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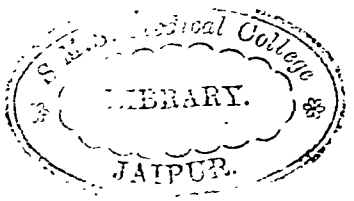
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F. W. W. GRIFFIN, M.D.,
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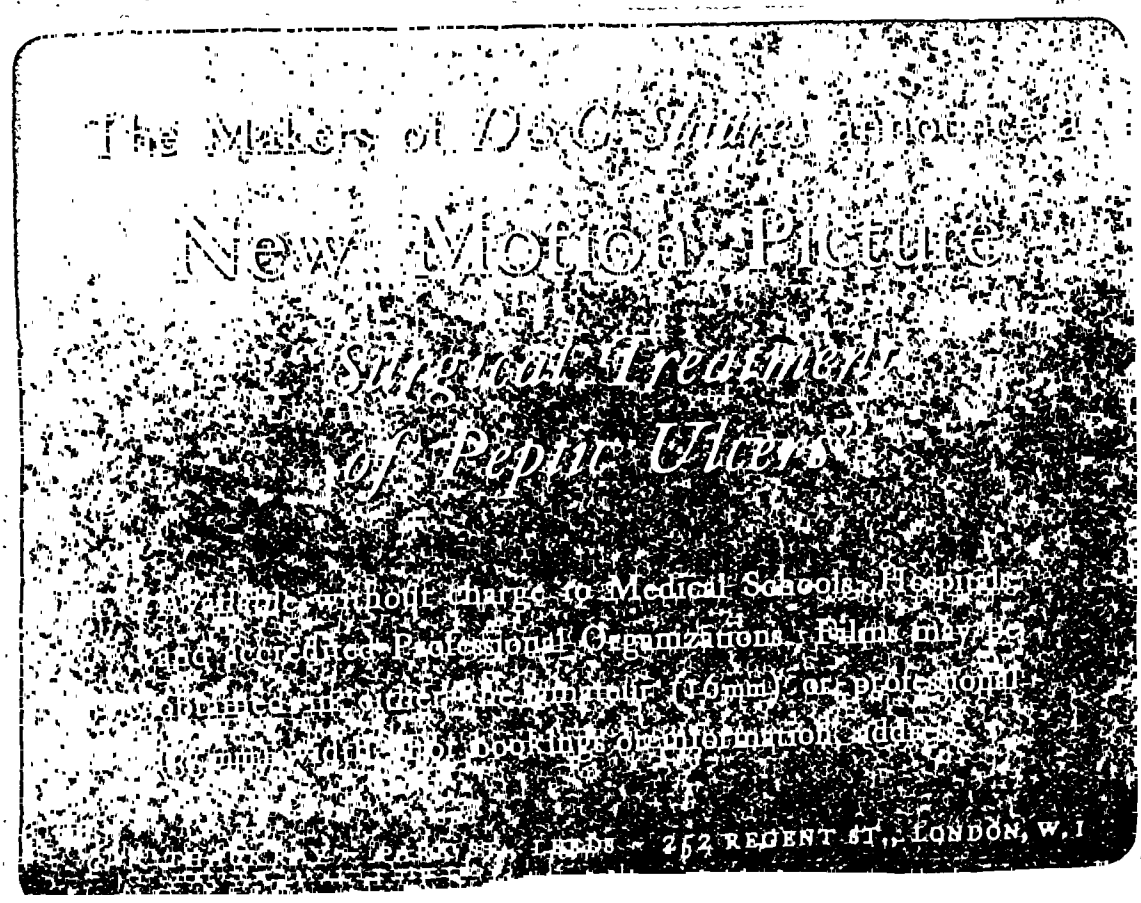
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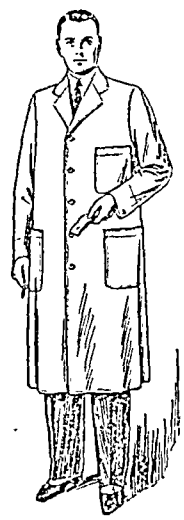
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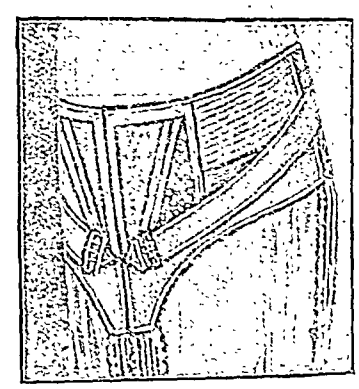
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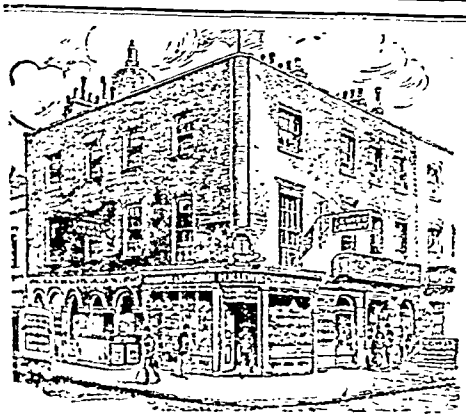
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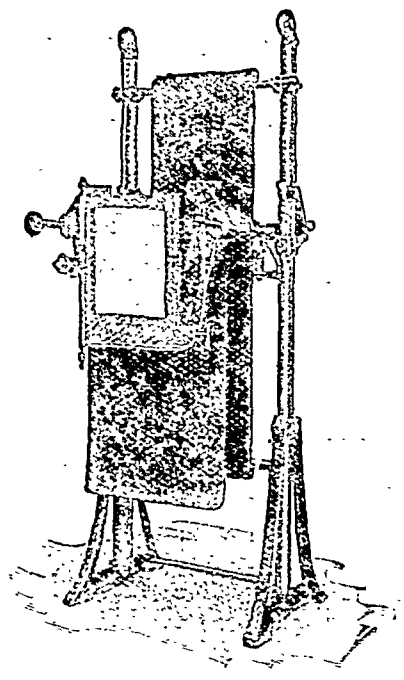
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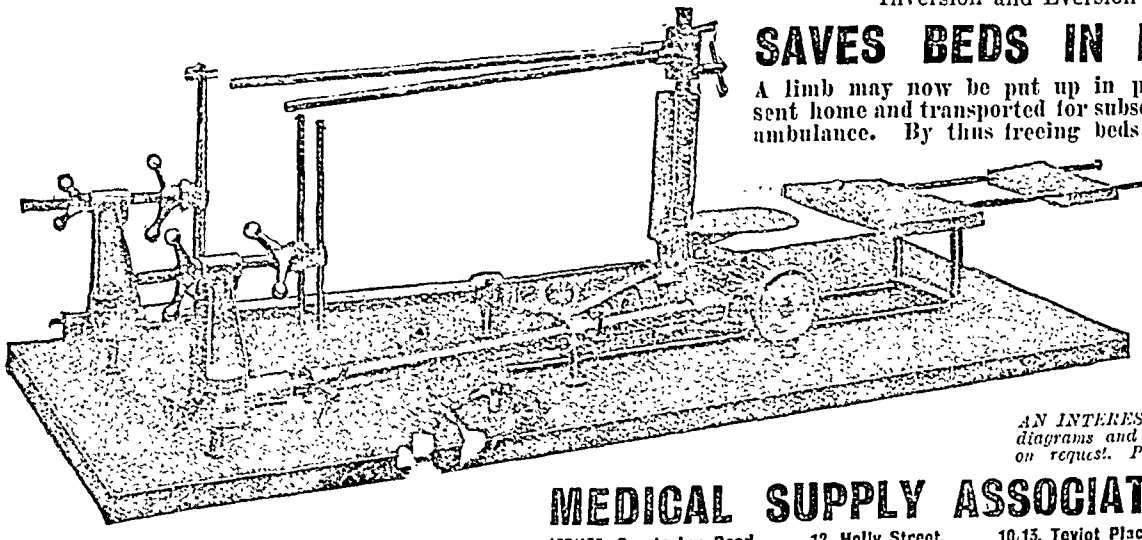
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The last decade has witnessed such a notable increase in the number of antiseptics of varying degrees of efficiency that it has become important for the physician and the surgeon to discriminate between the preparation of proven worth and that of unknown value.

The germicidal power of Acriflavine 'B.D.' Brand has been proved by clinical experience covering a period of thirteen years. Acriflavine 'B.D.' Brand is a product of wide application, and the fact that its potency is increased in the presence of serum gives it a distinct advantage.

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Acriflavine 'B.D.' Brand is issued in powder form, also in tablets, in solution, in an ointment, in bougies and suppositories.

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THE BRITISH DRUG HOUSES LTD. LONDON N.1

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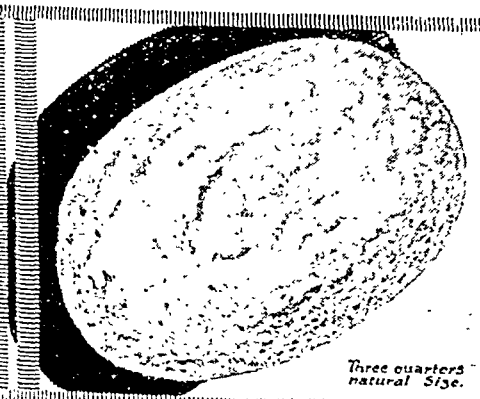
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Three quarters natural Size.

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Unsolicited testimonials daily for Carr's famous Bath Rusks, which are ideal for babies and young children.
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Made by

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"Glycerophosphates favour the assimilation of phosphates from the food and protect the combined phosphorus of the nervous system from wasting."

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"In Sanatogen we are offered an ideal combination to combat the wasting effect of chronic or acute illness. In fact, a better cell-reconstituent can hardly be imagined, for the casein and glycerophosphates in combination fulfil every demand for perfect nutrition."

PROF. GOLDWATER in "Therapeutic Medicine."

"I have used Sanatogen and am very pleased with the results obtained."

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CASEIN-SODIUM-GLYCEROPHOSPHATE

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In Chronic Indigestion Bemax "showed very satisfactory results."

Dg. 59.—Bemax was prescribed to several patients for "Various chronic digestive ailments, with very satisfactory results."
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By restoring a healthy metabolism, Bemax recreates a condition in which healthy digestion is possible and at length inevitable.

The excellent results obtained through its use by medical men in cases of Indigestion, Intestinal Toxæmia, Chronic Constipation, Debility, Neurasthenia, and Rheumatism afford ample evidence of its therapeutic value in all "deficiency diseases."

Bemax is a natural food prepared from the living embryo of cereals. It has a higher content of natural Vitamin B than any other known substance.

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¶ VITAD is the unsaponifiable fraction of Cod-Liver Oil containing in a high concentration Vitamins A and D.

¶ While presenting practically the full medicinal properties of Cod-Liver Oil, it is free from the nauseating oily fraction. Being exhibited as a Palatinoid, it is protected by the hermetically sealed non-actinic covering from all chance of oxidation and light action, thus ensuring a standard dose at all times.

¶ Palatinoid Vitad is put up in bottles of 25 and 100, and in two strengths:

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Two palatinoids respectively represent the full daily dose of Vitamins A and D.

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ANIL - QUINOLINE 48 S

THIS important new antiseptic is the result of Research carried out by a group of workers at the University of Leeds under the auspices of the Medical Research Council. It has been subjected to thorough clinical trials in the General Infirmary, Leeds.

Boots Pure Drug Co. Ltd. have been supplying QUINANIL for these clinical trials, and the results were reported in the LANCET of November 9th, 1929.

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QUINANIL is usually employed in solution in normal saline. The strengths used have varied from 0.005% (1:20,000) to 0.1% (1:1,000). See LANCET of November 9th, 1929, p. 969.

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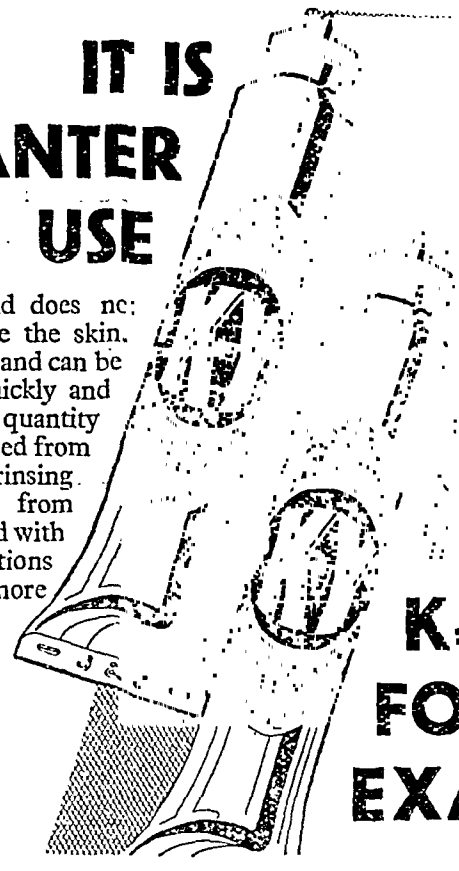
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IT IS PLEASANTER TO USE



K-Y Jelly is greaseless and does not soil the clothing or irritate the skin. It flows freely, never binds, and can be squeezed out of its tube quickly and conveniently in exactly the quantity required. It is easily removed from hands and instruments by rinsing them in water. Prepared from vegetable substances blended with correctly balanced proportions of boric acid, K-Y Jelly is more "slippery" than petrolatum and never spoils or becomes rancid or poisonous. Physicians and surgeons are invited to write for samples to Dept. B, Johnson & Johnson (Gt. Britain) Ltd., Slough, Bucks, stating name of their local supply house.

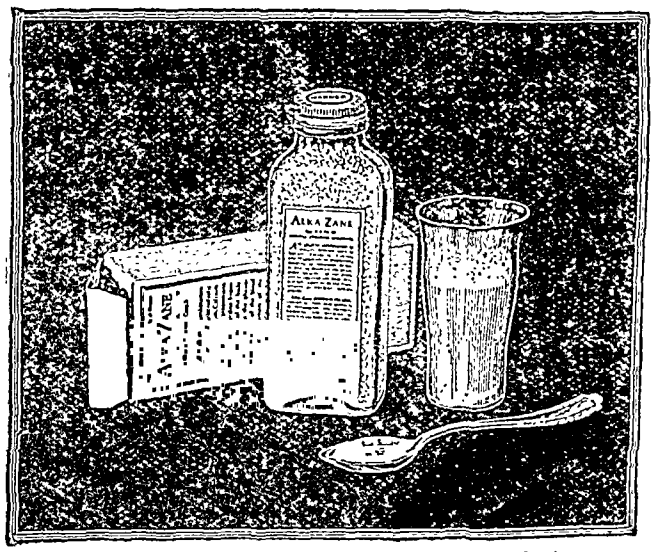
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A pleasant, effervescent granular preparation composed of carefully selected salts of Sodium, Potassium, Calcium and Magnesium in physiologically correct proportions.

is a palatable and rational antacid, indicated in all conditions of relative hyperacidity, rheumatism, gout, intestinal, gastric, and certain cutaneous disorders.

Prompt in action, lasting in effect, it promotes diuresis, neutralizes excess acid production and helps to rebuild the alkaline bases.

The efficiency of Alka-Zane is demonstrable by the briefest of trials.

A supply for clinical use and literature sent gratis to physicians on request.

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20 units per c.c. Packed in bottles containing:
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Mistol is a combination of eucalyptol, menthol and camphor in a specially prepared base of petrolatum. It is approved by leading nose and throat specialists for its quick action in relieving irritated and infected mucous membranes.

Due to its oily consistency, Mistol clings tenaciously to mucous membranes, keeping its soothing and astringent ingredients in direct contact with the inflamed parts for a considerable length of time.

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A concentrated mineral pabulum, possessing unrivalled therapeutic properties in all Wasting Diseases, which have been termed "Demineralizations" by modern clinicians.

Supplies the organism with those indispensable mineral elements:

Manganese Sodium Potassium Calcium Iron

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which has been extensively prescribed and used by the Medical Profession for a Century, and is still the best and safest means of administering Magnesia.

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RICH IN ESSENTIAL VITAMINS A, B, C & D.

Clinically tested at regular intervals, it has been demonstrated that Vitamalt is an extra-dietary food of considerable value.

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for cleansing Natural Teeth and the whole of the Oral Cavity.

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to be used as a Mouthwash, Spray or Gargle.

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FOR INFANTS OR DELICATE ADULTS

The value of Savory & Moore's Food has for many years been recognized by the Medical Profession. The consistent success, met in such extreme cases as the premature Infant whose life is despaired of, to the elderly patient suffering from digestive disorders or insomnia, enables the Food to retain its prominent position in the Medical mind.

"I have tried your Food in case of chronic dyspepsia in an elderly patient suffering at the time from a chill. The Food was well taken and retained when various other foods did not agree." ——, M.D.

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Prepared as directed Savory & Moore's Food contains the Vitamins and Enzymes which are essential for healthy growth and development in Infants or the sustenance of enfeebled Adult Digestion.

SAVORY & MOORE'S FOOD
may be prescribed with confidence.

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"For many years I have ordered Savory & Moore's Food with excellent results. In my experience about 95 per cent. of children are able to digest and assimilate your product." ——, M.B., Ch.B.

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Direct Treatment of

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FOR PROPHYLACTIC AND THERAPEUTIC USE.

ANTI-CATARRH VACCINE
Prophylactic
3 doses.

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THE VACCINE FOR COLDS
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3 doses.

INFLUENZA VACCINE
2 doses.

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'WHITE BEAR' BRAND

Cod Liver Oil



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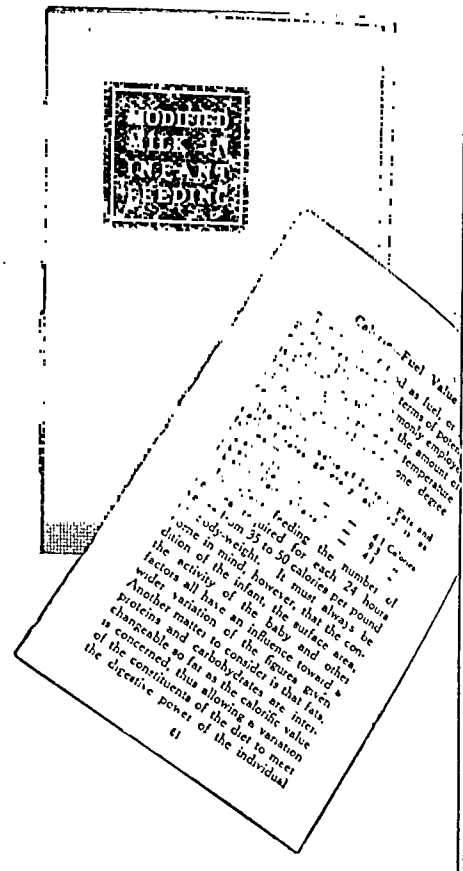
The difficulties that attend hand-rearing are minimised by the use of cow's milk modified by

Mellin's Food

The physical texture of the casein is thereby modified, the carbohydrate constituent raised, and the saline ingredients adjusted, so that the resulting mixture gives most satisfactory results under all average conditions.

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The Medical Profession when prescribing "Liquor Carbonis Detergens" SHOULD ADD THE WORD

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On receipt of your professional card, a package will be sent containing a sample of each of the following—

Wright's Coal Tar Soap.
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Although there is no secrecy as to the composition of Liquor Carbonis Detergens (it is described as "an alcoholic solution of coal tar"), the method of manufacture is unique. Imitations will be found to be produced by simple digestion, usually accompanied by some primitive, perfunctory, and inadequate stirring; whereas, in the case of the genuine product, the intimate contact required, for the complete extraction of all the soluble antiseptic constitutents, is attained by a series of complicated processes, involving the use of highly specialized machinery.

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In **Debility, Nervous Exhaustion** and **Anaemia,** where **Digestion** is **Impaired** and it is **Essential** to **Conserve** the **Weakened Vital Forces, Valentine's Meat-Juice** demonstrates its **Ease** of **Assimilation** and **Power** to **Restore** and **Strengthen.**



Employed in many Hospitals and Sanitariums and recommended by many leading Physicians and Surgeons throughout the world.

Physicians are invited to send for Clinical Reports.

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PLASMONA

THE BLOOD & NERVE FOOD

embodies the four most needed

Vitamins A, B, D & E,

combined with Calcium, Phosphates, Iron, etc.,

and is the

Sovereign Restorative and Nerve Tonic

in fatigue, general debility and exhaustion due to illness or nervous overstrain, in convalescence, and for those engaged in strenuous work, either physical or mental.

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PLASMON LTD.,

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B C.M.S.

National Committee for Promoting the Consumption of Norwegian Cod Liver Oil, Bergen, Norway.

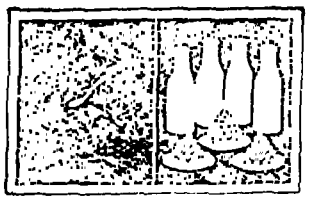
Ultra-violet radiation is sometimes tried to replace the lack of vitamins in food. It is not an economic way of attaining this result.

IN ITS REPORT FOR THE YEAR 1927—1928
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"The use of artificial light to supply only what the right food can give is merely wasteful. It commonly costs three or four shillings to give by light an effective supply of vitamin D that would cost less than a penny if given by the mouth in the form of cod-liver oil . . ."

Norwegian Cod Liver Oil abounds in natural vitamins. It is a natural food, supplying vitamins A and D, which is easily absorbed owing to its high percentage of glyceryl esters of unsaturated fatty acids. There is no efficient substitute for Cod Liver Oil.

A TEASPOONFUL OF NORWEGIAN COD LIVER OIL CONTAINS MORE VITAMINS THAN



ALL THE BUTTER AND MILK ANY INDIVIDUAL CAN EAT AND DRINK IN A DAY

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COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS

which strengthens the glandular secretions of the organ

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which regulates the secretion of the bile.

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which rehydrates the contents of the intestines.

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anti-microbian and anti-poisonous action.

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ITS USE DOES NOT LEAD TO HABIT

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A useful adjunct in the Treatment of RHEUMATIC AFFECTIONS

Reports received from Practitioners indicate that many cases of Rheumatic Affections have been successfully treated with Detoxicated Anti-Rheumatic Vaccine (*Genatosan*).

This vaccine now contains seven varieties of streptococci, including three new strains of osteotropic streptococci recently incriminated in the causation of rheumatism. Detoxicated Anti-Rheumatic Vaccine is an agent of great value in the treatment of acute and chronic rheumatism and rheumatoid arthritis.

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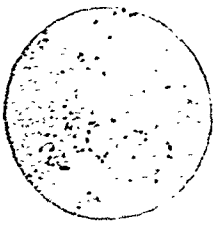
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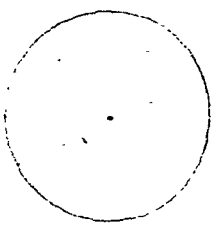
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CERTIFIED MILK
Legal Standard 30,000
Bacteria per c.c.


PASTEURISED MILK
Legal Standard 100,000
Bacteria per c.c.


COW & GATE MILK FOOD.
Always less than 150
Bacteria per c.c.

BACTERIOLOGY of MILK

Bacteriological sterility is perhaps one of the most important desiderata in the feeding of Infants. Periodical outbreaks of milk-borne epidemics are evidence enough that raw liquid milk is still outside the pale of safety; and the continual presence of tubercle bacilli in milk renders some form of treatment essential.

Cow & Gate Milk Food

"Cow's Milk made safe and suitable for Baby."

The accompanying micro-photographs illustrate the comparative degree of purity of different grades of milk and are convincing proof of the reliability of Cow & Gate Milk as opposed to all other forms of milk.

The bacteriological purity of Cow & Gate is assured by an Improved Roller Process which, unlike other forms of heat treatment, involves a minimum exposure to heat, and preserves intact the natural and rich vitamin content of the original West Country milk.

The makers will gladly supply samples for Clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

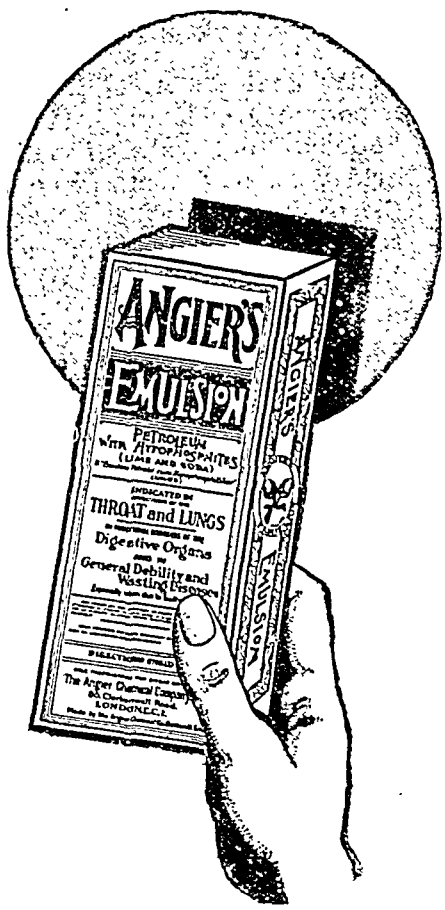
COW & GATE Ltd.,

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For Children

in Bronchitis, Whooping-Cough, Measles, and Scarlet Fever.

Angier's Emulsion is one of the most useful and dependable remedies at the command of the physician for the treatment of the various inflammatory and bacterial affections of children. Its soothing, inflammation-allaying properties and its general tonic effects are of first importance in these ailments, while its pleasant cream-like flavour and ready miscibility with milk make it easy of administration even to the youngest infants



In many of the wasting diseases of childhood a sensitive, irritable stomach and intestines preclude proper nourishment. Under the administration of Angier's Emulsion these organs become pacified and retentive, digestion is strengthened, and the assimilation of food is normal and complete. We confidently urge its trial in marasmus, scrofulosis, inherited tuberculosis, anæmia, and in the malnutrition associated with acute infectious disease.

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THE ORIGINAL AND STANDARD EMULSION OF PETROLEUM

Free Samples to the Medical Profession.

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"BYNOL"

A perfect combination of Malt Extract with Cod-Liver Oil.'—B.M.J.

'Bynol' contains 30% of the 'Allenburys' 'Perfected' Cod-Liver Oil

The 'Allenburys' 'Perfected' Cod-Liver Oil is examined biologically and certified as fully active with regard to Vitamins A and D.

Examined by the Antimony Trichloride Test it gives a colour equal to 8-9 'Blue Units.'

The 'Allenburys' Malt Extract renders 'Bynol' a rich, easily digestible and palatable product.

Issued in wide-mouthed jars.

Clinical trial sample will be sent on request, post free, to members of the Medical profession.

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The "Allenburys"

"*Perfected*"

Cod-Liver Oil

Cod-Liver Oil is the richest available natural source of the fat soluble growth-promoting and anti-infective vitamin *A* and the antirachitic vitamin *D*.

The 'Allenburys' 'Perfected' Cod-Liver Oil is examined **biologically** and **certified fully active** with regard to **Vitamins *A* and *D*.**

Examined by the Antimony Trichloride Test it gives a colour equal to **8-9 'Blue Units.'**

In amber bottles for protection against light at 1/3, 2/6, 4/6 and 8/6.

Descriptive literature and a clinical sample will be sent post free on application.

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PIONEERS AND EMPIRE BUILDERS: No. 538
EIGHTH PERIOD—circa 750 B.C. to A.D. c. 404



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NOVARSENOBENZENE
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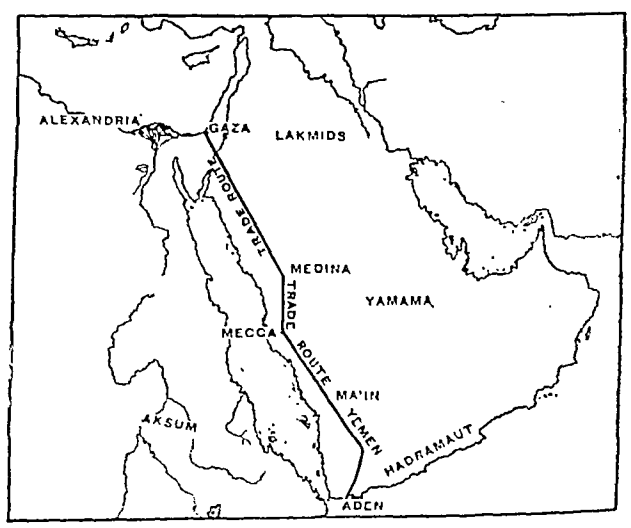
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DATE: c. 800 B.C. (or earlier)-A.D. c. 500.
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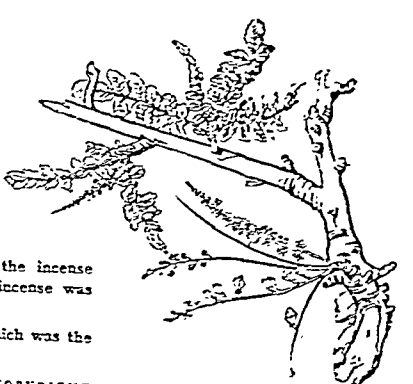


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The accompanying illustration shows the branch of the incense tree, which was the chief source of the prosperity of Sheba.

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THE JOURNAL OF THE BRITISH MEDICAL ASSOCIATION.

LONDON: SATURDAY, JANUARY 4TH, 1930.

An Address
ON
SOME CLINICAL ASPECTS OF PAIN.*

BY

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PAIN is the commonest symptom of disease; there is no symptom more informative to the practitioner and none at times more misleading; again, there is no symptom more distressing to the patient and none that so often gives rise to mental misconceptions.

The subject of pain bristles with attractive problems, to some of which only is it possible to refer. A rambling discourse, with reference to illustrative cases, would appear to be more suitable for present purposes than a systematic disquisition. If, then, certain aspects of pain are dealt with in what may appear to be a sketchy and haphazard manner, no apology is called for, since it will be thereby possible to cover a wider field.

What do we mean by pain? While the word is sometimes used to express a state of mental anguish or distress, it is commonly applied to a recognized type of bodily discomfort. It is to pain in this sense that these remarks refer. Here again, however, it is to be remembered that one individual will describe as pain a sensation to which another would not apply the term. Pain is indeed difficult to define, but since we all know what we mean when we speak of pain, in the common acceptance of the word, a definition would appear to be unnecessary.

Does pain fulfil any useful purpose—is it, in other words, of any economic value? If not, why should the human race be cursed by a symptom which is the cause of so much suffering? The pains of labour afford an instance, perhaps the only instance, in which pain is the constant accompaniment of a physiological process. But since the pains of labour are related to the evolution of civilization—for they are, I understand, comparatively trivial in the primitive races of mankind—they may perhaps be regarded as pathological. Sir Charles Sherrington has referred to pain as "a psychical adjunct to a protective reflex." Pain is indeed a protective danger signal, and, since it affords a warning that all is not well, it fulfils an invaluable purpose. In so far as pain is informative it must be regarded as an indispensable blessing, while it is, at the same time, one of the curses to which the human flesh is heir.

All the information regarding subjective pain that we possess has been acquired from personal experience or from the statements and reactions of the sufferer. On the other hand, our knowledge of objective pain and its subservient mechanism has been largely derived from a study of (1) the effects which result from localized disease of, and more particularly injury to, the peripheral nerves, spinal cord, and brain; (2) the phenomena which follow experimental nerve division in man; and (3) the "referred pains" and areas of cutaneous hyperalgesia which are met with in disease of the various viscera. Animal experiment has afforded us but little help in this connexion. Do the lower animals feel pain, and, if so, to what extent? This is a question which is difficult to answer. Professor Edinger of Frankfurt, one of the greatest comparative anatomists of his day, was of opinion that the lower forms of vertebrates, in which the pallium is wanting, do not feel pain. On the other hand, we now know that in man the thalamus is the centre in which crude sensations of pain are experienced. The reflex withdrawal of a limb which follows the application of a stimulus is no proof that the animal suffers pain. This is an independent phenomenon, as is demonstrated by the fact that in certain cases in man, in which conduction in the spinal cord has been interfered with by disease or injury, the lower limb is drawn up reflexly when the skin is pinched, although there is no accompanying painful sensation. Sir Edward Sharpey-Schafer writes: "Nothing is more certain than that pain is not a primitive sensation; it is in fact the latest sensation to be evolved." There appears, indeed, to be no doubt that the appreciation of pain is more acute the higher we ascend the evolutionary scale.

Individuals differ greatly in their sensitiveness to, and tolerance of, pain. Some are hypersensitive, others hyposensitive. Again, the threshhold for pain in the same individual differs in different situations, and varies from time to time and under different circumstances. Further, while one individual tends to minimize, another tends to exaggerate. This tendency, which applies to all subjective symptoms, may be "temperamental," while, on the other hand, it may be determined or influenced by extraneous circumstances. Unfortunately we possess no instruments of precision or other means whereby the clinician can measure pain and record comparisons in scientific terms. A conclusion can only be arrived at in terms of a general impression after a judicial consideration of all the circumstances. The appreciation of the subjective constitutes a large part of the art of medicine.

Anatomical and physiological considerations regarding the path of the nerve fibres which conduct painful impulses need not detain us. Suffice it to say that there are special afferent fibres which pass by way of the peripheral nerves to the spinal cord and brain stem. Soon after entering the central nervous system the path for pain decussates and terminates in the optic thalamus. Here the nerve impulses are appreciated in terms of pain and are recognized as diffuse, unlocalizable, disagreeable sensations. The function of the cerebral cortex, which is directly connected with the thalamus by fibres arising in the latter, is to localize these sensations and analyse their significance.

Pain is usually due to excitation of peripheral nerve terminals, but it may be directly determined by stimulation of the peripheral nerves, while it is very exceptionally a consequence of disease which involves the conducting tracts in the spinal cord and brain stem or the thalamus itself. Most of us have probably met with cases of epidemic encephalitis in which intense pain has been a striking symptom. The thalamus is often implicated in this disease, and the pains which result may present similar features to those met with in the thalamic syndrome of Dejerine.

The manner in which pain may be produced, as a consequence of excitation of the peripheral nerve terminals, calls for passing notice. Noxious stimuli of various kinds may, as we are well aware, excite the nerve endings in the skin and give rise to pain; again, we have all experienced the pain which accompanies muscular cramp, and we have observed the hyperalgesia of the muscles in alcoholic neuritis and the analgesic muscles in some cases of tabes; further, we are familiar with the joint pains in an acute arthritis, and with the excruciating pain in cases

* Delivered to the North Northumberland Division of the British Medical Association on November 12th, 1929. The subject of pain was treated on somewhat similar lines in a British Medical Association lecture (unpublished) delivered by the author to the Dumfries and Galloway Division of the Association on February 21st, 1928.

in which malignant tumours involve the bones. But the problem of pain in relation to visceral disease is somewhat different. When such organs as the lungs, the liver, or the spleen are affected by disease, pain is not complained of unless the investing serous membrane is implicated. Then, again, ulceration of a hollow viscus may exist for years without producing the slightest distress. "It is, indeed, a basal fact of clinical observation," as D. P. D. Wilkie writes, "that most abdominal pains, if we exclude those of the parietal peritoneum, are due either to spasm of, or tension in, the hollow viscera." The pain in such circumstances, as exemplified by the various types of colic (gastric, intestinal, biliary, renal, etc.), is either a direct consequence of the spasmodic contraction of the muscular tube in its attempts to force its contents beyond an impediment, or of a passive distension of the tube above the site of obstruction. Then, too, it is an interesting fact that pains arising in the internal organs are very inaccurately located and are misreferred, as reflected or referred pains, to more or less definite areas of skin on the surface of the body corresponding to the spinal segments from which the organs in question are innervated. There is, too, another well-recognized causal factor in the production of pain. I refer to interference with the blood supply, as exemplified by Raynaud's disease, intermittent claudication, and some cases of angina pectoris associated with disease of the coronary arteries. How difficult it is to appreciate the characters of a sensation one has not personally experienced; how difficult even for the trained observer to describe his sensations, how difficult to gauge the intensity of pain in the individual case!

A physician of wide experience once asked me to examine him, since for three days he had been troubled with what he described as a severe pain, which he referred to the side of the chest. Upon examination I found no objective signs, and ventured to predict that the pain might be the precursor of an attack of herpes zoster. "I have seen many cases of herpes zoster," said the patient, "and I am sure that this is not the pain of shingles." Nevertheless, on the following day the herpetic rash made its appearance.

The practitioner is called upon to regard the symptom pain from three points of view: first, as a phenomenon which often affords important information in diagnosis; secondly, as a symptom which may in itself call for treatment because of the distress or disability it produces; and, thirdly, as a possible source of misconception on the part of the patient; this, if uncorrected, sometimes determines a state of apprehension and anxiety, which may culminate in prolonged or permanent invalidism.

Pain is responsible for many diagnostic difficulties and pitfalls. All of us have met with cases in which a referred pain from a basal pleurisy has closely simulated appendicitis, with pain referred to the left breast by women suffering from pelvic disease, and with epigastric pain due to disease of the dorsal vertebrae. Again, we have met with cases in which the pains of tabes dorsalis have simulated disease of the stomach and other organs, and cases of hysteria in which acute visceral disease has been so closely imitated that the surgeon has been induced to open the abdomen. Many other instances of the kind might be cited. But it is not my present purpose to discuss the significance of pain as an indication of organic disease, the misleading features it may present, and the many niceties in diagnosis which occur in this connexion. Nor is it my intention to refer further to the treatment of pain attributable to, and adequately accounted for by, obvious physical causes. I would now consider another aspect of pain which calls for consideration, the more so since it does not perhaps receive the diagnostic attention which its importance merits.

Whereas pain is commonly attributable to physical causes and may consequently be termed physiogenic, since it is directly referable to a recognized physiological mechanism, it may, on the other hand, be of mental origin, or at least modified by the attitude of the mind. To this type of, or factor in, pain the term "psychogenic" is applicable. Reluctant as one is to adopt a nomenclature which is not in common usage, this becomes imperative if the terminology expresses an idea which serves to clarify existing conceptions. The terms "physiogenic" and "psychogenic" are peculiarly applicable to the symptom pain, for, as R. D. Gillespie points out, "the differentiation of physiogenic from psychogenic is not precisely the same as the differentiation of 'organic' *from 'functional,'* for 'functional' can be physiogenic." A correct appreciation of the etiology of pain in any given case is a necessary preliminary to rational treatment, hence the necessity for a precise etiological terminology. My remarks have so far been devoted to a brief consideration of physiogenic pain; let us now consider some aspects of its psychogenic counterpart.

The attitude of individuals towards pain is very different. I have by me a pamphlet written by a layman nearly two hundred years ago, evidently an irresponsible, happy-go-lucky fellow with a keen sense of *humour*; would that we could all share his cheery optimistic attitude as he writes upon the "Honour of the Gout"! Listen to what he says:

"Get me two men together, one that never knew Pain, and another newly recovered of the *Gout*; observe them both narrowly. In the former, perhaps, you may perceive an easy, even Temper, but the latter is ravished with Joys and Satisfactions, which if his tongue does not declare, his Hands, and Feet and Gesture shall. . . . Such are the lucid intervals between Heart-breaking Fits of the *Gout*, with all its Ravings and Roarings which the violent Paroxysm forces from the tortured Patient; and who would spoil the refined Pleasure of his Recovery, by wishing to have one angry Throb, one heavy groan bated him? . . . O, so pleased, so joyous, so happy, so blessed will you be, when the Turn of Health shall come. Why, Sir, you will be in Heaven, in Heaven while you are on Earth."

We do not like to be advised to curtail our interests and forgo our pleasures; we may, indeed, resent advice to this effect.

A lawyer, a man of ability, consulted me some years ago, not because of pain it is true, but on account of sleeplessness—a symptom which he said had troubled him for many years. As a result of my inquiries I ascertained that the patient was a very heavy smoker, that he had once given up smoking for six weeks, and that during this period he had slept well. The result of a prolonged examination was otherwise negative. The therapeutic indications appeared obvious, but when it was explained to the patient that the evidence was most suggestive to the effect that tobacco was the cause of his insomnia, and that he should at least cut down his smoking, his reply was, "I did not come to you to be told that, doctor, but to get something for my sleeplessness."

A forcible expression of opinion is sometimes necessary if it is to be effective.

A society woman, accustomed to enjoy to the full the pleasures of life, complained of a precordial pain which was interfering with her activities. She was seen by a heart specialist of world-wide reputation. A few questions and a brief examination served to elicit the essential facts. The diagnosis presented no difficulty, the indications for treatment were obvious, and after a short talk the physicians returned to the patient's room. "My lady," said the specialist to the spoiled child of fortune, "you are suffering from a pain which you are right in supposing is due to your heart. I might give you something which would relieve the pain, but I don't propose to do so. The pain is a warning to you to curtail your activities and live a different life." With this remark he turned and left the room. The advice was perhaps not unexpected, but the manner in which the opinion was expressed was so unlike that which the patient had been accustomed to receive from the physicians whom she had previously consulted that it came as a thunderbolt. Whether it achieved its purpose history does not relate.

Such is human nature! After all, we can only put the facts before our patients; it is for them to decide whether they will follow our advice. The doctor can only advise, he cannot coerce.

The influence of the attention upon pain is familiar to us all. We know that when we concentrate our attention upon a pain the pain is intensified, while, conversely, when our attention is distracted or otherwise occupied, the pain is much less apparent. The mother of the teething child tries to engage the child's attention, and when she is successful the pain is for the time being forgotten. This fact, which is constantly applicable to the subjective symptoms of disease, is of great therapeutic importance, especially in those cases in which the fixation of the attention upon the symptom in question is determined by anxiety as to its significance.

This observation raises the question whether, or to what extent, pain may persist as an after-memory, the conse-

quence of a stimulus that now no longer exists. Although unusual, this undoubtedly occurs. Fortunately our memory of pain is usually short-lived. I cannot, for instance, recall the case of a woman who has continued to be distressed by the memory of her labour pains after her child was born. The explanation may be that the pains, intense though they were at the time, are of short duration. On the other hand, it may be that the mother's thoughts are so concentrated upon the newborn infant, or on other matters, that her attention is distracted from her previous suffering. Again, it may be that she knows that the cause of the pain is now non-existent. An illustration of the fact that a pain may persist as a memory in the brain, after the peripheral stimulus which was originally responsible for its determination has ceased to act, is afforded by the following case.

A miner was admitted under my care suffering from sciatic pain, which he informed us had been continuously present and had incapacitated him for two years. The ankle-jerk was absent in the affected leg, an indication that he had almost certainly had a sciatic neuritis. On the other hand, there was no tenderness on pressure over the sciatic nerve or its branches. The patient appeared to be a good fellow, he was receiving no compensation, and he told us he was very anxious to be cured and to get back to work. After considering the facts we came to the conclusion that the pain was an after-memory. He was told of the conclusion we had come to and our reasons explained to him. The pain disappeared in a few days, the patient returned to work, and continued to work steadily from that time on.

A diagnosis in a case of this kind is often very difficult, notably when evidence of structural changes coexists which would appear to be sufficient to account for the pain; while, further, a confident diagnosis is essential if a cure is to be effected.

Some individuals are able to experience pain by an effort of the imagination—*pain which is as intense as a pain due to peripheral stimulation.* Thus a friend of mine, a very able member of our profession, tells me that he can imagine himself sliding down a sloping roof until his heels come into violent contact with the balustrade below. He says that he can feel the pain in his heels and the jar to his spine as vividly as if the accident had actually occurred.

Now if pain can be voluntarily induced, and if it may persist as an after-memory, it is not difficult to realize that it may originate in an idea. There can, indeed, be no question that some of the neuralgias, neuritic pains, rheumatic pains, and headaches with which we meet in practice are so determined or maintained. Again, we must remember that psychogenic pain is very real pain, and consequently, in speaking to the patient, it is inadvisable to use the words "hysterical" or "imaginary," for, unless we explain exactly what we mean, these expressions are apt to be misunderstood, and our supposed attitude may be resented by the patient. The following case of psychogenic pain is so instructive that I am tempted to describe it in some detail.

The patient, a man in the early twenties, a cripple since childhood, whose every want had been attended to by a devoted mother and sister, was admitted to a nursing home. A history was obtained from the patient's medical man to the effect that he had been called to see the patient some eight weeks previously, when he found him suffering from a severe pain over the left side of the chest, near the costal margin, for which, upon examination, he could find no cause. The pain continued to recur at the same time—ten minutes to ten each night. It was very severe, and drugs failed to relieve it. Every night for the six preceding weeks the doctor had had to keep the patient under the influence of chloroform for nearly two hours; the pain then passed off until the following evening at the same hour. When seen, on the afternoon of his admission to the nursing home, the patient stated that he felt perfectly well, excepting at those times when he was suffering from pain.

Upon examination no objective signs were detected to account for the pain. The conclusion was come to that the pain was psychogenic in view of its periodicity, the fact that the patient appeared to be unduly suggestible, the obvious concern shown by his relatives in his presence, and the absence of any other adequate explanation to account for the facts. The diagnosis was incomplete in that we failed to elicit the determining mental factor which had been responsible for the localization of the pain, a point of the greatest value in establishing, or corroborating, the diagnosis in cases of the kind. A line of action was determined upon, and the physicians returned that evening shortly before the hour when the pain was to be expected.

The picture was one never to be forgotten. The room was dimly lighted, the patient was breathing heavily and was apparently asleep. His mother, his sister, and two nurses were in attendance. As the physicians entered the room the mother approached them with her finger to her lips, and whispered, "It is not quite time," and they sat down to wait in an expectancy of silence. Precisely at ten minutes to ten the patient moved in his sleep, and began to give vent to groans, which gradually increased in intensity as he rolled from side to side in apparent agony. In accordance with a preconcerted plan the patient was asked to inhale some amyl nitrite, with the remark, "This will help you." When asked after a minute or two whether the pain was improving, the patient's answer was "Not yet." This response was in itself encouraging. A few minutes later the patient admitted that the pain was abating, and before long he said that it had gone. Then he was told, "You will have no more pain," and the physicians left the room. The patient's mother and sister followed. "It is wonderful," they said; "will you come to-morrow night and give him some more treatment?" The reply was, "No; there will be no recurrence of the pain, but we want you to leave the patient to the care of the nurses and not visit him again until we give you permission." The prediction was correct; the pain did not return.

This case serves to impress many lessons. Thus, among other things, it demonstrates that severe pain may occur in the absence of an organic or other accountable physical cause; that precise and inexplicable periodicity should suggest the possibility, although it does not necessarily imply, that the pain is of mental origin; that a diagnosis of psychogenic pain is based partly on the exclusion of an adequate physical cause and partly upon an estimation of the individual's suggestibility, together with a consideration of his attitude to his surroundings and the detection of a determining factor to account for the localization of the pain; that a psychogenic pain may be fostered by undue attention; that a pain of the kind may be cured by suggestion or persuasion; and that, in successfully dealing with such a pain, confidence in diagnosis and a confident expression of opinion are essential.

The psychogenic factor in pain is often determined and often maintained by suggestion. How foolish people are! They are constantly making remarks to their friends who have been or are ill. "How are you?" "You are not looking up to the mark." "You look as if you require a holiday." "I hope your pain is easier," and so on. Such remarks draw the patient's attention to his condition, the very thing we are so anxious to avoid. The individual in whom the psychogenic factor is prominent is for the time being a suggestible individual.

A psychogenic pain may be suggested by a previous illness.

A man who had suffered in early childhood from tuberculous disease of the spine fell and struck his back. From that moment he complained of pain in this situation. When examined some weeks later there was evidence of old tuberculous disease of the spine, but no indications of fresh injury. The patient had not apparently fallen very forcibly, yet he complained of severe pain in the region of the old disease. After a careful consideration of the facts the conclusion was come to that the pain was psychogenic. A confident opinion was given to the effect that the pain was not due to a recrudescence of the disease, the patient's anxiety was relieved, he was encouraged to move and walk about, and in two or three days the pain had disappeared.

Again, pain may be suggested by the surroundings in which it had originally appeared.

A woman had an extremely painful whitlow, which was opened, and was followed by nerve pain and sensitiveness of the finger, which persisted for months. Some two years after the pain in the finger had disappeared the patient revisited the locality where the whitlow had developed, and for two or three days she experienced the old pain in the finger, which she correctly attributed to the associations attached to her former experience.

Pain may be suggested by the illness of another. We have all met with instances in point. Then, too, pain may develop as a defence mechanism.

A young married woman had a miscarriage soon after her marriage and developed a perineal pain, which made intercourse impossible. A gynaecologist could find no local cause to account for this pain; the patient was in no way averse to intercourse, but inquiry showed that she believed that she was abnormal, and had an exaggerated fear as to the danger of parturition. When she realized that there was no reason for the fears she entertained the pain speedily disappeared.

Pain may be fostered in association with an inferiority complex. An individual recognizes that he is not up to what is required of him, and in some pain or other symptom from which he suffers he finds an excuse which will afford an explanation to the outside world and serve to maintain his self-respect.

We practitioners are apt to be too materialistic in our outlook. We are always searching for something objective to account for pain and other subjective symptoms to which, when found, we can attribute *all* the symptoms, often forgetting the part played by the mental attitude of the patient. Many of us can recall the day when the discovery of a movable kidney afforded us so much satisfaction. Here there was something to account for vague abdominal symptoms and for a neurosis from which the patient was suffering. Was not the proof to be found in the fact that the fixation of the kidney was, in some cases at least, followed by pronounced improvement? We failed for long to realize that by erroneously attributing symptoms to a movable kidney, of the existence of which the patient might be unaware, we were associating in the patient's mind the neurosis with the kidney; that she was only too pleased to have something tangible to which to refer her symptoms; that the movable kidney was in no sense responsible, but that once having produced this association in the patient's mind the symptoms would probably persist so long as the patient was aware of the physical condition which she regarded as their cause.

A lady consulted a surgeon because of abdominal pain, and he diagnosed a movable kidney, which he stitched to the abdominal wall, with the result that the pain completely disappeared. Six months later the patient happened to meet the surgeon. He asked her how she was, and she replied that the operation had been a complete success and that she had had no more pain, but, she said, "for the last day or two I have had a little pain here," pointing to the other side of the abdomen. "Oh," said the surgeon gravely, "I wonder whether the other kidney is loose." The kidney was not palpable, but from that day the patient complained of pain which she attributed to her kidney.

There can be no question but that we often suggest symptoms to our patients by drawing attention to phenomena of the existence of which they had previously been ignorant. Some of us remember the pleasure we used to take in demonstrating a case of hysterical hemiplegia—the loss of pain sensibility, the defective vision, hearing, and smell, the contraction of the visual fields, and so on. All these phenomena were merely indications of suggestibility, and the clinician was often, no doubt, responsible for producing them. When one examines a patient who is obviously suggestible, one does not ask him whether he feels the prick of a pin, but one says to him, "You feel that quite well, don't you?" and his reply is almost always in the affirmative, provided that he has not been previously examined. The man who has *x*-ray photographs taken in cases of visceroptosis and shows them to the patient in order to demonstrate the dropping of the viscera, and impress the patient with his diagnostic skill, is indeed a dangerous fellow, for, while visceroptosis may cause symptoms, it is often symptomless, and the last thing we wish is that the patient should erroneously attribute his discomforts to a physical cause we are unable to rectify.

We are all only too familiar with the pains complained of by the hysterical subject, the individual who believes that others fail to understand, and to give her that pity she feels that she deserves, whose craving for sympathy amounts truly to a vice. The state of mind of the litigant who suffers from pain, which he attributes to his accident, and the desire for material sympathy, is very similar. Impressed by what he regards as the injustice of those who, he believes, are either biased or regard his case from a too optimistic standpoint, he feels he must accentuate his sufferings to make them understood.

A type of case which presents great difficulty in diagnosis is well exemplified in the nervous woman who suffers from chronic abdominal pain. Here it may be extraordinarily difficult to apportion the physiogenic and psychogenic elements. None of us who have read that masterpiece of clinical picture-painting in which Robert Hutchison describes these patients is likely to forget it. "She is a connoisseur in doctors, specialists, and treatments, she has often acquired the operation habit, and although any new therapeutic plan usually relieves her for a time, the relief is always very short-lived." Chronic invalidism might often be prevented if these cases were recognized in their early stages, and, if I may say so without offence, saved from the machinations of a materialistic surgeon who ignores the mental side of the picture, and by plicating the stomach or fixing the dropped bowel—operations which are nowadays fortunately going out of fashion—often merely serves to perpetuate a clinical picture which in many cases, at least, is very largely of mental origin, although no doubt determined in the first instance, as is almost all psychogenic pain, on a physical basis.

If the medical man may be so deceived as to the cause of pain, we can readily understand that the patient may attach a quite erroneous interpretation to this symptom. It is natural that he should associate the pain with an organ which he believes lies in its immediate vicinity. We have all met with patients suffering from lumbago who have come to us under the impression that they must have disease of the kidneys, or complaining of precordial pain which they believe is an indication of cardiac disease, but which is actually due to heartburn.

Misconceptions of the kind are in themselves harmless unless the patient becomes anxious as to the cause of his pain, when a state of introspection may be initiated. This may culminate in an anxiety neurosis, and result in a disability as pronounced and as persistent as that due to grave organic disease. Indeed, as an experienced practitioner recently remarked to me, "an anxiety neurosis wrecks many a man's life." Now an anxiety neurosis is easily produced, and the practitioner is often responsible. If a tendency to introspection is recognized in its early stages it can usually be effectively dealt with, but if it is permitted to become a habit, like all habits it is difficult to correct. One of the most important qualifications of the practitioner consists in his ability to visualize a case from the patient's point of view, to recognize anxieties when these exist, and correct them where this is possible.

Reference to some general diagnostic and therapeutic principles may prove useful in dealing with patients, particularly those who are obviously anxious-minded, in whom pain or other subjective symptoms are predominant. A patient commonly consults a doctor for one of two reasons: on the one hand, it may be that the pain or other symptoms of which he complains are so distressing that they are interfering with his daily duties or his personal comfort; or, on the other hand, it may be that he fears that the symptoms in question, though not severe, are the precursor of illness which may temporarily or permanently incapacitate him or perhaps even prove fatal.

While in the majority of cases pain is attributable to, and adequately accounted for by, obvious physical causes, in some the severity of the pain and its persistence appear to be out of proportion to the physical condition, and in others no physical condition can be detected. In such circumstances the question arises, Is the pain in whole or in part psychogenic, or is the patient wilfully exaggerating or malingering? The answer to this question is often a matter of great difficulty, and an opinion can only be arrived at after a full consideration of all the data. Among these the following are deserving of special mention—namely, the situation and character of the pain, its constancy and intensity and circumstances which appear to influence it; the cause to which the patient attributes his pain, and possible misconceptions on his part which call for correction; the personality of the individual, his behaviour, his surroundings, his suggestibility, and his general outlook on his case; his responsibilities and sense of responsibility; the existence of an inferiority complex, his financial position, and, it may be, the question of compensation and his attitude towards it.

When one examines a patient whose symptoms there is reason for believing are psychogenic, or who, one feels, may be exaggerating, it is essential that the patient should not realize one's suspicion. He should feel, indeed, that one fully appreciates his trouble and sympathizes with him, for it is only by adopting such an attitude that it is possible to gain his confidence. The patient should be examined alone and his story patiently listened to, for the

history is of great importance. Direct questions as to the presence of symptoms of which the patient has *not* complained are to be avoided. A thorough, if rapid, routine examination should be carried out on the first occasion, if only to impress the patient with the fact that nothing has been omitted. Again, as one organ after another is examined, it is advisable to say, "Your heart, at any rate, is quite sound"; "your lungs are quite healthy," and so on, for it must be remembered that the patient may have fears which he has for the moment forgotten to mention, or has purposely refrained from mentioning. If there is evidence of organic disease it is best to tell the patient so; we must take him into our confidence, and explain to him exactly what significance we attach to it. When the opinion is expressed to the patient it must be as dogmatic as the facts permit, there must be no prevarication, and the symptoms to which he attaches special importance must be specially mentioned.

Finally, if no organic disease is found, don't clap the patient on the back and say, "There is nothing the matter with you, old fellow." This, it is true, may be all that is required in some cases, but other patients will go away and say, "By Jove! that doctor would know there *was* something the matter if he had my trouble." No, we must try to give the patient an intelligent and intelligible explanation of his symptoms. If the patient asks whether his symptoms are "imaginary," we must clearly explain to him what is implied by the word "imaginary," that there is nothing to be ashamed of, and that these pains may cause just as much suffering as those due to organic disease. We practitioners, I repeat, are often responsible for creating and perpetuating states of invalidism, either from want of knowledge or want of understanding. It may be that we fail to read the patient's mind and realize his misconceptions; again, we may forfeit the patient's confidence by giving him the impression that since his symptoms are not dependent upon organic disease his condition does not call for special attention, as there is nothing to be done. Even more culpable is the action of the weak man with whom we occasionally meet, who, posing under the guise of a "kind, attentive doctor," follows the path of least resistance, panders to his patient's whims, and unwittingly cultivates a curable neurosis as he would a hot-house plant.

In a last word I would refer to the value of isolation as an adjunct in the diagnosis and treatment of pain in which there is an obvious *psychogenic element*, and in the detection of malingering. Isolation has, in my opinion, fallen undeservedly *into disuse*. I have repeatedly demonstrated its efficacy in hospital practice in this type of case. There are three chief reasons why the "rest cure," as it was called, is nowadays but seldom employed: first, because at one time it was utilized indiscriminately in the treatment of all kinds of unsuitable cases; secondly, because it was often exploited by those who *failed* to appreciate its underlying principles; and thirdly, because the modern psychotherapist *argues that if a patient* is treated in isolation his environment is artificial, and that, although he is thereby protected *during his* course of treatment from counter-suggestion, he will relapse when he is once more let loose in the world. Dejerine, who did more than anyone to popularize this therapeutic measure, held a contrary view. This objection is purely hypothetical, and I know of no evidence to show that it is borne out by fact. Isolation might, I am convinced, be utilized with advantage very much more than at present is the case. It is a most useful adjunct to *suggestion* and persuasion in the treatment of cases of pain in which the psychogenic factor is predominant.

I have spoken of pain, but what I have said is equally applicable to many symptomatic manifestations with which we meet. Our conception of disease must not be limited by the confines of morbid anatomy, clinical pathology, and biochemistry. We are necessarily concerned with *all* those disturbances of function which tend to shorten life and produce incapacity, and with *all* the determining factors which give rise to them. What better illustration in this connexion than the symptom pain, the subject of these remarks?

PERFORATIVE DIVERTICULITIS OF THE COLON.

SOME PROBLEMS DURING THE TREATMENT OF A FATAL CASE.

BY

SIR W. I. DE C. WHEELER,

DUBLIN.

PERFORATION of the pelvic colon into the free peritoneal cavity in the case of an apparently healthy adult is sufficiently uncommon to justify, I think, this short communication.

Discussions on the prediverticular state, the comparatively common condition of diverticulosis, with such sequelae as diverticulitis, abscess and fistula, obstruction, and carcinoma, have received considerable attention in recent surgical literature (Spriggs, Mummery, Mayo, etc.). The case under review is in a different category.

History.

On April 27th last an apparently healthy man, aged 44 years, took a dose of salts in the morning, before breakfast. He had *felt* vague pain and discomfort in his abdomen for some days previously. Within an hour of taking the salts his bowels acted twice. He was *seized with a sudden excruciating* pain in the left iliac fossa after the second motion. He could put *his finger* on the exact spot. He said he felt as *if he had been shot*. He lay down with his legs drawn up, applied hot-water bottles to his abdomen, and drank some brandy, which was at once vomited. He was seen within an hour, and was then in a condition similar to an early case of perforated duodenal or gastric ulcer, except that all the local signs and symptoms were confined to the left iliac fossa. The pulse was slow, the temperature normal. There was fullness and rigidity of the lower abdomen, much more marked on the left side. There was nothing to be felt *per rectum*. The upper abdomen was soft, and high abdominal respirations were still present.

Diagnosis.

The diagnosis presented little difficulty. No left-sided appendicitis could have developed with such dramatic suddenness; the bowels had acted well, there was no distension, the picture was one of acute peritonitis, and not that of an obstructive lesion. In an adult, vigorous and healthy an hour previously, it was difficult to think of any likely cause other than perforative diverticulitis which would produce such an acute condition in the left lower abdomen. The diagnosis was made within a few minutes of seeing the patient. It was recognized that perforation of the colon into the peritoneal cavity, such as occurred in this case, *or in cases above a malignant obstruction*, is followed by a peritonitis of intense virulence, and a grave prognosis was given. (The segment of colon *involved is notoriously septic, and when* there are no limiting adhesions the assault on the peritoneum is seldom successfully countered.)

Operation.

Within three hours of the onset of pain the abdomen was opened on the left side below the umbilicus. So-called pus, *probably* of the defensive and protective variety, welled up. The coils of small intestine first seen were covered already with *patches of protective* lymph. The pelvic colon was sought, and was found loose, boggy, and swollen. The exact site of the perforation was difficult to *locate at first, but* was subsequently found. The friability of the swollen loop was such that an attempt at suture of the perforation was found to be *impossible*.

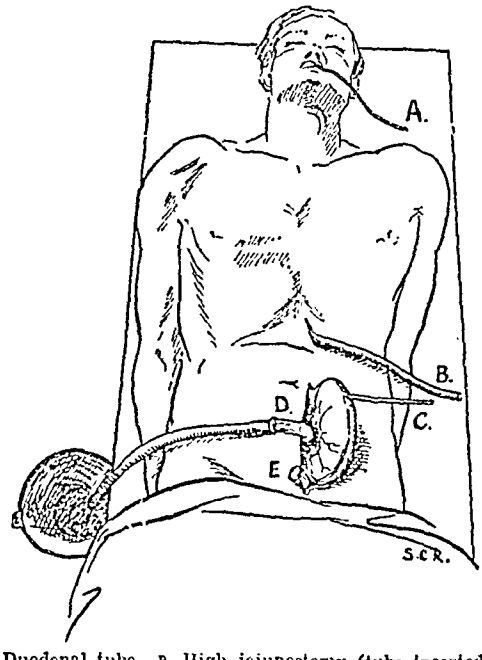
The exceptional freedom of the coil from adhesions suggested that there never had been previous attacks of diverticulitis, and confirmed a negative history given by the patient. The perforation was dealt with by leaving the loop of colon outside *the abdomen, with* a subsequent Mikulicz resection in contemplation if all went well. The caecum was drained, as it was thought unlikely that faeces could pass *for some considerable time* through the affected loop. It was possible to introduce the caecal tube through the primary incision. The pelvis was also *drained*.

At the conclusion of the operation the stomach was washed out, and, notwithstanding the short space of *time which had elapsed* (three hours) since the perforation, it already contained ominous black material.

After-History.

There was very little drainage from the caecum. On the day *after operation* vomiting became frequent; repeated lavage of the stomach only gave very temporary relief. A stab wound was made in the *extruded loop of* bowel, through which enemata were given without effect. Vomiting continued, and it was soon obvious that

a high obstruction was established, and high jejunostomy was indicated. An incision was made parallel to the left costal cartilages under gas-oxygen and local anaesthesia. A distended loop of jejunum was selected and a catheter was introduced by the usual Mayo method. A few ounces of green fluid came through the tube, but there was no subsequent drainage. Fluid, however, could be freely introduced.



A, Duodenal tube. B, High jejunostomy (tube inserted too low). C, Stab wound in colon. D, Caecal drainage. E, Drain in pelvis.

Vomiting continued throughout the third day. A second jejunostomy after identification of the flexure was considered, but it was felt that the same result might be obtained by drainage of the stomach and duodenal contents through the medium of a duodenal tube. The tube was swallowed with great difficulty between two attacks of vomiting, and, after lavage, by means of a nasal tube. It was now possible to aspirate fluid every half-hour with a Record syringe. Three pints were withdrawn in twelve hours. The character of the fluid completely changed; at first it was black, afterwards it became orange-coloured, with a foul, but not a faecal, smell. The toxicity of this fluid was made evident by the fact that if aspiration was delayed on any occasion the condition of the patient became rapidly worse.

The mechanical difficulties encountered were dealt with in the manner indicated, but, in addition, it was necessary to cope with progressive failure of strength from toxaemia and loss of fluids.

Biochemical Considerations.

Every few hours a pint (12 pints in all) of 10 per cent. glucose solution in distilled water was administered intravenously. During and at the end of each transfusion insulin was given hypodermically (1 unit to 3 grams of glucose). Fluids were given continuously by the drop method into each axilla; water, peptonized milk, and panopepton were introduced through the jejunostomy tube. It was interesting to note that, immediately after a transfusion, duodenal regurgitation increased, necessitating aspiration on each occasion.

At one stage the urine became alkaline, dehydration was marked, and slight tetanic spasms (cramps) occurred in the arms, suggesting the condition of alkalosis so commonly observed in the presence of high obstruction. Improvement followed the administration of collosol calcium and the substitution of hypertonic (3 per cent.) saline solution for distilled water when administering the glucose.

Towards the end of the illness a dilemma arose in connexion with treatment. Duodenal contents in the presence of high obstruction are notoriously toxic. Their retention is fatal. On the other hand, if they are abundant and freely drained the patient cannot survive their loss for any prolonged period. After forty-eight hours of frequent aspiration through the duodenal tube the patient became dehydrated and stuperose, and threatened with a physiological death.

Wilkie of Edinburgh was confronted with a similar dilemma in somewhat similar circumstances. High obstruction followed appendicectomy; the jejunostomy opening was made too low. A second jejunostomy was performed at a higher level. After a period of free drainage rapid emaciation followed and death appeared imminent. The upper and lower jejunostomy tubes were connected outside the abdomen so that the duodenal contents could be delivered into the lower intestines. An immediate improvement in the condition of the patient followed, with ultimate recovery.[1]

Wilkie's method was adopted in the present case in a modified form. The duodenal contents, immediately on their withdrawal, were injected through the jejunostomy tube with an aspirating syringe. Coincidently with this procedure the caecum commenced to drain. It was noticed that the peptonized milk, panopepton, and other materials given via the jejunostomy opening passed through the caecal tube unaltered.

Termination.

With the caecum draining and the duodenal contents saved the general condition of the patient improved. On the morning of the fifth day he announced that he felt better and was going to recover. The Record syringe failed to find any fluid in the stomach and duodenum, and some bile appeared for the first time in the caecal drain. The bile was green, and not intermixed with the other faecal material. (This has been noticed in other patients suffering from pancreatic disease.)

For six hours the patient made rapid strides towards recovery; there was no further regurgitation into the duodenum; his appearance was transformed. He was given a hypodermic of omnopon to promote rest, and all who were watching him felt that at last recovery was assured.

On the evening of the sixth day the signs of high obstruction again appeared; restlessness and delirium quickly followed. Aspiration of the duodenal contents and intravenous medication gave no response. He died twelve hours later.

Towards the end of the illness respirations became fast without any pulmonary complication; air hunger was followed by the appearance of acetone and diacetic acid in the urine. Alkalosis had now given place to acidosis. Alkali solutions, rigidly avoided at first, were freely administered in combination with glucose, but without effect in the end.

A post-mortem examination was refused, but the loop of bowel was examined, and proved to be the site of perforative diverticulitis.

The following points in the case are noteworthy.

1. The ease of diagnosis.
2. The good fortune in finding the perforation in a loop of bowel easily extruded.
3. The free drainage of the caecum after some days, with complete emptying of the lower coils of intestine in the presence of persistent high obstruction.
4. The efficacy of the retained duodenal tube as a means of high drainage.
5. The extreme toxicity of the obstructed duodenal contents.
6. The signs of hepatic and pancreatic insufficiency in the presence of continued obstruction.
7. A condition believed to be alkalosis changing to acidosis.
8. The dramatic relief from obstruction followed by a fatal relapse.

In conclusion, I wish to acknowledge my great indebtedness for the untiring help of Dr. Magennis and Dr. Gilbert Wilson in the management of the case. Dr. T. T. O'Farrell kindly examined and made sections of the specimen removed after death.

REFERENCE.

[1] *Brit. Journ. of Surg.*, 1924, xi, 568.

THE EARLY DIAGNOSIS AND TREATMENT OF CANCER.*

BY

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In his opening remarks Mr. Donaldson suggested that the problem of cancer might be considered under four headings: etiology, early diagnosis, treatment, and education of the public, and, having described briefly some of the views held on the etiology of cancer and indicated lines on which further investigation is proceeding, he continued as follows.

My object now is to discuss the second, third, and fourth parts of the problem, and it is as well to begin by trying to picture the situation as it exists to-day. To do this, I will try and describe what happens to thousands of people each year.

First, there are the average men and women, going about their daily life, occasionally thinking of the question of cancer. One day they experience some perplexing

* Abstract of an address delivered at the Royal Institute of Public Health on November 20th, 1929.

symptom; it is not a symptom that they are used to; they cannot assign any definite cause, such as a blow. They immediately think—Is it cancer? They try to put it out of mind; they put off going to their medical adviser for fear that he may pronounce it to be malignant disease, then later on they are forced to seek medical advice. They do not go and say: "Look here, I want to know whether I have cancer," but they go and give a general story, sometimes actually hiding the main symptom, hoping in their hearts that the doctor will realize they are nervous of cancer and tell them that they have not got it. It is an interesting psychological fact that people fear to admit they are afraid.

Then we come to the average practitioner; he is perhaps unable at a first glance to find out exactly what is the matter with this particular patient, but it is obvious that it is not an acute condition, so he recommends a bottle of medicine and a little rest, and tells the patient that if he does not feel better to come and see him again. The patient, consciously or subconsciously, takes this to mean that he has not got any malignant disease, and he does not feel ill enough to repeat the visit. A few months later, however, the symptoms are much worse, and he goes to see his practitioner, who now has no difficulty in seeing what is the matter. But precious time has been lost, and the chances of curing the patient are very much less. Yet no one is to blame; it is the system that is to blame. Many times have I had a letter from a doctor saying: "I have treated Mrs. X on and off during the last six months for toothache, indigestion, or what not, but only yesterday did she tell me that for the last nine months she had noticed irregular haemorrhage. When I knew this I at once examined her, and now send her to you, as I fear she has got an advanced cancer."

Then we come to the last part of our story—the present state of treatment of cancer. That is left largely in the hands of experts, but even here things are not satisfactory. The number of cases that can be dealt with by the experts is very limited, and naturally the early cases are given preference, as their chance is better. To get their patients treated quickly general practitioners have, therefore, to send many of them to general surgeons, who perhaps are rather less experienced in the treatment of malignant disease. It is becoming more and more common to find in the smaller country towns such general surgeons attached to a firm of general practitioners, and it is obvious that the combination is of very great value to the community, but for the particular object of cancer treatment such surgeons cannot have sufficient experience to be really up to date.

That, then, is a fair picture of the present state of affairs.

It would be as well now to consider, first, what should be the ideal, and, secondly, how any system can be grafted on to the existing one. Who is the first professional person to come in contact with the patient? Obviously, the general practitioner. He, therefore, is the keystone to an arch on which all the rest depends. One of the primary thoughts he must have in his mind when a patient comes to see him is, Has this patient got early malignant disease? Can every practitioner be made an expert in diagnosis of cancer? The answer is undoubtedly, No. He can only suspect the possibility that from the symptoms the patient may have malignant disease, and then at once send the patient to a diagnostic centre. Now what is needed in these diagnostic centres?

First, there is the question of the staff. This staff must be a well-organized team, trained in the science of cancer diagnosis. This is where we meet with the first difficulty. It is essential that the centres should be so plentiful that patients do not have to travel far from their homes in order that a diagnosis can be made, and yet these preliminary centres need highly skilled staffs, including surgeons, radiologists, and pathologists, and other specialists. Though it is not easy to find a number of such teams, nevertheless it should be possible to find one in each county hospital.

If it is discovered that the patient is suffering from malignant disease he or she must at once be transferred to a centre for treatment. These centres should be relatively few. Any person should be able to get a diagnosis made without any appreciable interference with his daily life; but treatment centres cannot be efficiently and economically run except in large institutions. The question arises—how to staff these large institutions. The staffs must be people who devote the greater portion of their lives to treatment of malignant disease; they must also act as a team, and frequent consultations should be held between the surgeons, specialists, radiologists, physicists, and pathologists. Such institutions must not only be for the treatment of the individual patient, but centres for education and research into treatment: post-graduate courses, both in treatment and in diagnosis, should be frequently held.

Patients who have passed through such a centre must be under its foster-care for the remainder of their lives, and for this purpose the centre would need an efficient follow-up department, which would write and ask the patient to come up to be examined at frequent intervals. There should be also a social service attached, which knows what happens to incurable patients. Much more could be done than is done at present for relieving pain in these cases. How many surgeons interested in neurology have worked out methods for destroying the pain-conducting nerves, yet it is not difficult to imagine operations for dividing the posterior roots, which, though not prolonging life, would make the last months more bearable.

Now we come to the last part of the problem, but by no means the least—namely, *the education of the public*. If we are successful in solving this all the rest of the difficulties will disappear. There are a few people who say that if we tell the public all about malignant disease a generation of neurasthenics will be produced who will go about imagining that they are suffering from cancer. Nothing, however, is further from the truth. There are millions of people who now spend hours of agony fearing that they have this dread disease, and if they could once summon up courage to go to a centre and be told that they have *not* got *malignant* disease they would go away quite happy. It must be the common experience of most practitioners, *certainly of gynaecologists*, that patients come complaining of some indefinite symptom. When, after careful examination with negative results, patients are told that there really is nothing serious, no tumour or cancer, etc., an expression of relief at once comes over their faces and they admit that that is what they had been fearing.

Until recent years tuberculosis claimed as many deaths as cancer, but very few people suffer from apprehension that they have tuberculosis. And why? Because they talk about it; because they know some of the symptoms; because they are not frightened or ashamed to go to a doctor and say: "I want you to go over my lungs and see that I have not got consumption." It may be said that there is another reason—namely, that consumption is curable; but so is cancer, if taken early enough. At present nine out of every ten people believe that no patient is ever cured of cancer. It therefore may be said that the first great step towards education is to make people talk more about it.

The next step is to get reliable facts published concerning the disease, and here I would appeal to the newspapers to go to committees for their articles on cancer rather than to individuals, whose object is often to promote their own welfare rather than that of the public. I am afraid this suggestion will not appeal to the less reputable organs of the press. It is much more exciting to have a headline such as "Eating tinned lobsters is the cause of cancer," than to publish a carefully thought-out article which has been discussed and passed by a committee of experts.

There are some who may say that the symptoms are so insidious and so often common to other conditions that it would be unwise to broadcast that these symptoms are possibly the early warnings of cancer; but, after all, the majority of people do not suffer from any symptom and will not be worried by such knowledge. To quote one small instance, in the case of women the two common sites for cancerous growth are the breast and the uterus. If every woman knew that the absence of any lump in the breast meant that she had not got cancer of the breast, and the absence of any irregular vaginal haemorrhage meant that

she had not got malignant disease of the uterus, it would relieve thousands of women of a haunting fear. Conversely, they should be told that if they have a lump in the breast they must at once consult a doctor, and likewise if they have *any irregular* haemorrhage. When, however, such propaganda is sent out it should also be explained that not every lump in the breast is cancer, and that a great many cases of irregular haemorrhage are not due to this serious condition.

It has been suggested that it is a good thing to tell the public the statistics of people dying from malignant disease. It is often said that cancer is on the increase, a statement which, though probably true, is by no means as true as the figures would seem to suggest. We must allow for the greater age to which people live, and for the better diagnosis owing to the higher average diagnostic ability of the general practitioner compared with that of a past generation. But how is broadcasting these facts going to help the public?

There is, however, one thing that will appeal to the people, and that is their pocket. Few of us are really very frightened of dying; most of us dislike the idea of pain during the process of dying; but all of us fear being put out of action and seeing our relatives suffering because the breadwinner is laid low and additional expenses are being incurred for treatment. Can this expense and worry be avoided, and can any scheme for this object be made to help in the education of the public? I believe it could be if a special insurance policy could be taken out for cancer, and if the premium on such a policy could be reduced on the production of a certificate that the individual had been examined within the last six months and shown to be free from any signs of malignant disease. Such a system would, I venture to suggest, appeal to millions of people. It is true that the insurance companies are not primarily philanthropic societies, and inquiries suggest that they are averse to the principle of frequent medical examinations in connexion with insurance. On the other hand, if a case of cancer is treated early the prospects of a permanent cure are very good, and the patient will go on paying premiums for a great many more years, and the insurance companies will not have to pay the large sums of money which are forfeited on the death of the patient.

There is yet another line in which the public must be educated, and that is concerning the meaning of the word "research." Nine out of ten people, even among the better educated, believe that research means that a person suddenly thinks of an experiment and does something to see what will happen, much in the same way as a little boy will put a match under some gunpowder to see what comes next. Nothing is further from the truth. Research may be considered under two headings: first, laboratory research; secondly, clinical research. Both of these are essential if any advance is to be made in the fight against cancer; but it is about the clinical side of research that the public must learn.

If we labelled any hospital as a "Research Hospital" it would be very difficult to get patients to come and be treated. The patients would imagine that the surgeon, like the little boy with the gunpowder, is going to do an experiment not knowing in the least what will happen. What are the real facts? In clinical research a patient is treated by the most up-to-date methods known to science, but instead of letting that patient go out of the hospital and all the facts concerning him be forgotten, extremely careful notes are taken before the treatment is started, during the treatment, and after the treatment. When some hundreds of similar cases have been treated these notes are collected and carefully compared to see the value of such treatment or the value of any modification that has been made in that treatment. It is true that to a greater or lesser extent all hospitals are research hospitals, because experience is gained by somebody every time a patient is treated, but in a busy general hospital the need to treat thousands of patients as quickly as possible prevents the medical attendant from making as careful records as is desirable. For that reason it is far better to segregate patients suffering from cancer in special hospitals, the staffs of which are specially chosen for their interest in and knowledge of that disease. Such a hospital must lay itself out for the careful observation and making of records.

It is quite true there are in this country cancer hospitals, but are there sufficient? There are in the British Isles over 40,000 deaths from cancer every year, and every one of these cases should have careful records and special investigations if rapid advances are to be made in the treatment of malignant disease. Can the existing hospitals deal with such numbers? It is obviously absurd. Even if there was sufficient accommodation in the existing hospitals, I venture to say that there is not one single hospital which at present quite "fills the bill" as a research centre. It is our duty to demand that such centres be created. Every such centre should have an efficient and well-equipped research laboratory attached to it so that clinical research and laboratory research can go hand in hand. It must not be forgotten that it is the patient who is suffering from the disease, and it is the patient who must be cured.

There is yet another difficulty that the public cannot realize—namely, that progress is a matter of evolution. One point gained leads to another, but the final goal is often a long way off, and it must be a really philanthropic person who is prepared to put down money to help a cause the ultimate goal of which may not be reached until after the death of the donor. If one could guarantee to have a solution to the problem within a specified time there would be no difficulty in getting money, but that is not possible. But think of the magnificent gamble! By subscribing a million or even half a million to a hospital the goal may be reached within a comparatively short time.

UNION AND NON-UNION OF FRACTURES.

WITH SPECIAL REFERENCE TO FRACTURES OF THE NECK OF THE FEMUR IN ELDERLY PEOPLE.

BY

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(*With Special Plate.*)

IN most situations in the body fracture of a bone is normally followed by a process of repair which leads eventually to restoration of the continuity, strength, and rigidity of the broken bone. This is bony union. Failure of bony union is non-union, because no other kind of union can give the strength and rigidity which are essential to the normal functioning of a bone.

For the purposes of this inquiry it matters not whether the fibrous tissue between the fragments of an ununited fracture is thin and loose or thick and firm, nor whether the ends of the fragments themselves are atrophied and pointed or enlarged and shaped to the semblance of a joint (pseudarthrosis). It is sufficient that non-union as a rule causes great disability, so that bony union is the ideal to be aimed at in the treatment of nearly all fractures.

The causes of non-union given in textbooks of surgery are many and various, and the following classification is fairly typical of them all.

I. Local causes:
   - (*a*) Imperfect immobilization—said to be the most frequent of all causes.
   - (*b*) Great separation of the fragments.
   - (*c*) Interposition of bone, muscle, or tendon.
   - (*d*) Poor blood supply through injury of the nutrient artery—for example, in fracture of the neck of the femur.
   - (*e*) Tumours—sarcoma in callus or pathological fracture through tumour.
   - (*f*) Infection and excessive suppuration.

II. General causes—for example, acute infectious diseases, scurvy, syphilis, osteomalacia, gout, rickets, rheumatism, chronic nephritis, diabetes, alcoholism, anaemia resulting from prolonged lactation or long-continued fever.

Before commenting on these alleged causes I would suggest that there is really only one common cause of non-union—namely, absence of haemorrhage between and around the fractured surfaces—and that the great majority of the causes given above may be identified with it.

The bones in most situations are vascular, and bleed when they are broken. Usually there is considerable haemorrhage between and around the fractured surfaces, and the extravasated blood, acting as an irritant, provides the first stimulus to repair of the fracture. Absorption of the blood clot and its replacement by connective tissue cells derived largely from the periosteum and marrow of the broken bone is the first step in the formation of the provisional callus which is essential for bony union.

When for any reason sufficient haemorrhage does not occur at the site of a fracture, the natural stimulus for repair is lacking, and the fracture may fail to unite. This event is especially common in the case of fracture of the neck of the femur in an elderly person, not, as usually stated, on account of malnutrition of the fragments, but simply on account of the absence of haemorrhage, for these fractures are practically dry.

Many surgeons, and particularly those who are familiar with cranial surgery, are aware of the remarkable haemostatic effect of fresh muscle tissue when it is applied directly to a bleeding point or surface. In some cases, when a bone is broken, the jagged broken surfaces are immediately thrust into the mass of muscle surrounding them. Haemorrhage is thus arrested, and when eventually the fragments are reduced and brought into apposition there may be little, if any, blood clot around them to provide the stimulus for repair. It has occurred to me that this may be the explanation of some cases of non-union—for example, of fractures of the shaft of the humerus.

When a fracture is compound and infected, even mildly, the first effect of the suppuration is to break down and remove the surrounding blood clot, which is discharged as pus. The infective process, if mild, may itself provide the stimulus for repair; but, on the other hand, it may not, and this is a not uncommon cause of non-union.

Of other causes of non-union, imperfect immobilization is said to be the most frequent of all. This is absolutely untrue. The treatment of fractures by active movements from the first results in sound bony union. Deliberate attempts to prevent bony union by active or passive movements are frequently unsuccessful. Fractures of the ribs and other bones, both in man and in other animals, unite readily in spite of constant movement. Great separation of the fragments, as well as the interposition of soft parts, may make it mechanically impossible to restore the continuity of the bone.

Poor blood supply through injury of the nutrient artery suggests that the reparative power of the bone is interfered with. But I would again suggest that the real cause of non-union is absence of stimulus, due to insufficient haemorrhage. Tumours, in so far as they are purely destructive, are an obvious cause of non-union.

Turning now to the general causes of non-union, many of these—for example, syphilis, gout, chronic nephritis, diabetes, and chronic alcoholism—are conditions which are or may be associated with arterial disease (endarteritis, arterio-sclerosis), and it is possible that this may account for very slight bleeding from the ends of a fractured bone, and in exceptional cases lead to non-union. It is difficult to see any other connexion between these common conditions and the comparatively rare occurrence of ununited fracture.

No orthopaedic surgeon would accept rickets as a cause of non-union. Deliberate fracture of rachitic bones for the correction of deformity is one of the commonest orthopaedic operations, and non-union is practically unknown. On the other hand, so-called renal rickets, which has nothing to do with rickets proper, but is definitely associated with chronic nephritis and arterial disease, may be included in the causes of non-union. Osteomalacia is not a cause of non-union, and I know nothing of non-union due to rheumatism, scurvy, or acute infectious diseases.

I would submit that there is only one common cause of non-union of fractures, and that is insufficient haemorrhage between and around the fractured surfaces. Two practical deductions obviously follow this conclusion: (1) that in order to promote union there must be blood clot at the site of a fracture; and (2) that in order to prevent union haemorrhage must be prevented, and blood clot, if present, must be removed.

Intracapsular Fracture of the Neck of the Femur.

Until comparatively recent times non-union was thought to be the almost inevitable result of an unimpacted intracapsular fracture of the neck of the femur. Non-union in this case has been attributed to malnutrition of the head of the bone, or to lack of apposition of the fractured surfaces (Whitman). More recently numerous attempts have been made to secure bony union in this fracture (*a*) by operative fixation of the fragments, (*b*) by the abduction treatment of Royal Whitman, and it is now pretty well established that bony union may be obtained in a fair proportion of cases by either of these methods.

But, while each has its enthusiastic advocates, neither method is suitable for general application among elderly patients. Intracapsular fracture of the neck of the femur is one of the common fractures of old people, and though it is true that it occurs also in the comparatively young, and sometimes even in the very young, this does not alter the fact that the majority of cases met with in practice are at least middle-aged or elderly. Many of these are entirely unsuited for direct operative intervention on the hip-joint, and the same objection applies to some extent also to the abduction treatment of Whitman.

The abduction treatment is by no means a trivial affair. For an elderly patient the administration of an anaesthetic, the forcible manipulation of the already injured hip, the application of the plaster, which takes time, and the prolonged fixation of the patient in plaster afterwards, constitute an ordeal which is not likely to become standard or routine unless we can confidently predict bony union as the ultimate reward. This we cannot do. The only statistics available show failure of bony union in from 30 to 40 per cent. of cases, and this is the experience of most surgeons.

The outstanding criticism of the abduction treatment, however, is that it is purely mechanical and takes no account of the physiology of repair in fractures. In other words, Whitman places the fragments in apposition and hopes that they will unite. Sometimes they do, and sometimes they do not. He does nothing further to promote their union, and it may be remarked in passing that prolonged fixation in plaster generally conduces to atrophy of bone, which is not encouraging to union of a fracture.

In the first part of this paper I have put forward the view that absence of haemorrhage between and around the fractured surfaces is the one common cause of non-union. In fracture of the neck of the femur, especially in old people, there is very little bleeding from the bone, and therefore the natural stimulus to repair of the fracture is wanting. Intracapsular fractures fail to unite because they are dry; turn them into wet ones, and they will unite like other fractures. Acting upon this hypothesis we have injected fresh blood directly into the hip-joint as soon as possible after the receipt of the fracture, with the result that sound bony union has been obtained without operation or prolonged fixation of the patient in plaster.

Needless to say, length and alignment are important mechanical considerations, and we have considered the best means of securing proper reduction of these fractures in the circumstances of elderly patients. We do not doubt that manipulation under an anaesthetic is most effective, but we have found that perfect reduction may also be obtained by weight extension, which is far more generally applicable to elderly patients. Weight extension is, of course, one of the oldest methods of treating fractures, but until the introduction of skeletal traction I believe it was not possible to apply really efficient traction to a fracture at the hip-joint. With skeletal traction perfect length and alignment can be obtained. Up to the present time only one case has been treated to a termination.

A woman, aged 57, fell and was admitted to the Middlesex Hospital on March 29th, 1929. On examination she was found to have a typical intracapsular fracture of the neck of the left femur (Fig. 1). Within an hour of her admission 14 c.cm. of blood were injected into the hip-joint. The blood was drawn directly from the median basilic vein with a Record syringe, and injected straight into the joint above the great trochanter. After the injection ice-tong callipers were applied under local anaesthesia to the lower end of the femur, and a weight of 15 lb. was applied at once. The weight was rapidly increased

up to 30 lb., and later reduced to 21 lb. This gave perfect reduction of the fracture with restoration of the normal length and alignment of the neck of the femur (Fig. 2), and it was maintained continuously for thirty days. The weight was then reduced to 11 lb., which was kept on for a further period of fifteen days, and then removed. During extension the limb was slung in a bent calliper splint for convenience in nursing and to reduce friction, but no attempt was made to immobilize the hip—in fact, massage was started at once on all accessible parts of the limb and movements were encouraged as far as possible without disturbing the extension. At the end of nine weeks the patient was got up in a walking calliper splint. For the last two months she has borne weight upon the joint, and she has now discarded the splint. The radiogram (Fig. 3) shows that the length and alignment of the neck of the femur have been maintained and that there is unmistakable bony union.

I am greatly indebted to my Registrar, Mr. E. W. Riches, F.R.C.S., for his invaluable assistance in carrying out the practical details of this case.

Commentary.

All our experience of fractures in general points to the conclusion that mere apposition and immobilization are not the vital factors in the repair of bone, but that a physiological process is involved, and it should be the aim of treatment to stimulate and promote physiological union when this is likely to be deficient. The case here cited was a typical intracapsular fracture of the neck of the femur in a middle-aged woman, which would almost certainly have failed to unite under ordinary treatment by weight extension alone. The injection of fresh blood provided the stimulus to repair, which is present in most fractures, even in old people, but which is lacking in intracapsular fractures of the neck of the femur. Perfect reduction of the fracture was obtained by efficient traction without serious disturbance of the patient, no general anaesthetic or direct manipulation of the fracture being required at any stage of the treatment.

If the experience gained in this case is borne out by others, it seems likely that this treatment by injection and traction will become the method of choice in the future, for it is applicable to any patient who can be kept in bed at all, and, provided that skilled nursing is available, the technical difficulties are not great.

RENAL CALCULUS ASSOCIATED WITH A SOLITARY CYST OF LEFT KIDNEY.

BY

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With Operation Note by

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ASSISTANT DIRECTOR OF SURGERY, ST. BARTHOLOMEW'S HOSPITAL.

(*With Special Plate.*)

THE following case is published for three reasons: (1) To place on record a case of solitary cyst of the kidney (itself a rare condition) associated with a renal calculus, a combination believed to be unique. (2) To describe how a case of renal colic should be relieved, investigated, and treated. (3) To show that, in spite of modern methods of urological diagnosis, the cause of a patient's symptoms may sometimes be only discoverable at the time of operation.

S. T., male, aged 54, married, was seen for the first time on June 8th, 1929, two hours after the beginning of a typical attack of left renal and ureteric colic.

Past History.—Six to four years ago he had attacks of pain in the left side of the lower abdomen which had a sudden onset, a duration of six to seven hours, and an abrupt termination. Four to two years ago there was a period of freedom from attacks. During the last two years there had been several attacks of a similar nature, but not so severe; during one of these a little blood was passed per urethram. A course of waters at Carlsbad made no difference to the symptoms. His last attack occurred about a month previous to the present one, and lasted for four hours. The pain, of a dull aching character, began in the left renal region, with intermittent acute pains shooting to the left testis and tip of the penis. The patient had never noticed any grit in his water. X-ray examination a year ago was said to be normal.

Examination showed the patient to be a healthy well-covered man, but in considerable pain. He micturated four or five times during the day, but not at all in the night; the stream was good and there was no difficulty, urgency, or haematuria. The pain was that of left renal and ureteric colic. The bowels were regular, and there was never any blood or mucus in the stools. Per rectum, the prostate seemed normal; no abnormality was felt. Examination by the abdomen showed neither kidney to be palpable. There was tenderness on deep pressure in the left loin.

Cystoscopy (under local anaesthesia).—The bladder mucous membrane showed mild cystitis with very slight swelling of the left ureteric orifice. A No. 4 Charrière ureteric catheter was passed up to the pelvis of the left kidney. Some resistance was felt at two points: (1) at the uretero-pelvic junction, and (2) about 3 inches lower than this. Some 15 c.cm. of urine, indicating a slight degree of hydronephrosis, were collected and preserved for examination. Immediately the catheter reached the pelvis of the kidney and the flow of urine was established, the renal colic subsided, and after withdrawal of the cystoscope and catheter the patient said he was absolutely free from all pain or discomfort.

A report on the catheter specimen from the left kidney stated it to be of normal colour, acid, slight haze of albumin present, no sugar, no phosphates, and a small deposit of mucus.

Subsequent Progress and Further Investigations.—On radiography of the urinary tract by Drs. Coldwell and Allchin the right urinary tract was found to be normal. The left urinary tract, with opaque catheter passed to the left kidney, showed: (1) no shadow indicating stone in left kidney or ureter; (2) displacement of kidney shadow upwards by a spherical body some 4 inches in diameter which is probably attached to the lower pole of the kidney and moves with it on respiration (Figs. 1 and 2); (3) this body displaces the lower ureter inwards and forwards, causing marked kinking of the catheter on full inspiration (Fig. 3), its opacity to x rays being rather less than that of the kidney itself.

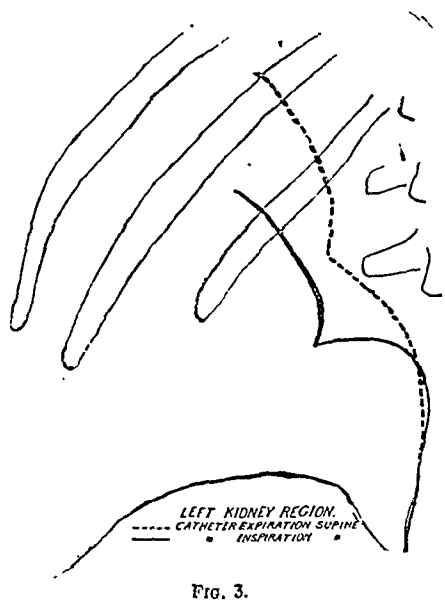


FIG. 3.

Left Pyelogram (with 20 per cent. solution of sodium iodide).—Pelvis and calyces normal. No demonstrable communication with any possible cavity in the spherical body. Sodium iodide withdrawn and a further skiagram taken in the hope that if a stone were present some of the fluid would adhere to its surface and thus throw a faint shadow. No shadow was seen.

Renal Function Tests.—10 c.cm. of a 1 per cent. solution of indigo-carmine were injected into the median cephalic vein, an observation cystoscope being in position. This appeared at the right ureteric orifice in two and three-quarter minutes, the efflux being well stained. There was no appearance of the dye at the left ureteric orifice in twelve minutes.

On June 26th the patient had a second attack of left renal colic, accompanied by some intestinal obstruction and followed by the passage of large quantities of flatus. A catheter was passed to the pelvis of the left kidney and the colic was relieved. The following day, at 9 p.m., he had a third attack of colic. A catheter was passed at the patient's residence, with immediate relief after withdrawal of 15 c.cm. of urine. During this attack it was possible to palpate a tumour in the left upper abdomen.

On June 29th the patient was seen in consultation with Mr. T. P. Dunhill, and the past history and investigations were explained. At this time no tumour could be palpated. Exploratory operation, with differential diagnosis of (*a*) a solitary cyst springing from the lower pole of the left kidney, and (*b*) hypernephroma, was advised, and permission obtained to remove the left kidney if necessary. The renal colic was thought to be due to kinking of the ureter by pressure of the tumour.

OPERATION NOTE BY MR. T. P. DUNHILL.

On June 31st the left kidney was explored through a curved incision in the loin, and on palpation the upper half appeared



FIG. 1. Intracapsular fracture of neck of left femur, before treatment.



FIG. 2.—The same case—showing reduction by skeletal traction.



FIG. 3.—The same case six months later—showing bony union.

J. C. AINSWORTH-DAVIS RENAL CALCULUS WITH SOLITARY CYST OF LEFT KIDNEY.



FIG. 1. Skiagram at full inspiration. Lower margin of cyst below iliac crest. No calculus visible.



FIG. 2. Skiagram at full expiration. Lower margin of cyst well above iliac crest. No calculus visible.



FIG. 4.—Skiagram of kidney, cyst, and calculus after removal. The last is well shown.

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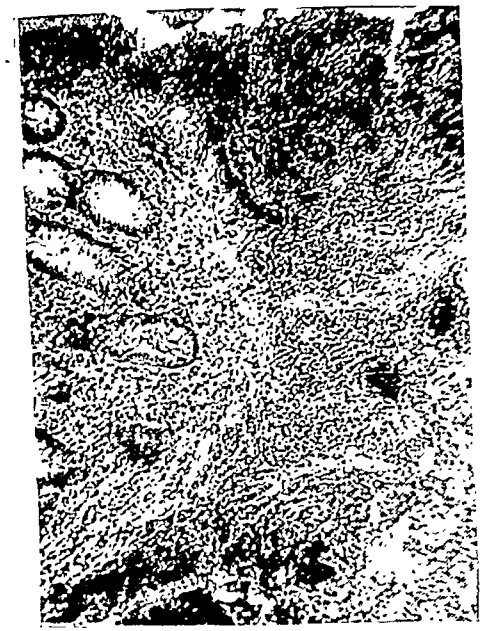


FIG. 1.—Case i. (× 90.)



FIG. 2.—Case ii. (× 25.)



FIG. 1.—Showing triangular shadow within the cardiac shadow.



FIG. 2.—Triangular shadow absent. Lipiodol showing no evidence of bronchiectasis.



FIG. 3.—Showing the triangular shadow with bronchiectasis within it.

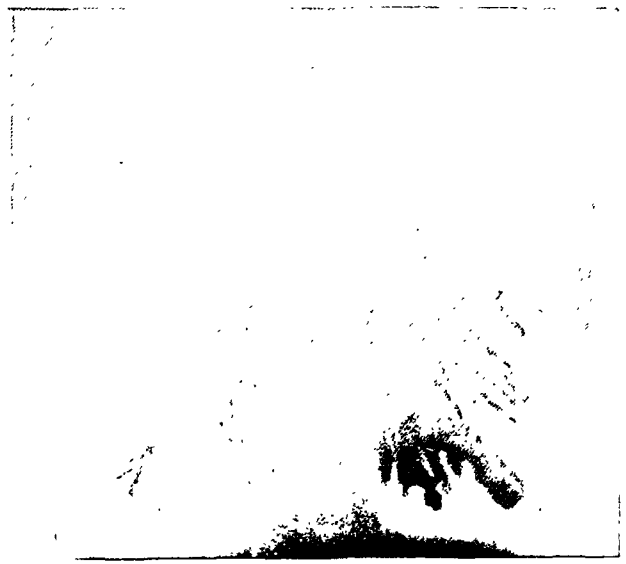


FIG. 4.—Showing bronchiectasis within the triangular shadow.



FIG. 5.—Showing triangular shadow at right base.

normal. The lower half was replaced by a cyst. A calculus about three-quarters of an inch long by half an inch wide was felt in the pelvis. The kidney was removed.

Report on Kidney and Cyst after Removal.

Fig. 4 is a skiagram of the specimen. The calculus is clearly shown. No connexion between the pelvis of the kidney and the cyst could be demonstrated. It would appear that the stone and cyst were independent of each other. The calculus was composed of pure uric acid.

Post-operative Progress.—The patient made an uneventful recovery. When seen on October 11th he was feeling well, putting on weight, and had no urinary symptoms. The urine was normal in colour, acid, clear, specific gravity 1018; no albumin, no sugar; urea 2 per cent.; there was a deposit of mucus. The centrifuged deposit showed an occasional pus cell, some epithelial cells, and phosphate crystals. No organisms were seen. Cultures were sterile.

CONCLUSIONS.

1. The passage of a ureteric catheter to the pelvis of the kidney, and withdrawal of its contained urine, will give immediate (but temporary) relief to pain arising from renal colic.

2. Repeated attacks of renal colic in an otherwise healthy person, even with a normal renal skiagram, should lead to a provisional diagnosis of stone, because a calculus of pure uric acid throws no shadow with x rays, as its consistence is equal to that of the kidney itself. The wax-tipped ureteric catheter should be of some assistance in confirming such a diagnosis where a calculus with a rough surface is present. It was not employed in this case because it was erroneously supposed that the cyst was the cause of the colic. Further, the patient should be advised to undergo an exploratory operation before the kidney becomes too disorganized to be worth preserving.

3. As regards the relations of the stone to the cyst, no connexion of any kind could be demonstrated.

4. Doubtful renal swellings should always be explored, owing to the impossibility of exact diagnosis.

5. Renal tumours can reach a considerable size—for instance, that of an orange—without being palpable in a well-covered patient, and further examinations such as radiography, pyelography, etc., should never be omitted when upper urinary symptoms are discovered.

6. Positive evidence should always be obtained of the presence and function of the opposite kidney in case nephrectomy has to be performed at the time of operation.

TWO CASES OF ACUTE SYPHILITIC APPENDICITIS.

BY

GRIFFITH EVANS, M.A., D.M.Oxon., F.R.C.S.,
CARNARVON;
AND
ELWYN ROWLANDS, M.B., CH.B.
PENYGROES.

(*With Special Plate.*)

THE increase in visceral syphilis is one of the features of medicine in the present century, but up to now not many cases of acute syphilitic appendicitis have been reported. In searching for such records we have had the able and generous help of the librarian of the British Medical Association, but have succeeded in finding two only—those reported by Pasqualis (D. A.).[1]

In Royster's exhaustive monograph on appendicitis (Appleton, 1927) there is reference to pseudo-appendix associated with secondary syphilis. This condition is classed by Condamin and Voron (ibid.) with the form of intestinal neuralgia which Fournier had called syphilitic typhosis.

The two cases about to be described, however, are true acute inflammations.

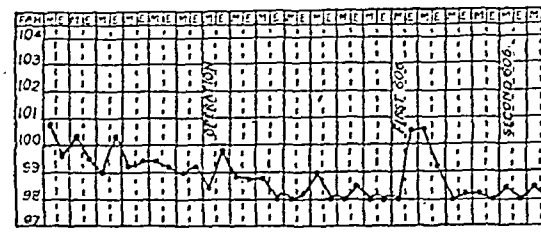
CASE I.

A woman, aged 19, felt well until she had a miscarriage in the fifth month on the floor of a farm kitchen. During the following week she developed lower abdominal pain and tenderness with pyrexia.

On admission to hospital she did not look very ill; temperature 100°, pulse 120, respirations 28. The throat was red and covered with loose mucus, but not painful. The abdomen was distended and tender all over, the maximum signs being in the right iliac fossa. No mass was palpable per vaginam, and only moderate tenderness.

In view of the possibility of infection following the miscarriage, and the condition of the throat, expectant treatment was given.

Her condition remained much the same for seven days, except that localization became more definite in the right iliac fossa. Laparotomy now showed: (1) general redness of the whole intestinal tract; (2) copious sero-sanguineous fluid; (3) patches of gelatinous exudate on the bowel and on the surface of the leaves



of the mesentery—evident precursors of mother-of-pearl plaques; (4) an enlarged and acutely inflamed appendix, which was removed.

Operation was followed by prompt clinical recovery, and the patient left hospital on the twelfth day after operation, the throat being normal. The Wassermann reaction was positive.

The appendix was submitted to Dr. W. H. Grace of Chester, to whom we are indebted for the report printed at the end of this communication. The features are well shown in the accompanying photomicrograph.

CASE II.

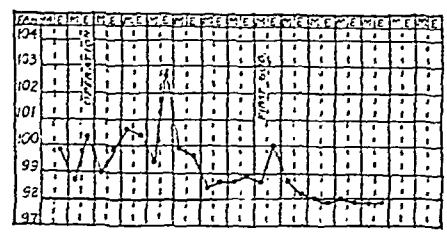
A woman, aged 26, complained of the sudden onset of right-sided abdominal pain with pyrexia. She was admitted to hospital the following day with a provisional diagnosis of acute appendicitis.

On admission the temperature was 100°, pulse 92, respirations 20. She was pale, but did not look very ill. The tongue was evenly covered with white mucous exudate. The abdomen was distended but not tense; it was tender all over, but moved with respiration. The maximum tenderness was quite definitely in the right iliac region. Nothing was found per vaginam.

The treatment was expectant; the tongue improved a little with mouthwashes.

The condition remained stationary, and on the fourth day of the illness laparotomy showed: (1) intestines peppered all over with small punctate and star-shaped haemorrhages; (2) a small amount of free serous fluid; (3) a large appendix, acutely inflamed and covered with plastic lymph.

On opening the appendix the mucous membrane was found to be of a uniform pale pink with no evident ulceration. The



thickening was clearly due to infiltration of the subperitoneal and submucous layers.

Recovery was uneventful, and the patient was discharged on the twelfth day. The tongue became clear the day following the first injection. The Wassermann reaction was positive.

The two cases had the following corresponding features.

CASE I.	CASE II.
Wassermann reaction +.	Wassermann reaction +.
Specific throat.	Mucous patches on tongue.
Denied infection, but was unmarried at the time of the miscarriage.	Denied infection, but had an illegitimate child seven years previously.
One of 10 healthy children, and no miscarriage in the mother.	One of 5 healthy children and no miscarriage.
Mother's W.R. ++. Sister's W.R. +. (No opportunity for examining other members.)	One brother has definite facies of congenital syphilitic.
No vomiting throughout the illness.	No vomiting.
Macroscopically acute appendix with unbroken mucous membrane.	Macroscopically acute appendix with unbroken mucous membrane.

Dr. Grace's Report.

CASE I.—Subperitoneal layer thickened and packed with lymphocytes. Number of lymphatics also full of lymphocytes. Muscular layer normal. Submucosa enlarged, with several small vessels packed with lymphocytes. Histological character consistent with diagnosis of syphilitic infection.

CASE II.—Chronic inflammation scattered throughout submucosa and underlying layers.* There is a predominance of lymphocytic infiltration, and the findings support a diagnosis of syphilis, but further than this it is not possible to go.

There was no evidence of tubercle in either specimen. Efforts to show up the spirochaete by Levaditi and other silver methods were unsuccessful, but, according to Warthin,[2] this is frequently the case in undoubted syphilis.

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[1] *Semana Med.*, 1929, i, 301. [2] *British Medical Journal*, August 10th, 1929.

ATELECTATIC BRONCHIECTASIS.

BY

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AND

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(*With Special Plate.*)

PERHAPS it is true to say that in no branch of medicine has radiology been more useful as a diagnostic aid than in disease of the chest; nevertheless, though the skiagram may show a condition which is definitely abnormal, yet the abnormality present is not diagnostic of the underlying pathological lesion; and, in order to ascertain the nature of the abnormal shadow, the aid of clinical medicine and pathology must be sought.

Such a radiological abnormality is a triangular shadow which is seen at the base of the lung. The shadow is a rectangular triangle, one side of which rests on the diaphragm, the other along the mediastinum; the hypotenuse runs from the mediastinum to the diaphragm. This shadow may appear on either side of the mediastinum, and when it occurs on the left it may lie within the cardiac shadow, and thus tends to be obscured and may be unrecognized at first.

In 1911 Dieulafoy[1] described the clinical findings in cases of mediastinal effusions; not long afterwards the radiological appearance of this condition was reported as being a shadow similar to the triangular shadow described above. The following case illustrates this.

H. W., aged 11 years. Four weeks before admission to hospital the patient had felt "off colour"; slight cough was present, with occasional traces of sputum. *Physical examination on admission* showed impaired percussion note and absent air entry at the left base behind. Temperature 99.8° on admission. The skiagram showed a triangular shadow behind the heart shadow (see Fig. 1). After a few days in hospital the temperature fell and the patient felt quite well; during the four ensuing weeks the physical signs gradually disappeared. A second skiagram showed that the shadow had gone, and that lipiodol could not demonstrate the presence of any bronchiectasis (see Fig. 2).

One brother of the patient had recently died of pulmonary tuberculosis, and another brother was suspected of the disease. The effusion was probably tuberculous in origin. Wallgreen[2] has described a similar case in which diagnosis was confirmed by exploratory puncture.

Recently the occurrence of massive atelectases of the lung has attracted considerable attention, from both the clinical and radiological sides, particularly the massive atelectases occurring as a post-operative complication, or as a result of haemoptysis; but massive atelectasis may occur in other pulmonary conditions—for example, trauma to the chest wall, pneumonia, and pleurisy. The atelectatic lobe, or part of the lobe, gives a dense shadow on the skiagram, and the mediastinal shadow is displaced towards the side of the lesion. The shadow of the atelectatic lobe may be similar to the triangular shadow now under discussion.

D. S., aged 8 years, came to hospital complaining of a cough which had been present for some time, but which recently had become worse. Physical signs revealed an area of dullness and bronchial breathing at the right base behind. The heart was displaced slightly towards the lesion. The skiagram shows the triangular shadow at the right base with the cardiac shadow drawn towards it. In view of the past history of pneumonia the diagnosis of bronchiectasis was made, and the patient was sent away to a convalescent home. On return the physical signs had disappeared, and lipiodol injection of the lungs showed no bronchiectasis; the shadow had gone from the skiagram and the heart had returned to its normal position.

In the following series of cases the skiagrams of the patients' chest showed the triangular shadow. In their histories these patients admitted to the raising of much sputum, or dated their cough from their recovery from pneumonia; which facts suggest the possibility of a bronchiectasis; the lung was therefore injected with lipiodol, and bronchiectasis was demonstrated within the shadow.

W. A., female, aged 17 years. Had pertussis when she was 4 years old; since then bronchitis, and during the last four years repeated haemoptysis. Patient had been notified as suffering from pulmonary tuberculosis. *Physical signs:* dullness and added sounds at left base. A skiagram showed a triangular shadow behind the heart (see Fig. 3), and lipiodol injection demonstrated bronchiectasis within the shadow.

B. P., aged 11 years, complained of cough which had been present for "years." The amount of sputum raised varied from 1 to 2 ounces. There was a history of patient having had pneumonia at 3, 5, and 10 years of age. Physical signs at left base; dullness, bronchial breathing, and rales. A skiagram showed a triangular shadow behind the cardiac shadow, and lipiodol injection demonstrated bronchiectasis in this shadow.

F. R., aged 14, had suffered from cough for "years." There was very little sputum. Past history of measles. Physical signs were present at the left base, and the fingers showed slight clubbing. A skiagram showed a triangular shadow behind the heart (see Fig. 4); lipiodol demonstrated bronchiectasis within the shadow.

E. S., aged 9 years, complained of cough which had been present since the last attack of pneumonia two years previously. Patient had had pneumonia three times. The sputum raised was offensive and varied from 2 to 3 ounces daily. Physical signs at right base; behind dullness and bronchial breathing, added sounds. Fingers clubbed. A skiagram showed the triangular shadow at the right base. Repeated attempts at lipiodol injection were unsuccessful (see Fig. 5). The facts that the amount of sputum was large and that the physical signs and skiagram remained unchanged for two years leave little doubt that the condition was one of bronchiectasis.

In 1926 Singer and Graham[3] described a case the skiagram of which presented the triangular shadow, and in which bronchiectasis was demonstrated by lipiodol. At operation an atelectatic lung with bronchiectasis was found to correspond to the shadow. Rist, Frocine, and Jacob[4] collected a series of seven such cases, which at first they suspected as being purulent mediastinal effusion, but the lipiodol injection showed the conditions to be bronchiectatic. Wallgreen reported five such cases, and discussed the pathology. He believes that the primary condition in these cases is an atelectasis and bronchiectasis.

It is a matter for speculation how much influence local areas of collapse exert in the etiology of bronchiectasis generally, though it is probable that it may have some bearing in relation to the disease occurring after chronic pneumonic conditions. The clearing up of a collapsed area of lung is dependent on the free mobility of the chest and diaphragm, and occurs least readily in those parts where there is a deficiency of movement.

This condition obtains particularly in that portion of the lung under discussion. Lying as it does in the recess formed by the spine and ribs and the angle of the diaphragm, it is shielded from the more forcible respiratory movements, and is a spot where one would expect to find a residual atelectasis. In such manner we account for the comparative frequency of the condition described: we consider, from the number of cases we have met with, that

* The appearance at operation was anything but chronic.

it is a not uncommon event, and may account for some of those cases of continual attacks of haemoptysis, with no definite signs of tuberculosis or gross disease, which are met with fairly frequently.

In this communication we have called attention to this triangular shadow, and we have discussed its significance; in our experience the most common lesion with which it is associated is bronchiectasis, and we are in agreement with Sergent[5] and Wallgreen that the presence of this shadow should always raise the suspicion of a bronchiectasis unless other clinical evidence is forthcoming to clinch the diagnosis of a mediastinal effusion.

Our best thanks are due to Dr. F. G. Chandler for his kind permission to use the notes and skiagram of the case F. R.

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EXPERIENCES WITH REGIONAL ANAESTHESIA.

BASED ON 208 CASES IN WHICH IT HAS BEEN USED.

BY

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IT is probable, if the discovery of novocain had preceded that of cocaine and of chloroform and ether, regional anaesthesia would by this time have been firmly established as the standard method of averting the pain of operations. Events having occurred as they did, regional anaesthesia has had to struggle against adverse conditions, but has steadily gained ground as safer drugs and improved technique have been evolved. One of the chief obstacles to its wider adoption is the entrenched belief that for major operations general anaesthesia is essential. Early fatalities, due to the use of cocaine, or to technical errors in administration, have done the method much harm. Injections of cocaine or of high titres of novocain (1 or 2 per cent.) have been the greatest errors; death has resulted from intravenous and intraspinal injection. According to Finsterer intravenous injection is easily avoided by adherence to two rules: (1) in regions free from large blood vessels[4] injections should be made only with a moving needle point; (2) in dangerous areas it is necessary to aspirate before injection and repeatedly during injection.

The number of cases (208) here dealt with is too few to suggest conclusions about the relative safety of regional and general anaesthesia, but in this series there has been no death directly attributable to the anaesthetic, and one only in which it is possible that the anaesthetic (spinal) played a part. A survey of the series can, however, give some idea of the value of the method to a general surgeon who is prepared to give some time and trouble to the acquisition of a technique which, though not easy, is fascinating.

Drugs and Solution Strengths.

I have tried novocain, borocain, tutocaine, quinine-urea, and eucupin, and though the first three of these have given satisfactory service, I prefer tutocaine, for the reasons presently to be stated.

Novocain (with Adrenaline).—Novocain has a low toxicity. Solutions of 1 in 400 may be used for infiltration anaesthesia; 1 in 200 is adequate for field-block procedures, and 1 per cent., and in rare instances 2 per cent., for blocking the large nerves. The stronger solutions should be used with extreme caution.

Borocain will give similar results; it is said to be superior for producing surface anaesthesia and to be less toxic than novocain. I can state from personal experience that 10 c.cm. of a 2 per cent. solution may produce toxic symptoms in a patient of lowered resistance. Solutions of borocain have the disadvantage that they are extremely sensitive to slight changes in reaction.

Tutocaine is, strength for strength, more toxic than novocain, but it appears to be much quicker in its action, and in 1 in 500 solutions has proved a thoroughly reliable anaesthetic. A 1 in 500 solution of tutocaine appears to be as effective for field block as a 1 in 200 solution of novocain.

Quinine-Urea.—I have not given this drug an extensive trial. Used alone it causes initial pain on injection, and it has a tendency to produce oedema, which persists for some time.

All these solutions are made up with normal saline and are sterilized by boiling; adrenaline is added (the synthetic variety will withstand a few seconds' boiling). The solution becomes pinkish; it may be used so long as the colour is not a mahogany; 1 c.cm. of 1 in 1,000 adrenaline is added to each 250 c.cm. of solution.

Classification of Results.

Many difficulties arise in attempting to assess the results of regional anaesthesia, two of the chief being the following: (1) the patients vary greatly in their reaction to a painful, uncomfortable, or an emotional stimulus; (2) it is difficult to assess the quality of anaesthesia where inhalation anaesthesia has been used in combination with regional anaesthesia. All cases in which it has been intended from the first to combine the two methods are classified in the following table as "intended combined." The quality of anaesthesia is classified as "poor" in

Table showing Results in 208 Cases in which Regional Anaesthesia was Employed.

Operations.	No. of Cases.	Intended Combined.	Quality of Anaesthesia.			Technique.
			Good.	Fair.	Poor.	
Major operations on stomach and gall-bladder	26	2	24	—	—	Anterior splanchnic anaesthesia (Braun).
Ditto	5	1	2	1	1	Posterior splanchnic anaesthesia (Kappis).
Ditto	4	—	2	2	—	Mesenteric anaesthesia (Finsterer).
On abdominal wall ...	15	3	12	—	—	Field block.
Appendicectomy	6	—	4	2	—	Field block and mesenteric (Finsterer).
Hernia: radical cure ...	15	—	14	—	1	Field block.
Jejunostomy and caecostomy	5	—	5	—	—	Field block.
Various abdominal operations	50	1	31	12	6	Spinal anaesthesia.
Suprapubic cystotomy	11	—	11	—	—	Field block.
Perineal prostatectomy...	4	—	4	—	—	Trans-sacral.
Suprapubic prostatectomy	3	—	—	3	—	Field block and epidural.
Operations on testicles ..	2	—	2	—	—	Field block.
Urethrotomy	3	—	3	—	—	Epidural 30 c.cm. 1/5% tutocaine.
Cystoscopy in males ...	15	—	14	—	1	Ditto
Excision of breast ...	3	—	3	—	—	Field block.
Empyema	4	—	1	3	—	Field block.
Thyroidectomy: excision of glands of neck	5	—	5	—	—	Paravertebral cervical block.
Perineorrhaphy: repair of cervix (D. and C.)	4	—	4	—	—	Field block: broad ligament block.
Haemorrhoids	5	—	4	1	—	Field block.
Operations on upper extremity	6	—	4	1	1	Brachial plexus block (Kulenkampff).
Hallux valgus; Mayo's operation	3	—	3	—	—	Field block.
Sympathectomy, femoral	1	—	1	—	—	Field block.
Excision of tongue ...	1	—	1	—	—	Field block.
Operations on foot ...	2	—	—	1	1	Anterior tibial and posterior tibial block.
Saphenous varix	1	—	1	—	—	Field block.
Circumcision	3	—	2	1	—	Field block.
Varicocele	2	—	2	—	—	Field block.
Amputation of penis ...	1	—	1	—	—	Field block.
Hydrocele	2	—	2	—	—	Field block.
Operations on hand ...	1	—	1	—	—	Median and ulnar block.

all cases where the administration of inhalation anaesthesia was not intended but became obligatory; in some of these cases the patient's emotional attitude rather than pain was the cause of failure. Under the heading "fair" are included the cases of patients who preferred to endure discomfort rather than to accept the proffered ether, or of patients who accepted ether anaesthesia too light to abolish consciousness. A preliminary explanatory talk was given to each of the patients, and then, as a routine, each patient received, one hour before operation, and again half an hour before operation, an injection of omnopon 1/6 grain, and scopolamine 1/400 grain.

It will be seen that in 163 of the 208 patients the results were completely satisfactory; in 27 they were adequate; and in 11 they were poor. In 7 cases anaesthesia was "intended combined."

Abdominal Operations.

The outstanding advantage of regional anaesthesia is that it facilitates the more difficult upper abdominal operations by securing an immobile abdominal wall and permitting exact suturing. This advantage is more apparent in cachectic patients, who, under regional anaesthesia, will withstand a severe operation better than they would a palliative operation under general anaesthesia.

For operations involving no traction on the viscera—for example, gastrostomy, repair of ventral hernia, cholecystgastrostomy, gastro-jejunostomy in patients with ptosis, and cholecystostomy—block anaesthesia of the abdominal wall is entirely adequate; for operations such as gastrectomy splanchnic anaesthesia by Braun's method is sufficient, but when for any reason, such as aspiration of blood, the application of Braun's method is impossible, mesenteric anaesthesia is usually adequate. When dense adhesions are anticipated, as in secondary operations on the stomach or biliary tract, the posterior route of Kappis is chosen, but with the precautions suggested by Finsterer—namely, putting the patient in a sitting position and using a weak solution. There is no objection to adding light ether anaesthesia during a difficult stage; but any approach to the state of excitation results in a loss of many of the advantages of regional anaesthesia. I find that the majority of patients decline ether when it is offered to them, or after they have taken a few breaths; but this applies only to patients who have been efficiently injected, and affords evidence that their pain is not very severe. Of 50 patients who had operations on the upper abdomen, 6 were kept under very light ether anaesthesia; 40 of the remainder required no ether, and 3 accepted small inhalations during the stage when traction was severe. In one case only was full ether anaesthesia called for. The method of regional anaesthesia is advocated in upper abdominal surgery because it gives the surgeon greater freedom in choosing appropriate operative measures, offers him certain facilities during operation, and helps to ensure to the patient a smooth convalescence.

Appendicectomy.—The interval appendix and the early acute appendix may be removed with less discomfort to the patient than he would experience if the operation were carried out under ether anaesthesia. The technique of administration described by Finsterer has been used. In certain cases of retrocaecal appendix the patient will require a little ether or gas during the brief stage when the appendix is being separated. In six cases such additional anaesthesia was required twice.

Inguinal and Femoral Hernia.—In these operations regional anaesthesia gives full relaxation, a bloodless field, and absence of post-operative straining; for these reasons it is certainly the method of choice. The one patient in whom it proved inadequate was a nervous man who, through an oversight, did not receive the preliminary sedative; he reacted so violently to a needle puncture that ether was started at once, and the operation was carried out without further injection.

Jejunostomy and Caecostomy.—A patient suffering from intestinal obstruction who needs simple drainage of the intestine may be operated on painlessly and with ease by the field-block procedure.

Genito-urinary Operations.

Suprapubic cystotomy for drainage, more especially in uraemic subjects, may be carried out under regional anaesthesia. If the surgeon wishes to explore the bladder with the finger it is more comfortable for the patient, though not necessary, to add epidural anaesthesia (caudal block) with 1/5 per cent. tutocaine.

Prostatectomy, by either the perineal or suprapubic route, may be carried out with trans-sacral anaesthesia, using 1/5 per cent. novocain. If the suprapubic route is to be used a field block will be needed as well. The administration of trans-sacral anaesthesia is one of the more difficult procedures, but the technique fully repays the trouble taken in acquiring it. Even if the procedure is only partially successful it is surprising how little disturbance the operation of prostatectomy causes the patient.

For cystoscopy in patients who, without anaesthesia, tolerate examination badly, caudal anaesthesia has proved ideal, and operations on the urethra may be carried out by the same method. By using 20 to 40 c.cm. of 1/5 per cent. tutocaine I have had no failures.

Miscellaneous Operative Procedures.

Recently I have been using field block combined with injections into the broad ligaments for operations on the vulva, vagina, and uterus by the vaginal route, with very encouraging results. Relaxation and a bloodless field make a perineorrhaphy by this method much easier.

Anaesthesia of the neck by paravertebral injection has proved completely satisfactory. I use the modified lateral approach to the transverse processes of the cervical vertebrae. In this method, devised by Meeker, the needle approaches from above downwards, and from without inwards, so as to mask the vertebral vessels by the transverse processes.

I have induced brachial plexus block six times. For this purpose 1/5 per cent. tutocaine appears to be too weak, but I have had no failures with 2 per cent. novocain. I have used the method for screwing a fractured olecranon, excision of the elbow, bone graft for radius and ulna, and reduction of fracture. Where 2 per cent. novocain is used extreme care must be taken to avoid intravenous injection.

Spinal Anaesthesia.

I have left spinal anaesthesia to the end because, although it represents the largest single item, I am using it less and less frequently. Experience shows that more reliable procedures are available for upper abdominal surgery. A great drawback of spinal anaesthesia is that one cannot be certain of the level of anaesthesia. In four cases out of fifty in my own series the level was too low. Moreover, in all cases there is a fall of blood pressure which is partially controllable by ephedrine; in six cases, however, the fall was severe, and in two, in spite of ephedrine, it was really alarming; in one of the latter it probably contributed to the death of the patient. I now use spinal anaesthesia in one type of case only—namely, in intestinal obstruction, where, I believe, its risks are outweighed by its advantages.

Conclusion.

Post-operative bronchitis and pneumonia are not eliminated, but it appears to be less common where regional anaesthesia has been used. Patients may vomit once, but the cause is probably post-operative medication and nervousness. Post-operative distension is very rare except in cases of organic obstruction or when the patient is uraemic. Wounds heal as well after regional as after general anaesthesia, except when drugs, such as quinine-urea or eucupin, are added to secure for the patient post-operative freedom from pain or ability to cough; in these circumstances tight suturing produces a small slough. In bronchitic patients this minor defect is compensated by the benefit to the patient of being able to cough freely.

The beginner should not start with the more difficult procedures. Even the technique of injecting the abdominal wall can be acquired only after practice.

A CASE OF ECLAMPSIA TREATED WITH SPINAL ANAESTHESIA.*

BY

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RUGBY.

On April 29th, 1929, shortly after 8 p.m., I was called to assist my colleague Dr. Waugh in the treatment of a case of eclampsia. I suggested that the administration of chloroform, if it was not already in progress, should be started at once. On my arrival I found a young, massive woman lying on her side in bed. She was almost fully dressed, was under the influence of chloroform, comatose, and breathing stertorously. The room was dismantled for spring cleaning.

The patient, aged 22, a primigravida seven months pregnant, had been quite well till half-past seven that evening. She had been feeling sick occasionally, but had regarded this symptom as unimportant. At the ante-natal clinic, where she had attended once a month, her condition was considered to be good. She ate a great deal, and was habitually constipated. At seven o'clock she had gone upstairs to help in the spring cleaning of the bedroom where she was lying. She knelt down to clean a chair, and said that she felt sick. She was told to sit down, and was given a glass of water. She took a sip of water and was helped into the bed. No sooner was she on the bed than she had a fit, and as the fit/or fits continued and her condition became alarming, Dr. Waugh, who had never seen the patient before, was sent for. He immediately injected a quarter of a grain of morphine (8.15 p.m.) and sent for me. The administration of chloroform was started at about 8.30.

As soon as I saw the patient I made preparations to induce spinal anaesthesia. To expose the patient's back her combinations were cut, a low corset being removed. With due precautions I made a lumbar puncture, drained off about two drachms of cerebro-spinal fluid, which was apparently under normal pressure, and then slowly injected 1.8 c.cm. of tropacocaine. This ended the treatment. The administration of chloroform was stopped; no vaginal examination was made, and not even a catheter was passed to collect urine.

It was now nearly 9 o'clock; the patient lay still, and her respirations were regular, loud, gurgling, and at the rate of about 24 a minute; the pulse, which previously had been about 72 to 80 in rate and bounding in quality, soon began to quicken and lose its volume; its rate increased to 104, and at times it could scarcely be felt at the wrist. On auscultation of the chest I could clearly hear the signs of fluid in the bronchi, and I thought that pulmonary oedema had occurred. For these reasons the foot of the bed was raised. Shortly before 10 o'clock the clinical picture changed. The patient turned her head, grimaced, and moved her arms as though to wipe her face. Muco-pus which had collected about the mouth and nostrils was wiped away, and the patient settled on her side, apparently in sleep. The breathing was now quiet, and on auscultating the chest I found that respiration was normal and the mucous rales had disappeared.

I left soon after 10 o'clock, but when at 11 o'clock I returned, the nurse, who had arrived during the interval, informed me that the patient had had another, very slight, fit, which had lasted only three minutes, after which she had once more become comatose. I found the patient semi-conscious, but at moments restless and moving about. I gave instructions that she was to be kept on her side; that if the bowels did not move naturally an enema was to be given, with the patient still on her side; and that if she became conscious she was to have nothing but water by the mouth.

The next morning (April 30th) Dr. Waugh and I saw the patient again; she was completely conscious, and had passed a restless night, but no further fit had occurred. She had complained to the nurse of "uterine pain." The night report was as follows:

11.10 p.m.	Temperature 97.4°; pulse 130.
11.40 p.m.	Simple enema given, not retained; patient very restless.
12.30 a.m.	Vomited.
1.0 a.m.	Vomited.
1.40 a.m.	Vomited again.
2.40 a.m.	Regained consciousness; passed urine, 20 ounces.
3.0 a.m.	Temperature 97.2°; pulse 104. Sips of water given.
3.15 a.m.	Soap enema given; very good but very constipated result.
9.0 a.m.	Temperature 98°; pulse 84.

Thus the patient had vomited, had had an action of the bowels, and had passed plenty of urine. The pulse and breathing were normal, and the blood pressure was 110/65. The patient was still a little confused, and had no knowledge of what had happened. On examination we found that the uterus was enlarged to the size of a seven months' pregnancy, and we heard the foetal heart. There had been no vaginal discharge, and a vaginal examination was not made. No urine had been kept for analysis. We allowed the patient nothing but water with sodium bicarbonate, ordered another enema, and forbade visitors.

From that day the patient's condition steadily improved; she had no more fits, and various symptoms, such as backache, headache, and buzzing in the head, gradually disappeared. She was allowed up on May 7th, and on May 15th, when she visited the ante-natal clinic, her condition was found to be good, and the urine, though alkaline, was normal. She had her baby, a male weighing 7½ lb., on June 20th, and Dr. Waugh, who attended, reported that delivery was normal. I saw the patient on June 23rd; she was smiling and well. Her blood pressure was 120/80, and a catheter specimen of urine was normal. It is noteworthy that albumin was found once only (May 1st), and in much smaller amount than was expected. Whether it was present at the time of the attack (April 29th) or the next day cannot be stated. Unfortunately, the child died at the end of a week, but the mother was discharged well on July 3rd.

I wish to express my indebtedness to Dr. Waugh for giving me the opportunity of treating this case.

* Dr. Waugh reported this case briefly in the *British Medical Journal* of October 12th, 1929, p. 663.

THE SIGNIFICANCE OF OXALURIA.

BY

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In the routine microscopical examination of urinary deposits it is not uncommon to find octahedral crystals of calcium oxalate. Apart from the formation of calculi, this oxaluria is not considered by most modern authorities to be of clinical importance. It is said that the great majority of persons passing even large numbers of individual oxalate crystals suffer no inconvenience. This absence of urinary symptoms is all the more remarkable when we consider the known effects of oxalic acid and soluble oxalates on the kidneys. Numerous workers have reported that these substances, introduced either orally or subcutaneously into animals, produce tubular nephritis, and Shaw Dunn and his co-workers[1] have shown that in rabbits, guinea-pigs, and dogs the intravenous administration of oxalates causes an intense nephritis, which primarily attacks the first convoluted tubules, and which for some months seriously affects the power of the kidney to excrete urea. It is interesting to note that they conclude that the deposition of calcium oxalate in the tubules plays no important part in this process. In man the ingestion of oxalates is sometimes followed by urinary symptoms.

During the past five years four patients suffering from oxalic acid poisoning have been admitted into the Royal Infirmary at Leicester, and in the only fatal case there was suppression of urine. In 1915 three anonymous correspondents in the *Lancet*[2] reported symptoms observed in themselves after taking rhubarb, which were attributed to the oxalic acid in the vegetable. Of these, one had dysuria and blood in the urine, one had dysuria alone, and one had no urinary symptoms.

There is, in fact, a considerable amount of evidence that oxalates in a state of solution are highly toxic to the kidney, and it would appear that the absence of serious symptoms in individuals passing calcium oxalate is dependent on the extreme insolubility of the lime salt. It was formerly believed that calcium oxalate crystals only separated out after the urine had stood for some time, being held in solution by acid sodium phosphate. That this is not the case is shown by the frequent finding of oxalate crystals in freshly passed acid urine, and by the entire absence of impaired renal function in these cases.

Presumably, then, calcium oxalate is sometimes excreted as such by the kidney. It would nevertheless be surprising if these sharp, hard crystals should pass over the delicate renal tissues without causing some disturbance, and that mechanical injury can be caused in this way the following case appears to show.

A boy, aged 15, consulted me on August 1st, 1929, for haematuria. He had been seen eighteen months previously for hilum tuberculosis, but six months' sanatorium treatment had apparently completely cured this condition. The haematuria of which he now complained had had a sudden onset a few days

beforehand; it was profuse and quite painless. He maintained that he felt quite well, and had absolutely no symptoms other than blood in the urine. A thorough examination revealed no abnormal physical signs. The urine was bright red, and a microscopical examination revealed, in addition to large numbers of red blood cells and a very occasional blood cast, the presence of many octahedral "envelope" crystals of a size rather larger than those usually seen in urine. He was put to bed, and given a milk diet with alkalis. On the following day there was much less blood in the urine, but the crystals were even more abundant. On the next day there was neither blood nor albumin in the urine, and only an occasional crystal was seen. The systolic blood pressure was 125 mm. of mercury, the diastolic 70. The blood urea was 23 mg. per 100 c.cm. No tubercle bacilli were found in the urine, and an *x*-ray examination showed no stone in the urinary tract. A week later there was nothing abnormal in the urine, and the boy has remained well since.

This patient had always had a fair amount of rhubarb in the summer, and during the past season had had more than usual. However, none had been taken for a fortnight before the onset of haematuria.

The Nature of the Crystals.

Although these crystals were of the octahedral form typical of calcium oxalate, it was thought advisable to investigate their chemical characteristics. So long ago as 1862 Neubauer and Vogel[3] pointed out that very similar forms could be obtained by crystallizing out sodium chloride from a solution containing urea. Another possible mistake is the confusion of an unusual form of ammonio-phosphate of magnesia with calcium oxalate. A specimen of urine containing the crystals was centrifugalized, the deposit was shaken up in a tubeful of distilled water, and this was again centrifugalized. The process was repeated, and the crystals were found to be still undissolved; therefore they were not sodium chloride. They were then similarly washed in dilute acetic acid, but remained intact, so that they were not triple phosphate. They were, however, soluble in hydrochloric acid, but were recovered from this solution on neutralizing it with lime water. Thus there can be no reasonable doubt that they were truly crystals of oxalate of lime.

It would be foolish to generalize from a single case, but the history of this patient is, I think, suggestive. It suggests, first, that the passage of calcium oxalate crystals is not always as innocuous as supposed, and that some cases of unexplained spontaneous haematuria may be due to a similar cause; secondly, although calcium oxalate can cause some mechanical damage to the kidney, the absence of symptoms, the rapid recovery, the normal blood pressure, and particularly the normal blood urea, of this patient show that it is the safest form in which the body can excrete any abnormal accumulation of oxalates in its substance.

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[3] Neubauer, C., and Vogel, J.: *A Guide to the Qualitative and Quantitative Analysis of the Urine*, translated by W. O. Markham, New Sydenham Society, vol. xx, 1863, 51 and 118.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACUTE APPENDICITIS COMPLICATED WITH PARATYPHOID FEVER.

THE association of the above two diseases seems of sufficient interest to warrant recording.

A healthy-looking adult, aged 22, was admitted to hospital complaining of a sharp bout of pain in the right lower quadrant of the abdomen. His temperature was 100.8° F., and pulse 80 per minute. Tenderness was present over the appendix area and there was some muscular rigidity, more marked on the right side. Tenderness was elicited on the right side when he was examined per rectum. He had vomited once. Acute appendicitis was diagnosed and he was operated upon. The abdomen was opened by a gridiron incision. Some free peritoneal fluid was found. The appendix was long, thick, tortuous, and very much inflamed. It was removed and the wound closed without drainage. The appendix was opened and found to contain blood and pus.

Next day the temperature was 99° and pulse 72. On the second day after operation the temperature and pulse were normal, and the patient felt very well and appeared to be making an uneventful recovery. However, on the third evening after operation the temperature suddenly started rising, and the next morning reached a maximum of 103.2°, while the pulse remained steady at 80. This was accompanied by diarrhoea of a dysenteric type. The stools consisted chiefly of greenish-yellow mucus, with here and there pale yellow "cheesy" masses containing pus cells and also bright red blood clots—about two or three per stool. The stool was examined bacteriologically.

One thought of the possibility of dysentery, or post-operative peritonitis, but the steady pulse, soft abdomen, absence of pain, and the general well-being of the patient were against the latter. That evening he had a sharp bout of epistaxis and later vomited some old blood; this latter was probably the result of the former, because neither epistaxis nor vomiting was repeated. He now complained of a sharp pain in the region of the umbilicus, which was relieved by going to stool. The motions (about six per diem) continued to show the bright red blood. The fever continued but the pulse remained steady. This lasted for six days, the fever gradually diminishing and the general condition of the patient always remaining surprisingly good. In the meantime, from the stool an organism had been isolated, cultured, and identified as *Bacillus paratyphosus* B. The appendix wound healed by first intention, and the patient made a good recovery from the paratyphoid fever.

It may be mentioned that the paratyphoid B is the common form of enteric in this part of Germany, but, as far as the British garrison is concerned, this was an isolated case. Apparently the sudden onset with rapid rise of temperature, dysenteric stool, infection of the colon causing bright red blood clots in the stool, steady pulse, etc., are all compatible with a paratyphoid B infection, but at the time this case caused great difficulty clinically in diagnosis.

The following questions are of interest. When did the paratyphoid fever start, and was the pathological condition of the appendix due entirely to *B. paratyphosus* B? If the condition of the appendix was entirely due to *B. paratyphosus* B, and if it had not been removed, would it have perforated, causing peritonitis? Unfortunately the appendix was not examined very carefully after operation, or sectioned, because it appeared an ordinary routine case. It may be mentioned, however, that at the operation there was no evidence of inflammation in the coils of small intestines seen, or in the commencing portion of the ascending colon, whereas the appendix was acutely inflamed. Finally, was free peritoneal fluid the result of a paratyphoid B infection in the lumen of the intestines?

My thanks are due to Lieut.-Colonel H. St.M. Carter, D.S.O., M.D., O.C. Connaught Hospital, Wiesbaden, for help and advice with the case; to Major J. W. Houston, D.S.O., M.B., for the laboratory work done, and to Lieut.-Colonel E. M. Pennefather, R.A.M.C., for permission to publish the case.

J. F. WILDE,
Lieutenant R.A.M.C.

Wiesbaden.

ACTIVE PULMONARY TUBERCULOSIS OF EXCEPTIONALLY LONG DURATION.

THE following case appears to be of sufficient interest to warrant publication.

X. Y. recently died of pulmonary tuberculosis at the age of 60. He gave a history of having suffered from "bronchitis" since he was 8 years of age. When he was 14 he commenced work as a compositor, but from the commencement he lost a great deal of time owing to cough and malaise, and he was told by his medical attendant that he was "in a decline." At the age of 27 he had an attack of pleurisy, followed by blood-stained sputum, and was definitely diagnosed as suffering from pulmonary tuberculosis. When 39 years of age he was sent to the Brompton Hospital, where he was found to have a cavity in the right lung.

He came under the Hertfordshire County Council Tuberculosis Scheme at the age of 47, and he was found to have signs of widespread disease in both lungs, and tubercle bacilli in the sputum. With an occasional course of sanatorium treatment he was able to continue at his occupation until the age of 53, when he was pensioned off. At no period of his life had he been able to live and work as a fit man, and he never remembered being without cough and sputum. The last two years of his life were spent more or less in bed.

From the above history it would appear that the patient had suffered from active pulmonary tuberculosis which was slowly progressive for forty-five or fifty years. Until the last two years of his life his general condition remained fairly good, but whether the marked chronicity of the disease was due to exceptional resistance of the patient or to an infection of low virulence is a matter of doubt.

A. P. FORD, M.R.C.S., L.R.C.P., D.P.H.,
Tuberculosis Officer, Hertfordshire.

Reports of Societies.

BLACKWATER FEVER.

AT a meeting of the Royal Society of Tropical Medicine and Hygiene on December 12th, 1929, a discussion on blackwater fever opened with a joint paper presented by Professor WARRINGTON YORKE and Drs. F. MURGATROYD and D. UVEDALE OWEN. The paper was confined to a description in very close detail, illustrated by tables and charts, of five cases of blackwater fever occurring in this country which Professor Yorke and his colleagues had had the opportunity of carefully observing from beginning to end, and in connexion with which all the various clinical, biochemical, and serological tests had been applied. Attention was drawn to the dissimilarity of the temperature charts in blackwater fever cases to those in cases of malaria, both malignant and subtertian. As regards the connexion between blackwater fever and malaria, the interesting hypothesis was advanced of binary fission occurring in the ordinary propagation of the malignant tertian parasite. The authors agreed that much interest surrounded the question of the existence of a pre-blackwater state, which, however, they had not been able to distinguish.

Dr. C. M. WENYON suggested that there might be a subliminal condition, in all respects identical with blackwater fever, except that there was no haemoglobinuria.

Dr. FRANCIS CHARLESWORTH thought that blackwater fever was quite distinct in its origin from malarial infection. Although malarial parasites, benign or malignant, had been found in a proportion of cases of this fever, it did not follow that these were the cause, which might be some hitherto undiscovered ultra-microscopical organism. In a part of Zanzibar where he had spent his medical career it was quite easy for a European to contract blackwater fever, but he had never known a case to occur in a native. On the other hand, when some Indian agriculturists were sent to Zanzibar to work on the land, all of them malarial subjects, four died of blackwater fever.

Dr. G. R. ROSS, speaking from experience in Southern Rhodesia, said that there was no doubt that in a certain number of cases of blackwater fever fatigue and chill could not be invoked as exciting causes; twenty-three patients in a series of 180 seen by him personally or notified to him developed blackwater fever while in bed in hospital under treatment for malaria. The part played by quinine in the genesis of an attack was considerable, and he mentioned the case of a patient with malignant tertian malaria who manifested haemoglobinuria within three-quarters of an hour of beginning quinine treatment.

Dr. D. B. BLACKLOCK emphasized the necessity for team work in the elucidation of blackwater fever; it was not a condition which was likely to be elucidated by the efforts of a single person. In connexion with Professor Yorke's suggestion that binary fission might be responsible for the propagation of the malignant tertian parasite in malaria, he mentioned observations which went to show, in persons dying from malaria, that the internal organs, especially the spleen, had a great number of sporulating forms in comparison with those in the peripheral blood.

Dr. P. H. MANSON-BAHR mentioned a case of sudden onset of blackwater fever in a hospital patient with tertian malaria who had been on carefully graduated quinine treatment for ten days. It was rare to get blackwater fever developing in people with large numbers of subtertian parasites in the peripheral blood. Even when there was blockage of the capillaries of the brain, the peripheral blood might still show very few subtertian parasites. He had been struck by the large, soft, and painful spleen in people who were about to develop blackwater fever; whereas it was rare to find a painful spleen in an ordinary attack of subtertian malaria. This organ shrank with great rapidity as the haemolysis cleared up, and there was some clinical evidence for supposing that the primary seat of the haemolysis was the spleen. The last four cases of blackwater fever at the Hospital for Tropical Diseases had been treated by blood transfusion as soon as the blackwater condition commenced, and the clinical results had been excellent, better than anything he had seen before. The introduction of fresh red blood corpuscles put a stop to the haemolytic process.

Dr. N. H. FAIRLEY suggested that detailed investigations of a limited series of cases were likely to produce scientific results of much greater value than the collection of wider statistical data under conditions in which accuracy, and detailed biochemical, serological, and other methods, were impossible. Some work at the Hospital for Tropical Diseases showed that all grades of transition occurred in blackwater fever—from severe to transient haemoglobinuria, and from frank jaundice to no jaundice at all. Recently he had seen two patients transfused during the haemolytic stage, with very dramatic and beneficial results. The haemolysis terminated and the haemoglobinuria cleared up, especially in one of the cases, at an earlier time than could have been anticipated on ordinary treatment. He could not personally support the view that the introduction of foreign blood terminated the haemolytic process, but the fact had certainly been established that it did not increase the haemolysis. Patients with blackwater fever died from one of three causes—namely, the rapid haemolytic process, heart failure, or renal complications—and he thought that transfusion during the haemolytic period was certainly a therapeutic aid of considerable importance.

Dr. H. S. STANNUS suggested that a change in the physical condition of the blood occurred in blackwater fever; this afforded an explanation of the action of quinine and sodium bicarbonate in those cases in which chill or fatigue had been concerned. In Africa cases were seen in which there was definite history of fatigue and chill. Dr. D. THOMSON doubted the division of malarial parasites by binary fission; he had never seen a malarial parasite so divided, and he had performed many successful cultures in malignant tertian fever. Dr. FREDERICK MURGATROYD said that alkalis were beneficial in the treatment of blackwater fever. Dr. D. U. OWEN had been impressed by the fact that the spleen punctures did not contain any more parasites than the peripheral blood.

Dr. G. CARMICHAEL LOW (from the chair) said that blackwater fever was an extraordinary disease in its epidemiology as well as in other respects. India, with the exception of two areas, had none, whereas it was found generally in African countries. The condition was also an extraordinary disease from the point of view that the clinician might have a run of successes followed by an equal run of failures. When Dr. Low went out to Uganda he was met by a distinguished man in tropical medicine who assured him that the only treatment for blackwater fever was quinine in large doses. On replying that they had been taught at the School of Tropical Medicine on no account to give quinine, he was referred to a list of recent cases in which unvarying success had followed this treatment; but, unfortunately, of the very next six cases so treated, every one died.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting of the Liverpool Medical Institution, held on November 28th, 1929, Miss FRANCES IVENS described the scheme for a national maternity service drawn up by the Medical Women's Federation, of which a full summary appears in the *Supplement* to this issue (p. 5).

In the course of the discussion which followed, Dr. LEITH MURRAY said that in its broad features the scheme conformed to the recommendations of the British Medical Association and the report of the Departmental Committee on the Training and Employment of Midwives. He considered that to increase the status of midwives was a necessity, but would prove a difficult and probably a costly problem. Only by subsidy and superannuation would it be possible to get a better class of candidate—namely, the generally trained nurse—to undertake the duties and drudgery of the profession of midwife. He emphasized the importance of ante-natal examination, and insisted that any attempt to carry out the more serious part of such work by one not qualified by special experience was bound to lead to the very difficulties which any national maternity service was designed to avoid.

Mrs. BARTON HALL said that it was mainly from the laboratory point of view that she was interested. Until recent years laboratory services had been looked upon as

somewhat of a luxury, but nowadays we were accustomed to rely on the State for a limited amount of laboratory service, and this was provided for in the scheme outlined by Miss Ivens.

Dr. C. O. STALLYBRASS stated that in Denmark maternity assistance was included in the insurance scheme which provided for the medical care of wives and children of insured persons, and in that country maternal mortality was exceptionally low. The capacity of the midwife had greatly improved since the passing of the Midwives Act; the statistics of cases confined under the care of the Queen Victoria District Nurses were exceptionally favourable in relation to both morbidity and mortality. It was his opinion that great practical difficulty would be experienced in enforcing a quota number on practising midwives.

Miss R. NICHOLSON considered that an important point in the scheme was the position of the general practitioner who was to be consulted by the expectant mother before she engaged her midwife. This would prevent selection of the doctor by the midwife, and booking by her of unsuitable cases.

Dr. ARTHUR GEMMELL said that he would like to hear the views of general practitioners, as he felt that some form of national maternity service would shortly be forced upon the profession. It would be most helpful if practitioners could give their views as to what would be possible, and what would be reasonable in the way of fees, as thirty shillings per confinement appeared to him to be much too small. He also feared that the introduction of such a service would lessen the number of patients available for teaching students, and thought that possibly some arrangement might be made whereby selected doctors and midwives could keep in close touch with teaching maternity hospitals and notify these institutions when they had labours in progress which students could attend.

Dr. H. H. MACWILLIAM said that in his opinion Liverpool women were more and more inclined to have their confinements conducted in hospital rather than in their own homes. There was already a shortage of maternity beds in the Poor Law hospitals, and more accommodation would have to be provided before long. He thought a maternity scheme based on insurance with friendly societies would not be easy to work, and that the friendly society part of the National Health Insurance Scheme had not been a complete success.

Dr. H. CANTRELL remarked that the £250 income limit included many women who do not at present attend a clinic or hospital out-patient department, but engaged their own medical attendant for their confinement. Many of these women would prefer to have their doctor present at a normal confinement at their own expense, and she suggested that they should be allowed to do so even whilst taking advantage of the other benefits of the scheme. Dr. Cantrell was glad to see that provision of sterile dressings was included in the scheme, and suggested that the sterilization of sheets would be even more ideal.

Professor BRIGGS spoke about his forty years' experience of midwifery in Liverpool, and Miss IVENS, in her reply, acknowledged the great work Professor Briggs had done to improve the teaching of obstetrics in that district.

DIABETES MELLITUS.

A MEETING of the Pathological Society of Manchester was held on December 11th, 1929. Professor SHAW DUNN, opening a discussion on diabetes mellitus, described the sugar metabolism in the body and the part played by insulin. He reviewed the experimental work on animals, and grouped the pathological changes in human beings under the following headings: (1) cirrhotic changes between the acini; (2) hyaline thickening of the fibrous septa of the islets and degeneration of the islet cells (occurring in cases of old-standing disease); and (3) hydropic degeneration of the islet cells. In many severe cases no evidence of the disease could be found in the pancreas. Dr. T. H. OLIVER classified the disease into three types: the pancreatic, defective sugar storage, and the endocrine form. The first type occurred in young people and should be treated with insulin. The second type comprised the majority of cases, and these generally yielded to dietetic treatment or insulin. Probably in a few cases in this group there was also a lesion in the liver, such as haemochromatosis; in these patients the prognosis was serious because insulin had no effect. In the third type the ductless glands were at fault; diabetics with exophthalmic goitre died rapidly even with insulin. The speaker reported cases showing the intermittency of symptoms sometimes due to a seasonal variation, for the relapses often occurred at the same season in which the patient was first affected. There was sometimes a strong family history, often associated with instability of the ductless glands. He attributed child diabetes to infection, instancing the case of diabetes following mumps. The indications for insulin were: (1) extreme youth, (2) bad family history, (3) complications such as gangrene, carbuncles, or phthisis, and (4) onset of a yellow coloration of the skin. Attacks of hypoglycaemia might come on very rapidly, and sometimes took the form of epileptiform attacks, transient hemiplegia, or mental disturbances. Diabetic coma had nothing to do with sugar, and the blood sugar was no guide to its onset; acetone was a guide, but was not the cause, and it was probable that protein was the determining factor. When albuminuria appeared coma was at hand, and, if untreated, a flood of fatty casts usually appeared in the urine and the patient died of uraemia with suppression of urine. Dr. LANGLEY agreed that diabetes was often infectious in origin; he had had two cases following broncho-pneumonia. He described cases of transient diabetes of suprarenal, cerebral, and alimentary causation.

FREE PERFORATIVE DIVERTICULITIS.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, with the president, Mr. R. ATKINSON STONEY, in the chair, Sir WILLIAM WHEELER described the clinical course of a fatal case of diverticulitis, which perforated into the free peritoneal cavity. A full account of the case is printed at page 5.

The PRESIDENT referred to the fact that the caecum had been brought out through the main incision, and suggested that, if a separate opening had been made on the opposite side, the caecum might have drained itself, and prevented the high obstruction. Mr. A. CHANCE said that he was inclined to think that the vomiting was not mechanical but toxic, and wondered if the whole condition could have been toxic. Mr. H. STOKES said he would like it made more clear that there really was a diverticulum in this case. He had come across many cases of perforation of the large intestine, but without diverticula. He drew attention to the fact that it was fatal to insert tubes into dilated gut with the object of draining. Mr. F. J. HENRY said that free perforative diverticulitis was a great rarity. He had seen only one case, in a woman who, two years previously, had been operated on for carcinoma of the breast. There was no difficulty in closing the perforation, and the patient recovered fairly easily.

Sir WILLIAM WHEELER replied that the caecum was loose, and it was possible to perform caecostomy through the primary incision. With regard to Mr. Chance's question, he believed that the obstruction which followed septic peritonitis was usually mechanical; loose adhesions between loops were the cause of obstruction. He referred to a paper by Dr. Charles Mayo on this subject. Mr. Stokes had asked if the diagnosis was certain. The loop of bowel was removed after death, and the perforation of one of many diverticula demonstrated.

Principles of Radium Therapy.

Dr. OLIVER CHANCE, who read a paper entitled "Some experiences in an English radium clinic," illustrated by numerous lantern slides, said that if radium was to be used effectively it was necessary to possess a thorough knowledge of the principles upon which treatment was based. The most important factor in the response of a tumour to radium was its histology. Examples which served to illustrate this fact were to be found in the different results which followed irradiation of carcinoma of cervix uteri and rectum, and, again, the better response to radium of growths on the posterior third of the tongue than those on the anterior two-thirds. An adequate dose and a homogeneous dose must be given. The condition of the surrounding tissues influenced the action of radium. The cavitation procedure should never be used if any other

method was practicable. Implantation was the best treatment in certain regions. Wherever possible, needles should be used in preference to seeds, since it was difficult to secure a homogeneous irradiation with the latter. Surface irradiation was applied through moulds of various sorts. Distance irradiation was theoretically the best method, but it was wasteful and expensive. Dr. Chance described the various techniques employed in different regions, and indicated the results of treatment. He said that it was just as difficult to assess the results of radium in treating cancer as to decide the value of salvarsan in the treatment of syphilis. Time and the keeping of careful statistics alone could help. He added that all that could be said at present was that radium was the best means for dealing with a limited group of cancers, and that with the passing of time, and the increasing knowledge which it would bring, this group might be enlarged.

Dr. W. C. STEVENSON said that a number of cases which were seen by him were quite incurable, and palliative treatment alone was possible, but he thought that this was very well worth while. He seldom saw cases of cancer of the tongue without extensive glandular involvement; much better results could be obtained if the glands were unaffected. In carcinoma of the cervix he found it difficult to give three treatments, since patients, especially those from the country, would not return, so he tried to do as much as possible in one session. He asked Dr. Chance how he ensured that the threads in the needle escaped being cut, since, if this happened, radium might be lost. Dr. R. STUMPF, referring to radium and to deep x-ray therapy, said he thought it was impossible to say that one method was superior to the other. In carcinoma of the cervix the results obtained from radium and from deep x rays were much the same, but in mammary cancer, if the tumour was large, he preferred deep x-ray therapy. Dr. M. R. J. HAYES said that it was absolutely necessary to know the histological nature of the growth in order that the dose might be properly regulated, and also to be able to give some idea as to the prognosis. Enlarged submaxillary glands were often inflammatory, and there was a risk of necrosis of the jaw unless care was taken in inserting the needles. In mammary carcinoma, when the whole pectoral muscle had been removed, it was rather difficult to treat patients with radium, unless great care was taken. Dr. R. R. WOODS asked if Dr. Chance thought there was any danger of necrosis of the great vessels of the neck from the proximity of radium needles.

Dr. CHANCE, replying, said that they had to reject about 30 per cent. of the cases that came to them for treatment, because they had not a sufficient supply of radium. The tip was carefully screwed into the needle, so it was impossible for any radium to escape; thread was not used, but fairly stout silk. He thought there was a great future for combined deep x-ray and radium therapy. They did not treat cases of cancer of the œsophagus, since on physical grounds they did not consider the treatment was sound. Some cases of cancer of the larynx did well, while others did badly. In mammary cancer, once nodules appeared, carcinomatosis very often followed. He had never seen necrosis of the great cervical vessels from the proximity of needles.

AT a meeting of the Optical Society, at the Imperial College of Science and Technology, on December 12th, 1929, with the president, Mr. F. TWYMAN, F.R.S., in the chair, Mr. CLIFFORD BROWN demonstrated an apparatus for the Duochrome sight test, which was intended as a substitute for the Snellen chart. The subject compared two lines of black type on red and green illuminated grounds, and the sight-tester added + or − lenses in the trial frame till both lines were equally distinct, when the correcting lens for the *mean ray could* be described. Similarly sets of radiating lines of black on red and green illuminated grounds enabled the axes of an astigmatic eye to be determined, after which the correcting power of each meridian could be found. Mr. S. ADAMS, for C. W. Dixey and Sons, described and showed four types of the Maddox cheiroscope for use in the treatment of squinter's acquired amblyopia, and for the improvement of the correlation between hand and eye.

Reviews.

GARRISON'S "HISTORY OF MEDICINE."

THE subject of medical history is one of the most recent departments in the healing art to receive systematic attention and study. It is now taught in some sixty-three academic institutions, and in Germany, which was one of the first countries to recognize the educational value of this subject, there are some fifteen chairs dealing with the history of medicine. In America, where it has been taken up with great enthusiasm, some nine chairs have already been established. For the intensive study of the subject one of the most remarkable developments has been the establishment of an institute and library of the history of medicine, intended to make possible the whole-time study of history by graduate students under the guidance of a great teacher in the Johns Hopkins University, Baltimore, Professor William H. Welch. This is somewhat on the lines of the Institut für Geschichte der Medizin, which was established in 1905 at Leipzig under the direction of Professor Karl Sudhoff by the widow of the late Professor Theodor Puschmann, an earlier medical historian.

The general textbook which has come to be regarded as the starting-point for study at these and other medical historical centres is undoubtedly Fielding Garrison's *Introduction to the History of Medicine*, of which a fourth edition,[1] revised and enlarged, has now been issued. An interesting preliminary chapter has been added to the book on prehistoric phases, from which it appears that early man must have been peculiarly liable to disease, for, among the few well-known remnants that have been discovered, it is stated by the author:

"The femur of the Javanese Pithecanthropus shows marked exostoses; the skull of Piltdown man (*Eoanthropus*) signs of acromegaly or of osteitis deformans. The left ulna of the original Neanderthal skeleton is fractured and, in the opinion of Virchow, the left humerus is rachitic. The spine of Heidelberg man (7000 B.C.) shows signs of Pott's disease, which is also common in later Egyptian mummies. Human paleopathology thus goes back to the late Pleiocene (500,000 B.C.), while osteomyelitis in fossil reptiles is already found in the topmost strata of the Paleozoic, which the physician-geologist Murchison called Permian.

"Bacteria probably functioned from the earliest times as rock-builders, by deposition of lime extracted from sea-water. In the Cambrian coal-beds they began to swarm, in the Permian they became pathogenic. . . . Pathogenic parasitism was evolved from easy-going commensalism and symbiosis in the Cambrian period. In course of time 'familiarity bred contempt and advantage-taking.' Worms began to bore into crinoids, even as the sponge justifies its name by boring into the oyster. Osteomyelitis and caries began to attack the reptiles, armored amphibians, and fishes of the Permian. The oldest known fractures occur in Permian reptiles of Texas. The earliest known bony tumour (*hemangioma*) was found in a Mesozoic dinosaur of Wyoming. A crocodile of the Oxford Jurassic shows necrosis with metastases. The aquatic mosasaurs and plesiosaurs of the Kansan Cretaceous show osteoperiostitis, osteoma, arthritides, and dental caries; a fracture of the humerus in a horned dinosaur resulted in a subperiosteal abscess with several liters of pus."

Notice is taken of the Edwin Smith medical papyrus, dating from 1600 B.C., and recently described by Breasted, which consists of a roll over fifteen feet long of cursive script, dealing with forty-eight cases in clinical surgery; in some of these cases feeble pulse and fever are noted in hopeless head injuries; in dislocation of the cervical vertebrae paralyses of the arms, legs, and sphincters are noted as unfavourable symptoms. This defective copy appears to be the remnant of some great surgical treatise which had long ante-dated the surgical works of Hippocrates. An interesting account is given of the mediaeval period of medicine, when, as Colonel Garrison says, the heresy imposed by the Arabic commentators of Galen that coction or suppuration was essential to the healing of wounds, made operative surgery a perilous and meddlesome undertaking, when the surgeon, too, whether scholar or mountebank, stood in danger of life or limb if he operated unsuccessfully on any of the feudal lords. To this period, however, belonged Theodoric, Bishop of Cervia, who about

[1] *An Introduction to the History of Medicine.* By Fielding H. Garrison, A.B., M.D. Fourth edition, revised and enlarged. Philadelphia and London: W. B. Saunders Company. 1929. (6 × 9¼, pp. 996; illustrated. 55s. net.)

1266 contradicted the dogma of coction and stood out as a sturdy pioneer of a simple expectant dry treatment, or rational asepsis; William Salicet, professor at Bologna about 1268, whose book on surgery contains the first known treatise on surgical anatomy; Lanfranc of Milan, who introduced the reunion of divided nerves and recommended neurotomy for tetanus; and Henri de Mondeville, who, in 1306, recommended the aseptic treatment of wounds by simple washing, since "wounds dry much better before suppuration than after it."

In the latter part of the book an effort has been made to do justice to the recent medicine of Russia, Italy, Spain, and the Latin American countries. Sections deal with modern sectarians and quackery, the development of modern medical periodicals, the tendency towards internationalism in medicine, and the special advances in medicine and surgery which originated in connexion with the world war. The author believes that "it is in Russia that the great future problems of social medicine will be tried out on a grand scale." Connected with the Peoples Commissariat of Public Health (1918) are institutes of protozoan disease, of communicable diseases, for control of serums, of physiological nutrition, of hygiene, of biochemistry, of tuberculosis, etc., but it is pointed out that of 33,000 physicians some 29,500 are virtually chattels of the State, at salaries of twenty to sixty-five dollars monthly, most of the doctors being "country shy" on account of the dreary isolation of the rural districts and the vast distances to be travelled in the course of practice. A valuable set of appendices, which have been to a large extent rewritten for the present edition, include one on the chronology of medicine and public hygiene, extending to over seventy pages of small type, and including most of the events in medical history from prehistoric times up to 1928; hints on the study of medical history, which form a useful guide to the methods adopted by various teachers; some forty pages of bibliographic notes, which give references to monographs dealing with various medical subjects, and particularly to important figures in medical practice; and, finally, a series of suggestive questions and exercises, which have been rewritten for the present edition, and which may form a serviceable guide for students.

The work is interesting, concise, and reliable as ever, and it forms a valuable companion alike for the teacher and the student of medical history, whether it be for the purpose of consecutive reading or for occasional reference.

PATHOLOGY AND TREATMENT OF DIABETES.

IN the preface to his work on the physiopathology and treatment of diabetes mellitus,[2] Professor LEGUEU refers to the admirable qualifications of M. Chabanier, as chief of the chemical laboratory at the Necker Clinic, to investigate the biochemical problems which diabetes presents. The book under review comprises the results of laboratory and clinical experiences collected and collated by M. CHABANIER and his two collaborators, Dr. LOBO-ONELL and Mlle LEBERT. For some years M. Chabanier has been convinced of the important part which the kidney plays in determining the clinical course of diabetes, even though the initial disturbance of the glyco-regulation may be due to pancreatic disease. Following the classification of Marcel Labbé, Chabanier makes a substantial distinction between diabetes with wasting and diabetes without wasting. Great stress is laid on the essential mobility of the renal threshold for glucose, and many examples are given of the threshold varying or remaining constant under alterations of the blood sugar level. It is shown conclusively how frequently the glycaemia and glycosuria do not run parallel. The first part of the book, devoted mainly to the chemical problems of the diabetic state, is long and intricate, but it well repays careful attention, for much of the work has not been published before. The second half deals with the treatment of diabetes and its complications. The authors' experiences with insulin lead to the noteworthy conclusion, "au lieu de restreindre systématiquement la ration en hydrates de carbone suivant la tendance de cette époque nous proposions, au contraire, de donner la quantité la moins restreinte possible de ces substances, telle cependant, dans chaque case particulier, qu'elle n'entrave pas l'instauration par l'insuline d'un état aussi voisin que possible de la normale." Not only do the authors consider that an adequate ration of carbohydrate diminishes the risk of insulin hypoglycaemia, but they regard it as the best and quickest way of restoring the general health. There is a curious observation about insulin hypoglycaemia—namely, that hypoglycaemia is more liable to occur in proportion as the preparation of insulin is more completely purified. But in this connexion we notice that the authors seem to inject the dose of insulin invarably just before the meal. They do not appear to have explored the varying effects of allowing a longer or shorter time to elapse between the administration of insulin and the meal, variations which are purely individual and influence the insulin effect most profoundly. Taken as a whole this is a delightful and stimulating treatise on diabetes.

In *Diabetics*[3] Dr. LUND presents for the guidance of diabetic patients instruction upon the essential points of the disease, the management of diets, and, what is almost equally important, their personal hygiene. The author is to be congratulated on his excellent summary of hints on hygiene. For his diet rules we have less admiration because, when he sets out a scale of gradually increasing diets, No. 15 reaches a total of 2,779 calories, and yet only contains 92 grams of carbohydrate as compared with 231 grams of fat (which, in the light of modern teaching, is an unnecessary stinting of carbohydates), and because of his predilection for brown bread over white. It is true he does not disregard (on page 22) the need for warning the reader that the brown or wholemeal bread must be of an unsweetened variety, but he does not emphasize the fact that the ordinary brown bread is frequently kept moist by the addition of molasses. Perhaps this book, sound as it is in its general tenor, serves to demonstrate our fear of carbohydates in the treatment of diabetes with the aid of insulin, even in despite of Dr. Banting.

Only a year has passed since the appearance of the fourth edition of Dr. LAWRENCE's book *The Diabetic Life*,[4] but in the fifth edition, just published, the author has incorporated a large number of new recipes for diabetics and of detailed examples of line diets. In this edition, moreover, he has made full use of the analyses of the carbohydrate content of foods, carried out by himself and Dr. R. A. McCance, and published last year in a Special Report (No. 135) of the Medical Research Council (*British Medical Journal*, July 27th, 1929, p. 156). From these analyses it appeared that there was much less available carbohydrate in most vegetables and fruits than had been supposed, and the food values now given differ appreciably, therefore, from those in the previous editions.

PRICE'S "MEDICINE."

THE appearance of a new edition of *A Textbook of the Practice of Medicine*,[5] by various authors, marks a definite event in the London school of medicine, and the editor, Dr. F. W. PRICE, is to be complimented on successfully guiding his large team for a third time. A great deal of the book has been revised and rewritten, and various changes have been made in the classification and arrangement. Rickets, for example, after wandering into the diseases of metabolism in the second edition, now comes back to the section on deficiency disorders. The list of new articles and new matter is a long one, and it is only possible to pick out a few items for comment. The section on metabolic disorders opens with a very good account of basal metabolism, and Dr. R. H. A. Plimmer has contributed an excellent article on vitamins. In Dr. Price's own contribution on the heart he has added a short article on cardiac infarction, and among other additions and alterations is a very

[2] *Physiopathologie et Traitement du Diabète Sucré.* Par H. Chabanier, M. Lebert, et C. Lobo-Onell. Préface du Professeur Legueu. Paris: Masson et Cie. 1929. (Roy. 8vo, pp. 444. Price 50 fr.)

[3] *Diabetics.* By John Knowles Lund, M.R.C.S.Eng., L.R.C.P.Lond., D.P.H.Manch. London: The Scientific Press, Faber and Faber, Ltd. 1929. (Fcap. 8vo, pp. 87; illustrated. 3s. 6d. net.)

[4] *The Diabetic Life.* By R. D. Lawrence, M.D., M.R.C.P.Lond. Fifth edition. London: J. and A. Churchill. 1930. (5½ × 8½, pp. viii + 204; 10 figures. 8s. 6d.)

[5] *A Textbook of the Practice of Medicine.* By various authors. Edited by Frederick W. Price, M.D., F.R.S.Ed. Third edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (5½ × 8, pp. xxxviii + 1871; 115 figures. 36s. net.)

good account of syphilitic affections of the aorta, heart, and pericardium. In the rearrangement of this section it is a pity that the description of angina pectoris has not been brought nearer to that on coronary disease.

In the section on diseases of the kidneys a brief note on nephrosis has been included, together with an account of the hyperpietic kidney. The description of uraemia has now been placed after nephritis, but, following Dr. Izod Bennett's recent lectures and book on the subject, this disorder requires a different method of approach to be up to date, and no mention is made of the acute haemorrhagic type of nephritis, which is certainly the commonest form in childhood. Dr. Hugh Thursfield has revised his contributions on purpura and on Gaucher's splenomegaly. In the former he gives a good critical summary of the modern views on the relation of the platelets and of splenectomy to the different varieties of purpura, and in the latter a short but complete account of this disorder, now looked upon as an inborn error of metabolism. The section on glandular fever has been largely rewritten, and the account of the medico-legal aspects of tests for drunkenness has been revised. A good description of Schilder's encephalitis is now included in the section on diseases of the nervous system, which remains one of the best parts of the whole book.

The new matter and the alterations in arrangement have added only about fifty pages to the total length of the volume, which, though it contains nearly 2,000 pages, remains remarkably compact in size. Unfortunately this compactness has been attained by the use of such thin paper that the type on the reverse side of each page in the copy submitted for review shows through sufficiently to make reading unpleasant. For the rest, this edition is worthy of its predecessors, and, generally speaking, each of the twenty-six authors has presented an impartial account of his subject, with just enough of the personal touch to make each section distinctive. The whole production is certainly worthy of the traditions of London medicine.

PRACTICAL PHYSIOLOGY FOR MEDICAL STUDENTS.

PHYSIOLOGY is fortunate in having a number of admirable textbooks designed for the service of medical students. Prominent among those which have found favour over a number of years are two practical class manuals, of which new editions have recently made their appearance. The senior book is HALLIBURTON'S *Essentials of Chemical Physiology*.[4] The other is *Practical Physiology*,[5] by Professor E. P. CATHCART, the late Professor NOËL PATON, and Professor M. S. PEMBREY. In both cases the new editions are significant by reason of changes in authorship.

The name of Professor Halliburton has been associated with *Essentials of Chemical Physiology* for thirty-six years, during which time eleven editions have been published. Professor Halliburton has now, however, been constrained to relinquish the full burden of authorship, and has called to his assistance Dr. J. A. HEWITT and Dr. W. ROBSON, whose names consequently appear upon the title-page. The result has naturally been a revision of the text more extensive than might otherwise have been the case. At the same time the general scheme of the book remains unchanged. A good deal of new matter has been introduced to bring some sections up to prevailing standards of medical education. The additions have, on the whole, been wisely conceived and ably executed, and the book has lost none of its authority. Of the new material that dealing with the applications of physical chemistry is the least convincing. The student is, for example, asked to mix equal volumes of decinormal acid and alkali, and to determine the *p*H of the *mixture*. The result of such an experiment in the hands of an elementary student would almost certainly be most misleading. We note an error in the *p*H attributed to decinormal sodium hydroxide; the value given is fourteen: it should be thirteen. Speaking generally, this remains the best brief textbook that we know of introducing the medical student to the minimum requirement in theoretical and practical biochemistry.

Practical Physiology has also suffered a change in authorship in its third edition through the death of Professor Noël Paton. The whole burden of revision has, consequently, fallen upon the shoulders of Professors Cathcart and Pembrey. The book is an excellent practical manual, to which each author has contributed his distinctive share. Emphasis is, throughout, placed upon the practical application of physiology to medicine, and the experimental work is so designed that as much of it as possible may be carried out upon man as the subject. The section entitled "Physiological histology" is of particular interest as a comment upon the increasing tendency for the teaching of histology to pass from the physiologist to the anatomist. The purpose of this section is to emphasize continually the functional significance of the structures which the student observes under the microscope. The section on chemical physiology covers the usual field, but does so with a lucidity and authority which is not so easy of attainment. The author has mitigated the difficulty of his task by a rather optimistic assumption of the extent of the student's knowledge of organic chemistry. We must again take exception to the unsatisfactory treatment of the subject of hydrogen-ion concentration. Authors must face the fact that few medical students have had an opportunity of understanding the theoretical basis of "*p*H," and they should attempt to meet the defect more adequately, otherwise it were better to leave the subject alone.

PREVENTIVE MEDICINE IN CHILDHOOD.

A VERY good introduction to the study of preventive medicine in the period of childhood has appeared entitled Social Hygiene for Infants and Young Children,[3] by Dr. EUGEN STRANSKY, who is an assistant in the State institution for the care of mothers and infants in Vienna. In an introduction, the director of the institution, Professor LEOPOLD MOLL, points out that the latest advances in hygiene are often buried in textbooks and periodicals where the general practitioner is unlikely to find practical advice in the confusion of pro and con arguments. This booklet, of a little over a hundred pages, represents an endeavour to give the doctor the advice he needs in order to apply the latest advances to his patients. The three parts deal respectively with the newly born, the infant, and the young child, and in each case the author sets out first the causes of mortality and morbidity at the different age periods and the way in which these causes can be dealt with and the statistical rates improved. Such disorders as intracranial haemorrhage in the newly born are well described from the preventive point of view, and in the second and third parts the prophylaxis of tuberculosis is clearly set out in light of recent work such as that of Calmette and his *B.C.G.* vaccine. The various acute infectious fevers are dealt with and details are given about the application of the Schick and Dick tests and the production of active immunity, while there is a very good account of "hospitalization" and its dangers for children of different ages.

NOTES ON BOOKS.

THE fifth edition of *Recent Advances in Medicine*,[2] by Dr. G. E. BEAUMONT and Professor E. C. DODDS, appears little more than a year after the fourth, and, without being materially increased in size, it has been brought up to date throughout. This has been effected by omitting certain sections—a wise plan, because some of the material in the first edition can no longer justifiably be called recent. Among the new matter is an excellent section on nephritis, which gives a very good clinical classification of the various types and correlates them with the biochemical findings. To complete this section the authors might perhaps devote space in the next edition to

[4] *The Essentials of Chemical Physiology*. By W. D. Halliburton, M.D., LL.D., F.R.S., J. A. Hewitt, Ph.D., D.Sc., and W. Robson, Ph.D., D.Sc. Twelfth edition. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. xi + 383; 55 figures. 9s.)

[5] *Practical Physiology*. By E. P. Cathcart, M.D., D.Sc., F.R.S., D. Noël Paton, M.D., LL.D., F.R.S., and M. S. Pembrey, M.D., F.R.S. Third edition. London: E. Arnold and Co. 1929. (Demy 8vo, pp. xvi + 573, 256 figures. 18s. net.)

[3] *Sozialhygiene im Säuglings- und Kleinkindesalter*. Von Eugen Stransky. Mit einem Vorwort von Hofrat Professor Dr. Leopold Moll. Leipzig und Wien: F. Deuticke. 1929. (Sup. roy. 8vo, pp. vi + 129; 6 figures. M.8.)

[2] *Recent Advances in Medicine*. By G. E. Beaumont, M.A., D.M.Oxon., F.R.C.P., D.P.H.Lond., and E. C. Dodds, M.D., Ph.D., B.Sc., M.R.C.P.Lond. Fifth edition. London: J. and A. Churchill. 1929. (8½ x 5½, pp. xiv + 442; 53 figures. 12s. 6d.)

the theories of the causation of uraemia. The section on diabetes and diabetic coma is fully up to date, and the account of the latter is one of the best of its kind in modern medical literature. The fifty pages on methods of blood and urine analysis have been carefully revised in the light of recent work. With this edition "Beaumont and Dodds" will undoubtedly continue the popularity it has justly won.

Mr. ERIC A. CROOK has managed to condense a great deal of the information to be found in the large manuals—such as Whitman's or Jones and Lovett's *Orthopaedic Surgery*—into the 228 diminutive pages of his book[10] in the Students' Aids Series. Its appearance is a sign of the great importance which orthopaedic surgery has attained in the present century. In such a small work it is not possible to give more than the essential facts, but we may hope that by it the reader will be stimulated to seek for more in larger works, and, better still, in orthopaedic clinics. Ultimately skill in orthopaedics can be acquired only by observation and practice. It may be easy to describe the manipulations necessary for the reduction of a congenital dislocation of the hip, but it is only by seeing and feeling and trying for himself that the surgeon can learn to carry out these manipulations successfully. The work contains few illustrations, but they are better than none; there are necessarily no reproductions of radiograms, which are of such importance and so illuminating to the orthopaedic surgeon.

If the claims of the authors, Messrs. SORRIN and MILLER, be well founded, the publication of *The Practice of Periodontia*[11] should prove a landmark in the history of "pyorrhoea." By the use of sodium sulphide the epithelium of the pockets is destroyed, and by pressing the raw connective tissue surface against the roots of the teeth, already scaled and cleaned, till clotting blood has formed a bond of union, an opportunity is given for fresh cementum and periodontal attachment to form, and later for new alveolar bone to be built up round the teeth. Besides the usual scaling and cleaning, the preliminary measures include treatment of "traumatic occlusion." To this the authors devote considerable attention, but we cannot gather what it is nor how it acts. Nor are the *x*-ray pictures purporting to show regeneration of bone very convincing. The claim, however, is made by men who are obviously thorough in their work and have a wide experience, and should lead others to put it to the test. The experience of the authors leads them to assert that elimination of pyorrhoea often cures eye troubles, rheumatism, sciatica, constipation, etc.

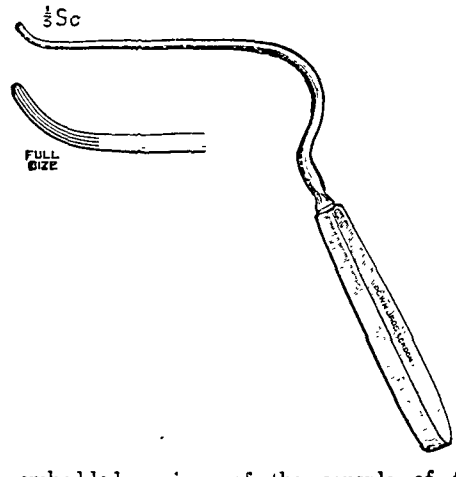
[10] *Aids to Orthopaedic Surgery.* By Eric A. Crook, M.Ch.Oxon., F.R.C.S.Eng. Students' Aids Series. London: Baillière, Tindall and Cox. 1929. (Pott 8vo, pp. viii + 232; 17 figures. 3s. 6d. net.)

[11] *The Practice of Periodontia.* By Sidney Sorrin, D.D.S., and Samuel Charles Miller, D.D.S. New York: The Macmillan Company; London: Macmillan and Co., Ltd. (Post 8vo, pp. xv + 160; 122 figures. 15s. net.)

PREPARATIONS AND APPLIANCES.

A TONSIL PRESSOR.

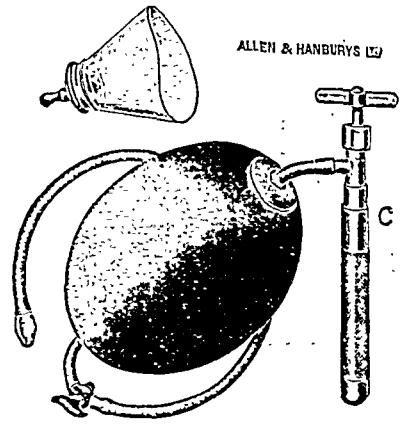
MR. HERBERT TILLEY, F.R.C.S., writes: It is a common experience to find that a healthy-looking tonsil contains septic material in the depths of its crypts, and that this can only be made to exude on the surface of the tonsil by pressure on



the outer, embedded regions of the capsule of the gland. Messrs. Down Bros. have made for me this very convenient instrument which enables such pressure to be applied without obstructing the view of the surgeon. If some cotton-wool be wound tightly round the curved terminal of the instrument, considerable pressure may be exerted without damaging the overlying mucous membrane or causing much discomfort to the patient.

PORTABLE OXYGEN INHALING APPARATUS.

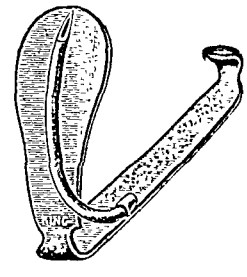
Dr. L. S. T. BURRELL (physician to the Brompton Hospital and the Royal Free Hospital) writes: Patients who find relief from oxygen inhalations have complained of the inconvenience



of the large oxygen cylinder when they are travelling. In order to meet with this difficulty, Messrs. Allen and Hanburys Ltd. (Wigmore Street, London, W.1) have made for me a small portable apparatus, which is depicted in the accompanying illustration.

A TONGUE BLADE FOR ANAESTHESIA.

Dr. V. EADES VESSELL (anaesthetist, Royal Northern Hospital) writes: When introducing the Boyle-Davis gag, trouble is frequently experienced in manipulating the tongue into correct position. The accompanying tongue blade has been designed to overcome this difficulty. In addition, the anaesthetic tube is carried to the end of the blade, instead of terminating half-way, as is customary, thus giving a true endo-pharyngeal anaesthesia, and the supply of anaesthetic or oxygen is not impeded by swabbing or haemorrhage. The terminal portion of the blade, being more sharply curved than usual, draws the base of the tongue forwards. This blade has been made to my design by Messrs. A. Charles King, Ltd., 34, Devonshire Street, W.



DANGEROUS DRUGS REGULATIONS.

Appointment of Dental Tribunals.

THE Home Secretary gives notice that, in pursuance of the Dangerous Drugs (Consolidation) Regulations, 1928, he has appointed two dental tribunals—one for England and Wales and one for Scotland—to which, as occasion arises, may be referred for examination and consideration any case in which there is, in his opinion, reason to think that a dentist may be administering any of the drugs to which the Regulations apply, either to himself or to any other person, otherwise than as required for purposes of dental treatment.

The appointment of the tribunal is an extension to dentists of the system already adopted with regard to medical practitioners on the recommendation of the Departmental Committee on Morphine and Heroin Addiction in paras. 65-75 of its report issued in January, 1926.

England and Wales.

Mr. W. H. Dolamore, M.R.C.S., L.D.S. (Chairman), nominated by the Dental Board of the United Kingdom; Mr. E. C. Sprawson, *M.C.*, M.R.C.S., L.R.C.P., L.D.S., nominated by the General Medical Council; and Mr. N. G. Bennett, M.B., B.Ch., M.R.C.S., L.R.C.P., L.D.S., nominated by the British Dental Association, or Mr. F. Butterfield, nominated by the Incorporated Dental Association; with Mr. E. Percival Clarke, K.C., as legal assessor.

Scotland.

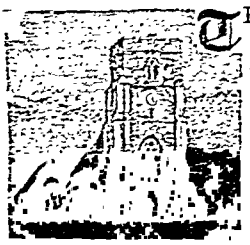
Mr. W. Guy, F.R.C.S., L.D.S. (Chairman), nominated by the Dental Board of the United Kingdom; Mr. J. H. Gibbs, F.R.C.S.Ed., L.R.F.P.S. L.D.S., nominated by the General Medical Council; and Mr. W. Graham Campbell, M.B., C.M., L.D.S., nominated by the British Dental Association, or Mr. G. Hogg Patterson, nominated by the Incorporated Dental Association; with Mr. John Cowan, K.C., as legal assessor.

THE MEMORIAL TO WILLIAM HARVEY.

BY

SIR JOHN ROSE BRADFORD, K.C.M.G., M.D., F.R.S.,

PRESIDENT OF THE ROYAL COLLEGE OF PHYSICIANS.



HEMPSTEAD CHURCH BEFORE 1832.

THE appeal that will very shortly be issued, and of which a preliminary announcement was made in the columns of the *British Medical Journal* of December 7th, 1929 (p. 1072), will give the medical profession a unique opportunity of providing a suitable memorial of a striking character to one of the greatest of men.

The medical profession is obviously peculiarly qualified to appreciate the magnitude of Harvey's work, because Harvey not only laid the foundations of medicine as a science, and indicated with the utmost clearness the path that should be followed by his successors if real progress was to be made, but he accomplished much more than this owing to his wide range of vision and the far-reaching character of his work. It may be truly asserted that Harvey's method not only marked the birth of physiology, but that it was, and still is, largely responsible for the progress and development of the biological sciences as a whole. Harvey's method and discoveries were what are spoken of as fundamental, and the method of Harvey is in daily use by all investigators at the present time, whatever their special aims may be. The fundamental nature of his method and discoveries makes his work much more readily appreciable by those who study the natural sciences than by the world at large; and hence the great public, although they may recognize that Harvey discovered the circulation of the blood, can scarcely be expected to realize the true magnitude and quality of his patient and unremitting investigations. It is perhaps peculiarly fitting, therefore, that those who know—that is, the medical profession—should rebuild a tower that will be visible to all. It may be that in years to come the tower of this ancient church of Hempstead, in Essex, will be known as the Harvey Tower, and this tower will not only commemorate Harvey and his work, but it will also be a token of the esteem and admiration with which Harvey's work is regarded by those best qualified to judge its real value.

Some worthy memorials of Harvey are in existence—several notable portraits, a statue, etc. From these we get some information as to the man himself; but the present proposal is for something somewhat different. It is rather that a great profession should try to express in a suitable form its sense of the greatness of Harvey. Surely a tower to the memory of William Harvey, in the church in which his mortal remains lie entombed in the Harvey Chapel, must commend itself to many as singularly appropriate.

The success of such an appeal as that of the Harvey Memorial Committee will be assured if individual members of our profession will take a personal interest in furthering the scheme, and realize that the occasion is exceptional, in that the collapse and ruin of this church tower has given the medical profession the opportunity of providing a lasting memorial not unworthy of the great man and of the profession of medicine, to which he was so greatly attached.

Donations towards the rebuilding of Hempstead Church tower should be made payable to the Harvey Memorial Fund, and may be sent to Dr. Arnold Stott (58, Harley Street, W.1), who is acting as joint honorary secretary with the Vicar of Hempstead.

A HOSPITAL SURVEY OF GREAT BRITAIN.

GROWING STRENGTH OF THE VOLUNTARY PRINCIPLE.

THAT "Whitaker" of the hospital world, *The Voluntary Hospitals of Great Britain*,[1] appears for the tenth year with numerous tables and analyses showing the position in England and Wales (outside London) and in Scotland in 1928. So effective is the survey that out of a total of 792 voluntary hospitals information has been secured from 759, representing a total of just upon 50,000 available beds. A really wonderful position is disclosed with regard to finance, especially when the fact is taken into account that continued heavy taxation must necessarily to some extent restrain benevolence, and, moreover, that hospitals have to meet increasing demands owing to the progress of medical knowledge and the introduction of new methods of treatment. The sum of £9,604,541 was raised during the year, and £8,199,844 was expended on maintenance and development, leaving a larger credit balance than in any of the previous four years for which figures are given. The totals would be more impressive if the figures for London—the domain of King Edward's Hospital Fund—were included. This is provincial achievement.

Services rendered by Hospitals.

The services which these hospitals rendered to the public are indicated in the simplest way by the statement that the new in-patients during the year numbered 775,425, and the new out-patients over three million, a figure which should be multiplied by at least three to give the total of attendances. This is above the average annual increase. In 616 hospitals the number of surgical operations performed under a general anæsthetic during the year was 582,310. Only 118 institutions give details of the work of their *x*-ray departments, but in these the number of radiographs taken was 416,130, the number of screen examinations was 33,477, and 93,940 *x*-ray treatments were given. In 100 hospitals giving particulars of their massage work, the total number of treatments during the year was 1,064,583. The statistics for the 14 hospitals in England and Wales (again excluding London) associated with medical schools are separately shown. The number of available beds in these is 5,152, the average number occupied daily is 4,631: new in-patients total to 97,814, an increase of 12,500 on the figure for 1924: out-patients number 635,500, an increase of 90,000 over the same period, and surgical operations 103,699.

Hospital Income and Expenditure Dissected.

Dissected figures are more instructive than these big resounding totals. In 661 hospitals which furnish complete returns the income per available bed was £150, and the expenditure £130. The following table compares the sources of income for maintenance of hospitals per bed in England and Wales and in Scotland, calculated to the nearest pound.

	England and Wales.	Scotland.
	£	£
Subscriptions	16	18
Donations, entertainments, etc.	21	12
Workmen's contributions and contributory schemes	39	22
Congregational collections ...	4	3
Patients' payments	29	10
Public services	9	6
Interest from investments ...	19	31
Other receipts	1	2
Extraordinary income	19	23

[1] Published by the Central Bureau of Hospital Information, under the auspices of the British Hospitals Association and the Joint Council of the Order of St. John and the British Red Cross Society. Price 1s. net; 1s. 5d. post free.

Co-operation between the voluntary hospitals and public authorities appears, from the increase in money received, to be most marked in respect to infant welfare, where the total sum has doubled since 1924, and to school children, where it has increased by one-third. The income received from public services is highest under the heading of national health insurance; venereal diseases comes next, and after this, infant welfare and maternity work, and tuberculosis schemes. Patients' contributions are a steadily rising figure, from £17 per available bed in 1924, to £20 in 1928. Workmen's contributions (including the Hospital Saturday Fund) have also risen during the same period from £34 to £39. Subscriptions have fallen slightly, but testamentary benevolence shows a remarkable increase in England and Wales, though not in Scotland. The amount received by legacy has risen by rapid stages from £576,337 in 1924 to £954,463 in 1928.

The expenditure of hospitals per available bed is shown in the following table:

	England and Wales.	Scotland.
	£	£
Provisions	27	27
Surgery and dispensary	17	14
Domestic	24	21
Salaries and wages	44	41

Hospitals and their Medical Staffs.

Appendices to the review contain the results of various inquiries into hospital administration. One inquiry was made as to any restrictions imposed upon former resident medical officers against practice in the locality on the termination of their appointment. Of 52 hospitals replying, 44 had no such restrictive clause nor contemplated any; one was considering the matter, and seven had restrictions against practice, the radius from the hospital varying from two to ten miles, and the period from six months to five years. Particulars have also been obtained as to the position of the resident medical and surgical staffs in representative hospitals having from 150 to 250 available beds. Of the 23 hospitals giving such particulars, 13 appoint resident officers to posts of rather greater responsibility than the ordinary "house man," and generally for rather longer periods. Practice with regard to operative work varies within very wide limits.

Another matter for detailed inquiry has been the question of payment to honorary medical staffs out of contributory funds. The 244 hospitals in England and Wales which replied showed the following position:

Size of hospital.	No payment.	Payment.
100 and more beds	79	6
30 to 99 beds	81	3
Under 30 beds	63	12

None of the 14 hospitals in Scotland receiving income from this source and replying to the questions made any payment. It appears that, generally speaking, the contributions to the newer and definite contributory schemes are higher than those made in the older organized workmen's collections. It is a common practice in cottage hospitals for medical officers to charge fees to the patients. Some of the schemes are intended only to cover cost of maintenance when in hospital, and the practice of payment by the patient to the doctor of fees for treatment is recognized. Again, several hospitals which are staffed by general practitioners in the area who are also insurance practitioners infer that the doctors have already been paid for their services as insurance practitioners, owing to the majority of the patients being insured persons. Hospitals where no payment is made at present out of contributory funds to the honorary medical staff were asked for an expression of local opinion, medical and lay. The answers given are various, but on the whole the "noes" have it, both on the lay and medical side. Here and there, it is stated, such a scheme is viewed with favour by the younger members of the medical staff.

One other matter of topical interest is brought out in this compilation. Motor accidents in 1928 necessitated additional hospital expenditure to the amount of £250,000, a bare tenth of which was recovered either directly or from compensation money. That indefensible anomaly, we may hope, will soon be redressed.

Nova et Vetera.

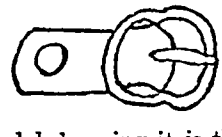
A HISTORIC FOREIGN BODY.

IN the electorate of Brandenburg the succession to the throne had for some time been doubtful; and a pity this was, for never before had the succession been so important. The ruler's father, Kurfürst Friedrich Wilhelm, the great elector, had raised the State to a position it had never attained before. "He found Brandenburg annihilated, and he left Brandenburg sound and flourishing; a great country, or already on the way towards greatness"[1]; and now the new elector is struggling "very hard, if not very wisely, to make his existence beautiful—to make it magnificent at least, and regardless of expense."[2] He was "crooked-backed, with his back half-broken." "The Nurse, in one of those headlong journeys which his Father and Mother were always making, let the poor child fall or jerk backward; and spoiled him much, and indeed was thought to have killed him, by that piece of inattention."[3] He is now filling his court with "*Kammerjunker, Kammerherrn*, Goldsticks, Silversticks, and the other solemn histrionic functionaries,"[4] and later is to achieve kingship as Friedrich I, and "the old electorate of Brandenburg is to become the kingdom of Prussia."[5]

And to all this the succession depended upon one small boy. As Kur-Prinz the elector had married a princess of Hessen-Cassel, who did not live long. "That poor young wife, when dying, exacted a promise from Prince Friedrich that he would not wed again, but be content with the daughter she had left him; which promise, if ever seriously given, could not be kept," and "Prince Friedrich brought his Sophie Charlotte home about fifteen months after"[6]—whence the name Charlottenburg. She gave birth to a son who died, and then to another, Friedrich Wilhelm, who in the year 1692 is a sturdy child of 4, with all the hopes of the head of the house centred on him, no other son having followed. True, the elector has half-brothers, but these he did not want to succeed, for he had never got on with his stepmother the electress Dorothee—whence Dorotheen-strasse. Suddenly one day there is great commotion in the palace—the Kur-Prinz has swallowed his shoe-buckle. But Carlyle must tell the story.

"At a very early stage, he, one morning while the nurses were dressing him, took to investigating one of his shoe-buckles; would, in spite of remonstrances, slobber it about in his mouth; and at length swallowed it down—beyond mistake; and the whole world cannot get it up! Whereupon, wild wail of nurses; and his 'Mother came screaming,' poor mother:—it is the same small shoe-buckle which is still shown, with a ticket and date to it, '31 December 1692,' in the Berlin *Kunstkammer*; for it turned out harmless, after all the screaming; and a few grains of rhubarb restored it safely to the light of day; henceforth a thrice-memorable shoe-buckle."[7]

And there it still is shown, no longer in a Kunstkammer, but in the Hohenzollern museum at the Château of Monbijon, in Room 35, in which are the table and chairs and old clay pipes of the Tobacco Parliament (Tabacs Collegium) from Wusterhausen. It has no longer the date



on the ticket, but a label saying it is the buckle swallowed by Friedrich Wilhelm I in his fifth year—a small silver buckle without sharp points, quite harmless to any child of 4 once it has passed the larynx and is not interfered with except by "a few grains of rhubarb." It is about one inch long with the prong well protected by lying against the loop, and at the other end a round knob wherewith to fix it to the strap—a very ordinary buckle, but had it not passed the larynx no Frederick the Great might have been begotten and the history of Europe would have been changed.

T. B. LAYTON.

[1] Carlyle's *Frederick the Great*, vol. I, People's Edition, p. 241. [2] Ibid., p. 19. [3] Ibid., p. 263. [4] Ibid., p. 284. [5] Ibid., p. 138. [6] Ibid., p. 41.

British Medical Journal.

SATURDAY, JANUARY 4TH, 1930.

CLINICAL ASPECTS OF PAIN.

To the practitioner of medicine pain presents itself in a very practical fashion; it creates a situation which demands attention and will not brook delay. Neither the doctor nor the victim, at least for the moment, is interested in speculations about the protective value of pain or about the part it has played in the evolution of the race; and, equally, disquisitions dealing with the benefit of pain as an instrument of moral discipline or with its philosophical meaning are, at such times, mere impertinent and even irritating irrelevancies. Upon all these aspects of pain much has been said and written from the comfortable shelter of the easy chair. Yet when put to the question by toothache not even a philosopher can endure it patiently. Relief is the demand of the sufferer, not dissertations, and to this demand the doctor must needs apply himself, although in doing so he has to remember a wider claim. For, of course, behind pain is a cause, and it may well be that to detect and to remove this cause is the only abiding method of securing relief. In short, pain as a clinical event asks both for diagnostic interpretation and for a scheme of effective treatment. The patient naturally insists on alleviation or deliverance, but, while giving this cry the consideration which it merits, the doctor cannot forget that pain may be an outward expression of serious mischiefs which it is for him to discover, and if possible to avert.

It is with a full recognition of these practical ends that Professor Edwin Bramwell, in a lecture printed in our present issue at page 1, discusses pain as a form of disturbance which has to be judged and to be treated by the physician. His long and special experience enables him to speak on the basis of first-hand knowledge and personal observation, and it is appropriate, in view of his family and academic tradition, that he should address his colleagues from the clinical platform. The subject, be it admitted, does not allow either clear-cut definitions or rigid classifications, nor is it one for which a short and certain guide to diagnostic and therapeutic success can readily be constructed. Yet pain as a fact has to be met at the bedside, and thus it is important that those who have given special thought to the issues which it raises should make what contribution they can to the common stock.

When, as frequently happens, pain is associated with physical evidences of disease, there is little difficulty, at least on the plane of practical affairs. Discussion on the nervous structures and pathways involved is a possible exercise, but it concerns, at least in the first place, the physiological classroom rather than the bedside. A symptom which may mean disease, and a physical fact which must mean disease, form a combination that leaves little room for hesitation either in opinion or in action. Somewhat less decisive, though often convincing enough, are pains which in degree and in distribution follow well-recognized traditional lines—as, for example, the pains of angina pectoris and of renal colic. In these the pain may well have features which justify both diagnosis and treatment without any support from physical examination. There is a substantial body of clinical experience to justify this position, though this is not to say that the individual picture is always well defined or that it is invariably a genuine one. It is when pain is neither accompanied by physical signs of organic change, nor marked by characters which compel its identification, that the greatest diagnostic difficulty arises, and to this group of cases Professor Bramwell pays special attention.

On the threshold is the question, Is the pain a real experience, or is it simulated by the patient? The doubt often arises when a claim for compensation is in issue; and while, on the one hand, it is a serious matter to charge a plaintiff with malingering, on the other it is unpleasant to be duped. A negative clinical examination carries much value, and negative skiagrams go to strengthen the conclusion. Do they, however, even in combination, close the debate? Room for dealing diplomatically with this question may be found in a recent discussion at the Medical Society of London, and reported in our issue of December 21st, 1929 (p. 1157). Here is convincing evidence that after violence applied to the skull apparent and satisfactory recovery may be followed by such symptoms as headache, vertigo, and minor mental disturbances, while through the whole story physical signs are entirely absent. The damage, whatever it may be, has been there throughout; it allows convalescence, though causing disturbance later; and it cannot be found on examination. How difficult it is to affirm, in view of such experiences, that negative results to clinical tests prove that the patient's complainings are without justification! If this is true of violence affecting the brain, a similar development may at least be suggested in relation to the spinal cord (the "railway spine" of a former day), and the pain in the back which has multiplied under the Workmen's Compensation Act becomes more and more difficult to label confidently as unreal and assumed. While, however, such problems arise in relation to technical medical evidence, the detection of the malingerer is, after all, not seriously affected. For though this depends negatively on the absence of physical signs of injury, it depends positively on evidence convicting the patient of falsehood or exaggeration or inconsistency. The medical practitioner may well chance upon such evidence, although more commonly the pretence is detected when the malingerer is off his guard and is watched unknown to himself. In brief, the wilfully assumed pain, though hard to denounce on strictly medical grounds, ought not to escape shrewd and careful observation.

From the pain which is "pretended" to the pain which is "imagined" may seem to be a change of name without a change of substance. Nevertheless the distinction is drawn, and not without justification. Indeed, the establishment of it is part of a movement which asserts that the clinical picture of a patient is incomplete if it includes only a bald record of his illnesses and a statement of physical facts as these are observed by the physician. The whole man must be surveyed and estimated, and this not merely as a physiological apparatus, but also as a unit having an individual psychological quality and significance. Many studies are emphasizing this aspect of clinical medicine, and are attempting to systematize and to extend what in some fashion has doubtless been followed empirically and within limits by many practitioners who have been psychologists without knowing it. Among the consequences of this development is a recognition of the possibility of "psychogenic" pain, and the name may be welcome alike to practitioner and to patient. Professor Bramwell has

contributed to this enlargement in the range of clinical observation, and his present quotations from his own case-records can be studied with interest and advantage. They enforce two lessons. The first is that in a very difficult group of cases all is not said when physical examination yields no positive result; and the second, that the practitioner who would be effective in dealing with these patients must cultivate the capacity to estimate the quality of the individual, as well as to gauge the integrity of the anatomical machinery. Pain apart from organic disease may be a very real experience, and the ways of meeting this situation ought to be part of the practitioner's therapeutic equipment. Help to this end will be found in Professor Bramwell's lecture.

THE CANCER PROBLEM IN 1929.

How much nearer has 1929 brought us to a solution of the problems of cancer? It may well be that many who ask this question would derive but small satisfaction from a correct answer—even if it were possible to find one. Anxiety breeds impatience, and to impatient people a year is a very long time. Life is short, says the public; but art is long, add those who are engaged in the scientific study of disease. In cancer research a year's duration may be said to vary; time may gallop, or it may dawdle. During the past twelve months it appears to have trotted steadily forward.

Perhaps the chief contribution in 1929 to the treatment and study of cancer has been the creation of the National Radium Fund, and the subsequent establishment of the National Radium Trust and the National Radium Commission. Leading to these events there had been an intensive propaganda for increasing the nation's radium supply; and, among the leading authorities on cancer, a general agreement had been reached that the public had been denied a valuable form of treatment because the available supplies of radium were insufficient for the country's needs. Side by side with this reasoned propaganda was conducted a less laudable campaign, in the course of which the extravagant and unjustifiable claim was made that the time had already come for the complete supersession of excisional surgery by radium therapy. Fortunately, the balanced statements issued by the Radium Commission, and the notes of warning sounded from time to time by responsible leaders of the medical profession, in our own columns and elsewhere, have done much to quell, though perhaps not wholly to end, this campaign, which, as we have had to remark more than once during the year, has cruelly misled the public and done a great disservice to the cause of radiotherapy itself. With the radium distributed by the National Radium Commission we may hope that in the course of the next few years effective studies of both the scope and the limitations of radium therapy will be carried out in this country. So far radium has been used with most success in cancer of the uterus, rectum, bowel, breast, tongue, buccal cavity, and the skin. In the near future we may expect technical advances whereby radium will be used more effectively in the treatment of cancer of these sites, and that its application may be extended to malignant growths which up to now have been inaccessible to radium therapy. Already the National Radium Trust has placed orders for large amounts of radium, and the Commission has formulated far-reaching plans for distributing radium to those hospitals and institutions which it believes are in a position to put it to the best use. The Commission has decided to recognize as national radium centres only institutions possessing medical schools with complete clinical courses and facilities for instructing students and graduates in the principles and practice of radiotherapy. But for the benefit of hospitals and other institutions to which otherwise it could give no direct aid, it has installed a radon plant at the National Physical Laboratory so that, under proper safeguards, it may supply them with radium emanation.

Under the auspices of the British Empire Cancer Campaign investigations have been continued into the best methods of constructing and using the radium "bomb," by means of which rays from a large mass of radium, suitably screened, can be brought to bear upon malignant growths from a distance outside the body. Hitherto radium teletherapy has been but little used in this country, but with the radium bought by the National Radium Trustees it is proposed to construct several such bombs and to ascertain how they can be adapted to give the best therapeutic results, combined with the greatest economy. Towards the end of the year the Radium Commission handed over one such bomb to the authorities of Westminster Hospital, and treatment with it has already begun. The great disadvantage of radium teletherapy is that the bomb can be applied to only three patients during the time that the same amount of radium in needle form could be applied to one hundred. In the interests of economy, therefore, it will be important to use no more radium bombs than are absolutely necessary, and here it is worth noting that in the treatment of highly radio-sensitive growths (for example, lymphosarcoma and other rapidly growing tumours) teletherapy with hard x rays may be as effective as treatment by the radium bomb, or even more effective. In some cases x rays alone may cause complete disappearance of a malignant growth, in others a combination of x rays and radium may give better results than either of these devices alone. Some measure of success has already been achieved by employing the combined method in the treatment of cancer of the cervix, radium being applied to the local growth and x rays to the gland areas. In treating cancer at this site x rays alone have proved insufficient, a tendency to recurrence having been observed in the primary lesion. During the year the so-called stimulation effect of small and repeated doses of x rays has been studied in animals, but so far it has not been possible to verify the hypothesis that under-dosage quickens rather than retards the growth.

It is too early yet to assess the value of the work on cancer that has been done during the year under the auspices of the Medical Research Council, the Imperial Cancer Research Fund, the British Empire Cancer Campaign, the Manchester, Leeds, and other local cancer committees—to mention but a few of the organizations engaged in cancer research. The war on malignant disease is being waged along a wide front; dramatic advances are few; and perhaps the most substantial inroads into the enemy territory will be made by summation of small advances. Here and there, however, it would almost seem as though a key position has been captured, as, for example, by the Manchester Committee, which, while studying the part played in the production of malignant growths by the lubricating oils used in cotton mills, has obtained information about the carcinogenetic power of various oils and the concentration within them of a cancer-producing principle. In the course of this research two pure compounds of known chemical

composition have been proved capable of producing tumours, and a study has been made of the factors which change a non-carcinogenic into an active carcinogenic substance. Already some of the methods employed for destroying the cancer-producing power of certain oils have proved to be effective, at least in part, and one method led to the preparation of a purified oil which, when subjected to vigorous tests, has failed altogether to produce cancerous growths. Representatives of the cotton industry, after comparing this oil with the crude untreated oil, have said that its lubricating power is unimpaired, and the Manchester Committee is therefore able to hold out the hope that before long it may be possible to put on the market an oil which fulfils the needs of industry without being a source of danger to the workers. Experiments during the year under the auspices of the British Empire Cancer Campaign have afforded evidence of the existence of antibodies having a special toxicity to cancer cells. So far, however, vaccine treatment, while it has brought about the disappearance of certain transplantable tumours, has not been so effective in the treatment of spontaneous cancer.

A striking development during 1929 has been the growth of team work in cancer research. For example, at the reconstructed Mount Vernon Hospital at Northwood in Middlesex, which is now devoted to the study of malignant diseases and their treatment, the clinical and laboratory staffs work together as a team, and the admission of patients is regulated solely according to the needs of the hospital as a centre of investigation. Perhaps the greatest mass attack that has ever been made on the problem of cancer, however, was organized during the latter part of the year, when the Council of the British Medical Association instituted an inquiry, in which all the members of the Association were invited to take part, into the incidence of cancer and its history after treatment. This collective inquiry, which is now proceeding, is limited to cancer of the breast, rectum, cervix, and tongue, and its aim is to gather information about the previous history of patients, the evolution of the disease itself, the nature and results of whatever treatment is undertaken, and the duration of the disease, both when treated and when untreated. These are matters about which the general practitioner is better fitted to supply reliable information than anyone else; but we do not pretend that the ultimate solution of the problems of cancer will necessarily come from him, any more than it will from the surgeon, the physicist, the biochemist, the pathologist, or the radiologist. The need of the moment is for the closest co-operation between all these workers, and if we may venture on a prophecy we would suggest that the near future will see the formation of more and more teams comprising representatives of all these groups, who will together tackle problems which none of them may ever hope to solve separately.

THE TRAFFIC IN DANGEROUS DRUGS.

Public attention has been directed of late to the traffic in dangerous drugs and the efforts to secure its international control from many different points of view. The Women's International League, on November 13th, 1929, devoted a whole day to conferences on the subject, at which the problem was discussed from the Indian, Chinese, and Egyptian aspects, as well as from that of the League of Nations. At the Medico-Legal Society, on November 28th, Mr. Llewellyn Jones, M.P., contributed a paper which recited the labours of the International Opium Conferences at the Hague in 1911–12 and Geneva in 1924–25, the conventions issuing from these conferences, and the legislation based thereon in this country, known as the Dangerous Drugs Acts, 1920–25. In some quarters it has been argued that the appalling excess of production of dangerous drugs over any legitimate requirement is only likely to be remedied by making their manufacture a Government monopoly, a view that is apparently held by Viscount Cecil, Professor Noel Baker, M.P., and Mr. L. A. Lyall, president of the Central Opium Board of the League of Nations. It is at least arguable whether the experience of Government monopolies in India, Singapore, and Hong-Kong has been uniformly successful in reducing the consumption of opium, while the revenue derived from such commerce is not without its bearing on a policy of restriction or suppression. Mr. Lyall recently called attention to the fact that in the Straits Settlements, where one-third of the revenue is derived from opium, "the vast majority of opium smokers learned to smoke opium by buying it from a Government that had given a solemn international pledge to suppress opium smoking." The president of the Central Opium Board of the League of Nations regrets the "whittling down" of the provisions of the Hague Convention of 1912 in regard to smoking opium by the more recent Geneva Convention of 1925. It is good to know that the president of the Board is convinced that "there is only one way to stop the illicit traffic, and that is to stop the surplus of drugs that is being produced throughout the world," a conclusion and a policy that have been consistently set forth for more than a decade by this *Journal*. Professor Noel Baker, M.P., a delegate to last year's assembly of the League of Nations, has stated that the League is aware that "the smuggling and distribution is carried on by a great international gang who have a stupendous capital behind them," while the exposures of the Naarden factory in the Netherlands last year and the more recent revelation of enormous exports of dangerous drugs from Switzerland to Egypt bear witness to the fact that smuggling of narcotics is no less prevalent in the West than it is in the East.

STANDARDIZATION OF CINCHONA FEBRIFUGE.

THE provision of an efficient cinchona preparation at the lowest possible price is of great importance for antimalarial work amongst the natives of tropical countries. Most white populations can afford quinine salts, but their cost is prohibitive to the vast poverty-stricken populations in the tropics, who are the chief sufferers from this disease. Some of the difficulties associated with the production of cinchona febrifuge are indicated in a short article recently published by Mr. D. Hooper.[1] The Indian Government, which has produced this febrifuge for fifty years, though always regarding it as a by-product in the manufacture of quinine, originally planted *Cinchona succirubra*, which produces "red bark." This tree is easily grown and produces a heavy yield of bark, but the bark contains relatively little quinine and a large quantity of amorphous alkaloids. It is therefore suitable for the production of febrifuge, but is much inferior to other species for the production of quinine. The Dutch Government in Java adopted the policy of producing the largest possible amount of quinine, and ignored the other alkaloids. In pursuance of this policy it developed varieties of *C. ledgeriana* and its hybrids which, though not such sturdy growers as *C. succirubra*, produced barks containing a high percentage of quinine. The Indian Government followed the example of the Dutch, but continued to produce a cinchona febrifuge. The new febrifuge, however, being made from a different raw material, differs from the original in composition. Febrifuge

[1] On the Standardization of Cinchona Febrifuge. By David Hooper. *Quarterly Journal of Pharmacy and Pharmacology*, ii, 185, 1929.

made from the red bark contained the alkaloids in the following proportion: cinchonidine 40, cinchonine 30, quinine 20, and amorphous alkaloids 10. Recent samples of febrifuge, however, contain larger proportions of amorphous alkaloids and considerable quantities of quinidine. The composition of the samples suggests that they have been made from the residual liquors of Ledger bark from which the quinine has been extracted. As far as is known the various alkaloids of cinchona have an approximately equal antimalarial action, and hence one form of febrifuge may be as good as another. If, however, cinchona febrifuge is to be recognized as an official medicine it must conform to some definite standard, for otherwise it is impossible to guard against wholesale adulteration. For the adoption of such a standard the present time, while the *British Pharmacopoeia* is undergoing revision, is particularly favourable, but as a first step it is important to estimate the relative efficacy of the individual cinchona alkaloids and of various mixtures of these alkaloids. Much valuable work has been done on this subject, but the problem is of such great economic importance that carefully planned investigations on a large scale should be carried out. With this pharmacological problem settled, it should then be possible for the Government plantations to decide on a policy which would produce adequate quantities of an efficient febrifuge at the lowest cost, and for the Government to arrange measures to popularize the use of such a product, and, if necessary, to subsidize its sale. It is evident that the problem is highly complex, but any reduction in the cost of efficient antimalarial remedies would confer a great benefit on the populations, not only of India, but of many tropical colonies.

OESOPHAGEAL OBSTRUCTION IN CHILDREN.

So much attention has been directed in recent years to the condition of "achalasia" of the lower end of the oesophagus that organic obstructions at other levels have perhaps been neglected. In the current number of the *Archives of Disease in Childhood*[1] Dr. Wilfrid Sheldon and Dr. Alan Ogilvie make a valuable contribution to the literature on this subject in their description of the clinical course of twelve cases of obstruction of the oesophagus, with pathological reports on four out of five fatal cases. The condition of complete atresia of the oesophagus met with during the first few days of life has been excluded, as has also the acquired type of stenosis following upon the ingestion of caustics. Of the twelve cases discussed, [illegible] showed evidence of obstruction at the level of the [illegible]nth thoracic vertebra, and the remaining two at the level of the diaphragm. The first group contained eight boys and two girls, and in all cases symptoms arose during the first year of life. Vomiting was the most prominent symptom, and dated from birth in seven out of the ten cases. This vomiting was generally effortless, and occurred during or directly after a meal; it was also subject to periodic bouts of exacerbation, and produced stunting of growth and constipation. X-ray examination in all these cases showed that the obstruction was well above the dome of the diaphragm, and seemed to lie about half-way between the bifurcation of the trachea and the cardia. From a general consideration of this situation of the obstruction and of certain pathological data, it is deduced that the most likely explanation of the obstruction is a congenital narrowing of the oesophagus, with possibly some secondary spasmodic element. The condition is probably cured by gradual growth of the parts, a process which is paralleled by the recovery from congenital laryngeal stridor. It is emphasized that in this state of affairs attempts at dilatation will only do harm, and the passage of bougies may actually convert a simple narrowing into a fibrous stricture. The correct line of treatment seems to be the institution of a fluid diet to carry the child on until the growth of the parts renders a solid diet possible. The second group of cases comprised two fatal instances of obstruction at the level of the diaphragm. In these vomiting had also occurred from birth, and varied in its severity from time to time. At both necropsies narrowing of the oesophagus was found, and in one of the cases where bougies had been used in an attempt to dilate the stricture fibrosis was also present in the wall of the oesophagus. After describing these twelve cases, and emphasizing the practical point that in making an *x*-ray examination a solid rather than an opaque meal should be employed, the authors discuss briefly the subject of cardiospasm or achalasia in childhood. They summarize the literature, and point out that some of the cases described in their paper had been originally regarded as examples of cardiospasm. Their verdict is that there is no conclusive evidence that achalasia of the cardia occurs in infancy, although it does rarely appear in later years of childhood. It is important that the distinction made in this paper should be clearly understood, for, as the authors rightly emphasize, the application of the bougie treatment, suitable for cases of achalasia, may do much harm if the condition is congenital narrowing of the oesophagus.

[1] *Archives of Disease in Childhood*, vol. iv, No. 24, December, 1929. Published by the British Medical Association. 4s. 6d.; yearly subscription 25s.

THE PROGENY OF SHERLOCK HOLMES.

THE birth rate is falling, and we are said to be within measurable distance of a stationary population; not so, however, among the spiritual offspring of Sherlock Holmes, whose fertility, judging from this season's publishers' announcements, far from abating, seems to be on an ever-steeper upward grade. Some allowance must be made, indeed, for the control exercised upon the detective population by a public growing in fastidiousness as it increases in sophistication. So exacting are the demands this public makes on its detectives that soon all but the most skilled among them may be forced into retirement or, at best, to move into another world, the world of sensational fiction, where he-men are he-men, and an unerring aim is of greater survival value than "the little grey cells." Even to-day there are signs that from the apparently undifferentiated mass of police novels there are emerging two quite separate evolutionary streams, the one tending towards a literature of growing intellectual complexity, the other towards a more lively literature of swiftly moving incident. Both of these classes are likely to appeal to a large public, for each fulfils certain clearly defined psychological needs, different indeed in their origins and manifestations and in their relative intensity among different individuals, but alike in seeking gratification in ways that are simple and socially permissible. Stated broadly, these needs are for intellectual certainty and for excitement and danger, and in so far as, speaking generally, those persons who feel the one need are little troubled by the other, the tendency in detective literature will be to produce fewer and fewer hybrids, but gradually to breed two distinct homozygotic strains, the one carrying the quality of logical analysis, the other of romance and adventure. To the former will turn persons given to philosophic speculation: indeed, so extensive already is the literature of almost pure detection that even now the intelligentsia forms a large part of the detective-story reading public. Bewildered by the mysteries of the universe, which have a way of becoming more complex with every fresh discovery of science; finding in even the simplest problem elements to baffle the mind; knowing so much and understanding so little; forced by their own philosophic conceptions to doubt even the evidence of their own senses—men and women of this class seek relief in a kind of problem for which they

know beforehand that a satisfactory solution will be forthcoming. The intellectual reader of detective tales does not ask for romance and adventure; he finds more than enough romance in a single atom; his adventure is of the spirit. He asks simply for nuts to crack, the harder the better, and he imposes upon the author but one restriction: that he shall be impartial between detective and reader, and give no help to the former that he denies to the latter. The story of pure analysis is valuable in affording brief respite from the philosophic perplexities which otherwise distract the mind and torture the spirit. The doctor, it may be supposed, belongs to the class of intelligentsia, but in the detective story he finds the added attraction that many of its problems are medico-legal in essence. Dr. Watson never mastered the methods of his great colleague, but to-day Dr. Thorndyke tackles and solves some of the most ingeniously conceived problems to be found in the whole range of detective fiction. Readers of the pure "thriller," unlike those of the detective story, ask for no problems to solve; they ask simply for some way of escape from the deadly security imposed on them by a well-ordered society. Their need is for a succession of hairbreadth escapes, and in the stories they favour, the element of detection, if present at all, is fortuitous and unimportant. Deep in their hearts is a thwarted desire for adventure, which, failing fulfilment in reality, demands fulfilment in fantasy. It may well be that in the capacity of the ordinary man and woman for fantasy, for identifying themselves with the characters of romance, is to be found one of the forces that make for social stability.

PREPARATION OF SCIENTIFIC PAPERS

For those who have something to say on a scientific topic, and wish to put it in good form, there is nowadays no lack of guidance. Sir Clifford Allbutt's admirable book on the composition of scientific papers[1] should be read and re-read. Though mainly concerned with words and phrases, the purpose of this little medical classic is "literary only so far as to insist on the qualities of precision, clearness, and definition." The would-be medical author's education is incomplete until he has digested Allbutt's *Notes*. Much good advice, technical and general, will be found also in a book by Dr. G. H. Simmons and Dr. Maurice Fishbein,[2] which presents the fruit of long experience in the editing of medical periodicals. There is also Mrs. M. H. Mellish-Wilson's small manual on the preparation of medical papers,[3] and Sir Humphry Rolleston's pamphlet on the writing of theses for medical degrees.[4] All these first-aid primers are, we believe, still in print, and if they were better known we should have less cause to regret the "curious disregard of the literary amenities displayed by a large number of members of the medical profession who send communications for publication." Another pamphlet, covering part of the same ground, was drawn up some years ago by the Medical Research Council with the object of persuading authors to keep the cost of publication of reports down to the lowest figure. A revised edition of these practical notes on the preparation of scientific reports has now appeared[5]; it is not being placed on sale, but a wide distribution has been made by the Council among research workers in the medical field. The advice given is based on experience gained in the production of more than 130 numbers of the Special Report Series. Before proceeding to small points of detail, the Council in this new edition urges that no effort should be spared in reducing the length of scientific papers and reports to the smallest compass consistent with clarity and effectiveness. Medical editors generally will agree with the Council that in the revision of manuscripts submitted to them a 10 to 20 per cent. reduction in length can very often be effected "by attention to arrangement of matter and by avoiding redundant or reduplicated sentences. Brevity can also be gained by using short English words in the place of longer words, often of Latin origin, or of groups of words." A string of examples to illustrate this point is given in an appendix. We are aware that clarity and brevity are not necessarily the same thing, but the scientific effect and literary form of a paper can always be improved by clearing away "the litter of idle words." Why write "a considerable amount of" when "much" is meant? Every medical author should learn to use the pruning knife. "A 10 per cent. reduction in the size of every paper would mean an equivalent gain in space for every library in the world, as well as in the time of all the readers concerned."

[1] *Notes on the Composition of Scientific Papers*. Third edition. 1923. London: Macmillan and Co., Ltd. 6s. net.
[2] *The Art and Practice of Medical Writing*. 1925. Chicago: American Medical Association (535, North Dearborn Street).
[3] *The Writing of Medical Papers*. Third edition. 1929. Philadelphia and London: W. B. Saunders Company. 7s. 6d. net.
[4] *On Writing Theses for M.B. and M.D. Degrees*. Second edition. 1925. London: John Bale, Sons and Danielsson, Ltd. 1s. net.
[5] *Notes upon the Preparation of Reports for Publication*. Revised edition. 1929. Medical Research Council (38, Old Queen Street, S.W.1).

MECHANICAL PROBLEMS OF RADIUM THERAPY.

THE comments of the coroner on a recent case, where a platinum filter (screen) containing 50 mg. of radium in a needle, which had been placed in a new growth of the nose, found its way into the lung, have attracted widespread attention to a risk which those accustomed to the handling of radium in this form have long appreciated. In the case reported the radium made its way well into the periphery of the lung so that extraction through the bronchoscope, though attempted, was found impossible. Removal through the chest wall after radiographic localization was comparatively easy, but associated with grave risks of pleural infection, from which eventually the patient died. As is customary, the head of the filter—to the eyelet of which the retaining wire was attached—was screwed into the main body containing the radium needle, the screw thread being fine and having about three turns, and it is evident that during insertion and the subsequent movements of the part, sufficient rotatory twist happened to undo the screw completely, thus detaching the body of the filter from the head and leaving it free. Accidents of a similar kind, if with less serious results, have been known to occur in other cases; and it is very necessary, therefore, to reconsider the whole technique of the use of radium needles and tubes. The methods commonly employed in treatment by radium are: (*a*) superficial application by special plaques, a method confined almost entirely to dermatologists, since the rays are unfiltered; (*b*) superficial application by needles distributed in some filtering or dispersing material; (*c*) insertion into the tissues of radium needles (partially or completely filtered) and of "radon seeds"; (*d*) insertion into the lumen of viscera of radium tubes and filtered needles; (*e*) massive irradiation by "bombs." It will be seen that the present question only concerns those methods in which needles and tubes are inserted, and it will probably be argued by many that such methods can be easily supplanted by the use of bombs and radon seeds. There are many reasons, however, technical and economic, why needles will continue to be used extensively for some time to come, despite the difficulties which may arise through the fact that they must be retrieved. The ordinary radium needle is constructed of platinum (Monel metal is sometimes used in America), alloyed with iridium—10 per cent. for the body and 25 per cent. for the trocar point—to give the requisite degree of hardness; the point is screwed into the body, after the insertion of the radium, and then hard soldered in position; there is therefore no possibility

of the point being detached in use. Platinum is adopted for three chief reasons: (1) its high atomic weight renders it possible to obtain efficient screening in a needle of small bulk; (2) it is durable and resistant to corrosive action; (3) it is indestructible at temperatures likely to be reached in an ordinary furnace. For the production of screw threads which will retain their efficiency for long periods of wear it is not, however, as suitable as some other metals, and for this reason, among others, the iridium is introduced. The screens or filters are made of any metal—gold, silver, etc.—of the requisite thickness, but here again, for the reasons given above, platinum is most commonly used. The heads of these filters could, of course, be hard soldered on to the bodies as in the case of the needles, but their general utility would then be enormously reduced, since it would be impossible to apply the same radium without the screen, or in any other dosage. The problems therefore confronting the designer and user of radium needles are two—to render the removal of the needle easy, certain, and fool-proof, and to guarantee that the apparatus cannot come apart while in the tissues. For the removal of needles, wires and threads are used, but neither can be considered fool-proof, quite apart from the risks incurred by sisters and nurses in the tedious and oft-times prolonged process of threading them into the small eyelets. Wires sometimes snap and are apt to be very irritating and uncomfortable to the patient; indeed, in some situations they cannot be used at all; threads chafe and break under the strain of extraction, which is very often considerable owing to the growth of tissue round them during the interval between insertion and extraction. Really thick thread would obviate this difficulty if it were possible to thread it through an enlarged eyelet, which could probably be designed without in any way weakening the head of the needle or diminishing its radiating power. A compound thread containing fine flexible strands of wire interwoven with the thread, after the manner of flex, might be within the possibilities of the manufacturer. The difficulty with the screens also should not be hard to overcome. The principle of the lock-nut could be applied; and the head, once screwed up, could be prevented from rotation by a small spring clip or a traversing pin. It would be simple to have an eyelet at each end of the capsule, the eyes being connected by a shallow groove on each side, so that the thread could be passed through both ends, while causing no obstruction to insertion and interfering but slightly with the radiating power. There is indeed no need for the capsule to be made in two parts, since the needle, itself threaded, could be inserted from the near end and held in position by a spring collar. Finally, the adoption of double threading (perhaps in distinctive colours) is always to be advocated and in many institutions is a routine procedure. If it is an easy matter to prevent nuts from loosening when subjected to the vibration and strains of a motor engine, it should be well within the capabilities of the radium tube designer to make a really fool-proof needle and capsule, and after the publicity given to the present case there is not likely to be much delay in its production.

REGIUS CHAIR OF MEDICINE AT ABERDEEN.

THE Regius Professorship of Medicine in the University of Aberdeen is the oldest foundation for the teaching of medicine in Great Britain. Up to now it has been a part-time chair at £850 a year. Henceforth it is to have a salary of £1,200 attached to it, in view of the professor being expected to devote more of his time than hitherto to teaching and research, while additional assistance and facilities for research are to be provided. The holder of the chair is an honorary physician to the Royal Infirmary of Aberdeen, with charge of beds. The appointment to the chair is made by the Crown on the recommendation of His Majesty's Secretary of State for Scotland.

MEMBERS of the British Medical Association will be glad to know that Sir Ewen Maclean, immediate Past-President, has returned safely from his successful visit to New Zealand and Australia (when he attended the Australasian Medical Congress at Sydney as official representative of the Association at home), and also to the Ceylon, Bombay, and Egyptian Branches on his way home.

NEW YEAR HONOURS.

THE list of New Year Honours which was issued as a special supplement to the *London Gazette* of December 31st, 1929, includes the names of the following members of the medical profession, to all of whom, and in particular to Dr. Andrew Balfour, we offer congratulations.

K.C.M.G.

Lieut.-Colonel ANDREW BALFOUR, C.B., C.M.G., LL.D., M.D., F.R.C.P., Director of the London School of Hygiene and Tropical Medicine and member of the Colonial Advisory Medical and Sanitary Committee.

Sir JAMES CRAWFORD MAXWELL, K.B.E., C.M.G., M.D., Governor and Commander-in-Chief of Northern Rhodesia.

K.B.E. (Civil).

The Honourable STANLEY SEYMOUR ARGYLE, M.B., lately Chief Secretary and Minister of Public Health for the State of Victoria.

Knight Bachelor.

Professor TEMISTOCLE ZAMMIT, C.M.G., M.D., D.Litt., Curator of the Museum, Malta. For scientific services.

C.B. (Military).

Surgeon Rear-Admiral ROBERT WILLIAM BASIL HALL, O.B.E., R.N.

Major-General DAVID HARVEY, C.M.G., C.B.E., M.D., K.H.S. (late R.A.M.C.), Director of Pathology, War Office.

Colonel ARTHUR BROWNFIELD FRY, C.I.E., D.S.O., M.D., I.M.S., Assistant Director of Medical Services, Presidency and Assam District, India.

C.I.E.

Lieut.-Colonel WALTER VALENTINE COPPINGER, D.S.O., M.D., F.R.C.S.I., I.M.S., Inspector-General of Civil Hospitals, Central Provinces.

Lieut.-Colonel ARTHUR FRANCIS HAMILTON, M.B., F.R.C.S., I.M.S., Professor of Midwifery, Grant Medical College, Bombay.

C.V.O.

Sir GEORGE WASHINGTON BADGEROW, C.M.G., M.D., F.R.C.S.

HERBERT STANLEY FRENCH, C.B.E., M.D., F.R.C.P.

O.B.E. (Military).

Surgeon Commander WILLIAM INNES GERRARD, M.B., D.P.H., M.R.C.P., R.N. (ret.).

O.B.E. (Civil).

HAROLD ARMSTRONG CROUCH, M.C., M.R.C.S., L.R.C.P., Medical Inspector, Upper Nile Province, Sudan.

WILLIAM ALFRED STEDWELL LAMBORN, M.R.C.S., L.R.C.P., Medical Entomologist, Nyasaland Protectorate.

CHARLES JOHNSTON SMITH, M.B., Senior Surgeon, Singapore.

M.B.E. (Civil).

Mrs. EVA COTCHING, M.B. For infant welfare work at Haifa, Palestine.

Major ALFRED BALDWIN DESOUZA, Indian Medical Department, Resident Medical Officer, Gokuldas Tejpal Hospital, Bombay.

JOHN YOUNG MCFADYEN, M.D., Magistrate and Medical Officer, Anguilla Island, Presidency of St. Christopher and Nevis.

Kaisar-i-Hind Medal (First Class).

Miss MARY LONGMIRE, M.B., Ch.B., Lady Doctor in charge of the Church of England Zenana Missionary Society Hospital, Khammamett, Hyderabad, Deccan.

Service Promotions.

Royal Navy: Surgeon Commanders to be Surgeon Captains: FRANCIS J. GOWANS, M.B., B.S.; LEONARD WARREN, O.B.E., M.B., B.S.; SHELDON F. DUDLEY, O.B.E., M.D., B.S., M.R.C.P., D.P.H.

Royal Air Force: Squadron Leader THOMAS JAMES KELLY, M.C., M.D., to be Wing Commander.

A baronetcy has been conferred upon Sir T. GREGORY FOSTER, Provost of University College, London, and recently Vice-Chancellor of the University of London.

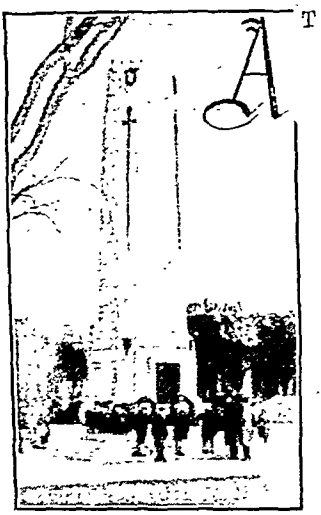
The recipients of the M.B.E. (Civil) include also Mr. D. H. J. NICHOLAS, Indian Medical Department, in charge of Government House Dispensary, Madras; and Miss ELSIE HUGHES, Secretary to Lord Dawson, for services during His Majesty's recent illness.

NINETY-EIGHTH ANNUAL MEETING

of the

British Medical Association.

WINNIPEG, 1930.



THE CENOTAPH, WINNIPEG.

AT the invitation of the Canadian Medical Association, the ninety-eighth Annual Meeting of the British Medical Association will be held in Winnipeg next summer, under the presidency of Dr. W. Harvey Smith, Professor of Ophthalmology in the Manitoba Medical College, who will deliver his address to the Association on the evening of Tuesday, August 26th. The scientific and clinical business of the meeting is being organized in fourteen Sections, which will hold their sessions on Wednesday, Thursday, and Friday, August 27th, 28th, and 29th, the mornings being given up to discussions and the reading of papers, and the afternoons to demonstrations and special addresses. The names of the Officers of Sections are given in this week's *Supplement*, together with other preliminary information, and further details of the arrangements will appear from time to time in later issues. Members who propose to take part in the Winnipeg Meeting should write for particulars about the journey by sea and land to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1. The British Medical Association has twice before met outside the British Isles, and on each occasion in a Canadian city; the Annual Meeting of 1897 was held in Montreal, and that of 1906 in Toronto. We publish below the first of a series of historical and descriptive articles on Winnipeg and its medical institutions, contributed by Dr. Ross Mitchell.

WINNIPEG: ITS EARLY HISTORY AND INDUSTRIAL DEVELOPMENT.

WINNIPEG owes its situation to the junction of two rivers. In the post-glacial period Lake Agassiz covered what is now Manitoba as well as parts of Saskatchewan, Western Ontario, North Dakota, and Minnesota. Since the ice-belt at the north of the lake prevented the passage of the waters into Hudson Bay, the great basin spilled southward by the Red River Valley, and reached the Mississippi. The old beaches of Lake Agassiz are still plainly to be seen, and the finer deposits offshore make some of the flattest and most fertile prairies. The final separation of the ice sheets permitted the waters to flow north-east, but remnants of Lake Agassiz still remain to form Lake Winnipeg and other Manitoba lakes. The Red River, which in former days flowed southward, now flows northward into Lake Winnipeg, which in turn drains by the Nelson River into Hudson Bay. The Assiniboine River, rising in Saskatchewan, flows eastward and joins the Red River forty miles above Lake Winnipeg. With these points in mind the reader will appreciate the topography of the country about Winnipeg, and the meanderings of the two rivers.

HISTORICAL.

So far as is known, the first white man to reach the spot where Winnipeg now stands was La Vérendrye, a native of Three Rivers, Quebec, who saw service in America and Newfoundland, and fought at the battle of Malplaquet, where, with nine wounds, he was left for dead on the field. Still seeking adventure in the peace that followed, he returned to Canada, and in 1738 voyaged by water from Montreal to discover a route to the Western Seas and to open up, for France, trade with the Indians of the plains. Travelling up the Red River from Lake Winnipeg, he reached the Assiniboine and passed up the latter to establish Fort La Reine near the present town of Portage la Prairie. He was shortly joined there by De Lamarque, one of the party, who had meanwhile built at the confluence of the rivers a small post called Fort Rouge. A suburb of Winnipeg still bears this name.

Some years after the British conquered Canada the North-West Company of Montreal pushed forward from their post at Fort William on Lake Superior, and, passing over La Vérendrye's route, established several trading posts from about 1780 onwards. In 1807 one of these, called Fort Gibraltar, was erected at the junction of the Red and the Assiniboine rivers.

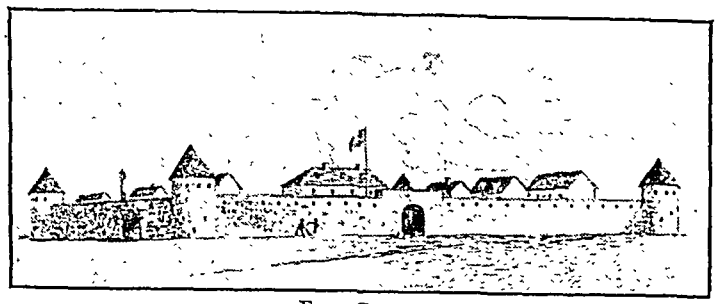
Following the year 1800, "the Governor and Company of Adventurers of England trading into Hudson's Bay," who had for over a century been extending their huge dominion from the Bay, established posts on the Red and Assiniboine Rivers. In 1811 this company conceded to the Earl of Selkirk the privilege of placing a colony on the Red River, granting him for this purpose some 116,000 square miles of the surrounding country. The first of these settlers sailed from Stornoway, Scotland, in 1811, and wintered at York Factory on Hudson Bay, continuing a journey of much suffering and hardship to reach their destination in 1812.

For years there had been bitter trade opposition and personal animus between the men of the North-West Company and those of the Hudson Bay Company. The advent of the Selkirk settlers intensified this feeling, and the North-West Company made it known that they intended driving the settlers out, since land settlement was detrimental to fur trading. The culmination of the feud was the tragedy of Seven Oaks, when Governor Semple of the Hudson Bay Company and a score of Selkirk settlers were killed. A monument marks this spot.

In 1821 the two great companies amalgamated under the title of the Hudson Bay Company. The next year Fort Gibraltar, which had been destroyed, was rebuilt and christened Fort Garry. It stood until 1882, when it was pulled down, with the exception of the north gateway,

which has been preserved in a small park. In 1831 the company commenced building Lower Fort Garry, twenty miles further down the Red River. This stone fort, with its buildings, wall, bastions, and many interesting relics, happily has been preserved, and forms a link with the past.

In 1869–70 occurred the first Riel rebellion. The French half-breeds, protesting against the surrender of the rights of the Hudson Bay Company involved in Canadian confederation, formed a provisional government. Riel seized Upper Fort Garry and terrorized the people of the district until forced to fly to the United States by the arrival of the Wolseley expedition. This force consisted of the 60th Rifles and other English Regulars, together with Canadian Militia from Eastern Canada. The troops were quartered for some time in the Lower Fort.



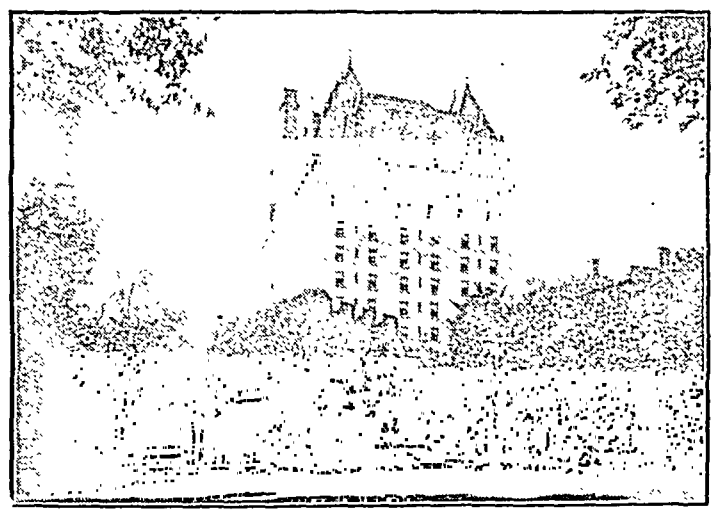
FORT GARRY.
(From a drawing made June 12th, 1845, by Alexander H. Murray.)

Nor was this the first time that English troops had been in the Fort Garry settlement, for in 1846 Colonel Crofton, with some 400 men, including a wing of the 6th Foot and detachments of artillery and Royal Engineers, had been dispatched at the request of the Hudson Bay Company, owing to the threat of war between Great Britain and the United States over the Oregon boundary question. The force remained for a year, and following this some British pensioners were sent out, many of whom remained in the country.

The village of Fort Garry was incorporated as the City of Winnipeg in 1873, and since then its growth has been steady, accelerated in 1883 by the arrival of the main line of the Canadian Pacific Railway, gradually followed by other lines, including the Canadian National Transcontinental. The earlier settlers came from Ontario, while later settlers came from the British Isles, the United States, and European countries.

INDUSTRIAL ACTIVITIES.

For a quarter of a century Winnipeg metaphorically carried its eggs in one basket. The basic industry of the Canadian West was agriculture, and with the success or failure of the crops the city's prosperity rose and fell. In recent years, however, the yield of the soil has ceased to be all-important. The development of hydro-electric power, the discovery of minerals in the northern part of Manitoba, and the completion of the long-discussed railway line to Hudson Bay have directed activities into new channels.



FORT GARRY HOTEL, WINNIPEG, SHOWING ORIGINAL FORT GARRY.
(Photo by courtesy of the Canadian National Railways.)

Winnipeg is naturally the hub of all industrial activity for the province, and by the way it has gone ahead in the last five years it reflects the general progress made by Manitoba as a whole. Material contributory factors have been the great development of hydro-electric power: mining activity, which includes investment of tens of millions of dollars, particularly in the north country; railway expansion, giving access to new territory and fresh resources; increase in industrial development with mounting pay rolls; and greater returns from agriculture through diversification in farming.

Winnipeg is also the centre of the grain trade of the whole country, as well as of many of the allied industries which have developed. Here are located the great selling agencies of the West's grain crop, the Wheat Pool and the Winnipeg Grain Exchange, which divide the handling about equally between them. It is the seat of the Canada Grain Commission, which is responsible to the Dominion Government for the administration and interpretation of the Canada Grain Act. The bulk of the grain is inspected at this point for grade standards in the largest and most important plant of the kind in the world. And from this centre the transportation departments of the two great railway systems direct the gigantic task of moving the crop each year.

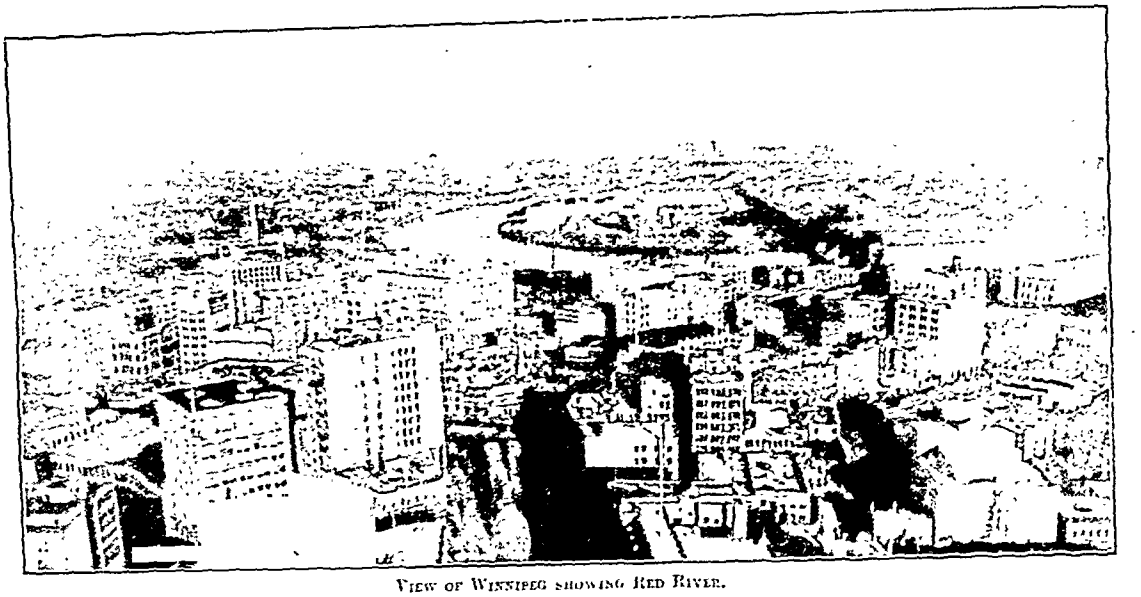
Wheat Production and Export.

Brief comment on the leading activities of Manitoba and its capital city may not be without interest. The only commodity it paid the earliest settlers to "pack out" was fur, and it was not until after 1870 that wheat began to be thought of as an export. Indeed, the very fertility of the soil was seriously questioned up to that time except along the silt-enriched banks of rivers. Neither was the fluidity of grain recognized, and men transported the early crops in jute bags. Other methods of handling were equally laborious.

The advent of the railroad made export both possible and profitable, and rapidly mounting growth in production was met by the gradual evolution of the most complete bulk handling system, participated in by the banks, the transportation companies (rail and navigation), the Government, and the grain trade. Proper handling has meant the provision of enormous storage capacity, with facilities for weighing, scouring, cleaning, drying, special binning, and efficient loading. It has meant the training of thousands of persons for the diverse phases of handling from the time the grain leaves the farmer's wagon-box until it passes out of the country. The heart of all this activity is Winnipeg.

Wheat production in 1928 reached the high mark of considerably more than half a billion bushels, and elevator storage capacity stood at nearly half that figure, including harbour front terminals as well as the interior elevators into which the farmer weighs. The Wheat Pool last year erected a handsome new headquarters for its central selling agency at Winnipeg. In 1928 the Winnipeg Grain Exchange thrust out a new half-million-dollar wing, and is again cramped for trading space. It is the largest cash grain market in the world where the greater part of the trading is backed up by the actual grain. The bulk of the 1928 export of grain—almost half of what the whole world consumed—was handled through Winnipeg.

The story of persistent research and experimentation in connexion with the evolving of an all-round suitable kind of grain is a romance in itself, which can barely be touched upon. Some years ago three heads of wheat were saved by an Ontario farmer, out of a sample of seed grain sent him from Scotland, and since traced to the Ukraine. These three heads became the ancestors of "Red Fife," which in turn, bred and crossed with Russian and other hardy northern varieties, brought forth "Marquis" wheat, the present standard. "Marquis," whilst of excellent milling



VIEW OF WINNIPEG SHOWING RED RIVER.
(Photo by courtesy of Royal Canadian Air Force.)

quality, early maturing, and frost-resistant, is not "rust" proof, and so a fresh intensive research is going on at the present time in the Government Rust Research Bureau, located at Manitoba Agricultural College, for a variety which shall retain all the good qualities of "Marquis" and be rust-resistant as well. Success in this instance will mean a saving of untold millions to the country.

Development of Hydro-electric Power.

The rapid increase in industrial production in Manitoba, which last year surpassed agricultural production by 10,000,000 dollars, is due in the main to one great economic factor—the development of plentiful and cheap hydro-electric power. Besides the benefits accruing to the city from the added pay rolls, it has become the first electrical city of the world, with an average of 3,384 kilowatt hours' annual consumption per residence. The cost is the lowest on record—a shade above three-quarters of a cent per kilowatt hour, as against an average cost of 7.16 cents in 172 representative American cities. Towns and villages throughout the province are rapidly being supplied with power, and the erection of transmission lines is keeping pace with the harnessing of waterfalls. Pulp and paper mills are included among the industrial enterprises which have followed in the wake of power production.

The total resources of the province in hydro-electric power are placed at 5,000,000 horse power, of which 3,000,000 are on the Nelson River, convenient to the mining belt of the north, and 800,000 on the Winnipeg River, within easy transmission of Winnipeg. The total development, so far, consists of three sites on the Winnipeg River, producing 308,000 horse power. Two other sites on the same river—Slave Falls with 90,000 horse power and Seven Sisters Falls with 225,000 horse power—are being developed, as well as one 50,000 horse-power hydro-electric plant in the northern mining area.

The full story of how the first of the equipment and machinery for the development of hydro-electric power was "packed" into the wilderness on the backs of men, of the overcoming of swamps and morasses, of mosquito-infested trails, of the excavating of thousands of tons of rock, and of the damming of lakes and rivers, may never be told as it deserves. But one thing is certain, and that is that the great waterfalls, beside which the toilers of an earlier era sometimes dropped dead under their 200-pound load per man during the portages, from now on will not be called "majestic and frightful," as Daniel Harmon said of them in his famous journal in 1800, but "majestic and useful."

Mineral Wealth.

The presence of valuable copper deposits along the Coppermine River on the Arctic border, has been known since the discoveries of Samuel Hearne in 1771-72, but they are still inaccessible. Similarly, the buffalo hunters who rode the trails on the great hunts in the fifties and sixties, knew of the lignite deposits in the Souris Valley on the south-western Manitoba border, but it was not until the railroad came that the knowledge could be put to general use. Something less than one-fifth of the surface of this province is arable, leaving an immense area in which it was possible to prospect for minerals, metallic and non-metallic, and yet it is a bare eighteen years since the beginning of Manitoba's metal-mining development, although production of non-metallics commenced earlier.

The returns from metallics have not been large so far, and will not be until the great plants, now being erected at enormous cost in the hinterlands of the province, bring the properties they are designed to serve into production. The largest of these are the Flin Flon and the Sherritt Gordon properties north of the Pas near the Saskatchewan border. The Hudson Bay railway cutting through this region is now an accomplished fact after more than forty years of "talk," and branch lines from it connect with both these properties. The Island Falls power site, ninety miles distant, now under development, will furnish the needful power.

When the Flin Flon mine is brought into production 3,000 tons of ore will be treated daily, with an approximate annual production of 30,000,000 pounds of copper and 50,000,000 pounds of zinc, as well as values in gold and silver, according to information supplied by the industrial development department of the Canadian Pacific Railway. A concentrator and smelter is now being erected to treat these ores. The Sherritt Gordon property, which is a near neighbour, will have a higher yield per ton, and contains copper-zinc ore with values in gold and silver also. A 1,500-ton concentrator is under construction on the property, while the copper concentrates will be smelted at the Flin Flon smelter. The "Mandy" is another property in the same area from which considerable high-grade ore was taken in 1917-19, with diamond drilling under way at present for the location of further ore bodies.

In the southern Manitoba mining field the Central Manitoba Mines is the only producing concern at present. A 150-ton mill has been in operation here since 1927, and gold to the value of 770,483 dollars was shipped to the mint at Ottawa last September. Hydro-electric power from Great Falls on the Winnipeg River supplies this plant. Other mines in this area, where developmental work is now

taking place, are the San Antonio and the Gem Lake. Minerals, other than those named above, which have been discovered in the province are tin, silver, arsenic, cobalt, iron, lead, nickel, molybdenite, tungsten, and beryllium.

For some time past the province has had a very real asset in the non-metallic minerals, which have been responsible for more than 75 per cent. of the mineral production to date. Of these, the group of structural and building material is the most important. First in rank is building stone (Tyndall stone), which is a limestone quarried thirty miles east of Winnipeg, and of so high a quality that it is being shipped to all parts of Canada. It is seen in Manitoba's public buildings and many of its business houses. The brick and tile industry is also important; gypsum has been produced for a number of years; and sand, suitable for glass manufacturing and moulding, is also available in large quantities.

A discovery which may be of considerable importance commercially is that of large quantities of lithium ore along the Winnipeg River, near the Ontario boundary. Considerable development of this find has already taken place, and ore has been shipped to Europe for extracting the lithium. The discovery has brought Manitoba conspicuously before other parts of the world in view of the fact that here is one of the largest sources of supply of a non-metallic mineral whose uses are rapidly increasing. Other non-metallics found in the province are limestone, granite, marble, bentonite, feldspar, garnet, salt, peat, coal, oil, and gas. There has, however, been very little production of any of the latter named.

A great deal of prospecting is now taking place, and it would not be surprising if new discoveries of first importance were made within the next few years, more especially in the non-metallic minerals in the northern part of the province.

MEDICINE AND PUBLIC HEALTH IN THE NEW PARLIAMENT.

THE Labour Government has been in office nearly six months, during which the new Parliament has been in session for twelve weeks. Both in the Ministries and in the House of Commons business has been heavy. As the Government was pledged to take urgent measures for the relief of unemployment and stimulation of work, it might have been expected that medical subjects would have been neglected. Actually they received a good share of attention, happily without becoming centres of party controversy. Almost at the beginning the new House made a united effort for medical progress when it authorized a vote of £100,000 for the purchase of radium. Mr. Greenwood, the Minister of Health, has given the Mental Treatment Bill precedence over the promised Housing and Slum Clearance Bill. This was partly because the former measure, not being opposed on party lines, could be introduced in the House of Lords, but the precedence given it indicates an interest in medical and public health subjects, which the Minister has shown in other ways. The Home Office, under Mr. Clynes, has given sympathetic attention to medical issues relating to factories and factory inspection. The appointment of Dr. Drummond Shiels as Parliamentary Under Secretary, first to the India Office and then to the Colonial Office, provides a new link between medicine and the Whitehall departments dealing with the tropics.

On both sides of the House the "back benchers" show no hostility to the medical point of view, and in many cases their questions display a desire to see the Government do more for public health. There have been practically no questions directed against vaccination and experiments on animals. At the start of the session Dr. Fremantle excited some Labour members by warning the Government that money was being eaten up by housing which would benefit national health far more if used on other services. During a recent sitting Dr. Vernon Davies corrected a lurking obsession among trade unionist members of Parliament by informing them that the medical profession had no trade union. But no antipathy has been shown by the Labour party towards the profession. That party contains leading and orthodox medical men among its members in the House of Commons. Two, Dr. Salter and Mr. Somerville Hastings, have been elected respectively chairman and honorary secretary of the Parliamentary Medical Committee, membership of which is now restricted to members of Parliament or peers with a medical qualification. These number about a score, and the profession has never been more strongly represented in Parliament.

If this Government and Parliament last their full term of four or five years—a matter on which all parliamentary observers feel doubts—medical proposals of outstanding importance will be put before both Houses. During the debate on the Widows' Orphans' and Old Age Pensions Bill Mr. Greenwood announced that a Cabinet Committee was considering the various State insurance schemes, the gaps between them, and their correlation with other forms of social service outside insurance. This last phrase hints apparently at the Poor Law and the voluntary hospitals. Mr. Greenwood spoke of coming proposals to enlarge the field of national health insurance. He said that the Government might ask the House to consider provision of medical and midwifery services in pregnancy and childbed to wives of insured men and the increase of specialist services to insured persons. Mr. Somerville Hastings has gone further in convening meetings at the House of Commons to promote the movement for a national medical service. Such a service is an objective of the Labour party, but forms no part of the Government's programme in the present Parliament. Incidentally it should be recorded that Mr. Greenwood has adopted, and is preparing to carry out, Mr. Chamberlain's plans for rearranging the hospital and institutional accommodation at the disposal of local authorities and for securing its use in co-ordination with the voluntary hospitals. A Midwifery Bill, introduced by Mr. Alpass, a Labour member, was looked upon as representing the policy of that party, but it has not met with success or with general acceptance.

The Mental Treatment Bill quickly passed through the Lords, where it was introduced on November 19th, and its prospects are good, though legalists in the House of Commons may urge the arguments put unsuccessfully in the House of Lords by Lord Brentford for retaining the certifying magistrate instead of relying on medical opinion. The bill was ably handled in the Lords by Earl Russell, and strongly supported by Lord Dawson. Together they convinced the House of the need for facilitating early treatment without certification. Earl Russell, in his speech, recognized the importance of offering greater protection to medical men who give certificates, though the provision of the bill on this point is neither clear nor universal in its application. One amendment has been made to ensure that "voluntary" application for early treatment on behalf of an adolescent shall be supported by a medical opinion. Mr. Greenwood has spoken in the House of Commons with dissatisfaction about the present provision for mental defectives. In England and Wales 28 local authorities have now provided residential institutions for these persons, but 78 had not, and others are only beginning to take action. Mr. Greenwood hopes to stimulate the backward authorities. Recognizing that cost is the chief cause of delay, he has instituted an inquiry into the possibility of reducing the expense of providing mental institutions.

Vaccination has not been much before the House of Commons, though Mr. Greenwood has announced that he is considering the whole question, including a proposal to make vaccination voluntary. He gives the proportion of parents claiming exemption for their children at 40 per cent. The Parliamentary Medical Committee has heard Sir George Newman and Dr. Hutchinson (from the Ministry of Health) on administrative aspects of the subject, and has also visited the Government lymph station at Mill Hill. The Home Secretary has answered questions from lay members concerning industrial diseases, such as conjunctivitis in silk works, aniline dye cancer, and silicosis. Amendments of the silicosis regulations are understood to be in preparation, but the Government's advisers have not accepted the assertion made by some miner members of Parliament that a detrimental "anthracosis" is caused

by coal dust. During the debate on a Children and Young Persons Employment Bill, Dr. Vernon Davies, as a former certifying factory surgeon, interested the House by contending that work in a mill during pregnancy may benefit some women. Dr. Davies has also spoken on the accommodation for seamen on British ships.

Mr. Adamson, the Secretary for Scotland, has carried through Parliament an Act authorizing increased grants for medical and nursing services in the Highlands and Islands. This measure was strongly supported by Dr. Elliot, who himself introduced a bill to permit the supply of milk to school children in Scotland to promote their health. Mr. Somerville Hastings has put a succession of questions regarding tuberculous milk, and has been informed that the proportion of cows tested in England and Wales with tuberculin is still too low to permit of general inferences. Dr. Fremantle, who is now deputy chairman of the Parliamentary Medical Committee, has concerned himself with the dangers from the dumping of London garbage on the Essex marshes and at other places in the Home Counties, and has formed a committee of members of Parliament to watch this subject.

On one other urgent issue of medical interest—the cost of treating in hospitals persons injured in motor accidents—Ministers were immovable when questioned in the House of Commons. The issue was raised in the Lords by means of a proposed amendment of the Road Traffic Bill, whereupon a promise was given that the Government would try to devise means whereby this heavy and growing charge on hospitals may be defrayed.

KING EDWARD'S HOSPITAL FUND.

DISTRIBUTION FOR 1929.

THE annual distribution meeting of King Edward's Hospital Fund for London was held on December 17th, 1929, at St. James's Palace, the PRINCE OF WALES presiding. After reading a message from the King expressing his pleasure in the fact that the Fund, for the second year in succession, was able to make an ordinary distribution of £250,000, and that the hospitals would also benefit very largely from the Thank-offering Fund, His Royal Highness said that the grand total of grants amounted to £378,734, besides the allocation of the radium purchased with Sir Otto Beit's gift of £50,000. In the first place, there was the ordinary distribution of a round quarter of a million. Last year, when this sum was reached for the first time, it was thought good policy to rest awhile, lest progress be too fast, but it was now apparent that even if the amount stayed at its present level for more than two years the Fund would not be doing its duty to the hospitals, which were continually increasing their liabilities. Grants towards the pensions scheme for nurses and hospital officers amounted this year to some £13,700. Then there was the special Thank-offering, which rendered £220,000 available for the King's Fund. Of this amount £105,000 was represented by the splendid gift of "Audax," which was to be invested, while the remaining £115,000 would be distributed in the form of grants in aid of extensions and improvements. Finally, there was the radium purchased by the King's Fund with Sir Otto Beit's gift. The 4 grams had been allocated among twenty hospitals. [It was stated in a subsequent report that 2,300 mg. had been actually delivered to fifteen hospitals, and the remaining 1,700 mg. was on its way as quickly as containers and needles could be supplied.] The Prince mentioned that that very morning a gift of £10,000 had been received from Mr. Roger C. Parr. He concluded by naming a number of persons and bodies to whom the Fund was specially indebted.

Sir COOPER PERRY, chairman of the Distribution Committee, said that 143 hospitals had made application to the Fund, two more than last year. The larger grants recommended in the ordinary distribution included the following:

Charing Cross, £4,500; City of London (Victoria Park), £3,500; East London, £3,250; Guy's, £12,000; Hospital for Sick Children, £4,150; King's College, £7,100; London, £14,150; London Temperance, £3,750; Metropolitan, £4,250; Middlesex, £2,300; Miller, £5,600; National (Queen Square), £4,275; Prince of Wales's, £5,850; Queen Mary's, £4,500; Queen's Hospital for Children, £3,600; Royal Free, £7,000; Royal National Orthopaedic, £4,500; Royal Northern, £3,800; St. Bartholomew's, £6,500; St. George's, £2,700; St. Mary's, £6,000; St. Thomas's, £10,500; University College, £8,750; West London, £5,250; Westminster, £5,100; Willesden, £3,000.

The sum available for distribution among convalescent homes not attached to any particular hospital in London had been fixed at £2,000. With regard to the special distribution of £115,000 out of the Thank-offering Fund, the committee had followed the plan of recommending large grants where circumstances demanded substantial assistance, but yet not so large as to exhaust the whole sum available, and thus unduly limit the number of hospitals participating. The names of 73 hospitals were included in this distribution; 3 received grants of £10,000 and over, 24 received grants of from £1,000 up to £10,000, and the remainder grants below £1,000. Of the purposes for which the grants were made the extension of existing hospitals was the most frequent (25); 12 were for rebuilding, reconstruction, or new and enlarged hospital buildings, 11 for additional nurses' accommodation, and 12 for enlarged out-patients' departments. The list of grants recommended from the Thank-offering Fund included:

East Ham, £2,500; General Lying-in, £2,500; Guy's (towards provision of site for out-patients' extension, and to reduce deficit on recent improvements), £3,000; King George (Ilford), £10,000; Metropolitan, £3,500; Middlesex (towards reconstruction), £14,000; Miller (to reduce deficit on extension), £12,000; Queen Charlotte's, £9,000; Royal Free, £5,500; Royal National Orthopaedic, £4,500; St. Bartholomew's (towards new operating theatres), £2,000; St. Mary's Hospital for Women and Children (Plaistow), £3,500; Woolwich War Memorial, £5,000.

Lord DONOUGHMORE, in submitting the report of the Management Committee on the Thank-offering Fund, said that the aggregate for the whole country was £629,597. The portion of this contribution which had been put to the King's Fund was, as stated, about £220,000; the contributions to the Radium Section (the object of which was to obtain the amount required for the National Radium Fund, to which the Government had promised £100,000 on a pound for pound basis) totalled £187,012; other thank-offering funds, the totals of which were included in the list, amounted to £192,478, and contributions earmarked for individual hospitals and other charities were £91,710. It was realized that the King's Fund could not put forward a claim to be regarded as the sole channel, although the hospitals of London were national institutions, but for the purpose of a thank-offering it was desirable that the public outside London should have an opportunity of selecting local charities. Therefore, provision for earmarking was made. Out of the money collected for radium, the first instalment of £100,000 had been handed over to the National Radium Trustees, to enable them to claim the Government grant, and a further £50,000 was held for their account. The balance of £37,000 would be placed at the disposal of the King's Fund for the purchase of radium to be loaned to hospitals in London. On Lord Donoughmore's motion, it was resolved that an address be presented to the King, referring to the origin, history, results, and distribution of the Thank-offering Fund, and tendering to His Majesty loyal congratulations on his recovery.

Sir EDWARD PENTON presented a report for the Voluntary Hospitals (Local Government) Committee, which is henceforth to be known as the Parliamentary Committee, and although called into being to deal with the situation created by the Local Government Act, is to remain in existence to consider any projected legislation affecting hospitals. The report described a draft scheme for a body representative of the voluntary hospitals of London to confer with the London County Council under Section 15 of the Local Government Act. The King's Fund, the teaching hospitals, and the British Hospitals Association had co-operated in the formation of a Joint Committee, a truly representative hospital body, for consultation with the council as required by the Act. The Joint Committee aimed, it was said, not merely at the fulfilment of a statutory obligation, but at providing the means for continuous consultation and co-operation between the voluntary and the county council hospitals. The scheme of representation provided that for each of the five hospital

areas in which London was to be divided there should be an area committee, composed of representatives of the voluntary hospitals, and that, for consultation with the county council, there should be a central committee for the whole county, composed partly of representatives of the area committees, and partly of representatives of special hospitals the services of which were not localized in relation to any particular area. It was also provided that the importance of teaching hospitals should be recognized by securing that each teaching hospital should be assigned to one or other of the areas, and be represented on the area committee, and that there should be a separate committee for the non-localized special hospitals. Lord MONK-BRETTON, chairman of the London County Council, voiced the cordiality with which the council would welcome such co-operation in the difficult and onerous duties before it.

Australia.

[FROM OUR CORRESPONDENT IN VICTORIA.]

Australasian Medical Congress.

THE third session of the Australasian Medical Congress (British Medical Association) was held at Sydney in the last week in September, 1929, and some account was given in the issues of the *Journal* on November 16th (p. 921) and November 23rd (p. 974). The majority of the fifteen sections met twice a day, and discussed many subjects; for the first time there was a section devoted to the study of anaesthesia. The congress was honoured by the presence of Sir Ewen Maclean, immediate Past-President of the British Medical Association, who attended as the official delegate of the Association. Sir Ewen Maclean took an active part in the discussions, and in many of his speeches showed his keen interest in the development of post-graduate work. Thanks are due to the president, Dr. C. H. Abbott, and the honorary secretaries, Drs. T. W. Lipscomb and A. A. Palmer, assisted by Dr. R. H. Todd, for the success of the congress, and for the manner in which they performed the difficult task of organizing so great a gathering.

Hospital Beds for Paying Patients.

The State Ministry has drawn up plans for the establishment of "community sections" at the public hospitals of Victoria. Mr. and Mrs. F. D. Michaelis recently asked the Premier, Sir William McPherson, to accept a gift of £5,000 to form the nucleus of a fund for the establishment of a community wing at the Alfred Hospital; the gift was accepted. It is proposed that the community wings should be conducted by a committee separate from, but appointed by, the general hospital committee, and that the financial arrangements for the community wards should be entirely distinct from those of the public wards. The community wards are to be used by private and intermediate patients, who are defined respectively as those able to pay in full or in part for their hospital accommodation and the medical and nursing fees. Questions relating to the admitting of each kind of patient will be decided by the committee controlling the community section on the recommendation of a medical practitioner. Medical fees charged to private patients will be entirely a matter of arrangement between the practitioner and the patient. The maximum amounts which may be charged to intermediate patients will be set out in a fixed table, to be drawn up by a body representative of the majority of medical practitioners in Victoria. The regulations assure to patients the right to choose their own doctor; all the reputable practitioners in a district served by a public hospital will be allowed to attend their patients in the community section.

Medical and Scientific Education in Melbourne.

The council of the University of Melbourne has appointed Dr. R. Marshall Allan, *M.C.*, to the chair of obstetrics. The new professor will devote the whole of his time to the organization of teaching and research. Under the auspices of the Melbourne Permanent Committee for Post-Graduate Work, Professor Hugh MacLean delivered, between August 12th and 23rd last, a series of lectures on gastric physiology and pathology, the diagnosis and treatment of gastric disease, some problems in carbohydrate metabolism and diabetes, vascular and renal disease, and the uses and abuses of biochemical methods in clinical medicine. The lectures were very well attended and were much appreciated. During the same fortnight a series of lectures and practical demonstrations, covering a wide range of subjects, was arranged by the post-graduate committee at the various teaching hospitals. Owing to the marked falling off of the number of students in the veterinary school, due chiefly to the poor prospect of remunerative employment after graduation, it has been decided to confine the teaching work to the first two years of the course, and to send the Victorian students to Sydney for the completion of their studies. The council of the University of Melbourne adopted the report of a committee appointed to investigate the financial position of the school; in this it was recommended that, for the present, the school should be carried on chiefly as a research institute. In recent years a good deal of research had been undertaken there, not only in connexion with the Department of Agriculture, but also with the Council of Scientific and Industrial Research, the Walter and Eliza Hall Trust, and cancer research.

Canada.

[FROM OUR CORRESPONDENT IN MONTREAL.]

Vital Statistics of Canada.

THE Dominion Bureau of Statistics has published a preliminary report on the vital statistics of Canada for the year 1928, from which the following facts are taken in respect of a population estimated as 9,645,000. The birth rate is one-tenth of 1 per cent. less than that for 1927, being 24.5 per 1,000; 3.1 per cent. of these births were illegitimate. The general mortality rate was 11.3 per 1,000, which is slightly higher than the corresponding rate in 1927, but is rather lower than that for 1926. While comparisons between the various provinces in this respect can only be legitimately made with some reservations, it is noteworthy that Quebec has the highest rate (13.8), while Saskatchewan has the lowest (7.2). There is little doubt that one disease which contributes largely to this higher mortality of Quebec is tuberculosis. This province had a record of 2,686 deaths from tuberculosis, out of a total for the Dominion of 6,481. Diseases of the heart accounted for the highest number of deaths—namely, 12,640; diseases of the arteries caused 5,644, and nephritis 5,717 deaths. Among children it is notable that there has been a considerable reduction in the mortality under the age of 5: but, even so, there is room for much more improvement, since the figures show that practically 20 per cent. of all deaths were those of infants under 1 year old, and that 25 per cent. of all deaths were those of children under 5 years of age. Maternal mortality showed no change in the rate which obtained in the previous year—namely, 5.6 per 1,000 living births. This rate was highest in Prince Edward Island and Alberta (6.1 and 6.8 respectively), and much remains to be done to bring about improvement in this respect. There are other diseases, however, which have been clearly shown to be more easily controllable, and yet they still appear statistically in unwelcome numbers; typhoid fever, for example, caused 468 deaths, and diphtheria 913.

A New Research Journal.

The ever-growing list of scientific periodicals has been recently augmented by the venture of the Research Council of Canada in issuing *The Canadian Journal of Research*, which is to be a medium for publishing the increasing number of scientific papers produced by Canadian workers. The journal was originally planned to record the work done under the auspices of the Research Council, but it is also open for suitable papers from Canadian workers not connected with it. The first two numbers contain accounts of research work on matters relating to husbandry and to biological problems, much of which has been undertaken in the Universities of Edmonton and Saskatoon.

Hospitals in Montreal.

The hospital situation in Montreal has presented itself as an acute problem for some years. There is, indeed, no exaggeration in the statement that for the last twenty years there has been no increase in hospital accommodation of any significance, and this in spite of the fact that the city has nearly doubled in population in that time: an unofficial census shows over a million inhabitants. This does not imply that the existing hospitals have not kept up with modern developments, for the leading institutions here, such as the Montreal General and Royal Victoria Hospitals, rank with the best on the continent, but they themselves have not increased in size. It has been very encouraging, therefore, to note an effort which has been recently made by the Jewish community in the city to relieve the situation. By means of an organization directed entirely by themselves, and with the aid of a grant from the Provincial Government, they have succeeded in raising more than a million dollars for the erection of a general and maternity hospital, which will contain about 150 beds, and be open to all, irrespective of race or creed. The Provincial Government has also granted 230,000 dollars towards the erection of a general hospital, to be administered under the Public Charities Act, and to be staffed by the Order of the Grey Nuns.

Scotland.

Memorial to Dr. John Thomson.

A MEMORIAL tablet to the late Dr. John Thomson, in the *Royal Hospital for Sick Children* at Edinburgh, was unveiled on December 14th, 1929, by Sir Thomas Barlow. Among those present at the ceremony were Principal Sir Thomas H. Holland, Professor G. F. Still, Dr. Robert Hutchison, Sir Robert Philip, Dr. Haig Ferguson, Professor Leonard Findlay, and Dr. Charles M'Neil, secretary of the memorial committee. Mr. J. S. Leadbetter, K.C., vice-chairman of the directors of the hospital, presided. Sir Thomas Barlow outlined the work and character of John Thomson, and said that a great reserve of quiet power, sound method, and good judgement lay behind his modest, half-deprecating demeanour. A hesitancy of speech was the outcome of a resolute determination to cultivate accuracy of statement. His work in Edinburgh had begun in 1886 as physician to the New Town Dispensary, where he soon developed a successful children's clinic, and shortly afterwards he entered on work as assistant physician to the Sick Children's Hospital. The most important item of knowledge that he had contributed to medical science was his account of pyloric stenosis in young subjects, an obscure affection of which the importance had been made clear by Thomson's exhaustive report of 100 cases under his own care. In Dr. Thomson's character there had been a genius of friendship, while jealousy and self-advertisement were unknown to him. A later phase of Dr. Thomson's career had been the earnestness with which, in the cause of mentally defective children, he set himself to engage the interest of mothers in simple methods of wakening intelligence and cultivating self-control. He would be remembered as the embodiment of wise sympathy and of a refined and delicate thoughtfulness. The memorial consists of a marble panel bearing a bronze portrait medallion of Dr. Thomson, and is placed opposite the entrance to the ward where he spent much of his life. It has been executed by Mr. C. O'D. Pilkington Jackson. It was announced that there were 117 subscribers, all medical men, from whom about £270 had been received. This provided, in addition to the memorial, a medal to be awarded by the University of Edinburgh yearly to a young graduate for original investigation bearing on the subject of children's diseases. Sir Thomas Holland, in accepting the commemorative medal on behalf of Edinburgh University, said that the work which would be done in connexion with the medal would not only be of humanitarian value but of economic importance to the community as a whole. One phase of research for which the medal would be bestowed would be related to the psychology of children, and the association of Dr. Thomson's name with this medal would be a great inspiration to students. Professor Still said that Dr. Thomson's character might be summed up in two words: "kindliness" and "sincerity." Few men had made such varied additions to the knowledge of disease in children, and Edinburgh might be proud to have reckoned among its citizens and alumni of the university such a distinguished physician, whose name would abide. Dr. Logan Turner said that Dr. Thomson's life had been one long opportunity for the consideration and elucidation of problems of disease in children, and Dr. Robert Hutchison said that Thomson's memorial was recorded in his scientific writings as well as in the lives and practice of students whom he had inspired, and who were scattered all over the globe, and, above all, in the gratitude of those to whom, as children, his whole life's work had been devoted. After the ceremony a complimentary luncheon was given in honour of Sir Thomas Barlow by the University of Edinburgh.

Gynaecological Statistics.

The governors and the medical staff of the Royal Samaritan Hospital for Women, Glasgow, formed the opinion, early in 1928, that a compilation of the statistics of patients treated in the institution might be of considerable scientific value and of general interest to gynaecologists and to other hospitals. The statistics of 2,033 patients, mainly Scottish, whose treatment was completed between April 1st and December 31st, 1928, have now been published, the diseases being scheduled under four headings —regional, general, outside the genital and urinary tracts, and conditions not classifiable under the other three headings. The material seems to have been drawn from four clinics; the number of operations performed was 1,856, with a mortality of 1.5 per cent. Etiologically the conditions from which the patients suffered are divided into: infection associated with child-bearing; infection unassociated with child-bearing; injury associated with child-bearing; new growth; errors of development; causes not belonging to any of these groups; and cases (121 in number) with no appreciable disease. Divided and subdivided in these ways, a complete list is given in Table V of the different pathological lesions encountered in the 2,033 patients. The table gives information as to the number of cases of each lesion, the condition of the patient as regards marriage and pregnancy, the number of patients operated on, the average stay in hospital, the number of cases in which one or more additional lesions were present, and the number of deaths. The next table gives the number of conditions regarded as the primary lesion in the 2,033 patients; while in following tables cases are recorded in which second or third conditions of less importance existed. A final table gives brief notes of the thirty-one fatal cases. The peculiar interest of this table is that, small though the proportion of deaths is, quite a number of the patients who died appear to have suffered from comparatively unimportant conditions. A useful reminder is given that even in plastic operations for procidentia pulmonary embolism may occur. Much of the work of preparing the schedule of diseases, and collecting, classifying, and compiling the statistics has been done by Dr. Donald McIntyre, surgeon to the hospital. He regards this record of nine months' work as an experiment, mainly for the purpose of judging if the scheme is workable. The result would seem to justify continuance of the scheme.

Increased Duties of Voluntary Hospitals.

An address was delivered recently in Glasgow by Mr. W. E. Whyte, clerk to the District Committee of the Middle Ward of Lanarkshire on the provisions of the Local Government (Scotland) Act, 1929. The lecturer spoke particularly of the great enlargement of powers committed to local authorities in connexion with hospital services. On account of the number of authorities who in the past had been empowered to make hospital provision, and the lack of co-ordination between these, there was often failure to secure an adequate hospital service. Many of the hospitals, he thought, were too small and too imperfectly equipped to be regarded as suitable, while the

accommodation for the sick poor was of a wholly unsatisfactory nature. Local authorities were now to be empowered to provide as part of their public health duties treatment for all kinds of sickness, and there would be no distinction between the ordinary sick and the sick poor. The intention was to link up local authority service with voluntary hospital service as far as this was possible, and it was not sufficiently recognized that local authorities might now make provision for all forms of sickness, whereas in the past they were only responsible for infectious diseases. The possibilities of the future were further enlarged by the provision that local authorities might recover reasonable charges in respect of treatment from persons who had been maintained in any institution, except in regard to persons receiving treatment for infectious disease. In framing schemes local authorities would require to consider not only the needs of their own area, but the matter of combining with neighbouring areas, especially in regard to institutions for special forms of treatment, such as hospitals for surgical tuberculosis, sanatoriums, and convalescent homes. Areas of administration under the new Act were greatly enlarged, but there would still be a need for joint action between counties and burghs, and such action, when it was desirable, would greatly save unnecessary expense.

Rheumatic Clinic for Edinburgh.

The Public Health Committee of Edinburgh Town Council, at a meeting on December 17th, 1929, decided to recommend the formation of a clinic for rheumatism, following upon a report by Dr. William Robertson, medical officer of health for the city. The report recommends that a system of notification for cases of rheumatism should be adopted with the view of securing an approximate idea of the numbers of persons under 16 years of age suffering in this manner, and of the extent to which they are affected. The report states that rheumatism is much commoner among the young population than was formerly supposed, and that serious heart involvement is frequently discovered among children showing unaccountable indisposition of long duration. The incapacitating effect of this condition is evidenced by the fact that £2,000,000 is paid out to insured persons as sick benefit in a year, so that early recognition of rheumatism might be regarded as directed towards the prevention of serious disability. It is proposed that the notification should be voluntary, and that a fee of 2s. 6d. should be paid for each case of rheumatism in a person under the age of 16 notified to the medical officer of health. The term is understood to include chorea, "growing pains," and pains in the joints, accompanied by raised temperature, as well as definite cases of rheumatic fever. The information to be supplied will include an opinion as to whether hospital or other special treatment is desirable. It is considered that this will give a good idea of the possible demands that may in future be made on the local authority for rest treatment in an institution. As an adjunct to notification it is proposed that a weekly clinic should be held, where appropriate advice about future care will be given to patients referred by their medical attendants.

Ireland.

Medical Benefits in Northern Ireland.

In reply to a resolution from the Armagh board of guardians about the inclusion of medical benefits for Northern Ireland, the Right Hon. J. M. Andrews, Minister of Labour, stated that while in certain areas in Northern Ireland there was little, if any, discontent with the existing dispensary system, the pauper taint was admittedly objectionable, and in many areas the working classes did not feel sufficient confidence in the medical services at their disposal. There were, moreover, other considerations which had to be taken into account in determining the future development of the medical services. In the first place, Northern Ireland was being urged by the Imperial Government to enable it to ratify conventions drawn up by the International Labour Office at Geneva in 1927. These conventions required the subscribing countries to provide medical benefit for workers, including agricultural workers, on an insurance basis, and had already been ratified, or were in process of ratification, by fifteen other countries. Up to the present, owing to the absence of medical benefits in Northern Ireland, the Imperial Government had been unable to do so, and it had been much embarrassed through not being able to fall into line with other countries in the matter of sickness insurance, while seeking to secure that these countries would raise their social standards to the British level in other directions. It was unwise to resist the pressure being exercised by the Imperial Government to adopt the British standards of medical services for insured workers. A further matter which gave him grave concern was the amount of sickness amongst insured persons; during 1928 the average expenditure per person on sickness and disablement benefits in Northern Ireland was £1 14s.; in England and Wales £1 1s. 6d.; and in Scotland £1 0s. 1d. Where insured persons were members of societies which operated in Great Britain as well as in Northern Ireland, the payment of these benefits had entailed loss on the British members, and had made the societies (who attributed the present position in large measure to the absence of medical benefits in Northern Ireland) very restless. Unless some improvement could be effected in the near future in the rate of sickness amongst Northern Ireland members the international societies would cease to operate in Northern Ireland. If, through the dissociation of Northern Ireland from Great Britain in the insurance scheme, the expenditure on sickness and disablement benefits in recent years had to be met out of income in Northern Ireland, the ordinary weekly contribution would have to be raised by 3d. A lesser cost than this would secure the proposed scheme of medical benefits, with all the advantages it contained. Should a system of medical benefits be introduced there would be some modification of the dispensary system and consequent curtailment of cost.

The Ulster Branch of the British Medical Association has appointed, at the request of the Ministry of Labour, an advisory committee representative of the profession, which is to act in a consultative capacity to the Ministry. Arising out of the extension of medical benefits, it is proposed to reduce the salary of the dispensary doctors, on the ground that a number of their patients are insured persons, and will be treated in future under the medical benefits scheme. This proposal has caused considerable anxiety amongst Poor Law medical officers, as they say that 90 per cent. of their work is among the wives and children of the insured and destitute, and that this work will continue under the medical benefits scheme.

Promotion in Mental Hospitals.

A deputation from the committee of management of the Clonmel Mental Hospital waited recently on the Minister for Local Government and Public Health, in Dublin, to discuss the method of filling the vacancy which has arisen in the office of resident medical superintendent, owing to the death of Dr. Bagenal Harvey. The deputation stated that it was the unanimous desire of the committee that they should be allowed to promote Dr. Fitzgerald, who had been for many years assistant resident medical officer in the Clonmel Mental Hospital. The deputation was convinced that this was a case in which the Minister should not insist on the appointment being made on the recommendation of the Local Appointments Commission. The Minister, in reply to the deputation, said he did not take the view that the mere fact that a man happened to be an assistant in a mental hospital when a vacancy occurred gave him an unquestionable right to succeed to the higher post. Experience and local knowledge should properly count, but there were other factors of importance that must be considered. The unanimous recommendation of the Poor Law Commission, that these posts should be filled on the recommendation of the Local Appointments Commissioners, was on record, and reflected what was the best opinion on the subject. The committee

was asking him to ignore the recommendations of the Commission. It was clearly in the interests of the whole medical service of the mental hospitals that there should be a selection free from all local influences. The committee might find it difficult to take that view, but it was the intention of the Oireachtas that certain posts should be filled only on the recommendation of an impartial tribunal, removed from local, political, and personal influences. This was clearly one of the posts in the filling of which the local authority should have the assistance of an expert advisory body. Experience had shown that every committee of management had a natural bias towards the man on the spot, and the practice that had grown up of excluding all outside candidates, no matter how well qualified, had had the effect of keeping capable men for a lifetime in subordinate positions, while juniors, with the minimum qualifications in point of service, had been promoted. Such a system was bound to be detrimental in its effects, and could not be defended on any reasonable grounds. It was essential that the whole mental hospital medical service should know beyond doubt that the department stood for the free flow of promotion, so that the best qualified men would have the way opened to them, and that appointments would only be made after impartial selection. With regard to the question of salary to be paid to the new resident medical superintendent, the Minister did not think it wise, as a matter of policy, to reduce the emoluments to a point at which these posts would cease to be attractive. They must offer an inducement for young men of talent to enter the service. A compromise was reached which, it was thought, would be acceptable to the committee.

Death Following Tonsillectomy.

At an inquest held recently at Ballymena, Dr. John Armstrong made a statement about the risks attending the too early discharge from hospital of children who have undergone an operation for tonsils and adenoids. The inquest concerned a child aged 6 years 11 months, who had been admitted to the Waveney Hospital on October 2nd, 1929, and, following an operation for chronically enlarged tonsils, had died suddenly on October 3rd, at his parents' home. Dr. Armstrong said that he had invited the inquest, after consultation with the medical officer of the Waveney Hospital, because they thought that owing to the frequency with which the operation was being performed the general public was inclined to take too light a view of the dangers that might be associated with it. At the last Annual Meeting of the British Medical Association, the Laryngological Section had passed a resolution that all children who had been operated on for tonsils or adenoids should be kept in hospital for at least forty-eight hours (*British Medical Journal*, August 17th, 1929, p. 303). Moreover, so many parents failed to carry out the directions they received about the preparation of the children, that hospital authorities preferred, for the children's own safety, to admit them twenty-four hours before the operation. After the operation the children required careful attention and skilled nursing. All of them swallowed a certain amount of blood, and if, as sometimes happened, they vomited before the effects of the anaesthetic had passed, the vomited material might get down into the trachea and choke them; only by close observation could such a danger be averted. Dr. Armstrong said that he wished to make these facts public, so that parents might know that an operation for the removal of tonsils and adenoids was not regarded by the medical profession as a trivial matter. It was probable that operations for tonsils and adenoids would be performed more frequently in the future than they had been in the past. With reference to the deceased child, Dr. Armstrong pointed out that the matron had advised the parents to let him stay in hospital until the next day, but they removed him on their own responsibility. Hospital authorities could not keep children if their parents wanted to take them out. A hospital was not like a lunatic asylum or a gaol; parents could take their children out at any time they liked, and neither the doctor nor the matron could prevent them. They could only advise them to let the children stay.

England and Wales.

Health Administration in London.

THE London County Council is rapidly getting in order the arrangements for the new duties which devolve upon it by reason of the Local Government Act. Details of the Central Public Health Committee have already been published (November 23rd, 1929, p. 980). The council has since decided to set up a general hospitals subcommittee consisting of twenty-two members, at least eight of whom shall be members of the Central Committee; a special hospitals subcommittee, constituted in almost the same manner; general hospitals (area) subcommittees, one for each of the five hospital areas of the county; general hospitals (visiting) subcommittees, one for each general hospital, or, if convenient, one for two or more hospitals; special hospitals (sectional) subcommittees, one for infectious diseases hospitals, a second for tuberculosis hospitals, and a third for children's hospitals; and special hospitals (visiting) subcommittees. There will also be a staff subcommittee of eight members, four to be members of the Central Committee; a planning and development subcommittee, an ambulance subcommittee, and a public health subcommittee, the last to deal with the matters which have hitherto come within the province of the existing Public Health Committee, which will shortly be absorbed in the larger body.

The council has also been considering certain amendments to its standing orders made necessary by the new administrative scheme. These relate particularly to the duties of the medical officer of health to the council, which have been considerably widened. His new duties are set out in many clauses of the amended standing order. Among other matters it is laid down that he shall advise on all questions relating to the maintenance and treatment of the sick in hospital; the classification, provision, maintenance, and management of hospitals, and arrangements for their visitation and inspection, as well as consultation and co-operation with voluntary and other hospitals serving the county. He is to be responsible for the administration of all hospitals maintained or managed by the council (other than mental hospitals), for the administration of the council's powers under a large number of Acts dealing with health matters, for local medical services, the conduct of the business of the hospital visiting subcommittees, and for "securing that hospital treatment is afforded to any person entitled thereto, and that the provisions of the law, including all rules, orders, and regulations of the Ministry of Health in relation to hospital treatment, are duly carried out." The personal assistant to the medical officer of health, who has hitherto held the rank of first-class assistant, is to have the higher status of senior assistant, with a special allowance of £112 a year. A new principal assistant medical officer is to be appointed in the Poor Law division of the public health department at a basic salary of £800, rising by increments of £50 to £1,000 a year. (The actual figures, with bonus adjusted to the cost of living, are £995 and £1,205 respectively.) The position of medical consultant (small-pox), vacant by the death of Dr. Wanklyn, is not to be filled at present; temporary arrangements have been made with the Metropolitan Asylums Board for the services of a rota of small-pox experts on the staff of the Board to carry out the diagnostic work.

Queen's Hospital, Sidcup, up to the present used by the Ministry of Pensions as a general hospital, is to be acquired by the London County Council in connexion with the new duties which will devolve upon the council under the Local Government Act. It is intended that this institution, which comprises an estate ninety-three acres in extent, shall form the nucleus of a convalescent home for patients who have been treated in the hospitals which are being transferred to the council, and it will also be used for "decanting" purposes in connexion with the removal of patients from transferred hospitals when alterations are being carried out. The hospital is designed to afford accommodation for 690 beds. The council has also accepted, as a gift from the United Services Fund,

Heatherwood Hospital, Ascot. This hospital, which was opened in 1922, consists of three ward pavilions to accommodate 136 children's beds, a treatment block with x-ray and artificial light departments, and isolation and administration blocks. The hospital was designed for the treatment of children suffering from surgical tuberculosis, and it has also been used for the treatment of other orthopaedic cases. The council of management of the United Services Fund realizes that in course of time the supply of patients to this hospital from various parts of Great Britain will probably cease, owing to the growing provision for the treatment of such cases in their own areas. Moreover, the fund will itself cease to exist in about eight years' time, and the council of management, having spent upwards of £200,000 on the building and equipment, is naturally anxious to ensure that it shall continue to be fully utilized. It has been arranged that the council shall undertake to be responsible for the maintenance of the hospital on the cessation of the United Services Fund, the council in the meantime taking an additional number of beds (up to eighty), that the hospital shall continue to be used for the treatment of children of ex-service men in London suffering from orthopaedic conditions, and that the staff shall be taken over. The council has expressed its sense of the generosity of the offer by the council of management of the fund.

Public Abattoirs.

On the motion of Dr. Stella Churchill, the London County Council has again been considering the question of public abattoirs, and has sought information from the authorities of the more important and representative towns of Great Britain where public abattoirs are provided. In London there are just over one hundred private slaughterhouses—a declining number, for there were 1,500 such places in 1873, and nearly 500 in 1897—and, in addition, the large public abattoir provided by the City Corporation at the Metropolitan Cattle Market, Islington, where three times as many animals are slaughtered weekly as at all the private slaughterhouses combined. From the point of view of public health there are important considerations which can be urged in favour of public abattoirs, the principal being that the inspection of animals, both ante mortem and post mortem, is more efficient. To be entirely effective, however, all the private slaughterhouses in the area should be closed, and power to do this has been secured by some authorities, but, even so, there is nothing to prevent dealers in doubtful meat from removing to some rural area where inspection is not so stringent. The Ministry of Agriculture is about to introduce experimentally in London and Birmingham a scheme for the grading and marking of home-killed beef, and if the scheme, as is anticipated, is confined to animals slaughtered in public abattoirs and in one or two of the largest private slaughterhouses, it is probable that the smaller private slaughterhouses, already greatly diminished, will disappear. Conditions are also changing in the meat trade in consequence of the development of the science of refrigeration; nearly three-fourths of the meat delivered at Smithfield during recent years has been American or colonial. Other considerations which favour public abattoirs, such as the better prevention of cruelty, are, the council believes, effectively met even now by its own by-laws and regulations. Therefore the council has come to the conclusion that while the problem of improving the conditions under which meat is produced was undoubtedly important thirty or more years ago, it is solving itself by the passage of time. The public abattoir at Islington is capable of dealing with the needs of the county of London, and is to be enlarged and modernized, and the council does not consider it necessary to take action in the further provision of public abattoirs for London.

Radiological Aspects of Tuberculosis.

The Joint Tuberculosis Council has arranged for a post-graduate course to be held in the radiological department of the Brompton Hospital for Consumption and Diseases of the Chest, from January 27th to February 2nd, under the supervision of Dr. Stanley Melville. The classes will be limited to twenty-five members, and arrangements will be made at the first meeting on January 27th, at 2 p.m., to form small groups for daily practical study in the department, and for visits to the wards and out-patients. A detailed programme will be sent to members of the course after enrolling. Lectures will be delivered on the x-ray diagnosis of pulmonary tuberculosis; technique; bronchiectasis and lung abscess; intrathoracic new growths; the surgical aspect of pulmonary tuberculosis; and dental radiology. Instruction will be given on screening and dark-room procedures, diagnosis, and reporting. Films will be exhibited and discussed, and it is hoped to demonstrate the technique of lipiodol injection. The approval of the Ministry of Health has been obtained for this course; the fee for attendance is three guineas. Further information may be obtained from Dr. William Brand at the offices of the Joint Tuberculosis Council, Tavistock House North, W.C.1.

Correspondence.

GASTRIC AND DUODENAL ULCERS.

SIR,—There are many points in the "Collective Investigation" concerning gastric and duodenal ulcers[1] which raise matters of great interest. Only those who have undertaken similar work can realize the heavy labour, or appraise the high value, of such efforts as that which Dr. Luff has so successfully undertaken. There is much in his report worthy of discussion.

The chief criticism I would venture to offer on Part I is that it is not enough merely to record such events as "Pain or other discomfort after food" in Table VIII, or "secondary haemorrhage" in Table XX. The true explanation of cases suffering from such disabilities is that ulceration is still present; either there is revival of activity in an old ulcer, or a new ulcer has formed in the duodenum, in the stomach, or, as is most probable, near the anastomosis. The number of gastro-jejunal ulcers is therefore understated; though the percentage given—2.8—is already rather high. The mortality of operations—5 per cent.—is also excessive, and does not represent the standard of modern practice in competent hands. "Shock" after operation for duodenal ulcer, of which 11 patients died, is easily avoidable, and indicates less than adequate preparation of the patient for operation, needless prolixity or exposure during operation, or insufficient care afterwards. If, as your leading article suggests, there is likely to be a "bogey score" for surgeons, I would suggest that a mortality of 5 per cent. does not so much correspond to the golfing skill of a Gillies or a Tweddell, as to the meandering futilities of a Moynihan, with a sorrowful handicap in double figures.

In the "After-History of Gastro-enterostomy," Part II, page 1125, a long report deals with "pyloric ulcers." What exactly is meant by "pyloric ulcers"? It is quite certain that ulcers at the pylorus, or in the pyloric canal, so close to the pylorus that they could not be said to be elsewhere, are extremely rare. My own figures, in numbers greatly exceeding the total examined in this collective investigation, show that "pyloric" ulcers form about 1 per cent. of all peptic ulcers requiring surgical treatment. Ulcers proximal to the pylorus are in the stomach and should therefore be called "gastric." Of the total number of gastric ulcers operated on by me less than 5 per cent. were within 1½ inches of the pylorus. Ulcers distal to the pylorus are "duodenal," and should be so called.

The 454 "pyloric ulcers" dealt with in this investigation were clearly not "pyloric" in the strict sense. Were they, then, gastric or duodenal? References to Tables VI and VII (p. 1125) are here relevant. "Pyloric obstruction" alone was shown in 38 per cent. of the cases, whereas in Part I (p. 1074) pyloric obstruction was found in only 17.1 per cent. of the cases of duodenal ulcer. "Pyloric obstruction" in the very great majority of instances I have seen was in fact *duodenal* obstruction. In few cases was the obstruction in the pyloric canal; and

[1] *British Medical Journal*, December 7th, 1929, p. 1074; December 14th, p. 1125.

n still fewer was it exactly at the pylorus. There is very rarely a difficulty in discovering exactly where a constricting ulcer lies. In Table VII the results of test meals are stated: hyperchlorhydria was present in 80.5 per cent.. a close approximation to the conditions in duodenal ulcer, and remote from those in any type of gastric ulcer. Do not these two pieces of evidence clearly indicate that most of the cases of "pyloric" were in truth cases of "duodenal" ulceration? The fact that throughout the long series no case of carcinoma developed at the site of an ulcer is corroborative of this view.

May I be allowed to offer a welcome and my tribute to the best book ever written in any language upon the subject of gastric and duodenal ulcer? The work of Hurst and Stewart is worthy of the finest traditions of British medicine.—I am, etc.,

London, W.1, Dec. 27th, 1929. MOYNIHAN.

THE SUN CURE AND THE WORK CURE IN SURGICAL TUBERCULOSIS.

SIR,—The paper by Dr. Auguste Rollier, and your editorial note in the *Journal* of December 28th, 1929 (pp. 1206, 1209), remind me of two very profitable and pleasant, if strenuous, days spent at Dr. Rollier's clinics at Leysin in September last.

Up to that time I had not realized the full effect upon surgical tuberculosis of a combination of high altitude, pure air, sunshine, simple orthopaedic methods, and suitable employment for the patients. One was struck at the outset by the cheerful optimism displayed by patients, nurses, and doctors, and the pervading air of good fellowship in every clinic visited. I was greatly impressed by the work accomplished and the results of treatment. It was a revelation to see the splendid muscular development in patients who had been bed-ridden for months, recalling the appearance of athletes who had been continuously exercising their muscles. Whether Dr. Rollier's explanation is correct or not, the fact remains that high muscular development in every visible part of the body is a striking feature in his cases.

The absence of the spinal jacket and the favourable course taken by cases of spinal caries without that support gives one food for thought, and suggests a revision of our methods of treating tuberculosis of the spine.

The series of cases shown of joint tuberculosis with what seemed to be hopeless degeneration of the joint structures, in which, after treatment, apparent regeneration of the joint with restored movements could be demonstrated by *x* rays and physical examination of the patient, completely upset my preconceived ideas on the prognosis in this class of case, and Dr. Rollier's views that "the ankle is of all joints, with the one exception of the wrist, the most favourable from the point of view of curability," are certainly not those upon which I was brought up. If I had not seen cases proving his contention I should hardly have been able to accept his statement.

Altogether, I was greatly instructed and stimulated by my visit, and I cannot speak too highly of the kindness and hospitality of Dr. Rollier, who, notwithstanding the enormous amount of work he has to do, is ever ready to demonstrate his patients and his methods to surgeons interested in this branch of work.—I am, etc.,

ANDREW FULLERTON,
December 29th, 1929. Professor of Surgery, Queen's University, Belfast.

THE IMPORTANCE OF THE FAMILY HISTORY.

SIR,—Without undervaluing the importance of the family history in any branch of medicine, I would affirm that in no branch is it greater than in that of psychiatry. If in this branch the importance of this history is great, no less so is the difficulty of eliciting it. That we should be faced with bona fide lack of knowledge on the part of the relatives of a patient is not surprising. How many of us, as regards knowledge of our forebears, can go further back than our grandparents? Even of our great-uncles and great-aunts most of us, I fancy, know little or nothing. In the rare cases in which a pedigree can be produced it may serve to show what a family has done for the country, or what the country has done for it; or even to prove that it sprang from some predatory Norman or minor Scandinavian king. There may, indeed, be proof of blue blood, but none about the diseases transmitted with it. But when we inquire concerning mental and "nervous" disease in the family forebears of a patient we frequently encounter not only ignorance, but evasion, concealment, and falsehood. I doubt whether in any branch of medicine the family and personal history of a patient is taken with such care, in such detail, as in psychiatry. This is one reason why, at psychiatric out-patients, comparatively few cases can be dealt with in the time allotted. Having been concerned with history-taking over the greater part of thirty-nine years' service in five mental hospitals, including some seven years at out-patients, I should say that the family history obtained has been of value only in exceptional instances. Nevertheless, one has, of course, been expected to give a prognosis in the case, and very often one's opinion has been requested on such difficult points as the choice of a career for the patient (should he recover) or his relatives, the prospects of the latter, the advisability of marriage.

Doubtless, some still talk of Alexander and some of Hercules, but more nowadays of Eugenia—a form of latter-day hero worship by proxy. A brave and inspiring conception. But what are we *doing* nationally to build up a system whereby accurate official data regarding the life-history of the individual, and therefore of the family, shall hereafter be available? Owing to some flaw in the ritual of a contraceptive method a birth, perchance, occurs —*plus* one, puts down the official concerned, as gratified as it is given to officials to be. Who cares? It does not help posterity to mate or live better. Or perhaps it is a death —*minus* one; here posterity might care much if the stated cause of death were reliable. And all in between, the silence of the tomb. The individual's illnesses, with trifling exceptions, are unknown. Whereas, were these compulsorily recorded, along with the *ascertained* cause of death, there would be available, with the passage of time, a set of facts about an individual's ascendants for him to record opposite these in the family pedigree, which should be compulsorily kept. This information would be accessible to authorized persons—thus, officials of the State, members of the family, medical men asked for an opinion, life assurance companies; those who, more rationally than now, will have to deal with criminals and malefactors in general; those who, more rationally than now, contemplate a joint ménage and are willing to give procreation a trial. More interference with liberty! Rather, a sound contribution to the common weal. These health dossiers, one assumes, would be kept at the Ministry of Health in London, and at its branches in the chief cities. A gigantic mass of *paperasse*, truly; but what of it, when all will be gigantic; when each city terrestrial shall have its subterrestrial and aerial counterparts; when cupboards for skeletons shall be plentiful and pigeon-holes no longer at a premium?—I am, etc.,

Hove, Dec. 29th, 1929. EDWIN GOODALL.

POST-OPERATIVE TETANUS.

SIR,—Your annotation in the *Journal* of December 21st, 1929 (p. 1167), on the report on post-operative tetanus by the Scottish Board of Health, is no doubt very interesting and instructive, but the work is a very roundabout and laborious method of arriving at a well-known fact—namely, that the tetanus bacillus will not grow in an aerobic medium. I think that Occam's razor, *entia non sunt multiplicanda praeter necessitatem*, should be diligently applied to all such work. Very many years ago a French surgeon introduced a method of treating aneurysm by the subcutaneous injection of a solution of sterilized gelatin. This had a certain amount of vogue until a few cases of tetanus followed; also tetanus occurred in several cases in America when wounds had been covered up with isinglass plaster. It is well known that gelatin contains calcium, and often the spores of tetanus; the same occasionally occurs in isinglass.

In the *Proceedings of the Royal Society* for 1919[1] there are recorded many experiments by Drs. W. E. Bullock

[1] *Proceedings of the Royal Society*, 1917-18, B xc, 513-523.

(now W. E. Gye) and W. Cramer on the calcium salts as an accessory factor in the production of gas gangrene and tetanus. In a paper on the treatment of pneumonia[2] I showed that injected ionizable salts of calcium contract or destroy the capillaries, and thus deprive the tissues of oxygen. The anaerobic germs will migrate to this chamber deprived of oxygen, and multiply on the dead tissues, whereas aerobic germs cannot exist in such circumstances.

The simple solution of the problem set out is to see that the catgut is sterile, and that there is no anaerobic chamber in which even spores can multiply. Sterilization is often an uncertain process, and as the tetanus bacillus in the presence of oxygen is a harmless saprophyte it is well to see that there is no anaerobic chamber in which it can prey on dead matter. When surgeons used to cauterize an ovarian pedicle there was no risk of introducing even tetanus spores, except when, with unnecessary caution, they supplemented the cautery with the addition of catgut.

There must have been a few unpublished cases of tetanus to have induced the bacteriologists to undertake so much trouble in this matter. It would therefore seem that if surgeons, wise or otherwise, acquire a habit of inadvertently introducing tetanus spores into the abdomen it may be necessary, as a matter of routine, to have a supply of antitetanic serum ready, or to get rid of the anaerobic chamber by filling the peritoneal cavity with oxygen or filtered air. It is also well to remember that there are many other anaerobic germs for which we have got no antiserum.—I am, etc.,

Hindhead, Dec. 29th, 1929. JAMES BARR.

TRAINING OF THE UROLOGIST.

SIR,—I have read with great interest your leading article on the above subject (December 21st, 1929, p. 1165), and while I agree in the main with your panegyric of some of the American urological teaching centres, I feel that you have been unintentionally unjust to our English institutions. You state that "the English school of urology is young." May I point out that St. Peter's Hospital for Stone and other Diseases of the Urinary Organs was founded in 1860, and for almost seventy years has been engaged in teaching urology. If one excludes the special stone hospitals founded in the eighteenth century which had only a brief existence, St. Peter's Hospital was the first and for many years the only hospital in the world entirely devoted to urology. The other great teaching centres, such as the clinic at the Necker in Paris, are special departments of general hospitals. I feel that we may justly claim that a certain amount of success has followed our efforts. Important urological posts are held by men who were trained at St. Peter's Hospital, not only in London and the provinces, but in Australia, New Zealand, India, South Africa, Canada, etc. Graduates come to us for instruction from all the London teaching schools, from the provinces, from the British Dependencies, from most European countries, from America, and even from places as remote as Korea and Chili.

The teaching of urology presents difficulties which are not met with in other specialties. A student cannot injure a patient with the ophthalmoscope or the laryngoscope, but he may inflict irreparable damage with the cystoscope or ureteric catheter. He must show a certain amount of dexterity before he can be allowed to use these instruments. Graduates who come to St. Peter's Hospital for instruction may be divided into three classes. The first come to see the work of the institution, which is open to all graduates but not to undergraduates. They attend the out-patient department, and watch operations on in-patients. The work is demonstrated to them, and they have an opportunity of seeing the condition of the bladder during cystoscopy. They can also examine out-patients, but *they are not allowed to pass any instrument on them.* The second class are the clinical assistants. Fifteen clinical assistants are appointed every six months. They commence by passing bougies on cases of stricture. As soon as they have proved that they are competent, they are taught how to use the cystoscope, and later how to perform intravesical treatment, such as fulguration of bladder growths. This training is invaluable, because if one has learned to place the tip of an electrode accurately on any part of a growth, one will never have any difficulty in passing a ureteric catheter. The third class are the resident surgical officers, of whom there are two, a senior and a junior. Each resident must pass six months in the junior before he can reach the senior position. In fact, the junior position is a training ground to enable him to become competent to undertake the duties of the senior post. In the six months during which each resident acts as senior R.S.O., he assists the surgeons of the hospital at about 200 urological operations, he is responsible for the after-treatment of all these patients, and has to keep their case sheets. In addition, he is allowed to perform operations under the supervision of the surgeon, to catheterize ureters, to perform pyelographies, etc. When he has finished his term of office he is thoroughly grounded in surgical urology.

One may ask if this practical method of teaching is acceptable to post-graduates. I may mention two instances which are typical of many, and may help to give an answer. The first was that of an American who came to Europe for a year's study in urology. He was advised to spend one month at St. Peter's Hospital, and the remainder of the time at the Continental clinics. Instead, he spent eleven months in London, and only one on the Continent. The second was that of an Australian who was one of my clinical assistants a few years ago. He lately returned to England for a further period of study, and mentioned in the course of conversation that he had been strongly recommended to return home via America, as then "he would realize how sound the London teaching was."—I am, etc.,

London, W.1, Dec. 22nd, 1929. J. SWIFT JOLY.

"TENNIS ELBOW."

SIR,—The truth of your editorial comment—"that the etiology of 'tennis elbow' is various, its pathology obscure, and its cure uncertain"—receives additional support from the letters in the *Journal* of December 28th, 1929 (pp. 1213 and 1219), by Mr. Trethowan and Commander Edgar.

While the former says the symptoms are: "pain in the region of the radio-humeral part of the elbow-joint," and "tenderness of the radio-humeral joint, both in front and behind, and especially in front of the tip of the external epicondyle," the latter states that "on examination the pain can be elicited . . . passively, as when the surgeon presses with his thumb immediately above the external condyle of the humerus," and that it is "due to an affection of the extensor group of muscles."

It is evident that these two surgeons cannot be describing the same trouble. Moreover, my own description of the condition would be "pain on pressure over the orbicular ligament, due to injury to that structure," which differs from both the others. As we three may perhaps be described as not unskilled observers, is it not likely that each of us is right, and that each of us has met with the condition he records? I suggest that tennis elbow is due to several pathological conditions, one of which may be traumatic synovitis (Mr. Trethowan), another muscular strain (Commander Edgar), and another ligamentous strain (my own explanation), and that often all three conditions occur in the same elbow. While accepting Mr. Trethowan's view that the trouble is due to a traumatic synovitis, it is difficult to believe that it is limited to the radio-humeral joint, for the joint cavity is directly continuous with the elbow-joint itself.

As regards treatment, it has long been evident to me that some of these cases require rest, some manipulation, some diathermy, and some removal of a septic focus, as mentioned by Commander Edgar. Only experience can decide which will be successful.—I am, etc.,

London, W.1, Dec. 28th, 1929. PAUL BERNARD ROTH.

SIR,—The fact that the discussion on minor injuries of the elbow-joint in the Section of Orthopaedics of the Royal Medical Society[1] *centred round* so-called "tennis elbow" speaks well for the interest of the profession in what Gerald Patterson calls "the best of all games."

[2] *Practitioner*, 1923

[1] *British Medical Journal*, December 14th, 1929, p. 1103

The impression left on your editorial mind by the discussion was that the etiology of tennis elbow is various, its pathology obscure, and its cure uncertain. And yet there is a certain dogmatism in the opinions advanced by the speakers, the only trouble being that each advanced a different dogma, and the chairman, had time permitted, was prepared to disagree with nearly everybody!

Now, Sir, the movements of the arm in tennis are comparatively simple, and the results of these frequently repeated movements, as expressed in pain, should not be so entirely beyond our ken, if they are beyond our skill. *Et ego militari non sine gloria*, for I won a French national championship—now, alas! thirty-three years ago—so I venture to give you the impressions of a veteran who, at the age of 60, can still gladly play a hard five-set single match. May I clear the ground by commenting on some of the remarks made at the discussion.

In the first place, only extreme cases, such, for example, as show the synovial fringes referred to by Mr. Trethowan, come to operation, so I think it is only fair to state that we are more or less in the dark as to the actual pathological condition of the structures involved. Mr. Ogilvie speaks of blood effusion, young connective tissue with or without cells or blood vessels, but we cannot make microscopic examination of these elbow-joints; nor would we if we could. Mr. Ogilvie states the cause clearly: rapid, frequent jerking of the arm into full extension while the fingers are strongly flexed round a large instrument. Every muscle, with its attachment, is therefore involved, and pain may result anywhere between the trunk and the terminal digital joints.

"Tennis arm" would be a better term than "tennis elbow," for the pain is scarcely ever limited (*pace* Mr. Trethowan) to the radio-humeral joint, but can always be elicited by firm pressure over the attachment of the muscles involved. We have not the four cardinal signs of inflammation, but it is surely fair to conclude that pain following the excessive use of groups of muscles implies congestion—congestion of all the parts involved—myositis, synovitis, periostitis, possibly even superficial osteitis, and certainly fibrositis. No doubt, in some very exceptional cases, there may be minute tearing of muscle fibre, and no doubt in all of us there are "circulating toxins."

Mr. Whitchurch Howell's conclusion that tennis elbow was the result of bad tennis has an element of truth in it, but many a finalist at Wimbledon, and many a professional, have suffered from it. His theory of the pinching of a cutaneous nerve lacks proof. I fear Mr. Elmslie would find few players of experience to agree with him that the cause is the "forehand drive in which the hand was supinated and the wrist fully extended." It seems to me a physical impossibility to drive with the hand supinated. Such a grip would inevitably loft the ball.

Undoubtedly manipulation has cured certain cases; I have not seen the actual process, but I have heard, at first hand, of too many to be able to remain sceptical. Mr. Macrae Aitken spoke of successful cases of manipulation which "went flick." But what "went flick"? Had something been displaced? And was it possible to guess what had been displaced? I think a valuable hint, as to treatment, is given by Mr. Elmslie's masseur—to pretend to be doing a lot and to do very little.

My conclusions, then, as regards tennis elbow are: etiology—exaggerated function; pathology—congestion, exudation, and inflammation; and treatment—in bad cases by rest, and in slight cases the patients should carry on.—I am, etc.,

Cannes, France, Dec. 17th. A. A. WARDEN.

SIR,—In the last sentence of his letter Surgeon Commander Edgar mentions what I believe to be the primary cause of "tennis elbow"—namely toxaemia. It is surprising that, in the discussion by the Section of Orthopaedics of the Royal Society of Medicine, but slight mention was made of this as a causal factor. I see no reason for regarding the lesion of tennis elbow as other than localized fibrositis, and as such attributable to the same primary cause as generalized fibrositis, though localized by trauma. There need be no difficulty in reconciling the histological findings of different observers, since at the external epicondyle fibrous tissue exists, in three closely apposed situations: the tendino-fleshy attachment of the extensor muscles of the forearm, the periosteum, and the capsule of the radio-humeral articulation. As at similar sites elsewhere, the incidence of trauma may be on any one of these structures or on a bursa, such as Osgood[1] described, underlying the attachment of the muscles, giving rise to closely similar symptoms. When the capsule is affected the underlying synovial membrane may be expected to be hyperaemic and the synovial fluid increased, as in the cases operated on by Mr. Trethowan (*British Medical Journal*, December 28th, 1929, p. 1218).

Mr. Trethowan dismisses the hypothesis that the lesion is periostitis, though Bergmann[2] stated that he found radiological or histological evidence of it in half of his cases. Mr. Trethowan states also that the suggestion of an affection of the muscle ("chronic muscle strain") is negatived, because similar conditions to tennis elbow do not occur in association with other joints. This is surely not so. Essentially the same symptoms—persistent localized tenderness at a muscle attachment to bone and, on strong contraction of the muscle, pain which sometimes radiates and often suddenly inhibits the contraction—are not uncommon at several other sites—for example, the proximal and distal attachments of the deltoid, the attachments of the erector spinae, and the styloid process of the radius. These are all sites of attachment of muscles liable to prolonged or sudden strain. I suspect that "chronic muscle sprain" is the commonest of the three possible varieties of fibrositis causing tennis elbow. It is significant that in most cases swelling in the region of the epicondyle, which one would expect to be present if periostitis or "synovitis" were the lesion, is absent. Adhesions might form in long-continued cases no matter which of the three varieties was present.

Because the condition usually arises during participation in a sport or occupation involving frequent contraction of the muscles attached to the external epicondyle, the idea of trauma as the sole etiological factor has become firmly established. Trauma seems undoubtedly to play an important part in the causation, but I believe it to be merely the localizing factor. It is notable that gradual rather than sudden onset is the rule. Moreover, the movement with which pain is associated may have been frequently performed for years before the onset. Carter[3] states that cases are on record in which trauma could be definitely excluded, the condition arising, for example, in the left arm of a person decidedly right-handed. Absolute or partial rest for long periods is often singularly ineffective in relieving the symptoms, and treatment by massage and heat, usually beneficial in traumatic lesions, may merely accentuate them. One must conclude that there is some other causal factor, and this I believe to be toxaemia from focal sepsis. The following case illustrates the importance of this factor.

A man, aged 46, developed pain in the region of the left external humeral epicondyle while golfing during October, 1928. The pain was felt only on lifting or gripping an object, with the elbow extended and the forearm pronated or semi-pronated. Numbness of the hypothenar eminence of the same hand was noticed a few weeks later. He had to give up playing golf because of the pain. During the next ten months the symptoms continued unabated in spite of abstinence from golf, a course of galvanization, manipulation of the elbow by a bone-setter, and wearing for the last five months of a splint preventing full extension of the joint. The tip of the external epicondyle was tender on pressure, but there was no swelling. The contour of the elbow was normal, and there was no limitation of movement or pain on forcible passive extension with the forearm pronated and the wrist and fingers flexed. The grip of the left hand was slightly weaker than that of the right, and the maximum circumference of the arm and forearm was half an inch less on the left than on the right side. Sensibility to pin-prick and cotton-wool were diminished over the hypothenar eminence of the left hand. The nerve trunks were not tender, and the muscles of the hand not appreciably wasted. A skiagram of the elbow-joint was normal. Skiagrams of the teeth showed four with apical infection, two of which were crowned.

[1] Osgood, R. B.: *Arch. Surg.*, 1922, iv, 622.
[2] Bergmann, E.: *Arch. f. Ortl. u. Unfall-chir.*, 1924, xxiii, 363.
[3] Carter, B. N.: *Journ. Bone and Joint Surg.*, 1926, vii, No. 3, 558.

The four infected teeth were extracted in October, 1929, and no other treatment was given. Three weeks later the patient reported himself free from pain for the first time for twelve months, and able to play golf without ill effects. There has been no return of pain since, although he is playing golf frequently.

—I am, etc.,

Bournemouth, Dec. 29th, 1929. N. ROSS SMITH, F.R.C.S.

SIR,—The discussion on this subject has thrown considerable light on the pathology of "tennis elbow," but has done little, so far, to aid treatment. I have seen much tennis elbow, both for diagnosis and for treatment, and I am now very firmly convinced that the real cause of it is toxaemia, while the exciting cause is prolonged—or unnatural—strain upon the particular joint. Failure to cure is due to neglect of the general cause—the toxaemia, for until this has been abolished no local treatment can be expected to succeed. Local infections (teeth, tonsils, etc.) must be cleared up, but in my experience the almost universal cause of tennis elbow and allied arthritic or "fibrositic" complaints is intestinal toxaemia. Details of treatment depend upon x-ray findings, but usually they include: (1) diet—insistence upon "live" foods, such as fruits, salads, and whole-meal; avoidance of "putrefiable" foods, especially excess of meat, sugar, and starch; (2) abdominal exercises, to combate constipation; (3) aperients, especially liquid paraffin and salines, to combat stasis; (4) belladonna (in many cases) to relieve intestinal spasm set up by putrefaction of stagnant faeces; and (5) kaylene (colloidal kaolin), to adsorb intestinal toxins. Many an obstinate tennis elbow has yielded promptly to this treatment, which has the great merit of being harmless, since the whole of the kaylene and paraffin are evacuated with the faeces, while the amounts of saline and belladonna needed to complete the action are quite small. Kaylene-ol and kaylene saline are suitable preparations for the treatment.—I am, etc.,

London, W.1, Dec. 27th, 1929. ALFRED C. JORDAN, C.B.E., M.D., M.R.C.P., D.M.R.E.

THE HARVEY MEMORIAL TOWER.

SIR,—I am very glad to see that you are again raising the question of the Harvey Memorial Tower at Hempstead, and are organizing a scheme. I visited the old church last year, the tercentenary of Harvey, and I was saddened to see the utter desolation of the place, reminding one as it does more of the devastated areas in France than of a tiny English hamlet. The photographs you reproduce, though very good, do not convey to my mind, and therefore probably to your readers, the present desolation, for the ruins of the fallen tower remain in the churchyard as they fell, nearly fifty years ago, with one of the three bells buried beneath the debris.

I felt it such a slur on our profession and the nation that the remains of the immortal Harvey should lie in such surroundings that I wrote to the President of the College of Physicians, and suggested a scheme by which the money for the erection of the tower could easily be raised. He replied most sympathetically, and courteously invited me to join his committee, which I regret I was unable to do. I fully agree with Dr. Herbert Spencer that a small subscription from each member of the profession would raise the necessary money, but the difficulty is how to extract these crowns and half-crowns from careless pockets without extensive organization. The suggestion I made to the President was this: the majority of the profession are panel practitioners. Every county and county borough has its Local Medical and Panel Committee, which has command of funds. They each vote per annum a small poundage (¼d.–½d.) for expenses, and a contribution from the balance is generally voted to a medical charity. Let them each vote a fraction of a penny for one quarter of the year and the thing is done.

Last year I addressed the Hants Committee, of which I am vice-chairman, on this subject, and I had a most sympathetic audience. A resolution was passed stating their full sympathy with the project, but requesting a lead from the College Committee. I am sure if the British Medical Association approached the whole of the counties and boroughs in the kingdom in the manner indicated they would, with the minimum of machinery, achieve their object. This scheme would not, of course, prevent non-panel practitioners subscribing in any way they liked to headquarters.—I am, etc.,

Hartley Wintney, Hants, Dec. 20th, 1929. W. BALGARNIE, M.B., F.R.C.S.

*** An article on the Harvey Memorial, by Sir John Rose Bradford, chairman of the committee, will be found at page 23.—ED., *B.M.J.*

THE CAUSE OF NATURAL ABORTION.

SIR,—Your editorial under the above heading (December 14th, 1929, p. 1121) states that the fate of the zygote, the degeneration of which occurs late, "depends on whether the mammal in whose uterus it is embedded produces a litter or only one foetus at a time. In the former, pregnancy proceeds to term, the degenerate zygotes being expelled with the normally developed foetuses; in the latter, natural abortion occurs, rendering possible immediate preparation for fresh gestation."

At term mares not infrequently expel, together with a normal living foal, a degenerated zygote in the form of an egg-shaped or spherical cyst, the thin wall of which is largely composed of osteoid tissue.[1] Such a mole occupies one cornu, the normal foetus developing within the other cornu. Both foal and mole are expelled within the foetal membranes at term. A similar sequel to twin pregnancy occurs occasionally in cows; the degenerate bovine zygote, however, is commonly covered with skin and hair, and, though smaller than the equine mole, appears to be more highly developed. Your contention that the degenerated zygotes are expelled before term is not supported by experience with the mare and cow, both of which commonly produce only one foetus at a time. It would appear that the retention *in situ* of a degenerated zygote is correlated with the possession of a bicornuate uterus, and not, as suggested, with multiparity.—I am, etc.,

Department of Pathology, Royal Veterinary College, N.W.1, Dec. 19th, 1929. TOM HARE.

PROBLEM OF MATERNAL MORTALITY.

SIR,—In a report recently presented by Dr. William Robertson, medical officer of health for Edinburgh, to the Public Health Committee, there appear two or three statements which I think are distinctly unfair to doctors practising midwifery. The report was published in *The Scotsman*, but I do not think that the pages of a lay journal are the place in which I should ventilate my objections. The report says:

> "The maternal mortality rate per thousand births in Edinburgh during the past two years has been 6.6 . . . the causes of death are puerperal sepsis, puerperal haemorrhage, and puerperal eclampsia caused by albuminuria. Of the total of 364 fatalities which occurred during the past eight years, these conditions caused 207 deaths. The somewhat disquieting feature . . . is that sepsis, haemorrhage, and eclampsia can be justifiably classed as preventable conditions."

I consider this last sentence misleading even to medical men. That some cases of sepsis are preventable is admitted. If a general practitioner or nurse is attending a case and has not examined the urine for albumin, and the patient develops eclampsia and dies, we agree that the nurse or doctor has not taken steps which might have prevented that death. That all cases of eclampsia are preventable is contrary to practical experience. That certain cases of puerperal haemorrhage can be avoided is also correct; that all cases of puerperal haemorrhage, even with fatal results, can be avoided is not correct. It is wrong, I think, to give the impression to the lay public that if a patient dies from sepsis, eclampsia, or haemorrhage, the death may justifiably be held as having been preventable in all cases. The responsibility and risk of attending midwifery cases is serious enough without adding this extra burden to the practitioner.

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[1] Hare, T.: *Vet. Journ.*, 1926, 82, 371.

The report continues:

"Between November 30th, 1928, and October 31st, 1929, there took place 7,389 births in the city. Of these, 1,404 were attended by the Queen's Jubilee Institute of Nurses. The total number of maternal deaths in the city was 53. When the nurses were in attendance the deaths numbered 2. Excluding the cases attended by the Queen's nurses, the maternal death rate for the city was 8.2 per thousand births. The maternal death rate where nurses were in attendance was 1.6 per thousand births."

This again appears to me to be a misleading statement. These 1,404 cases attended by the Queen's Jubilee Institute nurses are really successful cases of the co-operation of doctor and midwife. I employ Queen's nurses very largely in my practice, but all the patients are treated by me, they receive their ante-natal visit from me, I am present at the confinement, and attend during the puerperium, and I make a post-natal examination some eight weeks later. It is unfair, therefore, to state that these cases had a mortality of two when the nurses were in attendance. It ought to read "when the nurses and doctor were in attendance." Dr. Robertson then proceeds to recommend the establishment of ante-natal clinics throughout the city. In the opinion of many of us in Edinburgh this would not contribute to the solution of the problem.

I would venture to make two practical suggestions. Should not every general practitioner be qualified to give ante-natal care? Would Dr. Robertson not broadcast throughout the city that every woman should receive ante-natal care from her own medical attendant or at the maternity hospital? Then the already efficient and well-equipped ante-natal clinic at the maternity hospital would be available as a consultative centre to which practitioners would refer their cases for specialist opinion. The general practitioner, with his practical experience of all branches of medicine, is really the most highly equipped member of the profession to perform ante-natal work.

The next point of constructive criticism I would make is that Dr. Robertson should, for, say, one year, earmark the money he wishes to spend on the establishment of these new ante-natal clinics, as a fund from which he may pay to the practitioners in Edinburgh a fee to cover the cost of professional assistance which they would call in when they had to undertake any operative midwifery. Since acquiring an assistant and partner, I have made it a rule in my own practice to perform no operative midwifery single-handed unless in a case of grave emergency. This has robbed midwifery of half of its difficulties and terror. No provision of sterile equipment or gloves is of value unless the practitioner has the help of a colleague to administer the anaesthetic and is able to carry out his operative work quietly and with due antiseptic and aseptic care. The mere fact of having the second opinion prevents too early interference. I believe the solution of the problem of puerperal sepsis really lies along the lines of providing adequate nursing associated with the general practitioner, who must, however, if he has operative work to perform, have further medical assistance.—I am, etc.,

Edinburgh, Dec. 16th, 1929. A. FRASER LEE, *M.C.*, M.D.

REVOCABLE STERILIZATION OF THE FEMALE.

SIR,—I was much interested in reading Dr. Norman Haire's letter (December 14th, 1929, *p.* 1134), *in which he* says that the insertion of a silver ring into the uterus with the object of providing a contraceptive is harmless.

In September of this year a patient of Dr. Boyd of this town came to see me in order to have an *x*-ray examination of her uterus. She told me that three weeks *previously* she had a ring inserted while she was in London. She was feeling very ill, had a nasty discharge, and was running a temperature. (I enclose a radiogram of the ring *in situ*.) Dr. Boyd and I thought that the ring was responsible for her condition, and accordingly he dilated the cervix and removed the ring. On pulling down the cervix he found a laceration and erosion, and on removing the ring he found the lining membrane of the uterus extremely unhealthy and a purulent discharge coming through the cervix. He thoroughly curetted her and repaired the cervix, and I am glad to say that she made an uninterrupted recovery.

To us it seemed a thoroughly bad principle to introduce a foreign body into the body of a uterus which may or may not have been unhealthy at the time. This is the other side of the question. It would be interesting to know if other practitioners have had any similar experience.—I am, etc.,

Ulverston, Dec. 18th, 1929. RICHARD FAWCITT, M.B., Ch.B.

SIR,—Dr. G. L. Johnson's letter (November 30th, 1929, p. 1031) on temporary sterilization of the female by dislocating the fimbriated ends of the Fallopian tubes has prompted me to record the salient features of an unusual case which came under my notice recently, and which emphatically supports Dr. Norman Haire's objection to the dislocation procedure. The main points in this case were these:

Mrs. I., aged 31 years, and married one year, was operated on in the Royal Samaritan Hospital for Women, Glasgow, by Dr. Gardner on September 12th, 1926. A solid ovarian tumour (found on examination to be a simple fibroma) on the right side was removed, and with it the right Fallopian tube, which was adherent to the ovary and could not readily be separated. Apparently the whole tube was excised. On November 13th, 1927, she was readmitted urgently to the same hospital and diagnosed as a case of ectopic gestation. A tubal pregnancy on the left side was found on laparotomy, and a left salpingectomy was performed. A portion of ovary had to be resected. The diagnosis was confirmed pathologically. Despite the apparent removal of both tubes and an emphatic prognosis as to the impossibility of pregnancy, on October 12th, 1929, Mrs. I. was delivered of a full-time infant.

It is difficult to understand how pregnancy ensued without supposing that a patent portion of the Fallopian tube, however small, had not been removed. It is equally difficult to see how sterility may be obtained simply by dislocating the fimbriated ends of the tubes when it did not ensue even in the above case.

It may not be out of place here to mention the work of Haberlandt,[1] who, since 1919, has been experimenting on the problem of producing temporary sterility in female animals. Subcutaneous transplantation of ovaries from pregnant rabbits and guinea-pigs produced temporary sterility in these. The effect is thought to be brought on by the formation of a hormone in the transplanted corpus luteum, which inhibits follicle maturation. After resorption of the transplanted ovaries the animals became pregnant and gave birth to mature, normally developed, living young. Sterility could be obtained for two to three months. Haberlandt obtained identical results by the daily subcutaneous injection of certain ovarian and placental extracts on the market. He is convinced of a hormonal action in securing temporary sterility in these animals. It is not inconceivable, therefore, that, when we know more of ovarian hormones and when ovarian extracts are really active, Haberlandt's work on animals may be of practical value in producing the temporary or revocable sterilization of women.—I am, etc.,

Glasgow, Dec. 18th, 1929. ALBERT SHARMAN.

CHILD GUIDANCE CLINICS.

SIR,—Dr. Gillespie raises a number of important points, and we agree with his general plea for close liaison between the child guidance clinic and the general hospital. Our two years' practical experience of such a clinic has shown that it is easy, while maintaining independence, to get all necessary help in specialized diagnosis and treatment of physical conditions from certain neighbouring hospitals, though from some others we can get no help at all. We doubt if a general hospital is a suitable centre for a fully established clinic of this sort; its almoner's department works on different lines and with a differently trained staff; the expense is quite beyond the capacity of a voluntary hospital; and an elasticity of method is at all times necessary that is unlikely to be possible in a general hospital. What is needed is a close working arrangement between the two organizations, whereby each provides, quickly and freely, help to the other.

We do not believe that students can usefully be trained in the work of child mental hygiene by attendance at

[1] Haberlandt, L.: Hormonal Sterilization of Female Animals, *Zentralbl. f. Gynäk.*, 1927, li, 1438.

such a clinic. This is not a branch of medicine suitable for pre-graduate study, but should be approached only after a thorough and practical grounding in both general and psychological medicine. For a graduate in his early years to attack the problem of child mental hygiene without the discipline of a lengthy medico-psychological training, and a knowledge of even elementary social problems, would lead to the development of a superficiality in outlook against which this new department of medicine must be safeguarded. It is only by going beyond medicine, into the school and the family, that the proper perspective can be obtained.

The organization of the out-patient department and of the almoner's office of a general hospital are not, as yet, equipped for dealing with problems of this breadth.—We are, etc.,

Child Guidance Clinic, Jews' Free School, Spitalfields, E., Dec. 29th, 1929. NOEL H. M. BURKE. EMANUEL MILLER.

SIR,—I was pleased to see the letter of Dr. Gillespie in the *Journal* of December 28th, 1929 (p. 1219), and I hope that it will attract attention in the right quarters. The indifference of the general hospitals throughout the country to medico-psychology is a very serious matter. Not only does it leave a large proportion of the population without adequate treatment for their neuroses, but, as Dr. Gillespie rightly says, it makes it difficult to see how sufficient men are to be trained in psychological work to meet the ever-growing need.—I am, etc.,

Birmingham, Dec. 30th, 1929. R. MACDONALD LADELL.

"ACTIVATED" FLUORESCEIN IN THE TREATMENT OF CANCER.

SIR,—May I be permitted a final word or two in reply to Dr. Webster's last letter (December 28th, 1929, p. 1220)? I feel that in justice to my colleagues and myself I must enter a protest against the unscientific basis of much of his criticism. To cite an instance: in a former letter he stated that he had tried fluorescein without result; he now admits that this statement was based on a trial with *one* case only, and that a case in which multiple secondary growths were present. Dr. Webster again stresses the point that it is for me to prove that fluorescein, when activated with an appropriate *x*-ray dose, is capable of exerting a more intensive effect on malignant tissues than the same *x*-ray dose alone. I claim that this fact is definitely demonstrated in the series of photographs published in the *Journal of Public Health* for November, 1928, to which I have previously directed attention. It is also of interest, in this connexion, to quote from the report for 1928–29 of the medical superintendent of the North Middlesex Hospital. He states, on page 20, that "recently one remarkable case, which proved refractory to *x*-ray treatment, a large rodent ulcer of the face, healed up in a remarkably short time" as the outcome of the additional use of fluorescein.—I am, etc.,

London, N.W.3, Dec. 29th, 1929. S. MONCKTON COPEMAN.

*** This correspondence is now closed.

MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

SIR,—A resolution advocating representation of Members on the Council of the Royal College of Surgeons of England has now been passed by large majorities at forty-one annual meetings of the Fellows and Members. The reply to the resolution which was passed at the annual meeting of November 21st last is given in your issue of December 21st, 1929 (p. 1183), in a report of the proceedings at the subsequent meeting of the Council. In that reply the Council points out that no evidence is before them that any considerable number of Members desire a change in the constitution of the corporation. Now the only way to produce substantial evidence is to submit to the Council a widely signed request for consideration of a claim which all must admit to be just. With this object in view a card will shortly be issued to all Members, which we trust, for the honour of the corporation, will meet with a very large response.

At this stage the question whether a Member is personally interested does not arise, for surely the whole body of Members are corporately interested in obtaining a recognition of their desire to be more intimately associated with the conduct of their College. Nor do any questions arise as to what measure of representation should be accorded. All that is needed is an adequate expression of the view that this modification in the constitution of the College should be brought about. In the meanwhile, financial help to meet the expenses of the movement is urgently needed, and I shall be glad to receive subscriptions towards the cost, which we estimate will be about £250.—I am, etc.,

60, Welbeck Street, London, W.1, Dec. 30th, 1929. ERNEST E. WARE, President of the Society of Members.

THE ACETIC ANHYDRIDE TEST IN CEREBRO-SPINAL FLUID.

SIR,—May I put forward three points concerning the Boltz test, in reply to Dr. Grossman's letter in your issue of December 7th, 1929 (p. 1084)?

(1) I can confirm Dr. Herbert's finding that the reaction is due to tryptophane, having come to this conclusion working independently and from a different point of view. (2) The reaction is therefore only an indirect test for an excess of protein, and is positive when applied to cerebro-spinal fluids of high protein content from non-syphilitic cases. (3) In asylum practice the test is probably valuable, as the non-syphilitic insanities are not associated with a high protein content in the cerebro-spinal fluid, but in general hospital practice the test is useless.—I am, etc.,

King's College Hospital, London, Dec. 18th, 1929. C. E. NEWMAN, M.D.

The Services.

DEATHS IN THE SERVICES.

Lieut.-Colonel Arthur William Tuke, Indian Medical Service (retired), died very suddenly, while playing billiards, in the New Club at Cheltenham, on December 7th, 1929. Another medical man was present in the billiard room at the time, but nothing could be done, and he died almost immediately from cerebral haemorrhage. He was the youngest son of the late H. G. Tuke, Esq., barrister-at-law, of Charlton Kings, Cheltenham, and was born on March 30th, 1871. He was educated at Cheltenham College and at St. Thomas's, and took the M.R.C.S. and L.R.C.P.Lond. in 1896; also subsequently the F.R.C.S.I. and the D.P.H. of the Irish Colleges in 1906. Entering the I.M.S. as lieutenant on July 27th, 1899, he became lieutenant-colonel on January 28th, 1919, was placed on the selected list for promotion on March 28th, 1925, and retired on July 27th, 1926. He served with the Aden Boundary Commission in 1903–4, and in Mesopotamia during the great war. After his retirement he settled at Cheltenham, and built a house for himself on Cleeve Hill. He took a great interest in the enlargement and development of the Winchcombe Hospital, of which he was honorary secretary and treasurer. While in India he married Miss Anna Boyd, of a County Cavan family, who is left a widow without children.

Major Robert Sutherland Strachan, R.A.M.C., died suddenly at Cairo on December 10th, 1929. He was educated at Glasgow, where he graduated as M.B. and Ch.B. in 1915, entered the army as lieutenant on June 15th, 1917, and became major after twelve years' service. He served during the latter half of the war of 1914–18.

Major William Egan, D.S.O., O.B.E., R.A.M.C., died on December 11th, 1929, at Kingston, Jamaica. He was educated at University College, Cork, and at the Catholic University in Dublin, and graduated as M.B., Ch.B., and B.A.O. of the Royal University of Ireland in 1904. After filling the post of house-surgeon to the County and City Infirmary, Waterford, he entered the R.A.M.C., attaining the rank of major on January 30th, 1918. He served throughout the war of 1914–18, was mentioned in dispatches in the *London Gazette* of December 24th, 1917, received the D.S.O. on January 1st, 1918, and later the O.B.E.

Obituary.

SIR WILLIAM MILLIGAN, M.D., C.M., LL.D.,

Consulting Aurist and Laryngologist, Manchester Royal Infirmary.

SIR WILLIAM MILLIGAN, whose death we recorded last week, was the third son of the Very Rev. William Milligan, D.D., Professor of Biblical Criticism in the University of Aberdeen, who married Anne Mary, daughter of David Macbeth Moir of Musselburgh. David Moir, under the *nom de plume* of "Delta," was a well-known writer of Scottish stories and of poetry. William Milligan was born on August 24th, 1864, and was educated at Aberdeen University. He qualified in 1886 with the Aberdeen degrees and the diplomas of the Edinburgh colleges, and was awarded honours for his M.D. in 1892. After acting as demonstrator of anatomy at Aberdeen he came south to the Northern Hospital, Liverpool, where he held the posts of house-physician and house-surgeon. Whilst at Liverpool he contracted blood poisoning, and went a couple of sea voyages to recuperate. It was on one of these, it was said, that he met Dr. Pierce, then the aural surgeon of Manchester, who, being impressed with his personality and promise, suggested a partnership, and Dr. Milligan visited the town to see what the prospects were. Scottish medical friends encouraged him, and so he settled there in 1889. Having decided to specialize, he went for a time to Göttingen and Vienna to study the Continental methods of treatment. Aural and nasal surgery was not very efficient then in Manchester, nor in England, and, with the knowledge that he had gained on the Continent, he had his opportunity, which he made the most of. He was soon appointed an honorary surgeon to the Ear Hospital, and in 1899 as aurist and laryngologist to the Royal Infirmary, and it was in the latter post that he became widely known and did his best work. He was also appointed lecturer in the University. He was very neat, skilful, and resourceful, and, when occasion required, bold in his surgery, and a teacher of the first order—clear, instructive, and very attractive to students. He soon got a good practice, which in his later years, when he was so well known, became very large. After being in Manchester about ten years he was invited by Sir William Dalby to join him in practice in London, but there being no hospital post in view Milligan preferred the bird then in his hand. Had he accepted the offer there is no doubt that he would have worthily carried on the Toynbee, Hinton, Dalby traditions of Savile Row.



Always taking interest in the scientific side of his work, he was one-time president of the Manchester Medical, Clinical, and Pathological Societies, and of the Laryngological and the Otological Sections of the Royal Society of Medicine. At the Manchester Meeting of the British Medical Association in 1902 he presided over the Section of Otology, and he had previously held official posts at the Ipswich (1900) and the Bristol (1894) Meetings in his Section. During the war he was consulting surgeon in the North-Western area, with the rank of major R.A.M.C.(T.F.).

He filled his day very fully: up early transacting a good deal of business before leaving for the hospital or nursing home, where he arrived punctually to the minute—9 o'clock; his house-surgeons could rely on this so surely that the anæsthetic would be partly administered before he arrived in his theatre ready for work. Then he would have a light lunch at his rooms and see patients from 1 o'clock for four or more hours. More letters, and then home, and often social engagements in the evening. In spare moments he worked at his hobby of carpentry, making beautifully finished models, such as dolls' houses. He published, along with Dr. Wyatt Wingrave, *A Practical Handbook of the Diseases of the Ear*, and a smaller work on the same subject for students. He wrote the article in Allbutt's *System of Medicine* on "Chronic suppuration of the middle ear and labyrinth," in which he described his own special operations and instruments. In addition, he communicated several papers to the medical journals. He was created Knight Bachelor in the summer of 1914, and awarded the honorary degree of LL.D. by his own Alma Mater in 1927. He was a justice of the peace for Peeblesshire, in which county he had an estate at Polmood.

Milligan was a first-rate business man, and his capacity for money affairs secured for him a place on the board of directors of an important Scottish trust company, of which last year he became chairman. This quality made him a good committeeman, in the chair or out of it. Those who worked with him in appeals for cancer funds were much impressed with his devotion to the work, whether it meant visits to Liverpool, Warrington, or meetings at home. Indeed, he was taken ill for the first time the day after he returned from Liverpool after a committee meeting, when his colleagues travelling with him thought he was not as well as he had always appeared to them to be. He was of a very strong, forceful personality, liking to have his own way, but, on occasions when he could not get it, he accepted defeat with a good grace and bore no resentment. Although far from well, he went to Durham, and again to Sunderland, in November last, to support the cancer campaign in the North, and he kept up his practice and his public activities at home until the day before his final illness.

The foundation of the Manchester and District Radium Institute owes a great deal to his energy and his influence with the late Sir Edward Holt, who found a large sum to establish it. He was its secretary, real business manager, and director of its policy from its foundation. As he had a large practice amongst well-to-do classes he was able to secure subscriptions for the Institute, and later for the campaign in Lancashire, Cheshire, and North Wales for cancer research, organized by the Manchester and Liverpool committees on cancer, and the British Empire Cancer Campaign. He acted as chairman of the Manchester members of the executive committee of this appeal. He was a member of the council of the British Empire Cancer Campaign, and president-elect of the National Health Education Society. No medical man ever attained such a prominent place in the public life of the town as he did. He considered it his duty to do what he could for a city of which he was proud to be a citizen, and, consequently,

he was in great request for presiding at meetings on subjects not always of a medical nature. He was the first medical man to speak from the pulpit of a church on Hospital Sunday, when collections are made for voluntary hospitals of the town. Other members of the profession followed his example, and during the past year the local Branch of the British Medical Association circularized its members asking for volunteers for such charitable work. He could write terse and telling letters, and could also speak convincingly, and the latter he did best when his time was as limited as was the space in the columns of the newspapers. During the general strike he enrolled as a special constable, and his well-known figure was to be seen from time to time directing very efficiently the traffic in the town. He was chairman of the local branch of the National Lifeboat Institution for close on ten years, and worked hard for its centenary bazaar in the town. As a reward for this he was made a life vice-president in 1924—the highest honour that can be awarded to an honorary worker for the cause. Lady Milligan supported him in this work, and was awarded a gold medal for her outstanding service. An unrivalled host, he entertained freely, and many and varied indeed were the guests that enjoyed his choice and generous hospitality.

He was always a Liberal and free trader in politics, held office as chairman, and was an active worker and speaker at meetings in his own division for many years. When the Prime Minister of the day was visiting Manchester in 1918, he was taken ill in the private apartments of the Town Hall. He would not see a doctor, but as Sir William Milligan was attending a member of the Prime Minister's family for an influenzal "throat," he was introduced into the sick room to report, and, being there, the invalid was persuaded to submit to treatment by him for a similar ailment. Subsequently the physician accompanied his patient to London, and, at a later date, to international conferences at Spa and Paris. His political work culminated by his contesting West Salford for the Liberals in 1922. He was in many ways an ideal candidate, a prominent popular and public man in the district, a fluent and convincing speaker with good presence, a tireless worker, and not without financial means; he enjoyed the rough and tumble of the election, but was very disappointed at being at the bottom of the poll in a triangular contest. He did not again contest this or any other constituency.

He married in 1890 Bertha Warden, daughter of James Anderson, founder of the Orient Line of steamships, and leaves one son and one daughter. They mourn the untimely loss of a devoted husband and father, and in this they have the sympathy of innumerable medical friends.

A largely attended public memorial service was held in the Manchester Cathedral on the invitation of the Dean, who conducted it, at which the Lord Mayor, the president of the Chamber of Commerce, and other leaders of civic and commercial life, and representatives of the many hospitals, charities, and institutions with which he had been helpfully associated, were present. The remains were cremated after a private service at the crematorium, and there they remain, at any rate for the present. E. M. B.

Sir JAMES DUNDAS-GRANT (London) writes:

It is difficult to realize that the powerful and attractive figure of William Milligan has been removed from our midst. For many years he commanded the attention of the special societies and sections, and if he had lived would have done so for a good many years to come. This is true not only of the professional side of his life but of the social and public sides as well. The highest titular distinction would probably have fallen to his lot had he been spared, and he would have played his part with efficiency and distinction. His professional relations with Mr. Lloyd George during the war afforded ample evidence of the high esteem in which he was held by that discerning statesman. In return Milligan paid enthusiastic tribute to Mr. Lloyd George's almost uncanny powers of prescience and accurate visualization as displayed during his trying visit to the scenes of military activity. Milligan was firm in his opinions, and stood loyally by the Liberal party in its period of fallen fortune. In private life his sunny brightness made his presence a joy to his family and to his many friends. His wisdom in counsel and his sympathy in times of stress and anxiety made him an invaluable friend. He was more than welcome on occasions of gaiety and relaxation. As a travelling companion he was ideal.

Whatever he undertook he did with his might, and his *might* was very considerable. True of him in his work, this was equally so in his play. His activity in his recreation was seen at its best when he indulged in his hobby of carpentering, in which he was able to turn out work which would compare well with that of the trained artificer. His mental and bodily vigour rendered it indispensable for him to be doing something or making something. Careful and accurate in business matters he was generous to the point of lavishness in his hospitality. He displayed the Scottish character at its best.

A worthy addition to the brilliant body of "sons of the manse," Milligan was actuated by the best motives that the early training in regularity of life, in industry, and in seriousness of purpose could inspire. Though admittedly *propositi tenax* he possessed a fine flexibility of judgement and an adaptability of character that enabled him, without offending, to enforce his views to the advantage of all concerned. It would here be out of place to make the time-honoured quotations from Horace and from Shakespeare. They would indeed be appropriate, but it may be said, without affectation or exaggeration, that he was a great and a good man, much loved and respected during his life, and after his death long to be mourned and remembered.

Mr. HERBERT TILLEY (London) writes:

With the passing of Sir William Milligan, otology and laryngology lose one of their most brilliant exponents and an authority whose reputation was world-wide. Nature had been kind to our colleague, and the tall, alert figure, the well-cut features, combined with a commanding personality, at once arrested attention in any company, and particularly so in the international conferences which he so frequently attended. His public appointments and high professional attainments are known to all who are particularly interested in diseases of the ear, nose, and throat, and his written contributions to those branches of medicine will always rank high in the literature of otology and laryngology. But to those of us who were of his time, he will probably be remembered best for his power of making a clear, judicious, and convincing exposition of any subject to which he had given attention. It always appeared that any opinion he offered was the result of a carefully analysed practical experience, and more often than not his conclusions left one with a feeling that, for the time being, there was nothing more to be said in the matter.

Sir William Milligan possessed a type of wisdom which was invaluable in council, and his loss as chairman of the directors of the *Journal of Laryngology and Otology* will be very difficult to replace. I remember well after one of the annual meetings of the directorate of the above-mentioned journal, the chartered accountant who was present said to me at the close of the meeting, "Well! a large part of my life is spent in attending company meetings, and I don't think I have ever seen or listened to a more efficient and capable chairman—he knows his job from A to Z—would to Heaven we had more like him in the city." For some years Sir William Milligan had been my co-examiner for the M.S. degree in oto-laryngology in the London University, and during the *viva voce* and practical parts of the examination he impressed me with his intimate knowledge of general medicine, and his insistence that such was the essential foundation of special practice. On such occasions he was frequently my guest, and then one became acquainted with his many hobbies and interests outside his professional work. It was during these visits that were revealed a kindness of heart and personal charm which might not have been suspected in the cut and thrust of public debate. Our special department is much poorer for his loss, in that it is improbable that we shall see his like again.

Dr. P. WATSON-WILLIAMS (Bristol) writes:

My friendship with Sir William Milligan dates from the meeting of the British Medical Association at Bristol in 1894, when we were joint secretaries of the Laryngological and Otological Section, and one could not fail to be impressed with the scientific enthusiasm of my genial and debonair colleague. In the midst of his very busy life he was always keenly responsive and "quick in the uptake" to any useful suggestion. When the great war came we realized that the army medical services were ill equipped in regard to the subjects of our specialty, and when, in reply to a letter to Sir Alfred Keogh, Director-General A.M.S., he replied that he would be grateful for information, Milligan, with the writer, was invited to draw up a scheme. This comprised organization of the services of oto-laryngologists at home and at the front, including the special hospital clinics in France which eventually materialized at Havre and at Rouen. The influence of Milligan's vitalizing personality will long be felt, though it is hard to realize that his charm of presence is withdrawn from our midst. So recently as August 5th Milligan wrote, "I go back to Manchester upon August 10th, and intend to start work again at once and hope to attend meetings in London this winter. My main regret at not being at the Manchester Meeting was that it gave me no opportunity of entertaining old friends. I was asked to be President of the Section, but declined because at the time I was not fit to do any spade work." It was like Milligan to refuse the honour of the chair as he could not do the work of organization, yet it must have been a grave disappointment, as the growth and development of the great Manchester clinic has been so very largely due to his scientific work and enthusiastic organization. So eagerly looking forward to the resumption of his professional and other activities, his death truly is a grave loss to our specialty, a great bereavement to his many friends, and grievous sorrow to his wife and family.

Mr. LINDLEY SEWELL, aurist and laryngologist to the Manchester Royal Infirmary, writes:

As the first of a line of aurists to be trained by Sir William Milligan, may I pay a heartfelt, if feeble, tribute to his memory? When Milligan first came to Manchester the only treatment meted out in ear diseases was the use of various "drops" and sometimes the Wilde incision. He introduced the modern surgery of the ear, nose, and throat into this district. This was not done without some opposition, and he had a stiff fight before he overcame the prejudice of the general surgeon and was allotted beds. He was a bold and dexterous surgeon, and preferred the major to the minor operation, and to the more finicking measures which are common in the specialty. Thus, with the exception, of course, of the submucous resection operation on the septum, he did not perform any of the many intranasal operations now so commonly done, especially in Continental clinics. It was a favourite saying of his that there are two big principles in operating —one, to see what you are doing; second, to give good drainage. He was at his best in the radical mastoid operation, and although I have seen operators in almost all the large Continental centres, I never saw his better at this.

Milligan had the energy of two men, and I have rarely seen him tired. Frequently I have had to wait until ten o'clock at night before some matter could be discussed with him, and then he would be found as fresh as paint. He possessed a very clear, logical, and tidy mind, and could, I am sure, have been a very successful business man. His acumen in this line was shown by his success in the many public committees on which he sat during his later years. His very busy practice—and this came very early in life to him—precluded his carrying out any original research on any scale, and I do not think that his bent was in this direction. He had a great executive mind, and could marshal and evaluate the findings of others and apply them to practical purpose. His most outstanding features were his abounding energy, his incapacity of fatigue, and the thoroughness with which he saw through to completion any work which he had begun. He could have made his mark in any line of life. Mr. F. G. Wrigley and myself, his colleagues at the Manchester Royal Infirmary, will sadly miss his ready, kindly, and always valuable advice.

[The photograph reproduced is by Press Portrait Bureau.]

THE LATE Mr. J. SCOTT RIDDELL.

WE are indebted to Dr. THOMAS FRASER, lecturer in clinical medicine, Aberdeen University, and physician to the Aberdeen Royal Infirmary, for the following appreciation:

By the death of John Scott Riddell a forceful and striking personality has been removed from the medical circle of the North-East of Scotland. Though never of powerful physique, he was for long possessed of boundless energy, an acute and active brain, with a quickness of mental action possessed by few. This quality was often disconcerting in conversation from the incisiveness of the repartee which suddenly shot forth.

Riddell was a born teacher, and early in his medical career developed this faculty, not only in the infirmary and university, but also in courses of ambulance instruction, which he initiated and conducted in Aberdeen under the St. John Ambulance Association for many years. A ready speaker, a voracious reader of the best in general literature, and well equipped, therefore, in the language side of teaching, he added to these gifts of lucidity and illustration, combined with a great grasp of essentials and a dogmatic style, which made him an ideal and inspiring teacher. No student attended a lecture or demonstration by Riddell without carrying away something of value to his surgical equipment. He became surgeon in charge of wards at the early age of 34, and for long thereafter occupied the place in the practical surgery of the North-East which was vacated by Sir Alexander Ogston when he resigned his hospital appointment in 1898. Riddell proved no unworthy successor to the celebrated chief whom he had assisted in university and infirmary for seven years. Visits to Continental clinics, especially Germany, had kept him informed of the movement towards aseptic technique, and though it was Henry Gray who brought the completed aseptic system to Aberdeen in 1897, he found Riddell prepared and receptive, and the new system was rapidly adopted in his wards. Few surgeons made more careful or detailed preparation for operations than he did, and this was reflected in the results of his work and the confidence he inspired in the medical and lay public of the area which he served. He was a skilful diagnostician, and the meticulous care with which he investigated his cases led to the rare appearance of the term "exploratory laparotomy" on his operation lists.

Much might be written on his many activities outside the purely surgical sphere, but I feel that it will suffice to refer to his devotion to ambulance work, both civil and military. Ogston was no doubt the stimulator here by his interest in war surgery, which led to his active participation in the Egyptian campaign, and to the formation of a company of the V.M.S.C. in Aberdeen University. Riddell became one of the original band of officers in that company. From that moment his interest in this side of medical work never flagged, until the great war ended and Aberdeen, by ill-considered political action, was deprived of its medical units. When Lord Haldane was considering his great Territorial Force scheme Riddell was commanding the Aberdeen Medical Units with great success. He had keen military instincts, a strong sense of discipline, combined with great powers of organization. His command was in fine fettle and at full strength, and it is known that he was freely consulted by Sir Alfred Keogh, the then Director-General, who was working out the plans for the Territorial Force medical organization. He became the first A.D.M.S. of the Highland Division, while Mackintosh and Lister commanded the Aberdeen ambulances. The success of this combination was reflected later in the war record of the Aberdeen Medical Units, which recruited over 2,000, of whom over 1,600 served in field ambulances. Some degree of disability had already overtaken him before the outbreak of war, and it must have been a keen disappointment that he was unable to undertake the active duties in the field for which his training, experience,

and talents so eminently fitted him. With characteristic courage and determination, however, he undertook, in addition to his surgical duties, the administration of Red Cross work in the wide north-eastern area during the war, and also acted for two years as medical superintendent of the infirmary. The enormous amount of work he carried through then evoked the wonder and admiration of all who knew him and recognized the strain that it must have put on him.

An eminent surgeon, a great teacher, a staunch friend, a "bonny fechter" who left no dubiety about his views, Riddell bequeathes a memory which will live long in the minds of those who were his students or served with him in any of his widespread and public-spirited activities. Though it is ten years since he laid down his teaching appointments, the large attendance at his funeral of present-day students from the University showed how the recognition of his work and worth was being passed on from year to year.

We regret to record the death, on December 10th, 1929, at 28, St. James Square, Bath, of a veteran member of our profession, Dr. DAVID THOMSON. He was born on September 9th, 1844. After studying medicine at the University of Glasgow and in London, he graduated M.D.Glas. in 1865, and C.M. in 1868. He was for many years in general practice at Luton, and became a member of the staff of the Bute Hospital in that town, being appointed consulting surgeon on retirement from active work. He had long served as a medical officer in the old Volunteer Force, in which he attained the rank of colonel R.A.M.C.(V.), and was awarded the Volunteer Decoration. After relinquishing practice Dr. David Thomson lived in South Africa for a time; he then returned to England to make his home at Bath, and during the war he worked at the local war hospital. He was the father of Dr. F. G. Thomson, President of the British Medical Association in 1925–26, and of Dr. H. Campbell Thomson, consulting physician for nervous diseases to the Middlesex Hospital.

We regret to record the death, at the age of 70, of Dr. J. HERBERT HACKING, which took place at his home at Wilmslow, Cheshire, on November 19th, 1929, after an illness which compelled his retirement from practice eighteen months ago. A Manchester man, he received his medical education at Owens College and the Royal Infirmary, and obtained the diplomas M.R.C.S., L.R.C.P. in 1885. Two years later, after holding the post of house-surgeon at the Manchester Royal Infirmary, he started practice at Wilmslow. For many years Dr. Hacking served as surgeon with the Auxiliary Forces, and retired with the rank of surgeon lieutenant-colonel and the Volunteer Decoration. During the war he was appointed commandant and medical officer in charge of the Wilmslow and Styal Auxiliary Red Cross Hospital. For over twenty years he was lecturer to the local branch of the St. John Ambulance Association, and he was made an Officer of the Order of St. John of Jerusalem in England. A colleague writes: Dr. Hacking frequently attended divisional meetings of the British Medical Association; of a most sociable disposition, he liked to meet his fellows for a game of billiards and at professional gatherings. He was a keen sportsman, and usually took a shooting holiday in Anglesea. His upright character, kindliness, and quiet humour won the esteem and affection of his many friends. A devoted churchman, he held the office of churchwarden for many years.

The following well-known foreign medical men have recently died: Dr. PAUL LECÈNE, professor of surgery in the Paris faculty of medicine, surgeon to the Hôpital St. Louis, and officer of the Legion of Honour; Dr. GÉLIS, honorary professor of the Montpellier faculty of medicine, aged 72; Professor VICTOR VASSILIEVITCH, an eminent Russian cardiologist and director of a central institute for study of professional diseases, aged 54, of angina pectoris; Professor OTTO KUFFLER, a Berlin ophthalmologist and editor of *Zentralblatt für die gesamte Ophthalmologie*, aged 54; and Professor R. SALZWEDEL, formerly general in the service of military medicine in Berlin, aged 72.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT now stands adjourned till January 21st. On December 23rd the House of Commons discussed Egypt, and on December 24th financial policy.

In the House of Lords, on December 20th, the Royal Assent was given to the Highlands and Islands (Medical Service) Additional Grant Bill. The Royal Assent was also signified to the Expiring Laws Continuance Bill.

On December 23rd the Mental Treatment Bill, which has passed the House of Lords, was read a first time in the House of Commons.

The Home Secretary presented to the House of Commons, on December 24th, a memorandum on "factors which have operated in the past and those operating now to determine the distribution of women in industry."

The Midwifery, Maternity, and Child Welfare Bill, introduced by Mr. Alpass, is formally entered for second reading in the House of Commons on January 22nd, but is stated to be withdrawn.

Road Traffic Bill.

Debate on Motoring Casualties and Hospitals.

In committee on the Road Traffic Bill, on December 18th, the House of Lords considered Clause 34, which requires every motorist to take out a third-party insurance, or some equivalent against liability in respect of the death of, or bodily injury to, any person caused by, or arising out of, the use of the motor. Lord LUKE moved to add words providing that any policy issued under this clause should also "insure to any hospital treating any such bodily injury payment of the cost of such treatment up to a maximum payment of £25. He said that during 1927 the hospitals of the provinces treated, at a cost of £230,000, 26,000 in-patients and 39,000 out-patients as the result of motor accidents. From insurance offices and the patients only £26,000 was recovered. The few hospitals which were near the trunk roads received these cases in excess, in beds which had been provided for local needs. The maximum of £25 which he proposed was at the rate of £1 a week for six weeks. Usually the average weekly cost would not be greater than £4. If such a risk were added to anyone's policy the annual cost would only be about one or two shillings. Hospitals should have this first charge on the insurance.

Viscount KNUTSFORD said this amendment would not deal with all accident cases brought to hospitals through motor accidents but only with those where the driver was insured against third party risks and the accident was due to his negligence. If a man who was injured in an accident was taken to a nursing home and treated by a doctor the insurer had to pay the expenses as a liability in consequence of his negligence, whereas if that same patient was taken to a hospital the insurer was not liable, because the hospital had no legal liability to recover the costs incurred by it. Hospitals made no complaint of the burden. They were there to help the injured. He himself had been run over and nearly killed by a motor trolley. He was taken to a hospital. There he was not asked how much he would pay to be treated, and the man who ran him over paid nothing for the treatment at the hospital. A hospital might have to spend much more than £25 *in treating a patient.*

Lord SOMERLEYTON said the Voluntary Hospitals Commission had last year unanimously recommended legislation on this point.

Lord BERTIE OF THAME moved an amendment to Lord Luke's amendment. He desired to provide that the payment by the insurance company might be "or to any surgeon or medical practitioner rendering first aid." Doctors who lived near the scenes of frequent accidents complained that they treated persons who not only did not pay, but did not return articles which were lent to them.

Lord STANLEY OF ALDERLY said there was a distinction between a hospital and a medical practitioner. There was a common law remedy for the injured person to sue the motorist for damages and the cost of medical treatment. If the injured person were taken to a medical practitioner the claim of that practitioner would be a proper claim against the insurance company. Hospitals were voluntary associations, and as such could not institute an action or make a legal claim against the injured person or the person causing the injury.

Lord ATKIN said he knew of no insurance policy where the company promised, not to insure the motorist against liability, but to pay some third person direct for something for which the motorist was not liable. That interfered with the principle of insurance, which was the principle of indemnity. His opinion was that in many cases hospitals were in a position to make a charge against the patients. They had private wards, and charged for them. Many cottage hospitals charged for every bed. There was no reason why any hospital should not say, "We make a charge for any party who comes to us who is injured in a motor accident and remit the charge if, in fact, it is not covered by

insurance. If there were difficulties the real remedy would be to provide that any person injured by the negligence of a motorist should be entitled, as part of his damages, to a sum, not exceeding £25, which he had paid, whether legally liable or not, to a hospital for attention to his injuries.

Lord DANESFORT said that these new patients from afar had immensely increased the difficulties of voluntary hospitals. The new liabilities caused by taking patients who had been injured by motors had put York Hospital in a serious position. The point raised by Lord Atkin was only a technical one.

Lord EBBISHAM said that last year four small hospitals in Surrey had spent £2,000 on patients injured by motors but residing outside the locality. He asked whether Earl Russell, who was in charge of the bill, would, if he had to refuse the amendment, consider the possibility of supporting the hospitals in recovering stated charges for attendance from patients resident outside the area of the hospital. There was a parallel to this in Acts dealing with fire brigades.

Earl RUSSELL said he was aware of the grievance of the hospitals, which had grown in the last two or three years. The comparatively small local hospital had reason to complain, but the amendment proposed by Lord Luke was not the way to remedy that grievance. It was inconsistent with the general scheme of insurance in the bill, and it would not cover all cases. There seemed a unanimous feeling that something should be done, and he suggested that a separate clause should be drafted to provide for the insurance of all motorists, say, by a levy of 5s. on every person who took out a licence. There would be no obligation to pass that 5s. to an insurance company; it could be paid to a central fund, administered for the benefit of the hospitals. He invited Lord Knutsford to confer with him and the Government's advisers before the report stage to see if a separate clause could be drafted. There was the difficulty about hospitals not having a legal claim. They would have to consider if hospitals could obtain a legal claim by altering their rules, or whether the clause should give them a legal claim. He wished to give one word of warning—that if once a hospital which was voluntary began receiving contributions from any source in a manner which was not voluntary it was altering its character in a way which might ultimately expose it to some form of public management.

On behalf of the British Hospitals Association Lord BERKENHEAD asked Earl Russell to approach the question from the point of view of the amendment, and not by way of a levy on motorists of 5s. a head, to raise a fund. They required to put hospitals in the position of the ordinary nursing home.

Lord CECIL OF CHELWOOD said that one very serious grievance in country districts was that hospitals provided by the locality were, in fact, utilized by motorists. That grievance would not be dealt with in the manner the House was approaching the question. Country doctors could tell pitiful stories of how the poor were unable to get hospital treatment because the hospitals were filled up with motorists at one period of the year.

Lord BERTIE intervened to ask whether Earl Russell would also consider the protection of doctors who were left without payment.

Earl RUSSELL said he thought doctors were protected, as they could sue. An injured person could recover damages, which included medical fees, but in some cases where a patient had been treated at a hospital, although he recovered damages that included medical fees, they were not necessarily paid over to the hospital. He added an assurance that he would consider everything that any person interested in the matter represented to him.

Lord Luke's amendment, and Viscount Bertie's amendment to it, were then both withdrawn.

Tuberculous Milk.—On December 23rd Miss LAWRENCE informed Mr. Somerville Hastings that the average proportion of milk samples taken by the larger local authorities and found to be tuberculous had recently been 6 per cent. The results obtained by different authorities fluctuated considerably, and it would be difficult to say that the percentage for the whole country was either increasing or decreasing. In reply to a further question, Miss Lawrence told Mr. Hastings that the number of milch cows in this country which had been submitted to a tuberculin test was relatively few. It was not possible, therefore, to say what proportion would react to the test, or whether that proportion was increasing or decreasing.

Tests for Detecting Tuberculosis in Dairy Cattle.—Colonel GAULT asked, on December 19th, whether the Empire Marketing Board would consider making a grant for testing the varying efficiency of the present tests employed for detecting tuberculosis in dairy cattle, and whether there was any colonial evidence to show that the milk from certain types of cow condemned as tuberculous was capable of transmitting the disease to human beings. Mr. LUNN replied that in such matters the Empire Marketing Board was guided by advice received from the Ministries of Health and Agriculture in Great Britain. It would be for those departments to take the initiative in instituting such inquiries.

Shortage of Accommodation in Public Mental Hospitals.—Answering Mr. Sorensen, on December 19th, Mr. GREENWOOD said that, though there was a shortage of accommodation in public mental hospitals, there were relatively few cases of serious overcrowding. The position had already received his attention. Approval had been given to certain proposals for extending mental hospital accommodation, and others were under consideration. It was anticipated that these extensions would largely meet the shortage. Further alleviation of the position might result from the survey of institutional accommodation which might become available under the Local Government Act. He was aware that institutional accommodation for mental defectives, both adults and juveniles, was inadequate. Local authorities were being urged to carry out their statutory duty to provide institutional accommodation. Answering further questions, Mr. Greenwood said some local authorities had been deterred by the expense of providing this accommodation, but a committee had been appointed to recommend ways of reducing the cost. Local authorities had been urged to undertake their duty in this regard, and he hoped that the shortage of accommodation would soon be remedied

War Pensions.—On December 23rd Mr. F. O. ROBERTS told Mr. Beaumont that the primary points of difference between his policy and that of his predecessor in procedure in dealing with seven-year limit applications were that no claim would be rejected solely on the ground of the time limit; that every applicant would be invited to state his case and to give evidence in support of it in response to specific inquiries tending to elucidate the claim; that full consideration (including medical examination wherever necessary) would be given to all evidence submitted, and War Pensions Committees had been instructed to consider and investigate complaints from applicants whose claims had been rejected and to report specifically on them to the Ministry; and, finally, that in the determination of all cases of material doubt or difficulty independent medical experts, nominated by the Presidents of the Royal College of Physicians and the Royal College of Surgeons, would be regularly associated with the Ministry.

Blind Pensioners.—Mr. ADAMSON stated, on December 24th, that the Scottish Department of Health is of opinion that, save in cases of total blindness, blind pensions should, as a rule, only be awarded in future on the advice of an eye expert. Previously, he added, the Department had held that such pensions could safely be awarded on the advice of medical officers who were not specialists. Dr. VERNON DAVIES followed up this statement by asking whether Mr. Adamson held that a specialist was required to decide whether a man could see or not. Mr. ADAMSON replied that he thought that in certain cases a specialist was required to judge.

Health of the Mercantile Marine.—On December 24th Mr. GRAHAM supplied Dr. Fremantle with a statement on the work of the committee set up a year ago to advise on any questions affecting the health of the mercantile marine which the Board of Trade or Ministry of Health might refer to it. He said the committee's advice on questions was submitted to the departments as consideration of each subject was completed. No general report was published. The committee had already dealt with the *Ship Captain's Medical Guide*, which had been revised and issued. The scales of medicine and medicinal instruments and stores for ships which did not carry surgeons had also been revised and issued. A code for facilitating medical consultation at sea by wireless telegraphy had been completed and forwarded to the International Code of Signals Committee. The hygiene of crew spaces on board ship and the statistics relating to the mortality of seamen were under investigation

Committees connected with Public Health Administration.—Mr. GREENWOOD, on December 19th, furnished Mr. Llewellyn Jones with the following list of committees set up by the Ministry of Health in connexion with the administration of National Health Insurance or of public health generally since 1925:

Committee on Post-Graduate Medical Education.
Committee on Vaccination.
Dental Benefit Joint Committee—which has now been replaced by the Dental Benefit Council.
Advisory Committee under Therapeutic Substances Act, 1925.
Medical Advisory Committee on Decennial Revision of International List of Causes of Death.
Committee on the Optical Practitioners (Registration) Bill.
Advisory Committee under Article 41 of Medical Benefit Regulations, 1922.
Committee on Ethyl Petrol.
Committee on Training and Employment of Midwives.
Committee on Maternity [illegible]
Pharm[illegible] ittee under Article 25 of Medical Ben[illegible]
Joint [illegible] tion of Rivers and Streams.
Advis[illegible] tion of Drugs for the purposes of Medical Benefit under the National Health Insurance Acts.

Dr. FREMANTLE asked whether the general effect was that this side of the scheme on which the Ministry of Health was established had not been a dead letter since its formation. No answer was returned.

Criminal Lunatics in Scotland.—On December 24th Mr. ADAMSON informed the Duchess of Atholl that in 1926 the number of persons convicted in Scotland as criminal lunatics was 17, of whom 4 were of Irish nationality. In 1927 the number was 24, of whom 3 were Irish, and in 1928 the number was 18, of whom 3 were of Irish nationality.

Slum Clearance.—In reply to Mr. Louis Smith, on December 19th, Mr. GREENWOOD said he hoped to introduce the Government's Slum Clearance Bill on an early day after the Christmas recess. Answering Mr. Smithers, Mr. Greenwood said that since the Government took office six slum clearance schemes had been submitted, the estimated cost of which was £511,000.

Extension of Town-planning Powers to Built-up Areas.—Dr. FREMANTLE asked, on December 19th, whether Mr. Greenwood's attention had been called to the development of certain properties in the West End of London, such as the sites of Grosvenor House and Devonshire House, Westminster, and Hereford Gardens, near Marble Arch, whereby large new populations were housed without regard to the traffic capacity of the serving streets; and when he proposed to introduce legislation to enable developed areas to be re-planned and the population to the acre limited. Mr. GREENWOOD said he was aware of the type of development to which Dr. Fremantle referred. He hoped in due course to introduce legislation for extending town-planning powers to built-up areas. Replying to a further question from Dr. Fremantle, Mr. Greenwood suggested that this would be difficult to combine with the promised Housing and Slum Clearance Bill, as town-planning had been dealt with in separate statutes.

Telephone Services in the Hebrides.—On December 23rd Mr. LEES-SMITH, replying to Mr. Ramsay, who asked if he would consider the advisability of establishing a telephone in the doctor's house, schoolhouse, or other centre, in every parish in the Hebrides, for medical and surgical services, said that the distances between parishes in these islands were often great, and the cost of providing telephone services was usually prohibitive. Any case in which there was a reasonable prospect of the revenue not falling too far short of the expenses was, however, sympathetically considered.

Paint-spraying.—Mr. SORENSEN asked, on December 19th, whether Mr. Clynes was aware of the harmful effects of paint-spraying, both on the operators of the machines and on others in the vicinity, and whether he would introduce legislation to safeguard the health of such workers. Mr. SHORT replied that paint-spraying was not necessarily harmful. So far as the Home Office knew, any cases of risk to health could be effectively dealt with under the Factory Acts and Lead Paint Acts. Mr. Clynes would, however, be glad to make further inquiry if furnished with particulars.

Notes in Brief.

Mr. Greenwood states that as the Radium Trust is appointed by Royal Charter he is not able to anticipate any decision which may be taken by the Trust on the future purchase of radium from Radium Belge or from other firms.

Miss Lawrence, replying to Major Hills, on December 23rd, said that the question of compiling from the 1931 census statistics of the mortality of married women by reference to the occupation of the husband would be considered, though such supplementary tabulations could not be undertaken until the completion of the census tabulation. Statistics on the association of maternal mortality with the parents' occupations would also be considered.

Mr. Clynes told Mr. Freeman, on December 18th, that the average number of experiments on living animals in connexion with cancer during the last ten years was 13,369. These figures represented the number of experiments performed at special cancer research centres and those done elsewhere under grants from the Medical Research Council and the British Empire Cancer Campaign, in addition to some experiments probably done by licence holders for private research, though the latter number was small.

Universities and Colleges.

UNIVERSITY OF OXFORD.

THE following candidates have been approved at the examination indicated:

FINAL B.M., B.CH.—(*Medicine, Surgery, and Midwifery*): J. A. Brown, J. L. Clapham, C. M. Duncan, W. B. Fiddian-Green, J. K. Marshall, Q. St. L. Myles, R. S. B Pearson, C. R. Salkeld, W. A. Secker, W. B. Williams, Annie D. M Adams, Ruth Sandeman, (*Materia Medica*): R. A. Beaver, W. D. W. Brooks, W. D. T. Brunyate, P. G. Burgess, A. J. Carpenter, N. A. Gillespie, W. E. S. Merrett, J. A. Nunn, M. W. C. Oldfield, A. G. Palin, J. A. E. Scott, R. B. Scott, Elizabeth C. M. Brunyate, Amy C. E. Clarke. (*Pathology*): R. E. Adam, I. M. Bell, W. D. W. Brooks, G. H. Buck, J. M. Cribb, F. R. Crookes, S. Durham, N. A. Gillespie, N. Heath, G. W. Hinchliff, J. E. Jenkins, H. de B. Kempthorne, G. B. Malone-Lee, J. H. Peel, W. S. Tegner, H. A. Treble, F. M. Trefusis, O S. M. Williams, Elspeth W. Smellie. (*Forensic Medicine and Public Hygiene*): H. H Aitchison, F. Bell, W. D. T. Brunyate, G. H. Buck, J. L. Clapham, C. M. Duncan, W. B. Fiddian-Green, C. R. Greene, A. Guirdham, F. Hawking, W. H. McMenemey, J. K. Marshall, W. E. S. Merrett, R. D. Newton, J. N. O'Reilly, N. C. Parfit, R. S. B. Pearson, F. M. Trefusis, Amy C. E. Clarke, Victoria M. Robinson.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examinations indicated:

M.CHIR.—F. J. Milward.

THIRD M.B. (*Part I, Su[illegible] and Gynæcology*).—G. G. Allan, G. N. Bailey, G. O. [illegible] in surgery only), J. H. Bentley, R. M [illegible] D. D. Broughton, A. C. Crooke, A. M. Cunningham, H. Curtis, M. Ellis, R. B. Floyd, M. S. M. Fordham, I. J. Franklen-Evans, A. W. Franklin, A S. Hall, P. E. T. Hancock, A. G. J. Harris, J. E. M. Harrisson, F. T. J. Hobday, W. V. Howells, E. H. Hudson, C. G Jobbins, M. M. St. G. Johnstone, J. G. Jones, H. V. Knight, E. Landau, R. S. C. McDade, S. McDonald, A. P. McEldowney, R. W. Malim, C. E. P. Markby, R. A. Maynard, B. C. Nicholson. G. L. Ormerod, R. G. Orr, V. P. Paxon, J. O. Poynton, C. B. Prowse, T. G. Reah, G. H. Sanderson, J. E. Semple, R. H. B. Snow, G. H. G. Southwell-Sander, R. S. Stacey, E. T. W. Starkie, B. C. Thompson, C. P. K. Toland, F. S. Winton; Women—C. H. England, D. P. Firmin. (*Part II. Principles and Practice of Physic, Pathology, and Pharmacology*): R. Anderson, A. R. Banham, C. M. Barker, D. W. Bawtree, J. V. Broad, A. T. Curnow, C. J. M. [illegible] R. H. Dyer, J. H. L. Easton, P. H. F [illegible] A. H. Gurney, W. Heath, A. C. [illegible] G. Herbert, H. P. Hutchinson, T. C. Jameson Evans, C. G. Jobbins, E. R. Keeble, R. W. Knowlton, O. L. Lander, R. W. McConnel, S. R. Matthews, R. B. Mayfield, E J. Neill, T. N. Parish, J. A. Pocock, C. D. Politeyan, R. B. Pringle, A. W. Williams, J. K. Willson-Popper, G. N. Wood, F. G. Wood-Smith, B. Wright; Women—M. A. Willcox.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examinations indicated:

M.D.—*Branch I* (*Medicine*): B. Barling, F. M. M. Eyton-Jones, C. F. Fernando, T. R. Hill, B. B. Hosford, R. M. Maher, H. L. Marriott, R. L. Midgley, N. D. Patel, W. M. Ramsden, B. F. Russell, E. W. Skipper, E. C. Warner. *Branch II* (*Pathology*): G. W. J. Bousfield, Beatrice D. Pullinger, Dorothy M. Vaux. *Branch IV* (*Midwifery and Diseases of Women*): Janet I. Hoare, Winifred A. Ladds, Edna I. Langston, Isabella L. H. Livingstone. *Branch V.* (*State Medicine*): G. E. Brocklehurst, S. C. Gawne.

M.S.—*Branch I* (*Surgery*): A. W. Holgate, N. P. L. Lumb, R. W. Reid. *Branch III* (*Ophthalmology*): J. W. T. Thomas.

UNIVERSITY OF SHEFFIELD.

THE following candidates have been approved at the examinations indicated:

FINAL M.B., CH.B.—*Part I;* K. G. A. Barlow, C. England, M.B. Hallam, F. Hudson (with distinction in Forensic Medicine and in Public Health), Constance N. Jenkinson, S. K. Panniker, A. Spencer. *Part II:* A. Cohen, R. B. Gould, Bessy Hatherley, J. H. Wilbourn.

UNIVERSITY OF EDINBURGH.

A THREE months' course of instruction for the diploma in psychiatry will commence on January 14th. During its currency candidates are eligible for resident clinical clerkships at the Royal Edinburgh Hospital for Mental Disorders. Full particulars can be obtained on application to the Dean of the Faculty of Medicine, University of Edinburgh.

A graduation ceremony was held in the Upper Library Hall on December 20th, 1929, when the following degrees were conferred:

M.D.—Flora H. M. Calder, *T. C. Mitchell, *R. M. Murray-Lyon, E. Russell (*in absentia*), G. S. Scott, †Ta-Ming Tso.

CH.M.—*Alice Bloomfield.

M.B., CH.B.—W. S. Anderson, R. Austin, I. Bannerman, T. M. Beveridge, G. F. Bradbury, R. M. Bremner, J. F. C. du Toit, F. G. M. Fraser, E. E. Goldman, J. Gorman, D. H. Hooper, E. G. Hurd-Wood, I. Kaplan, H. I. Lahouri, L. E. Lucas, K. C. Mackenzie, A. C. M'Laren, D. J. A. MacLean, D. Macleod, H. J. Melville, G. R. Parker, J. L. Parker, R. A. P. Paul, G. A. G. Peterkin, J. C. Robertson, N. Talukder, Anne Tillema, S. C. H. Watters.

D.PSYCH.—T. A. H. Munro.

D.P.H.—K. V. R. Choudari.

* Highly commended for thesis.
† Commended for thesis.

The Syme Surgical Fellowship has been awarded to Dr. T. C. Mitchell.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examinations indicated:

PRIMARY FELLOWSHIP.—E. A. J. Byrne, S. F. Heatley, D. S. Poole-Wilson.

FINAL FELLOWSHIP.—B. P. Baliga, C. R. Boland, E. N. McDermott, K. F. Mackenzie, P. P. V. C. Nambiar.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL PROFESSIONAL.—M. J. Duffy, A. E. Flannery, T. J. Harkin, G. J. Harrison, J. Lennon, P. B. McCarthy, T. McCarthy, T. J. A. McHugh, P. McInerney, W. H. Peirce, F. O'C. Walsh, J. R. H. Weir.

D.P.H.—W. R. F. Collis, J. J. McHenry.

D.P.M.—J. F. Lyons, C. B. Bamford.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—J. S. Bury, D. Ram Annamalai, B. T. Squires, C. D. Trimble.

MEDICINE.—C. W. Ellison, V. J. Lopez, L. J. Pearson, T. G. Robinson, B. T. Squires.

FORENSIC MEDICINE.—C. E. P. Davies, W. J. D'Rosario, R. J. Kagan, V. J. Lopez, D. Ram Annamalai, B. T. Squires.

MIDWIFERY.—T. Chandrasekharan, G. P. Charles, W. J. Frith, R. J. Kagan, I. W. H. Mansfield, P. Somasunder, L. J. P. Soromenho, B. T. Squires, C. D. Trimble.

The diploma of the Society has been granted to Messrs. W. J. Frith, R. J. Kagan, V. J. Lopez, and B. T. Squires.

Medico-Legal.

OFFENCES UNDER THE DANGEROUS DRUGS ACTS.

AT Maidenhead police-court, on December 2nd, 1929, Richard William Starkie, formerly a metropolitan police surgeon, was sentenced to twelve months' imprisonment in the second division on summonses under the Dangerous Drugs Acts. He appealed to the Berkshire quarter sessions on December 20th, when the sentence was reduced to one of five months in the second division. In 1921 Mr. Starkie was sentenced to nine months' imprisonment for administering noxious drugs to a woman, and in consequence of that conviction his name was erased from the *Medical Register* in 1922 (*Supplement*, i, 1922, p. 217).

Outlining the present charge at the appeal proceedings, Mr. W. G. Earengey, for the Crown, said that in July last a man named Melville or Vilmer presented to a chemist a prescription for 8 grains of heroin. Over a period of three months twenty-three such prescriptions were handed in, all for a patient named Mrs. Melville, and Starkie agreed that his signature was on sixteen of them. To a police inspector he said that he had given Melville sheets of blank paper bearing his signature, which Melville had filled in in certain eventualities.

Chief Inspector Prothero said that until his conviction in 1921 Starkie's character was good, and he had an extensive medical practice. Since his release from prison in 1922 the police had known nothing to his detriment. There was no suggestion of drug traffic in this case.

Mr. A. R. Thomas, for Mr. Starkie, complained that in the police-court proceedings the advocate told the magistrates that he had instructions from the Home Office to say that the department regarded the case as a serious one. "Government departments have a good deal of authority thrust upon them by Acts of Parliament, and in many cases duties which formerly devolved upon justices come into their charge. But what justification can there be for someone sitting at the Home Office and, not having heard a single word in court, forming a certain conclusion about the case?"

The chairman of the sessions (Mr. C. M. Pitkin, K.C.) agreed that it should not have been mentioned, and certainly should not have had the slightest effect upon the magistrates.

Mr. Thomas further urged, on behalf of the appellant, that there was no suggestion here of traffic in drugs or of supplying prescriptions wholesale for money. All that Starkie had received was two worthless cheques, and he had no hope of getting anything. Two registered medical practitioners had been persuaded by Melville, as Starkie had been, to allow him to fill up the body of the prescriptions, and had been convicted for not keeping proper drug records. Melville was the villain of the piece, and it was he who should suffer. Starkie had been trying to get back on the *Medical Register*, and but for "this stupid business" might by now have succeeded.

The chairman said that the bench regarded the offences as flagrant and serious breaches of the regulations, which could not be punished in any other way than by imprisonment. They thought, however, that the sentence of twelve months' imprisonment was excessive, and reduced it as stated.

Medical News.

THE Hunterian Society of London will hold a banquet at the May Fair Hotel on Thursday, February 13th, at 7.30 o'clock, to commemorate the 202nd anniversary of the birth of John Hunter.

THE Harrison Memorial Lecture before the Pharmaceutical Society of Great Britain will be delivered on Tuesday, January 14th, at 8.30 p.m., at 17, Bloomsbury Square, W.C., by Mr. P. A. W. Self, B.Sc., Ph.C., who will be presented by the president of the society with the Harrison medal. This lectureship and medal were established to perpetuate the memory of Colonel E. F. Harrison, C.M.G., director of chemical warfare during the war, and a distinguished member of the Pharmaceutical Society. The prize founded by the Chemical Society in 1922, in memory of Colonel Harrison, has been awarded to Dr. R. P. Linstead. This prize is awarded every three years to the chemist, under thirty years of age, who during the preceding five years has produced research work judged to be of the greatest merit and promise. The prize will be presented at the annual meeting of the Chemical Society in March. It may be recalled that Harrison had been associated with the *British Medical Journal* for some years, and undertook the series of analyses of proprietary articles, afterwards collected and published by the British Medical Association in the two volumes *Secret Remedies* and *More Secret Remedies*, now out of print. He also gave evidence on behalf of the Association before the Select Committee on Patent Medicines, and the care he had spent in preparing his case and the transparent honesty with which he presented it made a deep impression on the committee.

THE annual meeting of the St. George's Hospital Ladies' Association will be held in the board room of the hospital, Hyde Park Corner, S.W., on Thursday, January 9th, at 3 p.m., under the presidency of Princess Marie Louise. Sir Humphry Rolleston will speak on the training of nurses.

A CLINICAL meeting will be held at the East London Hospital for Children, Shadwell, E.1, on Wednesday, January 8th, at 4.15 p.m., when cases of interest will be demonstrated in the wards. Tea at 4 o'clock. All practitioners are welcome.

A POST-GRADUATE course on diseases of the nervous system will be given at the National Hospital from February 3rd to March 28th. The general course will consist of thirty-two clinical lectures and demonstrations, teaching in the out-patient department, and eight pathological lectures and demonstrations. The fee for the course is £6 6s. A course of eight lectures on the anatomy and physiology of the nervous system will be arranged on Fridays at 12 noon if there are sufficient applicants; fee £2 2s. A series of twelve demonstrations on methods of examination of the nervous system will be given on Tuesdays and Thursdays at 12 noon; fee £2 2s. Further particulars can be had from the secretary, Medical School, National Hospital, Queen Square, W.C.1.

THE Medical Faculty of Vienna has arranged for an international post-graduate course to be held from February 17th to March 1st, in medical, surgical, and gynaecological therapeutics, with special reference to recent developments. Further information may be obtained from Dr. A. Kronfeld, Porzellangasse 22, Vienna IX.

THE KING has granted Dr. P. S. Selwyn-Clarke, *M.C.*, permission to wear the decoration of the Médaille d'Argent des Epidémies conferred upon him by the French Government for services in connexion with the outbreak of yellow fever in West Africa.

A SELECT Committee, appointed by the House of Commons to examine and classify petitions presented to the House, has reported on its work between July 2nd and December 18th, 1929, in a circular issued by the Stationery Office. Among the petitions was one praying for the prohibition of vivisection, and the committee states that it has not reported the total number of names appended, since it is of opinion that some of the signatures are in the same handwriting, and that therefore there has not been compliance with the orders of the House requiring the actual signatures of the persons named. The figure recorded by the committee, after ignoring these irregular signatures, is 3,549.

A LARGE gathering of past and present students of University College, London, attended a dinner which was held on December 19th, 1929, at the Connaught Rooms, with Sir Frank Heath, president of the Old Students' Association, in the chair, in honour of the Provost, Sir T. Gregory Foster, on the occasion of his retirement. During the evening, Sir George Blacker, Professor R. W. Chambers, Dr. Harriette Chick, and Mr. R. C. Wright presented the guest with an illuminated portfolio—the work of Miss Margaret Alexander, a former student—containing the signatures of the company present at the dinner. Sir Gregory Foster, in replying to the toast of "The Provost" which had been proposed by the chairman, said that there was nothing they could congratulate the country upon more than its faith in the scholastic profession, and its desire to put that profession in its right place in the country and the Empire.

THE German Society for Internal Medicine will hold its forty-second congress, under the presidency of Professor Volhard of Frankfort, at Wiesbaden from April 7th to 10th, when the following subjects will be discussed: the hypophysis, introduced by Trendelenburg of Berlin, and focal infection, by Rosenow of Rochester. Further information can be obtained from Professor Volhard, Süd 10, Medizinische Klinik, Frankfort.

UNDER the auspices of the Physical Society and the Optical Society the twentieth annual exhibition of electrical, optical, and other physical apparatus will be held at the Imperial College of Science and Technology, South Kensington, on January 7th, 8th, and 9th, in the afternoons from 3 to 6, and the evenings from 7 to 10. Tickets for others than members of the Physical or the Optical Society, together with a copy of the catalogue, may be obtained by sending 3d. in stamps for postage to the secretary of the exhibition, 1, Lowther Gardens, Exhibition Road, S.W.7.

THE ninth Italian congress for medical radiology will be held at Turin, under the presidency of Professor M. Bertolotti, in May, when the subjects for discussion will be the radiological diagnosis of intracranial tumours and the treatment of blood diseases by irradiation.

THE fifth international congress of physiotherapy will be held at Liège from September 4th to 8th, 1930.

AN international congress of neurology will be held at Bern in August and September, when the chief subjects for discussion will be muscular tonus, diagnosis and treatment of cerebral tumours, and injuries and infections of the nervous system.

DR. HASSELBACH of Copenhagen, whose son died of leukaemia at the age of 15, has given a sum of 700,000 kronen, the interest on which is to help Danish practitioners in researches on leukaemia.

THE issue of *Schweizerische medizinische Wochenschrift* for December 7th is devoted to the proceedings of the sixteenth congress of the Swiss Surgical Society held at Zug on July 25th and 26th.

DR. CHARLES NICOLLE, director of the Pasteur Institute at Tunis, has been elected member of the Académie des Sciences.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL, Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TREATMENT OF PRURITUS VULVAE.

"R. S." writes: I have a patient, aged 27, who suffers from intolerable pruritus vulvae, which has now lasted for several years. The irritation commences on the inner side of the left labium majus, and the patient can put her finger exactly on the spot. The irritation then extends into the vagina, until the patient, almost hysterical, douches the vagina with plain hot water, which gives relief for some hours. Vaginal, urinary, and rectal examinations are all negative. The patient has been under a prominent gynaecologist, who dilated and curetted, and also tried various treatments for months, but quite unsuccessfully. I have used every conceivable form of remedy I can imagine; bromides, calcium, thyroid, suppositories, douches, ointments, lotions, etc. If any readers can give me any suggestion for treatment which they have found useful I shall be much obliged.

INSULIN FOR SENILE DIABETICS.

"DISTRICT MEDICAL OFFICER" would like to hear of some simple plan for giving insulin in very small doses to parish patients about 80 years old. They suffer from senile diabetes of a type which cannot quite be controlled by diet alone, and they are unable or unwilling to go to institutions to have their blood sugar determined.

WINTER MOTORING.

"H. G." (*Blackpool*) writes: With reference to your article "Winter Motoring" in the *Journal* of December 7th (p. 1061), concerning antifreezing media of glycerin and water, I should be glad to know if this method has any harmful effects in any respect on the engine. Also, when desiring to finish with this mixture, should one simply drain the radiator or refill with water?

*** Our Motoring Correspondent writes: If the recommended proportions of glycerin and water are adhered to, the mixture will have no harmful effects on the engine or the water-circulating system. From this it follows that no special attention will be necessary as soon as the need for the mixture is over, when it can be drained and replaced by water.

INCOME TAX.

Change in Nature of Appointment.

"D. N. P." qualified in April, 1928, and during the year ending April 5th, 1929, his total income was £100. Since February 19th, 1929, he has held a resident post at a hospital at a salary of £300 per annum. What is his liability to tax for 1928-29 and 1929-30?

*** 1928-29: No liability, but "D. N. P." must, of course, make a statement of his total income in due form, if called upon to do so. 1929-30: £300 *less* £135=£165 at 2s. in the £—that is, £16 10s.; this assumes that he cannot claim relief in respect of life assurance, dependent relative, or marriage, and that he has no other income than the salary of £300.

LETTERS, NOTES, ETC.

GLUCOSE IN ASTHMA.

DR. H. N. MUKHERJEE (Biochemical Department, Carmichael Medical College, Calcutta) writes: With reference to Dr. Arthur F. Hurst's letter on "Glucose in the treatment of asthma" (*Journal*, November 16th, 1929, p. 930), may I draw attention to the fact that *Dr. B. C. Roy and myself* reported a condition of hypoglycaemia and acidosis (decrease in the alkali reserve) in asthma as early as 1923 (*Calcutta Medical Journal*, March, 1923, p. 12). For some years we have been using glucose together with sodium bicarbonate in the treatment of asthma, often with very good results. I may also add that Dr. W. Langdon Brown, in his opening paper on the treatment of asthma at the British Medical Association Annual Meeting held at Bath in 1925, referred to our work (*British Medical Journal*, August 29th, 1925, p. 368).

MR. FISHER'S STUDY OF CHRISTIAN SCIENCE.

LIEUT.-COLONEL S. P. JAMES, I.M.S.(ret.), writes: On the recommendation contained in the review of *Our New Religion*, by the Right Hon. H. A. L. Fisher, which appeared in the *Journal* of December 7th, 1929 (p. 1059), I bought the book and sent it to a friend as a Christmas gift. My friend tells me that he does not agree with the reviewer's opinion that the book is "a very brilliant piece of work," for the following reasons: (1) Mr. Fisher *has omitted to quote literature which conflicts with the kind of* history which he desires to record. For example, he has omitted from his list of "primary authorities" Mrs. Eddy's well-known book *Miscellany*, in which, on page 308, there is a detailed correction of the information contained in the article in *McClure's Magazine*, from which Mr. Fisher has evidently drawn most of his historical account. (2) Mr. Fisher is guilty of misquotation, as, for example, on page 214 of his book, where he quotes from Mrs. Eddy's chapter on prayer in *Science and Health*. In the last line of this extract from that book he quotes her as saying, "let our words attest our sincerity," whereas what is actually printed on page 15 of *Science and Health* is "let our lives attest our sincerity." My friend points out that there is an important difference between these two pieces of advice which Mr. Fisher has apparently failed to notice. I have been at some pains to consult the references mentioned, and have ascertained that my friend's statements are correct.

ARTERIO-SCLEROSIS IN COAL MINES.

DR. N. PINES (London, E.), in the course of a letter discussing the paper by Drs. D. Elliot Dickson and W. Arnott Dickson on arterio-sclerosis in coal miners (December 14th, 1929, p. 1103), writes:—Criticism may be directed to the following points: (1) the complete absence of ophthalmoscopical examination; (2) the suggestion that arterial thickening felt by palpation is due to calcareous degeneration. *In vivo* calcium is deposited in a semiliquid or colloid form, and therefore cannot be felt by palpation. One can feel the thickened or contracted arterial wall, but not the deposited calcium. May I suggest that the cause of vascular degeneration in miners is probably fine coal-dust, which is inhaled in large quantities by underground workers.

DISCLAIMER.

DR. A. T. TODD (Bristol) writes: I should like it to be known that I had no knowledge of or participation (active or passive) in the notices of our work on the treatment of cancer which have just appeared in the lay press.

1930 MOTOR LICENCES.

To assist motorists in connexion with the renewal of car and motor-cycle licences for the new year, the Automobile Association has issued a booklet, entitled *Your Motor Tax at a Glance*, which shows the various amounts due for licences, according to horse-power, either for the year or shorter periods. Information is also given concerning rebates obtainable in respect of old cars, refunds for surrendered licences, and the necessary procedure for renewing licences. It is important to bear in mind that the authorities grant fourteen days' grace for the renewal of licences, and that vehicles used during this period of grace become liable to taxation. Copies of the booklet may be obtained on application, by postcard, to the secretary of the A.A., Fanum House, New Coventry Street, W.1, or to any of the area offices.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, 52, 53, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 7.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

1. Inversion of the T-wave in Ventricular Strain.

A. R. BARNES and M. B. WHITTEN (*Amer. Heart Journ.*, October, 1929, p. 14) have attempted to analyse the influence of right and left ventricular strain in producing significant inversions of the T-wave. The authors' series comprised 177 patients who showed such electro-cardiographic changes, but inversion of the T-wave in Lead III alone was not regarded as having any significance. Not only were these patients investigated clinically, but in each instance a detailed pathological study was made at necropsy. The cases in which strain had *fallen principally on the left ventricle* were separated; this group consisted of patients suffering from present or pre-existing hypertension with or without coronary sclerosis, syphilitic aortic incompetence, and aortic endocarditis with stenosis or incompetence. Of these patients 84 per cent. showed inversion of the T-wave in Lead I, or Leads I and II; in all but two cases where this change occurred in Leads II and III infarction was found in the posterior surface of the left ventricle. Six patients in whom strain had fallen predominantly upon the right ventricle were investigated; this group included cases of mitral stenosis, mitral incompetence, and chronic pulmonary disease, and five of them showed inversion in Leads II and III. In the sixth case the T-wave was diphasic in all leads. There were twelve patients with such combinations of diseases that strain could have been exerted upon both ventricles; the T-wave was inverted in Leads II and III in seven of them. The right ventricular strain arose in all these cases from a mitral insufficiency, and this complication was apt to produce inversions in Leads II and III even when there was marked left-sided strain from hypertension. The authors found that large hearts gave a high percentage of T-wave inversions in Lead I, or in Leads I and II, this being in accord with the clinical observation that a clear-cut strain on the left ventricle is produced by those conditions which give rise to most cardiac enlargement. Among the patients studied were 52 suffering from myocardial infarction; it was observed that where infarction resulted from left coronary obstruction the T-wave was inverted in Lead I, or in Leads I and II. On the other hand, if those parts of the heart supplied by the right coronary artery became infarcted, the inversion occurred in Leads II and III.

2. Erythraemia at High Altitudes.

C. MONGE (*Arch. des Mal. du Cœur*, October, 1929, p. 651) has studied the morbid states produced by residence at altitudes of about 11,000 feet. He classifies patients into three groups: the first comprises those who are taken ill during rapid transit from sea level to high altitudes; the second consists of patients living at high levels who may have passed through an acute stage of maladaptation; the third class of case occurs among acclimatized residents who may have passed their whole lives on the mountain and who in later years suffer loss of acclimatization. Outlining the salient features of mountain sickness, the author mentions general vasodilatation, erythraemia up to seven millions, cyanosis, and breathlessness; vomiting and diminution of physical and mental capacity follow, and unless the patient returns to a lower level he is liable to increasing symptoms with cardiac insufficiency and suppression of urine. But in addition to this classical type, the author describes a more chronic condition which may supervene in those thought to be acclimatized, but who suffer from headache, breathlessness on exertion, and muscular pains, while considerable erythraemia ar[illegible] are discovered on examination. T[illegible] occurring among those who fail to[illegible] among those residents who lose their tolerance, are the severest. Removal to lower altitudes is almost invariably followed by improvement and rapid cure, some degree of tolerance being acquired, but if the patient returns to high levels the malady always recurs sooner or later. Examination of the blood of residents at high altitudes shows a characteristic reduction in the arterial oxygen saturation which is compensated by increase in the haemoglobin. In the more severe types of erythraemia oxygen is actually circulating in excess in the blood, but there is a failure of utilization on the part of the tissues. The relationship between altitudinal erythraemia and Vaquez's disease is not understood. The principal distinctions are that the former disease is cured either by acclimatization or by descent to lower levels, while it is suggested that loss of permeability in the lung is a feature in the pathogenesis of both conditions.

3. The Thyroid Gland and Rheumatism.

LAUTIER (*Bull. Soc. de Ther.*, October 9th, 1929, p. 165), who records three cases in female patients aged 15, 23, and 38 respectively, illustrates the frequency of a rheumatic origin of toxic thyroid adenoma and exophthalmic goitre by the fact that it was found in 25 per cent. of 250 cases of exophthalmic goitre collected by Mouriquand and Bouchut, and in 23 out of Froment's 33 cases, though he regards this as too low an estimate of the real frequency. In the early stage of thyroid intoxication extra-systoles, or a tachycardia of 100 to 150, and occasionally slight cardiac hypertrophy, are found. Subsequently disturbances of rhythm become prominent and the patient presents attacks of paroxysmal tachycardia, auricular flutter, and auricular fibrillation which is at first transient and finally permanent; occasionally pulsus alternans and heart-block appear. The last stage consists of cardiac insufficiency characterized by the typical symptoms of cardiac failure. The cardiac manifestations of exophthalmic goitre may be due to primary infection of the thyroid, giving rise to hyperthyroidism and dysthyroidism or to a simultaneous local infection of both the heart and thyroid. There is no doubt that both processes may be encountered. In the first cases severe symptoms of cardiac failure may disappear after thyroidectomy, but such an event is rare. In the more frequent cases in which the thyroid and heart are affected simultaneously the causal infection is often rheumatism. In such cases the administration of anti-rheumatic vaccine cures the cardiac insufficiency and restores the functional power of the myocardium.

4. Tobacco Smoking and Gastric Symptoms.

I. GRAY (*Ann. Int. Med.*, September, 1929, p. 266) made a study of the relation of gastric symptoms to tobacco smoking in 400 individuals, who were divided into two groups. One group consisted of 300 patients who had functional gastric disturbance and gave a history of tobacco smoking, and the other of 100 patients with organic gastric disease who also gave a history of tobacco smoking. The ages in both groups ranged from 25 to 65 years, and there was a history of tobacco smoking for at least five years. Of the entire group, 5 per cent. were women in whom the gastric disturbance was of a functional nature. Most of the patients were cigarette smokers. About one-fifth smoked cigars only, some smoked cigars and cigarettes, and very few smoked pipes. Gray concludes that tobacco smoking is an etiological factor in gastric disturbances, but individual sensitivity rather than the amount of tobacco consumed is the determining factor in the symptomatology. The secretory and motor responses in individuals with gastric disturbances due to tobacco smoking vary in spite of similarity in clinical symptoms. About one-fourth of those patients with functional gastric disturbances attributable to tobacco smoking show hyperacidity, and about one-fifth subacidity. In peptic ulcer tobacco smoking usually causes an increase of gastric secretion during the fasting stage, and hyperacidity in about one-third. Clinical improvement in some of these patients with ulcer occurred only after cessation of smoking. The therapeutic test, and not the clinical and x-ray findings, determines the conclusion whether the person should smoke or not.

5. Azotaemia in Urinary Diseases.

H. BLANC (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, November 3rd, 1929, p. 633) criticizes the tendency to accept a single blood urea estimation as indicative of the presence or absence of a high urea content. When the estimation is made it is important to note whether the patient is on a normal, high, or low protein diet, and the test should be performed again under different conditions. Thus, a blood urea figure of 50 mg. per cent. may not be excessive for a gross eater on a high protein diet, whereas one of 40 mg. per cent. may be so for another patient on a low diet. Moreover, oliguria or chloride retention may vitiate the estimation. Medical diseases of the kidney mostly give rise to the syndrome described by Guyon as "renal dyspepsia," indicated by a dirty tongue, a distended abdomen, loss of appetite, diarrhoea or constipation, and haemorrhagic phenomena, but the existence of cases of "ambulatory azotaemia" not showing these signs must not be forgotten. Blanc remarks that it might be supposed that essential renal disease would more or less rapidly give rise to azotaemia, but this is not always so; medical cases of cardio-renal or of Bright's disease sooner or later cause azotaemia, whether they take the hypotensive or the chloride retention form, but surgical diseases show another picture. The phenomenon

of "compensatory hypertrophy" plays an important part in disease necessitating nephrectomy, or even where there is extensive bilateral disease such as tuberculosis; and in such conditions it is not azotaemia, but toxaemia, which commonly kills; pyelonephritis is an exception. Azotaemia tends to occur in surgical diseases leading to retention of urine by obstruction of the upper or lower part of the urinary tract; the discovery of a high blood urea has even in some cases led to the discovery of retention due to calculus. The prognosis of azotaemia due to retention is relatively good where the retention can be relieved, and cases have occurred where a blood urea figure of 200 to 300 mg. per cent. has returned to normal limits after such relief—in fact, these high figures should be regarded as an indication for operations of relief. Radical operations, such as nephrectomy or prostatectomy, and extensive operations on the bladder, should be postponed till the blood urea has fallen below 50 mg. per cent. Azotaemia following operation is amenable to treatment if the figure does not rise above 200 mg. per cent. or does not remain too long at this height; it can be prevented by enforcing a low protein diet, and inducing moderate diuresis by such mild diuretics as Evian water. The importance of such preliminary operations as suprapubic drainage or the use of an indwelling catheter before radical operations is emphasized. Blanc adds that the severe regime necessary for medical cases of renal disease is best conducted in hydropathic institutions, but the possibility of a surgical condition must be excluded.

6. Non-tuberculous Haemoptyses.

H. TECON (*Rev. Méd. de la Suisse Romande*, September 10th, 1929, p. 589) calls attention to the considerable proportion of sputa examined for the tubercle bacillus with negative results. Of 800 sputa when this bacillus could not be found, *Spirochaeta bronchialis* was detected in 6 per cent. of the cases, a penicillium in 0.4 per cent., and other mycoses in 0.7 per cent. The author remarks that this is equivalent to 71 cases with infection other than the tubercle bacillus in 1,000 cases suspected of tuberculosis—a by no means negligible proportion. He concludes that in every case of haemoptysis where the tubercle bacillus is not detected by several repeated examinations a full bacteriological investigation of the sputum should be demanded. He defines seven principal types of non-tuberculous haemoptyses: cardio-vascular, cancerous, syphilitic, influenzal, hydatid cyst, bronchial calculus, and parasitic, including infections by spirochaetosis and various moulds. Each type is dealt with in turn and the etiological, symptomatic, and diagnostic features are considered. The importance of recognition of the last type is stressed and a more detailed description of it is given. Several cases are described in which a diagnosis of tuberculosis had been made on account of haemoptysis and other highly suggestive features, although tubercle bacilli had never been found in the sputum; more thorough examinations of the sputa revealed the presence of sporotrichosis, actinomycosis, or aspergillosis. Tecon adds that *x*-ray examination of the chest may help, and when the results are atypical of tuberculosis it becomes all the more important that a thorough search of the sputa be made for other forms of infection.

7. Septic Sore Throat.

D. J. DAVIS (*Journ. Amer. Med. Assoc.*, September 28th, 1929, p. 978) remarks that the present status of the epidemiology of septic sore throat is much the same as it was twenty years ago. Outbreaks are rare, but occasionally occur. Modern methods of pasteurization and the careful supervision of certified milk products, as well as new methods of identifying *Streptococcus epidemicus*, which seems to be the specific cause of the disease, should do, and possibly have already done, much to prevent epidemics. Studies of recent epidemics indicate that the usual if not the only route of transmission of the streptococci is from a human being to the teat and udder of a cow, where they rapidly multiply and then pass out into the milk directly to the throat of the consumer. Strains of *Streptococcus epidemicus* yield a specific soluble toxin which differs somewhat from the toxin of the scarlet fever streptococcus.

8. Ringworm of the Adult Scalp.

G. MASSIA and J. ROUSSET (*Ann. de Derm. et de Syph.*, August, 1929, p. 828) publish brief records of 23 cases of ringworm in adults. In 19 of these the parasite was one of the varieties of trichophyton, chiefly *T. violaceum*; in the remaining cases the parasite was the *Microsporon audouini*. Ringworm in the adult is comparatively rare, especially if those cases which persist from early childhood are excluded. In the microsporon cases (women with menstrual irregularities) the authors suggest that some endocrine deficiency may explain the susceptibility to ringworm.

Surgery.

9. Total Cystectomy for Bladder Carcinoma.

ENUMERATING the various groups of carcinoma of the bladder, E. BEER (*Annals of Surgery*, November, 1929, p. 864) states that there is one in which the trigone is so extensively involved that the ureters cannot be saved, and both have to be severed. In addition, many of these cases have extensive involvement of the vesical neck, so that the infiltrating growth involves half or more of the sphincter area and has invaded underlying tissues, particularly the adjacent prostatic tissues in the male. Four methods of treatment have been applied to these cases: suprapubic cystotomy; suprapubic cystotomy with electro-coagulation; suprapubic cystotomy with the introduction of radium deep into the growth; and total cystectomy with partial prostatectomy. The first two are usually little more than palliative, and only a few cases have been definitely cured by the third method. Beer draws the following conclusions from a review of the literature regarding complete cystectomy: the mortality is high unless the operation is performed in two steps; there is a definite mortality following bowel transplantation of the ureter; many patients have been relieved and have remained well for several years after the operation. The disposal of the ureters is the main problem because, wherever they are transplanted, attacks of pyelonephritis and secondary hydronephrosis are liable to occur. From personal experience Beer believes that the mortality of extraperineal cystectomy with partial prostatectomy is not prohibitive, and that it can be performed in one step by implanting the ureters into the skin without undue risk to the kidney; although patients must wear an apparatus for collecting the urine, they are much relieved, and may possibly be enabled to work. Eight cases are reported with only one operation death, and in this patient the ureters were obliquely transplanted into the sigmoid. In the remaining seven cases total cystectomy was immediately followed by implantation of the ureters into the iliac fossae. In all the cases the operations were performed in one step. The technique, which Beer does not consider difficult, is described. Of the surviving patients, one lived for five years, one for nine months, and one with leiomyosarcoma for over two months. Four patients are still alive four years, one and a half years, seven months, and six months respectively following the operation. The author adds that Federoff has attempted total cystectomy in females by beginning with an extirpation of the urethra, which is tied off after free dissection up to the neck of the bladder. The bladder is secondarily removed from above.

10. Thrombo-angiitis Obliterans.

M. E. BARRON and H. LINENTHAL (*Arch. of Surg.*, October, 1929, p. 735) describe thrombo-angiitis obliterans as a general disease which may attack any part of the vascular system; it may involve the blood vessels of the brain, neck, thorax, and abdomen, and not the blood vessels of the extremities only, as has sometimes been supposed. The symptoms are characteristic of the vessels involved. A lesion affecting the arteries of the brain may cause hemiplegia; if the coronary vessels are involved symptoms of coronary thrombosis or angina pectoris may ensue. A review is given of 34 cases of thrombo-angiitis obliterans occurring in persons under the age of 50, and therefore not of the "arterio-sclerotic age." It was found that the disease is slow and insidious in onset and may be of many years' duration. Since the vessels are slowly occluded, there is an opportunity for a collateral circulation to be established, and nutritional disturbance may not occur for several years in the parts involved. The process in the arterial tree does not spread by extension from a single focus, but may occur at different levels in an artery, and in various vessels at different periods. It is probable that the disease attacks the larger vessels first, and later obliterates the arterioles and capillaries, gangrene not occurring as a rule until late in the disease. The ability of the arteries to produce new and larger collaterals is often the deciding factor whether or not a patient will lose part of the body; the main arterial channels may be totally occluded without the part becoming gangrenous. The veins present a condition similar to that of the arteries, and a superficial phlebitis is fairly common in cases of thrombo-angiitis obliterans. A fresh clot is first noticed in the vein; it is made up of polymorphonuclear leucocytes, lymphocytes, mononuclear leucocytes, wandering cells, red corpuscles, and, later, foreign body giant cells are seen. The inflammatory cells invade the intima, media, and adventitia, and in the process of healing the vein, artery, and nerve are bound together by the newly formed inflammatory tissue, which soon becomes well organized. The inflammatory process keeps repeating itself in various vessels at various levels and at different times, so that the vessels are slowly occluded. The fact that patients have sometimes had symptoms for as long as twenty years proves the chronicity of the inflammatory process.

11. Compensation Treatment of Scoliosis.

A. STEINDLER (*Journ. Bone and Joint Surg.*, October, 1929, p. 820) maintains that the compensation treatment of scoliosis should aim at realignment of the trunk and body as a whole by means of compensatory secondary curves developed systematically in the adjacent sections of the spine. After body balance has been restored the musculature must be brought to a point of full control of body posture in order to maintain realignment, the degree of mobility or relaxation of the non-scoliotic sections imparted by the treatment being conditional upon the state of the muscles of the back. Except for congenital and traumatic cases of scoliosis, the skeletal parts of the spine play only a secondary part in producing the deformity, the primary changes being those of the muscular and ligamentous apparatus of the spine. Structural scoliosis in cases of the heavy, stocky type which have passed the period of rapid growth is sometimes spontaneously arrested under the development of secondary or counter curves; compensation treatment should follow this natural method rather than the method of forcible correction. Treatment should aim at the mobilization of sections of the spine to produce counter-curves and rearrange the body balance; stabilization by adequate mechanical support; and also muscle development and education to maintain the balance so regained. Compensation treatment is found to be adequate in cases of functional and postural scoliosis, which are about 10 per cent. of the whole number; in structural scoliosis of the habitual type and mild and moderate degree of rotation or lateral deviation, about 35 per cent. of the total; in paralytic scoliosis of the milder type; in some cases of congenital scoliosis; and in early or late rachitic scoliosis of moderate degree. Compensation treatment is a valuable aid preceding operative fusion. A large number of cases fused by the Hibbs method showed a subsequent break or pseudarthrosis formation in the dorso-lumbar level, due to the excessive strain caused by the "overhang" in non-compensated curves; this number included more severe paralytic cases which were still capable of passive realignment by compensation. Compensation treatment fails in the severest types of habitual scoliosis, in most cases of congenital scoliosis, and in the more severe types of paralytic and rachitic scoliosis.

12. Ptosis of the Colon.

K. H. AYNESWORTH (*Amer. Journ. Surg.*, September, 1929, p. 358) considers that ptosis of the ascending colon is congenital; he defines the following three types. In spastic colon this part of the intestine is smaller than normal; it is contracted, the musculature is thickened, the haustrations are small, and colitis results. The second type is a dilated colon with marked stasis, and a frequently dilated and defective ileo-caecal valve. The third type includes ptosis of a normal colon in younger patients, and those minor degrees of ptosis in which stasis will develop if treatment is not undertaken. The symptoms of right coloptosis are indigestion, constipation, and lassitude, with chronic right-sided abdominal pain, and in women menstrual irregularities. The pain in the right lower abdominal quadrant is irregular, chronic, and recurrent, but rarely severe; it is frequently mistaken for that due to chronic appendicitis. Pain may, in other cases, occur in the epigastric region and simulate that of a duodenal ulcer, coming at varying intervals after food. The onset of this pain is synchronous with the filling of the right colon from the ileum. In rare cases there may be pain in the region of the gall-bladder or in the right kidney region. The patients suffering from coloptosis are usually neurotic, due to the effect of stasis, and they often suffer from psychasthenia or some allied neurosis. The chief complications are colitis, pyelitis, indigestion, constipation, neurosis, and diarrhoea. The treatment should be medical in the early stages; if unsuccessful it must be followed by surgical treatment, colopexy by the Waugh technique being the operation needed to restore the displaced colon to the normal position.

13. Colles's Fracture.

E. J. GARVIN (*Med. Journ. and Record*, October 16th, 1929, p. 432) discusses the treatment of Colles's fracture as conducted in the Misericordia Hospital of Philadelphia, and describes the methods adopted in several other institutions. Statistics in 50 cases showed that the condition occurred almost equally in both sexes, females tending to be affected chiefly in childhood and old age, while males suffered mostly between the ages of 20 and 45, during the period of greatest industrial usefulness. Impaction occurred in eight cases, and in 20 per cent. of the total cases the styloid process of the ulna was also fractured. On admission an attempt at reduction was made without anaesthesia, and a splint was applied at once in the absence of any displacement. If unsuccessful, reduction by hyperextension, traction, ulnar abduction, and forced flexion with manipulation was carried out under N_2O anaesthesia, and a splint applied. On the following day an *x*-ray examination was made to determine the position of the fragments and the condition of the carpal arch; if satisfactory, the limb was put up in splints, or a plaster cast, for three to four weeks, with frequent change of dressing. Light massage was commenced at the end of the first week, with passive movements of the fingers at the end of the second week, and of the wrist at the end of three weeks. Garvin adds that after removal of the splints supervised physiotherapy should always be employed. From a consideration of various other methods adopted the moulded plaster cast seemed to be the best retention apparatus, being capable of more comfortable adaptation with the provision of the requisite amount of flexion and ulnar abduction for each individual case.

14. Surgical Treatment of Intestinal Tuberculosis.

L. BONAFE (*Presse Méd.*, September 18th, 1929, p. 1213) records seventeen cases of phthisis complicated by intestinal tuberculosis which were treated by abdominal operation. The tuberculous process had been more or less stabilized in each case by previous sanatorium treatment, but some of the lesions were extensive. In eight cases the operation was limited to laparotomy with or without appendicectomy; in three cases simple anastomosis was effected, and in six cases intestinal resection was performed. No other methods of treatment were attempted. In four of the eight laparotomy cases the lesions were found to be so extensive as to be regarded as incurable; two patients, however, did surprisingly well, and were subsequently classed as cured. Four out of these eight patients recovered completely, two were improved, and two died afterwards. Anastomosis resulted in one cure, one improvement, and one failure. Resection was attended by success in four cases; one patient improved temporarily, but relapsed and died later with laryngeal complications. In the sixth case the disease was too advanced, and the patient died a fortnight after the operation. In all there were nine clinical cures and three improvements amongst the seventeen cases. The author suggests that abdominal tuberculosis will more and more pass into the realm of surgery. In no instance was any extension of the pulmonary condition observed to follow the operation.

Therapeutics.

15. Vaccine Treatment of Soft Chancre.

A. F. LASSEN (*Ugeskrift for Laeger*, September 26th, 1929, p. 817) has conducted investigations at the Rudolf Bergh Hospital in Copenhagen with a vaccine prepared from dead cultures of Ducrey's bacillus. He gave this vaccine in increasing doses by intravenous injection, being guided by intradermal reactions provoked by its injection previously into the epidermis of the upper arm. The intradermal reaction was always negative in patients not suffering from a soft sore, and the degree to which it was positive varied with the stage of the disease, being slightest when a soft sore had just been acquired, more violent when a bubo had supervened and perforated, and most violent in cases of reinfection. Lassen states that the capacity to respond with a positive reaction persists probably for life, or at any rate for many years after recovery from the infection. The intradermal reaction usually becomes negative after the fourth intravenous injection of the vaccine given in increasing doses, and it again becomes positive some ten to fifteen days after the completion of these injections. The more violent the intradermal reaction the more effective and rapid was the therapeutic action of the intravenous injections. On the other hand, quite new cases of soft sore, in which the intradermal reaction was not yet positive, proved to be refractory to intravenous injections. These should therefore be deferred till the patient has been sensitized by his infection, and this does not usually occur till eight to twelve days after the first appearance of the sore. After giving details of the technique of the injections, the author, who had treated eighteen cases up to the end of February, 1929, states that the results were beyond his expectations. Large and fluctuating buboes, seemingly on the point of perforation, lost their inflammatory character in two or three days, and shortly afterwards disappeared completely, while the primary sore cleared up under a boiled water compress. The results thus achieved were superior in every respect to those following the conventional, non-specific treatment with incision of the suppurating buboes. While the author recommends such vaccine treatment in every case complicated by buboes, whatever their duration, size, or condition, he does not consider such specific treatment necessary or advisable in every uncomplicated case of soft sore, for which local treatment is often adequate.

16. Levulose in Diabetic Acidosis.

O. PUCSKO (*Münch. med. Woch.*, October 18th, 1929, p. 1755) has investigated the action of levulose administered by the mouth and by intravenous injection on the ketone bodies in the blood and urine of severe cases of diabetic acidosis. After the administration of levulose, either alone or succeeded, preceded, or combined with insulin, quantitative estimations of the amounts of ketone bodies in the blood and urine were made over a period of several days. Single doses of levulose by itself exhibited no appreciable action, but if repeated on several days a slight fall of the ketone body content was manifested; when insulin was also administered a much better result was attained. The intravenous dose of levulose employed was 20 c.mm. of a 50 per cent. solution, and 10 grams per dose if administered by the mouth. Insulin was given subcutaneously in doses of 20 to 40 units, but for intravenous injection the dose did not exceed 20 units. Clinical notes are given of four patients suffering from severe ketonaemia and ketonuria in which the acidosis was favourably affected by the intravenous injection of levulose combined with insulin treatment; some of the patients had already been treated with insulin and were found to be in some degree refractory. The author remarks that intravenous doses of dextrose generally show a more rapid action on the ketone bodies than levulose, but by the addition of levulose the diminution of the quantities of ketone bodies by dextrose will be maintained. Levulose given by the mouth and followed by insulin injections removes the ketone bodies, and will reduce the sugar in the urine to almost *nil*, but the action takes place more slowly than when it is injected intravenously.

17. Administration of Pure Oxygen in Cardiac Failure.

VARIOUS observers have suggested that death following pulmonary embolism is due to reflex failure of the heart. Attempts have therefore been made in human patients and animals to maintain the activity of the heart by inhalation of oxygen so long as there is any circulation in the lungs. G. LOTHEISSEN (*Zentralbl. f. Chir.*, October 12th, 1929, p. 2563) reports a case in which the typical symptoms of pulmonary embolism developed ten days after an uneventful appendicectomy. As soon as oxygen was administered the pulse improved; camphor and strychnine were also injected, but when the supply of oxygen was discontinued the patient relapsed and became blue and pulseless again. The administration of oxygen was therefore continued for three days; at the end of this time cyanosis did not return and the pulse remained good. The patient made a slow but complete recovery, and was discharged seven weeks after the operation. Lotheissen suggests, therefore, that patients with pulmonary embolism should be immediately treated with pure oxygen, and that this measure, combined with artificial respiration and heart massage, might also be useful in other forms of reflex inhibition of the heart such as that which follows electric shock.

18. Potassium Sulphocyanate in Hypertension.

R. S. PALMER, L. S. SILVER, P. D. WHITE, W. BLOOMBERG, and R. G. HAHN (*New England Journ. Med.*, October 10th, 1929, p. 709) report the clinical use of potassium sulphocyanate in 59 cases of hypertension. The majority of the patients were between the ages of 50 and 70, and were cases of essential hypertension, many showing such secondary effects of hypertension or of age as hypertensive heart disease, renal changes, congestive or anginal failure, and arterial disease. The usual therapeutic procedure was the administration of 1½ grains of potassium sulphocyanate in one drachm of water three times a day for the first week, twice a day for the second week, and once daily for the third and fourth weeks. A fall of 30 mm. of mercury or more in the systolic pressure while under treatment was regarded as indicating a definite effect, and on this basis the cases were divided into two groups: those showing such a definite response and those in whom the fall in pressure was less than 30 mm. of mercury. In 25 cases (42.4 per cent.) there was a good reaction to the treatment, while in the remaining 34 cases (57.6 per cent.) the result, though possibly favourable, was not so marked. Of the eight cases showing the most marked fall in systolic pressure (40 to 70 mm. of mercury), five were definitely cases of essential hypertension, and the other three had arterio-sclerotic and hypertensive heart disease. Although a few of the patients complained of weakness, anginal pain, or precordial distress while taking the salt, no definitely toxic effects were noted, but the treatment should be started cautiously, since unfavourable symptoms may follow in patients with renal changes or coronary sclerosis. The authors recommend trial of potassium sulphocyanate in patients suffering, or likely to suffer, from the effects of hypertension.

19. Treatment of Blackwater Fever.

J. FORBES (*Kenya and East African Med. Journ.*, September, 1929, p. 152), inspired by Professor MacLean's article on the treatment of gastric ulcer by combined alkaline carbonates (*Journal*, April 14th, 1928, p. 619), applied the method in the treatment of blackwater fever as follows. As soon as haemoglobinuria develops in a case of malaria under treatment, all food is stopped; boiled water alone is given until the urine has been clear for three days and is alkaline in reaction. Alkalis are administered according to MacLean's formula (sod. bicarb. 2½ oz., calc. carb. 5 oz., mag. carb. pond. 5 oz., bismuth oxycarb. 10 dr.), and one flat teaspoonful of the mixture is given every two hours in water from 6 a.m. to 10 p.m., when a double dose is administered. Absolute rest is essential. The windows must be open to ensure pure air, since much of the blood is destroyed and its oxygen-carrying capacity is reduced. Three or four doses of calomel (about 0.75 grain), at intervals of half an hour, are very useful. An enema of soap and water is given at the outset, and enemata of a weak solution of potassium permanganate twice daily. If the temperature falls and remains down no quinine is given at all, but sometimes a temperature resembling that in subtertian fever continues, and parasites may be found in the blood. In such cases small doses of tincture of cinchona (1 drachm three times a day) should be given. As improvement takes place a careful start with milk may be made, and the amount rapidly increased if the urine is neutral or fairly alkaline. A few days later the diet may be increased by jelly, fruit juice, and oatmeal porridge.

Anaesthetics.

20. Colonic Anaesthesia.

J. T. GWATHMEY (*Journ. Amer. Med. Assoc.*, August 10th, 1929, p. 447) reports his experience of 5,000 cases anaesthetized by the introduction into the colon of ether in olive oil. Experiments on animals have shown that if 0.01 gram of atropine per gram of body weight is given previously, full surgical anaesthesia can always be assured; it is completely controllable if the correct dose is administered, and can be promptly terminated by lavage. Colitis is unknown where no previous inflammation has existed. The special advantages of the method are that there is no psychic shock, less bleeding than with ordinary anaesthesia, and the recovery is uneventful, without nausea. The ether is really outside the body until it evaporates and is absorbed; Gwathmey gives charts showing the evaporation rate. He does not consider renal, pulmonary, or cardiac conditions contraindicate its employment, but all pathological conditions of the lower bowel, including colitis, haemorrhoids, and fistula, should bar its use. Special indications for the method are alcoholism, obesity, brain surgery, oesophagoscopy, suspension laryngoscopy, bronchoscopy, hyperthyroidism, and operations on the head, neck, and chest. During colonic anaesthesia the pulse rate, respiratory rate, and blood pressure are said to be lower than under ordinary conditions. Control of anaesthesia during the operation can be effected by placing a towel over the face to ensure rebreathing; the occasional use of supplementary open anaesthesia; and the introduction into the rectum of a further dose of 65 or 75 per cent. ether in oil, about 1 oz. for each extra hour of anaesthesia required. The night before the operation a light supper of tea and toast is given, followed after two hours by two tap-water enemata with an interval of twenty minutes between them, and the administration of 10 grains of barbital. Two hours before the operation a low clear-water enema is given, and 1/8 gram of morphine is injected subcutaneously; a 10 grain chlorbutanol suppository is inserted deeply, and half an hour later a subcutaneous injection of atropine gram 1/150 is given. Rectal instillation of the "retention enema" is then begun, the catheter and funnel being first filled with warm oil to exclude air; the retention enema mixtures in use are: ether 4 oz., olive oil 2 oz., paraldehyde 2 drachms; or ether 5 oz., oil 2½ oz., paraldehyde 2 drachms; or ether 6 oz., oil 3 oz., paraldehyde 2 drachms. Forty minutes before operation a final enema is given consisting of ether 3 oz. and olive oil 1½ oz., ten minutes being taken for its administration; absolute quiet must then be assured for the patient. Danger signals are cyanosis, dulled corneal reflex, and stertor; support of the lower jaw will usually correct the last-named. Summarizing his results, Gwathmey states that 65 to 75 per cent. ether in oil is non-irritating; the method can be used with safety where a cautery is to be applied in the region of the mouth; there is an absence of any "pain reflex" when the patient recovers; and sometimes there is actual amnesia of the fact of operation.

21. **Intratracheal Ethylene-Oxygen Anaesthesia.**

H. R. GRIFFITH (*Canadian Med. Assoc. Journ.*, September, 1929, p. 294) has used this method successfully for more than four years in a series of 1,200 cases of nose, throat, and ear operations, and of thyroidectomies. The ages of the patients ranged from 14 months to 70 years. The preliminary hypodermic injection of 1/4 grain of morphia and 1/50 grain of hyoscine is advocated, but not insisted on, especially in the case of children. After anaesthesia has been induced with nitrous oxide-oxygen, followed by a little carbon dioxide, ethylene, and ether, the face mask is removed, the head is thrown back, and the larynx is exposed quickly with a suitable Jackson speculum. A silk or lisle catheter of the proper size—F16–F18 for infants, up to F32—is introduced and the end pushed down to about 3 cm. above the bifurcation of the bronchi; this will be about 22 cm. from the teeth in the average adult. The ethylene is passed into the catheter by way of a small rubber bag, into which the patient should do a good deal of rebreathing. The possibility of explosion has to be constantly kept in mind, though the author has had no accident. He observes the following precautions. The Foregger "metric" and the "safety" machines are used, both of which contain water. In order that the gas may flow only over a wet surface a few drops of water are introduced into the rubber tubing and the rebreathing bag. The anaesthesia is finished, as started, with nitrous oxide and a little carbon dioxide. No cautery or other open flame or spark is permitted in the operating room during the administration of ethylene. The advantages claimed are: (1) the respiration is always under control, with no possibility of obstruction: (2) no hypersecretion of mucus occurs, as is the case with ether: (3) there is an immediate response to carbon dioxide or oxygen stimulation when necessary; (4) more satisfactory relaxation ensues than with nitrous oxide; (5) the patient wakes immediately after the operation and nausea seldom occurs; (6) there are no pulmonary sequels. The author considers this almost the ideal anaesthesia for small children.

22. **Ether Anaesthesia in Children.**

E. v. d. PORTEN (*Schmerz Narkose-Anaesthesie*, August 15th, 1929, p. 167) remarks that though there are no specialists in anaesthesia in Germany, everyone who has any experience of anaesthetics knows that the course in children is different from that in adults. Ether anaesthesia in children is attended with certain dangers owing to the rapidity with which they go deeply under the anaesthetic: the pupils rapidly become dilated and fixed, and the respiration fails. The following precautions should therefore be taken. As soon as the stage of excitement is passed there should be a considerable reduction in the frequency with which the drops are administered. The maximum constriction of the pupils preceding the dilatation in which no reaction takes place should be absolutely avoided in children, though in adults this stage may be reached with impunity. The stage of excitement is followed by an intermediate stage in which the corneal reflex disappears on one side but is still just present on the other. This intermediate stage has the advantage of being readily detected in children, and is not attended by danger at any age; it is particularly suitable for children in all operations except those on the peritoneum, in which the anaesthetic must be pushed. Children above the age of 4 years should be given an injection of morphine and atropine before ether anaesthesia. In conclusion the author states that girls about the age of puberty require a relatively large dose of the anaesthetic, and special care should be taken that such patients are kept in the intermediate stage.

23. **Spinal Anaesthesia.**

W. BOCTOR (*Journ. Egyptian Med. Assoc.*, September 23th, p. 122) records a series of 620 cases of spinal anaesthesia; a mixture of stovaine and caffeine was used, and no preliminary morphine injection was given. The Trendelenburg position was adopted in every case. As regards the blood pressure, in 44 cases this was unchanged, in 16 there was a rise, and in the rest a slight fall occurred. Most authorities have stated that it is not safe to use spinal anaesthesia when the blood pressure is below 100 mm. of mercury, but the author used it successfully in fourteen cases where the blood pressure was between 80 and 50. He remarks that it is not so much the actual fall as the sudden fall of blood pressure which is dangerous. As regards complications, the occurrence of nausea and vomiting, early or late, was noted in 50 cases; retention of urine in 91, of which in 31 there was some form of bladder disease; headache in 93, usually easily controlled by simple remedies, but in 4 cases persistent and severe; but there were no cases of backache or paralysis, and no death. In 22 cases a whiff of chloroform was required; in 30 cases the anaesthetic had to be supplemented, and in 19 no anaesthesia was produced by the spinal injection.

Obstetrics and Gynaecology.

24. **Haemorrhage from the Corpus Luteum.**

A. MUHL (*Zentralbl. f. Gynäk.*, September 14th, 1929, p. 2350) suggests that the clinical diagnosis of intra-abdominal haemorrhage from a corpus luteum may be simplified by examination of the urine by the Zondek-Aschheim test for pregnancy; a negative test will exclude extrauterine pregnancy. He records two cases of intra-abdominal bleeding from a corpus luteum in patients aged 23; in one the clinical diagnosis was acute appendicitis, and in the other the presence of a small cystic tumour in the postero-lateral fornix led to laparotomy for a supposed extrauterine pregnancy. In both cases the abdomen contained considerable amounts of blood, which was traced to a corpus luteum. Microscopical examination of both tubes and both ovaries (which has been said to be essential if other sources of bleeding than the corpus luteum are to be excluded in these cases) was not possible, but amenorrhoea was absent in the case-history of both patients, and one was a virgo intacta. In both cases the acute symptoms dated from the height of the premenstrual phase of the cycle.

25. **Auto-Blood Infusion in Gynaecology.**

LILIAN K. P. FARRAR (*Surg., Gynecol. and Obstet.*, October, 1929, p. 454) commends auto blood infusion in clean pelvic operative emergencies associated with haemorrhage, and mentions the necessity of preliminary training of the medical and nursing staff of the hospital in the technique. Among the advantages claimed for the method are the immediate restoration of blood to the circulation without the delay entailed in finding a suitable donor, the avoidance of any reaction due to incompatibility, and the ease with which it can be performed. In a sterile graduated suction bottle 10 c.cm. of sterile 2 per cent. sodium citrate solution is placed; blood is drawn directly from the abdomen into this to the 100 c.cm. mark. The bottle is then removed and replaced by another, and suction again commenced. The 100 c.cm. of citrated blood in the first bottle is then poured through twenty thicknesses of gauze wet with sterile normal saline solution lying on the top of a sterile funnel in a flask standing in a basin of hot water; 50 c.cm. of sterile normal salt solution are poured over the blood, which is then covered to prevent aeration and allowed to filter. The blood thus collected is introduced by the gravity method into the median basilic vein in the arm: 250 to 300 c.cm. can usually be given. The author remarks that the method does not interfere with the operation if the staff has been trained in the technique. It cannot be adopted if the blood is stagnant or clotted, or if there is any suspicion of infection in the pelvis or abdomen. The 2 per cent. sodium citrate solution keeps indefinitely in sealed sterile ampoules, and 10 c.cm. used with each 90 c.cm. of blood prevents coagulation; at least five times as much sterile normal salt solution as sodium citrate solution should be used.

26. **Acacia in Obstetrical Shock.**

CONTRARY to the opinion of certain authors, L. M. RANDALL (*Journ. Amer. Med. Assoc.*, September 14th, 1929, p. 845) considers that there is no fundamental difference between obstetrical and surgical or traumatic shock, and that the symptoms and treatment are the same. One of the outstanding features of shock, as a rule, is collapse due to lack of fluid in actual circulation. Keith and others have pointed out that nature's first reaction to shock is to supply fluid, and not erythrocytes, to the depleted circulation. The intravenous injection of solutions of sodium chloride and of dextrose is not entirely satisfactory, since they only temporarily increase the blood volume; gelatin has been discarded because of the difficulty of securing sterile solutions. Bayliss, experimenting with acacia, found that a 6 per cent. solution was entirely innocuous, and was capable of raising the blood volume and maintaining it. This method has been much employed in the Mayo Clinic, and Randall strongly advocates its use. The need in shock is for fluid that will remain in the circulation, and acacia fulfils all the requirements for intravenous treatment of shock, except the provision of erythrocytes. It increases the volume of plasma and blood, and keeps it increased until the normal fluid-regulating mechanism of the body is restored. Randall believes that in many cases life has been saved by its early use and by the postponement of operative procedures until the initial shock has been controlled; he adds that, as a preventive of shock, it is wise to give an injection of acacia solution in cases of fatigued or debilitated patients when obstetrical operations are to be performed. Proper preparation of the solution is emphasized, and a method is described. The injection is performed much in the usual way. It is best to use a needle

of large bore or a cannula; the gravity method of administration is good, and has the advantage of simplicity. From 25 to 40 c.cm. is given each minute, until from 500 to 1,000 c.cm. have been injected. Since shock is often accompanied by or is due to haemorrhage, treatment must include haemostasis. Besides these measures, heat should be applied and the head of the patient be lowered. Morphine may be given if the patients are restless, and stimulants, such as epinephrine and caffeine, are often indicated. Two illustrative cases of shock in obstetrical patients are recorded to demonstrate the efficacy of acacia in this condition.

27. Pyelitis in Pregnancy after Nephrectomy.

C. COLOMBINO (*Ann. di Ostet. e Ginecol.*, September 30th, 1929, p. 1114) discusses the dangers and treatment of pyelonephritis occurring in pregnant subjects who possess one kidney only. He points out that pyelonephritis occurs in approximately 1 per cent. of pregnancies, and the mortality of the acute condition is very small, although Dosza has recently reported a series of one hundred cases with four deaths. Recent studies have shown that serious sequels of pyelitis gravidarum are more frequent than was formerly supposed; they consist in occasional hydronephrosis and ureteral stenosis, but more often in the production of a contracted pyelonephritic kidney, in which a granular kidney not unlike that familiar to physicians is associated with infection both of the renal parenchyma and of the ureteral and periureteral zones. For these reasons, when the patient with pyelitis possesses a single kidney only, the risk of medical treatment (in spite of the success which as a rule follows in the disease) is too great, and speedy termination of the pregnancy is the only prudent course. Colombino records the case of a woman, aged 23, who had had two normal pregnancies and labours. A third pregnancy was associated with increasing and intractable pain in the left iliac fossa; a tumour palpable to the left of the tenth dorsal vertebra was proved to be the displaced left kidney by the fact that on cystoscopy the left ureter emptied more slowly than the right, but much more quickly when pressure was exercised on the abdominal swelling. The left kidney was removed and proved microscopically normal. The patient was readmitted to hospital three weeks after the operation, in the sixth month of pregnancy, with signs and symptoms of acute right pyelonephritis, which abated rapidly after induction of labour by Braun's bag.

Pathology.

28. The Sedimentation Test in Leprosy.

E. MUIR (*Indian Med. Gazette*, September, 1929, p. 488) suggests that the sedimentation test is a valuable means of testing the efficiency of drugs used in the treatment of leprosy, and is also a useful aid in diagnosis and prognosis. A technique is described which renders it possible to test a large number of blood samples fairly accurately and rapidly. An all-glass 2 c.cm. syringe receives 0.3 c.cm. of a 5 per cent. solution of sodium citrate in distilled water, and then 1.2 c.cm. of blood is drawn into it from a vein and thoroughly mixed; the mixture is then expelled into a clean test tube. If there are several patients to be tested a similar procedure is adopted with each, and the test tubes are labelled and placed in order in a rack. Sedimentation is carried out in 300 mm. pipettes graduated from above downwards from 0 to 100 with a space of 3 mm. between each mark. The content when filled up to 0 approximates 1 c.cm., but a variation of 0.05 c.cm. makes no appreciable difference in results. These pipettes are placed upright in a rack with their points inserted into holes in rubber corks to prevent the mixture escaping. A 10 c.cm. syringe is attached by a rubber tube to the upper end of a pipette, the point of which is inserted into one of the test tubes; the blood-citrate mixture is drawn up to the 0 mark and the pipette replaced in the rack. The other pipettes are dealt with in the same way. After one and a half hours, and again after two and a half hours, the top levels of the erythrocytes are read, the average of the two readings being taken as the sedimentation index (S.I.). Muir states that as a rule the S.I. in the different stages of leprosy increases in direct proportion to the number of bacilli in the body, and it is also a criterion of the reaction phase directly proportionate to the degree and extent of the reaction. The effect of a given dose of medicine or injection upon the S.I. affords an indication whether the next dose requires increasing or diminishing, or at what interval it should be given. A remedy which does not raise the S.I. is unlikely to be effective in eliminating the leprous infection.

29. The Acid-Base Equilibrium of the Blood in Acute Rheumatism.

THE theory of the infective origin of rheumatism, now commonly accepted, raises the question whether the causal organism may be one that produces an acid toxin. In order to obtain evidence for or against this hypothesis, L. G. PARSONS and S. H. EDGAR (*Arch. Dis. in Childhood*, October, 1929, p. 291) have investigated the acid-base balance of the blood in rheumatism. Normally the *p*H of the blood is extremely constant, but certain pathological conditions can induce an acidosis or an alkalosis. Usually, however, any change tending to occur is speedily regulated by alterations in the excretory systems, which neutralize the disturbing effect and keep the *p*H constant. This is not always so, and should a point be reached where the regulating mechanism is unable to cope with the disturbing factor—as, for example, in diabetes, where the production of non-volatile acids is continuous—the *p*H will be altered and an abnormal figure obtained. To ascertain the acid-base balance, or equilibrium, of the blood two estimations are necessary—namely, of the *p*H and the carbon dioxide content. These tests were applied to the blood of 53 children, all of whom had received institutional treatment for a period of one to two years or even longer. The results showed that the acid-base equilibrium of children suffering from acute rheumatism, whether in the acute, convalescent, or quiescent stages of the disease, was normal. The authors conclude that there is thus no evidence in favour of the view that the symptoms of rheumatism are due to an excess of acid in the tissues, or that the rheumatic child is an "acid" child. As regards other factors, Edgar has investigated the variability in blood calcium in rheumatism, and his results support this conclusion.

30. The Bactericidal Power of Human Blood in Typhoid Fever.

R. VEGNI (*Lo Sperimentale*, September 10th, 1929, p. 351), as the result of observations on ten normal subjects and eleven patients with typhoid fever, aged from 14 to 41, came to the following conclusions. The blood of healthy subjects presents a considerable bactericidal action on the typhoid bacillus *in vitro*, this action ranging within wide limits. The blood of typhoid patients possesses a bactericidal power on the typhoid bacillus which is usually higher than that of the normal subject; this power shows an increase during the first stage of the disease, reaching its maximum in the second or third week, and then declining during defervescence and still more so in convalescence. When defervescence is delayed and the course of the disease is severe the bactericidal power shows only a slow decrease. A study of the bactericidal power of the blood does not appear to have any prognostic significance, since a high bactericidal value was found both in severe and mild cases. No relation was found to exist between the bactericidal power of the blood and the agglutinating properties of the serum. Vegni adds that in the study of the bactericidal power of the blood it is essential to use fresh blood which has been defibrinated.

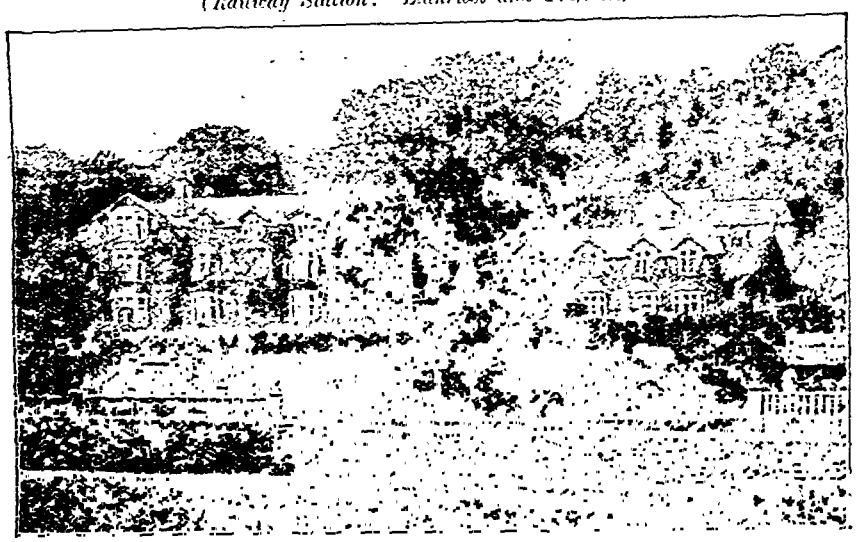
31. The Reticulocyte Reaction in Anaemia.

J. WAHLBERG (*Acta Med. Scand.*, October 17th, 1929, p. 143) contributes a study of blood regeneration in simple anaemia, comparing treatment by liver diet, by iron and arsenic, and by hospital treatment without special therapy. The expectant treatment afforded an estimate of the patients' spontaneous power of regeneration. Of the 10 cases so treated over a period of several weeks, the haemoglobin percentage remained unchanged and the rise of red cell count was only slight. In 19 cases the effect of iron and arsenic was compared with that of liver diet. Iron and arsenic did not give better results than liver alone; of 15 cases, 9 responded favourably to liver; there was no difference observed between the effect of liver extract and whole boiled liver; in 3 out of 13 cases there was better reaction to liver alone than to iron and arsenic. The reticulocyte reaction in simple anaemia is dependent on and approximately proportional to the blood regeneration; at first it is inversely proportional to the red cell count, but is only marked when the red cell count is below 3 million, and was most marked in severe post-haemorrhagic anaemia during iron and arsenic treatment. The specificity of the reticulocyte reaction for pernicious anaemia is questioned; the greater reaction and the sudden start of the regeneration after the commencement of the liver treatment are accounted for by the lower red cell counts of these patients. The practical value of the reticulocyte reaction in simple anaemia, as in pernicious anaemia, is an early indication of commencing improvement.

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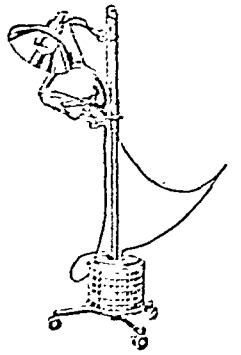
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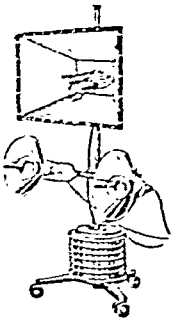


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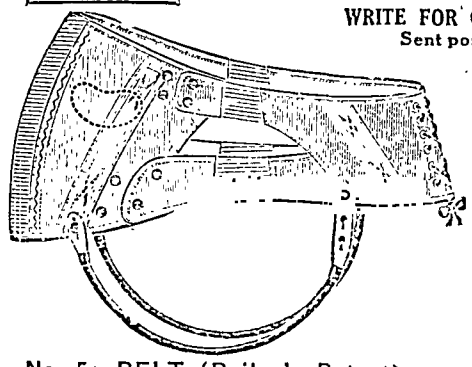
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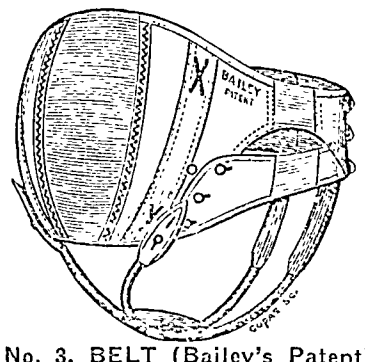
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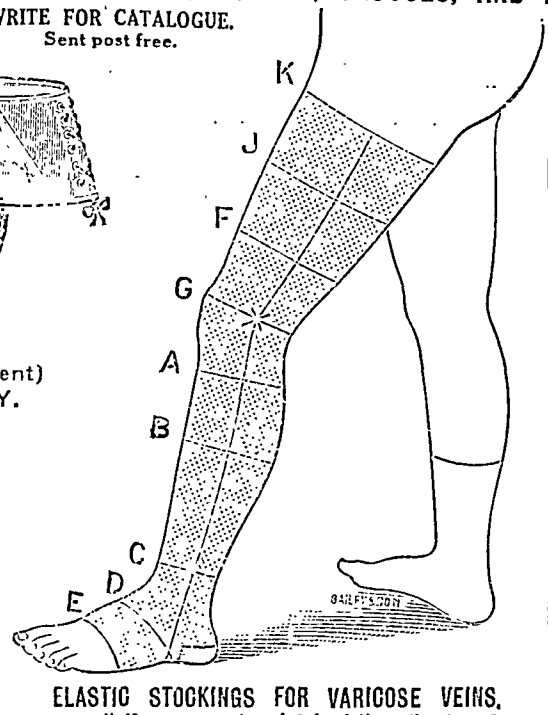
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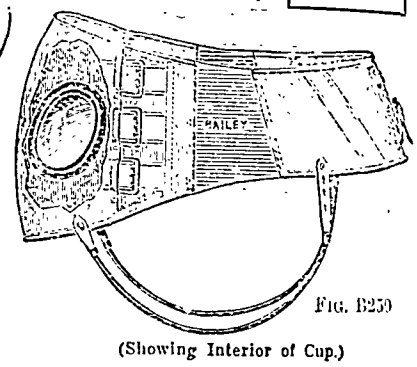


FIG. B250
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.

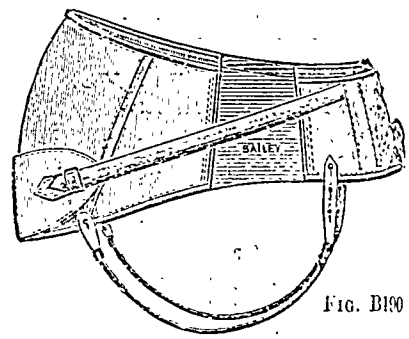


FIG. B190
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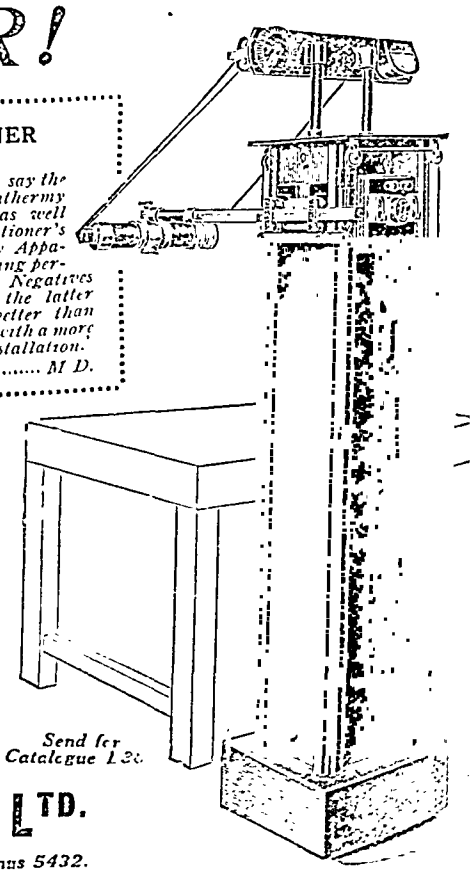
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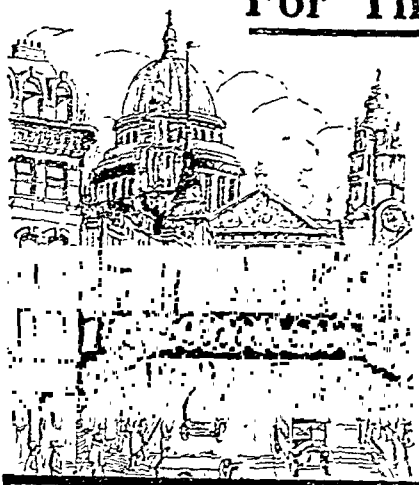
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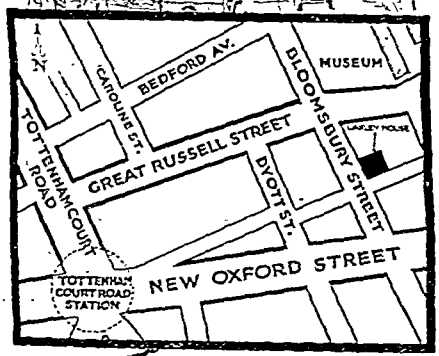
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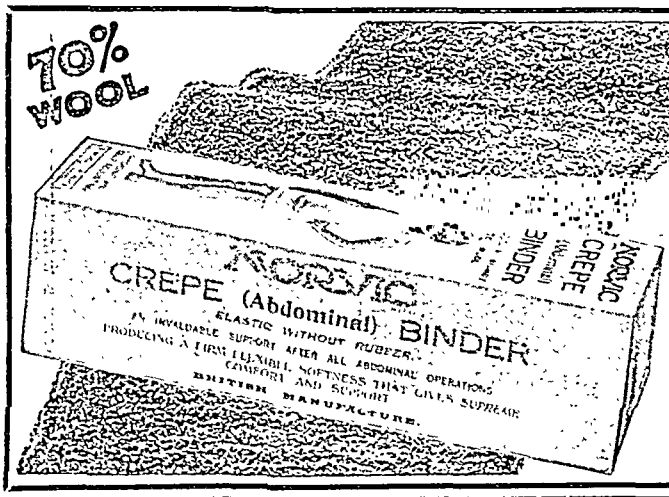
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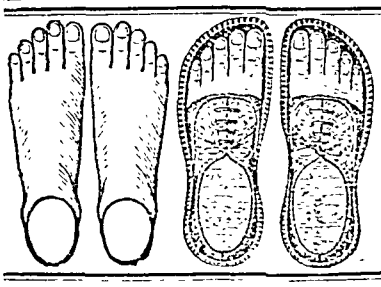
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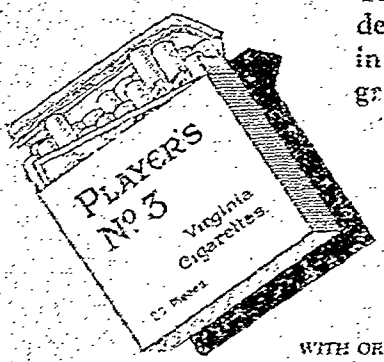
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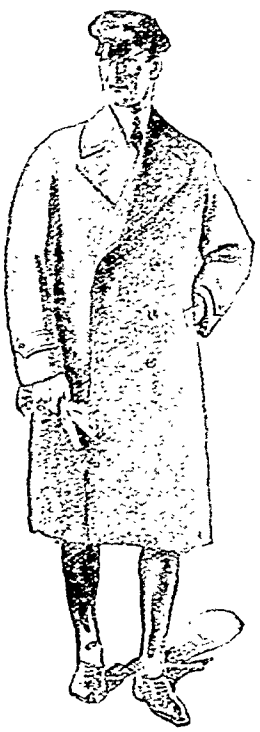


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A PRIVATE NURSING HOME for the CURATIVE TREATMENT OF NERVOUS AFFECTIONS. Voluntary Boarders also received Ladies only.

Apply, the Misses MCLINTOCK, or Dr. S. BARTON, Visiting Physician.

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 *miles from* Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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Situated in 3½ acres of secluded gardens.
HOME FOR TWELVE MENTAL PATIENTS (LADIES).
Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.
Station: Clapham Common Tube. *Telephone*: Brixton 0494. Apply, Mrs. THWAITES.

BOREATTON PARK, BASCHURCH, SALOP.

A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen *mentally afflicted.*
Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.
Voluntary Boarders accepted.
Apply for particulars to Dr. SANKEY.

Grove House, All Stretton, Church Stretton, Shropshire.

A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

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(ESTABLISHED 1922). *'Phone*: PAIGNTON 5110.

A small comfortable Home charmingly situated in secluded gardens overlooking Torbay. Ladies and Gentlemen treated with a view to a rapid and permanent cure by modern methods, which give excellent results Ample amusement, billiards, wireless, golf, tennis, etc. Good train service (3¼ hours London). Moderate inclusive terms. Prospectus, report, etc., from—Stanford Park, M.B., CH.B., Res. Med. Supt., Bay Mount, Paignton



WONFORD HOUSE HOSPITAL,

EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

THE ARCHER NERVE TRAINING COLONY, LANGLEY RISE, LTD.,

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Started 26 years ago by the late Mrs. William Archer, exists for the special treatment of FUNCTIONAL NERVOUS DISORDERS by means of a system of Relaxation correlated with training in Nerve Control. Home life in numerous small houses in charming grounds; chalets for resting, which is a special feature. Eurhythmics, Voice Production, Music, Dancing &c. Medical report required for admission. Apply Secretary. Telephone and Telegrams: King's Langley 19.

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A British country home in perfect surroundings for CONVALESCENTS or treatment of conditions requiring pure air, rest, and sunshine, such as ARTHRITIS, NEURITIS, COLITIS, etc. English Matron, English Nurses. Apply SECRETARY.

FUNCTIONAL NERVOUS DISORDERS.

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RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent*:

A. E. CARVER, M.D., D.P.M.

Telephone: Nuneaton 241

CHEADLE ROYAL,

CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received. For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY

THE LAWN, LINCOLN.

A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,

Dr. MARY R. BARKAS, M.D., D.P.M.

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DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by For particulars apply to—

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SHAFTESBURY HOUSE,

FORMBY-BY-THE-SEA, nr. LIVERPOOL.

For the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS or MENTAL breakdown. Voluntary Boarders received. Psycho-therapy in suitable cases if desired Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

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For Prospectus and full information please write MANAGER, M.J.

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As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

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Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent).

'Phone: Chislehurst 451. *Telegrams*: "Masters," Chislehurst.

The Stanboroughs

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Specially equipped for treating cases of functional nervous disorders, alcoholism, and drug addiction. Fees moderate. 200 acre park. Inspection invited.

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'Phone - - - WATFORD 1751.

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DRUG ADDICTION & NEURASTHENIA

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Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone*: 2708.

DROITWICH SPA.

Mild and invigorating climate.

RAVEN HOTEL or PARK HOTEL

for health and for comfort. Cordial hospitality and first-class cuisine await you. Adjoining brine baths—the certain cure for rheumatism. Special residential terms for Autumn and Winter. There are 230 rooms, magnificent grounds, lock-up garages and cars for hire. Illus. booklet sent on request. 'Phone 60 or 38.

PEEBLES HYDRO.

Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.

All modern Baths, Douches, Massage, and Electrical Treatment. Ultra-Violet Radiation. Physician in attendance.

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Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course. Prospectus from Manager. 'Phone: Peebles 2.

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Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra violet Light.
Every kind of Electricity. Diathermy.
Every kind of Douche.
Carlsbad and Vichy Waters, etc.
High Frequency. Electric Lift.

Prospectus from Secretary. *Tele.* 341.
Resident Physician: W. JOHNSON SMYTH, M.D.

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Private Establishment for CHILDREN and YOUNG PEOPLE, delicate or predisposed to Tuberculosis, Pleurisy, Convalescents, Glands, etc. Near Davos, Switzerland. Terms from £5 5s. p.w.—Apply to the Physician in charge, Dr. BERNARD HUDSON, The Victoria, Davos-Platz, Grisons, Switzerland.

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(an entirely British Sanatorium), DAVOS (GRISONS), SWITZERLAND. Terms from £5 a week. Medical Supt.: BERNARD HUDSON, M.D.(Cantab.), M.R.C.P., Swiss Federal Diploma.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.
FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical Treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P. *Telephone*: *Teignmouth* 289.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds.

Fees are from 10 guineas a week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

The Devon Mental Hospital,
Exminster, near Exeter.

The Committee of the above Hospital have accommodation for the reception of PRIVATE PATIENTS of both sexes, in special wards, which are healthily situated, with extensive views of the Exe Valley and surrounding scenery. The Hospital is fully equipped with Operating Theatre and X-ray departments, and has facilities for Ultra-violet Light treatment and modern Hydrotherapy.

Charges: £3 3s. per week, including all necessaries except clothing. Reductions can be made by arrangement. Apply to the Med. Supt. Tel.: Deepway, Exeter. 'Phone: 3580 Exeter.

KINGSDOWN HOUSE
BOX, near BATH.

For the CARE and TREATMENT of NERVOUS and MENTAL DISORDERS in BOTH SEXES.

Separate accommodation for Voluntary Boarders of the Female Sex. Applications received at the above or at 17, Belmont, Bath, by—

Dr. H. C. MACBRYAN or
Medical Superintendents.

BROOKE HOUSE,
CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

STRETTON HOUSE,
Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O. Church Stretton.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent. Nat. Tel. 152.

W. W. HORTON, M.D.

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(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone: 65, Ruthin. Ruthin Castle, North Wales.

ROOKSDOWN HOUSE,

NEAR BASINGSTOKE, HANTS.

Private Hospital for Mental Diseases

A modern building situated in a healthy district, easily accessible by rail and road. Patients taken at from three guineas per week.

Apply to Medical Superintendent. Telephone: 157 BASINGSTOKE

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1926, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0688.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: Colonel and Alderman Sir CHARLES CHEERS WAKEFIELD, Bart., C.B.E.
Treasurer: Sir LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN-SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases [illegible] CERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS THE [illegible] MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most modern principles. In connection [illegible] there is a Convalescent Home on the Surrey hills at Witley.
For further particulars apply to the PHYSICIAN SUPERINTENDENT.

WOODLANDS PARK

GREAT MISSENDEN, BUCKS.

650 feet above sea-level on Southern Chilterns. 90 acres, Gardens, Woods, and Park.

FOR REST AFTER OPERATION or ILLNESS, CARDIAC and NERVOUS DISEASES, or PERMANENT INVALIDS.

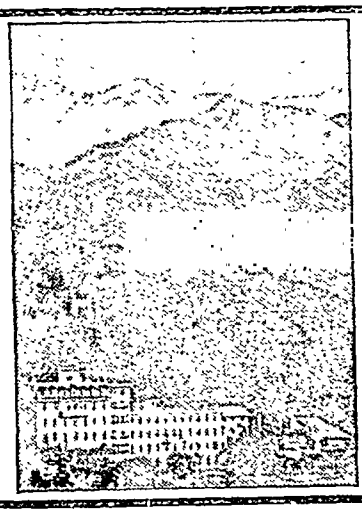
Fees from 8 guineas.

Telephone: 91 Gt. Missenden. *Apply*: C. W. J. BRASHER, M.D.

BAILBROOK HOUSE,

BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.
Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).
For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Batheaston 8189.



PALACE SANATORIUM, MONTANA (5,000 feet)

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SUNNIEST HEALTH RESORT IN THE ALPS.

For the treatment of all forms of lung diseases.
Special Department for surgical cases.

NEW MANAGEMENT.

Medical equipment completed and brought up to date.

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Full day and night staff of ENGLISH and Swiss trained nursing SISTERS.

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MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

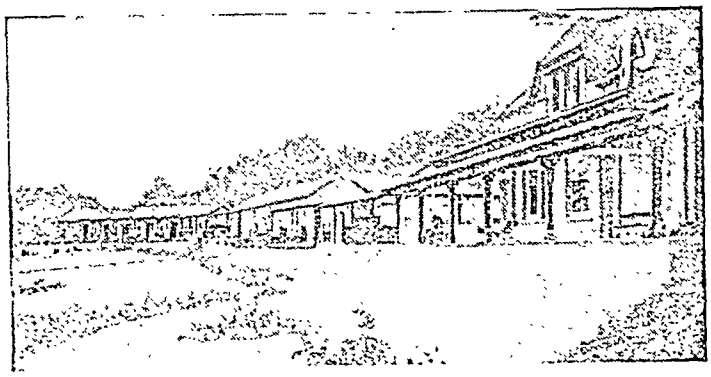
FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

THE COTSWOLD SANATORIUM



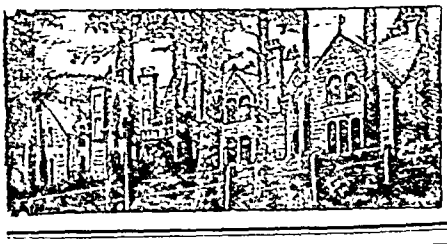
Specially built in 1898 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis on Nordrach lines. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (X-ray controlled), Tuberculins, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms.

Full day and night Nursing Staff.

Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.

Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester.

Telephone: 41 WITCOMBE. *Telegrams:* "HOFFMAN, BIRDLIP."



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THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis.

Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras

MEDICAL SUPT.: FELIX SAVY, M.B., Ch.B. *For particulars apply to the Secretary.*

PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4½ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

BRIDGE OF ALLAN HYDRO.

(Allan Water Hotel)

This once famous Hydro adjoining the Mineral Wells has recently been equipped with the most modern appliances for treatment by Electro-therapeutics, Medicated Baths, etc. All treatment is given only on the instruction of the Medical Superintendent, or of the patient's own medical adviser.

Bridge of Allan is an Inland Spa and Climatic Resort, sheltered from the North and East winds.

Terms on application. Medical Superintendent: Dr. W. C. HOFFMAN.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.

FELLOWSHIP OF MEDICINE AND POST-GRADUATE MEDICAL ASSOCIATION,

No. 1, Wimpole Street, London, W.1. *Telephone: MAYFAIR* 2235

POST-GRADUATE SPECIAL COURSES have been arranged for January in the following subjects: Cardiology, at the National Heart Hospital; Diseases of Children, Queen's Hospital; Medicine, Surgery, and Specialities, Prince of Wales's Hospital. Detailed copies of Syllabus, General Course Programme, and "Post-Graduate Medical Journal" from the Secretary.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—*Anæsthetic Courses.*—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

MOORFIELDS RESEARCH SCHOLARSHIP

Applications are invited for this

SCHOLARSHIP

of the value of £50 per annum.

The successful candidate will conduct Clinical Research at the Hospital. Names must be sent in by January 15th, 1930.

For details apply to—

THE DEAN,
Royal London Ophthalmic Hospital, City Road, London, E.C.1.

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SKILLED COACHING, GUIDANCE, and ADVICE From Specialist Tutors, in conformity with the Regulations of the various Universities.

Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5, for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendance at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to the Secretary.

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Are you preparing for any Medical or Surgical Examination?

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You can prepare for any of these qualifications by postal study at home. We specialize in Post-graduate tuition. Clinical and practical courses in any subject. Attendances at Hospital practice arranged.

THE SECRETARY,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1. Telephone: LANGHAM 1166.

Sir,—Please send me a copy of your "Guide to Medical Examinations" by return

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Address.....

Examination in which interested.....

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(1906-28) *Final*	135
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Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

CITY OF LONDON MATERNITY HOSPITAL,

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MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

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COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

The Cancer Hospital (Free),

Fulham Road, London, S.W.3.

A COURSE IN RADIOLOGY will be held at the Cancer Hospital (Free), commencing on January 21st, 1930. It will consist of a lecture and demonstration twice weekly for 12 weeks. Syllabus may be had on application to Secretary. The fee for the course is £5 5s., payable to the Hon. Secretary, Medical Committee.

Refraction and the Ordering of GLASSES

taught by Practising Ophthalmic Surgeon in London. £3 3s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

MIDDLESEX HOSPITAL.

The Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Monday, January 20th, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1.

ANATOMY.

Personal instruction is given daily by Professor T. YEATES, M.B., C.M.

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The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

BIOCHEMISTRY. GENERAL PHYSIOLOGY. HISTOLOGY.

A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

Instruction is given daily except on Saturdays; there is a three weeks' vacation at Easter, after which classes are resumed until the examination.

FEES.—£12 12s. each subject or £21 for both.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, February 10th. The fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

MARLBOROUGH COLLEGE,

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The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

STAMMERING, SPEECH DEFECTS.

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CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

STAMMERING.

SPEECH DEFECTS.

Resident and non-resident pupils. Full particulars upon request.—Mr. A. C. SCHNELLE, 119, Bedford Court Mansions, London, W.C.1. Estab. 1905. Telephone: Museum 3665.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence Jan. 27th. Correspondence course for July and later exams *should begin now.* Parties., H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

Royal Dental Hospital of London

and LONDON SCHOOL OF DENTAL SURGERY (University of London), Leicester Square, W.C.

The POSTS of LECTURER on ANÆSTHETICS and BACTERIOLOGY to the above Institution are vacant. Members of the staff are eligible for these appointments. Candidates for the appointments are requested to send in their applications, accompanied by three testimonials, on or before January 25th, 1930, to the Dean.

Birmingham Union.

SELLY OAK HOSPITAL.

TWO CASUALTY OFFICERS (Male).

Applications are invited from fully qualified Medical Practitioners for the appointments of Casualty Officers (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 540 beds divided into General Medical, General Surgical, Gynæcological, Obstetrical, Children, and Infectious Sections. There is a completely equipped Pathological Laboratory, also X-ray, Electro-therapeutic, Massage, and Sunlight Departments. Over 2,200 operations are performed annually.

The appointments will be for a period of six months in the first instance, but may be extended at the end of that time.

The officers appointed will be required to assist at operations, administer anæsthetics, and undertake casualty work, and such other duties as may be assigned to them by the Medical Superintendent, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the appointments is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896, and for this purpose the emoluments are valued at £200 per annum.

Further particulars of the appointments may be obtained from the Medical Superintendent, Mr. R. P. STANLEY KELMAN, M.B., F.R.C.S. (Eng. & Edin.) at the Selly Oak Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than Wednesday, January 8th, 1930.

Union Offices, Birmingham. December 12th, 1929.

C. P. BEECH, Clerk to the Guardians.

Birmingham Union.

DUDLEY ROAD HOSPITAL.

GYNÆCOLOGIST AND OBSTETRICIAN.

Applications are invited from fully qualified Medical Practitioners for the above appointment.

The Hospital accommodation is fixed by the Guardians at 926, divided into Medical, Surgical, Children's, Infectious, Gynæcological, and Obstetrical Sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electrical, Massage, Sunlight, and Dental Departments.

Candidates for the appointment must have had previous Hospital experience of a similar nature and be Fellows of the Royal College of Surgeons (England).

The scale of salary will be £700, rising by annual increments of £50 to a maximum of £1,000 per annum, and the salary of the successful candidate will be fixed within the scale according to experience and qualifications. Furnished quarters, rations, laundry, and attendance will be provided by the Guardians. Alternatively, a cash allowance will be paid if the officer appointed is non-resident. A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896.

The officer will be required to assist in the training and lecturing of nurses, and, should occasion arise, to attend at any of the other Institutions under the control of the Guardians.

Further particulars of the appointment may be obtained from the Guardians' Chief Medical Officer, F. W. ELLIS, Esq., M.D., F.R.C.S., Dudley Road Hospital.

The University of Manchester.

Applications are invited for the post of LECTURER IN DENTAL HISTOLOGY. Stipend £50 per annum. Duties to commence as early as possible in the Lent Term, 1930. Applications should be sent not later than Friday, January 24th, 1930, to the REGISTRAR, from whom further particulars may be obtained.

Rossall School. — Some twelve

Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

Resident Medical Officer required

for LEEDS JEWISH [illegible] AL. Salary £100 per [illegible] Ample time for Post-graduate work.—Apply, Secretary, Herzl-Moser Hospital, Leopold Street, Leeds.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1930. Applications should reach the War Office not later than January 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1930, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £372 per annum, normally earned by a Major after 20 years' service, to £940 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will also be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I), Whitehall, London, S.W.1.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the post of SENIOR RESIDENT MEDICAL OFFICER (male), vacant February 1st. The appointment is for nine months and renewable for a further six months. Salary £250 per annum, with board, lodging, and washing.

Candidates must have previously held a Hospital appointment. They must attend the Hospital for the purpose of an interview on Friday, January 17th, at 4.30 p.m. (No travelling or other expenses will be paid.)

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the post of OUT-PATIENT ANÆSTHETIST. To attend on Monday, Wednesday, and Thursday mornings. A payment of 10/6 per attendance will be made.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, January 17th. (No travelling or other expenses will be paid.)

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant February 1st). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, January 17th. (No travelling or other expenses will be paid). They must hold medical and surgical qualifications, and be registered *under the Medical Act.*

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

East Suffolk and Ipswich HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the posts of:

CASUALTY OFFICER, who will rank next to the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, and laundry. Previous experience essential.

FIRST HOUSE SURGEON. Salary at the rate of £120 per annum. Six months' contract, with board, residence, and laundry.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. January 4th, 1930.
ARTHUR GRIFFITHS, Secretary.

Seamen's Hospital Society, Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, from February 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three recent testimonials, to be sent in by January 21st to the undersigned.

Greenwich. December 28th, 1929.
E. V. BAX, Secretary.

Tyrone County Hospital, OMAGH.

The Committee of Management of above Hospital will, at their meeting on Tuesday, January 21st, 1930, appoint a HOUSE SURGEON for a period of six months. Salary £150 per annum, with board-residence.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, to be forwarded to the Registrar on or before Thursday, January 16th, 1930.

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered women under 35 years of age for the post of Full-time JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a resident appointment in a General Hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry). Subject to 12 months' satisfactory service, an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Chief Medical Officer, City Mental Hospital, *Rubery Hill, Birmingham, so as to be received* by him not later than January 17th.

Council House, Birmingham.
F. H. C. WILTSHIRE, Clerk to the Committee of Visitors.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male).

Salary at the rate of £150 per annum for the first six months and £175 for the second six months, with residence, board, and laundry.

The appointment is for six months and is renewable.

The Resident Staff consists of a Resident Surgical Officer, House Surgeon, and House Physician.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 2nd day of December, 1929.
ARTHUR H. LIMB, Secretary.

Royal Southern Hospital, LIVERPOOL.

WANTED.

Two HOUSE PHYSICIANS, Three HOUSE SURGEONS, and One MEDICAL OFFICER, to take charge of the Special Departments. The salary for each of the above appointments is £60 per annum, including board and residence.

Also, One RESIDENT CASUALTY OFFICER. Salary for this appointment £100 per annum.

The appointments will be for six months, duties commencing as from April 1st, 1930.

Applications and copies of testimonials to be sent to the undersigned on or before Saturday, January 18th, 1930.

ALLEN NALDRETT, Supt. & Sec.

The Royal Infirmary, Bradford.

RESIDENT SURGICAL OFFICER (male) required to supervise the work of four House Surgeons and be generally responsible for the surgical work of *the Hospital.*

Candidates must be single and legally qualified, have had previous Hospital experience, and be prepared to enter on duty at the beginning of February, 1930. Salary £250 per annum, with board, residence, and washing. There are 215 beds and six resident officers. Applications, stating age, *qualifications, and* previous experience, with copies of not more than three recent testimonials, to be received by the undersigned not later than Tuesday, January 7th.

J. J. BARRON, Secretary-Supt.

The Staffordshire General INFIRMARY, STAFFORD.

Applications are invited for the position of HOUSE PHYSICIAN (male), which will become vacant early in January. Candidates must be duly qualified and registered under the Medical Acts.

Salary at the rate of £150 per annum, with board, lodging, etc. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be *sent forthwith* to the undersigned.

Stafford. December 24th, 1929.
A. E. COLLINS, Secretary.

The West Cornwall Miners' and WOMEN'S HOSPITAL, REDRUTH, CORNWALL.

RESIDENT MEDICAL OFFICER (female) required early in the New Year, with experience of X-ray work. Salary £200 per annum, with rooms, board, and washing.

Apply, not later than January 15th, 1930, with copies of three recent testimonials, to the *Secretary, from whom further particulars may* be obtained.

Royal Edinburgh Hospital for SICK CHILDREN.

Wanted for this Hospital, Two HONORARY *RESIDENT HOUSE SURGEONS* and Three HONORARY RESIDENT HOUSE PHYSICIANS. One of the latter shall have charge of both a Medical Ward and an Ear and Throat Ward. The appointments shall commence on April 1st, 1930, and shall be for a period of six months. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before February 1st with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

The Consumption Sanatoria of SCOTLAND AND THE COLONY FOR EPILEPTICS, BRIDGE OF WEIR, RENFREWSHIRE.

RESIDENT ASSISTANT MEDICAL OFFICER (single, male) required. Duties to commence on January 20th, 1930.

Salary at rate of £200 per annum, with board, residence, and laundry.

Applications, with testimonials, and stating previous experience, should be addressed to the Medical Superintendent.

Both Sanatorium and Colony are connected with the Orphan Homes of Scotland (Quarrier's Homes), and are situated in the beautiful uplands of Renfrewshire, 15 miles from Glasgow.

West End Hospital for NERVOUS DISEASES.

(In-Patient Department, Gloucester Gate, Regent's Park, N.W.1.)

The Committee of Management invites applications from British male candidates for the vacancy of JUNIOR HOUSE PHYSICIAN to start duty February 1st. Salary £100, with board, residence, and laundry. Appointment in first instance for six months. Applications, with copies of three testimonials, must be received by the undersigned not later than January 20th.

73, Welbeck Street, W.1.
J. P. WETENHALL, Secretary.

Blackburn and East Lancashire ROYAL INFIRMARY.

RESIDENT HOUSE PHYSICIAN (male) *required at a salary of £150 per annum, with* board, residence, laundry, etc. In addition to Medical Wards, to be attached to Eye, Ear, Nose, and Throat Department.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent to the undersigned.

Royal Infirmary, Blackburn.
NATHAN A. SMITH, Gen. Supt. & Secretary.

North Riding Infirmary, MIDDLESBROUGH.
(General Hospital—150 Beds.)

SECOND HOUSE SURGEON wanted to take up duties middle of January. Salary at the *rate of £150 p.a., with board, residence,* and laundry. Applications, stating age, nationality, and previous experience, with three recent testimonials (copies), should be sent so as to reach the undersigned not later than January 10th.

NOTE.—The post of Senior House Surgeon will be vacant at the end of March and the Second *House Surgeon* will be eligible to apply for same. (Three Resident House Surgeons).

CHARLES POSTGATE, Secretary-Superintendent.

Finsbury Treatment Centre.

Applications are *invited from qualified* Medical Practitioners for the following posts:

Two Minor Ailment SURGEONS;
One ANÆSTHETIST;
One SECRETARY.

These appointments are made under L.C.C. regulations and commence on April 1st.

Applications, with copies of *testimonials,* to *be forwarded* before January 10th.

Preference will be given to local practitioners.

31, Spencer St., E.C.1.
THE SECRETARY.

Newark Hospital and Dispensary
(50 Beds).

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(Contd.)*	**PUBLIC HEALTH** *(continued).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	MERTHYR TYDFIL COUNTY BOROUGH. *(Assistant School Medical Officer and Assistant Medical Officer of Health.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)* *(Altrincham District.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec. New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. (Brisbane Associated Friendly Societies Institute.)	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 165, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
January 1st, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A CLINICAL ASSISTANT MEDICAL OFFICER in the VENEREAL DEPARTMENT is required on January 13th, 1930.

Gentlemen are invited to send in their applications, addressed to the Secretary, before twelve o'clock on Monday, January 6th, 1930, with copies of not more than three testimonials given specially for the purpose.

Candidates must possess a legal qualification to practise, and the successful candidate will be appointed for six months, and he will be eligible for re-election.

The Clinical Assistant Medical Officer in the Venereal Department will be required to attend on three afternoons a week from 2—4.30 p.m.

Salary at the rate of £1 1s. per visit or session.

All candidates must be in attendance to appear before the Joint Committee, if required, at its meeting on Wednesday, January 8th, 1930, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
December, 1929. Secretary.

Rochdale Infirmary and
DISPENSARY. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

Infirmary Office, Rochdale.
W. WYNNE, Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on January 9th, 1930, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

The work of this officer includes a large number of Tonsillectomies and other minor operations.

Candidates must be registered Medical Practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, January 6th, 1930, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months, and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, January 8th, 1930, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
December, 1929. Secretary.

Victoria Hospital, Burnley.

Wanted, HOUSE SURGEON (male), fully qualified. Appointment, six months. Salary £125 per annum, with board, lodgings, and washing. Applications may be sent in at once to F. A. HARGREAVES, Hon. Secretary, 7, Grimshaw Street, Burnley.

N.B.—This Hospital is approved by the London University for the M.B. and M.S. Examinations.

The London Female Lock
HOSPITAL,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by January 6th, 1930, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing February 12th.

The London Female Lock
HOSPITAL,
283, Harrow Road, W.9. (Founded 1746.)

HON. OBSTETRIC SURGEON.

The Board of Management invite applications for the above appointment. Copies of the laws relating to this appointment can be obtained from the Secretary. Applications, enclosing copies of not more than three testimonials, should be lodged with the undersigned on or before January 6th, 1930.

The appointment will be made at a special Court of Governors on January 9th, 1930.

By Order of the Board,
H. J. EASON, Secretary.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.

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ASSISTANCIES.

Wanted at once, outdoor male ASSISTANT, North Wales Town; knowledge of Welsh an advantage. Send references, age, and other essential particulars.—Address, No. 104, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, outdoor, early January, single, male, Protestant, preferably Scotch Graduate. Coupé provided. Dispenser kept. Usual bond. Country Town, Cheshire. Salary £330 p.a. State full parties. —No. 265, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, male, West of England, non-panel, non-dispensing Practice. Salary £250—£300. Usual bond.—Address, giving full particulars, No. 252, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Indoor Male Assistant in a London General Practice. Usual duties, work light. Catholic preferred. Bond required. Please state particulars and enclose photo. — Address, No. 124, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor (single) for mixed Practice in Lancashire. Salary £400 per annum. Usual bond. — Address, No. 254, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Assistant, indoor, recently qualified preferred, for small country Practice, near University Town. Must be able drive car. State essential particulars. — Address, No. 125, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, in Colliery Practice, South Wales. Dispenser kept. Salary £300 p.a. State age, nationality. References.—Address, No. 120, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, unmarried, private and panel Practice, Birmingham. Salary £450 p.a.—Address, No. 107, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an indoor Assistant, male, for Industrial Practice in Midlands, for four or five months. Salary £350, all found. Photo., testimonials, age, etc.—Address, No. 273, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, in town of 100,000 inhabitants. Mixed Practice. Dispenser and chauffeur kept. Usual bond. Salary £350.—Address, No. 127, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (male) for Industrial Practice, eastern suburb of London. Rooms at surgery, with attendance, fire, and light. Essential particulars.—Address, No. 108, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, male, Manchester district. Good salary (with prospects) given to suitable man.—Address, stating age, qualifications, experience, etc., No. 8107, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, with view to Partnership, in a Partnership of four in a Country Town within 50 miles. Ex H.S., H.P., with some experience of General Practice preferred. Cottage Hospital. Salary £350, with rooms.—Address, with details of height, age, testimonials, etc., and recent photograph, No. 274, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Unmarried Assistant for East London Industrial Practice. Young recently qualified man preferred. Work light and ample time for reading. Salary £300 per annum, rooms at surgery, with fire, light, and attendance. — Address, No. 268, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant for mixed private and panel Practice, country, indoor. Able to drive car. Suit one recently qualified, male or female, latter preferred. Usual bond.—Address, No. 137, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, Protestant, with view; or Partner. Industrial Practice near Manchester. Panel 2,000, income £2,000. State age and full particulars.—Address, No. 258, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, for mixed Practice in Midland Town. British, reliable. Usual bond. Salary £250—£300, according to experience. Photo. if possible. References.—Address, No. 271, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUMS by M.B., B.Ch., B.A.O., aged 29, single, male, abstainer. Resident Hospital. Experienced private, panel, and club. Drive car. Free now. — Address, No. 105, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Irish Graduate, 26 yrs., single, R.C., 4 years qualified. At present in panel practice. Free for interview or appointment after January 12th. — Address, No. 122, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, in sound mixed Practice by exper. Scotsman, 25, Glasgow Grad.; well received excellent testimonials; free now.—Address, No. 121, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, permanent, outdoor, preferably Branch Practice with house attached, by Scotch M.A., M.B., Ch.B. (Commendation), 1929, æt. 27; some experience as Assistant and Locum; free London now. Excellent testimonials. — Add., No. 119, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, by an Englishman, æt. 26, M.B., M.R.C.P.Edin., an ASSISTANTSHIP, with view to Partnership, in good-class Practice, preferably in the country; and must be in [illegible] Cumberland or [illegible]'s' hospital experience, available. —No. 109, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.B., Ch.B., post as ASSISTANT in Routine Bacteriological work. Accustomed to the preparation of vaccines, biochemical investigations, etc.—Address, No. 111, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., F.R.C.S. (Eng.), D.O.M.S., aged 29, ex H.S. and H.P., temporary ASSISTANTSHIP in London area. — Address, No. 116, B.M.A. House, Tavistock Square, W.C.1.

Assistants (Indoor and Outdoor) wanted immediately. Good salaries offered. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Assistantship or Partnership wanted by Indian, nine years own practice, just disposed. Free January. Capital available. —Address, No. 106, B.M.A. House, Tavistock Square, W.C.1.

Belfast University Graduate, male, single, aged 26, ex H.S., 2 years' exper. G.P., keen on surgery, competent obstetrician, anæsthetist, used to sole charge, driver, requires ASSISTANTSHIP.—Address, No. 257, B.M.A. House, Tavistock Square, W.C.1.

Lady (L.R.C.P. & S.Ed.), æt. 28, desires ASSISTANTSHIP, temporary or permanent. Moderate salary. Five years' exper. G.P.: private, panel, dispensing. Drive car. Excellent testimonials.—Address, No. 129, B.M.A. House, Tavistock Square, W.C.1.

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Part-time Assistant required in General Practice, N.W. London area. Board, residence, and small remuneration in return for light duties. — Address, No. 133, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.B., B.S.Lond., D.P.H., with eight years' teaching and practical experience in Pathology and Bacteriology, post as DIRECTOR or ASSISTANT DIRECTOR OF LABORATORY in London or Provinces. Free Jan. 1930. Highest refs.—No. 8116, B.M.A. House, Tavistock Sq., W.C.1.

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A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

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Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, The DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU for DISPENSERS, 12, Holborn Viaduct, E.C.1.

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Wanted immediately.—PARTNER, preferably unmarried, and keen on eye work and surgery, in rapidly increasing mi dle-class and panel Practice near Birmingham. Panel nearly 2,000, one appt. £150 p.a. Receipts 1929, £2,180. Half-share £2,000 cash.—Address No. 253, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Partner, early Feb. One-third share £900—2 years' purchase. Good Anæsthetist. Mixed Practice, up-to-date Cottage Hospital, Devon Coast. Rent house.—Address, No. 8115, B.M.A. House, Tavistock Square, W.C.1.

Wanted, active Practitioner to take over [illegible] per annum) in an [illegible] borders of Cheshire [illegible] few years. Plenty of scope and good prospects.—Apply, HOUGH, HOGARTH & Co., LTD., Manchester.

A Doctor with a small PRACTICE in a rapidly growing district will dispose of a SHARE to a Lady Doctor. Exceptional scope.—Address, No. 264, B.M.A. House, Tavistock Square, W.C.1.

Cheshire Town. — Near Manchester. — PARTNERSHIP in old-estab. Practice, after short preliminary assistantship. Income about £5,000 p.a. Panel 2,000. Premium—1/3 share—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Colchester. — Surgical Partnership wanted here by M.D., F.R.C.S.Ed., well experienced in general and surgical practice. Must be good house and share. Ample capital. — Address, full particulars, No. 102, B.M.A. House, Tavistock Square, W.C.1.

East Coast. — Large Seaport Town.—PARTNERSHIP. Cash receipts £10,834. Panel 5,000. Good house available. Rent £63 p.a. Short preliminary assistantship. Premium—1/6 share—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Sale. — One-third old-estab. middle and upper-class PRACTICE, South Coast, averaging £5,000 and over, one-fourth panel. One and a half years' purchase. Short preliminary trial for mutual satisfaction. No agents. — Address, No. 113, B.M.A. House, Tavistock Square, W.C.1.

Partnership in Woman Doctor's Practice. Quarter share worth £500. Premium 1½ years' purchase. — Address, No. 110, B.M.A. House, Tavistock Square, W.C.1.

Partnership, East Coast.—Old-established General Practice with surgery; no panel. One-third to one-half of about £3,000 at 2 years' purchase. Opening for well-qualified man with surgical experience.—Address No. 263, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Wanted, Share about £800 p.a. at 1½ years' purchase, cash payment, or would purchase small Practice with panel in district where there is definite scope. West country pref., but not essential. Advert. per keen worker.—No 131, B.M.A. House, Tavistock Sq., W.C.1.

Partner required immediately to run Country Practice. Income £1,000 p.a. Car provided. No purchase money required. Equal share of net receipts. Great scope for increase. — Address, No. 125, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Practice, industrial, in or near London. Panel 1,400 upwards. House to rent. Capital available.—Address, No. 267, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Practice, producing £1,000 to £1,500. Single-handed or Partnership. In Home Counties, London, or Coast.—Address, "MEDICO," 1, May Terrace, Sandgate, Kent.

Wanted, in or near London, Cash and Panel Practice averaging £1,500 per annum. Partnership with succession not objected to.—Address, No. 256, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Small Practice about £600 per annum, in or near Midland town.—Address, No. 128, B.M.A. House, Tavistock Square, W.C.1.

Birmingham. — Old-established PRACTICE. Average cash receipts £1,722 p.a. Panel 2,310. Good house, 2 reception, 5 bedrooms, garage, and garden, to be sold or rented on lease. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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Death Vacancy. — North-East COAST RESORT.—Old-estab. PRACTICE. Cash receipts 1928, £2,101. Excellent house and garden. Premium 1 year's purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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English Country Town on Welsh Border.—£1,200 gross. 23 appointments. House on lease, £85. 3 6 to a guinea; a delightful locality. Fees: 950 Educational advantages. Price £1,800. Professional fittings at a valuation. Any reasonable introduction.—No. 261, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Country Practice in Midlands. Income £1,000 p.a., panel 600. Expenses small. Nice house and grounds. Electric light; own plant at reasonable figure. Rent of house in district or to buy. Premium 1 year's purchase for immediate sale.—Address, No. 126, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—North London. Old-established PRACTICE, middle and working class. Increasing panel of 200. Receipts £400. Premium £600. Freehold corner house for sale, with surgery and garage.—Address, No. 134, B.M.A. House, Tavistock Square, W.C.1.

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Medical Practice in Glasgow for Sale.—The Subscribers have been instructed to dispose of the above Practice in a middle-class district of Glasgow, with panel of approximately 1,600. This would form a very desirable opportunity for any Doctor requiring a Practice in Glasgow.—For further particulars apply THOMAS SMITH & SONS, 135, Buchanan Street, Glasgow.

Medical Practice for Disposal, by order of executor; residential and country district, thirteen miles Birmingham. —LUDLOW, BRISCOE & HUGHES, Estate Agents, 19, Temple Street, Birmingham.

Manchester Suburb. — Good NUCLEUS in pleasant district. Nice house, rent £60. Receipts £600, with much scope. Panel 200, increasing. Price 1 year's purchase or offer. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Good-class Prac- TICE in first-rate residential suburb. Average cash receipts £2,206 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Prem. 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice in Langside, Glasgow, for sale owing to death of Owner.—For particulars apply to MARSHALL, LEARMONT & PATERSON, Solicitors, 180, Hope Street, Glasgow.

North Wales.—Death Vacancy. —Beautiful Seaside Town. Cash receipts this year £800. Small panel. Much scope. Excellent modern house, 8 bedrooms. Garden and garage. For sale or would let on lease. Premium—Practice—£1,200.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North Wales Seaside. — Death VACANCY.—Nice house, facing sea, garden, garage, rent £85. Receipts £800, excellent scope. Welsh not necessary. Locum in charge. Golf, tennis, boating, etc.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown St.

Sound Practice for Disposal, Manchester district. Six months' introduction offered.—For terms and particulars apply KNOTT & CASTLE, Solicitors, 3, Norfolk St., Manchester.

Small Practices with scope.—We have several in the Manchester district. *Cash receipts* £700; £600; £400, etc. Full particulars from BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Well - established middle-class PRACTICE in Cupar-Fife district. Receipts for last three years nearly £2,400. Panel of 690. Offers invited for immediate *sale. Modern house and garage in central* position for sale.—T. & R. J. DAVIDSON, 24, St. Catherine Street, Cupar-Fife, Scotland.

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Wanted, in good sound condition, Second-hand Pantostat, Schnee bath, Diathermy and Radiant Heat Apparatus, and *Thermal Couch*, all suitable for 220 A.C. main.—Address, No 8108, B.M.A. House, Tavistock Square, W.C.1.

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THE DINING, RECEPTION ROOMS LOUNGES, and **LIBRARIES** comprise a magnificent collection of Walnut, Mahogany, and Old Oak furniture in styles of Cromwellian, Queen Anne, Chippendale, Hepplewhite, and Adams, the small complete suites including sets of Chairs, Sideboard, Table, etc., offered for 10 gns., the more elaborate sets ranging up to 300 gns., many of these exquisite sets having cost over double the figure now asked to clear. Quantity of Cottage Wheelback Chairs at 5s.

SETTEES and **LOUNGE EASY CHAIRS** in covered morocco leather, heavy woven art tapestries, rich silk, and a large quantity covered plain art linen, all being of excellent quality and in most cases equal to new. SEVERAL SMALL LOUNGE EASY CHAIRS offered at 35s. each. Small size LOUNGE EASY CHAIRS IN REAL HIDE, 3 gns. Larger size LOUNGE EASY CHAIRS from £4 17s. 6d. to 12 gns. Well-made SOFTLY SPRUNG CHESTERFIELD SETTEES, 3 gns. LARGE SIZE CHESTERFIELD AND OTHER SETTEES, many with loose down pillow seats and backs, from £7 15s. to 25 gns.

A LARGE NUMBER OF PIANOFORTES by eminent makers, including fine tone Cramer in excellent condition, 35 gns., and Baby Grand, 75 gns.

OLD ENGLISH CHIMING GRANDFATHER and BRACKET CLOCKS, IMPORTANT COLLECTION of STATUARY, PICTURES, SILVER and SHEFFIELD PLATE, quantity of Fine Old Cut Glass. BED and TABLE LINENS. A LARGE QUANTITY OF OFFICE FURNITURE, INCLUDING IRON SAFES, ROLL-TOP DESKS, PEDESTAL DESKS, BOOKCASES, etc., etc.

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Bromley, Kent. — A well-buil FREEHOLD RESIDENCE in an importa central corner site (occupied for the last 2 years by a Doctor), eminently suitable for Radiologist or Dental Surgeon. Large hall cloakroom and lavatory, 3 reception roo 6 bedrooms, bathroom, ground floor c small garden, good garage, electric ligh Price £2,000 (open to offer).—Apply Sole Agents: BAXTER, PAYNE & LEPPER, Bromley Kent. (Tel.: Ravensbourne 0221 & 0222.)

Consulting Rooms to be Let.— Harley Street and district. Whole o part-time. Lists sent on application.—Elkins & Co., 10, Henrietta Street, Cavendish Square W.1. *Mayfair 5659.*

Harley Street. — Medical Man wishes to take over LEASE OF HOUS in Harley Street. Direct negotiations with existing owner preferred and will be treated as confidential. — Address, No. 269, B.M.A. House, Tavistock Square, W.C.1.

Harley Street. — Consulting ROOM to Let (furnished) from 9.30 a.m. to 3 p.m. daily, with telephone, gas, electric light, water, and attendance, and own key, but with doorplate, at £25 per quarter.—Address, No. 135, B.M.A. House, Tavistock Square, W.C.1.

Piccadilly. — Consulting Room in Dental Surgeon's Office. Exceptionally well equipped and furnished, fitted for Orthopædic and Sunlight work. Receptionist, gas, light, telephone, all inclusive, £12 per month.—No. 115, B.M.A. House, Tavistock Sq., W.C.1.

To Let, in modern House in Devonshire Street.—CONSULTING ROOM full or part-time. Plate, attendance, waiting-room. Immediate possession.—Address, No. 251, B.M.A. House, Tavistock Square, W.C.1.

Well-furnished Bed-Sitting ROOM to Let. Professional lady Doctor. Ten minutes' walk Harley Street. Attendance; use of bath; breakfast; telephone. References exchanged.—Address, No. 199, B.M.A. House, Tavistock Square, W.C.1.

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To be Sold (Muswell Hill, N.), corner of Pages Lane and Creighton Avenue.—Well-built HOUSE, 4 bed., 3 recep. rooms, hall, kitchen, and offices, good garden and garden room and garage. Suitable for Medical Practitioner.—Apply, A. E. BAILEY & SONS, 5, Witherington Road, N.5.

To Let, Queen Anne Street, Cavendish square. — PART-TIME CONSULTING ROOM, use waiting room, etc.; £40 per annum. Also double bedroom and small sitting room, furnished, service, etc.; 4 gns. p.w. —No. 259 B.M.A. House, Tavistock Square W.C.1

APPOINTMENTS.—Contd.

Queen Mary's Hospital for the EAST END, E.15.
Telephone: Maryland 2616.

Applications are invited from fully qualified and registered Medical Men for the post of CASUALTY OFFICER. Salary £150 per annum.

The Hospital contains 215 beds, including 48 maternity beds, and other special departments.

Candidates, who must have held previous resident appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Thursday, January 9th.

RAPHAEL JACKSON (Major),
Secretary.

Royal Sussex County Hospital, BRIGHTON. (225 Beds.)

CASUALTY HOUSE SURGEON (male) required February 6th. Salary £120 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should reach the undersigned not later than January 16th.

L. L. W. LANCASTER GAYE,
Secretary-Supt.

Huddersfield Royal Infirmary. (200 Beds.)

JUNIOR HOUSE SURGEON required for Eye, Ear, Nose, and Throat Department to commence duty as early as possible. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months, subject to renewal. Applications, with copies of not more than three testimonials, are invited from qualified and registered gentlemen and should be addressed to the undersigned at the Infirmary not later than first post on Tuesday, January 14th.

H. E. G. HALL, Secretary.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE CASUALTY OFFICER. Salary £100 p.a. The appointment is for three months. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital as soon as possible. The successful applicant should be prepared to begin duty at once.

Hermitage Sanatorium.

Wanted immediately, RESIDENT MEDICAL OFFICER. Previous experience necessary. Salary £550. Apply Medical Superintendent.

University of Edinburgh.
DIPLOMA IN PSYCHIATRY.

A COURSE OF INSTRUCTION for the Diploma in Psychiatry will commence on January 14th. The Course lasts about three months, and during its currency candidates are eligible for Resident Clinical Clerkships at the Royal Edinburgh Hospital for Mental Disorders.

For particulars apply to the Dean of the Faculty of Medicine, University of Edinburgh.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (man or woman) in its Mental Hospital Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £330 a year, rising by annual increments of £25 to £460 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £425 a year. No emoluments. Charges made for board, lodging, etc. (at present £2·9s. weekly), if required to be resident. In the case of women, marriage terminates contract of service. Candidate appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Thursday, January 16th.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Royal Hampshire County HOSPITAL, WINCHESTER. (158 Beds.)
SENIOR RESIDENT MEDICAL OFFICER.

Applications are invited from fully qualified men for the above post to take up duties at an early date. Salary £200 per annum, with board, residence, and laundry. Candidates, who must be of British nationality, to make application at once to the undersigned, enclosing copies of three testimonials. Preference given to candidate with some Ophthalmic experience.

HERBERT MASLEN, Secretary.

Waterloo and District General HOSPITAL, near LIVERPOOL. (30 Beds.)

HOUSE SURGEON required immediately for the above Hospital. Salary £100 per annum, with board, laundry, etc. The appointment is for six months. Applications, together with copies of testimonials, must be received by the Secretary, Medical Board, not later than January 8th.

Wrexham and East Denbighshire WAR MEMORIAL HOSPITAL. (105 Beds.)

Two RESIDENT HOUSE SURGEONS (male or female) required at above Hospital, to commence on February 1st. Appointments are for a period of not less than six months. Salaries £150 per annum, with board and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Wednesday, January 15th.

LESLIE SPENCER,
December 30th, 1929. Secretary.

Manchester Babies' Hospital, Burnage Lane, LEVENSHULME.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from February 1st, 1930. Salary at the rate of £125 per annum, with laundry. Only candidates with previous Hospital experience need apply.

Applications, together with copies of testimonials, should be sent to the undersigned, marked "R.M.O.," by Wednesday, January 15th, 1930.

ANGELA LOPEZ, Secretary.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.

The Board of Management will, after the expiration of one month, proceed to appoint an HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applications, stating qualifications, age, and experience, should be sent to the undersigned by January 9th. Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management,
GORDON M. SAUL,
December 23rd, 1929. Secretary.

Parish of Stepney.
APPOINTMENT OF RESIDENT DEPUTY MEDICAL SUPERINTENDENT.

The Guardians invite applications from duly qualified registered Medical Practitioners for the post of Resident Deputy Medical Superintendent at their MILE END HOSPITAL, Bancroft Road, Mile End, London, E.1.

Candidates must have held a resident post in a Hospital and have had sufficient general experience and knowledge to take full administrative charge of the Hospital in the absence of the Medical Superintendent. Previous Poor Law experience is desirable.

The successful candidate will be required to pass satisfactorily a medical examination before commencing duties.

Salary £600 per annum in addition to full residential emoluments, valued for superannuation purposes at £120 per annum.

The appointment is subject to any conditions affecting officers in the Local Government Act, 1929.

Forms of application may be obtained from the undermentioned address upon receipt of a stamped addressed foolscap envelope, or by personal application to the Medical Superintendent of the Hospital, and must be returned to this office by not later than Saturday, January 18th.

By Order,
Administrative Offices, Bancroft Road, Mile End, E.1. S. McCLELLAND, Clerk to the Guardians.
December 31st, 1929.

Bethnal Green Hospital, London, E.2.
SENIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the appointment of Senior Assistant Medical Officer at the above Hospital, at an inclusive salary of £500 per annum, with furnished apartments, board, and washing.

The Hospital is a recognized Training School for Nurses, has accommodation for 650 patients, and possesses X-ray apparatus and a fully equipped laboratory. The medical staff consists of eight Medical Men, a Visiting Dental Surgeon, a Consulting General Surgeon, and Consulting Specialists for certain diseases.

Candidates must possess one of the higher Medical or Surgical qualifications, be duly registered and have had considerable Hospital and administrative experience. The candidate appointed will be required to devote the whole of his time to the duties of the office, as assigned by the Medical Superintendent, and to assume full control of the Hospital in the absence of the Medical Superintendent.

Applications must be made upon forms which are obtainable from the undersigned, and which must be completed and returned not later than January 25rd.

C. FAULKNER JONES,
Administrative Offices, Bishop's Road, Bethnal Green, E.2. Clerk to the Board.

The Royal Gwent Hospital, NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and House Physician.

Salary £155, with board, lodging, and laundry.

Large Out-patient Department. Eligible for promotion. Resident Medical Staff five.

Applications, stating age and qualifications, with copies of three testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
December 31st, 1929. Secretary-Supt.

Croydon General Hospital.

A vacancy occurs on the Honorary Staff of the above Hospital for a MEDICAL OFFICER in charge of a Psychiatric Department, and candidates for the appointment are requested to forward their applications, together with statements of their qualifications and experience, to me on or before January 25th, with copies of three testimonials.

GEORGE H. DAMS,
December 30th, 1929. Secretary.

Croydon General Hospital.

A vacancy occurs on the Honorary Staff of the above Hospital for a GYNÆCOLOGIST, and candidates for the appointment are requested to forward their applications, together with statements of their qualifications and experience, to me on or before January 25th, with copies of three testimonials.

GEORGE H. DAMS,
December 30th, 1929. Secretary.

Somerset County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

Candidates must possess a Diploma in Public Health and have had experience of the general administration of a Public Health Department, of School Medical Inspection work and its administration, and of Mental Deficiency work. Experience in the treatment of venereal diseases under modern methods is also necessary.

The person appointed must devote the whole of his time to the duties of the office. He will act under the control and direction of the County Medical Officer of Health and will carry out such duties as the County Council may assign to him from time to time.

The salary will be at the rate of £750 per annum, rising by annual increments of £25 to a maximum of £900.

The appointment will be made subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Office and travelling expenses will be provided. Particulars as to the terms of the appointment, duties, qualifications, etc., may be obtained from the undersigned.

Applications, stating age, qualifications, and previous experience, together with copies of not more than three recent testimonials, to be forwarded to me not later than January 16th.

Personal canvassing will be a disqualification.

County Health Dept., Boulevard, Weston-super-Mare. W. G. SAVAGE, County Medical Officer of Health.

Administrative County of LONDON.

TEMPORARY ASSISTANT MEDICAL OFFICERS.

The LONDON COUNTY COUNCIL invites applications from registered Medical Practitioners (men and women under 45 years of age on January 20th, 1930) for inclusion in the panel for the year 1930-31 for filling vacancies for Temporary Assistant Medical Officers for School Medical work. The inclusive rate of pay is 30s. a session of 2½ hours, subject to periodical review.

Except in special circumstances married women are ineligible.

Special experience of the medical examination of children is necessary. Employment will depend upon the needs of the work, but normally practitioners will work three sessions a week during school terms.

Applications must be made on the official form, copies of which (with full particulars) may be obtained by sending a stamped addressed foolscap envelope (marked "Temporary Medical Staff") to the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1.

Forms must be returned by January 20th, 1930. Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Metropolitan Asylums Board.

The Board invite applications for appointment as JUNIOR ASSISTANT MEDICAL OFFICER in their Mental Hospitals Service. Salary £500 per annum, rising after 3 years' approved service to £560. Candidates must be under 40 years of age and should hold, or should be prepared to undertake to read for, the Diploma in Psychological Medicine. The appointment is renewable annually and is made in the first instance to March 31st, 1931.

If the candidate appointed is required to reside in the Institution to which he is allocated, a charge fixed by the Board's Finance Committee will be made for such residential allowances as may be authorised.

Forms of application may be obtained by sending stamped addressed foolscap envelope to the Clerk to the Board, Metropolitan Asylums Board, Victoria Embankment, E.C.4, to whom they should be returned not later than January 20th.

ALLAN POWELL,
Clerk to the Board.

Papworth Village Settlement,

near CAMBRIDGE, for the Treatment of all forms of Tuberculosis. Over 300 Beds (male and female).

Applications are invited for the post of SECOND ASSISTANT MEDICAL OFFICER. Salary £350 per annum, with board, lodging, and laundry.

Applications are also invited for the post of HOUSE PHYSICIAN. Salary £100 per annum, with board, lodging, and laundry. The appointment is for six months.

Applicants for these posts must be male and single, and all applications should be sent to the Medical Director, Papworth Village Settlement, Papworth Hall, Cambridge, accompanied by copies of not more than three references.

Papworth, December 30th, 1929.

Nottinghamshire County Council

TUBERCULOSIS OFFICER.

Applications are invited for the appointment of Tuberculosis Officer at a salary of £750 per annum, with travelling expenses according to the Scale approved by the County Council.

Candidates must be fully qualified and registered Medical Practitioners, with special experience in the diagnosis and treatment of tuberculosis, and should have held resident House appointments in a General Hospital for at least six months after graduation. The possession of a Diploma in Public Health is desirable.

The person appointed will be required to take charge of County Dispensaries and to perform such other duties as may be prescribed from time to time. He will be a member of the Staff and act under the control and direction of the County Medical Officer of Health, and will be required to devote his whole time to the duties of the office and to reside in such part of the County as may be approved.

The appointment will be terminable by three months' notice on either side, and the successful candidate will be required to pass a medical examination.

Applications, on the prescribed form (which may be obtained from me), accompanied by copies of not more than three recent testimonials, should be forwarded to the County Medical Officer, Shire Hall, Nottingham, not later than January 18th.

K. TWEEDALE MEABY,
Clerk of the Nottinghamshire County Council.

City of Birmingham.

The Public Health Committee invite applications from Medical Women for the post of MEDICAL OFFICER for Maternity and Child Welfare. *Applicants must have had Children's Hospital and* Maternity Hospital experience. The Diploma of Public Health is desirable. Salary £600 per annum. The candidate appointed will be required to join the Birmingham Corporation Superannuation Scheme, and for this purpose to pass a medical examination. The appointment will be terminable by one month's notice on either side. Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form to be obtained from the Medical Officer of Health, Council House, Birmingham, and returned to him on or before January 20th. Canvassing will disqualify.

City of Sheffield.

ASSISTANT TUBERCULOSIS OFFICER.

Wanted, a male (unmarried) Assistant Tuberculosis Officer, to reside at WINTER STREET HOSPITAL, and to devote his whole time to the Municipal Tuberculosis Scheme.

Salary £450 per annum, rising to £500 per annum by annual increments of £25, with board, residence, and laundry.

Applicants must be registered Medical Practitioners, with not less than three years' experience.

Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent to the undersigned on or before Jan. 18th.

Town Hall, Sheffield. FRED. E. WYNNE, Medical Officer of Health.

Bloomsbury Dispensary,

12, *Bloomsbury Street, W.C.1.*

RESIDENT MEDICAL OFFICER (male), not over 40, required to take up duties on February 1st, 1930. Salary commencing £250 per annum, with furnished apartments, coal, and light. Applications, with testimonials, to be sent to the Secretary (from whom further particulars can be obtained) not later than January 10th, 1930. Canvassing is not allowed.

City of London Hospital for

DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.

The Committee of Management invite applications for the staff appointment of ANÆSTHETIST. An honorarium is attached to the post.

Applications should reach the Secretary not later than Monday, January 27th.

GEORGE WATTS, Secretary.

Batley and District Hospital.

(General Hospital—84 Beds.)

Applications are invited for the position of RESIDENT HOUSE SURGEON (male). Salary £175 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned.

Batley, Yorks. A. W. WESTERN, Secretary.

City of Norwich.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER. He will be required to reside and carry out the duties at the Isolation Hospital, to devote his whole time to the services of the Council and not to engage in any private practice. Salary £450 per annum, with rooms, board, attendance, and washing (emoluments valued at £150 per annum). Board allowance at the rate of £60 per annum allowed when absent from Hospital on leave.

Candidates must possess a Diploma in Public Health. The officer selected will be under the direction and supervision of the Medical Officer of Health, who is also the School Medical Officer. He will be required to undertake any medical duties of the Public Health Department, including work under the School Medical Service, and the Maternity and Child Welfare Scheme. Age not to exceed 40.

The appointment will be subject to three calendar months' notice on either side and to the terms and conditions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to furnish a medical certificate of fitness.

Applications, stating age, qualifications, experience, and when at liberty, accompanied by copies of not more than three recent testimonials, must be sent on or before Jan. 16th.

Canvassing, directly or indirectly, is prohibited and will disqualify.

Churchman House, Norwich. V. P. SOOTHILL, M.A., M.D.

Royal London Ophthalmic

HOSPITAL (Moorfields Eye Hospital), City Road, E.C.1.

OUT-PATIENT OFFICER.

Applications are invited for the post of Out-patient Officer to attend on Wednesday and Saturday in each week.

Candidates must be registered Medical Practitioners. Salary at the rate of £100 per annum. The Out-patient Officer will be appointed for a period of one year and will be eligible for re-appointment.

Copies of regulations governing the appointment can be obtained on application.

Applications, stating age and qualifications, with testimonials, must be received not later than January 9th by—

ARTHUR J. M. TARRANT, Secretary.

The Willesden General Hospital

(Incorporated), London, N.W.10. (106 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from February 1st (the first three months as Casualty Officer and House Physician, the second three months as House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be sent at once to the Secretary.

R. J. HEARNE, Secretary.

December 20th, 1929.

Stroud General Hospital,

STROUD, GLOS.

HOUSE SURGEON required to commence duty at once. Salary £125 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the undersigned.

C. FORD SPENCER, Secretary.

Warneford General Hospital,

LEAMINGTON SPA.

RESIDENT HOUSE PHYSICIAN required on January 28th. Salary at the rate of £165 per annum, with board and laundry. Applications from qualified and registered Medical Practitioners (single) should be sent to the undersigned by January 18th.

W. RUSSELL RUDALL, House Governor & Secretary.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, now vacant. Salary at the rate of £100 per annum, with board, lodging, and laundry. Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible.

GEO. BALLANTYNE, Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania. Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Manchester Royal Infirmary.

HOUSE PHYSICIANS (Male)—Four Vacancies.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which become vacant as follows: two on February 15th, 1930, and two on March 15th, 1930. The applications will be considered to be for any of these posts, unless it is specially stated to the contrary.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for six months, subject to the provisions of the By-laws as to notice, etc.

Salary at the rate of £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than January 15th, 1930.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Manchester Royal Infirmary.

CLINICAL ASSISTANT IN AURAL OUT-PATIENT DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment.

Applicants (either sex) must be registered and hold a Medical and Surgical qualification.

The duties are for Wednesdays and Fridays from 9 a.m. to 1 p.m. Salary £35 per annum.

The appointment is subject to the By-laws as to notice, etc.

Applications, stating age, and testimonials should be addressed to the Chairman of the Medical Board not later than January 15th, 1930.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Manchester Royal Infirmary.

ASSISTANT MEDICAL OFFICER.

The Board of Management invite applications from registered Medical Practitioners for the above appointment.

The duties are to assist in the treatment of Medical Out-patients on two mornings per week. The appointment (non-resident) is for one year, but the holder of the office is eligible for re-election on two subsequent occasions for a similar period. Salary £35 per annum. Candidates must state age and send twelve copies of their application and testimonials to the undersigned on or before 9 a.m. on Monday, January 20th, 1930.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

The Jessop Hospital for Women, SHEFFIELD.

GYNÆCOLOGICAL AND MATERNITY DEPARTMENTS. (145 Beds.)

The Board of Management invite applications for the appointment of Two ASSISTANT HOUSE SURGEONS (male) for six months from January 15th, 1930.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, with copies of recent testimonials, should reach the undersigned on or before January 6th, 1930.

H. B. SHELSWELL, Secretary.

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards. Applications, with copies of testimonials, must reach the undersigned not later than Saturday, January 11th, 1930. The appointment is for six months, commencing on February 1st, 1930, with an honorarium of £50.

Brompton, S.W.3. FREDERICK WOOD,
December 28th, 1929. Secretary.

Manchester Royal Infirmary.

HOUSE SURGEON (Male)—AURAL, GYNÆCOLOGICAL AND OPHTHALMIC DEPARTMENTS.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on February 15th, 1930.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is for six months (three months as Senior and three months as Junior), subject to the provisions of the By-laws as to notice, etc.

Salary at the rate of £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than January 15th, 1930.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Manchester Royal Infirmary.

HOUSE SURGEONS (Male)—Five Vacancies.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, which will become vacant on February 15th, 1930.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointments are for twelve months (six months as Junior and six months as Senior), subject to the provisions of the By-laws as to notice, etc. Salary £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than January 15th, 1930.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Central London Throat, Nose, AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

FIRST ASSISTANT.

There is a vacancy for a First Assistant in the Out-patient Department.

The post is an honorary one, tenable for one year, subject to re-election.

Attendance is required at two Clinics each week to assist the Surgeons in seeing the patients.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a Third Resident House Surgeon to enter on duty on February 1st next.

The appointment will be for a period of seven months: one month as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon.

Remuneration at the rate of £75 per annum.

Application for either of these appointments, accompanied in each case by copies of not more than three testimonials, should be sent to the undersigned on or before January 6th, 1930.

JOHN H. YOUNG,
Secretary-Superintendent.

St. John's Hospital, Lewisham, S.E.13.

An appointment as ORTHOPÆDIC SURGEON has been created, for which applications are invited. The successful applicant will be required to do one out patient clinic per week, and will have charge of a number of orthopædic beds. Applications, with copies of testimonials, should be received by the Secretary at the Hospital not later than January 15th, 1930.

St. Mary's Hospitals, Manchester

Two HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity); and Two for the WHITWORTH PARK HOSPITAL (one Children's Department and one Gynæcological Department), each for a period of six months from February 1st next. Salaries at the rate of £50 per annum, with board and residence. Application, with copies of three testimonials, to be sent to the undersigned on or before January 15th.

R. RATCLIFFE, Secretary.

Leicester Royal Infirmary.

HONORARY PHYSICIAN.

A vacancy for an Honorary Physician will arise in February, consequent upon the retirement, under the rules, of Dr. Astley V. Clarke, Senior Physician. Applications are invited for the post. The only candidates eligible are those who have held the position of Honorary Assistant Physician to Leicester Royal Infirmary.

The present Senior Honorary Assistant Physician is a candidate.

HONORARY ASSISTANT PHYSICIAN.

Should the above vacancy be filled by one of the present Honorary Assistant Physicians, there will be a vacancy for an Honorary Assistant Physician. Candidates must be Graduates in Medicine of one of the Universities of the United Kingdom or Ireland, and duly registered. Fifty guineas annually is granted by the Board for out-of-pocket expenses. Applications (in the latter case accompanied by 100 copies of recent testimonials) to reach the undersigned by Tuesday, January 14th, 1930.

HONORARY SURGEON.

A vacancy for an Honorary Surgeon will arise in February, consequent upon the retirement, under the rules, of Mr. J. S. Sloane. Applications are invited for the post. The only candidates eligible are those who have held the post of Honorary Assistant Surgeon to Leicester Royal Infirmary.

The present Senior Honorary Assistant Surgeon is a candidate.

HONORARY ASSISTANT SURGEON.

Should the above vacancy be filled by one of the present Honorary Assistant Surgeons, there will be a vacancy for an Honorary Assistant Surgeon. Candidates must be Fellows or Members by examination of the Royal College of Surgeons of England, or Graduates in Surgery of the United Kingdom or Ireland. Fifty guineas annually is granted by the Board for out-of-pocket expenses. Applications (in the latter case accompanied by 100 copies of recent testimonials) to reach the undersigned by Tuesday, January 14th, 1930.

It is proposed that the successful candidate, in addition, shall be in charge in the Orthopædic Department, and he must have had experience in that branch of Surgery.

Canvassing in any of the appointments is not allowed.

HARRY JOHNSON.
House Governor and Secretary.

The Royal Infirmary, Sheffield. (500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE PHYSICIAN,
HOUSE SURGEON,
OPHTHALMIC HOUSE SURGEON,
ASSISTANT OPHTHALMIC HOUSE SURGEON,
ASSISTANT CASUALTY OFFICER.

The appointments will be tenable for six months from January 1st, 1930. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence.

Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Board Room, General Supt. &
December 3rd, 1929. Secretary.

Great Yarmouth General HOSPITAL.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER to take charge of the Ear, Nose, and Throat Department of the above Hospital.

Candidates must be duly registered Medical Practitioners.

Applications, with copies of testimonials, to reach the undersigned not later than Friday, January 24th, 1930.

Applicants should state the earliest date that they are prepared to commence duties.

Copies of the Hospital Rules affecting the appointment can be obtained on application.

Canvassing in any form is prohibited.

FRANK JENNINGS, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

There are vacancies for Two HONORARY ANÆSTHETISTS, for which two of the Honorary Assistant Anæsthetists may be candidates. In the event of their election there will be vacancies for Two Honorary Assistant Anæsthetists, for which posts applications are also now invited.

Candidates are required to be registered under the Medical Act; to send applications, with copies of testimonials, so as to reach me not later than Thursday, January 23rd; to attend the Medical Council Meeting on Friday, January 24th, at 5 p.m., and prior to that date to call upon and send copies of their application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of their application and testimonials to the Members of the Board of Management, who will elect on Tuesday, January 28th, at 5 p.m., when candidates, if notified, must be in attendance.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6.

Applications are invited for the post of ASSISTANT DENTAL SURGEON. Candidates are required to hold a Dental Diploma and be on the *Dental Register*, and also to hold some Medical or Surgical qualifications recognized by the General Medical Council of the United Kingdom; to send applications, with copies only of testimonials, so as to reach me not later than Wednesday, January 22nd; to attend a Meeting of the Medical Council on Friday, January 24th, at 4.30 p.m., and, prior to that date, call upon and send copies of their applications and testimonials to the Members thereof; to abstain from canvassing, but nevertheless to send copies of their application and testimonials to the Members of the Board of Management, who will elect on Tuesday, January 28th, 1930, at 5 p.m., when candidates (if notified) must be in attendance.

H. A. MADGE, Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the post of HOUSE SURGEON attached to the Orthopædic Department (male).

Salary at the rate of £125 per annum.

The appointment is for a period of nine months ending September 30th, 1930, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board.
Salford Royal Hospital. GEO. RUDDLE, Gen. Supt. & Secretary.
December 20th, 1929.

Kent and Canterbury Hospital,
CANTERBURY. (120 Beds.)

HOUSE SURGEON (male required. Six months' appointment. Duties to be taken up early in January.

Salary £125 per annum, plus board, residence, and washing.

Applications, accompanied by testimonials, and stating age, qualifications, etc., should be forwarded to the undersigned as soon as possible.

W. T. SOUTHWOOD, Secretary.

Kent and Canterbury Hospital,
CANTERBURY. (120 Beds.)

HOUSE PHYSICIAN (male) required. Six months' appointment. Duties to be taken up early in January.

Salary £125 per annum, plus board, residence, and washing.

Applications, accompanied by testimonials, and stating age, qualifications, etc., should be forwarded to the undersigned as soon as possible.

W. T. SOUTHWOOD, Secretary.

Arbroath Infirmary.

Wanted, for Arbroath Infirmary, JUNIOR RESIDENT MEDICAL OFFICER (male), from January 16th, 1930, for a period of six months at a salary of £75 per annum.

The appointment affords excellent opportunity for Surgical and other experience. The House contains about 50 beds.

Applications, with two recent testimonials, addressed to the Chairman, Weekly Committee, Arbroath Infirmary, to be lodged by January 7th, 1930.

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W. J. HICKS, *Secretary.*

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Trained Nurses for Mental and Nervous Cases can be had immediately.

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No Charge to Purchasers. All Business receives Mr. NEEDES' personal attention.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the following posts:

THIRD HOUSE SURGEON, *now vacant.* Salary £150 per annum, with board, residence, and laundry.

ASSISTANT HOUSE PHYSICIAN, *now vacant.* Salary £130 per annum, with board, residence, and laundry.

Both appointments will be for six months in the first instance, terminable by one month's notice on either side.

Applications should be sent to the undersigned.

R. J. CARLESS,
December 21st, 1929. House Governor.

THE OLDEST AND LEADING MEDICAL AGENT

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Terms post free on application.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8535.

Eastern Counties.—Old-estab.—ONE-THIRD SHARE of £2,400 p.a. Panel over 1,600 names. Appts. £100 p.a. Usual fees. Nice house and garden to rent. Prem. 1½ years, part down.—No. 8584.

London, S.W.—About £850 p.a. Mid. and upper-class non-panel PRACTICE. Visits 5/- to 21/-. Mids. 5—10 gns. Suitable for *bachelor* or as Lock-up. Premium 1 year or offer.—No. 8583.

Hants Country. — About £700 p.a. Appts. about £55 p.a. *Panel about* 500. Visits 3/6—10/6. House, 3 bed., etc., to rent or buy.—No. 8582.

N. W. Scotland. — About £860 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. *Premium*, including furniture, only £1,200.—No. 8577.

Cheshire Town Practice.—Income about £1,000 p.a. Private practice about £6 per week. Panel over 1,600. Urgent sale. —No. 8581.

Eastern Counties.—One-quarter share of £4,400 p.a., after prelim. asscy. *Option to increase later.* Panel 3,265. Visits 3/6—15/-. Young Eng. or Scotsman, single preferred.—No. 8579.

Glos.—Over £750 p.a., increasing annually. Clubs £40 p.a. Panel 550. Mids. 2—10 gns. Visits 3/6—10/6. Good house, 5 bed., etc.—No. 8578.

S. Wales Resort.—£1,400 p.a., increasing annually. Mixed class. Panel 607. Appts. £60. Mids. 3—10 gns. Visits 3/6—21/-. Good house and garden.—No. 8575.

Wiltshire.—*About £1,000 p.a.* Small panel. No midwifery. Appt. *£20 p.a. Visits 5/- to 10/6. Suitable house* to rent at £70 p.a.—No. 8574.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd of £3,500 p.a. Panel over 1,300. Appts. £280 p.a. Mids. 2 to 10 gns. Visits 5/- to 31/6, etc. Suitable accommodation.—No. 8573.

Home Counties.—Country Town. Share worth £1,000 or more p.a., in old established Practice. Appts. £250 p.a. Panel over 2,700. Personally visited.—No. 8563.

London, E. — £850 p.a. Old-estab. Visits 5/- to 10/6. Very little *midwifery. Panel over 500. Small house to let £60 p.a.*—No. 8562.

Continental Coastal Practice.—About £450 p.a. Visits 10/6 to 21/-. Cons. 5/- to 10/6. No appts. or mids. Good flat to rent, 3 bed., etc.—No. 8561.

Lancs.—1/3 or 1/2 share of over £2,400 p.a. Prelim. Assistancy. Panel £500. Mixed-class. Good house, 4 beds., attics., etc.—No. 8454.

Eastern County. — Over £1,000. Panel and appts. £560. Visits 4/6 up. Good house, with 4 beds., and garden. Low rent.—No. 8559.

Lancs.—£4,000 p.a., increasing. Panel over 2,650. Fees 2/6—7/-. Mids. 2—5 gns. Suitable for two. Two adjoining houses to rent or buy. Premium, including drugs, book debts, surgery furniture, etc., only £4,750.—No. 8509.

Herts.—Country.—Nearly £1,000. Panel 470. Appts. £54. Residential. Good fees. House, with good surgery, 6 bed., garden, etc.—No. 8556.

West of England Town.—Share worth £900 p.a., of which £600 is from panel and appts. House, with 7 beds., etc., to rent.—No. 8552.

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N. WALES.—DEATH VACANCY.—Good-class PRACTICE situated in Health Resort. Large house for sale or to rent at £85 p.a. Receipts approx. £1,200 p.a. Small panel. Premium 1 year's purchase.

N. LANCS.—Old-established G.P. Receipts average £2,000 p.a. Panel 2,150. House to rent at £80 p.a. Scope for increase. Premium, to include Look d-bts, stock, etc., £5,500 or near offer.

LANCS.—Seaside Resort.—Middle-class G.P. Average receipts £600. House for sale or to rent. Scope for surgery. Premium 1½ years' purchase for quick sale.

LONDON, S.W.—Mixed Cash and Panel PRACTICE. Medium-sized house to rent at exceptionally low rental. Receipts approx. £700. Panel 565. Fees 2/6 upwards. No midwifery. Premium £1,225 or near offer.

MIDDLESEX (N.), on the borders of London.—Well-established NUCLEUS PRACTICE in growing residential locality. Excellent scope. Large house, part suitet for professional purposes, on long lease. Large garden. Garage. Premium, to include furniture, fittings, drugs, and lease, £1,200.

GLOS.—Varsity Graduate desired as PARTNER, with view to SUCCESSION in three or four years' time, in old-established good class non-panel Practice situated in Country Town. Receipts over £2,000 p.a. One-third or half share offered to well-qualified man, aged about 30, at 2 years' purchase.

LONDON, N.—LOCK-UP SURGERY, with living accommodation if desired, situated in working-class district. Receipts £250 p.a. Panel 150. Premium for quick sale £300.

HERTS.—In close proximity to London.—Middle-class G.P. Good-sized house and grounds. Receipts £1,500. Panel 800. Scope for development. Prem. 1½ years' purchase. House £2,200. Part could remain.

BERKS.—PARTNERSHIP, with view to SUCCESSION.—Country Practice. Receipts average £1,120 p.a. Panel nearly 600. House to rent. Premium for 2/5ths share 2 years' purchase.

BEDS.—PARTNERSHIP in Town Practice. Receipts approx. £1,300 p.a. Panel 1,760. Half share for disposal with view to SUCCESSION at 2 years' purchase.

DERBYSHIRE.—PARTNERSHIP in old-estab. non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share, at 2 years' purchase.

GLOS.—Well-estab. middle and working-class PRACTICE. Medium-sized freehold house in own grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,700.

CORNWALL.—DEATH VACANCY.—Old-established Country Town PRACTICE. Receipts £1,300 p.a. Panel 900. Appointments. Hospital. Locum in charge. Premium 1 year's purchase. House to rent.

LONDON.—NUCLEUS PRACTICES.—We have several small Practices situated in London and elsewhere with incomes of £100 to £500. Full details on request.

GLOS.—Non-dispensing general Town PRACTICE. Excellent freehold house. Receipts over £700 p.a. Panel 550. Fees 3/- upwards. Suitable for Lady Doctor. Premium £1,050.

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LONDON, N.W.—Working-class G.P. in thickly populated locality. Receipts nearly £1,000. Panel over 800. Premium £1,250.

SALOP.—DEATH VACANCY.—NUCLEUS G.P. in agricultural district. Receipts £400. Panel 320. One appointment worth £175 p.a. Medium-sized house to rent at £35 p.a. Cottage Hospital. Premium 1 year's purchase.

SOMERSET.—PARTNERSHIP in old-established Country Practice. Sport of all kinds. Receipts approx. £1,600 p.a. Panel and several appointments. Premium for half share 2 years' purchase.

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(FOUNDED 1880.)

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7 LONDON, E. — Practice worth between £900 and £1,000 (half ready money) in thickly populated area. Panel about 600. Nice semi-detached house (5 bedrooms), garden, and garage, to be sold or let. Premium 1½ years' purchase.

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10 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

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15 LONDON, N.W. — Partnership in non-dispensing Practice in residential district. No panel. Share worth about £1,500 at 2 years' purchase. Incoming Partner must be English.

16 SOUTH OF ENGLAND. — Increasing Country PRACTICE in beautiful district on main line. Receipts last year £1,102. Panel about 440. Lovely old house (6 bedrooms), electricity and gas, large garden, for sale. Sport. Premium £1,500.

17 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Extremely attractive residence (5 bedrooms), central heating, and grounds 2½ acres, for sale. Hunting and other sport. Premium 1½ years' purchase.

18 EASTERN COUNTIES. — Partnership in Country Practice of £2,380 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

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20 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering-place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,400.

21 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

22 S.E. COAST.—Partnership in Practice over £5,000 p.a. in popular resort. Premium one-fourth share 2 years' purchase. Partner should be aged about 30 and must have held House appointments. Short preliminary assistantship.

23 LONDON, W.—Partnership in good-class non-dispensing Practice over £7,500 p.a. in Kensington. No panel or appointments. Incoming Partner must be well qualified (aged 30—35) and have held Hospital appointments. Share worth about £1,000 at 2 years' purchase.

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26 N.W. COAST.—Steadily increasing Practice (held by Medical Woman) in popular watering-place. Receipts past year £920 (including panel £230). Accommodation consists of 6 rooms, bathroom, etc., and can be rented. Prem. £1,000.

27 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

28 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

29 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

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32 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £700. Panel 420. Detached double-fronted house (4 bedrooms) to be sold. Considerable scope. Premium £600 only.

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34 SOUTH WALES. — Practice over £1,200 p.a. in Country Town. Panel about 300. Attractive old house (6 bedrooms). Garage and garden. Good facilities for sport. Premium £1,500.

35 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

36 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

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38 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (6 bedrooms) for sale. Sport. Premium 1½ years' purchase.

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45 SOUTH WALES.—Seaside Resort.—PRACTICE averaging £1,293 p.a. Panel 600. Nice house, with garden and garage, for sale or rent. Premium 1½ years' purchase. Welsh not necessary.

46 EASTERN COUNTIES.—Practice averaging £2,800 p.a. in Seaport Town. Panel 700. House (5 bedrooms), large garden, for sale or rent. Scope. Premium 1½ years' purchase.

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50 WEST MIDLANDS.—Practice of £1,440 p.a. in small market town in agricultural district. Panel 600. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

51 MIDLANDS.—Practice averaging £1,080 p.a. in important Town. Panel 1,560. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

52 MIDLANDS.—Partnership in non-dispensing Practice over £5,500 p.a. in first-rate residential town. Panel 1,700. Partner should be aged 27—30. One-fifth share at 2 years' purchase.

53 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

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4. MANCHESTER *DISTRICT*. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms *in addition* to professional rooms. Large garden. Price, freehold, £850. Moderate premium *accepted*.
5. NORTHANTS.—Unopposed old-established *Country* PRACTICE within easy reach of large town, worth last year over £1,500, including panel (with mileage) £675 and appts. about £80. Visits 5/- to 20/-, medicine sometimes extra. Suitable house available. *Rent £70 p.a. Premium 1½ years'* purchase. Held by Vendor (retiring) over 30 years. Sport of all kinds.
6. SOUTHERN COUNTY.—*PARTNERSHIP.—Third* share of very old-*established* increasing Practice situated in a beautiful residential and agricultural district within 10 miles of the sea. Cash receipts this year (to date) over £3,000, including panel *and appointments*. Visits 5/- *to* 21/-. Suitable house can be arranged for ingoing partner. *Premium* 2 years' purchase. District is developing rapidly and offers good scope.
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9. YORKS.—LARGE TOWN.—Very old-established middle and working-class PRACTICE, offering exceptional scope for increase. Income for last year £1,500. Panel of over 1,700. Visits 4/6 to 5/-. Conveniently situated house, with 2 reception, 4 bedrooms, etc. Rent on lease £56 p.a. Premium £2,250. Ill health reason for sale.
10. WILTSHIRE.—Very pleasant Village, in beautiful surroundings, and within easy reach of good town. Income last year £1,100. Panel of 445. Fees 2/6 to 21/-. Exceptionally picturesque house, with 3 reception, 4 bedrooms, 2 maids' rooms, etc. Electric light and gas. Garage for 2 cars. Half an acre of garden. Price for freehold £2,000. Premium £1,400.
11. EASTERN COUNTIES. — LARGE TOWN. — Sound good middle and working-class PRACTICE, producing last year nearly £1,900, increasing [illegible] £2,300. Fees 3/6 to 10/6, medicine extra. No [illegible] built house, easily run and with every modern convenience. Contains 2 reception, 5 to 6 bedrooms, etc., and good professional accommodation. Garage. Garden. Price for freehold £3,000, half on mortgage. Premium 1½ years' purchase.
12. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visit 5/- to 21/-. Panel of about 380. Appts. worth about £50 p.a. Convenient house, with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' pur.
13. PARTNERSHIP.—ESSEX. — (Within 50 miles of London). — Third Partner required in very old-established rapidly increasing Practice in small country town. Cash receipts for past three years average £3,755 (last year £4,176), including panel of 2,200 and appts. Third share is for disposal. Opposition slight. *Visits 5/- to 21/-.* Good house, professional accommodation, 2 reception, 4 *bedrooms*, bathroom, etc. Large garden. Garage. Rent £60. Premium 2 years' purchase. Educational facilities and sport.
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15. ESSEX.—(Within 15 miles of London).—*Old-established unopposed* and increasing PRACTICE, in pretty country district. Income last year over £1,100, including Union £90 and panel £432. Comfortable house, with ample accommodation and large garden. *Rent* £70 p.a. *on* lease. Premium £1,650. Ill health reason for sale.
16. HOME COUNTIES.—Within few miles of large town.—Old-established unopposed and increasing PRACTICE, in pleasant district, worth over £3,000 p.a., including panel, with mileage, producing about £1,000 and appts. £260. *Visits 3/6 to 10/6*, medicine usually extra. Very little midwifery. Good house (7 bedrooms, etc.), garden, garage. Price, freehold, £2,000. Premium 1½ years' purchase.
17. DEATH VACANCY.—NEAR MANCHESTER.—Old-established middle and working-class PRACTICE, producing last year at the rate of nearly £900 p.a., including panel of 550. Fees 3/- upwards. Specially *built* house in good position, with 2 reception, 6 bedrooms, etc., and large professional rooms, etc. Price £1,800, part on mortgage, or might be rented. Premium £800. Locum *in charge*.
18. CHESHIRE.—*Industrial* Town within easy reach of Manchester.—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
19. ESSEX.—POPULAR COAST TOWN.—Small easily worked PRACTICE, offering good scope, as district developing. Income last year £530. Panel of 200. Fees 2/6 to 7/6. House contains 2 reception, 3 bedrooms, etc. Garden. For sale or on rental. Premium £750, part down and balance instalments.
20. SOUTH WALES.—Seaside Resort.—Old-established mixed-class PRACTICE in favourite locality. Receipts for past 12 months £1,400, including panel of 607. Visits 3/6 to 21/-. *Convenient house*, with 2 reception, 4—6 bedrooms, and professional rooms, etc. Rent on lease £80 p.a. Good sport and schools. Prem. 1½ yrs.' purchase.
21. *SOUTH AFRICA.*—HEALTH *RESORT* (Inland Spa).—Old-established increasing PRACTICE (held over 20 years) on a main line of rail and in a healthy pleasant township much frequented by visitors in *the Season*. Cash receipts average over £1,750 *p.a.*, including several appts. One opponent. Price for *house £1,250, to include furniture, instruments*, and motor car (original cost £2,000), and for goodwill £1,250, part by instalments. *Efficient introduction.* A knowledge of Hydrology would be a big asset.
22. CROYDON [illegible] this share to commence *with* in an [illegible] tice. Income £2,750. Panel of 988. [illegible] house on lease. Rent £80 p.a. Pre[illegible] purchase.
23. WORCS.—*COUNTRY PRACTICE* within easy reach of two good towns. Old-established, and averaging over £1,000 p.a., including panel of about 600. Fees 2/6 to 10/6. Good house, with ample accommodation. Rent *on lease* £85 p.a. Premium £1,350, payable easy terms.
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26. LONDON, EAST.—(Within 1 mile of Liverpool Street).—Old established PRACTICE in thickly populated district worth last year £848, including panel of 520. *Small house* (surgery, waiting room, dispensary, lounge sitting room, 2 bedrooms, bathroom, etc.). Rent on lease £60 p.a. Premium £1,400, or near offer, to include fitted carpets, linoleum, and curtains.
27. MANCHESTER.—Rapidly growing Suburb within 5 miles of the City.—*Old-established mainly* middle-class PRACTICE, producing a *steady* average income of £2,000. Panel of nearly 1,400. Fees 3/6 to 10/6 Large house and garden. Price, freehold, £2,500, or would be let *on lease at £120 p.a.* Premium £3,500.
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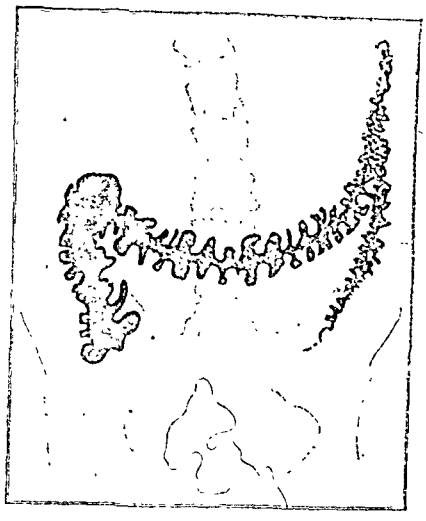
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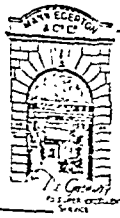
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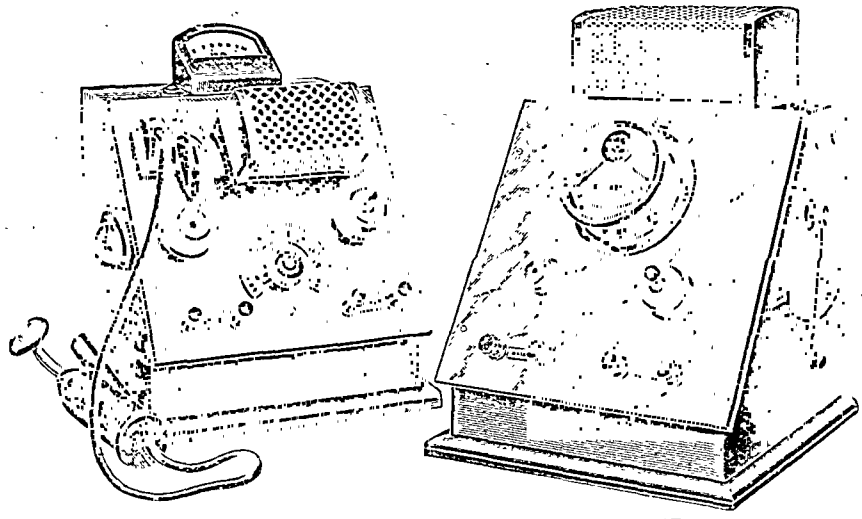
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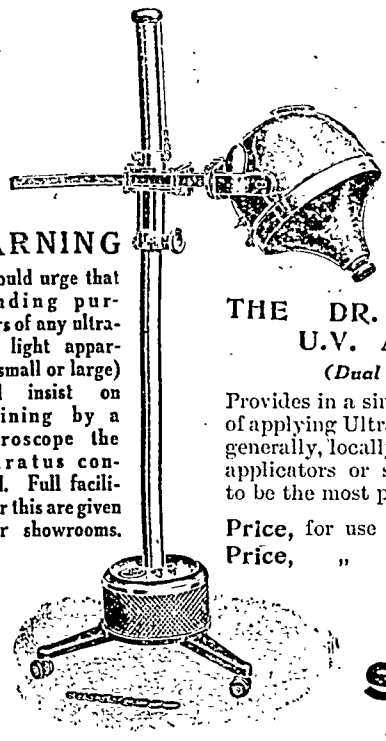
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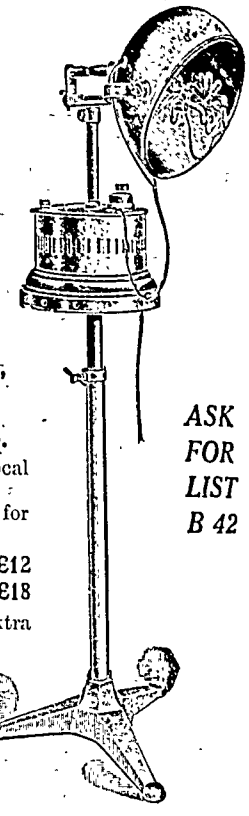
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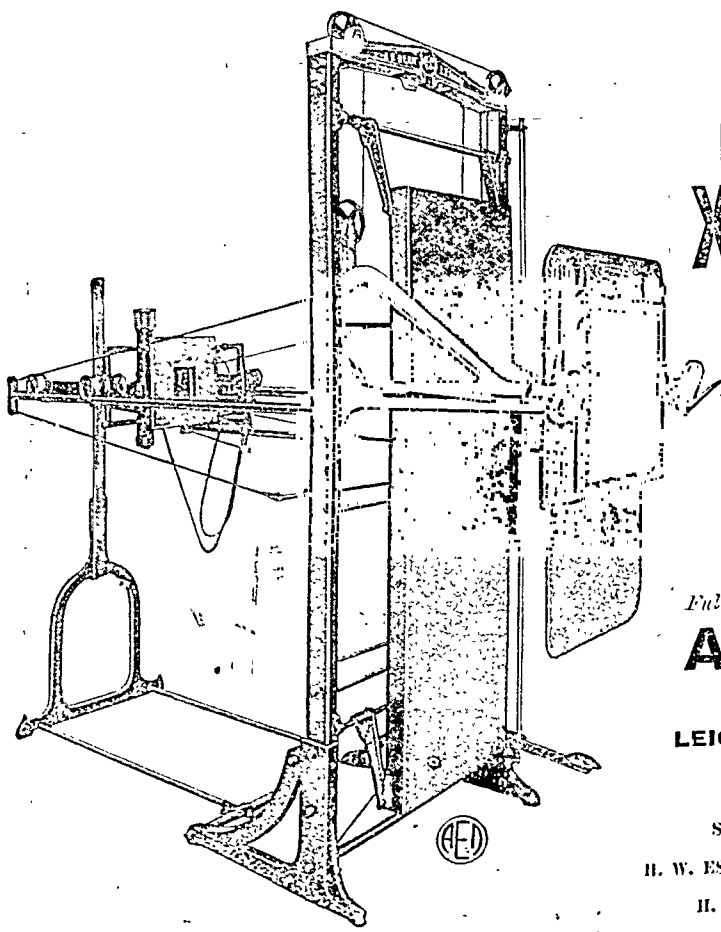
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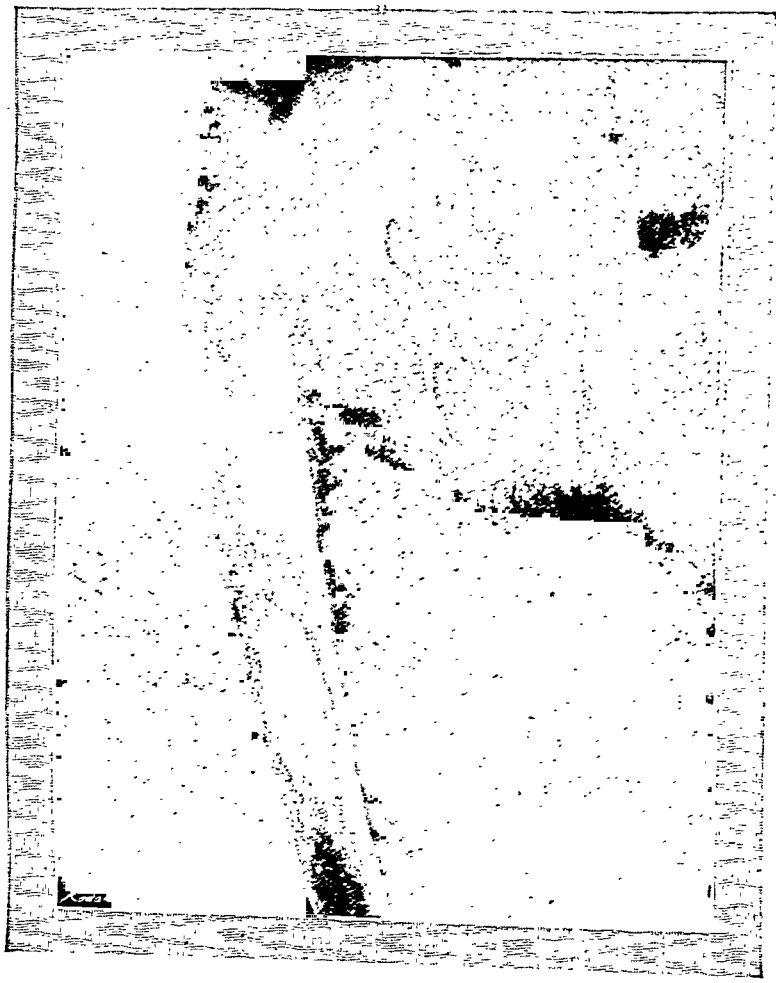
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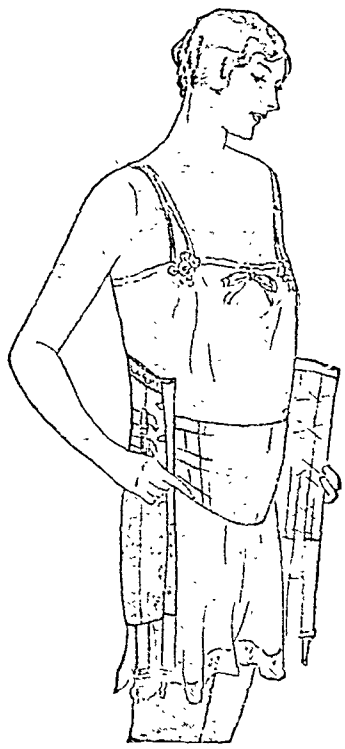
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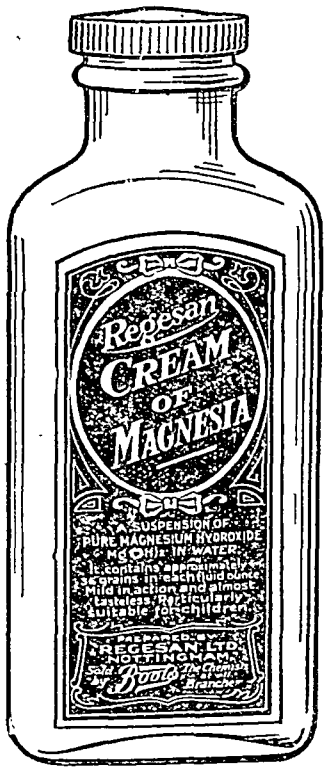
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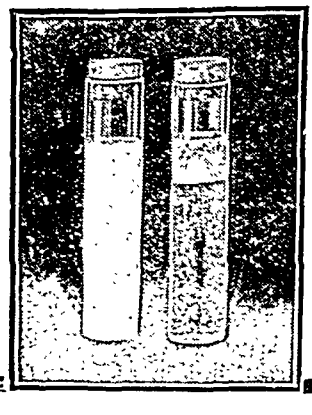
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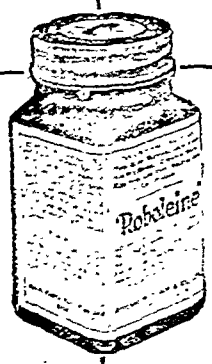
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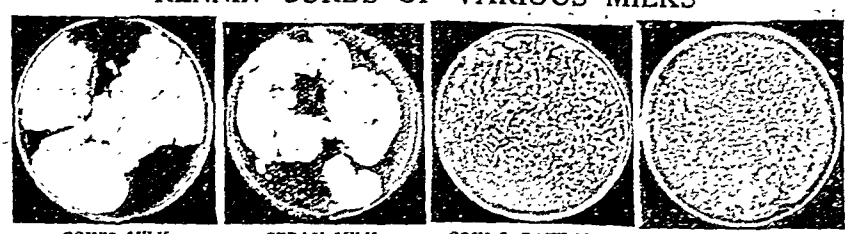
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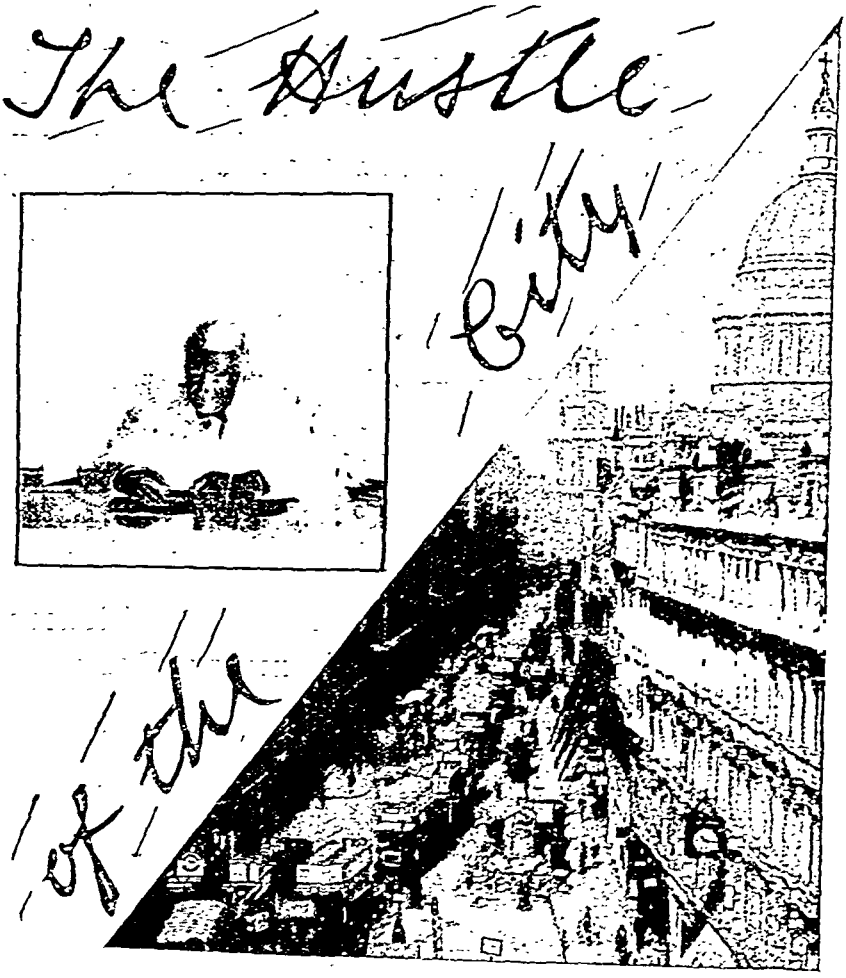
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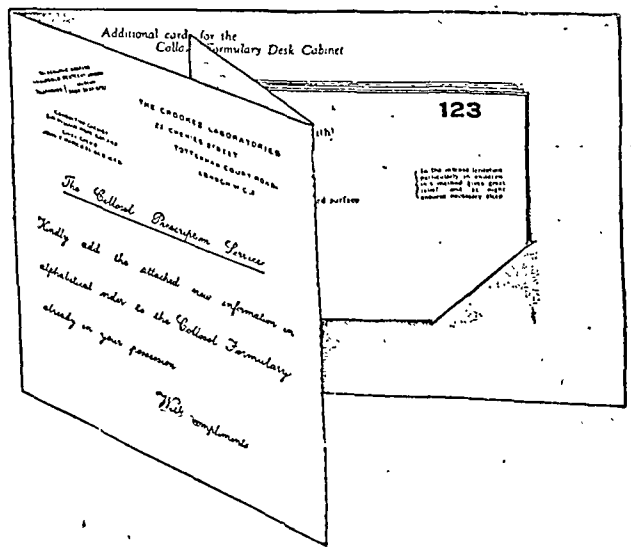
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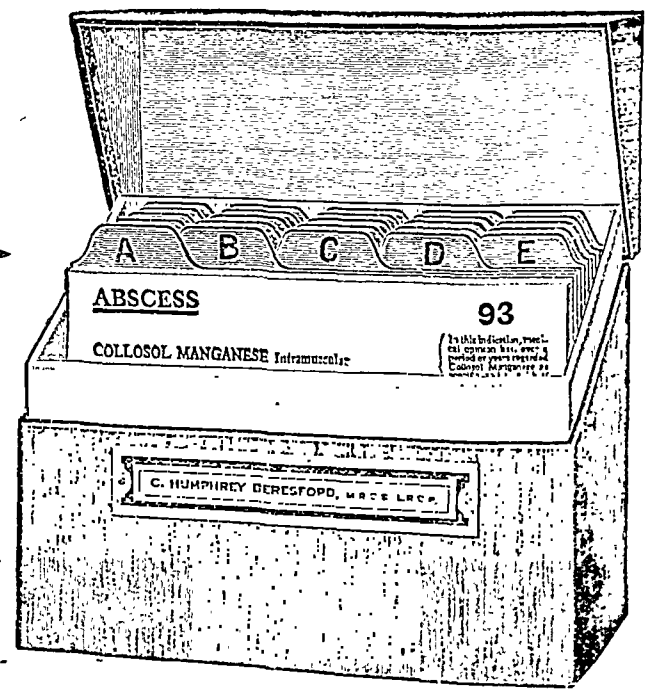
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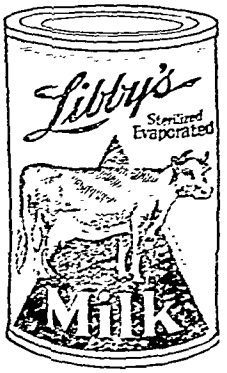
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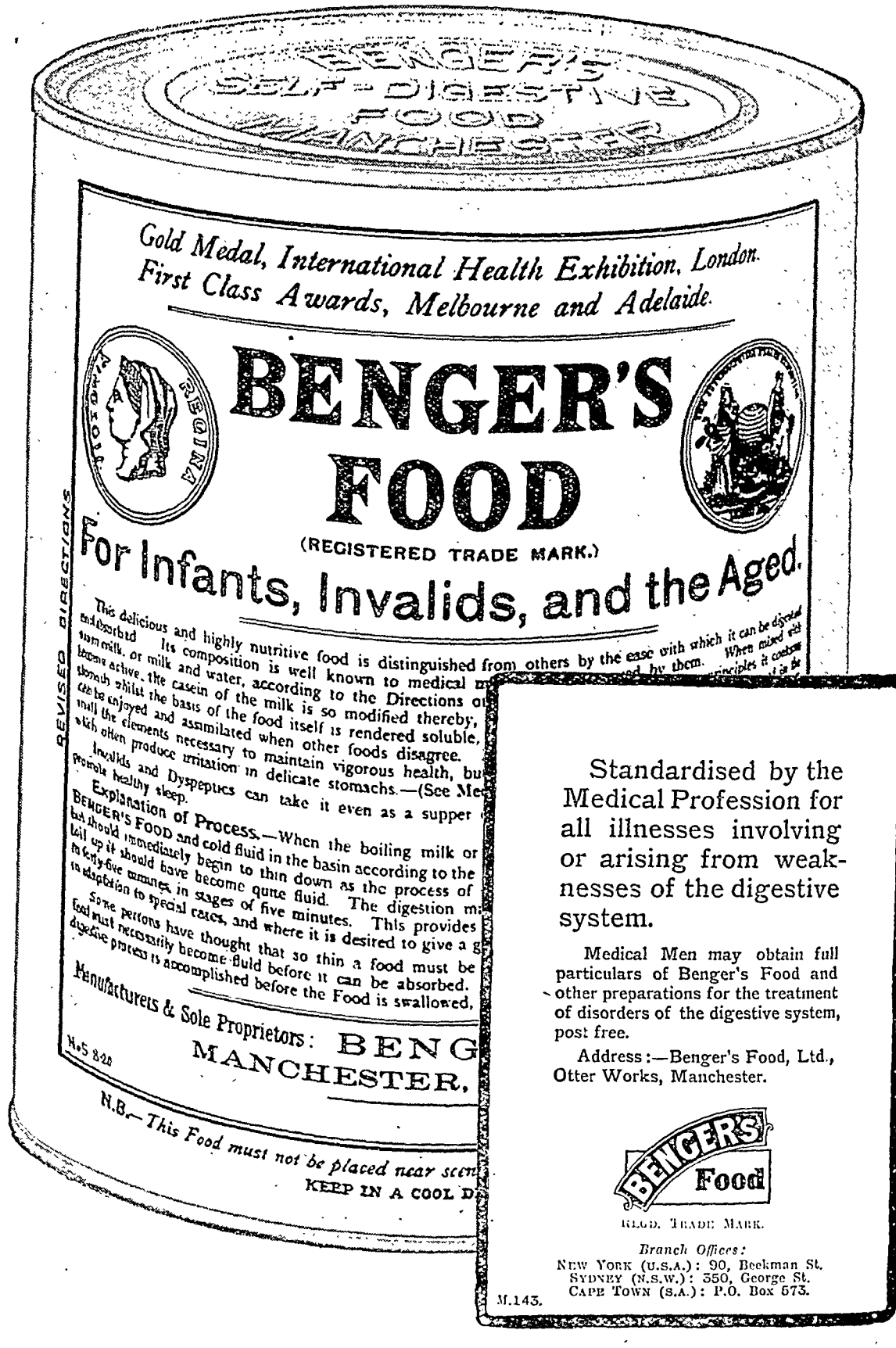
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Dr. Thos. M. Paul, in "The Urologic and Cutaneous Review," Vol. XXXIII, No. 11, 1929, states in the opening paragraph:—

"To state that hives will disappear in fifteen minutes, that the itching and oozing of an eczema will cease in half an hour, and that an eczematous lesion, regardless of its degree of lichenification, will vanish in a few days, as the result of a hypodermic injection, seems preposterous, yet such has been the writer's experience in a series of sixty-one cases."

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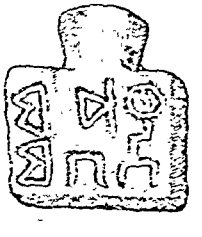
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STONE OBJECT OF UNCERTAIN USE, INSCRIBED WITH WORDS IN THE WRITTEN CHARACTERS EMPLOYED BY THE MINÆANS WHO HELPED TO CIVILISE ARABIA AND BUILT UP ONE OF ITS EARLIEST KINGDOMS.—Many inscriptions and traces of settlements left by the Minæans provide evidence of a vigorous kingdom existing side by side with that of the Sabæans, and, according to some scholars, of even earlier beginning. The native territory of the Minæans cut into that of the Sabæans, a circumstance which entailed frequent struggles between the two. Their capital, Ma'in, lay north of Ma'rib. The names of about thirty kings of Ma'in are known from native monuments. A most important Minæan colony existed at el-Ula in North Arabia, on the caravan route to Gaza; this was a centre of civilisation during a very long period. Their business enterprises seem to have led them far, for the epitaph of a Minæan agent in the incense traffic has been found upon a sarcophagus in Egypt, while an altar to Wadd, one of their most honoured gods, was set up in Delos. The object here reproduced—perhaps an amulet or a weight—bears the words "Wadd is a father." Wadd, who appears to have been the god of friendship, is usually qualified by a word the root of which means "to help."

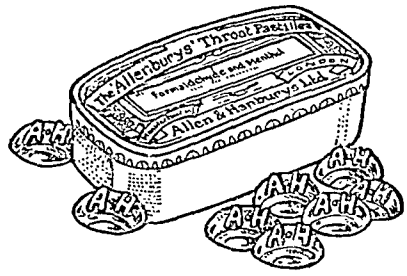


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The Savill Memorial Oration

ON

LOCALIZATION OF FUNCTION IN THE NERVOUS SYSTEM.

DELIVERED AT THE ROYAL COLLEGE OF PHYSICIANS ON DECEMBER 2ND, 1929,

BY

JAMES COLLIER, M.D., F.R.C.P.,
CONSULTING PHYSICIAN AND EMERITUS LECTURER ON NEUROLOGY, ST. GEORGE'S HOSPITAL.

I HAVE chosen the subject of localization of function in the nervous system because I have thought for some years that the information obtainable by our students from the current textbooks of medicine and of neurology is very much behind the times, when compared with the results of modern biological and physiological research, and that this information does not convey a satisfactory working hypothesis to the medical man. The subject is, moreover, very much in the air at this moment, for in the few months since I accepted this oration and decided upon this subject two exhaustive reviews have appeared, the one in America by Marion Hines, and the other in France by R. Brugia, under a preface by Pierre Marie. In comparison with these detailed and lengthy works, anything that I can put before you in the short space of an hour must be but a brief outline of present opinion, supported and modified perhaps a little by my personal clinical observations. There was another excellent review upon "cortical localization" thirteen years ago, from the physiological and experimental aspects, by the distinguished physiologist Professor Graham Brown.

I may well introduce my subject by putting before you a quotation from the conclusions from each of these reviews, beginning with that of Professor Graham Brown, who wrote:

> "The experimental evidence gives no grounds for the supposition of the localization of the function of voluntary movement in the 'motor area' as distinguished from any other part of the cortex."

Graham Brown sought to find proof that the "motor area" was more than a mere spot upon the outgoing path for voluntary movement, and by his experiments showing "primary facilitation," in which careful unipolar stimulation of a cortical point in the "motor area" raised the excitability of that cortical point, and those showing "secondary facilitation," in which similar stimulation of the same area caused the neighbouring region of the inexcitable post-central cortex to become excitable, he claimed to advance a proof that the "motor area" was something little more than a mere receiver and transmitter upon chief outgoing path for voluntary movements, and that nge and modification can take place at this station.

Dr. Marion Hines, who writes rather as a reviewer than a pioneer upon this subject, concludes in the following s:

> The diagrams of local representation of function in the cerebral cortex so prevalent in the last part of the nineteenth century e gradually become dimmer until finally point localization has peared even from the motor cortex under the careful experimental analyses of Leyton, Sherrington, and Graham Brown. the projection of the retina upon the calcarine now remains. yet in the light of our present knowledge to consider the al cortex as equipotential is hardly justified, nor to hold pinion that the kind is immaterial, providing the bulk icient."

Hines might, with a little thought, have rid her of the calcarine cortex, for the succinct projection of tina upon the calcarine is admittedly a precise ing of the impingement of visual afferents upon the The calcarine cortex is an important station upon path by which visual impressions reach the cortex n, at any rate, and holds a similar position with to the visual path as does the motor cortex to the tgoing path, in that lesions of these two regions ese paths respectively. Dr. Hines has rejected a localization of function of former days for a much more vague, indefinite conception of localization of function. You may remember that this was also the position taken by Sir Henry Head in his later writings. But this conception of vague localization has one thing in common with the old conception of succinct localization, and that is that both are centred around the regions where great incoming paths impinge, and where great outgoing paths emerge from the cortex, interference with which is readily manifest in disturbance of function, and that blocking of such paths cannot be excluded as causing a large part of the functional loss resulting from ablation of these regions. I do not wish to infer that the conception of vague localization of function is wrong or untenable, but it requires careful criticism. Surely it is impossible to think otherwise than that a part of the cortex—the latest and highest development in evolution—which receives the visual impressions will be especially important in connexion with the visual function otherwise than as a receiving and transmitting station, and similarly in the case of the motor emergent and other sensory receptive regions. But such thought does not altogether entail a conception of local function.

Dr. Brugia will have nothing of localization of function in the nervous system. He refers to this conception as the "seduction of all seductions," to which so many have gone under. At the end of his book of nearly two hundred pages he claims to have put forward adequate and convincing proofs that in the nervous system there are no centres of local function, neither for the reception of impressions, nor for exteriorization, nor for co-ordination, nor for volition. He commences by pointing out that the nerve cell is a structure appended as it were to the out-side of the true fibrillar conducting nerve substance which passes through it to end elsewhere, and that the proved function of the nerve cell is only nutritional, and that it cannot be a centre of function. He refers to the primary metameric nerve unit, and says with truth that from the peripheral receptor, through the afferent and nerve cells, to the efferent and the muscle, no part can be called the centre of reflex activity; no part can be deemed dominant over the others; every part is equally important in the occurrence of the reflex action. Reflex activity is the function of the metameric nervous unit as a whole. Brugia builds up the nervous system physiologically, as it is built up morphologically by interconnexion and fusion between the primary metameric units, and when this interconnexion begins there is convergence of paths and modification of the result of activity in any one segment—there is co-ordination. This is, of course, Sherrington's "principle of convergence." The forward metameres become highly developed and dominant from specialization, and the brain appears. But the whole nervous system acts as did the primary metameric nervous unit, not in terms of separate function in its several parts, but as a whole and entirely reflexly. He calls the metameric units "neuromyomes." Though he denounces a little loudly the earlier pioneers upon this subject, his summary is worthy of consideration, and especially does it bring into prominence the great importance of bearing clearly in mind the high part played by the peripheral nervous system, both receptors and effectors, in the activity of the higher parts of the nervous system, and the profound derangement of function which accompanies the severance of communication between these parts.

In my quotations from these three reviewers I have said enough to prove that a change of thought has been taking place with regard to the nature of activity of the various parts of the nervous system, and I must proceed to give very briefly some of the reasons for this change. I will first refer to the cerebral cortex.

The cerebral cortex, described by Sherrington as the principal ganglion of the distance receptors—namely, the receptors of smell, sound, and visual impressions—was in the earlier stages of its development the principal ganglion of the receptors of smell only, and its connexions with the functions of sight and hearing are secondary connexions. It is developed as an appendage to the olfactory paths, the primary connexion of which was with the thalamus. It begins as an outgrowth between the two primary masses of grey matter in which the olfactory tract terminates on either side, the inner of these remaining as

the hippocampal region and the outer as the pyriform lobe or uncinate region, and develops into the dominant part of the nervous system, perhaps because of the immense importance of the function of smell in finding food and in scenting danger. In some animals whose activity depends very largely upon the sense of smell, the severance of the olfactory tracts causes a complete destruction of the function of the brain. A shark, for example, with the olfactory tracts cut resembles in every way a shark with its forebrain removed. It is apathetic, motionless, and it will not feed. Appetite and activity are lost. I will now compare the shark with another fish, which does not rely entirely upon smell, but chiefly upon sight in getting its food and avoiding its enemies. If we remove from this second fish the forebrain, which is not much connected with visual function, it does not make great difference to him. He remains lively, he feeds well, and will select his food and distinguish between red worms and white worms. If we blind him we shall reduce him almost to the level of the decerebrate shark. I am stressing this point to impress you with the very great reduction of function which occurs in the higher regions of the nervous system from de-afferentation, whether this deprival of afferents occurs in the peripheral nervous system or, and this is even more important to my subject, in the central nervous system—for example, in the immediate subcortex. I may here repeat the story of the decerebrate frog and the flies, which has been often quoted as suggesting how much the forebrain adds to the capacity of the nervous system of this lowly animal. Such a frog does not compete well in the struggle for existence when in a comfortable aquarium with other frogs. But if we take this frog without forebrain and place him with a normal frog in a covered glass bowl and set free a dozen flies within that bowl, the decerebrate frog will get all the flies and the normal frog will get none. The reason for this is that the normal frog is aware that his surroundings are unusual and is uncomfortable; he spends his time in fear and attempts to escape, and before he has got over his embarrassment the decerebrate frog, who is not so aware and not so discomforted, but attends only to the grosser matters of appetite, has caught all the flies.

It is remarkable that the olfactory function, with which the development of the cerebral hemispheres is so intimately connected, seems not to be interfered with by any local lesion of the convolutions, whether unilateral or bilateral, provided the olfactory tracts are intact. Chatelin examined 5,000 cases of wounds of the brain, unilateral and bilateral, and found no loss of the sense of smell or taste. Our only knowledge of the connexion of these functions with any individual part of the brain rests upon the developmental and anatomical facts, and upon the occurrence of hallucinations of taste and smell in the epilepsy which may result from tumours in the uncinate region. Possibly the afferent paths of smell and taste have a very general impingement, as opposed to a local impingement, upon the cortex, and in great measure escape in local lesions of the convolutions. There are two clinical facts which seem to support the proposition. The one is that only in epilepsy commencing with an olfactory or gustatory aura does one meet with a highly organized hallucination comparable to an experience of actual life, and this hallucination may be one of hearing, of vision, of idea, or a combination of these. All other hallucinations in epilepsy and with local lesions of the hemisphere in other regions than the uncinate gyrus are crude sensations and not comparable with those of common experience. The other fact is the well-known high potentiality of a sensation of smell to rouse cerebral activity to a high pitch in the form of vivid memory. ...h high hallucinations and such sudden arousing of ...mory are compatible with the direct association ...ory path with many regions of the cortex and ...f the neopallium as part of the olfactory ...or area" of the cortex, the discovery ...tability of which by Hitzig and ...d the old theory of the phreno- ... by the clinical observations of Broca and Hughlings Jackson, seemed to place the hypothesis of local function in the several regions of the cortex upon a sound basis, has been the region in which recent experimental research has first and most disproved the tenability of this hypothesis, in its highly developed form certainly, and perhaps in any form at all. It must be borne in mind that there are three regions in each hemisphere from which movements can be elicited by unipolar electrical stimulation. One is at the posterior pole of the hemisphere and another is on the outer surface of the prefrontal lobe, both of these giving movements of head and eyes to the opposite side. The third comprises the whole of the ascending frontal gyrus, and from it, and it alone, the cortico-spinal tract or pyramidal tract arises. This ascending frontal convolution is mapped out in cortical points set in ladder-like fashion, stimulation of which produces movements of lower extremities, trunk, upper extremities, and face region from above downwards. Physiologists do not believe that the other regions of the cortex are not excitable, but that they are so much more lowly excitable as only to be aroused by such strengths of electrical stimulation as at once spread widely to other regions and render analysis impossible. One of these regions—the post-central gyrus—can be raised into a motor area by Graham Brown's method of secondary facilitation to which I have already referred.

Now in a chimpanzee Sherrington and Leyton removed the whole of the cortex from both ascending frontal gyri in two stages, separated by a considerable interval of time—the right first and the left subsequently. After each of these operations there was a temporary paralysis of the opposite side, which recovered perfectly. The left post-central cortex was then removed, but this produced no further disability. Later they examined this animal and found that no movements of face, body, or limbs could be elicited by stimulation of any part of the cortex, so that no other part of the cortex had taken on the role of electrical excitability of the removed cortex. The experimenters had removed the "cortical centres for movement," and had shown that no excitable area was left, and that none had been redeveloped. They had utterly destroyed the pyramidal system, for this had degenerated throughout. They had destroyed the post-central cortex on one side and had excluded the possibility of that potentially excitable region having taken over the motor function. They had left the chimpanzee with enough of his nervous system to recover and get along quite ably.

Now the interpretations which may be made of this sequence of events are, first, that we may believe that the cortical centres for movement were really ablated, but that the function of movement reverted to an ancestral home in the lower regions of the nervous system. This explanation, as Graham Brown points out, is possible, but most highly improbable. Secondly, we may think that the function of voluntary movement is concerned with the cerebral cortex in general, and that the ascending frontal convolution and its pyramidal tract are the chief, but not the only, outgoing path for movement, and that the ablations caused the temporary paralysis (1) because the usual way out was blocked and the alternative path took time to acquire function; (2) because the mechanism of motility was maimed as a whole by the loss of one of its elements and transcortical connexions, and time was required for compensation; (3) because some of the cortex which must be concerned especially with the receipt of impressions arousing motor activity was lost. The latter explanation is the highly probable one.

Graham Brown subsequently performed a very similar experiment, again upon a chimpanzee. He removed the whole of the cortex of the post-central gyrus, first upon the one side and subsequently upon the other. Clinical lesions of the post-central gyrus in man of this magnitude would have produced the most profound disability of the limbs and ataxy on both sides from loss of sense of position and astereognosis, for in man this post-central region has been held to be the centre for the more discriminating functions of sensibility. But this chimpanzee did not show any signs of disability at all, for within a few days of the completion of these ablations he learned to get open the cupboard in which his food was kept. [illegible]

cupboard was locked and latched and the door was tight-fitting, so that this monkey had to turn the key with one hand and the handle with the other, and had at the same time to put his foot against the impost and pull the door open. Watchful lest his crime should be detected, he even learned to do this complicated act with his back to the door—that is, without the guidance of his sight. He seemed not to have lost any of his function of sensibility at all. Graham Brown thereafter removed the left motor area of this animal, and the usual temporary hemiplegia ensued. But before a fortnight had elapsed, after repeated efforts to get the cupboard open meanwhile, he succeeded in doing so, and soon acquired his customary facility.

In considering the bearing of this experiment we must keep carefully in mind that the function of movement and the function of sensibility are not two separate functions, but that they are so intricately blended as to be inseparable. We have no consciousness of movement in ourselves except from the sensations which result in its accomplishment. We learn every skilled act by gradually laying down, by repetition, the pattern of the sensations which are produced by its correct performance. We reproduce them from the memory of these sensory patterns. We become clumsy with our skilled acts when out of practice because the memory of the finer details of the sensory pattern tends to fade, and we reinforce these again by further repetition. It was for these reasons that Bastian rejected the idea of a motor centre in the cortex, and insisted that it must be a sensorimotor centre.

In Graham Brown's chimpanzee it is certain that the post-central cortex was not the chief, nor apparently even an important, higher sensory centre, for its removal produced no disability. It was not a region in which this animal stored his memories of spatial relations and highly skilled movements, for he developed these subsequent to its complete removal; and, adding the left motor area to the extensive regions of the cortex which the animal had already lost, there was sufficient cortex left for the recovery of good function. This experiment supports further the argument that the cerebral cortex, with its afferents, efferents, and transcortical connexions, acts as a whole.

There is one other experimental fact which has a profound significance and to which I would especially draw your attention. The "motor area" for the face, jaw, tongue, and larynx, to which I may refer as the face-excitable cortex, is well marked in all animals from marsupials upwards, and it is a large area in the higher animals. Ablation of this face-excitable cortex, either unilateral or bilateral, has never produced even the least transitory paralysis of face, jaw, tongue, or larynx. Sherrington removed the whole of the face-excitable cortex in a young chimpanzee, with the result that the animal became at once more grimacing, more teeth-chattering, and much more noisy than before. One must conclude, therefore, for these animals that there is no localized centre of motor function for these important regions in the cortex, but yet that there is always an excitable path to these regions emerging locally from the cortex which does not seem to be the usual or even the important path of emergence for movements of face, jaw, tongue, and larynx, since complete ablation produces no disturbance of function.

When one compares the results of these experiments of cortical ablation in so high an animal as the chimpanzee with the results of pathological lesions of the same regions in man (which usually, but not invariably, obtain), there is difficulty in correlating the two. While it is allowable to use comparison between a lower and a higher animal in general, it is particularly unsafe to do so in connexion with the nervous system of man, the function of which is so far removed above that of the highest animal, and in which so much of the structural as well as functional development occurs after birth and during the course of training; and individualities of structure are without doubt sometimes determined by that training, so that the brains of men are not all fashioned alike, and may not behave alike when troubled with local injury. The chief difference between the brain of the chimpanzee and the brain of man is striking—not that the latter has more grey matter, but that he has much more white matter, weight for weight. The supremacy of the brain of man is associated structurally with a much richer association and more direct connexion between its several parts, and is therefore a better organ functionally; on the other hand, it seems to have became more dependent upon solitary afferent and efferent paths than is the case in lower animals, and therefore its function is more disturbed by local lesions. From birth to adult age this dependence upon solitary paths seems to increase.

Clinically one does not meet with lesions comparable to the accurate cortical removals of experimental physiologists. There is one case commonly cited in which Horsley removed the arm-excitable cortex of a boy on the right side. This patient is said to have recovered sufficiently to play tennis, though never so well as before the operation, and so may be said to show to some degree the recovery which occurs in apes. Pathological lesions are rarely confined to the cortex, and when there is evidence that a lesion is chiefly one of the cortex and not progressive, recovery of function occurs which may be complete, as in the experiments on animals, if the lesion is of the motor area, but little or no recovery seems to occur when the lesion is one of the visual area or of the post-central convolution. The absence of recovery in lesions of the visual cortex seems to me to be reasonably explained by the regularly patterned impingement thereon of the solitary afferent visual path, which is blocked out by the lesion at its termination, with no alternative path possible. Similarly, I would seek to explain both the disability with spatial relations and stereognostic sense which occur in lesions of the post-central gyrus in man as contrasted with the chimpanzee, and the absence of recovery after such lesions, by assuming a direct impingement and patterning upon the post-central gyrus of the afferents subserving that division of sensibility which Head has termed epicritic sensibility by a solitary path newly developed and peculiar to man.

Graham Brown, in his careful description of the movements which result from cortical stimulation in the limbs of the chimpanzee, takes great pains to emphasize that these movements are entirely different from any movements seen in the natural life of the animal. They have not the complexity of pattern, nor the purposefulness of natural movements. They are simple movements, well-nigh the same as those resulting from the stimulation of a peripheral nerve, whereas he says simple movements are never seen in the natural life of the chimpanzee. He evidently means, though he does not say so, that stimulation of the motor cortex is stimulation of a path passing through the cortex, and that it is not stimulation of a function in a centre in which that function is localized.

In man the cortex of the brain has been experimentally stimulated in many cases where the brain has been exposed by a wound in conscious patients, with the result from the ascending frontal gyrus that crude and simple movements followed as in the ape. The patients experienced a sensation of forced drawing of the limb, which they described as exactly the same as that produced by faradization of a peripheral nerve, and in no way resembling any sensation produced by voluntary movement. Similarly, stimulations of the post-central gyrus produced crude unnatural sensations of tingling, again resembling those resulting from faradization of a sensory nerve, and nothing more than these. One case, however, has been recorded in which the occipital pole was exposed, and the observer states that when the electrodes were applied to the region of the cuneus, crude sensations of light were experienced by the patient, and when the electrodes were passed over on to the outer surface of the lobe, the visual sensations assumed a higher character. This single observation is, however, so out of keeping with the clinical experience of visual hallucinations in connexion with lesions of the outer surface of the occipital lobe, which are invariably crude and unorganized, as to be unacceptable without further experiment.

I submit, therefore, that the evidence brought forward up to this tends to show that the loss of function produced

by local cortical ablation results almost entirely from the blocking of a nervous path which is entering or emerging from that part of the cortex, and that the positive results of cortical stimulation are due to stimulation of this path. Local cortical ablation will produce no loss of function if there is a facile alternative path to or from the rest of the cortex. It will give rise to temporary loss of function if a secondary path is available, and permanent loss of function only when no other path is available.

Lashley has recently made a very interesting series of observations upon the cerebral cortex of rats. From very numerous ablations of the cortex he has found no signs of localization of function, but he has proved that the capacity to form motor habits in these animals is reduced in direct proportion to the amount of cortex removed, and by equal amounts of ablation in any of the different cyto-architectural fields. He concludes that the capacity to learn such habits depends upon the available amount of the cortex as a whole, and not at all upon which region remains after ablation, and that the mechanism of integration is to be sought in the dynamic relations among the parts of the central nervous system and not in details of structural differentiation.

I may here, in passing, refer to Dusser de Barrenne's experiments upon strychnine sensitization of the cortex in the cat and in the macaque. In these animals, of course, removal of the cortex corresponding with the post-central cortex of man produces no loss of sensibility, yet he sought to connect these regions with sensibility notwithstanding, and he found that after painting this region with strychnine solution there was hyperaesthesia of the whole body, but much more marked on the opposite side and towards the periphery of the limbs, that there were signs of increased proprioceptive sensibility only on the opposite side, and that these results were absent when strychnine was applied to any other region of the cortex. It would seem, therefore, that in spite of the negative results of ablations, a sensory path does impinge upon this region of the cortex in the cat and in the ape as it does in man.

I will describe another class of experiments which are of much interest and have a profound bearing upon this subject. They were first performed by Robert Kennedy in 1900. Two dogs were taken and all the nerves of the left forelimb were divided above the elbow. In the one dog the nerves were at once rejoined in proper order. In the other the central end of the musculo-spiral was dissected into four strands and joined to the peripheral ends of median, ulnar, musculo-cutaneous, and musculo-spiral respectively. The central ends of median, ulnar, and musculo-cutaneous were cut off as short as possible and left dead-ended. Both dogs recovered the use of the forelimb perfectly and both recovered in exactly the same time. You will bear in mind that in the second dog all the flexor afferents and efferents had been changed on to an extensor path. On stimulating the motor cortex of this second dog it was found that the well-known region for flexion of the paw was no longer excitable, while stimulation of the extensor region now produced contraction of the flexors and of the extensors with equal facility.

Kennedy thought that he had shown that a given area of the motor cortex could be made to change its function, or rather, that it could be made to take on a fresh additional function by switching on to this area a fresh afferent and efferent peripheral path. His conclusions were much criticized on the grounds that the flexion and extension regions of the dog's cortex are not far enough separated from one another to allow of such absolute statements, and further that Kennedy had not taken sufficient precautions against peripheral regeneration from the stumps he considered dead-ended.

A few years later Osborne and Kilvington repeated these experiments in such a way as to avoid the possibility of these errors. They found it possible to divide the left middle cord of the brachial plexus in the dog, and, cutting the proximal end very long, to pass it under the trachea and unite it to the peripheral end of the right middle cord, also cut very long. The central end of the right middle cord was enclosed in a blind rubber tube to prevent sprouting. This dog recovered well; it could walk and run naturally and could use either forepaw to hold down a bone. A very long time was allowed to elapse after recovery before this dog was examined. It will be observed that the extensor afferents and efferents of the right forelimb had been thrown into the left middle cord and therefore on to the right motor cortex. Stimulation of the right motor cortex now gave movements in both forelimbs. In the left there was extension of paw and flexion of elbow, in the right contraction of the triceps and extension of the paw. Stimulation of the left cortex produced movement in the right limb only, entirely excluding any movement in the triceps or paw extensors. To put it shortly, the cortical points for extension of the right forelimb of this dog had been removed from his left hemisphere and had been implanted in his right hemisphere. The left middle cord was then divided high up and its distal end stimulated, when exactly the same movements occurred as had resulted from stimulation of the right cortex. Experiments were carried out on other dogs in which the left middle cord was sutured to the upper part of the right brachial plexus. Good recovery of function occurred, and the subsequent results of cortical stimulation were in every way parallel to those of the first experiment. Kennedy's results were in every way confirmed.

From these experiments, which Sir William Bayliss considered fundamental in connexion with the function of the cortex, have arisen certain rules. First, if a peripheral mixed nerve is cut the corresponding motor cortex loses its electrical excitability. (This, I submit, is only another way of saying that if you block an efferent path near its periphery there can be no result from stimulating that same isolated path as it leaves the cortex, and I infer from this that the results of stimulation in the motor area are those of stimulation simply of an outgoing path and not stimulation of a centre of function.) Secondly, it does not matter to which area of the motor cortex nor to which hemisphere you transfer your peripheral innervation; complete recovery of function occurs—motion, co-ordination, and sensibility—provided that the path in and the path out are fully restored. (From which I infer that the path is much more important than the whereabouts in the cortex.) Lastly, in this recovery of function the afferents must be all-important. Their functional reconstruction after the disorientations produced by the experiments I have just described must precede the regaining of co-ordinated and ultimately perfect movement, which can take place only by proprioceptive guidance. We have already seen that the only consciousness of movement performed comes from the periphery via the afferents. The unusual patterns from the latter, when a false or ineffective movement is performed and when a free act is being trained in, will apparently guide any part of the cortex to complete functional restitution. There is in the function of movement a running analysis from the proprioceptive system, and sometimes in addition from the visual and auditory systems, which is absolutely essential to this function, and from this fact it is probable that movements and sensibility are not separately represented in the cortex, though the afferent and efferent paths may connect on with the cortex in regions widely apart.

I have already referred to the visual region of the cortex as simply the place of reception of the visual fibres in very regular order. A very great part of this visual cortex may be destroyed in man with little lowering of the visual faculty. A bullet passing through both occipital lobes and causing thrombosis of both calcarine arteries and great destruction of the cortex of the cuneus may leave the impingement of the macular fibres upon the posterior limits of the calcarine fissure and on the posterior pole intact. Central vision remains perfect and the visual faculty is really not impaired at all. There is simply the loss of the peripheral fields. Both in the South African war and in the great war I have seen examples of this occurrence. If the bullet passes farther back and crosses the calcarine ending and posterior pole, there is destruction of much less of the cortex, but there is much more disturbance of the visual faculty, though again only because the very important macular afferents are destroyed. Destruction

one occipital lobe, again, produces no breaking up of visual function. A case illustrating this fact was for many years under my observation. A large tumour with many lobes like a dahlia root was dug out from the patient's left occipital lobe. Arising from the tentorium, it had grown across the occipital lobe and had become superficial in the region of the cuneus. Yet this man had no difficulty in returning to work at a skilled mechanic's bench, at which he has carried on for more than twenty years. He tells me that directly he had learned to dodge his absolute right hemianopia, his filing was just as true and his visual judgement was just as good as before his illness and operation.

Destruction of both occipital lobes causes profound disturbance of the visual faculty even in animals, and in man extensive lesions of the white centres of both these lobes, such as occurs in Schilder's disease, has a similar effect, which increases rapidly as the degeneration extends forwards, though there is no involvement of the cortex—as if the occipital lobes were indeed more closely associated with the visual faculty, afferents apart. I have seen no clinical evidence to connect the outer cortex of the occipital lobes with any higher visual function, nor the cortex of the left angular gyrus with the acceptance of written language or with visual disorientation. Visual disorientation has always, in my experience, resulted from a bilateral lesion of the white matter severing the transcortical path running forward from the occipital lobes. One such case resulted from a bullet traversing the brain from one angular gyrus to the other. There was right hemianopia, but vision was not otherwise impaired. He could see and name every object, but he could never avoid running into the tables and chairs in the ward, and when a handful of money was thrown on the ground and he was placed beside it, though he could name and count the coins and make a correct addition of them, he was unable to find them to pick them up. This patient lived many months in this condition, perishing ultimately from ventricular abscess from a scrap of cloth which the bullet had taken into the brain. The nature of the lesion was verified by necropsy. This patient could not connect his visual impressions with his outgoing executive path because the connecting path in the white centre was cut.

The faculty of hearing is only disturbed in man by a lesion of a very small area of the cortex of the temporal region, and then only when the lesion is bilateral. No case has been recorded in which this narrow bilateral lesion has not seriously impaired hearing. This region, known as Heschl's gyrus, is an architecturally distinct region of the cortex, and it is known to receive the radiation from the mesial geniculate body which presumably constitutes the central auditory path. It is an astonishingly tiny area were it a centre of function for so great a faculty as that of hearing. Heschl's gyrus on the left side is of high importance as subserving the faculty of speech. I submit that the cortex of this gyrus is of high importance in connexion with hearing and speech because it is the sole recipient of the central auditory path, and that it is not a centre of function.

The modern conception of the relations of the brain with the function of language began when Dejerine proved that loss of acceptance of written language on the one hand, and loss of exteriorization of speech on the other, could result from purely subcortical lesions, or rather transcortical lesions, which severed the connexions of the left temporal region with the visual receptive area and with the outgoing path respectively. Subsequent pathological evidence, of which I have seen a great deal, seems clearly to prove that loss of acceptance of spoken language, or "word-deafness," is most commonly due to a lesion of the white matter, undercutting the left temporal region, and so dividing the afferents in the central auditory path, and that it is sometimes due to a lesion of Heschl's gyrus, upon which these same afferents impinge. Inasmuch, therefore, as "word-blindness," "word-deafness," and aphasia result relatively or absolutely as permanent events from local lesions of the brain, they are caused by destruction of afferents and efferents, and not by destruction of centres. I was taken to task by Sir Henry Head some years ago for formulating this proposition, on the ground that in mentioning subcortical lesions I was dealing with matters outside speech in its relation to the cortex. I would explain that I consider that the faculty of speech is not the pouring out, as it were, of water from well-stored cisterns in the cortex; it is a high, delicate, and easily upset faculty, which depends very greatly for its functional stability upon a running analysis of correct execution which we receive with our ears and with the proprioceptors of the articulatory mechanism when we speak, and with our eyes and the proprioceptors of our hands when we write. If the two afferent paths by which this running analysis of spoken speech is carried out are cut across, the pattern of speech rapidly deteriorates; though at first it may be voluble, later it degenerates into a jargon bearing no resemblance to the language originally spoken, and, finally, speech tends to be completely lost. As both these afferent paths seem to enter the cortex in the region of Heschl's convolution, they are frequently involved by lesions of the white matter undercutting the left temporal cortex. This is the only lesion known to cause jargon aphasia, and it is a common lesion causing word-deafness. I have seen this proved at many necropsies. One that occurred in my practice only a month ago may be of interest. This was a woman with a tumour involving the left insular cortex, who had suffered for many months with symptoms of increased intracranial pressure without localizing signs. During the last week of her life, and then only, she developed word-deafness and jargon aphasia, word-blindness and right hemianopia, and became totally aphasic. The brain showed a yellow softening oedema extending backwards from the tumour of the insula throughout the white matter underlying the left temporal and the angular cortex. The whole cortex of the outer surface of the hemisphere was normal.

But apart from lesions involving these afferent and efferent paths, which, I contend, cause such profound disturbance of the speech faculty, there is another matter of profound importance, which, together with the lesions of the paths I have just mentioned, will account for all disturbances of the speech faculty, without reference to local centres of function in the cortex. This is the functional breaking up of the speech faculty when the level of its physiological activity is lowered from any cause whatever, including local lesions involving the anatomical substratum. The more difficult functions, the less deeply impressed functions, the functions acquired late, are lost first and most. The foreign language drops out while the mother tongue remains perfect. Solitary nominal recall set in no pattern to swing it up the hill fails, while the patterns of speech still remain facile. Voluntary speech fails sooner than reflex speech, and the patient, unable to exteriorize any spontaneous speech, may easily repeat any word he hears or copy any writing that he is shown. Visual speech fails early in most subjects, for it is the latest of the speech functions to be acquired. The comprehension of spoken language is the last of all to go, for this is the most deeply impressed and the first speech function to be acquired, and from it all other speech functions are trained in. This breaking up of a faculty with the loss of its elements in order of their depth of impression is known as "diaschisis." This term was introduced by von Monakow years ago to explain the occurrence of temporary "word-blindness," which so often accompanies the aphasia resulting from lesions of Broca's region. The word actually means breaking of the connexions, and I cannot help thinking that von Monakow, in using this term, had in his mind the disruption of the afferent, efferent, and transcortical paths, which I am contending are so important in the production of local loss of nervous function.

The association of the speech faculty with the left hemisphere of the brain does not compel the assumption that centres for that function are situated in that hemisphere in right-handed persons. But the alternative must be that the primary paths—afferent, efferent, and transcortical—must be developed in relation with the left hemisphere alone. The facile and invariable recovery of speech after lesions of the left hemisphere in children at an age when neuroblastic development is active and the laying down of fresh paths is possible favour this alternative. The choice of the left hemisphere is to be connected with that supremacy of the left hemisphere long present in

the human race in its expression of right-handedness. This seemed to be the view of Hughlings Jackson in his oft-repeated remark that he "considered that the right hemisphere was equally important, or even more important, than the left hemisphere, in connexion with the speech function in the right-handed person." Why it should be more important does not seem clear, but for Hughlings Jackson doubtless the right hemisphere would be further removed from the impingement of the tract subserving speech upon the left cortex, and therefore would constitute a realm of more complicated and higher function.

The connexion of the prefrontal lobes with mentality does not seem to rest upon the surest of facts. Mentality should be a function of the nervous system as a whole. Very widely spread destruction or isolation of the cortex anywhere and in either hemisphere will, for a time at least, result in grave depression of this function. What has struck me forcibly in my clinical experience is that lesions of the prefrontal region involving the cortex are so much less potent in this respect than destructive lesions of the prefrontal white centre, extending as these often do backwards to catch the forward fibres of the corpus callosum and part of the radiation from the temporal isthmus, and the obvious inference is that by such lesions of the white matter so much more of the cortex is functionally isolated, so many more of the transcortical paths are severed, and the possibility of compensation by other regions of the cortex is thereby defeated. I have seen the gravest disturbances of mentality from cortical and from subcortical lesions in every part of the brain, but more from subcortical lesions; of all lesions producing mental reduction those of the corpus callosum, however, have been the most striking and constant, and especially when the splenium is destroyed. One can well realize why the great anatomist Willis was convinced that the seat of the soul was in the corpus callosum. He had doubtless seen, as I have seen several times, a lesion of this structure associated with such loss of memory from moment to moment, such disorientations of association in consciousness, the more striking for the complete absence of hebetude, as to convince one for all time of the high potency of transcortical lesions in breaking up higher nervous functions. It is to such transcortical lesions rather than to any cortical lesions that the phenomena of apraxia, agnosia, and disorientation are attributable. Huge lesions of the brain, both of cortex and subcortex, even in the positive regions, are sometimes seen with little disturbance of nervous function. Most of such lesions have occurred in early life, and while neuroblastic development is still active. For example, a man of 24 years of age perished of tuberculous meningitis in my ward at St. George's Hospital. We found a porencephaly involving almost the whole area supplied by the left middle cerebral artery. Yet he was right-handed, and was a skilled artisan, and had shown no signs of a defective nervous system.

In a child under the age of 6 years a lesion involving Heschl's gyrus on the left side produces no permanent aphasia, but complete restoration of speech occurs provided sufficient intelligence remains. Nor does a lesion of the parietal region produce the very permanent defects of sensibility which are seen in the adult. This is another way of saying that, provided sufficient healthy cortex is available, and provided neuroblastic development be active, the paths which subserve these late developing functions will be redeveloped in connexion with other regions of the cortex. For in the brain the later developing structures are so much determined by the development of function, and for this reason it is indeed probable that human brains are not all structurally the same as regards details of anatomy subserving the higher and later developed functions.

It may be argued with justice that the different structure of the several parts of the cerebral cortex suggests an especial function for each region. But there are more than forty such areas which have been mapped out as architecturally distinct, the fascinating study of which has not yet thrown any light upon the part which each area may take in the make-up of nervous activity as a whole.

The cortex of the cerebellum shows no more localization of function than that determined by the bilateral symmetry of the body. The limbs of the same sides are more affected by lesions of the lateral lobe; the head, neck, and trunk more by lesions of the vermis. The lability and the compensatory possibilities of this cortex are most remarkable, for it may be said of the symptoms resulting from an acute and terminable lesion affecting chiefly the cortex, severe though these always are, that they invariably recover. It is of especial interest that irritative lesions of one of the chief afferents to the lateral lobe—namely, the vestibular nerve—produce exactly the same symptoms as does an acute lesion of the lateral lobe. For example, acute vestibulitis is only distinguishable from an acute vascular or inflammatory lesion of the lateral lobe by the deafness due to a simultaneous involvement of the cochlea, when this is present. When, however, the white connexions are destroyed, even locally and by small lesions, permanent symptoms result, and these are sometimes of local distribution. Thus, one may see the eyes, or speech, or the trunk, or the upper limb, but very rarely the lower limb, exclusively or predominantly affected. Any localization of function that there is in the cerebellum seems to be in the white matter and to result from destruction of the afferent and efferent paths of local direction.

The oculomotor nucleus has been resolved by anatomists into a very definite series of paired and unpaired subnuclei, and an attempt has been made to invest these subnuclei with local function. The results have not proved of clinical value, and even hypothetical "supranuclei," which are supposed to rearrange the cerebral incitations for the oculomotor nucleus, have been called upon to help the matter out. Such localization seems unnecessary and untenable on physiological grounds; for the oculomotor nucleus is nothing more than one region in the path subserving the movements of the eyes where a resorting of nerve fibrils occurs from the terms in which we use our eyes into terms of the peripheral nerves. There is, in addition, the path of the metameric light reflex thrown in.

Now we know well that the outgoing incitations from the brain to the oculomotor nucleus arrive at that nucleus in terms of conjugate upward movement, downward movement, and lateral movements and convergence; for all ablations and excitation of the brain prove this. Moreover, lesions just in front of the posterior commissure which do not touch any part of the oculomotor nucleus will cause paralysis in each or all of these terms, according to the position and extent of the lesion, and in these terms only. The path as it descends lies lateral to the nucleus and its elements turn in to the nucleus in known order: first those for upward movements, then those for downward movements, then those for convergence, and, lastly, those for lateral movements. It is this turning of the several elements of this path at different levels which determines local loss of function in terms of vision when there is a local lesion of the oculomotor nucleus, and not because a function is located in the grey matter thereof. Actually a lesion of the oculomotor nucleus, or of any other nucleus or mass of grey matter, potentially creates three lesions: the first in the incoming path, for this does not end abruptly; the second in the convergence, and this will produce irregularity, loss of balance, and inco-ordination in the result; the third in the outgoing path, for this does not gather abruptly.

Conclusions.

1. In the consideration of a faculty of the nervous system it is just to locate the function in the whole of the anatomical substratum connected with it, and not in any one part of it. The substratum is a path commencing in the periphery, entering the central nervous system and converging with other paths which modify its function at each convergence; entering the cortex of the brain and spreading widely with infinite convergences and modifications of function and gathering again thence to return to the periphery. In so far as this path is compact and single it is vulnerable to local destructions. Inasmuch as it is diffuse or duplicated in another place, it is not vulnerable. In the cortex of the brain the paths soon become diffused. Keep away from those regions of the cortex through which the compact single paths to and from the periphery are known to pass and ablations will produce no loss of function, for the path is here too widely spread and the

function too widely distributed to be influenced by small local loss; nor will such terms as "annexes," "association areas," or the word "psycho" prefixed to any word that you may wish satisfy us, in the absence of any definite evidence, as to the functions of the highest product of evolution—the cerebral cortex.

2. The chief difference between the brain of a bird, in which no ablation produces local loss of function, and that of a mammal, in which ablations in certain definite regions produce temporary loss of function, and again between these two and the brain of man, in which certain ablations produce permanent loss, seems to lie in the progressive development as one ascends the animal scale of direct and compact paths to and fro between the cerebral cortex and the periphery, and these paths tend to become exclusive as regards a definite function in the highest animal; whereas in the less high animal the indirect and ancestral path is still utilizable when the direct path is damaged. The brain of all the higher animals must be built up structurally and functionally more or less upon the same plan.

3. The experimental physiologists of to-day have laid down that the motor cortex is only so-called by them because it is more excitable than the rest of the cortex, and that even in this region lability of function, facilitation, and deviation of response are much more characteristic features than is localization; and that there must be other mechanisms than this precentral cortex which act directly upon the lower motor mechanism by means of direct descending fibres; and that normal motor activation takes place through descending fibres from many parts of the cortex; and that in complex motor activity the cerebral cortex acts as a whole, though the activity of some parts of it may be accentuated and of other parts depressed; and that the activity of any one part of the cortex is conditioned by the balance of innumerable activities which proceed from other parts of the cortex. (I have here used the words of Graham Brown.) The physiologists have abandoned the localization of function within the cerebral cortex, and this position is in accord with the clinical evidence in man.

4. The past century has seen the question of localization of function in the higher parts of the nervous system introduced by Gall and the phrenologists in 1810; denied by Flourens in 1824 from his ablation experiments upon the bird's brain, for he contended that the brain represented the living animal as a whole, and not in terms of separate parts or functions; reintroduced by Hitzig and Broca in 1860, and carried to a high degree of theoretical detail by the later Victorian authorities, amongst whom, however, Hughlings Jackson stood conspicuously apart, for his theory of the nervous system essentially denied separation of function in its highest parts; again gradually changing in the early part of the twentieth century for a vague and indefinite localization or for a localization of function in the conducting paths only, as adopted by Sir Henry Head in 1924; and finally rejected so far as the cerebral cortex is concerned by both physiologists and clinicians at the present time.

5. It is obvious that each region of the cerebral cortex must be of equal functional importance in the make-up of the perfect animal, yet it is difficult to give up the belief that those regions of the cortex which immediately border upon the junctions of the cortex with the sensory path, the visual path, the auditory path, and the pyramidal path, are more especially connected with the functions these paths subserve. But it must be carefully borne in mind that the evidence in favour of this belief, upon the experimental side, is solely the facilitation experiments of Graham Brown, while upon the clinical side there is no certain evidence whatsoever.

CONTROL OF OCULAR DISEASE OF VENEREAL ORIGIN.

A SURVEY OF THE METHODS EMPLOYED IN SCOTLAND.*

BY

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THE disastrous consequences to humanity which have resulted from venereal disease are well known and universally deplored. Laudable efforts have been made by the medical profession to counteract this evil. An International Ophthalmological Congress appears to be a suitable occasion on which to present a survey of what has been done in recent years in Scotland for the control, by preventive measures as well as by actual treatment, of the ocular disturbances which are associated with venereal disease.

I.—THE CONTROL OF PURULENT OPHTHALMIA.

In 1879, by the discovery of the gonococcus which bears his name, Neisser laid the scientific basis for the treatment of this purulent inflammation.

In 1880 Credé of Leipzig introduced the prophylactic method of dropping a nitrate of silver solution (2 per cent.) into the conjunctival sac of newborn infants, and thereby at once reduced the incidence of ophthalmia neonatorum in a remarkable degree. His method was largely adopted throughout the civilized world, with immense benefit.

In 1901 I had the honour to be appointed, in succession to my revered master the late Dr. Argyll Robertson, to undertake the duties of ophthalmic surgeon to the Royal Blind Asylum in Edinburgh, and in my first annual report, submitted to the managers on December 1st, 1902, I passed in review the causes of blindness in 92 inmates—25 males and 67 females. I drew attention to the fact that nearly one-third—31.8 per cent.—of all the cases admitted owed their blindness to purulent conjunctivitis, which had been permitted to occur in newborn children, generally for want of proper precautions which should have been taken at birth. The directors sent a copy of this report to all the dispensaries and local medical institutions in Edinburgh. Representations made by ophthalmic and gynaecological colleagues in other parts of Scotland lent their aid towards disseminating fuller knowledge, but ophthalmia neonatorum still remained of frequent occurrence.

In 1907 the British Medical Association appointed a committee to investigate and report upon the prevalence and prevention of ophthalmia neonatorum in the United Kingdom. The report was actually prepared by the late Mr. Sydney Stevenson of London, who was chairman of the committee, and was issued in 1909. It revealed the fact that in the various blind asylums and schools the proportion of patients whose blindness was due to ophthalmia neonatorum formed an average of about 35 per cent., and that there had been no certain diminution of the disease during recent years. Attention was also drawn to the fact that numerous cases had been known to occur among patients attended by medical practitioners, as well as in those attended by midwives only.

In 1911 the Local Government Board (now the Department of Health for Scotland) instructed Dr. T. F. Dewar, one of their medical officers, to investigate the position in Scotland. In the report which he submitted in 1912 Dr. Dewar estimated that approximately 500 cases of ophthalmia neonatorum occurred in Scotland annually. Of these, from 30 to 40 suffered some impairment of vision, and from 5 to 10 became economically blind. He found that medical opinion as to making ophthalmia neonatorum a notifiable disease was not unanimous, partly for sentimental reasons, but to some extent owing to a prevalent belief that under the existing conditions the disease was already becoming less frequent in Scotland. He pointed out the need for midwives being instructed to play their part more efficiently in the prophylactic treatment. Following the example of England, some local authorities in Scotland had already adopted compulsory notification, and after the circulation of Dr. Dewar's report the number of authorities which voluntarily adopted the action rose from 26 in 1912 to 40 in 1916.

In 1915 a Midwives Act for Scotland was passed, and under the rules drawn up by the Central Midwives Board for Scotland it became incumbent upon every midwife to call in to her assistance a registered medical practitioner

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if she observed inflammation of, or discharge from, the eyes, however slight. Further, if any purulent discharge from the eyes was seen commencing within twenty-one days from the date of birth, and medical assistance had not been obtained, it was her duty to inform the local authority.

In 1917 the development of child welfare and maternity schemes brought into existence another most valuable and beneficent organization. Strengthened by the strong recommendation of the Departmental Committee on the Welfare of the Blind [see report on July 20th, 1917 (Cmd. 8655)] that the notification of ophthalmia neonatorum should be made compulsory, the Local Government Board for Scotland issued the Public Health (Ophthalmia Neonatorum) Regulations (Scotland) 1918, which took effect as from November 1st, 1918. The covering circular issued with the regulations pointed out that mere notification without treatment was of no practical value, and impressed on local authorities the need for ensuring that skilled assistance should be available in every case as soon as it was notified.

On July 16th, 1921, the Scottish Board of Health issued a further circular on the question of ophthalmia neonatorum. It did not enforce, but it recommended, the instillation of a 1 per cent. solution of silver nitrate into the eyes of all newly born infants. It also stressed the need for hospital treatment in all but the mildest type of cases, and called for reports to be made to the Board in every case in which in the opinion of the medical officer of health there occurred appreciable loss of vision. The particulars to be supplied in these reports were as follows:

1. Name of case.
2. Address.
3. Date of birth.
4. Date of notification of ophthalmia neonatorum.
5. By whom confinement attended.
6. Subsequent medical attendant (if any).
7. Where treated.
8. Date of removal to hospital if so removed.
9. Date of discharge from hospital or of cessation of treatment.
10. Nature of infecting organism (if ascertained).
11. Condition as regards vision at end of treatment.
12. Living or dead.
13. Remarks.

On receipt of such reports investigation is made into the circumstances of each case by one of the department's medical officers. Special attention is directed not only to the clinical side of the case, but also to (1) the treatment of the eyes at birth, (2) the question of delay (if any) in notification by the doctor or midwife in attendance, and (3) the question of delay in the provision of special treatment. Attention is drawn to any cases in which there has been apparent laxity. Where a midwife has been at fault the local authority may, if the circumstances warrant, report her to the Central Midwives Board for Scotland. The penalty for gross negligence or carelessness is suspension or removal from the Midwives' Roll. Under the rules made by the Central Midwives Board for Scotland for regulating the practice of midwives, a midwife is required so soon as the child's head is born to cleanse the eyelids and instil one or two drops of a 1 per cent. solution of silver nitrate.

After three years' further experience the Scottish Board of Health were not satisfied that all that could be done for ophthalmic cases was being done by local authorities, and they accordingly authorized the issue of another circular on January 11th, 1924. This circular again emphasized that the disease was preventable, and that its disabling effects could be avoided by prompt and adequate measures of treatment. It pointed out that satisfactory arrangements for hospital treatment could not be improvised on the occurrence of a case, and local authorities were called on to make, as part of their maternity and child welfare schemes, arrangements with suitable hospitals possessing adequately trained staffs, in order that any case occurring might receive treatment immediately. It is satisfactory to note that, as a result of this circular, practically all local authorities administering maternity and child welfare schemes made arrangements on the lines indicated. Maternity and child welfare schemes are now (1929) in operation in areas comprising 93 per cent. of the population of Scotland.

The following table shows the trend of notification since notification was made compulsory in Scotland in 1918, and also the number of cases removed to hospital, and the number of cases resulting in appreciable loss of vision reported to the department since 1921, when reports were first called for.

TABLE I.—*Ophthalmia Neonatorum (Compulsory Notification—all Scotland).*

Year.	Number of cases of ophthalmia neonatorum notified.	Number removed to hospital.	Number of cases reported to department resulting in appreciable loss of vision.
1919	1,431	162	—
1920	1,871	127	— Reports not demanded at that time.
1921	1,697	115	—
1922	1,485	71	5
1923	1,390	105	7
1924	1,289	119	15 Probably due to delay in notification or sending to hospital.
1925	1,246	115	3
1926	1 295	140	2
1927	1,311	124	15 (4 from Eyemouth, 4 from Lanarkshire).
1928	1,305	154	4

The decrease of 30 per cent. in the number of notifications between 1920 and 1927 indicates a measure of success in the preventive action taken. The numbers removed to hospital do not show much variation over the period recorded. It does not necessarily follow, however, that there has been no reduction in the number of severe cases necessitating special treatment, as it may well be that, with the total number of cases showing a substantial decrease in the later years, a proportionately greater number are given the advantages of hospital treatment, which is now more readily available than it was in the earlier years of the department's administrative action in connexion with the disease. It is possible that the desire to secure careful treatment of all cases of conjunctivitis in the newborn may have resulted in the notification of some cases of conjunctival irritation or catarrh unconnected with venereal infection. This is all to the good, though it may make the statistical position somewhat more indefinite.

As regards the cases reported to the department as resulting in appreciable loss of vision, the following table shows the effect of the disease on the vision and whether the gonococcus was the infecting organism.

TABLE II.—*Summary of Cases of Ophthalmia Neonatorum reported to the Department as resulting in Appreciable Loss of Vision in all Scotland.*

Year of child's birth.	Total No. of cases reported	Analysis of cases resulting in impairment of vision.			Cases not resulting in loss of vision finally.	Cases due to gonococcal infection.	Cases where infection was not gonococcal or not ascertained
		Total blindness.	Partial blindness.				
			Both eyes.	One eye.			
1922	5	3	—	2	—	4	1
1923	7	—	2	4	1	3	4
1924	15	3	1	11 (1 died)	—	9	6
1925	3	1 (died)	—	2 (died)	—	1	2
1926	2	—	—	2	—	2	—
1927	15	1	4	8	2	3	12
1928	4	2	—	—	2	2	2
Total	51	10	7	29	5	24	27

The relatively large numbers reported in 1924 and 1927 were due to the occurrence of groups of cases in certain areas. It appears that in 1924 they were mainly due to delayed notification or delayed admission to hospital. In 1927 four cases occurred in one village, and four in another county due to inefficient cleansing or careless handling of contacts. The moral of such outbreaks is that the best organization will fail unless backed up by constant vigilance and conscientious performance of duty by all concerned. But where these conditions are secured the results are very gratifying.*

In the Edinburgh area the organization, supervised by Dr. Robertson, the principal medical officer, and his staff, is very complete and effective, and I am happy to be able to state that in this area there has been no case of blinding by ophthalmia neonatorum within the past five years.*

II.—THE CONTROL OF VENEREAL DISEASE IN GENERAL.

There is no compulsory notification of venereal disease (except ophthalmia neonatorum) in Scotland. Its control is thus much more difficult. It rests with the patients themselves or their medical advisers to avail themselves of the opportunities for diagnosis and treatment supplied by the public authorities or by qualified private practitioners.

In 1919, under compulsory regulations of the Local Government Board which applied to the whole of Scotland, the public health authorities of the city of Edinburgh reorganized the venereal disease department under the supervision of the medical officer of health, and in the same year Dr. David Lees was appointed as its chief director.

By arrangement with the Royal Infirmary of Edinburgh, the largest hospital in the city (which is maintained by voluntary subscriptions), accommodation was found for a special clinic for adults within that institution, but the cost of the maintenance of this department is borne by the public funds, one-fourth being raised by assessment upon the citizens and three-fourths by grants from the Government Exchequer. This plan has encouraged the attendance of patients of the hospital class, since it largely avoids the publicity and opprobrium attaching to their appearance at a separate institution, and it has brought the special staff, and their services for diagnosis and treatment, into close touch with the requirements of patients in all the medical and surgical wards of the Royal Infirmary. It has also facilitated the teaching of students in our great medical school.

The public health authorities have made further provision for nursing mothers and infants with ophthalmia neonatorum, and young boys and girls requiring hospital treatment—for example, cases of interstitial keratitis or vulvo-vaginitis. These are admitted to another civic hospital, where they receive treatment with a minimum of publicity. Every effort is made to investigate sympathetically the circumstances of the families from which these patients come. Thus, both the father and other children are inspected with a view to their protection and treatment.

In the absence of compulsory notification reliable statistics showing the relation between syphilis and eye diseases cannot be prepared. Cases first seen at the ophthalmic wards and eye dispensaries are usually sent on to the venereal disease department for a confirmatory diagnosis and for subsequent treatment. The figures tend to overlap. The cases dealt with in private are not recorded.

I am indebted to Dr. David Lees, the energetic head of the venereal disease clinic, for the appended table, which shows the total number of cases of syphilis attending his clinic for treatment in the last quinquennial period, and the number which resulted from inherited syphilis.

TABLE III.—*Syphilis.*

Year.	Males.	Females.	Total.	*Inherited Syphilis.*
1924	522	784	1306	372
1925	489	750	1239	312
1926	460	811	1271	232
1927	616	724	1340	313
1928	687	752	1439	284
	2775	3821	6595	1573

Some of these were not cases of gross illness. In some the eyes were not affected. The apparent increase in the total number treated in 1928 may only indicate that a closer scrutiny is being maintained.

The above table shows that the cases seen between the years 1924 and 1928 numbered 6,595. Of these, about two-thirds (that is, about 4,400) came from Edinburgh, the remainder from surrounding districts. Of the Edinburgh cases, 354 were due to inherited disease. Of these, 136 suffered from interstitial keratitis and about 40 more had some eye trouble—for instance, iritis or choroiditis, or optic atrophy.

At the Royal Blind Asylum School in Edinburgh, where the Wassermann test is now systematically applied to every applicant for admission, of 67 children examined in a period of six months, 21 were found to be suffering from inherited syphilis, both clinically and serologically.

My colleague Dr. Lees is, however, confident that some progress has been made—that there is a reduction in the number of fresh infections; a definite reduction in the number of cases of newly born children suffering from syphilis, and in the number of ante-natal and neo-natal deaths due to syphilis. He believes that the efforts which are at present being made, and especially the ante-natal treatment in association with maternity hospitals initiated by the late Dr. Ballantyne of Edinburgh, are lessening, and will in future appreciably lessen, the incidence of inherited syphilis. If, in addition, children born of infected parents are kept under observation for a considerable period after birth, as they now are through the child welfare organizations, there ought to be a decided decrease in the number of cases of ocular disease from inherited infection.

Time and space do not permit of my giving details of the organizations which are dealing with venereal disease in other parts of Scotland, but the arrangements in Glasgow, Dundee, Aberdeen, and the larger towns are on much the same lines as those already described, and good results are being obtained.

Our health authorities are seeking improvement in other directions, through better housing, by the promotion of temperance, and by instruction in the laws of health. Their exertions are aided by social efforts to promote morality. In recent years the health authorities for Edinburgh endeavoured to secure fuller powers for the control of venereal disease, including compulsory treatment, but the proposal was rejected by Parliament. It is understood that a fresh effort is being made in Glasgow and the West of Scotland. We have a large maritime population. In 1925 an international agreement relating to the treatment of venereal diseases amongst seamen was ratified by His Majesty King George on behalf of Great Britain and Northern Ireland. Under this agreement the contracting parties undertake that facilities shall be available, at each of their chief sea and river ports, for the gratuitous treatment of merchant seamen, without distinction of nationality, and such facilities are to include out-patient treatment, in-patient treatment where necessary, and the provision of sufficient medical supplies to carry out necessary treatment during the voyage to the next port of call. The agreement also requires that each patient shall be supplied with a card for the purpose of providing a brief record of the diagnosis of the case, the treatment given, and the treatment to be followed during the course of the voyage.

It will be interesting to compare our experiences with those of other countries as regards the methods of control which some have already enforced upon their people. We invite international co-operation in combating an international infection.

* Through the courtesy of Dr. T. Y. Finlay, chmical medical officer in charge of the Edinburgh *maternity and child welfare scheme*, I was able to present to the congress a table showing the total number of cases of ophthalmia neonatorum *notified in Edinburgh* between the years 1920 and 1928, the relative number of cases treated in hospitals or at home, and the results of treatment. A further table illustrated the number of cases notified in the year 1928, showing the actual interval which elapsed between birth and the notification of the appearance of conjunctivitis, and how the cases were dealt with and the results of treatment. Space does not permit of the reproduction of these tables here, but they will be gladly supplied on application to Dr. Finlay, c/o The Medical Officer of Health, Johnstone Terrace, Edinburgh, or to myself.—G. M.

ATYPICAL ENTERIC INFECTIONS.

A REPORT OF FOUR CASES.

BY

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BACTERIOLOGICAL investigation of material obtained at necropsies in the Royal Infirmary, Edinburgh, have recently demonstrated the presence of organisms of the enterica group in cases which during life have presented quite atypical features. The object of the present communication is to illustrate by means of four cases the apparent frequency of such infections (see Billet and others, 1910). In each of the cases the diagnosis of enterica was not made until specimens obtained at the necropsies were examined bacteriologically, although in one case the "step-like" rise of temperature had aroused clinical suspicions of enteric infection.

Such atypical cases may be either primary infections or acute exacerbations in a chronic carrier. They are liable to be diagnosed incorrectly, and the consequent absence of suitable precautions would then promote the spread of the infection.

As emphasized in the report by Dr. Brincker on the outbreak of paratyphoid fever in London in 1928, infections with certain organisms of the paratyphoid group were comparatively rare in Britain before the war. Since then, however, large numbers of individuals, after a sojourn in areas where such infections are endemic, have become carriers. The temporary carrier, convalescent from a recognized attack of enteric fever, is likely to be watched by careful sanitary authorities, but chronic convalescents, and specially paradoxical and transitory carriers, by the intermittent discharge of pathogenic organisms for many years, constitute a serious potential danger to the community. The length of time during which such carriers harbour the bacilli of course varies, and depends on the establishment of chronic lesions (Sacquépée, 1910). That the number of such individuals discharging these organisms is relatively great is supported by the demonstration of *B. typhosus* in Belfast sewage by Wilson (1928) and of *B. paratyphosus* B Schottmuller in Edinburgh sewage by myself in 1929. The comparative freedom of these towns from enteric fever during the investigations renders it probable that these findings were due to the presence of resident carriers or unrecognized cases of the disease.

CASE I.

Clinical History.—A painter, aged 63, was admitted with a three days' history of abdominal pain, diarrhœa, and the vomiting of clear and later a dark green, fluid; he was stated to have been "pale and ashen," and to have had a temperature of 99° F. two days before admission.

On admission he was moribund; temperature 98.6°; pulse feeble 80; respirations 28. He was sweating slightly, but there was no rash. He complained of pain, constant and gnawing, over the whole abdomen, but not radiating in any special direction. Apart from slight rigidity over the upper part of the right rectus muscle the abdomen was flaccid. He died the following day.

Previous History.—Similar but less severe attacks had been experienced every few months for some years, thirty years ago he had travelled widely as the mate of a merchant ship. There was no history suggestive of enteric fever in the patient or his family.

Post-mortem Findings.—The peritoneal cavity, stomach, and the large and small intestines were all healthy, but the liver was pale and congested. The gall-bladder was not thickened or enlarged but contained rather thick opaque and greenish bile. The spleen was not enlarged and the kidneys were congested and pale. There was no pneumonia.

Bacteriology.—The bile yielded an almost pure growth of an organism identified by agglutination and agglutinin-absorption tests as *B. paratyphosus* B Schottmuller, and the same organism was isolated from the intestinal contents.

Discussion.

The clinical data and bacteriological findings suggest that the case was one of acute exacerbation of a chronic cholecystitis due to *B. paratyphosus* B Schottmuller.

In the course of enteric fever the causative organisms are always present in the gall-bladder (Chiari, 1884, and Pratt, 1901). Owing to the invariable bacteriæmia in the early stage, the avenue of infection to the viscus is generally thought to be the hepatic circulation. Blumenthal (1907), Laubenheimer (1908), Garbat (1916), and Kuester (1918), however, have all given evidence in support of the possibility of an ascending infection from the duodenum, and Nichols (1917) believes in a descending infection from the liver. Pratt (1901) divided cases of typhoid cholecystitis into two classes: (1) cholecystitis secondary to typhoid enteritis, and (2) cholecystitis due to a primary infection of the gall-bladder. Experimentally, cholecystitis has been produced by many workers by the intravenous inoculation of typhoid bacilli (Rosenow, 1916).

That normal bile is not a suitable pabulum for the growth of organisms was shown by Förster, and, later, by Drennan (1922) and Johnson (1925). Drennan, however, showed that the inhibitory power of the bile was annulled by the addition of albuminous material sufficient to render the final concentration of bile not more than 70 per cent. In cases of enteric fever the albuminous material is supplied by the inflammatory exudate from the gall-bladder and bile ducts.

In most cases this "cholecystitis typhosa" subsides within at most a year of the recovery of the patient, but in about 2 to 5 per cent. of cases the bacilli persist in the gall-bladder for many years, the subjects then becoming chronic carriers of the organism. It is impossible to determine the date and primary site of the infection in the case recorded above. If infected abroad, the patient must have carried the bacilli for at least thirty years—most probably in the gall-bladder. Cases in which an attack of enteric fever preceded the detection of the carrier condition by forty-six and fifty-two years respectively have been recorded by Bolduan and Noble, and by Gregg. Actual cholecystitis—that is, clinical or pathological evidence of inflammation of the gall-bladder—following attacks of enteric fever by periods varying from seven to forty-one years have been recorded by Miller (1898), Hunner (1899), Dean (1908), Clairmont (1911), and Pomeroy and Shen (1925). Dean's case resembles the case recorded in being one of remittent biliary colic.

CASE II.

Clinical History.—Housewife, aged 76, admitted with five days' history of intermittent severe epigastric pain and vomiting occurring several hours after meals; the bowels were irregular and the stools contained blood. Similar, but less severe, attacks had been experienced for some years.

On admission she was acutely ill, but there was no jaundice or rash; the whole abdomen, though flaccid, was tender, especially in the epigastrium and over the gall-bladder. The temperature, which had been 99°, became subnormal; but on the second day after admission it rose to 103°, became swinging, and the patient died the following day with a temperature of 104°.

Previous History.—The patient had never been abroad, and there was no history suggestive of enteric fever in the patient or any of her relatives.

Post-mortem Findings.—The peritoneal cavity, liver, and stomach were all healthy; the gall-bladder contained two conical stones, each one inch in length and lying with the flattened surfaces apposed. The mucosa of the gall-bladder was thickened owing to fibrosis and recent inflammation, and, in apposition to the space between the stones, there was a deeply ulcerated and nearly perforated gutter round the whole circumference of the viscus. The gall-bladder was fibrosed and adherent to the liver tissue; the ducts were patent. The first part of the duodenum presented a stellate scar, and the second part a small acute ulcer. The lower end of the ileum was slightly congested, but there was no swelling or ulceration of the lymphoid tissue. The transverse, descending, and sigmoid colons all showed numerous ulcers. Each ulcer was a quarter to half an inch in diameter, and had raised edges and a necrotic floor. The spleen was small, and the pulp dark and diffluent. The other viscera were comparatively healthy.

Bacteriology.—An organism identified by agglutinin-absorption tests as *B. paratyphosus* B Schottmüller was isolated from the ulcers in the duodenum and large bowel, the intestinal lymph glands, the gall-bladder, and the interior of one of the gall-stones. In the spleen the same organism was present in pure culture.

Discussion.

This case is similar to the first, but with the addition of a concomitant cholelithiasis and generalized infection in which the situation of the ulcers was quite atypical. It seems probable that this case was an old-standing infection, since the demonstration of *B. paratyphosus* B Schottmüller in the interior of one of the stones is strong

evidence that it was the primary etiological agent concerned in the production of the stone. It is unlikely that enteric organisms penetrate preformed gall-stones (Pratt, 1901), and from the experiments of Dmochowski and Janowski it has been deduced that "in clinical cases where the typhoid bacillus is present alone it is improbable that other organisms were present at an earlier date." Presumably, therefore, the patient was a chronic carrier, developed gall-stones, and finally succumbed to an acute generalized infection. Such is undoubtedly a rare sequence of events, as Kuester did not observe a single disturbance which could be ascribed to the enteric organism in 800 chronic carriers kept under observation for two and a half years, and, according to Zinsser, carriers appear to possess a degree of resistance to second attacks higher than even that of the individual who recovers completely.

In addition to the usual tendency to obstruction to the flow of bile in all cases of cholecystitis, the presence of *B. typhosus* appears to have a special faculty of precipitating cholesterol from bile salts (Gilbert and Fournier, 1897: Richardson, 1899; Cushing, 1899; Doerr, 1905; and Exner and Heyrovsky, 1908), although Novzari (1928) does not believe that such infection predisposes to cholelithiasis. Pratt (1901) and Hertz and Adams (1909–1910) have recorded the formation of cholesterol stones containing *B. typhosus* within eighteen and sixty-eight days respectively from the apparent onset of typhoid fever. On the other hand, Dowd (1911) has reported the demonstration of *B. typhosus* in stones thirty-two years after typhoid fever.

CASE III.

Clinical History.—A brewery worker, aged 35, was admitted with a history of nausea for twenty-four hours and the sudden emesis of dark blood-stained material on three occasions on the day of admission. The bowels were regular and there had been no loss of weight.

On admission examination of the abdomen was negative except for slight tenderness and rigidity in the epigastrium. The spleen was not palpable and the stomach and liver were normal in size. Temperature 97.0°; pulse 120. The patient became rapidly weaker, and died on the fifth day after admission. The temperature showed a "step-like" rise, but never rose about 100.2°. There was no diarrhoea, although on the day before death the stools resembled the "pea-soup" variety.

Previous History.—Apart from being in France during the war, the patient had never been abroad, and there was no history suggestive of enteric fever in the patient or any of his relations.

Post-mortem Findings.—The peritoneum was healthy. The stomach contained bile-stained fluid and showed submucous haemorrhages. The small intestine was slightly inflamed, and although one of the Peyer's patches was ulcerated, there was no swelling of the lymphoid tissue. The naked-eye appearances of the large bowel and gall-bladder were healthy, but the liver and kidneys showed acute parenchymatous degeneration. The spleen was small, dark, and diffluent.

Bacteriology.—*B. paratyphosus* B Schottmüller was isolated from an emulsion of the crushed wall of the gall-bladder, the organism being identified by agglutinin-absorption tests. The heart blood, spleen, and bile were all sterile, and no non-lactose-fermenting organisms were isolated from the ileal ulcer, ileal contents, and emulsion of the liver. Serum obtained from the cadaver did not agglutinate a known *B. paratyphosus* B emulsion at a dilution of 1 in 25 or higher dilutions.

Discussion.

The case is peculiar in that, although the heart blood, spleen, bile, and intestinal contents did not show evidence of the presence of *B. paratyphosus* B Schottmüller, the organism was found in the gall-bladder wall. The examination of the latter was made in view of the fact that in cases of cholecystitis Rosenow (1916) and A. L. Wilkie (1928) have isolated from the wall of the gall-bladder a streptococcus which could reproduce the disease in animals.

The presence of the organism in the wall, and its absence from the lumen of the gall-bladder, may be accounted for by the supposition that the viscus contained a percentage of bile too great for the viability of organisms. The failure to demonstrate *B. paratyphosus* B Schottmüller in the ileal ulcer and contents may have been due to the fact that in the interval between death and necropsy (eighteen hours) there occurred an overgrowth of lactose-fermenting organisms which masked the presence of enteric organisms present at the time of death. On the other hand, the patient may have been carrying the organisms in the wall of the gall-bladder, which, prior to the death of the patient, was not discharging them into the lumina of the gall-bladder and intestines. This would be in keeping with the normal appearance and sterility of the bile. Pratt (1901) stated that in two cases he had found the enteric organism in the gall-bladder, but not in the heart blood, spleen, liver, and kidney. Fletcher and Lesslar (1925), who recorded a case of typhoid septicaemia without typhoid ulcers, regarded as an open question whether their patient was a chronic carrier in whom the septicaemia resulted from an old focus in the gall-bladder or whether the latter had become recently infected as part of the general septicaemia.

CASE IV.

Clinical History.—A domestic servant, aged 21, was quite well till a fortnight before admission, when she developed a "cold." A week later, owing to constipation, she took large doses of salts, since when she had had diarrhoea. For two days prior to admission generalized abdominal pain was felt, especially on the right side. There was no vomiting.

On admission the tongue was furred; the whole abdomen was tender, and in the lower part slightly resistant. There was no rash or recognizable enlargement of the spleen. The temperature was 102°. The abdomen was opened, and, as no pathological condition was found, was closed immediately. The temperature swung between 99.6° and 103.6°. Blood withdrawn two days after admission gave a pure culture of *B. typhosus*, and the serum agglutinated that organism in dilutions up to, but not higher than, 1 in 30. The urine (catheter specimen) was sterile on culture, but contained a few epithelial and red blood cells. The patient became gradually worse, and died four days after admission.

Previous History.—The patient had never been abroad, and there was no history suggestive of enteric fever in her or in any of her associates.

Post-mortem Findings.—The peritoneal cavity and stomach were healthy. Small, deep, punched-out ulcers, swelling of the Peyer's patches, and congestion of the surrounding mucosa were seen in the ileum, but there were no ulcers in the duodenum, jejunum, and large intestine. The liver showed advanced fatty degeneration but no necrosis, and the gall-bladder was healthy. The size and consistency of the spleen were normal. The kidneys showed fatty degeneration. There was no pneumonia.

Bacteriology.—*B. typhosus* was isolated in pure culture from the heart blood, spleen, liver, and bile, and from among lactose-fermenting organisms in the gall-bladder wall and caecal contents.

Discussion.

The clinical data and bacteriological findings suggest an acute primary infection, and illustrate how such a condition may simulate an acute abdominal lesion—for example, acute appendicitis. The ulceration of the ileum indicates that the condition had reached at least the eighteenth day, and yet the patient went about until within six days of her death. "Some of the most fatal cases have been those in which the patient was able to keep his feet with comparatively little inconvenience until the end of the third week" (Kerr, 1920).

DISCUSSION OF THE CASES.

The clinical picture presented by the four cases is indefinite. The most marked feature was the severity of the toxaemia in relation to the vagueness of the subjective and objective phenomena. The first patient was ill for only four days, the second for eight, the third for six, and the fourth for eighteen days. Enteric bacilli contain a non-specific endotoxin, and, according to Park, Williams, and Krumwiede (1925), the intestinal lesions may be absent and "some of the inflammatory complications which occur in typhoid fever are due to the growth of the bacillus in excessive numbers in unusual places in the body." The occurrence in enteric fever of sudden death from myocarditis and vasomotor paralysis has recently been emphasized by Jacobi (1927).

Generalized abdominal pain was common to all of the cases, and three of the four had vomiting and diarrhoea. In all, at least part of the abdomen was flaccid, and the rigidity, when present, was only slight. The absence of recognizable enlargement of the spleen and of rash was noteworthy. The temperature in all but one of the cases recorded failed to show the classical "step-like" rise, and a low pulse-temperature ratio was not present in any of the cases.

SUMMARY.

1. Four cases of atypical infection with typhoid-paratyphoid bacilli are discussed—3 of *B. paratyphosus* B and

1 of *B. typhosus*. Of these, two presented the clinical picture of cholecystitis—one having gall-stones. The gall-bladder wall of the third case was the only part of the body found to be infected with the enteric organism. The fourth simulated acute appendicitis. All four cases presented profound toxic manifestations, an irregular temperature and abdominal pain. Examination of the abdomen revealed at most only slight rigidity, no rash, and no recognizable enlargement of the spleen.

2. A plea is made for thorough bacteriological examination of cases with vague abdominal symptoms which do not correspond closely to any mild digestive disturbance or acute abdominal condition.

3. In the interests of the community, enteric carriers should be "tracked down," and, when necessary, administrative action should be taken to minimize their danger to those around them, especially by prohibiting their employment in any business where food is handled.

In conclusion, I desire to thank Professor T. J. Mackie for guidance in the course of the investigation; Professor Murray Lyon, Dr. Goodall, and Messrs. Scot-Skirving, Struthers, and W. Q. Wood for the clinical details of the cases; and Professor Lorrain Smith and his staff for facilities for obtaining specimens and permission to publish details of the post-mortem findings.

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A REVERSIBLE BED FRAME FOR SPINAL AND OTHER SPECIAL CASES.

BY

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DURING the war one had frequent necessity for a bed which would give ready access to the back or buttocks without moving the patient. Especially did this need arise in cases of spinal injury, in which special daily attention to the skin was required in order to prevent or to treat bedsores. At first we were content with the Pearson's bed, in which the frame is high and the patient is supported on transverse canvas slips any of which can be removed. But this device is very difficult and uncomfortable for nursing, because the nurse has practically to creep under the bed, and even then the back is seen with difficulty. We then had a tubular frame or cage made which was held inside a Pearson's bed frame and was made to turn over. This gave ready access to the back, and proved so useful that when the war was over a special bed was designed which should embody these principles. This has been carried out, and for the expenses of the work I am most grateful to the Association of Surgeons for a grant which they made me for the purpose. The design which was first elaborated was, I think, too complicated, as it included

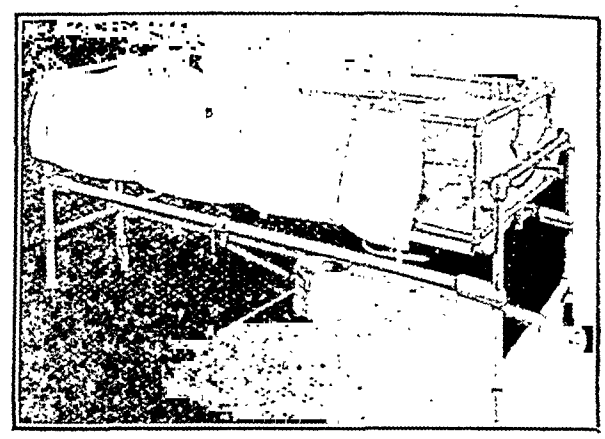


FIG. 1.

a device whereby the cage in which the patient lay could be tilted about a transverse axis, as well as rotated round a longitudinal one. In actual practice we found that the former movement was used so seldom that it was not worth while to have it provided for, as the same effect can be

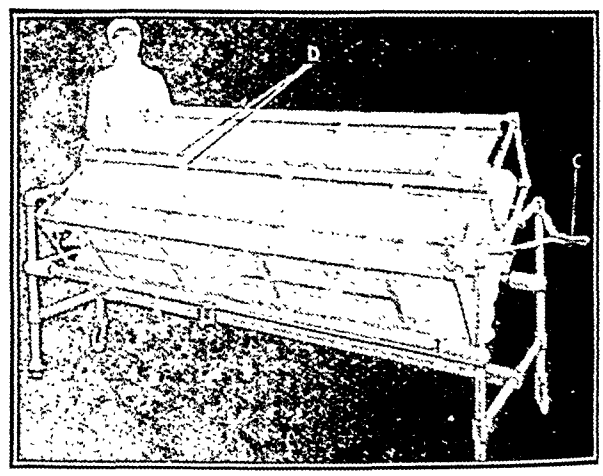


FIG. 2.

attained by lifting the head end of the bed frame and supporting it by two chains placed under the transverse bar.

The model which I am here describing has now been in constant use for the past few years, and it has passed the critical test of those sisters and nurses of the Bristol

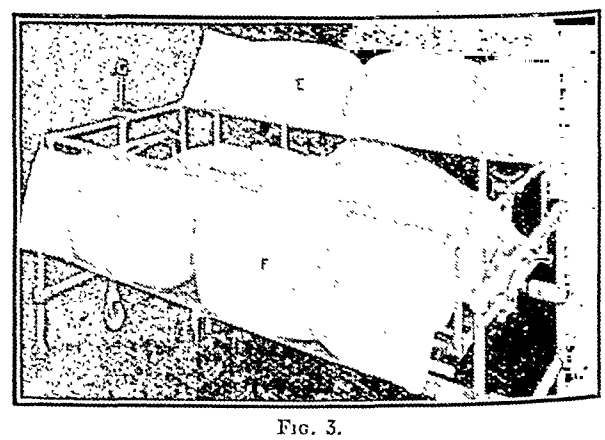


FIG. 3.

General Hospital who have been most enthusiastic in helping me to perfect its details.

The accompanying figures will, I think, serve to illustrate the construction and working of the bed. Fig. 1 shows the patient lying on his back, the head being raised on a pillow. The mattress is made in two longitudinal

halves separated from one another by a space of about 3 inches in their whole length. This gap allows the spine to rest on the split mattress without pressure upon the spinous processes of the vertebrae. In the middle of the bed the gap between the mattresses consists of a hole 8 inches in diameter, into which the special bedpan fits. This hole for the bedpan is suitably protected by rubber sheeting to prevent soiling the mattresses. The bedpan (A) is held by a lever which works in such a way that when pushed into place under the patient's buttocks the bedpan rises close under the hole in the mattress. When the pan has to be emptied the lever is pulled into position, shown in the illustration, and it drops so as to clear the bed frame. The case in which the patient lies is large enough to take a Thomas spinal frame or a hip abduction frame in a moderate degree of abduction. If this is used the lower mattresses would be discarded.

To the sides of the cage are hinged two flaps, on to which are strapped half-mattresses (B). Except when the patient is to be turned over these flaps lie as shown, flat against the sides of the bed cage. When the patient has to be turned over, the pillow is removed from under the head, and one pillow placed in front of and at the sides of his body, so as to pack him tightly in the cage. The flaps are then turned over so as to cover in the front of the patient, and are secured in this position by a catch and screw at the head, and another at the foot of the cage (C in Fig. 3). The front mattresses of the cage, when in position in front of the patient, have a 4-inch gap between them, which gives ample space for the face (D in Fig. 2).

The patient, being now snugly encased between the two sets of mattresses and the side pillows, can be turned over. This is done by releasing the catch (C) at both ends of the bed frame, and Fig. 2 shows the patient in the cage being turned over. When the cage has been reversed by being turned through a half-circle it is fixed in this position by the catch, and the back halves of the cage are open. In Fig. 3 one half (E) is seen being lifted up, and the other (F) has been dropped down by the side of the cage. The patient's back is now fully exposed for the purposes of dressing or attention to the skin of the buttocks.

The cases for which this device has proved to be of the greatest service have been: fractures of the spine, with or without paraplegia and paralysis of the bladder; tuberculous disease of the spine, especially cases in which a bone graft operation has been done; spinal cord tumour with paraplegia, or after a laminectomy; bad cases of fracture of the pelvis; special cases of fracture of both femora; and bad cases of burns involving the back.

The bed has been made for me by Messrs. Nesbitt-Evans and Co. of Wednesbury (Staffs), to whom I am greatly indebted for their trouble in carrying out my design.

THE RELATION OF ORTHODOX RHEUMATIC INFECTION TO MULTIPLE INFECTIVE ARTHRITIS.

BY

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IT is manifestly impossible from a statistical point of view to assess the relation, if any, between the acute and the more chronic forms of rheumatic disorder unless such terms as "acute rheumatism" and "chronic rheumatism" have a standard significance. As, however, the term "acute rheumatism" in the generally accepted sense means rheumatic fever, and the term "chronic rheumatism" is indiscriminately applied to many dissimilar affections of both muscle and joint, it is proposed in this paper to deal only with orthodox rheumatic infection and with multiple infective arthritis. By the former is meant frank rheumatic fever, and by the latter that type of subacute or chronic arthritis which is non-suppurative and is generally conceived to be due to infection of a non-specific character—in other words, which is not gonorrhoeal, pneumococcal, tuberculous, or syphilitic in nature. "Rheumatoid arthritis," as opposed to osteo-arthritis of the hypertrophic type, and "atrophic arthritis" are other terms for the disorder in question. Any arthritis which can be classified as being due to, or associated with, disordered metabolism, such as climacteric arthritis, is thus excluded from the series under discussion.

The possible relation of orthodox rheumatic infection to multiple infective arthritis was investigated by the following methods.

1. The evidence afforded by the family history of 50 consecutive cases of multiple infective arthritis in regard to orthodox rheumatic infection.

In 16 instances rheumatic fever was known to have occurred in a parent, brother, or sister.

2. The incidence of a clear history of orthodox rheumatic infection in 300 consecutive cases of multiple infective arthritis. By a clear history is meant the patient's positive assertion that rheumatic fever had occurred earlier in life and was not immediately connected with the present disability. This evidence was frequently borne out by the individual's own private practitioner.

Rheumatic fever is believed to have occurred in 14 instances, without, however, the presence of discernible complications of a cardinal nature (for example, carditis or large subcutaneous nodules) at the time of examination. This series does not include 13 additional cases in which rheumatic fever was alleged by the medical practitioner in charge of the case to have immediately preceded the onset of infective arthritis.

3. The occurrence in the aforesaid 300 cases of cardinal signs of orthodox rheumatic infection—namely, cardiac lesions of the orthodox rheumatic type and large subcutaneous nodules of the same histology[1 2] as those which occur in rheumatic fever of childhood. The millet seed granules[3] described by me as occurring in subacute rheumatic infection of childhood and in multiple infective arthritis are not included in this category.

The findings of the cardinal signs of orthodox rheumatic infection in these 300 cases of infective arthritis can be tabulated as follows.

	No Rheumatic Fever.		Rheumatic Fever.	
	No Nodules.	Nodules.	No Nodules	Nodules.
Mitral stenosis	3	2	—	—
Mitral regurgitation	2	—	1	2
Aortic regurgitation (in young subjects with negative W.R.)	2	—	—	—
Nodules	No carditis ... 13		No carditis ... 1	

Conclusions from the Above Data.

1. The incidence of orthodox rheumatic infection in the immediate family history of 50 consecutive cases of multiple infective arthritis is 32 per cent. This is a very high percentage, and accords with the popular conception that "rheumatism" has a familial or hereditary basis.

2. A low estimate of orthodox rheumatic infection in 300 consecutive cases of multiple infective arthritis is nearly 5 per cent. The attack rate of orthodox rheumatic infection among the under 15 population in Norway[4] is given as 0.8 per 1,000, and the highest figures published are from the Royal Naval School at Greenwich[4]—namely, 6 per 1,000. The attack rate was 2 per 1,000 in the 16–24 age period of the Ministry of Health's inquiry[4] into "rheumatism" in insured adults of both sexes.

3. The cardinal signs of orthodox rheumatic infection—namely, carditis and/or subcutaneous nodules—were present in 300 consecutive cases of infective arthritis in the following percentages:

	Per cent.
Cardiac lesions only without a history of rheumatic fever	2.33
Subcutaneous lesions only without a history of rheumatic fever	4.33
Cardiac lesions in the whole series	4.00
Subcutaneous lesions in the whole series	6.00

These cardiac figures are much higher than those given for organic cardiac disease after routine examination of school children[4] in England and Wales, 0.7 per cent.; in Scotland, 0.52 per cent.; and in New York,[5] 1 per cent.

In regard to subcutaneous nodules, Carey Coombs[6] has stated that of the principal phenomena of orthodox rheumatic infection—namely, carditis, polyarthritis, the

subcutaneous node, and chorea—the subcutaneous node is the most "rheumatic" of all. The above figures are therefore, to say the least of it, significant.

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SOME EFFECTS OF WARM IMMERSION BATHS UPON THE CIRCULATION.*

BY

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SPA physicians are aware that some of their professional brethren are a little sceptical about the efficacy of bath treatments, and it is probably not generally realized what profound effects such a simple procedure as a warm immersion bath may exert on the bodily functions, and especially upon the circulation. Some of these effects can be quite accurately measured. First, and most obvious, is an alteration in the pulse rate. Secondly, variations in blood pressure, both systolic and diastolic. Thirdly, and beyond the scope of ordinary clinical observations, there is a change in the amount of blood flowing from the heart per minute, as well as in the stroke volume or output per beat. Fourthly come various less accurately measurable effects, such as sweating, cutaneous hyperaemia, etc.

The following observations were made during a series of experimental baths taken by three normal subjects with a view to ascertaining the effect of immersion baths on the circulation and to determine whether the consequent variations in pulse rate and pulse pressure were in any close degree correlated with alterations in the heart's output. The effects on the circulation rate will be the subject of a separate paper, but I wish to draw attention to some rather striking effects on pulse rate and blood pressure revealed during these experiments. Typical examples are here given in tabular form.

It is common knowledge that an increase in the body temperature is accompanied by a proportional increase in pulse rate. Our experiments show this effect, but, in addition, two other features appear. (1) When a normal subject is placed in a bath at a temperature of approximately 103° F. there is an immediate increase in the pulse rate long before any significant rise of body temperature occurs. This increase is so sudden that it would appear to be due to some reflex cause, and a subsequent greater rise is superimposed. (2) In certain of the experiments there was definite hyperpnoea and consequent alkalosis (excessive CO_2 elimination). This alkalosis was associated with still further increase in the pulse rate.

It is just thirty years since Edgecombe and Bain[1] published papers on the effect of baths, massage, and exercise on the blood pressure, and these papers are still regarded as classics. They contain no reference to diastolic arterial pressure, but they were written before present-day methods of measuring diastolic blood pressure had been devised. The writers do, however, state the effects on mean arterial pressure, which they define as the reading taken when the indicator of the haemodynamometer gives its maximum excursion. It is probable that this point of maximum excursion would approximate somewhat closely to the diastolic pressure.

Our own observations show that in normal persons entering a bath at 103° F. there is an immediate fall in both systolic and diastolic blood pressure, approximately 10 mm. of mercury in each case. This initial fall would appear to be due to simple hydrostatic causes. When the blood pressure is taken with the subject on a couch the arm is lying by the side. If the arm be elevated to an extent such as occurs when taking the blood pressure of a patient immersed in a bath, a similar fall is observed. Subsequent to these immediate changes the systolic pressure may show a slight rise, which in none of our experiments exceeded 16 mm. of mercury, but was usually rather less. The most striking feature with regard to blood pressure was a marked fall in diastolic pressure, together with an alteration from the normal characters of the Korotkow sounds—that is, the sounds heard in the artery during decompression when determining blood pressure by the auscultatory method.

Wiggers[2] describes five phases in the Korotkow sounds:

"*First phase:* The sudden appearance of a clear sound, lasting for a fall of approximately 14 mm. of mercury. This has already been described as a criterion of systolic pressure.

"*Second phase:* The acquisition of a murmurish character, lasting while the pressure falls approximately 20 mm. of mercury more. It is attributed to the stenosis of the vessel produced under the cuff at this stage.

"*Third phase:* The replacement of the murmur by a sound becoming progressively louder and lasting during the next 25 mm. of pressure fall.

"*Fourth phase:* The muffling of the sounds, lasting while the pressure falls 5 to 6 mm. more. The cause of this muffling has been variously interpreted as due: (*a*) to the absence of diastolic collapse; (*b*) to the slowing of the stream under the cuff; (*c*) to the decreased resonance in the deflated cuff; (*d*) to a lack of flattening of the arterial wall.

"*Fifth phase:* The disappearance of all sound."

The pressure in the cuff at the commencement of the fourth phase is generally accepted as being the diastolic pressure. We found that although normally at rest the transition from the third to the fourth phase was well defined, and gave a sharp reading of diastolic pressure, after a short time in a bath at 103° F. this was no longer so. Almost immediately the sounds during the third phase, instead of becoming progressively louder throughout the whole of the phase, became at first louder and then gradually softer, and during this period of diminuendo tailed off almost imperceptibly into the fourth phase. Hence it was not possible to recognize the usual clearly defined criterion of diastolic pressure. In addition, the fourth phase became prolonged, and, not infrequently, after the subject had been in the bath for thirty minutes or longer, the fourth phase was found to continue right down to zero pressure—that is to say, the fifth phase was absent altogether.

In column three of the table the left-hand figure is, so far as could be ascertained, the transition from third to fourth phase. The right-hand figure, where only two are given, is the pressure at the end of the fourth phase—that is, disappearance of all sounds. Where this figure is zero it indicates that sounds were still present in the artery when the sphygmomanometer cuff was completely deflated. Where three figures are given, the front two show pressures at which clearly defined softening or muffling of the sounds occurred. So far we are unable to interpret these points with reference to Wiggers's phases, but it seems at least possible that in the later stages of a hot immersion bath the diastolic pressure falls very near to zero. These changes—namely, the fall in diastolic pressure and alteration of the Korotkow sounds—closely resemble those observed in severe cases of Graves's disease (hyperplastic exophthalmic goitre), and possibly also in cases of aortic incompetence and severe anaemias.

The significance of some of these observations is as yet obscure, but one point of interest may be briefly mentioned. It has generally been considered that an increase in pulse pressure associated with an increase in the pulse rate is indicative of an increase in the circulation rate. This has been shown to occur in exophthalmic goitre. Our observations on the circulation rate in baths have shown that, as a rule, no significant increase in circulation rate occurs even though both pulse rate and pulse pressure are increased. Indeed, in certain experiments the circulation rate under these conditions has been found to be actually lessened.

In the present communication it is impossible to give all the evidence in detail, but the most reasonable interpretation of such changes as we have observed and measured would be that there is constriction of the arteries and arterioles, together with a dilatation of the capillaries. This dilatation gives rise to diminished peripheral resistance, as well as a certain amount of peripheral stasis.

* A preliminary communication summarizing an address to the Yorkshire Branch of the British Medical Association at Harrogate on October 11th, 1929, and based on observations made in collaboration with Professor Whitridge Davies and a number of the senior students from the Leeds Medical School. The work was carried out at the Royal Baths and the Royal Bath Hospital, Harrogate.

The presence of peripheral stasis was further confirmed by the appearance in some experiments of a slight though quite appreciable cyanosis of the limbs. The normal, or sometimes diminished, general circulation rate, together with the increase in pulse rate, indicated an appreciable, and sometimes considerable, diminution in the output of the heart per beat.

Time	Systolic Blood Pressure	Diastolic Blood Pressure	Pulse Rate	Mouth Temp. °F.	Bath Temp. °F.	Remarks.
p.m. 3.30	123	80-74	68	98.1	—	Subject lying on couch before bath.
4.30	110	70-64	64	98.0	94.5	*Readings immediately on entering bath.*
4.40	108	62-58	64	98.0	94.5	(Plain water bath.)
4.50	109	65-58	68	97.9	94.0	
5.00	110	68-60	70	97.7	94.0	
5.07	110	66-60	64	97.2	93.5	
5.15	110	63-60	66	97.1	93.5	
5.20	—	—	—	—	103.0	Bath temperature raised to 103 F.
5.30	108	60-58	80	98.3	103.3	Perspiring.
5.40	110	54-44	84	99.9	102.8	
5.48	110	53-40	90	100.7	103.4	
5.58	120	64-44	100	101.3	103.2	Bath ended at 6 p.m.
6.15	110	75	76	99.7	—	After shower bath down to 65° F.
12.29	120	85	62	97.5	—	Subject lying on couch before bath.
12.37	—	—	—	—	—	Enters saline sulphur bath.
12.40	106	60	76	—	103.4	Temperature 103±1° F.
12.45	106	58-40	80	—	103.2	Sweating.
12.50	110	58-40	80	—	102.9	
12.55	110	60-40	90	—	103.2	
12.57	106	55-38	87	99.3	103.0	
1.01	112	58-0	99	100.0	103.1	
1.05	112	60-35-0	95	—	103.6	Loud sounds audible at zero.
1.09	110	60-38 0	95	100.2	—	
1.13	110	58-35 0	95	100.7	102.5	
1.18	120	56-32-0	93	—	102.4	
1.25	118	50-25-0	93	—	102.7	
1.28	120	40-15 0	—	—	102 9	
1.29	110	54-30-0	93	101.1	102.5	
1.35	120	60-20 0	100	—	—	
1.33	120	35 0	100	101.1	102.0	Loud sounds audible at zero.
1.39	—	—	—	—	—	Started cooling the bath.
1.41	108	50-0	—	—	87.0	
1.43	104	55-20	84	—	81.0	
1.46	100	50 35	70*	100.0	81.0	*Bigger wave at wrist. Marked cutaneous hyperaemia after bath.

The above figures are those obtained during two of the fourteen experimental baths on which the conclusions in the paper are based.

SUMMARY.

The following are the principal circulation effects noted during immersion baths at 103° F. in normal subjects:

1. Rise in pulse rate.
2. Maintenance, or increase, of systolic pressure, allowing for slight alterations in position of arm.
3. Fall in diastolic pressure.
4. Changes in pressure levels at which modifications of the Korotkow sounds occur.
5. Persistence of these sounds down to 0 mm. of mercury in certain readings.
6. Prompt return towards normal when the subject is cooled down on completion of bath.

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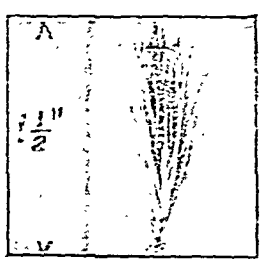
Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

FOREIGN BODY IN RIGHT BRONCHUS OF A BABY.

THE following case, in which a flower-spike of grass passed through the upper air passages and lung tissue to present beneath the chest wall, is of interest both from the mechanical aspect and on account of the fact that so little disturbance was caused.

The patient, a baby of 9 months, was admitted to the St. Albans and Mid Herts Hospital for observation on August 30th last. For two weeks the child had been fretful, with screaming attacks and occasional cough. On admission the temperature was 100°, pulse 120, and respirations 36. The general condition was fairly good, but screaming fits persisted. No abnormal physical signs could be detected except an impaired note over a limited area below the angle of the right scapula; adventitious sounds were absent and breath sounds were not appreciably altered. The temperature settled on the following day and screaming ceased. No further symptoms developed except an expiratory grunt, noticed especially at night. Chest signs remained unchanged. The child was discharged six days later apparently quite well.



On September 11th the mother noticed a "swelling on the back," and called in Dr. Ronald Wilson. He suspected a foreign body, and, on further questioning, obtained a history of a choking fit on August 12th—two and a half weeks before the first admission to hospital.

On readmission to hospital, on September 12th, the temperature was 99.8°, the pulse 136, and the respirations 34. The general condition remained fairly good. There was a tender swelling, two inches in diameter, extending downwards from the angle of the right scapula. It was fixed to the deep structures and had a small central red area but no fluctuation. Breath sounds were harsh in the neighbourhood of the swelling, but unchanged over the rest of the lung field.

On September 13th a radiogram showed thickening of the right ninth rib under the site of the swelling, with a cup-shaped area of rarefaction on its inferior margin and a well-defined opacity of lung field locally.

On September 14th, under a general anaesthetic, the tumour was aspirated, but no pus was found; incision revealed an inflammatory oedematous condition of the thoracic parietes, and no collection of pus. In the base of the wound a foreign body was exposed. This was withdrawn and found to be a flowering head of "wall barley," 1½ inches long (see photograph) with stalk end projecting outwards, and of slightly offensive odour. On passing a probe a sinus was found leading direct up into the right bronchus, reflex coughing being produced thereby. The wound was closed without drainage. A small superficial collection of pus formed, but rapidly cleared up, and the child had no further pyrexias or respiratory symptoms.

On September 23rd the patient was discharged with the wound completely healed. There was still a slight impairment of note, but no swelling, and breath sounds were good over the whole lung.

I am indebted to Mr. D. Morgan Jones, surgeon in charge of the case, for permission to publish this note.

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CHRONIC RHINITIS IN CHILDREN.

A FACTOR to be reckoned with in the treatment of chronic rhinitis in children is the large area of nasal mucous membrane involved. The area of the septum and lateral walls (not including any sinuses) in a small female subject in the dissecting-rooms of the Sheffield University was 225 square centimetres. As this mucous membrane is lying over immovable bone the removal of any excess of mucus must be dependent on (1) transmission along the surface by the action of the cilia, and (2) the expulsion of mucus by means of air currents.

By the reflex act of sneezing, which is an explosive form of expiration, an extra amount of secretion is poured out, which acts as a powerful cleansing force, loosening any debris collected there. If the sneeze is at once followed by a voluntary expiration through the nose (keeping the mouth shut and bending the head downwards) the old debris can be blown out of the nose. If the sneeze, or sudden involuntary expiration, is followed up by a short,

quick inspiration, as in sniffing, these particles are drawn up the olfactory cleft into its absorptive columnar epithelium, or else fall back on the nasopharynx, with its absorptive lymphoid tissue; some are finally swallowed and absorbed by the stomach, so that in sniffing there is a constant reinfection taking place.

In treating chronic rhinitis children must be trained as follows.

1. They must be taught how to blow the nose. Various methods are adopted with children of different ages.

2. They must be taught the act of sneezing. The frontal reflex is quite successful in some cases, and sneezing can be evoked by tickling the face, in exactly the same manner as is done by the Maories in their baptismal ceremony. When the priest recites the names of the baby's ancestors he tickles its face with a twig dipped in water, and when the baby sneezes it is supposed to have pronounced its own name. The easiest and quickest sternutatory I have found to be exsiccated sodium carbonate. By using a little tact and camouflage children can be made to sneeze without knowing about it, no matter how young or nervous they may be; as sneezing is regarded as a laughing matter by young children they do not object.

3. They must also be taught to blow the nose after the sneeze so as to get rid of the old debris.

4. They must never be allowed to sniff. This last point in the training involves the co-operation of the mother, who has to provide the child with a handkerchief and an easily accessible pocket.

This is the method advocated by Dr. Octavia Lewin; I have carried it out on 200 volunteers with great success during the last five years, the success being gauged by the continuous attendance at school of the children so treated.

There are many primitive ideas regarding sneezing which must be overcome; these ideas have been handed down through the ages, and are, perhaps, the unconscious basis of objections to sneezing in some cases. For instance, among the primitive islanders in the Pacific the Dyak mothers in Borneo, when their babies sneeze, call out, 'Soul, come back"; this idea that the soul lives in the nose, and can be lost by sneezing, is mentioned in Hindu legends, and is also among the beliefs of Red Indians.

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Reports of Societies.

ETIOLOGY AND TREATMENT OF RHEUMATOID CONDITIONS.

AT a *meeting of the Devon* and Exeter Medico-Chirurgical Society on December 19th, 1929, the president, Dr. B. COHEN, read a paper entitled "Rheumatoid conditions."

Dr. Cohen said that, although he would deal chiefly with rheumatoid arthritis and osteo-arthritis, much would apply equally to conditions such as myositis, fibrositis, "lumbago," and the various ill-determined affections classified as neuritis, for a large percentage of sufferers gave a history of vague rheumatoid conditions for several years prior to the definite establishment of arthritis, and it was during this incipient period that happy results might be achieved by treatment. The disease could be traced back to the Mesozoic period, long before the advent of man. For example, arthritic changes had been demonstrated in the cervical extremity of the skeleton of the giant Iguanodon, and, later, similar affections had been found in the cave bear and the sabre-toothed tiger; finally, remains of men in the Stone Age similarly affected had been discovered. It was the outstanding disease of the ancient Egyptians, and the importance attached to hydrotherapeutic establishments by the Greeks and Romans told its own tale. Spas in Europe, such as Aix-les-Bains, had been frequented continuously for the last 2,000 years. Dr. Cohen then touched upon the economic effect of rheumatoid disease on the country to-day, with an annual cost of £2,000,000 in sick benefit and loss of 3,000,000 weeks of work. The most common age incidence was after 40, women being more susceptible than men. It was generally held that infection arose from some primary focus elsewhere in the body—such as the teeth, tonsils, antra, and the genito-urinary tract. Pemberton had ranked exposure as a predisposing cause in 58 per cent., but his figures seem to have been based on army cases, and the higher occurrence in women in civil life needed explanation. The disease was more prevalent in cold damp places, and there was reason to believe that the physiology of muscle became consequently predisposed to rheumatoid affections. Omitting reference deliberately to the arthritis of the acute infectious diseases, the speaker defined two groups—the atrophic and the hypertrophic—or, as generally known, rheumatoid arthritis and osteo-arthritis respectively. The atrophic type was associated with asthenia and a slight build, the patient being below or about the age of 40; the hypertrophic type occurred at a more advanced age in a person of robust build and of fit appearance. In the atrophic form the disease was multi-articular with effusion into the joints; atrophic changes affected the skin and muscles, and finally ankylosis might ensue. The hypertrophic disease was frequently mono-articular, and deformities were due to osteophytic outgrowths and not to ankylosis. Evidence in respect of infection from remote foci had been secured by the removal of cartilage from the joints. The fact that protein shock therapy had given benefit in some cases supported the theory that anaphylaxis might have some bearing on arthritis, and Dr. Cohen reported a case of asthma, urticaria, and arthritis occurring in the same patient, one affection improving temporarily while the other predominated. There was little proof that acid foods or the accumulation of lactic acid were agents in producing arthritis, but more could be adduced for the lowering of the basal metabolism which was noted in 20 to 30 per cent. of the cases, and the occasionally favourable effect of thyroid therapy. B. Ray had hypothecated a rheumatic substrate operative throughout the body, explicable by the unbalanced state of the autonomic nervous system, septic foci being only one link in a tortuous chain. This theory seemed to find support in the resemblance of the joints of rheumatoid arthritis to those in tabes and syringomyelia.

Pemberton had discovered a delay in the fall of the blood sugar curve in arthritis in 70 per cent. of the cases, with a return to normal after the removal of a septic focus. So consistently did this appear that, if a curve did not so respond to the removal of a focus, Pemberton rejected that focus as being a cause of the arthritis; he had also demonstrated slowing of the capillary circulation, which he thought was the cause of the delayed sugar fall. He had been induced to perform these experiments by the fact that his arthritic patients improved when carbohydrates were cut out of their diet. Mutch, working in this country, had found the predominant organism in the intestinal tract to be *Streptococcus longus*, which was strongly glycophylic. These organisms lived only in the intestinal canal; in the presence of stasis and sugar they destroyed *B. coli* and retained their infective properties. Dr. Cohen pointed out that it was interesting that these two workers, one through biochemistry, and the other through bacteriology, had come to the same practical conclusion that carbohydrates in the diet should be reduced. He reconciled the two views by suggesting a mild infection of the pancreas. As regards the mechanics of intestinal stasis, the fault might lie on the proximal side of the ileo-caecal valve, and, although not recoverable from the faeces, the intestinal tract might be teeming with streptococci. In one of Mutch's cases the glycophylic organism found in an appendix abscess had been recovered from the empyema which developed as a sequel.

Passing on to the treatment of arthritis, Dr. Cohen emphasized the importance of determining the cause and then concentrating against it. When the origin was microbic the greatest care should be taken to isolate the organism at the time of removal of the focus; he emphasized the need for cultivating direct from the apex of an extracted tooth, avoiding all possibility of contamination, and for smearing the culture direct from the centre of the removed tonsil. Other possible sources of infection were the cervix, the prostate, and the gall-bladder. Dr. Cohen maintained that when organisms were present in the urine they were evidence of intestinal infection. He himself had never seen bacilluria unassociated with intestinal

stasis, and he regarded the kidney as merely acting as a filter in these cases. As regards removal of the foci, he called attention to the danger of the wholesale extraction of teeth under anaesthesia, and expressed the opinion that the smaller the tonsil was the more deadly it often proved as a nidus of infection. Having dealt with the possible focus, treatment, with vaccines or otherwise, followed. The course of injections should be undertaken and watched by the same man. Where the infection was derived from the mouth or throat Dr. Cohen started with a very small dose and increased gradually, thus: ¼, ½, ¾, 1, 1½, 2; whereas with intestinal vaccines he generally used the "double-up" method—1, 2, 4, 8, 15, 30, 60, 125, 250, 500, 1,000. If no reaction resulted from twelve doses at weekly intervals he relinquished the treatment, whereas, on the contrary, a mild reaction led him to repeat the dose responsible at intervals of a fortnight over a period of months. Dieting was most important in treatment, but preliminary bacteriological and radiological investigations of the intestinal tract were essential. Nowadays the old uric acid theories and consequent restriction of meat held no sway; it was found that in 70 per cent. of the cases the carbohydrates were at fault. The main point in diet was to reduce the load at the expense of the carbohydrates, an easier task with the hypertrophic cases than with the atrophic and asthenic; liver treatment proved useful where anaemia was a symptom with the latter class. Plombières treatment played an important part, but should be relegated to an expert guided by radiological findings. Potassium permanganate, both by injection and by the mouth, had proved a useful adjunct; in connexion with this Dr. Cohen deplored the multiplication of "colon filling stations" about the country. Aperients could not be omitted in all cases, but Dr. Cohen advocated the repetition of small doses of the less drastic aperients rather than brisk purgation by a single dose. Massage was of the greatest value, in combination with local heat, as an agent in the prevention or delay of muscle atrophy; in the improvement of the general metabolism; and in respect of mechanical influence on the circulation. Internally, thyroid and iodine were invaluable where there was evidence of thyroid deficiency. Nitrites were promising in that they had a favourable influence upon the blood sugar curve. Deep x-ray therapy had been found to have some good influence, but adverse results did occur, and especially in acute cases, and here Dr. Cohen gave a special warning in respect of vaccines also, and of any form of heat treatment away from the home. In all cases the personal equation entered largely into the choice of treatment, and the confidence of the patient in any one form would largely make for its success.

In conclusion, Dr. Cohen mentioned the influence of trauma in the production of arthritis, and cited a case of fracture in the region of the ankle-joint under his care many years ago. The man had pyorrhoea, and developed an arthritis of the ankle during the time he was under treatment for the fracture. It was therefore important, he added, to ensure against the possibility of septic foci, either in the mouth, throat, or intestinal tract, in all cases of trauma, and more especially if the accident occurred in a person about the age of 40. The case was the same with the patient aged 40 or thereabouts who was becoming "rheumatic," and for whom early investigation and treatment was of paramount importance.

Dr. R. V. SOLLY, commenting on the blood sugar curves shown by Dr. Cohen, remarked that one was rather high and the others low after the removal of the focus of infection: glycosuria might have been suspected in the first one. He had noted uncertain results with the vaccine treatment of arthritis, and benefit was often difficult to gauge owing to vaccines being given in combination with other forms of treatment. Mr. R. WAYLAND SMITH agreed as to the importance of guarding against oral sepsis in all cases of fracture, and mentioned cases from the United States where arthritis had cleared up after amputation of the cervix uteri. He asked if Dr. Cohen had met with success from using ultra-violet rays. Mr. R. WORTHINGTON could not mention any one case where he had cured arthritis by removal of the tonsils, but he had seen good results when operating in early cases of fibrositis, where repeated sore throats gave evidence of infected tonsils. When pronounced bony changes had occurred in the joints one could not hope for success. The speaker thought it preferable to obtain the organism from the intestinal tract rather than by section of the tonsil, and he attacked the tendency of too radical dental extraction. Dr. R. MICHELMORE commented on the difficulties which beset a panel doctor in providing the special treatment appropriate to these cases.

Dr. COHEN replied that although he had used ultra-violet rays without benefit he would try them again in cases of lowered metabolism. He had not treated any cases with intra-articular injections of oil, but he could quote improvement after saline injections under the strictest precautions. Rheumatism was a very big problem which the country would have to face in the immediate future, just as it had dealt, and was still dealing, with tuberculosis.

CHILD PSYCHOLOGY.

AT University College, London, on January 1st, under the auspices of the Child Study Society, Dr. H. CRICHTON-MILLER addressed a large gathering of teachers on the study of the child.

The lecturer's remarks, notwithstanding the title of his subject, pointed rather to the need for the study of the adult and the correction of some obvious adult faults in relation to the child. Many of the adult complainings with regard to children—their noisiness, their unwashedness, their peccadillos—were really, in Dr. Crichton-Miller's view, part of a campaign of adult sophistication against childish instinctive reactions. He reminded his audience that a child given to stealing sugar might be one of those unfortunate persons who suffer from sugar starvation, and the mere rebuke of the habit, without an understanding of the underlying cause, would not carry very far. It was impossible to get down to the actual behaviour of the child while it was under the shadow of the adult. There were parents who were always eclipsing the child, who seemed incapable of coexisting with the child unless they cast around it a shadow. He believed that in America, in connexion with some child clinics, a system had been devised of observing the child when it was unconscious of adult proximity, periscopes and microphones being employed; but short of this, there were some gifted people who had a marvellous way of attenuating their shadow until it became no more than that of a telephone pole, while that of others spread out like a beech tree. One condition on which Dr. Crichton-Miller laid stress was the need for neutrality in the child's environment. Many children suffered, he said, from a bias in their environment; they were unlike other children with whom they were perforce associated, and the difference led to unjust estimations, expectations, or depreciations in the mind of others. An extreme example would be one African child in a class of European children. Every departure from neutrality in environment meant some deviation or deflection of the child's purpose in life. Proceeding to speak of the goal of the child, which, he said, was adaptation (a thing of much broader significance than the choice of a business career), Dr. Crichton-Miller said that the child must be able to adapt itself to both success and failure, to prosperity and adversity. He sometimes wondered when he saw some of these dreadfully protected children, these poor little victims of a purblind parental devotion, who were never allowed to have a cold or a fall, or to encounter any form of adverse circumstance, such as the possibility of being physically overcome by another child, how they were ever going to meet the slings and arrows of outrageous fortune in after-life. When was it too early for children to begin to take the rough with the smooth? That was not a problem in child study, but in adult study. The child who lived the too protected life was hampered from the first in its capacity for adaptation. Dr. Crichton-Miller went on to speak of some behaviours of little children which might appear on the surface to be ordinary instinctive reactions of practically no significance, but which eventually had a profound motivation. The ignored, the undervalued, the unwanted child began a series of motivated reactions which were intended to acquire value for itself. Such a child, after having had an attack of

affective reactions to the experiences of life. Highly intense life impulses, together with strong inhibitions, great critical intelligence and power of sublimation, a weak projective capacity balanced by a strong trend towards co-ordination—such are the factors discovered by the author in the psychic structure of these philosophers. In philosophic activity it is possible to discover biological values—it serves as a substitute for practical action in the discharge of excess impulse energies; it creates, in the place of harsh and intractable and therefore unsatisfying reality, a painless and therefore satisfying world; and it leads by means of a detour to the real satisfaction of powerful interests. The thesis of the writer would seem to find points of contact with the generalization of Adler to the effect that an inferiority may, according to the general conditions obtaining, eventuate in three different modes of reaction—degeneracy, neurosis, genius.

THE BLOOD PICTURE.

PROFESSOR VICTOR SCHILLING'S *Das Blutbild und seine Klinische Verwertung*,[5] first published in 1912, is presumably a textbook well known to German haematologists. The present, so-styled, seventh-eighth edition is an American version of this work. Apparently the author's chief object is to advocate the use of Schilling's "haemogram" in preference to the more elaborated nuclear classification of Arneth. While we accept the more practical convenience of the "haemogram," we consider the claims to diagnostic importance of both these schemes are exaggerated. The introduction of yet another haematological method, for which Professor Schilling has devised the ingenious name "guttadiaphot," is perhaps premature; the author admits that "before we can establish the usefulness of the method and draw proper conclusions from it by scientific biologic study many tests must be made." Professor Schilling is unfortunate in his translator. We do not share the optimistic feeling he expresses in his preface that "when the great group of American laboratory investigators and clinicians have had time and opportunity to learn these methods they will find here a great help in everyday practice." A guide-book so ill arranged and so badly expressed can surely only add to their burden. We read on page 63, dealing with the sedimentation test of blood corpuscles: "Guided by Hoeber's work . . . it was thought possible to recognize the accumulation of albuminous decomposition products in plasma as the cause of the 'suspension instability' (Fahraeus). The 'globulin fraction' of the serum (fibrinogen + globulin) increases as compared to the serum albumin. In this way, according to Hoeber's theory, the negative charge of the erythrocytes is neutralized by increasing through *absorption* at their surface of dispersed, positive albuminous particles." What will clinicians make of this? Again, dealing with the same subject, on page 65: "*Physiologic acceleration* to a slight degree is found in children and women as compared to men, during menstrual periods, and sometimes in asthenics permanently."

PRACTICAL THERAPEUTICS.

Modern Methods of Treatment,[6] by Professor L. CLENDENING of the University of Kansas, is a book that has evidently supplied a popular need, for a third edition has appeared within a year of the second. There are no changes of importance, but paragraphs have been added describing certain new drugs such as synthalin, and the articles on quinidine, liver extract in anaemia, and the use of iodine in goitre have been revised. The principal virtue of the volume is that it covers every department of medical therapeutics, and drug treatment is described in relation to other forms of therapy. The only disadvantage of treating a wide field of knowledge in a single volume is that it is difficult for the author to avoid inaccuracies in those subjects with which he is least acquainted. The book would have been improved by a more careful revision from the biochemical aspect. For example, Kendall's formula for thyroxine is given, although Harington's formula is now generally accepted. Similarly, nothing is said about the international unit for measuring the dose of pituitary extract. These are, however, minor points, and the outstanding features of the book are that it is eminently readable, and it gives a clear and detailed account of how a patient can be treated. The author says: "My aim has been to describe each method of procedure so clearly and minutely that a person who has never seen it performed could do it from the description." The author has undoubtedly accomplished his aim, and the book is one which deserves its evident success.

[5] *The Blood Picture and its Clinical Significance.* By Professor Dr. Victor Schilling. Translated and edited by R. B. H. Gradwohl, M.D. Seventh and eighth revised edition. London: H. Kimpton. 1929. (6½ × 10, pp. 478; 44 figures, 4 plates. 42s. net.)

[6] *Modern Methods of Treatment.* By Logan Clendening, M.D. Third edition. London: H. Kimpton. 1929. (Sup. roy. 8vo, pp. 813; 95 figures. 45s. net.)

AN OBSERVER IN AMERICA.

AMONG several unusually interesting and informative books which have recently been written about the United States of America, one by Professor RICHARD J. A. BERRY, entitled *Through the States with a Seeing Eye*,[7] certainly is worthy of a place. The adjective which best describes it is, perhaps, "vivid." Professor Berry could never be commonplace: he is always keen, observant, and shrewd in his judgements. These qualities are as evident in these talks as in his other writings. Indeed, the chapters of his book are a series of "talks" which he was asked to broadcast from Melbourne. They are now "proffered in book form, exactly as delivered over the air," and they have been described by Sir James Elder, formerly Australian Trade Commissioner in New York, as "correct, informative, bright, breezy, and humorous." The tour which they in some sort narrate, and out of which the observations they contain have arisen, was undertaken for professional purposes and under the auspices of the Rockefeller Foundation of New York. The places described are New York itself, Boston, Baltimore, Washington, Nashville, St. Louis, Chicago, Detroit, and Ann Arbor; and among the general subjects dealt with are American railroads, American hotels, the American dialect, prohibition, the negro question, and the Ku-Klux-Klan. It would be easy to pick for quotation paragraphs on each of these subjects, and in respect of each of these towns, which would illustrate attractively the qualities of Professor Berry's work as characterized above; but the book—not a long one—should be read as a whole. It is only thus that its humour, its wisdom, and its essential fairness can be fully or properly appreciated. If the last chapter, "And what shall the verdict be?" does not result in an altogether flattering conclusion it is a kindly one, recognizing the "strength and weakness, the achievements and manifold follies, the genius, and the obsessions of these myriads of peoples of the United States of America." The volume is illustrated by many interesting original photographs. It can be commended as giving, of its kind and compass, one of the best and most living pictures of "the life, manners, customs, habits, and complexities of a great nation, great in its strength and in its human weaknesses."

NOTES ON BOOKS.

THE fourth volume of the fifth edition of Professor CARL OPPENHEIMER'S encyclopaedic work on ferments and their action[8] is devoted to the technology of ferments. The first half of the book (357 pages), which is written by DR. ALBERT HESSE, deals with the use of ferments in brewing, while the second half (370 pages), to which several authors contribute, treats of such subjects as the preparation of rennin, the tanning of leather, the preparation of medicinal ferments, and the baking of bread. The volume is intended for reference purposes, and descriptions are given of the more important patents that cover fermentation processes. Drawings and photographs are also given of apparatus for carrying through ferment processes on the commercial scale.

[7] *Through the States with a Seeing Eye.* By Richard J. A. Berry, M.D., F.R.C.S. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1930. (Cr. 8vo; pp. 200; illustrated. 5s. net.)

[8] *Die Fermente und ihre Wirkung.* Von Professor Carl Oppenheimer. Die Technologie der Fermente, Band iv, Fünfte, völlig neu bearbeitete Auflage. Leipzig: G. Thieme. 1929. (7½ × 10½, pp. xvi + 727; 107 figures. M.75.)

The necessity for normal standards is well illustrated in all radiographic work, and Dr. OSKAR KIRSCH has performed a valu[illegible]graph on the principles of the [illegible] of the heart and thorax in c[illegible] of measurements of 142 children of all ages, presenting in tables the age, height, and weight, as well as the measurements obtained, in an orthodiagram. He then analyses these results at length, and in various ways seeks to find some mathematical relationship between other measurements of the body and those of the heart. The last section of the book is concerned with this schematic representation of the size of the intrathoracic organs, and the subject is discussed fully, with a large bibliography. Twelve orthodiagrams are included to illustrate various types of children and the size of their hearts.

The second number of the proceedings of the German Society for the Study of the Circulation[10] contains discussions on a variety of subjects, and in this respect it resembles closely the first number, which was reviewed in the *British Medical Journal* of January 5th, 1929. The most attractive contributions are those on oedema, for they take the form of essays and penetrate deeply into the problem.

Dr. DIETEL'S inaugural address on enuresis[11] gives a full and well-written summary of the many varieties of causes to which this distressing complaint may be due in different cases, and adds a practical account of the various forms of treatment prescribed for it or found useful in its management. The book is an encouraging one to read, as the author holds that, in a large percentage of cases, it may be cured, particularly if its etiology can be set on a sound basis in any special instance. He gives a full account of Cathelin's method of treatment by epidural injections in the sacral region, using normal saline solution to the amount of 5 or 10 c.cm.: he himself has treated 32 cases by this method, curing 17 and leaving only 4 unimproved. The book should be read by all medical men who have cases of enuresis to deal with.

The Local Government (Scotland) Act, 1929,[12] by Mr. W. E. WHYTE, solicitor, is a handbook designed for the use of those concerned with the administration of this Act. It deals fully with the administrative and financial changes brought about by the Act, first, by a narrative outline of the provisions, and, secondly, by a reprint of the Act, with full notes and references on each section. Appendices and an ample index complete a very useful and authoritative guide to the complexities of the new measure.

[10] *Grundlagen der orthodiagraphischen Herzgrössen- und Thoraxbreitenbeurteilung im Kindesalter.* Von Dr. Oskar Kirsch. Berlin: S. Karger. 1929. (Sup. roy. 8vo, pp. 110; 12 figures. M.7.20.)

[10] *Verhandlungen der Deutschen Gesellschaft für Kreislaufforschung.* II. Tagung. Herausgegeben von Professor Dr. Bruno Kisch. Dresden und Leipzig: T. Steinkopff. 1929. (Med. 8vo, pp. xv + 177; 41 figures, 1 plate. R.M.15.)

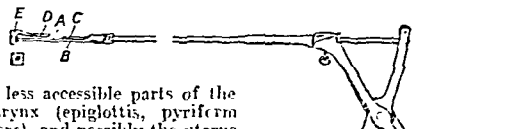
[11] *Das Bettnässen.* Von Dr. med. Friedrich Dietel. München: J. F. Lehmann. 1929. (6 × 9, pp. 85; 6 figures. M.4.50.)

[12] *The Local Government (Scotland) Act, 1929.* By W. E. Whyte, O.B.E., Solicitor. Edinburgh and Glasgow: W. Hodge and Co., Ltd. 1929. (Roy. 8vo, pp. viii + 332. 25s. net.)

PREPARATIONS AND APPLIANCES.

A RADIUM NEEDLE INTRODUCER.

DR. D. A. CROW (Hove) writes: Messrs. Allen and Hanburys Ltd. have constructed a radium needle introducer to my design, and improved on details which I suggested. Its scope is somewhat limited to the application of radium to growths in



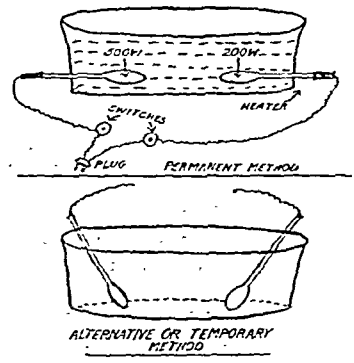
the less accessible parts of the pharynx (epiglottis, pyriform fossae), and possibly the uterus and rectum. Radium is conveniently introduced into the tongue or tonsil region by means of a more simple introducer; lower down, in the œsophagus itself, some form of intubation seems the most appropriate method. In the middle region of the lower pharynx, however, I have felt the need of an instrument which can be used through a direct laryngoscope, and the one suggested has proved slender enough for this purpose; moreover, it affords a very accurate aim.

The silk-threaded needle lies in a groove, A, in the shaft, B. It is held down by a spring, D, and propelled by a movable bar, C, through a countersunk opening in the square-ended, rough-surfaced foot-piece, E, which is held firmly on to the surface of the growth, all movements being slow and gentle to avoid damage to the silk thread.

The same firm has also made at my suggestion a chromium-plated head mirror, which has the advantage over the silvered glass mirror of being light and non-breakable.

A SIMPLE AND INEXPENSIVE ELECTRIC STERILIZER.

DR. E. M. R. FRAZER (Burton-on-Trent) writes: Electric sterilizers are expensive to buy, and I have devised one from the following simple and cheap instrument, using one fish-kettle type sterilizer, about 16 in. by 6 in. by 3½ in., and



costing about 12s. 6d. to 15s. Two electric "immersion" heaters of suitable voltage are employed, one of 500 watts loading, the other 200 watts; they cost about 4s. 9d. each. These heaters are similar in shape and size to an ordinary tablespoon. An electrician will solder a heater into each end of the sterilizer, incorporating a switch in each lead, and also a suitable plug or adapter for connexion to supply.

The vessel is filled with water and both heaters are switched *on*; the water boils in about seven minutes. The 500-watt heater is then switched off, the low-power one being sufficient *to keep the water boiling.*

The advantages are obvious—namely, the low initial cost (about 28s.); very rapid boiling; and the low consumption of current. One precaution is necessary: the heaters must be under water when in use, before the current is switched on, and the vessel must never be allowed to boil dry. Soldering is not necessary, since if it is desired to use the heaters for any other vessel they may simply be placed in the sterilizer before use. The sketches make the idea clear.

HIGH-TENSION TRANSFORMERS FOR X-RAY WORK.

We have often commented on the amount of well-condensed and useful information given in the catalogues of reputable manufacturers. This is true of the latest catalogue to reach us from Watson and Sons (Electro-Medical) Limited, of Sunic House, Parker Street, Kingsway, London. The body of the catalogue consists of an illustrated description of the various types of high-tension transformers built by this firm, but it is prefaced by an admirable account of the principle underlying such transformers and their construction and control. High-tension transformers, which convert the supply current received from the mains at a pressure of 100–250 volts to a current at a pressure of the order of 50,000 to 200,000 volts required to operate the *x*-ray tube, have contributed greatly to simplification of *x*-ray work by eliminating the vagaries and uncertainties of the induction coil. The methods of rectification, testing, and rating are set out, as well as the forms of rating prescribed in the British standard specification introduced by the British Engineering Standards Association, to which the transformers listed in this catalogue conform.

SOME PALATABLE PREPARATIONS.

We have received from Messrs. Wyleys Limited (*Coventry*) a number of recent preparations. Elixir ephedrine co. is a palatable liquid preparation containing 1/4 grain ephedrine per fluid drachm, and also contains various tinctures. Aromatic cascara is a preparation of cascara sagrada almost devoid of bitterness. Elixir bromo-valerian co. is a palatable preparation containing bromides and various tinctures. The same firm also sends samples of ruscol, an ointment containing an organic compound of bismuth and birch tar, which is recommended for a variety of skin diseases.

GLYCERIN OF THYMOL PASTILLES.

Compound glycerin of thymol pastilles (Messrs. Boots) are a new variety of antiseptic pastille. Their action is chiefly due to the presence of a powerful new antiseptic (amyl-meta-cresol), which has a Rideal-Walker coefficient of 250. Each pastille contains the equivalent of 2½ grains of pure phenol. In spite of this powerful antiseptic content the pastilles have a pleasant flavour and are agreeable to use.

DEVELOPMENTAL HISTORY OF THE PRIMATES.

PROFESSOR J. P. HILL'S CROONIAN LECTURE.

THE following is an abstract of the Croonian Lecture for 1929, on the developmental history of the primates, delivered before the Royal Society by Professor J. P. Hill, F.R.S.

Starting with the relatively simple developmental conditions met with in the Lemuroidea, Professor Hill considered the question of how the much more specialized and modified developmental relations found in the higher primates might be supposed to have arisen as the result of adaptive specialization, involving more especially acceleration and abbreviation in the developmental processes. A broad survey of the early development and placentation in representatives of the chief divisions of the order had led to the recognition of four main stages in its evolutionary history—lemuroid, tarsioid, pithecoid, and anthropoid.

The existing lemurs, said Professor Hill, were regarded, from the developmental point of view, as remnants of that basal lemurine stock from which the higher primates took their origin. In their development they exhibited a combination of primitive features with others which were certainly advanced, and which foreshadowed conditions characteristic of the higher types. Primitive features were evinced in the constitution of the blastocyst and its central type of development, in the disappearance of the covering trophoblast and consequent exposure of the embryonal ectoderm, in the origin and mode of spreading of the mesoderm, in the formation of amnion by folds, and in the development of the allantois as a free vesicle. Among the advanced features might be included the relatively early establishment of a complete chorion and its direct and complete vascularization by the ingrowth into it of the allantoic vessels and the reduction of the yolk-sac and its vessels. Their placentation was regarded as genuinely primitive, and the lecturer considered the manner in which the more specialized haemochorial type of the higher primates might have been substituted for it.

In the tarsioid stage, as exemplified by the existing tarsius, was to be observed the retention of certain lowly features characteristic of the lemuroids—for example, the exposure of the embryonal ectoderm and the development of the amnion by fold formation. At this stage certain developmental tendencies could be discerned which were already foreshadowed in the lemuroids—namely, the still more precocious differentiation of the extra-embryonal mesoderm, coelom, and chorion, and the replacement of the vesicular allantois by the almost solid connecting stalk, all of them features in which tarsius anticipates the pithecoids. Also present were certain definite advances on the lemuroid, in particular the acquisition by an early blastocyst of a direct attachment to the uterine lining and the resulting formation of a massive discoidal placenta of the deciduate haemochorial type.

In discussing the development of the placenta Professor Hill showed that the trophoblast was unique, both in its histological characters and in its behaviour, and on these grounds concluded that the tarsius placenta was too specialized to have been the actual forerunner of that of the pithecoids, but would seem to have developed along lines of its own, as a parallel formation. Acceptance of this conclusion in regard to the placenta in no way lessened the significance of the tarsioid phase as the more important transitional stage in the evolution of the developmental processes of the primates. It was only necessary to suppose that the pithecoids took origin from another branch of the tarsioid stock in which the attempt at the formation of a haemochorial placenta proceeded along lines comparable with those which were found in the existing pithecoids.

Passing to a consideration of the pithecoid stage, the lecturer said that the justification for the recognition of this stage rested on the occurrence in the platyrrhine and catarrhine monkeys of certain striking resemblances in their early development, all of the nature of definite developmental advances on the tarsioid condition. In this stage the amnion no longer developed by fold formation, since its cavity, the primitive amniotic cavity, arose as a closed space in the ectodermal cell mass of the very early blastocyst. The primary attachment of the blastocyst to the uterine wall was always effected by the trophoblast over the embryonal pole. A second attachment was also usually formed at the anti-embryonal pole, in which case the placenta was bidiscoidal. The extra-embryonal mesoderm and coelom and the mesodermal primordium of the connecting stalk were formed even more precociously than in the tarsioid. The extra-embryonal mesoderm (the so-called primary mesoderm of the early human blastocyst), though homologous with that of the tarsioid, was no longer of direct primitive streak origin, but appeared to arise, as in hapale, as a proliferation from the hinder margin of the shield ectoderm and the adjoining amniotic ectoderm. The trophoblast always became clearly distinguishable into cellular and syncytial layers. The syncytiotrophoblast exhibited erosive and destructive properties, and had the capacity of proliferating and of penetrating more or less deeply into the maternal decidual tissue in the form of an irregular network. The existence of certain well-marked differences in the behaviour of the trophoblast and in the structure of the placenta in the two groups of monkeys, and the very striking similarities in the development of the placenta in the catarrhines and the anthropoids, suggested that the platyrrhines separated very early from the parent stem to pursue a path of their own, while the catarrhines furnished the stock from which the anthropoids originated.

In the anthropoid stage were grouped together anthropoid apes and man, and in this stage was to be seen the culmination of developmental adaptation so far as the primates were concerned. Though there was no knowledge about the earlier stage in the development of the anthropoid apes, enough was known—thanks to the labours of Selenka and Strahl—of their later stages and placentation to justify the belief that their development conformed in all essentials to the human type, so that for the details of early anthropoid ontogeny the work of the human embryologist must be relied on.

The outstanding feature of the early human blastocyst was its extraordinary precocity, as exemplified, for example, in the relations it very early acquired to the uterine lining, and in the remarkably early differentiation of its trophoblast and its extra-embryonal mesoderm. It was no longer content to undergo its development in the uterine lumen, as did the blastocysts of the lower primates, but, while still quite minute, it burrowed its way through the uterine epithelium and implanted itself in the very vascular subepithelial desidual tissue of the uterus. Therein it formed for itself a decidual cavity and underwent its subsequent development, completely embedded in the maternal tissue. In this way the primate germ reached the acme of its endeavour to maintain itself in the uterus and to obtain an adequate supply of nutriment at the earliest possible moment. It was a significant fact that just as the pithecoid blastocyst always attached itself by the embryonal pole, so here that pole was the first to enter, and the embryo lay on the deep side of the blastocyst in immediate proximity to the site of formation of the definitive placenta.

Certain features, distinctive of the anthropoids, were to be regarded as the direct outcome of this process of interstitial implantation, and consequently as purely secondary specializations. These included differentiation of a decidua capsularis from the decidual tissue covering the blastocyst; formation round the very early blastocyst of a complete enveloping network of syncytio-trophoblast, possessing in even more marked degree than that of the pithecoids destructive and penetrative properties; and development from the chorion of the older blastocyst of a more or less uniform covering of chorionic villi. In the blastocyst itself formation of the extra-embryonal mesoderm apparently took place at such an early period that it was able to fill the minute cavity of the blastocyst completely as a delicate cellular tissue in which only later the coelomic cavity appeared.

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LOCALIZATION OF FUNCTION IN THE NERVOUS SYSTEM.

"PROGRESS of knowledge in regard to the nervous system has been indissolubly linked with the determination of localization of function in it." The truth of this statement by Sir Charles Sherrington might be illustrated from any epoch of the last three centuries of neurological history. But it is noteworthy that there have never been lacking critics of each advance in the theory of the localization of function. It is not surprising that the student, and sometimes even the adept, should find this conflict of opinions confusing. The localizationist can point to certain facts the explanation of which may justly be counted among his triumphs. The Jacksonian convulsion, the hemiplegia resulting from a lesion of the internal capsule, the hemianopia due to destruction of the optic radiation, seem incontrovertible evidence of localization of function. In face of these facts, in what sense must the doctrine of localization be considered inadequate or inaccurate? Dr. James Collier takes this question as the subject of his Savill Memorial Oration, which we publish in this issue (p. 55). Dr. Collier is, we think, right in considering that the information available to the student on this subject is out of date, and his review is therefore opportune. It is to be welcomed as focusing attention on an inquiry which goes to the root of our conceptions of neuro-physiology. This, however, is necessarily a complex question. In one way or another, the problem of the relation between form and function has been at the bottom of most philosophical disputes. The human nervous system is the most complex of living forms; its correspondingly complex functions are as yet only dimly apprehended. It is no wonder, then, that the correlation between these two partially understood complexities should be difficult and incomplete. Nevertheless, a good deal can be done to clear the ground and show how the problem must be approached if it is to be solved.

It is noteworthy that anatomists have played a large part in establishing the localization of neural function, notable examples being Willis, Magendie, and Bell. On the other hand, current criticism of the adequacy of localization theory comes primarily from physiologists, such as Sir Charles Sherrington, Professor Pavlov, and Professor Graham Brown. These facts afford a clue to the source of the apparent conflict. There are two opposite methods of approach to the nervous system, which, for convenience, may be distinguished as the anatomical and the physiological. We employ the anatomical approach when we inquire, "What is the function of the cerebellum, or of the precentral convolution?" We approach the nervous system physiologically when we ask, "What processes underlie movement, co-ordination, sleep, or speech?" Throughout the history of medicine anatomical knowledge has preceded and laid the foundations of physiological knowledge, but physiology requires methods of thought which are alien to anatomy, and for which anatomical education is not the best training. It is clear that the anatomical approach is based on an assumption which is not in fact justified: namely, that morphological distinctions and functional distinctions coincide—that the cerebellum, for example, being a morphological unit, must be a functional unit too, and therefore possesses a discoverable "function," the "function of the cerebellum." Intensive research into the effects of lesions of the cerebellum has greatly added to our knowledge of the symptoms produced by cerebellar destruction, but all attempts to conceive of "the functions of the cerebellum" are vague and unsatisfactory. Lesions of the cerebellum produce widespread disturbances of motility, which is a function of the nervous system as a whole, but the search for "the functions of the cerebellum" is a misapplication of anatomical concepts to the subject-matter of physiology. Still greater confusion arises when the same violence is done to the "higher" functions of speech and thought, as Sir Henry Head has shown. An analogy may be of assistance here. If a pianist suffers amputation of his hands he ceases to be able to play the piano. In what sense is his capacity for piano-playing localized in his hands? His hands are an essential part of the pianist as a piano-playing organism, but it is surely clear that the concept of localization is entirely inapplicable. A neurological parallel would be the state, in respect of motility, of a patient with hemiplegia. His pyramidal tract is a path essential to the function of movement, but motility is not in any sense to be localized there. Just as there are persons in possession of both hands who are unable to play the piano, so there are patients, without muscular weakness, who, having apraxia, are unable to carry out a movement when requested to do so. Even in playing the piano the player possesses considerable latitude as to which finger he shall use to play a given note, and modern researches appear to show that a similar latitude exists in the motor cortex in respect of the movements elicitable at different times from the same small area.

As Dr. Collier concludes, "it is difficult to give up the belief that those regions of the cortex which immediately border upon the junctions of the cortex with the sensory path, the visual path, the auditory path, and the pyramidal path, are more especially connected with the functions these paths subserve." It is indeed unlikely that this belief will ever have to be abandoned. But all these paths are concerned in the most elementary of neural functions, simple conduction of impulses. At this lowly functional level form and function most closely coincide, and there is least discrepancy between anatomical and physiological conceptions. It appears probable that anatomy is reaching the end of its great contributions to neurology, and that we are entering upon an era which will be characterized by the development of neuro-physiological and neuro-psychological concepts in which localization of function will play little or no part.

The interest of neurology has never been purely clinical, and its influence has always extended to psychology and philosophy. Indeed, one of the most important philosophical problems—the problem of knowledge—cannot be solved without its help. At the moment the most pressing need in metaphysics is to bridge the gulf that separates stimulus and sensation, the light wave and the colour. This is not the place to discuss this problem at length, but it is interesting to note that new attempts to solve it are being made on lines parallel to those along which neurology itself is developing. Professor Whitehead, in his recently published Gifford Lectures, "Process and Reality," proposes a solution of the problem of

DEVELOPMENTAL HISTORY OF THE PRIMATES.

PROFESSOR J. P. HILL'S CROONIAN LECTURE.

THE following is an abstract of the Croonian Lecture for 1929, *on the developmental history of the primates*, delivered before the Royal Society by Professor J. P. Hill, F.R.S.

Starting *with the relatively simple developmental conditions* met with in the Lemuroidea, Professor Hill considered the question of how the much more specialized and modified developmental relations found in the higher primates might be supposed to have arisen as the result of adaptive specialization, involving more especially acceleration and abbreviation in the developmental processes. A broad survey of the early development and placentation in representatives of the chief divisions of the order had led to the recognition of four main stages in its evolutionary history—lemuroid, tarsioid, pithecoid, and anthropoid.

The existing lemurs, said Professor Hill, were regarded, from the developmental point of view, as remnants of that basal lemurine stock from which the higher primates took their origin. In their development they exhibited a combination of primitive features with others which were certainly advanced, and which foreshadowed conditions characteristic of the higher types. Primitive features were evinced in the constitution of the blastocyst and its central type of development, in the disappearance of the covering trophoblast and consequent exposure of the embryonal ectoderm, in the origin and mode of spreading of the mesoderm, in the formation of amnion by folds, and in the development of the allantois as a free vesicle. Among the advanced features might be included the relatively early establishment of a complete chorion and its direct and complete vascularization by the ingrowth into it of the allantoic vessels and the reduction of the yolk-sac and its vessels. Their *placentation was regarded as genuinely primitive, and the* lecturer considered the manner in which the more specialized haemochorial type of the higher primates might have been substituted for it.

In the tarsioid stage, as exemplified by the existing tarsius, was to be observed the retention of certain lowly features characteristic of the lemuroids—for example, the exposure of the embryonal ectoderm and the development of the amnion by fold formation. At this stage certain developmental tendencies could be discerned which were already foreshadowed in the lemuroids—namely, the still more precocious differentiation of the extra-embryonal mesoderm, coelom, and chorion, and the replacement of the vesicular allantois by the almost solid connecting stalk, all of them features in which tarsius anticipates the pithecoids. Also present were certain definite advances on the lemuroid, in particular the acquisition by an early blastocyst of a direct attachment to the uterine lining *and the resulting formation of a massive discoidal* placenta of the deciduate haemochorial type.

In discussing the development of the placenta Professor Hill showed that the trophoblast was unique, both in its histological characters and in its behaviour, and on these grounds concluded that the tarsius placenta was too specialized to have been the actual forerunner of that of the pithecoids, but would seem to have developed along lines of its own, as a parallel formation. Acceptance of this conclusion in regard to the placenta in no way lessened the significance of the tarsioid phase as the more important transitional stage in the evolution of the developmental processes of the primates. It was only necessary to suppose that the pithecoids took origin from another branch of the tarsioid stock in which the attempt at the formation of a haemochorial placenta proceeded along lines comparable with those which were found in the existing pithecoids.

Passing to a consideration of the pithecoid stage, the lecturer said that the justification for the recognition of this stage rested on the occurrence in the platyrrhine and catarrhine monkeys of certain striking resemblances in their early development, all of the nature of definite developmental advances on the tarsioid condition. In this stage the amnion no longer developed by fold formation, since its cavity, the primitive amniotic cavity, arose as a closed space *in the ectodermal cell* mass of the very early blastocyst. The primary attachment of the blastocyst to the uterine wall was always effected by the trophoblast over the embryonal pole. A second attachment was also usually formed at the anti-embryonal pole, in which case the placenta was bidiscoidal. The extra-embryonal mesoderm and coelom and the mesodermal primordium of the connecting stalk were formed even more precociously than in the tarsioid. The extra-embryonal *mesoderm* (the so-called primary mesoderm of the early human blastocyst), though homologous with that of the tarsioid, was no longer of direct primitive streak origin but appeared to arise, as in hapale, as a proliferation from the hinder margin of the shield ectoderm and the adjoining amniotic ectoderm. The trophoblast always became clearly distinguishable into cellular and syncytial layers. The syncytial *trophoblast exhibited* erosive and destructive properties, and had the capacity of proliferating and of penetrating more or less deeply into the maternal decidual tissue in the form of an irregular network. The existence of certain well-marked differences in the behaviour of the trophoblast and in the structure of the placenta in the two groups of monkeys, and the very striking similarities in the development of the placenta in the catarrhines and the anthropoids, suggested that the platyrrhines separated very early from the parent stem to pursue a path of their own, while the catarrhines furnished the stock from which the anthropoids originated.

In the anthropoid stage were grouped together anthropoid apes and man, and in this stage was to be seen the culmination of developmental adaptation so far as the primates were concerned. Though there was no knowledge about the earlier stages in the development of the anthropoid apes, enough was known—thanks to the labours of Selenka and Strahl—of their later *stages and placentation to justify the belief that their development* conformed in all essentials to the human type, so that for the details of early anthropoid ontogeny the work of the human embryologist must be relied on.

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knowledge which entails a revision of current conceptions of localization both in the world of space and in the nervous system. Perhaps the neurologist of the future will look back upon the neurology of to-day as the relativitist regards Euclidean geometry. Even then, however, the student will still have to learn the course of the pyramidal tract.

CANINE DISTEMPER.

ABOUT seven years ago, as our readers will remember, a fund was inaugurated by the *Field* for the purpose of investigating the cause of distemper in dogs, and of finding, if possible, a practicable preventive. The work was undertaken at Mill Hill by the Medical Research Council because, although the disease is not transmissible to man, distemper is an acute infectious fever comparable to human influenza, and it was hoped that a study of the canine condition would lead to a better understanding of the human disease. The work took some time to get under way, as it was necessary to breed dogs in a carefully isolated area where they would be entirely free from outside contamination. Fortunately, however, it was discovered that the ferret was susceptible to the disease, and this animal has proved to be an invaluable laboratory aid throughout the investigations, and has considerably accelerated progress.

Dr. Laidlaw and Mr. Dunkin have been able to prove that the infectious agent is a filterable virus, thus confirming the claim made by Carré in 1905 and generally accepted by most responsible workers in this country—although received much less favourably abroad. They found that the virus could be transmitted by the blood and tissues of distemper cases through an indefinite series of animals, though the infective material appeared to be sterile in all known culture media. No bacteria were found, and it is now accepted that the various organisms previously associated with the disease are really secondary invaders. There is no reason, of course, why some or all of these should not cause disease by themselves, but such disease is not distemper. This term has been very loosely used in the past, and it is now known that several different infections were grouped under a common name. True distemper is due to a filterable virus, and, so far as is known, only one strain of this virus exists. It has also been found that this virus can be very easily killed or inactivated, and that, provided this treatment is not too drastic, the inactivated virus forms an efficient vaccine. Such a vaccine is now being prepared commercially, both in this country and in the United States, by the treatment of virus with formol; unfortunately, however, until a method is found of preparing the virus *in vitro*, recourse must be had to the crude virus in the lymph glands, spleen, and liver of infected animals. It has been found possible, with a single injection of this vaccine, to produce a resistant state in over 90 per cent. of ferrets and dogs. This resistant state is converted into a solid immunity by the subsequent administration of living virus. In the majority of cases this immunity proves to be complete, though in some cases there has been a short reaction. In under 1 per cent. death resulted; in a number of cases this was undoubtedly due to the fact that the dog, when vaccinated, was actually infected with the natural virus and in the incubative stages of the disease.

So far the work has been concerned with preventive measures, but now the workers are directing their attention to curative treatment. A vaccine is obviously of little use in an acute infectious fever, and so work has been concentrated on the production of a serum. A hyper-immune serum has already been produced at Mill Hill which, in a 10 c.cm. dose, produces an immediate passive immunity in a susceptible dog; dogs given a dose of virus simultaneously—but on opposite sides of the body—frequently proved to be immune to subsequent injections of virus alone. Work has not yet progressed to a stage where the exact dose can be stated, or the time required for the production of immunity be estimated accurately, and attention is at present being directed mainly towards the discovery of some means for the evaluation and standardization of different serums. The serum does, however, prevent an attack if given in the incubative period of the disease; and it can cut short an attack and prevent the development of the secondary febrile stage if given at the beginning of the primary stage. The serum would seem, therefore, to have obvious practical applications, but given alone the passive immunity only lasts for nine days and confers no permanent protection on the animal, although it may tide it over a dangerous period.

Considerable progress has thus been made with the investigations on the distemper virus. The results show, however, that it is merely a special case of protection by means of dead or inactivated virus. Very similar results have been obtained with other virus diseases, such as rabies, cattle plague, fowl plague, and foot-and-mouth disease, the latter being complicated by the fact that at least three strains of virus exist with no cross-immunity. The application of the results obtained in these animal diseases to analogous diseases in man has so far proved disappointing, and it is only where the human disease is found naturally in animals, as in rabies, or is experimentally transmissible to them, as in yellow fever, that progress has been possible. Until a method is found of obtaining large quantities of virus *in vitro*, it seems unlikely that we shall be able to employ an effective vaccine against such purely human diseases as influenza. It is not safe to be dogmatic about this, as it is only in very recent years that Indian monkeys have been found to be susceptible to yellow fever, and Chinese hamsters to kala-azar. Even though an experimental or natural host is found for influenza, it would obviously be much more satisfactory to discover some method of raising artificial cultures, and it is along these lines that future work must expect to obtain its most effective results.

DIFFICULT CHILDREN.

THOUGH now receiving prominent attention the problem of the difficult maladjusted child is of course as old as human nature. As Dr. G. A. Auden[1] has lately recalled, it was familiar to Plato and was forcibly brought before Jerome Cardan of Milan, famous mathematician, physician, and voluminous author in the sixteenth century, by the crimes of his two sons, in spite of the assurance of the horoscope cast by himself that "the nativities of my sons promise me much good and little harm." Within comparatively recent years several circumstances have combined to bring this important problem into the open field of practical consideration and action. Perhaps the most obvious of these is the influence of the war and its attendant effects, including the appearance of what was a newly recognized disease, epidemic or lethargic encephalitis; but there are others, such as the rise of eugenics, the increased activity in educational matters, and perhaps a more general appreciation of the altered relations between parents and children, the handicap of

[1] Auden, G. A.: *Journ. Roy. Sanit. Instit.*, 1929, l, 157; *Journ. Ment. Sci.*, 1929, lxxv, 220.

the only child, and the tragedy of the unwanted child. The need for investigation of maladjusted children and for their efficient treatment has now been recognized and acted upon. In London there are clinics for them at Guy's and University College Hospitals in connexion with the out-patient departments; at the Maudsley Hospital a children's clinic is held twice a week, and the Tavistock Clinic sees an increasing number of child patients. The Jewish Health Organization has for five years had a clinic at Spitalfields; the clinic at Clarendon Road, at the opposite end of the metropolis, has just issued its first annual report, and the Child Guidance Council, aided by a generous grant from the Commonwealth Fund in New York, has recently opened a fine clinic in Canonbury Place, Islington. There are also clinics at work in Bath, Brighton, Edinburgh, Glasgow, Portsmouth, Stoke-on-Trent, and elsewhere. The problem is complex, and therefore demands for its successful solution team work on broad lines, so that the educational, psychological, psychiatric, medical, and other aspects, such as the home environment reported on by a social worker, should all be surveyed and accurately correlated in their due proportion. The staff of the clinics should therefore be composed of workers skilled in these various lines and anxious to join in conferences rather than to pursue an individual course. This may appear too obvious a truism, but at the recent discussion, opened by Dr. Bernard Hart, at the Psychiatric Section of the Royal Society of Medicine on December 10th, 1929,[1] it was pointed out by Dr. H. C. Cameron that the scheme of these clinics was incomplete without a paediatrician, because the basis of the psychiatric condition of the child might be metabolic. This consideration has a direct bearing on a reasonable contention put forward by Dr. R. D. Gillespie in a letter printed lately in our columns.[2] Dr. Gillespie argues that these special clinics should be associated with general hospitals, where expert advice and investigation into the medical and metabolic factors can be readily obtained. Often, no doubt, two or more factors are responsible, and to neglect one might easily lead to failure. One advantage of an intimate association between these special clinics and teaching hospitals is that further opportunity would thus be available for the students (who seem to be more generally interested in the psychological aspects of medicine than were their forebears) of gaining practical experience in the methods of investigating and treating difficult, nervous, and maladjusted children. As already mentioned, co-ordinated or team work is especially necessary in connexion with this subject. The earlier in his clinical years that the student gets a taste for the psychological aspects of medical practice the better will he be equipped for his life's work; and his active interest will make him disinclined to throw the whole burden of investigation on the educationist and the lay psychologist.

RECURRENT DISLOCATION OF THE SHOULDER.

THE November, 1929, number of the *Revue d'Orthopédie et de Chirurgie de l'Appareil Moteur*, which has just reached us, contains a report of the discussion on recurrent dislocation of the shoulder-joint, which was opened by Dr. Tavernier of Lyons in Paris on October 11th, 1929, M. Albert Mouchet being in the chair. We published an abstract of Dr. Tavernier's paper in our issue of October 19th, 1929.[3] Comprehensive and interesting as that paper was, the discussion was hardly worthy of it, for only two speakers on it are reported. Perhaps the very completeness with which Dr. Tavernier treated his subject may have rendered discussion unnecessary in the opinion of most of his hearers. Dr. Mauclaire of Paris said that he had explored the joint and observed the explorations of other surgeons in these cases. His conclusions as to their morbid anatomy were that, although the capsule was often distended, as often it was normal in volume. He had never seen the posterior groove described by some. He had often found detachment of the perio-teum in front and chipping (*echancrure*) of the anterior border of the glenoid cavity, and also often mallet- or hatchet-shaped deformity of the humeral head. This implied a displacement of the axis of the shaft in the sense that the centre of the head no longer corresponded with the centre of the glenoid cavity. It was eccentric. The lesions present were very various, according to the case, and the pathogeny therefore not uniform. Hence different operative techniques were indicated in different cases. Dr. Mauclaire had done capsulorrhaphy in his earlier cases, and had seen relapses follow in epileptics. He found the myoplastic operation of Clairmont-Ehrlich difficult on account of the shortness of the musculo-tendinous transplant. He had a good result from osteo-periosteal bone grafts inserted in front of and below the glenoid cavity. The patient on whom this operation was done in 1923 had had no recurrence, despite an active life involving the carrying of heavy loads. Dr. Mauclaire suggested that the combination of such an operation with Oudard's method of lengthening the coracoid process, as practised by Lenormant, was worth trying. Dr. Rocher of Bordeaux reported the case of a soldier on whom he had performed the operation of Oudard (lengthening the coracoid process). He thought that it constituted a great advance in the treatment of recurrent dislocation of the shoulder.

MILK VERSUS COD-LIVER OIL.

IN the Danish journal *Ugeskrift for Laeger* (October 3rd, 1929, p. 852), H. R. Krogsgaard describes an investigation he carried out on the relative value of milk and cod-liver oil to growing children. The subjects of the investigation, boys living under the same conditions in a school in Denmark, were divided into three groups, of which the first, containing thirty-four boys, received a daily extra ration of 9 oz. of fresh milk, the second, containing thirty-three boys, served as control, and the third, containing eighteen boys, received a daily extra ration of a tablespoonful of cod-liver oil. The experiment was started on March 1st and ended on June 4th. Once a month the boys were weighed and measured for height, and the permanence of the results was checked by measurements taken on June 30th. In the first month the milk group forged ahead rapidly, with an average gain in weight of 7 lb. 5 oz., in contrast with the control group and the cod-liver oil group, whose average gain was only 1 lb. 1½ oz. and 12 oz. respectively. But on June 4th the differences were not so marked; the milk group failed to sustain its initial spurt, and its average gain was now only 2 lb. 6 oz.; of the control group it was 3½ oz., and of the cod-liver oil group it was 7 oz. On June 30th, when the permanence of the result was tested, it was found that the differences in the three classes had been almost wiped out, the average gain of weight over the whole period for the three groups being respectively 1 lb. 1½ oz., 12 oz., and 14 oz. In respect of increased height the cod-liver oil group proved, in the long run, to be better than the milk group. During the actual period of the experiment the average increase in the milk group was 0.5 inch, and by June 30th it had reached nearly 0.6 inch. In the control group the corresponding figures were 0.3 inch and 0.7 inch, and in the cod-liver oil group they were 0.1 inch and 0.8 inch. The surprising fact was that the cod-liver oil group, which had at first lagged behind the others, eventually beat them both. Krogsgaard's expectation that the underweight children in the

[1] *British Medical Journal*, December 21st, 1929, p. 1160.
[2] *Ibid.*, December 28th, 1929, p. 1219.
[3] "Recurrent Dislocation of the Shoulder," *British Medical Journal*, October 19th, 1929, p. 732.

cod-liver oil and milk groups would show the greatest gains was not fulfilled. In the cod-liver oil group there were ten children who were 7 per cent. under-weight in relation to their height; at the end of the experiment they were 8.4 per cent. under weight. In the milk group there were also ten underweight children; their average underweight in relation to height before the experiment was 9 per cent., and at the end of the experiment this figure was reduced to 7.5 per cent. It would seem that whereas the boys in the cod-liver oil group had developed in height rather than in weight, those in the milk group had spent their extra ration in growing heavier rather than taller. In respect of absences from school because of sickness the cod-liver oil group did best, the figure arrived at by dividing the number of days of sickness by the number of children being in this group 0.57, in the control group 2.62, and in the milk group 2.10. It was only during the period of the experiment that the three classes showed these striking differences in sickness rate. Krogsgaard concludes that the addition of milk to the dietary of school children of average weight brings about only a temporary gain of weight, and none at all in underweight children. Cod-liver oil, he suggests, not only promotes gain of height, but also a reduction of the sickness rate.

SIGHT TESTING IN AMERICA.

"THE diagnosis of eye symptoms and treatment of eye-strain should, so far as possible, be done by men and women educated in medicine." With these words ends a reasoned statement on the conditions attending eye work presented by the Committee on Optics and Visual Physiology of the American Medical Association at the annual meeting of 1929.[1] The experience of a century has shown how large is the number of persons with errors of refraction that demand treatment. Presbyopia comes to all with age; *myopia is a common affection of school life;* hypermetropia may lead to poor sight and strain, and astigmatism is worse. All these may cause serious strain of the nervous system. Errors of muscle balance have equally bad effects. Aching eyes, vertigo, nausea, nervous dyspepsia, malnutrition, hyperaesthesia, mental depression, melancholia, and illusions may be due to the nerve strain of trying to avoid blurring, or double vision, produced by ocular defects, and can be prevented or removed by wearing proper lenses or prisms. These facts, and the need for determining what share ocular defects may have in producing symptoms that might arise from other causes, make accurate correction of eye troubles imperative. This work *cannot be done by men ignorant of medicine,* by those who estimate success by the profit on glasses sold, by manufacturers trying to control the market by copyrighted names for their goods. Commercialism must not dominate either the eye physician or the optician. According to the report, "there has been an energetic, persistent effort on the part of aggressive optometrists to secure and to keep up a confusion in the public mind with regard to the different classes of advertisers who claim to measure the refraction of the eye and correct it with glasses. Some seek the degree of Doctor of Optometry, Doctor of Optics, or a similar title from commercial schools chartered to confer such degrees. They like to be called 'Doctor' by their customers, whom they speak of as 'patients,' and by everyone else who will help them extend the impression that they know something about medicine applied to the eye." The committee makes caustic references to the custom, prevailing among some ophthalmologists, of using non-medical assistants, or referring their refraction work to juniors, and urges the section to promote a wider understanding of visual physiology and optics, and their practical application to the needs of eyes subjected to the requirements of vision in our civilization.

[1] *Journ. Amer. Med. Assoc.*, November 9th, 1929, p 1410.

SURGICAL INSTRUMENTS AND CURIOSITIES.

THE Council of the Royal College of Surgeons of England has added to its benefactions to the surgical public by publishing Mr. C. J. S. Thompson's account of the surgical instruments and other objects in the historical section of the Museum.[1] In 1928 a *Catalogue of the Manuscripts in the Library* was printed, but not, so far as we know, placed on sale, as is the guide now issued. No more competent historian of the collection could be found than Mr. Thompson, a worthy successor to the late Mr. Alban Doran, to whom so much of the original work of describing and cataloguing was due. One of the most attractive features of this collection is its eclectic character. Here is no rigidly specialized exhibition of surgical tools, but rather a kind of *omnium gatherum* of objects of human interest ranging from an artificial leg of the third century A.D. to a cast of the humerus of Dr. Livingstone, showing the healed fracture by which the body was identified. There is a collection of tourniquets, including, of course, Petit's, which held the field from 1713 till that of Esmarch superseded it. We learn from Mr. Thompson that the very name of "tourniquet" was due to Petit. It is rather strange that in all the pictures of battles which we have seen there is no trace of blood. In those of the death of Nelson, the *Victory's* quarterdeck, which must have been like a shambles, is represented as spotlessly clean. Yet no means of preventing haemorrhage are represented, except in one instance, a mezzotint in colours in the Macpherson collection of naval paintings and prints, which was exhibited in the Guildhall Art Gallery, London, in the autumn of 1928. This print shows Captain Trollope of the *Glatton* in 1796 insisting that the wounded Captain Strangways, who commanded the marines, should go below. A screw tourniquet of the Petit type is represented on Strangways's thigh, outside his knee-breeches; the pad of the tourniquet is placed over the front of the middle of the limb instead of over the line of the femoral artery, but there is not a drop of blood visible anywhere! Professor Geoffrey Callender, the custodian of the collection, tells us that he has seen no other representation of a tourniquet in many thousands of prints of naval actions. Sir Gilbert Blane has left it on record that when he was with Rodney at the battle off Dominica in the West Indies, having no duties below, he provided himself with dressings and two or three tourniquets and took up a position on the quarterdeck, where he thought that he might be of service to wounded officers, for he had known of a number of cases in which wounded officers or men, while being carried below, had died for the want of a tourniquet and first aid. Among the curiosities in the Historical Room are a heavy chain and stout leather belt, which were found in an old house in Stoke Newington, and are supposed to have been used to restrain a lunatic in the bad old days when chains, straw, and whips were recognized means of treating mania. Chastity belts, the hands of Thomas Beaufort, mummies, and shrunken heads from South America, are to be seen there. Readers of the *Mysteries of Udolpho* and of *Northanger Abbey* will remember the mystery of the picture frame covered with a black veil, on lifting which the too sensitive Emily incontinently indulged in one of her many fainting fits. It is not till near the end of the third volume that the reader is told that the veiled horror was a representation in wax of a partially decomposed corpse. Although Mrs. Radcliffe knew little of Italy, she seems to have been well informed in this respect, as the following entry in the guide shows: "A 'Memento Mori,' modelled in wax by Zombo or

[1] *Museum, Royal College of Surgeons of England: Guide to the Surgical Instruments and Objects in the Historical Series, with their History and Development.* By C. J. S. Thompson, M.B.E. With a foreword by the Conservator, Sir Arthur Keith, M.D., F.R.C.S., F.R.S. Issued by order of the Council. London: Taylor and Francis. 1929. (2s. 6d.)

Zambo of Naples in 1660. Models illustrating the human body in the first stages of decomposition were executed with great fidelity by several Italian sculptors. Zombo, who became famous in the XVII century, carried out his models in coloured wax." Beside such things as these the collection of instruments and appliances used by Lister and the historical series of stethoscopes may seem tame, but there are many other articles of great interest described in the guide, which we hope may have a wide circulation and make better known some of the treasures stored in the college buildings and the Hunterian Museum.

FEMALE SEXUAL HORMONES.

THE general effect of recent advances in our knowledge of the female sexual hormones has been to reveal a system of hormonic control of hitherto unsuspected complexity. The problem, moreover, is complicated by much confusion in the nomenclature. Professor Ernst Laqueur of Amsterdam has made important discoveries in this field, and therefore his views are of particular interest. In a recent Mayo Foundation Lecture[1] he has given a short summary of the properties of menformon (or ovarian hormone) as determined by his school. His main conclusions are as follows. The hormone produces four chief effects. The first effect is the appearance of oestrus in castrated animals. This reaction is used in biological standardization, and the purest preparations contain 10,000 mouse units per milligram. Such preparations are protein-free. A second effect is the inducing of growth of juvenile genitalia and of atrophic genitalia. A third effect is the stimulation of growth of the mammary gland. This, however, is only produced in certain animals; it occurs, for instance, in the guinea-pig, but not in the goat. A fourth effect, in males, is inhibition of the growth of the testes and of the development of male secondary sexual characters in juvenile animals. The hormone also increases metabolism in castrated females. Menformon is certainly not the only female sexual hormone, but it is the one whose characters are best established at the present time.

HEALTH OF PALESTINE.

THE Department of Health of Palestine, in its report for 1928, is able to record a small decline in the infant mortality rate, but confesses that, with the figure at 186.34 per 1,000 for the whole country, and 203 per 1,000 among the Moslem population, it cannot yet hope to bring the rate down to that prevailing in England and America. The relatively low figure of 95.89 for the Jewish population is attributed partly to the interest of this section of the community in maternal and infant welfare, and partly to the fact that the Jewish mothers are comparatively young and healthy. The total birth rate of 53.98 compares with 50.35 in 1927, and the Moslem birth rate has risen to 60.99, an increase which the department regards as a sign of improving health and virility among both the urban and rural populations. The number of admissions to hospitals and attendances at dispensaries continues to be high, the Jewish population being particularly fortunate in the facilities provided for them, and the fellahin as well as the effendi taking every advantage of their opportunities of obtaining medical treatment. In general, however, services on behalf of the pregnant woman, infants, and children among the Arab population are inadequate, their extension being retarded by the fact that it is impossible to obtain a sufficient number of trained women of the right stamp. The department records with satisfaction that the standard of school medical service throughout the country has been well maintained. The health of the children, both in Arab and Jewish schools, is remarkably good, while the training in hygiene and the elements of mental science, and, in the girls' schools, in infant welfare, is having a beneficial influence on the pupils and producing a reaction on their own and their families' characters.

[1] *Proceedings of the Staff Meetings of the Mayo Clinic.* Vol. iv, No. 45.

SCIENTIFIC MUSEUM AT THE WINNIPEG MEETING.

IN connexion with the ninety-eighth Annual Meeting of the British Medical Association at Winnipeg next August, a museum of scientific exhibits and pathological specimens is being organized under the chairmanship of Dr. J. C. Boileau Grant. Arrangements have been provisionally made for five groups—namely, exhibits bearing on papers and discussions in the various Sections; specimens and illustrations relating to any recent research work; instruments associated with clinical diagnosis or pathological investigations; a series of specimens of special interest; and a large exhibit of *x*-ray films. Those intending to send such films are asked to arrange that, so far as possible, they shall be reduced to 8 by 10 inches, since cabinets are being constructed for these dimensions. The organizing committee of the museum wishes it to be understood that in addition to these groups provision can be made for members to exhibit other specimens, illustrations, photographs, lantern slides, casts, or microscopical preparations bearing on any special subject. Every possible care will be taken of such specimens, and the contents of the museum will be insured. Arrangements can be made for contributors to demonstrate their exhibits. The museum will occupy a central position, adjacent to the main auditorium, in the building which houses the commercial exhibits, recreation rooms, and registration offices. Members in a position to send scientific exhibits or pathological specimens should communicate as soon as possible with the honorary secretary of the organizing committee, Dr. Daniel Nicholson, Medical College, Winnipeg, Canada.

THE THANK-OFFERING FUND.

AFTER the closing, early in December, of the Thank-offering Fund, the general council of King Edward's Hospital Fund for London, of which the Prince of Wales is president, submitted an address to the King, describing the origin, history, results, and distribution of the Thank-offering Fund, and tendering loyal congratulations to His Majesty on his recovery. The address included the financial details set out in our columns on December 21st, 1929 (p. 1166), and recalled that this Fund was only the first of many others which sprang up all over the country. The total amount of money so raised is as yet unknown, but it is believed that what was received by King Edward's Hospital Fund does not represent more than a fraction of a very large sum. The King, in reply to the address, expressed his appreciation of the manner in which the Thank-offering Fund has been administered, and of the widespread response to the various other funds throughout the country.

THE General Medical Council is undertaking a new cycle of inspection of final examinations in medicine, surgery, and midwifery, in accordance with Section 3 (2) of the Medical Act, 1886, and has appointed for this purpose the following inspectors: Medicine, Professor T. Wardrop Griffith; Surgery, Mr. Farquhar Macrae; Midwifery, Dr. John S. Fairbairn.

WE regret that in the list of New Year honours published last week we overlooked the name of Dr. Russell Facey Wilkinson, physician to H.R.H. the Princess Royal, who has been created K.C.V.O.

THE PATHOLOGY OF RAYNAUD'S DISEASE.

AN EXPERIMENTAL STUDY.

IN our issue of July 20th, 1929 (p. 111) we gave some account of the third Victor Horsley Memorial Lecture, in the course of which the lecturer, Sir Thomas Lewis, M.D., F.R.S., described some observations relating to the mechanism of Raynaud's disease which he had carried out in association with Professor William Kerr. A full account of these observations appears in a monograph entitled "Experiments relating to the peripheral mechanism involved in spasmodic arrest of the circulation in the fingers, a variety of Raynaud's disease," which was first printed in *Heart* (vol. xv, No. 1, August, 1929). The studies were undertaken from a desire to demonstrate that the methods of investigating the physiology of the cutaneous vessels described in Sir Thomas Lewis's monograph *The Blood Vessels of the Human Skin and their Responses* could be extended to specific clinical problems, and Raynaud's disease was chosen as the malady most suited for this purpose. It is generally acknowledged that underlying this malady is an obstruction of the blood flow to the digits, and the experiments were devised to determine the site of this obstruction, its nature, and the way in which it is brought about. Upon these matters there has been no unanimity of opinion, nor, indeed, has any important knowledge been added since 1862, and again in 1874, when Raynaud published his own writings on the subject. The authors suggest that the reason for this slow advance is that workers have been content to follow the purely observational methods, and they decided, therefore, in their own work to use the method of experiment. To this end they investigated the condition of the hands during actual attacks, tried to discover precisely the circumstances in which such attacks occur and subside, and then proceeded to induce attacks and to analyse the mechanism underlying them.

Onset of Attacks and Recovery.

An "attack" is defined as the occurrence of a full cyanotic tint (with or without pallor) in such parts of the hand as are accustomed to present it periodically. After careful study it became possible to determine in most patients the particular conditions under which an attack would occur, and to induce it by various means almost at will. Early in the investigation it was found that undue cooling of the hand failed to bring on an attack under experimental conditions, and that suitable temperatures lay between 10° and 22° C. There are several reasons for the failure of the lower temperatures: (*a*) The minute vessels of the skin of these patients react as do those of normal skin to excessive cold by dilating; pallor tends not to occur, therefore. (*b*) At these temperatures dissociation of oxyhaemoglobin does not occur, or occurs only slightly; this hinders or prevents cyanosis. (*c*) Excessive cold induces an after-reaction in the skin, tending to dilate the arterioles: this reaction, by establishing a flow of blood through the skin, maintains a healthy-looking colour. In all the patients recovery was brought about at a room temperature of 20° C., though the time taken for this to occur varied from a few minutes to an hour or more. In most patients it appeared abruptly, the colour of the fingers changing from violet to bright red, and their temperature rising and remaining high. These changes indicate an abrupt and wide opening of vessels previously in spasm, and a consequent flooding of the finger with fresh oxygenated blood. In some patients partial recovery occurred, some parts of the fingers turning red, but not showing a rise of skin temperature. An important characteristic of those with severer type of disease is that the temperature of their fingers corresponds closely to that of the surrounding air. In the colder months, therefore, there would be frequent periods of exposure to cold during which the circulation of the fingers stops altogether: the intervals between are periods not of normal flow, but of very slight flow. These facts serve to explain why nutrition in the fingers suffers, and why from time to time portions of the tissue come away in the form of dry gangrene. In normal subjects Sir Thomas Lewis has found that the finger reacts to over-cooling—for example, to immersion in water at 0° C. for five or ten minutes, by becoming several or even many degrees centigrade hotter than its neighbours. This reaction, which has an important protective function, is normally at its height about fifteen or twenty minutes after the end of immersion, and continues for about forty to sixty minutes. In patients with severe Raynaud's disease, however, there is no appreciable rise of finger temperature after over-cooling. The compensatory increase of blood flow, owing to a counteracting spasm of the vessels, suffices only to redden the fingers. Observations were made showing that at a surrounding temperature of 30° C. the vessels even in severe cases were capable of an expansion giving a blood flow not far short of normal.

The Vessels Involved in the Spasm.

It is generally believed that during attacks of discoloured fingers the circulation in the skin is brought to a standstill. To estimate the amount of blood flow the authors used a colour scale ranging from the red of flushed skin to the tint of full cyanosis, and matched the colour of the fingers with the colours in the scale. In attacks of cyanosis the portion of the finger affected is its distal part, the tip, the last phalanx, the last two phalanges, or the whole finger. The march is usually from the distal part to the proximal; and, if there is successful recovery, the order is reversed. Some authors hold that the veins of the affected fingers are in a state of spastic contraction. Sir Thomas Lewis and his co-worker have observed, however, that if during an attack the hand is raised above the head the cyanosed fingers become paler, darkening again when the hand is lowered; in other words, that dark-coloured blood flows into or out of the minute vessels of the fingers when the arm is depressed or elevated. This test demonstrates the existence of an open pathway from minute vessels to veins and vice versa, for blood entering from the arteries would have produced reddening and not darkening of the skin. The vessels involved in the spasm were traced by warming different parts of the hand selectively. If the palm alone was warmed the fingers recovered slowly, proving that vessels in the palm were in spasm. Confirmatory evidence was afforded by studying the effect of local cooling of the palm while keeping the fingers warm. It was found that the vessels in the fingers corresponding to the cooled part of the palm went into the spasm. The mechanism of an attack appears to be a closure, at relatively low temperatures, of relatively large vessels; this closure is believed not to be reflex in nature, there being no evidence that vasomotor impulses, when weakly aroused, confine themselves to the tips of the digits, or that, as the nerve impulses increase in force, their influence spreads in stages in a proximal direction. Moreover, vasomotor reflexes created by cold are known to be conveyed very widely and not to limit themselves to the small skin territory to which cold has been applied. The authors are thus led to the conclusion that in patients with Raynaud's disease there is an abnormality of the arteries displaying itself in hypersensitivity to relatively low temperatures, and that the effects of cold are not produced through the intervention of the nervous system.

Blanching of the Skin during Attacks.

Great stress has been laid in the past on pallor of the fingers during an attack; by matching the colours of such fingers with the standard colour scale it has been found, however, that the extent of pallor has generally been overestimated, and that an equal amount can be induced in the pale hands of some normal subjects by temporarily arresting the circulation. The theoretical importance of a blanched skin lies in the fact that simple arterial obstruction will not produce it, provided that, as is usual, the hands lie below the level of the heart, and in the fact that a strong vaso-constrictor nervous impulse can probably produce full blanching of the skin by causing contraction of the minute vessels. If, therefore, it can be shown in patients with Raynaud's disease that blanching of the fingers is due to active contraction of the minute vessels, then this phenomenon, in the absence of some other equally reasonable explanation, would constitute evidence favouring the hypothesis of vasomotor impulses. Among the large number of spontaneous and provoked attacks seen by the authors not one started with blanching of the skin; the initial phenomenon was always cyanosis. Moreover, in not a single case of the series has blanching of the skin been an essential feature of attack; the blanching that does occur is due more often than not to movement and friction, giving place to cyanosis when the hands are held at rest. There is a second type, however, which holds for much longer periods when the hands

are at rest. In this form the minute vessels are actively contracted, their tone being broken down only by continued exposure to a pressure of 40 mm. Hg. The authors believe this active blanching to be analogous to the production of Bier's spots, or to the universal blanching of the skin after death, and in one of the patients they have reproduced the phenomenon of blanched finger by arresting the circulation to the arm.

The Role of the Vasomotor Nerves.

To gather further evidence about the influence of the vasomotor nerves upon spasm of the digital arteries, the authors have studied the effects on patients on anaesthetizing the ulnar nerve. The resulting vasomotor paralysis sufficed to redden the affected skin area, but not to raise its temperature if the hand were cold. By cooling the hand it was possible to induce a spasm in the fingers supplied by the anaesthetized ulnar nerve, and though full cyanosis was not always maintained there was evidence that the arterial spasm became practically complete. The authors, on the basis of physiological experiment, believe that the vaso-constrictor nerves pass to the vessels of the limb in the mixed nerve, and not along the arterial coats. It would follow, therefore, that complete anaesthetization of the ulnar nerve blocks all vaso-constrictor paths to the fifth finger; yet the authors, having paralysed the main and probably the only vaso-constrictor supply, were still able, by means of appropriate local stimulus of cold, to produce vascular spasm. Hence the abnormal spasm of the spontaneous attack must be produced locally, and does not arise primarily out of abnormal vasomotor impulses. The results of surgical interferences with the vaso-constrictor nerve supply have, in the opinion of the authors, been insufficiently tested by exact observation to serve as evidence in favour of a vasomotor origin of the spasm. They do not, however, intend to suggest that because a vasomotor impulse does not determine the abnormal condition of spasm it contributes nothing to the tone of the vessels.

THE SOCIETY OF APOTHECARIES.

MINISTER OF HEALTH AT YEOMANRY DINNER.

THE Yeomanry Dinner of the Society of Apothecaries of London was held in the Hall of the society at Blackfriars on January 7th, when about one hundred sat down under the presidency of the Master, Lieut.-Colonel C. T. SAMMAN. The principal guest was the Minister of Health (the Right Hon. Arthur Greenwood, M.P.), and among others present were Mr. Justice Humphreys, Mr. Justice Rowlatt, Sir Humphry Rolleston, Sir E. Farquhar Buzzard, Sir Walter Fletcher, Sir Andrew Balfour, and Dr. Walter Carr, Master of the Haberdashers' Company.

The MASTER, proposing the health of "His Majesty's Ministers," said that when the medical history of the present day came to be written the development of the public health service would be reckoned as perhaps its finest achievement. No people had more reason to be grateful than the British for the excellence of their medical service, supported as it was by a sympathetic and helpful Government department. Turning to the society he represented, the Master claimed for the Apothecaries that they had always been to the fore in the art of healing; indeed, shortly after the society received its charter its members won their spurs by their devotion during the great plague of London. To-day they were by no means content to live on their traditions. As one instance of fruitful action, he mentioned that at the suggestion of the British Medical Association the society had instituted a register of bio-physical assistants, which would go far to prevent an important treatment from being exploited by charlatans.

Mr. ARTHUR GREENWOOD, in the course of a response to the toast, said that he had presided over his department for six months only; therefore he could claim no credit for what had happened during the first nine years of its existence. He was glad to be the guest of the Society of Apothecaries, because this body, with its ancient history, had modernized itself so as to play a noteworthy part in current medicine. As one of the ordinary folk, he was most grateful to all who practised any form of the healing art. Notwithstanding the great advances of medicine in recent years, there still remained a vast amount of preventable suffering and mortality. The problem of public health went beyond all political and indeed all national frontiers. It was a world problem, and not a few of the difficulties with which the medical profession was faced to-day would be overcome only by co-operation with the organized profession in other countries. In days gone by, as a teacher, he had felt himself "up against" general social conditions of a depressing kind, which he could not control, and he did not doubt that the medical practitioner and the public health officer often felt the same. Mr. Greenwood said he believed that to-day, in matters of public health, this country was leading the world. It was the British Empire which had been the inspiring force in the Health Section of the League of Nations. If only a more general and comprehensive attack on the broad problems of public health could be made, and this nation become a healthy nation, he was sure that it would lead the world in intellectual and spiritual progress.

Sir GEORGE BUCHANAN, Senior Warden, proposed the health of "The Guests," to which brief replies were made by Mr. Justice HUMPHREYS, Sir HUMPHRY ROLLESTON, and Sir ANDREW BALFOUR.

Sir Andrew Balfour said that there could be little doubt that the physician sprang from the loins of the apothecary. Not so very long ago it was the custom in certain medical schools for the students to serve an apprenticeship in the chemist's place of business, where they learnt neatness, care, and cleanliness, and also the smell, and sometimes the taste, and incidentally the cost of drugs. All this was of great value in future professional practice. There were people to-day who proclaimed that the era of drugs had passed; that this was the golden age of vaccination and immunization and ultra-violet radiation and endocrine therapy. But at any rate in that branch of medicine with which he had a close acquaintance—namely, tropical medicine—many drugs, such as quinine, emetine, tryparsamide, and opium, were of the first importance in the treatment of disease, or, rather, in the treatment of the patient, for the Society of Apothecaries had always emphasized the necessity of treating the patient, not the disease.

Scotland.

Health of the School Child.

THE school medical officer of Midlothian and Peebles education authorities refers in his annual report to several matters bearing on the health of school children in this area. He suggests that excess of clothes is apt to make a child subject to colds, while tightness of the clothing restricts the movements of the growing chest. He draws attention to the undesirability of rubber shoes, which are often worn, and make the feet tender. Too many children have hair in a verminous condition, though definite improvement in this matter is noted. The condition was, generally speaking, confined to certain families, in the members of which it appeared to persist in spite of efforts of the medical and nursing staff to secure improvement. The summoning of negligent parents before the various school management committees on account of the condition of their children resulted, in many cases, in temporary improvement. Great difficulty was often experienced in getting the parents of so-called mentally defective children who, while not being institution cases, were yet unable to benefit properly from the education provided in ordinary schools, to consent to their transference to a special school. Parents were seldom willing to recognize mental defect unless this was so obvious that the child was really an institution case. It is regarded as unfortunate that the same term should be used to include the feeble-minded and also the imbecile and idiot. It is urged that if parents were more careful of children's teeth between the ages of 2 and 5, many mouths might be maintained in a comparatively healthy condition throughout school life, because in many cases much damage by decay had been done before the child started attendance at school.

A memorandum has been issued by the Department of Health for Scotland and the Scottish Education Department, dealing with school health administration as it will be affected under the Local Government (Scotland) Act

from May 15th next. It is stated that no field of public health work is more important than that of the school health service, which is responsible for the medical supervision of over 800,000 children, or one-sixth of the whole population of Scotland. The inculcation and establishment of hygienic habits during the nine or ten years spent at school will have a profound effect upon the habits and usefulness of these children when they become adults. The broad aims of school health administration are stated to be: to secure healthy growth and development and to prevent sickness among school children; to provide systematic medical examination and supervision during school life; to keep under observation all children found to be suffering from physical or mental defect; and to provide appropriate treatment for the children of necessitous parents, and secure that other parents have their children treated when necessary. For preventive work, provision is to be made for medical supervision of nutrition, hygiene of the school, control of infectious disease, and physical education of the children. For medical examination and supervision of the children, routine medical examination by age groups is recommended; also the re-examination of children found to be suffering from defects. The special forms of medical treatment which are likely to demand attention in addition to treatment of disease in general are: treatment of nutritional disorders; treatment of deformities by orthopaedic procedures; clinics for special types of defect; treatment of defective vision; treatment of defective teeth; operative treatment, such as that for enlarged tonsils and adenoids; and the general care of physically defective children attending special schools. In the case of mentally defective children, classification and supervision are required; also the care of mentally defective children in special schools; and, finally, the determination at the age of 16 whether future care and supervision are necessary.

Glasgow Western Infirmary.

At the annual meeting of Glasgow Western Infirmary, Colonel J. A. Boxburgh, who presided, said that both the ordinary and extraordinary incomes in 1929 were much the same as in the preceding year, while the expenditure was somewhat less. During the past year the Infirmary had treated a greater number of patients than in any year since its opening in 1874. The auxiliary hospitals which were worked in connexion with the Infirmary had proved most valuable. Thus the David Elder Infirmary at Govan had treated 600 of their convalescent patients, and the Lady Hozier Convalescent Home at Lanark had also been a valuable aid. The chairman adverted also, in some detail, to the question of road accidents in relation to Glasgow hospitals. He said that the Road Traffic Bill now before Parliament, which would make insurance of third-party risks compulsory, might render possible some arrangement to reimburse hospitals for their large outlays in connexion with motor accident cases. The difficulty of the problem was at present increased by the fact that many of the cases of accident did not belong to the area of the hospital to which the victims were brought. These accidents were very serious for the smaller hospitals, but even in Glasgow they had in the last year cost the three large infirmaries over £10,000. The number of motor car accidents treated in the past year at the Western Infirmary alone had amounted to 222 indoor patients and 212 out-patients. Motor omnibus accidents had, in addition, accounted for forty-three indoor patients and fifty-four out-patients; and tramcar accidents for thirty-six indoor and seventy-one out-patients. At the same meeting it was intimated that Sir Henry and Lady Meehan had donated £5,000 for the purchase of radium for the Western Infirmary. Lord Provost Kelly afterwards addressed the nurses, to whom the medals and prizes gained during the year were then distributed by Lady Stirling Maxwell.

New Cripple Home in Edinburgh.

The Edinburgh Cripple and Invalid Children's Aid Society held its annual meeting on December 13th, 1929, when opportunity was taken to visit the new home situated at Challenger Lodge, Boswall Road, Edinburgh. Mr. G. F. Henderson, chairman of the board of managers, presided, and said that a munificent gift of £6,000 from a friend of the society had enabled them to secure the present house in place of the homes at Nellfield and Viewforth, which had been latterly regarded as inadequate. He referred to the work of the after-care committee, which had secured a teacher of arts and crafts, because one of their great problems had been to find work for those who remained cripples when they were adults. Lord Murray, in proposing the adoption of the report, said that they need not be alarmed about a deficit between income and expenditure, because he believed that subscriptions would satisfactorily increase. Mr. W. J. Stuart, honorary surgeon to the home, seconded the adoption of the report, and said that the idea of the orthopaedic hospital which was at present being erected at Fairmilehead started with this society. The scheme had met with the sympathy of the Lord Provost, and a committee which had subsequently been appointed had worked so hard under the chairmanship of Sir David Wallace that the scheme was now in process of taking visible shape. The question of after-care of cripples was a most important one, and upon it depended the whole success of what was done.

Greenock Auxiliary Hospital.

A new auxiliary hospital, designed to receive convalescent patients from Greenock Royal Infirmary, was opened at Larkfield on December 22nd, 1929, by Miss Rankin. Mr. D. S. Macpherson, chairman of directors of Greenock Royal Infirmary, presided, and said that the hospital was being opened free from debt, while seven beds in the public wards had already been endowed by gifts of £1,000 for each bed. Sir Donald MacAlister, Chancellor of Glasgow University, said that in providing for the convalescence of patients in fresh air and sunshine Greenock Royal Infirmary was giving a lead which he hoped other hospitals would follow. An important matter was that this hospital also provided for invalids who desired to be independent, though they could not afford to enter an expensive nursing home, and the need for people such as these was a very urgent one. The hospital has been built at a cost of £60,000, and consists of two public wards for convalescent patients of the Royal Infirmary, as well as a wing with rooms for twenty paying patients. The total accommodation is for forty beds.

Cremation in Edinburgh.

The first annual meeting of the members of the Edinburgh Crematorium, Limited, was held on December 27th, 1929. The secretary stated that since the crematorium had been opened on October 3rd, 1929, there had been nineteen cremations, which were now taking place at the rate of four or five per week. Eight of the nineteen cremations had been those of insured persons, and they made an appeal specially to the artisan classes, not merely on grounds of sanitation and public health, but also for the sake of economy. The cost of cremation in the case of an insured person was only £4, the total minimum charge being £4 10s., and the public were now coming to understand that they could economize in regard to funeral expenses if they adopted the system of cremation.

England and Wales.

Improvement of the Tuberculosis Service.

THE Joint Tuberculosis Council has issued a memorandum on the improvement of the tuberculosis service, in which it points out that the efficiency of this service varies widely in different districts, though backward areas are being improved by wise stimulation from headquarters; supervision should not be used so as to hamper individual initiative or to impede experimental methods. The chief factor in success is the personality and ability of tuberculosis officers and superintendents of sanatoriums, and therefore a remuneration sufficient to attract good officers is all-important. The council holds that it is better to have fewer and better paid officers with wider areas than a large number of poorly paid men and women of mediocre capacity. Rural areas with populations of 250,000 and urban areas of 350,000 can be managed by one whole-time

officer with adequate medical and clerical assistance, and would provide sufficient remuneration. The service should be graded so that those officers who had acted as assistants might become higher salaried, whole-time, consultant tuberculosis officers, or senior sanatorium superintendents. Superannuation schemes (the memorandum proceeds) should be generally adopted, and be so arranged that an officer shall not suffer by being transferred to another district. The tuberculosis officer and sanatorium superintendent should have at their disposal facilities for diagnosis, such as an x-ray outfit, and also for special forms of treatment, such as actinotherapy, and artificial pneumothorax. Each tuberculosis officer should have hospital beds. Dispensary and sanatorium officers should be clinicians first and foremost, but should have a public health outlook; facilities to attend post-graduate courses are of the highest importance. In certain circumstances, where the sanatorium belongs to the authority responsible for the district in which it is situate, it may be advantageous for the medical superintendent of a sanatorium to be responsible for the tuberculosis work in the vicinity of the institution as part of his whole-time duties. It is not intended that this should apply to sanatoriums other than those under the direct control of local authorities. The practitioner's sense of responsibility in the diagnosis, prevention, and treatment of tuberculosis must in no way be impaired, and it is the first duty of dispensary and sanatorium officers to ensure this. One of the most helpful qualifications for these officers is to have been themselves in private practice. In conclusion, the Joint Tuberculosis Council records its belief that any improvement in the tuberculosis service is closely bound up with the preliminary training of men entering this service, and with the education of medical students and general practitioners in tuberculosis.

Merseyside Hospitals Council.

On October 30th, 1928, the Liverpool Voluntary Hospitals Council, following conferences with the leaders of organized labour in the district, adopted a revised constitution in terms of which it changed its name to the Merseyside Hospitals Council, and gave direct representation to affiliated trade unions. It decided that all manual workers, irrespective of income, should be invited to take part in a contributory scheme entitling them to hospital privileges at any of the associated institutions, but that for clerical workers certain income limits should apply; later on, however, it will consider the question of incorporating salaried workers above these income limits. In the report for the year 1928 the council draws attention to the success that has already attended the scheme. The number of contributors increased from 58,200 at the end of 1927 to 153,142 at the end of 1928, and the income from £28,860 to £63,574. By November, 1929, more than 210,000 employees, in about 3,000 separate firms and establishments, were individually contributing an average of 7s. 6d. per annum to the council's fund. Including wives and children, the scheme is thus providing an opportunity for more than half a million of the Merseyside population to be independent of charity for covering the cost of their maintenance at the local hospitals. The council refers with pride to the civic sense of the Merseyside people, and pays special tribute to the employers, who not only collect contributions through their pay offices, but generously add a subscription equal to one-third of their employees' contributions, sending their money at regular intervals to the central office. As part of the scheme the council is developing a convalescent and after-care service, and an ambulance service. Twenty-five institutions in Liverpool, Birkenhead, Wallasey, and Waterloo have accepted the council's scheme, and on the nomination of the council the associated hospitals have accepted representatives of the contributors and of organized labour on their boards of management.

Epidemic Sore Throat at Brighton.

During December last a large number of persons in part of Brighton and Hove suffered from sore throats of a more serious type than usual at this season, and eventually a statement was issued on January 5th by Dr. Rutherford Cramb, deputy medical officer of health for Brighton, and Dr. A. Griffith, medical officer of health for Hove. It was explained therein that inquiries had been made into all the probable causes, including the milk supply, and one dairy in particular had been indicated as being associated with the infection. Further investigation resulted in one farm being implicated, and the supply of milk from it was accordingly stopped from December 28th. So far as could be ascertained, no fresh cases had been reported during last week, except in families already affected, and it was concluded, therefore, that residents and visitors need have no fear of further infection. No official notification has yet been issued as to the bacterial nature of the outbreak, but it is believed to have been chiefly of a streptococcal origin.

British Social Hygiene Council.

The British Social Hygiene Council has been urging upon the London County Council that propaganda work in connexion with venereal diseases may be continued under the changed financial conditions whereby grants are no longer paid directly by the Ministry. In order to continue its national services and remain in a position to supply local authorities with what they need for their local campaigns, the British Social Hygiene Council states that £10,000 a year is required, and on the basis of this figure a contribution at the rate of 5s. a thousand of population, which for London represents about £1,120, is asked. The London County Council has decided to make a grant of this amount to the central funds of this body, towards which sum the L.C.C. will receive in its block grants about £670 a year, equal to 3s. a thousand of population. Consideration of a grant to be made to the same body for local services in London has been postponed.

Ireland.

Legislation for Clean Milk Supply.

In the course of a lecture delivered recently, Professor Grimes of the Department of Dairy Bacteriology at University College, Cork, said that milk was the best single food, because it contained all the essentials of a balanced diet. The fat standard in milk was most important. The law at present was that milk containing less than 3 per cent. of milk-fat was not genuine by reason of the abstraction therefrom of fat, or the addition thereto of water. The weakness of a fixed standard was that the percentage of butter-fat varied throughout the year. He saw no reason why the defence that the milk was sold as it came from the cow should be considered valid. Many cities in the United States insisted on a standard of 3.25 per cent. butter-fat and over, and they got it. A definite standard would increase cow-testing and make the milk suppliers keep only cows whose milk contained a satisfactory percentage of butter-fat. The consumer paid for milk containing a minimum of 3 per cent. butter-fat, and where bottled milk was sold containing a higher percentage—say, 3.5 per cent.—the fact should be stated on the label; the customer should be prepared to pay a higher price for it, and it should be a punishable offence if the milk did not contain the percentage of butter-fat stated on the label. It was interesting to note that, legally, there was stricter control over milk used for manufacture into dairy products than over milk used for human consumption. That was a condition of things that could not be remedied too soon. Dirty milk, from the standpoint of public health, must be considered potentially dangerous; yet "clean" milk was by no means necessarily safe milk: if infected with disease-producing bacteria it was more likely to preserve and carry infection, since it kept fresh longer, which meant that the disease-producing bacteria had comparatively little competition, and that the usual souring, which was detrimental to the disease-producing bacteria, did not occur. Pasteurization would not make dirty milk good, but it made clean milk safe. When legislation on the subject of milk was being enacted it was to be hoped that it would have the support of the consumer; but just as the housewife recognized various grades of butter, tea, meat, etc., so she would recognize the value of graded milk, and would be willing to pay for the better article. That would give a satisfactory incentive to the producer to produce Grade A milk. To prevent the danger of food poisoning through

ice-cream it was necessary that there should be power to fix bacteriological standards with which it would have to comply, and also to ensure that it contained a certain minimum percentage of butter-fat. In conclusion, Professor Grimes suggested that the milk supply to cities should be regarded as a "public utility," just as was the water supply. There was a direct responsibility on the Government and local authorities to prevent community injury through the use of milk. While recognizing this, it was necessary that the legislation should be so framed that every encouragement was given to increase both the milk supply and its consumption. Education was needed with legislation, for the good will of the producer was necessary to give the consumer a satisfactory milk supply. Dr. Brian Crichton said that, as one who worked solely among children, the question of cleanliness to him came before that of butter-fat. Tuberculosis, diphtheria, and vomiting were produced through dirty milk, and led to the deaths of hundreds of children. The time had come when the Government should at least try to ensure that the child should be supplied with clean milk from the cow. The bulk of the milk sold in Dublin was not fit for a child to drink, and milk was the only food that a child under 12 months old could use. It was now everybody's business to see that the proposed bill was passed into law.

The Local Government Department and Medical Appointments.

At the last meeting of the Monaghan County Council it was announced that a sealed order had been received from the Department of Local Government and Public Health fixing the salary of the doctor to be appointed as county medical officer of health and schools medical officer at £800, with £200 travelling allowances. The Minister also requested the Local Appointments Commission to recommend a person for the office. The county council had fixed the salary at £700, with £100 travelling allowances. The Department has also transmitted a sealed order to Limerick County Council to the effect that the Appointments Commissioners had been instructed to fill the position of county medical officer of health at a salary of £800 a year, with £200 a year travelling expenses. It has referred the appointment of a medical officer of Macroom Cottage Hospital to the Local Appointments Commissioners. The South Cork Board of Public Assistance had already appointed Dr. Kelleher, a pensioned medical officer, to a position at £700 a year. The Department also wrote refusing to sanction the Board's action in transferring Dr. Cagney, dispensary officer, to the post of visiting physician to the County Hospital, on the grounds that it was not advisable to transfer dispensary officers to such positions. The Board decided to ask the Department to reconsider its decision.

Decrease of Tuberculosis Mortality in Ireland.

At a meeting of the National Association of Insurance Committees, held recently in Dublin, it was stated that when national insurance was introduced into Ireland they were in the sorry plight that one in every seven persons was dying of tuberculosis. After some years' work they could now pride themselves on the fact that the number had been reduced to one in eleven.

India.

Economic Considerations in Public Health.

A PERTINENT question was put by Mr. G. Bransby Williams, late chief engineer to the Bengal Public Health Department, in an address which he delivered to the Rotary Club of Calcutta last June. Is, he asked, expenditure on public health productive of wealth, or will it in the end lead to over-population and death from starvation? Some people in India, he added, seemed to hold that such dangers were likely, for the expenditure by certain Government authorities in India on sanitation, water supply, and anti-malarial measures was ridiculously small; such indifference in these matters would not, he added, be tolerated even in a remote agricultural district in England. According to Mr. Williams, the death rate in Calcutta has increased by 50 per cent. in the last twelve years, while the drainage system has been allowed to silt up and no serious attempt has been made to maintain it. In the case of Bombay, he asserts, half a city of one million inhabitants is undrained, while Howrah, a town of 200,000 inhabitants, is without any form of sanitation, has filthy streets, and its water supply is quite inadequate. He believes that millions of lives could be saved annually, the efficiency of Indian workers be remarkably increased, and the amount of the suffering caused by disease be substantially diminished if only the Indian Government would undertake a series of public works, of which the cost would be defrayed by a loan, and the annual charges for capital and maintenance be met by a levy upon the owners of the land, who would benefit by the improvement. To obtain evidence of the practical value of this proposition Mr. Bransby Williams suggests that a site in a notoriously unhealthy and impoverished district might be selected; public health and irrigation work would be undertaken, epidemic diseases be eradicated so far as possible, and the area of land under cultivation extended. If such a policy was adopted he believes that the annual value of imports per head of population of India might be increased many-fold from its present miserable twelve shillings. He maintains that there would be a far greater financial return from two hundred million pounds spent thus in India than would be the case in England; the whole condition of the land would be transformed. Girding against the "obsession" as to the poverty of India and the difficulty of raising money for public works, he insists that the difference between productive and unproductive expenditure seems to have been ignored. He gives illustrations of the effect of such conditions on health, and states that the expectation of life of the Indian child at birth is about half that of the British child. He estimates the total annual cost of preventible diseases as being about two thousand million pounds, and bases upon this his argument that expenditure on public health is really a wise economy and a sound commercial undertaking.

The Medical Department of the Great Indian Peninsula Railway.

Railways have long been recognized as pioneers of civilization, but it is forgotten sometimes that in some countries, such as India, they make a not inconsiderable contribution to the promotion of health and the prevention of disease. An illustration of this is afforded by the annual report of the medical department of the Great Indian Peninsula Railway for 1928–29. This railway system employs more than 120,000 persons, and Mr. R. J. L. Sladen, F.R.C.S., the principal medical and health officer, mentions in the report that there are in his department eleven district medical officers, two assistant medical officers, and thirty-two assistant and subassistant surgeons. In addition, there is a "health staff," which since April 1st has consisted of seven "health assistants" and about forty sanitary inspectors. There are eight district hospitals, with a total of 181 beds, and in the year under review no fewer than 3,500 operations were performed. Mr. Sladen reports that there has been a marked fall in the incidence of malaria. This is attributed to the comparative healthiness of the year, greater care taken in diagnosis and registration, and the prosecution of antimalarial measures. At the same time it is admitted that the incidence of malaria varies greatly from year to year. As regards antimalarial campaigns, the company's medical officers appear to deprecate the adoption of large engineering schemes of doubtful advantage and entailing heavy expense. They are convinced of the utility of filling in low-lying lands, improving drainage, careful and continued search for the breeding places of anopheline mosquitos, and systematic treatment with crude oil. The organization of malarial surveys is developing. During the year 88 cases of cholera were reported, with a death rate of 34.09 per cent.; evidence of the efficiency of the precautions taken is afforded by the fact that the intrusion of infected pilgrims from the Kurukshetra Fair at Muttra did not occasion an epidemic among the railway staff. Only 25 cases of plague were reported, with a case mortality of 36 per cent. Although more than 63,000,000 passengers were carried, only sixteen fatal accidents occurred; an increase in non-fatal accidents

among railway servants is attributed to greater care in reporting. Thirty-five more deaths from accident than in the previous year among "other persons" were due, apparently, to more trains run at a higher speed catching trespassers unawares. In view of the increasingly prevalent use of electricity on the railway, Mr. Sladen recommends that special training should be given in Schafer's method of artificial respiration; that suitable equipment should be maintained in all power houses and substations; and that all electrical accidents should be specially investigated by an expert. He emphasizes the fact that in practically all cases of electrical shock there is a considerable interval between the onset of apparent and the moment of real death.

European Mental Hospital, Ranchi.

Europeans and Americans suffering from mental disorder are eligible for admission to the European Mental Hospital at Ranchi in the province of Bihar and Orissa; in addition, persons born in the British dominions and colonies, or their descendants, whether purely white or of mixed blood, are admissible if they are European as regards habits. This institution can accommodate 102 male and 56 female patients. In his annual report for 1928, the medical superintendent, Lieut.-Colonel Owen Berkeley-Hill, I.M.S., comments on the advantages gained by the discontinuance during the year under review of the rigorous segregation of the patients according to sex. Certain changes in the nomenclature of the wards and cottages were made, the names of leading benefactors to psychiatry being introduced with a view to enabling the patients and staff to keep in mind the debt of gratitude due to those who have rendered the treatment of mental disorder increasingly more hopeful. There has been a marked improvement in the number of voluntary patients admitted—one sign of the growing popularity of this hospital; rather more than half these patients come from Bengal, and one-quarter from the United Provinces. There was a marked decrease during 1928 in the daily average of the sick treated in the dispensary as compared with the previous year. Systematic attention is paid to the correction of bad habits, and a scheme has been devised for several members of the staff to co-operate in helping each patient in this respect. The hospital cinema is also described as having a therapeutic value. The staff of the institution are encouraged to compete from time to time in "research essays" on topics suggested by the medical superintendent and necessitating recourse to the valuable scientific library possessed by the hospital. Special steps are taken as regards the after-care of discharged patients, a follow-up-letter system being employed, while in Calcutta, the Bengal Presidency Council of Women, and Toc H. have continued to pay periodical visits and report on the home conditions of these patients.

Correspondence.

GASTRIC AND DUODENAL ULCERS.

SIR,—When preparing the report on "pyloric ulcers" I expected that the question asked by Lord Moynihan (January 4th, p. 40) as to what exactly is meant by pyloric ulcers would be raised soon after the publication of this report. I must leave the surgeons to settle this question, but as a collator I consider that I was bound to take verbatim the answers given by the various surgeons to Question 7 as to the position of the ulcers. As the ulcers questioned by Lord Moynihan were described as "pyloric ulcers" or "at the pylorus," I was compelled to report on them as such, although I should have much preferred the two groupings of duodenal and gastric ulcers.

As a golfer, though I regretfully own to a very poor handicap, I appreciate the reference in your leading article on December 7th last to the establishment of a "bogey for the upper abdominal course." I do not know what Lord Moynihan's golfing handicap actually is, but if your golfing simile is to be applied to the surgeon's art, then Lord Moynihan's position would be at least the equivalent of that of Bobby Jones.—I am, etc.,

Limpsfield, Jan. 4th. ARTHUR P. LUFF.

A NATIONAL MATERNITY SERVICE.

SIR,—In the very kind review[1] of my recent book on the *Causes and Prevention of Maternal Mortality*, your reviewer points out that the ideal service I suggest is very similar to that presented in the recent Memorandum of the British Medical Association. I am naturally very gratified to think that my views have received such valuable confirmation. There is, however, one respect in which my "ideal service" differs materially from the scheme presented in the Memorandum, and that is in relation to ante-natal care and diagnosis.

It seems to me that "the efficient ante-natal care" which the British Medical Association scheme provides is somewhat too haphazard and not wholly sufficient. I think that the more the care of the normal woman in labour is entrusted to midwives, the greater is the necessity for ante-natal care and diagnosis. Further, while I regard medical assistance during normal labour as non-essential, and as possibly prejudicial to the patient's interests, I regard medical care and diagnosis during pregnancy as the great safeguard of her present and future well-being. This being so, I think that a satisfactory scheme should recognize the following: (1) The primary and absolute *responsibility* of a medical practitioner for ante-natal care and diagnosis. (2) The possible delegation of such care in minor matters to the selected midwife, at the option of the practitioner concerned. (3) The necessity for more frequent medical visits, and for close supervision by the practitioner or by the midwife, especially during the later months of pregnancy.

Whether such alterations in the present scheme are possible is another matter. Here I only draw attention to the fact that they are points which, in my book, I have regarded as essential, and which I think should form a part of any ideal service.—I am, etc.,

Christchurch, N.Z., Dec. 2nd, 1929. HENRY JELLETT.

CHILD GUIDANCE CLINICS.

SIR,—I was very much interested in the reply of Dr. Burke and Dr. Miller (January 4th, p. 45) to my letter published on December 28th, 1929 (p. 1219). I have great admiration for the work conducted by them at the Jewish Children's Clinic, but I think it is unfortunate that they should take up the attitude that a clinic for nervous or difficult children should preferably be kept apart from a general hospital. This, together with an implication that they mention—namely, that medical students cannot be trained in child mental hygiene—is precisely the opposite view to that which one would like the medical profession to adopt. My complaint was not of independent clinics (and not at all of existing ones), so much as of the indifference of general hospitals; but Drs. Burke and Miller's remarks force me into a defence of the latter.

Drs. Burke and Miller's advocacy of an entirely independent clinic seems to be based on four grounds: (1) that the almoner's office of a general hospital works on lines irreconcilable with a children's psychopathic clinic; (2) that the expense is beyond the capacity of a voluntary hospital; (3) that the necessary elasticity of method is impossible in a general hospital; and (4) that child mental hygiene is too difficult a problem for the student to tackle.

The first two objections already have a practical answer. There is a specially trained social worker already appointed at Guy's, at University College Hospital, and, I believe, at one or two other general hospitals, part of whose function is to deal with nervous children attending the psychiatric clinic. The governors of these hospitals have evidently thought the expense worth while even in these days of great financial anxiety. It has been found possible at Guy's for the psychiatric social worker to work in conjunction with the almoner's department, and no difficulty exists in this direction.

As to the assertion that it is impractical or unwise to train medical students in such matters, it is impossible to emphasize too strongly the reactionary nature of such a suggestion. It is only recently by great efforts that psychological medicine has been brought more closely into touch with general medicine—the *rapport* is not yet by any

[1] *British Medical Journal*, September 21st, 1929, p. 542.

means close enough. Psychiatry has too long been confined to asylums, and erected into something apart, at which the general practitioner—to the great loss of the community and himself also—held up his hands in aversion and sometimes even derision. Now Drs. Burke and Miller would try to perpetuate this error in medical education by making an esoteric mystery of what is one of the most interesting branches of psychological medicine, and certainly the most practically fruitful branch. If medical students are to be taught, as they are in fact already taught, about the mental problems of adult life, it is difficult to see any justification for refusing them similar instruction in the case of children.

It seems to me that a knowledge of elementary social problems is no more to be spurned in dealing with adults than in dealing with children. The general practitioner, into whom most medical students fortunately still develop, is precisely the person who is going to have the knowledge of the social problems of his patient, which is likely to be an adequate safeguard against that superficiality of outlook which Drs. Burke and Miller seem so fearfully to apprehend.

The statement that "the organization of the out-patient department and of the almoner's office of general hospitals is not, as yet, equipped for dealing with problems of this breadth" is already not wholly true in fact, and in any case is the very worst reason for refusing to countenance development along these lines in general hospitals as a whole.—I am, etc.,

London, W.1, Jan. 4th. R. D. GILLESPIE.

THE CONDUCT OF INFANT WELFARE CENTRES.

SIR,—In the *Journal* of December 28th, 1929 (p. 1186), Professor Leonard Findlay, lecturing on paediatrics to the Belgrade Faculty of Medicine and Medical Association, is reported to have said: (1) "I can picture no more demoralizing sphere of work for one's medical outlook than to be condemned to do nothing but supervise healthy infants and direct their feeding"; and (2) "Children from 1 to 5 years are at present not provided for." Dr. Findlay seems to hold the view that the only duties of medical officers at child welfare centres, to whom I suppose he refers, are the supervision of healthy infants and directing their feeding. I should like, therefore, to give some idea of the work done at these centres and the routine generally adopted.

The babies are brought when they are about 3 weeks old; the family history is taken; they are weighed each time they come; and any collateral information bearing on each case is obtained. All babies are seen by the medical officer and carefully examined at their first visit, and a strict record is kept of all particulars; their diet is discussed, special stress being laid on the great importance of breast-feeding. The mother is supplied, if necessary, with printed instructions how to promote or increase the supply of milk, and advised as to the number and duration of feeds; further advice is given on clothing, bathing, ventilation, exercise, and all desirable hygienic necessities. If breast-feeding is not satisfactory, the mother comes to the centre for three or more "test feeds"—namely, weighing the baby before and after each feed; should the supply be insufficient an amount of modified cow's milk is ordered to be given immediately after each breast-feed, so that the total amount will produce 45 to 50 calories per pound weight per day. If breast-feeding is impossible written instructions are supplied to the mother how to feed the baby on modified cow's milk.

The mother brings the baby to the centre once a week; if all is not going well she sees the medical officer. This goes on at lengthening intervals during the first year. From the first to the fifth year (for which Professor Findlay says no provision is made) the child is brought to the centre once a month; if any evidence of illness or disease is apparent the case is referred to the private medical attendant or to a hospital. For minor ailments simple remedies are prescribed. We frequently meet with cases of malnutrition, marasmus, and sometimes coeliac disease, where dietetic treatment is sufficient.

We have never posed as specialists, although Professor Findlay refers to us as "pseudo-specialists." I have on several occasions interviewed deputations from America, Sweden, Japan, South Africa, and other places at our centres, and they have invariably expressed keen appreciation of our methods. I have had communications from them when they returned to their own countries, in which they have expressed their gratitude for what they learned from us. There is, I regret to say, among some members of our profession, a feeling of hostility to our work, for which I see no reason. We are most anxious to work amicably with every member of our profession.—I am, etc.,

J. FINCH HAINES, M.D., M.Ch., M.A.O.,
One of the Medical Officers to St. Pancras and East Islington Welfare Centres.

London, N.W.6, Dec. 29th, 1929.

THE GENESIS OF CANCER.

SIR,—In furtherance of the effort of the British Medical Association to make a survey of factors relating to the incidence of cancer, I venture to send the following notes. It is possible that they may lend precision to the description of the agents responsible for the local hyperplasia which, if prolonged, may eventuate in malignancy.

This local proliferation, in response to the long application of certain substances to living cells, is regarded as the first stage of cancer development. During its progress, and by reason of the vitiating action of the applied agent, the cells change their metabolic and respiratory methods and lose their histological and functional differentiation. After several generations in this form the type is established and the cells will tend to breed true unless a modicum of tissue fluid, now their sole nutritional requirement, is denied to them. They are transformed, as Cheatle describes, in the breast, into cancer cells, although not yet introduced through the connective tissue barrier, be it elastica or corium.

This introduction forms the second stage, and is effected by trauma, incomplete operation, rupture of duct or cyst, and other mechanical disjunctions, or by direct extension. In the third stage—the stage of perpetuation—the altered cells grow and multiply, to the detriment of the host, in any situation where tissue fluid is available. A discussion of the second and third stage is outwith the scope of this letter.

On what does the initial hyperplasia, or first stage, depend? This question is usually answered by the phrase "chronic irritation," but the vagueness of the term deprives it of any useful scientific meaning, and necessitates close inquiry into the grouping of the carcinogenetic substances. The oils, long associated with the soothing of injury, and the tars, employed in the cure of irritative skin lesions, would not fall naturally into an irritant group. Acids and alkalis, of sufficient strength to provoke a reaction, are definite irritants. Nevertheless we find, dealing for the moment with experimental and occupational cancers, that the carcinogenetic agents lie among the apparently bland and non-irritating substances, while the acids and alkalis, though they may produce erythema, oedema, vesication, and even ulceration when applied in sufficient strength over a long period, will never by their own action produce a true hyperplasia, papillomatosis, or cancer. Such soluble toxic substances are rapidly diluted by the local outpouring of fluid, carried in the circulation and eliminated by the kidneys or other route, as Lewis has shown with great experimental exactitude. Toxic substances, which are insoluble in the tissue fluids but are also viscous, and so able to permeate through the cellular strata, evoke an entirely different and fundamentally important reaction.

Substances which exhibit this physico-chemical complex of insolubility, viscosity, and toxicity (we will call them potent substances) will, on prolonged contact with living cells, lead to one of three results: (1) Hyperplasia may develop, by which the ingress of the potent substance is prevented, and, by *proliferation and desquamation*, the noxious agent is removed in adhesion to the desquamated cell. (2) No hyperplastic response may take place. The potent substance entering the lymph channels and capillaries ultimately reaches the liver. If the quantity of the substance and the degree of toxicity be sufficient death ensues, usually with marked cachexia. (3) A subeffective hyperplasia may be exhibited in which the slow proliferative effort is inadequate. A certain quantity of the potent

substance is thrown off. Some reaches the lymphatics, which become blocked, and papillomatosis develops. Some also reaches the liver, and we will see a local hyperplasia concurrent with chronic toxic absorption. In the possession of the three essential properties lies the only specificity among carcinogenetic agents.

Where do we see the physico-chemical cause at work? In my opinion it is operative in all cases, except in the very small and special groups of the malignant blastoma—for example, renal—of early childhood, and the melano-carcinoma of naevus cell origin, which Nicholson and Dawson have so admirably explained. Among the enormous number of individuals who are engaged in chemical manufacture, or who use strong chemicals in their work, there is no incidence of occupational cancers, except in the comparatively small group of those who are exposed, directly or indirectly, to the action of potent substances, such as tar, paraffin, and shale oil workers, mule-spinners, etc. In the non-occupational cancers it is my belief that in causative relation with all precancerous proliferative states will be found a potent substance, as, for example, effete retained sebaceous oil, the semi-inspissated secretion of the breast, the muco-purulent discharge of a uterine endocervicitis, the slimy mucus of stomach or large bowel, the fat-soluble poisons in partially burned skin, stale extravasated blood, the myxomatous degeneration of a simple tumour, or the tobacco oil which percolates through a porous pipe. The action of these substances is known to be intensified by acids, while they are dissolved or emulsified in alkalis. On this fact may depend the immunity of the small bowel from malignancy and the increase of cancer as age advances and the blood and tissue alkalinity slightly decline.

It is impossible within the bounds of a letter to discuss the full implications of this view or to make adequate acknowledgement to all the workers on whose results these deductions are based. It is of great interest to consider the action of the fibrin, lecithin, and cholesterin of extravasated blood which correlates the process of local hyperplasia, and probably of sarcoma, with normal tissue repair and early embryonic development. Of importance, also, is the increase of potassium in the slightly vitiated cell; by this means imbibition of fluid is facilitated and, very probably, radium sensitivity is determined. At present my purpose is to direct attention to the composition of the potent substances, and to suggest that they may be borne in mind by some of those who are taking part in the admirable inquiry of the Association.—I am, etc.,

Edinburgh, Dec. 26th, 1929. J. J. M. SAAW.

MENTAL DISORDER AND INTESTINAL SEPSIS.

SIR,—The much-discussed relationship between mental disease and intestinal sepsis has suggested to me that the following illustrative case might be worth recording.

That intestinal auto-intoxication is one of the causes contributing to and resulting from melancholia, in cases where there is a family history of insanity of that type, is well known, and has been repeatedly demonstrated clinically, but that this condition *per se* can apparently be responsible for an attack of melancholia in a case where no family history of insanity exists is, I think, illustrated by the following case.

A widow, aged 55, gradually developed symptoms characteristic of a recent melancholia. She was hypochondriacal, mildly delusional (her delusions being of the visceral type), and she repeated words again and again in a parrot-like, incoherent manner. She had the typical facies of the melancholic, and took no interest in her surroundings or friends. No focus of chronic or other infection in the mouth, throat, nose, sinuses, appendix, or uterus could be found, but a very definite history was given of chronic constipation, which had become aggravated recently. The patient was sent to a home, and placed under a suitable regime for her mental condition. The lower bowel was thoroughly and regularly washed out, and for over a week faecal concretions like marbles came away, some of which were encapsulated in mucoid material. Occasionally they were tinged with blood, probably due to slight ulceration of the intestinal mucosa by the scybalae. Intestinal tonics were administered, and a suitable diet prescribed. Under this treatment the patient's mental symptoms entirely subsided within fourteen days. (They had been continuous previously for three months.) She ate and slept well, enjoyed exercise and company, and put on weight.

The interesting feature of the case, to my mind, is the rapid clearing up of the mental symptoms, which have not returned a month afterwards. I doubt whether, if there had been a family history of melancholia, the elimination of the toxic condition would have been followed by the disappearance of the mental symptoms, but it would appear possible, at any rate from this case, that a mental condition based solely on an intestinal auto-intoxication in an individual free from any family taint of insanity will entirely clear up by thoroughly eliminating this condition.—I am, etc.,

C. JOYNER.

Torquay, Dec. 21st, 1929.

"TENNIS ELBOW."

SIR,—The correspondence in your columns on "tennis elbow" has emphasized the obvious point that this disability, which can only be defined as trouble in the elbow of one who uses a racket, may be due to any condition from a fracture to a Charcot's joint. But one who has personally suffered from a condition has both the stimulus and the opportunity for observation of a kind that is impossible from a purely objective view-point, and I have my own experience of a kind of injury that is common at tournaments, though rare in Harley Street because of a tendency to get well of itself. I have acquired, in the course of a liberal athletic education, both a ligamentous strain and an acute traumatic synovitis of the elbow, as well as torn muscles, acute bursitis, and acute periostitis elsewhere. (In all these I think sepsis can be excluded as a factor, since the cause was obvious, and the recovery complete without removal of either teeth or colon.) But my only tennis elbow was different from any of these, and the conclusions to which I came while sitting disconsolate in the players' stand were the following.

The injury is very like a riding sprain in its production and sensations; in both there is a tearing pain, produced by a sudden jerk on a contracted muscle. In the one this jerk is from the weight of the body flung against the gripping adductors, and in the other from the momentum of the ball transmitted through the racket on to the tense extensors of the wrist. In both the pain is confined to a definite spot just below the origin of the muscles concerned, and in both it becomes rapidly worse on continuing their use.

The actual damage is a tear of the aponeurosis of the extensor carpi radialis longus, the mechanism of which can be roughly imitated by gluing a strip of paper on top of a strip of thin leather, and then jerking the double strap so formed. The paper, being like the aponeurosis, almost inextensible, will split across; while the leather, like the muscle, stretches under the strain.

This explanation seems to me to fit *this particular injury* in many ways: (1) The pain only occurs where there is an aponeurotic covering to the muscle; (2) though one feels a distinct tear there is no effusion of blood, as the aponeurosis is an avascular structure: (3) healing is very slow for the same reason; (4) any use of the elbow-joint not involving the wrist extensor is quite painless; (5) any strain on the ligaments of the joint is also painless; (6) the maximum of pain is produced in the same way as the original injury—by a jerk on the contracted extensors.

It is common ground, again at tournaments, that the injury belongs particularly to the backhand shot. To explain this I would state a principle, which to my long-suffering friends is known as "Browne's law," that at the moment of striking with any instrument the wrist should be in full extension, the position of greatest grip. This is the real meaning of the advice to keep the head of the racket up, which is as universally given to novices as it is disregarded by experts. Now in the forehand shot (let me implore certain contributors not to use forearm in the sense of forehand) the thrust of the stroke is against the palm, and is largely taken by the ligaments of the wrist, if this is in the proper position, as its tendency is to extend a joint already fully extended. Incidentally, if Dr. Warden will study the production of two

of the best forehand drives ever known—those of Johnston and Harada—he will find that in them the forearm is locked in full supination, as well as the wrist in full extension, against the impact of the ball. In the backhand shot, however, the thrust is against the thumb, and tends to flex the wrist, so producing at each impact a jerk on the extensors which alone resist it.

As to the part played by bad shots, it does not require any very recondite calculations of ballistic centres to ascertain that it is the mishit ball that jars the wrist; and quite possibly an imperfect contraction of the muscles renders them more liable to injury of this or any other kind.

As I am only too well aware of the breach of sporting etiquette which it is to mention mechanics or anatomy in discussing a game, I feel I must apologize for the converse sin of touching on the technique of a game in a medical journal.—I am, etc.,

London, W.1, Jan. 6th. DENIS BROWNE.

SIR,—The correspondence on this subject has been so comprehensive that one is tempted to "leave it at that," were it not that a treatment of sovereign utility has not been mentioned in your columns. I refer to the oldest form of electricity used in medicine, yet one, in this country at any rate, much neglected—static electricity. The form of it which is of great use in "tennis elbow" (or "tennis arm," Dr. A. A. Warden terms it, and this coincides with my own experience) is the static wave current. The effects of this current are chiefly or entirely mechanical; the current causes tissue contractions—the coarser ones which can be seen, and finer contractions within the tissues—perhaps 120 contractions to the minute. It is not difficult to understand why the application of this current to the elbow should improve the condition and remove the congestion and exudation, which are the invariable concomitants of all forms of tennis elbow.

While agreeing with Mr. Paul Bernard Roth that "tennis elbow is due to several pathological conditions," I am of opinion that there is in all, or most of these conditions, one common factor—namely, a serous effusion, possibly, an inflammatory congestion of the synovial membrane, and an inflammatory exudation, the "coagulable lymph" of John Hunter. Erichsen pointed out the theory of treatment many years ago. "If," said he, "the disease progress favourably, these products are completely absorbed." In the static wave current we have an agent which will, by its mechanical action, disperse that congestion and so improve the circulation that these products are readily absorbed; and by hastening the absorption of morbid products it compels the disease "to progress favourably."

Turrell of Oxford, in speaking of this form of electricity, used by him for a sprained ankle, in which the pathological conditions are not altogether dissimilar, said, "I am not exaggerating when I state that during the football season I daily see examples of the immediate and lasting benefits of the static wave current in this class of case."—I am, etc.,

London, W.1, Jan 6th. F. HOWARD HUMPHRIS, M.D.

SIR,—May I offer a suggestion as to the treatment of 'tennis elbow" in those cases which are in the primary stage? The patient declines to stop his game; he is not quite bad enough. Yet every jerk given the elbow increases the mischief. Why not, then, induce him to wear an angular metal splint, braced by the usual armlets, with buckles above and below the joint, the whole fixed at a wide but varying angle, adjusted by a screw? Such a splint may at first feel cramping and cumbrous, but the player will probably soon accommodate his action to the fixation, as so many men have done in other injuries. If such a splint was well made and comfortably adjusted, it might, theoretically, to take the jerk, and to prevent the drag and strain on the joint, which is the principal factor in producing tennis elbow. At any rate, such a splint is worth trying, when the only alternative is complete cessation from play.—I am, etc.,

T. M. CORKER, Major-General.

Junior United Services Club, Jan. 6th.

HEALING OF THE TONSIL FOSSA AFTER TONSILLECTOMY.

SIR,—A contributor to your issue of December 28th, 1929 (p. 1196), assumes as a criterion of tonsil infectivity, among other things, "the presence of any tissue in the tonsil beds after tonsillectomy." He is perpetuating a common fallacy, that besets many physicians, that any residuum remaining in the tonsil fossa after complete enucleation is tonsillar tissue. In so doing he disregards the manner in which the healing occurs in the raw area left after removal of the tonsil. This heals up in a manner similar to any other uncovered wound—namely, by the formation of granulation tissue, which then becomes epithelized over, a process that is complete from the fourteenth to the twenty-first day. The formation of this granulation tissue interests the physician from two aspects.

1. One of the characteristics of this granulation tissue is its ability to bleed easily on the mildest of trauma, and it is this that gives rise to the majority of cases of secondary haemorrhage after tonsillectomy. A cough, bolting of solid food, or any such trauma is liable to dislodge a portion of the fragile granulation tissue, and produce a haemorrhage that is sudden in onset, spontaneous in cessation, and severe in amount. The surprising thing is that secondary haemorrhage is as rare as it is. Silver nitrate stick applied locally will always control this bleeding.

2. But this tissue formation has another significance. On occasion it is apt to be exuberant in bulk, and present as a fleshy mass in the tonsillar fossa. It is then by the uninitiated mistaken for a piece of tonsil left behind at operation, and its removal by further operation is advised. This excrescence should be removed, as exuberant granulations elsewhere, by the caustic stick, and not the scalpel. As I have had occasion to state elsewhere (*Clinical Journal*), there are physicians who are always of the opinion that unless tonsillectomy is performed by their own surgeon, the tonsil has never been satisfactorily extirpated. When they observe this mass of residual granulation tissue they invariably inform the patient, or the latter's parents, that the operation has been imperfectly performed, and has to be done again. They dwell with unwonted enthusiasm on the evils that will result from the retention of these pernicious "tonsil" remains. It is a matter calling for the display of much tact to disabuse the mind of such a patient and to reassure him that no further operation is called for. And all this is a result of ignorance of the normal pathology of the healing of the tonsil bed after tonsillectomy.—I am, etc.,

London, W.1, Dec. 28th, 1929. N. ASHERSON.

SECURITY OF TENURE IN PUBLIC POSTS.

SIR,—Readers of the correspondence on security of tenure in public posts will be interested to note your extract (December 28th, 1929, p. 1215) giving the considered opinion of the Royal Commission on the subject. The Commission's recommendation is satisfactory so far as it goes, but it does not directly protect the officer's pension, and therefore does not meet the view expressed in your leading article of March 9th, 1929 (p. 461), in which you stated:

"And certainly it will be necessary to secure changes in the Local Government and other Officers Superannuation Act so that an officer who has completed a certain number of years of service and is dismissed from his appointment shall be entitled, in the absence of evidence of misconduct, to a pension in accordance with his years of service. . . ."

Most of the Local Government Superannuation Acts protect the officer's right to a pension if he becomes incapacitated by sickness before he has served the statutory number of years. For example, the Asylum Officers Superannuation Act (1909) provides:

"Any established officer . . . who is permanently incapacitated for asylum duties after ten years' service by injury or illness, mental or bodily, medically certified and not attributable to his own misconduct, shall be entitled, on resigning or otherwise ceasing to hold office or employment, to receive during life or incapacity a superannuation allowance. . . ."

An extension clause to protect the officer's service pension might read thus, in accordance with your views:

"Any established officer who after ten years' service ceases to hold office or employment shall, in the absence of evidence of misconduct, be entitled during life to a superannuation allowance in accordance with his years of service."

Your article envisaged prompt action on the part of the Council of the British Medical Association with a view to clearing up the present unsatisfactory position. It may therefore be desirable to point out that an opportunity now presents itself for obtaining almost immediately such a measure of security in the case of at least officers in mental hospitals. I refer to the Mental Treatment Bill which is now before Parliament. The introduction of this bill has been made the means for obtaining administrative changes long overdue in the mental service, such as the reorganization of the Board of Control. Various clauses have been incorporated dealing with their terms of service, tenure of service, pensions, etc., among other things. There is thus every reason for asking that further clauses should be introduced to deal with the terms of employment of the staffs in the asylums, who will be in more intimate contact with the patients for whom the bill was ostensibly brought forward. It is to be hoped that those who will have to negotiate with the Ministry of Health, and to take parliamentary action on behalf of the profession, will endeavour to get such clauses included in the bill.

A bill which envisages such important developments in the activities of mental hospitals would be incomplete if it lacked safeguards such as that recommended by the Royal Commission on Local Government, and your own suggestion about pension protection.—I am, etc.,

Wedmore, Jan. 2nd. H. C. McMANUS.

SANITATION ON THE RIVIERA.

SIR,—The observations of your correspondent Colonel R. H. Elliot (December 28th, 1929, p. 1220) are certainly not applicable to all places on the Riviera. From personal experience I am in agreement with his remarks about Nice, where sanitation is very defective, yet in a place like Alassio on the Italian Riviera, where I am spending my second winter, sanitation is all that can be desired. Sewage is carried out to sea a long way east of the town by a main sewer. The streets are kept clean and well watered and sometimes oiled. No refuse bins are exposed in the streets, but a motor refuse van provided with a crane lifts up all refuse contained in receptacles kept covered below the level of the street, and rapidly conveys the refuse away to special dumping areas. The water supply is pure, and is brought down in a main from the snow mountains north-east of Alassio. The foreshore is sandy along its whole front, and provides a splendid bathing beach.—I am, etc.,

Alassio, Jan. 1st. C. R. KILKELLY, M.B., D.P.H., Colonel (ret.).

SYSTEMATIC INSTRUCTION IN RADIOLOGY.

SIR,—Why does not radiology, a science which has claimed more British martyrs than any of the other ancillary sciences, assume its proper position in this country? Too often it is the resort of the destitute, patients being sent to the radiologist only after the clinician has tried every other diagnostic procedure. If, as is then only too likely, the skiagram fails to give the required information, unfavourable comments are made about one of the most accurate aids to diagnosis we possess. There is a sharp distinction between knowing how to take a radiogram and knowing what a radiogram will show. The practitioner may acquire a valuable knowledge of radiology without learning anything about actual plant. While the origin of x rays is still a matter of dispute, their action is thoroughly well understood, and may be summarized in the statement that x rays penetrate different media to differing extents, thus casting shadows of different densities. The doctor who has grasped this basic principle can build up a useful knowledge of radiology.

It has been suggested that if radiology is popularized everyone would be stimulated to acquire a plant for himself, to the detriment of the science. There is no reason why this should occur, if in courses of instruction to general practitioners it is made clear that technique should always be left in the hands of those who have undergone the prescribed training. The duration of the courses for the D.M.R.E. or M.S.R. should sufficiently deter anyone from dabbling in radiology. While, however, there are excellent courses for the specialist in radiology, there are none for the general practitioner. I suggest that half a dozen lectures are enough to lay the foundations of a useful knowledge of the subject.

The "pathology of the living" is but now receiving the attention it deserves. Apart from operation, radiology offers the only way of visualizing the interior of the body; by its means one can watch the niche of a gastric ulcer slowly becoming shallower, and finally disappearing, as Professor MacLean has shown it does under the intensive alkali treatment. One can watch the furred appearance of active phthisis giving place to the nodular appearance of the healed form, or one can visualize the stages of repair in osteomyelitis or the advance of a bone sarcoma. In all parts of the country x-ray apparatus is being installed at the smaller hospitals, and competent radiologists and radiographers are being appointed; but the work is often hampered because the local practitioners do not know the help that x rays can offer them. Radiologists complain, indeed, that their burdens are heavy enough already without lectures. I suggest that their burdens are heavy because they are being saddled with so much unsuitable work—with cases in which the diagnosis can be made clinically, or in which the x rays could not be expected to offer help. I do not suggest that as a result of giving lectures their burdens would necessarily be lightened; they would probably get more work, but they would have the compensation of getting suitable cases, and their work would thus be more interesting.

It is doubtful whether the student should be inflicted with more lectures, though there can be no doubt that the graduate suffers from the lack of systematic lectures in radiology. In London we have professors in almost every branch of medicine except radiology, though this is probably the best handmaiden the clinician ever had. Surely it is the State's duty to provide practitioners under the National Health Insurance Act with the means of learning what radiology can do and how it can help them. If a fraction of what is now being spent on radium were devoted to the teaching of radiology many lives would be made happier and, what is more, many years of life would be added to thousands of patients, especially those suffering from cancer, because diagnosis would be made earlier, and operation would be performed at a time when it might be expected to do good.—I am, etc.,

London, W., Jan. 1st. A. P. BERTWISTLE, F.R.C.S.Ed.

A SIMPLE CONTROL FOR INSULIN INJECTIONS.

SIR,—In your issue of January 4th (p. 54) "District Medical Officer" inquires about a simple plan for giving insulin. For the last ten years I have been using regularly a method which has proved adequate, reliable, and very simple (described in the *British Medical Journal*, June 6th, 1925, p. 1033).

The evening specimen of warm urine is left overnight in a pint thermos flask to ferment with a little yeast, which destroys any sugar present. The flask must be full and lightly corked. The gravity of the urine is taken before and after fermentation. The difference represents the amount of sugar in grains per ounce. The gravities (before and after fermentation) are plotted as two curves in a child's squared arithmetic book. When the two curves have been coaxed by diet and insulin just into apposition, urinary sugar is absent and the dosage is correct. Any error in diet is at once apparent in the curves, both to patient and doctor. Hence calories are redundant. I give a strict carbohydrate-free diet (unweighed), and allow 3 to 5 ounces of bread—never less, for fear of ketones appearing. These are tested for by liquor ferri perchlor.,

a dark brown colour indicating urgently the need for more bread and more insulin. Insulin is administered twice daily, at first by a nurse, later by the patient. Gluten breads are rarely needed. Insulin cannot be given either safely or effectively unless the urinary sugar is measured daily. If this is done blood sugars are seldom required, except in coma.

It is a mystery to me (and my patients) why this simple and satisfactory system has not come into more general use.—I am, etc.,

F. C. EVE, M.D.Camb.,
F.R.C.P.Lond.

Hull, Jan. 7th.

THE PLACE OF THE STATISTICIAN IN MEDICAL RESEARCH.

SIR,—A note on the factors in the production of blackwater fever in the *Journal* of October 18th, 1929 (p. 729), mentions an article of mine which appeared in the *Kenya and East African Medical Journal* of the previous June. Unfortunately, your reviewer appears not to have understood the article, and misinterprets several points.

Conclusive evidence on any subject must be based on experience, or on the particular type of experience termed experiment. For a proper analysis and interpretation of medical experience co-operation between clinicians and statisticians is essential. The belief that an analysis of blackwater fever cases alone, based on their antecedents, can afford any evidence of causality is, to a competent statistician, absurd; but so-called "evidence" of this kind is commonly quoted in medical literature on the subject. If it were shown that of blackwater fever cases 75 per cent. had taken quinine and 90 per cent. had taken tea within twenty-four hours of the attack, this evidence—if it were evidence—would be stronger against tea than against quinine!

It is of the greatest importance that conclusions based on false logic should be discredited, especially in this case, where the treatment of serious malaria is often modified in accordance with the conclusions. I therefore attempted to show, as simply as possible, the correct statistical method of investigating the hypothesis that quinine and blackwater fever were causally related. By taking imaginary figures I showed that the correct method and the "common" method might lead to opposite conclusions. By quoting some very incomplete figures I suggested that quinine might have been falsely suspected. I pleaded that a proper statistical investigation was warranted

I should be glad if you would allow me to make the following corrections. My qualifications are mathematical and scientific—not medical. Groups of cases do not have to be investigated. The method consists in classifying a population into eight groups and counting the number of individuals in each group. I did not mention as a difficulty the minimum quantity of quinine, but the maximum period of time between the dose and the onset. Your reviewer speaks of "number of patients investigated," when my whole point is that to investigate patients is useless. I wrote, "No conclusion can be based on such small numbers, but their interpretation is as follows," which your reviewer changes to "He [Dr. Arnell] believes . . ." —I am, etc.,

O. R. ARNELL.

Kenya, Nov. 25th, 1929.

Obituary.

WE regret to announce the death, at the age of 60, of DR. ROBERT MATTHEW FENN, at his residence in Sheffield, on December 15th, 1929. He received his medical education at Edinburgh, where he graduated M.B., C.M. in 1890. An earnest evangelist from early youth, he determined, after graduation, to continue evangelistic work, and for seventeen years he superintended the work of the Red Bank Medical Mission in Manchester, where he is gratefully remembered to the present day. While there, Robert Fenn devoted himself particularly to diseases of the ear, throat, and chest. He was honorary assistant physician to the Manchester Hospital for Diseases of the Throat and Chest from 1895 to 1901, and physician to the Sunnyside Home for advanced tuberculosis cases. In 1913 Dr. Fenn married and went to Cuzco, Peru, where for a little over two years he conducted medical missionary work. Returning to England in 1915, he received a commission in the R.A.M.C., and was appointed to the Berrington War Hospital, Shropshire, where, soon afterwards, as major, he became second officer in command under Colonel C. Rundle. In 1921 he settled in Sheffield, and was appointed district tuberculosis officer in the West Riding of Yorkshire (Rotherham area); he studied at the University of Sheffield, and obtained the D.P.H. in 1922. Robert Fenn's life and work were characterized by unvarying conscientiousness and thoroughness, coupled with a sincere personal interest in his patients' needs—medical, temporal, and spiritual; many instances are known of his unostentatious help to the necessitous, even when his circumstances could ill afford such gifts. He leaves a widow and young son.

DR. JOHN FORRESTER-WOOD, whose death occurred on December 2nd, 1929, at Bettws-y-Coed, North Wales, was for twenty-five years a well-known practitioner in Southport. Born in 1867, and educated at Atherstone Grammar School and St. Bartholomew's Hospital, he obtained the diplomas M.R.C.S., L.R.C.P. in 1889, and became F.R.C.S.Eng. in 1896. After qualifying he acted as house-surgeon to the Gloucester Infirmary; later he made one or two voyages to the East as a ship surgeon. In 1896 he married, and subsequently settled in Southport. He was a member of the British Medical Association and a vice-president of the Southport Division. A colleague writes:

Dr. Forrester-Wood rapidly gained for himself many friends and an increasing practice; he was an excellent all-round man and a wise adviser, and with these qualifications he soon obtained a prominent position among his colleagues in Southport. He was president of the Southport Medical Society, in which he took considerable interest. During the war he served on the staff of the V.A.D. hospitals and the military annexe of the Southport Infirmary. For many years he acted as surgeon to the Bradstock Lockett Home for Crippled Children, to which he gave devoted service. In 1919, his health not being good, he was advised to seek relaxation in retirement, and he left Southport and went to live at Bettws-y-Coed, North Wales. Dr. Forrester-Wood was a charming colleague and a good friend. He was an excellent sportsman, and delighted to discuss with his intimate friends his success with rod and line. Although he had been absent from Southport for ten years his death will be felt by a large circle of friends, who still remember with affection his many kindnesses to them while he resided there. To the writer of these few lines he was a dear friend and colleague, and his death leaves a sad blank. A widow and three sons survive him, two of whom are in the medical profession.

DR. WILFRED JAMESON died on December 8th, 1929, at his residence at Pontesbury, Shropshire, after an illness of some weeks' duration. Though he had suffered from an affection of the throat for the last twelve months, he continued to practise until a few weeks before his death. Dr. Jameson received his medical education both in Dublin and in Edinburgh; in 1892 he obtained the diplomas L.R.C.P., L.R.C.S.Ed., and L.R.F.P.S.Glas. He started practice in Pontesbury thirty-one years ago, but his residence there was interrupted for a time when he joined Methuen's Horse and went to South Africa. Returning to civil life, he collected a large circle of friends from all classes. In his early days he was an enthusiastic Rugby footballer, and took a prominent part in local sport. During the late war Dr. Jameson held a commission in the R.A.M.C., and served for two years in Mesopotamia, after which he was invalided home. He was an ardent supporter of the British Legion, and was chairman of the local branch from its inauguration until the time of his death. He was a keen member of the British Medical Association. He leaves a widow and one daughter. His funeral took place on December 11th, in the parish church, and was very largely attended. A colleague writes: Dr. Jameson was exceedingly popular and highly respected. By his death the district loses an able physician and a loyal friend.

Dr. HOWARD DAVIES of Pontypridd, who died on December 23rd, 1929, in his sixty-eighth year, received his medical education at Charing Cross Hospital, and obtained the diplomas M.R.C.S. and L.S.A. in 1884. In the same year he succeeded his uncle, Dr. Rhys Hopkins, in a large practice at Pontypridd. From 1884 to 1911 he was medical officer of health for the town, and resumed these duties while his successor was on active service during the war. In 1884 he was appointed medical officer for the Pontypridd board of guardians, and held this post—which involved medical supervision of the Central Home, the Cottage Homes, and the Maesycoed Homes—until he died. He was also surgeon to the police, the Maritime Collieries, and the local St. John Ambulance Division, and treasurer to the Glamorgan Panel Committee; before and during the war he was the local recruiting medical officer. He was a member of the British Medical Association. He was devoted to various forms of sport, particularly cricket, and was president of the local cricket club. He interested himself also in the acquisition of Ynysangharad Fields as a public park, and was responsible for the establishment of the improved local water supply and drainage. He is survived by his widow and one daughter.

We regret to record the death, at the age of 47, of Dr. THOMAS EVANS FRANCIS, O.B.E., late medical officer of health and school medical officer for Barnsley, Yorks. A year ago he was obliged to give up work on account of severe illness, and he resigned his appointments in the spring of 1929. Having recovered sufficiently to undertake a ship surgeoncy, in the autumn he sailed for the East, but in the tropical heat had a recrudescence of bronchitis, and died after some weeks in hospital at Colombo, Ceylon. Thomas Francis received his medical education at Cardiff, and St. Mary's and St. Bartholomew's Hospitals; he graduated M.B., B.S.Lond. in 1905. Being attracted to public health work, he proceeded M.D. in State Medicine two years later, and was appointed medical officer of health and school medical officer for Llanelly in 1910. He served in the Territorial Force (Sanitary Service), and also for several years in the navy—in H.M.S. *Britannia*, H.M. Hospital Ship *Soudan*, and at the Royal Naval Hospitals at Haslar and Plymouth. The O.B.E. (Military Division) was awarded him in 1919. From 1920 till 1929 he held the appointments of medical officer of health and school medical officer for Barnsley, Yorks, where his intelligent zeal for measures likely to benefit the health of the community was highly appreciated. He published several papers in public health journals. He was chairman of the Barnsley Division of the British Medical Association from 1922 to 1927. A colleague writes: Throughout his work Francis never spared himself the trouble of thinking, and, having made up his mind, he was prepared to fight for his ideas. He leaves a widow and three children, one of whom, the eldest son, is taking a medical course in London.

The death took place, on December 27th, 1929, at his residence, Loganbank, Cupar, Fife, of Dr. WILLIAM SNEDDON. He was born in 1859 at Liberton, near Edinburgh, and at first adopted teaching as a profession. He afterwards studied medicine at Edinburgh University, where he graduated M.B., Ch.B., and in 1885 settled in practice at Cupar. For many years he had been one of the best-known practitioners in Fifeshire. He took a great interest in vocal music, and, possessing an excellent baritone voice, was in great demand for his services in the musical world as a soloist and demonstrator.

The following well-known foreign medical men have recently died: Professor LOUIS LEWIN, a Berlin pharmacologist, aged 80; Dr. ERNST GRASER, formerly director of the surgical clinic at Erlangen; Dr. JESSNER, a dermatologist and venereologist of Jena, aged 70; Professor GIOVANNI MIRGAZZINI, an eminent neurologist of Rome, aged 70; and Professor LOUIS PHILIPPSON, director of the dermatological clinic at Palermo.

Medico-Legal.

NEGLIGENCE ALLEGED AGAINST MEDICAL SUPERINTENDENT.

IN the Court of Session, Edinburgh, on December 21st, 1929, judgement was delivered by the Lord Ordinary (Lord Fleming) in an action brought by Duncan Carmichael, a dairyman, against the representatives of the late Dr. Alexander C. Miller, formerly medical officer of health for Fort William, and medical superintendent of the hospital there, for the alleged professional negligence of Dr. Miller in the treatment of one of Carmichael's children.

The child, Duncan, aged 2½ years, was admitted to hospital with scarlet fever on December 31st, 1925. Recovery proceeded normally until the following January 26th, when there appeared what was diagnosed as a secondary or supervening attack of scarlet fever, accompanied by pyrexia, sore throat, and copious rash. Recovery from this attack was complicated by otorrhœa. By March 1st the ear discharge had become slight and intermittent, and the patient was returned to his home. Six days later his brother and sister were admitted for diphtheria, and the sister died. Seven weeks afterwards yet another child was admitted for diphtheria. On the same date as this last admission the original patient, Duncan, was readmitted for recurrent otorrhœa, and it was reported that a swab had shown bacilli morphologically resembling diphtheria bacilli. He was retained until August 3rd, when he left hospital as cured, but a fortnight later he was readmitted for recurrence of the ear discharge, and subsequently his tonsils and adenoids were enucleated. He had still another recurrence, and was not finally discharged until June 8th, 1927.

The grounds of the allegation against Dr. Miller were that when the patient was first discharged from the hospital he exhibited post-diphtheritic symptoms, in addition to the ear discharge, and that the supposed secondary attack of scarlet fever was in fact an undiagnosed attack of diphtheria, with the result that, after leaving hospital, he infected other members of his family, one of whom died. It was further urged that Dr. Miller should have made a bacteriological examination of the ear discharge, and that had he done so it would have been apparent that it was not safe to discharge his patient.

Judgement of Lord Fleming.

Lord Fleming, in giving judgement, said that Dr. Miller, whose professional qualifications were of a high order, and his assistant, Dr. Mackintosh, came to the conclusion that the patient had a secondary attack of scarlet fever, which, though uncommon, occasionally supervened. Neither of them suspected diphtheria, nor did the fever nurse or the hospital matron. None of the clinical appearances of diphtheria were observed. His lordship had no difficulty in holding that there was no negligence in failing to diagnose diphtheria if Duncan really suffered from it. A more difficult point arose as to Duncan's condition at the time of discharge. The pursuer [plaintiff], his wife, and sister-in-law had testified that he had post-diphtheritic symptoms—namely, squint, nasal speech, and unsteady gait; this was contradicted by Dr. Mackintosh, the nurse, and the matron, who said that of these symptoms only unsteadiness in walking was present, owing to long confinement in bed. His lordship believed the doctor, nurse, and matron to be careful and reliable witnesses, who had seen the child constantly just before discharge, and he preferred their evidence to that given on the other side. Dr. M'Iver, a witness for the pursuer, first saw Duncan on March 7th, six days after discharge, and said that he noticed post-diphtheritic symptoms. If, in fact, Duncan was suffering from post-diphtheritic palatal paralysis, as Dr. M'Iver had said, his condition was one of some gravity, yet Dr. M'Iver took no steps to advise as to treatment, and though he apparently believed that Duncan had infected his sister and brother he said nothing to the parents about isolation, nor did he communicate his suspicions to Dr. Miller. Dr. M'Iver failed to take the steps which one would have expected of him, and his lordship was inclined to doubt whether the post-diphtheritic indications were as clear to him at the time as he now thought them to have been. The recurrence of the discharge from the ear alarmed the mother, who sent for Dr. M'Iver; he took a swab from the throat, which was reported negative, and, later, one from the ear, which was reported positive, upon which Duncan was readmitted to hospital. It was difficult to believe that, until he received that positive report, Dr. M'Iver was satisfied that Duncan was suffering from the sequelæ of diphtheria.

As to whether Dr. Miller could reasonably be charged with negligence for allowing Duncan to leave the hospital with his ear still discharging, it was proved in evidence that ear discharges after scarlet fever might continue for years, so that if it were laid down that patients should never be discharged until the otorrhœa had ceased it would be necessary to retain them for

very long periods. It was not in contravention of usual or reasonable medical practice to discharge patients suffering from intermittent scarlet fever otorrhoea. One of the witnesses for the pursuer, Dr. Gillies, medical officer of health for Argyll, agreed that it was quite a common practice to discharge patients in that condition, and Dr. Archibald testified that he had discharged from Belvidere fever hospital, Glasgow, about 300 scarlet fever patients suffering from otorrhoea, and had not been able to trace any return. Dr. Miller could not be held to have fallen short of the standard of care and skill practised in his profession by discharging Duncan before the otorrhoea had finally ceased.

It could not be disputed that the sequence of events was in favour of the pursuer's case, and the bacteriological examinations of swabs taken from Duncan's ear proved that diphtheria bacilli were present, but the fact that negative as well as positive results were obtained suggested that they were not numerous. The proof that the other children were infected from Duncan, however, broke down, because it had not been established that virulent bacilli were ever present in the discharge from the ear. Diphtheria bacilli might be virulent or avirulent, and infection could only be transmitted by the former type, and the types were definitely immutable. Only a biological examination could disclose to which of these types a diphtheria bacillus belonged, but in practice, if the clinical symptoms indicated that the patient was suffering from diphtheria, and the microscopic examination showed the presence of diphtheria bacilli, it was naturally assumed that the bacilli were virulent. In the present case there was no clinical history to show conclusively that Duncan ever suffered from diphtheria, and biological examinations which had been made on two occasions showed that the bacilli were of non-virulent type. If, therefore, the question had to be decided as to whether Duncan infected his brothers and sister, his lordship said that he would have to hold that the pursuer had failed to prove tha tthe diphtheria of which his daughter died had been contracted by infection from Duncan. The pursuer had experienced a remarkable series of misfortunes with regard to his children, and it was perhaps natural that he should think there must have been some carelessness. The evidence, however, showed that not only was Dr. Miller not guilty of negligence, but the pursuer's children received all proper care and attention while in his charge. The defenders [defendants] were accordingly entitled to be assoilzied [absolved].

The defence in this case was undertaken by the Medical and Dental Defence Union of Scotland.

CHRISTIAN SCIENCE HOME CENSURED BY CORONER'S JURY.

AT an inquest held at Ealing, on December 14th, 1929, on the body of a Mrs. Lundy, who died from injuries consequent upon jumping from a window in a Christian Science home at Greenford, the proprietress of the home, Mrs. Gertrude Robinson, was censured by the jury for not taking precautions to protect the deceased from a suicidal tendency of which she was made aware, for not immediately calling in a doctor after the woman's fall, and for omitting to inform the relatives at once of the occurrence. A verdict of "Suicide during temporary insanity" was returned. The coroner made it plain that he did not endorse the jury's censure.

It was shown in evidence that the deceased lady, who was not herself a Christian scientist, was taken to the home temporarily by a brother. A previous threat to jump out of a window was mentioned to the proprietress, who said that the windows were fastened. On the following morning, having induced the nurse in attendance to leave her for a moment, the deceased went to a landing window and jumped out. The daughter of the lady was not informed of what had happened until late at night, two hours after death. According to the nurse, the woman behaved quite normally after the fall, and was able to move her limbs and to speak with ease. The proprietress said that had she realized that there was severe injury she would have called in a doctor. In reply to the coroner, who said, "I thought it was against your belief," Mrs. Robinson replied, "Yes, it is, but there are certain emergencies for which there are rules we cannot ignore." She did not inform the relatives because she did not think the woman was badly hurt, and she did not want to upset her. Dr. M. H. Renall testified that death was due to a fracture of the spine which would have been very difficult even for a medical man to detect without *x* rays. Asked whether, had he been called in, he could have saved the woman's life, he replied, "I think not."

The coroner said that it was easy enough to be wise after the event, but it seemed to him that it might have happened in any home. He was sure the jury would be wise and broad-minded enough not to find fault because it happened to be a Christian Science home. The jury, however, returned the rider stated, the coroner remarking, "It is the jury's verdict, not mine."

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

PROFESSOR A. V. HILL, F.R.S., will give a course of four public lectures on oxygen and the recovery process in muscle and nerve on January 20th, 27th, February 3rd and 10th, at 5 p.m.

A course of four public lectures on chemistry of muscle in relation to problems of cellular physiology will be given by Professor Otto Meyerhof, Director of the Institute of Physiology, Kaiser Wilhelm-Institut, Berlin, on March 6th, 7th, 10th, and 12th.

Two public lectures on the growth and developmental mechanics of bone will be given on March 11th and 13th by Professor J. C. Brash, Dean of the Faculty of Medicine, University of Birmingham.

The second term of a course of post-graduate lectures in biochemistry, to be given on Thursdays and Fridays at 4 p.m., will commence on January 16th.

UNIVERSITY OF BRISTOL.

DR. R. J. BROCKLEHURST, who has been appointed to the chair of physiology in the University of Bristol, received his medical education at Oxford and St. Bartholomew's Hospital; he graduated B.M., B.Ch. in 1924 and D.M. four years later. He held the appointment of demonstrator in physiology at St. Bartholomew's Medical College, 1925–26; was awarded a Radcliffe Travelling Fellowship, with the aid of which he travelled in America and Germany from 1926 to 1928; and returned to take up the post of lecturer at University College in August, 1928. His appointment at Bristol will come into force on August 1st.

Medical News.

A MEETING arranged by the Metropolitan Counties Branch of the British Medical Association will be held at the B.M.A. House, Tavistock Square, W.C.1, on Tuesday, February 11th, at 5.30 p.m. Dr. Francis R. Fraser, professor of medicine in the University of London and physician to St. Bartholomew's Hospital, will give an address entitled "Before the Finals and After." Fourth and fifth year students and recently qualified medical practitioners are cordially invited. Tea and coffee will be served at 5 p.m.

SIR GEORGE NEWMAN will give four Gresham Lectures on physic at Gresham College, Basinghall Street, E.C., on February 4th, 5th, 6th, and 7th, at 6 p.m. The lectures are open to the public without charge or tickets.

THE annual meeting of the Royal Microscopical Society will be held at 20, Hanover Square, W.1, on Wednesday, January 15th, at 7.30 for 8 p.m. Mr. Joseph E. Barnard, F.R.S., will deliver his presidential address on resolution and visibility in medical microscopy.

VISCOUNT GREY OF FALLODON will take the chair at the meeting of the British Institute of Philosophical Studies to be held at the Royal Society of Arts, 18, John Street, Adelphi, W.C.2, on Tuesday, January 14th, at 8.15 p.m. Principal L. P. Jacks will deliver a lecture on the philosophy of adult education.

AT a meeting of the General Council of King Edward's Hospital Fund for London, held on January 6th, with Lord Somerleyton in the chair, it was reported that H.R.H. The Prince of Wales, President of the Fund, had appointed the Lord High Chancellor (Lord Sankey), the Speaker of the House of Commons (Captain the Right Hon. Edward Fitzroy, M.P.), and the Governor of the Bank of England (the Right Hon. Montagu Norman), to exercise his powers as President during his absence from England.

THE Fellowship of Medicine and Post-Graduate Medical Association has arranged an all-day course in diseases of children at the Queen's Hospital for Children from January 13th to 25th. Fee £3 3s. for the two weeks; simple lunch and tea kindly provided by the hospital authorities. From January 27th to February 8th an intensive course in medicine, surgery, and the specialties will be given at the North-East London Post-Graduate College (Prince of Wales's Hospital, Tottenham, N.15). The fee for the course is £5 5s., or £3 3s. for either week. On January 21st the Fellowship of Medicine will start a new series of lectures, at the Medical Society of London lecture room, on successive Tuesdays at 4 o'clock. Graduates are requested to note the change of day and time of these lectures, which are free to the medical profession. The new series of clinical demonstrations in medicine and surgery at the various London hospitals will open on January 23rd. In addition to the special courses arranged for 1930 the Fellowship provides a general course which consists of the clinical practice of its associated hospitals. A programme is provided for ticket holders, which sets out the clinics under subject headings, leaving the graduate free to make out his own time-table. This course

is continuous throughout the year, and may be begun on any day of the week. Inquiries should be addressed to the secretary, Fellowship of Medicine, 1, Wimpole Street, W.1.

UNDER the auspices of the National Association for the Prevention of Infant Mortality a course of post-graduate lectures on maternity and child welfare intended for health visitors, nurses, midwives, and superintendents of infant welfare centres, will be given in the lecture hall at Carnegie House, 117, Piccadilly, W.1, on Monday evenings from 6.30 to 7.30, from January 20th to March 24th. A course of lectures on infant care, specially intended for crèche nurses and probationers, will be given at the same address on Thursday evenings, from January 23rd to March 27th from 7.30 to 8.30. Further details may be obtained from the honorary secretary of the National Association, at Carnegie House.

UNDER the auspices of the British Institute of Philosophical Studies a course of six lectures on some aspects of the moral life will be given by Professor W. G. de Burgh of the University of Reading on Thursdays, January 16th to February 20th inclusive, at the Royal Anthropological Institute, 52, Upper Bedford Place, W.C.1, at 5.45 p.m. The fee for the course for others than members of the Institute is 12s. 6d. A course of four lectures on science and art will be given by Professor S. Alexander, of the University of Manchester, at the Royal Anthropological Institute on Fridays, January 31st to February 21st inclusive, at 5.45 p.m., the fee being 10s. Applications for the syllabus and form of registration should be addressed to the director of studies, 83, Kingsway, W.C.2.

A COURSE of lectures on the construction and operation of x-ray and electro-medical apparatus has lately been started at the Austrian State Engineering and Electrical Institute in Vienna.

THE Royal Institute of Public Health will hold a congress in Portsmouth from June 4th to 9th. The scientific work of the meeting is being arranged in five sections, dealing respectively with: State medicine and municipal hygiene; naval, military, and air (including tropical) diseases; industrial hygiene; women and children and the public health; and tuberculosis. Delegates are being invited from public bodies in Great Britain and Ireland, France, Italy, Germany, and the United States. Further information may be obtained from the honorary secretaries of the congress, Royal Institute of Public Health, 37, Russell Square, W.C.1.

THE second Pan-American congress will be held at Panama under the presidency of Dr. Francesco Fernandez, Minister of Health for Cuba, from January 30th to February 5th, and will be attended by representatives of all the American republics and the Dominion of Canada. An exhibition will be held at the same time, showing recent progress in American hospitals and laboratories.

THE forty-fifth congress of the Berlin Balneological Society will be held at Bad Elster from April 9th to the 13th, under the presidency of Professor Dietrich. The congress will be preceded by an inspection of the buildings of Leipzig University, and followed by a visit to the sanatoriums in the neighbourhood. The chief subjects for discussion at the congress are the importance of iron in spas, mud baths, and the diet of patients at health resorts. Further information can be obtained from the general secretary, Dr. Max Hirsch, Steglitzstrasse 66, Berlin, W.35.

THE first international congress for psychical hygiene will be held at Washington from May 6th to 10th.

THE Henry Saxon Snell prize, which is awarded by the council of the Royal Sanitary Institute at intervals of three years, is offered in 1930 for an essay on improvements in the sanitary provisions of schools. The prize will consist of fifty guineas and the medal of the Institute. Typewritten essays of not more than 5,000 words, and illustrated by drawings or sketches, must be received on, or before, August 30th, by the secretary of the Institute, 90, Buckingham Palace Road, S.W.1, from whom further details may be obtained.

AN address on the growth of the mind, delivered as the Ninth Henderson Trust Lecture by Sir Robert Armstrong-Jones at Edinburgh University on November 29th, 1929, has now been published as an attractively illustrated pamphlet of thirty pages, and may be obtained from Messrs. Oliver and Boyd (Edinburgh and London: price 6d.). The Trust was founded by William Ramsay Henderson, who, in 1829, made a trust-disposition and settlement, requesting his trustees to assist in advancing the knowledge of brain physiology—at that time referred to as phrenology, cranioscopy, or organology. The previous lectures have been delivered by Professor G. Elliot Smith, Sir James Crichton-Browne, Sir Arthur Keith, Professor W. W. Graves, Professor Karl Pearson, Dr. Robert D. Clarkson, Professor Cyril Burt, and Dr. W. Norwood East.

THE King has confirmed the appointment of Dr. Aubrey Montague, chief medical officer, Fiji, as a nominated member of the Legislative Council of the colony of Fiji.

THE issue of the *Wiener medizinische Wochenschrift* for January 1st contains a reproduction in small type of its first number, published on April 5th, 1851.

The *Police Journal*, an excellent and well-produced quarterly review for the police forces of the Empire, usually includes one or more articles of medical interest. In the current issue, dated January, 1930, we note "Superstition and Crime in India," by H. R. Roe; "The Drug Traffic in the Punjab," by F. L. Newman; "Age and Crime," by James Devon; and, of more general interest, an article on the policeman in fiction.

IT is announced that Sir Woolmer White, formerly chairman of the hospital, is the anonymous benefactor who offered £10,000 for the enlargement and modernization of the Royal Portsmouth Hospital on condition that a like sum was raised by public subscription. This object has now been attained and £30,000 is available for the hospital.

THE London County Council is proposing to erect, in connexion with Banstead Mental Hospital, a detached building to serve as an admission hospital, designed on modern lines for the accommodation of 100 patients, 50 of each sex. This provision, besides giving the facilities for classification and treatment which are now recognized to be essential, will add to the total accommodation of the hospital, and so will help to meet the increasing demand which is being made upon the Council for beds for mentally afflicted patients. Banstead Mental Hospital has not hitherto possessed an admission hospital.

THE following appointments of members of the medical profession to the Venerable Order of the Hospital of St. John of Jerusalem are announced. *Commanders:* Dr. Charles Bage, Dr. John J. Holland, Lieut.-Col. Hugh R. G. Poate, Dr. Leslie W. Dryland, Dr. Nigel C. Fletcher, Dr. Gilbert P. Mosscrop. *Officers:* Dr. Harry L. Brownlow, Dr. Frank Hichens, Major Robert D. Cran, R.A.M.C.T., Lieut.-Col. Alexander R. Falconer, Sir Louis E. Barnett, Dr. John B. Gunson, Dr. Gustave H. Hogg, Dr. James H. G. Robertson, Dr. Alexander N. McKelvey, Lieut.-Col. Harry Spackman, late R.A.M.C., Colonel Astley V. Clarke, M.D., Dr. Daisey E. Platts-Mills, Mrs. Elizabeth G. Stewart, M.B. *Serving Brothers:* Dr. Arthur P. Gibbons, Dr. Arthur B. Cardew, Dr. Cecil Hibbert, Dr. John Murray, Dr. John W. Wyncoll, Dr. James L. Callaghan.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62553 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SENSATION OF COLD IN THORAX.

DR. L. W. K. SCARGILL (Whitby) asks for suggestions that may help him in the treatment of a patient who complains of a cold band across and around the chest. The distribution corresponds roughly to the third and fourth thoracic segments. The patient describes the symptom by saying that he feels as if he was always sitting in ice-cold water, with the surface just above the nipples.

FACIAL NEURALGIA.

"R. B. M." asks for advice in treating a case of persistent neuralgia affecting the right side of the face in a man aged 70. The pain is shooting in character, and the corner of the mouth and upper lip are so sensitive that the patient cannot eat solid food. All the teeth are absent; there is no evidence of neoplasm, and an *x*-ray examination of the bony structures is negative.

TRAIN SICKNESS.

IN reply to the inquiry of "J. T. M." in the *Journal* of December 21st, 1929 (p. 1184), Dr. LESLIE B. HARTLEY (London, W.) writes: I would advise "J. T. M." to have the child's eyes examined, if he has not already done so, since errors of refraction may cause nausea and vomiting when travelling. A girl, aged 8, came to me for re-examination to-day; I had prescribed spectacles for her fourteen months ago. At the time she was complaining of "eye-strain," and I found that she had one dioptre of astigmatism in each eye. I prescribed spectacles for this, and told her mother that the child should wear them for near work, at cinemas, and for motoring—in fact, when she was using her eyes. The mother had not mentioned that the child suffered from nausea, accompanied by vomiting, in trains and in the car, as she had not connected this with her eyes. But the mother told me to-day that, although in the past the child had suffered from nausea and often from vomiting in the car, this had been completely cured since she had worn her glasses. Furthermore, in corroboration of the fact that the spectacles had cured her, the child was violently sick on the only occasion when she went in the car without them; also she had the same symptoms on the only occasion when she watched the lawn tennis championships at Wimbledon without her glasses.

DR. F. G. GARDNER (Oxford) writes: I have found that vomiting caused by long train or motor journeys may be warded off by giving for a few days beforehand a simple stomachic mixture, such as ordinary gentian and soda mixture, or rhubarb and soda mixture, to which small doses of potassium bromide have been added. This treatment might be of use when ordinary travel by bus or train brings on an attack. I think the eyes should be examined, if this has not already been done, since astigmatism may be present, and this may be the cause of the trouble.

DR. J. W. HAUGHTON (Falmouth) writes: I have tried several things for train sickness. The following is the most useful combination for an adult:

R	Chloralamide	15 grains
	Pot. broin.	15 grains
	Tr aurant.	1 dr.
	Aq. chloroformi	1 oz.

If this is given an hour before starting a journey, and repeated in one hour, a third dose can be taken in an hour's time. I have generally found two doses sufficient for the long journey to London from Falmouth. "J. T. M." could reduce the dose of chloralamide to suit the child's age.

TREATMENT OF PRURITUS VULVAE.

DR. AGNES SAVILL (London, W.) writes: "R. S.," in your issue of January 4th (*p.* 54), describes a severe case of the above. X-ray, high frequency, and ultra-violet light should be useful, but if any scratching or rubbing continues the condition cannot be cured. Luminal at night aids sleep; the hands must be bound till the irritation is yielding to treatment. Sometimes it is necessary to paint the area with a strong acid and keep the patient in bed till the raw surface heals. Full details are given in my article in the *Lancet* last spring on the treatment of eczema of the vulva and anus.

DR. PERCY HALL (London, W.1), in reply to "R. S.," writes: Probably local treatment with the Kromayer lamp would give relief. This might further be helped by diathermic fulguration of the "spot."

"F. H. H." suggests that as the application of hot water brings temporary relief, diathermy with a vaginal electrode applied daily will produce more lasting relief. This treatment, combined with the high-frequency vacuum tube excited from a static machine, has invariably produced excellent results in the writer's hands. Improvement is noticed from the first application, and continues in most cases to a successful cure.

DR. J. R. WILLIAMS (Penmaenmawr) writes: I would suggest painting the parts with ol. menth. pip. Over thirty years ago I tried this treatment in a very obstinate case, and it gave immediate relief.

DR. PAUL CAVE (London, W.1) writes: It is not unusual for cases which do not react to any of the usual remedies to respond well to treatment with small doses of *x* rays. I would suggest the local application of three 1/2 pastille doses through 1/2 mm. aluminium filter at intervals of ten days. This treatment should not be repeated, but, if relief is not obtained, a few local applications of ultra-violet rays with a tungsten or mercury vapour lamp might be tried.

"M. G." writes: I had a similar case in which the irritation originated in the anus, but spread to all the surrounding parts; there was a special focus of irritation in the vulva. The patient had a dry, thin skin, dry mucous membranes, and a tight, small sphincter ani. I have no doubt that these conditions, inducing as they did undue spasm of the sphincter, produced the fissures for which she was operated on on two occasions. At the second operation the knife was passed round the anal opening subcutaneously, severing the nerves. The irritation in the anus ceased, but the general irritation was no better. No local treatment was of any use until I thought of using menthol as an antispasmodic. She was given a lanoline ointment containing ammoniated mercury, cyllin, 5 grains of menthol, and a teaspoonful of camphor water to the ounce. This was applied to the anus only; it completely relaxed the spasm of the sphincter, and everything else got well forthwith. The patient has used this ointment for seven years and has remained perfectly well. She never allows the bowels to go for a day without acting, using a warm water injection when necessary. She wears, day and night, a linen handkerchief on a light elastic band, in order to keep the ointment from staining her clothing.

INCOME TAX.

Change in Nature of Appointment.

"NEMO'S" income during the year ended April 5th, 1929, was derived from a hospital house appointment, locumtenent work, and, as from January 21st, 1929, from a salary of £300 per annum, as indoor assistant to a general practitioner. The total amount of his earnings for that year was £141 16s. He has been assessed for the year ending April 5th, 1930, at £300. Is that correct?

*** *Yes.* The rule that income is calculated according to the amount of the previous year applies to each various source of income, but not to income as a whole. For instance, if "Nemo's" salary as general practitioner's assistant should be increased to £350 from April, 1930, he will still be assessable at £300 for 1930-31, but a change in the appointment starts a new basis, and he is chargeable for the first year on the amount of the income of that year.

Change in Partnership: Surtax.

SUPERTAX writes: A, B, and C were in partnership until June, 1928, when B died, and A and C carried on, claiming to be treated as a new business for income tax purposes. A's share of the profit in 1927-28 was £1,600 and in 1928-29 £1,900. On what basis should A render his surtax return for 1928-29 for the tax payable in 1930?

*** The surtax liability must follow the income tax assessment. If we understand the facts correctly, A and C are to be regarded as having started a new business at June, 1928, and will be chargeable to income tax for 1928-29 on their shares of the actual profits—£1,900 in A's case. That being so, the same figure must be adopted for surtax.

LETTERS, NOTES, ETC.

THE RUSTED HYPODERMIC NEEDLE EMERGENCY.

DR. J. N. MORRIS (Plymouth) writes: The following "tip" may prove valuable should one's only available hypodermic needle be found inseparably rusted to the stilet. The rusting occurs near the point, and if the needle is gently snapped across about halfway down, the stilet can be extracted, and the necessary operation performed on the unlucky patient with the stump. This is prevented from ever happening again by seeing that all needles are in proper order.

HERPES AND VARICELLA.

DR. C. EDWARDS (Andover) writes: I do not know if it is of sufficient interest to record another of these combinations which has occurred in my practice: Mrs. C. (mother), herpes of cervical plexus, first seen on December 12th, 1929; Betty C. (infant, aged 1 year), varicella; rash appeared on December 27th, 1929.

OESOPHAGEAL OBSTRUCTION IN CHILDREN.

THERE was an obvious slip in the annotation with this heading in last week's *Journal* at page 28. The sentence beginning at line 11 of the second column should run: "After describing these twelve cases, and emphasizing the practical point that in making an *x*-ray examination a solid rather than a liquid opaque meal should be employed, the authors discuss briefly the subject of cardiospasm or achalasia in childhood."

WINTER MOTORING.

IN connexion with our Motor Correspondent's recent article on "Winter Motoring" (December 7th, 1929, p. 1061), Lodge Plugs, Ltd., Rugby, write to point out that difficult engine starting in the cold weather is frequently caused by the firing points of the sparking plugs having "grown apart," resulting in too wide a spark gap. It is quite an easy matter to close the points up again, but to ensure that they are re-set to the correct distance apart a gauge is necessary. The firm has produced a handy little key-ring gap gauge for this purpose, one of which it will be glad to forward to any of our readers who send a stamped addressed envelope.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 15.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

32. Pseudo-encephalitic Hypertonicity in Typhoid Fever.

E. MAY and M. KAPLAN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 4th, 1929, p. 1228) state that a pseudo-encephalitic hypertonic state may occur in typhoid fever in two forms. In the more frequent type there are permanent contractions, either localized—as, for example, trismus—or generalized and tetanic. The second type resembles a Parkinsonian rigidity, but is seldom very definite; it occasionally simulates the meningeal syndrome, and may occur in the lower limbs, but is more frequently observable in the upper limbs, appearing as flexion of the forearm upon the arm, and offering resistance similar to that of true Parkinsonism. In mild cases the "cogwheel phenomenon" may occur. Although this condition causes no discomfort to the patients, yet of four cases in which it was observed by the authors three patients died, and the fourth patient's condition became extremely grave. The authors give details of these four cases. In the first, at the beginning of the third week of the illness rigidity was noticed in passive movements of the forearm; hypertonia increased, accompanied by katatonic rigidity; deep stupor and continuous rigors supervened, and death occurred eight or ten days after hypertonia of the arms had been first observed. In another case hypertonia appeared at the end of the second week; rigors followed with severe pharyngeal spasms, and death occurred in twelve days. The third patient's symptoms assumed a fatal ataxo-adynamic type. The fourth patient, who recovered, proceeded normally for three weeks, when hypertonia of all limbs developed, particularly in the elbows. There were slight tremors and slight involuntary manual movements. The patient remained fully conscious, but the rigidity increased and the features became immobile. Four days later complete aphonia supervened, due to paralysis of the left vocal cord (recurrent laryngeal type). In the fifth week double ankle clonus developed, with incontinence of urine and faeces, and large bedsores appeared. On the forty-second day the rigidity diminished, the voice returned, and the deafness disappeared. The patient was discharged at the end of three months. The authors direct attention to the late development of rigidity in these cases as compared with the very early appearance of meningeal symptoms. In all these cases rigidity was a danger-signal. In two cases lumbar puncture was performed, but the cerebro-spinal fluid was quite normal. The last patient alone exhibited symptoms of involvement of the pyramidal tracts (clonus). No necropsies were permitted, but the authors suggest that the encephalitic symptoms were due to toxic rather than to inflammatory conditions: the hypertonia would then result from enteric intoxication of the nerve centres, analogous to that occurring in tetanus and diphtheria. The evolution of the symptoms indicated that the lesions were mesencephalic, and in the fatal cases it is probable that these extended to the medulla.

33. Massive Collapse of the Lung.

P. BENEDETTI (*Paris Méd., November 9th, 1929, p. 425*) believes that massive collapse of the lung is much more frequent than was thought to be the case a few years ago. Etiologically it can be classified as *post traumatic*; the sequel of some respiratory illness such as *bronchitis*, pulmonary abscess, or tuberculosis; and a *complication* of various conditions, including diphtheria paralysis of the diaphragm, acute poliomyelitis, HCl *poisoning*, *acute meningitis*, malaria, and costal fracture due to neoplasm. There is often a sudden onset with dyspnoea, cyanosis, *pain*, and a sense of thoracic constriction, tachycardia, cough often with expectoration, fever, and leucocytosis, but these symptoms may be absent and the condition be only detected by physical and *x*-ray examination. Unless the condition is bilateral it is rarely fatal, and post-mortem examination is seldom possible owing to the *improvement or cure which* almost invariably ensues. The mechanical and nervous phenomena associated with the signs and symptoms of massive collapse are discussed, and six points are put forward in support of the view that there is a double antagonistic nerve supply to the lung. On the one hand the para-sympathetic influences the expansion of the lung by lengthening the interlobular and pleural muscle fibres, producing a dilatation or diastolic state of the lung; the sympathetic, on the other hand, determines the retraction by causing contraction of the muscles, producing a systolic state of the lung. The innervation of the pleuro-interlobular mechanism is thus, the inverse of that of the muscular system of the bronchi. Physiological experiments on animals are also mentioned which support this view, and, in conclusion, the hypothesis of pulmonary tonicity as applied to cases of massive collapse is put forward to explain the pathology of this morbid condition.

34. Epilepsy and Alcoholism.

L. JARLOW (*Thèse de Paris*, 1929, No. 218), who records six illustrative cases in men aged from 26 to 68, shows that *epileptic* syndromes may occur in the course of the different forms of acute or chronic alcoholism. The symptoms may not appear till late in life when the patient is a latent epileptic, the disease being revealed by an alcoholic excess. Clinically, the epileptiform convulsions of the alcoholic subject are characterized by their localization in one particular group of muscles, their violence, and their association with psychical disturbance. The medico-legal position is stated by the author to be that the alcoholic epileptic patient is responsible for having voluntarily made himself drunk, but is not responsible for acts committed during an attack.

35. Babinski's Sign in the Newborn.

C. JUARROS and A. G. MUÑOZ (*La Med. Ibera*, November 30th, 1929, p. 573) investigated the plantar reflex in 200 newborn children with the following results. In the first hour after birth 96 showed dorsal flexion in both feet; 54 dorsal flexion in one foot and plantar flexion in the other; 6 plantar flexion in both feet; and 8 plantar flexion in one foot and abolition of the reflex in the other. Further examination eight days later showed that the reflexes remained the same in 112 and had undergone changes in 88. The fact that the mother was a primipara or multipara appeared to have *little effect on the* plantar reflex, except in one respect—namely, the greater frequency of a bilateral Babinski sign in the children of primiparae. Abnormal labour also increased the frequency of Babinski's sign. Sex had no influence in determining the nature of the plantar reflex.

Surgery.

36. Oesophageal Varix.

A. VIOLATO (*Il Policlinico, Sez. Chir.*, October 15th, 1929, p. 540) reports a case of rapidly fatal haematemesis in a youth due to rupture of a varix of the oesophagus which communicated with the thoracic aorta. The *patient died* in forty-eight hours, but the only symptoms complained of were malaise and fullness of stomach. Cirrhosis of the liver and symptoms of stasis in the portal system being absent, the haematemesis was attributed to gastric ulcer, the true condition being only revealed by a post-mortem examination. According to Violato oesophageal varices are commonly believed to be due to cirrhosis of the liver; but other causes are recorded, such as stasis of the vena cava produced by a thyroid or pancreatic tumour. Other forms of oesophageal varix have been classified by Dionisi as: (1) senile, due to sepsis and not to stasis; (2) congenital; and (3) occurring in adults without stasis or any obvious cause. Congenital syphilis, puerperal infection, and appendicitis have been named, however, as possible causes. Violato remarks that the differential diagnosis of oesophageal varix is difficult. Chronic gastric ulcers can be excluded by the history of the case, but the acute ulcer remains, particularly that variety in which prodromal symptoms are absent. Portal stasis due to cirrhosis may be absent or, if present, may give rise to no symptoms. If the haematemesis is not quickly fatal, examination with the oesophagoscope is the only means of making a diagnosis before an operation for gastric ulcer is undertaken. The case recorded by Violato has, he thinks, no parallel in the literature. The necropsy revealed a communication of the varix with the aorta, and death should perhaps be attributed more correctly to haemorrhage from the aorta. No cause for such an occurrence could be traced in Violato's patient as in the case recorded by Loeffler, where a tuberculous vertebral abscess led to rupture of the aorta into the oesophagus. For such a rupture to occur the presence of foreign bodies is not necessary, since solid particles of food or a high blood pressure may be responsible for the breaking of an oesophageal varix.

37. Leucoplakia of the Renal Pelvis.

A. A. KUTZMANN (*Arch. of Surg.*, November, 1929, p. 871) defines leucoplakia as a thickening or keratinization of epithelium taking on a definite epidermoid character, and occurring in any part of the body. The leucoplakial membranes resemble skin with characteristic layers of the stratum germinatum, mucosum, granulosum, lucidum, and corneum. The granular layer shows the typical keratohyaline granules seen in the skin, and the cells of the rete have the typical intercellular bridges. Lymphocytic infiltration of the underlying connective tissue is present. With leukoplakia in the urinary tract an ectodermal type of structure occurs in organs of mesodermal and entodermal origin, and is associated with a chronic urinary infection or lithiasis. It is not discovered until operation or at necropsy, since there are no characteristic symptoms, and the patient is usually treated for the associated condition. Leucoplakia may occur in any part of the urinary tract from the renal pelvis to the urethra, and at any time during life, though the fourth decade is the most common. The frequent presence of cystitis, pyonephrosis, tuberculosis, and lithiasis emphasizes the coexistence of infection and stone with leucoplakia, and suggests the possibility of there being an irritative factor in its causation. The two theories with regard to the etiology of leucoplakia are, that the process is one of metaplasia or adaptation and protection by cornification as the reaction to a chronic inflammatory environment; alternatively, that it is of congenital origin due to misplaced embryonal cell rests from the primitive ectoderm. The symptoms are usually dysuria, burning on urination, and frequency, with lumbar pains and backache ranging from the dull type to acute renal colic. The urine shows signs of infection, and pyuria with hematuria in 35.8 per cent. of cases. Careful cystoscopic examination of the bladder may reveal irregular plaques of membranous formation, situated upon a normal or an infected vesical mucous membrane. Treatment may be surgical if only one kidney is infected, but when nephrectomy is contraindicated pelvic lavage with a weak solution of silver nitrate, or curetting of the desquamating membrane, may be tried. Fulguration and the application of radium have resulted in only limited success in vesical cases.

38. Primary Influenzal Appendicitis.

J. ROMANT (*Monde Medical*, October 15th, 1929, p. 954), who records three illustrative cases in patients aged 52, 14½, and 33 respectively, all of whom recovered after operation, maintains that influenza plays a much more important part in the etiology of winter appendicitis than is supposed. The symptoms resemble those of gastro-intestinal influenza, consisting in colic, tenesmus, meteorism, bilious vomiting, and intestinal cramp which may be so violent as to resemble cholera. While spontaneous pain is diffuse and situated in the region of the umbilicus, tenderness is more pronounced in the right iliac fossa. In women the coexistence of an infective oöphoritis can be confirmed or excluded by recto-vaginal examination. Romant considers that the administration of a purgative is a dangerous test, but a rectal injection under low pressure which increases the caeco-appendicular pain is a safe guide. Treatment consists in early operation.

Therapeutics.

39. Acid-Alkali Treatment of Urinary Infections.

VARIOUS investigators have found that *B. coli* grows best in a medium of *p*H 5.0 to 8.0, with 7.0 as the optimum. Most urinary infections are due mainly to this organism, rarely, however, in pure culture, and the administration of drugs to alter the reaction of the urine has long been a recognized form of treatment; recently rapid alternations of acid and alkali in controlling urinary infection have been much used. S. PERLMANN and H. v. SAUER (*Münch. med. Woch.*, October 25th, 1929, p. 1793) have tried a special modification of this method, and report the results in 75 cases of pyelitis and cystitis in the acute, subacute, and chronic stages. No local treatment was given, but the administration of drugs was supported by alterations in the diet. For this purpose the commoner articles of diet were classified under four headings: strongly or weakly alkaline (including milk, tea, most fruits, and vegetables), and strongly and weakly acid (including meat, fish, cheese, butter, and eggs). For making the urine alkaline one tablespoonful of sodium bicarbonate was given three times daily with foods from the alkali groups; for acidifying the urine, camphoric acid (7.5 to 15 grains thrice daily), hydrochloric acid, phosphoric acid lemonade, and urotropine were given, and the diet constructed from the "acid" groups. The change from one to the other form of treatment was generally effected at four-day intervals. It was also found useful to allow plenty of fluids on the alkalizing days, and to restrict the quantity of fluids on the acidifying days. As alkalization generally produces an amelioration of symptoms, and acidification tends to exacerbate them, it is regarded as advisable to start with alkalization. The 75 cases recorded included 36 of pyelitis, 22 of cystitis, 10 of haemorrhagic cystitis, and 7 of pyuria in children; 53 patients were cured, 15 improved, and 7 were unaffected by the treatment. When the treatment was continued for some weeks it was possible to cure cases of chronic infection of long standing. In the refractory cases such conditions as stricture of the ureter or prostatitis were subsequently found. Perlmann and v. Sauer therefore recommend this scheme of treatment as particularly applicable in private practice where conditions do not allow of local treatment (such as bladder wash-outs), and in children in whom a trial of conservative treatment is generally desirable. They add that it is important to recollect that a persistent pyuria may be secondary to tuberculosis, stone, or malformation.

40. Quinine Dihydrochloride in Chronic Constipation.

THE action of quinine and its official salts has been studied for many years, and Singer has reported the effects of the double salts in cases of severe and intractable constipation. Employing them subcutaneously, intravenously, and rectally in the form of suppositories and small enemas, he found that the rectal method gave by far the best and most prompt results. A. B. GRAHAM (*Journ. Amer. Med. Assoc.*, October 19th, 1929, p. 1187) records the results following the administration of 5-grain doses of quinine dihydrochloride as suppositories in 185 cases of chronic constipation of every type; good results were obtained in 76.2 per cent. of these patients. Though the improvement was not spectacular, Graham believes that, if a rapid evacuation of the contents of the rectum and pelvic colon is desired, the administration of these suppositories is far preferable to a cathartic or stimulating enema. Better and more prompt results will be obtained, and although the stools are large they are not watery. In 25 per cent. of the cases there was ano-rectal irritation, and in 2 per cent. small rectal haemorrhages occurred, but these were the only untoward effects manifested. Various theories have been advanced as to the mode of action of quinine on the intestine. Graham suggests that it is quite possible that this double salt of quinine, as Singer thought and Ladisch and Chione demonstrated, stimulates the smooth musculature of the intestine. Whether this is a direct action, or results from a mechanical and a possible chemical stimulation, could not be determined. In most cases in which positive results were not obtained with the 5-grain suppositories, doubling the dose proved successful; this might signify that some rectal mucosas require a more intense chemical stimulation than do others.

41. Treatment of Disseminated Sclerosis.

ADVOCATING haemolytic serotherapy in disseminated sclerosis, L. LAVASTINE and N. T. KORESSIOS (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 18th, 1929, p. 1255) refer to three cases reported in 1928; two patients have remained well for about three years, and in the third case the amelioration has persisted for a year. Four further cases are now recorded in which definite improvement followed injections of haemolytic serum. In a fifth patient doubt exists whether the remission was spontaneous or due to the treatment. In these cases two to five doses each of 1 to 5 c.cm. of the serum were administered. The authors state that in some cases a certain amount of improvement is obtained and the course of the disease seems to be arrested, but the persistence of Babinski's sign (as in one of the earlier reported cases) indicates that some lesions are irremediable, and that neither the intensity nor the duration of treatment can produce a greater improvement or definite cure. In disseminated scleroses of a paraplegic type with abolition or very great diminution of the muscular force, and even in those forms with a very marked cerebellar syndrome and conservation of the muscular force this treatment is useless. Serotherapy is recommended in all commencing cases in the first six or twelve months of their course; in acute cerebellar syndromes; in subacute sclerous myelites with a predominance of cerebellar troubles; and in paretic syndromes of slow evolution.

42. Antigangrene Serum in Typhoid Fever.

M. TAPIA and P. AZNAR (*La med. Ibera*, October 26th, 1929, p. 405) record eleven illustrative cases, in patients aged from 10 to 34, showing that the course of typhoid fever is in no way affected by antigangrene serum as recommended by Weinborg, owing to the association of anaerobic organisms, especially *B. perfringens*, with the typhoid bacillus. The authors agree that it is true that the patients' faeces always

contained *B. perfringens*, but this is also true of the faeces in other diseases or in normal health. They did not find any relation between the abundance of *B. perfringens* and its pathogenic action; in other words, the local conditions which might favour its multiplication did not appear to affect its virulence. There also did not appear to be any relation between the pathogenicity of the organism isolated from the patient and the toxic symptoms, or intestinal manifestations, in the patient.

43. Preservation of Typhoid and Cholera Vaccine.

F. KONRICH (*Zentralbl. f. Bakt.*, October 31st, 1929, p. 420), as the result of experiments on rabbits and guinea-pigs, comes to the conclusion that typhoid and cholera vaccine retain their efficacy for a considerably longer period than is generally supposed, the extreme limit being about two years. The ordinary room temperature does not have such an injurious effect on them as has hitherto been believed; it is best, however, to keep them in the ice-chest. The agglutination test is a less decisive means of deciding the efficacy of the vaccines than the immunity test.

Dermatology.

44. Alopecia Areata.

W. H. BROWN (*Brit. Journ. Derm. and Syph.*, August-September, 1929, p. 299) discusses the etiology of alopecia areata and its relation to vitiligo and possibly scleroderma, with references to the literature, his own observations, and a survey of 300 cases. The incidence is heaviest in the first decade of life, above all in the dark-haired. Among his own patients females predominated, though four other observers give a higher incidence in males. Family predisposition is also an important factor, though family traits may be quite easily overlooked except after searching inquiry. No one etiological factor will explain all cases, various factors, either singly or in combination, being responsible—as, for example, physical trauma, or psychic or mental stress and strain from anxiety, emotion, fever, and overwork. Such influences act by transmitting abnormal impulses through the sympathetic or endocrine-sympathetic system to the hair papillae with a disturbance of nutrition; they may be sudden and severe in onset or milder and more prolonged in operation. The absorption of toxins acting directly on the nutrition of the hair, or through the endocrine-sympathetic system from prolonged poisoning, may be a causative factor arising from focal sepsis, especially infection in the tonsils, teeth, nasopharynx, etc. Whatever the apparent causal factor, the brunt of the reaction in most cases is borne by the endocrine system, a primary lesion of which may so alter the normal hormone content of the blood as to disturb the nutrition of the hair, with resulting alopecia. Other factors are disturbances of the endocrine and vegetative nervous system, and a prominent predisposing factor is constitutional emotional instability.

45. Skin Changes in Pulmonary Tuberculosis.

J. SZÁNTÓ (*Derm. Woch.*, November 30th, 1929, p. 1839) finds that careful examination of the skin in patients suffering from pulmonary tuberculosis reveals two remarkable facts: (1) tuberculous lesions of the skin and oral mucosa seldom accompany pulmonary tuberculosis; (2) how frequently non-tuberculous skin lesions are found. Skin diseases occurring during the course of pulmonary tuberculosis may be tuberculides, or accidental dermatoses, but there is a group of dermatoses the connexion of which with tuberculosis is a moot point. Szántó found 1,405 cases of skin disease (that is, 29.53 per cent.) among 4,757 patients in two sanatoriums; of these, 601 patients were men, 793 women, and 11 children. These figures represent the total incidence of skin diseases, and not the number of patients affected; some had two or three dermatoses simultaneously. The group representing various tuberculides numbered only 38 (0.79 per cent.). These statistics approximate closely those of many other German writers. Sternberg suggests that there is an embryological antagonism between tuberculides and pulmonary tuberculosis, the skin being of ectodermal origin, while the lungs are chiefly derived from the endoderm; hence, coincident infection of skin and lungs occurs rarely. On the other hand, while in Czechoslovakia investigators have found only 20 per cent. of patients suffering from pulmonary tuberculosis and lupus, there occurred in Pomerania 24.7 per cent.; in Oslo 29.56 per cent.; in Theiss (Hungary) 34.8 per cent.; in Budapest 75 per cent.; and in Leningrad 78 per cent. These great differences discovered by various writers are due probably to geographical and ethnographical conditions. In the second group the present author places dermatoses of toxic origin. The septic condition of the skin lowers its resistance, hence the relative frequency of various forms of dermatitis and of eczema. Szántó found 103 cases of dermatitis and 71 of eczema among his patients. The sex incidence was practically equal. In the third group (usually associated with chronic febrile conditions) are skin oedema, dryness, atrophy, etc. The author places in a fourth group "indirect" skin lesions, such as seborrhoea, acne vulgaris, chloasma, acrocyanosis, and erythrocyanosis cruris. Chloasma phthisicorium must not be confused with Addison's disease; the former occurs on the exposed skin around the mouth, spreading later to the temporal and zygomatic regions; and the mucosae are not pigmented. Szántó places in a fifth group various dermatophyses and syphilis, found in 96 men and 35 women (2.75 per cent.). There has been a definite increase in syphilitic cases in the author's sanatoriums since 1925. Szántó found that the number of cases of erythema nodosum, lupus erythematosus, psoriasis, and herpes zoster was so small (the total number was only 30) that any connexion of these diseases with tuberculosis can be excluded.

46. Genital Moniliasis.

H. ODLAND and RACHEL E. HOFFSTADT (*Arch. Derm. and Syph.*, September, 1929, p. 335) record two unusual cases of an eruption on the genitals which was suspected at first of having a venereal etiology. A man complained of itching of the penis of four days' duration; a thin, fairly adherent, scaling band was found on the corona glandis, which on microscopical examination showed mycelial threads and clusters of conidia. His wife complained of a pruritus of ten days' duration; there was a thrush-like eruption of thick membranous patches on the labia minora, extending inwardly to the vaginal walls. Scrapings gave the same microscopic result as in the man. Complete cure resulted from the application of gentian violet alternated with a 10 per cent. solution of silver nitrate. No lesions were observed in the mouth or on any cutaneous surface. The cultural characteristics of the organism resembled those of the *Monilia pinoyi* of Castellani, except that it rendered milk alkaline after three weeks; the same type of organism has been reported by Castellani in a case of vaginal moniliasis. The thrush-like appearance of the eruption, especially in the woman, with its sharply marginated, pearly white, and thick membranous plaques, was characteristic; and the large numbers of mycelial threads and conidia were diagnostic. The disease appears to have been directly transmitted from the wife to the husband, the *Monilia pinoyi* being the causative agent in both cases.

Obstetrics and Gynaecology.

47. Section of the Ovarian Nerve Supply.

R. DUPONT (*Le Scalpel*, November 16th, 1929, p. 1245) has verified his opinion, shared with Lhermitte in 1927, that by cutting the nerve supply to the ovary there exists a simple remedy for a certain number of pelvic disorders. The nerves of the ovary take origin in the renal plexus, which is formed from the coeliac plexus; they then descend along the utero-ovarian artery, receiving several branches from the intermesenteric, and finally two or three nerves penetrate the ovary at the hilum. Hovelacque, who studied these nerves in detail, found no anastomosis between the nerves of the ovary and those of the uterus. In view of the derivation of the ovarian nerves, it becomes obvious that gastric and intestinal disorders may be associated with ovarian pain. The nerves entering the hilum are not visible to the naked eye, but their position has been determined by the author by means of a series of sections. He observed that they were constantly found at the middle of the hilum. The indications for the operation of cutting the ovarian nerve supply fall into three chief groups. The first is dysmenorrhoea of ovarian origin, the symptoms of which consist of lateral pain, which precedes and ceases with the appearance of the menses. This pain radiates to the thighs, and is accompanied also by distant manifestations such as digestive troubles. On examination of such a patient between the attacks of pain one or both ovaries are found to be enlarged and tender, and sometimes displaced. The second group of indications is furnished by subjective symptoms such as melancholy, neurasthenia, migraine, and insomnia. In the third group the symptoms are chiefly associated with the digestive tract, particularly with colic. The connexion between these groups of symptoms and the ovary is not always easy to demonstrate, but in the author's opinion the results of the operation verify the hypothesis. With a certain number of cases the section of ovarian nerves has been associated with ligamentopexy, resection of parts of ovary, and appendicectomy. But it is in the patients on whom ovarian neurectomy alone has been performed that the results have appeared convincing. The author supports his argument by quoting fifteen cases.

48. The Zondek-Aschheim Test for Pregnancy.

F. VOZZA (*Ann. di Ostet. e Ginecol.*, October 31st, 1929, p. 1189) confirms the value of the Zondek-Aschheim test for pregnancy, which consists in the injection into immature mice of the urine from the patient, a positive result being shown by increase in size and vascularity of the whole of the genital tract, and maturation of ovarian follicles with luteinization and intrafollicular haemorrhages. A slightly modified technique is described. In common with other observers, Vozza noted a comparatively large mortality (11 per cent.) among the animals used. In certain cases he claims to have obtained reliable results also from injection of the blood serum in amounts of 0.3 to 0.45 c.cm. The urine of 101 pregnant patients, of whom 49 were in the second month and 31 in the third month, gave positive tests in all but two cases; in one instance the reaction was positive eight days after the first menstruation had been missed. Ten cases of extrauterine pregnancy gave six positive and four negative results; in the former group the ovum was still alive, in the latter it had been destroyed by haemorrhage, etc. The reaction was positive in six cases of vesicular mole in which no foetal remnants were perceptible—a finding which has been made by others also; this is taken to signify that overproduction of the anterior pituitary hormone is due to a hormonic stimulus derived not from the foetus but from the chorion. Tests of the urine of 15 men, 15 patients with adnexal inflammation, and 20 other gynaecological patients were negative in all but one instance.

49. Alleviation of Labour Pains.

H. NEVINNY (*Wien. klin. Woch.*, November 7th, 1929, p. 1440) refers to the article by Vogt (see *Epitome*, 1928, vol., i, para. 329) and analyses the results obtained by the administration of pernocton in 100 deliveries accompanied by severe labour pains. The drug, which is a 10 per cent. solution of a barbituric acid derivative, was given intravenously after the commencement of a pain, the dose being 1 c.cm. of the solution to 12.5 kilos of body weight; by slowing the rate of injection to two minutes for 1 c.cm. the symptoms of excitement and restlessness, which were observed in some other cases, were lessened or removed. The shortest action of the drug lasted half an hour, and in those patients who had not received the full dose it lasted on an average 1½ hours. Of the 100 patients 71 had complete unconsciousness and 22 almost complete unconsciousness throughout the labour; in one case no result followed the injection, and in six the reaction was unsatisfactory owing to error in dose or in the selection of the site of the injection. In the majority of cases there was a marked fall in the maximum blood pressure after the injection, especially in patients with high blood pressure. The beneficial effect of pernocton on pre-eclamptic conditions has also been described by other observers. The respiration was deepened but not prolonged, resembling that of physiological sleep, and the pulse was slightly slowed. No unfavourable symptoms were noted either in the mothers or the children during their stay in the clinic.

Pathology.

50. Etiological Factors in Diabetes Insipidus.

L. D'ANTONA and L. CROSETTI (*Arch. Path. e Clin. Med.*, October, 1929, p. 3) have investigated three cases of diabetes insipidus, one of which was post-encephalitic, one probably of arterio-sclerotic origin, and the third of no obvious assignable etiology. In no instance were there any changes in the sella turcica to be noted radiologically. In all three cases pituitrin gave a marked inhibition of the diuresis, but this was only of short duration and without effect on the specific gravity of the urine. The authors regard the action of pituitrin as purely vaso-constrictor. They find that ergotamine can diminish the antidiuretic action of pituitrin; a similar antagonistic effect which has been noted for these substances in respect to heat production seems to confirm the hypothesis that pituitrin acts by way of the diencephalic centres. It was found that whereas potassium chloride combined with pituitrin does not modify appreciably the action of pituitrin, the combination of calcium chloride and pituitrin not only intensifies the antidiuretic action, but increases the density of the urine. The authors have studied in detail the elimination of the radicles Cl, SO_4, P_2O_5, K, Ca, and Na, and note that in diabetes insipidus there is an alteration in the elimination of different ions, which are concentrated in varying degree, not only in different cases, but in the same case, depending on the introduction of different chemical combinations of the same ion. This is an indication that the polyuria of diabetes insipidus should not be regarded as a simple renal hydrorrhoea, but that, besides the kidney, the tissues play an important part in the phenomenon.

51. The Nasopharyngeal Flora in Health and during Respiratory Disease.

E. L. BURKY and W. G. SMILLIE (*Journ. Exper. Med.*, November, 1929, p. 643) have conducted an investigation of the nasopharyngeal flora in isolated communities in Alabama and Labrador. In Alabama cultures were taken at irregular intervals from a group of twenty-three school children; in Labrador most of the cultures appear to have been taken from native trappers. During the investigation in Alabama an epidemic of colds broke out, and in Labrador an epidemic of tracheitis, which was apparently of influenzal origin. Though both qualitative and quantitative differences were found, there was a considerable degree of parallelism between the results in the two communities. The normal flora consisted mainly of Gram-negative cocci, haemolytic streptococci, and staphylococci; in Labrador pneumococci were common, whereas in Alabama they were absent; Pfeiffer's bacillus was present in only small numbers. During the epidemic of colds in Alabama the most striking finding was the appearance of pneumococci and the rise in the incidence of Pfeiffer's bacillus; haemolytic streptococci likewise appeared, but only in small numbers. During the epidemic of tracheitis in Labrador Pfeiffer's bacillus increased in incidence, but the percentage of pneumococci actually fell slightly; haemolytic streptococci were practically absent. It is noteworthy that in Alabama the prevalence of Pfeiffer's bacillus reached its maximum a month after the epidemic of colds had reached its height, whereas in Labrador the maximum prevalence was coincident with the rise of the tracheit's outbreak. The results obtained in these two isolated communities are in general agreement with those obtained by Park in New York.

52. Cultivation of the Leprosy Bacillus.

K. SHIGA (*Zentralbl. f. Bakt.*, November 30th, 1929, p. 511) claims to have cultivated the leprosy bacillus on an artificial medium. The technique used was as follows. The lepra nodules were excised under antiseptic conditions and sent to the laboratory, where they were examined three to ten days after excision. The nodule was ground up in a mortar with 5 per cent. sulphuric acid; it was left in the incubator for twenty minutes, and was then centrifuged. The deposit was washed with saline solution and again centrifuged. The washed deposit was inoculated with a platinum loop on to glycerin potato, prepared by steaming the potato wedges in 4 per cent. glycerin broth, standardizing the reaction to *p*H 6.8 to 7.0, transferring the wedges to Roux tubes, the lower part of each of which was filled with glycerin broth, and sterilizing the medium in the autoclave. No growth is detectable at 37° C. for about two months, and even then no visible colonies appear. The colonies that do form are very delicate and effuse, and under the microscope are found to be about 0.02 to 0.1 mm. in diameter. Films made after two months, and stained by the Ziehl-Neelsen method, show the bacilli arranged chiefly in clumps, similar to the arrangement in the tissues. They withstand 2 per cent. acid-alcohol; whether higher strengths are tolerated without decolorization is not stated. Subcultures are made every two months, and, since the colonies on potato are invisible, several tubes should be inoculated in case the platinum loop fails to touch a colony. The organisms have now been cultivated for four generations on this medium. On glycerin agar very tiny, just visible colonies have been obtained. The author attributes his success chiefly to the treatment of the lepra nodules with sulphuric acid.

53. Storage of Vitamins in the Placenta.

H. GUGGISBERG (*Deut. med. Woch.*, November 22nd, 1929, p. 1953) has shown by experiments on rats that the human placenta serves as a store for vitamins. The placenta can deprive a mother already deficient in vitamins for the advantage of the foetus; the mother becomes ill, but the foetus remains healthy, though the reserve store of vitamins in the offspring is reduced, and the resistance to extrauterine influences is lowered. While the general characteristics of the foetus, its size, weight, and the development of its bones and organs are not affected, the richness in vitamins and the mineral metabolism of the offspring are influenced by the placenta. From observations on human beings and on rats Guggisberg found that by giving extra vitamin with the food to the pregnant mother the vitamin strength of the offspring was raised. To the food of a series of pregnant rats several drops of a vitamin preparation were added daily. After birth the young received mother's milk for seven weeks, and then this was substituted by McCollum's rachitic diet; none of these young rats developed rickets. A number of control young rats born from normally fed mothers who had not received the vitamin preparation were similarly fed, first on mother's milk and after seven weeks on McCollum's diet; all these rats without exception developed rickets.

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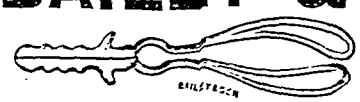
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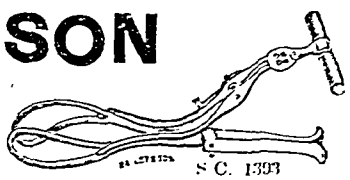
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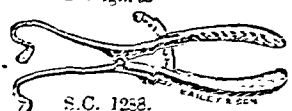
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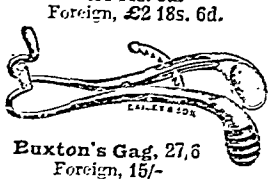
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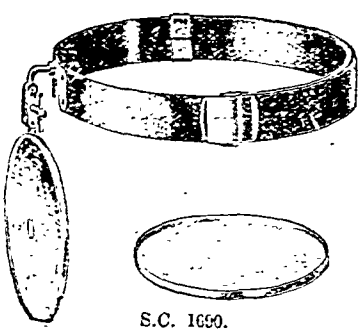
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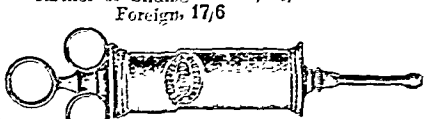
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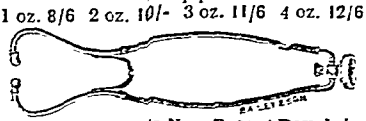
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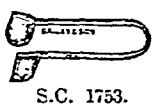
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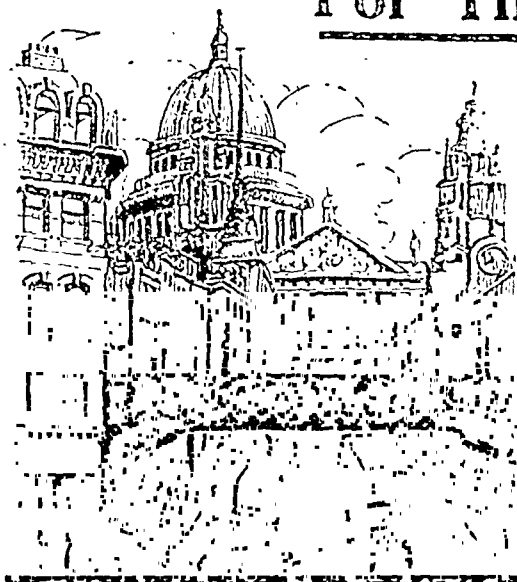
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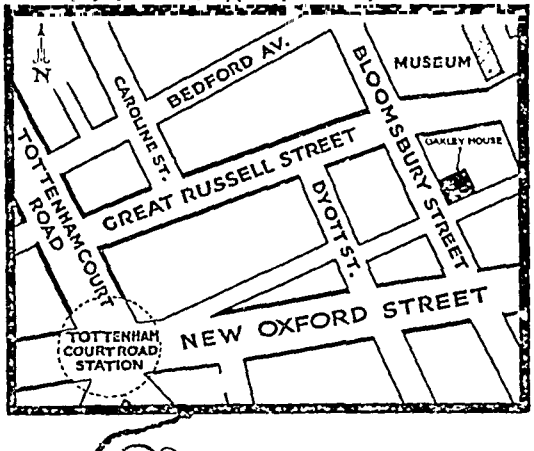
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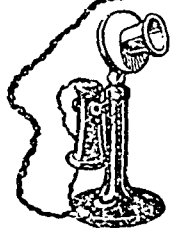
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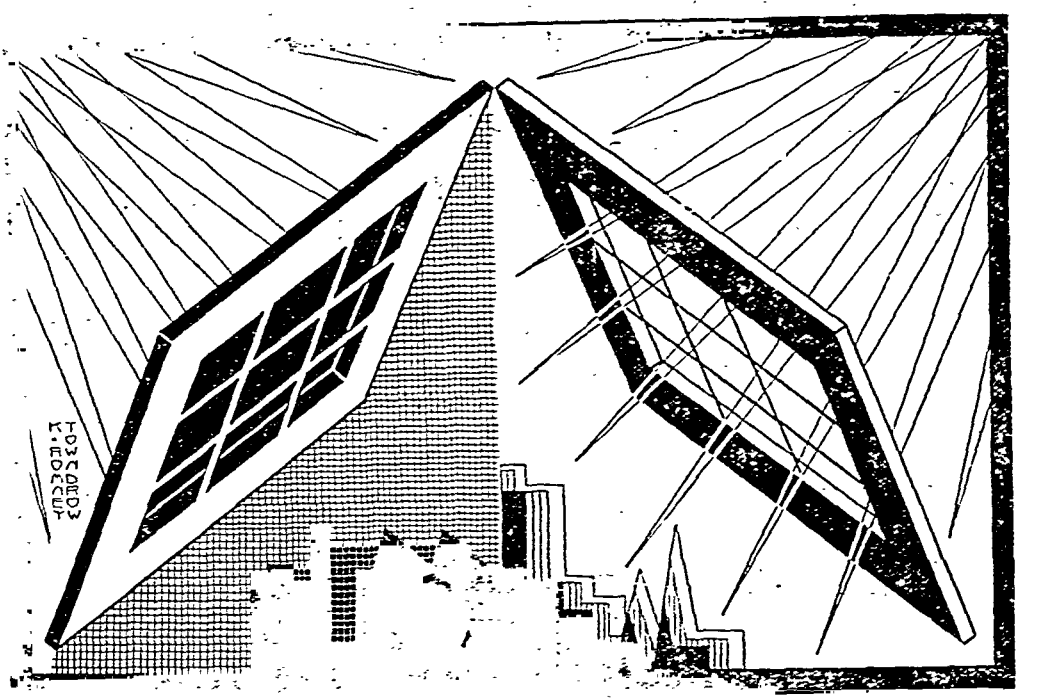
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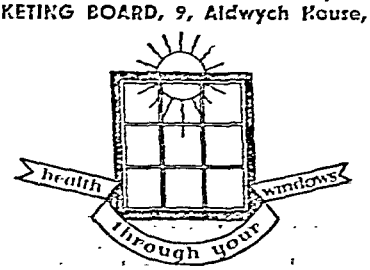
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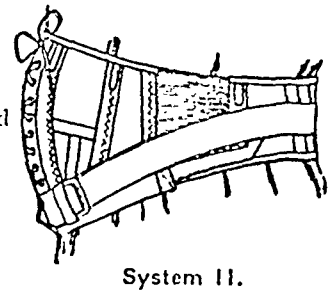


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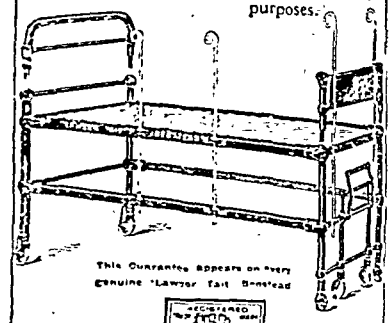
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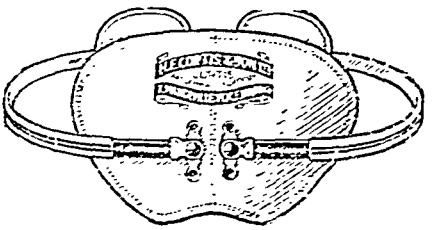


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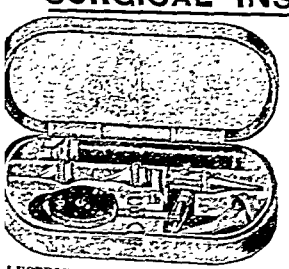
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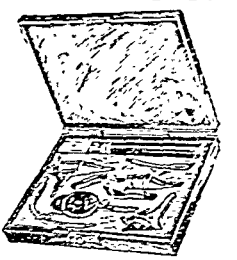
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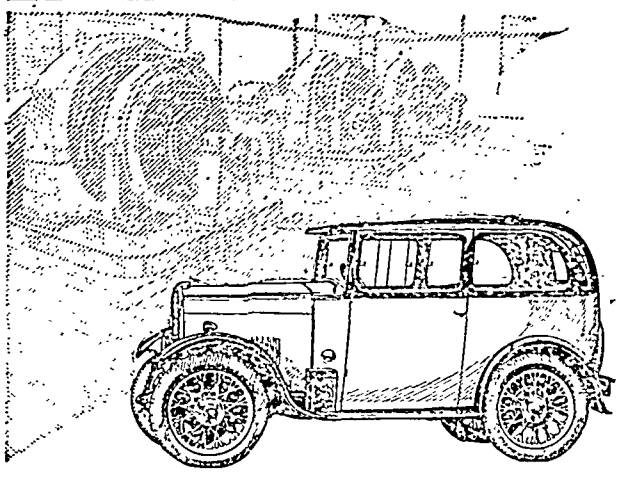
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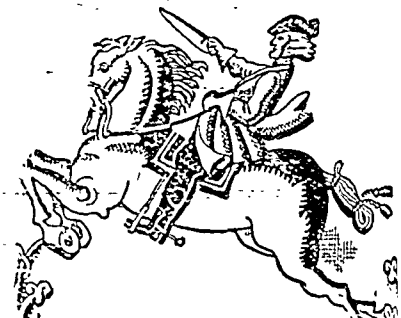
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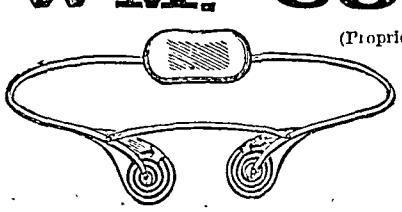
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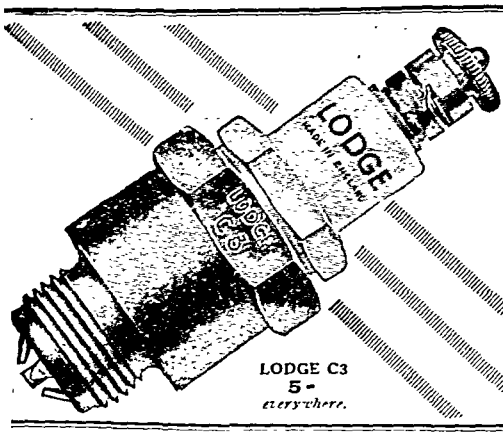
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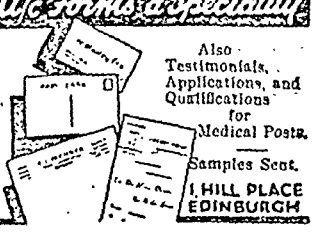
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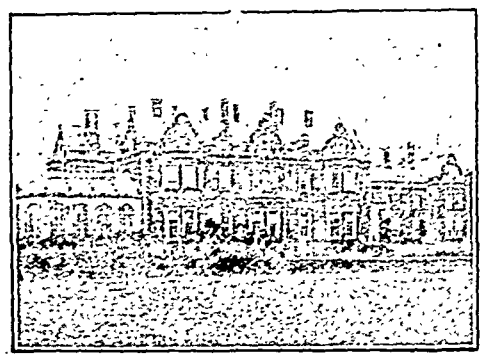
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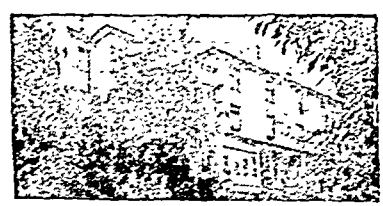
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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 481 GATLEY.

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A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,
Dr. MARY R. BARKAS, M.D., D.P.M.

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Situated in 3½ acres of secluded garden
HOME FOR TWELVE MENTAL PATIENTS LADIES
Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

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The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiograph, Artificial Sunlight, and Medical Baths.

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Telegrams: Castle, Ruthin. Telephone: 65, Ruthin. Ruthin Castle, North Wales.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1926, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

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Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
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For further particulars, apply to the MEDICAL SUPERINTENDENT.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.
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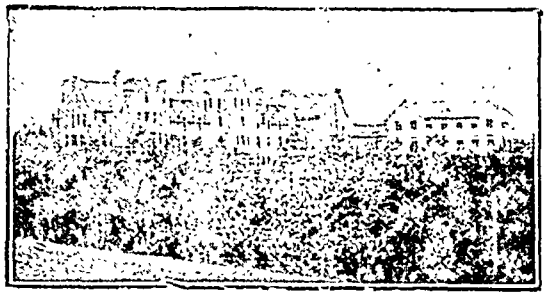
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The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

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Medical Director: David Lawson, M.D., F.R.S.E.

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WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23

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Qualified Medical Women are admitted to

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MIDDLESEX HOSPITAL.

The Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Monday, January 20th, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1.

ANATOMY.

Personal instruction is given daily by Professor T. YEATES, M.B., C.M.

PHYSIOLOGY.

The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

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A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

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A Course of Four Lectures on "*Oxygen and the Recovery Process in Muscle and Nerve*" will be given by Professor A. V. HILL, F.R.S. (Professor of Physiology in the University), at UNIVERSITY COLLEGE, LONDON (Gower St., W.C.1), on MONDAYS, JANUARY 20th, 27th; FEBRUARY 3rd and 10th, at 5 p.m.

A Course of Four Lectures on "*Physiology of Posture and Movement*" will be given by Dr. SAMSON WRIGHT, M.D., M.R.C.P., at KING'S COLLEGE, LONDON (Strand, W.C.2), on TUESDAYS, JANUARY 21st, 28th; FEBRUARY 4th and 11th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

The University of Manchester.

Applications are invited for the post of LECTURER IN DENTAL HISTOLOGY. Stipend £50 per annum. Duties to commence as early as possible in the Lent Term, 1930. Applications should be sent not later than Friday, January 24th, 1930, to the REGISTRAR, from whom further particulars may be obtained.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

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Examination in which interested.....

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all*

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Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above examination will begin on Monday, February 10th. The fee for the Course is 15 guineas. Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

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19, WELBECK STREET, LONDON, W.1.
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F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence Jan. 27th. Correspondence course for July and later exams. should begin now. Parties.—H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

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Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from JANUARY 27th to FEBRUARY 8th. Lectures, demonstrations, and cliniques in the various general and special departments. The number is limited to 25.

Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

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BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

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The next Examination will take place on Monday, May 19th, 1930, and following days. For regulations apply to—
FRANK HAYDON, Secretary.

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ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the JUNE EXAMINATION will begin on MONDAY, FEBRUARY 3rd, 1930, and will be conducted as follows:

ANATOMY AND EMBRYOLOGY.—*Prof.* J. ERNEST FRAZER, F.R.C.S. (Professor of Anatomy in the University of London).

PHYSIOLOGY AND HISTOLOGY (with Practical Classes).—Prof. B. J. COLLINGWOOD, O.B.E., M.D. (Professor of Physiology in the University of London).

Fee for the Course, 16 gns., or 9 gns. for either section separately. This fee includes membership of the Students' Club during the period covered by the Course.

For further particulars apply to the School Secretary.

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Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

St. Mary's Hospitals, Manchester

Two HOUSE SURGEONS for the WHITWORTH STREET WEST HOSPITAL (Maternity), and Two for the WHITWORTH PARK HOSPITAL (one Children's Department and one Gynæcological Department), each for a period of six months from February 1st next. Salaries at the rate of £50 per annum, with board and residence. Application, with copies of three testimonials, to be sent to the undersigned on or before January 15th.

R. RATCLIFFE, Secretary.

THE CANCER HOSPITAL (FREE), FULHAM ROAD, LONDON, S.W.3.

ADVANCED COURSE IN RADIOLOGY will be held at the above Institution, extending over a period of three months, commencing on January 21st, on Tuesday and Thursday afternoons from 3 to 5 p.m.

The Course includes lectures, practical and clinical demonstrations upon RADIUM and X-RAY THERAPY, and Radio Diagnosis, with preliminary instruction in the physical and technical aspects of treatment.

The fee for the Course is 5 guineas—payable to the Hon. Secretary Medical Committee.

Further particulars may be obtained from the undersigned.

(Signed) J. COURTNEY BUCHANAN, Secretary.

LEOPOLD SALZER PRIZE.

Attention is called to this CASH PRIZE of £100 to be offered on January 1st, 1931, to the author of the best Essay upon the treatment, according to the principles of Homœopathy, of INSANITY in all its forms.—For full particulars apply to the Secretary, British Homœopathic Association (Inc.), 43, Russell Square, W.C.1.

City of Aberdeen.

WOODEND MUNICIPAL HOSPITAL.

JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited for the post of *Junior Resident Medical Officer* (male) at Woodend Municipal Hospital, Aberdeen.

Applicants must be fully qualified, registered and unmarried. Appointment limited to one year only and not renewable.

Salary £100 per annum, with apartments, board, and laundry free.

Applications, with copies of recent testimonials, should be forwarded to the undersigned on or before Tuesday, 14th instant. The successful candidate will be required to take up duty before the end of January.

41½, Union Street, Aberdeen. HARRY J. RAE, Medical Officer of Health.

Manchester Royal Infirmary.

CLINICAL ASSISTANTS (Two) in SURGICAL OUT-PATIENT DEPARTMENT.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments, vacant on February 1st. Applicants (either sex) must be registered and hold a Medical and Surgical qualification.

The appointment (non-resident) is for six months, subject to the provisions of the By-laws as to notice, etc. Attendance is required daily (Sundays excepted) from 9 a.m. Salary £35 for the period of six months.

Applications, stating age, should be addressed to the Chairman of the Medical Board not later than Monday morning, January 20th.

By Order, FRANK G. HAZELL, Jan. 6th, 1930. Gen. Supt. & Secretary.

Manchester Royal Infirmary.

BARNES CONVALESCENT HOSPITAL, CHEADLE.

RESIDENT MEDICAL OFFICER, to commence duty during January.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is tenable for twelve months, subject to the provisions of the By-laws as to notice.

Remuneration is at the rate of £250 per annum, with board and residence.

Applicants must state age, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Thursday, January 23rd.

By Order, FRANK G. HAZELL, Jan. 6th, 1930. Gen. Supt. & Secretary.

Royal Albert Hospital and Eye INFIRMARY, DEVONPORT.

A vacancy for the post of SENIOR HOUSE SURGEON exists. Applicants must be fully qualified, registered, and unmarried. Salary £150 per annum, with apartments, board, and laundry.

Applications, together with copies of not more than three testimonials, addressed to the "Chairman of the Selection Committee," must reach the undersigned not later than first post Saturday, January 18th.

Royal Albert Hospital and Eye Infirmary, Devonport. January 6th, 1930. [illegible] ROWE, Secretary.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invites applications from registered Medical Practitioners for the post of Assistant Medical Officer. Applicants must not be over 35 years of age, and must possess the Diploma of Public Health. The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare and Tuberculosis Acts, and Venereal Diseases Regulations; and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County. The salary will be £600 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained, together with further particulars, from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Monday, January 27th. All communications must be endorsed "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Hall, Kingston-upon-Thames. January 7th, 1930. DUDLEY AUKLAND, Clerk of the County Council.

City and County of the City of CHESTER.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the appointment of Assistant Medical Officer of Health for the City of Chester, at a salary of £600 per annum (*without bonus*). The work will include, among other duties, School Medical Inspection and work in connection with infectious diseases, tuberculosis, maternity and child welfare schemes, and laboratory work, and the whole time of the officer must be given to the duties of the office.

Candidates must possess registered qualifications in Medicine, Surgery, and Midwifery, and hold a Diploma in Public Health.

The successful applicant will be required to pass a medical examination and contribute to the fund established under the Local Government and Other Officers Superannuation Act, 1922.

Canvassing, either directly or indirectly, will be a disqualification.

Applications, accompanied by copies of four recent testimonials (which will not be returned), on forms to be obtained from the undersigned, must be received not later than Friday, January 24th.

Town Hall, Chester. January 6th, 1930. J. H. DICKSON, Town Clerk.

The Marie Curie Hospital.

(For Radium Treatment of Cancer in Women.)

Applications are invited for the post of HOUSE SURGEON (woman) at the above Hospital of 25 beds. Salary at the rate of £50 a year, with board, residence, and laundry.

The appointment will be for a period of six months in the first instance, from March 1st.

Applications, with copies of three recent testimonials, to be sent to the Secretary, The Marie Curie Hospital, 2, Fitzjohn's Avenue, London, N.W.3, not later than Saturday, February 1st.

The Marie Curie Hospital.

(For Radium Treatment of Cancer in Women.)

Applications are invited for the post of ASSISTANT ANÆSTHETIST (woman) at the above Hospital of 25 beds. The appointment will be for a period of six months in the first instance, from March 1st.

Applications, with copies of three recent testimonials, to be sent to the Secretary, The Marie Curie Hospital, 2, Fitzjohn's Avenue, London, N.W.3, not later than Saturday, February 1st. Further particulars may be obtained from the Secretary.

Coventry and Warwickshire HOSPITAL, COVENTRY. (307 Beds.)

RESIDENT ASSISTANT HOUSE SURGEON (male) wanted. Salary £125 per annum, board, laundry, and attendance provided. Candidate must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before January 21st.

(Miss) R. HOOPER, Secretary.

Nottinghamshire County Council

APPOINTMENT OF SCHOOL DENTISTS.

Applications are invited for the appointment of four additional whole-time School Dentists at a salary of £500 per annum, rising after two years' satisfactory service by increments of £25 to a maximum of £550. Travelling expenses will be paid in addition according to the scale approved by the County Council.

Candidates must be fully qualified and registered dentists, and the persons appointed will be required to perform such duties as may be from time to time prescribed by the County Education Committee and to devote their whole time to the duties of the office. They will be members of the staff and act under the control and direction of the County Medical Officer of Health, and required to reside in a part of the County to be approved by the Education Committee.

The appointments will be terminable by three months' notice on either side.

Successful candidates will be required to pass a medical examination.

Applications on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to "The County Medical Officer, Shire Hall, Nottingham," not later than January 22nd.

Shire Hall, Nottingham. K. TWEEDALE MEABY, Clerk of the County Council.

Somerset County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

Candidates must possess a Diploma in Public Health and have had experience of the general administration of a Public Health Department, of School Medical Inspection work and its administration, and of Mental Deficiency work. Experience in the treatment of venereal diseases under modern methods is also necessary.

The person appointed must devote the whole of his time to the duties of the office. He will act under the control and direction of the County Medical Officer of Health and will carry out such duties as the County Council may assign to him from time to time.

The salary will be at the rate of £750 per annum, rising by annual increments of £25 to a maximum of £900.

The appointment will be made subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Office and travelling expenses will be provided. Particulars as to the terms of the appointment, duties, qualifications, etc., may be obtained from the undersigned.

Applications, stating age, qualifications, and previous experience, together with copies of not more than three recent testimonials, to be forwarded to me not later than January 16th.

Personal canvassing will be a disqualification.

County Health Dept., Boulevard, Weston-super-Mare. W. G. SAVAGE, County Medical Officer of Health.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (man or woman) in its Mental Hospital Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £300 a year, rising by annual increments of £25 to £400 a year, plus fluctuating temporary additions, the present total commencing remuneration being approximately £423 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. weekly), if required to be resident. In the case of women, marriage terminates contract of service. Candidate appointed will be *pensionable under the* Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Completed applications must be received by Thursday, January 16th.

Canvassing disqualifies.

MONTAGU H. COX, Clerk of the London County Council.

David Lewis Northern Hospital.

RESIDENT MEDICAL OFFICERS.

Applications are invited for the following:
FOUR HOUSE SURGEONS;
TWO HOUSE PHYSICIANS;
to commence duties from April 1st.

Remuneration at the rate of £100 per annum, with board-residence.

Applications and testimonials to be in the hands of the undersigned on or before Saturday, January 18th.

H. LEVEY, Secretary-Supt.

Nottinghamshire County Council

TUBERCULOSIS OFFICER.

Applications are invited for the appointment of Tuberculosis Officer at a salary of £750 per annum, with travelling expenses according to the Scale approved by the County Council.

Candidates must be fully qualified and registered Medical Practitioners, with special experience in the diagnosis and treatment of tuberculosis, and should have held resident House appointments in a General Hospital for at least six months after graduation. The possession of a Diploma in Public Health is desirable.

The person appointed will be required to take *charge of County Dispensaries and to perform* such other duties as may be prescribed from time to time. He will be a member of the Staff and act under the control and direction of the County Medical Officer of Health, and will be required to devote his whole time to the duties of the office and to reside in such part of the County as may be approved.

The appointment will be terminable by three months' notice on either side, and the successful candidate will be required to pass a medical examination.

Applications, on the prescribed form (which may be obtained from me), accompanied by copies of not more than three recent testimonials, should be forwarded to the County Medical Officer, Shire Hall, Nottingham, not later than January 18th.

K. TWEEDALE MEABY, Clerk of the Nottinghamshire County Council.

City of Norwich.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER. He will be required to reside and carry out the duties at the Isolation Hospital, to devote his whole time to the services of the Council and not to engage in any private practice. Salary £450 per annum, with rooms, board, attendance, and washing (emoluments valued at £150 per annum). Board allowance at the rate of £60 per annum allowed when absent from Hospital on leave.

Candidates must possess a Diploma in Public Health. The officer selected will be under the direction and supervision of the Medical Officer of Health, who is also the School Medical Officer. He will be required to undertake any medical duties of the Public Health Department, including work under the School Medical Service, and the Maternity and Child Welfare Scheme. Age not to exceed 40.

The appointment will be subject to three calendar months' notice on either side and to the terms and conditions of the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to furnish a medical certificate of fitness.

Applications, stating age, qualifications, experience, and when at liberty, accompanied by copies of not more than three recent testimonials, must be sent on or before Jan. 16th.

Canvassing, directly or indirectly, is prohibited and will disqualify.

Churchman House, Norwich. V. F. SOOTHILL, M.A., M.D.

City of Sheffield.

ASSISTANT TUBERCULOSIS OFFICER.

Wanted, a male (unmarried) Assistant Tuberculosis Officer, to reside at WINTER STREET HOSPITAL, and to devote his whole time to the Municipal Tuberculosis Scheme.

Salary £450 per annum, rising to £500 per annum by annual increments of £25, with board, residence, and laundry.

Applicants must be registered Medical Practitioners, with not less than three years' experience.

Applications, stating age, qualifications, and experience, with *copies of testimonials*, to be sent to the undersigned on or before Jan. 18th.

Town Hall, Sheffield. FRED. E. WYNNE, Medical Officer of Health.

City of Birmingham.

The Public Health Committee invite applications from Medical Women for the post of MEDICAL OFFICER for Maternity and Child Welfare. Applicants must have had Children's Hospital and Maternity Hospital experience. The Diploma of Public Health is desirable. Salary £600 per annum. The candidate appointed will be required to join the Birmingham *Corporation Superannuation Scheme*, and for this purpose to pass a medical examination. The appointment will be terminable by one month's notice on either side. Applications, endorsed "Medical Officer for Maternity and Child Welfare," and accompanied by copies of three recent testimonials, to be made on a form to be obtained from the Medical Officer of Health, Council House, Birmingham, and returned to him on or *before* January 20th. Canvassing will disqualify.

Birmingham Union.

DUDLEY ROAD HOSPITAL.

GYNÆCOLOGIST AND OBSTETRICIAN.

Applications are invited from fully qualified Medical Practitioners for the above appointment.

The Hospital accommodation is fixed by the Guardians at 926, divided into Medical, Surgical, Children's, Infectious, Gynæcological, and Obstetrical Sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electrical, Massage, Sunlight, and Dental Departments.

Candidates for the appointment must have had *previous hospital experience of a similar nature* and be Fellows of the Royal College of Surgeons, England.

The scale of salary will be £700, rising by annual increments of £50 to a maximum of £1,000 per annum, and the salary of the successful candidate will be fixed within the scale according to experience and qualifications. Furnished quarters, rations, laundry, and attendance will be provided by the Guardians. Alternatively, a cash allowance will be paid if the officer appointed is non-resident. A deduction of 2 per cent. will be made from the salary and value of emoluments under the provisions of the Poor Law Officers Superannuation Act, 1896.

The officer appointed will be required to assist in the training and lecturing of nurses, and, should occasion arise, to attend at any of the other Institutions under the control of the Guardians.

Further particulars of the appointment may be obtained from the Guardians' Chief Medical Officer, F. W. ELLIS, Esq., M.D., F.R.C.S., Dudley Road Hospital.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than 11 a.m. on Wednesday, January 15th.

Union Offices, Edmund St., Birmingham. C. P. BEECH, Clerk to the Guardians.

Metropolitan Borough of SOUTHWARK.

LADY ASSISTANT MEDICAL OFFICER OF HEALTH.

The Southwark Borough Council invite applications for the position of Lady Assistant Medical Officer of Health. Applicants must be between 25 and 35 years of age, unmarried, and must be fully qualified and registered Medical Practitioners. It will be a condition of appointment that, in the event of the marriage of the person appointed, she immediately resign her position under the Council.

The principal duties of the officer appointed will be in connection with Maternity and Child Welfare work. She will be required to possess a practical knowledge of ante-natal and post-natal diseases and management of women, and the developmental treatment of children and their diseases. She will be required to reside in or near the Borough, and must give her whole time to the duties of the office, acting under the direction of the Maternity and Child *Welfare Committee of the Council* and the Medical Officer of Health.

Special consideration will be given to applicants who have held official positions in hospitals or other institutions for the treatment of women and children.

The salary will be £600 per annum, inclusive, and the appointment will be subject to the approval of the Ministry of Health, and to three months' notice to terminate the engagement on either side.

The selected applicant will be required to pass the medical examination specified by the Council, and will be subject to the provisions of the Council's Superannuation Scheme.

Forms of application, containing a list of duties and conditions of appointment, may be obtained on sending a stamped addressed envelope to the undersigned. Applications, on the prescribed form, accompanied by copies of three recent testimonials, and endorsed "Lady Assistant Medical Officer of Health," must be received by me not later than noon on Wednesday, January 22nd.

Canvassing, directly or indirectly, will disqualify.

DAVID T. GRIFFITHS, Town Clerk.
Southwark Town Hall.
Walworth Road, S.E.17.
January 1st, 1930.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE CASUALTY OFFICER. Salary £100 p.a. The appointment is for three months. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital as soon as possible. The successful applicant should be prepared to begin duty at once.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1930. Applications should reach the War Office not later than January 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1930, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £372 per annum, normally earned by a Major after 20 years' service, to £940 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will also be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I), Whitehall, London, S.W.1.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£15	6th
			£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£25	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1930.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1930. Applications should reach the War Office not later than January 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1930, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
„ 15 „ „ £2,800.
„ 18 „ „ £3,500.

Current rates of retired pay range from £372 per annum, normally earned by a Major after 20 years' service, to £940 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will also be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I), Whitehall, London, S.W.1.

INDIAN MEDICAL SERVICE

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Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Years' Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		530	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£25	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years service as Major	1250		
Lieut.-Col.	(i) Until completion of 21 years' total service	1500	£30	13th and over
	(ii) During 21th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum. £
After 17 years' service for pension	400
„ 18 „ „ „	420
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1930.

Warrington Infirmary and Dispensary.

The Board of Management invite applications for the post of SENIOR HOUSE SURGEON (male, unmarried). Applicants, who must be of British nationality, must be duly qualified Medical Practitioners with previous Hospital experience.

Salary £225 per annum, with board, apartments, and laundry.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent in immediately to the undersigned. The post will become vacant at the end of January.

By Order,
HENRY L. ROOT,
Supt. & Secretary.

January 4th, 1930.

National Hospital for Diseases of the Heart, Westmoreland St., W.1.

PHYSICIAN TO OUT-PATIENTS.

The Committee of Management invite applications for the post of Physician to Out-patients to fill a vacancy on the Honorary Medical Staff.

Candidates must be Graduates in Medicine of a University of the British Empire recognized by the Royal College of Physicians of London and Fellows or Members of that College.

Applications, with ten copies of not more than three recent testimonials, should be sent to the undersigned not later than Saturday, February 1st.

ROBERT G. E. WHITNEY,
Secretary.

East Suffolk and Ipswich Hospital, Ipswich.

(265 Beds—Seven Residents.)

Applications are invited for the posts of:

CASUALTY OFFICER, who will rank next to the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, and laundry. Previous experience essential.

FIRST HOUSE SURGEON. Salary at the rate of £120 per annum. Six months' contract, with board, residence, and laundry.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

ARTHUR GRIFFITHS,
Secretary.

The Hospital,
Ipswich.

January 4th, 1930.

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty on February 1st next. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before Tuesday, January 21st.

FORTHCOMING VACANCIES.

House Physician, six months from March 1st.
House Surgeon (Orthopædic), six months from March 1st.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Rochdale Infirmary and Dispensary.

(110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

W. WYNNE,
Secretary.

Infirmary Office,
Rochdale.

Paddington Green Children's Hospital (Incorporated), London, W.2.

Applications are invited for the appointment of HONORARY OPHTHALMIC SURGEON to the Hospital. Candidates must be Fellows of the Royal College of Surgeons, England.

Applications, stating age and qualifications, accompanied by copies of three testimonials, should reach the undersigned not later than first post on Friday, January 31st.

JAMES A. HAMLIN, Secretary.

Newark Hospital and Dispensary.

(50 Beds).

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

Ear and Throat Hospital, Birmingham.

HOUSE SURGEON wanted (non-resident) to assist chiefly in Out-patient Department. Must be qualified and with clinical experience.

Appointment to March 31st, when one of the other House Surgeon appointments will be vacant. Salary at the rate of £150 per annum, with lunch five week-days, and an allowance at the rate of £50 per annum in lieu of full board and lodging. Duties to commence as soon as possible.

Applications and testimonials to be forwarded on or before January 22nd to the undersigned.

S. G. GREW,
Secretary.

January, 1930.

Ear and Throat Hospital, Birmingham.

SECOND HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with part board, and an allowance at the rate of £50 per annum in lieu of full board and lodging. Duties to commence as soon as possible.

Appointment to March 31st, when the office of First House Surgeon will be vacant, for which the Second House Surgeon will be eligible.

Applications and testimonials to be forwarded on or before January 22nd to the undersigned.

S. G. GREW,
Secretary.

January, 1930.

District Infirmary, Ashton-under-Lyne.

(General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON, preferably with experience of Ophthalmic work. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Gen. Supt. & Secretary.

Jan. 2nd, 1930.

Manchester Babies' Hospital, Burnage Lane, Levenshulme.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from February 1st, 1930. Salary at the rate of £125 per annum, with laundry. Only candidates with previous Hospital experience need apply.

Applications, together with copies of testimonials, should be sent to the undersigned, marked "R.M.O.," by Wednesday, January 15th, 1930.

ANGELA LOPEZ, Secretary.

Leigh Infirmary, Lancashire.

Wanted, a RESIDENT HOUSE SURGEON, male, single, for Hospital of 70 beds. Commencing salary £150, with rooms, fire, attendance, and board. The position is vacant at the end of January next.

The appointment is for six months, with eligibility for re-election. Must be good anæsthetist. Knowledge of Ear and Throat work desirable.

Applications to be addressed to J. A. SMITH, Esq., Secretary, 5, Silk Street, Leigh, Lancs.

Bradford Royal Infirmary.

Two HOUSE SURGEONS (male) wanted for March 1st. Candidates must be single and legally qualified. Salary £150 per annum each, with board, residence, and washing.

There are 215 beds and six Resident Officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials to be received by the undersigned not later than Tuesday, January 21st.

J. J. BARRON,
Secretary-Supt.

January 6th, 1930.

City of London Hospital for Diseases of the Heart and Lungs, Victoria Park, E.2.

The Committee of Management invite applications for the staff appointment of ANÆSTHETIST. An honorarium is attached to the post.

Applications should reach the Secretary not later than Monday, January 27th.

GEORGE WATTS, Secretary.

Greenock Royal Infirmary.

Wanted, a HOUSE PHYSICIAN, immediately. Salary £100 p.a., including board, residence, and laundry. Other two Residents on staff. 150 beds. Good experience. Applications invited, with testimonials, to be sent to the Secretary, 2, Hamilton Street, Greenock.

JAS. A. LOVE, Secretary.

Hull Royal Infirmary.

(272 Beds.)

Applications are invited for the following posts (male):

THIRD HOUSE SURGEON, now vacant. Salary £150 per annum, with board, residence, and laundry.

ASSISTANT HOUSE PHYSICIAN, now vacant. Salary £130 per annum, with board, residence, and laundry.

Both appointments will be for six months in the first instance, terminable by one month's notice on either side.

Applications should be sent to the undersigned.

R. J. CARLESS,
House Governor

December 21st, 1929.

The Staffordshire General Infirmary, Stafford.

Applications are invited for the position of HOUSE PHYSICIAN (male), which will become vacant early in January. Candidates must be duly qualified and registered under the Medical Acts.

Salary at the rate of £150 per annum, with board, lodging, etc. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent forthwith to the undersigned.

A. E. COLLINS,
Secretary.

Stafford.

December 24th, 1929.

The Jessop Hospital for Women, Sheffield.

GYNÆCOLOGICAL AND MATERNITY DEPARTMENTS. (145 Beds.)

The Board of Management invite applications for the appointment of Two ASSISTANT HOUSE SURGEONS (male) for six months from January 15th, 1930.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, with copies of recent testimonials, should be forwarded at once.

H. B. SHELSWELL, Secretary.

St. Bartholomew's Hospital.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, February 18th, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Saturday, February 1st.

THOMAS HAYES,
Clerk to the Governors.

Jan. 9th, 1930.

Westminster Hospital Broad Sanctuary, S.W.1.

DENTAL DEPARTMENT.

There is a vacancy for a CLINICAL ASSISTANT to the Dental Department. A candidate must be a Licentiate in Dental Surgery and registered Dental Practitioner.

Applications, together with copies of testimonials, should be addressed to the undersigned on or before January 18th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Victoria Hospital, Burnley.

Wanted, HOUSE SURGEON (male), fully qualified. Appointment, six months. Salary £125 per annum, with board, lodgings, and washing. Applications may be sent in at once to F. A. HARGREAVES, Hon. Secretary, 7, Grimshaw Street, Burnley.

N.B.—This Hospital is approved by the London University for the M.B. and M.S. Examinations.

Warneford General Hospital Leamington Spa.

RESIDENT HOUSE PHYSICIAN required on January 28th. Salary at the rate of £165 per annum, with board and laundry. Applications from qualified and registered Medical Practitioners (single) should be sent to the undersigned by January 18th.

W. RUSSELL RUDALL,
House Governor & Secretary.

The Royal Edinburgh Hospital for Sick Children.

The Directors of this Hospital will meet on Wednesday, February 12th, to elect One HONORARY RADIOLOGIST to the Institution.

By Order of the Directors,
HENRY & SCOTT,
Hon. Secretaries

56, Frederick St.,
Edinburgh.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(cont'd.)*.	**PUBLIC HEALTH** *(continued)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)* *(Altrincham District.)*	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.		

Address: B.M.A. House, Tavistock Square, W.C.1.
January 8th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the post of SENIOR RESIDENT MEDICAL OFFICER (male), vacant February 1st. The appointment is for nine months and renewable for a further six months. Salary £250 per annum, with board, lodging, and washing.

Candidates must have previously held a Hospital appointment. They must attend the Hospital for the purpose of an interview on Friday, January 17th, at 4.30 p.m. (No travelling or other expenses will be paid.)

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the post of OUT-PATIENT ANÆSTHETIST. To attend on Monday, Wednesday, and Thursday mornings. A payment of 10/6 per attendance will be made.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, January 17th. (No travelling or other expenses will be paid.)

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

The Victoria Hospital for CHILDREN, Tite Street, Chelsea, S.W.3.
(Beds 138.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant February 1st). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, January 17th. (No travelling or other expenses will be paid). They must hold medical and surgical qualifications, and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, January 15th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

Bloomsbury Dispensary,
12, Bloomsbury Street, W.C.1.

RESIDENT MEDICAL OFFICER (male), not over 40, required to take up duties on February 1st, 1930. Salary commencing £250 per annum, with furnished apartments, coal, and light. Applications, with testimonials, to be sent to the Secretary (from whom further particulars can be obtained) not later than January [illegible].

Low
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

City of Birmingham Mental HOSPITAL.

The Committee of Visitors invite applications from duly qualified and registered women under 35 years of age for the post of FULL-TIME JUNIOR ASSISTANT MEDICAL OFFICER at the City Mental Hospital. Preference will be given to candidates who have held a resident appointment in a General Hospital.

The commencing salary will be £350 per annum, together with emoluments (board, residence, and laundry). Subject to 12 months' satisfactory service, an increase of £50 will be granted at the end of that period. The appointment will be terminable by three months' notice on either side, and the selected candidate will be required to join the Asylums Officers Superannuation Scheme.

Applications, accompanied by copies of three recent testimonials, should be marked "Junior Assistant Medical Officer," and addressed to the Chief Medical Officer, City Mental Hospital, Rubery Hill, Birmingham, so as to be received by him not later than January 17th.

F. H. C. WILTSHIRE,
Council House, Birmingham. Clerk to the Committee of Visitors.

Huddersfield Royal Infirmary.
(200 Beds.)

JUNIOR HOUSE SURGEON required for Eye, Ear, Nose, and Throat Department to commence duty as early as possible. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months, subject to renewal. Applications, with copies of not more than three testimonials, are invited from qualified and registered gentlemen and should be addressed to the undersigned at the Infirmary not later than first post on Tuesday, January 14th.

H. E. G. HALL, Secretary.

ASSISTANCIES.

Wanted. — Assistant for mixed Private and Panel Practice; country town of 25,000 inhabitants, in Midlands; ex H.S. or H.P. essential; with view Partnership or succession, if suitable. Cottage Hospital and Maternity Home, well staffed. Salary £400. House (partly furnished) free.—Add., No. 308, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, for General Practice in N.E. of England. Exceptional salary and prospects for well-qualified, energetic young man, with some experience. Please state particulars and enclose photo. — Address, No. 329, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Assistant, indoor, recently qualified preferred, for small country Practice, near University Town. Must be able drive car. State essential particulars. — Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, who has held Hospital appointments, in sound private Practice. £23 monthly (indoor). Experience in refractions. Motor car. Usual bond. Photo. Suitable for married man.—Add., No. 328, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, outdoor, male or female, panel and private Practice, central London. Usual bond. Please state age and full particulars.—Address, No. 313, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, some experience, British; good references essential; under 40.—Apply personally, 11 a.m. (not Sunday), Dr. RIDEWOOD, 103, Bethnal Green Road, E.2.

Wanted. — Male Assistant, Protestant, with view; or Partner. Industrial Practice near Manchester. Panel 2,000, income £2,000. State age and full particulars.—Address, No. 258, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for mixed Practice, West of England. Salary £250—£300, according to experience. Photo. if possible.—Address, with full particulars and references, No. 335, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£450 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—Single male Assistant for Practice in country town in Midlands. Salary £450, outdoor. Dispenser kept. —Address, No. 306, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, for mixed Practice in Midland Town. British, reliable. Usual bond. Salary £250—£300, according to experience. Photo. if possible. References —Address, No. 271, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, in Colliery Practice in South Wales. Dispenser kept. Salary £300 p.a. State age, nationality, references.—Address, No. 332, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Newcastle-on-Tyne, for January 20th, male indoor ASSISTANT, single, abstainer; ex H.S. or H.P. preferred. Motor cyclist. English or Scotch. Good-class Practice, small panel. Salary £300, all found. Send references and photo. Usual bond.—Add., No. 317, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Irish Graduate, 26 yrs., single, R.C., 4 years qualified. At present in panel practice. Free for interview or appointment after January 12th — Address, No. 307, B.M.A. House, Tavistock Square, W.C.1.

Wanted, by an Englishman, at 26 M.B., M.R.C.P.Edin., an ASSISTANTSHIP, with view to Partnership, in good-class Practice, preferably in the country; and must be in N. of England, if possible in Cumberland or Westmorland. Three years' hospital experience, mainly medical. Capital available. —No. 109, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.B., F.R.C.S. (Eng.), D.O.M.S., aged 29, ex H.S. and H.P., temporary ASSISTANTSHIP in London area. — Address, No. 116, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted end of January. Motorist; separate car provided. Indoor. —Address, with all essential particulars and photo., if possible, No. 404, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Partnership wanted by Indian, nine years own practice, just disposed. Free January. Capital available. —Address, No. 325, B.M.A. House, Tavistock Square, W.C.1.

Cambridge and St. Thomas' man (ex H.S.), desiring experience in all branches of G.P., wants temporary ASSISTANTSHIP, three to six months from end of February. Aged 29, tall, good appearance, energetic. Recent experience anæsthetics and obstetrics. Can drive car or motor cycle. Salary secondary importance if experience good and varied.—Write, 7, Iverna Gardens, W.8.

Jewish Doctor, young and energetic, seeks ASSISTANTSHIP; four years' experience general practice; thoroughly reliable; capable of taking complete charge; own car. Free February 1st.—Address, No. 318, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B.Glasgow, aged 28, male, single, 3½ years' experience G.P. and Hospital, well received, can drive car, seeks ASSISTANTSHIP or PARTNERSHIP. Capital available. Free now.—Address, No. 336, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistant, male, morning and evening work. Suitable for Post-Graduate. £200 p.a.—Address, No. 312, B.M.A. House, Tavistock Square, W.C.1.

X-Ray Assistancy, with definite view, required by M.B.Lond., etc., aged 27, any large town. Hospital appointments and succession essential.—Address, No. 334, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.D., F.R.C.S., with many years' experience, PART-TIME or LOCUM WORK in City or West End of London.—Address, No. 338, B.M.A. House, Tavistock Square, W.C.1.

Wanted by experienced middle-aged Practitioner, with highest qualifications, PART-TIME or LOCUM work in City. —Address, No. 305, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

B.A.(London), 27, seeks part-time (day) post as SECRETARY to Surgeon, W. or N.W. district preferred. At present with surgeon. Good testimonials and highest references. — Address, No. 314, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Dispenser (Clergyman's daughter) desires RE-ENGAGEMENT, with Doctor or at Institution. Apothecaries' Hall certificate. Twenty years' experience. Free now.—MISS HOLMES, c/o Roxborough, Moor-end Grove, Cheltenham.

Dispenser (Hall), lady, desires POST with Doctor or in an Institution. Good experience. — SOLOMON, "Coopers Acre," Clanville, near Andover, Hants.

Dispenser (qualified) needs Post, with another Dispenser preferred. Can drive car.—Address, No. 303, B.M.A. House, Tavistock Square, W.C.1.

Eye Work.—Would any leisured Medical man or Woman, with good knowledge Eye work, wishing useful philanthropic work, care join Staff old-established Eye Institution? Pleasant provincial town. Chiefly out-patient work. Chances private practice very poor.—Address, stating age and experience, No. 403, B.M.A. House, Tavistock Square, W.C.1.

Gentlewoman (domesticated), accustomed to sole charge of widower's child and household (2 maids) for 7 years, seeks SIMILAR POST. Salary not essential. Four years' V.A.D. Could bring good maid.—Add., No. 327, B.M.A. House, Tavistock Sq., W.C.1.

Hospitality in return for Part-TIME SERVICE offered by Woman Doctor to colleague with experience. London suburb. — Address, No. 301, B.M.A. House, Tavistock Square, W.C.1.

India.—Medical Man, preferably ex H.S. or with other Surgical experience, abstainer, and in full sympathy with Medical Missionary work, required on agreement for the THOMAS EMERY HOSPITAL, MORADABAD, U.P. Married or single.—Apply, C.M.O., 5, Warltersville Road, N.19.

Lady Dispenser requires Post with Doctor. Aged 24 years. Disengaged. Hall certificate. — Address, Miss D. BRUFORD, 83, County Road, Swindon, Wilts.

Medical Propaganda Representative required by well-known Manufacturing House for West and South-West London. Qualified Pharmacist, experienced in propaganda, with knowledge of Physiology and Anatomy preferred.—Write, giving details of age, experience, and salary required, to Box M.P.R., c/o TUNE KNOX, Ltd., Chronicle House, Fleet Street, E.C.4.

M.D., Hon. Cons. Physic., excellent Obstetrician, recently retired from large Practice, wants MEDICAL WORK. —Address, No. 310, B.M.A. House, Tavistock Square, W.C.1.

Masseur and Medical Electrician, aged 23, C.S.M.M.G. cert., London Light Clinic, desires POST with a Doctor or at an Institution. Two years' Hospital experience.—B. HONAN, 19, Spellow Lane, Liverpool.

Over-due Accounts promptly collected and Doctors' books written up. Income tax worries obviated. Strictly confidential. Bankers and highest references given. "GARNHAM," 31, Fetter House, Fetter Lane, E.C.4.

Part-time work required by M.B., Ch.B., D.P.H., engaged in research work during day. Could do evening surgery, week-ends, and occasional whole days.—Add., No. 401, B.M.A. House, Tavistock Sq., W.C.1.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invi[illegible] H. GOODING, Hon. Sec., [illegible] Grove, Victoria Park.

Qualified Dispenser (lady) desires POST with Doctor, preferably Essex in the Wanstead, Woodford, Loughton area. Experienced, good testimonials. Also good knowledge secretarial work and book-keeping.—Add., No. 337, B.M.A. House, Tavistock Sq., W.C.1.

S.R. Nurse desires post as RECEPTIONIST. Usual certificates. Small salary only.—Address, No. 302, B.M.A. House, Tavistock Square, W.C.1.

Secretary, 25, Hospital-trained nurse, shorthand typist, bookkeeper, desires POST with Doctor in West End. — Replies to MASON, 96, Wigmore Street, W.1.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Young Lady Dispenser-Book-keeper (Hall certificate), 6 years' experience, desires WHOLE-TIME POST with Doctor. London, Croydon, Sutton, or districts preferred. Disengaged January 24th.—Address, No. 333, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

LOCUM TENENS
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. Tel: TEMPLE BAR 1054. RIVERSIDE 1254. (Night Calls).
Telegrams: "REASIDE, TUBERCLE, WESTRAND, LONDON."

Locum desires Engagement, in or outdoor; an exper. G.P., obstet., dispensing, M.R.C.S., L.R.C.P.Lond., ex H.P., English, abstainer, motorist. Fees £6 6s. p.w. and expenses return Bristol. — Address, "DOCTOR," 12, Caledonia Place, Clifton, Bristol.

Locum Tenens of wide experience, and thoroughly reliable, will be disengaged on January 11th. Unquestionable references, and interview arranged. Reasonable terms. — Address, "MEDICUS," 5, Ashbrooke, Monkseaton, Northumberland.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." Phone: Temple Bar 9011.

PARTNERSHIPS.

Wanted by M.Ch., a PARTNERSHIP in a large well-established Practice in the South, preferably near or in London. Advertiser has had extensive experience of good-class practice and has been on the Hon. Surgical staff of a General Hospital (150 beds) for the past eight years. — Address, No. 304, B.M.A. House, Tavistock Square, W.C.1.

Wanted, by Glasgow Graduate, Gold Medallist in Surgery, with exceptionally wide surgical experience, PARTNERSHIP in Practice where surgical ability would be real asset, and where large initial capital sum would not be required in purchase of share. — Address, No. 316, B.M.A. House, Tavistock Square, W.C.1.

Berks. — Partner required for old-established Practice. Receipts average nearly £1,500 a year, including fair panel. Half share for sale, premium £850. Excellent chance for young energetic Doctor. Scope for increase.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Colchester. — Surgical Partnership wanted here by M.D., F.R.C.S.Ed., well experienced in general and surgical practice. Must be good house and share. Ample capital. — Address, full particulars, No. 102, B.M.A. House, Tavistock Square, W.C.1.

East Coast. — Large Seaport Town.—PARTNERSHIP. Cash receipts £10,834. Panel 5,000. Good house available. Rent £65 p.a. Short preliminary assistantship. Premium—1/6 share—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Disposal.—Retiring Partner from old-established middle and working-class PRACTICE (panel over 3,600), 6—7 miles from Manchester, has his SHARE for disposal. Income averages about £1,350 gross. Two Partners remaining. Good detached house (with garage) on rental (£60). Price 1½ years' purchase, with debts at valuation.—Address, No. 309, B.M.A. House, Tavistock Square, W.C.1.

Medical. — Partnership offered in desirable residential district in Glasgow. Substantial panel and private connection, with house. Enquirers must give full particulars as to their age, qualifications, and experience, and give references to one or more Medical Men of good standing. — Reply, CRAWFORD, HERDON & CAMERON, Writers, 257, West George Street, Glasgow.

Partnership wanted by Glasgow Graduate; over two years' general practice and six months' hospital. Income £1,500 per annum. Premium part by instalment.—Address, No. 321, B.M.A. House, Tavistock Square, W.C.1.

Partner required immediately to run Country Practice. Income £1,000 p.a. Car provided. No purchase money required. Equal share of net receipts. Great scope for increase. — Address, No. 125, B.M.A. House, Tavistock Square, W.C.1.

Partnership in Woman Doctor's Practice. Quarter share worth £500. Premium 1½ years' purchase. — Address, No. 110, B.M.A. House, Tavistock Square, W.C.1.

Required. — Partnership or Succession to good-class PRACTICE, £1,500 to £5,000. Advertiser highly qualified and ample capital.—Address, 319, B.M.A. House, Tavistock Square, W.C.1.

Yorks. — Partnership in old-established Practice of £1,400 yearly. Panel £550. Appts. £85. House for Partner or live with Vendor. Great scope. Price half share 1½ years' purchase. — MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, Brown St.

PRACTICES.

Wanted. — To retiring Practitioners or any about to sell their Practice. Young married Doctor of good address wishes to purchase sound PRACTICE in Shropshire, Cheshire, N. Wales. Full particulars in strict confidence.—Address, No. 330, B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy. — North-East COAST RESORT.—Old-estab. PRACTICE. Cash receipts last year, £2,101. Excellent house and garden, to rent. Premium 1 year's purchase or near offer. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy, Dunbar.—Owing to the sudden death of Dr. Flood, large panel and private PRACTICE for immediate sale.—Apply for particulars to FERGUSON & PETRIE, Solicitors, Duns.

Death Vacancy. — Near Manchester.—Cash receipts last year £803. Panel 550. Scope. Excellent house, 2 reception, 6 bedrooms. Large garden and garage. No reasonable offer refused.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Sale.—Country Practice in Midlands. Income £1,000 p.a., panel 600. Expenses small. Nice house and grounds. Electric light; own plant at reasonable figure. Rent of House in dispute or to buy. Premium 1 year's purchase for immediate sale.—Address, No. 126, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Very old-established HOMŒOPATHIC PRACTICE, Chester, owing to sudden death. Good freehold house. —Full particulars: POTTS, POTTS & GARDNER, Solicitors, Chester.

For Sale. — Practice in East London (lock-up surgery). Small panel. Average receipts over £1,200. Low rent, corner house. Good scope. 1½ years' purchase.—Add., No. 320, B.M.A. House, Tavistock Sq., W.C.1.

For Disposal.—X-ray Practice in manufacturing town. Receipts about £1,000. Vendor on Hospital staff. D.M.R.E. essential. — Address, No. 311, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

F.R.C.S. in the forties, experienced in general surgery and in eye work, seeks PRACTICE or PARTNERSHIP, £1,200 and upwards, with scope. Good house and garden. Ample capital available. Strictest confidence.—Address, No. 118, B.M.A. House, Tavistock Square, W.C.1.

London, N.W.-Practice yielding £1,000 p.a., including panel 480. Nice flat, large garden, garage, etc. Rent £85; no rates or taxes. Price £1,250. Vendor going abroad. — Address, No. 2118, B.M.A. House, Tavistock Square, W.C.1.

London, S.E. (15 mins. from Charing Cross).—Cash and Panel PRACTICE in densely populated district. Receipts about £1,400 p.a., panel 750. House, rent £78 p.a. Premium £2,000, cash preferred.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London, W.—Small, high-class PRACTICE. Fees £1 to £2. Mid. discouraged. No appts. Estab. 17 years. £1,200 to £1,500 p.a. Experienced man with ample capital only. Could be easily doubled. Interv. —No. 405, B.M.A. House, Tavistock Sq., W.C.1.

Manchester.—Old-established, in populous district. Surgery (6-roomed house), rent £45. Receipts £1,550. Panel £730, great scope. Suburban residence (1½ miles away), electric light, small garden. Price for Practice, residence (freehold), debts (£280, good), drugs (£50), surgery fittings and furniture in waiting room, £3,200, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Rapidly increasing PRACTICE. Cash receipts last 11 months £835. Panel 750. Small house to rent at £45 p.a. (clear). Premium 1½ years' purchase. BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice in Langside, Glasgow, for sale, owing to death of owner. — For particulars apply to MARSHALL, LEARMONT & PATERSON, Solicitors, 180, Hope Street, Glasgow.

Manchester. — Well-established. Good corner house, £44 17s. inclusive. Panel 750, increasing. Appts. £50. Price £1,000, to include good stock drugs, furniture (waiting room), and dispensary fixtures.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

North Wales.—Death Vacancy. —Beautiful Seaside Town. Cash receipts last year £800. Small panel. Much scope. Excellent modern house, 8 bedrooms. Garden and garage. For sale or would let on lease. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Sound Old Medical Practice in Suffolk (within 60 miles of London) for SALE, in existence for over 100 years. Owner retiring through advancing age. Three months' agreement, with a view to purchase at 1½ years' profits (about £800 a year). Practice capable of considerable expansion. Could rent existing surgery and consulting room. — Address, No. 324, B.M.A. House, Tavistock Square, W.C.1.

Sound Practice for Disposal, Manchester district. Six months' introduction offered.—For terms and particulars apply KNOTT & CASTLE, Solicitors, 3, Norfolk St., Manchester.

Small Practices with scope.—We have several in the Manchester district. Cash receipts £700; £600; £400, etc. Full particulars from BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Woman Doctor's Practice for Sale in industrial area of Midland City, well established. Panel 590, increasing. Takings last year £760, easily capable of £1,000. Freehold corner house.—Address, No. 315, B.M.A. House, Tavistock Square, W.C.1.

Wales. — Old-established PRACTICE. Receipts £1,450 p.a., including panel 1,300. Nice house, garage, etc., rent £60. Premium £1,500.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

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For Sale. — 10 K.V.A. X-Ray TRANSFORMER SET, complete. Splendid condition, practically as new. Low offer accepted for quick sale. — Address, No. 322, B.M.A. House, Tavistock Square, W.C.1.

The Medical Practitioners' Cash BOOK, 12/6 post free. Specially designed by a qualified Accountant for the profession. Easy to use. Saves time, worry, and Income Tax. Money refunded if dissatisfied.—CHEANWOOD PUBLISHING CO., Atlas House, Coalville, Leics.

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DINNER SUITS fr. £8 8s. DRESS SUITS fr. £10 10s.
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Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (particulars on application). Sample bottle (500) of Cough or Expect. Mist. Tablets, 1/- post free.
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The Proprietors of British Patent No. 289125 for "A Process for the Production of Inactive Menthol (the Racemate of Natural Menthol)" are desirous of entering into negotiations with interested parties for the GRANTING OF LICENCES thereunder on reasonable terms or for the SALE of the PATENT outright. — Communications please address to Messrs. DICKER, POLLAK & MERCER, Chartered Patent Agents, 20-23, Holborn, London, E.C.1.

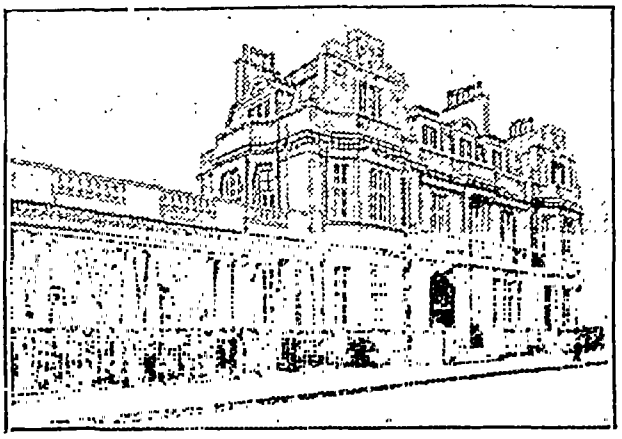
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Consulting Room. — Best room, ground floor, in house lately belonging to famous Consultant, Queen Anne St. Light and attendance. £200 per annum. — Address, No. 323, B.M.A. House, Tavistock Square, W.C.1.

Doctor and wife want Paying GUEST. Small convenient house, charming suburb of fashionable seaside town, South Coast. — Address, No. 402, B.M.A. House, Tavistock Square, W.C.1.

Doctor has taken modern flat just off Portland Place. Could accommodate Consultant or Anæsthetist with SUITE of CONSULTING, BED and BATH ROOMS, or BEDROOM *alone*. *Breakfast if desired.*—Add., No. 339, B.M.A. House, Tavistock Sq., W.C.1.

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MAGNIFICENT WILLETT-BUILT RESIDENCE FOR SALE.

LUXURIOUSLY EQUIPPED THROUGHOUT

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WALTER HALL & SONS,
1, YORK STREET, BAKER STREET, W.1.

By direction of the Executors of the late Percy Charles Woollatt, M.D., F.R.C.S.

WESTCLIFF-ON-SEA.

Messrs W. H. TAYLOR & SON are instructed to submit to public auction at the Hotel Victoria, The Broadway, Southend-on-Sea, on Saturday, January 25th, 1930, at 3.30 o'clock in the afternoon, the Commodious and well-appointed Freehold Residence known as "THE LODGE," No. 98, CROWSTONE ROAD, WESTCLIFF-ON-SEA, containing lounge hall, two reception rooms, consulting room, cloak room, billiard room, domestic offices, five large bedrooms, bathroom and lavatory accommodation. Two motor houses. Large garden. Frontage about 51 feet. Depth 250 feet. Additional land with frontage to King's Road.

Vacant possession on completion of purchase.

Vendor's Solicitor: HENRY FLINT, Esq., 102, High Street, Southend-on-Sea.
Auctioneers' Offices: 44, Alexandra Street, Southend-on-Sea.

Harley Street. — Medical Man wishes to take over LEASE OF HOUSE in Harley Street. Direct negotiations with existing owner preferred and will be treated as confidential. — Address, No. 269, B.M.A. House, Tavistock Square, W.C.1.

One or two Bedrooms to be Let, furnished, in Doctor's house, near Harley Street. Telephone, etc. Breakfast supplied. Could be let as bedroom and sitting room if desired — Address, No. 331, B.M.A. House, Tavistock Square, W.C.1.

Piccadilly. — Consulting Rooms in Dental Surgeon's Office. Exceptionally well equipped and furnished, fitted for Ophthalmic and Sunlight work. Receptionist, service, light, telephone, all inclusive, £12 per month. —No. 115, B.M.A. House, Tavistock Sq., W.C.1.

To be Sold (Muswell Hill, N.), corner of Pages Lane and Creighton Avenue.—Well-built HOUSE, 4 bed., 3 recep. rooms, hall, kitchen, and offices, good garden and garden room and garage. Suitable for Medical Practitioner.—Apply, A. E. BAILEY & SONS, 5, Witherington Road, N.5.

To Let, in modern House in Devonshire Street.—CONSULTING ROOM, full or part-time. Plate, attendance, waiting room. Immediate possession.—Address, No. 326, B.M.A. House, Tavistock Square, W.C.1.

Macclesfield General Infirmary. (100 Beds.)

Wanted, RESIDENT HOUSE SURGEON. Salary £180 per annum, with board and residence. Candidates must be fully qualified and registered. Applications, with copies of testimonials, to be sent to the undersigned.
A. E. HANRAHAN, Secretary.

APPOINTMENTS.—Contd.

North Middlesex Hospital, Silver Street, Edmonton, N.18.

Male RESIDENT MEDICAL OFFICER required. A well-qualified gentleman desirous of good hard work is required at this Hospital, with over 1,000 sick beds and Out patient Department. As experience is very extensive the candidate should have previously held a House appointment, and preference will be given to one with knowledge of routine of Hospital work. The appointment is a whole-time one, living in. Age not over 45 years. Salary £200 per annum, subject to terms stated on application form. Applications, in writing only, to be made immediately, and in any case not later than January 18th, on forms obtainable by sending stamped addressed foolscap envelope to Medical Superintendent and Surgical Director. No personal interview at present.

Doncaster Royal Infirmary.

HOUSE SURGEON (SECOND) required at once. Staff of Three. Experience in Anæsthetics essential.

Appointment offers opportunity to gain good surgical experience.

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Wednesday, January 15th.

J. LAWRENCE MEARS,
Jan. 7th, 1930. Secretary-Supt.

Swindon & North Wilts Victoria HOSPITAL.

Required (February 1st) HOUSE SURGEON. Salary £100 per annum, with board, residence, and laundry. Appointment for minimum of six months.

Candidates must be registered under the Medical Act. Applications, stating age, qualifications, etc., and accompanied by copies of not more than three testimonials, to be sent to the Secretary at the Hospital on or before Monday, January 20th.

Selected candidates will be required to appear before the Medical Committee for an interview.

General Infirmary, Salisbury. (General Hospital—151 Beds.)

HOUSE PHYSICIAN (male) required to commence duty at the beginning of February.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be had on application.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Devonshire Hospital, Buxton,

DERBYSHIRE. (300 Beds.)

(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties February 1st. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory, and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
General Superintendent & Secretary.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE SURGEON,
OPHTHALMIC HOUSE SURGEON,
ASSISTANT OPHTHALMIC HOUSE SURGEON,
ASSISTANT CASUALTY OFFICER.

The appointments will be tenable for six months from January 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
December 29th, 1929.

The Royal Gwent Hospital,

NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and House Physician.

Salary £135, with board, lodging, and laundry.

Large Out-patient Department. Eligible for promotion. Resident Medical Staff five.

Applications, stating age and qualifications, with copies of three testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
December 31st, 1929. Secretary-Supt.

Seamen's Hospital Society,

Greenwich.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, from February 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three recent testimonials, to be sent in by January 21st to the undersigned.

Greenwich. R. E. V. BAX,
December 28th, 1929. Secretary.

The Willesden General Hospital

(Incorporated). London, N.W.10.

(165 Beds.)

The Executive Committee invite applications for the appointment of RESIDENT HOUSE SURGEON (male). Candidates must be duly registered under the Medical Acts, and unmarried.

The appointment is for a period of six months from February 1st (the first three months as Casualty Officer and House Physician, the second three months as House Surgeon). Salary at the rate of £100 per annum.

Fully detailed applications, with copies of testimonials, to be sent at once to the Secretary.

R. J. HEARNE,
December 20th, 1929. Secretary.

Royal Devon & Exeter Hospital,

EXETER (225 Beds.)

HOUSE SURGEON (Male).

Applications are invited for the post of HOUSE SURGEON at this Hospital, vacant on February 11th next. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Monday, 20th inst.

By Order of the Committee,
S. S. COLE,
Jan. 3rd, 1930. *Secretary & Manager.*

Royal Edinburgh Hospital for

SICK CHILDREN.

Wanted for this Hospital, Two HONORARY RESIDENT HOUSE SURGEONS and Three HONORARY RESIDENT HOUSE PHYSICIANS. One of the latter shall have charge of both a Medical Ward and an Ear and Throat Ward. Two appointments shall commence on April 1st, 1930, and shall be for a period of six months. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before February 1st with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

West End Hospital for

NERVOUS DISEASES.

(In-Patient Department, Gloucester Gate, Regent's Park, N.W.1.)

The Committee of Management invites applications from British male candidates for the vacancy of JUNIOR HOUSE PHYSICIAN to start duty February 1st. Salary £100, with board, residence, and laundry. Appointment in first instance for six months. Applications, with copies of three testimonials, must be received by the undersigned not later than January 20th.

J.-P. WETENHALL,
73, Welbeck Street, W.1. Secretary.

West Suffolk General Hospital,

BURY ST. EDMUND'S. (108 Beds.)

Applications are invited for the post of HOUSE SURGEON which will be vacant immediately.

Salary £150 per annum, with board, residence, and laundry.

Applicants must be fully qualified and registered.

Applications, giving particulars of experience and three recent testimonials, to be sent to the undersigned.

E. E. HARDWICKE,
December 4th, 1930. Secretary.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, now vacant. Salary at the rate of £100 per annum, with board, lodging, and laundry. Applications, to be made on official form to be had from the undersigned, should be sent in as early as possible.

GEO. BALLANTYNE, Secretary.

Ilford Emergency Hospital

(8 miles from London), to be extended and renamed KING GEORGE HOSPITAL.

Applications are invited for the appointment of HOUSE SURGEON. Salary £100 per annum, with board, residence, etc. Applications should be sent at once to the Secretary.

Jewish Maternity Home.

There is a vacancy for an ANÆSTHETIST an honorarium of one guinea per anæsthetic will be paid. Applications, together with copies of three recent testimonials, to be sent to the Hon. Secretary at the Home, 24, Underwood Street, Whitechapel, E.1, not later than Feb. 1st.

West Herts Hospital,

HEMEL HEMPSTEAD.

(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on February 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties early in February. Salary £100, with rooms, board, and laundry.

There are 110 beds.

Particulars to be obtained of, and applications, stating previous experience and essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Great Yarmouth General

HOSPITAL.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER to take charge of the Ear, Nose, and Throat Department of the above Hospital.

Candidates must be duly registered Medical Practitioners.

Applications, with copies of testimonials, to reach the undersigned not later than Friday, January 24th, 1930.

Applicants should state the earliest date that they are prepared to commence duties.

Copies of the Hospital Rules affecting the appointment can be obtained on application.

Canvassing in any form is prohibited.

FRANK JENNINGS, Secretary.

The Guest Hospital and Eye

INFIRMARY, DUDLEY

(General Hospital, 104 Beds.)

Applications are invited for the posts of HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Duties include Medical, Surgical, Eye, Ear, Nose, and Throat, and Venereal Diseases work. Salary £150—£175 per annum according to experience, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
The Guest Hospital, Secretary.
Dudley. January 3rd, 1930.

Royal Sussex County Hospital,

BRIGHTON. (225 Beds.)

CASUALTY HOUSE SURGEON (male) required February 6th. Salary £120 per annum, with board, residence, and laundry. Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should reach the undersigned not later than January 18th.

L. L. W. LANCASTER-GAYE,
Secretary-Supt.

The Sheffield Royal Hospital.

There will shortly be vacancies on the Resident Staff (male), and applications should be forwarded early to the undersigned. The available beds number 540, there are twelve residents, and the Hospital is a Medical School. Salary for the first six months at the rate of £80 per annum, afterwards at £100 per annum, with board, residence, and laundry.

W. H. BOOTH,
Jan. 3rd, 1930. Supt. & Secretary.

The West Cornwall Miners' and

WOMEN'S HOSPITAL,
REDRUTH, CORNWALL.

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Apply, not later than January 15th, 1930, with copies of three recent testimonials, to the Secretary, from whom further particulars may be obtained.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)

(FOUNDED 1880.)

12, Stratford Place,

Oxford Street, W.1.

Tele. Address: Triform, Wesdo—London.

Telephone: Mayfair 1782, 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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2 SOUTH MIDLANDS.—Partner required in Country Town Practice over £4,500 p.a. Panel 2,500. House available, with 6 bedrooms, etc. One-fourth share at 2 years' purchase after preliminary assistantship. Applicant must be married and about 30/35 years of age.

3 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

4 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

5 SOUTH OF ENGLAND.—Partnership in Practice nearly £2,600 in small industrial town. Panel 2,200. One-third share at 2 years' purchase after preliminary assistantship. Applicant should be interested in Obstetrics.

6 SOUTH COAST.—Ophthalmic Practice over £1,900 p.a. in residential town. House, containing 5 bedrooms, etc., for sale or rent. Premium £1,800.

7 WEST OF ENGLAND.—Country Practice about £500 p.a. in mining and agricultural district. Panel £550. House (6 bedrooms), with fine garden and paddock, to rent. Premium £500.

8 NURSING HOME in favourite Town on Kent Coast. Clear net profit £750 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

9 SOUTH MIDLANDS. — Easily worked Country PRACTICE upwards of £1,000 p.a. in beautiful part. Panel 470. Excellent and most pleasantly situated modernised house (6 bedrooms), in old-world garden, for sale Sport and schools. Premium £1,350.

10 HEREFORDSHIRE.—Practice about £400 p.a. in beautifully situated Market Town. No panel. Centrally situated house (5 bedrooms) for sale. Great scope. Premium 1 year's purchase.

11 SOUTH COAST.—Non-dispensing Practice of about £1,900 in residential town. No panel. Choice of house.

12 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

13 LONDON, E. — Practice worth between £900 and £1,000 (half ready money) in thickly populated area. Panel about 600. Nice semi-detached house (5 bedrooms), garden, and garage, to be sold or let. Premium 1½ years' purchase.

14 HOME COUNTY.—Partnership in Practice £4,500 in industrial district under 25 miles from London. Panel over 4,000. House to let. Premium one-fourth share at 2 years' purchase.

15 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

16 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

17 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

18 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

19 LIVERPOOL. — Increasing Practice of nearly £1,300. Panel 560. House (4 bedrooms), garage and garden, for sale. Golf near by. Premium £1,550 (£500 by instalments, without interest).

20 ESSEX.—Practice of £1,100 p.a. in Rural District. Panel 670. Old-fashioned house (6 bedrooms), with large garden, to rent. Scope. Premium £1,650.

21 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Extremely attractive residence (5 bedrooms), central heating, and grounds 2½ acres, for sale. Hunting and other sport. Premium 1½ years' purchase.

22 EASTERN COUNTIES. — Partnership in Country Practice of £2,380 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

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Practices and Partnerships for Disposal (continued).

23 W. OF ENGLAND. — Ophthalmic Practice, between £850 and £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,300.

24 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering-place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,100.

25 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

26 LONDON, W.—Partnership in good-class non-dispensing Practice over £7,500 p.a. in Kensington. No panel or appointments. Incoming Partner must be well qualified (aged 30—35) and have held Hospital appointments. Share worth about £1,000 at 2 years' purchase.

27 INLAND WATERING-PLACE. — Good-class PRACTICE of nearly £2,000 p.a. (General and Spa work). No midwifery or panel. Excellently situated house to be purchased.

28 SUSSEX. — Partnership in increasing Country Practice nearly £3,000 p.a. Panel nearly 1,500. Good society and sport. One-third share at 2 years' purchase. Scope for increase.

29 N.W. COAST.—Steadily increasing Practice (held by Medical Woman) in popular watering-place. Receipts past year £820 (including panel £220). Accommodation consists of 6 rooms, bathroom, etc., and can be rented. Prem. £1,000.

30 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

31 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

32 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

33 BRITISH EAST AFRICA. — Assistant required (with view to Partnership) in General and X-ray and Electro-therapeutic Practice. Assistant must hold the F.R.C.S., and experience in X-ray would be advantageous. Share of about £1,200 p.a. offered to suitable man after preliminary assistantship.

34 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 200. Suitable and convenient house.

35 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £700. Panel 420. Detached double-fronted house (4 bedrooms) to be sold. Considerable scope. Premium £600 only.

36 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained.

37 SOUTH WALES. — Practice over £1,200 p.a. in Country Town. Panel about 300. Attractive old house (6 bedrooms). Garage and garden. Good facilities for sport. Premium £1,500.

38 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

39 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

40 SOUTH COAST. — Increasing Practice £1,345 p.a. in favourite Seaside Resort. Panel 400/500. Choice of two houses for sale. Scope for increase. Premium 1½ years' purchase.

41 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (6 bedrooms) for sale. Sport. Premium 1½ years' purchase.

42 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

43 WEST OF ENGLAND.—Steadily growing Country PRACTICE of about £650 in delightful part of the Cotswolds—easy reach of two good Towns. Panel 497. House (6 bedrooms), with garage, ½ acre garden, and paddock, for sale. Good scope. Premium £800.

44 N.E. COAST.—Partnership (after short preliminary Assistantship) in Practice in Seaport Town. Suitable house to rent. Share worth over £1,200 p.a. at 1½ years' purchase. Applicant must be young (about 30) and energetic.

45 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

46 SOUTH COAST.—Practice of about £1,400 p.a. in popular resort. Panel 785. House (5 bedrooms), on main road, to rent.

47 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms) and garden for sale. Premium £750.

48 SOUTH WALES.—Seaside Resort.—PRACTICE averaging £1,200 p.a. Panel 600. Nice house, with garden and garage, for sale or rent. Premium 1½ years' purchase. Welsh not necessary.

49 EASTERN COUNTIES.—Practice averaging £2,800 p.a. in Seaport Town. Panel 700. House (5 bedrooms), large garden, for sale or rent. Scope. Premium 1½ years' purchase.

50 NORTH MIDLANDS. — Partnership in Practice £2,586 p.a. in one of the principal cities. Panel about 1,500. Share up to one-half at 2 years' purchase after preliminary Assistantship.

51 SHEFFIELD.—Practice about £800 (including appointments worth £155 p.a.). No panel or dispensing. Convenient house (6 bedrooms) to be sold or let. Premium £500 or offer.

52 WEST MIDLANDS.—Practice of £1,440 p.a. in small market town in agricultural district. Panel 630. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

53 MIDLANDS.—Practice averaging £1,680 p.a. in important Town. Panel 1,560. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

54 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

55 LONDON, S.W.—Good middle-class non-dispensing PRACTICE in pleasant residential suburb. Receipts year ended September 30th, 1929, £2,428. No panel. Excellent detached corner residence (7 bedrooms). Premium—house and Practice—£4,000.

56 Near BIRMINGHAM.—Partnership in very sound Practice, nearly £3,000, in large and rapidly growing residential country district. Panel 950. Suitable house obtainable. Premium one-third share 2 years' purchase.

57 SUSSEX.—Partnership in Country Practice, £2,750 p.a. in residential district near the Coast. Panel about 700. Good house (about 6 bedrooms) to rent on lease. Scope. Premium one-half share 2 years' purchase.

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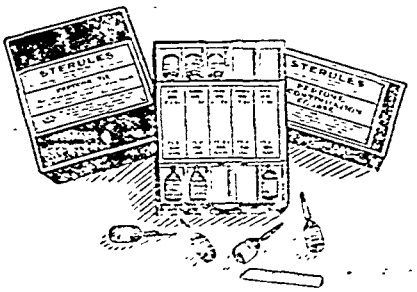
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1. SUSSEX.—Favourite Residential Town.—PARTNERSHIP with view to succession (3 to 4 years) can be acquired by preferably an Oxford or Cambridge Graduate about 30 to 35 years of age and fond of sport. Practice is old-established, chiefly better class, and the receipts last year amounted to over £2,500. Two-fifths share will be sold to commence with. Personal application desired if possible.
2. DEATH VACANCY.—NORTHANTS.—Near Large Town. Old-established country PRACTICE, producing about £1,200 p.a., including panel of 700-800. Fees 2/6 to 10/6, medicine extra. Mid. 2 to 5 gns.; about 20 cases yearly. Very good house available, or purchaser can choose his own residence. Prem £1,200. Locum in charge.
3. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—A share producing about £1,200 p.a., with prospects, is for disposal owing to retirement of one of the partners in an old-established Practice. Ingoing partner would reside in a pretty country district about 5 miles from pleasant country town, where main practice lies. No opposition. Total income about £8,000, including valuable appointments worth about £2,000, and panel. Very desirable residence (ample accommodation) with 2½ acres of ground available on lease at low rental of £60. Premium 2 years' purchase.
4. YORKS.—(North Riding.)—Country PRACTICE in beautiful district. Average income over £750, including panel of about 330. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
5. GLOS.—Favourite Town.—Mixed general non-dispensing PRACTICE. Income last year over £700, including panel of 550. Visits 3/6 to 10/6. Mid. 2 to 10 gns. Good house, in excellent position, with 10 bedrooms, 3 reception, 3 bedrooms, etc. Rent on lease £75 p.a. Premium 1½ years' purchase. Suitable lady doctor.
6. PARTNERSHIP.—COUNTY TOWN within easy reach of London.—A one-third share is offered, owing to retirement through ill health of one of two partners, in an old-established better and mixed-class Practice, averaging over £3,600 p.a., including panel of 1,100. Fees 3/6 to 42/-, medicine extra. Good house, with 3 reception, 6 bedrooms, etc. Garden. Rent on lease £85 p.a. Excellent society, sport, and schools. Prem. £2,700, to include share of surgery. Premium 1½ years' purchase.
7. LONDON, W.—Chiefly middle-class PRACTICE, averaging about £700 p.a., including panel of 750. Visits 3/6, 5/-. No midwifery. Suitable house, with 4 beds., etc. Rent on lease £96 p.a. Prem. £1,100.
8. MANCHESTER DISTRICT.—Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
9. NORTHANTS.—Unopposed old-established Country PRACTICE within easy reach of large town, worth last year over £1,500, including panel (with mileage) £675 and appts. about £80. Visits 5/- to 20/-, medicine sometimes extra. Suitable house available. Rent £70 p.a. Premium 1½ years' purchase. Held by Vendor (retiring) over 30 Years. Spot of all kinds.
10. SOUTHERN COUNTY.—PARTNERSHIP.—Third share of very old-established increasing Practice situated in a beautiful residential and agricultural district within 10 miles of the sea. Cash receipts last year over £3,000, including panel and appointments. Visits 5/- to 21/-. Suitable house can be arranged for ingoing partner. Prem. 2 years purchase. District is developing rapidly and offers good scope.
11. DEATH VACANCY.—NORTH WALES.—Easily worked PRACTICE, offering large scope, and situated in a beautiful seaside and country district. Cash receipts about £300-£900. Very convenient well situated house, or near offer. Efficient Locum in charge.
12. EASTERN COUNTIES.—LARGE TOWN.—Sound good middle and working-class PRACTICE, producing last year nearly £1,900, including panel of 2,300. Fees 3/6 to 10/6, medicine extra. No midwifery. Specially built house, easily run and with every modern convenience. Contains 2 reception, 5 to 6 bedrooms, etc., and good professional accommodation. Garage. Garden. Price for freehold £3,000, half on mortgage. Premium 1½ years' purchase.
13. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visit 5/- to 21/-. Panel of about 380. Appts. worth about £50 p.a. Convenient house, with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' purchase.
14. PARTNERSHIP.—ESSEX.—(Within 50 mils of London).—Third Partner required in very old-established rapidly increasing Practice in small country town. Cash receipts for past three years average £4,176), including panel of 2,200 and appts. Third share is for disposal (opposition slight. Visits 5/- to 21/-. £3,755 (last year £4,176), including panel of 2,200 and appts. Good house, professional accommodation, 2 reception, 4 bedrooms, bathroom etc. Large garden. Garage. Rent £60. Premium 2 years' purchase. Educational facilities and sport.
15. WITHIN TWENTY MILES OF LONDON.—Old-established good mixed-class PRACTICE, in attractive residential district. Receipts average £1,000 p.a. Panel of nearly £500 and appts. worth £60. Visits 3/6 to 21/-. Very nice house, with all modern conveniences and half acre of garden. Price for freehold £1,800. Premium £1,400.
16. ESSEX.—(Within 15 miles of London.—Old-established unopposed and increasing PRACTICE, in pretty country district. Income last year £1,150, including Union £90 and panel £432. Comfortable house, with ample accommodation and large garden. Rent £70 p.a. on lease. Premium £1,650. Ill health reason for sale
17. HOME COUNTIES.—Within few miles of large town.—Old-established unopposed and increasing PRACTICE, in pleasant district, worth over £3,000 p.a., including panel, with mileage, producing about £1,000 and appts. £260. Visits 3/6 to 10/6, medicine usually extra. Very little midwifery. Good house (7 bedrooms, etc.), garden, garage. Price, freehold, £2,000. Premium 1½ years' purchase.
18. DEATH VACANCY.—NEAR MANCHESTER.—Old-established mid and working-class PRACTICE, producing last year at the rate of nearly £900 p.a., including panel of 550. Fees 3/- upwards. Specially built house in good position, with 2 reception, 6 bedrooms, etc., and large professional rooms, etc. Price £1,800, part on mortgage, or might be rented. Premium £800. Locum in charge.
19. CHESHIRE.—Industrial Town within easy reach of Manchester—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation, Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
20. ESSEX.—POPULAR COAST TOWN.—Small easily worked PRACTICE, offering good scope, as district developing. Income last year £550 Panel of 200. Fees 2/6 to 7/6. House contains 2 reception, 3 bedrooms, etc. Garden. For sale or on rental. Premium £750, part down and balance instalments.
21. DEATH VACANCY.—SOUTH WALES.—Seaside Resort.—Old-established mixed-class PRACTICE in favourite locality. Receipts for past 12 months £1,400, including panel of 607. Visits 3/6 to 21/-. Convenient house, with 2 reception, 4-6 bedrooms, and professional rooms, etc. Rent on lease £80 p.a. Good sport and schools. Prem. 1 year's purchase.
22. SOUTH AFRICA.—HEALTH RESORT (Inland Spa).—Old-established increasing PRACTICE (held over 20 years) on a main line of rail and in a healthy pleasant township much frequented by visitors in the Season. Cash receipts average over £1,750 p.a., including several appts. One opponent. Price for house £1,250, to include furniture, instruments, and motor car (original cost £2,000), and for goodwill £1,250, part by instalments. Efficient introduction. A knowledge of Hydrology would be a big asset.
23. PARTNERSHIP.—STAFFORDSHIRE.—LARGE TOWN.—A one-third share is offered in a very sound old-established chiefly working-class Practice, averaging £3,700 p.a., including panel of nearly 5,000. Very suitable house, with 2 reception, 3 bedrooms, etc. Moderate rent. Premium only 1½ years' purchase, part by arrangement.
24. CROYDON AREA.—PARTNERSHIP.—A two-fifths share to commence with in an old-established middle-class Practice. Income £2,750. Panel of 988. Fees 3/6 to 10/6. Convenient house on lease. Rent £80 p.a. Premium 2 years' purchase.
25. WORCS.—COUNTRY PRACTICE, within easy reach of two good towns. Old-established, and averaging over £1,600 p.a., including panel of about 600. Fees 2/6 to 10/6. Good house, with ample accommodation. Rent on lease £85 p.a. Premium £1,550, payable easy terms.
26. SOMERSET.—Near Hospital Town, in very pleasant residential district, an old-established unopposed Country PRACTICE averaging over £900 p.a., including panel (producing about £400 p.a., with mileage) and appts. Visits 3/6 to 21/-. Railway station in place. Nice house (5 bedrooms, dressing and bathroom, etc., garden). Price, freehold, £1,250, part on mortgage. Prem. £1,250, to include drugs, etc
27. LONDON, EAST.—(Within 1 mile of Liverpool Street).—Old-established PRACTICE in thickly populated district worth last year £343, including panel of 520. Small house (surgery, waiting room, dispensary, lounge sitting room, 2 bedrooms, bathroom, etc.). Rent ex lease £60 p.a. Premium £1,400, or near offer, to include fitted carpets, linoleum, and curtains.
28. MANCHESTER.—Rapidly growing Suburb within 5 miles of the City.—Old-established mainly middle-class PRACTICE, producing a steady average income of £2,000. Panel of nearly 1,400. Fees 3/6 to 10/6 Large house and garden. Price, freehold, £2,500, or would be let on lease at £120 p.a. Premium £3,500.
29. PARTNERSHIP.—Pleasant Seaside Resort within 40 miles of London.—A third Partner required in very old-established mixed-class Practice worth over £5,000 p.a., including panel of about 1,800. Visits 3/- to £1 1s. Only 20 to 30 midwifery cases yearly. Prospect of being appointed on Hospital staff within reasonable time. Suitable flat available or house to be obtained. Premium 2 years' purchase.
30. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A one-third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, on rental. Premium £2 250.
31. PARTNERSHIP.—SOUTH COAST.—Favourite Residential and Holiday Resort.—A one-third share, with increase later, in a well-established non-dispensing chiefly better-class Practice. Visits 5/- to 21/-. Very little mid £3,000 p.a., with large scope. Fees 5/- to 21/-. Average income ex Good corner house, with 4 reception, 6 bedrooms, etc. Premium 2 years' purchase. Scope for surgery.
32. SOUTH-WEST OF ENGLAND.—GOOD HOSPITAL TOWN.—A one-half share in an old-established mixed-class PRACTICE is offered owing to the retirement of the Junior Partner. Gross cash receipts average £2,300 p.a., including good appts. Small panel. Low expenses Commodious house, with garden and garage, rent £70 p.a. Premium 2 years' purchase. Vendor on staff of Hospital, and scope for surgery.

Full Schedule of Terms and Conditions will be forwarded on application.

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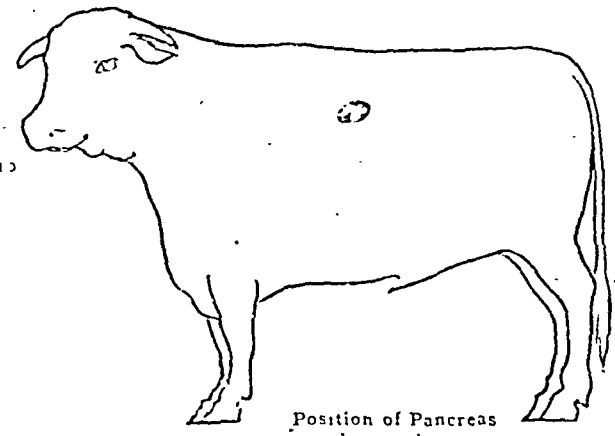
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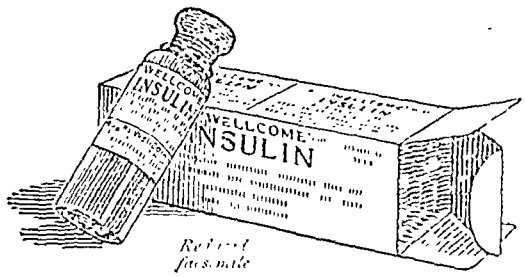


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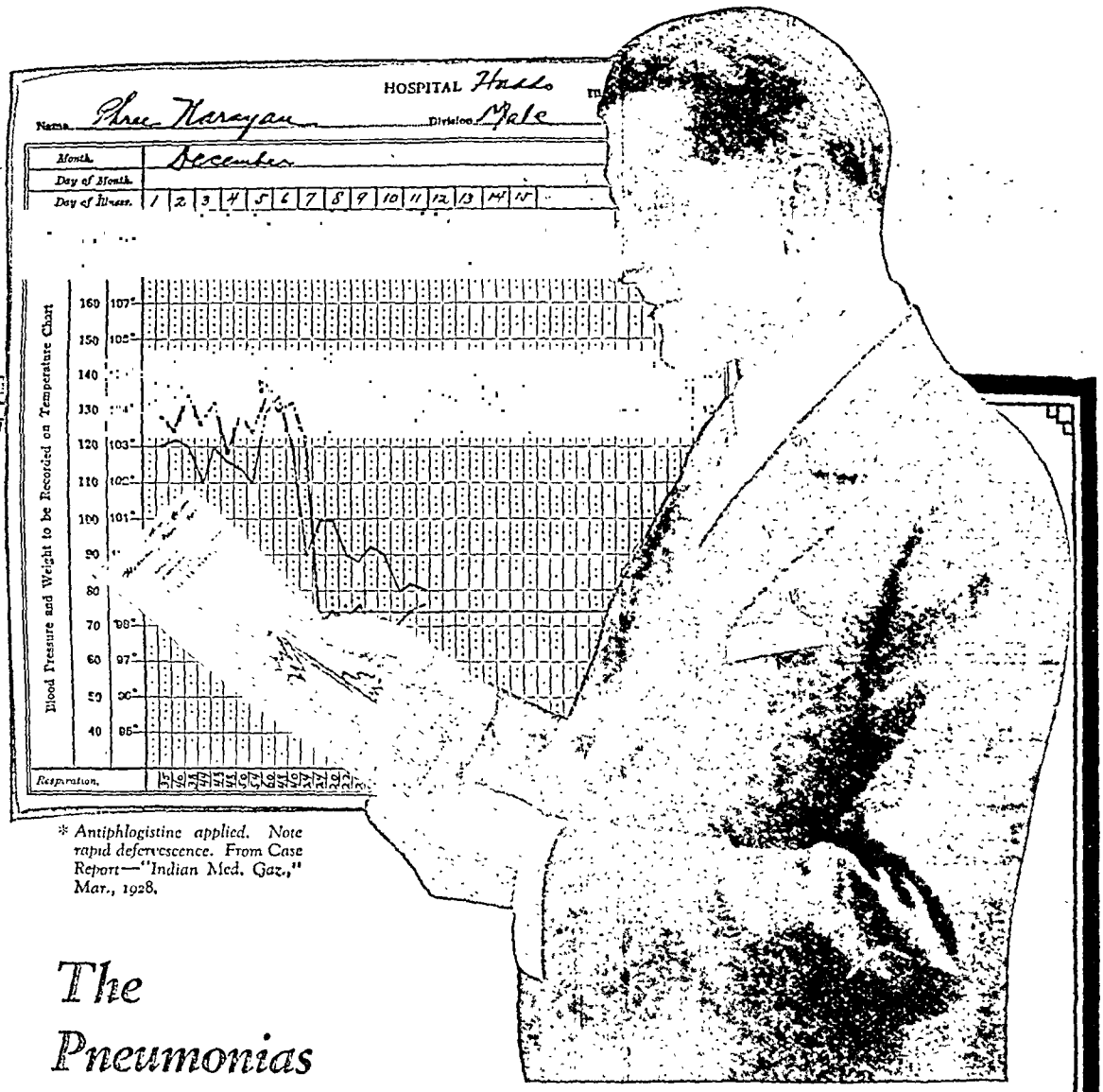
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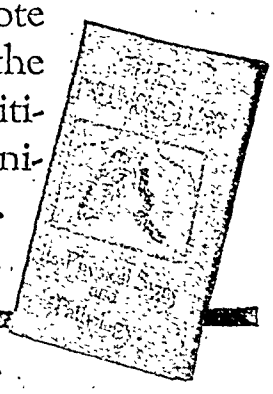
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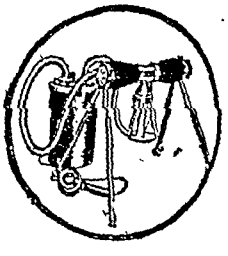
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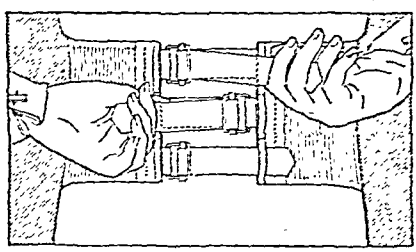
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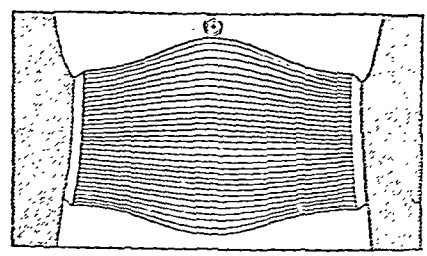
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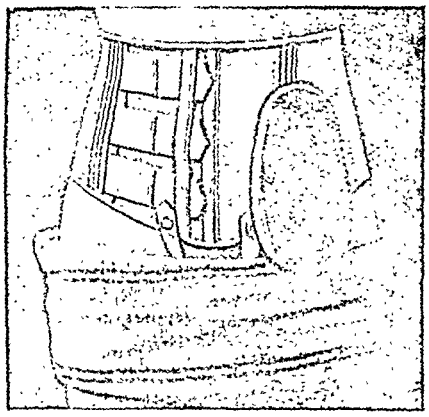
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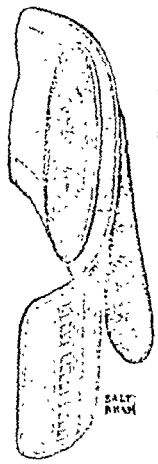


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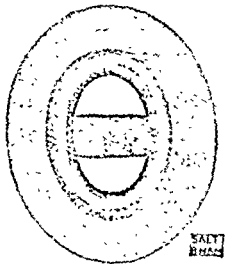
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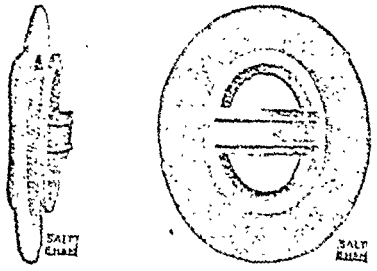


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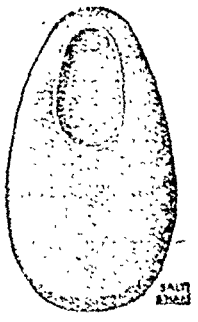
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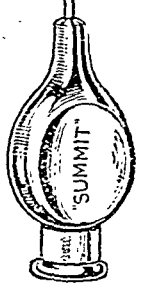
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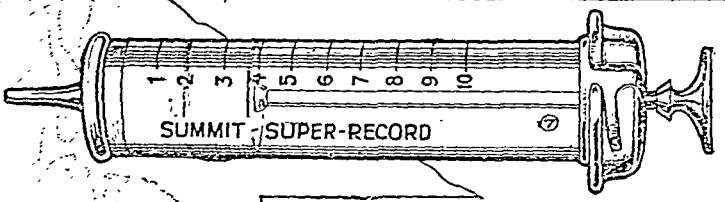


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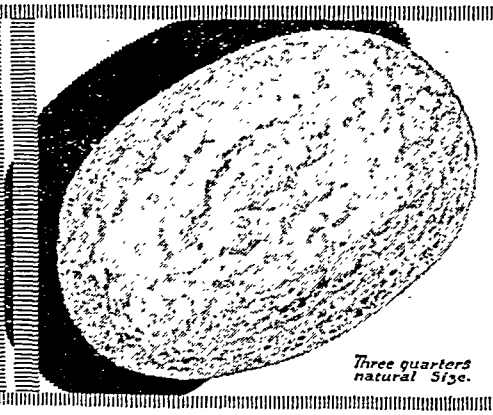
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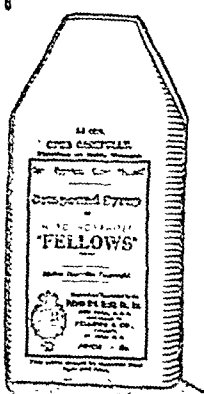
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Of the epidemics prevalent in winter, influenza has probably become the most formidable; in consequence, a recent publication (*B.M.J.*, Oct. 12th, 1929, p. 663), giving results of clinical tests made with S.U.P. 36 in forty-two cases of influenza, has stimulated interest in this product.

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There are certain types of chronic asthmatics who require relief of their paroxysms. While adrenaline is generally effective, it must be given hypodermically, and its action is short lived. Vapo-Cresolene (specially prepared cresols of coal tar) vaporized in the bedroom at night will give the desired relief. The patient is not disturbed as he breathes the medicated air of the bedroom.

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My last sample was used on a patient suffering from acute Ptomaine poisoning following a meal of shell fish (mussel) at 10.30 p.m. Symptoms first appeared at 12.30 a.m., and when I saw him at 3.0 a.m. he was vomiting blood and passing almost pure blood per rectum. He had commenced cramps and nervous twitchings which would shortly have gone on to tonic convulsions. He was very collapsed and had a weak pulse. I gave him only Kaylene in cold water, one drachm every quarter of an hour, from 3.0 until 8.0 a.m., when I felt it safe to leave him. For the next two days Kaylene was given every one to two hours, and was then followed by Kaylene-ol. No other medication of any sort was used, and he made an excellent recovery. This follows a somewhat similar case which I treated at the end of last year.

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NSD.49.—Steady improvement in appetite, digestion and weight. ——, M.B.

There has for some time been a division of opinion among medical men concerning the effect of a diet deficient in Vitamin B. Is the resulting malnutrition due to the absence of this vitamin, or is it simply starvation ?

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The results clearly demonstrate that it is 'B' Vitamin deficiency and not food deficiency which causes the serious pathological and physiological changes predisposing to disease.

We shall be happy to send to any medical man interested, copies of the laboratory report referred to, together with a free tin of BEMAX for personal trial.

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Largely prescribed in cases of Chronic Gastric Catarrh, Hyperaemia of the Liver, Gall-stones, Chronic Constipation, Diabetes, Renal Calculi, Gout, and Diseases of the Spleen, arising from residence in the Tropics or Malarious Districts.

Medical Practitioners should kindly note, when prescribing, to specify "Carlsbad SPRUDEL-Salt" on account of the many artificial preparations upon the market.

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A Valuable Sedative Antiseptic and Healing Ointment.

UNG. SEDRESOL is a combination of the products obtained by the destructive distillation of the wood and bark of the *Betula alba* in combination with Oxide of Zinc and Antiseptics.

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in fatigue, general debility and exhaustion due to illness or nervous overstrain, in convalescence, and for those engaged in strenuous work, either physical or mental.

Plasmona has proved of the greatest value in

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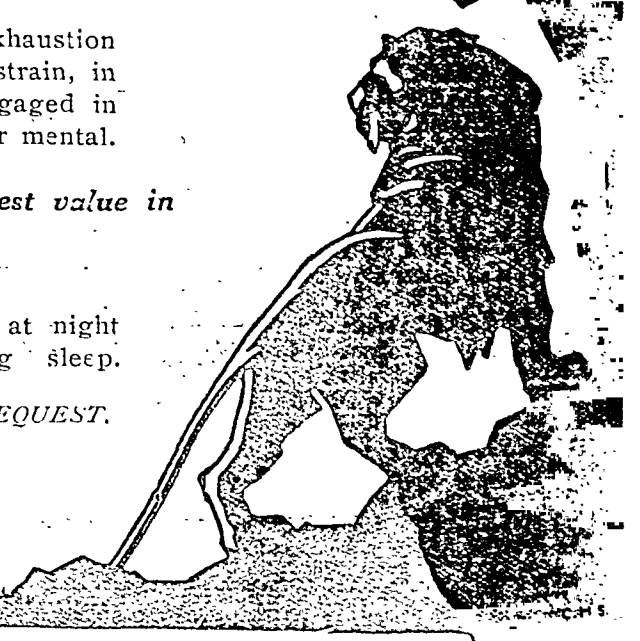
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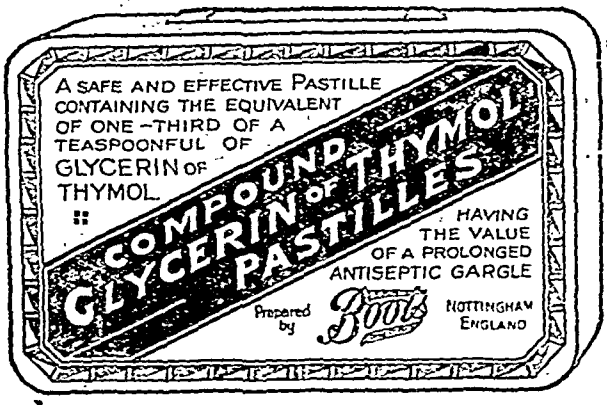
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THE DANGERS OF HYPERVITAMINOSIS

Damage from irradiated ergosterol

"An infant whose birth was retarded two weeks and whose initial weight was 4500 g. became weak soon after being born. He had vomiting, a certain rigidity of the skin, and a subfebrile evening temperature; the Pirquet reaction was negative. Though no symptoms of rickets were present, 6 drops of irradiated ergosterol were administered daily, beginning in the tenth week, and this dose was continued for 96 days. Seventy days after the beginning of the treatment leucocytes and albumin were found in the urine but were ascribed to cystitis. The child died when 5½ months old and the post-mortem examination, as reported by Dr. Puschler, in the *Zeitschrift fur Kinderheilkunde*, showed severe calcification of the tubules and interstitial tissue of the kidneys. The administration of irradiated ergosterol seems to have caused this condition, which corresponds with what is found in animals fed in the same way. The case suggests that this substance is by no means harmless if given to infants not suffering from rickets."

The above extract from *The Lancet* (Jan. 4th, 1930, p. 42), shows only too clearly the grave danger attending the addition of irradiated ergosterol to infant foods. This practice originated in an abortive attempt to improve the nutritive value of milk produced on soils deficient in their vital mineral constituents.

It is now known, however, that even the Natural vitamin "D" content of milk is not efficient unless the calcium content is also adequate, and any attempt to improve the nutritive properties of a milk by the addition of a synthetic concentrate, the potency of which is unknown and dangerous, is futile in the absence of the vital calcium salts.

Cow & Gate Milk Food

"Cow's Milk made safe and suitable for Baby."

Cow and Gate is produced from the milk of the renowned pastures of Somerset and Dorset. Unlike the sun-scorched grass of other climates, where cattle suffer from calcium deficiency and the resulting Osteophagia and will eat the bones of their own kind to rectify this, these pastures provide fully for the mineral requirements of the cows and the milk they produce. This milk contains an adequate vitamin content for the full assimilation of the mineral salts, which are preserved undisturbed by the specially designed and improved roller process. For these reasons the makers of Cow and Gate do not add to their products concentrates whose action is uncertain and by demonstration dangerous.

The makers will gladly supply samples for Clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

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The "Allenburys" "*Perfected*" Cod-Liver Oil

Cod-Liver Oil is the richest available natural source of the fat soluble growth-promoting and anti-infective vitamin *A* and the antirachitic vitamin *D*.

The 'Allenburys' 'Perfected' Cod-Liver Oil is examined biologically and certified fully active with regard to Vitamins *A* and *D*.

Examined by the Antimony Trichloride Test it gives a colour equal to **8-9 'Blue Units.'**

In amber bottles for protection against light at 1/3, 2/6, 4/6 and 8/6.

Descriptive literature and a clinical sample will be sent post free on application.

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A perfect combination of Malt Extract with Cod-Liver Oil.'—B.M.J.

'Bynol' contains 30% of the 'Allenburys' 'Perfected' Cod-Liver Oil

The 'Allenburys' 'Perfected' Cod-Liver Oil is examined biologically and certified as fully active with regard to Vitamins A and D.

Examined by the Antimony Trichloride Test it gives a colour equal to 8-9 'Blue Units.'

The 'Allenburys' Malt Extract renders 'Bynol' a rich, easily digestible and palatable product.

Issued in wide-mouthed jars.

Clinical trial sample will be sent on request, post free, to members of the Medical profession.

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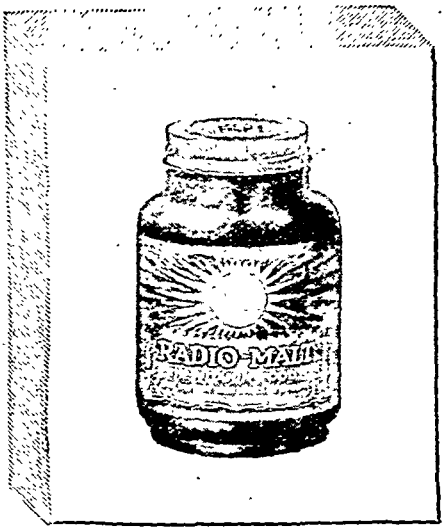
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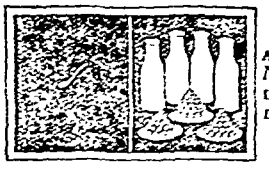
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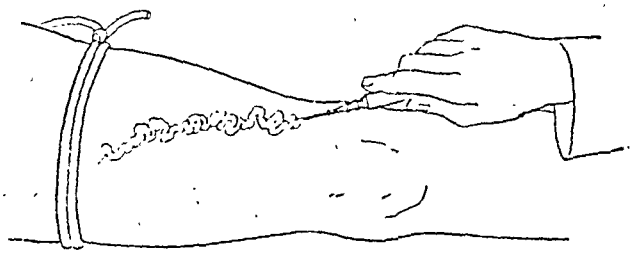
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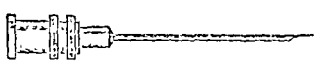
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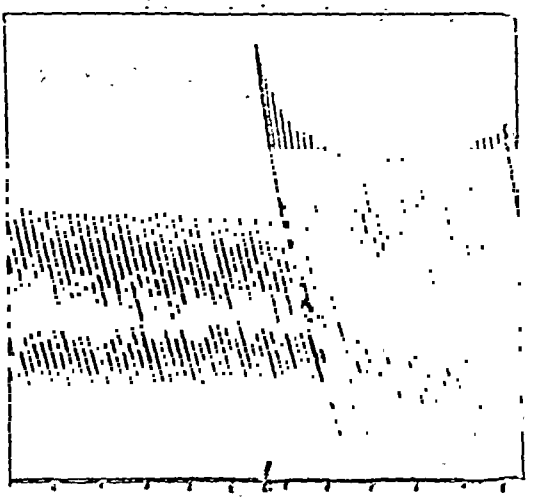
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A British Medical Association Lecture

ON

PAIN IN THE ILIAC FOSSA.

DELIVERED BEFORE THE WAKEFIELD, PONTEFRACT, AND CASTLEFORD DIVISION ON OCTOBER 10TH, 1929,

BY

JOHN FRASER, M.D., F.R.C.S.ED.,
REGIUS PROFESSOR OF CLINICAL SURGERY, UNIVERSITY OF EDINBURGH.

I DARE say that to some it may seem that a discussion on pain in the iliac fossa is a somewhat barren and uninteresting subject; for myself I confess that there are few problems in abdominal diagnosis which cause me greater anxiety or difficulty.

Let us suppose that we have to deal with a patient who presents as the principal theme of the history the complaint of chronic pain in one or other of the lower quadrants of the abdomen. I would say that in a surgical outpatient clinic this type of case is one of the most common of abdominal disorders, and often one of the most difficult to unravel. Too often, it seems to me, we arrive at what we regard as a diagnosis upon evidence which is superficial and incomplete, and, where right-sided pain is concerned, we are inclined to attach the blame to an organ which has borne so much of the heat and burden of the surgical day—the vermiform appendix. It is my intention to analyse a problem of this description, and to attempt to show that there are many possible explanations of chronic iliac pain.

The importance of a critical analysis and a reasoned diagnosis is obvious. In many instances, it is true, the case history and the physical signs are sufficiently distinctive to establish a correct diagnosis, but such is not the class which I have in my mind; it is rather the indefinite and more elusive type of case, in which an ambiguity of symptoms may lead us to take refuge in operative intervention—a course which too often, instead of clearing up the mystery and affording relief, results in a persistence of symptoms and an obscuring of the issues, and perhaps the introduction of complicating features of a most regrettable character.

Let me illustrate what is in my mind by quoting to you the following abstract of a case history.

Mrs. A. B. had complained for three years of chronic pain in the lower abdomen. It was referred to an area a handbreadth below the umbilicus; it was bilateral, but somewhat more severe on the right side. It was not an acute pain, but of a dull, aching character. It was relieved by lying down, and it was sometimes referred to the lower part of the lumbar spine. The symptom made its appearance soon after the birth of the first and only child three years before. It was sometimes accompanied by a sensation of nausea.

I need not elaborate the symptoms—what concerns us now is the fact that a diagnosis of chronic appendicitis was made, the appendix was removed, and for a time there was relief from symptoms. There was then a recurrence of the original complaint, and some months later a laparotomy was carried out and the right ovary removed. Again there was a period of relief, and again a recurrence of symptoms. A ventral fixation of the uterus was performed, but on this occasion there was no relief, and four months later a complete hysterectomy was recommended and accepted. Some months later the low abdominal pain and the backache reappeared, and on this occasion permanent relief was secured by the fitting of an efficient sacro-iliac belt. Someone recollected that a lax sacro-iliac joint may be responsible for low abdominal pain.

Perhaps there is something to be said for diagnosis by the method of radical exclusion practised in this case; it certainly eliminated possibilities until there was little left to consider, but from the patient's point of view it must be regarded as a *via dolorosa* which need never have been travelled. I have made no call on my imagination in the recitation of this case; it is an accurate record of events, and it has left me with an impression of the importance of a most rigid analysis of the clinical features of every case of chronic low abdominal pain.

THE ANALYSIS.

The Index of Pain.

The major symptom in the history of the case which we propose to analyse is pain, and therefore this feature focuses our attention, and we discuss it first from a general standpoint. It is a symptom so variable in quantity and quality that a concise definition and conception of it is always difficult and sometimes impossible. No one has succeeded in establishing its index, and, there being no constancy in its concept, we have no means of scientifically measuring or recording its degree. We have no choice but to place our dependence upon the statement of each individual, and, as we do so, we register one of the weakest points in our system of clinical investigation, for we are at the mercy of such unscientific elements as the power of description, the influence of imagination, it may be the utter materialism of "an axe to grind." Someone has said that to carry out an investigation of any case in which the pain syndrome exists four considerations must be taken into account: (1) the personality equation, (2) the history, (3) the examination, and (4) the interpretation. The first of these is the most difficult, for it entails the consideration of what our legal friends term "*the competency of the witness.*" Is *actual pain* being suffered? Is there a subjective sensation which is not pain, but which is confused or exaggerated or distorted, and presented to the examiner as pain, or is the error a psychological one, so that the more general disturbances of anxiety or fear are made manifest in the local guise of a pain which is purely imaginary? The first and often the most difficult part of the problem is to assure ourselves that pain exists, and that it is reasonably constant in situation and in character.

THE PHYSIOLOGY OF PAIN.

If we are satisfied of the existence of pain, we may review for a moment certain of the more commonly accepted facts in relation to the anatomy and the physiology of the disturbance.

The Pathway.

What is perhaps the simplest conception of pain arises in connexion with cutaneous sensibility. If I prick the skin on the back of my hand, and if in doing so I disturb one of the nerve endings which lie in the Malpighian layer, I am conscious of the sensation of pain. The stimulus has travelled along a well-defined route; it has been transmitted by a mixed nerve to the spinal cord, it has entered that organ through the medium of the posterior route, it has terminated for the time being in the synapse of the grey matter of the posterior horn. Picked up at this point by the synapse of the second axone, it passes to the *opposite side of the cord, and then, by way of the spino-thalamic tract and the fillet*, it ends as a synapse in the outer part of the optic thalamus. A third and last axone proceeds from this point in the posterior part of the internal capsule to end in the sensory area of the cortex which lies behind the fissure of Rolando. It is there that the actual consciousness of the peripheral stimulus is recorded.

The Sites of Origin.

Such is the conception of pain sensibility in relation to the skin, but in our consideration we must recognize that the stimulus which induces pain may arise from areas other than the skin. Many of you may have noticed that, when employing local anaesthesia, pressure on a blood vessel causes pain when the surrounding structures have been rendered insensitive. When you made this observation you were confirming an experience which Foerster recorded many years ago in connexion with an avulsion injury of the brachial plexus. Blood vessels, more especially the smaller arteries and the arterioles, are sites from which painful stimuli originate, but there is this distinction, that the tract which the stimulus follows is along the line of the larger blood vessels and thence by way of the sympathetic system through the anterior nerve roots into

the spinal cord. Subcutaneous fat is apparently insensitive, but fascial planes and septa are plentifully supplied with sensory nerve endings which react to painful stimuli. Muscular tissue is presumed to be insensitive to pain, but the fascial intersepta are highly sensitive, and periosteum is so well supplied with sensory nerve endings that painful stimuli readily arise from it.

There remain to be considered the viscera and the serous surfaces. Both are areas from which pain may originate, the impulses travelling by the line of the splanchnic nerves and ganglia, by the rami communicantes into the mixed spinal nerves, from which point they enter the spinal cord through either the anterior or the posterior nerve roots.

I have recorded these facts so that I may be in a position to say that when Mrs. A. B. complains of chronic pain in the iliac fossa, the individual tissues from which the painful stimuli may originate are the skin, the fascial planes and septa, the blood vessels, the periosteum, the serous membranes, the viscera, and of course any point in the nerve tract which pain impulses follow.

Nature of the Stimulus.

Continuing my study, I am anxious to know something of the manner in which the pain may originate, something of the influences which, when exerted, result in the sensation of pain. This point is evident—that the stimulus may be applied either to an end-organ or to any portion of the nerve fibres throughout the course of the first axone and probably of the second; but here comes a distinction, for, if the stimulus is applied to an end-organ, it would seem to be a necessity that it shall be distinctive in character and relatively intense in degree, while, where the nerve fibre is concerned, the question of the specificity of the stimulus would appear to be less important. The stimuli which affect the nerve endings of skin, fascia, and periosteum are those of prick, temperature, and tension. Where the blood vessels are concerned the origin is somewhat different; tension is probably one of the influences, and it is most likely responsible for the pain which accompanies conditions of extreme vascular spasm or of undue dilatation. In the case of the blood vessels, however, we have reason to believe that the stimulus of the nerve endings may be chemical in character and arising from such influences as an excess of CO_2 or the products of imperfect tissue metabolism.

The nature of the stimulus which induces visceral pain is still a matter of controversy, but it is evident that hollow viscera are peculiarly sensitive to stimuli which arise in association with undue contraction or undue relaxation of the muscular walls. From observations which we have made we believe that the explanation may lie in a whorl-like arrangement of the nerve fibres around the spindle-shaped muscle cell. Tension on the encircling fibre may result from excessive contraction and foreshortening of the cell or from undue relaxation and stretching.

In one or other of these different ways—by stimuli of prick, of pressure, of temperature, of stretching, and of chemical influence—the pain impulse may arise.

The Manner of its Conduction.

I conclude these physiological questions with a query: The stimulus having arisen, what is the manner of its conduction?

You will recall that the transmission is not a continuous one, but one which is repeated at a rate which varies from five to one hundred impulses per second, each period being accurately spaced, for the phase of transmission is followed by one of refraction, during which conduction is interrupted, and this phase must pass before the succeeding transmission can be assumed. Learmonth has expressed nerve conduction figuratively by saying that it is not a long-drawn-out Hey, but a Hey-hey-hey.

These are the general facts, and I think it has been of interest and importance to notice them, for we are able to appreciate in a physiological sense the situation from which the painful stimuli may have originated, the type of stimuli, the paths which they follow, and the nature of their progress.

Anatomical Aspects.

One of the reasons why there may be difficulty in the diagnosis of chronic low abdominal pain is that these regions are intimately related to a variety of anatomical structures which, if affected by changes which produce pain stimuli, may refer the pain to one or other of the lower quadrants of the abdominal area. Let me indicate what these structures are.

The Sacro-iliac Joint.

If I indicate an outline on the anterior abdominal wall which extends from a handbreath below the umbilicus downwards towards the pubic spine, and is some two inches from the mid-line, I have outlined the position of the sacro-iliac joint in relation to the anterior abdominal wall. This joint is a synarthrosis of supreme significance in the system of body mechanics. Through it the bulk of the body weight is transmitted to the lower limbs; its statics and dynamics are not above suspicion, for the joint is the contact of two parallel surfaces, and, though it lies in relation to an inverted dovetail, is a central one, and thus liable to forces which rotate and loosen until fixation is insecure. If for any reason there is imperfect fixation oedema may result, and if such develops it is chiefly evidenced in an area where the ligamentous arrangements permit it to occur—the anterior portion of the joint. Oedema means increased tension, a stimulation of nerve endings in fascia, and the production of pain stimuli, which may be referred to the lower quadrants of the abdomen, and which may be associated with local tenderness when pressure is exerted on the anterior abdominal wall in the line of the sacro-iliac joint.

The Lumbar and Sacral Nerves.

Passing in close relationship to the sacro-iliac joint are the nerve plexuses, which are motor and sensory to the lower limbs. The third and the fourth lumbar nerves unite to form the femoral or crural nerve at a point which corresponds to the upper portion of the sacro-iliac joint. The fifth lumbar and the upper four sacral nerves unite in the formation of the lumbo-sacral cord, and the area of union is roughly over the lower third of the sacro-iliac joint.

Now the points of exit of the individual nerves are either through rigid bony foramina, or, as in the case of the fifth lumbar nerve, beneath a bony traverse and an equally rigid ligament, while there is the interesting but somewhat paradoxical position that, though the nerves are probably the largest in the body from the point of view of girth, the foramina through which they pass are not proportionately arranged for their accommodation—aperture and content are curiously close-fitting in their adjustment one to another (Putti). There are thus abundant possibilities for nerve irritation. The underlying joint itself may be none too secure, and the nerve tracks are so arranged that pressure upon them readily occurs—a state of affairs which results in oedema of the nerve sheaths and pain, which is both local and referred to the lower quadrants of the abdominal wall.

The Psoas Muscle.

Overlying the sacro-iliac joint and the related nerve tracks is the muscle mass of the psoas major. There are conditions under which this muscle becomes tender and oedematous, and on such an occasion I have seen pain in the iliac fossa so definite and distinct that a diagnosis of appendicitis was seriously considered.

The Viscera.

The anatomical sources of iliac pain, however, which bulk most largely in our minds are in relation to the viscera. In a visceral disturbance associated with pain two types or varieties of pain may arise. One is local—that is to say, its evidence is in a situation corresponding to and immediately overlying the organ affected; the other is referred through the medium of nerve tracts so that the surface manifestations are evidenced in parts of the body remote from the original and primary area of the disturbance, an example of the latter being the shoulder pain

hich develops in association with inflammation affecting he under surface of the diaphragm.

Appreciating these points, we ask ourselves: What are he viscera which directly or by reference are associated ith iliac pain? The answer is not difficult. The organs hich occupy the iliac fossae come first to our minds—the wer loops of the small intestine, the caecum and the scending colon, the vermiform appendix, the iliac and the elvic colons, in the female the tubes and the ovaries. here are others which we are more apt to forget; I llude to the ureters and the kidneys. The line of the wer third of the ureter is roughly that of the sacro-iliac oint, and a disturbance of this portion is associated with ocal tenderness and subjective pain referred to the iliac ossae. In the case of the kidney and the upper end of he ureter, though local pain is evidenced at a level above he iliac regions, it is not unusual to find the reference of ain to the abdominal surface at a considerably lower level. ncluded in the visceral group we must recognize the ssociated lymphatic glands, and particularly those which ccupy the ileo-caecal angle.

The Superficial Nerve Distribution.

There is yet one more distinction which I would mention, nd it is in relation to the nerve elements which pass hrough or are distributed in the parietes of this region. need not elaborate them in detail; it is sufficient to say nat in this area there gathers a complexity of nerve ements which extends from the distribution of the tenth horacic to the third lumbar. It is an extensive summaon of nerve tissue in a comparatively small area, and inically it may be regarded as indicating a wide potential ource from any point of which there may be an ultimate perficial reference of iliac pain.

CLINICAL CONSIDERATIONS.

Hitherto I have spoken in terms of anatomy and physiogy; let me now put the matter in the clinical sense. We ve seen that where individual tissue is concerned the ain stimuli may originate in skin, fascia, peritoneum, ood vessels, nerve trunks, viscera, or serous membrane. udged anatomically, the common site origins of iliac pain e the sacro-iliac joints, the lower nerve trunks of the mbar plexus, the sacral plexus, the psoas muscle, the arious viscera which occupy the iliac region, the viscera a higher level which may refer pain to the iliac gion, the associated groups of lymphatic glandular ssue, and, related to these various sites, the complex stribution of nerve elements in the parietes of the region. shall devote the remainder of this address to a considera-on of some of the clinical characteristics which distinguish fferent types and origins of iliac pain.

The Visceral Aspects of Iliac Pain.

1. *The Appendix.*

I consider this aspect of this problem first because it is ill a common conception that pain in the right iliac ssa is appendicular in its source. It is one of those gmatisms which possess a half-measure of truth, and yet ssess also a great background of potential error. Many riters and observers have striven to clarify the position. erren, for example, has expressed in so many words e almost startling paradox that when pain develops *initio* in the right iliac fossa the chances are that, atever the clinical condition may be, the one it is most ilikely to be is appendicitis. Others have made the same claration, but, in spite of these and similar statements, e impression remains, with the result that untold mbers of cases have undergone the operation for appencitis when, whatever may have been the explanation, it is certainly not the appendix which was at fault.

When an individual develops appendicitis three processes e presumed to be responsible for the production of pain, d the events may follow one another in sequence or may cur in combination. The processes are:

(*a*) Severe spasmodic contraction of the related hollow viscera, the lowest coils of the ileum, the caecum, and the pyloric portion of the stomach.
(*b*) Increased tension within the appendix.
(*c*) An infection of the related peritoneum.

The first of these, by undue contraction of the fibres of the involuntary muscle, stimulates nerve endings which communicate their disturbance to overlying parts, usually to the body mid-line in the supra-umbilical and umbilical regions. As the more local appendicular tension increases, afferent stimuli are transmitted through the medium of the tenth and eleventh dorsal nerves, which results in a diffuse pain in the subumbilical region on one side of the mid-line. With the third stage of the development of the disease—the infection of the related peritoneum—there is localized tenderness, both subjective and objective, which delimits itself at the situation which the appendix occupies, and, as this in some 85 per cent. of cases is at McBurney's point, there is local pain in the right iliac fossa.

What has been the sequence of events? There has been an epigastric or umbilical pain followed by a diffuse subumbilical pain, and only with the third stage is there localized right iliac pain. The sequence is of great importance in the matter of differential diagnosis, and as far as my experience goes I am in agreement with the statement which Sherren and others have made—that, if pain *begins* and remains in the right iliac fossa, the chances are that the case is not one of appendicitis.

I have said that the appendix occupies the right iliac fossa in some 85 per cent. of cases; in the remaining 15 per cent. it is accommodated elsewhere in the pelvis—beneath the mesentery of the small intestine, below the pylorus with an undescended caecum, or in the cellular tissue of the retrocaecal region. In all these instances, which may be termed anomalies of position, there may be no pain in the right iliac fossa, it is supra-pubic or subumbilical, or subcostal, or in the loin, according to the position which the organ occupies. My point is this, that right iliac pain as an evidence of appendicitis depends upon the organ occupying what is supposed to be its normal anatomical position, and, moreover, that its appearance is an evidence of a stage in the local pathology which bespeaks an established infection of the organ with peritoneal involvement.

2. *The Ileo-caecal Junction.*

If the appendix as a source of right iliac pain has to be accepted with a certain measure of qualification, there is another structure in the right iliac fossa which is responsible for the symptoms, and that with a considerable measure of constancy. Let me quote from one of many similar records.

Miss C. D., aged 30, complains of pain in the right iliac fossa. The attacks are intermittent, they come and go at different periods of the day, and they vary in intensity. If at all severe a sense of nausea is present. The symptom is often relieved by lying down, and there is usually complete comfort during the resting hours. The appetite is indifferent, and there is obstinate constipation. Miss C. D. is a spare woman, observant to the degree of introspection, and of a highly strung and nervous temperament. The abdominal wall is thin, and the site of the pain is characteristically indicated by laying the palm of the hand obliquely downwards and inwards over the right iliac fossa. On palpation no local rigidity can be demonstrated, but on deep palpation a sensation of discomfort, scarcely amounting to pain, may be elicited slightly below and to the inner side of McBurney's point. As the hand rises from the abdominal wall there may be a gurgling sensation produced by the expanding caecum. On *x*-ray barium investigation it is evident that there is some degree of stasis of contents in the caecum and lower part of the ascending colon.

It may be that I am injudicious enough to operate on Miss C. D., and if I do I shall certainly remove her appendix. Then I shall don a convenient pair of pathological spectacles and shall describe to my friends suggestive evidences of an existing pathology. Miss C. D. will make an early and a good recovery, I have no doubt, and for some weeks or months there will be no return of symptoms; but presently, and with a most disconcerting certainty, she will return to tell me with some measure of satisfaction that her symptoms have recurred. I shall not be unduly surprised (though in my wisdom I shall give Miss C. D. no indication of the fact) because her symptoms have been proceeding from spasm of the lowest loop of the ileum, the caecum, and the ileo-caecal valve.

Let me for a moment elaborate the points which this case illustrates. Certain types of individuals are liable to *unusual* degrees of spasm at what may be termed junctional points in the alimentary tract. These points correspond to segments in which sphincteric action normally occurs—*the pylorus*, the ileo-caecal valve, the mid-colic sphincter, and the pelvi-rectal sphincter. In subjects who are liable to disorders of these areas there are probably peculiarities of *innervation* and, more evidently, of structural arrangement. The condition of the ileo-caecal region is characteristic; the caecum is thin-walled, blue, and distended, an injected veil of peritoneum may cross its surface, but, most distinctive of all, there is a meso-caecal attachment which permits of considerable mobility of the structure. For some reason which we do not fully understand, the sphincteric portions of such an arrangement are liable to spasmodic disturbances of considerable intensity, and these are evidenced by pain in the related area. Superficially it may suggest appendicitis, but the sequence of events, the distribution of the pain, the absence of *rigidity*, and the associated findings will establish the true explanation. Ileo-caecal spasm is a common visceral explanation of right iliac pain, while a similar disturbance of the sphincteric arrangements of the pelvic colon gives rise to left iliac pain.

3. *The Tubes and Ovaries.*

Pain in the iliac fossa arising from affections of the tubes and ovaries is a common source of confusion, and I may say that surgery has made a confession of the difficulty by employing the paramedian or Battle's incision in the doubtful female case.

The source of the confusion is partly attributable to the fact that the segmental spinal areas, and therefore the areas of superficial pain reference, are very similar in the two instances—the appendicular being the tenth and eleventh thoracic, the ovarian the tenth thoracic, the tubal the eleventh and twelfth. It is easy to see, therefore, how confusion may arise. It is not within the scope of this paper to enter into details of differential diagnosis, but I would remind you of one feature by which ovarian and tubal disease may be distinguished from appendicitis: it is by the demonstration of a point of maximum local tenderness at the position of the internal abdominal ring. The explanation is an anatomical one: arising from the hilum of the ovary and the under surface of the tube is the infundibulo-pelvic ligament, its superficial attachment corresponding to the position of the internal abdominal ring. It would seem that irritation or infection of the visceral connexion is transmitted to the peripheral area and is there manifested by pain on pressure.

4. *The Kidney and the Ureter.*

The association of kidney disease with iliac pain is apparent in the following case history.

Miss M. W., a girl of 18, recently suffered from an attack of tonsillitis. During convalescence she complained of a sudden attack of pain in the right side. It was partly in the back, but it extended over the right iliac region. Soon after the onset of the illness there was a shiver scarcely amounting to a rigor, and the temperature was found to be 101°. There was a leucocytosis. In some way the complaint of iliac pain, accompanied as it was by fever and sickness, aroused suspicions of appendicitis, and once the impression had taken root the common sequence—an operation—followed. The appendix was normal; the explanation, as later results showed, was an acute pyelonephritis, secondary, no doubt, to the pre-existing tonsillitis.

In this instance the confusion arose from the combination of features (fever, vomiting, and leucocytosis), but the essential symptom productive of the error was the right iliac pain referred from a kidney undergoing increasing tension, and distributed to the right iliac fossa along the ilio-hypogastric and ilio-inguinal nerves.

Where ureteral conditions are concerned the problem is somewhat different. There may be some degree of referred pain along the distribution of the eleventh and twelfth thoracic and the first lumbar nerves, but in this instance the demonstration of local tenderness arises. In a ureteral irritation, particularly if it is such as to involve the lower end of the organ, pain is elicited on pressure [illegible] the brim of the pelvis, an inch and a half on either [illegible] of the promontory of the sacrum. I can recall several cases in which recurrent right iliac pain, ureteral in origin, formed a problem of diagnosis closely resembling appendicular infection. I illustrate one of an unusual character.

Mrs. R. W. complained of recurring attacks of right abdominal pain, which was referred widely over the subumbilical region, the attacks being accompanied by nausea and vomiting. Local examination revealed tenderness of the inner portion of the right iliac region. In this instance there was reason to suspect that the pain had a ureteric origin, and a ureterogram revealed a distorted and kinked organ (injured, as it transpired, in a former operation for hysterectomy).

In this case the pathology was obvious and distinct, but there are others of a more subtle type, and particularly I have in my mind the milder degrees of ureteral stricture, errors which are only appreciated objectively in a ureterogram, or by the sense of obstruction which there may be to the passage of a ureteral bougie. There are innumerable instances of confusion of this condition with appendicitis.

5. *The Mesenteric Glands.*

That inflammatory affection of the mesenteric glands may be associated with iliac pain is a fully accepted fact. Unfortunately it is an additional source of confusion that intestinal catarrh is premonitory to the glandular disturbance, so that colic and diarrhœa may appear and further obscure the diagnosis. The inflamed glands are themselves tender to pressure, while there may be referred pain in the parietes of the overlying abdominal wall. It is true that there is usually an absence of muscular rigidity, because the parietal peritoneum is not involved, but the issue is so difficult that in most cases the relatively safe course of laparotomy is advised and preferred.

6. *The Psoas Muscle.*

If we consider the question, it is evident that affections of the *psoas muscle* may be associated with pain and tenderness referred to the region of the iliac fossæ, but it is a possibility which clinically we are apt to forget. The experience of a recent case impressed me with the confusion in diagnosis which may arise.

Mrs. M. was a sufferer from rheumatoid arthritis of the right hip-joint, and the limb had become somewhat adducted and flexed. It was suggested that manipulation of the limb under anæsthesia into a position of abduction was advisable, and this was carried out. Twenty-four hours later pain was complained of in the right iliac fossa. There was local tenderness below the umbilicus and to the right of the middle line; the temperature had risen; there was vomiting, though it was recognized that this feature might be ascribed to the influence of the anæsthetic. The picture suggested appendicitis, and this diagnosis was seriously debated, but an entire absence of muscular rigidity lent support to a simpler explanation, and as events turned out it was ultimately established that the symptom proceeded from an œdema of the psoas muscle, which had been stretched, or even torn, in the manipulation of the hip-joint.

7. *The Lumbar and Sacral Nerves.*

I dare say we pay insufficient attention to the influence which nerve cord irritation plays in the production of low abdominal pain. I have alluded to the relationship of the lumbo-sacral nerve trunks and the regions of the iliac fossæ, and I have recounted the evidence to which Putti drew attention that the lumbar and sacral nerves, while among the largest in the body, are accommodated in vertebral foramina which are curiously close-fitting in their capacity. In the existence of an osteo-arthritis affecting the spinal column osteophytic outgrowths around the intervertebral foramina, with accompanying perineural œdema, are frequent evidences, and I can recall many cases in which low abdominal pain, right or left iliac, was attributable to such a source.

Mr. W. D., aged 62, complained of recurring discomfort and pain in the lower abdomen. The discomfort was *intermittent* but he noticed that it was often troublesome at night after he retired to bed. He had previously suffered from rheumatism, and twelve years previously his teeth were removed on account of a diffuse pyorrhœa infection.

On examination it was demonstrated that there was local tenderness over the lower and inner parts of both iliac fossæ but the feature was somewhat more evident on the right side. His condition had been diagnosed as chronic appendicitis and the appendix had been removed, but his symptoms had continued.

A skiagram of his spinal column showed clear evidences of osteo-arthritis. There was considerable outgrowth of new subperiosteal bone, and to some extent it was laid down around the neural openings. It is reasonable to suppose that pressure upon the nerves at their points of exit, with resulting oedema, played a considerable part in the collective group of symptoms.

The sacro-iliac joints as a source of iliac pain I have already referred to, and I need not repeat how important is the recognition of this association.

I might allude to other sources from which iliac pain may arise—the peritoneal and fascial stretching associated with an incipient inguinal hernia, for example—but I feel I have already drawn a complicated picture, and I do not wish to add to its complexity. It has been my desire to remind you of the importance of analysing in a more or less logical way any case of chronic iliac pain with which we may meet, and I have attempted to remind you of the physiological and anatomical considerations upon which such an analysis must be based.

NOTE ON THE ETIOLOGY OF PELLAGRA.

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SOME extremely interesting statistics of pellagra as it occurs in South Africa have recently appeared in a paper by Dr. E. H. Cluver.[1] Dr. Cluver describes an "outbreak" of pellagra in the Durban prison command, which comprises three groups of prisoners in separate institutions—the Central Gaol, the Point Prison, and the Concella Prison. In the first, for European and short-term prisoners, 1.9 per cent. were affected; in the second and third, for long term hard-labour prisoners, 3.8 and 8.2 per cent. respectively.

It is of interest to consider whether the valuable tables of the rations supplied to the prisoners provide any evidence in support of either the vitamin deficiency or protein deficiency theories of the etiology of the disease. Four different ration scales are described—C and D, for short term (under three months) and long term coloured prisoners not natives of South Africa: E and F, for short and long term natives respectively. Prisoners receiving D and F do hard labour.

In a paper published in 1921[2] I drew attention to the fact that if the available protein (gross protein less loss in intestine) be reduced to the value of meat protein by the application of K. Thomas's figures for the "biological value" of protein from different sources, diets in which the value so obtained fell below 40 grams daily for non-labour communities and 45 grams for labour communities were likely to lead to pellagra in the consumers. There seem to be good reasons for doubting the validity of the method of determining the biological value employed by Thomas; nevertheless, the relationship of the value of protein in a diet so deduced to pellagra incidence is quite definite and cannot be accidental.

In Table I given below the protein content of Cluver's four diets has been investigated in this manner, the value of the mixed proteins expressed in grams of animal protein being shown in the line indicated by the letters B.V.

TABLE I.—*The Protein Value of the Durban Prison Rations.*

Ration Scale.	C.	D.	E.	F.
Gross calories	2,700	2,850	2,500	3,750
Gross protein	80	75	60	119
Protein from maize*	21	40	52	61
Protein from meat*	5	9·8	0	9·8
B.V. of protein	29·5	23·5	14	33
Cases of pellagra among recipients	2	7	10	44

* Gross amount; B.V. estimated from gross protein less 25 per cent.

The loss of protein in the intestine from a diet containing such indigestible materials as whole maize and beans is considerable. H. E. Roaf and I[3] determined the average loss from the intestine on a somewhat similar diet supplied to the Turkish prisoners of war in Egypt in 1918. The observation was carried out on a squad of five men over a period of days. It was found that 33 per cent. of the protein intake failed to be absorbed. In estimating the available protein from the gross protein in the four diets one-third has therefore been deducted for non-absorption. The "biological value" is estimated from that figure.

It is evident that the value of the protein in all these four diets falls below the minimum safe value of 40. They are all, in fact, diets which would have been expected to result in pellagra among the recipients.

It seems scarcely justifiable to feed any type of prisoner for as long as three months on a diet so bad as E, issued to short term native prisoners. It consists entirely of maize with 450 grams daily of mixed vegetables. The general health of the recipients of this diet is not mentioned; the considerable daily amount of vegetables no doubt saved them from much. Although this diet is exactly adapted to produce pellagra, it is, even so, surprising that no fewer than 10 cases developed within less than three months from the time they commenced its consumption. The diet has a protein value almost identical with that used by Goldberger and Wheeler[4] in the Rankin farm experiment; the calorie value is considerably less. In that experiment six out of eleven convicts forming the experimental squad developed the disease; it was not, however, until seven months after the beginning of the experiment that definite symptoms suggestive of pellagra were seen. The fact that two persons were admitted to the prison already suffering from the disease suggests that pellagra is less rare in South Africa than is supposed. It is also possible that individuals of the poorer class of natives, already sufficiently ill nourished, suddenly placed on such an exceptionally deficient diet as E, developed pellagra sooner than would otherwise have been the case. The still more perplexing fact that the disease had not been observed before in any of the three institutions, although the diets had been in force for some years, will be referred to later.

Unfortunately Dr. Cluver does not supply any information as to the percentage of pellagra cases among those receiving the four different ration scales. It may probably be assumed that the coloured foreign long term prisoners on ration scale D were very much fewer in numbers than the native long term prisoners on scale F. The conditions of labour appear to have been the same in the two cases: the incidence of pellagra among the coloured foreign prisoners, owing to the lower value of the diet (whichever of the two views of the etiology of the disease is adopted), should have been greater than among the native convicts.

That labour has an important influence in increasing the liability to pellagra is an undoubted fact to which I have drawn attention (*loc. cit.*, p. 32), the apparent reason being that labour raises the need of the protein requirement (*loc. cit.*, p. 54). The relatively large number of cases on diet F must be ascribed to the influence of labour on a community receiving a diet which, judged of by its protein value, would have been pellagrous even without that influence. It may be noted that of the 44 cases on diet F, 8 were originally on diet E, and were therefore probably non-labour.

From what has been said it is evident from the analysis of the four diets in regard to their protein value that the protein deficiency theory of pellagra provides a reasonable explanation of the result. Dr. Cluver very naturally accepts without comment Goldberger's view that the primary cause of pellagra is a deficiency in the P-P (B2) accessory factor in the diet. It is the purpose of this note to show that this theory is by no means conclusively proved, and that diets responsible for the Durban prison outbreak in fact supply strong evidence that the defect was not in the vitamin content but rather in the value of the protein.

In a paper read at the International Congress of Tropical Medicine in Cairo, which will be published shortly, I have endeavoured to analyse the data brought

forward by Goldberger and others upon which the theory is based. It would obviously be impossible to discuss the question in a short note such as this except in a very incomplete manner. The view is based mainly on the results of ten experimental diets supplied to groups of female patients, inmates of the Georgia State Sanitarium. In all except two of these diets the high or low value of the protein appears to provide a sufficient explanation of the curative or non-curative effect. The two exceptions are diets by which cure and protection were effected in one case by the addition of 50 grams of yeast[5] extract (or dried yeast), in the other by the addition of 1,200 grams of tomato juice[7]—the basic diet being of very low nutritive value.

Apart from the fact that the supplements in the quantity given contain, in addition to the vitamin content, a large amount of other material, there are circumstances about these two diets which suggest the need of further investigation. That the curative effects of such diets is due to the B2 factor is deduced from experiments on rats and dogs, on the assumption that the peculiar dermatitis of rats and experimental "black tongue" in dogs are the analogues of pellagra in man.

The original experiments of Goldberger and his co-workers (ref. [6]) have been repeated by Chick and Roscoe,[8] Findlay,[9] and others, and there is no doubt that a characteristic dermatitis is produced in rats by deprivation of vitamin B2. It cannot, of course, be expected that in animals so different from man as the rat and the dog the symptoms of a deficiency disease would be identical. There are, however, characteristic differences in the condition seen in rats which suggest some doubt as to the identity with pellagra, and circumstances in regard to the condition in dogs which, in my opinion, make the identity with the human disease very improbable. In the pellagra-like condition in rats, except in Findlay's experiments, alimentary tract symptoms appear not to have been seen. The dermatitis in rats is not related to exposure to light, while in man this is with rare exceptions the only direct exciting cause of the cutaneous symptoms. In man pellagra does not affect the urinary tract; in the rats haematuria seems to be a constant symptom.

The condition now known as "experimental black tongue," owing to its supposed identity with Stuttgart disease, known as "black tongue" in the United States, was first observed by Chittenden and Underhill[10] in 1917 to result from improper feeding in dogs. The disease is characterized by the appearance of a pustular eruption on the mucous membrane of the cheeks, gums, and lips, gangrene of the tongue, with subsequent sloughing and acute gastro-enteritis. The cutaneous symptoms appear to be in the nature of localized inflammations resulting in subcutaneous abscesses. Goldberger and Wheeler[11] consider that the condition is due to feeding on materials deficient in vitamin B2; they find, however, that, although it is curable even in an advanced stage by raw lean beef, it is not curable, except in the early stage, by the administration of yeast or yeast extract. Underhill and Mendel,[12] on the other hand, conclude from their experiments that the condition is due to the absence of carotin from the food, and can be cured by the daily administration of 5 mg. of that substance, while it is not cured by the administration of either lean beef or yeast.

Black tongue resembles in some of its symptoms the descriptions of acute or typhoid pellagra, but it has no resemblance to the form of pellagra seen in Egypt. It seems, therefore, that while it is possible, in spite of certain characteristic differences, that the deficiency disease of rats corresponds to pellagra in man and is produced by the same cause, it is unlikely that this is so in the condition of experimental black tongue in dogs.

It is of interest to consider, apart from the experimental evidence referred to above upon which the vitamin deficiency theory of pellagra is based, what evidence there is that such deficiency is not the usual or only cause.

In the paper mentioned above (ref. [5]) I have endeavoured, by grouping the components of various pellagrous and other diets in a manner originally suggested by Hindhede according to their assumed vitamin content, to find out whether in such diets there is any correlation between the amount of foodstuffs rich or poor in vitamins and the results in the communities receiving the diets. The only correlation is with the content in animal proteins, pellagra incidence being greater the less animal protein there is in the food. This is a well-known fact, and has frequently been quoted as evidence of the benefit of high value protein in the cure and prevention of the disease. Diets, of course, occur which are non-pellagrous but contain no animal protein.

It has been pointed out that the dietaries tabulated by Dr. Cluver might be expected to be pellagrous from the value of the protein content. It is proposed to compare these diets with some others and consider whether there is any evidence of a vitamin B2 deficiency which might equally or in part have been responsible for the result.

Aykroyd and Roscoe[13] have recently published a valuable paper on the distribution of vitamin B2 in foodstuffs, from which it is possible to state roughly the relative value of different materials in this factor. They examined seventeen foodstuffs, both in regard to the growth-promoting property and the curative effect on the pellagra-like dermatitis of rats. They find that the two properties run parallel, indicating that the cessation of growth and the appearance of the specific dermatitis are the result of a deficiency of the same factor. The authors deal with the cereal and pulse products in a slightly different manner; by comparing, however, their Tables II and IV, and using the explanatory figures given in para. 3 (p. 496) of their paper, it is possible to determine the number of grams of different food materials which would contain an approximately equal amount of vitamin B2. I have ventured to estimate this for certain foodstuffs so as to show what number of grams of each would correspond in vitamin content to 1 gram of meat in its natural state. The following is the result of the estimate: meat 1; beans (dried) 1.2; whole maize (African) 1.5; milk (natural) 2; maize meal or wheat flour 2.8. Beans are assumed to be of the same value as dried peas; the amount of maize meal needed in the food to produce normal growth is stated by Aykroyd and Roscoe to be more than 65 per cent.; it is assumed for the purpose of this estimate that an amount equivalent to 100 per cent. would suffice.

It is necessary to state briefly the manner in which these figures have been arrived at from the authors' results. In their Table IV it is stated that the minimum amount of meat in its natural state required to produce normal growth in the rat is about 2.5 grams, of fresh milk 5 grams. In Table II it is stated that to produce a comparable result with vegetable foodstuffs there must be added to the basic diet (free of B2) 45 per cent. of dried peas, 50 per cent. of whole maize, and more than 65 per cent. of maize endosperm (100 of maize meal has, as above stated, been taken as sufficient). They state that 1 gram of dry food represents 14 per cent. of the daily ration. It will thus be seen that by dividing these percentages by 14 the daily required amount in grams will be obtained. For example, in the case of whole maize $50 \div 14 = 3.57$ grams. Dividing the figures so obtained by 2.5 (grams of meat needed daily) the amounts given above corresponding to 1 gram of meat are found.

It seems justifiable to assume that, applying the figures for the different food materials as factors, the comparative value of different diets in regard to their vitamin B2 content can be roughly estimated. This has been done in the subjoined Table II, the protein value being given also for comparison. Apart from rice and fresh vegetables the only components given are those which may be a source of the B2 factor. It will be remembered that Goldberger and his co-workers (ref. [6]) describe an experimental diet with a supplement of 200 grams of lean beef which was curative and preventive of pellagra. There is no doubt that these observers considered that this amount, or rather less, contained all the required pellagra-preventing factor. This diet is therefore given in the first column of the table with two other diets following it which were known to be curative or non-pellagrous, and three more under the influence of which the recipients suffered from the disease. The figures given in this table need very little comment. It is obvious that, assessed on the basis of Aykroyd and Roscoe's results, the vitamin B2 content of

the food has no relation to the incidence of pellagra. The content in this factor is as high in the pellagrous diet as in the non-pellagrous. On the other hand, the pellagrous diets all have a protein value considerably below the minimum safe value of 40, while the non-pellagrous have a value considerably above this figure. All the diets have been analysed as described and are given as examples: fourteen other diets known to have been either curative or the reverse have been examined in a similar manner with the same result.

TABLE II.

	Curative or Non-pellagrous.						Pellagra Producing.					
	1		2		3		4		5		6	
	A	B	A	B	A	B	A	B	A	B	A	B
Meat	200	200	105	105					62	62	62	62
Milk			200	100			700	350				
Whole maize ...					50	33			235	121	235	121
Maize meal ...	140								250	82	250	82
Grits	43	90										
Wheat flour ...	70				125	43						
Wheat bread ...			600	150								
Pulse (dry) ...	14	12	50	41	170	141			49	35	200	166
Fish	23		75		470							
Vegetables ...	150*	?	150	?	170	?	113*	?	150	?	200	?
B.V. ...	43		51		50		23		29		38	
B2 value ...		302		376		217		353		350		431

1. Goldberger's preventive diet with meat supplement.
2. Kasr-el-Aini (Cairo Hospital) ordinary diet. Curative with meat.
3. Mean of six Indian gaol diets (McKay).
4. Pellagrous diet. Non-curative (Goldberger).
5. Durban prison diet D.
6. Ditto, F (Cluver).

A. Daily weight in grams of certain components.
B. Vitamin B2 value of the same as compared to value of meat.
* Tomato juice. Other vegetables mixed.
B.V. Net protein value in terms of animal protein.

The paper referred to above (ref. [5], now in the press) as written before the appearance of Aykroyd and oscoe's observations. These observations appear entirely support the conclusion which I arrived at from the nsideration of other available data; the conclusion being: at in diets composed of natural foodstuffs the usual igin of pellagra is related to a deficiency in the protein ine and not to a deficiency in the vitamin content. There are, however, certain diets on which the pellagra cidence was very high and which are not only very ficient in protein value but also deficient in vitamin ine. The following are examples:

	B.V.	B2 Value.	Pellagra Incidence.
			Per cent.
menian refugee epidemic	23	192	23
nkin farm experiment	15	144	55
ic diet in Goldberger's experimental iets	10	102	40

The components (excluding sugar and fats) in the basic t to which various supplements were added in Goldger's experiments are shown in Table II, col. 1. t is of interest to consider briefly whether there is any dence that the effect of a protein deficiency may be entuated by a coincident deficiency in the B2 factor. During the past few years papers have been published Reader and Drummond[14] and by Miss Hartwell[15] wing that, at any rate in the growing animal, vitamin is essential to the effective metabolism of protein in body. The last author has demonstrated, in addition, t the amount of this factor required varies with the ure of the protein, being least in the case of proteins animal origin. It is therefore possible to believe that the absence of a sufficiency of B2 in the food a secondary protein deficiency would manifest itself, while with a sufficiency of the vitamin factor relative to the type of protein the value of the latter might be high enough. The deduction, therefore, which may be suggested from the relation of vitamin B2 to protein metabolism in its bearing on the etiology of pellagra is the following: "that among individuals living on the borderline of vitamin sufficiency the value of the protein intake would determine the pellagrous or non-pellagrous effect of the diet."

There may therefore be two alternative causes of the disease—a deficiency in the vitamin factor, or a deficiency in the value of the protein. From what has been said above, however, it seems unlikely that under ordinary conditions the content in the first factor is ever insufficient. It is possible to imagine unusual diets in which the assimilation or metabolism of proteins is interfered with by the absence of the B2 factor. This may, indeed, be the origin of the pellagra-like condition described in rats.

In conclusion, attention may be drawn to a rather paradoxical circumstance in connexion with the Durban prison outbreak, which required more explanation than Dr. Cluver gives. The ration scales are stated to have been unchanged for seventeen years, and it is suggested that pellagra was unknown in these prisons before November, 1927. The fact that at about the same date the public health authorities issued a circular drawing the attention of medical officers to the question of pellagra suggests that possibly undiagnosed cases may have occurred previously; just as the fact that two individuals were admitted to the prison already suffering from the disease suggests that pellagra is commoner among the poorer classes in South Africa than is supposed.

Nightingale, in 1913, described a somewhat similar outbreak which occurred in the Victoria Prison in Rhodesia: in that case the outbreak was traced to a coincident change in the rations, finely milled maize flour having replaced coarsely hand-ground millet. It certainly would be a very surprising fact, considering the value of the diets if pellagra were unknown in the Durban prisons previous to 1927.

Apart from this case, there are many anomalous facts familiar to those acquainted with the epidemiology of pellagra: the geographical distribution of the disease, its absence or rarity in some countries and presence in others where the food conditions are not very different and the economic state of the poor must be the same; the occurrence of asylum cases in England and other European countries, in institutions in which the diets seem to be above reproach; the familial cases in children, such as those described by Box[16] and Hutchison.[17] These are among the facts for which a fully satisfactory explanation does not yet seem to have been found.

I believe that the essential cause of pellagra is a primary or secondary deficiency in the value of the protein intake relative to the individual requirement—a requirement which may be raised by various conditions. Observers, however, with large clinical experience of the disease are not all convinced that there is no other extrinsic factor, and the possibility ought perhaps not to be lost sight of that the food deficiency may be the necessary precursor or concomitant of such a factor.

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THE USE OF FORCEPS AND CAESAREAN SECTION IN LABOUR.*

BY

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I HAVE chosen for my subject "the use of forceps and Cæsarean section in labour," for several reasons, the chief of which is that under its cover I may provoke discussion of certain mechanical problems that arise in connexion with cases of labour that may occur any day in any practice. Rather than detail a series of individual cases, I think it would be more profitable if I attempted to review labour as a whole, and tried to establish principles which might guide us in making a wise selection of the use of forceps or Cæsarean section, when either is necessary.

The great majority of cases require no special mechanical treatment at all, and in them we merely try to control the pain and safeguard the patient against any possible avoidable accident. May I digress from the main theme here for just a moment, because the importance of the psychic side of labour is so often completely ignored, and we, as a profession, do not regard it seriously enough. To a great many patients the experience of labour is associated with ghastly pain, and the effect it produces upon their psychology is often very marked. It is very important in the present discussion that we should realize that though prolonged labour may be physiological, it is extremely painful, and we must bear that point well in mind if we are to make a wise choice in cases in which surgical intervention would be called for. Just as there is a breaking strain which varies with the individual metal, so there is a breaking strain in every human mentality, and it, too, varies with the individual. Many of us were familiar with cases of shell shock in the war; cases of birth shock are just as real, but they often pass unrecognized. It is with that we are now particularly concerned.

Before we can have an intelligent understanding of the methods with which we can tackle these problems, we must realize two important points: first, the positions in the pelvic canal in which labour is likely to be obstructed, and secondly, the mechanical factors which will bring about these obstructions. Most of us will remember the time when it was an established principle that in her first labour a woman should be allowed to go through what was called "a trial trip." That is to say, intervention was regarded with such suspicion, and its results were often so unfortunate, that it was considered wiser to let the woman try herself, rather than take a hand in the game by intervening, unless there was some very marked indication for intervention. Modern methods have completely altered this outlook, and we are all well aware that it is just as essential for any woman who goes through the prolonged strain, mental and physical, of pregnancy and labour to have a living child on the first occasion as on any subsequent occasion. We are therefore constantly trying to devise scientific means whereby it may be possible to anticipate for any individual whether there will be any cause for delay in the birth of her child, and, if so, the extent and importance of that cause. Now as labour is from start to finish a mechanical process, this problem is fortunately in the majority of cases quite simple, but it can be the most difficult problem with which we are faced, because the mechanical factors at work vary so much in the individual, and there is no means save of knowing them very accurately.

As you know, it is now the custom to insist on seeing every woman at intervals during her pregnancy, and certainly at the thirty-sixth week. It was an accepted maxim that the external measurements of the pelvis should be taken, and an attempt be then made to estimate the true conjugate of the pelvis. Now, personally, I have found that the external measurements of the pelvis afford no indication of the size of the true pelvis. Moreover, as the child can vary from four pounds to fourteen, it is not so much a question of estimating the actual size of the pelvis, as of the relative size of the child to the pelvis in each individual case. I have seen a woman with a $3\frac{1}{2}$-inch pelvis have a baby quite easily, and I have seen many a woman with what is regarded as a normal pelvis have very definite obstruction during labour. Let us therefore bear in mind that the child may be obstructed anywhere along the pelvic canal, but the most common and important point of obstruction is at the entrance to the pelvis, at the brim, and if we can be quite sure that the child's head will pass the brim, the rest of the treatment as a general rule will be relatively simple. In the majority of primiparae the head will be engaged in the brim, or through it, when labour begins.

Now let us consider those cases in which real difficulty may be experienced and fine judgement be called for. If, at the thirty-sixth week, the head is engaged in the brim, lying low in the pelvis, and there is no obvious deformity at the outlet, all we need do is to see the patient every week or ten days, and make sure that the head remains in position. But supposing the head is not through the brim, what are we to do? These cases will present themselves in three groups. In the first group overlapping is small, and we feel confident that the child is not likely to increase in size so greatly that the degree of overlapping will ever be anything but small. We hope, therefore, that the patient will have strong pains, and that the degree of moulding of the child's head will be sufficient to allow it to pass when labour ensues. We are seeing this patient at the thirty-sixth week, and it is well known that in a number of people the head will "drop" into the pelvis at a later date than this; we must always remember, however, that there is no definite time when in any particular individual we should assume that the child will drop. If there is apparently a slight degree of overlapping, we must also remember to be perfectly sure that the presentation is a normal one and not an occipito-posterior, in which the head is often partially extended and so appears to be larger. A final test of the degree of overlapping in which there is any reasonable doubt can only be made satisfactorily under an anaesthetic. On more than one occasion when I have been uncertain whether the head would pass or not, I have readily settled the problem by anaesthetizing the patient and finding that when her muscles were relaxed, and the angle of the pelvis altered, the head could readily be pushed into the pelvis.

In the second group the overlapping at the thirty-sixth week is so great that it would be relying too much upon chance to hope that, whatever the force of the uterus, or whatever the degree of moulding, the head could be forced down through the pelvic bones. The degree of prominence of the sacral promontory is a very important fact here, because, the head being above the brim, if the sacral promontory protrudes at all far forward, any thrust from above tends to make the child's head override the symphysis pubis, and, of course, prevents its entrance into the pelvis without a very considerable degree of moulding. In cases of this kind what are our alternatives? We can attempt to induce labour; or, after a long second stage, we can, if necessary, apply forceps; or we can perform Cæsarean section at term. I have lived through the time when Cæsarean section was regarded with such great disfavour and held to be such a dangerous operation that all these cases were treated by forceps. The results of applying forceps were often so disastrous that one naturally turned to a method which had some science in it, rather than to one which depended upon the application of brute force. As we have improved surgical technique the risk of Cæsarean section has practically disappeared, and I cannot imagine anyone with a mechanically trained mind who would prefer to extract a child by sheer brute force rather than by a method which is just as safe and is guided by the modern principles of aseptic surgery.

Cases in the third group present the most difficult task of all; in these all seems well by every known test, and yet the child does not advance. We have, because of our reluctance to intervene unless necessary, left them to Nature, but Nature has failed us. They prove that obstetrics provides no exception to the general gamble

* A lecture delivered to a common meeting of the Folkestone Medical Society and the British Medical Association at Folkestone.

of life—we have taken every conceivable care, but the game has gone against us. Indeed, there is no means at present of knowing for certain whether any given case will or will not present such difficulty. Do not let us delude ourselves: cases in the third group are fortunately not common, but they do occur, and we must be prepared to meet them.

To return to the more general statement. The methods by which we can meet cases of mechanical obstruction are three. The first is the induction of labour. The methods at our disposal here are, of course, medical and surgical. Personally, I have practically abandoned both kinds in my practice, except in very exceptional cases, for three reasons. First, they are so very uncertain. The medical means, in which quinine and castor oil figure largely, have often failed, and particularly in those cases in which an early induction would be most desirable, and not only failed, but, if we realize the psychic effect of that failure, have left the patient in much worse state than when we started. I wonder if we always realize what must be the effect upon a sensitive patient who, having been assured that some drugs she will swallow in the morning will bring on her labour, finds that the only result of taking quinine, etc., is that she has terrific noises in her head and that she feels ill and wretched. This experience considerably shakes her confidence in her medical man, especially if, after she has been left alone for two or three days, the treatment is repeated, perhaps again with failure. With regard to surgical methods, such as the careful introduction into the uterus of bougies, stomach tubes, etc., my experience at Guy's Hospital has shown that they also are very uncertain, and on occasion ten to fourteen days have elapsed before the patient has been given the cheerful intimation that at long last labour has started. To my mind this is a very poor preparation for anyone who has to undergo the ordeal of a first confinement.

The second reason against the method of induction is the difficulty of establishing the time when it should take place. We have no accurate means, as I have already pointed out, of knowing when labour should be induced, and it must frequently be done when it is in fact quite unnecessary. Recently a case was brought to my notice which showed this difficulty in a marked way.

An experienced medical man had under his care a primipara in whom there was some question as to the exact duration of the pregnancy, because although the date of the last exactly normal menstrual period was definite, there had been some haemorrhage for three days at the time when the next menstrual period would normally have occurred, and this was regarded by the patient herself as a normal period, though the loss was considerably less and the duration three days instead of five. The head did not appear to go down into the pelvis, and so, at what he took to be the thirty-sixth week, under an anaesthetic, he introduced two bougies into the uterus. She passed these bougies out forty-eight hours later, when she had some slight pains, but nothing further eventuated. She was a very nervous woman, and her relatives, who were even more so, refused to allow anything further to be done. Seven weeks later she had, unaided, a lusty baby in six hours, though according to the general rule by which we estimate the duration of pregnancy, she was now three weeks past full term.

My third objection is that, in my experience, the risk of induction is just as great as with the other methods at our disposal. I do not forget that I have been called in on three occasions to see patients into whom bougies had been previously introduced, and who had subsequently died of sepsis, although every conceivable care had been taken. So, taking it all together, I regard it as an inferior method. I might mention in this connexion that at Guy's Hospital we have recently been making use of animal bladders filled with glycerin. This is more certain than the older methods of induction, and those who are interested in it may refer to a very capable paper by Mr. G. F. Gibberd, which appeared recently in the *British Medical Journal* (October 5th, 1929, p. 617).

The second method is the use of forceps, which, speaking generally, were short instruments originally designed to extract the child if there was any delay after it had reached the floor of the pelvis. Then their use was extended to the mid-cavity, the shaft of the forceps having been lengthened for that purpose, and so far they are, and have been, exceedingly useful instruments; but the subsequent development—axis-traction forceps, which at first sight appear to be ingenious instruments—is really mechanically unsound when we are attempting by their use to deal with those cases in which the head is above the brim and cannot be made to enter it by the ordinary force of the uterus, because we are so often then attempting a mechanical impossibility. In cases of this kind the head of the child is often not through the os, which is not fully dilated, and whose lips have often become oedematous, because there has been nothing to complete its dilatation, the membranes having ruptured early. The uterus not having been able to push the child through the brim or to mould its head sufficiently so that it can pass the os, application of axis-traction forceps must result in something giving way to allow the head to pass; and this, in a large number of cases, certainly does happen. Very bad lacerations of the os and genital tract occur with all their sequelæ, or the intracranial membranes of the child are torn and it is born dead; but as it has been delivered through the vagina we are tempted to be satisfied, because a so-called natural delivery has taken place, though in reality a very primitive and unscientific method has been made use of. In my earlier days we were frequently instructed to make use of this method, and I do not know anything that is more likely to do irreparable harm to a woman without necessarily actually killing her. Now that Bossi's dilator is obsolete I consider axis-traction forceps used in these circumstances to be the most dangerous instruments we make use of, but as the damage is hidden for the moment apparently it passes unnoticed, until the patient appears at a later date as a chronic invalid, with her cervix badly lacerated, with a constant chronic discharge, the pelvic cellular tissues infected, and the uterus anchored in some odd position to the side of the pelvic wall, with the result that there is chronic pelvic pain. The application of these axis-traction forceps is often a very difficult matter, because it is necessary to make use of them in a primipara, in whom the vagina is not dilated, the os not completely dilated, the head is not engaged or fixed in the brim, and so is not completely flexed. Any slight misapplication of the forceps, therefore, when traction is made, is liable further to extend the head, and so increase the engaging diameter and the difficulty. To speak broadly, then, as a guiding principle, forceps should not be used if it is possible to avoid it, unless the head is through the os, the os being fully dilated, and the head at least partly down in the pelvis.

The third method is Caesarean section, which is an operation based on modern scientific surgical principles. Its mortality, in my own experience, is not greater than delivery by forceps, nor, for that matter, than any other abdominal operation. The risk to the child is rendered negligible; except in cases in which disease has been present I have not yet lost a child delivered by Caesarean section; and in considering the question of statistics on this point, which appear to delight the hearts of so many of us, let me say that they are of no value at all in the consideration of an individual case. We are not considering the risk of Caesarean section in normal labour, but Caesarean section as an alternative to other methods of delivery when obstruction has occurred, or will inevitably do so. The only drawbacks to its performance of which I am aware are: (1) the question of sepsis; (2) the question of the scar in the uterus; (3) the psychic effect on the woman and her relatives of the need for an abdominal operation, which is classically described as "having the child cut away," and the idea, therefore, that she must be in some way abnormal.

With regard to the first point, it has not been my experience that the risk of sepsis is any greater than by any other means of delivery. In my experience it has been less. It used to be supposed that the risk of sepsis in Caesarean section was very greatly increased according to the number of hours a woman had been in labour, and so firmly was this view held when I was a student that very few people would have dared to do the operation late in labour for that reason, particularly if the patient had been examined vaginally by a medical attendant or midwife. Now our views on puerperal sepsis are undergoing a very radical change, and extended experience of the operation of

Caesarean section shows that this risk is very greatly exaggerated. By that I do not mean that one would choose to wait long in labour before a Caesarean section is performed, but, as we shall show later, it may be necessary to do so; if, however, reasonable care had been exercised in any vaginal examination that may have been made, I personally would not hesitate on that ground to perform a Caesarean section. I should not prefer to do so, but I should not hesitate to do so, because it is the best alternative then at our disposal. In these circumstances I think it would probably be wisest to paint out the vagina and then to eventrate the uterus, packing it off completely from the peritoneal cavity, and when the child had been removed, to paint out the uterine cavity itself with a suitable antiseptic.

With regard to the question of a scar in the uterus, much has been made of its risk in a subsequent pregnancy. Personally I have not been troubled by it, and I attribute this to the fact that I take the greatest possible care in my method of suturing the uterus. Normally the cavity of the pregnant uterus is sterile. This I have proved, because in 75 cases I have taken smears at the time of operation, and these have been invariably returned as sterile. Therefore one is perfectly safe in putting one's sutures right through the mucous membrane into the cavity, and thus getting a very exact apposition of the walls.

I have one patient at Guy's Hospital on whom the operation has been performed five times, and on the fifth occasion I asked the dresser to show me where the scars were. None were visible; the only result of the five operations was that the anterior wall of the uterus was considerably thickened and more powerful than the posterior. I fancy there are very few women who would want more than five babies born by Caesarean section.

With regard to the psychic effect on the woman and her relatives, this used to be tremendously marked in the days when Caesarean section was performed as a last resort, and so rarely that every student and every nurse that could possibly manage to do so used to come to watch it. It also affords material for those amazing females who apparently delight to gather round a pregnant woman and tell her of all the horrors, real and imaginary, that can be associated with labour. Now, fortunately, this stage is completely past, and I have on many occasions, both in hospital and in private, been asked by women to deliver them by Caesarean section.

What, then, is going to be to-day our routine practice? Normally we should examine all women at the thirty-sixth week, and in the vast majority will find that the head passes the brim, and nothing more will be necessary, in all probability, than to avoid those accidents which may always occur during labour, however normal it may appear to be. However, one should be on the watch, because the head may pass the brim, but may become stuck in the mid-cavity, owing to those very important ischial spines. Should delay occur there, always be on the look out for a persistent occipito-posterior presentation, because these play a large part in determining backward rotation. Delay also may occur at the outlet. In the two latter cases, having corrected the position if necessary, the application of forceps, after sufficient time has been allowed for moulding to take place, will usually finish off the labour very satisfactorily.

In those cases in which the head is overlapping at the brim, and in which we feel certain that the power of the uterus and the moulding of the child's head will allow it to pass, do nothing, but expect the labour to last longer than usual, and here a study of the psychic side of the patient will be of very great importance, because a human being cannot be expected to go on indefinitely in pain, and it is in these that the use of morphine and scopolamine is of such great value. If it is found that after the lapse of a reasonable time the head does not come down into the pelvis, Caesarean section may still quite safely be performed. If, however, the child does come down sufficiently for the head to be through the os and through the brim, and becomes at all engaged in the pelvis, the extraction of the child by forceps should be carried out.

On the other hand, if we feel certain after all examinations have been made, supplemented, if necessary, by x-ray photographs, that the head is definitely too large, I should not consider the induction of labour at an early date, for the reasons I have already given, but would let the woman go on into labour and see what happens. If the child makes no advance I should perform Caesarean section. If I felt confident at the start of labour that the overlapping was so great that one could not intelligently anticipate that the obstruction could possibly be overcome, Caesarean section would be indicated.

AN IMPORTANT SIGN IN ACUTE APPENDICITIS.*

BY

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MOST cases of acute appendicitis present no difficulty in diagnosis. The sudden abdominal pain, first, possibly, in the upper part of the abdomen, then localizing in the right iliac region, the nausea or vomiting, the hyperaesthesia and/or tenderness on gentle palpation of the right iliac fossa, the rigid abdominal wall, either limited to the right iliac region or general—all these signs and symptoms present a picture which the veriest tyro can recognize. The possible presence of right-sided localized tenderness or swelling on rectal examination, pain felt in the right iliac region when sudden pressure is made over the left iliac region, pain evoked on suddenly bringing into action the muscles upon which an inflamed appendix lies, an increased rectal temperature, are still further corroborative signs, one or more of which may be present.

In a large number of cases, however, a patient complains of slight abdominal pain in the right iliac region, but there are none of the above-noted signs or symptoms. There is a clean tongue, normal temperature, normal pulse, no pain or tenderness on movement, no nausea, no vomiting, no rigidity, and no abnormality discovered rectally; in fact, there is simply a "stomach ache." In the course of the last few years I have had at least a dozen such cases where I was yet able correctly to diagnose acute appendicitis, in each case an immediate operation demonstrating the appendix to be either inflamed or full of pus, or ulcerated.

Such apparently mild cases with no distinguishing signs or symptoms place one on the horns of a dilemma: if one diagnoses acute appendicitis and removes an appendix which proves to be normal, one is rightly blamed for performing a needless operation; if, on the other hand, one decides against appendix trouble, and a few hours or days show definitely that appendicitis is present, with possibly disaster resulting from delay in operation, then one is impaled on the other horn. Auto-suggestion may give rise to many of the symptoms of appendicitis, especially in young susceptible people, and these constitute the larger bulk of difficult cases; children form another large class; but there are also a large number of cases of acute appendicitis with practically no signs or symptoms.

For some years I have noticed that in all cases of acute appendicitis one sign, not mentioned in the textbooks, is invariably present at the onset. It is the state of the abdominal wall covering the right iliac fossa, and is produced by the earliest reflex of the inflamed appendix. This reflex may, indeed, produce the classical "rigidity" in severe cases where the onset of the appendix inflammation is very sudden and acute, particularly in those cases where the appendix contents are under pressure from a blockage of its lumen or are of great virulence; but in just such cases there is no difficulty in diagnosis. The earliest reflex may, however, result in nothing more than an increase of the normal tone of the muscle covering the right iliac fossa, and is definitely appreciable to careful palpation. This slight tightening of the muscle has to be carefully searched for, and all voluntary contraction of the abdominal muscles must be obviated. The patient lies on his back, limp, his arms by his sides, breathing freely with his mouth wide open, his tongue protruded, and his glottis open (making no noise on respiration). The warmed hand of

* A paper read before the Dorset and West Hants Branch of the British Medical Association.

the surgeon is then placed on the lower abdomen, the metacarpo-phalangeal joints resting on the pubes and the fingers kept rigid, together, extended, and pointing first to the right clavicle when examining the right side and to the left clavicle when examining the left side; by a gentle movement of the metacarpo-phalangeal joints, wrist, and elbow, and without any deep pressure of the phalanges, the muscle tone of the two sides is several times compared, when it will be found that there is a definite increase of tone on the right side as compared with the left.

It is a very delicate palpation, but is worth carefully cultivating. I regard it in my practice as a definite deciding factor in doubtful cases, and it has never let me down. The fact that it is an objective sign and not under the control of the patient makes it of the utmost value.

Another little but important point is always to treat a possibly inflamed appendix very gently and not to palpate deeply, for even in what appears to be the mildest of cases there may be an ulcer on the point of perforating, or the appendix may be acutely distended with pus. In two cases I have known rough handling result in perforation and death.

Of course, this sign by no means rules out chest troubles or stone in the kidney or ureter, or some other lesion of the bowel (for example, volvulus or intussusception), or a twisted pedicle of an ovarian cyst; but these, and other conditions in which the sign may be present carry other well-defined signs and symptoms. In one such case with mild symptoms of abdominal pain but with definitely increased right iliac muscle tone the appendix proved to be adherent to the right ovary from old inflammation, thus producing the common menstrual appendix pain. In another patient sent to hospital as suffering from acute appendicitis, where many symptoms were present but this sign was absent, a diagnosis of small ovarian cyst was made, and this was in due course removed.

The following three cases illustrate the value of examining the iliac fossa in the way I have described.

CASE I.

I was called in one evening to see a governess, aged 22, who had *a slight abdominal discomfort in her right iliac region. The* history was that she had had a slight pain in the early morning, which had passed off; she had a normal pulse and temperature, a clean tongue, no nausea or vomiting, and no physical signs whatever except the slightly increased muscle tone over the right iliac abdominal wall. I said to her mistress that I suspected *appendicitis, but I would leave her till the morning.* The patient had a perfect night, and next morning had no pain or other symptom; but she still had the slightly increased muscle tone in the right iliac region. I definitely diagnosed acute appendicitis, and operated the same morning. The appendix was swollen and full of muco-pus.

CASE II.

A man, aged 32, walked into my consulting room at 7.30 one evening; he punched himself hard with his fist in the right iliac region and said he was a little uncomfortable there, and wanted to know what was the matter. He had wakened the previous night with a pain and had taken a dose of castor oil. At 9 a.m. he had gone to his office eight miles away, but in the evening, still finding that deep pressure produced discomfort in the same spot, he came to see me.

His tongue was clean; he had had no nausea or vomiting; his pulse and temperature were normal, and there was no hyperæsthesia or tenderness in the *right iliac region except on very* deep pressure (as is common with the normal person). He had no rigidity, but there was a slight increase of the muscle tone of the right iliac region as compared with the left. I operated the same evening, and found that the appendix was inflamed, tense, and full of muco-pus, with commencing ulceration of the mucous membrane.

CASE III.

A man, aged 35, had ridden two hundred miles on his motor cycle, arriving home exhausted. He ate a large dinner, and took various forms of alcoholic liquor to excess. After a good night's rest he woke up at 8 o'clock the next morning with a *severe headache*, vomiting, and diarrhœa; he had, in fact, what might have been expected—a severe gastro-intestinal irritation. He stayed in bed all day, but could keep nothing in his stomach, returning even small drinks of water. At 7 p.m. he sought my advice.

He had had no abdominal pain; when I examined him he had no temperature and his pulse was normal; he was quite cheerful, and wanted something to stop the vomiting when he took water. He evidently had acute gastro-intestinal irritation. There was no abdominal tenderness or rigidity, but he was a little hyperæsthetic at McBurney's point. He had definite, but slight, increased "muscle tone" in the right iliac abdominal muscles. He had no other signs or symptoms of acute appendicitis.

I told him that, in addition to his "stomach upset," he had also got an acutely inflamed appendix, and advised immediate operation. He demurred. I pointed out the risks he ran without operation, and at last he consented. When the ambulance to bring him to the nursing home arrived an hour afterwards he refused operation on the ground that another medical man had assured him that there was no appendicitis, and that it was "gastro-enteritis" only. At 10 p.m. that doctor came and apologized, saying that the patient merely asked him, "Have I appendicitis?" and had withheld the fact that I had seen him; he (the doctor) could find no evidence whatever of appendicitis, and had advised him accordingly. At 4 a.m. the same doctor came to my house and said he had just been called to the patient, who now had definite signs of acute appendix. He had had him removed to the nursing home, and asked me to operate. I did so at once. The appendix was acutely inflamed and on the point of ulcerating through at one spot. Thus the increased muscle tone sign had enabled me to say definitely that the appendix was involved nine hours before the other doctor (a very able diagnostician) was convinced of that fact.

THE PORTABLE ELECTRO-CARDIOGRAPH IN PRACTICAL CARDIOLOGY.

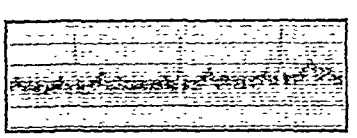
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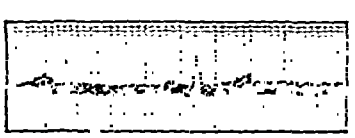
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THE electro-cardiograph is one of the best-recognized methods at the present time for forming an accurate opinion of the heart's functional activity. Until recently *the electro-cardiograph has only been available (1) to* persons in a hospital or similar institution; (2) to patients capable either of attending or being brought to a cardiologist's consulting room.



Cambridge Standard. (Lead ii.)



Cambridge Portable. (Lead ii.)

Victor Portable. (Lead ii.)

FIG. 1.—The top two records are from the same person.

The production of a portable electro-cardiograph has greatly extended its scope, as it is now available anywhere quite independent of electric power supply. There are at least two portable instruments, which we have had the opportunity of thoroughly testing. These instruments must of necessity become increasingly used as their value is recognized. They are the Victor machine, which is constructed on the wireless valve principle, by which the heart currents are amplified and then recorded; and the Cambridge portable instrument, which is essentially a string galvanometer and records the actual current. Either of these instruments is thoroughly reliable, and gives records which are for all practicable purposes comparable.

The records of normal cases reproduced in Fig. 1 show the slight differences of these instruments and the standard Cambridge instrument.

The Victor is the more expensive, is somewhat less portable, and takes slightly longer to operate, but the service after sale is excellent.

The Cambridge machine is slightly more portable, and gives a record similar to that of the standard Cambridge instrument, which is in general use in this country. As to its possibilities, it will do everything which the ordinary standard machine will do, so that it is just as easy to obtain records in a private house as in the consulting room or hospital, and it is therefore available to bed-ridden patients, and especially to those suffering from acute heart conditions which preclude any movement whatever.

In the standard Cambridge instrument the image of the fibre is projected directly on to the camera. In the portable Cambridge machine, in which the same principle of a string galvanometer is kept, the size of the instrument is reduced by the image of the fibre being doubly reflected by mirrors in such a way as to lessen the distance between the fibre and the camera from 100 cm. to 23 cm. Another difference between the two Cambridge instruments is that in the portable machine the camera moves at a fixed rate, thus making comparisons between different records easier. In addition to the actual galvanometer itself there is a twelve-volt battery and a case containing film holders, electrodes, and connecting cables.

The chief uses of the electro-cardiograph may be summarized as follows: (1) diagnosis or cardio-analysis; (2) estimation of progress under treatment. Generally speaking, the electro-cardiograph is essentially the instrument for assessing the myocardium. Possibly the types of case in which it is most commonly used are the irregularities of rhythm, but by far its most important function is in analysing cases of obscure pain in the chest or other vague symptoms suggestive of cardio-vascular disease in which there are often no gross physical signs, or in the analysis of cases of paroxysmal tachycardia, heart-block, nodal rhythm, and auricular flutter with a regular ventricular rate.

The following four cases may be taken as illustrating the uses of the electro-cardiograph.

CASE I.—*Auricular Flutter; Normal Rhythm Restored by Quinidine.*

A man, aged 63, was first seen on June 2nd, 1927. He complained of pain below the outer half of the left clavicle. There was also shortness of breath or undue exhaustion. His previous health had been good, he had played golf up to a few weeks previously. He smokes 2½ oz. of pipe tobacco a week. He is a solicitor and works at journalism.

On examination the heart was slightly enlarged, with loud, rasping apical systolic murmur. Blood pressure 160/90. Other systems normal. Electro-cardiogram (Fig. 2) shows auricular flutter with irregular ventricular rhythm. He was given digitalis by his own practitioner. When seen again four weeks later pain was still present. Electro-cardiogram (Fig. 3) shows slow, coarse auricular fibrillation.

He was admitted to hospital on June 20th. Auricular fibrillation was still present. He was given 5 grains of quinidine on the first day and 10 grains on the second day. Normal rhythm was restored; see electro-cardiogram (Fig. 4). He was discharged with normal rhythm, taking 5 grains of quinidine daily.

Seen September 8th, 1927, no symptoms were present, and there was normal rhythm. Quinidine was reduced to 3 grains daily.

On October 10th, 1928, he stated that he had been perfectly well up to three days previously, when, after strenuous exertion, pain and irregular rhythm returned. An electro-cardiogram showed 4 to 1 auricular flutter. Rhythm reverted to fibrillation on digitalis, which persisted after cessation of the drug. Quinidine (8 grains) restored normal rhythm. He was sent out with normal rhythm, taking 5 grains of quinidine daily.

When last seen, on October 31st, 1929, he had no symptoms; normal rhythm, rate 80. Blood pressure 124/78. He was leading a normal life and playing golf regularly. Still taking 5 grains of quinidine daily.

This case shows the necessity of controlling the treatment by frequent electro-cardiographic examinations.

CASE II.—*Toxic Myocarditis Associated with Apical Dental Abscesses.*

F. T. L., male, aged 65, was first seen on May 12th, 1926. He complained of a feeling of constriction in the upper chest, palpitations, and giddiness on stooping. He had had jaundice in childhood, and again two years previously, with temporary glycosuria at the time. He was operated on for haemorrhoids two months before.

Examination showed that the heart was not enlarged; first apical sound short, and multiple premature contractions. Blood pressure 140. Teeth very bad. Electro-cardiogram (Fig. 5) shows a right preponderance, T1 large, T2 subphysiological, and numerous left ventricular premature contractions. All teeth were extracted.

Seen again on August 24th, 1926, he was feeling much better; symptoms had practically gone. On examination the heart was clinically unchanged. Blood pressure 110/60; rate 72. Premature contractions still present. An electro-cardiogram (Fig. 6) shows a marked left preponderance, large T2, and premature contractions arising from the right ventricle.

Later records up to March, 1929, remain unchanged, except that the premature contractions are less numerous. The patient is enjoying good health except for flatulent dyspepsia; urine normal.

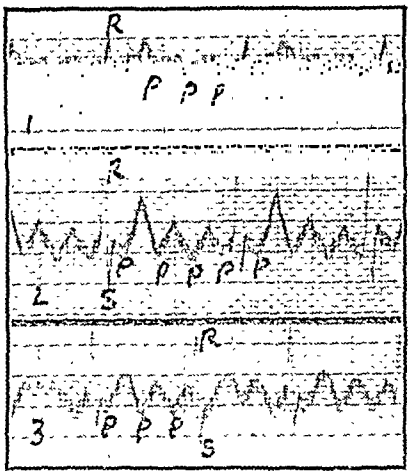


FIG. 2.—Case I.

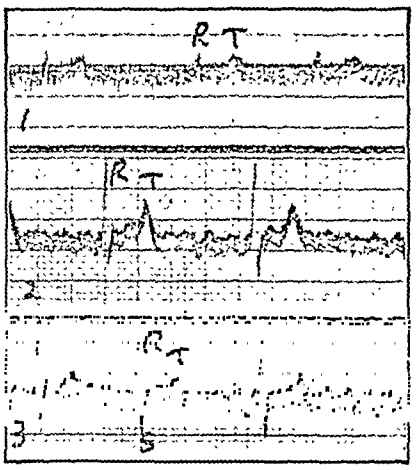


FIG. 3.—Case I.

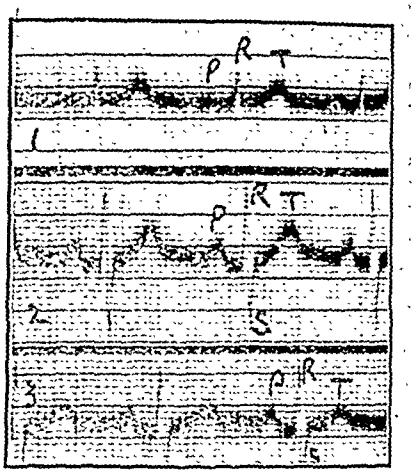


FIG. 4.—Case I.

CASE III.—*Exophthalmic Goitre before and after Subtotal Thyroidectomy.*

E. F., female, aged 43, was first seen on July 25th, 1929. She complained of palpitation and breathlessness. Enlargement of the thyroid gland was first noticed six months previously. Exophthalmos and symptoms came on two months later. She had had no previous illnesses.

Examination showed a large uniform goitre with pulsating vessels, moderate exophthalmos, tremors, moist skin, and general nervous demeanour. The heart was large; apex beat 5 inches out; loud mitral systolic murmur conducted into axilla, and pericardial rub over pulmonary area. Blood pressure 150/80. Rhythm completely irregular. Apical rate 176. An electro-cardiogram (Fig. 7) shows rapid auricular fibrillation.

She was treated by rest in bed and digitalis. The heart greatly improved; rate controlled but still irregular. Subtotal thyroidectomy on August 12th was followed by a normal convalescence.

Seen again, on October 10th, the apex beat was 4½ inches out; murmur still present, but fainter. Blood pressure 130/80; rate

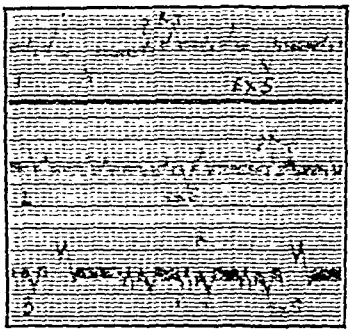


FIG. 5.—Case II.

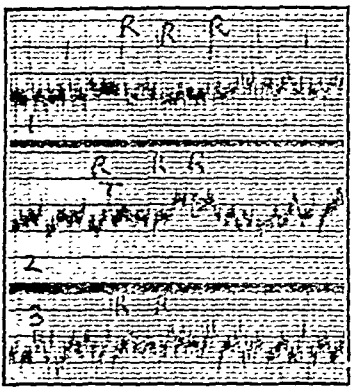


FIG. 7.—Case III.

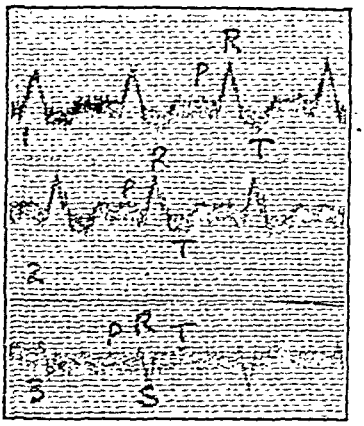


FIG. 9.—Case IV.

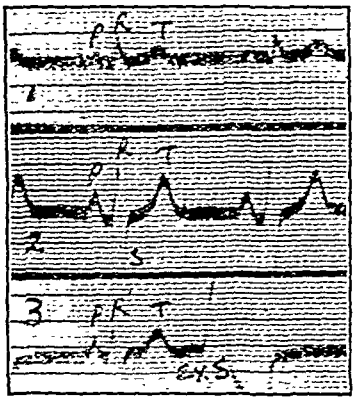


FIG. 6.—Case II.

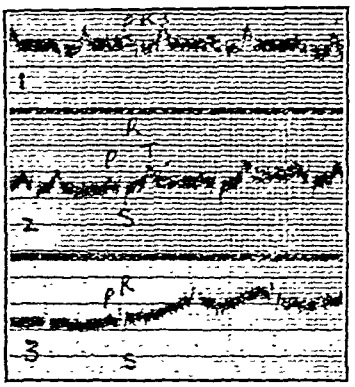


FIG. 8.—Case III.

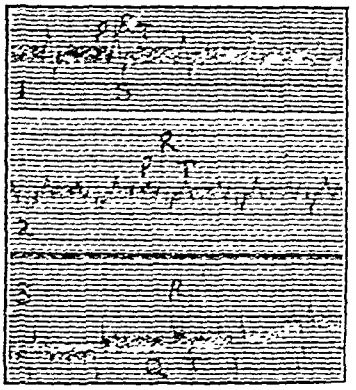


FIG. 10.—Case IV.

84, regular. An electro-cardiogram (Fig. 8) shows left preponderance, regular supraventricular rhythm, and physiological waves.

CASE IV.—*Right Branch Block Disappearing under Treatment.*

J. M., male, aged 73, was first seen on May 24th, 1929. He stated that he had had intractable cough for five years, asthmatic attacks, and progressive dyspnoea; there was a history of haemoptysis and pain in the chest. An electro-cardiogram (Fig. 9) shows right branch block.

Seen on October 3rd, he stated that he had not been so well for years; he had no cough, very little dyspnoea, and no asthmatic attacks. Electro-cardiogram (Fig. 10) no longer shows impaired conductivity in the right ventricle.

KÜMMELL'S DISEASE.

BY

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In 1894 Kümmell of Hamburg described a disease of the spine occurring in three phases. The condition was brought about by an injury to the spinal column caused by direct violence, accompanied by local pain and discomfort of short duration. This constituted the first phase, and was followed by a second, latent, period of varying length of time—months or years—with no symptoms, the patient being able to continue his usual employment. This spell of freedom from pain and disability was then followed by a third phase in which there was the gradual onset of local and radiating pain, muscular weakness, kyphotic deformity of the spine, and cord irritation, these symptoms and signs being referable to the segment of the cord corresponding to one or, perhaps, two injured vertebrae, and being indicative of compression.

In Kümmell's cases, as in those recorded since, there was the definite history of a fall and a resulting local injury of such severity as to produce a compression fracture of a vertebral body. Then came the latent period: and, afterwards, delayed or remote signs and symptoms of cord compression brought about by a vertical collapse of a vertebra with postero-anterior wedging. The resulting compression paraplegia in most recorded cases was usually slight, especially at first; and most cases were relieved by rest and immobilization.

The following record is thought worth publishing because: (1) it is that of the second case of Kümmell's disease of the cervical spine published, the first having been recorded by Cardis, Walker, and Olver in the *British Journal of Surgery*, 1928 (p. 616); (2) there are two superimposed cervical vertebrae diseased—namely, the sixth and seventh; and (3) because comparatively few cases of Kümmell's disease are noted in the literature.

Miss E. D. M., aged 47 years, was admitted to hospital on May 17th, 1929, complaining of pain in the back of the neck, and pain in the right hand radiating from time to time along the arm to the neck. The duration of her illness she gave as three years.

History.—Her ailment dated from an occasion in 1916 when she fell off the top of a six-foot flight of steps on to the back of her neck. The neck was painful for a day or two, then got better, and gave her no further pain or trouble until June, 1927—that is, eleven years after the accident—when she noticed tingling of the fingers of the right hand and a return of the pain in the neck on movement and palpation. At this time (June, 1927) the first radiogram was taken. It showed caries of the sixth and seventh cervical vertebrae, with some degree of wedging of both; there was no cervical rib. In October, 1927, the pains became intensified, especially in the fingers of the right hand, which now felt more or less constantly cold. Housework so aggravated matters that she was no longer able to do it properly, and she began to lose sleep at nights. In the mornings, at this time, there was weakness in the muscles of the right hand and arm, so that she could not

grip properly, and brushes, etc., kept falling out of her grasp, and so that she could not pick up a pin or piece of thread. If she held her hand above her head for a few moments the pain became temporarily easier and she could resume her housework; but by and by all work became impossible, and she was compelled to rest. In January, 1928, the neck pain persisting, she was again x-rayed, with the same result; the caries, however, did not appear to have become worse in the interval since the previous

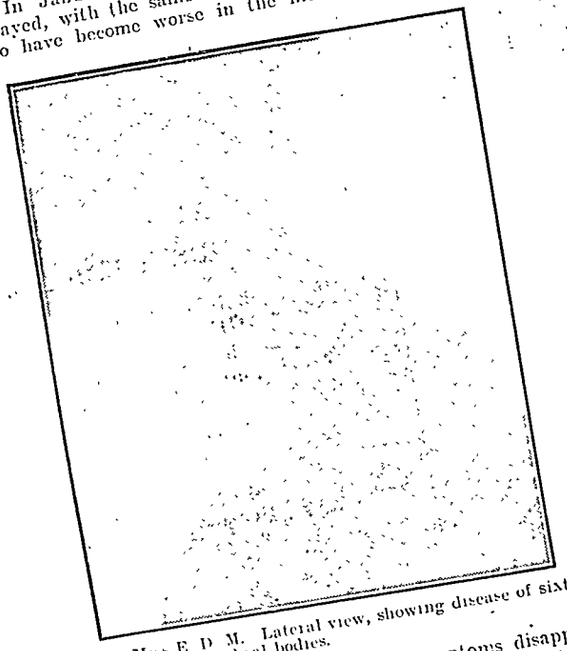


FIG. 1.—Miss E. D. M. Lateral view, showing disease of sixth and seventh cervical vertebral bodies.

examination. In the spring of 1928 all symptoms disappeared, so that she was able to resume her full employment; but in December, 1928, with the onset of cold weather, pain and loss of power returned, this time affecting both hands and arms, and spreading slowly along the limbs and over the shoulders to the neck. Dr. Malpas, at this time, made the following radiographic report:

"The bodies of the sixth and seventh cervical vertebrae appear to be involved in a process of gross trouble accompanied by collapse of both bodies."

The only other illness the patient recollects having had was exophthalmic goitre. This she had in 1918, and was off work for three months, during the whole of which time she had radio-therapy which, she states, quite cured her.

There is no family history of tuberculosis. Her father died, aged 83 years, of senility. Her mother died, aged 62 years, of cerebral meningitis. She has four brothers, all alive and healthy. There were eight sisters, two of whom died: one, aged 34 years, in childbirth, her death appearing to have been hastened by goitre and heart disease; the other, aged 47 years, of goitre and heart disease. The other sisters living are strong and well. All her people were born and brought up in Hampshire.

State on Admission.—Pulse 80, temperature 98°, blood pressure 150/100 mm. of mercury. Her usual attitude is sitting upright in bed without the support of pillows. When sitting up she does lie down she needs an extra pillow. When she does lie down to give support to her neck and head by placing one hand behind her neck; at other times she is noticed to support her chin with her hand. She appears to hold her head and neck rigid and fixed, moving them as little as possible; yet, when asked to, she can move her head and neck in all directions, there being surprisingly little limitation of movement or rigidity or pain. What pain there is seems to be easily bearable. She is well nourished and of good colour. Except for some crepitus on moving both knee-joints, there is no evidence of other joint or bone disease. There are no scars or stigmata of any kind.

Examination of the neck reveals an undue prominence of the sixth and seventh cervical spines, with some extent of local kyphosis, and with lateral deformity and fullness to the right of the mid-line. These spines are tender to pressure and percussion, as are the parts adjacent. Any rigidity is strictly local. There are no enlarged lymphatic glands anywhere; no enlargement of thyroid or of spleen. The heart and lungs are normal on examination. The tongue is clean, and the five teeth which remain in the lower jaw appear clean and well cared for. Urine: sp. gr. 1010; acid; no albumin; no sugar; no deposit. All tendon reflexes are normal, though brisk. There is no muscle wasting or paralysis, and no sensory defect, clinically. The radiographic report on the cervical spine is as follows:

"There is marked erosion of the seventh cervical vertebra as viewed laterally. The caries appears to penetrate fairly deeply into the substance, and already there is some deformity noticeable in the position of the vertebra; Two vertebrae are affected—namely, the sixth and seventh cervical vertebrae."

Since Admission.—The temperature has been normal except for one rise to 99°, which lasted for six hours only. The pulse rate has been within normal limits. There has been no impairment of general health. The urine has remained normal. There has been no cough, and lung examination has at all times been negative. The Wassermann and Kahn reactions have been negative, and so has the Pirquet tuberculin skin test. No changes have been found in the skeleton other than those found in the cervical spine. Syphilitic spondylitis, Pott's disease, cervical rib, have all been excluded in the diagnosis.

The treatment given was rest in bed to begin with, and the giving of calcium-containing foods and of calcium phosphate in pill. Mr. Ellis Bowden kindly saw the patient with me, and advised the use of a poroplastic collar. This was fitted, and she was discharged from hospital on June 25th, 1929, to the care of Dr. J. L. Reeve, who had referred her to hospital.

The above record corresponds fairly closely with Kümmell's original description of the disease. In his series of cases the injury was usually a direct one, the result of a fall, and was referred to one vertebral spine, dorsal or lumbar. The diagnosis of the condition depends upon the history, the local pain and deformity, and the radiographic appearances. The disease has usually affected those vertebrae known to suffer most in trauma to the spinal column—namely, the lower dorsal, the first lumbar, and, as in our case, the sixth and seventh cervical vertebrae. The wedging seen in the x-ray picture is due to the vertical collapse of the vertebral body from pressure. The thin edge of the wedge is ventral, the thick end is dorsal and bulges into the lumen of the spinal canal. In the various radiograms taken in our case the intervertebral discs showed no damage.

At first Kümmell believed the disease to be a traumatic osteo-arthritis of the spine; but, later, he came to consider the trouble more likely to be due to fracture. The disease appears to result from a compression fracture causing a traumatic spondylitis, inflammatory and reactionary, which is followed by absorption or osteoporosis of the centrum of the vertebra. The condition seems to be best named a rarefying osteitis. In any case, there appears to be no doubt as to the erosion of the body of the vertebra as a



FIG. 2.—Miss E. D. M. Photograph taken May, 1929. Deformity in neck easily visible.

sequel to a definite reactionary inflammation. In Kümmell's disease there is no glandular enlargement of note, nor any abscess formation.

The case at once suggests the need for radiographic examination, not only of that portion of the spine injured, but also of the whole column, as soon as possible after the accident, and again later on if pain and discomfort persist or recur. Railway spine and the painful spine of traumatic neurasthenia should in all cases be radiographed in their whole length. If this is done I feel certain that Kümmell's disease will be found to occur oftener than is supposed.

A CASE OF PSITTACOSIS.

BY

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On first observation the case reported below suggested a typhoid group infection of about the third week. The period of fever lasted twenty-three days, and coma about three weeks. Treatment was symptomatic.

The fact that the patient was in close contact with his pet parrots for about a fortnight in a cabin 7 ft. by 6 ft. by 7 ft. suggests that he was infected by them. The birds were not caged, but were chained to a perch which consisted of a floor board, a vertical pole 12 in. long, and a horizontal perch of 9 in. This contrivance rested on the patient's tool chest, and when he had occasion to open the latter, the perch was placed on the floor. The patient cleansed the floor board, etc., every morning himself.

A. C., aged 53, ship's carpenter, ex s.s. *B*——, from Buenos Aires and Rosario, was admitted on December 9th, 1929, to the Port of London Hospital, Denton, Gravesend, as a suspected case of typhoid fever. The vessel had left Buenos Aires on November 9th after a visit to Rosario. The patient became ill on or about November 20th; he felt weak, and had to remain off duty for the remainder of the voyage. Subsequently he complained of shivering, sweating, diarrhoea, and some cough. His temperature ranged about 102° F., and when he was admitted to hospital he was still suffering from diarrhoea.

On admission he was almost comatose; he could be roused to answer questions, but would soon relapse into an apathetic state. He had a dry tongue and a foul mouth; there was fullness in the right iliac region, but very little general distension; the spleen was not palpable; there were no rose spots on his skin, and his body had no characteristic odour. His temperature was 100.4° F., his pulse was dicrotic, its rate being 108, and his respiration rate was 32. Some bronchitic sounds were heard over the bases of the lungs. Till he had been some days in hospital he could remember nothing of what had happened to him, and even then he had no memory of any events that had occurred after the first week of his illness.

For the first three days in hospital (December 9th to 11th) his evening temperature was 103° F., his morning temperature 100.4° to 101° F. On the fourth day his temperature began to fall by lysis, reaching normal on the seventh day (December 15th), and remaining normal thereafter. Enemata every other day produced light, semi-formed stools, and the distension disappeared. The tongue cleaned and the apathetic condition which had lasted throughout this period gradually passed off. There was general pleurisy affecting the left lung from December 13th to 16th. On December 14th the skin was clammy and there was general perspiration. The patient's mental condition was improving, but there was still some confusion in the evening. He had tremors of the hands and tongue.

His subsequent progress was satisfactory. On December 24th the heart muscle showed lack of tone; exercise tolerance 108–144, and after 2 minutes' rest, 108. There was slight oedema of feet, but no albuminuria. The patient said he felt perfectly well, but he still had tremors of the hands. He was discharged from hospital on January 1st, 1930.

Previous History.—The patient stated that he bought two small parrots at Buenos Aires and kept them on board in his cabin on a perch while the vessel proceeded to Rosario, and subsequently returned to Buenos Aires, before sailing for London. These birds were in his cabin for about a fortnight; he occupied the room alone. Parrot No. 1 became sick one to two days after the ship had left Buenos Aires for London; it was drowsy and off its feed, and the patient knocked it on the head and threw it overboard. Parrot No. 2 had diarrhoea a few days later; it was seen to fall off its perch, and was picked up dead and thrown over the side by the patient. The patient's illness began four to five days after the death of parrot No. 2.

Agglutination Reactions.—A specimen of blood sent to the bacteriological laboratory of the Seamen's Hospital, Greenwich, was reported to be negative to *B. typhosus*, paratyphoid A, paratyphoid B, *B. psittacosis*, and *B. Aertrycke*, in dilutions 1/10 to 1/640. These findings were confirmed by the Bacteriological Department of the Ministry of Health.

Remarks.

The diagnosis is somewhat obscure. Clinically the case suggested typhoid fever, but the symptoms were by no means typical, and the agglutination reactions were all negative. A specimen of faeces showed an excess of *B. pyocyaneus*, but no typhoid bacilli. Pneumococci were not discovered in the sputum.

On the other hand, it is known that at the time the s.s. *B*—— was in Buenos Aires there were several outbreaks of psittacosis in the Argentine. The fact that there were no other cases of illness on board, and that the patient alone had any association with the sick parrots, strongly suggests that he derived his infection from them, though the diagnosis of psittacosis was not confirmed bacteriologically.

I am indebted to Dr. C. F. White, medical officer of health for the Port of London, for drawing my attention to the prevalence of psittacosis in the Argentine and to the close association of this patient with sick parrots.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AN OBSCURE CASE OF INTERNAL HAEMORRHAGE.

THE following case is interesting because it shows how much damage may result to a patient from an apparently trifling cause.

A patient of between 50 and 60 years of age came to me recently complaining of indigestion, a trouble from which she had suffered before, but never so persistently. There were no physical signs or other indications of organic trouble. She had not suffered from sickness or had increased discomfort after food. She looked an extremely healthy and well-nourished woman, and had no other ailments.

In the course of conversation it came to light that, about six weeks previously, she had been eating chicken curry, when she thought a piece of bone stuck in her throat. As this did not seem to move, her family advised her to see a doctor, but she refused, saying that she "hadn't troubled doctors in her life, and was not going to start now." After about three weeks she told her daughter that she thought the bone had gone and that she felt nothing of it.

The next event was the starting of indigestion some days before she came to see me. The patient did not associate her indigestion with the bone. In fact, it was more or less by a chance question that this part of the history was elicited. It was therefore by no means certain that the bone was at the root of the trouble, and I dismissed the patient with some general advice.

Later the same evening events took a serious turn, and what follows of the history is as it was told to me by the daughter. "At about 9 o'clock mother did not feel so well, and vomited about a teacupful of bright blood. We put her to bed, but she would not have a doctor. She had some sleep during the night and felt better next morning, deciding, however, that she would not get up till after lunch as she felt rather weak. I was with her till 10.30, and she was reading quite happily. At a quarter to 11 I returned, and was horrified to find mother sitting in bed with blood pouring from her mouth. I thought she was dead." When I arrived shortly afterwards she *was* dead.

At the post-mortem examination my partner and I found the colon and rectum full of dark-coloured blood. The small gut was empty, except for the last few inches of the ileum, which also contained blood. All the abdominal organs were bloodless. The stomach was very large, and also full of blood, but of a fresher nature than that found in the colon. In the anterior wall of the stomach, and protruding at each surface, was a small but exceedingly sharp piece of copper turning, barely a quarter of an inch in length, and bent on itself. In its passage through the stomach wall it had transfixed a large vessel, and there is, I think, no doubt that this had caused the initial bleeding. In the oesophagus were three small ulcers at the level of the bifurcation of the trachea. One of them was found to communicate with the aorta. The sudden perforation of this ulcer, the largest of the three, and measuring half an inch across, had no doubt been the cause of almost instantaneous death. One imagines that the small ulcers were caused by the copper turning when it—and not, as the patient had thought, a bone—became embedded in the oesophagus, and the ulceration started in this situation continued after the copper had passed further down.

It seemed extraordinary that a piece of metal so small could do so much damage, and after doing its worst in the oesophagus should descend and pierce an important vessel in the stomach, when, considering the amount of stomach wall free from large vessels, the chances against its doing damage must have been very great indeed.

The next question is, What was the nature of the offending metal? It struck us at once that it was a fragment from one of those sponge-like saucepan cleaners which are made from brass or copper turnings, woven into a ball.

On inquiry we found that one had been used. It is easy to understand that, at any rate after much use, small fragments may become detached, and, with a little carelessness on someone's part, find their way into food.

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Cowfold, Sussex.

URTICARIA WITH ASTHMATIC SYMPTOMS.

IT may be of interest to record a further case of urticaria with asthmatic symptoms very similar to that reported by Dr. F. F. Wheeler in the *Journal* of November 2nd, 1929 (p. 806).

On June 2nd, 1929, I was called to see a patient who was suffering from acute generalized urticaria of sudden onset. A male, aged 26, he had been seen ten minutes previously when he had applied for a laxative. His only complaint at that time was that he had been constipated for the past twenty-four hours. Mist. alba was administered; he had had this before with no untoward effect.

The second time he was seen he was barely recognizable on account of the swollen condition of his face and closure of the eyes from oedema of the lids. His respirations were laboured, the accessory muscles being used; musical, sibilant rhonchi were heard over both lungs. He became cyanosed and collapsed, having a subnormal temperature and rapid thready pulse. After two or three minutes he began to improve rapidly, and before any treatment had been given all adventitious sounds had disappeared from the lungs and the respiration had become normal. About ten minutes after the onset of the attack he was given a hypodermic injection of 10 minims of adrenaline hydrochloride and 30 grains of calcium lactate by the mouth. At 3 p.m. that day there was no evidence of any rash or other abnormality, and he felt quite well again. He stated that he had had two similar attacks previously, in 1922 and 1927. No dietetic or other cause could be found for the condition.

J. J. KEEVIL, L.R.C.P., M.R.C.S.

Reports of Societies.

TROPICAL DISEASES ARISING FROM DIETETIC DEFICIENCIES.

THE Sections of Tropical Diseases and Pathology of the Royal Society of Medicine combined for a discussion, on January 7th, of tropical diseases arising from dietetic deficiencies.

Professor J. W. D. MEGAW spoke first of the relation between the total available food supply and the population in tropical regions. In many such countries the food supply was insufficient, even in normal seasons, so that failure of a crop immediately brought about a state of famine. Another important consideration was the protein factor, which had been shown by McCay to be the most important of the dietetic constituents which were commonly in defect, and, finally, there was the question of the vitamins. Vitamin B deficiency had received special attention because of the belief that beri-beri was due to a shortage of this factor. The generally accepted views as to the causation of beri-beri were very clear and simple, but if they were wrong or only half true their attractiveness and apparent completeness made them the more dangerous. In the speaker's view the vitamin deficiency theory had not been established to such an extent that all other theories were put out of court. So far as he was aware, there were no cases on record in which a disease of the beri-beri type had been produced as a result of feeding persons on a diet which was satisfactory in other respects, but deficient in vitamin B, and, on the other hand, there were numerous outbreaks of beri-beri in which the diets of the persons concerned had been beyond reproach in the matter of vitamin B. There was really very little evidence of a uniform association between human beri-beri and vitamin deficiency. Beri-beri was a name which had been used for many years as a designation for some combinations of disease manifestations. It was likely that two or more diseases had been called beri-beri, but these had not yet been differentiated with any conclusiveness; probably one of the diseases was due to a poison formed in rice which had been stored under hot and damp conditions. Each disease had its own essential cause, though there might be various contributory factors. He believed epidemic dropsy to be a form of beri-beri, though there was no reason for thinking that this disease was an avitaminosis. From a practical point of view the practitioner would be justified in regarding epidemic dropsy as the beri-beri of parboiled rice, whereas the beri-beri of the Far East was essentially a disease of the eaters of over-milled rice.

Dr. G. M. FINDLAY, speaking from the pathological standpoint, surveyed the present knowledge of deficiency diseases which had been gained from animal experiments, mentioning the known vitamins, and the diseases attributable to their deficiency. In vitamin B, in addition to B1, which was the original thermolabile antineuritic factor, second and third thermolabile factors had been described, and also, in addition to B2, a second thermostable factor. To these he added bios, a substance present in yeasts, and necessary for their growth, and apparently quite distinct from vitamins B1 and B2; bios was regarded as a factor preventing pink disease. Beri-beri might appear as either the dry or the wet form (with definite oedema), and it seemed probable that the latter variety had been mixed up with other oedematous conditions. One type, never recorded as having been produced in animals, but which had occurred in famine-stricken human beings, was known as hunger oedema; it was probably due to protein deficiency of some type. The condition of epidemic dropsy seemed to occur only in rice eaters, whereas beri-beri appeared quite frequently in persons who never had rice at all, but who were living on a diet deficient in vitamin B1. Epidemic dropsy also did not seem to develop in breast-fed children, whereas the wet form of beri-beri did so. With regard to Professor Megaw's suggestion that epidemic dropsy was due to a toxin in rice, the speaker thought it should not be difficult to obtain some of this so-called "bad" rice, feed animals with it, and produce the same symptoms in the presence of ample supplies of vitamin B.

Dr. H. B. DAY (lately professor of clinical medicine, Royal School of Medicine, Cairo) discussed pellagra, which, he said, bore the same relation to the consumption of maize as beri-beri did to the consumption of rice. From his own experience in Egypt he would put pellagra next to ankylostomiasis and bilharzia infections as one of the great weakening factors among the poor fellaheen. Opinion varied for a time between the view that maize was deficient as a diet for man, and the view that in damaged maize, owing to the growth of fungus, toxins were produced which were responsible for the appearance of the pellagra. The deficiency idea had now rather gained the day. Shortly before the war the idea of pellagra as having an infectious causation obtained some currency. This theory was based upon the almost epidemic outbreak of pellagra which then occurred in some of the southern States of America; no one, however, had succeeded in transmitting the disease. In Egypt during the war a large number of Turkish prisoners were assembled in camps, and in them pellagra made its appearance. With regard to clinical types, the first symptom, and the one which was in favour of the infectious origin, was diarrhœa, which occurred together with general symptoms of weakness and mental depression. Finally, there was a rash—an aggravated form of sunburn—not appearing, however, for some time. The actual cause of pellagra had something to do with the nutrition of the skin, the mucosa of the intestinal canal, and the central nervous system. Deprivation of vitamin B led to an atrophy of the intestinal mucosa, and it was probable that the maldigestion or malassimilation of food which ensued completed the vicious circle; for this reason pellagra was noteworthy among deficiency diseases for running a chronic course.

Dr. G. W. BRAY (late Government medical officer at Nauru, in the Pacific) gave an account of infantile beri-beri among the native population of the island, in whose food there had been an absence of vitamin B factor. The position had been entirely altered, however, by the giving of "toddy," an extract from the coco-nut palm, and this, with cod-liver oil, had proved so beneficial that the death rate from infantile beri-beri on the island had fallen to zero.

Dr. J. TERTIUS CLARKE (formerly medical officer, Federated Malay States) said that dry beri-beri had been very common in Malaya, but as soon as the polished form of the rice was abandoned the disease came to an end.

It was not necessary that the rice should be parboiled; any rice not polished would cure or prevent the condition. One interesting point was that in every acute case of beri-beri examined after death in Malaya there was duodenal enteritis, and sometimes gastric inflammation also; it was possible that the intestinal lesion was secondary to the nerve lesion.

Dr. ACKROYD, commenting on the incidence of beri-beri in Newfoundland and Labrador, among people who were on a staple diet of white flour, said that in these countries the disease called beri-beri had never been regarded as other than the tropical rice-eater's variety. It might be defined as a polyneuritis associated with myocarditis, and occasionally with oedema, occurring in people with marked malnutrition, and responding to dietary treatment. It actually appeared in families who were reduced for only three or four months to a diet almost entirely composed of refined white flour, with small additions of such foods as salt meat and molasses. He thought there was evidence that deprivation of vitamin B1 was a potent factor in the causation of the disease.

In the course of further discussion, Dr. H. S. STANNUS said that he could never quite understand how deficiency produced the symptoms. It seemed more reasonable to suppose some toxic element at work. Dr. KINGSTON BARTON mentioned that beri-beri occurred in Polynesian infants who were breast-fed, showing that the mother must have been infected.

NORTH OF ENGLAND OBSTETRICAL AND GYNAECOLOGICAL SOCIETY.

AT a meeting of the North of England Obstetrical and Gynaecological Society on December 17th, 1929, in the University of Manchester, with the president, Dr. GORDON FITZGERALD in the chair, Dr. W. W. KING (Sheffield) reported a case of rectal injury caused by the administration of a simple enema to a 6-para, three days after a perfectly normal parturition.

Pain had occurred during the injection, with some bleeding and immediate swelling of the perineum; on the next day the pain spread to the abdomen, and the patient vomited. Her condition became serious twenty-four hours later, there being signs of peritonitis; the perineum was enormously swollen and oedematous. The abdomen was opened and purulent fluid was evacuated, which was subsequently found to be sterile. The rectum and sigmoid were greatly swollen and dark blue in colour. Colostomy was performed and the peritoneal cavity drained, a free incision being made into the perineal swelling. Convalescence was stormy, and a rectal stricture resulted. Five months later the colostomy was closed, but the stricture persisted, necessitating the regular use of rectal dilators.

Dr. King explained that the hard nozzle of the enema syringe had been inserted into the rectum; a sample of the soap used was found to contain more free caustic and alkali carbonate than the *B.P.* standard. He concluded that only a soft catheter should be inserted into the rectum.

Professor FLETCHER SHAW (Manchester) mentioned a case of the same kind, seen in 1922. The injury had been caused during labour, but he did not see the patient until three months later, when permanent occlusion of the rectum had resulted. Miss NICHOLSON (Liverpool) reported two cases of this kind, one of which had occurred just before delivery, and the other some time before the completion of labour. In the second case forceps were used to complete delivery, which was followed by sloughing of the rectum and vaginal walls, and the prolapse of gangrenous loops of tissue out of the cavity, closely resembling coils of small gut. The patient subsequently died. Mr. KELLY reported a similar case, which he believed to have been due to sloughing of the mucous membrane caused by the enema fluid being too hot.

Hydradenoma of the Vulva.

Professor DOUGAL (Manchester) read notes on a case of hydradenoma of the vulva occurring in an unmarried woman, aged 52.

A small pinkish cauliflower excrescence, about half an inch in diameter, was situated on the left labium minus, a short distance below its bifurcation. The growth was removed locally, and, on examination by Professor Shaw Dunn, it was reported to be an adenoma hydradenoide. The vulva was excised four weeks later.

Professor Dougal, in an account of the main points of these tumours, said they resembled small cauliflowers projecting outwards beneath the epithelium; they were covered by stratified squamous epithelium, which in some places was much thickened, and, in others, worn away by friction. Leading down from the surface epithelium were ductlike tubes, which merged with a mass of tubules, of which the main tumour was composed. These tubules formed a complicated system, but were of uniform appearance, being lined by inner cylindrical, and outer cuboidal, layers of cells. In places the masses of cells strongly suggested malignancy. The tubules resembled the ducts of sweat glands, in one of which the tumour had evidently originated. Professor Dougal made several references to the literature, and the difficulty of deciding as to the malignancy of these tumours. He emphasized particularly the account of Outerbridge and Schwartz, in which they regarded as being malignant the tumours of this kind in which the acini had invaded the stroma, or where masses of polyhedral cells were found in the same situation. Professor Dougal had performed a radical operation because of the masses of these cells present in the sections of his case.

Primary Carcinoma of the Vagina.

Mr. N. L. EDWARDS (Derby) showed a specimen of primary squamous-celled carcinoma of the vagina which had been removed at an operation (Wertheim) from a married sterile woman, aged 32.

She had had a discharge like dirty water from the vagina of six weeks' duration, and had bled on coitus for two years. The menses were regular, the type being 1:22; there was much congestive dysmenorrhoea. The Wassermann reaction was doubtfully positive. The growth was of the proliferative type, situated in the upper third of the posterior vaginal wall, and separated from the posterior lip of the cervix by half an inch of apparently normal vaginal mucous membrane. Its dimensions were 1¼ in. by 3/4 in. There were no naked-eye signs of carcinoma in the uterus or adnexa, though the latter were thickened and adherent as the result of previous inflammatory trouble. There was no obvious enlargement or involvement of the pelvic lymphatic glands. Microscopical sections showed the growth to be a squamous-celled carcinoma.

Professor DOUGAL reported two cases; one patient operated on eight years ago was still alive, the other, in whom the disease was ineradicable, died in six months. Miss IVENS (Liverpool) had treated one case of the kind with radium, but had later removed the growth in case of secondaries in the glands.

Sarcoma of the Broad Ligament.

Professor DOUGAL reported a case of sarcoma of the broad ligament in a married nullipara, aged 46, who had complained of bearing-down pain, haemorrhoids, pain in the rectum, and constipation.

Examination revealed a fixed elastic swelling low in the left half of the pelvis and extending up to the pelvic brim. At the operation the uterus and both appendages were found normal and displaced to the right side, a firm round tumour the size of an orange being situated in the left broad ligament; the tumour was fixed and reached to the pelvic brim on the left side, lying on the inner side of the femoral and obturator vessels, beneath the obliterated hypogastric artery, and to the outer side of the ureter. The tumour was removed with some difficulty after excising the uterus and both appendages, and it was realized that fragments of it had been left behind. The patient received treatment by radium and *x* rays; recurrence became obvious in eight months, and she died ten months after operation. Sections showed the tumour to be a rapidly growing fibro-sarcoma. It had probably arisen in the cellular tissue at the base of the broad ligament, but, since it contained some bundles of smooth muscle fibres, it might have originated in a fibroid.

Malignant Uterus Incarcerated in a Procidentia.

Professor DOUGAL reported lastly the case of a single woman, aged 58, and five years past the menopause, who had had prolapse for five years, complete for the last four years. Her main complaint was severe pain in the lower abdomen and in the procident mass; this was evidently due to incarceration of the contents, for the prolapse could not be reduced. There had been some irregular haemorrhage for two weeks. Vaginal hysterectomy with colporrhaphies was performed. The uterus contained a large necrotic growth, which proved on section to be an endothelioma. The right ovary contained a nodule of similar growth. The points of interest were: the occurrence of complete prolapse in a nulliparous woman; the incarceration of the enlarged uterus in the procidentia; and the nature of the tumour—an endothelioma.

Reviews.

A SYSTEM OF BACTERIOLOGY.

IN our issue of November 16th, 1929 (p. 908), we announced that *A System of Bacteriology* of exclusively British authorship was in the process of preparation, and volume iii, the first of this system to be published, was reviewed. The appearance of volume iii has been rapidly followed by that of volume iv,[1] and it is satisfactory to note that the high standard set by the former has been fully maintained. This volume consists of chapters on *B. typhosus*, the Salmonella group, the dysentery group, the colon group and allied organisms, the cholera vibrio and related organisms, the Pasteurella and *B. pseudotuberculosis rodentium*, a much more homogeneous collection than those contained in volume iii.

Perhaps the best chapter in the volume under review is that by W. J. Wilson on the colon group and similar bacteria. Professor Wilson possesses the gift of clarity of exposition in high degree, and this has enabled him to cover a large field of work in a comparatively restricted space, and yet give us an eminently readable article. Perhaps some mention might have been made here of recent work which would indicate that the virus of typhus and *Rickettsia prowazeki* are phases in the life-cycle of *B. proteus* X 19. Also the author seems to be in two minds with regard to *B. bronchisepticus* as the etiological agent of distemper, for after carefully considering the claims of this organism he summarily dismisses them in the last sentence of the section, when referring to the work of Laidlaw and Dunkin. These, however, are minor points which detract but little from the general excellence of this chapter. The account of the Salmonella group by P. Bruce White is somewhat disappointing. Bruce White is an acknowledged authority on the antigenic structure and interrelationship of the organisms of this group, so that we looked forward to finding here some clear statement on the question: a message of hope for the less initiated. The facts are all there, but their marshalling at times leaves something to be desired, and the impression that will remain in some minds is that the author is more concerned with demonstrating the complexity of his subject than with its clarification.

The chapter on *B. typhosus* by D. Harvey, H. M. Perry, and H. J. Bensted is a straightforward account of the subject which is clearly set out, and in which the salient points calling for further investigation are indicated. The same may be said of the account of the dysentery group of bacilli by A. D. Gardner and L. Dudgeon, the section dealing with the group as a whole by the former of the two authors striking us as particularly good. This chapter has a useful section by O'Brien on the production of toxin and antitoxin on a large scale; it is a pity, though, that a sentence such as, "made up to a volume of 0.5 c.cm. and injected intravenously into mice weighing from 16 to 20 grams after 45 minutes in the incubator at 37° C." should have been allowed to pass unnoticed. The chapter on the cholera vibrio and related organisms by T. J. Mackie, E. D. W. Greig, and W. F. Harvey is very good, and so are the two short concluding chapters by H. Schütze on the Pasteurella and *B. pseudotuberculosis rodentium*, though from a medical point of view it is to be regretted that more was not said about diseases of laboratory animals caused by the Pasteurella. *P. lepiseptica* is a constant source of worry to those who are carrying out animal experiments, and some mention of Webster's work on the epidemiology of *P. lepiseptica* infections in rabbits would have been distinctly useful.

A feature of this volume, as of the previous one, is the historical notes by Professor Bulloch which preface the majority of the chapters.

[1] *A System of Bacteriology in Relation to Medicine.* Medical Research Council. Vol. iv. London: H.M. Stationery Office. 1929. (Sup. roy. 8vo, pp. 482. Single volumes, £1 1s. net; set of nine volumes, £8 8s. net.)

THE HISTORY OF SCIENCE.

IT is nearly a hundred years since William Whewell, the great Master of Trinity, of whom Sydney Smith said that "Science is his forte and omniscience his foible," wrote his famous *History of the Inductive Sciences from the Earliest to the Present Time* (1837). Now with the enormous growth of science in all directions the time has come, as Mr. W. C. D. DAMPIER-WHETHAM points out in his *History of Science, and its Relations with Philosophy and Religion*,[2] for another attempt to give a complete outline of the development of scientific thought. A fellow and sometime tutor of the same college, and an earnest student of the history of science, as shown by his published works, Mr. Dampier-Whetham is well equipped for such a serious undertaking, though he modestly tells the reader that this admirable survey was written for his "own satisfaction and amusement." Science is defined as ordered knowledge of natural phenomena and the rational study of the relations between the concepts in which those phenomena are expressed. Pure science is later described as continually improving and extending our model of nature from the microcosm of the atom to the macrocosm of the visible universe of spiral nebulae and galaxies of stars. In the introduction the relations of science and philosophy are summarized, and in connexion with the mechanistic and vitalistic conception the conclusion is reached that to see life steadily and to see it whole we need not only science, but ethics, art, and philosophy, together with the recognition of a sacred mystery, the sense of communion with a Divine power that constitutes the ultimate basis of religion. This solemn problem is dealt with in the last chapter on scientific philosophy and its outlook. It is impossible to do justice to the vast amount of knowledge and thought set out in the chapters dealing with the state of science in the ancient world, the Middle Ages, the Renaissance, the Newtonian epoch, nineteenth century physics, nineteenth century biology, nineteenth century science and philosophic thought, recent development in biology and anthropology, and the new era in physics. Though physics naturally occupies much space, biology and physiology receive due attention, and in dealing with the Renaissance, Harvey's discovery and the work of William Gilbert of Colchester, who coined the word "electricity" from the Greek name for amber, are placed in their proper position. The chapter on biology in the nineteenth century tells the story of Darwin's work on evolution, incidentally giving the relation in time of his conception to that of Alfred Russel Wallace, and quoting Huxley's remark that to the contemporary men of science the publication of *The Origin of Species* in 1859 "had the effect as of a flash of lightning in the darkness." It is then shown that anthropology, or the comparative study of man, arose from that epoch-making book. The essence of Mendelism, rediscovered by Bateson in 1900, is described as consisting in the disclosure that in heredity certain characters may be treated as individual and apparently unalterable units, thus introducing what may perhaps be termed an atomic or quantum conception into biology. Turning to physiology, the author remarks that the most noticeable feature of the present century is an extension of the application of the methods of physics and chemistry to physiological problems, and that physiology may almost be said to have been resolved into biophysics and biochemistry. The marshalling and correlation of such wide realms of knowledge in clear and simple language compels admiration, and Mr. Dampier-Whetham's book should attract many medical readers.

DR. LYNN THORNDIKE's latest work throws much new light, from his researches into manuscripts and other unpublished material, on a century that has been comparatively neglected, and continues his own *History of Magic and Experimental Science*, which went up to 1327. Incidentally he remarks that the old-fashioned disparagement of the

[2] *A History of Science, and its Relations with Philosophy and Religion.* By William Cecil Dampier Dampier-Whetham, M.A., F.R.S. London: Cambridge University Press. 1929. (6¼ × 9¼, pp. xxi + 514; 14 figures. 18s. net.)

Middle Ages is now repeated only by mechanical creatures of habit who stopped thinking twenty or thirty years ago; the true renaissance occurred in the twelfth rather than in the fifteenth century. Wide as is the field indicated in its title[3] a very considerable share of the book is yet devoted to medicine. In the fifteenth century plastic surgery in the repair of the lips, ears, and noses was practised on quite modern lines by the Brancas, father and son, in Sicily. The disputations at Florence about the relative superiority of law and medicine are considered in a very scholarly essay, in which there is evidence of the frequency of human dissection long before the time of Vesalius. The chapter on the surgical treatise of the well-read Leonard of Bertipaglia brings out his antagonism to the barbers who, in 1423, were trying to be incorporated in the College of Surgeons in Paris. Elsewhere Dr. Lynn Thorndike deals with an anonymous surgical treatise of a rather earlier date, based on his collation of four manuscripts and previously unnoticed except briefly by Sudhoff. Some minor and little-known medical works, written at Florence between 1460 and 1512, but never printed, are then brought to the reader's notice. Human dissections were regularly performed in the universities before the time of Vesalius, usually on the bodies of criminals; but that this was not all is shown by Bernard Torninus's account of a necropsy on a highly placed official's son in order to find out if the disease was hereditary so as to take measures for the protection of the other children in the family. These chapters on medical subjects are supplemented by appendices and plates reproducing the manuscripts. The volume, as a whole, is an invaluable source of reference for much interesting material which the author has brought to light from the original documents.

VENOUS PRESSURE AND CARDIAC FAILURE.

As Professor EYSTER remarks in the preface to his book on *The Clinical Aspects of Venous Pressure*,[4] the significance of this factor has been greatly neglected. It is unfortunately true that in the recent textbooks on diseases of the heart this important subject is either entirely omitted or receives but scant attention. Venous congestion is not only the chief factor underlying the symptoms and pathology of cardiac failure, but is also responsible in large part for the physical signs accompanying it: the venous pressure is perhaps the most reliable and important single factor to know and to follow accurately when cardiac failure develops or when it is impending. It is important to realize that the presence or absence of venous congestion can be determined more certainly by observations of the superficial veins themselves than by noting such signs as oedema or enlargement of the liver. It is equally important to realize that in the majority of patients, and with due precautions, the venous pressure can be estimated at the bedside easily and with an accuracy sufficient for all practical purposes. Professor Eyster gives a good account of our knowledge of the venous pressure under normal and abnormal conditions, and of the present-day conceptions of the mechanism of cardiac failure. He describes the indirect method of measuring the venous pressure and its modifications, and especially the instrument devised by Hooker and Eyster. He discusses also the effects of venesection and of therapeutic measures generally in cases of cardiac failure, and in chapter vii presents a series of clinical reports to illustrate the practical importance of following the pressure variations. The book concludes with a list of important papers dealing with the subject: for ready reference these would have been better arranged alphabetically. We echo the author's hope that the reading of the book by practitioners generally will stimulate an interest which can only make for a better recognition, understanding, and treatment of cardiac failure.

[3] *Science and Thought in the Fifteenth Century: Studies in the History of Medicine and Surgery, Natural and Mathematical Sciences, Philosophy, and Politics.* By Lynn Thorndike. New York: Columbia University Press; London: Milford, Oxford University Press. 1929. (Med. 8vo, pp. xiii + 387; 10 plates. 24s. net.)

[4] *The Clinical Aspects of Venous Pressure.* By J. A. E. Eyster, B.Sc., M.D. Macmillan Medical Monographs. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1929. (Demy 8vo, pp. x + 135; 7 figures. 10s. 6d. net.)

ANALYSIS OF DRUGS AND CHEMICALS.

The Analysis of Drugs and Chemicals,[5] by Mr. NORMAN EVERS and Mr. G. D. ELSDON, is a useful laboratory handbook for those who may have to examine the chemical purity of materials required for therapeutic or technical uses. What ought to be set down in a laboratory handbook must always be a difficult matter for authors to decide when confronted with all the matters on which information may be wanted and having to produce a book that is not to be too large for its place. The difficulty is encountered quite as often among the things every analyst ought already to know as among those which properly belong to larger works of reference. There was thus a danger that, by attempting to satisfy in both directions, the authors might fail to satisfy in either; but Evers and Elsdon, who are both engaged in the practice of the analytical operations of which they write, have succeeded as few others could. The subjects which present the most or greatest difficulties to analysts are those which they discuss most thoroughly. The book deals with various articles grouped in classes which comprise chemicals of organic and inorganic composition, crude drugs, fixed oils, essential oils, and galenical preparations. It indicates what are the impurities of most frequent occurrence and what scheme of examination is ordinarily sufficient. It is perhaps in the last-named particular that the book will be most generally appreciated, for it is an outstanding problem to analysts to decide when the examination for impurities has been carried to a sufficient length. There is also an appendix containing a set of tables of specific gravities, refractive indices and other constants, and a full index. These useful tables are particularly well chosen for the purpose in view. The book will be exceedingly helpful to those who have to examine the purity of chemicals or to make the assay of drugs.

OTO-RHINO-LARYNGOLOGY

A Manual of Diseases of the Nose, Throat and Ear,[6] by Dr. GLEASON, has sustained more than twenty years of popularity by no fewer than six editions, besides several reprintings. It will, as before, be found a trustworthy guide in all the ordinary work connected with these regions of the body. To bring it up to date much has been cut out and much rewritten, and we might suggest that if any further search is made for the superfluous or obsolete, chronic subglottic laryngitis might be eliminated, while, on the other hand, laryngeal carcinoma deserves rather fuller description. Great care has been taken to make the section on the ear complete, especially the important part relating to its surgery, and it is here that the author is at his best. As a book of moderate size giving a good general survey of all three divisions, it merits continued success.

Miss DENISON'S *Textbook of Eye, Ear, Nose and Throat Nursing*[7] should be welcome to nurses working in special departments or wards. In addition to purely technical information, it contains a sufficient background of anatomy and pathology to give the reader an intelligent interest in her work. It should be useful, especially to those who happen to have charge of large out-patient departments, and is not without its message to the almoner. If any criticism is needed it would be that the book is larger than necessary and consequently the price is higher than might suit the purse of a nurse during her training, but it contains many practical details, with useful lists of instruments and apparatus. The book would find a suitable place in the library of any nursing institution.

[5] *The Analysis of Drugs and Chemicals.* By Norman Evers, B.Sc., F.I.C., and G. D. Elsdon, B.Sc., F.I.C. London: C. Griffin and Co., Ltd. 1929. (Med. 8vo, pp. x + 372; 12 figures. 25s. net.)

[6] *A Manual of Diseases of the Nose, Throat and Ear.* By E. B. Gleason, M.D., LL.D. Sixth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1929. (Post 8vo, pp. 617; 257 figures. 21s.)

[7] *A Textbook of Eye, Ear, Nose and Throat Nursing.* By Alby-Helen Denison, R.N. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1929. (Demy 8vo, pp. xii + 255; 21 figures. 12s. 6d. net.)

NOTES ON BOOKS.

Applied Chemistry,[8] by TINKLER and MASTERS, is written expressly for students intending to take the diploma in the subject of household and social science of the University of London. It is described on the cover as a practical handbook for students of household science and public health, and the description is fitting and exact. It describes and illustrates a series of experiments admirably designed to illuminate the lessons taught. It is greatly to the credit of the authors that they have succeeded so well in a branch of study so new as this is to academic teaching, for although the empirical knowledge of the subject is old, and although domestic operations have been understood in a scientific sense for a long time, the empiricism and the science were known only to different groups of people who had neither a common outlook nor even a common vocabulary; until lately there had been no attempt to bridge the gap between them. The authors had therefore new ground to break, and might have made the task of their students a hard one had they not possessed the teacher's gift in a high degree. They themselves acknowledge in the preface the help they have derived from Sir Herbert Jackson and H. L. Smith, who immediately before them were the chief pioneers in opening this domain of study. Volume i, now in its second edition, deals with the study of water, detergents, textiles, and fuels, and explains the qualities possessed by different waters, the mode of action of soap, the composition and properties of fabrics, and the character and effect of fuels. It is clear that the authors have a living interest in their work, and that the book is appreciated by a large number of students. We may add that it would interest many readers who are past the age of those who work for university diplomas.

Mr. P. B. KITTEL, in a work entitled *Haemodynamics*,[9] has attempted to present, "in a novel manner with the use of knowledge now antique," a description of blood flow in capillaries and veins which aims at disclosing the pathological processes of such diverse conditions as varicose ulcer and Raynaud's disease. The book loses much of its possible value by the diffuseness of its style. The precise meaning of many of the sentences is in the hope of arriving at their true sense. As an example may be cited the following extract from the chapter on venous and capillary flow: "There is no continuous accumulation of energy, however, for before the tension within which is of the flow and energy from within can test the strength of 'fluid bulk' without, the blood has begun to fill the veins. . . ." Presentation of this type demands too much from the busy reader, and actually masks the author's discoveries which he has set out to expound. Mr. Kittel's description of the use of sodium morrhuate for the injection of varicose veins will prove of special interest, because the substance can be used with greater safety than other solutions now in common use. If it proves to be equally satisfactory in its obliterating effects it will surely supplant them entirely.

The Mayo Foundation, Rochester, Minnesota, has published an interesting series of lectures, given under its auspices in 1926–27, on *Plant Pathology and Physiology in Relation to Man*.[10] The study of the diseases of plants shows how closely they are comparable to diseases in man, what enormous effects they may have on man's well-being and comfort, and how necessary it is to link up pathological and physiological investigations in animals and plants. Before the catastrophic epidemic of potato disease in 1845, which resulted in the death of nearly a quarter of a million people in Ireland, little had been done in exploring the causes of plant disease. In the last half-century it has been found possible to attribute many forms of disease to fungi, to bacteria, and even to filterable viruses, as in the case of mosaic disease of tobacco and other plants. The problems connected with the extermination of these pests were discussed by the lecturers: and the losses attributable to them were illustrated by graphic statements. Thus it was stated that for every two sweet potatoes an American consumes at a restaurant he pays for one that has been lost through disease. With every half-dozen cotton shirts is included the price of one lost through disease in the cotton fields. The last lecture in the series dealt with some aspects of cellular physiology. The results of experiments on the selective permeability of protoplasm in the enormous cells of valonia and nitella must interest animal physiologists no less than plant physiologists.

[8] *Applied Chemistry*. By C. Kenneth Tinkler, D.Sc., F.I.C., and Helen Masters, B.Sc. Vol. i. Second edition, revised. London: Crosby Lockwood and Son. 1929. (Demy 8vo, pp. xii + 296; 34 figures. 15s. net.)

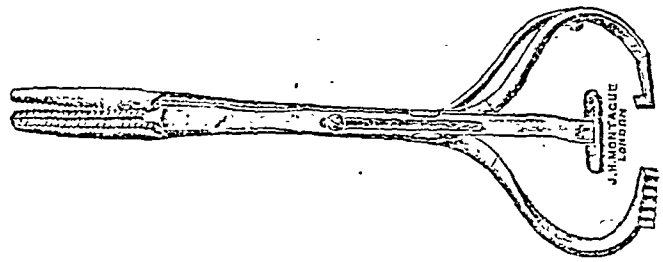
[9] *Haemodynamics*. By P. B. Kittel, F.R.C.S. London: H. K. Lewis and Co., Ltd. 1929. (Cr. 8vo, pp. xi + 195; 8 figures, including 3 plates. 10s. net.)

[10] *Lectures on Plant Pathology and Physiology in Relation to Man*. Philadelphia and London: W. B. Saunders Company. (Post 8vo, pp. 207; 16 figures. 12s. net.)

PREPARATIONS AND APPLIANCES.

A PROSTATECTOMY INCISING CLAMP.

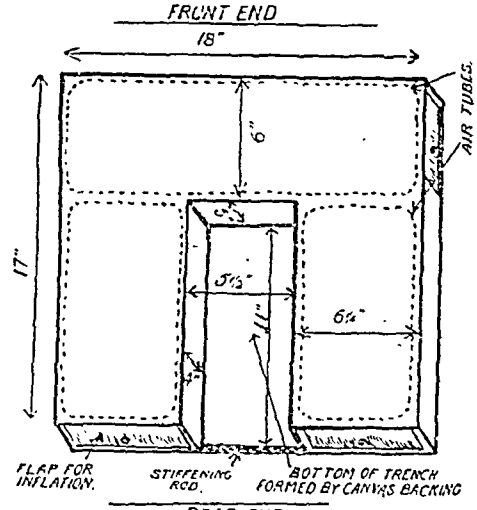
MR. W. K. IRWIN, F.R.C.S. (London, W.), writes: As is well known, after the actual enucleation of a prostate by Freyer's method a shelf often remains, which, if not divided, may lead to partial, or even complete, occlusion of the vesical outlet. Cutting it with scissors may result in further haemorrhage, while tearing it with the finger is not only crude, but in some cases impossible. I have therefore designed the instrument shown in the accompanying illustration. It is about eight inches long, has an outer or handle portion with a self-releasing



rack, and an inner portion consisting of a clamp and blade. The inner end for clamping and cutting the shelf has flat, serrated jaws, each of which is deeply grooved down its centre. When the clamp has been applied the blade is pushed down the grooves to the end of the instrument. In this way the partition is not only divided but thoroughly crushed on each side of the incision, the process taking only a few seconds, and very much minimizing the possibility of dangerous bleeding. The instrument has been neatly and skilfully made for me by Mr. J. H. Montague of New Bond Street, W.

AN AIR CUSHION FOR COLOSTOMY PATIENTS.

DR. H. S. GASKELL (Stowmarket) writes: Many patients with a colostomy and inoperable carcinoma of the rectum would, by means of skilled nursing and the carefully thought out administration of anodynes and soporifics, be able to lead fairly happy and comfortable lives if they could sit without pain. An ordinary chair, however well padded and sprung, is generally out of the question; and a circular air cushion is



objected to by these patients because it is no higher in the front than the back, and also because they cannot bear any pressure in the region of the sacrum at all.

I enclose a diagram of an air cushion made for me by Messrs. Moseley, the manufacturers of the "Float-on-air" car cushion; it has answered admirably, allowing the patient to sit, if not in perfect comfort, at any rate without pain. The idea was originally thought out by Nurse Lawrence, who made a stuffed cushion of that shape, and I had it made in air form. It consists of three air "sausages," each of which can be separately inflated by a bicycle pump to the height desired. It is sewn into a canvas case, which has a light cane or aluminium rod incorporated into the back to stiffen it; this allows it to be carried about easily. Possibly the cushion might be of use in other painful anal conditions.

British Medical Journal.

SATURDAY, JANUARY 18TH, 1930.

THE REACTION OF THE GASTRIC JUICE.

Of the digestive secretions poured into the alimentary tract, that of the stomach alone is acid; and early last century it was recognized that the acidity of the gastric juice was due, not to any organic acid, but to muriatic or hydrochloric acid. Figures varying from 0.05 to 0.57 per cent. are found in the literature, representing the analyses of human stomach contents of varying degrees of purity, since the hydrochloric acid may be taken up in part by the proteins of food and by mucus from the stomach wall, or partly neutralized by swallowed saliva or by pancreatic juice and bile regurgitated from the duodenum. When obtained in pure state, however, unmixed with other digestive juices or foods, the gastric juice has an acidity of about 0.4 to 0.5 per cent., and this acidity is due to the presence of hydrochloric acid.

In the diagnosis of gastric disease, a knowledge of the presence and the amount of hydrochloric acid in the stomach contents is therefore of primary importance, and much work has been done in devising methods for obtaining this knowledge and estimating its significance. In order to obtain comparable results in different subjects, simple standard test meals were introduced, such as the toast and tea breakfast of Ewald, or a dinner of soup and minced beef and potato purée suggested by Riegel. A portion of the stomach contents was withdrawn by means of the stomach tube after a period of digestion lasting one to three hours, and chemical tests were made of the chyme thus obtained. A rough qualitative test of acidity is given by the reaction with litmus or Congo red filter paper, but for quantitative work titration methods are usually adopted. It is customary to use two indicators, one, little sensitive to acids, such as dimethylamidoazobenzol (Töpfer's reagent), the other, highly sensitive, phenolphthalein. The titration result with the former is regarded as the measure of "free hydrochloric acid," while that obtained with phenolphthalein is the measure of the "total acidity." The difference between the two represents the hydrochloric acid which has already combined with protein as well as the acidity due to lactic and other organic acids; but the proportion of this last is small in normal stomach contents. In the earlier tests a single evacuation of the stomach contents was made at what was judged to be the height of digestion. A considerable advance took place when the principle of fractional sampling was introduced by Rehfuss, and the fractional test meal is now generally adopted. By this means the kinetics of gastric secretion are studied and the course of digestion in the stomach can be observed. When the results of analysis are plotted out as curves the acidity is found, in general, to rise to a maximum in one to two hours, and later to diminish.

Of the series of one hundred healthy young people investigated by Bennett and Ryle,[1] in the majority the free acid, as measured by titration, showed an average of 25 to 30 per cent. in an hour or an hour and a half after the start of digestion. In 80 per cent. the acidity was between 15 and 45 per cent., which may be taken as normal values. Of the rest, about 10 per cent. showed higher values; in 4 per cent. no free acid was obtained, and the remainder showed lower values than the average. In some cases the curve continues to rise progressively until the stomach is empty. These are the cases in which hyperacidity was found by the older methods, 100 cubic centimetres of filtered gastric contents requiring at least two-thirds of that amount of decinormal soda solution to produce neutralization—a condition usually associated with duodenal ulcer. With the single meal a greater proportion than in Bennett and Ryle's series have no free acid, even 15 to 20 per cent. having been observed in some series of published cases, but the fractional test meal has shown that free acid is present at some stage of gastric digestion in many of these. The importance of Bennett and Ryle's results is that from them has been developed a theory of gastric pathology which is now widely adopted in this country.

Hurst, whose writings are pre-eminent in this domain of medicine, has revived the old notion of inherent diatheses. At one end of the scale he recognizes a sthenic, vagotonic, or hyperchlorhydric diathesis; this is the basis on which ulcer arises, and, according to Hurst's view, only this class of patient can be the subject of peptic ulcer. At the other end of the scale, in the cases of achlorhydria, he differentiates patients in whom there is congenital absence of hydrochloric acid secretion, *true achylia gastrica*, from those in whom a former power of secreting hydrochloric acid has become reduced or has disappeared owing to preceding gastritis. This is a *false achylia*, and is often capable of recovery; treatment of the gastritis will result in a reappearance of acid in the gastric juice. Another explanation is given by Faber, who believes that all these variations are related to a preceding and often insidious gastritis. Degrees of subacidity and achlorhydria are, he suggests, the result of gastritis affecting the greater part of the mucous membrane of the stomach, while gastritis localized to the pyloric antrum leads to *hypersecretion by the* glands of the fundus. Of 127 healthy infants examined by Faber all showed acid secretion. The frequency of achylia increases in proportion to age; this would relate it rather to the damage the stomach receives as life advances than to an inherent disability. Post-mortem evidence of gastritis is difficult to obtain, owing to the self-digestion of the stomach which proceeds after death; but examination of portions of stomach removed at operation and fixed immediately has shown the prevalence of gastritis.

Since the active ferment of the gastric juice, pepsin, requires a certain degree of concentration of hydrogen ions for its efficient working, the determination of the concentration of hydrogen ions in the stomach contents is really the result to be aimed at in gastric chemistry. This applies particularly to states of hyperacidity. Now the concentration of hydrogen ions, *pH*, in mixed

[1] *Guy's Hospital Reports*, 1921, lxxi, 265.

stomach contents is only roughly proportional to the total acidity given by titration methods using phenolphthalein as an indicator, while the accurate determination of this value requires much more elaborate methods—too elaborate, indeed, for practical use in a clinical laboratory. Simpler test meals have therefore been introduced, with the object of providing a stimulus to gastric secretion whereby a pure gastric juice may be obtained for analysis by titration without the addition of complicating or buffering substances. Well-diluted alcohol (Ehrmann) is one of these, others are a cup of clear soup or unsweetened tea, or a solution of pure caffeine in water (Katsch and Kalk). Although these test meals have led to increasing knowledge of gastric chemistry in health and disease, they have not yet superseded the older methods in clinical diagnostic work, but the results already obtained suggest that further work on similar lines will bring new knowledge of the details of gastric chemistry.

The special secretion of the stomach—the gastric juice—is probably always the same substance, though it is not always to be obtained pure. It varies with the changing condition of the stomach, as Beaumont noted in his carefully recorded experiments and observations on his servant and patient, Alexis St. Martin, which have recently been reprinted.[2] Beaumont found that "derangement of the digestive organs, slight febrile excitement, fright, or any sudden affection of the passions, cause material alterations in its appearance. Overburthening the stomach produces acidity and rancidity in this organ, and retards the solvent action of the gastric juice. General febrile irritation seems entirely to suspend its secretion into the gastric cavity; and renders the villous coat dry, red and irritable. Under such circumstances, it will not respond to the call of alimentary stimulus. Fear and anger check its secretion, also:—the latter causes an influx of bile into the stomach, which impairs its solvent properties." From many experiments "it may be clearly inferred, that in the most natural and healthy states of the stomach, there are little or no fluids, of any kind, in the gastric cavity, until excited by aliment or other irritants; and that digestion, under this condition, is the most rapidly and perfectly performed." For Beaumont digestion in the stomach consisted essentially of chymification of the food, "effected by the solvent action of the gastric juice, aided by the motions of the stomach and the natural warmth of the system." Observation with the fluorescent screen has confirmed the importance of the disintegration of the food, by showing that the pyloric sphincter tends to open in the phase of relaxation of every peristaltic wave arriving at the antrum, and does so without much regard to the reaction of the gastric or duodenal contents. Beaumont had the advantage of direct vision of the gastric mucous membrane and its contents, but sampling the stomach pool, in which the gastric juice is mixed with food and diluted with other fluids, "such as saliva, water, mucus, and sometimes bile, and, perhaps, pancreatic juice," must produce varied findings. In the experiments of Bell and MacAdam[3] on the gastric response of a healthy individual to the same test meal, under the same conditions, on twenty consecutive days, while the rate of emptying of the stomach was remarkably constant, the curves of acidity showed a considerable range of variation between a mild and a definite hyperchlorhydria, and one was distinctly subacid. Nevertheless, having regard to the solvent action of the acid gastric juices on proteins, its antiseptic properties, and power of evoking pancreatic secretion, the reaction of gastric juice as determined by test meals is a useful aid in diagnosis and guide to treatment.

[2] *Experiments and Observations on the Gastric Juice and the Physiology of Digestion.* By William Beaumont, M.D. Facsimile of the original edition of 1833. Cambridge, Mass.: Harvard University Press; London: Milford, Oxford University Press. 1929. (12s. 6d. net.)

[3] J. R. Bell and William MacAdam: *Quarterly Journal of Medicine*, 1923-24, xviii, 215.

GRENFELL OF LABRADOR.

FOR nearly forty years he who is now known to the world as Sir Wilfred Grenfell, K.C.M.G., M.D., etc., has been the single-minded benefactor of the people of Labrador, seeking publicity, not for his own sake, but in order to obtain funds wherewith to carry on his work as superintendent of the Labrador Medical Mission of the Royal National Mission to Deep Sea Fishermen. An Oxford rugger blue, he came up to the London Hospital to become house-surgeon to Sir Frederick Treves, and to fit out the first hospital ship of the Mission to Deep Sea Fishermen. With these fishermen he cruised in the North Sea, and, indeed, wherever their calling took them, from the Bay of Biscay to Iceland. His writings on the subject of his life work and the adventures he has met with in doing it are well known, not only to grown-up people, but to many a schoolboy whose imagination he has fired. In his article "Medical pioneering in Labrador," printed in this issue at page 122, he draws a pleasing picture of his relations with the somewhat primitive inhabitants of the coast, who have a hard struggle for existence in that climate of violent extremes, which might be ours were it not for the "Gulf Stream drift"—for the parallel of latitude of London passes through Labrador. Sir Wilfred Grenfell describes some of the makeshift remedies to which lack of supplies sometimes reduced him, and the surprising cures which were wrought by soda, ginger, red ink, sea water, and faith. And the greatest of these is faith in the personality of the physician, such as Sir Wilfred never fails to inspire in his flock, if we may so call them. "Can prayer heal a broken limb?" asked the ominously red surgeon of Tennyson's poem. Though the answer to that question may be in the negative, Grenfell of Labrador seems to have healed an alveolar abscess by "a few sentences of Welsh and Eskimo and a few passes made over the seat of the trouble," to which we would venture to add "time."

We take it that there is no National Insurance Act and no unemployment benefit in Labrador, so that the mission, with its chain of hospitals and nursing stations, has been well advised to institute occupational therapy, not only as a means of completing cures, but as a money-making process, so that the convalescent may have something in hand, when he leaves hospital for home, from the profits of sales in New York, London, and Philadelphia. Those who wish to learn more of this work may do so at 63, Victoria Street, London, S.W., the office of the Royal National Mission to Deep Sea Fishermen. In the earlier days of the mission, when its scope scarcely overpassed the North Sea, such enterprises as agricultural work for the production of antiscorbutic vitamin-rich food, and technical schools for boys, to say nothing of boarding schools and orphanages, were not dreamt of as likely to concern it. The great heart, untiring energy, and unfaltering faith of Grenfell of Labrador have not only shown the need for all these things, but proved their feasibility. Echoing the last words of his article, we hope he may long continue to keep his "flag flying on the hospital steamer, and to get an immense pleasure and satisfaction out of life."

IN MEMORY OF MANSON.

WHEN in 1878, in China, Patrick Manson discovered that *Filaria bancrofti* was conveyed from man to man by the mosquito, the foundation stone of modern tropical medicine was laid. When in 1899, at the Albert Docks, he founded the London School of Tropical Medicine, he started an educational movement which has had its repercussions throughout the world; and when in 1907 he inaugurated the Society of Tropical Medicine and Hygiene he provided a means of expression and of communication for workers in all the scattered and isolated parts of the tropics. In the course of his very full life he made many contributions of fundamental value to tropical medicine and parasitology. More important still, by his work and personality he inspired others to undertake research and to conquer the diseases of mankind in the tropics. He has left behind him the "Manson tradition," which makes tropical research and teaching a really vital thing. Millions of people owe their lives, directly or indirectly, to Manson, and millions more their health and happiness. All those who labour in the tropics or depend on tropical products are in his debt—and that is practically all mankind, whether or no they realize it. How can this debt be repaid? Manson himself cared little for material honours, and he would probably have found the greatest satisfaction in seeing tropical research encouraged and stimulated. The provision of well-endowed scholarships, for example, is a measure which would have commended itself highly to him. There is another method, however, of *honouring* his name, which would also continue his work and ideals. The Royal Society of Tropical Medicine is in need of a permanent home, and an appeal for funds for such a purpose has just been issued by its president, Dr. G. C. Low, Sir Ronald Ross, Sir Andrew Balfour, and others. The present quarters at 11, Chandos Street, W.1, are hopelessly inadequate for their purpose; they must be replaced by more modern and extended rooms if the society is to continue and develop its almost indispensable function in fostering and extending tropical research. A sum of £20,000 is required to provide such a home. When completed the house will bear the name of Manson. It will be at once a memorial to one of our greatest men and a stimulus to one of the main driving forces of the British Empire abroad.

CARE OF CHILDREN UNDER SCHOOL AGE.

IN an annotation in the *Journal* of October 19th last (p. 729) it was stated: "The infant up to 1 year of age, or even 2 years, has of late years been the object of much public solicitude and action; concern for the child of from 2 to 5 years of age has been less pronounced. This era of comparative neglect now seems to be passing, and much more attention is likely to be given to the needs of these children in the near future." These needs, of course, are many; and at this age, even more than later, it is extremely difficult to disentangle those connected with health from those connected with education. It is appropriate, therefore, that the Minister of Health and the President of the Board of Education should have issued jointly a circular to maternity and child welfare authorities and to local education authorities with regard to children under school age. It is a call to these authorities to use the powers which all possess but which only some exercise. The State has made itself responsible for the health and education of all children from the age of 5 onwards. Considerable provision has also been made for the supervision of the health of infants. There remain large numbers of children who, during the three or four years before they go to school, need attention but do not get it. Many of these cannot get it unless it be provided under public auspices. Education authorities can establish nursery schools, primarily for the sake of the children. They can also (though this is less obviously desirable) admit children of three or four years of age to the ordinary infant school or department. Maternity and child welfare authorities can provide day nurseries, largely to help the children, but mainly, perhaps, for the sake of the mothers who have to go out to work. In the circular now issued by Mr. Greenwood and Sir Charles Trevelyan some detailed suggestions are made as to the lines on which the matter may be dealt with; and it is in particular pointed out that, as a result of experience, it is found that nursery schools may be larger than was formerly thought desirable, and may well be planned and conducted on open-air lines. The numbers, it is said, can be increased up to about 150 without undue risk. It follows that these schools should not be expensive either in planning or equipment, and that the larger schools may be expected to be more economical both in initial cost and in maintenance. The Minister of Health and the President of the Board of Education say that "it is important that in every area there should be systematic health visiting of all children up to the age at which they enter school, and provision for their medical supervision, with a view to the early detection and treatment of all defects and diseases." This is, of course, broadly true but the "systematizing" of health visitation has its disadvantages and dangers, and requires to be very carefully done. Fortunately, there are still a large number of homes in which it is unnecessary. It is as well that the circular goes on to say: "Where possible parents should be persuaded to have the child examined by their ordinary medical attendant, who would himself undertake any treatment which might be required, but it would be necessary to arrange for facilities for examination and treatment to be available for other children at a clinic or hospital." Even in the latter case there is no reason why the experienced private practitioners of the locality should not be associated with the work.

THE JAMES MACKENZIE INSTITUTE

"THERE has come into being the only effectively working example which exists of the end towards which modern public health legislation is tending—namely, the development of a united medical service incorporating private and panel practice and public health work." This quotation from the tenth annual report of the James Mackenzie Institute for Clinical Research at St. Andrews epitomizes both the aims of its founder and the activities of his disciples. It is well illustrated by the work of the children's department, where complete health records are being obtained by ante-natal histories provided by practitioners, notes taken from birth to the end of the second year at the child welfare centre, examinations made at regular intervals at the Institute of children between the ages of 2 and 5, and continued observation through the school years. Such thoroughness cannot, of course, be applied to adults until the Institute has existed long enough to watch the children of to-day grow up into healthy burghers of St. Andrews. Nevertheless, "150 new cases and 1,110 additional notes have been added to the files of the Institute during the year," and with such accumulation proceeding it has been decided to inspect and analyse all the records of the Institute. This work was begun early in 1929, and at the end of the year under review it was found that 58.5 per cent. of the records were complete, 20 per cent. required to be brought up to date, and 21.5 per cent. were incomplete in that the patients had died or had left the district. A records and research committee, composed of members of the staff of the Institute, has been formed for the purpose of extracting the information contained in these records in furtherance of the aims of the Institute. Of the special work carried

out during 1929, mention may be made of important studies bearing on the common cold; these include research into the etiology of colds and their relation to influenza, the incidence of respiratory catarrhs in young children in relation to environmental conditions, and the state of the tonsils and its relation to disease. Investigations are also being carried out on variations in temperature and pulse rate which are consistent with health, and such modifications of each as are of value in the detection of early signs of disease, and on the cytology of the blood in health and in common ill-defined diseases. It is in matters of this kind that the Institute at St. Andrews is doing particularly valuable work. The Institute has now been in existence for just over ten years, and throughout this period it has bravely tackled one of the most difficult problems of medicine, delving into that "ill-defined" borderline between health and disease. It is often urged against the hospital physician, especially in a big centre like London, that he is only called upon to deal with textbook disorders, and rarely has anything to do with the vague aches and pains which come within the everyday experience of a general practitioner. Sir James Mackenzie realized this fully, and the first object of the Institute is set out as follows: "To investigate disease before the occurrence of any structural change in any organ of the body, in the hope of providing a diagnosis at a period earlier than is possible by the methods now in use." Perhaps when the medical history of the years 1900–50 is written it will be recorded how, side by side with the development in bacteriology, pathology, and biochemistry which marked the first half of this period, there grew up a movement which had for its pioneers a group of workers in St. Andrews, and for its motto "Back to the patient."

THE MAKING OF SCIENTIFIC INSTRUMENTS.

Of the making of scientific instruments, as of the making of books, there is no end, and the joint exhibition of the Physical and Optical Societies, which is held at the Imperial College of Science, South Kensington, during the first week of each new year, continues to bring forward new marvels from research departments. One danger, however, overhangs the making of scientific instruments. In this field, as in many other industries, mass production has made its inevitable appearance, and even the simpler modern instruments are beyond the capacity of one man to make. The result is that the old spirit of craftsmanship, he occasion of so much pride and emulation, tends to die away. If a worker occupies his days with some small intermediate stage of a process, neither the end nor the beginning of which he sees, it follows that it is difficult for him to maintain his interest and zeal, and still more difficult to call into play any useful initiative. Therefore, for the first time this year, the recent exhibition of the two societies at Imperial College included a section illustrating the work of apprentices and learners, and prizes were offered for the best designs. It is hoped that in this way craftsmanship may be encouraged. Some interesting work was certainly shown. Another section took the exhibition visitor back from the modern apprentice to the old craftsman. This was a historical section, devoted chiefly to representing the evolution of the thermometer, beginning the story with the thermoscopes described by Philo of Byzantium and Hero of Alexandria, and continuing it down to the earliest insulated thermometers made in this country just a hundred years ago. To the research and experimental section of the exhibition most interesting contributions were made by the National Physical Laboratory, the Royal Air Force Establishment, and other official bodies, but it was also noteworthy how much excellent work, especially in optics and acoustics, is being carried out by the research departments of commercial firms. Among the many devices which caught the eye was an arrangement—already on trial, we understand, in a street at Wembley—for extinguishing the lamplighter. This was a photo-electric street-lighting unit, so arranged that when daylight fails the lamps are automatically turned on. Not only so, but by means of a thermal relay arranged to introduce a time lag, the street lamps are prevented from "chattering" when clouds pass across the sky. Another wonder was an immense block of optical glass, whose transparent depths were so fascinating that perhaps it was as well to put the legend outside, "This is not a diamond."

PILGRIMS AND A PUBLIC HEALTH PROBLEM.

EVERY year during the past few years some 100,000 pilgrims on their way to Mecca have arrived by sea at Djeddah, and have presented a formidable problem in public health to the Egyptian health authorities. The report on the hygienic aspect of the pilgrimage of 1929 has now been issued, and, without bringing forward any sensational information, it is packed with interesting details of what might quite well be regarded as a nightmare by any medical officer of health in this country. The pilgrims of all social ranks arrive from Algeria, Iraq, Morocco, Palestine, Sudan, Syria, and elsewhere, and the health authorities know beforehand the extent to which such diseases as plague, cholera, and small-pox are rife in these countries. There is a big quarantine station at Tor, on the Sinai peninsula, and for about forty days in the year some 5,000 pilgrims are dealt with at any one time. This camp is divided into sections, each with accommodation for 600 pilgrims, and complete with baths and latrines. There are four hospitals, all thoroughly modern in equipment, and a bacteriological laboratory is also available. The drainage system has been modernized, and the whole camp is lighted by electricity. Immediately after arriving the pilgrims comply with certain passport formalities, and then proceed to disinfection of all their baggage, during the progress of which the owners are sent to the baths. Here a close inspection for any skin eruption is made, and then the pilgrims are able to pass on to the sections to which they have been allotted. Medical examination follows, and during the three days of sojourn at Tor a doctor does a round of all the pilgrims in his section twice a day. On the evening of the last day a special final examination is made by the director of the camp and the doctor of each section, to see that the pilgrims are in a good state of health and fit to travel. Food, water supply, and laundry present further problems which have to be studied in this big quarantine camp, and it is greatly to the credit of the organization that the total sickness rate among the pilgrims in 1929 was only 1.23 per cent., and the death rate at Tor 0.14 per cent. Nearly 400 patients were admitted to hospital, and the year under review was notable for an increase in the number of cases of malaria and a decrease in the cases of dysentery. An interesting series of cases of suppurative parotitis, twelve pilgrims in all being affected, five fatally, formed a curious feature of the surgical side of the work in 1929. The camp at Tor deals with pilgrims from the north; for pilgrims from the south—that is to say, from India, Malay, China, Persia, Java, South Africa, etc.—a quarantine camp is established at Cameran, where similar arrangements have to be made. Not only have medical inspections to be made of pilgrims on their way to Mecca, but also on the return journey, so that there is no chance of disease being carried back to their native countries. The work done in this respect is, of course, of great importance to the whole civilized world. As the current report indicates, this annual problem in public health is being solved satisfactorily, and a study of the methods employed makes fascinating reading.

THE HISTORY OF HAEMOSTASIS.

THE application of artery forceps with subsequent ligature of the bleeding vessel appears so simple an operation that few persons are aware of the long travail that has made the procedure possible. In *The History of Haemostasis*[1] Dr. S. C. Harvey recounts the practice of successive ages in the control of haemorrhage, a surgical fundamental long hampered by fanciful physiology. Although Graeco-Roman medicine recognized the utility of pressure and ligatures, the cautery held the pride of place in Western Europe for centuries. Paré was the first to break away from servility to tradition, and chose to follow the guidance of experience rather than the distractions of the imagination. On one occasion during his first campaign, lacking the requisites for cauterization, he dressed the wounds of a number of soldiers with a mixture of yolk of eggs, olive oil, and turpentine. That night, he says, he could not sleep, fearing that by morning the wounded would be dead or empoisoned. To his delight he found their injuries free from swelling or other signs of inflammation, so thereupon he vowed that never again would he subject the wounded to cruel and needless torture. Later, at the siege of Danvilliers, greatly daring, he amputated a limb, employing ligatures instead of the cautery. The wounded officer made a good recovery. "I dressed him," says Paré simply, "and God healed him. He returned home gaily with a wooden leg, saying that he had got off cheaply without being miserably burned to stop the bleeding." Prior to the siege of Besançon (1674) there was no effective method of securing temporary haemostasis other than by direct pressure on the spurting vessels. During the campaign Morel introduced the practice of inserting a stick beneath a bandage applied proximally and twisting it until the arterial flow stopped—an outstanding observation without which it is doubtful if the ligature could have established itself as the method of choice in amputation. The author brings his story down to modern times, and reminds us that Lister's work on the material of ligatures and their employment was second in importance only to his introduction of the antiseptic method. Every medical man has at least some idea of the history of the introduction of anaesthetics and of the control of sepsis. It is far otherwise as regards haemostasis, an art of no less importance to the surgeon. Dr. Harvey's scholarly little monograph provides the material to make good this defect in general medical education.

PSITTACOSIS.

DURING the past few weeks there have been reports from places as far apart as Buenos Aires, Berlin, and Baltimore of cases of psittacosis in human beings. It has long been known that this infectious disease of birds, especially parrots, is transmissible to man, and there seem grounds for thinking that it has been more prevalent in man than was formerly supposed. Now that occurrences abroad have drawn attention to the matter, it is probable that cases, wherever they arise, will be recognized with greater frequency. The mortality, both in human beings and in parrots, is high, and it is important, therefore, that any suspicious case should be fully investigated. References to the disease in English medical literature have hitherto been few and far between. A paper by Mr. T. P. Beddoes appeared in the *Journal of Tropical Medicine and Hygiene* in 1914, and another by Lieut.-Colonel H. M. Perry in the *British Journal of Experimental Pathology* in 1920; Professor Lovell Gulland reported two cases in the *British Medical Journal* of August 23rd, 1924: and Dr. A. P. Thomson, who is to make a communication on the subject to the Section of Medicine of the Royal Society of Medicine on January 28th, described, in the *Lancet* of July 20th, 1929, four cases of human infection. In our present issue at page 111 Dr. J. S. Warlack, deputy medical officer of health for the Port of London, reports a recent case, and in our correspondence columns (p. 139) will be found a letter from Dr. Robert Hutchison stating that an investigation of psittacosis is now being carried out at the London Hospital, and asking any doctor who has had to deal recently with a case to communicate with him.

[1] *The History of Haemostasis.* By Samuel Clark Harvey, M.D. New York: P. B. Hoeber, Inc. London: Milford, Oxford University Press. 1929. (7s. 6d. net.)

WE much regret to announce the death, on January 14th, of Sir George Thane, LL.D., F.R.C.S., professor of anatomy at University College, London, from 1877 to 1919. The funeral service is being held to-day (Friday, January 17th), at 10.30 a.m., at St. Pancras Church.

THE Hunterian Oration before the Royal College of Surgeons of England will be delivered by Mr. Ernest W. Hey Groves, professor of surgery in the University of Bristol, on Friday, February 14th, at 4 o'clock, in the theatre of the College, Lincoln's Inn Fields. In the evening a dinner will be given by the President and Council to commemorate the birthday of John Hunter, who was born on February 14th, 1728.

BRITISH EMPIRE CANCER CAMPAIGN.

THE MARQUESS OF READING presided at the quarterly meeting of the Grand Council of the British Empire Cancer Campaign held on January 13th.

It was reported that, in accordance with the invitation of the National Radium Commission, an informal conference was held between representatives of that body, the Medical Research Council, King Edward's Hospital Fund, and the British Empire Cancer Campaign on the general subject of radium. The Campaign had been represented by the two vice-chairmen of the Grand Council, Lord Dawson of Penn and Sir John Bland-Sutton, Bt., and by the chairman of the Executive Committee, Mr. J. P. Lockhart-Mummery. It was stated that similar conferences would be resumed at an early date, with a view to the Campaign assisting in every way the co-ordination of the radium supplies of the country. At the informal conference the general secretary of the Campaign reported that, as a result of investigations, it would appear that when the present supplies of radium ordered by the Radium Commission were available, together with the 4 gram "bomb" now at the Westminster Hospital, as well as orders placed by private institutions, the total amount of radium available in England, Scotland, and Wales would approximate 60 grams. It was contemplated that this amount would be still further increased when the final orders were placed by the National Radium Commission and the various branches of the British Empire Cancer Campaign.

The Council confirmed the action of the Scientific Advisory Committee and the Finance Committee in approving that Dr. Thomas Lumsden, who has been engaged on important immunization work at the Lister Institute of Preventive Medicine, shall in future carry on his work in the laboratories of the London Hospital, to which organization he has been formally appointed honorary director of cancer research. In accordance with the recommendation of the Finance Committee, the Campaign will continue to make its financial grant direct to Dr. Lumsden for the continuance of his work.

On the recommendation of the Executive Committee a request for affiliation to the Campaign by the Manchester and District Radium Institute was acceded to. Sir Charles J. Martin, F.R.S., director of the Lister Institute, was elected a member of the Grand Council, at the request of the Queensland Branch of the Campaign, as its representative.

The secretary reported that formal approval had now been given for the transference of the offices of the Campaign to 12, Grosvenor Crescent, Hyde Park Corner, the building at 19, Berkeley Street having been sold. In the new building the Campaign will be the tenants of the Joint Council of St. John and the Red Cross. The removal is expected to take place immediately after the Easter recess.

MEDICAL PIONEERING IN LABRADOR.

BY

SIR WILFRED GRENFELL, K.C.M.G., M.D., LL.D., F.R.C.S., F.A.C.S.

THE practice of surgery and medicine under the conditions that prevailed on the coast of Labrador when first we knew it in 1892 offered a very satisfying problem. So far as its opportunities went, we were forced to realize that, beyond the purely professional challenge to repair the machine and reform the public health conditions that did, or rather did not, prevail, if we were to improve conditions materially we should have to include in our activities efforts to rehabilitate our cripples, and enable our convalescents to adapt themselves to their hard environments—in other words, to make the life one helped to prolong to be worth while living. Of this we fully recognize the difficulty, but the realization that all our problems have, after all, to be solved by very human beings gave us great encouragement. Conscious of our fallibility, and in the spirit of Lord Byng's famous order at Vimy Ridge, "Go in and do your —— best," we went ahead, and still venture to record our results.

Postal isolation makes it impossible to keep pace in Labrador with all the literature; even the excellent year-books of treatment cannot replace the personal inspiration of the human factor in teaching. So in our efforts to keep abreast of the times, and to give our patients what would satisfy ourselves, we make periodic descents, somewhat like pirates, on the great clinics, from London to San Francisco. As we have now been able to acquire a string of small hospitals about 150 miles apart, with nursing units between them, at which we collect our patients, it has become possible each summer to lure specialists and experts in various branches of the profession to make the rounds of our long coast in their vacations, and to give us as well as our people the benefit of their technique. Thus, for example, for eighteen consecutive years, until he crossed "the great divide," Dr. Joseph Andrews, a well-known consulting oculist of New York City, and subsequently of Santa Barbara, California, came every summer to help us, entirely at his own expense. This is just one instance paralleling the invaluable services rendered to the great city hospitals by our leaders in England, but our visitors have unanimously declared that the journey is more than worth while, and might with much profit be adopted in the case of many of the similar lonely outposts of empire in other parts of the world. There is, it may be added, wonderful salmon fishing and cruising to fill up any intervals.

The stimulus of competition, and even more so that of criticism, in the great centres and in the wards of the great school clinics, are factors that are missing when one works alone, and so the benefit from such periodic inspections is far more than the improvement in special technique gained at the time.

The man behind the gun is always human, and it has helped us perhaps more to recognize that fact in great centres than to be reminded of our own limitations. Thus, out of many such instances observed on our travels, two come to memory as I write, both in the region of the knee—a region specially interesting to us in our peculiar environment. The first was at a famous hospital in London, and in the wards of an internationally famous surgeon. There was a large, increasing, and apparently non-fluctuating or pulsating tumour in the popliteal space; it had been diagnosed as a sarcoma, and the case had been put down for amputation at the thigh. After lecturing on it to the large class in the theatre, the surgeon, before proceeding with the operation, said: "It is just as well to be absolutely sure before it is too late," and lightly punctured the tumour, with the result that a jet of pus shot almost across the theatre like a waterspout. The second instance was in New York, and the circumstances were just the same, except that this time the tumour was in front above the patella and over the lower part of the quadriceps femoris. Moreover, it was, I think, part of the clinical exhibition of an annual surgical congress, and the theatre was full of visiting surgeons. Again the diagnosis was carefully analysed, and the possibility of any other condition excluded. But again, when immediately before the amputation a slight incision was made, exactly the same result occurred. Both these surgeons' names were on our list of "demigods," and both said exactly the same thing: "Remember, gentlemen, we are all human."

It is part of our burden in Labrador that we have to face each problem ourselves as it comes along, and to do the best we can in every field of surgery, conscious, however, that there are others who could do much better. And in a sense there is a real satisfaction in this responsibility, whether it is due to cold storage or to purer atmosphere who shall say:

> "Where the playful polar bear
> Nips the hunter unaware;
> Where the ice crop pretty sure
> And the air is kind of pure."

But somehow our two main hospitals have received, after careful examination, the standardization of the College of Surgeons of America; the others being yet but wood buildings we could scarcely expect it.

One sort of interesting experience which is common is due to being temporarily isolated from even a dispensary or an instrument case. At such times a man, however orthodox minded, is forced into the list of empirical practitioners, since he is driven to adopt methods that would almost cast doubt upon his right to registration at home. However, in these days of recognition of the ethereal nature of the atom, even the ultra-conservative will allow us to consider that the emotions have a greater impulse on action than logic. Yet, though the immense influence of emotions on our material frame is obvious, it is still regarded by many as a sign of mental inferiority to believe in faith cures, to say nothing of resorting to any but physical measures for the cure of what are still oddly considered organic, as against functional diseases. It has been, on the other hand, only recently admitted that the term "idiopathic" is no longer acceptable as an etiological diagnosis. My allegiance to the materialistic conception of life has been irretrievably broken. In 1893, with only a cook and an engineer in a 45-foot steam launch containing all our supplies, we had visited the coast and fishing fleets for three months over 1,500 miles of coast, relying on local forests for our fuel. All supplies had run out, and we were making south for hospital; we anchored for the night off a little village. A crowd of patients had come some way for help, most of them suffering from various forms of indigestion, for which they use the odd expression, "I finds myself in my stomach, doctor." Our reputation had spread like wildfire, because there had been no other doctors on the coast. Moreover, our people, with the mysticism of the seafarer, and quite a little Scottish blood in them, had an implicit faith in "medicine," colour and taste being to them the gauge of the power. We could not disappoint them, so with baking soda, ginger, and sea-water, well coloured with varying shades of red ink, we satisfied temporarily all their immediate desires. A fortnight later, coming south for the last time, we once more anchored in that harbour. No sooner was our anchor down than we saw, with some trepidation, a flotilla of fishing boats speeding towards us. But their mission proved to be entirely peaceful; their only desire was that we should fill pickle and other jars with a good winter supply of our veritable elixir vitae!

But the faith factor in surgery also is by no means to be overlooked, which, oddly enough, is nowhere more patent than in the famous surgical clinic of my friend and teacher George Crile of Cleveland, who, a mechanist in philosophy himself, is also the apostle of anoci-association, and will postpone a thyroidectomy on the morning that everything has been got ready if the patient (who is unaware of the preparation) is not in a cheerful mental attitude. It may be added that his actual results are unsurpassed. The arguments from experience of the reality of the unseen in this relationship might naturally be attributed to silly superstition, or a need for an excuse for incompetent workmanship; when, however, it is the

patient, not the doctor, who supplies the argument, this seems a prejudiced view to take. Thus, on one occasion the giant skipper of a schooner came aboard with his head all tied up as if he had a fractured skull. In reply to my questions, however, he could only growl that he had "a swelling on his jaw"; it proved on examination to be a large abscess, with no small amount of looking of the jaw. Having indicated that I could easily treat it, I sought out some nickel-plated forceps, which unfortunately flashed ominously in the sunshine when I returned on deck. My patient, who was a southern Irishman, at once took fright, and would not even allow me to get near him, insisting that though he was suffering the pains of hell he could not stand "being cut up." Not being prepared for a battle, I resorted to argument, but he merely kept asserting that he knew I could "cure pain by charming folk," but that as he was a Catholic he had been warned I would not give him fair play. He even produced his fee to prove that he was not looking for charity. As we should not be near him again for a full fortnight, it was with sincere reluctance that I let him go, with nothing but a few sentences of Welsh and Eskimo, and a few passes made over the source of trouble. On our next visit he was the first man to leap abroad, and a more grateful patient it would be impossible to imagine. "Ne'er an ache out of her, your honour, from the moment you charmed her!"

The fact that I have had nearly a hundred dental colleagues during these years will, I hope, be sufficient to convince any critics that I am not discrediting in any way the more orthodox methods—only trying to apologize for those who, like myself, have accepted a role in life that the materialists of my student days found it hard to approve—an attitude in them that I attributed not to super-knowledge so much as to lack of the spirit of venture. It so happens that in my lifetime the very existence of an "unseen world around us" has, against bitterness and against equal prejudice, had to fight its way to acceptance by our own profession—from the days when the President of the British Association, a surgeon of no small repute, thanked God in his opening speech that he had not submitted any of his patients to the charlatanism that was the outcome of the hypothesis which Pasteur and Lister were sedulously championing, and for faith in which later on Dr. Trudeau of the famous Saranac Tuberculosis Clinic, and others, had to suffer, before its acceptance became general.

In our little chain of hospitals, and intervening nursing stations, we have occupational therapy, conducted in the wards by competent teachers; this affords an element of hope to men, who, during long periods in hospital, know only too well that they must return to empty cupboards and naked families, an almost hopeless social problem. The value of our output of industrial products rose this year to over £10,000, and there are centres for the sale of these products in New York, London, and Philadelphia. We have also boarding schools and orphanages giving help in times of need, as part of our child welfare work. We have been enabled also to start agricultural work to provide better vitamin-containing and cheaper articles of diet, regular mechanical teaching enables our growing youth to face with greater efficiency and success the problems of wresting a livelihood from an environment still so severe that it is often responsible for preventable incapacitating diseases, such as beri-beri, scurvy, rickets, and perhaps tuberculosis.

We have made, and still make, lamentable mistakes. To say that we are far above criticism would be to say we are far from human. But, after forty years, we continue to keep our flag flying on the hospital steamer, and to get an immense pleasure and satisfaction out of life.

Nova et Vetera.

MOORFIELDS EYE HOSPITAL.

Moorfields is a name that is as familiar in old London traditions as Cheapside and London Bridge. But to many medical practitioners throughout the English-speaking world it has other connotations. It stands for the eye hospital around which much of the history of British ophthalmology has gathered. Mr. Treacher Collins has done good service by gathering up some of the story of that institution.[1]

Many hospitals have owed their origin to medical men, and Moorfields is one of them. John Cunningham Saunders, a Devonshire man, John Richard Farre, who was born in distant Barbados, and Richard Batley from Wakefield were the movers in its foundation. Saunders would seem to have been the leader. All of them were students of the combined medical schools of St. Thomas's and Guy's Hospitals. Saunders became assistant to Astley Cooper, and there is evidence that he was a man of capacity. But since he had been apprenticed to a provincial practitioner he could not reach that position in a London hospital which his attainments justified. His undoing in this regard was good fortune, for it brought Moorfields into being. He had served his apprenticeship with John Hill of Barnstaple, a surgeon keenly interested in eye work, who performed operations for cataract and knew the value of belladonna for dilating the pupil. There can be no doubt that the inspiration of Saunders had its springs in the teaching of Hill.

The formation of the Royal London Ophthalmic Hospital, or, as it was at first called, "The London Dispensary for the Relief of the Poor afflicted with Diseases of the Eye and the Ear,"-had the good wishes and substantial help of medical practitioners and City merchants. Nevertheless it was a bold venture, for at the time eye work was for the most part in the hands of itinerant quacks, and those who ventured to practise the art were apt to be classed as such. George Coats, in his description of these times writes:

"In the eighteenth century ophthalmology had not yet undicated, in England, its position as a separate branch of practice. It was a province of a set of ambulant practitioners who toured the country accompanied by all the apparatus of shameless advertisement (including 'monkies,' we are told), couching cataracts, and selling infallible salves and eye-washes. This taint of quackery appears to have deterred respectable surgeons from meddling much with the subject; their operative experience was probably small, and the procedure of couching, attended frequently with brilliant immediate, but disastrous after, results, was likely to be performed with fewer scruples by itinerant oculists, here to-day and gone to-morrow, than by settled practitioners who had to abide the consequences of their handiwork."

One William Read, a tailor, became one of these quack oculists, and ultimately oculist-in-ordinary to Queen Anne and a knight. A sample of his methods of treatment is given:

"The putting of a louse into the eye when it is dull and obscure, and wanteth humours and spirits. This tickleth and pricketh, so that it maketh the eye moist and rheumatick and quickeneth the spirits."

In such evil times and from such small beginnings arose the well-known hospital at Moorfields, and since the 120 years of its growth have been coincident with the growth of ophthalmology, it is inevitable that the history of the institution should be a reflex of the great advances this period has known, some of which have been initiated or worked out within its precincts. A hospital that has been served by such men as Saunders (one of the earliest to operate for cataract in infant patients), George Critchett, William Bowman, J. W. Hulke, Jonathan Hutchinson, John Couper, Edward Nettleship, and Marcus Gunn—to name only a few of the long list of its staff—must surely have made its mark on British ophthalmology, and indeed in international advance. Bowman and Hutchinson alone were great enough to achieve this position.

Moorfields both gained and suffered from the fact that it was not and never has been completely independent as a medical school, in the sense that other London schools

[1] *The History and Traditions of the Moorfields Eye Hospital.* By E. Treacher Collins, F.R.C.S. London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. xii + 226; 27 plates. 12s. 6d. net.)

are. The members of its staff were at the beginning general surgeons and on the staffs of other hospitals. At one time fears that surgeons would spread themselves over too many hospitals caused rules to be drawn up restricting their service to the hospital of their choice. In some respects it would have been better if that rule had remained. But it was rescinded. It has happened, therefore, that for the most part the surgeons on its staff have had other interests than that of Moorfields, sometimes predominant interests in other medical schools. Perhaps in this is to be found the reason for the late development of Moorfields as a school of ophthalmology. Visitors it has had in numbers, and in later years many clinical assistants, but systematic post-graduate teaching was of quite late development.

Mr. Treacher Collins has traced these changes through the years, and interwoven them with quaint bits of local history and tradition and with biographical details, all of which go to make a most human document that will be of domestic interest to those who have worked within this hospital and to not a few others who will be attracted by stories of the private lives and aims of the prophets of ophthalmic surgery in England. On one point we are inclined to think that Mr. Collins has missed an opportunity. Those who have attended the practice of this hospital will know how largely the main part of its work—that is, the out-patient service—is done by clinical assistants. There are some few references to these junior members of the staff in the book, but they give little indication of the services these and the chief clinical assistants have rendered, and of what became of them in their later years. But perhaps these, like the multitude who make the State, are too many to be numbered!

The author in his preface writes, with perhaps a hint of sadness: "It has been said that 'when a medical man begins to write on the history of his subject it is a sure sign of senility.'" He need not be afraid—his pages show no sign of weakness; rather there is that touch of simplicity which fashions the folk-lore of a people into the fairy stories of the young, and helps to spur them on to their turn of endeavour.

THE RIVIERA:

ANOTHER MEDICAL VIEW.

THE letter by Lieut.-Colonel R. H. Elliot on sanitation in the Riviera, published in our issue of December 28th last (p. 1220), has prompted another correspondent to record his personal observations, in the hope that steps may be taken by the French authorities to improve matters.

Like many others (he writes), I often go to the Azure Coast because of my love of the sun, but I never stay there without a feeling of deep regret that matters are not better arranged in the interest of the guests.

A journey to the south coast of France is nowadays a delight. The "blue" train and other trains are comfortable and clean, and the service courteous and efficient. The only complaint that can be made is that an insufficient number of trains are available, so that booking many days, or even weeks, ahead is often necessary at the height of the season; and it is not always that a business or professional man can see so far ahead.

The coast, like most other places, has its bad days, but its good days are almost unsurpassable in the glowing radiance and delight of the sunshine. We forget two or three days of cold, or the wet and miserable days, when they are followed by a cloudless week. The day's warmth is then delicious, but it has its treacherous end. When the sun is setting, and after it has set, the cold comes down like a shower, the humidity of the atmosphere changes, and serious risks are run by those who neglect to keep moving or to cover their bodies with an extra garment. The whole length of the coast is in some degree a plague spot: illness is rife; colds, bronchitis, and pneumonia, with all their perils, are not infrequent. Some of these maladies can and should be avoided, and to this end every visitor should be furnished by the hotel manager with a brief card of instructions and advice. The danger of taking a chill at sundown should always be emphasized.

A part of the many illnesses is due to easily preventable but universally neglected conditions. Sanitation, as we in England or those in America understand it, is unknown in many parts of France. Anyone who was in a battalion which took over French trenches in the war will be quick to agree with this truth. On the hills behind the coast towns are picturesque villages, the sewage from which is often allowed to dribble down the hillsides. When the weather is dry and the wind comes, particles of dried faecal and other putrid matters are blown everywhere, are inhaled, and cause, or are a factor in causing, those "Riviera throats," those attacks of fever and malaise, those "colds" from which probably a majority of the visitors, and almost all the hotel staff, suffer within a few days of arrival in hotels even of the most expensive kind. And sometimes, I regret to say, even when the management is English a very inefficient regard is paid to sanitary matters. The lavatories and drains in the immediate vicinity of the hotels are often pestilent, and no one seems to mind. Bathrooms in the hotels have no outlet other than the door into the bedroom, through which alone ventilation is possible. Ventilation of the bedroom exists only when the window is opened. To open one's bedroom window at night in many hotels is to invite insomnia. For the traffic along the twisting roads is considerable, begins early, continues late, and is surely unmatched in all the world for the raucous cacophony of motor horns. The French motor driver approaching cross-roads, or a curve when the road ahead is hidden, thinks his obligations to other users of the road are fulfilled if he sounds his horn and continues to sound it until the danger point is passed. The drivers are often very skilful, but they are unacquainted with the courtesies of the road which one sees (too seldom, perhaps) in this country. It rarely occurs to a driver to slacken his pace when approaching a danger spot; he merely warns others of his presence by the most continuous shrill sounding of the horn—and the horn has often a high note of most piercing character.

In hotels of the "de luxe" class—indeed, in nearly all hotels—the cooking is excellent, far better than can be found in hotels of a similar grade in England, and the service is sometimes faultless. But due recompense is expected. At one famous "reserve," after a really delightful luncheon, those who confidently expected a gratuity ranged themselves in line, and they numbered no fewer than nine. This greedy and insatiable desire for "tips" is an offence. It is only a part of that Gallic urgency for the capture of still another franc or two, under all conditions, at all times, and from all people, which is a real annoyance to visitors. Few of those who go to the South of France complain at a fair expenditure of money. What is found to be so annoying is the endeavour of shopkeepers of all kinds, waiters everywhere, servants of every grade, and all hotels, to extract an additional sum, large or small, on every possible occasion.

The absence of sanitary methods leads to the neglect of pools of stagnant water, which in summer breed mosquitos by the million. No effort whatever is made to rid the entire coast of this plague of mosquitos, and yet a concentrated and sustained effort would destroy them for ever by preventing their breeding. Such an effort is more than ever necessary in view of the summer seasons, which are the occasions for many delightful holidays. The eastern end of the coast during last summer was almost uninhabitable because of the plague of mosquitos. Other evidences of sanitary inefficiency are seen on every hand. Drains from coast-line hotels, and the neighbouring houses, end near the shore, and but for swarms of seagulls, and no doubt of fish, would cause even greater olfactory discomfort than they do now. Bathing in summer at some of the resorts, even the most modern, is often, as one visitor has expressed it, "immersion in dilute sewage." On the coast seaweed may collect, be thrown up above the high water mark, and be rotting in the sun, malodorous, for months.

Communication between town and town is now better than ever because of the bus system, but is still far less than visitors desire. Trains are infrequent and unpunctual, and buses are infrequent and overcrowded. But happily the hiring of a car by day, week, or month is cheap; it is, indeed, the only cheap thing to be had in the Riviera. Communication by telephone or by post between coast towns is ludicrously inefficient. It took me eight hours to be connected to a town twenty miles away, and before the conversation was over it was interrupted by a "through call" from Paris. A villa in

which friends of mine were staying in the little town in whose chief hotel I was a guest was distant from me about two miles. If I wanted to speak to my friends it was quicker to take a car to the villa on the hill than it was to telephone. Never once could I be connected in less than twenty minutes. The local telephone service is surely the worst in all the world.

These are only samples of discomforts and discourtesies with which one meets. When a protest is made the inhabitants are not ashamed to point out that the country belongs to them, that we are only visitors, and that we must take things as we find them or stay away. An American friend of mine, possessed of a most beautiful villa, asked to whom such a coast as the Riviera really did belong. Did it belong to those who owned the soil, or did some measure of proprietorship attach to those who, by their presence and expenditure, created and maintained the hotels, casinos, villas, etc.? It is notorious that the French people themselves do not contribute one-tenth of the money which supports these various institutions. In the large hotel in which I stayed last winter, in two in which I lunched, in one in which I dined, there was not one French family. English, Americans, Germans, Dutch, Norwegians, Swedes were there, but no French. In the summer a few French families go, but by comparison only a few. The Riviera, as we enjoy it, was created by the English and is maintained by other nations. "The place does not belong to the French at all," said my American friend, carrying his remonstrances too far.

Oh, no! it is not all joy and sunshine in the Riviera. We have risks to run in the matter of health, discomforts with which to contend, and discourtesy to ignore. Nevertheless, when the sun shines we are tempted to forget everything in the joy and exhilaration of life.

England and Wales.

University of Birmingham Medical Society.

A WILLIAM HASLAM ORATION has been instituted by the University of Birmingham Medical Society as a mark of its esteem and gratitude to the former dean of the Medical School, Mr. W. F. Haslam, M.B., F.R.C.S. The first oration will be delivered in the Medical Theatre of the University on Monday, February 3rd, at 8 p.m., by Professor J. C. Brash, M.D., dean of the Medical Faculty, on "The surgeon anatomist and the history of anatomy." All past and present students of the Birmingham Medical School and medical practitioners in the neighbourhood are cordially invited to attend.

The University Union, Manchester.

The twenty-first anniversary of the opening of the Men's Union of Manchester University will occur next May, and it is proposed to arrange special celebrations of the event on the first two days of that month. In view of the difficulty of tracing the present addresses of many life members of the Union who have not been in close contact with it for several years, they are asked to send their names and addresses to Mr. F. Tomlinson, clerk to the University Union, Burlington Street, Manchester, so that they may receive details of the arrangements. On the first day there will be a general meeting in the afternoon for the conferment of honorary life membership of the Union upon representatives of various interests in the city; a dinner will follow in the evening. On May 2nd there will be festivities and a dance.

Variation in Work done under Tuberculosis Schemes.

Again, with the beginning of a new year, there appears the analysis by the Ministry of Health (Memo. 131B T.) of the work done during 1928 under tuberculosis schemes in England, with a view to assisting local authorities to review their own achievements and to consider whether their schemes for the treatment of this disease need revision in any respects in order to secure the most efficient arrangements and full value for the money expended. As in the case of the memoranda relating to 1926 and 1927, the present analysis compares certain statistical reports from different counties and county borough councils in England; a new feature of the present publication is the inclusion of corresponding details for Wales. Local authorities and their officers can thus compare the figures returned in respect of their own areas with those relating to other areas of similar size and character, and in some instances they may deem it advisable to extend or vary their own schemes, or to effect economies in certain directions. A few general conclusions are drawn in this analysis which will repay careful examination. Thus, it is pointed out that there is still much to be done in respect of making the most economical use of the available residential accommodation, due regard being paid to the stage of the disease and the response to treatment of each individual patient. Satisfaction is expressed in the memorandum that a higher proportion of the total tuberculous population is gradually being included in dispensary registers, and that there is a noticeable tendency for these registers to contain a smaller proportion of cases in which the diagnosis has not been completed. The relative numbers of new cases and contacts examined by tuberculosis officers, and the numbers of x-ray examinations and consultations, are also steadily increasing. On the other hand, the decline continues in the proportion between the number of sputum examinations in connexion with dispensary work and the total number of new cases and contacts seen. It is possible that this decline is due to a more strict interpretation of the term "in connexion with dispensary work," resulting in exclusion of sputum examinations made for persons not on the dispensary registers. It is to be hoped that this decline is thus more apparent than real, for an actual reduction in the work of sputum examination must be viewed with concern. There has been a noticeable tendency to continue residential treatment in the case of pulmonary patients for longer than six months; this is most marked in respect of the intermediate cases, and there is no change as regards advanced cases. This extension of treatment, it will be generally agreed, is satisfactory, but it makes the economical use of residential accommodation a still more important consideration. For these and other reasons it is highly desirable that what appears at first sight to be little more than a repellent category of figures should be examined with care since practical conclusions of value may thus be reached.

Scotland.

Edinburgh Royal Infirmary.

THE annual meeting of the Royal Infirmary of Edinburgh was held in the City Chambers on January 6th. The report showed that 19,839 patients had been treated in the wards, and 67,623 as out-patients. The deaths had numbered 1,244, representing a percentage of 6.2 of the cases treated, or, deducting those deaths which occurred within forty-eight hours of admission, the mortality was 4.3 per cent. With regard to finance, the total ordinary income had been £114,838, as against £117,191 in 1928. Voluntary contributions formed the major part of the income, amounting to £69,675. Appreciation was expressed in the report of the response made by trade union organizations, friendly societies, and county associations in connexion with the bicentenary of the Infirmary, celebrated in 1929, while the League of Subscribers' collecting scheme had raised £21,564 from employees in public works, business establishments, staffs of schools, and offices. It is pointed out that this collecting scheme, during the eleven years of its existence, has raised in all £201,936 for the funds of the institution. The contributions from employees in coal, shale, and oil mines in the Lothians and Fifeshire amounted to £10,529. A smaller but important source of revenue was the collection of silver paper, of which some seven tons had been sent to the institution, representing a money value of £300, or sufficient to maintain two beds for a year. The total ordinary expenditure had been £143,684, as against £135,851 in 1928. There was, however, a daily average of 43 more occupied beds during 1929. The extraordinary income had amounted to £139,382, which was the highest figure ever recorded for one year. The extraordinary expenditure had been £18,867, in which the chief item

had been the cost of installing new electric lifts. The upkeep per occupied bed for the year worked out at £150 5s. 11d., and the average cost per patient at £7 4s. 6d. It is stated that in the Astley Ainslie Institution, which is reserved for convalescents from the Royal Infirmary, there are 90 beds in use, to which 282 patients have been admitted from the Royal Infirmary in the past year; when this institution is completed there will be a total accommodation of 150 beds. It is also mentioned that the managers have in hand a special sum of £25,232 towards the extension scheme of the Infirmary when they obtain entry to the George Watson's College ground in November, 1931. They propose to inaugurate an active campaign for raising the funds necessary for this purpose in the spring of the present year. The belief is expressed that the Royal Infirmary of Edinburgh will, in all likelihood, be recognized by the Radium Commission as a centre, to which 2 grams of radium will be supplied. The managers have decided to reconstruct Beechmount, the Infirmary's property at Murrayfield, for the purpose of making it a radium institute, and they have already received two donations—one of £5,000 and the other of £1,000—towards this purpose.

Glasgow Royal Infirmary.

The annual meeting of Glasgow Royal Infirmary was held on January 1st in the institution, when Lord Provost Kelly presided. Mr. James Macfarlane, LL.D., chairman of the managers, in the course of an address, said that the Local Government (Scotland) Act, passed in 1929, contained provisions of the greatest importance to all the voluntary hospitals. The Act visualized the continuation of the voluntary hospitals in unimpaired strength and vitality. Some concern had been felt at first as to the effect which the Act might have on these hospitals, but the speaker felt sure that they could look to the future without apprehension. The income for the year had been £115,000, including subscriptions, donations, and all kinds of legacies, while their expenditure had amounted to £115,200. The speaker suggested that there were two sources of extra revenue which might very fairly be brought into action. In the past two years the treatment of cases of motor accidents had cost the Royal Infirmary £9,151; the Infirmary was never intended to treat such cases, and, since many of them were insured persons, or persons insured against third-party risks, he thought that it was unreasonable that they should receive treatment to this extent at the expense of voluntary hospitals. The other possible source of revenue was the remission by the Chancellor of the Exchequer of the duty on legacies to the voluntary hospitals; during the last five years no less than £12,000 of duty had been deducted from legacies to the Infirmary. The prizes won by nurses during the year were presented to them by Mrs. M'Cready, daughter of the Lord Provost; the chairman announced that 65 nurses who had entered for the preliminary State examination had passed, while of 99 entered for the final State examination 90 had passed.

Workshop for Blinded Ex-soldiers in Glasgow.

A meeting was held in the City Chambers, Glasgow, on December 19th, 1929, in connexion with the workshop recently established in that city by the Scottish National Institution for Blinded Sailors and Soldiers. The Rev. Thomas Burns, chairman of the Scottish National Institution, said that at Newington House, Edinburgh, some 150 men had been trained in crafts such as basket making, rug making, and boot repairing. The men had been settled in places near their homes, but after a few years interest in them began to wane, so that they became less successful. A central workshop had accordingly been formed in Edinburgh as an experiment, and this had proved so successful that it had been decided to institute another workshop for men in the neighbourhood of Glasgow. They now solicited, not money, but employment for the men in the workshop, and it was desirable that a local committee should be formed for this purpose. On the motion of Sir John S. Samuel a committee of thirty-three members was appointed to superintend the activity of the branch workshop.

Correspondence.

CHILD GUIDANCE CLINICS.

SIR,—Dr. Gillespie is to be congratulated on bringing this subject forward, and many years of experience in psychological medicine have taught me that the views expressed by him and by the writer of the annotation on difficult children in your last issue are right. Indeed, the whole trend of treatment in mental medicine has been to get back to the incipient stages, and these are most commonly to be found in childhood. Dr. Cameron has frequently pointed out that metabolic changes may be the cause of a child's being difficult, and experience confirms this view. Again, I have long observed that capillary stasis may be the forerunner of emotional instability and all the disabilities that may become associated with it. Other physical conditions, not forgetting toxaemia, might be mentioned, but these are enough to show how urgent it is that any specialist treatment should be carried out in association with a general hospital where all that medical science can give is available. Also, for years it has been urged that the medical student should be given instruction and should obtain knowledge in the minor mental disturbances which will form so large a part of his practice, and there is, further, the question of research. The general hospital contains, or should contain, every means for investigation, the importance of which no one will deny.

Disorder of mind and its activities should not be divorced from physical disease, and even if behaviour necessitates this in later life it rarely does so in childhood. Students must not be deprived of the opportunity of acquiring knowledge of a subject so important to their future practice, for failure to acquire this knowledge leads to a "superficiality of outlook" on this subject when they leave the hospital. My experience is that most practitioners deplore their ignorance of a subject upon which they are so often consulted, and had they been given the opportunity of acquiring knowledge of it in their hospital days they would have welcomed it.—I am, etc.,

London, N.W.1, Jan. 15th. MAURICE CRAIG.

THE NATURE OF "PSYCHOGENIC PAIN."

SIR,—In his lecture (*British Medical Journal*, January 4th, p. 1) Professor Edwin Bramwell, like all previous writers on this interesting and difficult subject, appears to assume that "physiogenic pain" and the so-called "psychogenic pain" are in their nature identical, and that the latter is *a sensation* of the same essential order as those we all experience when we have toothache, knock our shins, or have colic. In other words, the assumption is that psychogenic "pain" is a form of bodily sensation in the scientific sense of this expression. May I submit that there is no warrant for this assumption, and also that there is a body of clinical experience unfavourable to it; that, in short, we are using in this connexion a word, "pain," for something that has nothing of the quality of a sensation at all.

When the subject of a traumatic neurosis says that he has an intolerable pain in his back, he speaks with conviction, and his demeanour indicates that there is indeed a something that is distressing him, and this something he calls a pain. It has been our custom to take this statement at its face value, yet surely some further examination of the problem involved is required from us. When I have submitted this proposition to a psychologist he has replied, "the man either has a pain or is a liar." No other comment is necessary upon this reply than to say that it begs the question, and indicates a refusal to face the issue.

An illustration from Professor Bramwell's lecture may make clear the distinction which I wish to draw. He cites the instance of a friend who "can imagine himself sliding down a sloping roof until his heels come in violent contact with the balustrade below. He says that he can feel the pain in his heels and the jar to his spine as vividly as if the accident had actually occurred." With this proposition Professor Bramwell appears to agree, and he adds that it is possible to experience intense pain by an effort of imagination.

I submit that these statements embody a complete fallacy, and that we cannot summon up even the faintest trace of true painful sensation by an effort of will. What Professor Bramwell's friend does is to visualize the situation, and at the moment he reaches that stage of his mental imagery when his heels make the violent contact he produces a grimace expressive of pain, stiffens his muscles, draws in his breath—and then nothing whatever happens. His exercise is an absolutely painless affair. All he achieves is to think about a pain. He has not even that vague conception "an after-memory" of a pain to invoke. Indeed, so innocuous a business is this imagining of a pain that it has distinct possibilities as a parlour game. To speak of "pain" in these circumstances is surely to be deceived by one's own figures of speech.

This brings me to the question of "psychogenic pain" in general. If a perfectly normal man can so deceive himself as to suppose he has pain, how much easier must it be for the aggrieved subject of some injury sustained in the course of his employment to fancy that he suffers pain, especially if at the moment of his trauma he did indeed experience this form of sensation. Such a man dwells continually upon this painful episode, has many cogent reasons to persuade himself that he has in fact got disabling pain, and as far as volition allows he reproduces those concomitants of true pain that are within his power: thus he limps, groans, sighs, draws in his breath, and so on; thus buttressing his thoughts about pain until absolute conviction is secured. It yet remains to be proved that any true sensation of bodily pain is present. We are therefore at liberty to question the notion that he has true pain, and this without implying that the man is wittingly untruthful.

In support of our doubts on this point are various clinical observations. Whereas even the most intense physical pain is capable of relief by appropriate drugs, "psychogenic pain" is commonly not relieved by these means, and this, surely, because it is not pain but only thought about pain. Further, severe physical pain of long standing brings in its train such physical consequences as wasting, loss of sleep and of appetite, pallor, sweating, vomiting, etc. Yet the subject of "psychogenic pain" may continue for months under her affliction as fat as a partridge, as rosy as an apple, and (when not a compensation case) in a state of beatific calm. Such a state of affairs is incompatible with the continued presence of true pain. It is in young hysterical women that this striking discrepancy between the alleged intensity of "psychogenic pain" and the physical condition is most often seen.

It may therefore reasonably be urged that "psychogenic pain" is not pain in any precise sense of the word, that it is nothing other than mental concentration upon the notion of pain, or of some particular pain once suffered by the subject. Further, the conception of an "after-memory" of pain is an unconvincing evasion of the issue involved, and does not appear with a good grace in company with the hypothesis that in man the memory for pain is short. We appear, then, to have got into the habit of using the word "pain" for two wholly different things, and the fallacy of thought thus engendered seems too deeply rooted to be eradicated, though the contradictions into which it leads us when we are dealing with the neuroses surely indicate that some clarifying process of thought is long overdue.—I am, etc.,

London, W.1, Jan. 7th. F. M. R. WALSHE.

UNION AND NON-UNION OF FRACTURES.

SIR,—In your issue of January 4th (p. 8) Mr. Bankart levels some very reasonable criticisms against the usual textbook classification of non-union after bone fractures. I agree with him that imperfect immobilization and poor blood supply are not in themselves important or often effective causes of non-union. In my experience syphilis is the only easily recognizable constitutional condition which certainly inhibits normal callus formation. At the same time, I cannot but think that the problem of bone repair is more complicated than Mr. Bankart would have us believe. I do not think his theory that union is dependent on the presence of a large quantity of blood clot between and around the broken surface will bear criticism. It is, for example, common experience that impacted fractures in general unite readily and rapidly, and yet in them bleeding at the break is slight owing to the mechanism of the injury. Another example of a similar kind is to be observed when an autogenous graft is pegged or inlaid into the shaft of a bone. Union of the graft to the host bone is achieved with certainty when a close fit is obtained, so that there can be little blood between the two surfaces. A graft loosely placed so that blood clot lies between it and the host bone nearly always undergoes rarefaction and fails to establish union with the host bone.

The injection of the patient's own blood about the seat of fracture was, I believe, suggested by Professor Bier some time ago for the treatment of delayed union. The procedure still finds a place in most German textbooks on the subject, coupled with a list of other remedies. I gave the method a trial on a series of cases shortly after the war, but could not convince myself that it was effective in its aim.

Mr. Bankart passes on to quote one case of fractured neck of femur in which union resulted after immediate injection with blood. But the fractured surfaces, to judge by the *x* ray, were brought into perfect apposition by traction. I think he will agree that the latter factor was the one most probably responsible for the satisfactory result. Transcervical fractures of the neck of the femur owe their evil reputation, I think, to the fact that the break is into a joint: in consequence there is free access of synovial fluid to the broken surface. There is much evidence to show that joint fluid has the power—protective as far as joint function is concerned—of suppressing new bone formation. Other fractures in which this factor is operative are those of the carpal scaphoid and the condyles of the humerus. It will be generally admitted that in these examples bony union is the exception. Repair by bone occurs only when the broken surfaces are so closely apposed that the synovial fluid has no access to them. So long as this close apposition is maintained for a sufficient length of time union will occur. In the case of transcervical fractures of the femur, the mechanism at present available to effect and maintain apposition is admittedly cumbersome and uncertain. The method employed by Mr. Bankart in this case appears to simplify the matter, and it should be given a trial in order to test its efficiency in a large group of cases.—I am, etc.,

London, W., Jan. 9th. C. MAX PAGE.

TRAINING OF THE UROLOGIST.

SIR,—In the *Journal* of January 4th (p. 42) Mr. Swift Joly suggests that the writer of the leading article in a previous number has "been unintentionally unjust to our English institutions," and that in particular he has underestimated the excellent work carried on by St. Peter's Hospital in the teaching of urology. Personally, I do not interpret your leader as in any way censuring the work of British urologists of the past or present. I regard it rather as an encouragement to the making of still greater efforts in the future. It is impossible for anyone acquainted with the work of such men as Hurry Fenwick, Freyer, Thomson-Walker, and of Mr. Swift Joly himself, to underrate what British urology owes to St. Peter's Hospital. For at least sixty years British urology and St. Peter's Hospital were one and the same thing. But times have changed. We have now three London hospitals—St. Peter's, St. Paul's, and All Saints—entirely dedicated to the treatment of genito-urinary diseases, as well as numerous special departments in the large general hospitals. St. Peter's Hospital is, as it were, the senior partner in a growing concern. Our problem is how to develop and to correlate the teaching in these various hospitals so as to make the best use of the material at our disposal. In spite of the fact that St. Peter's was founded as long ago as 1860, urology is only just obtaining recognition as a separate branch of medicine in Great Britain. The *British Journal of Urology* is not a year old, and even now, although proctology and venereology have, from time to time, their sections at the Annual Meetings of the British Medical Association, a separate section for the study of genito-urinary diseases has only once been held.

Much has been achieved, but a great deal remains to be done. It is to the importance of studying the future needs of the British school of urology, rather than to any deficiencies of the past, that your leading article has, in my opinion, drawn attention.—I am, etc.,

London, W., Jan. 11th. KENNETH WALKER.

THE EPIDEMIC OF SORE THROAT AT BRIGHTON.

SIR,—In view of your paragraph in the *Journal* of January 11th (p. 85), and the interest which the matter has excited in the lay press, to say nothing of the many inaccurate statements made by the latter, perhaps some notes on the recent epidemic at Brighton and Hove might interest you and your readers.

The epidemic has been a widespread one of great clinical interest. At the outset we were faced with the fact that acute tonsillitis of an aggravated form was occurring epidemically quite independently of the patient's age and previous history of susceptibility to tonsillitis. Patients were of all ages, but it was noticeable from the onset that many of them were in their sixties and seventies. Within a few days the tendency of the disease to relapse was also noticeable. It soon became apparent that the epidemic was confined to the two towns, and that there were no cases in the adjacent areas of Sussex, nor did there appear to be any cases in London.

The tonsillitis was of two types, of the follicular variety, and also frequently accompanied by the formation of false membrane, and I have seen cases the clinical picture of which, so far as the throat was concerned, was that of virulent diphtheria. Culture from throat swabs in every instance gave streptococci, Klebs-Loeffler bacilli being absent. Only comparatively recently a few swabs have been positive, but no more than might have been expected where so many swabs have been examined. Glandular involvement was a more marked feature altogether than with ordinary acute tonsillitis, and lymphadenitis may, indeed, be described as a constant feature. Patients who had previously been deprived of their tonsils by surgical operation appeared to many practitioners to suffer more severely than their fellows who still possessed these organs, and more than one practitioner expressed the opinion to me that this epidemic had made him think seriously whether tonsillectomy was not being performed too indiscriminately. Few of the cases of lymphadenitis resulted in abscess formation.

We thought at first that the epidemic was a special type of influenza, the infection focusing itself upon the throat, as that of 1918–19 had upon the pulmonary organs. The tendency to relapse now that the true cause is known is easily explained, for no sooner did the unfortunate patient begin to make some recovery and was able to swallow again than fresh doses of the poison were administered to him in milky foods. Acute otitis media, the complication of all others which would have been expected to be most common, was noticeably rare, so also was pneumonia. Many patients, on the other hand, had arthritis, and others migratory pains about the joints, associated with further rise of the temperature chart. Haematuria was uncommon. On the other hand, albuminuria was the rule, and in some instances present in large degree, but no case to my knowledge had severe urinary complications or is going to be left with any permanent renal disease. There were cases of erysipelas, chiefly of the face, but also cellulitis of other regions—for example, one girl of 20 developed severe cellulitis of the foot and ankle, which went on to suppuration. There were at least three instances to my own knowledge of acute general peritonitis, two of which terminated fatally, the third being a child (whose father had been an early and fatal case of the epidemic) who, after operation, developed empyema, the pus of which grew streptococci in pure culture, and he appears likely to recover. One patient died of acute streptococcal septicaemia with a positive blood culture, and in others, in whom no blood culture was made, the clinical evidence pointed to the same conclusion.

As an example of the very unusual type of clinical case with which we were confronted I might specify a retired Anglo-Indian, whom I saw in consultation. Although in his eightieth year, he had a severe acute tonsillitis, with great enlargement of the lymphatic glands of the neck on both sides, both tonsillitis and lymphadenitis being relapsing in character. He subsequently developed acute arthritis of the left wrist and right shoulder, septic rashes in various regions of the body, and, after putting up a stout fight, died of cerebral symptoms and to all appearances a general streptococcal septicaemia. In many of the cases myocardial weakness has been manifest; but in one, and one only (although all the cases were carefully examined), have I met with endocarditis.

The outbreak has now been traced, without a shadow of doubt, to one farm which supplied milk to a large dairy in the town, such milk being infected with a haemolytic streptococcus. This source of milk supply has been cut off, we have no fresh cases, and (*pace* the lay press), there is no likelihood of any second wave of the epidemic. It is easy to be wise after the event; but unquestionably the throat lesions at such unusual ages, the fact that the epidemic was localized to Hove and a part of Brighton, and the relapsing nature of the cases as soon as their throats had recovered sufficiently for them to take nourishment by the mouth, might have given us clinicians the clue earlier. For example, the boy with general peritonitis and empyema, to whom reference has already been made, was, after his father's death, taken away to relatives in Surrey, came home three weeks later, and within three or four days was himself suffering from acute tonsillitis.

The immediate cause of death in the seven fatal cases I have seen was general peritonitis, general peritonitis part of a septicaemia, an intercurrent cerebral haemorrhage, erysipelas, pneumonia in an old man with known myocardial disease, septicaemia, and maniacal delirium probably associated with general blood infection.

By a strange mischance the milk involved was purveyed by a dairyman who is one of the pioneers in this country of pure milk supply, and has in the past saved many more lives than unfortunately have been destroyed in the present epidemic.—I am, etc.,

Hove, Jan. 11th. DONALD HALL.

THE CONDUCT OF NORMAL MIDWIFERY IN RELATION TO PUERPERAL SEPSIS.

SIR,—Dr. Eden[1] has invited an expression of opinion on what he called a fresh orientation of midwifery practice as suggested in the Aberdeen report. I believe that this might be accomplished with the advantage hoped for, but without such disadvantages as Dr. Eden suggests might accrue, if a modification of the programme of change were adopted.

The suggestion made as to the possibilities of droplet infection from the pharynx appears to be one of great importance, but the greater exposure to streptococcal infections incurred by doctors is not the most obvious factor of difference between doctors and midwives in their conduct of labour. The midwife has the cardinal virtue of patience, and she is not bothered for time. Circumstances weigh very heavily against the doctor in this respect; his day is too long and his obligations too many. There can be few doctors with whom the "time factor" has never counted in the conduct of maternity work against the individual patient's interest. This factor encourages the use of forceps and of pituitrin unnecessarily, and leads to the too hasty expression of the placenta.

A placenta lying in the vagina is not necessarily free of the uterus. While in this site it is a possible reflex source of uterine contraction, and its hasty and forcible dislodgement is accompanied by a good deal of descending stress, which brings the cervix to a temporarily *lowered* level in the vagina, with possibly greater risk of infection of the uterus. Furthermore, it subjects to yet greater strain the loosened uterine attachments, and favours the retention *in utero* of fragments of membranes, thus tending to both displacement and infection.

Were this all that is to be said about the matter normal midwifery might be transferred to the midwife wisely, but there is a serious objection to this course. The midwife is certainly far less capable of recognizing and of adequately dealing with lacerations of the genital tract. The question of protection from sepsis cannot fairly be

[1] *British Medical Journal*, July 20th, 1929, p. 81.

divorced from that of protection from prolapse in the allotment of normal midwifery, nor ought it to be overlooked that if the theory of throat infection is correct, the risk of introducing sepsis to the patient will hold some proportion to the number of throats and to the amount of exposure to such throats capable of infecting her. In hospital practice the number of throats, owing to change of duty, is likely to be the largest; in private practice less; and in the midwife's practice least of all. An unfortunate surgical experience of my own in which I had a strong suspicion that a haemolytic streptococcal peritonitis was the result of a droplet infection makes me the more ready to believe in the possible importance of throat infection in midwifery.

Certainly the suggestion for a fresh outlook requires consideration. It is common custom for the doctor to leave a case after the baby's birth has taken place, lacerations have been repaired, and the placenta expelled, coaxed, or frankly removed. This moment of leave-taking is *an arbitrary one, for it has not been shown* that post-partum haemorrhage is conspicuously greater in midwives' than in doctors' practice; nor is the patient free from this danger for some hours to come.

Might we not, then, change our midwifery habits advantageously on such lines as these:

1. That the doctor undertake the first and second stages of labour, and the investigation and repair of all genital lacerations.
2. That the patient, watched by the midwife, be allowed to deliver her own placenta without intervention of any sort, excepting for such an emergency as haemorrhage—but certainly not excepting the midwife's regard for an immediately tidy bed.
3. That the midwife be trained to give an anaesthetic mixture consisting of two parts of ether to one of chloroform, but be prohibited from undertaking such anaesthetizing except at the doctor's request.

Such a policy would result in a saving of time for the doctor, with less urge for the use of forceps and pituitrin, and much less placental interference. The value of some anaesthetic training for a midwife, who is frequently called on to hold a mask while the doctor washes up, is apparent, for more confidence in his anaesthetist would permit of more thorough preparation for the procedure to be undertaken.

If the theory of throat infection be correct the general use of some kind of adjustable mask will come to prevail, perhaps, but, be the theory true or false, such advantage as might accrue from the principles enunciated would remain uninfluenced.—I am, etc.,

G. H. ALABASTER, M.D., F.R.C.S.Ed.

Queenstown, Union of South Africa.

SIR,—The letter of Dr. A. Fraser Lee, in your issue of January 4th (p. 44), again draws attention to the attitude of officials, in both England and Scotland, towards maternal mortality. When Edinburgh's medical officer proclaims in the *Scotsman* that "sepsis, haemorrhage, and eclampsia can be justifiably classed as preventable conditions" he makes a statement which needs pointed contradiction. Most practitioners have enough anxieties in abnormal puerperal cases *without the added risk of being unjustly called to account for the loss of a woman's life.*

My own opinion is that some of the suggested means for reducing maternal mortality show a lack of proportion, and that they are premature. I am reminded of the parable of the foolish directors. A factory made dolls, and all went well until it was discovered that sometimes the dolls were not right. A few had squint eyes or twisted legs, and some even broke at a touch. So the directors looked into the matter. They inspected the factory one Saturday afternoon, but they found *nothing* to account for the trouble, so they called in an expert. This expert had never made dolls, but he knew mathematics. He had studied theories of probability and the integral calculus, and with these subtle tools he got to work. After ten years he found that dolls were damaged whether the employees ate their lunches in or out, or whether they drank tea or coffee. The number of the rooms in their houses made no difference, nor did intoxication, but there was a slight balance in favour of safety razors as against ordinary razors. After much work he at last discovered that the men (who did all the heavy work) damaged more dolls than the women. A directors' meeting was called. No one knew how the dolls were damaged, but they sacked all the men and lived happily ever afterwards.

However, to return, puerperal sepsis is much greater in the practice of doctors than of midwives. Now the infection must be particulate, whether as living organisms or otherwise. If a doctor has *Streptococcus haemolyticus* in his tonsils I do not see how he can infect a patient. Some honest professions need a preliminary spit on the palm, but not the medical. There must be some radical difference in the practice of doctors and nurses. Having scrutinized the matter, I note two vital points of difference: (1) nurses change their bag linings after every case and (2) nurses cleanse and change their outer garments weekly at least, and their aprons at every case. As to doctors, I regret to say that many of them do not even possess a bag with a removable lining, and that others change their linings in a most perfunctory manner. Moreover, the less said about doctors' (and men's) outer garments the better. Yet, how often do they appear at confinements in their shirt sleeves, with at best a mackintosh apron to protect their trousers! If there is any difference between the results of doctors and midwives, and any truth in our conception of infection, assuredly here is the reason.

So far as my own experience goes, the difference lies in training. One might put it that students are taught to clean their instruments, nurses their clothes. When I was at midwifery cases students were *supplied* with clean bags at each case, but used one apron (their own) throughout. Nurses, on the other hand, were *taught* to keep sterilized linings and fresh garments. So difficult is it to break custom that I was a year in practice before the absurdity of my own aseptic precautions became apparent. When I tried to clean up after a case of erysipelas I found my bag lining a fixture! In addition, I noted that I had been carrying round a collection of dirty cardboard boxes of pituitrin and adrenaline, a further danger.—I am, etc.,

Stone, Argyll, Jan. 13th. THOMAS ROBERTSON.

REVOCABLE STERILIZATION OF THE FEMALE.

SIR,—The letters of Dr. Hare (December 14th, 1929, p. 1134) and Dr. Fawcitt (January 4th, p. 45) on temporary sterilization by a Gräfenberg silver ring, raise points which need emphasis, in view of the possibility that the method may become widely used in this country.

I have just returned from a visit to Dr. Gräfenberg in Berlin, undertaken on behalf of the Birth Control Investigation Committee. I was impressed by the care with which he selects his cases, and by the fact that his results, so far, have been very satisfactory. He only uses his method on parous women with healthy uteri who are prepared to remain under proper gynaecological supervision. He regards the presence of any degree of uterine or cervical sepsis as an absolute contraindication to insertion of a ring. He has found also that a uterus containing a ring is very liable to rapid and acute involvement in any local infection, such as gonorrhoea, which is acquired after a ring has been inserted. He therefore frequently warns patients about this danger, and impresses on them the importance of the immediate removal of the ring in such circumstances.—I am, etc.,

London, W.1, Jan. 12th. HELENA WRIGHT M.B., B.S.

SIR,—In your issue of January 4th (p. 45) Dr. Richard Fawcitt describes a patient whom he saw suffering from fever and uterine discharge three weeks after the insertion of a Gräfenberg silver ring. Such a condition may be avoided if the following precautions are observed:

1. The ring should not be inserted if the uterus is not healthy.
2. Strict asepsis should be observed during introduction.
3. The patient's temperature should be taken on the three days after the insertion of the ring. The patient should be warned that rise of temperature, pain, or discharge is a sign of something wrong, and that if any of these occurs she should *at once* consult the practitioner who introduced the ring, or, if she cannot reach him, some other practitioner.
4. On examination, if any sign of infection is found to have developed since the introduction of the ring, the latter should be removed.

It must be remembered that pelvic disturbances which occur subsequent to the introduction of the ring are not necessarily caused by the ring. They may be due to infection with the gonococcus or with some other pathogenic organism at a later date.

If I may draw an analogy, a good splint properly applied in a suitable case is very useful. If the practitioner uses a splint unsuitably or applies it badly, or neglects to warn the patient that numbness, swelling, blueness of the limb, etc., are danger signs, or if the patient disregards such danger signs for some time, the splint may eventually cause ulceration or gangrene. But in such a case we do not condemn splints *per se*, but merely blame the particular doctor or patient in question. So it is, I suggest, with the Gräfenberg ring. Of course, if further experience leads to the conclusion that the risk of such complications is too great to compensate for the advantages of the method it must be abandoned. An accurate judgement can only be formed when a considerable number of cases have been observed over a sufficiently long period.—I am, etc.,

London, W.1, Jan. 9th. NORMAN HAIRE.

PSITTACOSIS.

SIR,—An investigation on psittacosis is at present being carried out at the London Hospital, and I should be grateful if any doctor who has had to deal recently with a case of the disease would communicate with me. I should also be glad if any parrot suspected of conveying the disease could be sent to Dr. Western, Bacteriological Department, London Hospital, E.1.—I am, etc.,

32, Devonshire Place, W.1, Jan. 14th. ROBERT HUTCHISON.

THE CLAIM OF MEDICAL CHARITIES.

SIR,—About a year ago you allowed me to contribute to your columns a plea that those members of the medical profession who are without dependants, or have more than sufficient to provide for their dependants, should be urged, when disposing of their property by will, to consider the claims of the two great professional charities—the Royal Medical Foundation of Epsom College and the Royal Medical Benevolent Fund.

From certain private correspondence which ensued, I have reason to believe that this plea may in time bear some fruit; but it has by no means gained sufficient acceptance, to my mind, and I ask your permission to reiterate it. Only last week the press contained particulars of the will of a doctor of medicine who left over £100,000 for distribution between ten charities: had he added the two I have mentioned to the list, he would have solved many difficulties for their councils, which are seriously hampered for lack of funds. Another member of our profession left £10,000 last year to charity—half to a hospital and half to the Lifeboat Institution, if I remember rightly. Yet another left a large sum, about £50,000, I believe, to an educational foundation in the North.

There are few of us who can ever hope to distribute money to charity on this scale. But those few can do so much for their professional colleagues, through the two great medical charities, that they may surely be urged to recognize a duty in this matter superior to other claims, even when the latter include such excellent institutions as hospitals, universities, and lifeboats.—I am, etc.,

London, S.W., Jan. 12th. HENRY ROBINSON.

The Services.

DEATHS IN THE SERVICES.

Surgeon Commander Eustace Arkwright, R.N. (ret.), died at Roxdene, Hamilton, Bermuda, on December 9th, 1929. He was the son of the late Charles Arkwright of Ashlands, Lincoln, and was educated at Edinburgh, where he graduated as M.B. and C.M. in 1896, after which he entered the navy as surgeon, attained the rank of surgeon commander on May 25th, 1913, and retired after the war. He served through the war of 1914–18.

Lieut.-Colonel John Hoysted, R.A.M.C. (ret.), died on November 5th, 1929, a few days before his eighty-first birthday. He was born in County Kildare on November 8th, 1848, and was educated at the Ledwich School, Dublin, taking the L.R.C.S.I. and L.K.Q.C.P. in 1870. Entering the R.A.M.C. as surgeon on September 30th, 1874, he attained the rank of surgeon lieutenant-colonel after twenty years' service, and retired on January 16th, 1895. After retirement he was employed for some time at Norwich. He served in the Perak expedition of 1875–76 (medal with clasp), in the Afghan war of 1878–80 (medal), and in the Sudan campaign of 1885 at Suakin (medal with clasp and Khedive's bronze star).

The issue of the *West African Medical Staff List*, dated November, 1929, shows a total strength of 239 officers, an increase of 6 on the establishment during the past twelve months. The number of senior specialist and research appointments is 82. The names of 14 women medical officers are contained in supplementary lists.

Universities and Colleges.

UNIVERSITY OF LONDON.

A COURSE of four lectures on the physiology of posture and movement will be given by Dr. Samson Wright at King's College, Strand, W.C.2, on Tuesdays, January 21st and 28th, February 4th and 11th, at 5 p.m. Admission to the lectures is free without ticket.

The following have been recognized as teachers of the University in the subjects indicated and assigned to the Faculty of Medicine:

London (Royal Free Hospital) School of Medicine for Women: Dr. Harold G. Hill (medicine) and Miss Ida Caroline Mann (ophthalmology).

London School of Hygiene and Tropical Medicine.—Miss Hilda M. Woods (epidemiology and vital statistics), Dr. Walter R. Wooldridge (biochemistry), Lieut.-Colonel George S. Parkinson (public health and preventive medicine), Mr. Guy T. P. Tatham (hygiene), and Mr. Guy P. Crowden (physiology).

St. Thomas's Hospital.—Dr. Henry Yellowlees (psychological medicine) and Mr. R. H. O. Botham Robinson (surgery and anatomy).

St. George's Hospital Medical School.—Dr. John F. Taylor (pathology).

A University readership in anatomy is to be instituted at King's College in accordance with the regulations on University titles.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examination indicated:

D.P.H.—I. S. Jones, J. C. McFarland, E. Miles.

UNIVERSITY OF GLASGOW.

Harry Stewart Hutchison Prize.

THE University of Glasgow announces in our advertisement columns that the Harry Stewart Hutchison prize, of the value of about £50, will be awarded in 1931 for the best writing or writings embodying original research work in a branch of medical science relating to children. Graduates of not more than ten years' standing from first graduation of all British, home, and colonial universities may be competitors. Compositions must be submitted to the clerk of the Senate, University of Glasgow, by March 31st, 1931. Each must be distinguished by two mottoes, and accompanied by a sealed letter bearing on the outside the same mottoes, and containing a declaration subscribed by the author that the composition is entirely his own.

NATIONAL UNIVERSITY OF IRELAND.

THE following medical degrees were conferred on January 11th:

M.D.—W. H. Ashmore, M. R. Brady, T. E. Pierse.

M.B., B.Ch., B.A.O.—L. K. Malley, P. J. Campbell, J. Coffey, P. H. Curran, T. N. Fogarty, T. G. Hynes, Margaret M. Maguire, K. C. Mallen, J. R. O'Donnell, T. G. O'Donnell, Una M. M. O'Mara, J. G. O'Reilly, H. C. O'Rourke, M. C. H. Purcell, J. J. Sheridan, H. P. Teevan.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council meeting of the Royal College of Surgeons was held on January 9th, when the President, Lord Moynihan, was in the chair.

Diplomas of Membership were granted to Rose E. Chamings, B. S. Cornell, A. N. Duggal, A. H. Gurney, and H. P. Nelson. Diplomas were granted jointly with the Royal College of Physicians to eleven candidates in psychological medicine and to eighteen candidates in laryngology and otology.

A report was read from the Board of Examiners in Anatomy and Physiology for the Fellowship, stating that at the examination held in December, 1929, 155 candidates were examined, of whom 49 were approved and 106 rejected. The Hallett Prize was awarded to Hedley John Barnard Atkins, of the University of Oxford and Guy's Hospital Medical School.

Mr. R. H. Burne, the physiological curator, was appointed acting conservator during Sir Arthur Keith's absence on his visit to Egypt. Mr. T. B. Layton was appointed to give one Arnott demonstration on the Onodi collection, illustrating the anatomy and pathology of the nasal and accessory nasal cavities, and Sir Frank Colyer was appointed to give two Arnott demonstrations, the three demonstrations to be given in March.

A report was received from the [illegible] of Management submitting regulations for a Diplo[illegible] Obstetrics, to be granted by the two Royal Colleges. Thanks of the Council were given to members of the Committee of Management for their report and to the gynaecologists and obstetricians who assisted them in drawing up the report.

Obituary.

JAMES HOGG MARTIN, M.D., F.R.F.P.S.G.,

Professor of Midwifery and Gynaecology, Anderson College, Glasgow; Obstetrical Surgeon to the Royal Maternity Hospital and the Glasgow District Hospitals.

WITH deep regret we have to record the death, on December 31st, 1929, of Professor J. H. Martin. We are indebted to a colleague for the following memoir.

Within the last year or two the medical profession in Glasgow has suffered severely by the passing of a number of able men: the most recent loss has made a grievous breach in its ranks.

Martin was in many ways a somewhat remarkable man, and it may be permitted to one who knew him well over a long period of years, and who held him in high esteem, to try to give a short outline of his life and work. He was one of a large family of boys and girls; his elder brother and his next younger brother were Glasgow High School boys, but, unlike him, they went direct from school to college, graduating in medicine with distinction. James, however, went into business for some years after leaving school, but his heart was elsewhere; accordingly, when already 30 years of age, he became a student of medicine at Glasgow, and graduated M.B., Ch.B., with commendation, in 1897, preceding M.D. three years later.



Even during his student days he began to take part in the teaching of students, acting for two years as a student demonstrator in anatomy under the late Professor Cleland. After graduation he held the appointments of house-surgeon and house-physician in the Western Infirmary, Glasgow, and thereafter, for two years, he acted as clinical assistant to Dr. William MacLennan. He continued to add to his surgical knowledge by dispensary work, and by association for some years with the writer, as his private assistant.

Martin's inclination, however, was from the first very definitely towards the study and practice of midwifery and gynaecology, and he shaped his course accordingly. As an undergraduate, he had distinguished himself in the class of midwifery taught by the late Dr. John Edgar, gaining the class medal in midwifery and the first prize in gynaecology. A year or two after graduation he became house-surgeon at the Royal Maternity Hospital, Glasgow; later he became one of the assistants, and was eventually elected a visiting surgeon. This office he held up to the time of his fatal illness. He had taken occasion, earlier, to widen his outlook and extend his knowledge of obstetrics at the Rotunda Hospital, Dublin, and at the Jessop Hospital for Women, Sheffield. In 1912 he was appointed gynaecologist to the out-patient department of the Western Infirmary, Glasgow, and he carried on the work there from that year almost to the end, dealing with large numbers of patients and taking an active part in the instruction of students, also occasionally acting in the wards of the Infirmary. He particularly prided himself on the pioneer part he took in the establishment of ante-natal teaching. He was chiefly responsible for the establishment and carrying on for a good many years of the work of the ante-natal dispensary of the Royal Maternity Hospital. During the last ten years of his life he was the sole obstetric surgeon to the three district hospitals under the Glasgow Parish Council.

Martin lived a very full and busy life, for the demands of his several hospital appointments were onerous and severe. He found time, nevertheless, all through his career to devote a great deal of energy to the active teaching both of students and of nurses. He conducted the class of midwifery at St. Mungo's College, Glasgow, for two years during the illness of Professor Jardine, and from 1922, when he was appointed professor of midwifery and gynaecology at the Anderson College of Medicine, Glasgow, he continued with great success to give instruction to large numbers of students. His courses at the Anderson College were recognized for graduation purposes by the University of Glasgow, as well as by the Royal Faculty of Physicians and Surgeons. Clinical obstetrics he taught to large numbers of students at the Royal Maternity Hospital, and he also took part in post-graduate teaching. As a senior member of the latter hospital, he was one of those concerned in helping to bring into actual working the recent changes in the curriculum of final year students, whereby the academic year is now divided into three separate terms for intensive training, and he willingly gave what aid he could to make the new arrangements a success. That he was a good teacher, and that the general lines he followed were sound is well known; his teaching was simple, more or less dogmatic, and without frills, but it was thoughtful, and much of it was supported by observations from his own experience. As a clinical teacher he particularly excelled, for he was able to turn to account his large and carefully digested clinical experience.

In the course of such a busy life as his not much time remained for writing, and his contributions to the literature of his subject were in consequence not many in number, but, such as they were, they were of good quality. The thesis for his M.D. degree in 1910, on treatment of the excessive vomiting of pregnancy, was published in the *British Medical Journal*. Probably, however, his most valuable contribution was the paper he read before the Royal Medico-Chirurgical Society of Glasgow in 1921, entitled "Fifty consecutive Caesarean operations, without fatality." In this he described certain original modifications in the actual technique of the operation and in the immediate after-treatment, the most important feature of the after-treatment being the adoption from the first of the sitting-up posture. This paper received favourable comment in British and American journals. Martin was an obstetrician *par excellence*. In a difficult midwifery case he could be trusted always, and for a number of years he had been generally recognized as one of the soundest and most reliable of obstetricians in Glasgow.

In spite of the heavy demands on his time and energy, Martin took a deep interest in the work of several local medical societies, and for many years he held the office of treasurer, both to the Royal Medico-Chirurgical Society of Glasgow and to the Northern Medical Society. For years, too, he was treasurer of the Western Infirmary Residents' Club. His presentation of the balance sheet at the annual dinner of this club was always something of an event, and to him a considerable measure of the credit belongs for the promotion and collection of the fund which enabled the club to erect, within the new Infirmary chapel, its war memorial to former residents. His earlier business training made the work of treasurer no doubt come more easily to him than it would to many, but it must have added not a little to his labours.

To many of us Martin will live in memory as a loyal friend, who never spared himself any trouble, if thereby he might lighten the burden of those for whom he cared. Beginning his professional career late in life, he had a somewhat hard struggle in the earlier years, and only his dogged persistence enabled him to win through. But win through he did, and when his fatal illness struck him down he had made for himself a notable place in the professional life and activity of Glasgow. He will be greatly missed and sincerely mourned. With his widow, who did so much to encourage him during his earlier struggles and who was his stay and comfort during his long illness, deep sympathy is felt.

HUGH FALCONER OLDHAM, M.A., M.D.,

Morecambe.

We announce with much regret the death, on January 5th, of Dr. H. F. Oldham of Morecambe, one of the most prominent citizens in the Lancashire town in which he had lived and practised for nearly forty years, and known to a much wider circle for his services as a member of the Insurance Acts Committee and in other capacities on behalf of insurance practitioners.

Hugh Falconer Oldham was born in 1853 in India, where his father, Professor Thomas Oldham, was director-general of the geological survey. He was educated at Rugby, and later went to Trinity College, Dublin, graduating M.B., B.Ch. there in 1883, and M.D. in 1886. After holding some resident appointments at Liverpool and Manchester, he settled down in general practice in the North Lancashire seaside resort in 1890.

From the inception of the national health insurance scheme Dr. Oldham took a great interest in the administration of the insurance medical service. From 1912 until 1928, when he retired, he occupied the chair of the Lancashire County Local Medical and Panel Committees, a record of length of service which cannot have many rivals, although London also furnishes another example of continuing chairmanship. Dr. Oldham was a member of the Insurance Committee of his county, and served on its various subcommittees. For many years he was the authentic spokesman of the insurance practitioners of Lancashire and of the North of England, and no better man could have been found. On the occasion of a presentation made to him on his retirement from the chairmanship of the Panel Committee the language used in the address was much more than conventional eulogy: "We appreciate your untiring energy and zeal in upholding the rights and furthering the interests of panel practitioners, your wise counsels and guidance in matters of difficulty, your unfailing patience and courtesy, and the vast amount of time and personal sacrifice which your devotion to our interests must have involved."

Dr. Oldham did not confine his interests to the County Palatine. For many years he was a valued member of the Insurance Acts Committee and a leading figure at successive Panel Conferences. The Conference of 1928 was the first from which he was absent for many years—he was even then in failing health—and almost the first business of the Conference was to send him an affectionate message. In the central debates and negotiations he was always listened to with respect. He was not a frequent or a fluent speaker, but he was always alert and well informed, as well as courteous and tolerant. He was one of those men who loved this kind of work, and the more involved and complicated it became the more joy he found in it.

In the affairs of his own town Dr. Oldham interested himself on many sides. For a time he served on the local municipal council, and for a longer period on the Education Committee. On his settlement in Morecambe he was the prime mover in founding a local corps of the ambulance brigade, with which he was for many years connected as divisional surgeon. For his services in this connexion he was made a Knight of Grace of the Order of St. John of Jerusalem. He also founded, more than twenty years ago, a branch of the District Nursing Association. During the war he was responsible for the establishment and maintenance of an auxiliary hospital at Morecambe, where much good service was done on behalf of wounded soldiers. Another war-time activity of his was the organization of a local milk supply for the poor. Other activities were connected with the organization of the Morecambe Musical Festival. He was also a devoted worker at the parish church, and for many years a warden.

Dr. Oldham leaves a widow and one son, who is following his father's profession. The funeral, which took place on January 8th, showed in what high regard Dr. Oldham was held by his fellow townspeople, his colleagues in the profession, and those who had been brought into touch with him in local and central affairs.

DR. FREDERICK NICHOLAS HEYGATE, who died on January 1st, was born in 1852, and received his medical education at St. Thomas's Hospital. He obtained the diplomas M.R.C.S.Eng. and L.S.A. in 1880. After practising for thirteen years in Wellingborough he moved to Sussex thirty-five years ago, and built up a large practice in the neighbourhood of Horsham. He was a keen member of the British Medical Association, and a most regular attendant at Divisional meetings. In addition to being a popular practitioner in a large country area, he was a well-known sportsman in the county and a J.P.

Medico-Legal.

DEATH FROM HYDROCYANIC ACID GAS POISONING.

ON January 6th Dr. F. J. Waldo, City coroner, held an inquiry into the death of a chemical laboratory assistant, aged 17, who, in the course of his duties, had accidentally inhaled fumes of hydrocyanic acid. The deceased, it was stated, was overcome while cleaning out a tank containing a deposit of silver cyanide, and though he received prompt attention, and every possible means of saving his life was tried, he died in hospital. The coroner said that the case was the first of its kind within his experience. Cases of suicide by means of hydrocyanic acid taken in liquid form were common, but in none of the works dealing with medico-legal matters which he had consulted could he find any reference to death by inhalation of hydrocyanic acid. Mr. Arthur William Scott, a metallurgical chemist, explained that the sludge in the tank consisted of nitrate of silver and sodium cyanide, which produced silver cyanide and sodium nitrate, both innocuous chemical substances. In cleaning out the tank the deceased would have stirred pure water into the solution, and at the time he was overcome he would have had only a little more stirring to do. Mr. Scott suggested that the hydrocyanic acid gas was lying in a concentrated form in the sludge, and that it escaped when the sludge was stirred. The deceased had probably not stirred the solution far enough, and the sludge, therefore, had not mixed with the water as it should have done. Sir Bernard Spilsbury, who performed the post-mortem examination, said that the lips and finger-nails of the deceased were livid, and the heart was slightly enlarged, with all its cavities dilated. The heart muscle was pale, and the muscle cells, on microscopic examination, showed a trace of fatty degeneration; the mitral valve was slightly thickened. The air passages were deeply congested, and contained a frothy fluid; the lungs were large, heavy, congested, and oedematous. The lungs and the air passages smelt of, and gave a positive reaction to the chemical test for, hydrocyanic acid. Otherwise the organs were those of a healthy youth of 17. Sir Bernard Spilsbury added that one of the lungs was being retained for analysis to discover how much gas had been absorbed. The cause of death was coma due to poisoning from hydrocyanic acid gas. Probably no other case of such poisoning had occurred in the last hundred years. A verdict of death by misadventure was returned.

Medical News.

THE second half of the 157th session (1929–30) of the Medical Society of London opened on Monday last with a pathological evening. At the meeting on January 27th Professor D. P. D. Wilkie will introduce a discussion on the etiology of gall-bladder infections. On February 10th a discussion on the surgical treatment of pulmonary tuberculosis will be opened by Dr. Maurer of Davos and Mr. Morriston Davies. The Lettsomian Lectures, on enlarged prostate and prostatectomy, will be delivered by Sir J. W. Thomson-Walker, on February 17th and 26th, and March 5th. A discussion on the treatment of syphilis will be opened by Colonel L. W. Harrison on February 24th. Dr. J. W. McNee will open a discussion on cardiac infarction at the meeting on March 10th, and on March 24th there will be a discussion on coliform infections of the genito-urinary tract, introduced by Sir Thomas Horder and Mr. Kenneth Walker. The anniversary dinner of the society will be held at the Hotel Cecil on March 6th. The annual general meeting of the society, at 8 p.m. on May 12th, will be followed by the annual oration, to be delivered by Sir Arthur Keith, on modern medicine and evolution, after which a conversazione will be held.

AT the meeting of the London Clinical Society, on Tuesday, January 28th, Dr. Arthur Hurst and Mr. H. S. Souttar will open a discussion on the treatment of gastric ulcer. The meeting is at 8.45 p.m. at the London Temperance Hospital, Hampstead Road. All medical practitioners are cordially invited.

IT is announced in the *St. Bartholomew's Hospital Journal* that Professor Joseph Barcroft, F.R.S., will deliver the mid-sessional address before the Abernethian Society on Thursday, February 6th, at 8.30 p.m. For title he has taken "La fixité du milieu intérieur est la condition de la vie."

A MEMORIAL plaque to the late Sir William Glyn-Jones, in the examination hall of the Pharmaceutical Society of Great Britain, 17, Bloomsbury Square, W.C.1, will be unveiled by the Right Hon. Christopher Addison, M.P., M.D., on Wednesday, February 5th, at 3 p.m.

THE sixteenth annual conference of the National Association for the Prevention of Tuberculosis will be held at the British Medical Association House, Tavistock Square, W.C., on July 3rd, 4th, and 5th.

THE Royal Institution (21, Albemarle Street, W.1) has now issued its programme of lectures to be given before Easter, 1930. Among the Friday discourses we note one by Professor Leonard Hill, on February 7th, on "Diving," and another on March 14th by Professor Elliot Smith entitled "New light on vision." A course of four lectures on "The passage from mediaeval to modern science" will be given by Dr. Charles Singer at 5.15 p.m. on March 11th, 18th, 25th, and April 1st; and Dr. H. A. Harris will give two lectures entitled "The Growth of children in health and disease" on January 23rd and 30th. During the reconstruction of the lecture theatre discourses and afternoon lectures will be given in the newspaper room on the ground floor. Owing to the limited accommodation special numbered tickets will be issued.

THE Fellowship of Medicine begins a new series of lectures on Tuesday, January 21st, when Mr. Geoffrey Keynes will speak on the present position of radium treatment of carcinoma; the lectures will be given at the Medical Society of London, 11, Cavendish Square, W.1, on successive Tuesdays at 4 p.m. On January 23rd, at 11 a.m., Mr. V. Zachary Cope will give a clinical demonstration at St. Mary's Hospital, and on January 24th, at 6 p.m., Dr. W. B. Winton will give a clinical demonstration at the Hospital for Diseases of the Skin, Blackfriars Road, S.E.1. No fee is charged for these lectures and demonstrations. One week remains of the special course in diseases of children at the Queen's Hospital; instruction is given throughout the day in all departments. From January 27th to February 8th an intensive course in medicine, surgery, and the specialties will take place at the North-East London Post-Graduate College (Prince of Wales's Hospital), Tottenham, N.15; the daily sessions are from 10.30 a.m. to 5.30 p.m., and members of the Fellowship of Medicine are invited to the formal lectures at 4.30 p.m. Special courses in February include: psychological medicine at the Bethlem Royal Hospital on Tuesdays and Saturdays at 11 a.m., February 4th to March 1st; gynaecology at the Chelsea Hospital, mornings and/or afternoons, February 10th to 22nd; tropical medicine at the Hospital for Tropical Diseases on Tuesdays and Thursdays at 2 p.m., February 11th to March 6th; dermatology, St. John's Hospital, every afternoon and evening, February 17th to March 15th; copies of the *Post-Graduate Medical Journal* and of all syllabuses, and information regarding the general course of work at the associated hospitals, may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A COURSE of post-graduate lectures and demonstrations at Ancoats Hospital, Manchester, will commence on Thursday, February 27th, when Mr. E. E. Hughes will discuss renal tuberculosis. The course will be continued on succeeding Thursdays till April 10th, when Mr. Harry Platt will lecture on injuries to the spine. The lectures, which are free to all medical graduates and senior students, will take place at 4.15 p.m., and tea will be served at 3.45 p.m. In addition to this course a post-graduate day of clinical teaching by the honorary staff commenced on January 16th and will be continued each Thursday during the Lent term.

PROFESSOR R. J. A. BERRY, who recently resigned the deanship of the Faculty of Medicine and the chair of anatomy in the University of Melbourne, has been appointed medical director, Stoke Park Colony, Stapleton, Bristol. Professor Berry has held many clinical appointments in Melbourne dealing with mental deficiency, and is regarded in Australia as one of its leading authorities on this subject.

THE Secretary of State for Home Affairs has issued an Order making Section 107 (relating to lists of outworkers) and Section 108 (relating to employment in unwholesome premises) of the Factory and Workshop Act, 1901, applicable to the manufacture of lampshades other than those made wholly of metal, glass, or stone.

THE Académie des Sciences has recently awarded the following prizes to well-known French medical men: Prix Montyon, three prizes of 2,500 francs to Dr. Gaston Cotte and Professor F. Rathery of Paris, and Drs. David and Jean Olmer of Marseilles; Prix Barbier of 2,000 francs to Professor P. Merklen and Dr. Wolf of Strasbourg; Prix Bréant of 3,000 francs to Dr. Marcel Léger, formerly director of the Institut Pasteur at Dakar, and of 2,000 francs to Professor Pierre Lereboullet and Dr. G. Boulanger-Petit of Paris; Prix Argut of 1,200 francs to Dr. Leroux-Robert, head of the department of oto-rhino-laryngological physiotherapy at the Hôpital St. Louis, Paris.

THE recently published first number of the thirty-fourth volume of *Strahlentherapie* is dedicated to the memory of Niels Finsen, on the occasion of the twenty-fifth anniversary of his death.

UNDER the title of *Sale of Food and Drugs Acts*, a pamphlet has been issued by H.M. Stationery Office, at the price of 1s. 6d. net, containing extracts from the annual report of the Ministry of Health for 1928-29, relating to this subject, together with an abstract of reports of public analysts for the year 1928. The Ministry's report from which these abstracts are taken was noticed in our issue of August 24th (p. 355).

THE offices of the Federation of the Health Resorts of France are now at Tavistock House (North), Tavistock Square, W.C.1.

THE Late Dr. William Robert Ashurst of Farningham, Kent, who died on November 11th, 1929, left estate of the value of £144,266 with net personalty £133,451. After payment of certain legacies he has bequeathed one-tenth of the residue of the property to each of the following institutions: The London Lock Hospital, the Free Homes for the Dying, Clapham Common, the British Hospital and Home for Incurables, Streatham, the Middlesex Hospital, Charing Cross Hospital, and St. Mary's Hospital, Paddington.

THE tenth Belgian congress of neuropsychiatry will be held at Liége, under the presidency of Professor X. Francotte, on July 26th and 27th, when the subjects for discussion will be: (1) angioneuroses, introduced by Divry and Moreau; and (2) congenital disturbances of speech, introduced by J. Ley. Further information can be obtained from the general secretary, Dr. Leroy, Rue Héricourt 40, Liége.

Letters, Notes, and Answers.

All *communications* in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9361, 9362, 9363,* and *9364* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

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MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh)

QUERIES AND ANSWERS.

POST-MENSTRUAL PAIN.

"V. J." asks for suggestions as to the cause and treatment of a severe pain which immediately follows the cessation of the menstrual flow in a virgin; she has no pain before or during the flow.

THE ETERNAL COLD QUESTION.

"H. H." writes: I am 54 years old, and during the last twenty years I have, without exception, suffered every winter from colds. I commence invariably in November, and continue with a succession of colds until the end of March. I have tried, without any success, an operation on the septum; innumerable vaccine inoculations; nasal douches, sprays, and snuffs; sun baths; Turkish baths; quinine tablets; iron and tonics; and emulsions. I am obliged to be most particular about changing on the slightest suspicion of dampness, and have been compelled to give up night work during the winter months, since it invariably brings on a relapse. I always avoid going out on wet days, if at all possible; in every other respect I am sound and healthy. I should be deeply grateful for any assistance, and any suggestion would be more than welcome, however much trouble the treatment might involve.

TREATMENT OF PRURITUS VULVAE.

DR. CHRISTOPHER KEMPSTER (London, W.1) writes: In reply to "R. S.'s" inquiry under the above heading (January 4th, p. 54), I would suggest giving small doses of unfiltered x rays. I have treated many obstinate cases by this means, with excellent result. Some cases clear up with the first application.

"J. R. R." writes: In the past twenty years I have treated many patients with this condition by means of x rays of medium penetration, administering about four-fifths of the full dose through a 0.2 mm. aluminium filter, at intervals of three weeks for several doses. The treatment cures many patients, and produces great improvement in most. I have never seen any ill effects from it.

INCOME TAX.

Private Use of Car.

"W. S. G." uses his car occasionally for private purposes, and consequently has been allowed only six-sevenths of the running costs. He has now replaced his car, and the inspector of taxes now objects to allowing him more than three-fourths of the cost of replacement. Is this correct?

*** If a car is used partially for private purposes it is a fact that the whole of the cost cannot be allowed, but it is, of course, a difficult matter to decide what is a reasonable percentage to exclude from the income tax statement. Mileage is probably the best basis, but it is seldom available for reference, as few (if any) practitioners find it worth while to keep the necessary records. Probably "W. S. G." will find it impossible to get away from the six-sevenths basis, but he seems to have good grounds for contending that the replacement cost should be dealt with on the same footing, and six-sevenths, not three-quarters, allowed.

Sale of Practice.

"O. B. E." sold his practice as from June 30th, 1929. His successor purchased the "collector's book debts," but the other debts are being paid to "O. B. E." direct. How should his liability be calculated?

*** We assume that our correspondent has in the past accounted for his liability on the "cash basis," and that there are no special reasons which suggest that that basis was unfair to the Revenue. On that assumption it is clear that "O. B. E." is not liable to assessment on the debts collected after he sold the practice, because they represent earnings of years for which he has accounted for his income tax liability. His liability to assessment, therefore, for the period April 5th to June 30th, when he sold the practice, is the tax due on the amount of the earnings of the practice for that actual period; further, the Revenue is entitled to revise the assessment for the year to April, 1929, substituting for the amount of the assessment the amount of the profits of the practice of that year.

LETTERS, NOTES, ETC.

RADIOTHERAPY IN SKIN DISEASES.

DR. C. H. C. DALTON (Ipswich) writes: I feel that I cannot allow the remarks of Dr. Harvey on the above subject (December 28th, 1929, p. 1202) to pass without comment. A *little time ago* I was asked to treat a man who was suffering from a severe attack of herpes zoster of seven weeks' duration. The distribution of the lesions was considerable, and pain was more severe at this time than it had been previously. Second stage erythema doses were given to the areas of the lesions with the mercury vapour lamp, and considerable relief was experienced, even after the first application. After six exposures, spread over a period of a fortnight, the patient was almost completely relieved of his pain. In my opinion this form of treatment gives great relief in severe cases of herpes zoster.

REVOCABLE STERILIZATION OF THE FEMALE.

DR. BINNIE DUNLOP (London, S.W.), in the course of a letter on the above subject, writes: It would seem that in Gräfenberg's ring (*British Medical Journal*, December 14th, 1929, p. 1134) we have at last a contraceptive so perfect as to provide a solution even for the problem of high-grade mentally deficient girls, unless it is objected that sterilization which is revocable is not to be advised in their case. I hope that many gynaecologists will now begin to test Gräfenberg's method, and that the ring and the inserting probe will soon be made in England.

THE INCIDENCE OF CANCER.

MR. ERIC YULE, F.R.C.S. (Nuneaton), writes with reference to the preliminary note on an investigation into the incidence, epidemiology, and ecology of cancer in Westmorland, which appeared in the *Journal* of December 7th, 1929 (p. 1062). He recalls that a rather similar investigation was made by a committee appointed in March, 1898, by the Birmingham and Midland Counties Branch, a report being published in the *Birmingham Medical Review*, May to July, 1900. The chairman of the committee was Dr. R. M. Simon, and the honorary secretary Dr. E. N. Nason of Nuneaton. Mr. Yule calls attention to the fact that many of the conclusions then reached are in accord with the opinions expressed by the Westmorland Field Commission. Cancer was found to occur more frequently in old than in new houses and districts, and some indication was forthcoming of its possible transmissibility from one person to another; there was abundant evidence of the existence of groups of houses in which cancer was found with marked frequency, second and third cases appearing in the same house more often than could be explained by coincidence. A damp, ill-drained, waterlogged soil was said to be more frequently associated with a high cancer death rate than a dry, well-drained one, and prolonged contamination of the soil with decomposing organic matter was suggested as a factor in the production of the high cancer death rate.

DIPLOMAS IN OBSTETRICS.

DR. E. R. SMITHARD (London, N.15) writes: You have of late been giving us information about the new British College of Obstetricians and Gynaecologists, and in the *Journal* of December 21st, 1929 (p. 1173), you quote the president, Professor Blair Bell, as saying "soon the council hoped to discuss . . . the granting of a diploma in obstetrics and gynaecology." Surely the time has now come for a word of protest at this incessant multiplication of diplomas and qualifications in the realm of medicine. What is the object of the diploma? Is it merely to serve, like the D.P.H., D.P.M., D.L.O., etc., as a mark of proficiency in a specialty, or is it the thin end of the wedge in bringing about a triple qualification instead of the conjoint of the two older Colleges? If the former, it seems unnecessary, since we gather (from Professor Blair Bell's address) that the membership of the College will be open to the specialists in obstetrics and gynaecology as well as to the quasi-specialists in maternity work in the public health services; if the latter, surely it is again unnecessary, as being already provided for. What is the object of making a triple conjoint lettering instead of the present double one? We appear to be aping the engineers in the incredible length of the abbreviations after our names. And, further, if we are going to separate midwifery and gynaecology from general medicine and surgery, then why stop there? Why not a college of laryngologists, or a college of proctologists, each with its own qualifying examination and diploma; each with its grand council, fellows, members, and "general expenses of not less than £100,000"? *Do let us try to preserve proportion.* It is said that the College will be useful, *inter alia*, to stimulate research into *such questions as maternal morbidity.* But just because there is at the moment a parrot-cry of "3,000 mothers' lives wasted every year," that in itself is surely no reason why the medical profession, through membership and diploma fees, should be fleeced to the extent of £100,000. Besides this, the College, as an entity, is superfluous. There are obviously very few advances to be made in obstetrics, while gynaecology is a mere and minor branch of surgery; and, anyhow, there is ample research work going on at the present time for the 3,000 mothers *without the aid of the new College.*

AUTOMATIC MACHINES FOR THE SALE OF DRUGS.

THE president of the Pharmaceutical Society of Great Britain (Mr. L. Moreton Parry) has uttered an important warning in the name of his council on the dangers of automatic machines for the sale of drugs. He deplores the use of such contrivances, which has recently been on the increase, for the reason that when poisons or potent drugs are sold in this way none of the safeguards contemplated by pharmacy legislation can be observed. The restrictions involved in such legislation were imposed to ensure the presence of someone able to give advice to a purchaser as to how a substance was to be used, to give warning when special care was necessary, and also to refuse the supply of substances when they did not appear to be needed for a proper purpose, or when the purchaser was not *a safe person to be trusted with them.* With an automatic delivery machine there is nothing to prevent a child obtaining poisons *such as potassium permanganate*, or potent drugs such as aspirin, nor is there any guarantee against mistakes, such as taking packets from the wrong section. Mr. Parry begs members of his society to refuse to install automatic machines for this purpose on their premises, and we feel sure that his timely warning will be endorsed by the medical profession.

CORRIGENDA.

THE National Radium Commission requests us to correct two statements which appeared in our article on "The Cancer Problem in 1929" (January 4th, p. 26). In discussing the investigations conducted under the British Empire Cancer Campaign we stated that "with the radium bought by the National Radium Trustees it is proposed to construct several such [radium] bombs." The Council of the British Empire Cancer Campaign in its *sixth* annual report, presented at a meeting held at the House of Lords on July 8th, 1929, made the following announcement: "With the increased supply of radium which will shortly be available as a result of the National Radium Fund, it is proposed that several such bombs shall be available for the treatment of cases." The Radium Commission now informs us that it is not its present policy to purchase any other bombs than the one on loan at Westminster Hospital. It further asks us to state that, while the question of establishing a radon plant has been under consideration, nothing definite has yet been settled.

MR. GEORGE MACKAY should have been described as Consulting Ophthalmic Surgeon to the Edinburgh Royal Infirmary (not "Consulting Surgeon") in the heading to his article on "Control of Ocular Disease of Venereal Origin," published on January 11th (p. 61).

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 51, 54, 55, 58, 59, 60, 61, and 62 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *23*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

54. Milk-borne Septic Sore Throat.

P. B. BROOKES (*Amer. Journ. Pub. Health*, September, 1929, p. 1033) records two milk-borne outbreaks of septic sore throat which developed in New York State between February 1st and April 1st, 1929, under very similar circumstances. Both occurred suddenly in rural villages, and each was traced to the consumption of raw milk from a herd in which a case of mastitis was discovered. There were cases of sore throat in both forms, in one instance before and in the other after the discovery of the mastitis. In the first epidemic there were 141 cases, nearly all of which developed on February 16th and 17th, and the last on the 18th. All the patients examined had used raw milk from a certain dairy where there had been a case of sore throat on February 1st. On February 12th the principal milker developed a sore throat but continued his work, and on the 14th mastitis was discovered in a cow. The milk from the cow was excluded until February 16th, was included on the 16th, 17th, and morning of the 18th, and then permanently excluded. Several cases were complicated by peritonsillar abscesses and adenitis, and death occurred in one case complicated by erysipelas. Examination of the milk from the cow infected with mastitis showed a great number of pus cells and short chain streptococci, but no haemolytic streptococci. Throat cultures from convalescent patients were found to contain haemolytic streptococci. In the second outbreak, in which there were about 75 cases between March 10th and 13th, there was no history of sore throat on the farm before the epidemic. Haemolytic streptococci, however, were isolated from milk obtained from a cow with mastitis and also from the throat of a number of patients. Several cases were complicated by abscesses and adenitis, and there was one death attributable to the epidemic.

55. Ulcerative and Membranous Gastritis in Typhoid Fever.

A. COSTA (*Rif. Med.*, November 2nd, 1929, p. 1484), who records two illustrative cases, remarks that in contrast with the severe symptoms referable to the intestine, gastric manifestations are relatively rare in typhoid fever. His first patient was a woman, aged 39, who while convalescing from typhoid fever, which had been confirmed bacteriologically, began to suffer from acute abdominal pain, vomiting, and hiccup, and subsequently died. In addition to healing ulceration of the typhoid ulcers in the intestine, the necropsy showed three small ulcers in the lesser curvature of the stomach, involving the mucous and subcutaneous coats. No organisms were found. The second patient was a woman, aged 45, who on the twenty-second day of typhoid fever had a sudden fall of temperature. Collapse was followed by vomiting and haemorrhage from the bowel; the condition grew worse and death ensued. The necropsy showed a greyish membrane starting from the lesser curvature and invading the anterior and posterior walls of the stomach. Numerous bacilli were found in the neighbourhood of the lesions, but their nature was not identified.

56. Cerebro-spinal Meningitis of an Acute Poliomyelitic Type.

WHILE medullary forms of the disease are not frequent, J. MAGE and L. VAN BOGAERT (*Ann. de Méd.*, November, 1929, p. 377) consider that cerebro-spinal meningitis of a poliomyelitic form is in reality a primary infection of the grey substance characterized clinically and anatomically by an attack of the anterior horns in particular, the posterior being involved later and in a lesser degree. In these medullary forms three elements are affected—the meninges, roots, and cord. In general, the patient presents the usual symptoms of cerebro-spinal meningitis. During the first days weakness with loss of movement is felt in one or more limbs; very frequently this is accompanied, or even preceded, by more or less violent pains in the affected limb and in the corresponding region of the trunk, the scapular or lumbar. In some cases these symptoms appear only after the decline of the meningeal phenomena; in others the indications of meningitis and poliomyelitis appear simultaneously. In either case a flaccid paralysis, accompanied by abolition of the reflexes and sometimes by sphincter troubles, occurs. The paralysis is complete during the ensuing days and may extend to neighbouring muscle groups; the pains and sphincter troubles disappear. Following this, muscular atrophy and sometimes changes in the electrical reactions, even that of degeneration, supervene. After a certain time there occurs a partial regression of the paralysis and atrophy, which attacks only some isolated muscle groups, with subsequent deformities. A case of this nature is reported in which there were three characteristic phases: first, a stage of invasion of a poliomyelitic type, the true nature of which was, however, soon revealed by the isolation of meningococci in the cerebro-spinal fluid; secondly, one of attenuation of the symptoms with an obstinate sero-resistance, the patient receiving more than 500 c.cm. of polyvalent serum—at the end of this phase the meningococci disappeared and were replaced by staphylococci; finally, there was a terminal phase, in which again only staphylococci were found. The post-mortem examination revealed lesions of the meninges, the intramedullary vessels, the anterior horns, and the white columns of the cord. The authors state that, in addition to the lesions of acute meningitis with concentric subpial extension, the most important ones were caused by an anterior poliomyelitis which did not present the massive, acute degeneration of Heine-Medin's disease.

57. Infectious Mononucleosis.

E. SCHWARZ (*Wien. Arch. f. innere Med.*, November 14th, 1929, p. 205) discusses the white cell blood picture and its association with angina described by various observers as occurring in "infectious mononucleosis" or "glandular fever." He concludes that this is a distinct disease which attacks young persons almost exclusively, and is caused by a lymphadenotrophic virus. It is characterized by general enlargement of the spleen and lymphatic glands, and a lymphoblastic plasma cell blood picture; it always ends in convalescence. The constitutional condition contributes nothing to the blood picture, which is more probably to be ascribed to an elective stimulant action by the specific irritant on the lymphatic apparatus; the erythropoietic system is not affected. The condition is frequently complicated by angina and has given rise to the terms "angina with lymphocyte reaction" or "monocyte angina." The disease has many features in common with lymphatic leukaemia, and it is suggested that "glandular fever" may be a mild form of leukaemia conditioned either by a less toxic cause or by a greater resistance on the part of the patient; however, in the American epidemic of infectious mononucleosis not a single case of lymphatic leukaemia was reported.

Surgery.

58. Rupture of Aneurysm of the Splenic Artery

P. BERTRAND and C. CLAVEL (*Lyon Chir.*, September-October, 1929, p. 641) report twenty-seven cases which have been under their observation. Of these, the rupture occurred into the peritoneum in thirteen cases; into the stomach in six; into the colon in four; once simultaneously into the stomach and peritoneum; once into the splenic vein; and twice simultaneously into the stomach and colon. Five of the patients were operated on, but these cases, like the remaining twenty-two, proved fatal. In each case diagnosis was extremely difficult, the chief sign being an ill-defined shapeless mass situated in the abdomen below the umbilicus and formed of blood clots with adhesions to the adjoining organs. Hypertrophy of the spleen was found in twelve cases, and in one case the organ was found to weigh 4 kilograms. The symptoms were slight and so vague as to make diagnosis almost impossible in the early stage; the condition may exist for a long while, with only slight haemorrhage, pain in the epigastrium or the left hypochondrium, giddiness, and a tendency to faintness. In the second stage true rupture occurs, and then the symptoms, which may vary considerably according to the situation of the rupture, are severe, and generally end with death. It is usually only the post-mortem examination which reveals the real condition, and then sometimes only after careful dissection. The prognosis is grave; patients with haemorrhage into the alimentary canal may live for several months, but intraperitoneal haemorrhage proves fatal in a very short time. Different types of operation for this condition have been practised. Ligature of the splenic artery has been performed with success, while splenectomy for an aneurysm near the hilus of the spleen was tried with a fatal result four days afterwards; packing of the aneurysmal sac has not been successful. The ideal treatment consists in excision of the sac between two ligatures; this is, however, often very difficult to accomplish in view of

the anatomical position of the splenic artery. When this is impossible splenectomy may be the only course open, including, if possible, the removal of the aneurysmal sac at the same time.

59. Tonsillectomy and Diphtheria Immunity.

B. SCHICK and ANNE TOPPER (*Amer. Journ. Dis. Child.*, November, 1929, p. 929) report their observations on 100 Schick-positive children, aged from 2 to 12 years, on whom tonsillectomy was performed. Six months later the children were retested; 18 were still positive, but 82 had become negative. As a rule such a high rate of immunity does not develop until adult life. The following explanations are offered to account for the results. During the six months after tonsillectomy a certain proportion, but not more than 5 to 10 per cent., would have developed immunity even without tonsillectomy. A certain percentage of the children may have been carriers of diphtheria bacilli. In these tonsillectomy may have given rise to a mild auto-infection which was followed by immunity; this would account for only a small increase in the negative tests. The children living in congested districts may have been exposed to diphtheria immediately after tonsillectomy and so may have acquired a mild infection, which stimulated production of diphtheria antitoxin. The minute doses of toxin in the Schick test may have stimulated the cells to produce antitoxin. Infections other than diphtheria not only produce their specific antibodies, but also increase the production of other antibodies. The authors conclude that tonsillectomy should be performed in preference to immunization in children with diseased tonsils who are sensitive to horse serum. Children who have had tonsillectomy performed six months or more previously should be Schick-tested before being immunized with toxin-antitoxin.

60. Carcinoma of the Colon.

F. W. RANKIN and J. A. BARGEN (*Arch. of Surg.*, November, 1929, p. 907) report the results in sixty cases of malignant disease of the colon in which intraperitoneal injections were given of a vaccine containing *B. coli* and streptococci as an adjunct to surgical treatment. The vaccine used was prepared in the first instance from human faecal strains of these bacilli isolated from the heart's blood of animals after peritoneal inoculation with faeces. Similar strains were isolated later from patients who died with peritonitis. Vaccines were prepared separately from each of these organisms, and later a mixed suspension in sodium chloride was made with a density of about 1,000 million organisms for each cubic centimetre; 0.25 c.cm. of this vaccine, made up to 1 c.cm. with physiological saline solution, was given subcutaneously a week before operation. The next day 1 c.cm. of vaccine in 10 c.cm. of solution was injected intraperitoneally, and after two days a similar injection was given. The reactions were severe, with rise in temperature, abdominal pain or discomfort, and general leucocytosis, but subsided by the end of twenty-four hours. It was found that the mortality rate was lower by 18 per cent. in the group of sixty who had been vaccinated than in another group of sixty with similar lesions who had had no such treatment, and post-operative convalescence was noticeably smoother than in the former group. Although the series of cases was too small to assert dogmatically that vaccination will prove of extensive benefit in malignant conditions of the colon treated surgically, it is believed that, as an adjunct to operation and as a step in the pre-operative preparation of patients for radical extirpation of malignant growths, peritoneal vaccination has a marked value.

61. Mammary Abscess simulating Cancer.

B. H. NANAVATTY (*Indian Med. Gaz.*, November, 1929, p. 632) reports a case of chronic encysted mammary abscess which simulated scirrhous cancer, and comments on the diagnostic difficulties which arose. A rapidly growing tumour was found in the breast of a woman aged 55. The nipple became increasingly retracted, the axillary glands enlarged, but no evidence of fluctuation could be obtained, nor was there any pyrexia. An exploratory puncture was suggested, but was refused by the patient. Later on slight fluctuation was felt on deep palpation, and the possibility of the condition being a chronic deep-seated abscess was admitted. An exploratory puncture was then made, and confirmed the diagnosis. The abscess was freely opened and the subsequent recovery was uneventful. The author points out that the condition, which at one time closely simulated scirrhous cancer, resembled also chronic lobar mastitis, chronic lobular mastitis, cystic growth, and adenomatous tumour. No history of trauma was obtained until after the condition had cleared up, and this, combined with the absence of pyrexia and fluctuation, delayed for some time the correct diagnosis.

Therapeutics.

62. Bromine Therapy.

IT has been repeatedly demonstrated that the therapeutic effect of bromine administration is determined by the bromide-chloride balance in the body, and depends not only on the amount of chloride which is being given in the diet simultaneously with the bromide, but also on the sodium chloride already present in the body. If part of the normal chloride content of the body is replaced by bromide, a much smaller quantity of the latter is required to produce an effect. As R. VON DEN VELDEN points out, however (*Deut. med. Woch.*, October 18th, 1929, p. 1752), the reduction of salt intake in various conditions in which this was theoretically desirable has been limited in practice largely because a diet with a very low salt content is difficult to enforce owing to its unpalatability. This difficulty has now been solved to some extent by the use of a substitute for common salt consisting of a double salt of glutaminic acid. A modification of this containing 60 per cent. of bromine renders it possible simultaneously to administer bromide and reduce the salt intake without interfering with the flavour of the food; it has been used by von den Velden during the past eight months in a series of experimental investigations and for the treatment of eighty patients. He found that if the preparation was administered to patients on an ordinary diet the excretion of bromine started after twelve hours, but only proceeded very slowly. If the administration was preceded by three days during which the double glutaminic salt was substituted for common salt the first traces of excreted bromine were not evident for forty-eight hours; other factors known to affect excretion, such as the intake of fluids and the composition of the diet, were kept constant as far as possible throughout the experiments. Further tests also showed that the amount of chloride in the urine was increased by the administration of the author's modified preparation, indicating that bromide was replacing chloride in the body. Other conditions in which it was also found of value were various oedemas and obesity, in which dehydration was required. The excretion of sodium chloride was increased, thirst diminished, and the patients were willing to continue on a diet so flavoured for a considerable time. The sedative effect of the bromine, though of secondary importance in these cases, was also valuable. Von den Velden concludes that systematic bromine treatment along the lines indicated by these experimental and clinical results should not only be more effective than by the older methods in conditions in which the value of bromides has long been recognized, but that the medical and dietetic properties of this preparation are also likely to prove useful in a number of other conditions in which the mineral salt and water balance are disturbed.

63. Luminal in the Epilepsies.

R. R. GRINKER (*Journ. Amer. Med. Assoc.*, October 19th, 1929, p. 1218) maintains that, until the pathogenesis of epilepsy is fully elucidated and thus a rational therapy becomes possible, symptomatic treatment must hold the field. He believes that phenobarbital (luminal) is the best agent for the treatment of the convulsions, but that little is known concerning its successful administration. Definite doses cannot be arbitrarily stated for any individual, since the convulsive threshold varies enormously. With major convulsions a certain rhythm frequently occurs in the fits, ranging from fixed daily periods to a weekly or seasonal incidence; the spells may be nocturnal or diurnal, or may occur at any time and at very irregular intervals. Each patient is therefore an individual problem and has to be treated by the method of trial and error till the proper dosage and time of administration can be ascertained. In cases of nocturnal seizures the only dose necessary may be given after the evening meal, and should start with 1½ grains. When the fits occur in the forenoon or afternoon the drug should accordingly be administered after breakfast or at noon. This dosage may suffice in patients with occasional attacks at definite times. If the convulsions occur more frequently or severely, one dose may not be enough. The phenobarbital should first be increased to 2 or 2½ grains at one dose; if the threshold still keeps low it should be given twice daily, and, if required, after each meal, beginning with 3/4 grain. Should it become necessary the dosage may be advanced by 1/4 grain increases to 2, 2½, or even 3 grains three times daily. When convulsions occur irregularly at any time, phenobarbital should be started in 3/4 grain doses three times daily, and increased, if required, to 3 grains three times daily. The drug should be prescribed in powder form in capsules, though occasionally the soluble phenobarbital sodium may prove efficacious when the powdered form fails. In obstinate cases 1/10 to 1/5 grain of extract of belladonna may be included in the capsules, but a combina-

tion of phenobarbital sodium and sodium bromide acts better. For the most resistant seizures from 15 to 20 grains of bromide and 1½ to 2½ grains of phenobarbital three times a day may be necessary. A modified ketogenic diet may accompany the phenobarbital, and general physical abnormalities should be corrected. Stimulants must be avoided, but exercise may be allowed. *Petit mal* attacks do not respond to this treatment, and large doses of phenobarbital in this form of epilepsy are not advisable.

64. Pituitary Extract in Renal Calculus Cases.

H. NAUMANN (*Med. Klinik*, November 1st, 1929, p. 1697) states that later experience confirms his opinion, already recorded, that hypodermic injection of pituitary extract was a valuable method of treating selected cases of renal calculus. In fourteen cases of this disease so treated only one patient failed to expel the stone. A second series of fifty successes has been recorded, and Naumann now reports three recent cases. The first patient, a man aged 54, had a right renal calculus; three hypodermic injections of pituitary extract were without any effect, but fifteen minutes after the fourth injection an attack of pain occurred. The injections were continued, and eight days after admission, and one day after the last injection, the patient passed an oxalate calculus as large as a pea. The second patient, a man aged 29, had had occasional attacks of renal colic for four years, and skiagrams showed the shadow of a calculus lodged in the right ureter. A hypodermic injection of pituitary extract was followed by a severe attack of colic; a second injection caused recurrence of the pain, and a skiagram showed that the calculus, which was as large as a pea, had passed into the bladder, whence, a few days later, it was expelled spontaneously. In the author's last case the patient had typical attacks of renal colic, and skiagrams showed small rounded shadows in the ureter. Injections of various pituitary preparations produced no effect at first, but three weeks after the last injection the spontaneous passage of several calculi as large as peas or maize confirmed the original diagnosis. Although this treatment is not always successful, Naumann advises its employment in apparently suitable cases before submitting the patient to operation. He remarks that it is obvious that the success of this treatment depends on anatomical considerations; the size and site of the calculus and the condition of the ureter are, above all, determining factors. When the calculus is lying in the renal pelvis, and when it is too large to pass through the ureter, nothing is gained by injecting pituitary extract. The author finds glycerin-lemonade (10 per cent. glycerin in water, flavoured with lemon juice) a valuable adjuvant in these cases.

Ophthalmology.

65. Buphthalmos and Naevus.

T. R. AYNSLEY (*Brit. Journ. Ophthalmol.*, December, 1929, p. 612) records four cases of buphthalmos associated with facial naevus which present certain features in common. The patients were all female imbeciles; three showed a left and one a right hemiplegia; and *x*-ray plates of the skull revealed *in one case a l*
another a circumscribed
and in a third a dark ar
of commencing calcification. The first case of glaucoma in association with naevus was published by Schirmer in 1860, and about thirty cases have since been described. There appear to be two main groups—those in which a condition of hydrophthalmos is present at birth or arises early in life, and those in which acute or chronic glaucoma occurs in later life. Since many patients with facial naevi do not have glaucoma, there have been differences of opinion whether the two conditions are in any way causally connected; some of these varying opinions are cited. Aynsley has no doubt that while congenital abnormalities of the eye appear to be merely associated with facial naevi, it is more likely that they have some common underlying cause, and it is probably in the cases where there is intracranial involvement that eye defects are likely to arise. To explain the variety of cases he suggests that facial naevus has in itself no causal relationship with glaucoma, but that where the general cause of facial and bodily naevi—either a toxin or (as Unna surmises) slight trauma to the branchial clefts—acts to produce naevi of the cerebral vessels, then the mesoblastic structures of the developing eye may be affected, and this may lead to various pathological conditions of that organ. Cases of naevi (particularly fifth nerve distribution), cases of buphthalmos with facial or bodily naevi, and cases of von Hippel's disease should be examined by *x* rays, and neurologically for the presence of intracranial lesions. A negative *x*-ray picture may simply mean that the meningeal naevus has not yet become calcified.

66. Eye Symptoms and the Parkinsonian Syndrome.

L. J. GOLDBACH (*Arch. of Ophthalmol.*, November, 1929, p. 555) states that in some cases a clear association can be defined between ocular symptoms and the Parkinsonian syndrome, while in others this seems extremely difficult. Encephalitis is very varied in its symptomatology; in certain phases it has a predilection for ocular muscles, in others it ignores the ocular syndrome. Nonne has made the following classification of ocular changes in relation to encephalitis: encephalitis with bulbar symptoms; premature paralysis agitans, but without an inclination to sleep; and bulbar paralysis without ocular changes. According to recent researches, four more syndromes associated with the region between the commissural mesencephalic nuclei and the globus pallidus are recognized: (1) mesencephalic, characterized by oculomotor paralysis and diplopia; (2) metathalamic, characterized by ocular crisis, upward or downward, and absence of oculomotor paralysis and diplopia; (3) syndrome of the hypothalamus, manifested by lateral and not rotary deviations; and (4) simple lateral deviation. Goldbach classifies the ocular symptoms as follows: ptosis, permanent, transient, or partial; diplopia, crossed and homonymous; rotary nystagmus; paresis of the external and superior recti and superior oblique muscles; attacks of paresis on looking upward; paralysis of both the muscles of accommodation and of convergence, or of either; inequality of the pupils, long-lasting or temporary, and sluggishness of the pupillary reactions. In some cases there remain permanent disturbances of the cerebral nerves, and among the most important are the reflexes and absolute paresis of the pupil. The Argyll Robertson pupil can no longer be considered as pathognomonic of neurosyphilis, and the conception that impaired accommodation or paresis is associated with a diphtherial toxicity must be held in abeyance.

67. Treatment of Trachoma.

D. D. MCHENRY (*Journ. Amer. Med. Assoc.*, October 26th, 1929, p. 1291) believes that many cases of trachoma respond readily to treatment, and that 99 per cent. are curable. The basis for the treatment of this affection should be surgical in all but very acute cases; proper surgical procedures will shorten the treatment by many months, and in many instances years, as compared with treatment by drugs alone. In the great majority of cases of well-advanced trachoma the caruncle is involved, and must be included in surgical procedures if successful results are to be obtained. Any surgical method that will entirely eradicate the trachoma follicles and their contents with a minimum destruction of normal mucosa is adequate. Usually treatment is commenced by a radical operation. In acute cases, under good anaesthesia, McHenry rubs off the follicles with the finger covered with gauze, saturated with either boric acid powder or 2 to 5 per cent. copper sulphate in glycerin. This is followed by the application of copper sulphate (2 to 5 per cent.) or silver nitrate (1 per cent.) daily or two or three times a week; the patients subsequently apply at home mercuric oxycyanide, in from 1 in 5,000 to 1 in 3,000 solution, two or three times daily. Most chronic cases show a decided hypertrophy of the orbicularis muscle with, often, a blepharophimosis due to years of squinting; in these the other operative treatment is preceded by a radical canthoplasty, according to Ziegler's method, care being taken to cut the canthal ligament. McHenry describes his own technique of performing this operation. Tarsectomy has no place in the treatment, but is of value in cured or nearly cured cases with thickened and distorted lids. The operative procedure should be followed by drug treatment and observation for one or two years before the cure can be regarded as established; any follicles appearing during that time must be destroyed.

68. Plasmoma of the Conjunctiva.

W. M. JAMES (*Amer. Journ. Ophthalmol.*, September, 1929, p. 731) reviews the literature of plasmoma of the conjunctiva. He places this complication of trachoma in cases as high as 50 per cent., and discusses the relationship of the two conditions. In the case of one of his patients, a farm lad aged 17, who lived in a district where chronic trachoma was prevalent, there was a chronic inflammatory condition of long standing, involving both eyes; the patient had a harelip and cleft palate, and was treated for chronic trachoma, being kept under observation in hospital for three months. His health was good during that time, and he reacted favourably to the operative procedures instituted for the repair of the harelip and cleft palate. In addition, excision of the masses of redundant tissue which protruded from the caruncle and fornices, together with *x*-ray and radium therapy, gave hopeful results. There was, in fact, no evidence of a recurrence of the plasmoma where it had been excised.

Obstetrics and Gynaecology.

69. Haemorrhage at the Menopause.

E. NOVAK (*Med. Journ. and Record*, November 6th, 1929, p. 481) discusses ovarian dysfunction and uterine cancer as causes of menopausal bleeding. Two types of uterine bleeding somewhat characteristic of middle life—functional haemorrhage and that associated with malignant disease of the uterus—are considered. In those cases in which no evidence of cancer or other disease can be found the diagnosis of the underlying condition must depend upon a microscopic examination of curette scrapings. Such a diagnostic curetting may suffice to effect a cure, but when this does not occur the induction of an artificial menopause by radiotherapy gives excellent results, provided that malignancy can be excluded. When once the diagnosis of cancer has been established the practice of treating all cases of cervical cancer by radium, as carried out in many clinics, seems justifiable, since this method appears to be followed by as large a percentage of cures as is the case with operation. Many gynaecologists, however, consider that if the disease is in an early stage in a good subject total extirpation of the pelvic organs renders the result more certain. In cancer of the body of the uterus operation is the method of choice, since surgery yields comparatively good results, and those following radium therapy are less favourable than they are in cancer of the cervix. The author believes that some more specific method of treatment will eventually arise, and that *meanwhile both radium and surgery are merely makeshifts*, though at present they afford the best available means of treatment.

70. Ovarian Transplantation.

C. C. NORRIS and C. A. BEHNEY (*Surg., Gynecol. and Obstet.*, November, 1929, p. 642) emphasize the importance of preserving the ovarian function, and assert that after a bilateral oöphorectomy during the child-bearing period a proportion of patients suffer as much, or even more, from the surgical menopause as they do from their original morbid condition. Cases are not infrequently encountered in which the removal of one ovary is imperative, and the remaining ovary is so injured, or its blood supply so impaired, that its conservation in its normal position is accompanied by considerable risk of subsequent degeneration, loss of function, and the development of painful symptoms. It is in this type of case that transplantation by the Blair Bell method was practised in the series of 31 cases here reported. With this technique the ovary, after being decapsulated and scored, was divided into two, three, four, or more pieces of not greater diameter than 6 to 8 mm. or thicker than 3 to 4 mm., and each was embedded in a separate pocket in the rectus muscle. The results indicated that a high percentage of the grafts were able to function, but the life of the transplanted ovary is said to be probably not more than two or three years. Grafts frequently become tender for a day or two each month, but rarely give serious trouble. The authors consider that ovarian transplantation is not a substitute for conservation of the ovary in its normal situation, and should be reserved for those cases in which this is inadvisable.

71. Continuous Dextrose Infusion in Puerperal Fever.

H. KÜSTNER (*Zentralbl. f. Gynäk.*, November 23rd, 1929, p. 2962) states that the majority of patients admitted to the Leipzig Universitäts-Frauenklinik with severe puerperal fever have previously received injections of trypaflavine or a silver preparation, but the utility of these treatments in such cases is doubtful. The most important therapeutic point is the improvement of the patient's general condition, and Küstner attaches considerable value to three adjuvant measures—namely, alcohol therapy; slow intravenous infusion with dextrose; and injections of an antiserum prepared from streptococci and their exotoxins. The alcohol is given in massive doses, chiefly as brandy. Intravenous injection of dextrose was advocated by Kirstein four years ago, a 10 per cent. solution being employed. Küstner prefers to give a 2 per cent. solution of dextrose in Ringer's solution; 2½ litres are introduced by continuous infusion during about twenty-four hours into an antecubital vein. Skilled nursing attention is necessary. Cardio-vascular stimulants are sometimes added to the infusion. The treatment operates by producing diuresis with toxin elimination; by furnishing an easily combustible nutrient; and by stimulation of the haemopoietic system and the myocardium. This therapy, combined with serum and other treatments, succeeds, it is said, in effecting cure in many (but by no means all) apparently hopeless cases of puerperal septicaemia; it must, however, be commenced at an early stage of the disease, and within a short time of the appearance of high fever, or especially of a rigor.

Pathology.

72. The Morbid Process in Senile Osteomalacia.

E. MORETTI (*Arch. d. Ist. Biochim. Ital.*, November, 1929, p. 255), who records five illustrative cases in patients aged from 53 to 70, states that senile osteomalacia is no longer a frequent disease, as it was ten years ago. In addition to the phenomena of softening and atrophy of bone, clinical and anatomical evidence of hyperostosis may be found, especially on the cranium. The histological picture of the characteristic lesions of senile osteomalacia is quite different from that presented by osteodystrophic fibrous processes. On the other hand, senile osteomalacia and rickets are closely allied owing to the constant presence in both diseases of the osteoid substance. The changes found in senile osteomalacia in the endocrine glands, and particularly the parathyroids, are so variable that no conclusions can be drawn as regards the existence of a constant pathogenic relationship, especially between hyperparathyroidism and osteomalacia. In the present state of knowledge it is more reasonable to suppose that there is a secondary relationship between the parathyroids and osteomalacia which explains the development of parathyroid hyperplasia as a process of compensation. Clinical and pathological researches do not give any support to a parathyroid origin for senile osteomalacia, and leave it doubtful whether excess of ovarian activity through endocrine correlations is responsible for the condition. The clinical and biological study of Moretti's cases of senile osteomalacia shows that the condition is closely analogous to that of rickets, by demonstrating the constancy of two fundamental phenomena—namely, acidosis and deficiency of blood phosphates—though it has been impossible to determine which of the two was primary. In conclusion Moretti emphasizes the frequent association of senile osteomalacia with tetany in which there is a diminution of calcium and an increase of potassium.

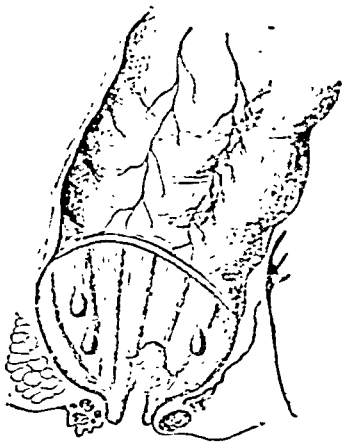
73. A Medium for the Cultivation of Gonococci.

R. S. SPRAY (*Journ. Lab. and Clin. Med.*, November, 1929, p. 179) describes a quickly and easily prepared medium on which the gonococcus and allied organisms may be grown without the necessity of blood or serum. The principle underlying its use is that fresh meat infusion contains a property, variously termed hormone, vitamin, or growth accessory factor, which is adsorbed if the infusion is passed through organic matter such as cotton, gauze, wool, or charcoal. In the preparation of the medium fresh, lean, fat-free veal (for which a dehydrated veal powder may be satisfactorily substituted) is boiled in distilled water, the broth then being filtered through glass wool. To the filtrate, peptone, sodium chloride, nutrose, gelatin, and soluble starch are added. The medium is titrated with phenol red to *p*H 7.4 or 7.5, and shredded agar is added. The mixture is boiled to dissolve the agar, autoclaved for fifteen minutes, and then allowed to solidify. The lower layer, which contains a heavy sediment, is discarded, and the remainder is distributed in flasks or tubes and again autoclaved. Carbohydrates, glycerin, or blood may be added if desired. All the common pathogenic organisms, as well as the more delicate ones such as the gonococcus, pneumococcus, meningococcus, and the influenza bacillus (with addition of heated blood), grow abundantly on initial isolation. For the preparation of autogenous vaccines, or for mass cultivation for antigens, this medium is considered by Spray to be vastly superior to plain agar.

74. Cutaneous Reactions produced by Gland Extracts.

C. CENI (*Arch. di Patolog. e Clin. Med.*, November, 1929, p. 167) has investigated in a number of healthy and diseased children and adults the cutaneous reactions following the intradermal injection of aqueous extracts of testes and ovaries obtained from the lower vertebrates; the dose of the extract used was equivalent to 0.15 gram of fresh glandular substance. Though varying in some degree with different persons the results were fairly constant, and were characterized by the appearance after ten to fifteen minutes of a more or less raised vesicle with a diffuse pink and white surrounding area which rapidly disappeared after ten to twenty minutes. The reaction does not occur in young children and is usually seen first at about the twelfth year, after which the effect increases in intensity with the years of sexual maturity up to the fiftieth or sixtieth year; it ceases to appear in still later life. In normal women the reaction is strong and regular throughout the period of pregnancy; it is absent for a short interval after parturition, but reappears and remains constant during lactation. The reaction is absent in severe cachectic states and in all debilitating diseases. In young mental defectives of both sexes the reaction appears later than in normal children; it is often not met with in adult defectives, whatever their physical condition.

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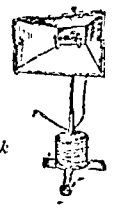
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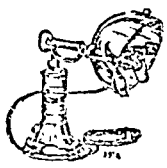
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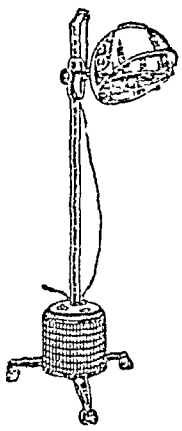
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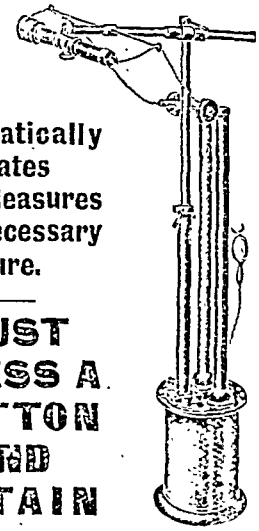
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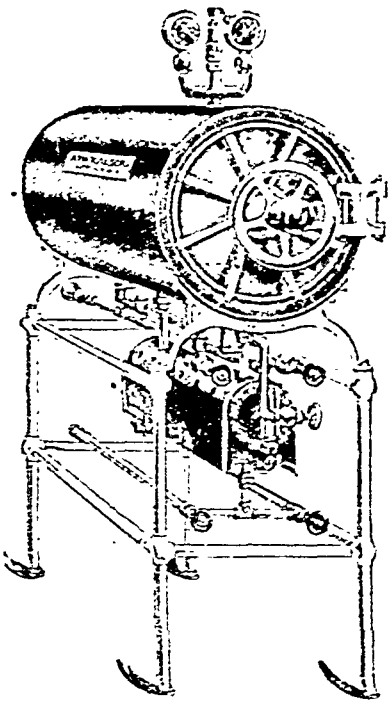
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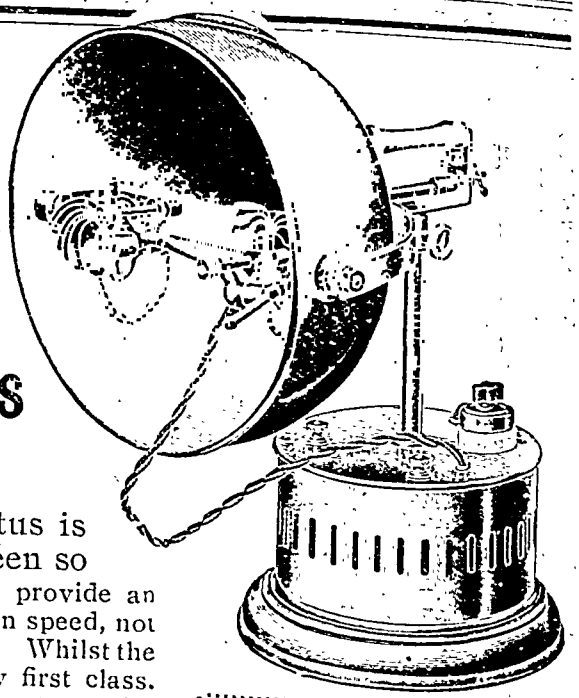
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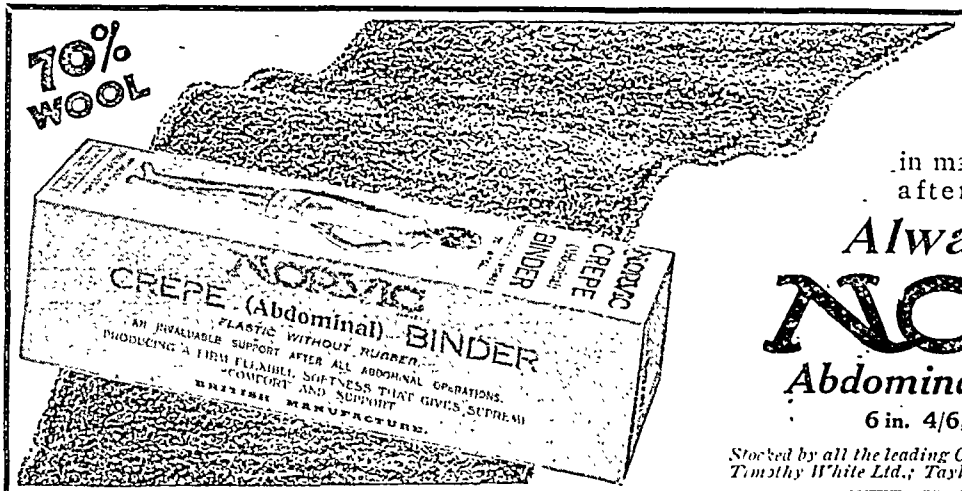
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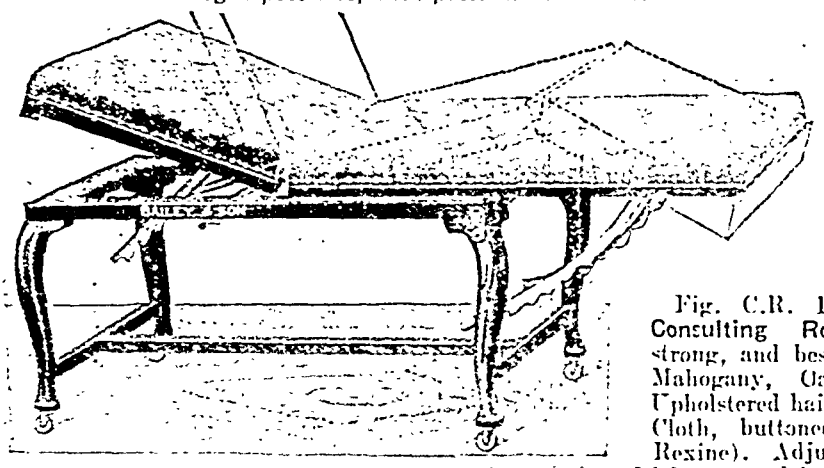
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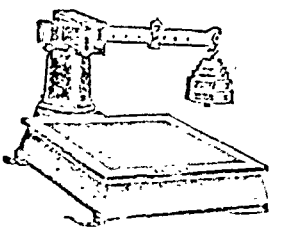
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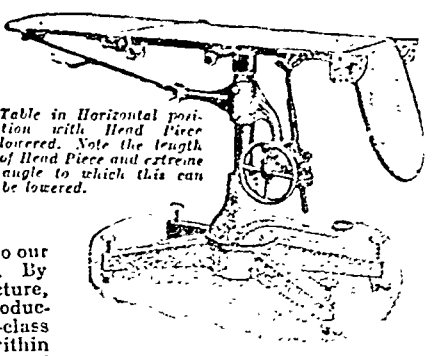


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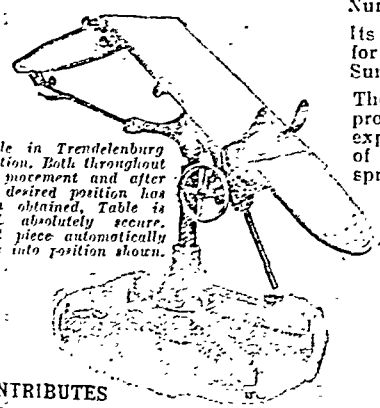
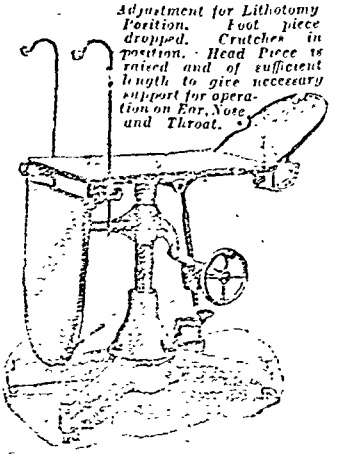


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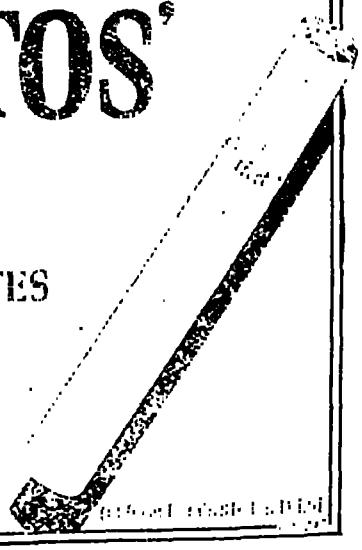
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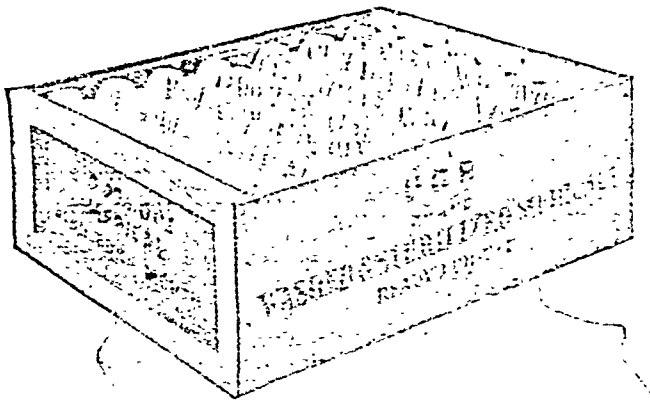
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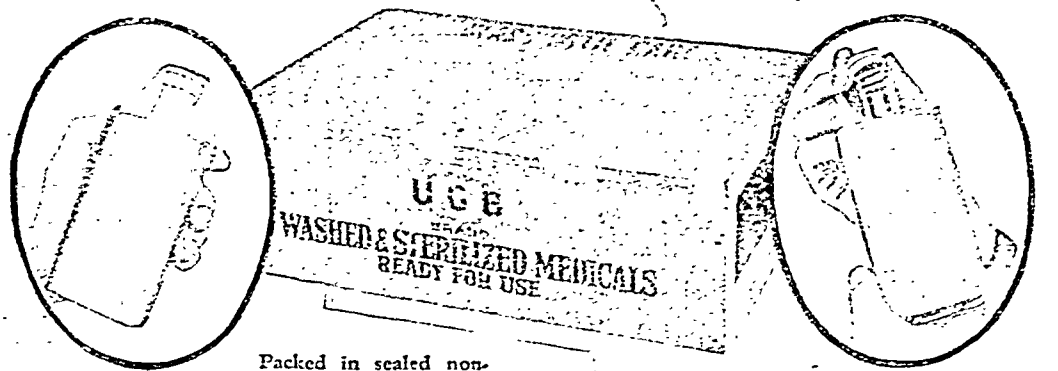
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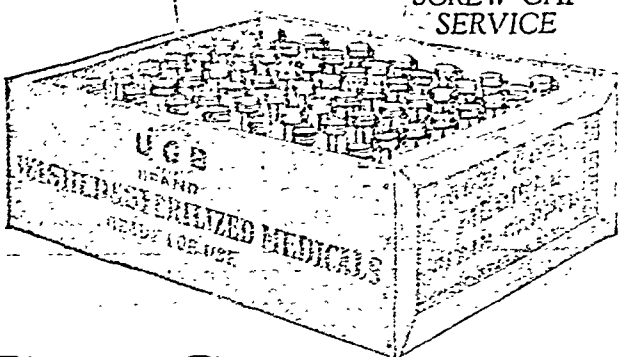
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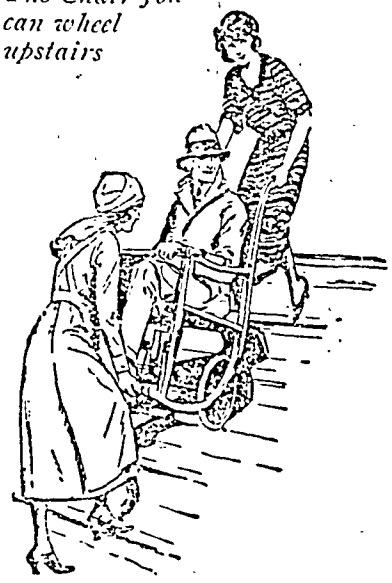
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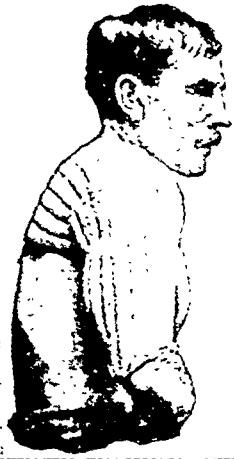
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for Ladies and Gentlemen who have Epilepsy, but are of good intelligence and sound mind.

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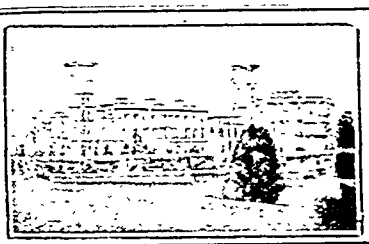
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[illegible] 1916. For the TREATMENT of [illegible] from NERVOUS and [illegible] Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

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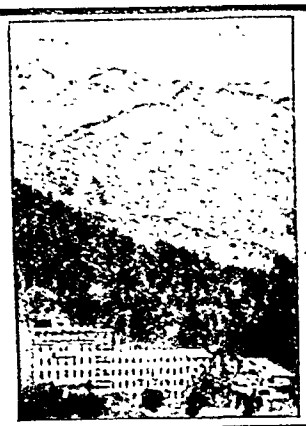
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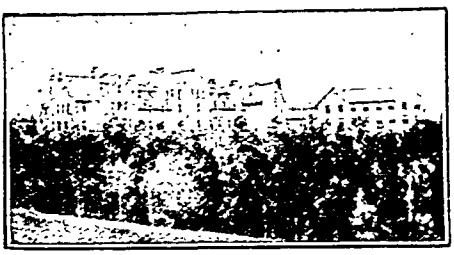
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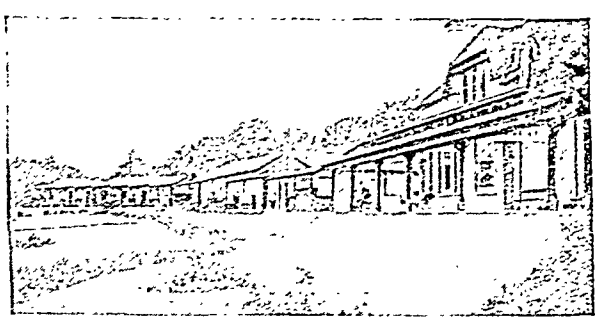
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M.D.	Various. By Thesis. Numerous successes.	

Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral [illegible] higher Medical [illegible] the Higher Sur- [illegible] for the Special [illegible] Course, Open ings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations. PRIVATE WARDS for paying patients.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

M.R.C.P.(Edin.)

A REVISION CLASS in the Practice of Medicine and Therapeutics, in preparation for the April examination, will commence on Feb. 11th.—Particulars from Dr. D. STEWART, Clinical Laboratory, Royal Infirmary, Edin.

Rossall School. — Some twelve Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London—Apply, THE BURSAR, Rossall School, Fleetwood.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Tropical Medicine and Hygiene.

The School provides two courses yearly, each of 20 weeks. The next courses commence on February 3rd and September 30th, 1930. Composition fee, to include hire of microscope, etc., £54 5s.

Diploma in Public Health.

The next course of study, covering a period of 12 months, commences on October 1st, 1930, and is so designed that students wishing to do so can proceed to the new academic diploma instituted by the University of London.

The composition fee of £54 covers the cost of the necessary practical work and instruction in infectious diseases, etc.

Diploma in Bacteriology.

The course of study, covering one academic year, commences early in October. Composition fee, £47 15s.

Epidemiology and Vital Statistics.

Special three-monthly advanced courses. Fee £5 5s.

Applications for prospectuses and for other information should be addressed to the Secretary, Keppel St. (Gower Street), London, W.C.1.

THE CANCER HOSPITAL (FREE),

FULHAM ROAD, LONDON, S.W.3.

ADVANCED COURSE IN RADIOLOGY will be held at the above Institution, extending over a period of three months, commencing on January 21st, on Tuesday and Thursday afternoons from 3 to 5 p.m.

The Course includes Lectures, practical and clinical demonstrations upon RADIUM and X-RAY THERAPY, and Radio Diagnosis, with preliminary instruction in the physical and technical aspects of treatment.

The fee for the Course is 5 guineas—payable to the Hon. Secretary Medical Committee.

Further particulars may be obtained from the undersigned.

(Signed) J. COURTNEY BUCHANAN,
Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at *Miss* BEHNKE'S *house on the Chilterns*.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence Jan. 27th. Correspondence course for July and later exams should begin now. Parties., H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

University of Leeds.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY.

The Council will shortly proceed to the appointment of a DEMONSTRATOR IN PATHOLOGY AND BACTERIOLOGY. Salary £300 a year. Further particulars may be obtained from the REGISTRAR, The University, Leeds, who will receive applications for the appointment up to January 31st.

UNIVERSITY OF LONDON.

KING'S COLLEGE.

PRIMARY F.R.C.S.

Courses in preparation for the June Examination will be held as follows:

Physiology, under the direction of Dr. SAMSON WRIGHT, commencing on Tuesday, February 18th, 1930.

Anatomy, under the direction of Prof. D. M. BRAIS, commencing on Thursday, May 1st, 1930.

The Dissecting Room will be open from the commencement of the Physiology Course.

Applications to be admitted to the Course should be addressed to the Dean of the Medical Faculty, King's College, Strand, W.C.2.

University of London.

A Course of Four Lectures on "*Oxygen and the Excitatory Process in Muscle and Nerve*" will be given by Professor A. V. HILL, F.R.S. (Professor of Physiology in the University) at UNIVERSITY COLLEGE, LONDON (Gower St., W.C.1), on MONDAYS, JANUARY 27th, 28th, FEBRUARY 3rd and 10th, at 5 p.m.

A Course of Four Lectures on "*Physiology of Posture and Movement*" will be given by Dr. SAMSON WRIGHT, M.D., M.R.C.P., at KING'S COLLEGE, LONDON (Strand, W.C.2), on TUESDAYS, JANUARY 21st, 28th, FEBRUARY 4th and 11th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

University of London.

A Course of Four Lectures on "*Control of the Circulation*" will be given by Professor E. J. S. MCDOWALL, D.S., M.B., F.R.C.P. (Edin.), (Professor of Physiology in the University), at KING'S COLLEGE, LONDON (Strand, W.C.2), on THURSDAYS, JANUARY 30th; FEBRUARY 6th, 13th, and 20th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

University of London.

A Course of Ten Lectures on "*Comparative Physiology*" will be given by Mr. G. P. WELLS at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, JANUARY 17th, 24th, 31st; FEBRUARY 7th, 14th, 21st, 28th; MARCH 7th, 14th, and 21st, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

University of Glasgow.

THE HARRY STEWART HUTCHISON PRIZE

The Harry Stewart Hutchison Prize, of the value of about £50, for the best writing or writings embodying Original Research Work in a branch of Medical Science relating to Children will be awarded in 1931. Medical Graduates (of not more than two years' standing from their first graduation in Medicine) of all British, Home and Colonial Universities may be competitors. Compositions must be submitted to the Clerk of Senate, University of Glasgow, not later than March 31st, 1931. Each must be distinguished by two mottoes, and accompanied by a sealed letter bearing upon the outside the same mottoes, and containing a declaration subscribed by the Author that the Composition is entirely his own.

St. Thomas's Hospital Medical SCHOOL.

UNIVERSITY OF LONDON.

The Council of St. Thomas's Hospital Medical School invite applications for the post of LECTURER IN PHYSIOLOGY, vacant at the end of March, 1930, at the salary of £500 per annum.

Further information may be obtained from the Medical Secretary.

Applications, showing Academic record, and with copies of testimonials, must be received by the Dean of the Medical School, St. Thomas's Hospital, S.E.1, by February 14th, 1930.

Stroud General Hospital,

STROUD, GLOS.

HOUSE SURGEON required to commence duty at once. Salary £150 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the undersigned.

C. FORD SPENCER, Secretary.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
			150	1st
Lieut.		500	150	2nd
			150	3rd
Capt.			150	4th
	(i) During first 3 years' service as Captain	650	£15	5th
			£15	6th
			£25	7th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	8th
			£25	9th
			£25	10th
	(iii) With more than 6 years' service as Captain	850	£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1930.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in January, 1930. Applications should reach the War Office not later than January 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of January. They must be under 28 years of age on February 1st, 1930, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—Pay from £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
" 15 " " £2,800.
" 18 " " £3,500

Current rates of retired pay range from £372 per annum, normally earned by a Major after 20 years' service, to £940 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will also be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I), Whitehall, London, S.W.1.

West Sussex County Council AND BOGNOR REGIS URBAN DISTRICT COUNCIL.

ASSISTANT COUNTY AND DISTRICT MEDICAL OFFICER OF HEALTH.

Applications are invited for the following joint whole-time appointments:

(*a*) Assistant County Medical Officer of Health for the County of West Sussex. Salary £500 per annum, rising by annual increments of £25 to £600;

(*b*) Medical Officer of Health for the Bognor Regis Urban District. Salary £200 per annum, rising by annual increments of £25 to £300 per annum.

Office accommodation and necessary clerical assistance will be provided in connection with the appointments. An allowance will be made for travelling expenses in the County according to the current scale of allowances approved by the County Council. The appointments are subject to the approval of the Ministry of Health and the Board of Education, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922. The selected candidate will be required to pass a satisfactory medical examination.

Applicants must be duly qualified medical men, with experience in Public Health duties, and hold the Diploma of Public Health. Applicants should not be over 45 years of age. The person appointed will be required to reside in the Bognor Regis Urban District. As regards his duties as District Medical Officer of Health, the officer will be subject to the sole control and direction of the Bognor Regis Urban District Council. As regards his duties under the County Council, the officer will act under the general control of the County Medical Officer, and will be required to perform such duties as may be from time to time prescribed.

The appointment will be determinable on three months' notice and, as far as the office of District Medical Officer is concerned, will be subject to the approval of the Ministry of Health and the provisions of the Sanitary Officers Order, 1926. The person appointed shall, if required, enter into an agreement in a form approved by the Clerk of the County Council.

Applications on the prescribed form, which, with list of duties and conditions of appointment, may be obtained from the undersigned, must be accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned, S. THORNELY, and delivered at the County Hall, West Street, Chichester, not later than Thursday, Feb. 6th. Canvassing will disqualify.

(Signed) S. THORNELY,
Clerk of the County Council.

(Signed) J. JUBB,
Clerk to the Urban District Council of Bognor Regis.

County Hall, Chichester.
January 13th, 1930.

City and County of the City of CHESTER.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the appointment of Assistant Medical Officer of Health for the City of Chester, at a salary of £600 per annum (without bonus). The work will include, among other duties, School Medical Inspection and work in connection with infectious diseases, tuberculosis, maternity and child welfare schemes, and laboratory work, and the whole time of the officer must be given to the duties of the office.

Candidates must possess registered qualifications in Medicine, Surgery, and Midwifery, and hold a Diploma in Public Health.

The successful applicant will be required to pass a medical examination and contribute to the fund established under the Local Government and Other Officers Superannuation Act, 1922.

Canvassing, either directly or indirectly, will be a disqualification.

Applications, accompanied by copies of four recent testimonials (which will not be returned), on forms to be obtained from the undersigned, must be received not later than Friday, January 24th.

J. H. DICKSON,
Town Clerk.

Town Hall, Chester.
January 6th, 1930.

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointment from February 15th:

HOUSE PHYSICIAN. Salary £70 p.a.

Applications, giving full details of qualifications and accompanied by testimonials (if desired), should reach the undersigned by January 27th.

A. H. LEANEY, House Governor.

Metropolitan Borough of SOUTHWARK.

LADY ASSISTANT MEDICAL OFFICER OF HEALTH.

The Southwark Borough Council invite applications for the position of Lady Assistant Medical Officer of Health. Applicants must be between 25 and 35 years of age, unmarried, and must be fully qualified and registered Medical Practitioners. It will be a condition of appointment that, in the event of the marriage of the person appointed, she immediately resign her position under the Council.

The principal duties of the officer appointed will be in connection with Maternity and Child Welfare work. She will be required to possess a practical knowledge of ante-natal and post-natal diseases and management of women, and the developmental treatment of children and their diseases. She will be required to reside in or near the Borough, and must give her whole time to the duties of the office, acting under the direction of the Maternity and Child Welfare Committee of the Council and the Medical Officer of Health.

Special consideration will be given to applicants who have held official positions in hospitals or other institutions for the treatment of women and children.

The salary will be £600 per annum, inclusive, and the appointment will be subject to the approval of the Ministry of Health, and to three months' notice to terminate the engagement on either side.

The selected applicant will be required to pass the medical examination specified by the Council, and will be subject to the provisions of the Council's Superannuation Scheme.

Forms of application, containing a list of duties and conditions of appointment, may be obtained on sending a stamped addressed envelope to the undersigned. Applications, on the prescribed form, accompanied by copies of three recent testimonials, and endorsed "Lady Assistant Medical Officer of Health," must be received by me not later than noon on Wednesday, January 22nd.

Canvassing, directly or indirectly, will disqualify.

DAVID T. GRIFFITHS,
Town Clerk.

Southwark Town Hall,
Walworth Road, S.E.17.
January 1st, 1930.

Nottinghamshire County Council

APPOINTMENT OF SCHOOL DENTISTS.

Applications are invited for the appointment of four additional whole-time School Dentists at a salary of £500 per annum, rising after two years' satisfactory service by increments of £25 to a maximum of £550. Travelling expenses will be paid in addition according to the scale approved by the County Council.

Candidates must be fully qualified and registered dentists, and the persons appointed will be required to perform such duties as may be from time to time prescribed by the County Education Committee and to devote their whole time to the duties of the office. They will be members of the staff and act under the control and direction of the County Medical Officer of County to be approved by the Education Committee.

The appointments will be terminable by three months' notice on either side.

Successful candidates will be required to pass a medical examination.

Applications on the prescribed form (which may be obtained on application to me), accompanied by copies of not more than three recent testimonials, should be forwarded to "The County Medical Officer, Shire Hall, Nottingham," not later than January 22nd.

K. TWEEDALE MEABY,
Clerk of the County Council.

Shire Hall, Nottingham.

Bristol General Hospital.

SENIOR RESIDENT MEDICAL OFFICER (male). The Committee invite applications for this appointment. Salary at the rate of £200 per annum, with board, residence, etc., provided in the Hospital. Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability. The duties attaching to the post are chiefly surgical, but being also in part administrative, experience in this direction is therefore essential.

Applications, accompanied by copies of testimonials, three of which must preferably be given in support of the application, to be forwarded to the undersigned on or before Wednesday, February 5th next, from whom forms of application and copies of the duties may be obtained.

The Hospital contains 256 beds and is a School of Medicine attached to the University of Bristol.

THOMAS W. GREGG, Secretary.

Essex County Council.

MEDICAL OFFICER AT COUNTY SANATORIUM.

The County Council of the Administrative County of Essex invite applications for the appointment of Resident Medical Officer at their Sanatorium for the treatment of Tuberculosis now in course of erection at BLACK NOTLEY, near BRAINTREE, from registered Medical Practitioners, not more than 45 years of age, who are experienced in the treatment of pulmonary and non-pulmonary Tuberculosis, particularly in the latter, and who have had experience in the treatment of Orthopædic cases.

The Institution, when completed, will provide accommodation for the treatment of approximately 174 cases of pulmonary and non-pulmonary Tuberculosis, and for 10 Orthopædic cases.

The salary attached to the appointment will be at the rate of £750 per annum, together with the use of unfurnished house, rates and Schedule A tax free, water, light, laundry, coal, and such garden produce for the needs of the household as may be available from the grounds of the Sanatorium after the requirements of the Institution have been met, and will rise, subject to satisfactory service, by annual increments of £25 to £950 per annum. The foregoing emoluments are valued at £150 per annum.

The person appointed will be required to devote his whole time to the service of the Council, and, under the control and supervision of the County Medical Officer of Health to perform such duties, and to furnish such advice and assistance appertaining to his office as may be required, and to assist in such other of the County Medical work as he shall have time and opportunity for performing. The appointment will be subject to three months' notice on either side.

Applications on the prescribed form, obtainable from the undersigned, and accompanied by copies of not more than three testimonials, which will not be returned, should be addressed to me and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Friday, the 31st day of January.

JOHN H. GOOLD,
Clerk of the County Council.

Shire Hall, Chelmsford.
January 8th, 1930.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invites applications from registered male Medical Practitioners for the post of Assistant Medical Officer. Applicants must not be over 35 years of age, and must possess the Diploma of Public Health.

The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare and Tuberculosis Acts, and Venereal Diseases Regulations; and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County.

The salary will be £600 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained, together with further particulars, from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Monday, January 27th. All communications must be endorsed "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

DUDLEY AUKLAND,
Clerk of the County Council.

County Hall, Kingston-upon-Thames.
January 7th, 1930.

Erith Education Committee.

APPOINTMENT OF SURGEON FOR TREATMENT OF TONSILS AND ADENOIDS.

Applications are invited for the above appointment from duly qualified and registered Medical Practitioners.

The fee payable will be £5 5s. per session. Six cases will usually be treated per session, but in no case will the number exceed eight.

Further information may be obtained from Dr. C. HERINGTON, Council Offices, Erith, to whom applications, endorsed "Surgeon," accompanied by copies of not more than three testimonials, stating age, qualifications, and experience, must be sent to reach him not later than February 1st.

DOUGLAS S. TWIGG,
Clerk to the Council.

Council Offices, Erith.
January 14th, 1930.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** (*contd.*).	**PUBLIC HEALTH** (*continued*).
EBBW VALE, MON. (*Workmen's Medical Society.*)	OAKDALE, MON. (*Medical Officer for Medical Aid Association.*)	CHESHIRE EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female.*)
GILFACH GOCH, GLAMORGAN. (*Workmen's Medical Scheme.*)	OGMORE VALLEY, GLAMORGAN. (*Wyndham Colliery Medical Aid Society.*) (*Workmen's Medical Scheme.*)	CORNWALL EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female.*)
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. (*Workmen's Medical Scheme.*)	**POOR LAW.**	GLASGOW EDUCATION AUTHORITY. (*Male Assistant Medical Officer.*)
MARDY, GLAMORGAN. (*Workmen's Medical Scheme.*)	LEWISHAM HOSPITAL. (*Assistant Medical Officer.*)	YORESHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. (*Assistant School Medical Officer.*)
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. (*Workmen's Medical Scheme.*)	**PUBLIC HEALTH.**	YORKSHIRE WEST RIDING COUNTY COUNCIL. (*School Medical Inspector.*)
NEATH AND DISTRICT. (*Medical Aid Association.*)	CHESHIRE EDUCATION COMMITTEE. (*Assistant School Medical Officer—Male.*) (*Altrincham District.*)	

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (*Grenada with Carriacou, St. Vincent and St. Lucia.*)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. (*All Friendly Society Appointments.*)	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), B.M.A. Building, 30-34, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** (*Lodge Appointments.*)	Secretary, South Australian Branch, 207 North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** (*Contract Practice Appointments.*)	Dr. G. F. V ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 196, Wellington, New Zealand.
QUEENSLAND. (*Brisbane Associated Friendly Societies Institute.*)	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** (*Contract and Lodge Practices.*)	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
January 15th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

There are vacancies for Two HONORARY ANÆSTHETISTS, for which two of the Honorary Assistant Anæsthetists may be candidates. In the event of their election there will be vacancies for Two Honorary Assistant Anæsthetists, for which posts applications are also now invited.

Candidates are required to be registered under the Medical Act; to send applications, with copies of testimonials, so as to reach me not later than Thursday, January 23rd; to attend the Medical Council Meeting on Friday, January 24th, at 5 p.m., and prior to that date to call upon and send copies of their application and testimonials to each Member thereof; to abstain from canvassing, but nevertheless to send copies of their application and testimonials to the Members of the Board of Management, who will elect on Tuesday, January 28th, at 5 p.m., when candidates, if notified, must be in attendance.

H. A. MADGE, Secretary.

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty on February 1st next. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before Tuesday, January 21st.

FORTHCOMING VACANCIES.

House Physician, six months from March 1st.
House Surgeon (*Orthopædic*), six months from March 1st.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

West London Hospital,
Hammersmith Road, W.6.

Applications are invited for the post of ASSISTANT DENTAL SURGEON. Candidates are required to hold a Dental Diploma and be on the *Dental Register*, and also to hold some Medical or Surgical qualifications recognized by the General Medical Council of the United Kingdom; to send applications, with copies only of testimonials, so as to reach me not later than Wednesday, January 22nd; to attend a Meeting of the Medical Council on Friday, January 24th, at 4.30 p.m., and, prior to that date, call upon and send copies of their applications and testimonials to the Members thereof; to abstain from canvassing, but nevertheless to send copies of their application and testimonials to the Members of the Board of Management, who will elect on Tuesday, January 28th, 1930, at 5 p.m., when candidates (if notified) must be in attendance.

H. A. MADGE, Secretary.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE SURGEON,
OPHTHALMIC HOUSE SURGEON,
ASSISTANT OPHTHALMIC HOUSE SURGEON,
ASSISTANT CASUALTY OFFICER.

The appointments will be tenable for six months from January 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
December 28th, 1929.

St. Bartholomew's Hospital.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, February 18th, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Saturday, February 1st.

THOMAS HAYES,
Jan. 9th, 1930. *Clerk to the Governors.*

Bradford Royal Infirmary.

Two HOUSE SURGEONS (male) wanted for March 1st. Candidates must be single and legally qualified. Salary £150 per annum each, with board, residence, and washing.

There are 215 beds and six Resident Officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Tuesday, January 21st.

J. J. BARRON,
January 6th, 1930. Secretary-Supt.

Rochdale Infirmary and
DISPENSARY. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

Infirmary Office, Rochdale.
W. WYNNE, Secretary.

Department of Health for SCOTLAND.

BACTERIOLOGY.

APPOINTMENT OF MEDICAL OFFICER.

The Department of Health for Scotland are prepared to receive applications from registered Medical Practitioners for a post as Medical Officer.

Experience.—Applicants must have expert knowledge of Bacteriology. Experience in Hospital administration will be an additional qualification.

Age.—Must not be over 45 years.

Salary.—£600 per annum, rising by annual increments of £25 to £850 per annum, then by annual increments of £50 to £1,000 per annum. Cost of living bonus will be payable in addition—the bonus on £600 at present, £176, and on £1,000 being £205.

Duties.—The Medical Officer appointed will be required to devote his full time to the Public Service, and to perform such duties as may be assigned to him by the Department from time to time.

Further particulars and forms of application may be obtained from the Establishment Officer, Department of Health for Scotland, 125, George Street, Edinburgh. Letters applying for forms of application should have the words "Medical Officer" boldly written in the top left-hand corner of the envelope. No application will be considered if received after February 10th.

Metropolitan Borough of GREENWICH.

The Council of the Metropolitan Borough of Greenwich is prepared to receive applications from fully qualified and registered women Medical Practitioners for the position of MEDICAL OFFICER at one of the Infant Consultation Centres, which is held every Thursday afternoon at 2 o'clock; and, in addition, to conduct an Ante-Natal Clinic which is held at the same Centre at 10 o'clock on the first and third Thursday mornings each month, at which Clinic a few children also attend to complete the morning session.

A fee of 1½ guineas will be paid for attendance at each of such sessions.

Any further particulars may be obtained from the Medical Officer of Health, Borough Hall, Royal Hill, Greenwich, S.E.10.

Written applications, giving full particulars of any post-graduate study or practical experience connected with such work, sealed and endorsed "Medical Officer," must reach me not later than 10 a.m. on Wednesday, Jan. 29th.

Town Hall, Greenwich Road, S.E.10. FREDERICK J. SIMPSON, Town Clerk.

January, 1930.

The Manchester and District RADIUM INSTITUTE.

APPOINTMENT OF HONORARY CONSULTING SURGEON LARYNGOLOGIST.

Applications are invited for the above vacancy.

Candidates are requested to send particulars of their qualifications and experience, accompanied by testimonials, to the Hon. Secretary and Treasurer, The Radium Institute, Nelson Street, Manchester.

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The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male).

Salary at the rate of £150 per annum for the first six months and £175 for the second six months, with residence, board, and laundry.

The appointment is for six months and is renewable.

The Resident Staff consists of a Resident Surgical Officer, House Surgeon, and House Physician.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

ARTHUR H. LIMB, Secretary.

East London Hospital for CHILDREN & DISPENSARY FOR WOMEN, Shadwell, E.1.

The Board of Management invite applications for the post of SURGEON to the Nose, Throat, and Ear Departments, to see Out-patients one day a week.

By Section 6, Subsections 19 and 20 of the Constitutions of the Hospital, every Surgeon shall be a Fellow of the Royal College of Surgeons of England.

Applications, with copies of testimonials, should be addressed to the undersigned and delivered to the Hospital on or before Saturday, February 1st.

By Order of the Board of Management,
W. M. WILCOX, Secretary.

Metropolitan Hospital, Kingsland Road, London, E.8.

The Committee of Management are prepared to receive applications for the appointment of OPHTHALMIC SURGEON (male).

Candidates must hold the Fellowship of one of the Royal Colleges of Surgeons, and not be engaged in general practice. Candidates shall produce satisfactory evidence of having (after becoming qualified) filled an Ophthalmic appointment in a Hospital specially devoted to Eye work.

Candidates will be required to submit to Members of the Medical and Surgical Staff one copy of their application, with testimonials, and subsequently to call by appointment for interview. A list of the Medical and Surgical Staff and further particulars will be supplied upon request.

One copy of the application should be submitted to the undersigned as early as possible, but not later than first post on February 7th.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

Metropolitan Hospital, Kingsland Road, London, E.8.

The Committee of Management are prepared to receive applications for the appointment of an ASSISTANT SURGEON in the Department for Diseases of Women (male).

Candidates must be Fellows of the Royal College of Surgeons of England, and not engaged in general practice.

Candidates will be required to submit to Members of the Medical and Surgical Staff one copy with testimonials, and by appointment for inter edical and Surgical Staff and further particulars will be supplied upon request.

One copy of the application should be submitted to the undersigned as early as possible, but not later than first post on February 7th.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

Royal Surrey County Hospital, GUILDFORD. (180 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post from Practitioners who have held Post-Graduate Medical and Surgical Hospital appointments for at least one year. The candidate appointed will be required to act as House Physician, to supervise the work of three House Surgeons, and to perform such operations as may be deputed to him, and to take up the duties as early as possible. Salary £250 per annum, with board, residence, and laundry. Applications, accompanied by copies of testimonials, to be sent not later than January 31st to the Honorary Secretary, from whom further particulars may be obtained.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for eight months, from February 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before January 28th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
January 13th, 1930. Secretary-Supt.

Princess Alice Memorial Hospital EASTBOURNE. (96 Beds.)

Applications are invited for the posts of:

(*a*) HOUSE SURGEON, to commence duty on February 1st, and take up SENIOR position after one month; and

(*b*) a JUNIOR HOUSE SURGEON, to commence duty on March 1st.

Both appointments are for periods of six months. Salary at the rate of £125 per annum as Senior, and £100 per annum as Junior, with board, lodging, and laundry. Candidates must be unmarried, fully qualified, and registered.

Applications, stating age and qualifications, and accompanied by copies of not more than three recent testimonials (one of which must be from Medical School), must reach the Secretary by January 23rd.

The Staffordshire General INFIRMARY, STAFFORD.

Applications are invited for the position of HOUSE PHYSICIAN (male), which is now vacant. Candidates must be duly qualified and registered under the Medical Acts. Salary at the rate of £150 per annum, with board, lodgings, etc. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent forthwith to the undersigned.

A. E. COLLINS,
Stafford. Secretary.
January 13th, 1930.

The Liverpool Eye and Ear INFIRMARY, MYRTLE STREET.

Applications are invited for the post of HOUSE SURGEON to the Ear, Nose, and Throat Department of the above Institution. Salary £100 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than January 28th to—

CHARLES W. WRIGHT, Esq.
9, Harrington St., Liverpool.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

Nuneaton General Hospital, WARWICKSHIRE. (76 Beds.)

HOUSE SURGEON required. Salary £120 per annum, with board, lodging, and laundry. The appointment is tenable for six months, but application may be made for an extension of the period. Candidates must be registered according to the provisions of the Medical Act, and be members of one of the Medical Protection Societies. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent at once to the Medical Secretary.

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required, must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months from February 16th next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than 10 a.m. Saturday, February 1st.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

CLINICAL ASSISTANTS are required in the Medical Department under the Honorary Physicians, to attend on Monday, Tuesday, Wednesday, and Friday afternoons.

CLINICAL ASSISTANTS are also required in the X-ray Department, to attend on Monday, Tuesday, and Thursday afternoons.

Applications for appointment to be sent to—

FREDK. W. DREWETT, Director.

Taunton and Somerset Hospital, TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male), required at beginning of February. The appointment, which will be for six calendar months, is approved by the University of London for the purpose of the M.D. examination. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

General Infirmary, Salisbury. (General Hospital—151 Beds.)

HOUSE PHYSICIAN (male) required to commence duty at the beginning of February.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be had on application.

City of Carlisle.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Council of the City and County Borough of Carlisle invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health or an equivalent qualification, for the appointment of Medical Officer of Health and School Medical Officer for the City.

The salary will be £930 per annum, rising by annual increments of £50 (subject to satisfactory service) to a maximum of £1,000 per annum.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, to reside in the City, and will not be allowed to engage in private practice. He will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be, in future, assigned to him.

The appointment is to be held in accordance with the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and subject to the provisions of the Local Government and other Officers Superannuation Act, 1922, the successful candidate being required to pass a medical examination.

Canvassing, either directly or indirectly, is prohibited.

Applicants may, if they desire, forward copies of their applications and testimonials to the members of the Selection Committee, a list of whose names will be supplied by the undersigned upon request.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than the first post on Monday, January 27th.

Town Clerk's Office, Carlisle. January 14th, 1930. FREDK. G. WEBSTER, Town Clerk.

Bolton Union.

TOWNLEYS HOSPITAL.

Wanted for the Townleys Hospital, Farnworth, near Bolton, a SECOND ASSISTANT MEDICAL OFFICER (male) for a period of one year.

The salary will be at the rate of £225 per annum, and rations, furnished apartments, attendance, washing, etc.

The Hospital has accommodation for 550 patients, is a recognized Training School for Nurses, and has a Medical Superintendent and Three Resident Assistant Medical Officers.

Forms of application, together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed), may be obtained from me.

Last day for applications February 3rd.

22, Mawdsley St., Bolton. January 11th, 1930. H. I. COOPER, Clerk to the Guardians.

City of Leicester.

RESIDENT MEDICAL OFFICER.

Junior Assistant Medical Officer (male) required for the CITY ISOLATION HOSPITAL & SANATORIUM, Groby Road. The appointment will be for a period of twelve months. The salary at the rate of £300 per annum, with board, residence, and laundry. The officer appointed will be required to contribute to the Superannuation Fund of the Corporation.

Applications, stating age, experience, etc., together with copies of three testimonials, to be sent to the undersigned not later than January 30th.

Health Offices, Leicester. January 14th, 1930. C. KILLICK MILLARD, Medical Officer of Health.

Chester Royal Infirmary.

(211 Beds.)

Wanted, HOUSE PHYSICIAN (male) to commence duties February 10th. Salary £150 per annum, with board, lodging, and washing.

Application list closes on January 31st.

Application forms may be obtained from the undersigned.

W. H. GRACE, M.D., M.R.C.P., Hon. Supt. of Resident Medical Staff.

Waterloo and District General Hospital, near Liverpool.

(50 Beds.)

HOUSE SURGEON required immediately for the above Hospital. Salary £160 per annum, with board, laundry, etc. The appointment is for six months. Applications, together with copies of testimonials, must be received by the Secretary, Medical Board, not later than January 24th.

Wilts County Council.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector. Applicants must be fully qualified Medical Practitioners, hold a Diploma in Public Health or an equivalent qualification, and have had some special experience in Tuberculosis.

The salary will be £600 per annum, rising by annual increments of £25 to a maximum of £750 per annum, and will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination. Travelling allowance for own motor car in accordance with County scale.

The officer appointed will be required to reside in Salisbury, to devote his whole time to the duties of his office, and to act under the direction and control of the County Medical Officer of Health, who is also School Medical Officer. The duties of the post will be chiefly concerned with the School Medical Service, but a proportion of the officer's time will be devoted to the Public Health work of the County, including the duties of Assistant Tuberculosis Officer and Medical Officer of Harnwood Tuberculosis Hospital. The appointment will be determinable by three months' notice on either side.

Applications on form to be obtained from the undersigned, together with copies of not more than three recent testimonials, and enclosed in envelope marked "Assistant Medical Officer," to be lodged with the undersigned not later than first post on Monday, February 3rd.

Canvassing, either directly or indirectly, is strictly prohibited and will be regarded as a disqualification.

County Offices, Trowbridge. January, 1930. W. L. BOWN, Clerk of the County Council.

Beckett Hospital and Dispensary, Barnsley. (130 Beds.)

JUNIOR HOUSE SURGEON (male) required to commence duty February 24th. Applicants must be fully qualified and registered.

Salary attached to this appointment is at the rate of £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the undersigned not later than January 25th.

ARTHUR L. BOURNE, Secretary-Supt. January 14th, 1930.

The Northern Infirmary.

Wanted, for February 1st next, JUNIOR MEDICAL RESIDENT, male, unmarried. Will be eligible for appointment to post of SENIOR HOUSE SURGEON on April 1st next; must be fully qualified and registered. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, stating age, Medical School, qualifications, and experience, with copies of recent testimonials, to be sent to Mr. ROBERT GILBERT, Hon. Secretary to the Institution.

20, Church Street, Inverness. January 15th, 1930.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST required, which with a coexisting Research appointment will allow of a salary of £350 per annum. Applications, stating age, experience, qualifications, appointments held, etc., to be forwarded to the undersigned on or before January 28th.

By Order of the Board, HERBERT J. DAFFORNE, Gen. Supt. & Secretary.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE CASUALTY OFFICER. Salary £100 p.a. The appointment is for three months. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital as soon as possible. The successful applicant should be prepared to begin duty at once.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON, vacant on 31st instant. The appointment is for six months, renewable. Salary at the rate of £150 per annum, with board, lodging, and washing. Applications, stating age, qualifications, and experience, with copies of testimonials, to be addressed to the Secretary on or before 23rd instant.

City of Coventry.

ASSISTANT SCHOOL MEDICAL OFFICER (AND ASSISTANT MEDICAL OFFICER OF HEALTH).

The Coventry City Council invite applications for the post of Assistant School Medical Officer (male) in connection with the medical inspection, etc., of school children. When not engaged in school work, the officer will be required to assist in the work of the Public Health Department.

Applicants must possess a Diploma in Public Health, and preference will be given to those who have held Hospital appointments, or had previous experience of similar work.

The salary will be on Grade C of the Council's salary scale, which provides for a commencing salary of £600, increasing to a maximum of £700 by increments of £25 granted by the Council on the recommendation of the Education Committee.

The post is a designated post under the Local Government and other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination and to contribute to the Superannuation Fund.

Applications must be made on the prescribed form (which may be obtained from the undersigned), and must be delivered not later than Thursday, January 30th.

Canvassing, either directly or indirectly, will disqualify.

Council House, Coventry. January 15th, 1930. FREDERICK SMITH, Town Clerk.

Borough of Taunton.

ANTE-NATAL CLINIC, Municipal Offices, Corporation Street.

Applications are invited from duly qualified registered Medical Practitioners for the post of PART TIME MEDICAL OFFICER of the above.

Applicants should have held a Resident appointment in a Maternity Hospital with Ante-Natal Clinic, or had at least three months' Post-Graduate instruction at a recognized school.

Clinics held at fortnightly intervals. Fee payable 15 guineas per Clinic.

Applications should be sent to reach the undersigned not later than Friday, the 24th instant.

Municipal Buildings, Taunton. January 16th, 1930. W. H. BAILEY, Town Clerk.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

Applications are invited for the undermentioned posts:

Two HOUSE SURGEONS.
One HOUSE SURGEON (Surgical Unit).
Two HOUSE PHYSICIANS.
One HOUSE PHYSICIAN (Medical Unit).

Salary at the rate of £50 per annum, with board and lodging. Appointments are for six months, commencing February 22nd.

Forms of application can be obtained from the undersigned, and should be returned with copies of three recent testimonials on or before February 3rd.

R. ARMSTRONG, Medical Supt. January 14th, 1930.

District Infirmary, Ashton-under-Lyne.

(General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON, preferably with experience of Ophthalmic work. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER, Gen. Supt. & Secretary. Jan. 2nd, 1930.

Huddersfield Royal Infirmary.

(200 Beds.)

HOUSE SURGEON required immediately for Specials Department. Salary £150 per annum with board, residence, and laundry. Appointment six months, subject to renewal. Applications, with testimonials, from qualified candidates to Secretary.

Ilford Emergency Hospital

(8 miles from London), to be extended and renamed KING GEORGE HOSPITAL.

Applications are invited for the appointment of SECOND HOUSE SURGEON. Salary £160 per annum, with board, residence, etc. Applications should be sent at once to the Secretary.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQ., LONDON, W.C.1.

T/A: ARTICULATE, WESTCENT, LONDON, *Tel.*: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted at once, male (British) indoor ASSISTANT in pleasant country district in Midlands. £300 to commence. Early Partnership. Send age, height, school, experience, and photo. Should be car driver. All sports obtainable and opportunities for same. —No. 598, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, Assistant-SHIP, LOCUM, or BRANCH MANAGEMENT. M.R.C.S., L.R.C.P., married, no family, sober, keen, motorist. Exp. all branches general prac. Well received; aged 48, looking younger. —No. 513, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£450 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, almost immediately, an experienced and well-qualified ASSISTANT for a mixed Practice on the outskirts of Leeds. Liberal salary.—Address, No. 501, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Male Assistant for panel and private Practice in Midlands. Salary £250 to £300. Recently qualified or experienced. British. Usual bond.—Address, No. 529, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, married preferred. "Panel" class Practice, Devon. Good prospects for suitable man. References.—Address, No. 520, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, outdoor, for Cash Practice, Peckham. Suit newly qualified, or reading for further exam. Time off. State essential particulars.—Address, No. 526, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for East London, near City. No midwifery. Work light. Salary £300.—Address, stating age, testimonials, etc.; No. 552, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Lady Assistant, with experience, for a General Practice near Manchester. Able to drive car. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant, male, single, Protestant. Mixed Practice, large town. Salary £300—£350 (according to experience), with furnished rooms, light, and fuel. —Address, No. 538, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for private Practice. Separate car provided. Salary £300. Usual bond.—Address, with particulars, No. 551, B.M.A. House, Tavistock Square, W.C.1.

Wanted for panel and private Practice in outlying suburb of provincial City, indoor male ASSISTANT, with experience of general practice. Salary £300. —Address, No. 534, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, European. Used to panel and private Practice. Salary £25 per month. State references, etc.—Address, No. 561, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Irish Graduate, 26 yrs., single, R.C., 4 years qualified. At present in panel practice. Free for interview or appointment after January 12th. London preferred. — Address, No. 556, B.M.A. House, Tavistock Sq., W.C.1.

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APPOINTMENTS.—Contd.

The Sheffield Royal Hospital.

There will shortly be vacancies on the Resident Staff (male), and applications should be forwarded early to the undersigned. The available beds number 340, there are twelve residents, and the Hospital is a Medical School. Salary for the first six months at the rate of £80 per annum, afterwards at £100 per annum, with board, residence, and laundry.

W. H. BOOTH,
Jan. 3rd, 1930. Supt. & Secretary.

North Devon Infirmary,
BARNSTAPLE. (60 Beds.)

Wanted at once, duly qualified RESIDENT MEDICAL OFFICER, gentleman or lady. Salary £150 per annum, with board, apartments, and laundry. Appointment to be for not less than six months. Applications, stating age, qualifications, with copies of recent testimonials, to be sent forthwith to the Hon. Secretary.

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West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on February 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties early in February. Salary £100, with rooms, board, and laundry.

There are 110 beds.

Particulars to be obtained of, and applications, stating previous experience and essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Wrexham and East Denbighshire War Memorial Hospital.

Applications are invited by the Elective Committee of the above Hospital for the post of HONORARY ASSISTANT PHYSICIAN AND SURGEON.

Applications, stating age and qualifications, *together with copies of not more than three recent testimonials*, must be delivered to the undersigned on or before Saturday, Feb. 1st.

By Order,
LESLIE SPENCER, *Secretary*.

Extract RULE 70.—"Personal canvassing of the Governors, Board, or the Elective Committee, or any members thereof, by any candidate for any office to be held in connection with the Institution, shall disqualify the candidate."

Bristol Homœopathic Hospital.
(BRUCE MELVILLE WILLS MEMORIAL.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER, *at a salary of £100 per annum*, with board, laundry, residence, etc., in the Hospital.

Good surgical and general experience.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, not later than the 25th instant.

Applicants should state the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel), *Secretary*.

Birmingham Maternity Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER AND REGISTRAR, to commence duties on April 1st next. The appointment is made for one year at least and can be renewed if desirable. Salary £200 per annum.

Applicants must have had previous experience in Obstetrics and be reading for Higher Examinations.

Applications and copies of testimonials to be sent to Mr. HUGH C. ASTON, 46, Newhall Street, Birmingham, *not later than February 15th.*

The Royal Edinburgh Hospital
FOR SICK CHILDREN.

The Directors of this Hospital will meet on Wednesday, February 12th, to elect an *HONORARY RADIOLOGIST to the Institution.*

By Order of the Directors.
56, Frederick St., Edinburgh. HENRY & SCOTT, *Hon. Secretaries.*

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) *required.* Salary £120 per annum, *with board, residence*, and laundry. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

National Hospital for Diseases
OF THE HEART, Westmoreland St., W.1.

PHYSICIAN TO OUT PATIENTS.

The Committee of Management invite applications for the post of Physician to out patients to fill a vacancy on the Honorary Medical Staff.

Candidates must be Graduates in Medicine of a University of the British Empire recognized by the Royal College of Physicians of London and Fellows or Members of that College.

Applications, with ten copies of not more than three recent testimonials, should be sent to the undersigned not later than Saturday, February 1st.

ROBERT G. E. WHITNEY,
Secretary

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the posts of: CASUALTY OFFICER, who will rank *next to* the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, *and laundry. Previous experience essential.* FIRST HOUSE SURGEON. Salary at the rate of £120 per annum. Six months' contract, with board, residence, and laundry.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by *three recent testimonials*, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. *Secretary.*
January 4th, 1930.

Central London Ophthalmic
HOSPITAL, Judd Street, W.C.1.

There is a vacancy for the post of ASSISTANT SURGEON to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons (Eng.) or hold the Degree of M.S.London in Ophthalmology, and must have held the post of Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than January 31st, and candidates must attend at the Hospital on Thursday, February 13th, at 4.30 p.m.

H. R. S. DRUCE, *Secretary.*

City of London Hospital for
DISEASES OF THE HEART & LUNGS,
Victoria Park, E.2.
(Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on March 1st. Six months' appointment. *Salary at the rate of £100 per annum.* Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Monday, February 16th.

GEORGE WATTS, *Secretary.*

Victoria Hospital, Burnley.

Wanted, HOUSE SURGEON (male), fully qualified. Appointment, six months. Salary £125 per annum, with board, lodgings, and washing. Applications may be sent in at once to F. A. HARGREAVES, Hon. Secretary, 7, Grimshaw Street, Burnley.

N.B.—This Hospital is approved by the London University for the M.B. and M.S. Examinations.

Macclesfield General Infirmary.
(100 Beds.)

Wanted, RESIDENT HOUSE SURGEON. Salary £180 per annum, with board and residence. Candidates must be fully qualified and registered. Applications, with copies of testimonials, to be sent to the undersigned.

A. E. HANRAHAN, *Secretary.*

Royal Devon & Exeter Hospital,
EXETER (225 Beds.)

HOUSE SURGEON (Male).

Applications are invited for the post of HOUSE SURGEON at this Hospital, vacant on February 11th next. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of three recent testimonials, should be sent to the undersigned on or before Monday, 20th inst.

By Order of the Committee,
S. S. COLE,
Jan. 3rd, 1930. *Secretary & Manager.*

The Manor House Hospital,
Golders Green, London, N.W.11.
(112 Beds.)

Applications are invited for the post of HOUSE SURGEON. *Salary at the rate of £200* per annum, with board, residence, and laundry. Appointment for six months; renewable if mutually agreed. Preference given to one having held six months' previous appointment as a House Surgeon. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, should reach the undersigned as soon as possible.

JAMES W. LINKHORN, *Secretary.*

North Riding Infirmary,
MIDDLESBROUGH.
(General Hospital—150 Beds.)

SECOND HOUSE SURGEON (male) wanted to *commence duties early as possible.* Salary at the rate of £150 p.a., with board, residence, and laundry. Applications stating age, nationality, and previous experience, with three *recent testimonials (copies)* should be sent forthwith to the undersigned.

NOTE.—*The post of Senior House Surgeon will be vacant at the end of March and the Second House Surgeon will be eligible to apply for same. (Three Resident House Surgeons.)*

CHARLES POSTGATE, Secretary-Supt.

Swindon & North Wilts Victoria
HOSPITAL.

Required (February 1st) HOUSE SURGEON. Salary £100 per annum, with board, residence, and laundry. Appointment for *minimum* of six months.

Candidates must be registered under the Medical Act. Applications, stating age, qualifications, *etc., and accompanied by copies of not more than three testimonials, to be sent to the* Secretary at the Hospital on or before Monday, January 20th.

Selected candidates will be required to appear before the Medical Committee for an interview.

National Hospital, Queen Sq., W.C.1.

HONORARY DENTAL SURGEON.

Applications are invited for the post of *HONORARY DENTAL SURGEON and should be* sent to the undersigned on or before February 1st. The qualifications required are F.R.C.S. or M.R.C.S. and L.D.S. Any further particulars may be obtained in the Secretary's office.

GODFREY H. HAMILTON, *Secretary.*

Newark General Hospital.
(50 Beds).

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

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Ear and Throat Hospital,

BIRMINGHAM.

HOUSE SURGEON wanted (non-resident) to assist chiefly in Out-patient Department. Must be qualified and with clinical experience.

Appointment to March 31st, when one of the other House Surgeon appointments will be vacant. Salary at the rate of £150 per annum, with lunch five week-days, and an allowance at the rate of £50 per annum in lieu of full board and lodging. Duties to commence as soon as possible.

Applications and testimonials to be forwarded on or before January 22nd to the undersigned.

S. G. GREW,
January, 1930. Secretary.

Ear and Throat Hospital,

BIRMINGHAM.

SECOND HOUSE SURGEON wanted (non-resident). Must be qualified and with clinical experience. Salary at the rate of £150 per annum, with part board, and an allowance at the rate of £50 per annum in lieu of full board and lodging. Duties to commence as soon as possible.

Appointment to March 31st, when the office of First House Surgeon will be vacant, for which the Second House Surgeon will be eligible.

Applications and testimonials to be forwarded on or before January 22nd to the undersigned.

S. G. GREW,
January, 1930. Secretary.

East Riding Mental Hospital,

BEVERLEY, YORKSHIRE.

JUNIOR ASSISTANT MEDICAL OFFICER (lady) required. Salary £250, with board, apartments, and laundry. Appointment subject to provisions of the Asylum Officers Superannuation Act.

Apply, stating age, with particulars of qualifications and experience, and testimonials, to the Medical Superintendent.

Coventry and Warwickshire

HOSPITAL, COVENTRY. (507 Beds.)

RESIDENT ASSISTANT HOUSE SURGEON (male) wanted. Salary £125 per annum, board, laundry, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before January 21st.

(Miss) R. HOOPER, Secretary.

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ASSISTANT, with view to Partnership, wanted for large general Practice in country town thirty miles from London. Married man, age about 30 preferred. Salary £400 p.a. and furnished rooms.

PARTNER REQUIRED for large Industrial Practice in Staffs. Receipts over £3,200. All books audited. Panel over 4,900. Good house at surgery, e.l., garage, etc. Present partner leaving through ill health. Age 30 to 40 preferred. Good accoucheur necessary. 1/3 share for sale for 1½ years' purchase.

LONDON, N.W. — Old-established panel and private PRACTICE for sale. Income £727. Number on panel 1,257. Fees 2/6 up. Surgery and waiting room in main road, rent £52 p.a. Flat available near, rent £100 p.a. Premium £1,250.

LONDON, W.C.—Good-class Consulting PRACTICE for sale. Panel of about 200. Income £686 p.a. Lock-up waiting room and consulting room, rent 30/- a week. In addition, large living room, kitchen, and bathroom all adjoining; could be had for further 30/- a week. Premium £750.

LADY DOCTOR'S PRACTICE in attractive Gloucestershire town. Established nearly six years. Income now about £840 p.a. Number on panel 550. Fees 3/- up. Very nice house, 3 reception rooms, 5 bedrooms. Freehold to be sold for £1,300. Premium for Practice £1,050. This Practice would suit a man.

MONMOUTHSHIRE.—Panel and private PRACTICE for sale. Income £1,050. Number on panel 1,228. Good detached house, 2 reception, 5 bedrooms, bathroom, kitchen, lawns back and front; garage. Rent £40 p.a. Premium for Practice £1,800. Accept £1,000 down. Balance by instalments.

LEICESTERSHIRE.—Panel and private PRACTICE for sale. Income about £800. Number on panel 500. Fees at surgery 3/6. Good comfortable family residence, 3 reception, 4 bedrooms, 2 attics. Separate surgery entrance. Gas and e.l. Central heating. Rent £100 p.a. House could be bought if desired. Premium £950.

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Eastern Counties.—Rapidly increasing. 1/3 share of £2,500 p.a. Country Town. Appts. £65 p.a. Panel over £750 p.a. Clubs, etc., £150 p.a. Mids. from 3—5 gns. up. Visits from 5/-. Alternative accommodation. Personally visited.—No. 8591.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Surrey.—Death Vacancy.—About £1,500 p.a. Mixed-class PRACTICE. Visits 3/6—21/-. Panel and appts. over £600 p.a. Good house and garden. Personally investigated.—No. 8586.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 5/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8585.

Eastern Counties.—Old-estab.—ONE-THIRD SHARE of £2,400 p.a. Panel over 1,600 names. Appts. £100 p.a. Usual fees. Nice house and garden to rent. Prem. 13 years, part down.—No. 8584.

Hants Country. — About £700 p.a. Appts. about £55 p.a. Panel about 300. Visits 3/6—10/6. House, 3 bed., etc., to rent or buy.—No. 8582.

N. W. Scotland. — About £800 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premium, including furniture, only £1,200.—No. 8577.

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Wiltshire.—About £1,000 p.a. Small panel. No midwifery. Appt. £20 p.a. Visits 5/- to 10/6. Suitable house to rent at £70 p.a.—No. 8574.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd of £3,300 p.a. Panel over 1,300. Appts. £280 p.a. Mids. 2 to 10 gns. Visits 5/- to 31/6, etc. Suitable accommodation.—No. 8573.

Home Counties.—Country Town. Share worth £1,000 or more p.a., in old-established Practice. Appts. £250 p.a. Panel over 2,700. Personally visited.—No. 8565.

London, E. — £850 p.a. Old-estab. Visits 5/- to 10/6. Very little midwifery. Panel over 500. Small house to let £60 p.a.—No. 8562.

Continental Coastal Practice.—About £450 p.a. Visits 10/6 to 21/-. Cons. 5/- to 10/6. No appts. or mids. Good flat to rent, 3 bed., etc.—No. 8561.

Lancs.—1/3 or 1/2 share of over £2,400 p.a. Prelim. Assistancy. Panel £500 Mixed-class. Good house, 4 beds., attics, etc.—No. 8454.

Lancs.—£4,000 p.a., increasing. Panel over 2,650. Fees 2/6—7/-. Mids. 2—5 gns. Suitable for two. Two adjoining houses to rent or buy. Premium, including drugs, book debts, surgery furniture, etc., only £4,750.—No. 8509.

Herts.—Country.—Nearly £1,000. Panel 470. Appts. £54. Residential. Good fees. House, with good surgery, 6 bed, garden, etc.—No. 8556.

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HOME COUNTIES.—Well-established country PRACTICE. Receipts £1,400. Panel 703. Excellent freehold house with large garden and garage. Scope for surgery. Premium 1½ years' purchase.

LANCS.—Cash and Panel middle- and working-class G.P. House to rent. Receipts £750. Panel 700. Premium £1,650. £600 down and balance by instalments.

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LANCS.—Old-established middle-class PRACTICE in manufacturing area. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. Premium for Practice 1½ years' purchase, payable part down and balance by arrangement. Partnership would be considered.

LONDON, N.—NUCLEUS Lock-up Practice, with living accommodation if desired. Receipts over £750. Panel 510. Premium £600, cash, for quick sale.

N. WALES.—DEATH VACANCY.—Good-class PRACTICE situated in Health Resort. Large house for sale or to rent at £85 p.a. Receipts approx. £1,200 p.a. Small panel. Premium 1 year's purchase.

N. LANCS.—Old-established G.P. Receipts average £2,000 p.a. Panel 2,150. House to rent at £80 p.a. Scope for increase. Premium, to include book debts, stock, etc., £3,500 or near offer.

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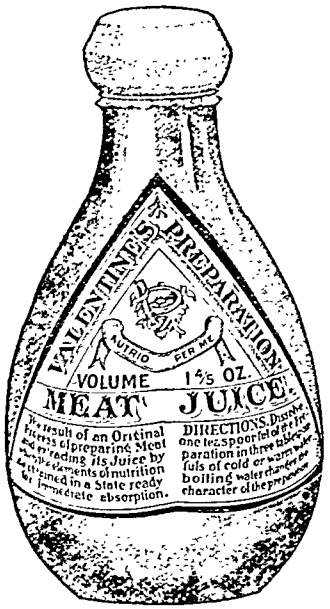
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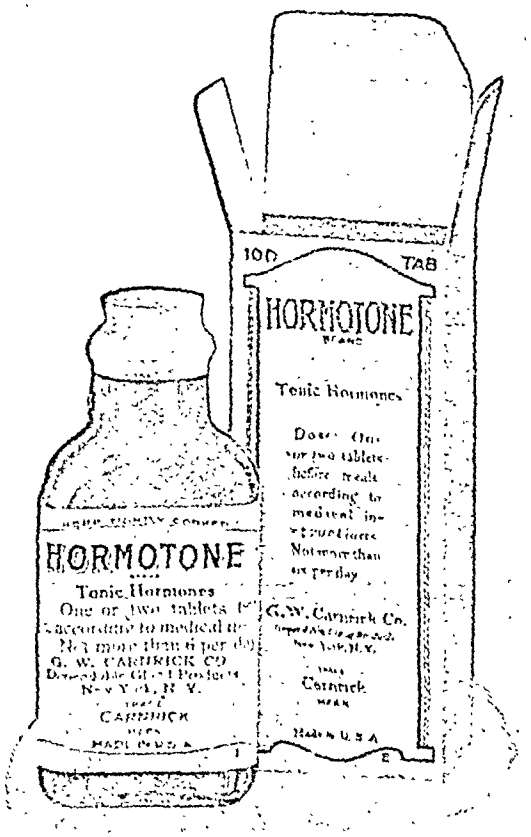
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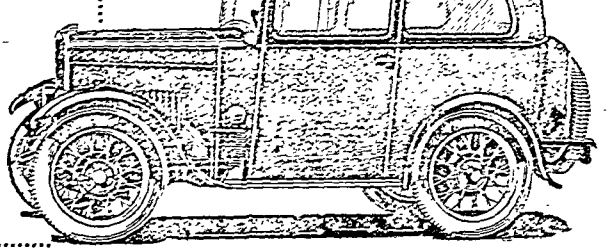
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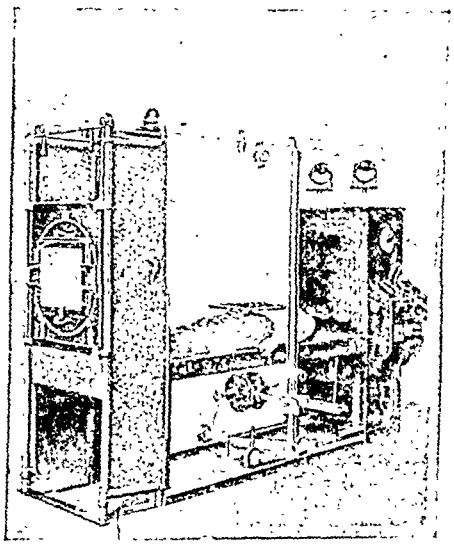
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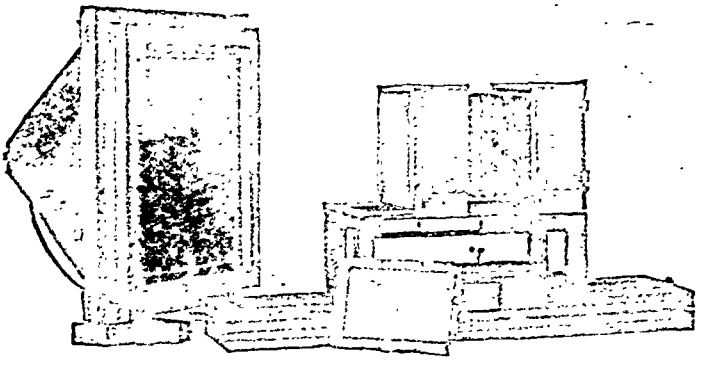
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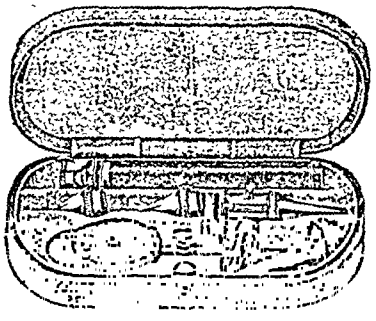
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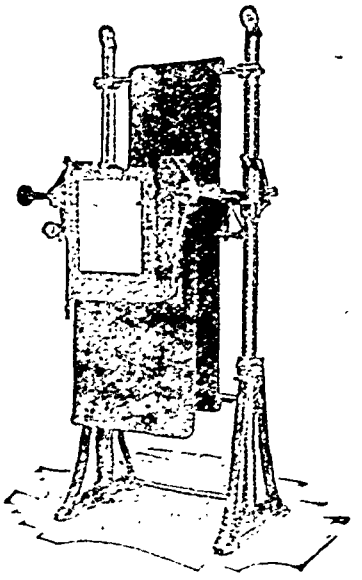
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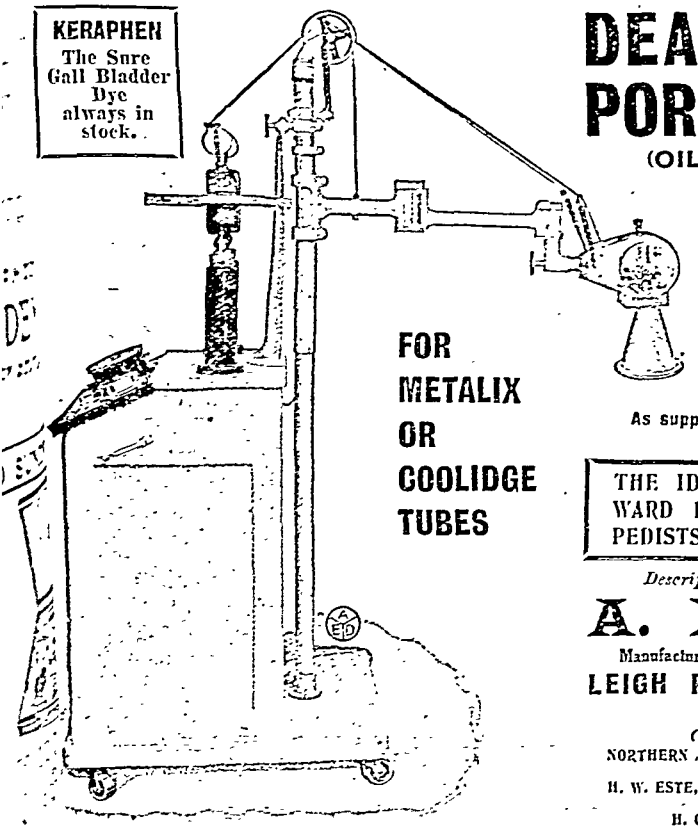
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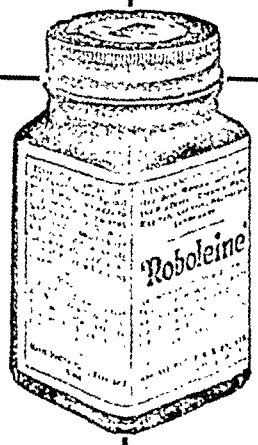
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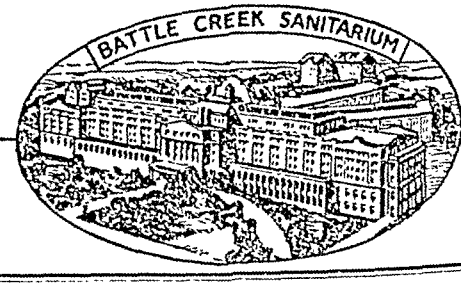
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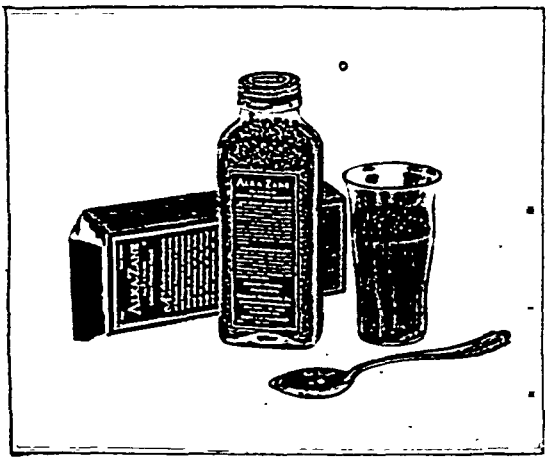
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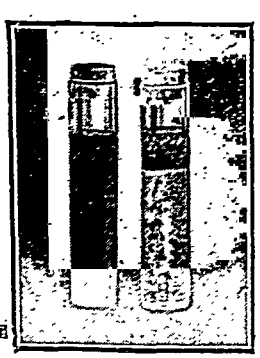
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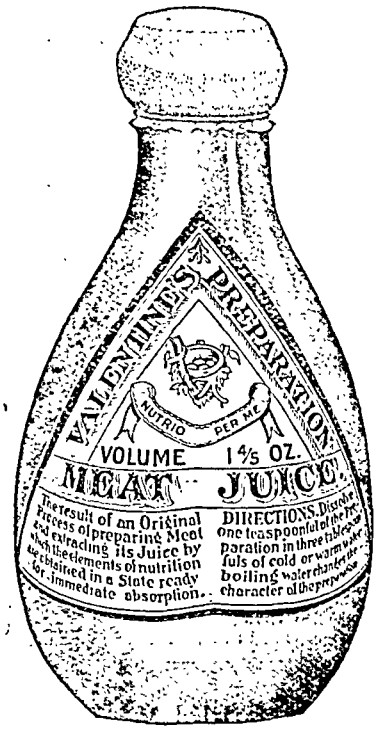
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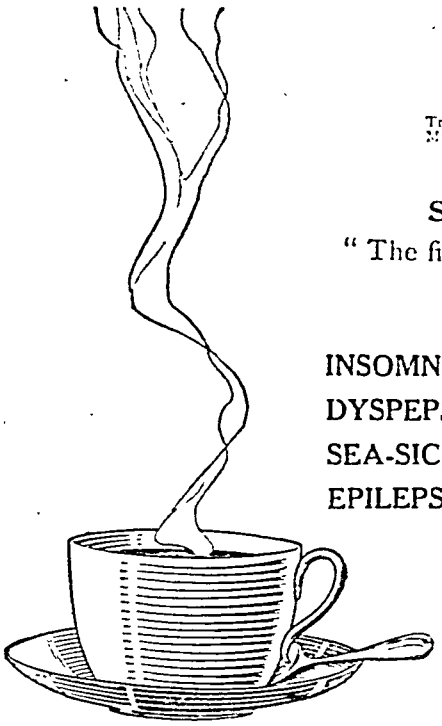
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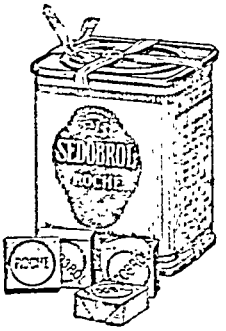
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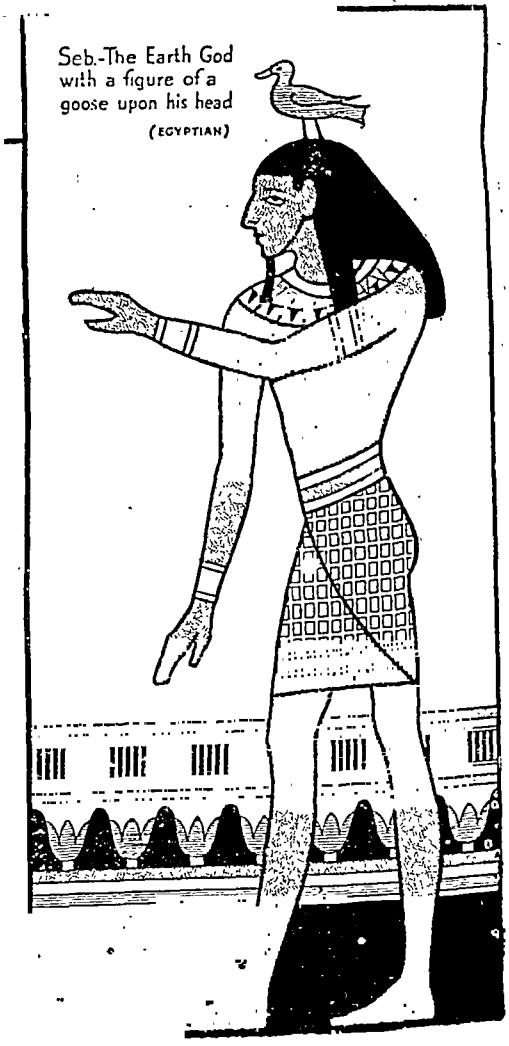
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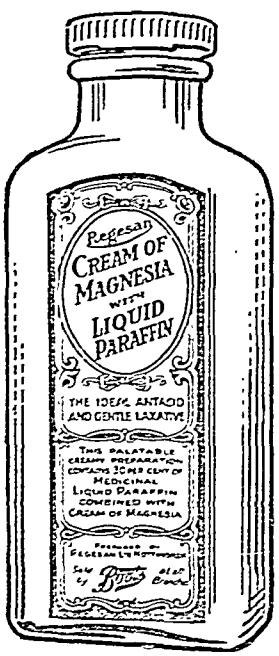
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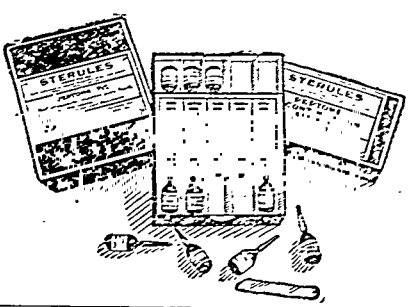
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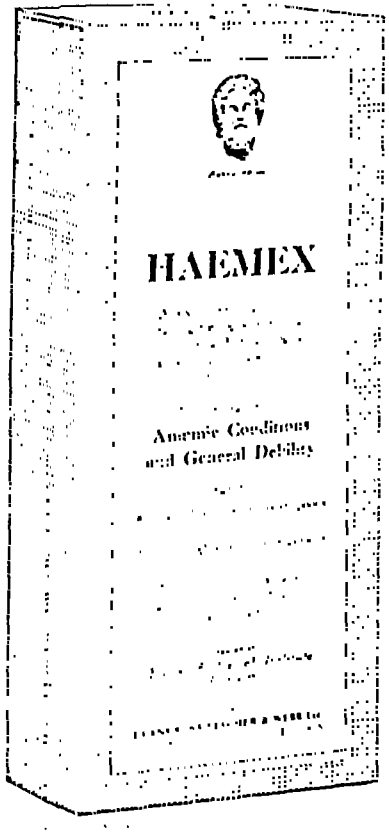


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The above extract from *The Lancet* (Jan. 4th, 1930, p. 42), shows only too clearly the grave danger attending the addition of irradiated ergosterol to infant foods. This practice originated in an abortive attempt to improve the nutritive value of milk produced on soils deficient in their vital mineral constituents.

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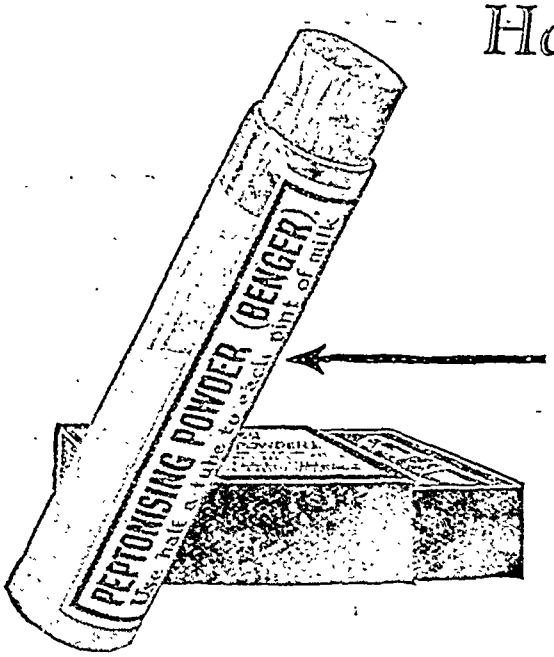
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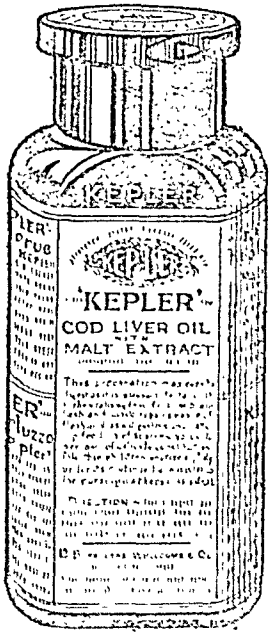
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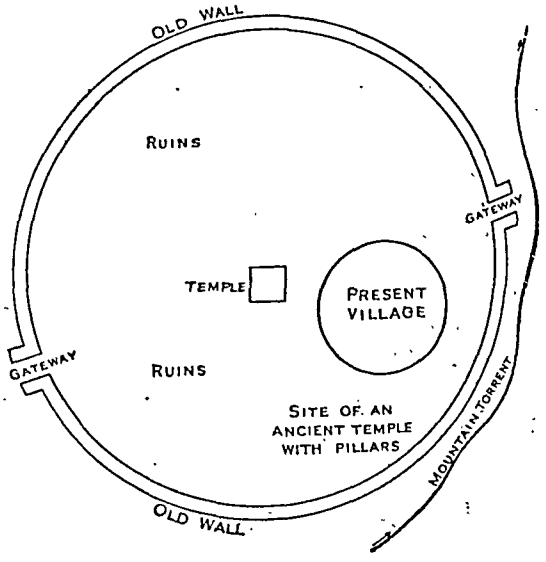
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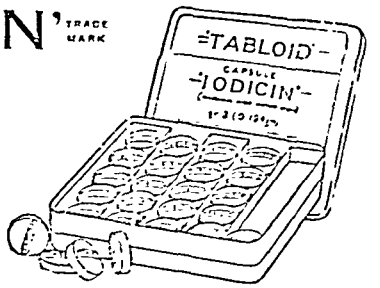
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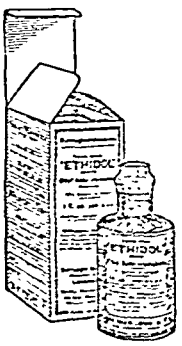
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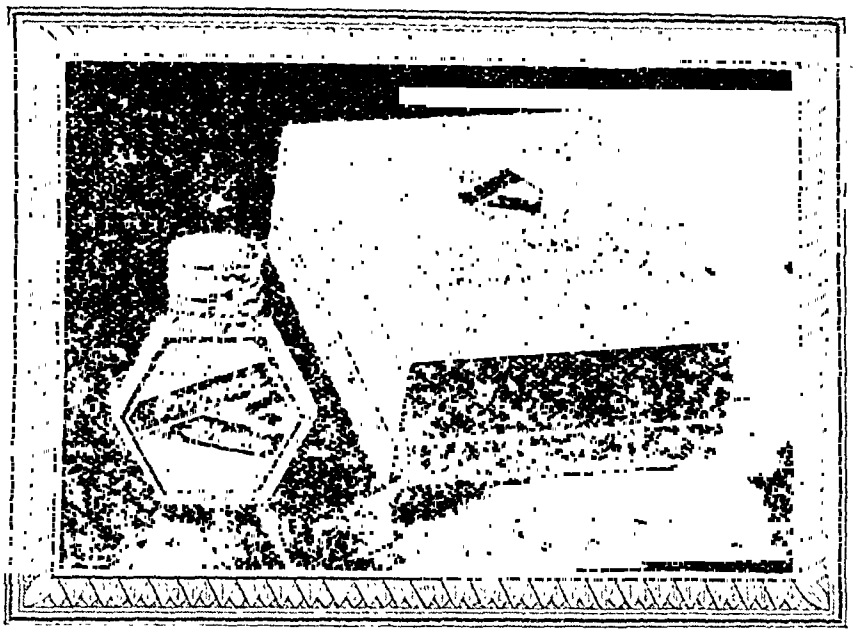
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Observations
ON THE
DIAGNOSIS AND TREATMENT OF CATARRHAL AND ULCERATIVE COLITIS.

BY
H. LETHEBY TIDY, M.D.Oxon., F.R.C.P.Lond.,
ASSISTANT PHYSICIAN TO ST. THOMAS'S HOSPITAL.

THE medical treatment of catarrhal colitis needs the most careful attention to detail. A bald statement of general principles is insufficient guide. Indeed, as usually enunciated, these consist mainly of starvation and opium and medicated enemata—measures which would induce colitis in many healthy individuals. For success, it is necessary to attend to many details which might appear to be minutiae. The chronic form will be dealt with first and special points in the treatment of the acute type will be given subsequently.

Chronic catarrhal colitis is a condition in which clinically there is persistent diarrhœa over a long period. Characteristically gastric symptoms are absent—that is to say, there is no nausea, vomiting, heartburn, waterbrash, or flatulent eructations. If present, they are slight and do not form a prominent feature. The appetite is not sharp, but is usually sufficient for the patient to take a considerable amount of nourishment. Gastric symptoms are, however, easily produced by an unsuitable diet. It is obvious that a severe or extensive catarrhal gastro-entero-colitis is hardly consistent with a chronic course.

Excluding effects of treatment, the diarrhœa does not tend to vary greatly from day to day. Nor does the character of the stools alter markedly from one motion to another. Days of constipation or the passage of solid faeces are not interspersed in the course. Blood and mucus may be present in varying quantities and mixed in varying degrees of intimacy, but blood is not always present.

Chronic colitis may commence suddenly with an acute or subacute colitis: this partly subsides, but persists as chronic colitis. On the other hand, chronic colitis may drift in gradually. The patient notices that the daily motion has become consistently soft and half-formed. Then in course of time two stools a day are passed. Gradually the frequency increases in spite of ordinary measures for dealing with casual diarrhœa.

No distinction is made here between catarrhal and ulcerative colitis. The conditions are essentially the same and the treatment is identical. Before describing the treatment, the diagnosis must be referred to—first, because certain diseases have some resemblance to catarrhal colitis, but call for different treatment, and secondly, because certain methods of diagnosis affect the treatment.

DIAGNOSIS.

The patient must be under observation in bed and the stools examined, at least with the naked eye, before a diagnosis of catarrhal colitis is made. Apparent colitis may sometimes prove to be due to aperients taken from ungrounded fears of cancer or of constipation, and the stools may become solid in a few days without treatment; in other instances the history has evidently been inaccurate, especially when there is a factor of neurosis. In severe cases very little observation is sufficient, and no time need be lost before treatment is commenced. Difficulties in diagnosis more commonly arise in cases of less severity, and a few days may be necessary for diagnosis: this time can safely be afforded for observation in such instances. Bacteriological and microscopical examination of the stools should be carried out in every case, but it is not necessary for commencement of treatment to wait until these are complete.

The special conditions from which the diagnosis of catarrhal colitis must be made are:

1. Muco-membranous colitis.
2. Dysentery.
3. Neoplasms of the colon.
4. Tuberculosis.

Muco-membranous Colitis.

In this condition there are three special features noticed—constipation, and the passage of mucus. During evacuation the mucus is passed characteristically in the form of cast or "skin," but this is not so at all periods or in every case. Except under the immediate influence of aperients, faecal matter is passed in a solid agglutinated form. The diagnosis is usually simple on observation. Initial difficulty not uncommonly arises from the patient giving an exaggerated or misleading account of the symptoms, consisting of impaction or some diarrhœa or colitis. The condition is essentially one of constipation and mucus and is not truly a colitis. The treatment is not referred to in this article.

Dysentery.

The bacteriological examination need be taken into account for purposes of treatment only when definite strains of Shiga or Flexner bacilli are identified, atypical strains may be neglected. Bacillary dysentery now rarely produces chronic carriers, but a chronic colitis may persist after an attack of bacillary dysentery or a tendency to recurrences of colitis of varying severity. The treatment is identical with that of other cases of chronic catarrhal colitis.

It may be accepted for practical purposes that amœbic dysentery only occurs in those who have been exposed to infection in dysenteric countries. Amœbic dysentery becomes chronic in a high percentage of cases. When there is a history of an attack of amœbic dysentery or any tropical diarrhœa the stools should be repeatedly examined for amœbæ cysts. Indeed, with such history every case of chronic colitis may well be given a course of specific treatment.

Neoplasms of the Colon.

Two general considerations must be borne in mind:

1. The growth produces two groups of symptoms—one due to constriction of the lumen of the bowel and the other to ulceration of the tumour.
2. The symptomatology varies according to the site of growth.

Constriction and Obstruction.—Obstruction leads to colicky pain, to sensation of fullness and of tightness, and to audible rumblings. These tend to occur especially after food, and hence are often considered by the patient to be "indigestion," and are attributed to the stomach itself. Air swallowing in the effort to obtain relief may complicate the picture. Intermittent constipation and diarrhœa tend to occur, though the effect may vary with the site of the growth. As constriction and obstruction increase, peristalsis of the intestine becomes palpable. In the later stages peristalsis is visible, but by this time the obstruction will cause nausea and occasional vomiting.

Site of Growth.—The symptomatology will now be considered according to the site of the growth.

1. *Pelvic Colon.*—This includes the portion of colon situated in the left lower quadrant of the abdomen. A tumour is frequently not palpable either on abdominal or rectal examination, at the stage when the diagnosis is still in doubt, but ballooning of the rectum is present in the great majority, and is never present in catarrhal colitis. Special points connected with growth in this site are the following:

i. Obstruction is frequent and early, with symptoms as described above. The area of discomfort is over the left half of the abdomen.

ii. The bowels show periods of constipation and other periods of recurrences of so-called diarrhœa.

iii. There is no true persistent diarrhœa, but rather discomfort and tenesmus, with frequent desire to pass a stool.

iv. Such stools may consist of mucus or watery faecal matter or solid faeces. The character of the stools varies at different times; blood may or may not be present in any stool.

v. There is a special tendency for a small motion to be passed immediately on rising. Another may be passed after breakfast, and no more for the remainder of the day.

The general characteristic of a growth in this site is irregularity in the nature of the stools, in their times of passage during the twenty-four hours, and in their frequency

considered over longer periods. It does not produce the constancy of the type of stools which occurs in catarrhal colitis, and the comparative regularity of their frequency. The description given by the patient may not clearly reveal these characteristics.

Considering these various points together, the diagnosis between neoplasm of the pelvic colon and catarrhal colitis should not be, and in my experience very rarely is, in doubt after a few days' observation in bed.

2. *Splenic Flexure.*—This includes the portion of the colon situated in the left upper quadrant of the abdomen. Special points connected with growths in this site are:

i. Partial obstruction is so early and frequent that symptoms are very rarely absent. These include discomfort in the upper abdomen and symptoms of dyspepsia, suggesting to the patient that the stomach itself is involved. The left lower quadrant is comparatively free.

ii. The stools at times may be distinctly diarrhoeal, but with a definite tendency to vary in character and with periods of cessation of frequency; during these periods the dyspeptic symptoms continue.

A tumour is practically never palpable.

3. *Hepatic Flexure.*—This includes the portion of the colon situated in the right upper quadrant. Special points connected with growths in this site are:

i. A tumour is frequently palpable.

ii. Symptoms of pain and discomfort occur which are maximum in the area involved, and direct special attention to this site.

iii. The stools may be soft, chocolate-brown faeces, similar to those which may occur in catarrhal colitis. When such stools occur in colitis, consecutive motions resemble each other, while with neoplasm there is a greater tendency to variation. Further, with such stools in colitis there is nearly always an intimate but obvious mixture with blood.

The diagnosis of neoplasm in this site depends mainly on the localization of symptoms.

4. *Caecum.*—Special points connected with growths in this site are:

i. A tumour is nearly always palpable.

ii. Symptoms of discomfort are present which are referred to the right iliac fossa.

Neoplasms in this site cause difficulty in diagnosis from tuberculous and other conditions, but not from catarrhal colitis.

Tuberculosis of the Intestine.

Tuberculosis of the intestine, distinguished from tuberculous peritonitis, is common as a secondary condition in pulmonary tuberculosis. This form need not be discussed. The primary type is not very rare in children, but is usually associated with tuberculous glands; it is recognized by diarrhoea, pain, and wasting. In adults the primary type is very rare; but it undoubtedly occurs, and the question of its presence arises in most cases of chronic colitis with a gradual onset. Consequently it is unfortunate that its symptomatology has been little studied.

The condition tends to develop slowly. The stools may be soft and unformed, and at other times thin and watery, while formed motions are also passed. The stools may contain no pus, mucus, or blood. There may be periods in which the stools are mostly formed with an occasional loose action, and other periods in which they are mostly loose. It will be seen that the motions differ little from what may occur from the effects of aperients. It is on this variability of the stools and the long duration that the exclusion of ordinary chronic colitis mainly depends.

Abdominal discomfort is present; while not severe, it is rarely absent for any length of time.

Loss of flesh depends on the severity of the diarrhoea, and the weight may vary but little for a long period.

In the later stages the stools may resemble those of chronic colitis; blood may be present in small amounts or severe haemorrhage may occur. The temperature may now rise, having been normal previously. At this period the condition may closely resemble chronic catarrhal colitis, but it is noticeable that the frequency of the motions is usually not great.

The discovery of tubercle bacilli will decide the diagnosis in this or any previous stage, but a negative test is inconclusive.

METHODS OF DIAGNOSIS.

The diagnosis between catarrhal colitis and other conditions frequently cannot be made from the patient's story or on a single examination. But if the patient and the stools are under observation for a few days the diagnosis should rarely be in doubt. There are, however, certain special methods of investigation which must be considered. These include sigmoidoscopy, radiography after barium meal or enema, and exploratory laparotomy. The performance of these is often recommended without hesitation. It seems almost to be tacitly assumed that no step should be omitted to avoid mistaking neoplasm of the colon for catarrhal colitis. To justify this it would need to be upheld that no comparable harm is done to catarrhal colitis by such steps. Colitis improperly treated has a terrible mortality; if correctly treated, much can be done for it. Clearly colitis has its rights, even in comparison with neoplasm.

The methods mentioned will now be referred to.

1. *Sigmoidoscopy.*

This may reveal the presence of a neoplasm of the pelvic colon, situated in the sigmoid and out of reach both of the finger in the rectum and of a hand on the abdomen. As described above, the diagnosis between such a neoplasm and catarrhal colitis should be capable of decision on other grounds.

The question arises whether there is any indication or contraindication for the use of the sigmoidoscope in catarrhal colitis. It is, indeed, not uncommonly stated that every case of colitis should be examined with the sigmoidoscope, the purpose of this being to ascertain if ulceration is present, thus justifying the diagnosis of "ulcerative colitis." Formerly I was accustomed to examine cases of colitis with the sigmoidoscope as a routine. Neither in my own observations nor in those recorded by others can I find any information which would alter the lines of treatment based on other methods of examination. The observation of the presence or absence of ulceration does not influence the treatment. On the other hand, sigmoidoscopy should not be undertaken lightly in catarrhal colitis. Every effort has to be made to prevent further irritation of the anal canal and rectum. Indeed, the avoidance of irritation is one of the greatest difficulties with which one has to contend. As we shall see, the gentlest methods are necessary in the injection of enemata. Serious results can undoubtedly be produced in catarrhal colitis by the mere passage of the sigmoidoscope into the lumen.

When the long course of treatment is completed, sigmoidoscopy may help in prognosis, though by that time other observations and the result of experience should be sufficient for reasonable accuracy. At the outset, in my opinion, sigmoidoscopy gives no useful information, may do definite harm, and should never be employed.

2. *Barium Enema and Meal.*

Radiographs with a barium enema can be relied upon almost—though not quite—with certainty to establish the presence or absence of a neoplasm of the colon. It does not usually produce harmful effects in colitis; indeed, it may be beneficial; but, on the other hand, it is occasionally definitely injurious. It is less harmful and much more valuable than sigmoidoscopy, and in cases of special difficulty in the diagnosis between neoplasm and colitis it may be resorted to, but its use should rarely be necessary.

It should be noted that a barium meal is not nearly so reliable in diagnosis and is more harmful in colitis.

3. *Exploratory Laparotomy.*

Laparotomy may, of course, be necessary before distinction can be made between various causes of obstruction. But it should not be employed to diagnose between colitis and neoplasm. It is sometimes recklessly recommended. Exploratory laparotomy in a severe case of colitis is a very serious matter. It is better for those who are hesitating as to the diagnosis to treat the case as colitis and rely on the help of further observation.

TREATMENT.

Direct applications to the lower bowel are the basis of treatment, but there are certain general points which are of great importance.

Warmth.—It is essential that the patient should be kept warm in order to diminish loss of heat from the body. The extremities are often cold. Owing to the long duration it is usually impossible to keep the arms under the bedclothes. A light woollen jacket extending to the wrists should be worn, with stockings or long socks with pyjamas. Hot-water bottles and plenty of blankets should be provided. Patients frequently assert that they do not feel cold, but they usually soon appreciate the benefit of additional warmth.

Fluid.—Fluid must be given in considerable amounts to repair the loss from the body. One to two ounces may be given every twenty to thirty minutes between meals. Any bland fluid is suitable, such as lemonade, weak tea, or soda water. Alcohol must not be given in any form.

Diet.—It is of the greatest importance that the patient should get sufficient nourishment. There is no doubt that in this condition more patients are underfed than overfed, and many are definitely starved. The stomach and small intestine are little affected and can digest considerable amounts, provided that the diet is plain and the method of preparation is suitable. Food should be given at intervals not longer than two and a half hours. Bread or toast, biscuits, butter, eggs, fish, meat jellies, and meat extracts may be used freely. Custard, Allenburys and simple foods, and simple milk puddings are suitable, but milk must not be used as a beverage or taken too largely. Grapes and orange juice should be given. Fats must be used in moderation apart from fresh butter. Meat is unnecessary and must not be given. With regard to vegetables, their harm depends greatly on the method of preparation: small quantities of carefully prepared purées of spinach or potato can often be given in the later stages without ill effects. They should be used principally to relieve the tedium of a diet, when this is beginning to cause loss of appetite. Attempts to force the amount of food unduly or the administration of heavy dishes will disturb the stomach and result in anorexia and nausea, a most serious complication.

Treatment by Enemata and Colonic Washes.

Direct treatment of the colon is the essential method of attacking catarrhal colitis. The greatest care, patience, and attention to detail are necessary in the procedure. It is easy to do more harm than good, and the tendency to do too much and in too great a hurry must be resisted.

There are three main types of enemata, and these roughly correspond to progressive stages. They are: (1) the starch and opium enema; (2) simple colonic wash; (3) medicated enema. The method of preparation and administration will be first described.

1. *Starch and Opium Enema.*—The mucilage of starch which forms the basis is prepared as follows: Half an ounce of starch is rubbed to a smooth paste with 4 ounces of water; 16 ounces of water are raised to the boil, the starch paste added, the mixture raised to the boil again and allowed to cool. The amount of mucilage used for a patient of ordinary size and weight is 3 ounces; for a small woman 2 ounces is sufficient; and for a large man 4 ounces may be used, but this is the limit. The amount of tincture of opium added is in general 20 to 40 minims, but the dosage will be referred to again later. The injection is given through a soft No. 10 rubber catheter attached to a glass funnel. The catheter is passed not more than three inches and the enema allowed to flow in. The patient is encouraged to retain it as long as possible.

2. *Simple Colonic Wash.*—This may be prepared with sodium chloride, 1 drachm to a pint of water, or sodium bicarbonate, 2 drachms to a pint. Two pints are used for a patient of average size; the temperature should be 98° to 99°, which will be somewhat less than that of the colon. The injection should be given through a rubber catheter as for the starch and opium enema. The fluid must flow in solely by the force of gravity, the container being held not more than a foot above the anus. The rate of flow should be a pint in fifteen to twenty minutes. These points are of great importance in order to avoid irritating or stimulating the intestine. The patient may lie on the back; in this position two pints of fluid will easily reach the caecum. There is no need to move the patient from side to side. The patient should be encouraged to return the wash after an interval of fifteen minutes if this has not already occurred, and may be sat up in bed. No other steps should be taken. As these patients are usually short of fluid no harm is done by its absorption, though its benefit as a wash is lost. In no case should any attempt be made to recover the fluid by the passage of a "long rectal tube." Formerly it was believed that this could be passed an unlimited distance along the colon and the fluid reached and recovered. It has long been established that the tube merely coils up in the rectum. Anyone who has used a sigmoidoscope must recognize that it is impossible for a tube passed blindly through the anus ever to enter the sigmoid. The "long rectal tube" must act by distending and stimulating the rectum, a harmful procedure in colitis.

3. *Medicated Enema.*—This is well prepared with albargin. The modern preparation seems to be more powerful or more irritating than formerly. It is best to commence with 20 grains of albargin in 30 ounces of normal saline; subsequently the strength may be increased to 30 grains. Of this 25 ounces is used for the patient of average size. It must be injected very slowly through a rubber catheter and glass funnel. A simple colonic wash must be given first; unless at least half its volume is returned the administration of the medicated enema must be abandoned for the day. If the wash is returned satisfactorily the medicated enema is given two hours after the wash was commenced. Convenient hours are at 9 a.m. and 11 a.m. respectively.

These various enemata correspond approximately to stages in the treatment.

STAGE I.—*Starch and Opium Enema.*

When the patient first comes under observation, treatment should commence with starch and opium enemata. The effect of an enema lasts not more than twelve hours. It should first be given at night in order to obtain rest and sleep. It must not be given on more than three days *consecutively, or more than five times a week. If the* treatment is hastened the rectum and anus become irritated and the injections cannot be endured, and at a critical time this may necessitate the treatment being abandoned for a week or more. Throughout the entire period of treatment, both in this and subsequent stages, no attempt must be made to hurry the progress by increasing the frequency of the injections. It is essential for the medical adviser to adhere firmly to this, in spite of entreaties and his own desire for more rapid improvement. A few evening injections will reduce the number of stools at night. After an interval of a day two or three injections are then given in the mornings in order to reduce the number by day. During this period the stools usually tend to increase again at night, and it will then be necessary to return to a course of evening injections. Subsequently treatment often involves giving alternate morning and evening series of two or three injections. Usually the motions at night are the more easily controlled, and the injections will mostly be given in the morning in order to control the day motions.

Quite early in the treatment an enema may result in no stool being passed for twelve hours; too optimistic an outlook must not be based on such apparent early success. *It is possible that the action of these injections is mainly* in allaying the irritability of the rectum: this reduces the number of motions somewhat artificially, but it enables the patient to obtain some rest, and also enables the rectum and anus to endure the colonic washes in the next stage.

In severe cases toxic results may be produced by 25 or 30 minims of tincture of opium. A patient may become partly collapsed about two hours after the injection. This may be preceded by a period of excitement. If this occurs the dosage should be reduced to 10 or even 5 minims, and

then gradually increased. It is advisable in every case to commence with not more than 20 minims. I have never attempted to increase beyond 40 minims.

As a guide to the duration of this period, its aim may be stated as the reduction of the number of stools by half, or to about five daily. The usual time is about three weeks, but it may be considerably more.

STAGE II.—*Colonic Washes.*

When the stools are reduced as stated, colonic washes are begun. Many patients cannot stand more than three washes a week. Consequently at the onset they should be given on alternate days. As a general rule they should not be given on more than two days consecutively. If the stools become more frequent again a return should be made to the starch and opium enemata from time to time.

This stage is a matter of months, and it will gradually be discovered how frequently the individual patient can bear injections. It is often a successful practice to give colonic washes and starch and opium enemata alternately, and a patient may be able to endure these daily for several weeks. At the slightest hint that the anus is becoming irritable, or that the washes are being returned too soon, their frequency must be reduced or an interval of several days allowed.

This stage aims at a reduction of the number of stools until they are consistently less than five a day. In a severe case this period will be six to eight months.

STAGE III.—*Medicated Enema.*

The patient is now ready for medicated enemata, which may be regarded more definitely as the curative form of treatment. These enemata must never be given more frequently than on alternate days, and not more than six in a fortnight, followed by at least a week's interval.

Considerable judgement has to be used in deciding how long a patient should be encouraged to retain such an enema. An albargin enema is always uncomfortable, and in a short time often becomes distinctly painful. For the first enema a period of five minutes is as long as is advisable. This period should be increased gradually to fifteen minutes, though any time over ten minutes is satisfactory. Retention should never be allowed beyond twenty minutes. There is never any difficulty in the enema being returned.

If medicated enemata are commenced before the intestine is in a fit state the pain will be too great to permit retention; the enemata, if persisted in, will irritate the intestine and result in an increase in the number of stools. In such circumstances they must be abandoned immediately, and a return made to the treatment of Stage II for four to eight weeks. It is nearly always advisable, after the first series of six medicated enemata, to return to Stage II for two or three weeks. Stage III will usually occupy two or three months.

Once again it may be repeated that patience is essential, and the desire to hurry progress must be resisted.

Other Forms of Medicated Enemata.

Many other forms of medicated enemata have been employed. Of these the tannic acid enema is most in use. In strength this may be regarded as intermediate between a simple colonic wash and an albargin enema. It can be commenced earlier than albargin, but is definitely less efficacious. In my opinion it is best to wait until the colon can tolerate albargin. Tannic acid enemata, or other forms of medicated enemata, are often employed from the onset of treatment, directly the patient comes under observation. This practice must never be followed. It is associated with the disastrous mortalities so often recorded in series of cases which have been "medically treated."

Incontinence of Faeces.

Incontinence is a very grave symptom. Obviously it robs us of all opportunity of the use of enemata. Occasionally, though rarely, it can be controlled by a starch and opium enema. In general, incontinence must be regarded as the indication for surgical treatment.

Incontinence can be produced by injudicious methods in the use of enemata, as by giving them too frequently, by commencing medicated enemata too early, or by giving the injection too rapidly or without due gentleness. It can undoubtedly be produced by the use of the sigmoidoscope.

Drugs, and Other Methods of Treatment.

Morphine.—The question of the administration of morphine needs great care and often considerable moral firmness. It is easy to paralyse the intestine by an injection of morphine or even by a large dose by the mouth. The reduction of stools is regarded by a patient and by the relatives as the essential point in treatment, especially when associated with the comfort of the narcotic action. Consequently strong pressure is often brought to achieve this result by any means. It is the duty of the medical attendant to resist this pressure. Mere paralysis of the intestine does not allay the inflammation or prevent toxic absorption from the intestine. The result, far from being satisfactory, is usually absolutely disastrous; the patient rejoices in the comfort, feels greatly improved, and resents any attempt at active treatment; meanwhile cardiac weakness and collapse progress rapidly. It may be stated as a definite rule that in no circumstances should an injection of morphine be given. By the mouth a dose of 5 minims of tincture of opium four times a day may safely be given if desired, but larger doses must not be given. Indeed, the use of morphine should be restricted to the opium in the starch and opium enema.

Drugs by the mouth, apart from morphine, appear to have very little effect in the more severe stages. In the later periods of improvement certain preparations are of assistance, and should be employed. Mistura cretae (*B.P.*), bismuth, especially as bismuth salicylate, and aromatic sulphuric acid are the most valuable. The maximum official dose should be given three to five times a day, and at night.

Comparative trials on a considerable scale in bacillary dysentery during the war did not suggest that these had any obvious effect during the acuter stages.

Of other drugs and preparations, personally I give charcoal or kaolin if the stools are offensive; it is difficult to assess its value, but it cannot be harmful. True antiseptics can scarcely be expected to have any useful effect in the colon in doses in which they can be given safely by the mouth. Soured milk should only be employed if its proper preparation can be guaranteed; in such circumstances it may be given; it does not appear to possess any value during the severer stages. Emetine is definitely contraindicated in every form of colitis, except amoebic dysentery.

Vaccines.—Neither in severe nor mild forms, nor in any stage, have I seen any good results from the use of vaccines.

Serum Therapy.—Some observers have recorded good results from the injection of antidysenteric serum. Unfortunately others besides myself have failed to obtain these results. It may be noted that it is generally agreed that antidysenteric serum is of no use in bacillary dysentery itself after the first few days of illness, though it is effective at the onset.

Surgical Treatment.

Incontinence is a definite indication for surgical treatment unless it can be rapidly checked. As stated above, this may result from injudicious treatment. Apart from incontinence I can find no reason for surgical intervention, and the results recorded are certainly not better than those of rational medical treatment.

Of operations, the only one which should be performed is appendicostomy.

Acute Colitis.

Acute colitis usually commences suddenly. The symptoms may progress as rapidly as, and in a manner similar to, acute bacillary dysentery. This is unusual, and more commonly there is a period of two or three days during which the condition is rapidly becoming more severe. In cases with a sudden onset the possibility of irritant

poisoning may arise, but vomiting and gastric symptoms are prominent features with poisoning, and precede the onset of diarrhœa. In bacterial food poisoning diarrhœa may commence suddenly, but several persons are usually involved and improvement is very rapid.

In treatment it is particularly important to attend to the warmth of the patient. The loss of heat and fluid from the body is very great, and the extremities are often pinched and cold. Owing to restlessness it is usually impossible to keep the arms under the bedclothes. The limbs should be wrapped loosely in cotton-wool down to the wrists and ankles, and hot-water bottles and plenty of blankets provided. Fluid must be given freely.

Diet must not be pressed at this stage. Feeds should be given every two hours, and should be alternately milk (about 7 ounces with 3 ounces of water), and meat extract such as bovril. They should be cold, but not iced, or just warmed sufficiently to take the chill off.

The essential treatment is the administration of starch and opium enemata on the same plan as in Stage I of chronic colitis.

If the patient comes early under observation it is a good practice to employ the saline treatment as used in bacillary dysentery. Sodium sulphate, 1 drachm, is given every two hours for the first twenty-four hours, then every four to six hours for the subsequent four or five days. Cases must be carefully selected for this treatment. It must be employed only at the onset of the attack, not later than twelve or at most twenty-four hours from the commencement, and it is contraindicated by numerous previous motions and by great severity.

Injections of morphine must never be given. Alcohol is also contraindicated; the patient usually dislikes it, and it is apt to disturb the stomach.

THE USE OF RADIUM IN THE TREATMENT OF RECTAL CARCINOMA.

BY

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THE treatment of rectal carcinoma by means of radium is still very much in the experimental stage, and it seems to me that it is important that at this stage we should frequently compare notes and review our successes and failures. There is still a great deal of work to be done before the results of treatment in rectal carcinoma can be compared favourably with the results already obtained in uterine and mouth carcinoma. Rectal carcinoma presents special difficulties, some of which are very hard to get over, and is beset with problems entirely its own.

Since radium needles and seeds for the treatment of rectal cancer first began to be used I have treated a number of cases by this method, and I think it may be of interest to others to survey some of the results.

Radium may be used in three ways in the treatment of rectal carcinoma: (1) As an adjunct to excision, thereby enabling a less serious operation to be performed. (2) To treat cases that are surgically inoperable. (3) As a substitute for the operation of excision.

Radium as an Adjunct to Excision.

At the present day it is generally agreed by surgeons that the only justifiable treatment for even early cases of carcinoma of the rectum is complete removal of the rectum and surrounding tissues. This of necessity involves the establishment of a permanent colostomy opening, which is naturally very distasteful to the patient. The old methods of local removal of the growth without leaving a permanent colostomy were some time ago universally abandoned because recurrence of the growth was the almost inevitable result. Since this principle of total removal of the rectum has been adopted the results of treatment in rectal cancer have greatly improved, so that the proportion of cures (based on a five years' survival) is now over 50 per cent. But the operation is a mutilating one, and it is obvious that if a technique can be evolved by which the patient is saved a permanent colostomy and the proportion of cures can still be kept high a great advance will have been made over the present methods.

By the suitable use of radium we have, it seems to me, a means of treating at any rate early and favourable cases of rectal cancer by local excision of the growth without making a permanent colostomy, and yet obtaining a good percentage of cures. Many years must, of course, elapse before we can be sure that the results are satisfactory, or that they can be compared with the total excision of the rectum and colostomy, now the usual practice. The results in the few cases that I have already treated in this way have been sufficiently encouraging to warrant further trial of the method in suitable cases.

The cases treated were very early growths in the middle or lower part, of the rectum on the posterior wall, and the patients were so extremely anxious to avoid a colostomy that they were prepared to run a possible additional risk of recurrence.

The Operation.—The rectum was cut down upon from behind after removal of the coccyx, or where necessary a portion of the sacrum, the muscular tissues were divided, and the rectum was well freed and opened to one side of the growth, which was then cut completely out with a margin of at least half an inch of apparently healthy tissue. The resulting wound in the rectum was then carefully closed by catgut sutures in a transverse direction, so as not to narrow the lumen more than could be helped, and the muscular structures were sewn back into place so as to support the first line of suture. Radium needles were then placed in the mesorectum as high up as possible and all along the line of lymphatic spread, also on each side of the rectum and in all the tissues in the immediate neighbourhood where it was considered possible cancer cells might be. The back wound was then entirely closed except for a small drain, the threads attaching to the radium needles being left inside the wound. The rectum itself was drained with a large tube through the anus. *No colostomy was performed.*

At the end of a week the wound was reopened, the radium needles were removed, and free drainage provided.

These cases have done very well, and in only one was there any faecal leakage through the back wound, and this was quite small and very soon closed up. Function has been perfectly restored, and the bowels act in the normal manner. If—which time alone will show—the ultimate result in these cases is good as regards recurrence, then we have a method in suitable cases which will enable a colostomy to be dispensed with and a normal functioning rectum to be left. One case showed a doubtful recurrence at a point in the scar some six months later, and this was treated again with radon seeds. It seems to me that this method of using radium in association with local removal of the growth may have a useful future in suitable cases.

Radium as a Substitute for Excision.

In view of the results up to date I do not think any surgeon would advise the treatment of an operable case of cancer of the rectum by radium alone. A few cases have been treated because the patient has refused colostomy, or excision was otherwise not advisable on account of age or infirmity, but the results of radium treatment at the present time do not justify it being used in place of excision in operable cases. The best results that I have seen have been in cases of epithelioma of the anus in elderly persons. One patient was 83, and a large and horrible epitheliomatous ulcer healed up as the result of the insertion of radon seeds.

Radium Treatment in Inoperable Cases.

Most of the cases treated so far have been in this category. The technique is still very much in an experimental stage, and we have much to learn as to the best methods of applying it. In the early stages a large dose was given and the needles, containing 5 to 20 mg. of radium, were removed in twenty-four or thirty-six hours. This proved unsatisfactory for two reasons: (1) there was too violent local reaction, and (2) the growth was not sufficiently

destroyed. For the last two years the method has been to use much smaller doses spread over a longer time. Needles containing 2 or 3 mg. of radium are put in and left for seven to ten days. This method has given much better results, but it has been found necessary to increase the dose up to 6,000 mg. hours and more, and also to increase the screening. Screens of 0.5 mm. of platinum cause necrosis around the needles and very dense fibrosis of the neighbouring tissues. We are now increasing the screening to 1 mm. of platinum, with beneficial results. I have tried, in addition, placing the needles in rubber catheters to increase the distance between the radium and the tissues, and I think this tends to reduce local necrosis, but the insertion of the catheters is troublesome.

The method of dealing with growths that I have chiefly used has been to expose the rectum from behind after removing the coccyx, or such part of the sacrum as is necessary, and to insert 3 mg. needles into and around the growth about 1 cm. apart, the object being to expose all parts of the growth to a lethal dose of radium as uniformly as possible. The needles are placed roughly parallel to the bowel lumen. If inserted at right angles to the lumen it is almost impossible to avoid some of the needles perforating the lumen, with consequent serious infection. The number of needles inserted depends upon the size of the growth and the amount of lymphatic spread into other parts. After the needles have all been placed in position the silks to which the needles are attached are tied together and pushed into the wound, which is closed with a small drain. At the end of a week or ten days the wound is reopened and the needles removed. After this the wound is not reclosed, but is left open and freely drained with tubes.

This method has to be modified when the growth is on the anterior wall of the rectum. I have in such cases exposed the rectum by an incision in front across the perineum and barraged the growth in a similar manner, care being taken in a male subject not to place any needles quite close to the urethra and not to get needles in front of the vesiculae seminales. In this way I have so far avoided causing damage to the urethra or bladder.

The greatest difficulty is in dealing with the area of lymphatic spread on the pelvic and abdominal aspect. For this purpose the abdomen has to be opened and the needles inserted into the upper part of the mesorectum and the areas on each side of it. All the early cases developed a plastic peritonitis which had to be drained and was clearly due to the action of the radium on the peritoneum. To get over this, packing had to be inserted over the needles and free drainage provided. This difficulty I am trying now to get over to a large extent by using radon seeds for the abdominal barrage in place of needles. This at any rate saves having to reopen the abdomen at the end of a week or ten days.

The results of radium treatment are that the growth in the course of a few weeks begins to get markedly smaller and the ulcerated area heals. In a successful case the growth entirely disappears, leaving normal tissue in its place. Very often there is a considerable amount of scarring and thickened fibrous tissue in the situation of the growth, but this tends gradually to soften in course of time. Unfortunately, what too often happens is that the growth is not entirely destroyed, and the main mass disappears, leaving islands of cancer tissue that have failed to be destroyed. These islands can be attacked again with radium needles or radon seeds, but it is very difficult to be sure that they have been adequately treated, and the dense fibrous tissue resulting from the first treatment makes insertion of the needles at the second operation peculiarly difficult.

The main difficulty of the radium treatment of cancer of the rectum is that of access to the growth. It is not easy to get satisfactory access to the upper part of the growth, which is in many ways the most important. One has to work at a considerable depth and endways to the main mass, also the bowel is thin, and it is very important not to injure the lumen.

Another difficulty is that the wounds are very slow in healing, and considerable sepsis is at present unavoidable. Sepsis is due partly to the fact that some necrosis in the immediate neighbourhood of the needles seems inevitable, and partly to the fact that the action of the radium is very markedly to lower the natural resistance of the tissues to infection. If proper care is taken to avoid a primary sepsis at the time of the operation the sepsis is only secondary, and therefore not serious, but it is very tiresome and makes convalescence very slow.

The chief indications for improvement in technique in these difficult cases appears to me to lie in the direction of: (1) Increased screening of the radium to cut out the action of unwanted rays. (2) The use of radon seeds to barrage the growth and infected lymphatics from the abdominal aspect in place of needles. (3) More successful aseptic methods in respect of the wounds of access.

It is too soon as yet to give any figures of the results of radium treatment in these cases. Some of the results are good, some very unsatisfactory. My object in writing this paper is to give some of the results of my experiences with the treatment, in the hope that it may encourage other surgeons to do the same. It is at the present time, when the technique of treatment is developing, that an exchange of views and experiences is most likely to be of value.

THE OCHSNER-SHERREN (DELAYED) TREATMENT OF ACUTE APPENDICITIS:

*INDICATIONS AND TECHNIQUE.**

BY

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I WAS brought up in the belief that as soon as acute appendicitis was diagnosed immediate operation was always indicated unless the patient was obviously getting over the attack. This was my faith until I became surgical registrar to James Sherren at the London Hospital. Association with this eminent surgeon was responsible for altering my views; slowly I began to realize that an appreciable number of deaths and many complications are due to immediate operation in certain phases of the disease.

The "delayed treatment," as McNeill Love has called the postponing of operation in selected cases, was originated by Albert J. Ochsner of Chicago, who published his first communication on the subject as long ago as 1902. James Sherren's treatment differed from Ochsner's on many points, and some of the details of his method have been still further modified by his pupils.

The objective of the Ochsner-Sherren school is to help to reduce the serious total mortality of appendicitis, which, at the present time, in spite of better transport, increased hospital facilities, better technique, and a full post-war complement of a temporarily depleted medical profession, shows no abatement. Not even its few ardent supporters would attempt to deny that the delayed treatment of appendicitis is open to abuse, and if abused would defeat the very object of its inception. Just as we believe that its universal adoption under proper conditions would help to reduce mortality, so we freely admit that its misinterpretation would prove disastrous. Evil lies in the abuse of all good things.

The treatment is not merely a postponement of operation; it is not just the old "interval appendicectomy"; it is unfair and inaccurate to dub the treatment as temporizing; it is not a substitute for operation, but a preparation for it—essentially a surgeon's treatment, to be undertaken only in a surgical hospital, or a correspondingly equipped nursing home, with a nursing staff trained in the method. Above all, in a civilized country, the treatment must always be carried out on the very threshold of the operating theatre. As private houses are not thus equipped, it should be regarded as criminal to attempt the treatment in the patient's home. But one can picture

* An address given to the Leicester Medical Society on November 13th, 1929.

circumstances—for instance, in a small ship at sea—where to attempt the treatment would be less dangerous, by reason of these circumstances, than to attempt operation. At home the duty of the practitioner remains as heretofore to arrange for the admission of the patient to hospital as soon as acute appendicitis is diagnosed—and by his example and teaching to mitigate the ingestion of purgatives in cases of undiagnosed stomach-ache. With the advent of that Elysium when all cases of acute appendicitis are in the hands of the surgeon while the disease is still limited to the appendix the need for the Ochsner-Sherren treatment will pass. In the meantime, the general adoption of its principle would doubtless prevent many deaths among those patients who arrive "too late for the early operation and too early for the late operation"; particularly would it prevent many of those deaths which come under the heading of disappointments, the victims being far from moribund at the time of admission.

Selecting Cases for the "Delayed Treatment."

The history is taken, and particular note is made of the number of hours since the onset. The history begins "10, 26, 55 *hours* ago," not "last Thursday," or "three days ago." The physical signs are then recorded in diagrammatic form. The extent of the rigidity is marked by shading; the presence of a lump is drawn as near as possible to scale. The presence or absence of hyperæsthesia is always recorded, and the findings of a rectal examination are not omitted. It is necessary to include these particulars, for it is impossible to proceed without minute attention to detail, for fear of being misunderstood.

If the diagnosis of acute appendicitis is made and the history is of *under forty-eight hours' duration* immediate operation is nearly always advised. If the diagnosis of acute appendicitis is made and the history is *over fifty hours' duration* one should ask oneself the question, "Is there any reason why this appendix *should* be removed at once?" The answer by one trained in the delayed treatment is "It is safer to postpone operation for the time being, unless . . ."

Exceptions to the Rule.

1. Hyperæsthesia is present. Providing that the other signs are consistent this may be taken as good evidence that the appendix is still unperforated.

2. Age under 5 years.

3. The diagnosis cannot be made between acute appendicitis and some other intra-abdominal catastrophe normally requiring immediate operation—particularly perforated diverticulitis and perforated duodenal ulcer.

4. General peritonitis has supervened. Only cases which have obvious general as opposed to pelvic peritonitis are excepted.

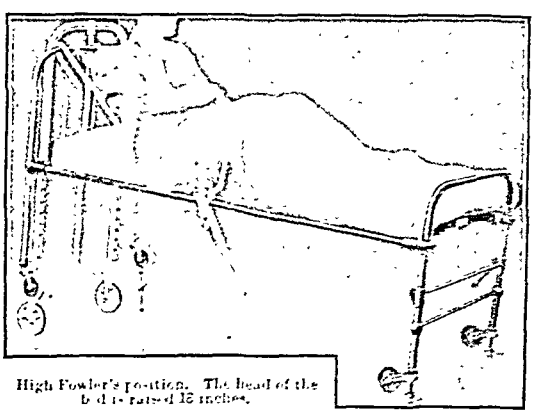
5. The recent ingestion of a powerful purgative may be a justifiable indication for performing operation which otherwise would be delayed.

The careful reader will have noticed a disparity of two hours between the forty-eighth and fiftieth. A little latitude is left for the benefit of individual judgement. As a general rule in my practice, unless hyperæsthesia is present, all cases which have passed the forty-eighth hour since onset are placed upon the Ochsner-Sherren treatment in the first instance. If any of the other contra-indications enumerated above enter the picture the case is re-examined and reconsidered after a lapse of two hours.

Technique of the Treatment.

The patient is placed in Fowler's position. There are many ways of interpreting Fowler's position. When the position is ordered for a case about to undergo the Ochsner-Sherren treatment it is of paramount importance to see that what is known as high Fowler's position is effectively maintained.

High Fowler's Position.—The head of the bed is raised eighteen inches on wooden blocks. What is more convenient and quite as efficient as the wooden blocks is a fitting supplied by Hoskins and Sewell of Birmingham (see figure). This bed-lifter can be readily attached to any bedstead, and it permits of the bed being wheeled about without any alteration of the patient's position. A useful fitting for maintaining the necessary flexion of the



High Fowler's position. The head of the bed is raised 18 inches.

knees is the Burton donkey, which is cleaner and cooler in hot weather than the customary suspended bolster.

Charts.—As a routine the pulse is recorded every two hours in graphic form on a special chart. In cases where anxiety is felt as to the advisability of continuing the treatment an hourly chart is employed. On several occasions, when the peritonitis has been widespread, I have even had a half-hourly chart prepared through the night. Temperature is relatively unimportant. . . it is recorded every four hours. Instructions are given to the nurse to record any vomiting on a separate piece of paper known as a vomit chart. On this is entered the time at which the vomitus was ejected, together with the quantity and character of the fluid.

Diet.—Water only is given for four days or longer. This is very strictly adhered to. The patient may have as much plain cold water the patient may have is permitted although he is not encouraged to drink more than is necessary to satisfy his thirst. In order to prevent accidents we have a notice put over the patient's bed "Water only; no purgatives." It is very desirable to explain to patients that they are going to be starved—"in order to prevent the appendix bursting" is what I tell them. On the fifth day, if the pulse and temperature are satisfactory and the patient feels hungry, feeding is commenced. Small feeds of Benger's food, alternating with a cup of bovril, are given. On the sixth day custard and jelly are allowed. After that the diet is gradually increased. Regarding diet Ochsner himself instructed, "After the patient has been normal for four days give commercial beef-tea in small quantities, later broth, later strained gruels, later strained soups. Do not give milk until at least a week after the patient is apparently well." I was not aware until recently that Ochsner prohibited milk. We have been giving it in the form of Benger's food from the fourth day with satisfactory results.

Drugs.—All drugs are forbidden. It should be particularly noted that no morphine or its derivatives are given.

Bowels.—The bowels are left confined if they are not opened naturally. On the fourth or fifth day a small glycerol enema is given. No purgatives of any kind are given until resolution is complete—that is, until the temperature and pulse have been normal for a week and pain and physical signs are absent—then liquid paraffin, 2 drachms thrice daily, is prescribed.

Pain, as opposed to tenderness, is very seldom complained of after the first night of the treatment. A hot bottle may be given to the patient to apply to the abdomen: but it is well to repeat that as long as the inflamed appendix remains *in situ* drugs are forbidden, for they may mask those all-important signs which foretell that the delayed treatment is not likely to succeed.

Instructions are given for the nurse in charge to watch the patient and report immediately (1) a rising pulse rate;

(2) vomiting; (3) pain; and, in the later stages of the treatment, (4) diarrhoea or the passage of mucus in the stools (pelvic abscess).

A rising pulse rate in the early stages is the most reliable single sign that it is dangerous to proceed with the delayed method. If the pulse rate has increased even ten points in the first four hours, operation is often indicated. I do not feel at all alarmed at a moderate rise in temperature. It quite often indicates that the patient is exhibiting a good reaction to the inflammatory process; it does not necessarily mean that a local abscess is developing, though this, of course, may be the case, and will be revealed by the physical examination. A moderate rise of temperature with a pulse rate in the eighties or nineties does not foretell failure of the delayed treatment.

Vomiting after the first few hours should always be regarded seriously, and this by itself may be a sufficient indication to abandon delayed treatment.

A patient undergoing delayed treatment should not complain of pain, as opposed to tenderness, after the first six hours of treatment. If he does there is usually something wrong, and this is a strong indication for operation. In the few cases in which pain has been the determining factor in advising operation a large thick-walled unperforated appendix has been found. The patient was experiencing appendicular colic.

After six and a half years' experience of the Ochsner-Sherren treatment I have nothing but praise for it. Several hundred cases have resolved uneventfully. As in surgical practice one always seems to get ill fortune in batches, it sometimes happens that several cases in a short period of time fail to resolve. If the delayed treatment fails, and the patient has been starved for some days, the urine should be examined for acetone before the anaesthetic. In any case glucose and saline is prescribed. If acetone is present it is often good practice to perform the operation under spinal anaesthesia.

I have tried to emphasize the possible dangers of this treatment in order that there should be no slackness in its application. In order to strengthen the confidence of those who have not had the advantage of a thorough training in the method I can state with assurance:

1. Subphrenic abscess is almost unknown, and I have not had a case which could be attributed to the Ochsner-Sherren treatment.

2. Pylephlebitis does not occur. I have had a number of cases of pylephlebitis, but not once has it developed in a patient undergoing delayed treatment.

3. Intestinal obstruction is very much rarer than after immediate operation.

4. The treatment is not a hardship to the patient.

5. In the long run there is very little wastage of hospital beds. But what is this in the matter of saving a useful life?

One of the most important duties in a case where the delayed treatment has proved successful is to ensure that the patient has his appendix removed in due course. In former days it was the custom to perform appendicectomy before the patient left hospital. This is, without question, a great mistake. Experience shows that in an average case an interval of two months is necessary for the products of inflammation to resolve completely. Appendicectomy soon after clinical resolution is often a very difficult operation, and the patient, by reason of the starvation, is ill prepared to stand it. If an interval of two months elapses between the time he is fit to be discharged and the operation it will be found that everything has settled down, the patient's general condition will have improved, and the operation will be comparatively easy. It is remarkable how few adhesions are found.

Unfortunately, a very real danger creeps in. The patient may fail to reappear for his operation. I found that more than 5 per cent. of those who had successfully undergone the Ochsner-Sherren treatment failed to return. They were written to and a proportion replied, with varying excuses, the principal being that they had not understood. In 1926 I adopted the following plan. As soon as it is evident that resolution of the disease may be confidently expected the patient is handed two cards to sign. On each is printed the following words:

I realize that I have just been tided over an attack of appendicitis. The surgeon considered that in my case it was safer to defer operation. I fully understand the danger of leaving the appendix, and I agree (1) to come into hospital on ; (2) to report at the hospital immediately if I have any symptoms before that date.

One card the patient takes away; the other is indexed and serves to remind the staff of the appointment, which, except in special cases, is made for a date two months after leaving. This method has worked admirably, and frees the surgeon of the responsibility of inadvertently omitting to explain adequately the necessity for eventual operation.

Appendix Abscess.

"Where there is pus you must let it out" is an old and wise surgical axiom. Nevertheless, it is well established that the rule may be broken in the case of small and moderate-sized appendix abscesses, for these cases often do exceptionally well under the delayed treatment. The lump, which no doubt is in part made up of inflamed omentum, but in most instances contains at least some pus, with starvation and rest gradually gets smaller and smaller, and finally disappears. When the time comes for the appendix to be removed one often marvels at the freedom from adhesions; perhaps there are a few dried-up pieces of leathery substance stuck upon the appendix or the juxta-appendicular structures, but this is all that remains of what was once an undoubted abscess giving rise to a lump, say, the size of a cricket ball. To those familiar with the delayed treatment such a phenomenon is commonplace. But I find that to most of my assistants (trained in various parts of the country) the resolving [illegible] abscess and the eventual operation [illegible] the comparatively normal-looki[illegible] astonishment second to none[illegible]elief that as soon as acute

We will assume that the immediate operation was always appendicitis of several [illegible]ent was obviously getting over the in the right iliac fay faith until I became surgical regis- carried out in [illegible]erren at the London Hospital. Associa- described. The [illegible]minent surgeon was responsible for alter- skin and each [illegible]owly I began to realize that an appreci- amination is peleaths and many complications are due to the abscess has im[illegible] in certain phases of the disease.

[illegible]reatment," as McNeill Love has called [illegible] of operation in selected cases, was origi- [illegible]t J. Ochsner of Chicago, who published his [illegible]ation on the subject as long ago as 1902. [illegible]en's treatment differed from Ochsner's on and some of the details of his method have [illegible]ther modified by his pupils.

[illegible]ive of the Ochsner-Sherren school is to help [illegible] serious total mortality of appendicitis, which, [illegible]t time, in spite of better transport, increased [illegible]ilities, better technique, and a full post-war [illegible] of a temporarily depleted medical profession, [illegible]atement. Not even its few ardent supporters [illegible]pt to deny that the delayed treatment of is open to abuse, and if abused would defeat [illegible]ject of its inception. Just as we believe [illegible]ersal adoption under proper conditions would [illegible]e mortality, so we freely admit that its mis- [illegible] an abscess which has invaded the pelvis. That a pa[illegible] abscess is developing is always heralded by diarrhoea, and often the passage of mucus in the stools. When pelvic abscess has been diagnosed a rectal examination is performed daily. When the abscess feels quite soft—this often takes five or six days or longer—I drain it into the rectum.

If delayed treatment has been tried, as I feel convinced it should be, the number of appendix abscesses which need drainage will be comparatively small. Those that do not require evacuation of pus will be frank abscesses, and the technique may be reduced to the simplest character, for the question of removing the appendix at the time of the evacuation of the pus never arises. This, no doubt, helps to account for the very small mortality of appendix abscess treated on the above lines. We are spared the possibility

Indicati[illegible]

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or, alternat[illegible]
2. The lu[illegible]
gentially.
3. The te[illegible]
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ture is not[illegible]
4. *Childl[illegible]*
4 years b[illegible]
necessary n[illegible]
5. Fluctu[illegible]
may indica[illegible]
long.
6. Pelvic [illegible]

of turning a localized abscess into general peritonitis, a tragedy which I have witnessed under the old regime of immediate operation.

Acute Appendicitis with Grave General Peritonitis.

When the pulse is feeble in the neighbourhood of 140, and the abdomen drum-like, or other combinations of signs make it undeniable that the peritonitis is frankly general, the interests of the patient are best served by adopting a conservative attitude, at any rate for the time being. In addition to the usual delayed regime order:

1. Subcutaneous saline (rectal saline may not be absorbed).
2. Concentrated anti-gas gangrene serum, 10 c.cm. intramuscularly.
3. Camphor in oil, 10%, two-hourly; three doses. Repeat if necessary.
4. An hourly pulse reading.
5. Aspirate the stomach contents if vomiting is in evidence.

In all but the moribund some improvement in the general condition takes place, and in a few hours the patient is again examined and the facts of the case reviewed. In deciding the momentous question what to do for the best the following summary may be taken into consideration.

The day is not long past when it was considered that the patient's only chance lay in an operation, and, above all, in free drainage. Close attention to the subject has shown that the problem before us is not nearly so simple as this.

It will be recalled that Ochsner himself first framed his method for cases of spreading peritonitis. There is plenty of evidence that certain cases of this type respond to the method. The treatment aids nature in transforming the general peritonitis into a localized infra-umbilical or pelvic collection of pus, which can then be treated safely by simple drainage.

Experience teaches us that simple drainage without removal of the appendix before this localization has occurred rarely saves the patient's life. Indeed, in many instances it appears to hasten the end. On the other hand, in most cases the expeditious removal of the appendix, together with suprapubic drainage, is, I believe, the best line of treatment in perforated appendicitis with general peritonitis, but the operation must be expeditious and the anaesthesia as perfect as possible. Should the operation prove to be difficult, necessitating considerable intra-abdominal manipulations, or if the attempt to remove the appendix has to be abandoned in favour of simple drainage, death usually follows. In these circumstances one must be prepared to state that such a case might have been saved by the delayed method.

In the light of the above remarks it is at least necessary for the surgeon to pause for a moment before advising immediate operation, and ask himself three questions:

1. Can I obtain for this case the services of an anaesthetist skilled in the administration of gas and oxygen?
2. Have I had sufficient experience to remove this appendix reasonably quickly if it is mobile?
3. Is it likely that this appendix can be delivered without much trouble?

No one can answer the last question with assurance, but one can say this much: *if the disease has been present for more than sixty hours it is practically certain that the appendix will be matted to neighbouring structures.*

Unless these questions can be answered satisfactorily immediate operation is contraindicated and perseverance with the delayed method in the hope of localization of the infections offers the patient his best chance.

There are two notable exceptions to this rule: (1) childhood and early adolescence; (2) when there is good reason to believe that the general peritonitis is due to the recent bursting of an appendix abscess. *In childhood and early* adolescence localization of a general peritoneal infection does not occur often enough to warrant a trial of the delayed method unless the circumstances are extenuating. If there is good reason to believe that the general peritonitis is due to the recent bursting of an appendix abscess *simple drainage is a life-saving measure.*

In the treatment of acute appendicitis with frank general (as opposed to pelvic) peritonitis there must be adequate reasons for adopting the method chosen. If those reasons dictate delaying operation then the surgeon must be courageous, for in this instance it requires more courage *not* to operate.

Statistics.

Statistics of acute appendicitis are prone to be difficult to compile, for the notes on such a common condition are often scanty, and unless they are made by the statistician himself there is little uniformity in nomenclature. For want of a better term the busy house-surgeon often signs up as "acute appendicitis" cases in which an apparently normal appendix has been removed. Such examples are not rarities. These, together with subacute and a few recurrent cases, tend to swell the total number to be analysed. I have analysed for a period of two and a quarter years—from August, 1927, to November, 1929—cases of acute appendicitis treated by myself. During this period all cases in which the removed appendix was not definitely inflamed have been written up as "appendicectomy," as opposed to acute appendicitis, and have been discarded. I might also add that the notes on all the cases, with very few exceptions, have been made by myself.

Total *number of cases of acute appendicitis* ...	315
Treated by operation* within six hours of admission, including 24 with general or severe peritonitis	242
Died	4
Treated by the Ochsner-Sherren method	73
Died	1

*All patients with a gangrenous appendix received an intravenous *injection of mercurochrome at the conclusion of their operation.*

Analysing further the cases treated by the delayed method, in four cases removal of the appendix was undertaken whilst the Ochsner-Sherren treatment was in progress, owing to threatened failure of this treatment. Of these one died. In twelve instances an abscess required draining owing to failure of the abscess to resolve. Eight of these were drained in the right iliac fossa and four pelvic abscesses were opened into the rectum, all with recovery. This makes the total mortality for all cases of acute appendicitis during the period analysed about 1.75 per cent.

Analysis of Deaths.

Two died of intestinal obstruction following general peritonitis. One of these two months, and one two and a half months, after *operation. Both the patients were little girls.*

One patient died a few hours after admission following an operation for what was thought to be intestinal obstruction. At *operation an appendix abscess containing* about a pint of pus, with tremendous distension of the small intestine, was found. This death was hastened by an untimely operation due to a mistaken diagnosis.

One boy died two months after removal of an acute gangrenous unperforated appendix from pylephlebitis with multiple liver abscesses. The patient had a rigor before operation, which I now look upon as a strong indication for tying the ileo-colic vein. Had this been done portal pyaemia might have been prevented.

A boy, aged 9, was admitted with general peritonitis of four days' duration. He was treated by the Ochsner-Sherren method for sixteen hours. His pulse then began to rise, and appendicectomy with suprapubic drainage was performed. Twenty-two days later he had a venous secondary haemorrhage from the wound, and improved after a blood transfusion. A few days later the haemorrhage again started. Further blood transfusion and laparotomy were performed. The haemorrhage was apparently coming from the superior mesenteric vein, but no bleeding point could be found to be ligatured. He died twenty-seven days after the first operation.

Conclusion.

I feel that the key to lowering the total mortality of appendicitis is to be found in the standardization of the type of case to be treated by immediate operation, together with the proper selection of patients for the Ochsner-Sherren treatment. This standardization is not yet final. I have tried to indicate a method of selecting cases for each form of treatment based upon the practice of my former master, who was a wise surgeon, for he knew when to operate and also when not to operate.

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THE USE OF QUININE IN NORMAL LABOUR.

BY

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THERE may, even yet, be purists or idealists who will quarrel with the title of this paper. I have a keen recollection of entering a vicarage at 6 p.m. one day, persuading the hostess of a tea party to retire (most reluctantly) to an upper room, and being able to congratulate her on the birth of her eldest daughter while yet the vicar was speeding the parting guests at 6.20 p.m. This is the ideal of midwifery at which we should aim; but, unfortunately, it is very rarely realized, and there are few of us who would not, if we could, fortify the parturient woman against the possible dangers of her labour.

About five years ago I brought before the Clinical Society of Bath a method of pre-natal quininization which owed its origin to Dr. Philip Jones of Coleford. At that time our claims for the method were very modest. They were, roughly, that labour was considerably hastened; that it was rendered easier; and that the general well-being of the patients was improved. Since that time a large number of cases have been given this routine, and something over 400 of them have been under the direct observation of Dr. Jones and myself. In all, the method has been on trial for seven years, and, so far from modifying the claims of five years ago, further experience has made it necessary to add to them.

This progress has led me to a careful study of quinine—the drug—and has brought to my notice the experiences of various workers who have studied the action of quinine in every stage of pregnancy. Such a study would tend to make one very critical of any claim made for this routine; but, rather to my own surprise, this study of the drug—in my own case—appeared to intensify the logic of such conclusions as have been brought forward. I propose, therefore, to mention a few of the more important points noted in the study of quinine in pregnancy, as opposed to labour.

Perhaps it should be mentioned, first, that the actions of quinine as (1) an external antiseptic, (2) a stomachic, (3) a tonic, and (4) an antipyretic, are generally accepted in practically all textbooks on therapeutics. Even its action *in increasing the contractions of the uterine muscle*—in the pregnant state or otherwise—is readily admitted. The important point in this connexion is, however, that the muscular fibres of the lower uterine segment and cervix take part in this contraction, in direct contrast to the relaxation which they undergo in labour and, to a lesser extent, in abortion.

It is the workers in tropical areas who have taught us that quinine, when used in pregnancy complicated by malaria, is almost a specific to prevent abortion in these cases. Maplestone,[1] in 1927, collected a large series of cases reported by various tropical workers, in which large doses of quinine were given for malaria during pregnancy, with an extremely low percentage of subsequent abortions, and contrasted these results with the high percentage of abortions due to malaria where quinine was withheld. Included among these cases were examples of women who took as much as 100 grains repeatedly, either in error or deliberately, without interfering with the pregnancy. Summarizing these records Maplestone says:

"It seems safe to conclude that quinine in therapeutic doses has no effect in terminating pregnancy, and has rather the opposite tendency by curing the malaria which is the real cause of abortion in these cases."

I think that one warning note must be sounded in reference to these conclusions. We all know, *only too well*, the type of patient, probably with an imperfectly developed uterus, in whom repeated abortion is only too prone to occur. It is more than probable that in such a case any increase in the normal uterine contractions, such as that produced by even medicinal doses of quinine, might turn the scale in favour of a[illegible] cards to sign. On each is printed quinine to determine at[illegible] tided over an attack of appen- the drug has been shown [illegible]hat in my case it was safer to evitable abortion"—that is [illegible]d the danger of leaving the of the lower uterine segment [illegible]nto hospital on ; Kessler,[2] in Kiel University, [illegible]ely if I have any symptoms series of cases in which (apart [illegible] quinine has proved greatly superi[illegible] is indexed tion in the treatment of this condition.

Then, apart from the question of earlier [illegible] which, quinine has been frequently used for the purpo[illegible]months bringing on labour or, alternatively, increasing [illegible], and pains. In 1907 Conitzer[3] gave an account o[illegible]rtently in which quinine was used for increasing l[illegible]ventual It was not effective in every case, but when [illegible] the pains became stronger, of longer duration [illegible] frequent. In some cases a regular storm of [illegible] old on without injury to mother or child. Conitzer [illegible] that quinine was not indicated in prolonged labour [illegible] an undilated os; but he thought that its use at [illegible] beginning of labour would often make forceps unnecess[illegible] The same idea is obvious in many of our own textb[illegible] and it is extended to cover the probability of qui[illegible] increasing the patient's resistance to infection.

Haig Ferguson,[4] in 1921, pointed out the tonic e[illegible] *upon the uterus of small doses of quinine given for* [illegible] or three days preceding labour, and further sugge[illegible] that the increased resistance to infection thus acqu[illegible] was a good preparation for possible contingencies in [illegible] way of "interference." Unfortunately, he did not [illegible] us how to estimate, with any degree of accuracy, exact [illegible] date labour would set in. The method of inducing labour [illegible] by castor oil and quinine has many potent factors other [illegible] than the quinine, and has, [illegible]ever, been notoriously [illegible] unsuccessful unless the patien[illegible] is close to full term, or [illegible] unless pituitrin is added. So far from negativing the [illegible] investigations previously quoted, it undoubtedly supports [illegible] them, and emphasizes the fact that quinine has no effect [illegible] in initiating labour unless the cervix is already relaxed.

The Puerperium.

Before detailing the actual method and its results, I wish to draw attention to the results obtained by the administration of quinine in puerperal fever. For very many years it has been the most effective drug known to influence this serious infection, and very many successes have been recorded to its credit. In 1923 Gordon Luker[5] described his method of intramuscular injections of the acid hydrochloride, *combined with antistreptococcal serum*, and produced almost startling—though limited—figures of recovery rate. Most authorities are agreed that the potent factor in these results was the quinine, though, unfortunately, Luker's results have not been properly confirmed. Green-Armitage[6] comments very favourably on the method from his Calcutta experiences, and I personally have been impressed by the results I have seen in 12 consecutive cases. It was noticeable in those cases which did well that the large subinvoluted—or rather, non-involuted—uterus contracted down very rapidly, again demonstrating the power of this drug to influence the uterine muscle even in the most unfavourable circumstances.

The Use of Quinine in Normal Labour.

Dr. Philip Jones commenced his method of quininization in preparation for labour in the spring of 1922, and passed it on to me rather more than a year later. About eighteen months later still the method was outlined in my M.D. thesis, and also brought before the Clinical Society of Bath. Nearly three years later, in 1927, Dr. W. M. Hewetson[7] of Rhodesia described a very similar routine which he was using for malarious patients, and which had so impressed him in the matter of the ease and rapidity of labour, and in the apparent prophylaxis of febrile complications, that he had come to use it in all cases, whether malarial or not. It was in reply to his letter in the *British Medical Journal* that I first widened our original claims for the method by noting the following points: (1) The general health of patients is improved. (2) Labour is made easier and shorter. (3) Uterine retraction is

* Paper read before the Bath and Bristol Branch of the British Medical Association, November 27th, 1929.

of turning a localized abscess in
tragedy which I have witnessed
immediate operation.

Acute Appendicitis with
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and the abdomen drum-li
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obvious that with this prescription two bottles will
the patient over the three weeks, and, keeping in
ne fact that we are for the moment discussing
orward cases, in which both breech and occipito-
presentations are included, we can say that no
lications have so far been found in over 400 cases.
w cases were met with in which the patient com-
cramp-like abdominal pains on starting the
In these cases the dose was reduced to half,
f them returned to the full dose in a few days.
rom contraindications, certain points require
irst, ante-natal work is insisted upon. Secondly,
ication of normal routine is necessary. In the
ys of this routine we were not infrequently sur-
—and perhaps annoyed—at the number of cases born
ore our arrival. The point is that the nurse in charge
d not send early enough, because she did not realize the
apid, and sometimes easy, progress of some of these cases.
n spite of this circumstance, laceration of the perineum
as not of more frequent occurrence. I do not think this
urprising, because it seems more likely to occur when
he patient has to use all her accessory muscles, aided,
erhaps, by fundal pressure by the doctor or nurse, than
hen the uterus is quite equal to the task, and the atten-
ant has only to use restraining pressure to the crowning
ead.

If this increased rapidity and ease of labour should ulti-
nately gain general acceptance, it seems almost unneces-
ary to point out that there would automatically be a
eduction of forceps cases, and this was a definite feature
f my own cases. This point should make a strong appeal
o those who hold that "interference" is the dominant
ictor in puerperal sepsis.

Now, in spite of careful ante-natal work, difficulties
ust sometimes occur. Occipito-posterior cases will occa-
onally rotate backwards instead of forwards, and yet
have seen quite a number of these cases rotate forwards
nd deliver themselves naturally in rapid, though not pre-
pitate, time. Breech cases can be very difficult. Owing
o an unfortunate early experience of seeing a series of
ery large breech babies with extended legs, I have made
a rule to try to turn by external version in the last
wo or three weeks every breech presentation that comes
y way. On the other hand, Dr. Jones, in his series of
uininized cases, had seven breeches, all easy, all fairly
apid, and with no foetal mortality.

In order to have some idea of the duration of labour,
nd to compare the time with that of patients not under
uinine treatment, I have taken the time in many cases
om the onset of true pains to the birth of the child.
o try to stabilize the onset of true pains, I have defined
as the moment when the patient has to stop walking
nd hold on to the chair or bedpost until the pain passes
f. Taking this definition, and excluding difficulties such
s persistent occipito-posterior cases, or slight disproportion
even in spite of ante-natal care), the duration of labour
ppeared to average about six hours for primiparae and
hree hours for multiparae. I must remind you again
hat these were "straightforward cases," but even then
hese times are a great deal shorter than the textbook
verages—about sixteen hours for primiparae and eight
or multiparae—and probably dependent to some extent
pon the definition of "true pains."

no increased tendency to
e labour, retained placenta,
er pains."

the administration of a small
weeks prior to the expected date
ble that many prescriptions, con-
of quinine, would do equally well.
er, be an optimum dose, which is
quivalent to four or five grains of the sulphate
he prescription I have used personally is as

Subc sulph.	1½ grains
Conc itrohydrochlor. dil.	3 min.
aurant.	½ dr.
Cam ... ... ad	2 dr.

Mitte 8 oz. Sig. 2 dr. ex. aq. t.d.s. a.c.

Now I wish to make a special point of the fact that "uterine retraction" was uniformly good. This was so marked that I personally have given up the use of ergot or pituitrin as a routine after delivery of the placenta. The maternity sister in one hospital where I was working noted the fact that clots were very rarely seen in these quininized cases in the twenty-four hours following labour, whereas they occurred frequently in other cases. This I consider to be a tribute to the very efficient retraction which obtains with the method. A further point is obvious—namely, if retraction is good involution will also be good. It might, perhaps, be suggested that there is a possibility of superinvolution and consequent sterility, but this was completely negatived by seeing a number of cases through two or three or even more pregnancies.

It is, perhaps, permissible to reflect upon the possibilities of this efficient involution as a measure of "prophylactic gynaecology." When we think of the large number of hysterectomies performed at or near the menopause, for haemorrhage due to hypertrophic endometritis and fibrosis uteri—the former almost certainly, and the latter probably, due to chronic subinvolution—the point demands consideration. And, moreover, hysterectomy is not always the greatest trouble that these patients have to face.

Abnormal Labour.

Now it has become necessary to consider certain questions of abnormal labour, because, as is quite obvious, the quality of the uterine contractions can easily make all the difference between the normal and abnormal.

It has already been mentioned that, in this discussion, breech and occipito-posterior presentations have not been included as abnormal. And yet, as is well known, either of these conditions may be as serious as any form of complicated labour. In extreme cases of either of these conditions—that is, in large breech babies with extended legs, and in backward rotation of the occipito-posterior position—quininization can obviously do no more than fortify the uterus for its unreasonable task.

There are, however, five points about the cases which have undergone this method of treatment which should be effective to some extent even in abnormal cases: (1) Uterine contractions will be strong. (2) Uterine retraction will be good. (3) Following from these two points the puerperal uterus will be empty. (4) Involution will tend to be normal. (5) The patient's resistance to infection will be raised.

Even then we can scarcely expect any great improvement in the course of such difficulties as the large breech or the persistent occipito-posterior presentation: nor can we expect any revolution in such complications as transverse lies, hydramnios, twins, or hydrocephalus. Here again the importance of concentrated ante-natal work must be emphasized.

Placenta praevia, too, occurring as it generally does before the thirty-eighth week, barely enters the discussion. Post-partum haemorrhage, however, certainly requires consideration, and even though it did not occur in this series of cases, no definite conclusion is drawn from the fact. It would, perhaps, be more than human not to wonder if efficient uterine contraction contributed to this fact. It has already been mentioned that no tendency to retained placenta (with its risk of post-partum haemorrhage) has been found with this method. Precisely the same point arises in connexion with the primary and secondary uterine inertia, of which I have no experience in this series of cases. One would almost expect the quinine to have a definite prophylactic effect in patients liable to these conditions. This is an extremely important point for further investigation, because there is no need to emphasize the close connexion between the "inertias" and "prolonged labour," "instrumentation," "haemorrhage," "laceration," and, possibly, severe or even fatal "sepsis."

The view is still held in academic circles that the organisms of puerperal sepsis are mainly introduced from outside, the chief cause of their introduction being "interference." It is not for me to disagree with such a verdict, but I must admit that I consider an empty and contracted uterus as of first importance. This condition

will, I maintain, be fostered by a pre-natal quininization of the patient.

It has been shown previously that subinvolution (or non-involution) is almost an invariable symptom of puerperal fever, and that quinine injections will frequently correct this failure of involution and cure the infection. How much more effective should be a preliminary quininization, which will at least tend to prevent such failure of involution!

There are two other points of great importance bearing upon this subject which have only come to light in this current year. First, it has been shown by Burt-White and Armstrong[8] that streptococci present in the cervix and vagina at full term (and this is not infrequent) increase rapidly in the uterus up to the third or fifth day after labour, and then diminish. This may possibly be correlated to the other fact, pointed out by Miller and Whitaker,[9] that the bactericidal power of the blood, after steadily rising during pregnancy, undergoes a rapid fall at or near the time of labour. These two points have prompted me to suggest that the quinine routine should be extended to the end of the first week after labour.

And now, for a moment, let us be thoroughly pessimistic. Let us imagine: (1) poor uterine retraction; (2) blood clot in the uterus (an ideal culture medium); (3) the presence of streptococci—rapidly increasing in the first few days after labour; and (4) a sudden fall in the bactericidal power of the blood. Surely the stage is completely set for puerperal septicaemia! And this after normal labour with no interference!

"Poor uterine retraction" can almost certainly be prevented by quininization, and it is almost equally certain that blood clot will not be present in the uterus. It would be interesting to investigate whether the sudden fall in the bactericidal power of the blood could be delayed or prevented by quinine administration. It does not seem impossible. Now it may be that a mixture of enthusiasm and optimism have led me to exaggerate the possibilities of this method, but personally I do feel most grateful to Dr. Jones for introducing the method to me. In any case the routine is so simple, and so obviously harmless, that any who may be interested can have no possible argument for not trying it out for themselves.

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THE SODIUM SALICYLATE LIVER TEST.

BY

FRANK MARSH, M.B., B.S.

FOLLOWING the work of Roch and Schiff in 1921, and H. Thiers in 1927 (see *British Medical Journal*, 1928, vol. i, p. 231), it was decided to test the value of the peroral administration of sodium salicylate and its subsequent recovery from the urine in cases of (1) clinically definite liver disease: (2) normal men; (3) clinically suspected liver disease; and to control the results with the levulose tolerance test of Spence and Brett. It is claimed by the authors of the test that sodium salicylate in doses of 0.04 gram can be swallowed by a healthy man and no trace of salicylic acid or sodium salicylate be detected in the urine afterwards, owing to the destruction of the drug by the liver; but in the case of a subject of liver disease quantities of unchanged salicylates would appear in the urine.

The test as described had an attractive simplicity. The subject ingested 0.04 gram of sodium salicylate dissolved in water at 8 a.m.; all urine passed was then collected until 1 p.m. and tested for the presence of salicylates with acidified ferric chloride (as in the authors' method). Twelve patients were examined, strictly following the authors' instructions. Two had very great enlargement of their livers, due in one case to a severe liver abscess, and in the other case to advanced obstructive jaundice. The remainder were normal men. In no case were salicylates detected in the urine.

It was decided to examine the technique of the authors in detail, with the object of discovering any possible flaws in the method as published. With this end in view solutions of known concentration of sodium salicylate were made in distilled water and in normal and pathological urines, and acidified to varying degrees with a number of different acids, with the result that HCl and H_2SO_4 were found to give the best colour (at an optimum reaction of *p*H 3 to *p*H 2 judged by freshly made Congo red and methyl orange paper) on extraction with ether and addition of the reagent. Cooling the treated urine and ether on ice, before use and during separation, materially improved the colour. The optimum strength of the reagent was next the subject of experiment, and it was finally decided to use the following mixture: liquor ferri perchlor. fort. 1 c.cm., concentrated hydrochloric acid 1 c.cm., and distilled water to 500 c.cm. The reaction was made quantitative, a standard depth of colour called "K" being chosen; this was produced by mixing sodium salicylate and the reagent in the relative proportions of 1 gram of the sodium salt to 1,000 c.cm. of the reagent (or 0.001 gram sodium salicylate to 1 c.cm. reagent). It was found that the most accurate results were obtained by keeping the volume of reagent and sodium salicylate as low as possible. A 2 c.cm. quantity of the reagent was used as routine, since it contained enough ferric chloride to produce the full colour from 0.0025 gram sodium salicylate, and experience had shown that it was unlikely that amounts larger than this would be found in 20 c.cm. of the urine. Also 2 c.cm. of the reagent gave a little bulk with which to wash the ether and to retain the extractives after evaporation of the ether. A graph was constructed showing the variation in "K" with dilution; by this curve the quantity of sodium salicylate in any dilution of the reagent could be found in terms of "K."

Having thus improved the method of estimation, it was now necessary to discover the optimum amount of ether required for extracting the maximum amount of salicylate that was likely to be found in 20 c.cm. of urine. A number of experiments showed that maximum amounts of salicylate were extracted by 15 c.cm. of ether used in three washings of 5 c.cm.; this quantity of ether was then adopted as the routine. The following procedure was employed.

Treatment of Patient.

The patient fasted from 10 o'clock the previous night. At 6 a.m. the bladder was emptied and the urine collected in marked measuring cylinders. The patient then swallowed 0.04 gram of sodium salicylate in 8 oz. of water. He was given 8 oz. of water to drink every hour from 7 a.m. The urine passed at 6 a.m., 8 a.m., 10 a.m., 12 noon, 2 p.m., and 4 p.m. was collected in separate measuring cylinders, and the volumes noted. The amount of salicylate was then estimated in an aliquot portion of each specimen, using the 6 a.m. specimen to make the standard solution.

The steps in this investigation were as follows. A sample of urine measuring 25 c.cm. was taken, chilled on ice, and filtered through paper; exactly 20 c.cm. was then measured out and rendered acid to Congo red paper (blue colour) with hydrochloric acid. It was then poured into a separating funnel, and extracted with 15 c.cm. of ether in three quantities (keeping on ice). After separating the urine from the ether emulsion the emulsion was broken up with absolute ethyl alcohol and the lower portion was discarded, the ether remaining being measured. Then 2 c.cm. of the reagent was added; the mixture was well shaken and allowed to stand at room temperature until the ether had evaporated. The eventual colour was compared with the standard "K" in a colorimeter, and the result expressed as a decimal of "K." The quantity of sodium salicylate was then calculated from the graph.

The preparation of the standard was as follows. Of the 6 a.m. urine (previously tested, as in estimation for presence of salicylate) 20 c.cm. was cooled and filtered; 0.006 gram sodium salicylate was added, the urine extracted as in estimation, and the final result used as the standard. (Sometimes as many as five standards were made from one urine.)

Eleven patients were examined by the improved method, and the following results were obtained.

1. *Case B.*—A patient with catarrhal jaundice of more than two months' duration was examined three times by the salicylate method and twice by the levulose tolerance test. He had a most obvious lesion of his liver, and when first examined by the levulose test showed a very marked divergence from the normal. Some weeks later, at a time when he showed obvious clinical improvement, his levulose reaction was nearly normal. His response to the salicylate test was quite impossible to correlate with either his clinical course or the results of the levulose tests. When his illness was at its height he excreted most of the salicylate (8 a.m., 0.0045 gram; 10 a.m., 0.0023 gram; 12 noon, 0.0013 gram; total 0.0081 gram); when he was almost convalescent he only excreted 0.004 gram of sodium salicylate (8 a.m., 0.00225 gram; 10 a.m., 0.00105 gram; 12 noon, 0.00075 gram; 2 p.m., 0.003 gram. Midway between these two occasions he only excreted 0.002875 gram (8 a.m., 0.00125 gram; 10 a.m., 0.001 gram; 12 noon, 0.000525 gram).

These results would appear to bear out the authors' conclusion that the healthy liver led to the excretion of less salicylate in the urine than the diseased liver.

2. *Case W.4, C.2.*—A patient with a large liver abscess gave a very high curve with the levulose tolerance test, and, clinically, had a much enlarged and severely damaged liver. He reacted to the salicylate test by excreting 0.001 gram (8 a.m., 0.0023 gram; 10 a.m., 0.0015 gram; 12 noon, 0.0006 gram). Clinically and by the levulose test this man had more severe liver injury than Case B (1).

3. *Case M.F.*—A healthy male, who excreted 0.0075 gram of salicylate in response to the test—that is, he excreted nearly as much as "B," who had a severe liver disorder, and nearly twice as much as "W.4, C.2," who had a much more severe lesion than "B."

At this stage it was suspected that the salicylate test could not be called one of liver function proper, but was dependent for its results on some unknown individual idiosyncrasy.

4. *Case M.A., W.4, C.8.*—A patient with catarrhal jaundice only excreted 0.00348 gram of salicylate (8 a.m., 0.00195 gram; 10 a.m., 0.00116 gram; 12 noon, 0.00137 gram).

5. *Case P. H. S. W.*—The patient, who was admitted with bronchitis, excreted 0.003 gram of salicylate (8 a.m., 0.0009 gram; 10 a.m., 0.000846 gram, 12 noon, 0.0013 gram). Tested by the levulose test he gave a perfectly normal result.

6. *Case W.8, C.21.*—Admitted with ascaris infection; excreted 0.001475 gram (8 a.m., 0.000937 gram; 10 a.m., 0.0025 gram; 12 noon, 0.00052 gram; 2 p.m., 0.000158 gram).

7. *Case W.8, C.19.*—Convalescent after a mild attack of malaria, and responding easily to quinine; this patient excreted 0.00653 gram of salicylate (8 a.m., 0.00327 gram; 10 a.m., 0.00215 gram; 12 noon, 0.00116 gram).

8. *Case W.8, C.22.*—A patient with symptoms suspicious of liver abscess excreted 0.001152 gram of salicylate (8 a.m., 0.000703 gram; 10 a.m., 0.000228 gram; 12 noon, 0.000216 gram).

9.—*Case M. M.*—A healthy control had taken 10 grains of aspirin (unknown to the experimenter) thirty-eight hours before beginning the salicylate test. The 6 a.m. urine already contained salicylate. The ingestion of 0.01 gram of sodium salicylate was followed by a most profuse diuresis, in this patient only, and the urinary salicylate excretion totalled 0.025 gram (6 a.m., 0.00221 gram; 8 a.m., 0.01870 gram; 10 a.m., 0.00225 gram; 12 noon, 0.00236 gram).

Even with the modifications instituted (for help in the improvement of which the author of this paper wishes to express his gratitude to Mr. A. Laird, B.Sc., of the Chemical Research Laboratory, Masjid-i-Suleiman) the colour on adding the reagent to the ether extract was often very poor. The preparation of a good standard was also a great difficulty, five attempts having frequently to be made.

The method of steam distillation of Thoborn and Hanzlik was suggested by Mr. J. Henderson, refinery analyst, Abadan. This gave a very good colour, but in my hands a yield of only 17.5 per cent.

The experiments were not carried any further, as it was obvious that the claims of the original authors were not borne out by the results attained.

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN, ESPECIALLY TONSILLECTOMY.

BY

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THE choice of the anaesthetic to be used for an operation of short duration on a child always presents a serious problem, especially where it is necessary that full surgical anaesthesia shall be obtained. The operation most frequently performed on young children is that of tonsillectomy by the blunt guillotine method, and, to be successful, the anaesthetic used for this operation must comply with the following conditions, especially where time is an important factor.

1. Simplicity of administration.
2. Rapid induction.
3. Full surgical anaesthesia for not less than one minute after the mask is removed.
4. Rapid return of the cough reflex.
5. Safety.

In the majority of clinics where tonsillectomies are done in large numbers ethyl chloride is the anaesthetic most commonly used, and all those who have employed it will realize its disadvantages when given by the ordinary open or closed methods. Two years ago, after reading Gwathmey's[1] figures of the decreased toxicity of all anaesthetics, including anesthol, when administered in conjunction with oxygen, I began to use closed ethyl chloride and oxygen as an anaesthetic for tonsillectomies in children; and, once a technique had been evolved and the necessary dosage discovered, I adopted this anaesthetic as a routine for all short operations on children up to 12 years of age.

Ethyl chloride and oxygen is by no means a new anaesthetic, as in 1906 Rosenthal and Berthelot[2] reported a series of experiments on animals in which a mixture of oxygen and ethyl chloride was used; and Lotheissen[3] has described his experience of five years' use of ethyl chloride narcosis by means of the simultaneous inhalation of ethyl chloride and pure oxygen, employing a modification of the Roth-Drager apparatus.

I have found that closed ethyl chloride and oxygen narcosis possesses the following advantages over the ordinary methods of using this drug.

1. Safety. In over 300 cases anaesthetized by this method not one has developed those unpleasant symptoms of syncope which are so often met with when ethyl chloride is used without oxygen.
2. Complete muscular relaxation
3. Increased time of full surgical anaesthesia after withdrawing the anaesthetic.
4. Freedom from post-anaesthetic complications.

Apparatus Used.

I use a Guy's inhaler with the following modifications: (1) an ordinary two-gallon gas bag with a bottom tube, which is connected to an oxygen cylinder fitted with a fine adjustment valve; (2) a slightly larger phial graduated up to 8 c.cm.

Dosage.

I have found that a considerably larger dose of ethyl chloride is necessary with oxygen than without, when it is administered by the closed method—namely:

3 to 5 years of age	4 c.cm.
5 to 8 years of age	6 c.cm.
8 to 12 years of age	8 c.cm.

These doses are varied within certain limits according to the size and physique of the patient.

Technique.

All hospital cases are given a hypodermic injection of atropine forty-five minutes before operation, but this can be omitted in cases of emergency, as there is very little mucus formation with this anaesthetic.

The necessary dose is first measured into the phial and the bag half filled with oxygen. The child is then induced to bite on a Doyen's gag, and, after allowing the ethyl chloride to run into the bag of the inhaler, the facepiece is closely applied to the patient's face. Personally I use a celluloid facepiece without a rubber pad, and cover the child's face with a sheet of gamgee tissue, which has a heart-shaped hole cut in the middle for the nose and

mouth. This does not allow nearly so much leakage of gas along the gag as a rubber facepiece.

Two or three breaths are permitted with the stopcock closed, and then it is pushed over to "No valves" during an expiration, the patient rebreathing throughout the whole period of induction. After a few breaths a short period of apnoea commonly occurs, after which the respiration soon becomes regular and stertorous, whilst the pupil first contracts and then begins to dilate. As soon as full anaesthesia is reached the Doyen's gag is opened, and after two more respirations the inhaler is removed and the operation proceeded with.

In a series of thirty consecutive cases the time of induction, from the opening of the valve to the removal of the mask, varied from 49 to 82 seconds, with an average for the series of 63 seconds; whilst the period of anaesthesia from the removal of the mask to the return of the cough reflex varied from 58 to 160 seconds, with an average of 115 seconds.

Throughout the whole period of induction of anaesthesia and of operation the patient's colour remains a rosy pink, whilst, after the initial struggle when the valve is opened, the pulse is slow.

In my opinion, the hyperoxygenation reduces the probability of haemorrhage, as there is never the slightest tendency to cyanosis with its concomitant congestion.

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THE DANISH TREATMENT OF ITCH.

BY

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A GLANCE at the following summary will emphasize the importance of this treatment, which cures scabies in one day.

Summary of Facts.

1. This treatment has stood the test of time (1912–1929).
2. Certain cure is attained within twenty-four hours.
3. The treatment is ambulatory.
4. The cost of the ointment is not great.
5. Relief is rapid.
6. One single inunction suffices.
7. If made as directed the ointment will never produce any alkaline cauterization of the skin; and if used as described below no toxic symptoms will ever be manifest.
8. The hydrogen sulphide gas given off, which is the most active principle, will tarnish certain metals badly.

The prescription is complicated, and its preparation requires care and practice to ensure a perfect result. Marcussen discovered the cure in 1911, and Ehlers tried it, and made it known in 1912. Marcussen makes up the preparation as follows:

I. 1 kg. of sublimated sulphur is dissolved by heating it gently in 1 kg. of a 50 per cent. solution of potassium hydroxide, a clear yellow solution resulting.

II. 225 grams of vaseline and 225 grams of water-free lanoline are mixed with care, no heat being used.

III. To this mixture 375 grams of the solution of sulphur in potash lye (see I) is added.

IV. Fresh zinc hydroxide is prepared by mixing 28 grams of $ZnSO_4$ and 40 grams of a 20 per cent. sodium hydroxide. Then this is added to the ointment.

V. Liquid paraffin is added to make a total weight of 1,000 grams.

VI. 5 grams of benzaldehyde is added to check the somewhat disagreeable smell of sulphuretted hydrogen.

Remarks.

Ehlers and Marcussen state that whenever the ointment comes into contact with the skin it produces hydrogen sulphide, the "high" sulphides of potassium being the active principles upon which its activity depends. The adult mite is slain within half an hour of exposing the affected area of skin to this most powerful weapon. The eggs have more resistance, but in spite of this they are killed within the allotted time for cure. Although it is advisable to disinfect the clothes, Lomholt of Copenhagen states that this is not necessary. The odour is unpleasant, but does not last much more than an hour.

The Procedure in Treatment.

The treatment is carried out in seven stages.

1. The patient takes an ordinary cleansing bath.
2. He then wipes himself thoroughly dry.
3. He applies the ointment to the whole of the body except the head, by gentle rubbing only. Someone will assist him in anointing the back.
4. He waits for twenty minutes, to allow the application to soak in.
5. He then goes to bed, or does otherwise.
6. The next day, twenty-four hours after receiving the application of the ointment, the patient receives his second bath.
7. He puts on fresh underclothing, and walks away cured.

Notes on the Treatment.

Every patient speaks of its rapid soothing properties. No relapses have been reported in the last seventeen years, during which time many physicians have kept a watchful eye on the results of the treatment. Every day we get several new cases of itch, and these are cured before the next batch come in on the morrow. The economic aspect of this treatment speaks for itself.

In a typical case the patient said that within an hour his suffering from intolerable itching ceased, and within a day his disease was no more. Needless to say, we use this as a routine treatment for scabies. Other skin diseases have been treated with this application, but without any striking results; so at present, after its successful employment for seventeen years, it should be described as essentially the treatment of scabies or itch.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ACTINOMYCOSIS OF THE TONSILS.

ACTINOMYCOSIS of the tonsils is a rare condition. For this reason I venture to report the following case.

Miss X, aged 19, was seen by me at the hospital in the early part of last year. She had been sent by her doctor for an opinion about her throat, which had been troubling her for some time. Examination revealed somewhat enlarged faucial tonsils, with a whitish fungus-like growth projecting out of almost every follicle. In addition, there were similar patches on the base of the tongue and lingual tonsils. The glands in the neck were not enlarged, and the patient did not feel ill. Palpation of the tonsils revealed the fact that they were very hard, and that the surface was rough—just like the surface of a nutmeg grater.

I provisionally diagnosed the case as being probably due to involvement by a streptothrix, and advised that the faucial tonsils be removed and that the other patches be curetted. I subsequently performed the operation as suggested, and sent the tonsils for microscopical examination, when it was found that the condition was due to actinomycosis.

The faucial tonsillar bed healed perfectly, and has remained quite healthy and free from recurrence. I had to use an electric cautery on the patches on the base of the tongue and lingual tonsils to clear up the condition in that situation. It is now quite free from patches and in a healthy state.

The operation was performed in May, but the patches which were cauterized did not disappear until about one month ago. I have had the girl examined for foci in other parts of the body. The result of such examinations has always been negative. Potassium iodide has been administered during the whole of the treatment.

During the summer of 1928 Miss X, who lives in a country district, used to take walks in the fields and pick up pieces of straw and grass and chew them. In my opinion this is the source from which she has been infected.

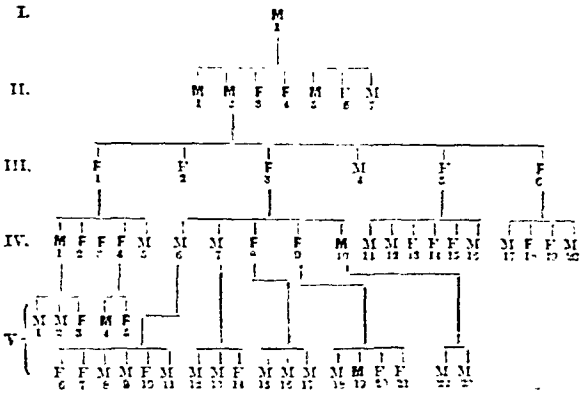
Interesting points in this case are: (1) that the tonsils and base of the tongue only were affected, the teeth and perfectly normal; (2) that there has been no apparent systemic infection; (3) that as a result of treatment the disease has apparently been eradicated.

Manchester. VERNON SMITH, M.D.

HEREDITARY LAMELLAR CATARACT.

THE accompanying pedigree is of interest in that it shows the continuous descent of hereditary lamellar cataract through five generations.

The information regarding the first and second generations is of necessity only hearsay, and has been obtained chiefly from III 3. The family originated in a small town near Wigan. The first afflicted person (I 1) died in 1869. Of his family of seven, five are known to be dead, and the other two cannot be traced. No definite information is available regarding their issue, except in the case of II 2. II 1 is stated to have died without issue, II 3 to have died at her first confinement, II 4 to have had afflicted issue, II 5 to have had no issue, and II 6 and II 7 to have had normal issue. It has been impossible to confirm these statements as the families lived in a distant part. The pedigree is complete from II 2 onwards; III 1, III 2, and III 4 are dead; IV 8 is also dead.



The afflicted members are indicated by the black letters M and F.

The cataract varies in degree. In six cases the affliction is severe enough to make the victims blind within the meaning of the Blind Persons Act. In the remaining seven living cases the eye condition is not of such serious degree, four of them having been treated operatively with considerable success. There is no history of associated epilepsy, nor is there any evidence of exceptional dental hypoplasia.

The pedigree shows that the condition is transmitted through both males and females. The cataract is only transmitted through affected members of the family, and is never a recessive Mendelian factor.

The information given by III 3, regarding the living members of the family, proved, on investigation, to be accurate. There is no reason for doubting that the information she supplied regarding the first and second generations shown, and other members of the family who are dead, is also accurate.

I am indebted to Dr. J. J. Butterworth for permission to publish this history.

R. M. GALLOWAY, M.D., M.R.C.S., D.P.H.,
Assistant M.O.H., Lancashire County Council.

SUPRAPUBIC HERNIA.

IN the literature available to me I have been unable to discover a description of a similar case to that recorded below: the condition was obviously an approach to ectopia vesicæ.

A printer, aged 46, suffering from severe bronchitis and emphysema, was seen in June, 1929. A routine examination of the abdomen revealed a large suprapubic hernia, which had been present, the patient alleged, as long as he remembered, but for which he had never received medical attention. When standing the protrusion was the size and shape of an orange, and moderately tense: on lying down it became smaller and flaccid, but did not entirely disappear. The deficiency in the abdominal wall reached upwards for two inches from immediately above the symphysis pubis; its maximum transverse diameter was one inch: at the upper extremity and to the right there was a small extension of the defect, roughly circular, and half an inch in diameter. The hernial covering was skin and subcutaneous tissue only, and was extensively ulcerated below; there were scars of previous ulceration all over the protrusion. The contents appeared to be intestine, and no hernia of the bladder could be detected, nor were there urinary symptoms.

The distal two inches of the dorsum of the penis, including the glans, were deeply grooved, and showed, here and there, patches of smooth mucous membrane, but there was no communication between the groove and the urethra. The bones of the pubic symphysis were normal to palpation.

Patient. ERNEST WARD, M.D.Camb., F.R.C.S.Eng.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

ST. PANCRAS DIVISION.

Debate on Actinotherapy.

AT a meeting of the St. Pancras Division held at the House of the British Medical Association on January 15th, with Dr. P. P. DALTON in the chair, Dr. PERCY HALL opened a discussion on actinotherapy.

Dr. Hall said that he thought actinotherapy had sufficiently proved its merits in the eyes of the medical profession, though a pronouncement on the authority of the Medical Research Council had attacked the claims made by those who employed this treatment. He sketched the history of light treatment since the original work of Finsen and the installation of the Finsen lamps at the London Hospital thirty years ago. No one, he supposed, would seriously question the fact that the Finsen lamp, especially with its modern improvements, cured lupus. Later on, treatment with the mercury vapour lamp was introduced, at first in Germany; other methods had also been employed, and during the last ten years in this country actinotherapy had gained for itself rapidly increasing public and professional recognition. He himself had approached the subject with an open mind. He began by applying the treatment to various conditions, and was so surprised by the results that he persuaded the local authority in the town where he was then practising to open a municipal clinic for the treatment by light of children suffering from rickets and other infantile disorders. The results obtained at that clinic were so good that the attention of other local authorities was attracted, and clinics were opened, and light departments set up in general hospitals. It sometimes happened that such departments were placed in charge of men who knew nothing about the subject, with the result that there was failure and discredit in some quarters. If a method of treatment was capable of doing good, it was capable of doing harm if used wrongly. Many bad results in actinotherapy would be found to have been due to bad technique, wrong apparatus, wrong choice of patient, or lack of skill in the operator; idiosyncrasies also occurred among patients. But the results were so often dramatic that the public began to demand the treatment for every ill under the sun. A certain boom in the manufacture of apparatus developed, and ultra-violet lamps were widely installed, but, of course, the possession of an ultra-violet lamp did not make a medical man an actinotherapist.

It had been said that this treatment was empirical, but so were many procedures used by the profession. Could anyone say why colchicum was of use in gout, or salicylates in rheumatism? How was the presence of vitamins proved in food-stuffs? These things had been elicited, not by scientific, but by clinical methods of observation: it was the clinician, not the physiologist, who had made the great advances in medicine. Therapeutic procedures which at one time were thought to be the domain of the quack—a term sometimes applied now to the medical man who used light treatment—were now universally recognized in medicine; electricity, for example, had a very hard battle to fight before it gained the day. It was the favourite resort of many opponents to say that the results of treatment were due to suggestion, and the number and variety of the diseases which actinotherapists claimed to treat had been pointed to with some derision. Was a man to be

condemned as a quack because he put his patients to bed, on the ground that he applied the same treatment to many different diseases? Dr. Hall, in conclusion, criticized the experiments carried out under the auspices of the Medical Research Council, holding that it was not fair to institute experimental examinations of this nature unless the criteria were carefully looked into by experts in the subject; he believed that in this connexion no experts had been consulted. Further, he was inclined to think that the doses administered in this experiment were too large and tended to over-stimulate.

Dr. DORA COLEBROOK said that if she had to decide whether her patients should have light treatment (provided always that the treatment was directed by an expert in the general treatment of the disease as well as in the application of actinotherapy to it) she would advise, in lupus and surgical tuberculosis, if natural sunlight were scanty, artificial light baths, with local light in lupus in certain cases. In certain diseases of the eye she would also advise the use of general and local light. But, speaking generally, those were the only conditions in which she would recommend it, though in psoriasis or acne she would hope to secure temporary benefit if the circumstances seemed to make it desirable. In rickets she would never advise artificial light unless other more appropriate prophylactic and curative measures failed. Her studies had been concerned with the effect of artificial light on subnormal infants at welfare centres, on some cases of varicose ulceration, and on the health and development of elementary school children. In the welfare centre work she found it impossible to get any satisfactory objective evidence as to gain in weight or growth following upon the administration, though there was plenty of subjective evidence volunteered by parents. It was difficult to assign to light its part in all this, for attendance at the clinic also involved instruction for the mother in feeding and hygiene, and for the child it meant some added health discipline, cleanliness, and a new interest. With regard to the cases with varicose ulcer, the conclusions she had reached were that the effect of the light was markedly inferior to that of Unna's paste dressing. Finally, in the inquiry concerning elementary school children, the plans for which were passed by the Light Committee of the Medical Research Council, she found that in two groups of children, one treated with ultra-violet rays, and the other irradiated from an exactly similar lamp with all its ultra-violet rays cut off by window glass, the percentages of improvement were about the same; there were no significant differences. Actinotherapists, repudiating the suggestion of a cure-all, now pronounced light only an important adjuvant. In support of this view it had been said that "a large number of people are convinced that irradiation . . . has definite tonic properties." But so also had a country walk, a cinema, a happy home. Was the tonic property of any one of these more relevant to the practice of medicine than that of any other? She doubted whether the assumption was justified that it was the ultra-violet component of sunshine for which people longed. What about the brightness and all the other loveliness in which a spring day was so rich and an artificial light bath so pathetically poor?

Dr. Colebrook criticized much of the evidence in favour of ultra-violet light as being contradictory and wanting in scientific quality; it was based on isolated cases or a small number of cases, judgements were not controlled by a parallel series of untreated cases, and reliance was placed on subjective evidence. Light was used in conditions in which diagnosis was vague, and prognosis therefore uncertain; in diseases in which spontaneous remissions and a tendency to natural cure were common, and in which symptoms rather than the underlying morbid conditions were treated. Failures were ascribed to faulty technique, but there seemed to be no technique, within broad limits, which was commonly associated with success or with failure. She further complained that the treatment tended to divert energy from the hunt for the real solution of the problem. The debilitated child, if not suffering from some specific complaint, was the victim of some defect in environment—food, air supply, housing, sleep, or parental care. Did light serve as a corrective to such defects? It was said that light induced sleep, but so did a small dose of bromide; each was a placebo the use of which, apart from exceptional or temporary conditions, was really a cloak for inability to understand or tackle the fundamental problem. To a certain extent, Dr. Colebrook concluded, all much advertised remedies must be associated with cures and betterness in the days of their popularity: such was the power of suggestion. But public favour and vociferous advertisement neither proved nor disproved the merits of a remedy.

Dr. WILLIAM BEAUMONT, director of the municipal light clinic of St. Pancras, stated that out of 62 underweight children between the ages of 1 and 5, 49, after a maximum period of twenty treatments, reached or went above the normal standard. These children had previously had the benefit of skilled supervision at welfare centres, and they had been given cod-liver oil and malt, but when sent to the light clinic they were still under weight. He also referred to the value of light in cases of delayed closing of the anterior fontanelle or delayed eruption of the teeth. Dr. F. M. SHATTOCK thought that nobody could dispute the value of light in surgical tuberculosis or in lupus. It was astonishing to watch the clearing up of tuberculous glands week after week as the result of light treatment. Dr. W. A. M. SWAN referred to a case of varicose ulcer of the leg which had completely healed under light treatment. He thought that ultra-violet ray treatment had more than justified itself in the treatment of children who were in a debilitated state of health.

Dr. COLEBROOK, in replying, took up the reference to the Medical Research Council's statement that ultra-violet was no more effective than a mustard plaster. She read the actual words of the report to show that they were carefully qualified, and did not bear the rough-and-ready construction put upon them in the newspapers.

Dr. HALL maintained that the press was justified in its general interpretation of the Medical Research Council's report. No actinotherapist of any distinction had ever claimed that light was a panacea, and it was very unfair for the Medical Research Council to have made that suggestion.

Dr. DALTON, in closing the meeting, referred to the Institute of Ray Therapy, just opened in Camden Road (the subject of an article at page 163), and prophesied great things for the future of what was, in effect, a voluntary specialist hospital.

Reports of Societies.

THE ZONDEK-ASCHHEIM TEST FOR PREGNANCY.

AT the meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on January 17th, with Dr. ARTHUR E. GILES in the chair, Dr. J. H. HANNAN opened a discussion on the Zondek-Aschheim test for pregnancy, which is based on the presence in the urine of pregnant women of very large amounts of the hormone of the anterior lobe of the pituitary body. [Some details of this test were given in the *Journal* of February 9th, 1929, p. 259.]

Dr. Hannan said that, impressed by the results reported by those who had introduced the technique, which showed positive results in pregnancy in about 98 per cent. of cases, and about the same proportion of negative results in non-pregnant women, he began in 1929 to investigate the test in routine practice. Finding the technique somewhat expensive and inconvenient in view of the large number of infantile mice required, he had modified it, so that instead of using five mice for each test he employed one albino rat, aged 6 to 8 weeks, and injected 3 c.cm. of the suspected urine in one dose; the animal was killed and examined ninety-six hours later. A positive reaction was indicated by the appearance of spots in the ovary, repre-

senting haemorrhages into the follicles, which were easily detected by the naked eye. Out of a total of 41 pregnancies the test had yielded a negative result in only 3, an error of 7.3 per cent. In 15 non-pregnant women, normal, and with the regular menstrual cycle, the test was negative in every instance, but in 42 non-pregnant women suffering from various disorders the test was positive in 12. These cases were as follows:

	Cases.	Test positive.
Secondary amenorrhœa	8	2
Menopause (amenorrhœa)	12	4
Fibroids	8	2
Ovarian cyst	3	0
Genital carcinoma	7	2
Exophthalmic goitre	4	2

In five tests on men also a positive result was twice obtained. From results recorded in literature it appeared that out of 452 pregnancies the test was negative eight times, and out of 451 cases of non-pregnant women it was positive fifteen times. He felt it justifiable to conclude that the Zondek-Aschheim finding that the urine of pregnant women contained large amounts of anterior pituitary antacoid was confirmed. The presence of the foetus was an essential factor in the production of these phenomena, since the reaction quickly disappeared in the puerperium, and was not found in cases of ectopic pregnancy where the foetus had perished. Normal women with regular menstrual cycles invariably gave a negative reaction. Women with diseases of various kinds, particularly those with a disturbance of endocrine balance, passed urine which, in many instances, contained the anterior pituitary antacoid. He felt that if such a test was associated with the smallest percentage of error it was better to continue to rely on the old method of "seeing the patient again in a month's time." While feeling somewhat disappointed in adding this test to the long series of tests for pregnancy which had arisen in the past, and had not proved entirely specific, he was compensated by the demonstration that the anterior pituitary had an important place in the complex mechanism concerned in the function of reproduction.

The discussion was continued by workers in the Animal Breeding Research Department and Pregnancy Diagnosis Station, University of Edinburgh. Dr. B. P. WIESNER, Ph.D. (Vienna), said that from his own observation at Edinburgh he had gained the impression that the Zondek-Aschheim test was very good and reliable; it had come into existence as a sideline to research on the pituitary gland. It was found advisable, however, not to reduce the number of mice employed, nor to substitute the rat. The only simplification of any importance made was the abandonment of the micro-scopical examination, for it was felt that if the test was to be of any use it must be a quick one. It was not quite correct that the reaction was due to the anterior lobe hormone, as Zondek and Aschheim had stated. The anterior lobe contained four hormones, which could be comparatively easily separated; only two of those had any effect upon the ovary, and these were produced during pregnancy by the placenta. The presence of hormones in the urine was a placental sign, not a sign of the presence of the foetus; if no active placenta was present the test would be negative, and thus a small percentage of error might be expected, which in Edinburgh was only just over 3 per cent. He was of opinion that the test was a further addition to the means for the differential diagnosis of pregnancy, and he hoped that a chemical test would be developed which would make it possible to prove whether a living foetus was present or not.

Dr. ROBERTSON said that the error of 3 per cent. at Edinburgh related to a total of 429 cases. On five occasions the station was left without further information from the practitioner sending the sample than that the result had disproved the test finding. In five instances where a positive result was given there was definite evidence of the foetus having died, and in one case there was some endocrine disturbance. Two tests were performed on another occasion, and one was found to be positive and the other negative, but there seemed to have been a possibility of abortion during the three weeks which separated the tests. Four cases of hydatid mole gave a positive result.

Mr. C. I. B. VOGT, also of Edinburgh, described work in connexion with a simple chemical test for pregnancy, which he had indicated in a letter published in the *Journal* of November 2nd, 1929 (p. 839). This test was based on the detection of histidine; it had now been carried further, and showed a correlation with the Zondek-Aschheim findings as high as 95 per cent. Dr. H. BURR-WHITE remarked that, in co-operation with Dr. Archer at St. Bartholomew's Hospital, he had investigated a certain number of urines with the bromine water test described by Mr. Vogt. Out of 245 pregnancies, from six weeks to thirty-six weeks' duration, there had been 22 errors. If more concentrated urines could be obtained in these cases the error would be less.

Mr. DICKINS said that at the Middlesex Hospital, in more than 200 specimens to which the Zondek-Aschheim test had been applied, the error had been found to be about 2 per cent. in the case of pregnant women, and 3 per cent. in the case of non-pregnant. He thought it clear that the test was of considerable value. It must be remembered that Dr. Hannan had used the rat, whereas the original technique was worked out exclusively for the mouse, and there was undoubtedly a great deal of difference between the two animals. In Germany, recently, Dr. Wagner had published statistics of 2,000 cases, with again a 3 per cent. error.

Mr. L. C. RIVETT regretted that Dr. Hannan's new technique resulted in so large an error. About 99 per cent. of pregnancies were quite easy to diagnose; the remaining 1 per cent. were very difficult, and an error of 22 per cent., which appeared from Dr. Hannan's figures for non-pregnant women suffering from various disorders, was far too high to admit of the test being of practical use. All the tests seemed to embody a small error of about 3 per cent., which further investigation would doubtless diminish. The PRESIDENT (Dr. Giles) said that mistakes made by an expert in diagnosing pregnancy on clinical evidence would certainly not reach a higher proportion than 1 per cent., so that if a test of this kind was to be brought into practice it needed to be more accurate than at present. The test was essentially one showing the presence of the placenta, and, of the placenta, essentially the chorionic elements. In that connexion it was interesting to find that in a case of chorionic epithelioma the test was positive. The positive results with non-pregnant women seemed to show that there must be a considerable variety of conditions which would produce the same hormones in the urine. If the test could be changed from a biological to a chemical one it would be an immense gain, and would necessarily widen the field of investigation and application. Probably most of those present would deduce from the discussion that for the present they had better trust to their fingers and their senses generally for the diagnosis of pregnancy.

Dr. HANNAN, replying, said that an error of 3 per cent. had to be considerably improved if the test was to be of practical use; there were so many variable factors that he did not think it could ever be specific. With regard to the large proportion of error in his own non-pregnant cases in which there was some abnormality, he pointed out that in many instances there was associated amenorrhœa.

ROYAL SOCIETY.

Composition of Diphtheria Toxin.

At a meeting of the Royal Society on January 16th a joint paper by Messrs. J. R. MARRACK and F. C. SMITH, on the composition of diphtheria toxin-antitoxin floccules, was communicated by Sir CHARLES MARTIN, F.R.S. It was stated that the floccules formed by diphtheria toxin and antitoxin closely resembled serum pseudoglobulin, the ultra-violet absorption curves being identical. The amount of precipitate obtained from a balanced mixture of a given toxin and antitoxin was to a large extent independent of the conditions under which flocculation occurred, and particularly of the amount of non-specific protein present. Lipoid material formed a very small fraction of the floccules. The authors concluded that the floccules consisted mainly of antitoxin, which they inferred was not merely carried down in the pseudoglobulin fraction, but actually was this substance.

Delayed Lethal Effect of Radium on Tissue Cultures.

Sir FREDERICK ANDREWES, F.R.S., communicated a paper by Mr. F. G. SPEAR on the delayed lethal effect of radium on tissue cultures *in vitro*. Cultures of the choroid and sclerotic of embryo chicks had been exposed for varying periods to gamma rays from radium, with subsequent subcultivation every forty-eight hours. In one series of experiments the cultures were exposed to 100 mg. radium (filtered through 0.5 mm. platinum) at a distance of 0.5 cm.; in a second series 300 mg. radium was used under the same conditions. When a delayed lethal effect followed exposure to radium it occurred sooner in those cultures which had been exposed to a greater intensity of irradiation for a shorter time than in those subjected to a lesser intensity for a longer time, the product of milligrams of radium and hours of exposure being the same in a given comparison.

Individuality of the Red Blood Corpuscle.

Mr. F. R. DOUGLAS, F.R.S., presented a paper by Mr. CHARLES TODD (read in title only) on the cellular individuality in the higher animals, with special reference to the individuality of the red blood corpuscle. It was stated to be possible, by means of simple immunity reactions, to distinguish the red blood corpuscles of any particular fowl from those of any other individual of the same species, except in certain cases when there was close blood relationship. This showed that the red cells of any individual possessed specific characteristics distinguishing them from those of any other individual not closely blood-related. It appeared probable that in the higher animals this individual specificity of the red blood corpuscle was only one example of a general rule applying to most cells of the body. This view was supported by a considerable amount of evidence, and particularly from the results of experiments on tissue transplantation. Comparison of the red cells of chicks with those of their parents allowed in some cases the actual identification of at least one parent, and, in a large proportion of chicks, afforded definite evidence of relationship. The experiments, it was added, were as yet in too early a stage to permit definite estimation of the extent to which these methods were applicable.

PSYCHOTHERAPY IN ALCOHOLISM.

AT a meeting of the Society for the Study of Inebriety, under the presidency of Mr. W. MCADAM ECCLES, on January 14th, an address was given by Dr. WILLIAM BROWN, Wilde Reader in Mental Philosophy in the University of Oxford, and psychotherapist to King's College Hospital, London, on the role of psychotherapy in the prevention and treatment of alcoholism and other drug addictions.

Dr. Brown thought that the causation of alcoholism on the psychological side was fairly definite; there was evidence of previous inadequacy to face the facts of life, and for the most part, also, a bad heredity factor, not necessarily alcoholic. The nervous symptoms of the "pre-alcoholic" were protean in their manifestations, but the common factor was a state of depression. The individual did not find the joy in life which he expected, and his doubts, phobias, and anxieties and general feeling of inadequacy all contributed to a lowered psychological tension. It was now generally recognized that the action of alcohol on the nervous system was not that of a stimulant, but always a depressant. The depression took place first at the lower centres, but it induced a reaction at the higher levels which had the appearance of stimulation. There was a liberation of repressed energy which gave the patient a feeling of well-being, and tendencies ordinarily inhibited came to the surface. Dr. Brown remarked on the relative infrequency of alcoholism during the war. The events of the war themselves provided the excitation and the loosening of inhibitions for which otherwise people resorted to alcohol. There were two main lines of psychotherapy in alcoholism—the method of analysis and the method of direct personal influence. The analysis consisted in a careful investigation of the psychological causes, the patient being encouraged to talk fully about his life; this gave the physician an insight into the mental condition, and also brought the mental conflicts to the knowledge of the patient. The process of analysis always carried with it, sooner or later, what the Freudians called transference. It was believed that after adequate analysis the patient would become better able to deal with his difficulties, and would no longer need the solace of alcohol, but things did not work out quite so smoothly as that. Patients needed something else in place of their alcohol to enable them to take an interest in life. One necessity was to give up alcohol completely, and not merely to diminish it. With patients living in their own homes, who came to see him day after day, Dr. Brown had found it useful to give a mixture of bromide and valerian, or a mixture of bromide, nux vomica, and sal volatile, which they could take three times a day or whenever they felt any special impulse to take alcohol. The mild cases responded to treatment along these lines, provided the physician was prepared to act not only as an analyst, but also as a director, encouraging the patient to get a new philosophy of life. In many cases, however, the illness had gone too far for such measures, and the patient was unable to keep clear of drink; he should then enter an institution, or at least acquire a companion. Suggestion treatment, even in its most extreme form of hypnotic treatment, might be necessary. The more advanced cases of alcoholism were, as a rule, easily hypnotized, for alcohol induced a tendency to dissociation similar to that found in the hysterical patient. Under hypnosis the patient accepted suggestions to which otherwise it would be impossible for him to respond. With regard to the theory that all alcoholic addicts suffered from repressed homosexuality, and could not recover until the homosexual basis was revealed and dealt with, Dr. Brown said that it could not be denied that homosexual difficulties were a fruitful source of alcoholism, but they were not the only cause. Many alcoholic patients could rightly attribute their difficulties to the repression or inadequate satisfaction of other instincts, such as self-assertion. Finally, the religious factor was ultimately a very important one; conversion experiences cured large numbers of these patients, who gained an appreciation of the value of life. Religion brought satisfaction and happiness, and made recourse to alcohol or other stimulants unnecessary.

In reply to Mr. MCADAM ECCLES, who asked whether every patient suffering from alcoholism or drug addiction should have some type of psychotherapeutic treatment, Dr. BROWN expressed the view that a certain amount of psychotherapy would always be beneficial; there were, undoubtedly, many different types of alcoholics, however, and some were far less amenable to this treatment than others. The passive homosexual alcoholic was specially difficult. A lively discussion followed, in which many speakers, medical and lay, participated.

Dr. HARRY CAMPBELL thought that Dr. Brown was much too sweeping in his statement that the sole psychological cause of alcoholism was inadequacy in facing the world. One point of vast psychological importance of which Dr. Brown had said nothing was the fact that all these patients exhibited a weak will. The line of treatment was to bring home vividly to the patient the consequences of surrender to temptation.

Sir ROBERT ARMSTRONG-JONES confessed that the terms of the new psychology seemed to him to suggest unintelligible propositions. The new psychology had no place for the will, which was relegated to the background. According to behaviourism, conduct was due to conditioned reflexes. He agreed with Dr. Campbell that it was essential to strengthen the weak will; this could be done most effectively by appealing to the ideal self, and he invited Dr. Brown's opinion about the "psychology of the pledge."

Dr. BROWN replied that, in rejecting the concept of the weak will as unscientific, he had not intended to reject the will itself, but it was necessary to examine the meaning conveyed by the term. He employed some terms which Freud had put into circulation because he thought them helpful in directing attention to certain psychological activities, but he was not a Freudian. Freud had no adequate theory of truth; he was a mechanical determinist, and so, ultimately, he had no theory of the will. As for the value of the pledge, alcoholics, by the time they reached the physician, had usually taken and broken many pledges, and were ready to take more. The more optimistic the patient about his condition, the more pessimistic, in secret, might the doctor well be.

Discussion followed on the role of psychotherapy in the case of alcoholics in a poor social environment. Dr. J. R. REES said that in the case of many poor patients who came to the Tavistock Square Clinic the results of psychotherapy were extremely satisfactory, and presented no marked difference from the results in a different social grade. He considered that the only hope in respect to the problem of alcoholism was along the lines of social adjustments and psychotherapy.

VACCINATION AND ITS SEQUELS.

AT a meeting of the North London Medical and Chirurgical Society on January 8th, a paper entitled "Vaccination against small-pox" was read by Dr. J. D. ROLLESTON.

Dr. Rolleston remarked that the attitude of the medical profession in this country towards vaccination had recently been somewhat modified by two important facts—the extraordinarily mild character of small-pox at the present time, and the occurrence of a new and highly fatal though undoubtedly rare sequel of vaccination. G. F. Buchan had recently shown that small-pox had lately caused fewer deaths than either chicken-pox or mumps, there having been only 142 deaths from small-pox in England and Wales during the decennium 1917–26, as compared with 595 deaths from chicken-pox and 287 from mumps during the same period. Since 1922, when it was 2.27 per cent., the case mortality of small-pox had never been so high as 1 per cent., but had ranged between 0.27 and 0.11 per cent., whereas in the great London epidemic of 1901 and 1902 the case mortality was 14.74 and 16.89 per cent. respectively. The extremely mild character of small-pox in England had led to the mistaken opinion that the disease was not small-pox at all, but the generally accepted view was that the mild form of the disease to which the term "para-small-pox" or "alastrim" had been applied was merely modified small-pox. The great majority of cases of post-vaccinal nervous sequels had occurred in England and Holland. From December, 1922, to June, 1929, inclusive, 175 children in England had developed some nervous disease within the four weeks following vaccination, and 91 had died. During this period, however, five and a half million vaccinations had been performed, so that the proportion of cases with nervous sequels was 1 to every 33,000 vaccinations, and, of deaths, 1 to every 60,000 vaccinations. In Holland between 1923 and January, 1929, there had been 146 cases, of which about a third had been fatal, or about 1 case to every 5,000 vaccinations. Moreover, 92 cases had recently been collected by Eckstein in Germany since 1912, and 21 in France by Netter between October, 1926, and June, 1929. On the other hand, no cases had been reported in Jugoslavia, Rumania, or Soviet Russia, in spite of the vast number of vaccinations recently performed in these countries. Although a few cases of encephalitis had followed revaccination, the great majority had followed primary vaccination and in children of school age. In 70 per cent. of the cases the manifestations appeared between the tenth and thirteenth days after vaccination, the principal symptoms being high fever, vomiting, and headache or stupor. Death occurred in 30 to 40 per cent. of cases, most often three to ten days after the onset; recovery in the rest was usually rapid and complete. Although no satisfactory prophylaxis or treatment of the post-vaccinal nervous phenomena could be instituted until their nature had been understood, a single insertion, in place of three or four, with a minimum of trauma, had been recommended. Dr. Rolleston said that for some years he had adopted Goldberger's method of vaccination on the inner and back side of the upper arm, since this site was least exposed to injury. Dilution of the lymph to prevent excessive reactions had recently been recommended by Bedson. As regards treatment, the use of the serum of the patient's parents who had been vaccinated with the same lymph, or of sheep immunized against vaccinia, had recently been employed. After briefly reviewing the other sequels of vaccination Dr. Rolleston concluded by emphasizing the rarity of post-vaccinal nervous manifestations, and the immunity from small-pox of the well-vaccinated staff of small-pox hospitals.

TREATMENT OF PEMPHIGUS.

AT a meeting of the Liverpool Medical Institution on December 12th, 1929, Dr. L. J. A. LOEWENTHAL read a note on pemphigus.

Dr. Loewenthal began by differentiating true pemphigus from the bullous forms of other dermatoses, and suggested that still further eliminations might be made in the cases of acute malignant pemphigus—a septicaemia—and pemphigus vegetans. Pemphigus vulgaris, he suggested, might be subdivided into an acute and a chronic form, the latter often drifting ultimately into the foliaceus type. He reported a case of the acute form of pemphigus vulgaris, treated by injections of sodium cacodylate, and responding dramatically to each set of injections. During a period of five weeks 50 grains of the drug were injected, chiefly in 2-grain doses, no signs of arsenical intoxication appeared. At the present time the patient was following his occupation, and attended once a week for an intravenous injection; this seemed to keep him free from lesions for the following three days, a few blisters appearing during the second half of the week.

The subject was discussed by DRS. F. A. POND, R. STOPFORD-TAYLOR, ELIZABETH HUNT, and C. O. STALLYBRASS. During the discussion the merits of whole-blood transfusion were mentioned, and support was given to the plea that pemphigus acutus malignus should be regarded as a septicaemia and not as a member of the pemphigus group.

The Nature of Senility.

Dr. H. R. HURTER read a paper entitled "What is meant by old age and of what do old people die?" After brief references to some of the longevity recipes of the ancient world and of the dark ages, Dr. Hurter sketched the life and work of the most famous of the alchemists—Paracelsus—whose panacea for longevity brought him such a large public following early in the sixteenth century. Accepting Sir Humphry Rolleston's definition of old age as the state resulting from pure involution and atrophy of the tissues, accompanied by progressive loss in their functional activity, and unaccompanied by superimposed pathological lesions, he admitted that a death from physiological old age (so defined) was rare, but contended that the death of the majority of people over the age of 75 was attributable in greater measure to such physiological causes than to accompanying pathological lesions. Dr. Hurter then analysed the death certificates of seventy-two persons whose average age was 81 (including one centenarian, six nonagenarians, thirty-three octogenarians, and thirty-two septuagenarians who were over 75); of these, fifty were women and twenty-two were men. He drew attention to the rarity of malignant disease (6 per cent.) and of renal disease (3 per cent.) in the aged. He found that from the year when terms like "senile decay" were discountenanced by the Registrar-General as descriptive of the cause of death, it had become customary to attribute more of such deaths to vascular lesions than the facts warranted. He acknowledged that phrases such as "fibrosis of the myocardium" and "degeneration of the arteries" on the death certificates of the aged were refuges of the diagnostically destitute; from a statistical point of view they were worthless, and no more enlightening than the words "senile decay."

AT the annual general meeting of the Royal Microscopical Society, held on January 15th, the council reported that several important communications upon technical and applied microscopy in science and industry had been received and published in the society's journal during the year, and the society continued to play an increasingly important part in the application of science to British industries. In the absence of the president, Mr. J. E. Barnard, F.R.S., through illness, the CHAIRMAN announced that the presidential address on "Resolution and visibility in medical microscopy" would be delivered at the society's meeting in March. A paper was read by Dr. W. E. COOKE on asbestosis, in which he described the history and incidence of this disease among asbestos workers, and its identification. Mr. T. D. HAMILTON read a paper on the preparation of thin microscope sections of whole organs by the paraffin method.

Reviews.

JELLETT AND MADILL'S "MIDWIFERY."

THE Rotunda Hospital is fortunate in its Masters and the Dublin School in its Professors, and this *Manual of Midwifery*,[1] by an ex-Master and one-time Professor in Trinity College, is a good example of their ability to give a wide publicity to the Dublin methods. Under Dr. Madill's editorship the fourth edition now exceeds 1,250 pages of closely printed text, and its bulk scarcely justifies the term "manual." It is the most exhaustive treatise on midwifery produced in these islands, and provokes comparison with the weighty tomes usually imported from the United States of America. The arrangement of its matter is clear and simple. It begins with a section on anatomy and development, and another on methods of investigation, asepsis, and technique; these are followed by three parts covering the physiology of pregnancy, labour, and lying-in, and these in turn by three on pathology. The last two of its ten parts are concerned with obstetrical operations and the infant.

The bacteriology of the genital tract has been revised by Professor J. W. Bigger, and some of his conclusions are worthy of note. While recognizing the occasional occurrence of an auto-infection, he regards this as the cause of a very small proportion of all cases of puerperal sepsis, the prevention of which must depend on general measures of surgical cleanliness and on "the complete avoidance, if possible, of vaginal examination and on the minimum of interference with labour." Yet later on, in describing treatment of retention of the placenta without haemorrhage, manual removal is advised after so short a wait as one hour. There is a full and discriminating discussion of methods of disinfection and sterilization, though the continued advocacy of lysol throughout the book is open to question now that so many brands of variable strength and efficiency are on the market. In accordance with modern practice special emphasis is laid on abdominal palpation and external manipulation, and the description of the abdominal diagnosis of presentation and position is as good as can be given by the written word and without actual demonstration. The clinical practice, based as it is on the Rotunda teaching, might tempt a search for points of divergence from another popular book built on the same foundation; but each new Master means a fresh outlook, and no one of them would be true to his national characteristics if he continued in complete agreement with his predecessors and teachers. The one point of difference that may be noted is that in this book the Dublin method of treating accidental haemorrhage by vaginal plugging is strongly advocated, and Caesarean section for cases with concealed bleeding, whereas the more recent practice in the Rotunda Hospital is to rely on treatment of the collapse by saline infusion and pituitary extract with rupture of the membranes and a tight binder. Both authorities are agreed about the bad results of a forced or rapid delivery.

Pelvic deformity, both in its common and rare forms, is exhaustively considered, and indeed throughout the book the practical side is thoroughly well done. The one criticism we would make is that pages are devoted to discussions of theories—including too many that have little evidence to support them, as, for instance, in the various toxaemic conditions. Much space might be saved without disadvantage to the reader by a rigorous sifting of many items in the lists of theories that occur so frequently. The scientific side of the book has been brought up to date. The summary of the recent work of Teacher and others on embedding and the development of the placenta may be mentioned as a clear exposition of a difficult subject. An account of the formation of the decidua in pregnancy is, however, incomplete without some consideration of the endometrial changes in menstruation and evidence of the part played therein by the corpus luteum.

[1] *A Manual of Midwifery.* By Henry Jellett, M.D.Dub. Univ., F.R.C.P.I., L.M., and David G. Madill, M.B., B.Ch., B.A.O.Dub. Univ., L.M. Fourth edition. University Series. Edinburgh: E. and S. Livingstone. 1929. (6½ × 9½, pp. xii + 1281; 570 figures. 25s. net.)

A TREATISE ON PROCTOLOGY.

NOTHING could provide clearer evidence of the high development of proctology in the United States of America than the publication of a volume of 660 pages by Dr. FRANK YEOMANS, whose work in this branch of practice is well known to his British colleagues. It is a sign of the times that the author has chosen the single word *Proctology*[2] as the title of his book, which he describes in the sub-title as a treatise on the malformations, injuries, and diseases of the rectum, anus, and pelvic colon. We have come to expect a high standard of production in American textbooks, and the work under review well maintains this tradition. The illustrations in particular are excellent, for not only are they well drawn, but they do represent what they purport to describe, and each bears a close relation to the section of letterpress it illustrates. A full bibliography is provided at the end of every chapter, and there is a good index.

The first two chapters give a very clear and practical account of the surgical anatomy of the rectum. This is followed by a section devoted to diagnostic methods, including a careful description of the use of the sigmoidoscope. There is a special chapter on methods of local and regional anaesthesia, which evidently find great favour with the author, for he makes constant reference to their value in the performance of quite considerable operations, many of which appear to be carried out on "out-patients" in his consulting room! This suggests that American citizens are more determined patients than most of those whom proctologists have to deal with here. The chapters dealing with the pathology and treatment of rectal diseases conform to standard practice, and they are well arranged, most comprehensive, and quite up to date. There is even a paragraph describing pneumatic rupture of the rectum brought about by workmen carelessly using compressed air nozzles either for the purpose of blowing the dust from their clothing or in the course of practical jokes played on new hands.

In a sense this book may perhaps be regarded as a voluminous work of reference rather than one to which the junior practitioner may safely turn for help and guidance, for the amount of information placed at his disposal is so great, and the alternative methods of treatment are so numerous, that he may find some difficulty in deciding on the most suitable method of dealing with his particular problem. The book is written in an agreeable and readable style which will commend itself to English readers.

SPECIAL PATHOLOGY AND THERAPEUTICS.

THAT well-known German standard work the STRÜMPELL-SEYFARTH textbook of special pathology and therapeutics[3] is now in its twenty-eighth edition, and the second of the two volumes of the new edition, published last year, has been sent for review. Volume ii includes diseases of the renal system, muscles, blood, ductless glands, metabolism (including deficiency diseases), and finally the nervous system, to which is devoted more than half of the 990 pages. There is also a chapter on the psychoneuroses, and at the end a short section on poisons, another giving several pages of prescriptions, and brief details of the principal health resorts in Germany.

It is difficult to find fault with a book of such well-established reputation, and indeed it can be accepted as an epitome of current German views on medical pathology and therapeutics. The opinions expressed are really so similar to those held in Britain and America that a translation into English would be very acceptable. The chapter on renal disease is excellent, and special attention may be drawn to the short section on perinephritic abscess, the clinical aspects of which are often inadequately dealt with in textbooks of medicine. It has always seemed to the reviewer that the chapter on diabetes mellitus is less clearly expressed in almost all German textbooks than it

[2] *Proctology.* By Frank C. Yeomans, M.D., F.A.C.S. New York and London: D. Appleton and Co. 1929. (6½ × 10, pp. xxxi + 661; 417 figures, 4 plates. 45s. net.)

[3] *Strümpell-Seyfarth Lehrbuch der Speziellen Pathologie und Therapie der inneren Krankheiten.* Achtundzwanzigste, neubearbeitete Auflage, von Dr. med. et phil. C. Seyfarth. Zweiter Band. Leipzig: F. C. W. Vogel. 1929. (7 × 9¾, pp. xii + 991; 215 figures, 9 plates. M.25.)

ought to be, and this is certainly true of this volume. The questions of insulin therapy, of dietetics, of coma and its complications (especially the renal disturbances), are not easy to follow as a whole, and it would be really difficult to handle a severe diabetic with only this book for guidance. Another chapter which seems inadequate is that on exophthalmic goitre. It may be that we in Britain have been too much influenced by American views on goitre, but the discussion on treatment in this book is very incomplete and almost out of date. The problems of surgical intervention, especially in cases with cardiac complications, of pre-operative treatment with Lugol's iodine, and of the need to deal with localized infections in the tonsils or elsewhere, are inadequately dealt with or omitted altogether. The long account of diseases of the nervous system follows standard lines, and is illustrated with good photographs and diagrams.

The whole volume is well produced, and the illustrations, both coloured and in black-and-white, are of a high standard.

BACTERIOLOGY AND SANITARY SCIENCE.

GERSHENFELD'S *Bacteriology and Sanitary Science*[1] takes a worthy place among the many good textbooks that have been built up from courses of lectures to students. The audience to whom these lectures were addressed comprised students of pharmacy, chemistry, and related subjects, but the textbook itself contains much to interest the medical man concerned with problems of public health. The author attempts to deal with a large number of subjects within a small compass: elementary bacteriology, protozoology, and helminthology; the principles and practice of sterilization, disinfection, and fumigation; bacteriology and parasitology in relation to commerce and industry; sanitation with reference to microbiology; the part played by insects, rodents, and snakes in the production of poisoning and infection—all these are admirably summarized and their relation to the problems of public health fully discussed. The technique of the preparation and standardization of vaccines, serums, and other biological products is described, and some account is given of the methods adopted by the State to control their purity and potency. The very feature of the book that will appeal to the student—namely, its wide scope coupled with conciseness—will disappoint those who attempt to use it for reference purposes, some of the subjects being treated with but scanty detail. The volume would be greatly improved by the inclusion of more references and illustrations. When, however, the author's aim, as outlined in the preface, is compared with his achievement, it must be admitted that the result is good.

LIPOID METABOLISM.

THE study of lipoids in recent years has shown, without any doubt, that these substances are of very great importance in many vital processes, and that disturbance of their correlation may be productive of grave pathological conditions. The literature of the subject, distributed for the most part in the form of isolated articles in numerous journals throughout the world, is now very large; and a summary of our present knowledge, such as that contained in Dr. KNAUER'S work on Lipoid Metabolism,[2] cannot fail to be of use both to those engaged in research and those who desire to gain some insight into this complicated subject and the problems which it presents. Dr. Knauer has himself done much research on lipoid metabolism in children, enlarging our knowledge and confirming the work of others, and he has included in his book details of the more important of his experiments. He has not, however, limited his outlook to the conditions found in children, but has taken the opportunity of making a complete survey of lipoid metabolism generally, and the result is an excellently planned textbook and work of reference on the subject. It is a custom with some writers to exclude fats from the class of lipoids, limiting the group to cholesterin, phosphatids, and cerebrosides; the author has included fat metabolism in his survey. He has, further, insisted on the importance of recognizing the interrelation of the several lipoids in research work, for he has found that the value of many experiments recorded in the earlier literature is seriously diminished owing to investigations having been made on cholesterin metabolism alone, instead of the total lipoid metabolism.

The scope of Dr. Knauer's book may be briefly indicated. The biological properties of lipoids in the normal condition of the organism are first considered—namely, their relation to the coagulation of blood and agglutination, to haemolysis, resistance to infection, and the production of antibodies; further, the normal lipoid picture of the blood and the maintenance of the lipoid quotient in the course of normal metabolic processes; the normal lipoid metabolism in the several organs and the splitting of fat in the two forms of lipolysis and lipodieresis. In the next place the lipoid metabolism in various modifications of the normal condition is considered—namely, during digestion, during pregnancy, and in the newborn and growing child—the central point of interest in these studies being the variations met with in the lipoid picture of the blood. There follows a discussion of the blood lipoids in diseases of the organs and in various pathological conditions, such as anaemia, rickets, jaundice, infections, lipomatosis, and toxaemias. Finally, the problem of the relation of lipoids to vitamins is considered, the modes of their excretion from the body described, and their relation to carbohydrates and proteins indicated.

The author has succeeded in giving a thoroughly readable and interesting account of the above matters within the narrow compass of less than 140 pages, and he has found room to mention all the fundamental researches on the subject, together with the modifications of view which subsequent researches have brought about, and to indicate the present position of opinion in this branch of medical science.

PREVENTIVE MEDICINE.

FROM his position as director of library services at the London School of Hygiene and Tropical Medicine and his association with the Bureau of Hygiene and Tropical Diseases, Dr. J. F. C. HASLAM is admirably equipped to contribute the volume *Preventive Medicine*[3] in the Recent Advances Series. As prevention has played such a prominent role in connexion with tropical diseases it must have been a piece of self-denial on his part not to have insisted on this aspect of the subject. He has utilized Sir George Newman's *Outline of the Practice of Preventive Medicine* as the framework of a very up-to-date and well-written account of present-day preventive medicine. As would be expected in this series, due attention is paid to a number of burning questions of the day, such as maternal and infant mortality, the nutrition and well-being of children, dental disease, industrial hygiene, atmospheric conditions in their relation to health, and active immunization against colds, diphtheria, and scarlet fever. After a critical examination of the statistics about anti-cold vaccination a pessimistic and sceptical conclusion is reached. A clear and well-balanced account of vitamins is contributed by Professor S. J. COWELL, and altogether the whole subject of preventive medicine is treated in a very broad-minded manner.

GUY'S HOSPITAL REPORTS.

THE last quarterly instalment of the *Guy's Hospital Reports*[4] for 1929 includes three papers on abdominal pain: that by Dr. E. P. Poulton sets out the physiological considerations; Dr. Arthur Hurst writes on the nature and localization of visceral pain; and Dr. J. A. Ryle on colonic pain. In his biochemical observations on 110 asthmatics Dr. G. H. Oriel divides the cases into two groups: the first is associated

[1] *Bacteriology and Sanitary Science.* By Louis Gershenfeld, Ph.M., B.Sc. Philadelphia: Lea and Febiger. 1929. (6 × 9¼, pp. xv + 432; 39 figures, 2 plates. 4 dollars net.)

[2] *Ergebnisse der Lipoidstoffwechselforschung.* Von Dr Hans Knauer. Berlin: S. Karger. (Sup. roy. 8vo, pp. iv + 164—text 136; 22 tables, 1 figure.)

[3] *Recent Advances in Preventive Medicine.* By J. F. C. Haslam, M.C., M.D., M.R.C.P., D.P.H.; with a chapter on Vitamins by S. J. Cowell, M.B., M.R.C.P. London: J. and A. Churchill. 1930. (5½ × 8¼, pp. viii + 328; 30 figures. 12s. 6d.)

[4] *Guy's Hospital Reports.* Vol. 79 (Vol. 8, Fourth Series), October, 1929. Edited by Arthur F. Hurst, M.D. London: The Lancet Ltd. 1929. (6 × 9¼, pp. 379-590; 33 figures. Annual subscription £2 2s.; single numbers 12s. 6d. net.)

with other allergic phenomena and often begins as infantile eczema, which alternates with asthma commonly labelled bronchitis; prurigo, cyclical vomiting, and migraine are later phenomena. These cases show a positive van den Bergh reaction and a high amino-acid content of the blood during the asthmatic state. In the other and larger group the onset is often at puberty or the menopause, the van den Bergh test is negative, and the amino-acid content of the blood normal. In both groups the blood sugar is low, and the urine during the attacks contains a complex body allied to the secondary proteoses. It appears that the asthmatic diathesis is characterized by biochemical instability in nitrogenous and carbohydrate metabolism, and in acid-base balance, and that stabilization can be effected by the administration of glucose and ammonia. This investigation is supplemented and confirmed by Dr. F. A. Knott's routine laboratory work on a number of the patients in Dr. Oriel's series. Mr. R. C. Brock and Dr. G. W. Rake contribute a valuable paper on blood platelets, especially in tuberculosis, and Mr. A. Ralph Thompson supplies three papers—on congenital deformities of the lower urinary tract and the genitalis, on vesical calculi, and on stones in the prostate. Dr. Hurst records a case in which inflammation of a congenital diverticulum of the duodenum imitated an ulcer, and Mr. W. H. Ogilvie and Mr. S. A. Scorer one of suppurative gastritis mimicking carcinoma. There are two papers describing endocrine diseases, one by Mr. R. P. Rowlands, Professor G. W. Nicholson, and Dr. Parkes Weber on an adenoma of the interstitial cells of the testis with precocious sexual and bodily development (macro-genitosomia), and the other by Drs. E. P. Poulton and E. C. Warner on infantilism due to deficiency of the anterior lobe of the pituitary with thyroid enlargement. The cure of a virulent typhoid carrier by cholecystectomy is described by Mr. Nesbitt-Wood.

NOTES ON BOOKS.

A Text Book of Materia Medica,[8] by Professor H. G. GREENISH, has now reached its fifth edition. The work is profusely illustrated, and the author describes fully all the important crude drugs of vegetable and animal origin used in medicine, giving an account of their naked-eye and microscopical appearances, the chemical tests for ascertaining their purity, and the methods for detecting common adulterations. The book, he states, is designed for students of pharmacy and medicine, but, little pharmacognosy now being demanded of medical students, its chief interest is to the former class. The author is well known as the joint editor of the last edition of the *British Pharmacopœia*, and is the leading authority on pharmacognosy in this country.

DR. P. F. PATEL'S work on *Infectious Diseases and other Fevers in India*,[9] which is based on his experience in England and India during the last fifteen years, contains an account of the acute infectious diseases common in this country and those met with in India, such as plague, cholera, malaria, and leishmaniasis. The author has obviously had considerable personal experience of the diseases discussed, as well as some knowledge of the literature, although no bibliographical references are given. In the chapter on typhus (pp. 253, 254, 257, and 258) we have noticed transference without acknowledgement of several passages from the first edition of J. D. Rolleston's *Acute Infectious Diseases* (pp. 197, 205, 206). There are numerous misprints of proper names and other words, and the printing, paper, and binding are poor.

DR. DOLJAN'S book on the architecture of matter[10] contains the results of the author's meditations on the nature of the universe. His starting-point is the modern discovery of the structure of the atom; he considers that the universe is built on a similar plan, and his book is an attempt to demonstrate the fact. In early life he was a believer in matter only; now he believes there is an intangible something besides. He writes: "The aim of this book is not to convince or make proselytes. It contains the results of the analysis of meditation and study which have compelled me to admit the existence of a supreme creative and directing force, and transferred me from the camp of infidels to that of believers." The book is essentially a personal confession of conversion from pure materialism.

The Bachelor Woman and Her Problems[11] deals with a subject too often neglected. Dame MARY SCHARLIEB shows that, instead of regarding the unmarried woman as an encumbrance, the community is beginning to recognize the special services which she alone has time to render to her fellows. The book shows the alert common sense for which the author is noted, and in no case more clearly than in her eminently wise comments on absorbing friendships between people of the same sex (see page 49). All aspects of the life of the unmarried woman—including social work, professional careers, and dedication through the Church—are discussed lucidly and sympathetically; and the conclusion borne in upon the reader is that the young would find in Dame Mary a sage counsellor and sympathetic friend.

The forty-ninth volume of *Transactions*[12] of the Edinburgh Obstetrical Society opens with Dr. J. H. Ferguson's presidential address, in which he drew a full-length portrait of James Matthews Duncan, a man who "was not only an ornament to our Society, but a man to whom the world at large owes undying gratitude and respect." Among the longer communications relating to obstetrics are a critical survey by Drs. H. S. Davidson, Douglas Miller, and Elsie Crowe of 159 cases of eclampsia treated by conservative methods; Dr. James Young's *scheme of maternity service co-ordinating ante-natal, domiciliary, and hospital treatment*; a study of the bactericidal power of the blood during pregnancy and the puerperium, by Dr. Douglas Miller and Dr. J. R. Whitaker, jun., which appeared in the *British Medical Journal* of July 20th, 1929 (p. 85); and a paper on stillbirth and neo-natal death, by Drs. Fahmy and Crowe. Gynæcological communications include Dr. B. P. Wiesner's paper on pseudopregnancy and its mechanism, and Dr. Walter P. Kennedy's paper on the ganglion cervicalia uteri and the œstrus hormone.

The full text of the Rickman Godlee Lecture, entitled "Natural history, the pleasure and purpose of observation," delivered by *Viscount Grey of Fallodon* at University College, London, in November last, of which an account appeared in our issue of November 16th (p. 919), has now been published. Copies may be obtained on application, enclosing postal order, to the Publications Secretary, University College, Gower Street, W.C.1, price 1s. (post free, 1s. 3d.).

[8] *A Text Book of Materia Medica*. By Henry G. Greenish, D.Sc.S., F.I.C., F.L.S. Fifth edition. London: J. and A. Churchill. 1929. (Med. 8vo, pp. xiv + 551; 297 figures. 25s.)

[9] *Infectious Diseases and other Fevers in India*. By Purshotamdas T. Patel, M.D.Lond., M.R.C.P., D.T.M., and H. Calcutta and London: Butterworth and Co., Ltd. 1929. (Cr. 8vo, pp. xiv + 784; 47 charts. 16s. 6d. net.)

[10] *Architecture de la Matière*. By Dr. Constantin Doljan. Paris: F. Alcan. (5½ × 9, pp. 198. 13 fr.)

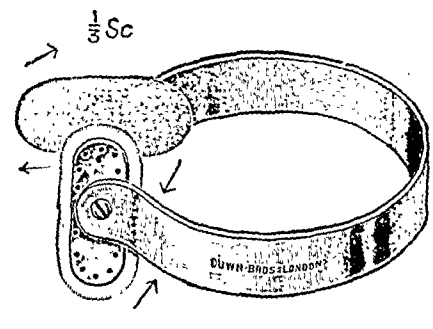
[11] *The Bachelor Woman and Her Problems*. By Dame Mary Scharlieb, M.D., M.S., LL.D.Ed., J.P. London: Williams and Norgate, Ltd. 1929. (Cr. 8vo, pp. 125. 4s. 6d. net.)

[12] Edinburgh: Oliver and Boyd. 1929. (Med. 8vo, pp. xvii + 242; illustrated.)

PREPARATIONS AND APPLIANCES.

A NEW VARICOSE VEIN CLIP.

MR. R. DAVIES-COLLEY, M.Ch., F.R.C.S., writes: The spring clip shown in the accompanying illustration has been designed to take the place of an assistant in the operation of varicose vein injection. It consists of two padded metal plates connected by a horse-shoe spring, which, when applied over the



site of an injection, exerts sufficient pressure to prevent circulation through the vein while subsequent punctures are being made in other parts of the limb.

The instrument has been made for me by Messrs. Down Bros., Ltd., 21 and 23, St. Thomas's Street, S.E.1.

Percain.

In a note on this drug, published on December 14th, 1929 (p. 1114), it was stated that "Messrs. Ciba recommend that the maximum quantity injected should be . . . 0.2 gram in a 0.005 per cent. solution." This concentration should be 0.05 per cent. The makers also request us to point out that the chemical name given—namely, diethyl-ethylene diamide of α-butyl oxycinchoninic acid—is the name of the base, and that percain is the hydrochloride of this base.

British Medical Journal.

SATURDAY, JANUARY 25TH, 1930.

THE DIAGNOSIS AND TREATMENT OF COLITIS.

A DIAGNOSIS of colitis is often made simply because a patient complains of chronic diarrhœa or of pain or discomfort believed to be located in the colon; or because mucus is present in the stools or an excess of streptococci has been cultivated from them. But colitis means inflammation of the colon, and the diagnosis is only justified when a sigmoidoscopic examination has shown the presence of obvious inflammatory changes in the mucous membrane, or when the stools have been found to contain not merely excess of mucus, but also excess of leucocytes, with or without blood. Every normal mucous membrane secretes mucus, and when the colon is irritated mechanically by hard faeces, or chemically by aperients, the mucus which appears in the stools should be regarded as evidence that the mucous membrane is performing its functions in a normal manner, and not that a disease is present. The word "catarrh" is generally applied to a condition in which the surface of a mucous membrane is slightly inflamed, and the mucus-producing cells, as the result of the added irritation, are stimulated to excessive activity. There is no evidence that such a "catarrh" of the colon is an early stage of the very serious infective disease known as ulcerative colitis; it is true that a pre-ulcerative stage can sometimes be recognized, in which the mucous membrane is swollen and red and bleeds very readily when touched; but this condition—characterized by an involvement of the whole thickness of the mucous membrane, and an exudate containing pus cells and red corpuscles as well as mucus, even when no blood can be recognized in the stools by the naked eye—bears no resemblance to what is generally known as a catarrh.

In a lecture published in our issue of December 7th last Dr. Geoffrey Evans emphasized the importance of an examination of the stools in the diagnosis and treatment of constipation. Dr. Letheby Tidy, in his paper on colitis (printed at page 135 this week), shows how daily observation of the stools, together with a carefully compiled history of the symptoms, may be all that is necessary for the differentiation of colitis from carcinoma of the colon. Few physicians, however, would have sufficient confidence in their powers of observation to dispense entirely with the aid of radiology and sigmoidoscopy. An opaque meal in cases with involvement of the caecum or the ascending colon, and an opaque enema when the lesion is in the part between the ascending colon and the middle of the pelvic colon, may often locate an early growth before the appearance of any characteristic symptoms or tumour; and the sigmoidoscope has saved many lives by revealing early carcinoma of the lower half of the pelvic colon and of the uppermost inch of the rectum—a condition which cannot be palpated on abdominal or rectal examination or recognized by means of x rays, and in which the stools are either normal or indistinguishable from those passed in a case of colitis of moderate severity.

One of the lessons that the routine use of the sigmoidoscope has taught is that, since the war, amœbic dysentery has sometimes occurred in individuals who have never been out of England. Whereas the bowel in bacillary dysentery looks so like the bowel in sporadic ulcerative colitis that the two diseases may legitimately be regarded as closely related in their pathology, amœbic dysentery presents an entirely distinct and very characteristic picture. Many cases have now been observed in which, the usual treatment of ulcerative colitis having failed to produce improvement, sigmoidoscopy has suggested the true nature of the case, and fresh swabs from the mucous membrane have revealed the presence of the *Entamœba histolytica* or its cysts. In such cases complete recovery has followed a few days of specific treatment. While inexpert sigmoidoscopic examination may seriously aggravate colitis, in skilled hands this danger is negligible; if the instrument is introduced properly the mucous membrane is barely touched, and not the smallest injury should result. The examination may also afford information of the greatest value in determining when treatment can be discontinued and the patient can be allowed to get up. This is a matter of some importance, as the stools are often perfectly normal in appearance long before complete healing has occurred; early relapse is inevitable if treatment is discontinued before the mucous membrane has regained its normal aspect. Radiology is the only means of recognizing the onset of stricture, a condition that occasionally develops in very chronic cases without any accompanying change in the symptoms, and from which recovery is impossible until the obstruction is overcome by a short-circuiting operation. Sigmoidoscopy sometimes reveals the development of minute multiple adenomata in the course of healing. These disappear under the influence of deep x-ray therapy, but if left untreated they are liable to undergo malignant degeneration, sometimes after an interval of many years.

Twenty years ago ulcerative colitis was almost invariably fatal. Medical treatment now results in the recovery of a large majority of patients, but as many months, and sometimes a year or more, are generally required, great patience is called for both from the patient and those in charge of him. Unfortunately recurrences are common, sometimes after an interval of one or even several years, but if the patient is taught to recognize the importance of early treatment later attacks are generally much shorter than the first. The principles of medical treatment have been described in a series of papers published from Guy's Hospital,[1] where the disease was first recognized as a distinct condition by Sir Samuel Wilks in 1875. In the Guy's series from 1921 to 1925 there were no deaths among thirteen cases treated medically, though all were given medicated enemas from the beginning: albargin was used at first, but was found too irritating, and in the later cases tannic acid was generally employed. It is certainly true that great care must be taken to avoid irritating the anal canal by the frequent passage of the catheter through which the fluid is injected, but this applies equally to the use of starch and opium enemata.

The injection of polyvalent antidysenteric serum is occasionally followed by dramatic cures. The first case in which this treatment was attempted is described in the *Guy's Hospital Reports* for 1921: an almost moribund patient, who had been ill for over a year, was restored to complete health in less than a month, innumerable ulcers, which had been seen a few days before, vanishing five days after the first injection. Unfortunately, few cases respond so

[1] *Guy's Hospital Reports*, 1921, lxxi, 25, and 1925, lxxv, 45; *Lancet*, 1923, i, 951.

rapidly to the treatment, but recovery is often greatly hastened, and it is comparatively rare for no improvement at all to follow. It is interesting to note that the treatment was initiated as a result of recognizing the remarkable similarity of the sigmoidoscopic appearance in a case of ulcerative colitis and in a case of bacillary dysentery of two years' duration which had rapidly recovered under serum treatment after all other methods had failed to produce any improvement.

IRRADIATED ERGOSTEROL.

THE literature on the therapeutic uses of vitamin D and irradiated ergosterol provides a striking example of the rapidity with which advances in treatment can occur under modern conditions. There has been a constant and copious output of literature on this subject during the last ten years, but the problems considered have changed in a remarkable manner. At first the question debated was whether or not vitamin D produced a beneficial action in rickets. The clinical evidence was, however, so overwhelming that this discussion came to an end in a few years. Then the chemical nature of vitamin D became the centre of interest, and about three years ago the identity of vitamin D with irradiated ergosterol was established. One outstanding result of this discovery was that it enabled manufacturers to obtain the active principle in practically unlimited quantities, and in concentrations far greater than those occurring in the richest natural sources. Before the discovery of irradiated ergosterol one of the chief difficulties in treating rickets lay in persuading the infant to take an adequate dose of cod-liver oil, but this discovery made it possible to give enormous overdoses, and at once the question arose as to the dangers associated with such overdosage. The possibility of overdosage is shown by the fact that 1/100,000 mg. of irradiated ergosterol can produce a definite physiological action on a young rat, and the minimal active dose of such a preparation for an infant would be a small fraction of a milligram.

During the past two years a considerable literature has appeared regarding the toxic symptoms produced in animals by overdosage with irradiated ergosterol. It was at first thought that these were all due, not to the antirachitic principle, but to toxic side-products. This view appears to be incorrect, for more recent work is in fair agreement that irradiated ergosterol, however it may be prepared, gives rise to symptoms of poisoning when administered in excessive quantities. The chief toxic effect that has been observed is hypercalcaemia, and it has been shown that irradiated ergosterol can increase the blood calcium of animals from 50 to 100 per cent. above the normal. The doses needed to produce such effects are, however, thousands of times greater than the therapeutic dose. This work does not preclude the possibility that other substances that can produce a variety of toxic actions may be associated with irradiated ergosterol. For example, Agduhr[1] concluded that excess of cod-liver oil could produce a variety of lesions in animals and man, and that this effect was due to the co-operation of several different active principles.

Information about the toxic effects of irradiated ergosterol on infants is naturally more scanty than that concerning the reaction of experimental animals. Hess and his co-workers[2] have made a study of the effects on infants of long-continued administration of irradiated ergosterol, and they conclude that "hypercalcaemia may occur in infants when excessive amounts of irradiated ergosterol are given for prophylactic purposes, but rarely comes about in the course of curative treatment—in other words, simultaneously with active rickets or tetany." They conclude also that "the induction of an excess of calcium in the blood is not distinctive of irradiated ergosterol, but is simply a sign of overdosage of an antirachitic agent, and may result from giving large amounts of cod-liver oil. . . . The reason hypercalcaemia rarely develops in infants as a result of cod-liver oil medication is simply that one cannot give more than about from six to eight teaspoonfuls daily." They mention that hypercalcaemia in infants is always accompanied by a decided failure of appetite, and that this forms a valuable early sign of overdosage with irradiated ergosterol.

The literature indicates that there is a wide margin of safety with irradiated ergosterol—indeed, this margin is greater than that for almost any other drug known to produce a definite action. On the other hand, there is at present no agreed dosage, and the potency of the preparations on the market varies in a remarkable fashion. Hess and his associates[2] tested four of the most widely used preparations of irradiated ergosterol, and found that the strongest was more than 200 times as strong as the weakest. A number of manufacturers in the United States have now agreed to assay their preparations so that they will have a potency a hundred times that of a high-grade cod-liver oil—that is to say, one drop of such a preparation will be equivalent to about one and a half teaspoonfuls of a potent cod-liver oil. The action of the American manufacturers in agreeing to market a product of uniform potency is undoubtedly a useful therapeutic advance, and we may hope that their example will be followed generally. It is indeed a fortunate circumstance that the margin of safety for irradiated ergosterol is exceptionally broad, for the public has the opportunity to dose itself with a large variety of irradiated products, and but little regard has been paid hitherto to the possibility of overdosage.

[1] Agduhr. Thirteenth International Physiological Congress Report, 1929, p. 5.
[2] Hess, Lewis, and Rivkin. *Journ. Amer. Med. Assoc.*, 1929, 93, 661.

THE CAUSAL ORGANISM OF INFLUENZA.

THE scientific mind receives the announcement of all new discoveries with a wholesome scepticism: this is as it should be. Particularly is this so when the discovery makes its debut in the lay press. Some few weeks ago the British public learned through the columns of a popular evening newspaper that Dr. I. S. Falk of Chicago had discovered the causal organism of influenza. That the information should reach medical investigators in this country through such a channel is a matter for commiseration with Dr. Falk and his colleagues, for such a happening was probably quite beyond their control. The sceptical attitude, however, with which this announcement has been received is not likely to be dispelled by the preliminary report which these workers have published in our valued contemporary the *Journal of the American Medical Association*.[1] The discovery is the work of a team of twenty-four investigators, of which Dr. Falk is the director—truly a super-team even for a country accustomed to do things on a magnificent scale—but it appears that, of the twenty-four, twenty have not been acquainted with the nature of the report, and therefore take no share in the responsibility for the statements which it contains. Surely this is an indication of

[1] Experiments on the Etiology of Influenza. Preliminary Report. *Journal of American Medical Association*, December 28th, 1929.

undue haste. And when we read that the organism incriminated is a pleomorphic "Green" streptococcus (which, incidentally, does not appear in this role for the first time) the need for this haste becomes still less obvious. The report opens with an outline of the scheme of work which this team has had before it to guide its endeavours. No one would quarrel with the scheme, for it is most comprehensive; but what follows in the report—the answers to the various questions—is hardly likely to carry conviction. There is a curious vagueness in the wording of some of the conclusions. Speaking of this pleomorphic streptococcus, for instance, the report says: "We have isolated cultures of this group at least forty-nine times. It is certain or highly probable that at least forty-eight of these were derived from human sources directly or from monkeys that had been directly or indirectly infected or contaminated with material from human sources." The exact number and provenance of these strains ought to be known. Then again: "In a significant number of instances, acute disease of the upper respiratory tract occurred after the close of the epidemic among members of the staff exposed to infection with pleomorphic streptococci in the laboratory." Does this mean accidental or deliberate exposure to infection? Influenza may be due to a streptococcus, though this is open to question. Dr. Falk and his colleagues have yet to produce all their evidence; but, to judge from the preliminary report, they will find it difficult to make out a better case for this organism than has already been done for Pfeiffer's bacillus or *Bacterium pneumosintes*.

IS MAN A PRIMITIVE ANIMAL?

PROFESSOR F. WOOD JONES has lately brought forward a new scheme of man's evolution,[1] but before touching on the substance of his argument something must be said of its style. Professor Wood Jones is a gifted writer and a born teacher: every one of the forty short chapters which make up this book is crisply, concisely, and clearly written: touches of fancy, wit, and humour liven his pages. The happy gift of exposition possessed by the late Sir Frederick Treves owed much to his experience as a demonstrator of anatomy; it is probable that Professor Wood Jones's facility of exposition has gained greatly from many years of teaching in the dissecting room. Anatomists of late have viewed the human body with a comfortable placency. They had come to the conclusion that no one could ever question the fact that man was the most highly and the most recently evolved of all living animals. They also felt certain that the verdict reached in Darwin's time—namely, that in the course of his evolution man had passed through an anthropoidal stage—could never be upset. Professor Wood Jones attacks both of these positions: he finds that man, in spite of his big brain, gifts of speech, and modified foot and big thumb, is essentially a bundle of ancient or archaic characters: he rejects, with heat, the accepted imputation that man has passed through an anthropoidal stage in the later phases of his evolution. Having thus thrown overboard the theory of man's origin usually accepted by anatomists, he has to construct a substitute. This he does by carrying man's history back to that distant period of the earth's history—the Eocene—when tarsioids represented the highest primate forms. Many of man's characters, he believes, have been derived directly from a tarsioid ancestry. Of the tarsioids there is only one living representative—the little quaint owl-eyed tree-jumper, *Tarsius spectrum*, of Borneo. If Professor Wood Jones is right, man and tarsius are distant cousins. The orthodox anatomists also go back to the tarsioids to get a beginning in tracing man's lineage. They suppose that the tarsioid stock became separated in the Eocene into two branches—one giving origin to the monkeys of the New World, the other giving rise first to the monkeys of the Old World, which became specialized into many forms, then to the smaller anthropoid apes, later to larger anthropoids, and last of all to man. Professor Wood Jones reverses the order in which the various members of the Old World primates broke away from the parent stem. He supposes that the proto-human stock was the first to embark on a separate line of evolution; it broke away at an extremely early period, and thus man has retained a wealth of "primitive" characters; but by way of warning it may be said that there are many who will hesitate to accept the characters designed by the author as primitive as being truly such. After man's stock broke away that of the orang followed; then that of the gibbons, later the gorilla and chimpanzee, and last of all the monkeys of the Old World. Professor Wood Jones thus reverses the usually accepted order of separation. Strangely enough, when he first enunciated his theory in 1918 many who rejected man's anthropoid ancestry with scorn accepted his distant tarsioid origin with alacrity. And yet the structural transformation needed to convert a small, simple-brained, tree-living tarsioid into a human being is colossal; while that needed to change an anthropoid into a human form is, in comparison, an evolutionary event of minor magnitude. Clearly it is impossible in the space at our disposal to review the evidence on which Professor Wood Jones relies to prove the truth of his theory of man's origin. Our readers must consult the book itself and form their own opinions. They will find the author to be a thoroughgoing disciple of Lamarck, believing that habit and environment somehow bear in upon the living body of parents and ultimately alter all the processes concerned in development and growth of the bodies of their progeny. The tendency among students who devote themselves to the problems of development and of growth is to reject the Lamarckian interpretation in all its forms. Whether readers accept Professor Wood Jones's interpretations or reject them, they will find him a stimulating, if somewhat provocative, writer.

[1] *Man's Place Among the Mammals*. By Frederic Wood Jones, F.R.S. London: Edward Arnold and Co. 1929. (Demy 8vo, pp. xi + 372; 160 figures, 12 plates. 21s. net.)

EPHEDRINE AND SUGAR METABOLISM.

ENDOCRINE balance as a factor in the preservation of normal bodily function is no new conception. By administration methods, by animal experiment, and from the clinical results following extirpation in the human subject, the antagonistic effects of the active principles of the various ductless glands have gradually become apparent. The work of Cannon showed in dramatic fashion the manner in which the body mobilizes adrenaline, and among the sequels of such mobilization this observer demonstrated the production of hyperglycæmia. The action of insulin in depleting the blood sugar pointed to antagonism between this body and adrenaline, and it might therefore be expected that ephedrine and ephetonine, which are chemically closely related to adrenaline, should exert the same effect. This problem has recently been studied by Leyko and Méhes,[1] who found that the injection of ephedrine hydrochloride or ephetonine was followed by elevation of the blood sugar level in both rabbits and dogs. This action was not powerful; for example, one-third of the lethal dose administered to rabbits produced an increase of about 27 per cent. in the blood sugar. No inhibition of the normal hypoglycæmic action of insulin could be produced by previous ephedrine administration, but small doses of insulin definitely reduced the hyperglycæmic effect of ephedrine. While this process could be demonstrated easily in the dog,

[1] E. Leyko and G. Méhes: *Journ. of Physiol.*, xxvii. 1929, p. 247.

it was much less pronounced in the rabbit. Moreover, Leyko and Méhes showed that small doses of adrenaline and ephedrine exerted a synergic hyperglycaemic action. The increasing use of adrenaline and its derivatives in asthma lends interest to these observations on sugar mobilization. A. F. Hurst[1] ascribes the value of the drug to its influence on the broncho-dilator fibres of the sympathetic; he has referred in this connexion to the sudden termination of an attack of asthma which may follow shock or fright, presumably depending upon an autogenous provision of adrenaline. It seems likely, however, that these phenomena are related, at any rate in part, to the influence of the sympatho-mimetic substances upon sugar metabolism, especially in view of the beneficial effect of glucose administration upon asthmatic children. In the light of these findings it seems probable that adrenaline, ephedrine, and its racemic compound ephetonine produce their effects in some measure by virtue of sugar mobilization. The successful results obtained in the treatment of asthmatic children by glucose have not been forthcoming among adults, although in some instances benefit has undoubtedly accrued. The disparity may be due to the variety of factors producing asthma in adults, whereas in children nasal and other sources of local irritation are not usually found. Indeed, in children the fundamental disability would seem to be a metabolic disorder which may be rectified by the administration of glucose and alkalis, with consequent cure of the asthma.

RANCIDITY OF EDIBLE FATS.

THE researches conducted under the supervision of the Food Investigation Board are concerned primarily with the needs of industry—with the questions of food preservation, the prevention of wastage, efficiency in the production of food, and the maintenance of its quality. In the Board's report for the year 1928[2] there is, however, the usual chairman, Sir [illegible] Broodbank, points out in a preface, abundant evidence that inquiries whose scope is limited by the needs of industry can, if carried out with sufficient thoroughness, contribute in no slight degree to the general advancement of knowledge. As an example may be cited the investigation conducted by Mr. C. H. Lea of the factors underlying the production of rancidity in animal and vegetable fats. The development of an objectionable taste, odour, or appearance in these substances has been attributed to three main causes: moulds and bacteria, atmospheric oxidation, and tissue enzymes; and any combination of these may produce the general condition known as rancidity. Two distinct types of rancidity have been recognized—one brought about by atmospheric oxidation without the intervention of micro-organisms, the other by the action of moulds. In the former ethylenic linkages of the unsaturated acids are attacked, with the production of a variety of compounds, including aldehydes and acids of lower molecular weight. In the latter a series of methyl-ketones are produced from the lower saturated acids. Both these types of rancidity have been found to occur in butter, a material containing a sufficiency of moisture and nitrogenous matter, together with a fair proportion of unsaturated acids. Thus samples of butter which have been held in storage for some time may acquire a stale, tallowy taste and odour, accompanied by a certain loss of colour—changes probably due to atmospheric oxidation. Other samples, attacked by moulds, may became discoloured in patches and acquire the peculiar smell and taste which have caused this type of deterioration to be termed "perfume rancidity." The fat of beef or mutton held in cold storage gradually acquires a strong flavour and odour which render it unpalatable, and, with increasing periods of storage, becomes definitely rancid. These changes are very complex, the presence of enzymes, moisture, nitrogenous matter, and atmospheric oxidation all being contributory causes. Experiments are in progress to determine the relative importance of the various factors at chilling and freezing temperatures. Of considerable interest is a study of the part played by lipolytic enzymes; for though a high free acidity does not itself indicate rancidity, the presence of free acids probably accelerates the changes which together constitute rancidity. Yet another investigation concerns the effect on the progress of rancidity of varying the physical conditions in the storage chamber—for example, the humidity and oxygen content. It has also been found necessary to conduct experiments for the purpose of elucidating the mechanism of the reaction between oxygen and the unsaturated fatty acids—incidentally affording an admirable illustration of the way in which pure research may be stimulated by an inquiry undertaken primarily for the solution of practical problems.

[1] A. F. Hurst: *British Medical Journal*, November 9th, 1929, p. 839.
[2] Department of Scientific and Industrial Research. Report of the Food Investigation Board for the Year 1928. H.M. Stationery Office. 1929. 3s. 6d. net.

X RAYS IN INDUSTRY AND BIOLOGY.

THE ever-extending application of x rays to the examination of the materials used in industry was the subject of a lecture by Mr. G. Shearer, D.Sc., of the National Physical Laboratory, at a meeting of the British Institute of Radiology on January 16th. Dr. Shearer explained that the great value of x rays in this connexion is that they permit, by the well-known method so often expounded by Sir William Bragg and others, the examination of molecular structure. In order to see the atom one would require to have a magnification of the order of one hundred million diameters. It could never be hoped, said Dr. Shearer, to obtain such magnification by means of the microscope, for the limit was imposed by the wave-length of light itself; but with radiation of shorter wave-length than visible light, followed [illegible] such as x rays, the shape and arrangement of molecular structure came within human cognizance. He described how the aggregation of atoms and molecules followed a regular pattern, which was recognized in the crystal, the crystal being nothing else than the repetition of some small unit of arrangement. Atoms always arranged themselves with crystalline regularity if given a chance. All metals were crystalline, and so were many organic structures; indeed, the technical difficulty, said Dr. Shearer, was to find anything which was not crystalline. When substances were mounted in a fine x-ray pencil, the diffraction effects by their pattern and the relative intensity of the images were to the physicist significant of the structure of the material. Every material "wrote its signature" in this manner, even materials like paraffin wax, which under the finest microscope revealed no crystalline structure, but under the x-ray beam showed a regular pattern of crystalline origin. The examination of the x-ray spectra of metals was of constant use in industry in detecting concealed faults and abnormalities. Dr. Shearer showed a remarkable series of x-ray spectra of iron as it altered under varying temperatures up to more than 1,000° C., and of aluminium alloy as increasing percentages of copper were added. The same method could be applied to the examination of fatty acids and to vegetable fibres. In the fibre of cellulose and in a strand of animal hair the crystals were definitely arranged along the axis of the fibre, just as in drawn aluminium wire. One of the most striking results was to be seen in connexion with india-rubber. When a piece of ordinary rubber was taken and subjected to the x-ray beam there was little evidence of crystalline structure; it had the diffused appearance of a liquid body. If, however, the rubber was stretched towards the limits of its elasticity a characteristic picture of crystals was immediately obtained. The crystals made

their appearance during the stretching process, and it was stated in Germany that it had been found possible even to watch on the fluorescent screen the appearance and disappearance of the crystals with the stretching and relaxation of the rubber. Dr. Shearer thought that muscle might be examined in the same way. Another possible field of inquiry was the investigation of the crystalline structure of teeth and its bearing on the question of dental decay.

EDUCATION OF THE ADOLESCENT.

THE reorganization of public education in England on the lines of what is now commonly known as the Hadow report has already begun, and at the end of three years from April, 1930, it will be largely accomplished. The compulsory school age will have been raised by one year, primary education will be mainly uniform from 5 to about 11 years of age, secondary education will be organized in complete courses of varied kind from 11 years of age to 15 or 16, and thereafter there will be opportunity for those who desire it to pursue further education, usually of a more technical character. It is clear that there never was so much need as now for careful thought as to what exactly should be done through these years, and what should be the pedagogic aim and method during these successive periods. Professor Olive A. Wheeler of the Cardiff University College has written a book entitled *Youth*,[1] which is a valuable contribution to such thought and an interesting and practical guide to such aims and methods. Sir Henry Hadow himself has written a commendatory introduction. The subject of the book is described in its subtitle as "*The psychology of adolescence* and its bearing on the reorganization of adolescent education." Professor Wheeler's general argument and point of view may best be indicated by a few short quotations. "A century ago the methods of English education, outside of certain great names, were not based upon any very adequate understanding of the pupil's mind: our schoolmasters were better at teaching Latin than at teaching John." "The old view—primary education for the poor, secondary for the middle class, and higher education for the rich—has not only proved itself to be a dismal and disastrous theory, but is *fundamentally inconsistent with* a democratic order of society. The extension of the provision for adolescent education is therefore an essential part of the reform movement towards a functioning democracy." Further, even "primary education for all and secondary education for the clever is being undermined by the increasing understanding of the nature and changes of adolescence. It is not only the clever boy or girl who needs guidance in this critical period; the dangers of instability and the difficulties of self-control are as great in the case of the less academically minded." "Just as *infancy may be regarded* as the period for the adaptation of the individual to the physical universe, so adolescence reveals itself as pre-eminently the period of adaptation of the individual to society and to the spiritual universe." "Already infant school workers have a technique of education due to systematic child study and to concentration of attention on the *individual*; on the other hand, university lecturers are so occupied with their *subjects* of study that they tend to ignore methods. Somewhere between these extremes will be found most teachers at work in primary and secondary schools." "There are apparently born teachers *who do not need* psychology, just as there are successful bonesetters whose insight into anatomy is largely unconscious; but this is no argument against the view that the arts of medicine and education depend on certain sciences, and that in general the practitioners should be aware of the scientific bases of their respective arts." In the spirit and with the aim indicated in these quotations, Professor Wheeler carries her subject through, logically, scientifically, comprehensively, not only in the sphere of abstract psychology, but in the sphere of practical teaching and administration. She deals with sexual differences and the problem of the mixed school, with the different types of adolescents and the varying kinds of educational guidance they require, with the juvenile delinquent and the question of *discipline during* adolescence, with vocational guidance, and with the problems of aesthetic and of religious education. In this book, within moderate compass, parents, teachers, administrators, and voluntary workers will find very useful help.

[1] *Youth*. By Olive A. Wheeler, D.Sc. With an introduction by Sir W. Henry Hadow, LL.D. London: University of London Press, Ltd. 1929. (5s. net.)

KALA-AZAR IN THE SUDAN.

AN increase in the incidence of kala-azar in the Sudan occurred in 1928, when 42 cases were reported, as against 21 in 1927 and 24 in 1926. The principal increase was in the valleys of the Setit and the Upper Atbara, on the *western side of the Kassala Province, where 18 cases* were reported. Owing to the construction of the Kassala-Gedaref railway, intercommunication between this hitherto secluded area and the neighbouring districts has been greatly stimulated, and in the report on medical and health work in the Sudan, 1928, Dr. L. H. Henderson suggests that the increase in the number of cases recorded may be attributed to a tendency in a freely moving population for existing disease to come more under notice, or to an actual increase in the incidence of the disease following the movement of non-immune persons into infected but *highly immune villages*. As a *third possibility* he suggests that the increase may be due to reoccupation of, or increased traffic in, certain parts of the rivers Atbara and Setit, which had been evacuated by the natives on account of the prevalence of continued fever other than malaria. This is supported by the fact that in a company of the Eastern Arab Corps, in camp at a place on the Upper Atbara, far from a village or any human habitation, seven men contracted kala-azar, probably while the company was in camp. The fact that the site of the camp, already deserted by man, was inhabited by baboons is possibly significant.

THE HALF-YEARLY INDEXES.

THE usual half-yearly indexes to the *Journal* and to the *Supplement* and *Epitome* have been printed; they will, however, not be issued with all copies of the *Journal*, but *only to those readers who ask for them. Any member or* subscriber who desires to have one or all of the indexes can obtain what he wants, post free, by sending a postcard notifying his desire to the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1. Those wishing to receive the indexes regularly as published should intimate this desire.

A HUNTERIAN Lecture on "Massive collapse of the lung" will be delivered before the Royal College of Surgeons of England by Sir John Rose Bradford, P.R.C.P., on Friday, February 7th, at 5 p.m. Fellows and Members of the College are invited to attend.

SIR CUTHBERT WALLACE, K.C.M.G., C.B., F.R.C.S., has been appointed by the council of Mount Vernon Hospital director of medical services and research to that institution for the study and treatment of cancer.

WE regret to announce the sudden death, on January 21st, of Dr. Philip Boobbyer, who retired twelve months ago from the post of medical officer of health for the city of Nottingham. We hope to publish a memoir in an early issue.

CRIMINAL LUNATICS AND THE CRIME OF ARSON.

ONE HUNDRED CASES.

BY

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THE grouping of types of criminals who commit the crime of arson is not an easy matter. Roughly speaking, there are four groups:

1. The incendiaries who remain undiscovered.
2. Those who receive the benefit of the Probation of Offenders Act or are placed under the care and guidance of relatives.
3. Those who are sent to prison.
4. Those who are found or certified insane and sent to Broadmoor.

Obviously one cannot comment on the first group. Of the second and third I have no recorded experience. Therefore I will confine myself solely to the fourth group.

In the annals of crime arson is of sufficiently frequent occurrence to warrant a search into the records of patients who have come to Broadmoor after this offence. Arson cases average about 4 per cent. of the total number of inmates. These cases are not selected, but are the last hundred "arsons" in sequence, who have been under care since the beginning of the century. I have come into personal contact with 31, and observations are chiefly made from this number. The information concerning the remaining 69 is gleaned from the notes of my predecessors, and I owe them my thanks for their care and precision in writing up the case papers.

Arson may be divided into *fraudulent* and *purposeless* groups. I apply the term "fraudulent" to that class which worries insurance companies. It comes into the sphere of ordinary crime as merely an exploitation (obtaining money by false pretences), and has nothing to do with the subject proper, because insanity as a rule does not enter into the question, and the criminals concerned do not come under asylum notice. Therefore any further reference to arson in these notes, unless otherwise stated, will refer solely to the other group. The word "purposeless" is open to criticism, because many of the offences will be seen to be committed with a definite end in view on the part of the offender—for example, revenge—but it is meant for those cases where there is no pecuniary or further gain to the perpetrator other than the commission of the act.

Types.

In this series purposeless arson is usually committed on readily inflammable material, and resolves itself into two types: (1) stack-firing (65 cases), and (2) setting fire to buildings whose chief constituent is wood (35 cases, 10 of which were those of farms or outhouses in outdoor areas). It is obvious, then, that most of the offences take place in the country, and the following figures show that the majority of the perpetrators were connected in some capacity with farm or outdoor work. As large a proportion as 77 per cent. are classified as "labourers." This classification includes agricultural and general outdoor labourers, gardeners' assistants, and domestic servants. The remaining 23 per cent. are classed as "various," which includes many forms of occupation, from coal-trimmer and policeman to commercial traveller and "of independent means." Both sexes are included—91 males, 9 females.

Reasons.

The chief reasons given were:

Revenge	32
For being refused work. For dismissal. For grievances, real or fancied.	
Fond of fire	5
"Desirous of seeing a blaze."	
Wanton destruction	5
Response to voices	4
Self-destruction	3
"Various"	28
"Unassigned"	23

"Various" includes solitary instances as follows. "To burn the devil"; "cursed by a witch"; "call of the Blood Alliance"; "because it was cold"; and many others, chiefly showing a response to delusions of a persecutory nature. "Unassigned" occurs in those whose mental condition was that of dementia praecox, epilepsy, hysteria, due to alcohol, etc.

Trial.

At the trials the following were the findings and sentences:

1. Insane on arraignment, and detained during His Majesty's pleasure	35
2. Guilty but insane, and detained during His Majesty's pleasure	26
3. Guilty, and penal servitude or imprisonment ...	39

Of (3) it is of interest to note that before the Mental Deficiency Act, 1913, the number sentenced to penal servitude or imprisonment was 27: after the passing of the 1913 Act, but before the 1927 Act, the number sentenced to penal servitude or imprisonment was 12. Of the 27 sentenced before the 1913 Act, 14 were subsequently certified as mentally defective; 1 as suffering from dementia praecox; and 12 as backward + psychosis. Of the 12 sentenced after the 1913 Act, but before the 1927 Act, 5 were subsequently certified as mentally defective, and 7 as backward + psychosis.

In the series 17 had previous convictions for arson:

1 had 4 previous convictions, was very backward + psychosis.
4 had 3 previous convictions: 3 mentally defective; 1 backward + psychosis.
3 had 2 previous convictions: 1 mentally defective; 2 backward + psychosis.
9 had 1 previous conviction: 4 mentally defective; 5 backward + psychosis—

a total of 8 mentally defective and 9 backward + psychosis.

Epilepsy and Automatism.

In the series 13 suffered from epilepsy (11 grand mal, 2 petit mal). Of the total, 7 (5 grand mal and 2 petit mal cases) showed automatism after their seizures, but only 3 of the grand mal and the 2 petit mal patients committed their offences during post-epileptic automatism. A short summary of these 5 is appended.

Petit mal cases:

1. Policeman with a history, from many sources, of curious acts after seizures. Several mysterious fires occurred on his beat and were traced to him, yet he was unaware of having caused them.
2. Grocer, with bad family history; his father, paternal grandfather, and three paternal uncles had been insane. He himself was weak-minded, unstable, and alcoholic, in addition to being epileptic. He set fire to his own house.

The grand mal patients who committed their offences during automatism were all very backward types. Reports showed:

1. "Made persistent attempts to set fire to the house."
2. "Mentally weak, with 'arsonical monomania.'"
3. Set fire to a barn. "Struck others after fits." "Impulsive."

Alcohol.

Alcohol was the stated exciting factor in 7 of the series. There were numerous others the reverse of abstainers, but the above seven appear to have been in a condition of, or bordering on, delirium tremens.

Stack-firing does not come under this exciting factor; they all seem to attack their own habitations. Every one set fire to the house in which he was then residing, whether as householder or lodger. Perhaps the extravagant carelessness of the intoxicated may have been an added cause, or an endeavour to consume the terrifying illusions or hallucinations conceived by their faulty perceptions. All of this type were of the physically robust and energetic class; five were general labourers, one a grocer, the last an "artist." The grocer is the one referred to under "Epilepsy." The "artist" attended school until he was 14 years old, reaching Standard V; he was described as lazy and eccentric, and had previously been in a mental hospital. His general demeanour and work showed that the "artist" was a misnomer, and he proved to be merely a verbalist.

General Paralysis.

Only two suffered from general paralysis of the insane, a disease surprisingly rare in Broadmoor.

1. Reached only Standard I at school, and had always been mentally retarded.
2. Engine driver. Set fire to several outhouses, called people's attention to the fires and gleefully watched the firemen's effort to subdue the flames; probably an expression of the playful tendencies of the general paralytic.

Dementia Præcox.

In a condition noted for negativism and impulse one would expect it to loom more largely in the list, but only three suffered from this disease.

1. Commercial traveller. Had delusions of persecution, that he was followed by his enemies everywhere, and set fire to a haystack in order to get to prison, where the high walls would keep them away.
2. Clerk. Became apathetic and disinterested in his work. He watched a bungalow being constructed, and when the work was completed and the furniture installed, he broke in and set it on fire, causing its total destruction. He is alternately lethargic and restless, solitary and negativistic.
3. Gardener. Had periods of seclusiveness and inattention to work. Even during remissions is not anxious to discuss his case.

GENERAL NOTES AND OBSERVATIONS.

In these 100 cases one feature is outstanding, and that is the lack of education. Forty-four were mentally defective and could not be educated. Fifty lacked the power of application, and were so retarded that their educational attainments were limited. The remainder, supposed to be of brighter intellect, were more of the verbalist type, garrulous no doubt, and considered by some to be good conversationalists. On the surface they were apparently good, but none really had any depth of general education. The "clerk" can talk glibly of ships, but is poor at figures. The "commercial traveller" was an inferior writer of letters. The "lady of independent means" could talk of her wealth (not delusional), but on general topics was poor. One might correctly, then, assume that purposeless arson is only committed by persons who lack education. They have been untrained in the usual warnings of childhood, and if they have received warnings or chidings against fire they have soon forgotten or have not absorbed them.

In prison life one finds many reasons assigned for committing offences, and, true or otherwise, they are often excuses such as out of work and hungry, or a profession of amnesia. Except in the alcoholic and epileptic groups in this series, it is remarkable how often a definite reason, without excuse or attempt at mitigation, is given. Again, in prison, innocence, real or false, is often the plea, but, save the above exceptions, in this incendiarism it is notable how seldom there is denial of guilt. Occasionally there is an endeavour to show justification, but the reason is given freely, and the perpetration of the act admitted in most of the cases.

It would appear proverbial that "once a stack-firer, always a stack-firer," and all with repeated offences of arson showed remarkable consistency in their methods. With one exception, those who had been previously convicted set fire to haystacks and used the same methods of incendiarism. The one exception set fire to a barn his first time, and served a sentence of penal servitude. On release he not only committed a like offence, but actually set fire to the same barn. These are signs of the ineducable, the dull, and the backward—their minds running in one groove, with no foresight, ability to plan, initiative, or originality.

Of the 65 cases of stack-firing 36, or 55 per cent., of the culprits were definitely certifiable as mentally defective, while of the remainder all but half a dozen were of the backward type. This includes all those who never reached a high standard at school (Standard VI being credited as "high") owing to inability to learn or lack of application. All of them would certainly come under the classification of moron, the majority as feeble-minded. They are the more notable types of unemployed, or, more correctly, unemployable, who, owing to repeated refusals of work, or dismissal after brief trial, think the world "up against them," believe they are unwanted, and develop resentment and the sense of persecution, with which their inferior minds and morals cannot cope. Usually they progress, or rather degenerate, into definite delusional insanity, culminating in some purposeless act, such as stack-firing. As to them the world has obviously shown its dislike, they therefore choose an obvious expression of their defiance by demonstrative incendiarism.

In Broadmoor, in this series of cases of patients found or certified insane, stack-firing is clearly the act of those definitely retarded, peculiarly the province of the mentally defective. They lack active cerebration, cannot conceive the terrible consequences which might ensue, the probable loss of life, serious damage, and the possibility of punishment. Rather in their childish ways do they look on themselves as heroic. In one case there was loss of life, in others heavy pecuniary loss, one case resulting in £36,000 damage. In these two outstanding cases the perpetrators were defectives who would nowadays be promptly certified under the Mental Deficiency Act. There are records of only two female stack-firers, both farm domestic servants. Probably the fact that until recently women were non-smokers, and did not, as a rule, carry matches, may have had something to do with that.

Of the 35 who set fire to buildings or their contents 11, or 31 per cent., were definitely certifiable as mentally defective; 18, or 52 per cent., were backward and showed psychoses; the remaining 6, or 17 per cent., were supposed to have had a fair degree of education. Whereas there were only 2 women among the stack-firers, in this group there are 7, or 20 per cent. of the total.

Whilst under asylum care the majority of the patients are, as a rule, well-behaved, but few seek to take advantage of any opportunities to learn, even when they possess limited ability. Those who, labouring under the stress of persecution, committed arson, have usually other wilfully demonstrative methods of showing dislike, such as tearing up sheets, etc., and require careful supervision. There is little room for improvement, and they generally degenerate into dementia.

I am indebted to the Home Office and to Dr. H. P. Foulerton, medical superintendent of Broadmoor, for permission to publish these notes, and, in conclusion, I would add that any observations expressed are not necessarily official opinions.

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A VOLUNTARY "LIGHT" CLINIC FOR LONDON.

An Institute of Ray Therapy has recently been opened in the borough of St. Pancras—in effect, a voluntary special hospital in which actinotherapy is the sole method of treatment—and both by reason of its scale and equipment and the manner in which its work is to be organized it merits the attention of the medical profession. The building, in the Camden Road, with its pleasant white exterior and lattice shutters, gives a distinctive touch to a rather drab thoroughfare. It is still, in large part, in the workmen's hands, but a considerable block is completed, and patients are already being treated. Ray therapy, it should be understood, means only what is popularly known as light treatment, and the subtitle of the institute is "Sunlight Clinic"; it has nothing to do with *x* rays or with massage or any form of hydrotherapy.

Some fifteen months ago a business man of Kentish Town, Mr. G. F. Kimber, called upon Dr William Beaumont, the physician in charge of the municipal sunlight clinic, St Pancras, and offered to give £10,000 towards the establishment of an institution for ray treatment for the poor, the institution not to be run for profit, but to be on the lines of a voluntary hospital, providing treatment free for the necessitous, and otherwise for working people, at small fees adjusted to the patient's means. A trust was created, an organization brought into being, a site discovered and the work put in hand, part of the original donation being expended in the purchase of land and buildings. Dr. Beaumont himself, the honorary medical director, disclaims any idea that it has been a "one man show," but there is little doubt that he and his wife, who is the honorary secretary, have been the moving spirits in a venture which it is hoped may eventually be the means of treating 20,000 cases a year, and do much to establish on proper lines the position of actinotherapy in this country.

The institute has been formed with three objects in view: first, to provide treatment for sick and poor persons by means

CRIMINAL LUNATICS AND THE CRIME OF ARSON.

ONE HUNDRED CASES.

BY

THOMAS CHRISTIE, M.B., CH.B.,

H.M. PRISON SERVICE; MEDICAL OFFICER, BROADMOOR CRIMINAL LUNATIC ASYLUM.

THE grouping of types of criminals who commit the crime of arson is not an easy matter. Roughly speaking, there are four groups:

1. The incendiaries who remain undiscovered.
2. Those who receive the benefit of the Probation of Offenders Act or are placed under the care and guidance of relatives.
3. Those who are sent to prison.
4. Those who are found or certified insane and sent to Broadmoor.

Obviously one cannot comment on the first group. Of the second and third I have no recorded experience. Therefore I will confine myself solely to the fourth group.

In the annals of crime arson is of sufficiently frequent occurrence to warrant a search into the records of patients who have come to Broadmoor after this offence. Arson cases average about 4 per cent. of the total number of inmates. These cases are not selected, but are the last hundred "arsons" in sequence, who have been under care since the beginning of the century. I have come into personal contact with 31, and observations are chiefly made from this number. The information concerning the remaining 69 is gleaned from the notes of my predecessors, and I owe them my thanks for their care and precision in writing up the case papers.

Arson may be divided into *fraudulent* and *purposeless* groups. I apply the term "fraudulent" to that class which worries insurance companies. It comes into the sphere of ordinary crime as merely an exploitation (obtaining money by false pretences), and has nothing to do with the subject proper, because insanity as a rule does not enter into the question, and the criminals concerned do not come under asylum notice. Therefore any further reference to arson in these notes, unless otherwise stated, will refer solely to the other group. The word "purposeless" is open to criticism, because many of the offences will be seen to be committed with a definite end in view on the part of the offender—for example, revenge—but it is meant for those cases where there is no pecuniary or further gain to the perpetrator other than the commission of the act.

Types.

In this series purposeless arson is usually committed on readily inflammable material, and resolves itself into two types: (1) stack-firing (65 cases), and (2) setting fire to buildings whose chief constituent is wood (35 cases, 10 of which were those of farms or outhouses in outdoor areas). It is obvious, then, that most of the offences take place in the country, and the following figures show that the majority of the perpetrators were connected in some capacity with farm or outdoor work. As large a proportion as 77 per cent. are classified as "labourers." This classification includes agricultural and general outdoor labourers, gardeners' assistants, and domestic servants. The remaining 23 per cent. are classed as "various," which includes many forms of occupation, from coal-trimmer and policeman to commercial traveller and "of independent means." Both sexes are included—91 males, 9 females.

Reasons.

The chief reasons given were:

Revenge	32
For being refused work.	
For dismissal.	
For grievances, real or fancied.	
Fond of fire	5
"Desirous of seeing a blaze."	
Wanton destruction	5
Response to voices	4
Self-destruction	3
"Various"	28
"Unassigned"	23

"Various" includes solitary instances as follows. "To burn the devil"; "cursed by a witch"; "call of the Blood Alliance"; "because it was cold"; and many others, chiefly showing a response to delusions of a persecutory nature. "Unassigned" occurs in those whose mental condition was that of dementia praecox, epilepsy, hysteria, due to alcohol, etc.

Trial.

At the trials the following were the findings and sentences:

1. Insane on arraignment, and detained during His Majesty's pleasure	35
2. Guilty but insane, and detained during His Majesty's pleasure	26
3. Guilty, and penal servitude or imprisonment ...	39

Of (3) it is of interest to note that before the Mental Deficiency Act, 1913, the number sentenced to penal servitude or imprisonment was 27; after the passing of the 1913 Act, but before the 1927 Act, the number sentenced to penal servitude or imprisonment was 12. Of the 27 sentenced before the 1913 Act, 14 were subsequently certified as mentally defective; 1 as suffering from dementia praecox; and 12 as backward + psychosis. Of the 12 sentenced after the 1913 Act, but before the 1927 Act, 5 were subsequently certified as mentally defective, and 7 as backward + psychosis.

In the series 17 had previous convictions for arson:

1 had 4 previous convictions, was very backward + psychosis.
4 had 3 previous convictions: 3 mentally defective; 1 backward + psychosis.
3 had 2 previous convictions: 1 mentally defective; 2 backward + psychosis.
9 had 1 previous conviction: 4 mentally defective; 5 backward + psychosis—

a total of 8 mentally defective and 9 backward + psychosis.

Epilepsy and Automatism.

In the series 13 suffered from epilepsy (11 grand mal, 2 petit mal). Of the total, 7 (5 grand mal and 2 petit mal cases) showed automatism after their seizures, but only 3 of the grand mal and the 2 petit mal patients committed their offences during post-epileptic automatism. A short summary of these 5 is appended.

Petit mal cases:

1. Policeman with a history, from many sources, of curious acts after seizures. Several mysterious fires occurred on his beat and were traced to him, yet he was unaware of having caused them.
2. Grocer, with bad family history; his father, paternal grandfather, and three paternal uncles had been insane. He himself was weak-minded, unstable, and alcoholic, in addition to being epileptic. He set fire to his own house.

The grand mal patients who committed their offences during automatism were all very backward types. Reports showed:

1. "Made persistent attempts to set fire to the house."
2. "Mentally weak, with 'arsonical monomania.'"
3. Set fire to a barn. "Struck others after fits." "Impulsive."

Alcohol.

Alcohol was the stated exciting factor in 7 of the series. There were numerous others the reverse of abstainers, but the above seven appear to have been in a condition of, or bordering on, delirium tremens.

Stack-firing does not come under this exciting factor; they all seem to attack their own habitations. Every one set fire to the house in which he was then residing, whether as householder or lodger. Perhaps the extravagant carelessness of the intoxicated may have been an added cause, or an endeavour to consume the terrifying illusions or hallucinations conceived by their faulty perceptions. All of this type were of the physically robust and energetic class; five were general labourers, one a grocer, the last an "artist." The grocer is the one referred to under "Epilepsy." The "artist" attended school until he was 14 years old, reaching Standard V; he was described as lazy and eccentric, and had previously been in a mental hospital. His general demeanour and work showed that the "artist" was a misnomer, and he proved to be merely a verbalist.

General Paralysis.

Only two suffered from general paralysis of the insane, a disease surprisingly rare in Broadmoor.

1. Reached only Standard I at school, and had always been mentally retarded.
2. Engine driver. Set fire to several outhouses, called people's attention to the fires and gleefully watched the firemen's effort to subdue the flames; probably an expression of the playful tendencies of the general paralytic.

Dementia Præcox.

In a condition noted for negativism and impulse one would expect it to loom more largely in the list, but only three suffered from this disease.

1. Commercial traveller. Had delusions of persecution, that he was followed by his enemies everywhere, and set fire to a haystack in order to get to prison, where the high walls would keep them away.
2. Clerk. Became apathetic and disinterested in his work. He watched a bungalow being constructed, and when the work was completed and the furniture installed, he broke in and set it on fire, causing its total destruction. He is alternately lethargic and restless, solitary and negativistic.
3. Gardener. Had periods of seclusiveness and inattention to work. Even during remissions is not anxious to discuss his case.

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The institute has been formed with three objects in view: first, to provide treatment for sick and poor persons by means

of ray therapy; secondly, to constitute a training centre for persons who will be qualified to administer such treatment; and, thirdly, to be a centre of research work in the subject. The administration is vested in a medical advisory committee and a committee of management. Sir William Hale-White is president of the advisory committee. Sir William Hamer, late medical officer of health for London, is chairman, and the other members are Professor J. Eyre of Guy's Hospital, Dr. P. P. Dalton and Dr. J. Liddell (who have been elected respectively by the St. Pancras and the City Divisions of the British Medical Association), and Dr. Beaumont. The committee of management has for its chairman Mr. Alfred Davies, a prominent business man in St. Pancras and the City, who is associated with various hospital movements, and the treasurer is Mr. Kimber, the original donor. There is a resident medical officer, who has a flat on the premises, and the nursing staff consists of a matron and sister in charge, with other nurses, all non-resident, to be added as requirements develop. The teaching staff is to consist of Professor Eyre, who will lecture on bacteriology, Dr. N. Lucas, experimental pathologist at the Lister Institute, whose subject will be the physics of ray therapy, and the honorary medical director, who will deal with the clinical side.

One governing principle is that no patient shall be admitted save on the recommendation of his private or insurance practitioner. Treatment will be given only upon the presentation of a medical certificate by the applicant. The adoption of this principle and the general lines proposed for the work of the institute have won the support of the British Medical Association, whose officials have been consulted from time to time by those responsible for the initiation of the work. It is hoped to work in close co-operation with the practitioners who send cases, and a card system has been devised which, in addition to serving the purposes of the institute, will afford information to the practitioner about his patient.

The question of patients' fees has been carefully thought out, and the general lines of the scale suggested by the British Medical Association in the last Annual Report of Council have been followed. Necessitous cases, as already stated, are to be treated free. Other patients are arranged in four grades, according to their earnings and the number of their dependants; the fees charged range, according to the grade, from one to five shillings for each treatment. The excellent rule is laid down that the practitioner sending the case, who is obviously the best person to judge, shall grade the patient. The institute expects to be of service under the National Health Insurance Act in so far as ray treatment may be made an additional benefit. The Hearts of Oak Benefit Society has already made arrangements for light therapy to be obtained at the institute by its members. In view of the fact that this will be a clinic for working people, the hours of treatment are being arranged so that patients can attend after the working day, and children after school time.

A tour of the institute at the moment, when it has scarcely begun to operate, requires some exercise of faith, for the treatment is being carried on in what will be eventually the administration block. When the premises are fully available the arrangement of the equipment will permit numbers of patients to be treated simultaneously, and by any form of light treatment which has been proved effective for the purpose. The nucleus of equipment at present consists of a quadruple carbon arc, a mercury vapour lamp, a Kromayer lamp, a water-cooled tungsten, and an ordinary tungsten, but the plans provide for much more extensive installation, and for many separate cubicles and group treatment rooms. A great deal of thought has been taken in arranging the rooms for the reception of patients, for rest after treatment, and for shower baths. The institute is situated at 152-154, Camden Road, N.W.1, within seven minutes' walk of the important Camden Town underground junction: it is hoped that its income will be augmented by voluntary contributions.

The building will be ready with full equipment by the end of February, and an official opening will follow later.

It is announced that all financial liabilities connected with the removal and rebuilding of the Royal Westminster Ophthalmic Hospital in Broad Street, Holborn, have now been met, with the exception of a bank overdraft of £15,000. The new building was opened a year ago, and the total cost of the removal from Charing Cross was £140,000.

VITAL STATISTICS FOR ENGLAND AND WALES, 1929.

We are indebted to the Registrar-General for the following statement regarding the birth rates and death rates and the rates of infantile mortality in England and Wales and in certain parts of the country during 1929. The statement is issued for the information of medical officers of health. The birth rate and infantile mortality rate for London have been provisionally corrected for transfers.

ENGLAND AND WALES.

Birth Rate, Death Rate, and Infantile Mortality during the Year 1929 (Provisional Figures).

	Live Births per 1,000 Population.	Deaths per 1,000 Population (Crude Rate).	Deaths under One Year per 1,000 Live Births.
England and Wales (on 1929 estimated population)	16.3	13.4	74
107 county boroughs and great towns, including London (on 1928 estimated population)	16.7	13.8	79
157 smaller towns (populations from 20,000 to 50,000 in 1921—on 1928 estimated population)	16.0	12.3	69
London (on 1928 estimated population)	15.9	13.9	70

The death rate for England and Wales relates to the whole population, but that for London and the two groups of towns to the civil population only.

England and Wales.

The birth rate is 0.4 per 1,000 below that of 1928, and is the lowest recorded. The death rate is 1.7 per 1,000 above that of 1928, a rise practically confined to the first quarter of the year, and due to the epidemic of influenza in the spring and the severe weather in that period.

The infantile mortality rate has increased from 65 to 74 per 1,000 live births, a rise probably due to the same causes.

Ireland.

Public Health in the Irish Free State.

The third report of the Department of Local Government and Public Health (Irish Free State), which covers the twelve months ending March 31st, 1928, has now been issued; it contains sections relating to general administration and local finance, public health, housing, poor relief, and rates. The conclusion is drawn that the system of notification is still defective, more so in rural than in urban districts. In several areas county medical officers of health were appointed during the year under review to supply the department with weekly reports of infectious diseases, taking the place of the individual reports previously submitted by district medical officers. Exceptions are made as regards small-pox and typhus fever, where, to obviate possible loss of time, direct communication between the district medical officers and the department continues. The county medical officer is responsible for preventive measures in his area, including the school medical services and tuberculosis, the adequacy and purity of water supplies, cleanliness in food and dwellings, the supervision of midwives, maternity and child welfare, and the welfare of the blind. Such medical officers of health were already functioning in Cork, Carlow, Kildare, and Offaly when the report was compiled, and further appointments are being made in the remaining counties as opportunity offers. The Rockefeller Foundation has assisted in the organization of such county health units in Cork and Kildare. It is hoped to appoint trained whole-time sanitary inspectors in all these county areas before long, and school medical services are being inaugurated. The general death rate in the year under review amounted to 14.77 per 1,000, an advance of 0.72 on 1926, due principally to an increased mortality from influenza, and, to a less extent, to affections of the respiratory system and heart disease. The infant mortality improved, however, and the death rate from the principal

epidemic diseases was lower, mainly in consequence of a reduction in the number of deaths from infantile diarrhœa. A decrease in the cases of measles was neutralized by a material increase in the deaths attributable to whooping-cough. Typhus fever was substantially reduced, and, contrary to the experience of recent years, it occurred to a less extent in the rural than in the urban districts. The incidence of typhoid fever in rural districts increased, the counties principally affected being Kerry, Galway, Limerick, and Mayo. The increase is attributed to the prevalence of shallow open wells, insufficiently protected against surface pollution, or to pump wells to which drainage from refuse dumps or otherwise may gain access. In some districts the Schick test and toxin-antitoxin immunization against diphtheria have been introduced. During the year an approved scheme for the treatment of tuberculosis was started in Cork county borough, bringing the number of such schemes in the Free State to twenty-five. A system of tuberculosis dispensaries has been instituted; preliminary measures of the same kind are being taken in Limerick and the counties of Meath and Wicklow. For the treatment of tuberculous patients in the Free State 2,190 beds are specially assigned, and there are also 5,757 beds available for the reception of cases of this disease or of others. The sanatorium accommodation for early cases is in the proportion of one bed for each 3,500 of the population. In the course of the past five years there has been a substantial advance as regards the maternity services. Free midwifery and medical attendance in childbirth is provided for the poorer class of women under the medical charities system. In Dublin domiciliary attendance on midwifery cases is undertaken by the staffs of the maternity hospitals, which to a large extent replaces the services offered elsewhere under the medical charities system. It is recognized that further institutional accommodation is needed, and provision is now being made at county and district hospitals and county homes for all classes of maternity cases. No inquiry as regards the training of midwives has been considered necessary, but the results of the English inquiry are being closely studied with a view to applying its conclusions to the special circumstances and conditions of the Irish Free State. A model child welfare centre is operating in Dublin as a result of a grant from the Carnegie Trust; it is hoped that similar institutions will come into existence in other parts of the country. Its functions are purely preventive, and do not encroach upon the province of a children's hospital. A scheme of school medical inspection was introduced in Dublin at the beginning of 1928; in Cork such a scheme has already been in operation for four years, and the arrangements are more fully developed, thirty-nine schools being supervised. In Clonmel urban district a separate scheme of school medical services has been inaugurated by the corporation, with the approval of the Tipperary county council, part-time medical officers, specialists, and dental officers being employed.

Provision of a New Hospital in Lurgan.

Dr. J. McCloy, medical inspector to the Northern Ireland Ministry of Home Affairs, recently opened a public inquiry in the Lurgan Workhouse in regard to the application of the Lurgan Board of Guardians for sanction to a loan of £40,000 for the reconstruction and equipping of the present workhouse buildings as a district hospital. Mr. James A. Pringle, K.C., in opening the case for the board of guardians, said that Lurgan Hospital could not be thought of as an ordinary country hospital. Three points could not be disputed: the present buildings were unsuitable and inadequate for the needs of the unions; if the submitted scheme was adopted the hospital would be brought up to date; and the cost of the alterations was quite within the limits of the board of guardians, the expense being small compared with the benefits which would accrue. The total valuation of the union was £176,429, and a penny in the £ produced £735. The borrowing powers of the guardians were £44,107, while £2,264 was already owing. The population of the union was 50,542. During the past four years the average yearly number of admissions to the hospital was 1,685 patients. In 1929, 540 operations were performed, the majority of these being of a major nature. Twenty-eight out of the thirty-eight guardians in the union were in favour of the scheme before it was launched. Mr. Pringle pointed out that Lurgan had an excellent water supply and a good sewerage scheme; it was excellently situated for a hospital, and it had first-rate surgeons. If the hospital were reconstructed the town supply of electric light would be installed in it.

Meat Inspection in Dublin.

Alleging that meat inspection by the veterinary inspectors of the public health department of the Dublin Corporation was pushed to an excessive extent, a firm of bacon curers recently closed their factory temporarily and dismissed their employees. Dr. Dwyer, one of the city commissioners, in the course of a statement issued by him, compared the condemnations in the case of this factory (0.103 per cent.) with the figure for Canada in 1928 (0.27 per cent. of the total kill) and with two of the largest South of Ireland factories in competition with that firm (0.2 and 0.25 per cent. respectively). Dr. Dwyer pointed out that the inspection of all meat was necessary for the health of the country, and that the inspection of meat for export protected the farmers from the fate of the Continental producers of pork—namely, total exclusion from the English market. All the meat inspectors were fully qualified veterinary surgeons, possessing higher qualifications than any other meat inspection staff he knew. The bacon factory has again been reopened, and, in connexion therewith, Dr. M. J. Russell, medical officer of health for Dublin, has issued a statement assuring the public that the arrangement under which the factory had decided to reopen did not involve any relaxation whatever of the standard of inspection by the corporation veterinary inspectors in this factory and any other factory, slaughter-house, or shop where food was prepared for human consumption. Dr. Russell added that the demand for inspection by fully qualified inspectors was becoming every year more exacting. It was insisted on by health authorities in all countries, and the good results which were bound to follow in the Free State would be reflected in benefit to the public health and in increased home and export trade.

Presentation to Dr. J. Campbell Hall.

Dr. James Campbell Hall, who has retired from the Monaghan County Hospital, was recently presented with a massive centrepiece, a purse of gold, and an illuminated album address, containing the names of 654 subscribers. Before the public meeting the Catholic Bishop of Clogher unveiled a mural tablet at the hospital recording Dr. Hall's services. In making the presentation the Bishop said they all desired to express their high appreciation of Dr. Hall's eminent services to their County Hospital, and through that institution to co. Monaghan. The gifts were but a small token of their grateful recognition of his services, and also of the high esteem and warm friendship in which he was universally held. For nearly forty years Dr. Hall had been in charge of the hospital, and it had been the predominant aim of his life to make it increasingly efficient for the great purpose for which it was established. Dr. Hall expressed warm thanks for the gift and the manner of its presentation.

Scotland.

Control of Lunacy and Mental Deficiency.

A CIRCULAR has been issued by the General Board of Control for Scotland, drawing attention to the provisions of the Local Government (Scotland) Act, 1929, in so far as these affect the administration of the Lunacy and Mental Deficiency Acts. The General Board of Control for Scotland will remain the central authority, but the functions of district boards of control, of parish councils, and of education authorities will be transferred to county councils and to town councils. Upon the latter will accordingly fall in future the provision and maintenance of institutional accommodation for lunatics and mental defectives, the arrangements for certification, the discovery of mental defectives within their respective areas, and the

provision for educable mental defectives between the ages of 5 and 16 years, activities which had been previously conducted by education authorities. It is suggested by the Board of Control that a special lunacy and mental deficiency committee should be appointed by each local authority; to this persons who are not members of the local authority, but whose experience is valuable, may be co-opted. The obligation to provide institutional accommodation for suitable cases, and also to provide for defectives sanctioned for residence under guardianship, is unconditional. Scotland is now divided for lunacy and mental deficiency purposes into twenty-seven lunacy districts, and the limits of these are defined in an appendix to the circular. Powers are given to two or more local authorities to combine in the maintenance of a district asylum or institution for mental defectives. It is pointed out, however, that the erection of institutions has been to a great extent at a standstill since the war, and that there is a clamant need for additional accommodation in Scotland for lunatics and mental defectives. Plans of new buildings and of alterations and additions, as well as combination agreements, still require to be submitted for the approval of the General Board, and in some instances for the approval of the Secretary of State, but local authorities are now given the power to borrow money for the purpose of meeting capital expenditure without the consent of the central department. A list of the Scottish Lunacy and Mental Deficiency Acts is given in the circular, which may be obtained from H.M. Stationery Office, 120, George Street, Edinburgh, price 1d.

The Character of Scottish Universities.

An address was delivered on January 14th by Dr. T. J. Mackie, professor of bacteriology in the University of Edinburgh, to the Institute of Public Administration, on the relationship of the University to public affairs; Mr. William J. Harvey, treasurer of the city, presided at this meeting. The lecturer said that the modern university was now essentially practical in its outlook on life, and was a training school for direct usefulness to the community. The universities were great scientific institutes, and their chairs were in a sense public offices, which had been founded by public-spirited persons with the object of promoting knowledge for the common good. It was an axiom of the present day that research in a university must be conjoined with teaching, and it was on the research side that the maximum possibilities in the general public service could be developed. The Government, public bodies, and industries were invoking more and more the services of the scientist and the investigator. In regard to medicine, new hospitals under the direct control of local authorities were now to supplement the voluntary hospitals, and the future might bring about vast changes in hospital organization. The question must soon arise in university centres as to what place the medical schools would take in this organization. The voluntary hospitals had in the past played a notable part in medical teaching, and had been great centres of medical progress, but the problem of the hospital had altered; it was now not so much related to diseased individuals as to the fight against disease itself. The question arose whether in university centres the hospitals of the future might be most effectively staffed, in the interests of the public, of medical education, and of research, by a whole-time medical personnel; medical staffing of hospitals would inevitably present a difficult problem in the future to public administrators. It must be remembered that clinics were nowadays only one element in medical care, for a hospital required considerable laboratory services in order to be effective. It was in these services that a medical school, with its existing laboratories, could most fully supplement the work of a hospital. While the care of the sick constituted a great palliative measure in public health administration, central and local authorities must regard the prevention of disease as the ultimate object of all public medical administration. Lack of knowledge barred the way to the realization of this ideal, and medical research should be realized as being one of the primary and greatest of public interests. Governing authorities should remember that every particle of assistance given to university medical schools indicated the taking of a step further along the road towards the prevention of human disease. The Scottish universities were in some danger of losing their national character, although they were institutions with centuries of memorable history to inspire them. Every patriotic Scotsman would like to see these maintain and strengthen their great national traditions, for the universities must determine the general culture and intellectual life of the people. These universities should strain every effort to attract and concentrate in their teaching the highest of Scottish genius, in order to maintain their national character and to infuse into public life all that was best in Scottish nationality.

Glasgow Royal Infirmary.

Some further statements about the working of the Glasgow Royal Infirmary in the past year, in addition to those at the annual meeting recorded in the *Journal* of January 18th (p. 126), were made at a meeting of the delegates of employee contributors held on January 11th, when Mr. James Macfarlane, LL.D., chairman of the managers, presided. Mr. Thomas M'Ghie, a member of the House Committee, in the course of a report, announced that the number of patients treated during the past year in the Royal Infirmary had numbered 17,035, an increase of 1,236 over those for 1928. The out-patient figure had risen to 102,188, an increase of 2,895 over that of the previous year. The sums received during the year from, or on behalf of, patients who had been in the Infirmary amounted to £2,147, and the subscriptions collected from employees in works had aggregated £29,691, an increase of £496 over the sum derived from this source in 1928. The general fund of annual subscriptions showed an increase of £732 over those of 1928, and the year's working had resulted in a small surplus of £579 of income over expenditure. It was stated, however, that there was an urgent need for increased income, because for some time past the Infirmary had been carried on by borrowing from the bank, a costly business; subscribers were asked, therefore, to send in their money earlier in the year, or even half-yearly or quarterly. It was also stated that the managers had had under consideration the question of carrying on or closing down some parts of the Infirmary in order to curtail expense, unless more subscriptions were received. This had, however, proved not to be necessary, but it was hoped that subscribers would respond still more liberally in the future.

England and Wales.

Harrison Memorial Lecture.

AT a meeting of the Pharmaceutical Society of Great Britain, on January 14th, the Harrison Memorial Lecture—founded to perpetuate the memory of Colonel Edward Frank Harrison, director of chemical warfare during the great war—was delivered by Mr. P. A. W. Self, B.Sc. The lecturer, in dealing with the education of the future research worker, expressed the view that, while it was desirable to include some science in elementary education, the time devoted to it should not be very considerable, nor be allowed to interfere with a sound general education in other subjects. Any science taught before matriculation should be directed to assisting the student to discover whether he possessed any ability for scientific accuracy and to giving him some idea of the enormous importance of science, its methods, and its progress. After the student had matriculated and was undergoing his purely scientific training, he should still avoid too early specialization. In these days, said Mr. Self, the boundaries of the so-called pure sciences were rapidly becoming less well defined and were almost disappearing in places. Research in physical chemistry, for example, demanded at least as good a knowledge of physics as of chemistry. The worker in physiological botany had to be a chemist and a physicist as well as a botanist; and the physicist must be a first-rate mathematician. He thought it desirable also that all research workers, particularly those engaged in applied sciences, should have a short business training, sufficient to afford a reasonable knowledge of ordinary business

routine, and also some insight into the purposes and spirit of business life. With regard to the qualities which the ideal research worker should possess, Mr. Self placed in the most important position good judgement, and next to this a vivid but well-controlled imagination. To this should be added initiative, energy, perseverance, some curiosity, and a good sense of proportion. The worker should be both a pessimist and an optimist—enough of the former to realize that some tasks were beyond him; and enough of the latter to believe, once he had chosen his subject, that he was capable of overcoming any difficulties in relation thereto. In addition, if he was in the position of directing other workers, he must possess a character which would ensure him at least the respect, if not the devotion, of his subordinates; he must be a good organizer and possess a considerable knowledge of human nature. A being possessed of all these qualities had never existed, and probably never would exist. Nevertheless, the lives of some of the great scientists represented a very close approach to this ideal, and when they were studied it was remarkable how often the ideal had very nearly been attained.

Central Midwives Board.

The Central Midwives Board for England and Wales, at its meeting on January 2nd, considered a letter from the Ministry of Health stating the conclusions reached by the Maternity and Child Welfare Subcommittee of the British Medical Association with reference to the summoning of a doctor by a midwife and the sending of patients direct to hospital. The Board agreed to inform the Ministry that the suggested alterations to the rules should receive consideration when the rules underwent revision. Reciprocity was approved with the Nurses' Registration Board of Hobart, Tasmania, as regards the placing on each Roll duly certified midwives in each country. The Board placed on record its opinion that it was desirable in the public interest that the draft of any bill dealing with midwifery questions should be communicated to it for its information and observations before the bill was presented to Parliament, inasmuch as since 1902 it had been the duty of the Board to regulate the admission of midwives in England and Wales to the Roll. The hope was also expressed that the Minister of Health would consult the Board before proceeding to exercise any powers relating to midwifery under any present or future Act. Copies of the resolutions were ordered to be sent to the Prime Minister, the Minister of Health, and the Secretary of the Ministry of Health.

Colonies for Mental Defectives.

The Board of Control, with the approval of the Minister of Health, has appointed a committee with the following terms of reference: "To consider and report what are the essential structural requirements of a complete colony for mental defectives of all types and to what extent the cost could be reduced by the adoption of semi-permanent or temporary buildings or other new methods of construction, having regard to the comparative cost of maintenance as well as the initial capital expenditure involved." The committee is constituted as follows: Mr. Walter Hedley, K.C., Recorder of Newcastle-on-Tyne (chairman); Mrs. F. Rose Davies, Alderman, Glamorgan County Council; Miss Clara Martineau, member of the Birmingham City Council; Sir George Oatley, F.R.I.B.A.; Dr. A. Rotherham; Mr. A. Scott, A.R.I.B.A., chief technical officer, Ministry of Health; Sir Lindsey Smith, chairman of the board of governors of Holloway Sanatorium; Dr. F. Douglas Turner, medical superintendent of the Royal Eastern Counties Institution, Colchester; with Mr. H. J. Clarke of the Board of Control as secretary.

Child Guidance.

The report recently issued of the first year's work at the Children's Clinic at The Quest, 85, Clarendon Road, London, W., opens with a general survey of the problem of child guidance as it affects the children attending the London County Council schools, and contains an account of the present methods adopted at the clinic to deal with this problem. At least 10 per cent. of elementary school children, states the report, find themselves at some time unable to fit satisfactorily into home or school life, their failure to achieve harmony expressing itself in delinquency or some form of nervous disorder. Backwardness may result not from any congenital physical condition, but from inability to cope with the stresses incidental to modern life. Some children, in face of the normal difficulties of family relationships, act in a way which baffles their parents or teachers; others unconsciously seek compensation for physical inferiorities in abnormal ways. The aim of the clinic is to restore such children to mental and physical health, and to enable them to work out within themselves a solution of their conflicts. It tries also to help parents in the understanding and management of their children. Every child attending the clinic receives careful physical examination, and treatment is carried out at the clinic, or, if necessary, the children are referred to suitable hospitals or practitioners. The family situation and home surroundings are carefully reviewed by the senior physician and the social worker, and close co-operation is maintained with other bodies working for the welfare of children. Recognizing the relation between posture and mental outlook, those in charge of the clinic try to make every child during his attendance take part in rhythmic exercises and free movements. There is, furthermore, a biochemical department in which studies are being carried out on the relations between variations from biochemical norms and nervous conditions of childhood. In some cases it is found that the nervous suffering of the parents is the source of the child's difficulties, and to meet this situation a department has been opened where parents may receive psychological guidance. The statistics for the year show that the clinic has the confidence of the authorities in whose district it works. The London County Council, children's welfare societies, private practitioners, and hospitals have between them referred to the clinic no fewer than 45 of the 110 children who attended during the year.

India.

Medical Dispensaries in Assam.

REPORTS on the working of medical dispensaries in Assam are published at intervals of three years; the account of the triennium 1923–25, by Colonel C. H. Bensley, I.M.S., late superintendent of the civil hospitals in that province, was noticed in the *British Medical Journal* of November 27th, 1926 (p. 1018). In the report for the three years 1926–28 one of the most striking features is the increase in the number of hospitals and dispensaries of all descriptions by twenty-one, and in that of patients by 234,000. In the previous triennium these institutions actually decreased by nine and the patients by 276,000. Lieut.-Colonel W. D. Ritchie, I.M.S., officiating inspector-general of civil hospitals in Assam, in the later triennial report, attributes this gratifying change to the rising popularity of the existing dispensaries and the greater possibility of opening new ones, even though a larger number of scientifically qualified practitioners are establishing themselves in private practice, thereby reducing the need for the provision of dispensaries in their areas. The percentage of the population to whom medical relief was afforded by the various kinds of dispensaries rose from 19.51 in 1926 to 20.27 in 1927 and 21.33 in 1928. About 52 per cent. of the persons who benefited during 1928 were Hindus and 34 per cent. were Mohammedans. The triennium was marked by an increase in the prevalence of dysentery, malaria, and skin diseases. In 1927, 5,000 cholera cases were treated, but the extensive inoculation commenced immediately the outbreak started brought about a rapid limitation of the infection, which extended into the following year. The co-operation between the medical and public health departments of the Government of Assam in the control of epidemic diseases generally, and of kala-azar in particular, has been intensified, with satisfactory results. The total number of surgical operations performed in the dispensaries rose from 18,836 in 1926 to 19,982 in 1928. The number of beds at the end of last year was 1,057, and it appears that accommodation for in-patients is still ample. Large Government grants were made during the triennium to local authorities for the improvement of their dispensary buildings and for the construction of new ones. A new

modern hospital is to be built at Shillong, and a new medical school at Sylhet, which it is hoped will enable a greater number of suitable Mohammedans to enter the medical services.

The Government General Hospital, Madras.

Reference was made in this column on October 27th, 1928 (p. 768), to the important scheme of reconstruction now being undertaken in the Government General Hospital at Madras, some of the buildings of which date from 1772. This is still in progress, and the new out-patient department, of which the foundation stone was laid in August, 1928, is undoubtedly a most valuable asset. Lieut.-Colonel J. M. Skinner, I.M.S., superintendent of this institution, in his report for 1928, gives details of the changes already effected, and mentions particularly the new electric light installation. In addition to the usual mass of statistics, his report contains notes by various members of the staff on interesting clinical cases that have occurred during the year. Many of these were abdominal in origin. Thus it is recorded that thirteen patients were infected in hospital by cholera, almost all those attacked being debilitated by long illness, or with their resistance lowered temporarily after operation. Cases of peptic ulcer are increasing in number, and it is found that the younger and healthier patients are more ready to undergo the risks of abdominal operation than to rely on prolonged medical treatment. It is notable, however, that in about 5 per cent. of the patients there is a history of previous operations for the disease. In one case a duodenal ulcer perforated eighteen days after an exclusion operation; faith in the infallibility of gastro-enterostomy has, consequently, been somewhat shaken, and there is a tendency to adopt partial gastrectomy, although the primary mortality from this procedure is admitted to have been high. Elsewhere in the report it is stated that post-anaesthetic complications continue to be the main cause of mortality after operation for gastric and duodenal ulcers; since the Fowler position immediately after operation has been thought to be responsible for some cases of cardiac weakness and low blood pressure, the recumbent posture has been adopted in some of the wards. Amongst uncommon digestive troubles treated during the year there was a case of reflex amoebic dyspepsia, apparently due to the presence of large numbers of *Amœba histolytica* in the bowel: this was cured by doses of emetine. Five patients who died of chronic diarrhoea, for which no definite cause could be found, are provisionally classed as having suffered from "inanition diarrhoea." It is stated that, contrary to general observation elsewhere, the statistics of South India show a great proportion of primary carcinoma of the liver as compared with secondary cases. Allusion is made in the report to an interesting form of cheek cancer, supposed to be due to the practice of some betel chewers of keeping a small lump of betel-nut-lime-tobacco mixture in their cheeks. This lump is almost always carried in the left cheek, and the cancer is usually on the left side of the mouth. The disease cannot be due merely to betel chewing, since this practice is practically universal among South Indians. Only a comparatively small percentage of betel chewers retain the lump of tobacco in their mouths, but the majority of sufferers from cheek cancer have been in the habit of so doing. It is suggested that coarsely ground areca nut particles traumatize the mucosa, and that the resulting scar is irritated by contact with the betel-nut-lime-tobacco quid, and that the Malabar tobacco, as a result, perhaps, of the soil in which it is grown, has a specially irritating effect. The treatment of inoperable sarcoma with Coley's fluid has been found disappointing. In the section of nervous diseases it is stated that encephalitis lethargica appears to be gradually dying out in Southern India, and that hysteria is rare in Indian females, though comparatively common in males. The difference, which is similar in Graves's disease, is attributed to the more sheltered life of Indian women. It is suggested that a form of recurring polyneuritis which sometimes occurs in Anglo-Indians is of diphtherial origin. Intrathecal injections of antitetanic serum have been given up as a routine practice, owing to a suspicion that they were followed frequently by hyperpyrexia and death.

The tannic acid treatment of burns has been found superior to the aqueous solution of picric acid. Three hundred and two students received instruction in the hospital during the year, of whom fifteen were Anglo-Indians or Europeans. A poor fund has been established for paying railway fares for patients, providing attendants for children and helpless persons, and for supplying surgical appliances such as artificial limbs.

Health Measures in Agra and Oudh.

The value of health propaganda in the prevention of epidemics is fully recognized in the United Provinces of Agra and Oudh, and references have appeared previously in the *Journal* to the special efforts made in connexion with cholera centres so notorious as Hardwar to which pilgrims flock. With the opening in December, 1928, of the new building of the Provincial Hygiene Institute at Lucknow still greater progress will become possible as the number of trained students becomes greater. In his report for the year ending December 31st, 1928, Lieut.-Colonel C. L. Dunn, director of public health for the United Provinces, indicates that this building will eventually be enlarged to accommodate the malariology branch, the public analyst's laboratory, and the hygiene publicity bureau, thus improving the co-ordination of all concerned in public health work. A school for training health visitors was opened in October, 1928, half a mile from the institute. An important occurrence during the year under review was the increased mortality due to plague; indications of a very severe general recrudescence were noticeable throughout the province from the very beginning of the year. Inoculation facilities were provided generally, but since it is only popular during the presence of plague in an epidemic form its benefit is more limited than is desirable. It enjoys a certain amount of popularity only in some of the south-eastern districts of the province. Evacuation of infected villages is the most popular preventive measure, but the villagers generally leave their homes too late and return to them too early. Investigation of the conditions under which plague is carried over from one season of incidence to another does not seem to have yielded much definite result, but it is believed that the infection is kept alive in a scanty rat population with a scanty flea population during the hot weather; in very humid districts rat fleas will be more numerous, and so favour an outbreak later on. Investigations on cholera carried out in the United Provinces suggest that while non-agglutinating vibrios are found in 5 per cent. of the people examined, nevertheless every epidemic of the disease has been due to importation. It appears to be essential that the specific virus should be imported; observations made do not support the suggestion that non-agglutinating vibrios constitute the reservoir of cholera and, owing to biochemico-physical conditions, undergo a change in the intestines, appearing as the agglutinating vibrios of Koch. The appreciable increase in the number of non-agglutinating vibrios which often occurs during the cholera season, though suggesting relationship with the agglutinating vibrio, may, it is suggested, be merely a coincidence. A definite connexion has been traced between cholera and the annual fairs and pilgrimage. Thus the pilgrims' centre, Hardwar, has been regarded by many people as an endemic focus of cholera. But even if the non-agglutinating vibrios found in Hardwar sewage water are descendants of an agglutinating ancestor, it has been shown that for cholera to occur the true virus must be imported. Lieut.-Colonel Dunn criticizes Hankin's view, published in 1896, that the water of the rivers Jumna and Ganges possessed antiseptic action for the cholera vibrio. Most of the Hardwar cholera cases have been traced to ingestion of water from the Ganges, while it has been found that the vibrio lives for at least twenty-four hours in both the Jumna and the Ganges water. The paper by Lieut.-Colonel Dunn and Dr. Saranjam Khan on cholera in Hardwar, which was read at the congress of the Far Eastern Association of Tropical Medicine in India in 1927, has now been reprinted from the *Transactions* of the association, and may be obtained from Thacker's Press and Directories, Ltd., Calcutta. One of the methods of countering malaria is to introduce larvae-eating fish into breeding-places. In the United

Provinces artificial stocking of tanks has not been found necessary, since tanks, depressions, and ditches become automatically stocked during the rains; but it is necessary to guard the small larva-eating fish against depredations by human beings and by the larger predaceous fish. This is done by prohibiting the use of nets with a mesh of less than one inch, but encouraging the native to fish with large-meshed nets. Antimalarial operations continue actively, and the experiment of planting clover was tried; the experiment was ruined by a deficient monsoon. While Paris green remains the larvicide of choice in municipalities and construction camps, its cost and the close inspection entailed preclude its application in villages.

Correspondence.

THE NATURE OF "PSYCHOGENIC PAIN."

SIR,—Dr. F. M. R. Walshe, in a letter which he contributes to your columns under the above title (January 18th, p. 126), refers to a lecture of mine upon "Some clinical aspects of pain" (*British Medical Journal*, January 4th, p. 1). I am tempted to reply to his letter, since I cannot but feel that he is drawing a red herring over a clinical track. I was particularly anxious to emphasize, in the lecture in question, the necessity for regarding a symptom from the patient's point of view, and while I employed the term "psychogenic pain" (pain of mental origin or the mental factor in pain), as contrasted with "physiogenic pain," I purposely refrained from discussing its nature. Dr. Walshe finds fault with the word *sensation* as applied to psychogenic pain, but is it not the case that, when regarded from the standpoint of the patient, "psychogenic pain" is just as much a sensation as is "physiogenic pain"? Finally, Dr. Walshe writes: "We appear to have got into the habit of using the word 'pain' for two wholly different things, and the fallacy of thought thus engendered seems too deeply rooted to be eradicated, though the contradictions into which it leads us when we are dealing with the neuroses surely indicate that some clarifying process of thought is long overdue." Is it not the case, however, that we speak of an organic or a hysterical paralysis, although we recognize that they are two wholly different things? I submit that, unless it is possible to introduce a more precise etiological terminology of preferable clinical value in place of "psychogenic pain," a term which carries with it a definite meaning, it is a mistake to resort to destructive criticism which, although of academic interest and appreciated by the expert, must, I think, confuse rather than "clarify" a clear clinical issue in the minds of your readers.—I am, etc.,

Edinburgh, Jan. 20th. EDWIN BRAMWELL.

SIR,—From Dr. Walshe's interesting commentary (January 18th, p. 126) on Professor Bramwell's lecture it is clear that he has never suffered from "psychogenic pains." The feeling of "psychogenic" and "physiogenic" pains is identical; they only differ, as the names imply, in their origin, and even in that I submit they must have a common factor. Pain is a mental process, the result of stimulation; and whether it be from external trauma or from the stimulus of a repressed memory the feeling is the same.

Dr. Walshe says: "Yet the subject of 'psychogenic pain' may continue for months under her affliction as fat as a partridge, as rosy as an apple, and . . . in a state of beatific calm." But surely this is not a common experience; this is not the picture of the psychotic, who is the most usual sufferer from "psychogenic pain," or "the young hysterical woman." She may be fat and rosy, but this is never combined with beatific calm, and she is indeed far more often suffering from "wasting, loss of sleep and of appetite, pallor, sweating, vomiting, etc.," such as he describes in the sufferer from "physiogenic pain."

Now as to the responses to treatment: both forms of pain can be stilled by suggestion under hypnotism; even the pains of labour (typical of physiological pain) can be made to cease. But drugs, which are of undoubted use in "physiogenic pain," fail in "psychogenic pain" unless they produce unconsciousness. This, I think, is not because the pain is different, but because the origin in one case is from below the pain centre, and in the other from above.—I am, etc.,

Stratford, Jan. 19th. PERCIVAL S. CONNELLAN.

CHILD GUIDANCE CLINICS.

SIR,—There are many considerations both for and against the inclusion of a child guidance clinic within the unity of a general hospital, and we gave only such small part of the argument as seemed apposite to Dr. Gillespie's original suggestion (December 28th, 1929, p. 1219), which we now find we misread in one particular. It seems a pity that our letter (January 4th, p. 45) should have led him to the conclusion that workers in independent clinics are in any way hostile to the study and teaching of psychological medicine for the child or the adult. We confined our remarks very specifically to the child guidance clinic, the triple constitution of which has a special significance, both as regards organization and conduct of research.

It is obvious, and desirable, that general hospitals possessing such pioneers as Dr. Gillespie should decide to take up the special study of the difficult child; but we repeat that, for the full understanding of the sociological as well as of the psychological factors involved, an initial expenditure on the full organization and method is desirable. This includes the service of a skilled educational psychologist, whose help we have found invaluable in the discovery of special causes of backwardness and even of disturbances of emotional rapport.

Such an organization is time-devouring. Results are difficult to discern, and much patient study of social organization, as well as of psychology, is needed. We, who are giving many hours a week to the problem, are conscious of the experimental nature of the whole work, and that there is more than one useful way of attacking it. By all means let Dr. Gillespie pursue the study on the lines best fitted to a general hospital and let him teach his students as much as his limited time will allow, despite the fact that the General Medical Council cannot yet see its way to putting the elements of psychology into the medical curriculum. We have no fear of raw or inadequate psychologists emerging from Guy's Hospital: but where the larger field of psychiatry, in the majority of general hospitals, is still desert and barren soil, to attempt to establish the complicated system of a child guidance clinic on the American model may, we fear, without any desire for "reaction or esoteric mysticism," lead to superficial work and to some discredit to that branch of medicine which we, as well as Dr. Gillespie, regard as the most fascinating and not the least important. As in many other fields of medicine, the initial steps in child mental hygiene have been cut by organizations whose work is extra-mural to the hospitals, and even to medicine itself, but medicine ultimately reaps the benefit. We have little doubt that, in the course of time, the general hospitals may absorb these clinics, but this will come when the hospitals function largely as prophylactic centres and are more free from the atmosphere of disease.

In the meantime, the child guidance clinics have arisen from the pressure of the social conscience rather than from medical inspiration: they are free from the atmosphere and connotation of disease or illness, and in this light the children and their parents regard them.

It is probably best, therefore, that they should continue their independent efforts for some time, in friendly harmony with the hospitals, and with the hope of gaining the interest and support of the rest of the medical profession by the convincing evidence of useful work done.—We are, etc.,

Child Guidance Clinic, Jews' Free School, E.1, Jan. 15th. EMANUEL MILLER.
NOEL H. M. BURKE.

"TENNIS ELBOW."

SIR,—Mr. Trethowan has done good service in drawing attention to the fact that "tennis elbow" presents a constant and characteristic clinical picture which is almost certainly due to an equally constant underlying pathological condition. And if we cannot whole-heartedly agree with his view of that pathological condition, we are at least encouraged to try to find out what it really is. Some others of your correspondents are not so helpful. They would appear to be content to make tennis elbow a dumping ground for "various pathological conditions" which they are unable to diagnose, and, if their views are allowed to prevail, we shall be saddled with another meaningless expression, like "low back pain," which is a travesty of surgical diagnosis.

If a patient suffers from traumatic synovitis, periostitis, osteo-arthritis, or neuritis in the region of the elbow, there will be characteristic signs of those conditions, and the diagnosis should be made accordingly. Tennis elbow presents a clinical picture quite different from these other conditions. It is so called (1) because it occurs frequently, though by no means exclusively, in lawn tennis players, and (2) because, unfortunately, we do not know what else to call it.

Tennis elbow is produced by a sudden and, I would add, unexpected strain on the extensor muscles of the wrist. Muscles are strained when they are caught unawares, and hardly ever when they are braced to receive the strain. In tennis the injury occurs when a stroke is ill timed or its force misjudged. Joints are strained only when they are forced beyond their normal range of movement, and there is no evidence that this happens in tennis elbow. Many patients can recall the occasion on which the original strain was received. The pain is felt on the outer side of the elbow on certain movements of extension of the wrist. Not every movement of extension is painful, and it is characteristic of this affection that the pain often comes suddenly and unexpectedly during extension of the wrist from some particular position of partial flexion. On examination there is found to be a point of acute tenderness on pressure over the common origin of the extensor muscles just below the external condyle of the humerus. The patient will localize this tender spot quite accurately, and he will identify it with the origin of the pain which he experiences on extension of the wrist. It is quite obvious that there is *something*—some localized sensitive condition—deep to this point of acute tenderness, and the question is, What is it?

First of all, what can happen when a group of muscles is suddenly contracted or strained? Some of its fibres may be torn from their attachment to the bone. This will give rise to traumatic periostitis with tenderness and usually some enlargement of the bone—but this is not tennis elbow. The muscle may compress and perhaps damage some nerve fibres passing through it—but there is no evidence that any such thing happens in tennis elbow. It is difficult to imagine how a sudden contraction of a muscle could produce a traumatic synovitis of a joint over which it passes, and Mr. Roth is rightly sceptical as to the occurrence of synovitis limited to a small part of a large joint with which it freely communicates. There is no evidence of general synovitis of the elbow-joint in typical cases of tennis elbow. What usually happens when a muscle is strained is that a few of its fibres are torn, and this causes a little haemorrhage and the usual simple inflammatory reaction which follows such an injury. In this way we believe that a small sensitive area of granulation tissue or scar tissue may be formed either in the substance of the muscle or upon its surface, and such a lesion may give rise to pain on contraction of the neighbouring muscle fibres or on pressure or friction against contiguous structures.

Most surgeons, I think, disagree with Osgood's description of tennis elbow as an epicondylar bursitis, but it may be useful to recall the actual observations which led to that description. In 1922 Osgood, himself an expert tennis player and a sufferer from tennis elbow, got two of his colleagues to cut down upon the painful spot on his own elbow to see what they could find. Operating under local anaesthesia, they split the common origin of the extensor muscles, and upon the smooth glistening surface beneath they found a little greyish-red nodule about the size of a pin's point, which when touched with a probe was acutely painful. Moreover, this pain was identical with that produced by the tennis elbow. The nodule was excised, and on microscopical examination the pathologist reported that "it looks like bursal tissue." On the strength of this and of three or four similar cases Osgood, unfortunately I think, called the condition "epicondylar bursitis." The term is unfortunate because the painful spot is not epicondylar, but below the condyle; the pathological report is, to say the least of it, unconvincing; and there is no evidence that a bursa is a normal or common occurrence in this situation.

Nevertheless, Osgood and his colleagues did find *something*, and I myself, soon after the publication of Osgood's paper, operated upon four typical cases of tennis elbow and I found a condition just as he described. It is essential to operate under local anaesthesia, because the lesion is quite inconspicuous, and it is found with certainty only by searching with a probe, when at the right spot the patient exclaims "That's the spot!" and there is no doubt about it. It is not surprising that Mr. Trethowan, operating under general anaesthesia and with a completely exsanguinated limb, failed to find anything abnormal outside the joint.

Apart from the operative evidence of an extra-articular lesion, which, when once found, is most convincing, there are other objections to the view that tennis elbow is always a traumatic synovitis of the radio-humeral joint—that is, a part of the elbow-joint. Traumatic synovitis is the result of forced movement of a joint. Tennis players must decide whether tennis elbow is really produced by forced hyperextension of the *elbow-joint* (in which case I cannot see that it matters whether the hand is grasping a large or a small object, nor whether the wrist-joint is extended or not), or whether the strain falls on the extensor muscles of the *wrist*, as nearly all agree—in which case it cannot possibly produce a traumatic synovitis of the elbow-joint. A hernial protrusion of synovial membrane is surely an uncommon result of synovitis. Yet *every* sufferer from tennis elbow produces the pain by forcibly contracting the extensors of the wrist. Everyone agrees that some cases of tennis elbow are cured by manipulation. The manipulation employed is one which stretches the extensor muscles of the wrist, and the cure may be rapid, if not sudden. Traumatic synovitis cannot be cured in this way. Lastly, removal of an extra-articular lesion, whatever you like to call it, immediately cures tennis elbow.

It is a pity that some more rational name cannot be found for this common result of muscular strain. It is rather disconcerting to have to diagnose tennis elbow in a man who does not know one end of a tennis racket from the other. It so happened that of the four typical cases operated upon by me only one attributed the injury to lawn tennis. One was an expert croquet player who got it in the left elbow while playing an extra hard stroke; another was a business man who got it while trying to open the door of an office safe; and another was vague about its origin.

With regard to treatment, tennis elbow can be cured outright by operation, and, if a quick cure is wanted, this is perhaps the quickest. But it must be admitted that operation is seldom necessary. Some cases can be cured by manipulation, and others cannot. The explanation of this is that if the case has progressed to fibrosis with shortening of the muscle, this can be broken down by manipulation, and the patient will be cured, as in other cases of chronic muscular strain. But manipulation can accomplish nothing if there is no resistance to be overcome. In my experience a good masseur who will really "get down" to it can accomplish a great deal in a comparatively short time. On the other hand, Mr. Elmslie's masseuse, who finds it expedient to "pretend to be doing a lot and really to do very little," confirms the well-known observation that this condition often gets well without any treatment. (I am not sure whether Mr. Elmslie intended this remark to apply to tennis elbow.) It follows, then, that any treatment which can be sufficiently prolonged may in the end claim a "cure." Athletic people, however, are apt to be impatient.—I am, etc.,

London, W.1, Jan. 12th. A. S. BLUNDELL BANKART.

SIR,—The discussion on this subject has been of special interest to me because (1) I had a severe attack about thirty-five years ago; (2) I discovered a simple cure—namely, to play golf; and (3) this method of cure has been adopted by several other persons with complete success.

...—India, where so many Europeans play tennis almost ...-summer and winter—it is probable that this affec... more common than in England. It happened that ne days I played badminton, or polo, and so was o compare the strokes in each of these games that l the greatest pain; and later to inquire whether was any anatomical explanation of the fact that rdinary strokes at golf do not specially strain the that is affected in "tennis elbow."

are agreed that the onset is very gradual; the first I noticed was that the overhand service and some nanders caused pain; at badminton the overhand es near the net—flicks and smashes—gave most ...ible; at polo the forward stroke on the near side ...used most pain. In these painful strokes the forearm is semi-pronated; adduction and abduction of the wrist play a prominent part, the former caused by the flexor and extensor carpi ulnaris, the latter by the flexor carpi radialis, the extensor carpi radialis longior and brevior, assisted in a minor degree by muscles to the thumb. Watch a badminton player at the net and notice the frequency of the "flick" and "smash," the lightning speed of the stroke and the sudden check. Give special attention to the sudden check and observe that the brunt of the strain falls on the longior and brevior muscles. It would not be surprising if these sudden checks disturbed the attachments of these muscles. It will be said that the pain is not confined to these strokes; but when the quadriceps breaks the patella, the movement of other muscles may cause pain. It is important to make a distinction between the muscles that do the damage and the others that may cause pain after the damage has been done. Contrast these sudden checks with what happens in an ordinary game of golf: there are no backhanders, no overhand strokes; most of the vigorous shots have a "follow through," and the wrist is supinated when the club strikes the ball; the abductors have very little to do.

Many years ago I read that the pain is on the inner side of the elbow. Since then I have seen many cases, and it has been my custom, after making a preliminary apology, to press the outer side, just over the head of the radius; the result has been a wince, and a remark "Ah, that's the spot." Mr. Roth (January 4th, p. 42) finds difficulty in reconciling the views of other writers with his own, and suggests that they may all be right. When we consider how closely the structures of the elbow-joint are associated with the attachments of the two extensors referred to, the apparent differences in the various descriptions of tennis elbow are reconciled, and the unanimity between doctors becomes marked.—I am, etc.,

A. BUCHANAN, M.A., M.D.,
Guernsey, Jan. 14th. Lieutenant-Colonel I.M.S.(ret.).

ERRORS OF REFRACTION.

SIR,—In your note on sight testing (January 11th, p. 80) there is a passage which contrasts strongly with statements published on December 7th last (p. 1041), in a paper by Dr. T. A. Ross, and makes the present muddle still more deplorable. You say, "Aching eyes, vertigo, nausea, nervous dyspepsia, malnutrition, hyperaesthesia, mental depression, melancholia, and illusions may be due to the nerve strain of trying to avoid blurring. . . ." Against this let me quote Dr. Ross. Referring to such claims, and mentioning specifically astigmatism in that connexion, he says: "The ground on which these beliefs are justified is commonly that many patients are cured when these things are attended to; there is little other ground for them. It may be said that this ground is good enough; but not when we look into the history of the neuroses," and he goes on inferentially to compare the fuss about correction of refractive errors for most of the symptoms mentioned in your note, with that formerly attaching to now discredited faddish treatments. It happens at the present time that sight testing on a grand scale has passed into the hands of a *pseudo-scientific* body of business men, who, by astute advertising, can persuade the neurotic patient (and the above symptoms are typical of the major and minor psychoses) that his salvation lies in the optician's shop. It has been shown by Mr. George Pooley, in his work for the Medical Research Council in connexion with miners' nystagmus, that much more than half the population has an appreciable error of refraction, whilst Dr. Millais Culpin more recently has demonstrated for the same body the great prevalence of neurotic symptoms among the general population. *Shrewd advertisement* and ignorance of anything but optical work on the part of the optician, and credulity and ignorance on the part of the public, can soon bring about an effective relationship between these two facts. Indeed, it has already occurred, with the result that thousands of people are now wearing glasses provided via optical benefit regardless of a medical appraisement of the value of their symptoms. If you are right, that is not necessarily an evil; half a loaf is better than no bread. But what if Dr. Ross is right, and *post hoc* has been *confused with propter hoc once more?* The matter is urgent. The profession is speaking with two voices. To which are we to listen? Meanwhile the friendly societies lean to the optician, because it costs less. The question of the optician's competence to correct errors of refraction is beside the point. The outstanding question is, Should they be corrected or not, and if so, when? Dr. Ross in effect says these patients have a neurosis. I agree. Ophthalmologists have the opportunity of considering Dr. Ross's ideas. How is the optician to learn, and where is *the incentive?*—I am, etc.,

Portsmouth, Jan. 13th. W. S. INMAN.

*** The passage to which Mr. Inman takes exception was quoted by us from the report of the American Medical Association's Committee on Optics and Visual Physiology.

TRAINING OF THE UROLOGIST

SIR,—Mr. Kenneth Walker (January 18th, p. 127) contends that urology is only "just obtaining recognition as a separate branch of medicine in Great Britain" because there is no urological section in the British Medical Association meetings, and because the *British Journal of Urology* is not a year old. The British Medical Association naturally decides the number of sections it will hold: that is a matter of internal policy. As a matter of fact, there were three very interesting discussions on urological subjects at the Manchester Meeting; if a urological section had been in existence I doubt if it would have had more than two sessions, so the urologists really gained by not having a section. The birth of the *British Journal of Urology* was not contemporary with the birth of British urology, it merely marked the advent of the journalistic spirit. Modern urology did not originate in any one country; it is part of the great development of surgery rendered possible by Lister.

At the same time, I am exceedingly grateful to your leading article of December 21st. It has really opened up the whole question of medical education. This country differs from all others in the method adopted. Here the students receive individual instruction in the wards and in the out-patient department. They are taught how to take medical histories, how to examine patients, and how to treat them. The classes are split up, and every physician, surgeon, and specialist has his own following. Instruction and treatment go hand-in-hand. Abroad there is little or no ward teaching. The professor lectures to a class of 150 or 200 students. Some five or six patients are wheeled into the theatre, and two students are called down to examine each of them. They are allowed less than a minute for each examination, and after a few questions from the professor they return to their seats. In this way each student only handles about one patient in a hundred. The work which is done here by clinical clerks, dressers, and clinical assistants is done abroad by the professor's qualified assistants. I am convinced that in no country in the world is the general level of medical knowledge as high

as in the British Isles, and I believe that it is entirely due to our method of teaching.

Post-graduate teaching is essentially similar to under-graduate teaching. Both should be individual and practical. Lectures and courses are useful as a "brush up" for those who already know something of the subject, but I feel they are not the right way to teach the novice. I contend that your leading article is making a grave mistake if it is to be understood as advocating that the teaching of urology, or of any other specialty, should begin with courses of lectures. They are an adjuvant to practical instruction, but they can never replace it. I feel that the British method of teaching is the best, and that we should not attempt to copy the foreigner.—I am, etc.,

London, W.1, Jan. 20th. J. SWIFT JOLY.

CANINE DISTEMPER.

SIR,—Having perused your very clearly expressed summary[1] of the views at present held as to the cause of canine distemper and similar diseases which can be transmitted by filtered material, I wish to put on record a different point of view, founded on experiments and clinical observation, which, so far, has not been refuted, nor in my opinion can it be, if the technique I have described in these investigations is strictly followed. The alternative view is that microbes, like protozoa, break up under the influence of certain environments into forms so small that they will pass through a filter. If the mucous membrane of a rabbit's nose is inoculated with the material containing the filter-passing virus of fowl-pox, small-pox, or vaccinia, and after a proper interval cultures are made with proper precautions as to medium and incubation, minute Gram-negative bacilli with growth and morphology resembling the influenza bacillus can always be obtained. In the case of fowl-pox I have cured the disease in the acute phases; prevented it so successfully that no further case occurred; transmitted the disease by spraying a suspension of these microbes on to the throats of healthy fowls; and recovered the microbe from them. The proof that the microbe used in the antigen is the development of the filter-passing virus is thus complete. I have been able to protect rabbits completely from the virus of vaccinia intensely vaccinated three months after the last inoculation with an antigen of a microbe similarly isolated from vaccine lymph. This work has confirmed and extended the work of Monckton Copeman, described in his Milroy Lectures of thirty years ago. Further studies are being made with this microbe, but I may say here that it can be isolated invariably from the skin lesions of small-pox, and from vaccine lymph by the technique described, as well as from the throats of small-pox patients, and with it I have produced skin lesions and paralysis in rabbits.

You say that a vaccine cannot be expected to be effective in an acute infection like distemper. Here again is a sharp difference of opinion, for I have many times cured most dramatically dogs, actually ill with distemper, with an autogenous antigen of the minute Gram-negative bacillus, which can invariably be isolated from the nasal discharge in distemper. The worst case was completely paralysed except for its respiratory and swallowing muscles. It recovered completely, but for a slight halt in one of its hind legs. This case was a supreme test for any treatment.

My view, constantly expressed, is that an autogenous antigen is a far more effective and specific therapeutic agent in acute infections than a serum.—I am, etc.,

Dublin, Jan. 14th. W. M. CROFTON.

THE WINNIPEG MEETING.

SIR,—It is surely remarkable that there is to be no Venereal Diseases Section at the Winnipeg Meeting. The subject must be of interest to Canadian practitioners, since syphilis is by no means a rarity in the Dominion. For example, Clarke[2] states that routine Wassermann tests carried out in the Toronto General Hospital gave a positive percentage rate of 12.8. His opinion is that in Canada syphilis must be considered *a greater menace* than tuberculosis. Graham also, *in a medical discussion in* Toronto,[1] stated that, of 412 patients admitted to the same hospital, 43.6 per cent. reacted positively to the Wassermann test. Among the professional class 7 per cent. gave a positive reaction, and among the business class the positive percentage was 23. In view of this, of the great success of the Venereal Diseases Section in Manchester last year, and of the undoubted importance of the subject, it is amazing that the Section should be dropped for 1930.—I am, etc.,

E. TYTLER BURKE,
Venereal Diseases Medical Officer to the City of Salford.
January 7th.

*** Even if it were possible, it would be undesirable to arrange a separate Section for every branch of medicine. The claims of the various specialties are carefully considered each year in relation to local circumstances and preferences. The choice of Sections for the Winnipeg Meeting was, in fact, made by our Canadian colleagues.

TREATMENT OF CANCER IN BRISTOL.

SIR,—In view of the unauthorized and misleading statements which have appeared in certain sections of the lay press, the Faculty of the Bristol Royal Infirmary would be glad if you would allow them to state very briefly the true position with regard to the treatment of cancer here.

A considerable amount of research has been carried out, both clinically and in the laboratory, and special beds have been set aside for the study of cancer. A number of patients have been relieved, in some cases to a very gratifying extent, by lead compounds and other methods of treatment, but some unfortunately show no improvement, and no claim to have achieved a cure has ever been made. Details have appeared, on more than one occasion, in medical publications.—I am, etc.,

R. C. CLARKE,
Honorary Secretary to the Medical Faculty, Bristol Royal Infirmary.
January 15th.

POISONING BY HYDROCYANIC ACID GAS.

SIR,—In the *British Medical Journal* of January 18th (p. 132), in the report of an inquest on a case of poisoning by hydrocyanic acid gas, Sir Bernard Spilsbury is made to say that probably no other case of such poisoning had occurred in the last hundred years. Surely Sir Bernard was misunderstood. Cases of poisoning by hydrocyanic acid gas are by no means uncommon. This gas (described in the newspaper reports of the same inquest as a "rare" gas), generated by the action of sulphuric acid on high-grade sodium cyanide, is used by the ton in fumigation for the destruction of vermin. This has resulted in numerous deaths, as many as twelve cases having occurred in New York City alone in quite a short period—ten on ships and two on land.—I am, etc.,

Shalford, Surrey, Jan. 16th. H. O. NOLAN.

THE GULF STREAM MYTH.

SIR,—In your article, "Grenfell of Labrador" (January 18th, p. 118), you speak of the "hard struggle for existence in that climate of violent extremes, which might be ours were it not for the 'Gulf Stream drift.'" The Gulf Stream's beneficent influence on the coasts of Western Europe is an exploded myth. As the subject is of general interest, and very few know the truth about it, I will ask your permission to quote the following passages from an article which I have published elsewhere.

It is now known without any doubt that the Gulf Stream as such cannot be detected east of Newfoundland. It is now known that the relatively warm climate of Western Europe is due to two causes. First, the prevailing south-west winds. These prevailing winds are not only warm in themselves, but carry a large amount of aqueous vapour, and whenever this vapour condenses and falls as rain there is liberated a large

[1] *British Medical Journal*, January 11th, p. 78.
[2] *Journ. Amer. Med. Assoc.*, 1917, vii, 203.

[1] *Lancet*, 1914, i, 1074.

amount of heat that was required to keep the vapour in the gaseous state. The functions attributed to warm air in meteorological literature really belong to the water vapour which the warm air carries.

The second great influence is the movement of the surface of the ocean from the warm tropical regions in a north-east direction. This movement starts in a northerly direction, but coming from near the Equator, where the velocity of the earth's rotation is greatest, it shares in this higher velocity, and, going northwards, tends, as it were, to overtake the earth, and so assumes a north-east direction—that is, towards the coasts of Europe. Deep down in the ocean there is a balancing movement from the polar regions, especially from the Antarctic, whence cold water flows towards the Equator and takes the place of the water which has gone towards Europe. At the Equator polar water is recognized by its salinity, its temperature, and by the living organisms which it carries. This movement of the ocean is the exact counterpart of the movement of the atmosphere which causes the trade winds.

It is, then, the prevailing south-west winds, and not the Gulf Stream, that prevent the Thames and the Liffey from being frozen for several months in the year like the St. Lawrence. It is these beneficent winds that prevent England and Ireland from being swept by the icy blasts of Labrador and save Lisbon and Madrid from the blizzards of New York, which is in about the same latitude. It is the movement of the surface of the ocean towards the north-east that brings tropical seeds and shells and other flotsam and jetsam to the coasts of Europe. And it is this movement that brings the little larval eels from their distant cradle in the Sargasso Sea.

—I am, etc.,

Kensington, W., Jan. 16th. J. MCNAMARA, M.D.

SECURITY OF TENURE IN PUBLIC POSTS.

SIR,—Permit me to thank Dr. McManus for drawing attention in the *Journal* of January 11th (p. 99) to the injustices of the Asylums Officers' Superannuation Act. This Act is one of the many things connected with the mental hospital service which require a thorough overhaul. I do not propose at the moment to enter into a long discussion on the deplorable position of the assistant medical officer in asylums, but I agree with Dr. McManus that the present is a favourable opportunity for making an attempt to improve matters. For one thing, why should a man who leaves a mental hospital appointment after a few years' satisfactory service lose all his contributions under the Superannuation Act? I consider this nothing better than common theft. Again, why have a pension scheme without a compulsory retiring age? I could mention at least a dozen other points which require rectification before the asylum service can be considered anything other than the last refuge of the destitute. Once again we look to the British Medical Association for support. I feel confident we shall not look in vain.—I am, etc.,

January 11th. A. M. O.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

THE next examination for the Buckuill Entrance Scholarship will be held on Tuesday, June 24th. It entitles the holder to the course of intermediate medical studies (including Part II of the Preliminary Scientific) at University College and the final course at University College Hospital and Medical School.

Two Goldsmid Entrance Exhibitions, entitling the holder to the final course, are offered for competition in July, 1930. They are open to students preparing for the degrees of the Universities of London, Oxford, Cambridge, Durham, and other British universities, or for the diplomas of the Royal Colleges of Physicians and Surgeons, or for the licence of the Society of Apothecaries. The next examination will take place at University College Hospital Medical School on July 17th and 18th.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

AT the later winter commencements held on January 17th the following degrees were conferred:

M.CH.—H. E. Murray.

M.B., B.CH., B.A.O.—Dora G. Knott (formerly Bradley).

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Lectures.

A COURSE of lectures for 1930 commences on Monday next, January 27th, when Mr. Victor Bonney will discuss the surgical treatment of carcinoma of the cervix. On January 29th Professor G. E. Gask will lecture on the treatment of epithelioma of the tongue; on January 31st Mr. W. Sampson Handley on the papilloma and its menace; on February 3rd Mr. Geoffrey Keynes on radium treatment of carcinoma of the breast; on February 5th Mr. J. Herbert Fisher on perforating injuries of the eyeball; on February 7th Sir John Rose Bradford on massive collapse of the lung; on February 17th Mr. R. H. O. B. Robinson on the role of short-circuit operations in the treatment of cholecystitis; on February 19th Mr. W. McAdam Eccles on anatomy—orthoplox and heteroplox—in relation to surgery; and on February 21st Mr. L. R. Flint will conclude the series by a lecture on the association between gall-bladder lesions and hepatitis in the human subject. The lectures will be given in the theatre of the College, Lincoln's Inn Fields, W.C., at 5 p.m. The Hunterian Oration will be given by Professor E. W. Hey Groves on Friday, February 14th, at 4 p.m.

Medico-Legal.

LIBEL ON A MEDICAL OFFICER OF HEALTH.

BEFORE the Recorder of London, at the Central Criminal Court, on January 15th, a woman on bail was fined £10, and ordered to pay a sum not exceeding £25 towards the cost of prosecution, for publishing a defamatory libel of Dr. James Bonnell Howell, medical officer of health for Hammersmith. The defendant, who pleaded guilty, was a property owner in Hammersmith, and from time to time Dr. Howell had served notices on her about the condition of some of her houses. According to the prosecution she had written a series of offensive and abusive postcards to Dr. Howell, to the sanitary inspectors, to the town clerk of Hammersmith, and to the clerk of the Kensington Justices. In November she had been fined 40s. by the Kensington Justices for defective paving, and in a postcard she alleged that Dr. Howell had bribed them to convict her. Mr. J. W. Morris, representing the defendant, said she now admitted that there was not the slightest ground for what she had written and she wished to tender a complete apology, and to offer an undertaking not to repeat her conduct. She seemed to have the idea that some of the notices served on her were oppressive. The Recorder said that if, in the defendant's opinion, legislation bore hardly on property owners, she was entitled to criticize it, and, in temperate language, to criticize those whose duty it was to carry out the provisions of such legislation; but she and people like her, had to learn that they were not entitled to couch their criticism in terms of vulgar abuse.

STATUS OF AN UNREGISTERED PRACTITIONER.

ON August 10th, 1929 (p. 281), we recorded proceedings in the King's Bench Division when Lieut.-Colonel J. W. Kynaston sought to make absolute a rule nisi for mandamus requiring the General Medical Council to delete the record of penal removal of his name from the *Medical Register* in 1922. The three judges who constituted the court (the Lord Chief Justice, Mr. Justice Avory, and Mr. Justice Branson) were unanimous in refusing to make the rule absolute. Against this decision Lieut.-Colonel Kynaston appealed, and his appeal was heard, on January 16th and 17th, by Lords Justices Scrutton, Greer, and Slesser.

Mr. H. J. Wallington and Mr. J. Buckley appeared for the appellant, and Mr. R. M. Montgomery, K.C., and Mr. D. C. Bartley for the respondents, the General Medical Council.

In concluding his argument, Mr. Wallington submitted that the practitioner was the only person to decide whether his name should remain on the *Medical Register* or not. The practitioner had a right to have his name enrolled and a corresponding right to have it taken off. The Colleges through which practitioners passed were the only bodies with disciplinary powers, and it was not the intention of the legislature that there should be another overriding body in matters of professional discipline. Through all these years the General Medical Council had, in his submission, been exercising a power, in good faith no doubt, but a power which the Medical Act of 1858 did not give it.

Counsel for the respondents were not called upon by the court to argue.

Judgement.

Lord Justice Scrutton, giving judgement, said that he would not deal with the case on technical grounds. The Medical Act of 1858 was not well drawn. It did not in terms provide for a register, but it assumed there was one, and that it would be kept in accordance with the provisions of the Act and the orders and regulations of the General Medical Council. The

Act provided that, if a practitioner, after due inquiry, had been found guilty of "infamous conduct in any professional respect," the Council could, if it saw fit, direct the erasure of his name. The name of a practitioner did not necessarily come off the *Register* because he had been found guilty, but only if the Council saw fit to remove it. Clearly that was more than an administrative act; it was a judicial duty. The court was asked by the appellant to say that, just as a practitioner had a right to go on the *Register* if he was properly qualified and paid the necessary fee, so also he had a "nominal right," whatever that meant, to have his name removed by merely writing a letter. His lordship could find no such right given by the Act, and it was idle to suppose that a man could have his name taken off the *Register* to avoid inquiry as to infamous conduct. It was a pity that the word "infamous" was used in relation to these matters, and very difficult to give an ordinary meaning to the term in this connexion. What the Act meant was serious misconduct in a professional sense. It had been well established by decisions that the General Medical Council was the judge of whether there was serious misconduct in a professional sense. The only circumstances in which the Court of Appeal could interfere was when there was no evidence to justify a finding by the Council. In the present case there was not, in his lordship's view, any ground for interference, and the appeal must be dismissed.

Lords Justices Greer and Slesser also delivered judgements dismissing the appeal.

DEATH FROM HYDROCYANIC ACID GAS POISONING.

IN last week's issue (p. 132) we recorded an inquest on the body of a youth, aged 17, who died of poisoning by hydrocyanic acid accidentally inhaled. We are now informed that from half of one of the lungs Dr. Roche Lynch, senior analyst to the Home Office, has obtained a trace of hydrocyanic acid. In view of the fact that the deceased lived for two hours after he had been overcome by the fumes, and that artificial respiration had been applied by the house-surgeon at St. Bartholomew's Hospital, it was *not* expected that analysis would yield more than a trace of hydrocyanic acid.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT reassembled on January 21st, when the House of Lords amended the Unemployment Insurance Bill and the House of Commons took minor business, including a Supplementary Estimate for the Ministry of Labour.

The Parliamentary Medical Committee is to meet on January 23th, when an address is expected from Sir Hubert Bond on mental treatment. The Government hopes to appoint an early day for the second reading of the Mental Treatment Bill. On January 29th Dr. Fremantle will preside at a meeting of the Conservative Health and Housing Committee, when the Mental Treatment Bill will be discussed, as also a Canal Boat Bill, which awaits second reading.

Slum Clearance.—On January 21st Mr. MACDONALD informed Sir Kingsley Wood that it was hoped that the Slum Clearance Bill might be introduced at an early date. During a debate on unemployment later in the day Sir O. MOSELEY stated that the Government had a big slum clearance measure ready for presentation to the House. It was only the parliamentary time-table which had prevented the Government already making progress with the measure.

Proposed Appointment of a Surgeon in Caithness.—Mr. ADAMSON, on January 21st, told Sir A. Sinclair that the question of assistance from the Highlands and Islands (Medical Service) Fund towards the appointment of a surgeon in Caithness was brought before the Department of Health for Scotland some time ago by the managers of the Dunbar Hospital. In the absence of any indication from the managers of the Bignold Hospital that they desired such an appointment, the Department had not yet been able to deal with the matter. Any application that had the support of both bodies would receive the sympathetic consideration of the Department.

Explosions in Mines due to Smoking.—On January 21st Dr. VERNON DAVIES asked the Secretary for Mines whether, in view of the fact that in 1927 three men were killed as the result of explosions in mines due to striking matches or smoking, and in 1928 five deaths resulted from the same causes, he proposed to introduce legislation which would provide additional safeguards to miners against such practices. Mr. TURNER replied that the existing legal provisions were strict and comprehensive, and he did not think that breaches of these provisions could be prevented by further legislation.

Notes in Brief.

The Minister of Health is unable to make any further statement of his intentions in regard to amendment of the Vaccination Acts.

Mr. Graham has no knowledge of complaints having been made to the Board of Trade of the spread of tuberculosis in this country through the importation of condensed skimmed milk.

The Services.

ROYAL ARMY MEDICAL CORPS.

TEMPORARY COMMISSIONS.

REVISED conditions under which temporary commissions will in future be granted in the Royal Army Medical Corps have now been approved.

An applicant must be a duly qualified medical practitioner registered under the Medical Acts in force in Great Britain and Northern Ireland. Approved candidates will be appointed in the rank of lieutenant. After three and a half years' temporary service officers will, if duly recommended, be promoted to the rank of captain, with the appropriate rate of pay and allowances. Pay will be at pay warrant rates, as for an officer of his rank in the Royal Army Medical Corps, and allowances as for a regular officer will be issued. In addition, on conclusion of his temporary service, a bonus of £100 will be paid for each completed year of satisfactory service. A refund (up to £40) will be made of reasonable expenditure on articles of uniform which an approved candidate is specifically instructed by the War Office to obtain on appointment. If subsequently appointed to a permanent commission he will receive the difference between £50 and any sum already issued to him as outfit allowance.

An officer appointed to a temporary commission under the above conditions will be eligible for selection for a permanent commission provided he is not over 28 years of age. In reckoning age for this purpose an officer will be allowed to deduct from his actual age the period of such temporary service. Permanent commissions will normally be offered to temporary officers on or before the completion of twelve months' temporary service. Temporary officers who do not then accept a permanent commission will not be eligible, save in exceptional circumstances, for the grant of a permanent commission at a later date. An officer appointed to a permanent commission while serving as a temporary officer under the above conditions will not receive the bonus of £100 for each completed year of service, but he will be allowed to count such temporary service for increase of pay, promotion, and retirement.

All particulars may be obtained by application to the Under Secretary of State, the War Office (A.M.D.1), Whitehall, London, S.W.1.

DEATHS IN THE SERVICES.

Lieut.-Colonel Sir Allan Perry, R.A.M.C. (ret.), died at Great Austin's, Effingham, Surrey, on December 17th, 1929, aged 69. He was born at Chatham on April 17th, 1860, was the youngest son of the late Isaac Perry, and was educated at the London Hospital, taking the M.R.C.S. and L.S.A., and also subsequently the D.P.H. of the London Colleges and the M.D. of Durham. Entering the army as surgeon on January 31st, 1885, he became surgeon major after twelve years' service, and retired with a gratuity on December 8th, 1897, when he received the appointment of Principal Medical Officer of the Ceylon Medical Service, which he held up till 1915. He then rejoined the R.A.M.C. for service in the war, from June 24th, 1915, and was promoted to lieutenant-colonel from July 5th, 1915, and for two years—1915-17—commanded the Harvard Surgical Unit in France. While in Ceylon, in addition to his regular duties as Principal Medical Officer, he was placed in charge of the Boer prisoners of war camps in 1900-3, and embodied his experiences in *The Medical History of the Prisoners of War in Ceylon.* He was a Knight of Grace of the Order of St. John of Jerusalem. In 1886 he married Agnes Muriel, younger daughter of the late Lieut.-Colonel J. C. F. Flynn, Army Ordnance Corps.

Colonel David Mason MacFarlane, C.M.G., C.B.E., M.D., died at Turin, Angus, on January 7th, aged 67. He was born in 1862, and was educated at Edinburgh, where he graduated as M.B. and C.M., subsequently taking also the M.D. and being elected F.R.C.P.Lond. He retired from medical practice in 1906, after twenty years. In 1890 he took a commission in the 4th (Territorial) Battalion of the Royal Berkshire Regiment, which he held up till the war. From 1914 to 1918 he served in command of the 4th (Territorial) Battalion of the Seaforth Highlanders, or Ross-shire Buffs, was dangerously wounded at Neuve Chapelle in March, 1915, and was four times mentioned in dispatches. He received the C.M.G. in 1915 and the C.B.E. in 1919, was promoted to brevet colonel in June, 1918, and to colonel in August, 1918; he also held the Territorial Decoration. He was a J.P. for Angus (Forfarshire), and a member of the King's Bodyguard for Scotland, the Royal Company of Archers. He married Mary Blanche, daughter of Francis Edmund Anstie, M.D., F.R.C.P., and leaves one son.

Obituary.

SIR GEORGE DANCER THANE, LL.D., Sc.D., F.R.C.S.,

Emeritus Professor of Anatomy, University College, London.

SIR GEORGE THANE, both by reason of length and intensity of service, may justly be regarded as the most whole-hearted servant of a school which has never lacked sons who placed the interest of the medical school and hospital before all personal advancement.

George Dancer Thane was born at Great Berkhamsted, Herts, on May 27th, 1850, and was the eldest son of G. D. Thane, M.D. He died at home, in Harrow, on January 14th, as the result of gradual cardiac failure during the last two months. He entered University College in 1867, following such alumni as H. Newell Martin, the founder of American physiology; John Williams, obstetrician; William Gowers, *neurologist*; *John Tweedy*, opthalmologist; Marcus Beck and Rickman John Godlee, surgeons. The entry in the years immediately following bears names which became familiar as Henry Morris, surgeon; Ray Lankester, biologist; Thomas Barlow, physician; Albert Edward Sharpey-Schafer, physiologist. The late Dawson Williams, Frederick Mott, Victor Horsley, Stanley Boyd, and Montague Murray had enrolled before 1874. This was a goodly company. Thane's progress in anatomy was such that he was appointed demonstrator by Professor Viner Ellis in 1870, a year before he qualified M.R.C.S. He succeeded Ellis in 1877, at the early age of 27, and continued in the chair of anatomy until 1919, when, elected emeritus professor, he was succeeded by the present holder, Professor G. Elliot Smith. He was knighted in 1919 largely for his services as inspector under the Vivisection Act of 1876, as well as for his services to University College.



Thane occupied a distinguished position among British and Continental anatomists. He was one of the founders of the Anatomical Society of Great Britain and Ireland, and became president. He was a member of the French and German societies, and foreign corresponding member of the Anthropological Society of Paris. The environment into which Thane was thrust as a youthful demonstrator and professor from 1870 to 1877 was a remarkable one from the point of view of the development of British medicine and of British physiology in particular. The quarrels of the anatomists and surgeons among themselves on questions of division of labour, no less than the antagonism between the anatomists and the College Council, had threatened to wreck the institution soon after its foundation in 1827. In 1837 William Sharpey was appointed professor of anatomy and physiology, at a time when Richard Quain held the chair of practical anatomy and served as surgeon to the hospital. Sharpey, with tremendous energy, commenced a course in microscopic anatomy, and re-edited the fifth edition of Jones Quain's *Anatomy*, with Richard Quain as co-editor. He introduced into this book the results of his researches in microscopic anatomy and in relation to bone in particular. He instituted a lectureship in practical physiology "with a view to supplying medical students with instruction in the use of the microscope in examining the textures and fluids of the bodies." Thus the teaching of histology and neurology was undertaken by the department of physiology, and the department of anatomy was left with no equipment beyond the cadaver, and sank to be the handmaid of surgery.

Thane was placed in charge of a department which had been obscured by the brilliant energy of the school of physiology under Sharpey, seconded by the no less brilliant Michael Foster and Burdon-Sanderson. The school of physiology not only attracted workers like Schafer, W. H. Gaskell, Gotch, Halliburton, *Benjamin Moore*, *Leonard* Hill, a sequence which was destined to reach maturity with Bayliss and Starling, but also attracted from the hospital back to the physiological laboratories such workers as Sydney Ringer, Oliver, Rose Bradford, Beevor, J. H. Parsons, and Page May. The wave of enthusiasm for physiology at this time left most departments of anatomy sterile. Yet Thane managed to provide the clinical and pathological staff of the hospital with a succession of young men trained to think anatomically. His demonstrators included Rickman Godlee, Silcock, Bilton Pollard, Rose Bradford, Percy Flemming, Raymond Johnson, Mower White, George Blacker, S. G. Shattock, C. Stonham, T. W. P. Lawrence, Donald Armour, Batty Shaw, Wilfred Trotter, A. M. H. Gray, E. K. Martin, and G. S. Hett.

Thane was no transcendental anatomist. He refused to pretend to be a morphologist or physiologist. His mind was content with that conception of anatomy which satisfied Claude Bernard.

> "Anatomy is the basis necessary to all medical investigation, whether theoretical or practical. Anatomy in itself is a sterile science, its existence is justified only by the presence of living *men and animals, well and sick*, and by its own possible usefulness to physiology and pathology. . . . Anatomy is the necessary foundation of physiology, and never can we become good physiologists if we are not first deeply *versed* in anatomical studies and *trained* in anatomical dissections."

Poetic and philosophical intrusions into the domain of precise and accurate descriptive anatomy he abhorred, and he scoffed at loose analogy or fantastic simile. He distrusted the statistical method, and maintained that the higher mathematics was but a form of intellectual shorthand which contributed nothing to the sum total of anatomical knowledge.

As most of Sharpey's contributions to anatomy and histology were incorporated in the various editions of *Quain's Anatomy*, so most of Thane's original observations are incorporated in the ninth and tenth editions of the same book, with Sharpey-Schafer as co-editor. The tenth edition of "Quain" furnishes the highest standard of precise, naked, and finally concentrated anatomical truth. The brevity is classical. There is not a redundant word or phrase. Here is no tolerance of "it is almost universally accepted"; "there is every reason"; "it is safe to assume"; "it is tempting to suppose"; "probably each"; "presumably." On one occasion Thane said that "any fool is perfectly at liberty to assume anything he likes, but it is very much open to question whether it is safe to assume anything when considering so intricate a subject as the central nervous system." The illustrations of the bones of the skeleton in the tenth edition of *Quain's Anatomy*, from drawings by two of his demonstrators,

T. W. P. Lawrence and D. Gunn, are the most accurate osteological drawings extant, and represent the highest standard of the woodcut in anatomical illustration. Thane's drawings of the small bones have been widely copied.

The influence of *Quain's Anatomy* is but inadequately appreciated. A definitive translation of the seventh edition was published in German by Hoffmann in 1870. The translation was an immediate success. Schwalbe, not satisfied with translating the second volume, dealing in particular with the nervous system, more than doubled its size by additions. The Hoffmann-Schwalbe translation next served as the basis of Rauber's *Lehrbuch der Anatomie des Menschen* and of Schwalbe's *Neurologie der Menschen*—with no reference to "Quain." By 1920 eleven editions of Rauber's *Lehrbuch* had appeared, mainly under the editorship of Kopsch. The Rauber-Kopsch *Lehrbuch* has been repeatedly translated into various languages. It is not without humour that Rauber's description of the muscles, translated from the "Quain," should have been retranslated into English as the basis of many textbooks of anatomy since 1889. The time is not yet ripe for a candid history of these translations and retranslations.

As in the "Quain," so in Ellis's *Demonstrations of Anatomy*, which Thane edited through many editions, in brief articles to *Nature*, such as that "On the Brain of the Gorilla" (December 14th, 1876), and in the various communications to the *Proceedings* of the Anatomical Society, the same precision, brevity, and careful usage of words is seen. Thane, in his descriptive anatomical writings, had as much precision as the French anatomists, as much thoroughness as the Germans, and a higher standard of self-control and a stronger appreciation of anatomical truth than either.

As dean of the Medical Faculty and as member of the College Committee Thane had a most intimate acquaintance with the students and the affairs of the College and hospital. Differences between the department of anatomy and the College Council in 1828–30 had almost led to the dissolution of the College. It is fitting to note that the strong bond of friendship between Thane and the late Provost, Sir Gregory Foster, at the critical period at the beginning of this century, did much to raise the College to its present standard of efficiency, and led to the successful transfer of various departments under a special charter of January 1st, 1907, to a separate corporation as the University College Hospital Medical School. Thane's delight in the welfare, progress, and subsequent history of the student was unequalled. From 1874 to 1914 he kept a detailed Students' Register, written in a careful hand, with red ink for failures and purple ink for successes. The perusal of this register is the acme of delight to one who loves naked history untarnished by scissors and paste.

George Hancock, who was laboratory assistant to Thane for twenty-nine years, said: "I always remember the professor as one who dominated all others, high and low, without bullying. He was a martinet in regard to rules and regulations. He was intolerant of smoking, and made me take the names of eminent members of the staff when he detected them smoking, while he was preparing for his lecture in the theatre. Students were orderly in his presence not from fear, but from a real desire to stand well in his sight. I was impressed by the frequency with which he was consulted by such surgeons as Beck, Godlee, Bilton Pollard, Johnston, Spencer, Blacker, and others. His memory for names and faces was unequalled, and I remember seeing him meet a former student who had been abroad for twenty-five years. He greeted him by name on sight. I have seen many such incidents. The professor was very direct in speech, and he once told a student that the specimen which he was handling roughly was of more use to medicine than the student."

Since his retirement in 1919 Sir George Thane was a frequent visitor to University College, and maintained his interest in the department which is now so well endowed. For several years he brought with him, on each visit, two or three of his treasured books and presented them to the library, thus taking a tender farewell of each book, rather than sending all at once. His knowledge of the history of anatomy remained as wide, as accurate, and as unequalled as ever, for he possessed an extremely active memory. His pleasure in the *Dictionary of National Biography* and in the *Oxford English Dictionary* was characteristic. The history of botany and the history of the Roman occupation interested him greatly, and he was a keen field naturalist.

He welcomed the good fortune which made possible, through the munificence of the Rockefeller Foundation, the erection of the new Institute of Anatomy, in which histology, neurology, and embryology returned to the fold of anatomy under the guidance of Professors Elliot Smith and J. P. Hill. Thane's frequent visits to the new laboratories, his interest in the Page May neurological collection, his appreciation of the developments in radiology and anthropology, his frequent inquiries concerning the extent of the liaison between the department and the hospital, showed to what an extent his manly and energetic zeal outlasted his years, as did his cordial and undisguised contempt of the fashionable quackeries. To have been the last of his demonstrators and curator of the anatomical museum, to have had his kindly interest and paternal affection in the last twelve years, has been an education in the art of being joyfully overburdened with duties.

H. A. H.

Sir George Thane was buried at Highgate Cemetery on January 17th, after a memorial service held at St. Pancras Church. At a meeting of the Faculty of Medicine, held in the anatomy theatre of University College, the Dean (Professor Drummond) read the following resolution, which was supported by Professor Elliot Smith, F.R.S., Sir John Rose Bradford, P.R.C.P., F.R.S., and Mr. Percy Flemming, F.R.C.S., who had both been closely associated with Sir George as senior demonstrators of anatomy.

"It is resolved that the Faculty of Medical Sciences places on record its sense of the great loss the College has suffered by the death of Sir George Thane, who for forty-two years was professor of anatomy in the College, and for ten years emeritus professor. In the fulfilment of the duties of his chair, as dean of the Faculty of Medical Sciences, and as a member of the College Committee for many years, he rendered conspicuous services to the Faculty and to the College. His wide and exact knowledge of anatomy found luminous expression in the ninth and tenth editions of *Quain's Text Book of Anatomy*, which his predecessors in the chair of anatomy in this College had created. At the time when it was first issued it was a new type of textbook of anatomy, more comprehensive and exact than anything that had preceded it. It was copied in Germany and in France, and soon became the recognized type of book adopted in medical schools throughout the world. In Thane's hands it attained a still higher standard of precision and lucidity, which made it the most reliable and comprehensive textbook of the subject which had ever been issued. Into it Sir George put the wide knowledge he had acquired by original investigation and an amazing familiarity with the literature of anatomy. His personal knowledge of anatomists, both in this country and abroad, and of their activities, social as well as academic, was as wonderful as his knowledge of the literature. Even more surprising was his intimate acquaintance with the life-history of every student who had worked under him. He maintained his interest by keeping himself informed of the subsequent careers of all his students. His memory of the personal details of the lives of thousands of medical men and women was truly astounding. By his death the College has lost a man, not only of wide knowledge and genial humanity, but one who was a link with those who laid so truly and so well the foundations of the Faculty of Medical Sciences, and who himself consolidated their efforts by his loyal and devoted work."

In supporting this resolution Professor Elliot Smith said: By the death of Sir George Thane, within four months of the eightieth anniversary of his birth, University College has lost a distinguished teacher of anatomy who was associated with the College for sixty-three years, and devoted practically the whole of his life to its service. When a student of medicine he came under the influence of George Viner Ellis, who was then professor of anatomy, and before he had completed his course of training was elected a demonstrator of anatomy before he was 20 years of age. He held this position for seven years, and in 1877 was appointed professor of anatomy in succession to Ellis.

After occupying the chair for forty-two years he was given the title of emeritus professor ten years ago on his resignation of the professorship. Ellis's conception of teaching anatomy was an insistence upon the exact observation of fact and a clear and restrained expression of what he exposed by dissection. It has been said of him that he regarded an interest in the subject as outside the scope of a teacher's aims. Without sacrificing any of the discipline of precise observation and lucid expression Thane made the study of human anatomy a humane occupation, and he threw into his teaching the whole force of his personality and became keenly interested in every individual student. He made a practice of keeping a record of the life-history of every student who came under his teaching, and he followed up this interest after the students had left the department of anatomy, so that he had imprinted upon his memory a full record of the life and achievements of every individual student. It was not merely their knowledge of anatomy or their academic achievements that interested him, but their social circumstances and everything that related to them, which appealed strongly to his deep feeling of humanity. Thane was a man who had a profound knowledge of anatomy, which he had acquired by persistent observation and the study of literature. He was not merely acquainted with the writings of his contemporaries, but he knew every prominent anatomist personally and intimately, and knew the circumstances of their social life and interests as well as their achievements. During the sixty years of his activity he devoted the best energies of his life to University College, and as he had a personal knowledge of the men who immediately preceded him his life may be said to have been a living link throughout the whole career of the College. But his work is distinctive of the type of anatomy which grew up in University College. When Thane became associated with Allen Thomson and Schafer as editors of the ninth edition of *Quain's Anatomy* they said of William Sharpey, whom they described as the distinguished anatomist and histologist, that he put his most valuable original observations into the texture of the book which they were revising. Sir George Thane also put into *Quain's Anatomy* the results of a lifetime of original observation and a knowledge of the literature of anatomy which in his day was probably unsurpassed.

[Our portrait of Sir George Thane is reproduced, by permission of the artist, from the painting by Professor William Rothenstein.]

ALBERT MORTON MARTIN, M.B., B.S.,

Consulting Surgeon, Royal Victoria Infirmary, Newcastle-upon-Tyne.

IT was only last September that Albert Martin, consulting surgeon to the Royal Victoria Infirmary, Newcastle-upon-Tyne, retired from the staff of the Infirmary on attaining the age limit of 60 years, after an uninterrupted service of nearly forty years. Though at that time it was known that his health had not been very satisfactory, none anticipated so sudden a curtailment of the many years of useful life which all hoped lay before him. Just after his retirement he was able to take part in the final examination in clinical surgery, and those of his colleagues who met him after his short absence from his hospital duties noticed a marked restoration in health, as shown by a return of the cheery optimism which was so characteristic of him. Unhappily it was otherwise ordained, and on the last day of 1929 a return of bronchitic trouble was followed by cardiac failure, which rapidly proved fatal.

Albert Morton Martin came of a South Shields family, but he was educated at the Royal Grammar School in Newcastle and the University of Durham College of Medicine in the city. After graduating M.B., B.S.Durham with honours in 1890, he acted for a short time as house-surgeon in the Ingham Infirmary in his native town. At the end of this appointment he returned to the Newcastle Infirmary as house-surgeon to the late Professor W. C. Arnison, and he served that institution in one capacity or another continuously and faithfully from that time almost to the day of his death. For twenty-nine years he had been an honorary surgeon in charge of wards, and for a short period he was also the surgeon in charge of the then existing orthopaedic department. He acquired an early interest in the surgery of bones, joints, and deformities, and throughout his professional life this branch of work especially appealed to him. It may be said that he very largely developed and perfected the surgery of the semilunar cartilages, not only in this district, but among surgeons the world over, and thousands of patients—miners and footballers for the most part—are grateful witnesses to his skill in this department, which he made peculiarly his own. The clinical features of the various forms of injury to the knee-joint were so familiar to him that his diagnosis was only rarely at fault. The simple transverse incision which he advocated gave an ample exposure in his hands, and he was so adept at this operation that a distinguished visitor, himself an orthopaedic surgeon of renown, characterized the proceeding as being almost as simple as shelling peas! The results were remarkable and were greatly appreciated by the public, and no miner in the counties of Northumberland and Durham ever hesitates to accept an operation as *the method* of treatment if "the cartilage" is at fault. This position is largely due to the work initiated and carried out so successfully by Mr. Martin. Many visitors to his clinic were surprised at the simplicity of his technique, and those of small experience and poor knowledge of surgical principles looked upon his theatre arrangements as perhaps old-fashioned. The reason why he persisted to the end of his days in a technique which was largely antiseptic was because it had given him such admirable results and had enabled him to open the knee-joint so freely in so many hundreds of cases almost without a fault. Change he felt was unnecessary, and not likely to bring any reward for the additional responsibility thrown on the surgeon.



As so often happens, his work in his own specialty overshadowed his great capacity as a general surgeon, for he was most skilful, and operations in his hands appeared to be conducted with surpassing ease. The confidence of those about him in his manipulative skill was illustrated by a story of one of his students who, years ago, suggested to Mr. Martin, then working in the out-patient department, that a mass of acute inflammatory glands in the groin might, perhaps, be successfully dealt with by the operation of excision. To this Mr. Martin replied that he would not let anyone dissect out his glands in the same circumstances. Like a flash came the answer from the student, "Perhaps not—but I would allow you to remove mine." His teaching was direct and common-sense, and he endeavoured to fit his students for their life's work, holding that the special branches were the more suited for post-graduate study. His classes in the out-patient department, in the old days, were extremely popular, and the writer can testify to their great practical value. The same traditions pervaded his bedside teaching, and served generations of students in good stead. As a hospital officer he was most regular in his attendance, and punctilious in the performance of his duties. Since 1914 he had acted as chairman of the honorary staff, and in that capacity he was a regular attendant at the meetings of the House Committee. Unhappily, he wrote seldom, and it is sad to think that his large experience bears so little record. During the war he did yeoman service at the 1st Northern General Hospital, with the rank of lieutenant-colonel, and after the armistice he served on the staff of the orthopaedic hospital as its senior surgeon, until it was moved to other quarters ten years later.

He was always fond of the country and the life of the open, and he looked forward to spending his retirement among his farmer friends on his estate at Bingfield, in the Hallington district of Northumberland. He will indeed be sadly missed, for he possessed qualities for friendship and

companionship that endeared him to us all. The funeral ... Desmond Old Cemetery was a tribute to his popularity, ... attended largely as it was by hosts of friends in very ... varied walks of life. His wife had predeceased him, but ... he survived by two sons, one a member of the medical ... profession, and two daughters, for whom great sympathy ... is felt.

G. GREY TURNER.

Medical News.

... WILKIE of Edinburgh will open a ... of gall-bladder infections before ... don, 11, Chandos Street, Cavendish ... next, January 27th, at 8.30 p.m.

PROFESSOR D. P. D. ... of ... al profession introduced by Fellows ... session on the etiolog... repeatedly welcomed.

... Medical Society of Lon... ot with ... tal Radium Annexe, at 66, Fitz-..., W., on Monday ... uscles, ... be opened on the afternoon of ... members of the medic... translat... by Viscount Lee of Fareham, ... Society will be cordi... anatom... dium Commission.

... Westminster Hospi... id hist... anged by the Clinical Medical ... Avenue, N.W.3, wil... action with the Yorkshire Council ... day, January 29th, ... " so ... er Campaign will be given at the ... n of the National R... tuesday, February 4th, at 8.45 p.m. ... econd lecture arr... the editi... n the treatment of mammary ... ommittee in conju... ure, su... t will be illustrated by lantern ... itish Empire Can... ember 14 ... ibition of microscopical ... y of Sheffield on T... the *Proceedi*...ents will be provided after ... enthal Cheatle o... recision, brevi...oners are cordially invited. ... by radiation. ... Thane, in his ... be given by Dr. J. Murdoch ... d there will be ... an exc... ision as the French anatomists, ... Tea and light refreshm... resolution, ... All medical ... titi... -glass window is to be placed in St. Luke's ... ecture of the May.

A STAINED ... of the late Sir G. Stewart Church, Reading, in memory ... Abram, physician to the Royal Berkshire Hospital, Reading.

THE Section of History of Medicine of the Royal Society of Medicine will hold a reception at the Wellcome Historical Museum, 54a, Wigmore Street, W.1, on Thursday, January 30th, at 8.30 p.m. Dr. A. P. Cawadias will give a short address entitled "From Epidaurus to Galen, the Principal Currents of Greek Medical Thought," and Mr. L. W. G. Malcolm will demonstrate some recent acquisitions to the museum. Fellows and their guests, including ladies, are cordially invited.

THE Fellowship of Medicine announces that Mr. P. Lockhart-Mummery will give a cinematograph demonstration on the perineal excision of rectal cancer on Tuesday, January 28th, at 4 p.m., at the Medical Society of London lecture hall, 11, Chandos Street, Cavendish Square. On January 30th, at 2 p.m., there will be a demonstration by Mr. St. J. Dudley Buxton, at the Royal Waterloo Hospital, and on the following afternoon, at 2.30, Dr. Bruce Williamson will give a demonstration at the Royal Northern Hospital on medical cases. No fee is charged for any of these demonstrations. At the North-East London Post-Graduate College (Prince of Wales's General Hospital), Tottenham, a two weeks' intensive course in medicine, in surgery, and the specialties will continue from January 27th to February 8th inclusive, with daily sessions from 10.30 a.m. to 5.30 p.m. Members of the Fellowship are invited to attend the formal lectures at 4.30 p.m. On Tuesdays and Saturdays at 11 a.m., from February 4th to March 1st, the Bethlem Royal Hospital will give a series of lecture-demonstrations of psychological medicine, and from February 10th to 21st the Chelsea Hospital for Women will hold a special course in gynaecology in the mornings and/or afternoons. On Tuesday and Thursday afternoons, from February 11th to March 6th, a series of eight clinical demonstrations will be conducted by Dr. Carmichael Low and Dr. Philip Manson-Bahr at the Hospital for Tropical Diseases. A course in dermatology will be held in the afternoons and evenings at St. John's Hospital, from February 17th to March 15th, comprising clinical instruction and bi-weekly lectures; practical classes in pathology can be arranged if desired. A course in diseases of children will be held at the Children's Clinic in conjunction with several other hospitals from February 24th to March 8th, occupying some mornings and some afternoons; there will also be an afternoon course at the Royal Eye Hospital from February 24th to March 8th, with daily demonstrations on the diagnosis and treatment of the eye, at 3 p.m. Copies of all syllabuses, specimen copies of the *Post-Graduate Medical Journal*, and information regarding the general course of work at the associated hospitals may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A COURSE in methods of examination and diagnosis will be held at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, W.C.1, on Mondays and Wednesdays from February 3rd to 19th. The course is free to clinical assistants and the fee to other students is £1 1s.

THE trustees of the Dickinson scholarships announce in our advertisement columns that applications for scholarships in medicine and pathology of the value of £300 and £75 per annum respectively must be sent in by February 15th. Candidates for the former must have taken out their full course of clinical instruction in the Manchester Royal Infirmary and the University of Manchester, and have earned distinction in so doing. For the scholarship in pathology candidates must be University graduates who received their full course of instruction in pathology, medicine, and surgery in the University of Manchester and the Manchester Royal Infirmary. Copies of the regulations can be obtained from Mr. Frank G. Hazell, secretary of the Dickinson trustees, Manchester Royal Infirmary.

THE President and Council of the Royal Society have appointed Dr. A. S. Parkes to the Foulerton Research Studentship, rendered vacant by the appointment of Dr. R. J. Ludford to a senior post on the staff of the Imperial Cancer Research Fund. Dr. Parkes, who at present holds a senior Beit Memorial Fellowship and is working at University College, will, it is understood, continue his researches on the physiology of reproduction, with special reference to the internal secretions of the ovary.

A SUMMER excursion, arranged by the *Bruxelles-Médical*, will start this year on July 12th, when the steamship *Cap Varella* will leave Bordeaux on a circular journey, which includes Oporto, Cadiz, Tangiers, Malta, Syracuse, Taormina, Palermo, Naples, and Marseilles, the last port being reached on July 28th. Optional land excursions will be arranged in each port. Arrangements are being made for two classes, the minimum price for medical practitioners in the first class being £27 5s., and in the second class £11 16s. Doctors may be accompanied by their families, and persons not belonging to the medical profession may take part in the tour if recommended by their family practitioner. Further details may be obtained from the Section des Voyages de *Bruxelles-Médical*, 29, Boulevard Adolphe Max, Brussels.

WITH the coming into force on April 1st of the Local Government Act, 1929, the percentage grants previously payable towards the cost of treatment of tuberculosis under the approved schemes of tuberculosis authorities will be discontinued, and revision is therefore necessary of the procedure at present in operation for the payment to tuberculosis authorities by the Ministry of Pensions of the cost of the residential treatment and other services relating to tuberculous ex-service men in England, so far as it is chargeable to that Ministry. The Minister of Health has therefore issued a memorandum (146/T), which will supersede 30/T (Revised). The new memorandum embodies the revised arrangements in this connexion which will come into force on April 1st, and particular attention is called to the paragraphs describing the new procedure to be adopted for the recovery of costs from the Ministry of Pensions.

THE Water Pollution Research Board of the Department of Scientific and Industrial Research has issued a series of abstracts of current literature relating to water supplies; the analysis and examination of water; sewage, trade waste waters; pollution of natural waters; and miscellaneous subjects. The booklet has been placed in the library of the British Medical Association, where it may be consulted. Copies are procurable from H.M. Stationery Office, price 1s. 3d. net.

THE International Labour Office has published eight further leaflets, Nos. 155 to 162, dealing with: divers; game keepers, hunters, trappers, and breeders; glue; hairdressers; heating; lace and lactic acid; lime; and pneumatic tools. The brochure, entitled *Occupation and Health*, containing these eight leaflets may be obtained from the director of the London office of this organization, 12, Victoria Street, S.W.1.

UNDER the Public Officers and Government Departments (Change of Designation) Ordinance, about to be introduced in the Gold Coast Legislative Council, the title of "Health Service" will be substituted for that of "Sanitary Service," with consequential alterations in the titles of officials of that Department.

TWO new chairs have been founded in the medical faculty of Vienna—namely, one for surgery of the teeth and jaws, and another for medical chemistry—with Professors Richter and von Fürth as their first occupants. Since the death of Professor Paltauf in 1924 the chair of experimental pathology has remained vacant.

THE following prizes have recently been awarded by the Académie de Médecine: Prix du Prince Albert I de Monaco (100,000 francs) to Professor Borrel of Strasbourg, Prix du Marquis d'Argenteuil (1,000 francs) to Dr. Jules Janet, for his work on the diagnosis and treatment of gonorrhœa, and the treatment of stricture.

A LECTURE on the history of the Manchester Fever Hospital, delivered by Dr. D. Sage Sutherland as a presidential address at the annual meeting of the Fever Nurses Association at Manchester, 1929, has been published in booklet form under the title *The Manchester "House of Recovery" and "Board of Health," 1796 to 1852*. The text is illustrated with photographs taken from paintings of John Ferriar, John Haygarth, and Thomas Percival, and appended is a list of the physicians to the Fever Hospital from 1796 to 1885.

A Glossary of Bacteriological Terms has been issued by the division of bacteriology in Peiping Union Medical College, China, giving the English, German, and Chinese equivalents of the words and phrases in most common use. This useful index contains a blank column in which the equivalents in other languages may be inserted, and space is provided for additional terms.

SOME recently published observations on the epidemiology of malaria in certain parts of India show that epidemics tend to occur at five-yearly intervals, and are dependent on, among other factors, an optimum temperature and relative humidity following an increased rainfall and lowered resistance among the population. It is interesting to note that all these points were demonstrated in Khartum Province during the epidemics of August, 1927, and April, 1928. Thus, according to Dr. J. C. N. Harris (Assistant Director of the Sudan Medical Service) in his report for 1928 on the health and sanitation of Khartum Province, five years had elapsed since the previous epidemic of 1923; the rainfall was the highest recorded since 1923; the temperature and humidity were higher during these months than they had been during the corresponding months of the previous year and approximated more to those recorded in 1922 and 1923; and the resistance of the population other than European had been lowered by four years of poor rains and corresponding high prices of staple foods. Moreover, the epidemic previous to that of 1923 occurred in 1918, also a five-year interval.

IN few countries of the world is medical aid more generously distributed by the State than in Ceylon. According to the administration report for 1928 of Dr. J. F. E. Bridger, the Director of Medical and Sanitary Services, there were in 1928 no fewer than 88 Government general hospitals in the outstations—including two which had been opened during the year—with provision for 6,689 beds. In addition to the general hospitals a number of special hospitals were maintained, among them a lying-in home, an eye hospital, a women's hospital, a children's hospital, a female venereal hospital, a police hospital, a tuberculosis hospital, and an infectious diseases hospital. There are 575 central and branch dispensaries and visiting stations provided and maintained by the Government in different parts of the island, and, in addition to these, 81 hospitals and 634 dispensaries were maintained during the year by the proprietors of estates. The total number of in-patients treated in the various Government hospitals was 224,850, with 14,066 deaths, giving a mortality rate of 6.26 per cent., as compared with 200,770, 12,158, and 6.05 respectively in the previous year. In the Government dispensaries and the out-patient departments of Government hospitals 3,482,691 patients, who paid 5,169,488 visits, received treatment, as against 2,753,403 patients and 4,205,220 visits the previous year. The infant mortality rate among the Cingalese is high, the figure for 1928 being 173 per 1,000 live births; among the Indian immigrant population the figure is 211; among the Europeans it is 12.

THE Mellon Institute of Industrial Research, University of Pittsburgh, has initiated an investigation upon vehicles and solvents for iodine, with the aim of evolving, if possible, a more satisfactory preparation than the alcoholic tincture now in use. Also engaging its attention is an inquiry into the value of iodine in the feeding of live-stock. The institute contemplates founding a research scholarship for the purpose of contributing to the solution of various problems relating to the use of iodine in internal medicine.

THE Medical Council of the Commissariat of Public Health at Moscow has recently formed a special committee for the study of goitre.

PROFESSOR ALFRED LUGER has been appointed honorary secretary for Austria of the Interstate Postgraduate Medical Association of North America, in succession to the late Professor Clemens Pirquet.

THE following appointments have recently been made in foreign faculties of medicine: Dr. Louis Caussade, professor of clinical paediatrics at Nancy; Dr. Eugen Kahn of Munich, professor of psychiatry at Yale; Dr. William Corcoran, professor of children's diseases at the Loyola University, Chicago; Dr. Alary, professor of surgical pathology; Dr. Bureau, professor of operative surgery at Clermont-Ferrand; and Dr. T. Maestre, professor of medical jurisprudence at Salamanca.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the *Financial Secretary and Business Manager.*

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963,* and *9964* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL, Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62350 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

EFFECT OF TROPICS ON MENORRHAGIA.

"F. E." would be glad to know promptly the usual effect of residence in the tropics on menorrhagia. The patient is a waitress, aged 24, healthy, but not robust. Can she be advised to live on the coast of North Borneo?

CHILD PSYCHOLOGY.

"H. P." asks for the names of a few practical books on infant and child psychology which, while up to date, are not too "Freudian."

*** A correspondent well versed in the literature of this subject suggests that a selection might be made from the following tentative list: *The Nervous Child*, by H. C. Cameron (Oxford Medical Publications); *Health and Psychology of the Child*, by Elizabeth Sloan Chesser (Heinemann); *The Child and his Problems*, by Alice Hutchison (Williams and Norgate); *The Psychology of the Free Child*, by C. M. Meredith (Constable); *Educate your Child*, by Herbert Mackay (Oxford University Press); *The Mental Growth of the Pre-School Child*, by Gesell (Macmillan); also three works by Piaget, *The Language and Thought of the Child, Judgment and Reasoning in the Child*, and *The Child's Conception of the World* (all three published by Kegan Paul).

TRAIN SICKNESS.

IN reply to the inquiry under the above heading (December 21st, 1929, p. 1184), "J. H. C. W." writes: I would suggest that "J. T. M." should give glucose a trial; I have used it with success. Further information is available in *The Pathology of Seasickness* and *The Treatment of Seasickness*, by Dr. G. H. Oriel (*Lancet*, 1927, vol. ii, pp. 811 and 1146).

THE ETERNAL COLD QUESTION.

"E. E." writes to suggest that from "H. H.'s" description of his symptoms (January 18th, p. 133) a diagnosis of latent nasal sinus infection can be made. The "colds" are manifestly not acquired from external infection, since they have a regular association with wet weather or damp feet, etc. Probably "H. H." has a constant mild infection which in good weather and when his general health is good produces no symptoms or not sufficient to attract attention; his antibodies are adequate. With the onset of darker days it is probable that antibody production is impaired, increased humidity of atmosphere renders the task of the mucosa more difficult, and on the occurrence of any (even slight) factor lowering the resistance generally, the local infection ceases to be latent and becomes manifest—a "cold" develops. In such a condition drainage of the affected sinus is of more importance than vaccines, since the patient has probably been vaccinated by his own secretions for many years. Since local applications and general hygienic measures have proved unavailing, drainage of the sinus is probably the only resort.

DR. A. S. MCNEIL (Orpington) writes: I recommend "H. H.," who would like advice for his "colds," to read the article which appeared in the form of a letter in the *British Medical Journal* of November 26th, 1926 (p. 856), entitled "Prevention of Coryza," and to carry out the simple directions therein given by me for both cure and prevention of coryza.

TREATMENT OF PRURITUS VULVAE.

DR. F. J. N. CARNEY (Alfreton) writes: I have used with success hip baths of sulphaqua. Following the bath I paint the parts with tar in spirit, 2 drachms to 1 ounce. As the spirit evaporates it leaves a thin coat of varnish, which has a constricting and protective action. This is, of course, only a palliative method, and I would suggest that "R. S." should carefully examine for any hepatic trouble which might reflexly give rise to the condition. Furthermore, I have seen two cases of Graves's disease in which there was an intense pruritus prior to the appearance of the cardinal signs. However, this case may be one of "mental pruritus," such as Crocker describes. In these cases there is a predominance of vagotonic element, and they are said to respond sometimes to small doses of atropine. Finally, if everything fails, "R. S." might cauterize the point where the itching commences.

FACIAL NEURALGIA.

DR. B. R. JOHNSTON (Grasmere, Westmorland) writes in reply to "R. B. M." (January 11th, p. 96): In a severe case of trigeminal neuralgia of several years' duration, great benefit has resulted from the inhalation of pure trichlorethylene; 20 drops of this poured on a small piece of lint should be inhaled through the nose three times a day. It should be done with the patient lying down, for fear of faintness. After a week's use my patient got complete relief.

MR. T. Y. SIMPSON, M.S., F.R.C.S.Ed., writes in reply to the inquiry of "R. B. M." (January 11th, p. 96): The case appears to be one of trigeminal neuralgia, and, after excluding syphilis by a Wassermann test, I would suggest the use of the following mixtures and paint, care being taken to cover or close the eyes while applying the latter. The first mixture is as follows: Butyl chloral hydrate 2 drachms, liquor arsenicalis 1 drachm, tincture of gelsemium and liquor morphinae equal parts to 3 drachms, mucilage half an ounce, aqua chloroformi to 3 ounces. For the second mixture 2 drachms of antipyrine is dissolved in 3 ounces of aqua chloroformi. Half an ounce of the first mixture is taken every three or four hours, mixed with half an ounce of the second one, if the patient is in pain. The dose of morphine and gelsemium should be varied according to the patient's physical condition. The paint consists of camphor 1 drachm, menthol 2 drachms, and liniment of aconite to 1 ounce; it may be applied frequently. The attention of "R. B. M." may also be called to a form of treatment used with considerable success in Amsterdam, and referred to in the *Epitome* (1929, vol. i, para. 69); it consists of the inhalation of trichlorethylene. I should be interested to hear the result of treatment. If what has been suggested fails, the injection of alcohol should be tried; in view of the patient's age I omit mention of surgical treatment.

"F. H. H." writes in reply to "R. B. M." (January 11th, p. 96): For the treatment of facial neuralgia diathermic massage, as first described by Turrell, is often successful, the patient being on the auto-condensation couch and connected up in the ordinary way, and a current of 500 milliamperes flowing through his circuit. The operator places his finger or fingers over the painful area, and in order to avoid sparking at the point of contact between the fingers and the face, the patient's circuit may be opened while the fingers are applied and closed when they are in position, and this manœuvre repeated when the treatment is finished or interrupted. Another method is by the constant current, and success consists in the administration of an intensity as high as the patient can readily tolerate, often 40 to 90 milliamperes for half an hour. Two practical points in the technique should be noted. The side of the face should be covered with the active electrode, but a piece of jaconet should be placed over the angle of the jaw to avoid accident; and the second point is that the size of the indifferent electrode is double that of the pad placed over the side of the face.

INCOME TAX.

Cessation of Partnership.

"X. Y. Z." is in partnership with B, taking a one-third share of the earnings of the practice. The accounts have been made up to December 31st for several years, and as from December 31st, 1929, A has retired and B has taken over the whole practice. What is the legal position with regard to the income tax chargeable for 1929-30?

*** If the usual course is followed the aggregate gross assessment will remain the same, but B will be chargeable to tax in respect of 2/3 of 3/4 *plus* 1/4—that is, 3/4, and A in respect of 1/3 of 3/4—that is 1/4 of that assessment, being the amount of the profits of the practice for the year ended December 31st, 1928. For 1930-31 B will be chargeable on the aggregate net profits of the practice for the year 1929. It is, however, open to A and B jointly to make application under Section 32 of the Finance Act, 1926, to have the assessment for 1929-30 based on the actual amount of the profits of that year, but if that is done the liabilities for 1928-29 and 1930-31 will also have to be based on the actual year's profit. If A and B should decide to make such an application, it must be lodged within three months from the date of the change in the partnership. As A is taking his car with him on retirement, its renewal will not be an expense of the practice, and no charge under that head can be made against the profits of the practice. It is unfortunate that "depreciation" was not claimed, but the inspector of taxes may perhaps concede that allowance for 1929-30 when adjusting the assessment. We understand that the assessments on A and B have been made separately, but have ignored that fact in the above reply, as, in our opinion, the liability should be dealt with as assessable on the firm as such.

Assessment of Partners.

"BICUSPID" writes: A and B have been in partnership for two years and have made separate returns for assessment, but the inspector of taxes insists on assessing the firm in one sum. Is this correct?

*** Yes. As the law stands the profits of a partnership must be assessed in one sum, but the amount of tax so assessed must not exceed the aggregate which would be chargeable if the partners were assessed separately. The greater convenience of the separate assessment of partners was urged on the Royal Commission on the Income Tax some years ago, but no change in the law has yet been made. In the meantime, however, inspectors of taxes will, on request, supply an allocation of the firm's assessment, showing how it should be divided between the partners, and that statement should be obtained and checked with the individual returns.

LETTERS, NOTES, ETC.

DAMP HOUSES.

DR. W. J. BURNS SELKIRK (Erdington, Birmingham) writes: Might not medical case-taking include the query—Is your house damp? Even so, a negative answer may be worse than ignorance, being untrue. For the person may not know the house is damp, or, though suspecting it, may be very unwilling to admit it, because of what this may entail in repairing costs or change of house. For certainty a personal inspection is necessary, and will sometimes reverse the negative. A doctor waiting at the door for admission may with interest look for the gratings which indicate the sub-ground floor ventilation. These are apt to be covered up by the garden soil, preventing the under floor air current, and thereby allowing damp to affect the wooden floors and the lower walls. But in Birmingham there is a matter vastly more important. Few householders here can tell where their storm water from the roof goes. I understand there is a by-law against running it into the drains, so it is conducted to a sump-hole some yards from the house. This hole is filled up with broken bricks, etc., the top being soil and grass. After some years this sump-hole gets blocked by decaying leaves, mud, sand, etc., or the pipe to it may be broken. In either case the rain water is then dammed back towards the house and a damp house results—for example, I found recently that a patient with chronic arthritis was living in a house which was damp because two of these underground pipes were completely broken, so that the storm water entered the ground about four feet from the house and worked back to the house.

THE "LEPROSY REVIEW."

THE first number of the *Leprosy Review*, [illegible] of the British Empire Leprosy Relief [illegible] published; it replaces a previous [illegible] which won increasing popularity. The new publication is not intended to be solely a technical journal, and, in addition to the more scientific articles, it includes interesting and practical details, specially collected for missionary and other workers who have made no attempt to specialize exclusively in leprosy. The January issue opens with a short practical note by Dr. R. G. Cochrane on the principles of prognosis in leprosy; Dr. Park Howell discusses ocular leprosy; and Lieut.-Colonel Henry Kirkpatrick, I.M.S.(ret.), deals with the treatment of ocular complications. The abstract of the Cameron Lecture by Sir Leonard Rogers, which appeared in the *British Medical Journal* of November 23rd, 1929, is reprinted, and an article on industrial therapy in leprosy, by Dr. R. M. Wilson, should be of considerable interest to those working in leper colonies, in view of the various suggestions it contains. Leprosy in Korea is dealt with by Dr. Henry Fowler, and a note on the details of the procedure of the Kahn test will assist pathologists. Professor W. H. Hoffmann comments on chaulmoogra oil in the treatment of early leprosy, and a summary of a lecture by Dr. H. P. Lie records a research into the pathological changes in the central nervous system in leprosy. In its new form this publication of the British Empire Leprosy Relief Association will, doubtless, command the popularity of its predecessor, and may be commended to all who are interested in one of the most hopeful fields of modern therapeutics. The *Review* may be obtained from the offices of the Association, 29, Dorset Square, N.W.1, price 2s.

A LONG BILL.

INSURANCE PRACTITIONER" writes: A patient who had been treated for diabetes for nearly nine years was lately transferred from my panel list; his drug bill for the past 4¾ years amounted to £218 4s. 4d. I imagine that this record would be hard to match.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 42, 43, 44, 45, 48, 49, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *31*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

75. The Infectiousness of Leprosy.

E. MUIR (*Indian Med. Gazette*, November, 1929, p. 620) discusses the infectiousness of leprosy and the best means to be taken to prevent its spread. He considers that the criterion of whether to isolate a patient should be the bacteriological examination for Hansen's bacillus, rather than clinical considerations; thus patients bacteriologically negative but clinically positive might be allowed to continue their work under regular observation and treatment. Patients in whom only a few acid-fast bacilli are with difficulty found, while the nose is bacteriologically negative, will in many cases become bacteriologically negative with six months' treatment; they should, therefore, be granted leave under periodical inspection, while those whose nasal mucosa is bacteriologically positive may require one or two years' leave before they cease to be infectious. Muir remarks that the general acceptance of such a classification would have the effect of making employers more likely to insist upon medical examination of the employees; it would render employees more inclined to present themselves for diagnosis and treatment, and less likely to try to hide their lesions through fear of losing employment; and it would act as an incentive to speeding up improvement. The present ostracism of all cases of leprosy without any discrimination as to the degree of infectiousness tends, he finds, to foster concealment and so produces the most dangerous carriers. The danger from a patient with a leprous skin lesion in which no Hansen's bacilli are present is negligible; but although there is practically no danger where only a few bacilli can be found after much search, it is best for such a patient to leave work until bacteriologically negative.

76. Ocular Symptoms of Vitamin A Deficiency.

IT is known that the eye may be seriously affected by the absence of certain factors in the food; these more or less serious eye troubles are not due to the absence of lipoids but to a lack of vitamins, particularly of the fat-soluble vitamin A. A. PILLAT (*National Med. Journ. of China*, October, 1929, p. 614) enumerates the ocular symptoms of vitamin A deficiency, which he finds are best studied in adults. The first one—night-blindness, or inability to see in the dark, especially after sunset—is unaccompanied by positive eye-ground findings, and is therefore called essential night-blindness or hemeralopia. The second symptom, xerosis epithelialis conjunctivae, or dryness of the ocular conjunctiva, appears in four clinical forms: Bitot's spots; irregular xerosis of large parts of the conjunctiva; loss of lustre; and wrinkling of this membrane. Xerosis epithelialis corneae, the next symptom in diet deficiency, is often associated with types of the previous xerosis, and rarely occurs alone. Two forms may be distinguished clinically, pre-xerosis and real white xerosis of the cornea. The three main symptoms of the former are a slight loss of lustre of the cornea, reduced sensibility, and the finding of *B. xerosis* in the degenerated epithelial cells. Real corneal xerosis presents three pictures: white crescents within the upper or lower circumference of the cornea; irregular whitish plaques in connexion with the limbus; and isolated islands in the centre of the cornea, which are not connected with the limbus. Keratomalacia is the last stage of vitamin A deficiency in the adult eye. Other symptoms frequently encountered are pigmentation of the conjunctiva, meibomitis, blepharitis and hordeolum, decrease of the lacrymal fluid, oedema and puffiness of the lids, and comedones near the eyes. All these symptoms disappear when proper nourishment is given or treatment with cod-liver oil is undertaken.

77. Subcutaneous Emphysema in Asthma.

IN view of the rare occurrence of interstitial emphysema beneath the fascia in asthma, only three cases having been reported—two in the *British Medical Journal* (1902, vol. ii, p. 1899, and 1905, vol. i, p. 173)—H. E. MACDERMOT (*Canadian Med. Assoc. Journ.*, December, 1929, p. 708) reports the case of a young man, aged 22, who for about six years had suffered from asthma due to sensitization to a ragweed. During a paroxysm of dyspnoea pain was felt in the upper part of the chest, and the neck began to swell; well-marked subcutaneous emphysema was found in the tissues of the neck from the angle of the jaw to just below the clavicles. The physical signs were only those typical of asthma, and an *x*-ray examination showed no pathological appearances in the lungs. The asthma yielded to palliative treatment, and the emphysema disappeared in five or six days. MacDermot remarks that of the three previously recorded cases, one occurred in a child aged 8, the other patients being 17 and 25 respectively. In each instance the emphysema only occurred on one occasion, and no special cause apart from the severe asthma could be traced.

78. Acute Suprarenal Insufficiency in Influenza.

PLAZY and MARÇON (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, November 4th, 1929, p. 1234) record the case of a sailor, aged 22, who in convalescence from a mild attack of influenza was suddenly seized with a feeling of extreme lassitude and lumbar pain followed a few hours later by bilious vomiting and diarrhoea. Improvement was at first obtained by intravenous injections of adrenaline, but the symptoms soon recurred in a more violent form and death ensued. The necropsy showed no change in the heart or lungs, but the liver presented typical syphilitic changes, a hypoplasia of the suprarenals with a very marked fibrous reaction, diminution in size of the cortex, and the complete absence in many places of the spongiocytic appearance of the zona fasciculata. It is probable that syphilis furthered the action of the influenzal virus in this case.

79. Nervous Complications of Varicella.

F. FASELLA (*Il Policlinico*, Sez. Med., November 1st, 1929, p. 566), who records a personal case, has collected the following examples of nervous complications of varicella from the literature: five cases of serous meningitis, two of meningo-encephalitis, seven of encephalitis with symptoms of cerebellar ataxia, four with symptoms of acute cerebral tremor, two without special localization, two of chorea, one of disseminated sclerosis, four of encephalomyelitis, four of myelitis, one of neuritis, two of polyneuritis, one of neuromyositis, and one of ophthalmoplegia externa. Fasella's own patient was a boy, aged 6, with a negative personal and family history, who, seven days after the onset of a moderate eruption of varicella, when the temperature had subsided, had a recurrence of fever and very severe symmetrical pain in the lower limbs. On examination there was complete paralysis of the lower limbs, with disappearance of the knee and ankle jerks, and acute tenderness in the sciatic and anterior crural nerve trunks. These symptoms subsided in two days, and then the upper limbs became similarly attacked. Very rapid improvement, however, took place, and the paralysis disappeared in a week without leaving any trace. Fasella attributed the condition to the action of the virus of varicella.

Surgery.

80. Chronic Duodenal Stasis.

ALTHOUGH chronic dilatation of the duodenum has long been recognized, it is only within recent years that actual clinical significance has been attached to this affection. J. FRIEDENWALD, T. H. MORRISON, and M. FELDMAN (*Amer. Journ. Med. Sci.*, December, 1929, p. 796) record 24 cases of chronic duodenal stasis, an analysis of which leads them to the following conclusions. The condition is made possible both by anatomical and embryological factors, and by conditions favouring adhesions or pressure on the duodenum, such as spinal deformities, abdominal growths, or traction on the mesentery due to visceroptosis. In some cases no demonstrable lesion is present; in the more chronic forms the pylorus is patent and the first three portions of the duodenum are permanently dilated. Duodenal stenosis may occur at any age, and is twice as frequent in females as in males. The symptoms are not always characteristic, especially in the milder forms. Periodic attacks of nausea and vomiting occur, and constipation with intermittent diarrhoea is often present. Loss of weight and strength is not unusual, and neurasthenic manifestations are common. Change in posture may afford relief of the symptoms. During the interval between attacks the patient ordinarily enjoys good health. As the disease becomes more chronic the dilatation extends into the stomach, when nausea and vomiting become persistent. Headaches and migraine are not infrequent, and in the severer types a high degree of toxaemia may develop. Associated conditions may occur, such as peptic ulcer, gastric dilatation, cholecystitis, and pancreatitis. In the diagnosis the presence of visceroptosis is important, the only conclusive evidence of which can be

obtained by x-ray examination. In many cases, especially in those due to visceroptosis, medical treatment is quite satisfactory. In severe types, accompanied by excessive vomiting and dehydration with a threatened alkalosis, the intravenous administration of sodium chloride solution with glucose is indicated. When the symptoms are severe, or when medical treatment no longer gives relief, surgical intervention is indicated, the most satisfactory procedure being duodeno-jejunostomy.

81. Phrenicectomy in Tuberculosis.

E. S. WELLES (*Arch. of Surg.*, December, 1929, p. 1169) reports a series of 271 cases of section or crushing of the phrenic nerve on one side as a means of supplying rest to the lung in pulmonary tuberculosis. The operation is performed under local anaesthesia through an incision about one inch long which is placed accurately in one of the transverse folds of skin about an inch above the clavicle; the centre of the incision is situated over the anterior scalene muscle, which lies beneath the outer border of the sterno-mastoid. The author recommends this incision as giving a much less conspicuous scar than the vertical one, and a more satisfactory approach to the nerve than the lower incision often used. If a temporary result is desired the nerve is crushed with haemostatic forceps for about a quarter of an inch as it crosses the scalene muscle, and if the accessory branch can be found this also is crushed. Paralysis occurs at once, but function returns in five to six months. To secure a permanent result the nerve is divided, several inches being removed. Welles reports that beneficial results followed in approximately two-thirds of the cases. Less than 2 per cent. were actually made worse by it, so he considers that assurance can be given that no harm will be done by the operation, even if it fails to prove beneficial. A few patients after the operation suffered from dyspnoea, which lasted for a short time only; occasionally digestive disturbance results, but this is transient.

82. The Modern Treatment of Erysipelas.

M. ROSENBLUM and R. KAZNELSON (*Wien. klin. Woch.*, November 28th, 1929, p. 1534) record their observations on 83 cases of erysipelas, 26 of which were treated by intramuscular injection of the patient's own blood, 28 by injection of milk, 22 by symptomatic measures only, and 7 by the Dick scarlet fever antitoxin. They conclude that the intramuscular injection of milk and autohaemotherapy shortens the febrile period of erysipelas, mitigates the toxic symptoms, and reduces the stay of the patient in hospital; that treatment with the Dick antitoxin yields the same results, but is sometimes accompanied by unpleasant symptoms of anaphylaxis; and that the best results from these methods are obtained when they are applied as early as possible, and in any case not later than the fourth day of disease, but treatment on these lines seemed to have no effect on the frequency of relapses or the frequency and severity of complications. The authors add that owing to the generally low mortality from erysipelas nothing definite can be said as to the effect of these methods on the death rate; for this purpose a large amount of statistical evidence is required. In their opinion no decision can be reached at present as regards the specificity of these lines of treatment.

83. Umbilical Ecchymosis.

E. FORGUE (*Paris Méd.*, December 21st, 1929, p. 541) draws attention to the fact that the existence of deep haemorrhagic areas is often revealed by superficial haemorrhagic infiltrations and symptomatic ecchymosis. Thus, an ocular conjunctival ecchymosis is seen in fractures of the base of the brain, and lumbo-dorsal ecchymosis in haemothorax; it is therefore logical to expect an external ecchymosis in cases of intraperitoneal haemorrhage. The author describes one such extravasation—namely, umbilical ecchymosis. This sign was first noted twenty years ago by Hofstätter in a case of ruptured tubal pregnancy, and was later reported by Cullen and Hellendall in similar instances. Umbilical ecchymosis may be present not only in haemorrhages due to rupture or abortion of tubal [illegible] may also be an early diagnostic sign of [illegible] into the peritoneum. A large effusion is not necessary for its appearance, and it may also be noted in small ones. It is not a constant or primarily important symptom, but is of great complementary value. According to American authors, the migration of the colouring elements of the peritoneal blood to the umbilicus is effected by the very rich anastomoses between the intra- and extra-peritoneal lymphatic systems. Forgue considers that this sign, though infrequent and sometimes not very evident, is worthy of a place in the often obscure symptomatology of pelvic and abdominal haemorrhages, and should always be looked for.

Therapeutics.

84. Treatment of Post-operative Collapse with Ephedrine.

POST-OPERATIVE collapse is apparently more frequently due to failure of the peripheral vascular system than to weakness of the heart. Though the effect of ephedrine in raising blood pressure is slower than that of adrenaline, to which it is chemically similar, it is much more prolonged. This drug can also be administered with safety in a much wider range of doses. Applying these observations to the treatment of post-operative collapse, E. MELZNER (*Münch. med. Woch.*, November 15th, 1929, p. 1909) found that the most useful dose was 0.1 gram of ephedrine to 1 litre of saline solution, which was allowed to run into a vein at the rate of a quarter of a litre per hour until the blood pressure remained steady even when the drug was discontinued. In one patient the infusion was continued without intermission for three days, during which time he received 1.45 grams of ephedrine without any undesirable secondary effects. As the interval between beginning the intravenous infusion and the rise in blood pressure is fifteen to thirty minutes, it is recommended that the saline ephedrine infusion should be preceded by an intravenous injection of 0.05 gram of ephedrine, which takes effect in one or two minutes. Melzner reports a series of forty-five post-operative cases to which ephedrine was administered in saline intravenously as described. In the majority the prognosis before operation was poor because of the nature of the illness—carcinomatous cachexia, peritonitis, sepsis, and advanced pulmonary tuberculosis. In one group of cases the injection was started by way of prophylaxis as soon as pulse irregularity and other symptoms indicated incipient weakness of the circulation; in none of these did collapse occur. The second group consisted of eighteen cases of severe post-operative collapse, and three of these were saved; in thirteen the pre-operative condition was practically hopeless. While recognizing the difficulty of estimating the value of any given restorative in severe post-operative collapse, Melzner points out that the value of adrenaline as an emergency treatment in acute hypopiesis, such as may follow lumbar anaesthesia, has frequently been demonstrated, and that in his opinion the similar but more gradual and more prolonged action of ephedrine has considerable advantages; by administering it in saline solution the effect of both seems to be enhanced, while ephedrine is in addition more easily sterilized than adrenaline.

85. Serum Treatment of Diphtheria.

M. GOROSTIDI (*Thèse de Paris*, 1929, No. 252) states that the case mortality of diphtheria in Paris has risen since 1925, although it is lower than when diphtheria antitoxin was first introduced in 1894. In the period 1901–3, when the first rise in the death rate was observed after the fall following the introduction of antitoxin, the diphtheria mortality, which had previously been below 10 per cent., exceeded 15 per cent., and reached 17.9 per cent. in 1902 and 15.7 per cent. in 1911. An even higher mortality occurred at the Hôpital des Enfants Malades, Paris, in 1929, where out of 220 patients admitted 44 died—a mortality of 30 per cent. The high figure is due partly to greater virulence of *C. diphtheriae*, partly to greater frequency of associated infections, especially with the pneumococcus, and partly to the high mortality in larval forms of diphtheria and in simple carriers. While in ordinary attacks injections of antitoxin for three to five days are sufficient, in malignant forms the author recommends that the injection should be given for twelve to fifteen days or even more, and that serum treatment should be resumed on the appearance of any toxic complication.

86. Prevention of Post-operative Pulmonary Affections.

H. BREMER (*Zentralbl. f. Chir.*, November 23rd, 1929, p. 2955) reports favourable results obtained by the use of calcium gluconate as a prophylactic against post-operative affections of the respiratory organs in 150 cases. The patients during narcosis showed signs of marked exudation in the respiratory passages, and the possibility of post-operative lung complications was feared. After the operation the patient was given 10 c.cm. of a 10 per cent. solution of calcium gluconate by intramuscular injection either into the glutei or into muscles of the thigh. Lobar pneumonia did not occur in any of the 150 cases. In two instances broncho-pneumonia developed in the left lower lobe, but with further injections of calcium gluconate this was resolved in three to four days. Slight bronchitis appeared in many patients, but lasted only twenty-four to forty-eight hours. The author notes that whereas by intravenous injection of calcium the blood calcium content is raised only for a short period, by the intramuscular method the blood calcium is still markedly raised after twelve hours, the action of the drug is prolonged, enabling it to inhibit the onset of pneumonia with more certainty.

Radiology.

87. Treatment of Angiomas with Radium.

J. NIELSEN (*Ugeskrift for Laeger*, September 19th, 1929, p. 795) reviews the results achieved with radium in the treatment of angiomas at the Radium Station in Copenhagen in the period May, 1913, to November, 1926. There were 415 cases of angioma treated during this period and re-examined from one to fifteen years after the completion of treatment. The angiomas were cavernous in 354 cases, capillary in 55, and venous in 6. As many as 261 patients were less than a year old, and the majority were young children. Of the cavernous angiomas, 202 were cutaneous, while the remaining 152 were for the most part subcutaneous. The face was involved in 279 cases. A classification of the results achieved in the cases of cavernous angioma showed that in 90 per cent. a complete cure was effected: in 7 per cent. the cure was vitiated by secondary effects from the rays; and in 3 per cent. the disease proved refractory to this treatment. In this third class the failures were mostly due to some other treatment having been tried first, or to the treatment being too timid, and to the fibrous or cystic structure of the tumour. In no other form of angioma was radium treatment more successful than in the large rapidly growing tumours, which in most cases presented locally all the properties of a genuine malignant growth. With regard to the permanency of the cures effected in cases of cavernous angioma, *subsequent growth of the tumour* was practically never observed after the completion of the treatment. The results were less satisfactory in the 55 cases of capillary angioma, in only 4 of which was a cure effected. In 20 improvement could be claimed. The remaining 31 cases proved refractory to the treatment, or various radium lesions developed. Comparing radium with other forms of treatment of angiomas as a whole, the author claims that it is safe provided it is carried out by a specialist; though it is lengthy, it is well worth while. The *x* rays are said to be much less certain in their action and more difficult to apply. Finsen light has only a superficial effect, and provokes scars (naevi plani). Apart from comparatively small superficial and stationary angiomas, which react promptly and with good cosmetic effects to freezing, hot air, or electrolysis, Nielsen concludes that radium should be regarded as the best treatment for angiomas. In the cases in which it is feasible, excision is superior in the matter of speed, but not in so far as the cosmetic results are concerned. The author recommends the institution of radium treatment as early as possible after birth, and he points out that the safety with which this treatment can be carried out in earliest infancy is one of the features which make it superior to certain other procedures.

88. Radiological Diagnosis of Spinal Cord Tumours.

F. NAVILLE, F. ODY, and A. REVERDIN (*Rev. Méd. de la Suisse Romande*, November 25th, 1929, p. 793) state that, in diagnosing tumours compressing the spinal cord by means of lipiodol injections, the completely arrested descent of the substance is nearly always due to a serious obstacle, and that by multiple and successive radiographs the form, dimension (by high and low injections), and exact situation of the obstacle can often be determined. However, in exceptional cases the lipiodol does not descend in this normal way, and this may confuse the diagnosis. To illustrate this point a short review of the literature is given, and two cases are reported. In one patient, with a small subduramatral tumour in the dorsal region, the lipiodol descended almost the whole length of the canal, leaving only a few drops near the neoplasm. In the other, with an extraduramatral growth, also in the dorsal region, the lipiodol descended without leaving any trace near the tumour, and only by subsequently employing the Trendelenburg position was the presence and form of the obstruction shown in the radiographs. In almost all cases of this nature the transit of the lipiodol should be controlled by successive radiographs taken in reversed positions, and this procedure should be followed in any case in which compression of the cord is suspected, despite a normal and complete descent of the lipiodol.

89. Radiotherapy in Genito-urinary Conditions.

G. SCHWARZ (*Wien. klin. Woch.*, October 10th, 1929, p. 1329) reviews the application of *x* rays and radium to the treatment of genito-urinary conditions, and suggests that irradiation of the testicles might be employed for sterilization of the mentally unfit. In renal tuberculosis *x*-ray treatment of the kidney is recommended where one kidney has already been lost, where both kidneys are affected, or if the patient refuses operation. Stepp recommended that in all cases of commencing renal tuberculosis *x*-ray therapy should be tried, and the present author believes that increasing use is being made of this in tuberculosis of the epididymis and bladder. Six exposures are given at intervals of ten days, but none must exceed 30 per cent. of the erythema dose. After an interval of two months' rest the series may be repeated. With the use of modern technique *x*-ray treatment of prostatic hypertrophy is again coming into fashion and will probably prove very useful; soft hypertrophy is particularly suitable for this procedure. The irradiation is given from three points—the rectum, the symphysis pubis, and the perineum. *Each field should receive 70 per cent. of the erythema dose in the course of a week*: after an interval of one month the treatment is repeated. Exposure to *x* rays has proved to be very useful in prostatic haemorrhage, and in many cases has caused partial disappearance of the hypertrophy. Bladder tumours are very amenable to treatment with radium "points" introduced through a cystoscope, but carcinoma of the bladder is quite refractory to *x* rays and radium, although the cervix uteri reacts so well to them. In carcinoma of the penis the trial of large doses of radium and the employment of the new *x*-ray methods have given such striking results as to make them the methods of choice. Of the testicular tumours, seminomas are very sensitive, but teratomas and melanotic sarcomas are quite insensitive to *x* rays. Most kidney tumours are insensitive, but hypernephromata react to this treatment; for tumours of the renal capsule, generally lipomyxosarcomas, it is the method of choice. The successful treatment of nephritic oliguria and anuria with *x* rays is probably due to their action on the blood vessels.

90. X-ray Treatment of Perforated Ulcer of Foot.

L. TURANO (*Rif. Med.*, September 14th, 1929, p. 1242) reports four cases of perforated ulcer of the foot (plantar), of which two were completely cured by the application of *x* rays to the thoracic nerve segment. In another case with sores in each foot, one healed while the other needed surgical treatment; the fourth case was much benefited, but was not cured. The first two patients had syphilis, but specific therapy was of no avail; the third had a history of alcoholism. Turano discussed the mechanism by which complete cure is obtained, and records cases of psoriasis, eczema, and cutaneous epithelioma cured in this way. Busi suggested that the irradiated cutaneous tissue might release certain substances which could operate on distant lesions. A more reasonable possibility is that put forward by Magnus and O. Müller—namely, that even if the ulcer is secondarily of vasomotor origin, it is primarily always due to altered function of the sympathetic nervous system. Trophic functions are undoubtedly controlled by the spinal ganglia (Arloing and Tripier); therefore it is reasonable to assume that *x* rays act on the ganglia and so promote healing, whether of perforating ulcers or skin diseases. Turano gives some hints on the technique recommended, and points out that in order to make the posterior nerve roots absorb the necessary dose, the tube must be adjusted obliquely at an angle of 40 degrees, so as to avoid absorption by the body and transverse processes of the vertebrae. Irradiation is applied on both sides from the sixth thoracic to the third lumbar vertebra. The treatment is given on three occasions at intervals of twenty days. The author adds that it is very rare for cure not to follow the third session; failure in such cases must be attributable to certain definite factors that prevent healing.

Obstetrics and Gynaecology.

91. Rupture of the Abdominal Incision after Caesarean Section.

D. A. HORNER (*Journ. Amer. Med. Assoc.*, October 12th, 1929, p. 1126) gives notes of three cases of rupture of the abdominal wound after Caesarean section: all the layers from within outwards were involved, so that the abdomen was completely opened and its contents exposed. Each of the three patients was over the age of 33, and was a poor surgical risk, continued coughing being a common factor. The author states that the rupture appears unexpectedly during the second week with the characteristic discharge of peritoneal fluid, which may even be discovered accidentally during the changing of dressings. There was no pain previously in any of the three cases, and none of them showed any evidence of shock. The recovery in all cases appeared to be due to the promptness with which the condition was recognized, and to the fact that each was treated according to its special indication rather than by the adoption of any routine standard. Horner suggests that the risk of such an occurrence may be lessened by incising the different layers at various distances from the mid-line so that no structure is opened in the plane of the one immediately above it, or by overlapping the edges on closure so as to obtain a similar effect. The peritoneum should be closed with sutures close together, care being taken not to include intestine or omentum; the author prefers interrupted sutures for the subsequent layers, with tension

sutures to safeguard the closed incision against strains. When gaping has occurred closure layer by layer should be attempted, but when this is impracticable lateral rubber tubes for broad zones of traction may be used after the replacement of organs; in case of irreducible protrusion of viscera a rubber shield may be sewn to the edges of the skin over the entire mass, with perforations to allow escape of discharges. Patients should not be allowed up so early as in other abdominal operations, nor is it advisable to remove the stitches too soon; all Caesarean incisions should be watched carefully during convalescence.

92. Hydrorrhoea of Pregnancy.

E. KEHRER (*Dent. med. Woch.*, November 1st, 1929, p. 1834) asserts that hydrorrhoea, or the discharge per vaginam of large quantities of watery fluid during pregnancy, may be due to excessive serous secretion of the endometrial glands. This prevents the complete obliteration of the true uterine cavity, which normally occurs about the third month of pregnancy when the decidua vera and decidua capsularis come into contact and adhere; this is called hydrorrhoea decidualis. It may, on the other hand, be due to a very early rupture of the membranes, in which case the hydrorrhoea is amniotic. The two may be distinguished by analysis of the fluid, collected at the external os with aseptic precautions, the amniotic fluid generally containing lanugo, squamous epithelium, and urea crystals. Amniotic hydrorrhoea may be complicated by an extrusion of the foetus through the hole in the membranes into the uterine cavity, in which it may continue to develop for some weeks, even in a few recorded cases up to full term, though pressure deformities of head or limbs are likely to result. In a cited example of such an extramembranous pregnancy the hydrorrhoea started about the sixth month of a second pregnancy with breech presentation. Spontaneous delivery occurred nine weeks later, the infant surviving for only a quarter of an hour, though there were no macroscopic signs of developmental defect. The placenta appeared normal, but there was marked disproportion between the size of the infant and the much smaller bag of membranes. For the treatment of hydrorrhoea of pregnancy Kehrer advocates complete rest, and morphine if premature labour threatens. In view of the fact that neonatal deaths and stillbirths account for 88 per cent. of these infants, however, induction at an early date should be seriously considered if the health of the mother is being affected by a copious hydrorrhoea, or if an *x*-ray examination reveals deformities of the foetus.

93. Conduct of the Third Stage of Labour.

I. BENZION (*Zentralbl. f. Gynäk.*, October 19th, 1929, p. 2665) reports that injection of the placenta with fluid is an admirable method of completing the third stage of labour. It diminishes by one-half the proportion of cases in which manual detachment becomes necessary; failures are due to application in unsuitable cases, or to faulty technique. It is necessary for the injected placenta to be still adherent; the Gabastou method cannot be expected to be effective if the uterus has been subjected previously to vigorous massage, the Credé manœuvre, or the action of pituitary extract injected intravenously. The injection of water is necessarily ineffective in cases of placental accretion or insertion in the tubal angle. It finds no place in treatment of cases of severe bleeding (750 c.cm. or over), and manual detachment is necessary as a life-saving measure; where there is placental retention, with no bleeding or slight bleeding, Gabastou's treatment is peculiarly suitable. The amount of fluid injected should vary with the size of the foetus and placenta, and Benzion calculates on experimental grounds that the square of the height (expressed in centimetres) of the seated foetus gives the requisite amount in cubic centimetres—for example, with a foetus measuring 32 cm. from rump to crown about 1 litre is required. The following conduct of the third stage of labour is advised. Expectant treatment is adopted, the height of the fundus and the amount of bleeding being noted, and watch being kept for the signs of intrauterine detachment of the placenta. If these are observed, manual expression, aided by a voluntary effort of the patient, is tried. If this fails, or if the placenta does not become detached, the uterus is left at rest, and pituitary extract may be injected into a muscle but not into a vein. In the absence of haemorrhage, two hours are allowed to pass before Gabastou's method is tried, 0.5 c.cm. of pituitary extract being administered intravenously at the conclusion of the injection. Should the placenta be still undelivered, Credé's expression is tried, if necessary under an anaesthetic. In cases of failure recourse must be had to manual detachment. If before the two hours have elapsed haemorrhage, though not immediately alarming, exceeds 300 or 400 c.cm., Gabastou's injection is performed, preceded by compression of the aorta, which may be achieved manually by an assistant.

Pathology.

94. Age Distribution of Normal Antibodies in Man.

E. FRIEDBERGER, G. BOCK, and A. FÜRSTENHEIM (*Zeit. f. Immunität*, December 6th, 1929, p. 294) have conducted an investigation into the distribution at different ages of normal antibodies in man. A total of 653 persons was examined for haemolysins to sheep's red cells, and 367 for agglutinins to rabbits' red cells. The results showed that the titre of these antibodies pursues a definite curve, similar in many respects to that depicting the frequency of Schick-negative reactors in the population. In the case of sheep-cell haemolysins the curve rises from zero at birth to reach a maximum at about the tenth year, after which it falls gradually, till in persons of 70 years and over the titre is about the same as in infants of one year. The curve representing the proportion of persons at any age containing sheep-cell haemolysins is very much the same. In the case of rabbit-cell agglutinins the curve expressing the titre rises from zero at birth to reach a maximum about the tenth year; after this till about the thirtieth year it remains at the same level, and then falls very gradually, till at the seventieth year the titre is about equal to that at the fifth year. The frequency distribution of these antibodies in any given age group is variable, some individuals possessing none, others a moderate amount, and others a large amount. In any one serum both antibodies may be present together in more or less equal amount, or they may vary in amount, or one may be present without the other. No relation between the presence of these antibodies and the blood grouping could be substantiated. From these results the authors argue that, since the curve expressing the proportion of Schick-negative reactors at different ages closely resembles the curves expressing the proportion of persons containing sheep-cell haemolysins and rabbit-cell agglutinins, it is not dependent on a latent or manifest infection with the diphtheria bacillus, but represents part of a general biological phenomenon. This explains why the Schick curve is similar in communities, such as the Eskimos, which do not come into contact with diphtheria, to that among more civilized populations.

95. Lymphadenoid Goitre.

R. MCCARRISON (*Indian Journ. Med. Research*, October, 1929, p. 439) discusses the influence of manganese chloride in preventing lymphadenoid goitre in rats. From previous experiments (see *Epitome*, August 11th, 1928, para. 91) it was found that well-marked lymphadenoid goitre developed in three out of eighteen animals fed upon white flour, meat residue, olive oil, and a salt mixture containing potassium iodide, whereas no [illegible] thyroid occurred in thirty-six animals [illegible] with the addition of manganese chloride. [illegible] that the added manganese chloride prevented the occurrence of lymphadenoid goitre by supplying a deficiency of that element in the diets until it was found that they contained considerable amounts of manganese. It seemed, however, unlikely that the deficiency could have been made good by the addition of small amounts to diets already containing twelve to thirteen times as much as the amount added unless, being in the form of a soluble salt, it exerted an action different from that exercised by the manganese in foodstuffs. In further experiments a number of non-goitrous thyroids from rats fed upon diets to which manganese chloride had been added were examined histologically, and these showed a striking contrast in size to those from animals receiving no manganese chloride and in whom lymphadenoid goitres resulted. In the thyroid glands of the rats receiving manganese chloride there was deep ruby-red staining of the colloid material distending the vesicles. The author concludes that it is only possible to assert that any action the manganese chloride may have had in preventing lymphadenoid goitre was not due to the correction of any manganese deficiency in the diet, and the question of its action in prevention is being further investigated.

96. Serum Lipase and Tuberculosis.

S. BERG (*Acta Med. Scand.*, November 30th, 1929, p. 303), employing the tributyrin method of Rona Michaelis, has determined the lipase content of the blood serum in 90 cases of pulmonary tuberculosis, and finds that it varies directly with the body weight. There is no evidence that the increased lipase titre is an expression of the reaction of the body against tuberculous infection; nor is there any connexion between a lowered lipase titre and the progress of the disease, except indirectly through a lowering of the body weight. Berg was unable to establish any relation between the number of lymphocytes and the lipase content. The administration of specific lipoids, cod-liver oil, Malmstrom's irradiated cod-liver oil, or creosote does not produce any change in the lipase content of the serum.

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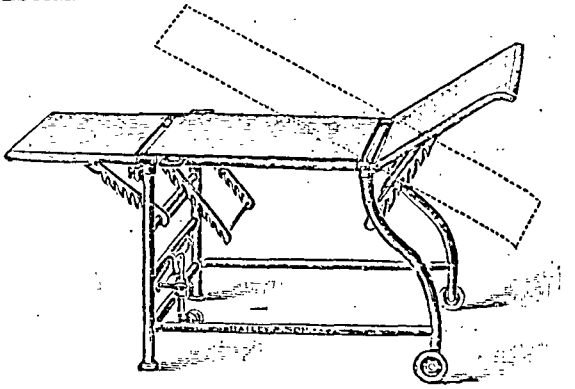
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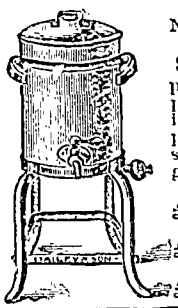
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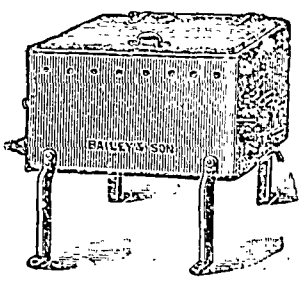


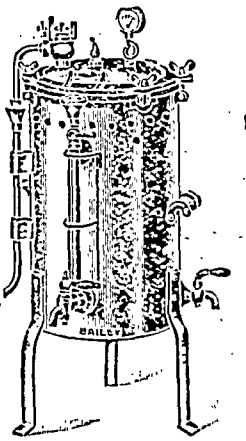
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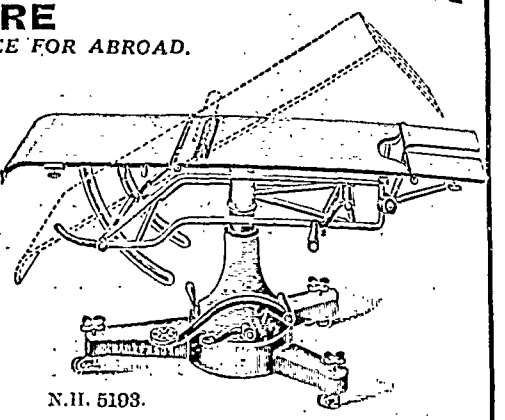
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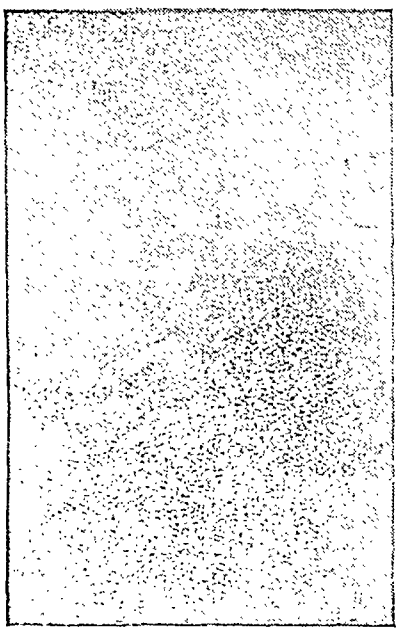
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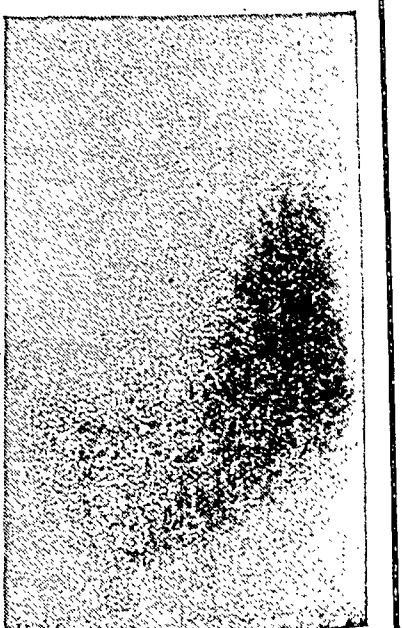
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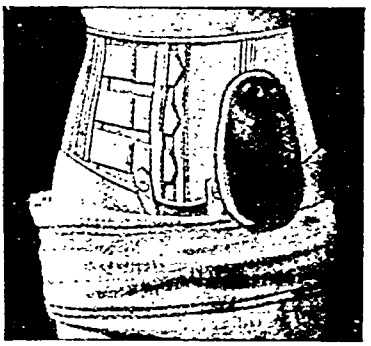
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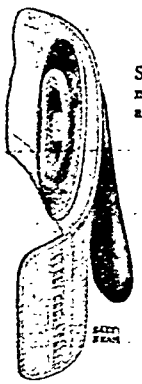


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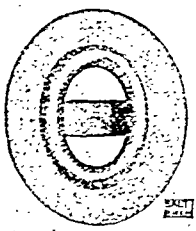
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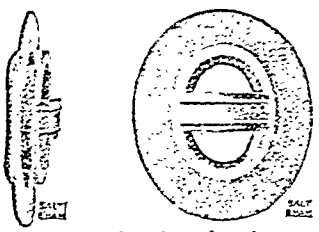


Showing attachment of receiver and bag to belt.

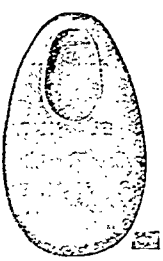
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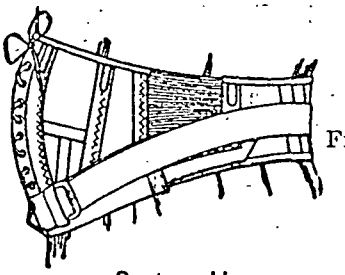
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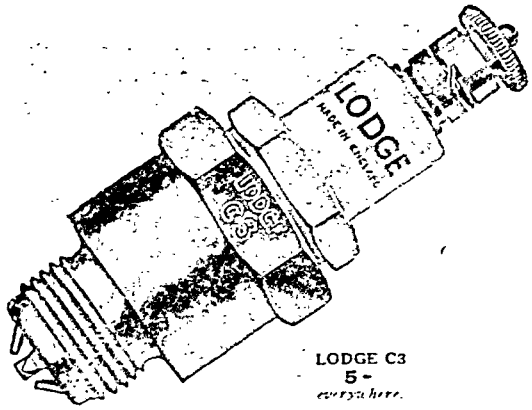
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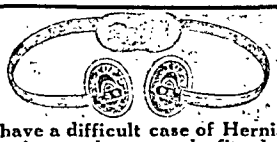
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CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: *Teignmouth* 289.

BELVOIR NURSING HOME,
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FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—
DR. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

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'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

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HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of ...e Patients of both sexes of the Upper and Middle Classes at moderate ...f payment. It is beautifully situated in its own grounds on an eminence ...distance from Nottingham, and from its singularly healthy position ...fortable arrangements affords every facility for the relief and cure of ...ntally afflicted. Voluntary Boarders received without Certificates.

For terms, etc., apply to the Medical Superintendent.

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DENMARK HILL, S.E.5.

Telephone: RODNEY 4841—2.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
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Terms:

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

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EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

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Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment. Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
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Telephone: No. 7 Barnwood.

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Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

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The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch. Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.

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Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
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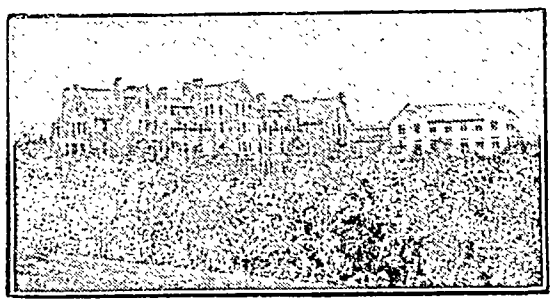
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Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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This once famous Hydro adjoining the Mineral Wells has recently been equipped with the most modern appliances for treatment by Electro-therapeutics, Manipulative Surgery, Medicated Baths, etc. All treatment is given only on the instruction of the Medical Superintendent, or of the patient's own medical adviser.

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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

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Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23

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PRIMARY F.R.C.S.

Courses in preparation for the June Examination will be held as follows:

Physiology, under the direction of Dr. SAMSON WRIGHT, commencing on Tuesday, February 18th, 1930.

Anatomy, under the direction of Prof. D. M. BLAIR, commencing on Thursday, May 1st, 1930.

The Dissecting Room will be open from the commencement of the Physiology Course.

Applications to be admitted to the Course should be addressed to the Dean of the Medical Faculty, King's College, Strand, W.C.2.

UNIVERSITY OF LONDON.

A Course of Six Lectures on "*Cytology in Relation to Physiology and Pathology*" will be given by Dr. R. J. LUDFORD (Imperial Cancer Research Fund; Honorary Lecturer in Cytology, Department of Anatomy (Embryology and Histology), University College, London) at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAYS, FEBRUARY 5th, 12th, 19th, 26th; MARCH 5th and 12th, at 5 p.m.

Admission free, without ticket.

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University of London.

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Admission free, without ticket.

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A Course of Ten Lectures on "*Comparative Physiology*" will be given by Mr. G. P. WELLS at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on FRIDAYS, JANUARY 17th, 24th, 31st; FEBRUARY 7th, 14th, 21st, 28th; MARCH 7th, 14th, and 21st, at 5 p.m.

Admission free, without ticket.

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The University of Liverpool.

The Council invites applications for the post of HONORARY LECTURER IN LARYNGOLOGY. Applications, together with the names of three references, to be forwarded to the undersigned (from whom further particulars may be obtained) not later than February 20th.

EDWARD CAREY,
Registrar.

January, 1930.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

PRIMARY F.R.C.S. COURSE.

A Course of Instruction for the JUNE EXAMINATION will begin on MONDAY, FEBRUARY 3rd, 1930, and will be conducted as follows:

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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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FEBRUARY TO MAY, 1930.

The above Course will commence on Monday, February 24th. It is regretted that no further applications can be received as all the vacancies have now been allocated.

T. B. JOHNSTON, Dean.

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FRANK HAYDON, Secretary.

Society of Apothecaries of LONDON.

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The first Examination for Part I will take place on Monday, June 23rd, and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

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M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

MIDDLESEX HOSPITAL.

The Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Monday, January 20th, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1.

ANATOMY.

Personal instruction is given daily by Professor T. YEATES, M.B., C.M.

PHYSIOLOGY.

The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

BIOCHEMISTRY. GENERAL PHYSIOLOGY. HISTOLOGY.

A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

Instruction is given daily except on Saturdays; there is a three weeks' vacation at Easter, after which classes are resumed until the examination.

FEES.—£12 12s. each subject or £21 for both.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence Jan. 27th. Correspondence course for July and later exams should begin now. Partics., H. C. ORRIN, F.R.C.S., at Surgeons' Hall, Edinburgh.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Monday, March 3rd.

Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, February 10th. The fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from JANUARY 27th to FEBRUARY 8th. Lectures, demonstrations, and cliniques in the various general and special departments.

The number is limited to 25.

Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD,

Specialises in

CAREERS FOR GIRLS.

List and Prospectus from Principal.

Special Terms to Medical Men.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE

From Specialist Tutors, in conformity with the Regulations of the various Universities.

Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

Medical and Dental Students:

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

M.R.C.P.(Edin.)

A REVISION CLASS in the Practice of Medicine and Therapeutics, in preparation for the April examination, will commence on Feb. 11th.—Particulars from Dr. D. STEWART, Clinical Laboratory, Royal Infirmary, Edin.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1050		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1750	£20	17th and over
	(ii) During 24th and 25th years' service	1900		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service,

WAR SERVICE CONCESSIONS.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
„ 18 „ „ „	430
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	750
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. Applications should be submitted as soon as possible. The Selection Committee will meet shortly to make nominations, and the selected candidates will be required to attend a course of instruction commencing on February 4th, 1930.

Royal Society of Medicine.

NICHOLS PRIZE—THIRD AWARD.

In accordance with the will of the late Dr. Robert Thomas Nichols, the Royal Society of Medicine owers every three years a prize (being the accumulated interest on £2,200), open to any British subject, for the most valuable contribution towards "*The Discovery of the Causes and the Prevention of Death in Childbirth from Septicæmia.*"

Work submitted for the third award must reach the Secretary of the Society (1, Wimpole Street, London, W.1) not later than October 1st, 1930, and must be marked "Nichols Prize." It must be typewritten or printed, in English, and accompanied by the name and address of the author.

Work already published may be submitted, provided that publication was not earlier than October 1st, 1927.

If no work of sufficient merit be submitted, the prize will not be awarded.

Sudan Government.

MEDICAL DEPARTMENT.

A MEDICAL OFFICER is required immediately for the SUDAN MEDICAL SERVICE. The candidate must be single and should be under 30 years of age, and he must have held a Resident appointment in a large General Hospital.

The successful candidate will be required to take the Course at the Tropical School, starting on February 3rd. Fees are paid by Government, and a subsistence allowance is granted.

Pay commences at £E.720 a year, rising to £E.1,200 after thirteen years' service. On confirmation of his appointment, the selected candidate will be eligible for pensionable service.

Applications (in writing only), with copies of recent testimonials, should be made to Dr. HODSON, 24, Welbeck Street, W.1, from whom, and from the Secretaries or Deans of the principal Medical Schools, further particulars can be obtained.

District Medical Officer for Indian State Railways.

The Secretary of State for India proposes shortly to make one appointment as District Medical Officer on the Indian State Railways. Candidates must be European British subjects of non-Asiatic domicile, and must be under 32 years of age. They must possess a qualification registered in Great Britain and Northern Ireland under the Medical Acts in force at the time of appointment. Commencing pay Rs.650 per mensem, including overseas pay. The officer selected will, in addition, be permitted to take private practice subject to the sanction of competent authority. Leave, Provident Fund, Gratuity, and passages in accordance with the rules generally applicable to officers of Indian State Railways.

Copies of the regulations and forms of application can be obtained from the Secretary, Services and General Department, India Office, S.W.1, to whom applications should be addressed not later than February 8th.

India Office. January 16th, 1930.

Bolton Union.

TOWNLEYS HOSPITAL.

Wanted for the Townleys Hospital, Farnworth, near Bolton, a SECOND ASSISTANT MEDICAL OFFICER (male) for a period of one year.

The salary will be at the rate of £225 per annum, and rations, furnished apartments, attendance, washing, etc.

The Hospital has accommodation for 550 patients, is a recognized Training School for Nurses, and has a Medical Superintendent and Three Resident Assistant Medical Officers.

Forms of application, together with conditions of appointment (for which a stamped addressed foolscap envelope must be enclosed), may be obtained from me.

Last day for applications February 3rd.

28, Mawdsley St., H. I. COOPER,
Bolton. Clerk to the
January 11th, 1930. Guardians.

St. Thomas's Hospital Medical School.

UNIVERSITY OF LONDON.

The Council of St. Thomas's Hospital Medical School invite applications for the post of LECTURER IN PHYSIOLOGY, vacant at the end of March, 1930, at the salary of £500 per annum.

Further information may be obtained from the Medical Secretary.

Applications, showing Academic record, and with copies of testimonials, must be received by the Dean of the Medical School, St. Thomas's Hospital, S.E.1, by February 14th, 1930.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

RESEARCH TRAVELLING SCHOLARSHIP IN MEDICINE.

The Trustees invite applications for the Dickinson Research Travelling Scholarship in Medicine.

The Scholarship is of the value of £300, tenable for one year. Candidates must be University Graduates who have taken out the full course of Clinical Instruction required by their examining bodies in the Manchester Royal Infirmary and the University of Manchester, and have earned distinction in so doing. They may apply for the Scholarship within any period of years after qualification as may be approved by the Trustees.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Saturday, February 15th.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester
Royal Infirmary.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

PATHOLOGY SCHOLARSHIP.

The Trustees invite applications for the Dickinson Pathology Scholarship.

The Scholarship is of the value of £75, tenable for one year. Candidates must be University Graduates who have received their full course of instruction in Pathology, Medicine, and Surgery at the University of Manchester and the Manchester Royal Infirmary.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Saturday, February 15th.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester
Royal Infirmary.

West Sussex County Council AND BOGNOR REGIS URBAN DISTRICT COUNCIL.

ASSISTANT COUNTY AND DISTRICT MEDICAL OFFICER OF HEALTH.

Applications are invited for the following joint whole-time appointments:

(*a*) Assistant County Medical Officer of Health for the County of West Sussex. Salary £500 per annum, rising by annual increments of £25 to £600;

(*b*) Medical Officer of Health for the Bognor Regis Urban District. Salary £200 per annum, rising by annual increments of £25 to £300 per annum.

Office accommodation and necessary clerical assistance will be provided in connection with the appointments. An allowance will be made for travelling expenses in the County according to the current scale of allowances approved by the County Council. The appointments are subject to the approval of the Ministry of Health and the Board of Education, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922. The selected candidate will be required to pass a satisfactory medical examination.

Applicants must be duly qualified medical men, with experience in Public Health duties, and hold the Diploma of Public Health. Applicants should not be over 45 years of age. The person appointed will be required to reside in the Bognor Regis Urban District. As regards his duties as District Medical Officer of Health, the officer will be subject to the sole control and direction of the Bognor Regis Urban District Council. As regards his duties under the County Council, the officer will act under the general control of the County Medical Officer, and will be required to perform such duties as may be from time to time prescribed.

The appointment will be determinable on three months' notice and, as far as the office of District Medical Officer is concerned, will be subject to the approval of the Ministry of Health and the provisions of the Sanitary Officers Order, 1926. The person appointed shall, if required, enter into an agreement in a form approved by the Clerk of the County Council.

Applications on the prescribed form, which, with list of duties and conditions of appointment, may be obtained from the undersigned, S. THORNELY, accompanied by copies of not more than three recent testimonials, should be addressed to the undersigned, S. THORNELY, and delivered at the County Hall, West Street, Chichester, not later than Thursday, Feb. 6th.

Canvassing will disqualify.

(Signed) S. THORNELY,
Clerk of the County Council.
(Signed) J. JUBB,
Clerk to the Urban District
Council of Bognor Regis.

County Hall, Chichester.
January 13th, 1930.

Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, W.C.1.

OUT-PATIENT STATISTICAL REGISTRAR.

There is a vacancy for the above-named officer, who must have had experience in the Speciality.

The duties are mainly statistical, but the Registrar is also required to assist the Surgeons in seeing patients when required, and to undertake elementary Post-graduate Teaching in conjunction with the In-patient Registrar.

There are small honoraria attached to the post, which is tenable for one year, subject to annual re-election for a period of not more than five years in all.

FIRST ASSISTANT.

There is a vacancy for a First Assistant in the Out-patient Department.

The post is an honorary one, tenable for one year, subject to re-election.

Attendance is required at two Clinics each week to assist the Surgeons in seeing the patients.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a Third Resident House Surgeon to enter on duty on March 1st next.

The appointment will be for a period of nine months—three months as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon.

Remuneration at the rate of £75 per annum.

Applications for any of these appointments, accompanied in each case by copies of not more than three testimonials, should be sent to the undersigned on or before February 8th.

JOHN H. YOUNG, Secretary-Supt.

Great Western Railway Hospital, SWINDON, WILTS.

(MEDICAL FUND SOCIETY.)

(36 Surgical Beds.)
28,000 Out-patient Attendances per year.

Applications are invited for the post of ASSISTANT SURGEON. Candidates must hold the Diploma of F.R.C.S.(Eng.).

The appointment is a whole-time one, and the salary £800, rising to £900 per year. In applying, candidates should state any special branch of Surgery in which they have had experience, age, etc.

Applications, with testimonials, should be sent before February 1st to the undersigned, endorsed "Assistant Surgeon."

S. E. WALTERS, Secretary.

Great Western Railway Medical Fund Society, SWINDON, WILTS.

Applications are invited by the Committee of the above Society for the post of ASSISTANT MEDICAL OFFICER. Such officer will be required to devote his whole time to the service of the Society.

Applications should be sent to the undersigned on or before February 1st, stating age, nationality, qualifications, with dates and midwifery experience, and should be accompanied with three copies of recent testimonials. Salary £700, rising by two annual increments to £800.

S. E. WALTERS, Secretary.

Jewish Maternity Hospital (JEWISH MATERNITY HOME, INCORP.)

There is a vacancy for a REGISTRAR.

The appointment is for one year, but is renewable annually. Applicants, who must be Fellows of the Royal College of Surgeons of England, should submit their applications, together with copies of three recent testimonials, to the undersigned not later than Saturday, February 15th. There is an honorarium of £25 p.a. attached to the post.

24, Underwood St., ALICE MODEL,
Whitechapel, E.1. Hon. Secretary.

Warrington Infirmary and Dispensary.

Wanted, JUNIOR HOUSE SURGEON (owing to promotion of present occupants).

Salary £175 per annum. Six months' appointment. Applications to be sent in by February 4th, addressed to the Superintendent.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Rossall School. — Some twelve

Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
January 22nd, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Metropolitan Hospital,
Kingsland Road, London, E.8.

The Committee of Management are prepared to receive applications for the appointment of an ASSISTANT SURGEON in the Department for Diseases of Women (male).

Candidates must be Fellows of the Royal College of Surgeons of England, and not engaged in general practice.

Candidates will be required to submit to Members of the Medical and Surgical Staff one copy of their application, with testimonials, and subsequently to call by appointment for interview. A list of the Medical and Surgical Staff and further particulars will be supplied upon request.

One copy of the application should be submitted to the undersigned as early as possible, but not later than first post on February 7th.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

East Riding Mental Hospital,
BEVERLEY, YORKSHIRE.

JUNIOR ASSISTANT MEDICAL OFFICER (lady) required. Salary £250, with board, apartments, and laundry. Appointment subject to provisions of the Asylum Officers Superannuation Act.

Apply, stating age, with particulars of qualifications and experience, and testimonials, to the Medical Superintendent.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Metropolitan Hospital,
Kingsland Road, London, E.8.

The Committee of Management are prepared to receive applications for the appointment of OPHTHALMIC SURGEON (male).

Candidates must hold the Fellowship of one of the Royal Colleges of Surgeons, and not be engaged in general practice. Candidates shall produce satisfactory evidence of having (after becoming qualified) filled an Ophthalmic appointment in a Hospital specially devoted to Eye work.

Candidates will be required to submit to Members of the Medical and Surgical Staff one copy of their application, with testimonials, and subsequently to call by appointment for interview. A list of the Medical and Surgical Staff and further particulars will be supplied upon request.

One copy of the application should be submitted to the undersigned as early as possible, but not later than first post on February 7th.

HERBERT F. RUTHERFORD.
Secretary & House Governor.

East London Hospital for
CHILDREN & DISPENSARY FOR WOMEN, Shadwell, E.1.

The Board of Management invite applications for the post of SURGEON to the Nose, Throat, and Ear Departments, to see Outpatients one day a week.

By Section 6, Subsections 19 and 23 of the Constitutions of the Hospital, every Surgeon shall be a Fellow of the Royal College of Surgeons of England.

Applications, with copies of testimonials, should be addressed to the undersigned and delivered to the Hospital on or before Saturday, February 1st.

By Order of the Board of Management,
W. M. WILCOX, Secretary.

St. Mark's Hospital for Cancer,
FISTULA, AND OTHER DISEASES OF THE RECTUM,
City Road, London, E.C.1.

HOUSE SURGEON (male) required, must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months from February 16th next. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than 10 a.m. Saturday, February 1st.

Nuneaton General Hospital,
WARWICESHIRE. (76 Beds.)

HOUSE SURGEON required. Salary £120 per annum, with board, lodging, and laundry. The appointment is tenable for six months, but application may be made for an extension of the period. Candidates must be registered according to the provisions of the Medical Act, and be members of one of the Medical Protection Societies. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent at once to the Medical Secretary.

North Ormesby Hospital,
MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

Wilts County Council.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL INSPECTOR

The Wilts County Council invite applications for the appointment of an Assistant County Medical Officer of Health and Assistant School Medical Inspector. Applicants must be fully qualified Medical Practitioners, hold a Diploma in Public Health or an equivalent qualification, and have had some special experience in Tuberculosis.

The salary will be £600 per annum, rising by annual increments of £25 to a maximum of £750 per annum, and will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination. Travelling allowance for own motor car in accordance with County scale.

The officer appointed will be required to reside in Salisbury, to devote his whole time to the duties of his office, and to act under the direction and control of the County Medical Officer of Health, who is also School Medical Officer. The duties of the post will be chiefly concerned with the School Medical Service, but a proportion of the officer's time will be devoted to the Public Health work of the County, including the duties of Assistant Tuberculosis Officer and Medical Officer of Harnwood Tuberculosis Hospital. The appointment will be determinable by three months' notice on either side.

Applications on form to be obtained from the undersigned, together with copies of not more than three recent testimonials, and enclosed in envelope marked "Assistant Medical Officer," to be lodged with the undersigned not later than first post on Monday, February 3rd.

Canvassing, either directly or indirectly, is strictly prohibited and will be regarded as a disqualification.

County Offices,
Trowbridge.
January, 1930.

W. L. BOWN,
Clerk of the County Council.

Borough of Watford.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE CENTRE.

Applications for this post are invited from qualified Medical Women residing in the neighbourhood of Watford (within 10 miles radius).

The duties consist in attending at an Infant Consultation Clinic on one afternoon per week at a salary of 1½ guineas per session.

Applications, stating age and previous experience of this work, together with copies of three recent testimonials, should be forwarded to Dr. W. J. Cox, Medical Officer of Health, 1, St. Albans Road, Watford, not later than Friday, February 7th.

Municipal Offices,
High Street, Watford.

W. HUDSON,
Town Clerk.

City of Liverpool.

SEAMEN'S DISPENSARY.

The Port Sanitary and Hospitals Committee of the Council of the City of Liverpool invite applications for the post of PART-TIME TEMPORARY ASSISTANT VENEREAL DISEASES MEDICAL OFFICER for the Seamen's Dispensary at a salary of £250 per annum.

Applicants must be registered Medical Practitioners who have had experience in the modern methods of treating venereal disease.

The appointment is for a term of not exceeding one year.

The officer appointed will act under the direction of the Medical Officer of Health.

Applications, stating age, qualifications, training, and experience, accompanied by copies of not more than three recent testimonials, to be addressed to the Town Clerk, Municipal Buildings, Liverpool, and delivered not later than Friday, January 31st.

Canvassing of Members of the City Council will be considered a disqualification.

Envelopes to be endorsed "V.D. Medical Officer."

Town Clerk's Office,
Liverpool.
January 20th, 1930.

WALTER MOON,
Town Clerk.

City of Birmingham.

CITY HOSPITAL FOR INFECTIOUS DISEASES, LITTLE BROMWICH.

SCHOOL OF MEDICINE.

ASSISTANT MEDICAL OFFICER required for LECTURER [illegible] possible. Previous Resident to end of March, 1930, and.

[illegible] months. Salary £300 per annum. [illegible] board and residence.

Further information may be obtained from, Medical Secretary.

Applications, showing Academic [illegible], with copies of testimonials, must be sent, on or before by the Dean of the Medical School, Hospital, S.E.1, by February 14th.

City of Coventry.

DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from Medical Practitioners for the appointment of Deputy Medical Officer of Health of the City. The inclusive salary will be £750 per annum on Grade B of the Council's Salary Scale, which provides for increases of £50 up to a maximum of £1,000, such increases being by recommendation only.

The post will be a designated post under the Local Government and Other Officers Superannuation Act, 1922, and the salary will accordingly be subject to a 5 per cent. deduction under that Act. A satisfactory medical certificate from the Council's medical referee will be essential before appointment. Age not to exceed 40.

Applicants must be duly registered and hold a Diploma in Public Health. The successful applicant must be prepared to devote his whole time to the duties of the office and to reside within the City.

The Deputy Medical Officer of Health will also be the Deputy Medical Superintendent of the Infectious Diseases Hospitals, and (the Medical Officer of Health being the School Medical Officer) will be the Deputy School Medical Officer. He will also be the Medical Officer of Health's Deputy in regard to general administrative control of all other Public Health work in the City. He will be required to undertake the clinical work of the Corporation Hospitals for Infectious Diseases. A portion of his time will also be associated with the clinical work of the Maternity and Child Welfare services.

Applications must be made on the prescribed form, which can be obtained from the undersigned, and must reach me not later than Friday, January 31st.

Canvassing, directly or indirectly, will be a disqualification.

Council House,
Coventry.
January 18th, 1930.

FREDERICK SMITH,
Town Clerk.

City of Coventry.

ASSISTANT SCHOOL MEDICAL OFFICER (AND ASSISTANT MEDICAL OFFICER OF HEALTH).

The Coventry City Council invite applications for the post of Assistant School Medical Officer (male) in connection with the medical inspection, etc., of school children. When not engaged in school work, the officer will be required to assist in the work of the Public Health Department.

Applicants must possess a Diploma in Public Health, and preference will be given to those who have held Hospital appointments, or had previous experience of similar work.

The salary will be on Grade C of the Council's salary scale, which provides for a commencing salary of £600, increasing to a maximum of £700 by increments of £25 granted by the Council on the recommendation of the Education Committee.

The post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, and the successful candidate will be required to pass a medical examination and to contribute to the Superannuation Fund.

Applications must be made on the prescribed form (which may be obtained from the undersigned), and must be delivered not later than Thursday, January 30th.

Canvassing, either directly or indirectly, will disqualify.

Council House,
Coventry.
January 13th, 1930.

FREDERICK SMITH,
Town Clerk.

City of Stoke-on-Trent Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of Assistant School Medical Officer to the above Education Authority.

Salary £500 per annum, rising to £600 per annum after the completion of one year's satisfactory probationary service. No bonus is payable in addition.

The duties consist in the carrying out of medical inspection and treatment, under the direction of the School Medical Officer, of pupils attending the elementary and secondary schools of the City.

The successful candidate will be required to devote the whole of his time to the duties of the appointment.

Canvassing will be a disqualification.

Form of application may be obtained from the Director of Education on receipt of a stamped addressed foolscap envelope, and completed forms should be submitted by Feb. 8th.

Education Offices,
Town Hall, Hanley,
Stoke-on-Trent. January 21st, 1930.

County Council of Essex and URBAN DISTRICT COUNCIL OF CHINGFORD.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH.

Applications are invited for the following appointments:

(*a*) Assistant County Medical Officer for the County Council. Salary £580 per annum.

(*b*) Medical Officer of Health for the Urban District of Chingford. Salary £220 per annum.

An allowance will be made by the County Council for travelling expenses as Assistant County Medical Officer.

The appointments are subject to the approval of the Ministry of Health, and also subject to the conditions set out on the front page of the form of application.

Applicants must be duly qualified men, with experience in Public Health duties, and hold a Diploma in Public Health. Applicants should not be over 45 years of age.

Applications on the prescribed form, which may be obtained from the undersigned JOHN H. GOOLD, accompanied by copies of not more than three recent testimonials, which will not be returned, should be addressed to the undersigned JOHN H. GOOLD, and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Monday, February 10th.

JOHN H. GOOLD,
Clerk of the County Council.
G. H. GREEN,
Clerk to the Urban District Council of Chingford.

Shire Hall, Chelmsford.
January 20th, 1930.

City of Liverpool.

BROADGREEN SANATORIUM.

ASSISTANT RESIDENT MEDICAL OFFICER.

The Port Sanitary and Hospitals Committee of the Council of the City of Liverpool invite applications for the above office. Salary £250 per annum, together with board, washing, and lodgings at the Sanatorium.

The appointment is for a term of not exceeding one year and is not renewable.

Every candidate will be required to possess a registered Medical and Surgical qualification and should have a knowledge of Bacteriological methods.

The person appointed will not be allowed to engage in private practice, and will be required to devote whole-time service to the duties of the office.

Applications, stating age and qualifications, accompanied by copies of not more than three recent testimonials, to be addressed to the Town Clerk, Municipal Buildings, Liverpool, and delivered not later than Friday, Jan. 31st.

Canvassing of members of the City Council will be considered a disqualification.

Envelopes to be endorsed "Resident Medical Officer."

Town Clerk's Office,
Liverpool.
January 20th, 1930.

WALTER MOON,
Town Clerk.

City of Leicester.

RESIDENT MEDICAL OFFICER.

Junior Assistant Medical Officer (male) required for the CITY ISOLATION HOSPITAL & SANATORIUM, Groby Road. The appointment will be for a period of twelve months. The salary at the rate of £300 per annum, with board, residence, and laundry. The officer appointed will be required to contribute to the Superannuation Fund of the Corporation.

Applications, stating age, experience, etc., together with copies of three testimonials, to be sent to the undersigned not later than January 30th.

Health Offices,
Leicester.
January 14th, 1930.

C. KILLICK MILLARD,
Medical Officer of Health.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE SURGEON,
OPHTHALMIC HOUSE SURGEON,
ASSISTANT OPHTHALMIC HOUSE SURGEON,
ASSISTANT CASUALTY OFFICER.

The appointments will be tenable for six months from January 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

Board Room.
December 28th, 1929.

JNO. W. BARNES, F.C.I.S.,
Gen. Supt. & Secretary.

Sussex Eye Hospital,
BRIGHTON.

CLINICAL ASSISTANT REQUIRED.

The Committee of Management hereby give notice that a meeting of the Committee will be held on February 20th for the purpose of appointing an Honorary Clinical Assistant to help in the Out-Patients' Department only on Wednesdays at 12.30 and Saturdays at 1.30. The appointment to be for two years. The successful candidate to be eligible for re-appointment at the end of that period.

Applications, in writing, for the vacancy, with testimonials, must be sent to the Hospital, addressed to the Assistant Secretary, on or before Monday, February 10th. Candidates must be registered under the Medical Acts.

No candidate can hold the appointment unless he resides in Brighton or Hove.

Board Room, Queen's Road, Brighton. January 16th, 1930. A. F. GRAVES, Assistant Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) attached to the Orthopædic Department.

Salary at the rate of £125 per annum.

The appointment is for a period from February 8th to Sept. 30th, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before the 29th instant.

By Order of the Board,
GEORGE RUDDLE,
Salford Royal Hospital, January 20th, 1930. Gen. Supt. & Secretary.

Accrington Victoria Hospital.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates may be male or female and duly qualified and registered. Number of beds, 50. Salary £150 per annum, with board and lodging.

There are Two Honorary Anæsthetists on the staff who attend on regular operation days.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom application, with copies only of testimonials, should be sent on or before Feb. 4th.

Town Hall, Accrington. W. H. WARHURST, Hon. Secretary.

Royal Sea Bathing Hospital for
SURGICAL TUBERCULOSIS,
MARGATE. (302 Beds.)

Applications are invited for the post of RADIOLOGIST to this Hospital, which will be vacant on March 31st next.

Attendance on two afternoons per week is required, and an honorarium of 100 guineas is offered.

Candidates should have had previous Hospital experience.

Applications, accompanied by one testimonial, should reach the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, W.C.2, on or before February 22nd next.

Bradford Royal Infirmary.

Two HOUSE SURGEONS (male) wanted for March 1st. Candidates must be single and legally qualified. Salary £150 per annum each, with board, residence, and washing.

There are 215 Beds and six Resident Officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than Tuesday, January 28th.

J. J. BARRON,
January 6th, 1930. Secretary-Supt.

Taunton and Somerset Hospital,
TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male), required at beginning of February. The appointment, which will be for six calendar months, is approved by the University of London for the purpose of the M.D. examination. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with testimonials, to—
F. J. J. STACEY, Secretary.

Hermitage Sanatorium.

Wanted immediately, RESIDENT MEDICAL OFFICER. Previous experience necessary. Salary £350. Apply Medical Superintendent.

Devonshire Hospital, Buxton,
DERBYSHIRE (330 Beds.)
(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties February 1st. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory, and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
General Superintendent & Secretary.

North Riding Infirmary,
MIDDLESBROUGH.
(General Hospital—150 Beds.)

SECOND HOUSE SURGEON (male) wanted to commence duties early as possible. Salary at the rate of £150 p.a., with board, residence, and laundry. Applications, stating age, nationality, and previous experience, with three recent testimonials (copies) should be sent forthwith to the undersigned.

NOTE.—The post of Senior House Surgeon will be vacant at the end of March and the Second House Surgeon will be eligible to apply for same. (Three Resident House Surgeons.)

CHARLES POSTGATE, Secretary-Supt.

Royal Victoria and West Hants
HOSPITAL, BOURNEMOUTH.
(BOSCOMBE BRANCH. 170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty at end of January. Salary £120 per annum, with board, lodging and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act.

Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
January 20th, 1930. Secretary.

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the post of CASUALTY OFFICER, who will rank next to the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, and laundry. Previous experience essential.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.
January 4th, 1930.

Tiverton Hospital, Devonshire.

Applications are invited for the post of HOUSE SURGEON, which will become vacant on February 17th. The salary is £100 per annum, with board, residence, and laundry. Number of beds 36, work chiefly surgical.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned as soon as possible.

C. H. DEEKS, Hon. Secretary.

King George Hospital,
ILFORD. (6 miles from London.)

Applications are invited for the appointment of SECOND HOUSE SURGEON. Salary £100 per annum, with board, residence, etc. Term: six months, with eligibility for a further period as Senior House Surgeon at £150 per annum.

Applications should be sent at once to the Secretary.

Norwood and District Cottage
HOSPITAL, Upper Norwood, S.E.19.

Applications are invited for the post of HONORARY ANÆSTHETIST, and should be sent to the Secretary not later than Jan. 31st.

Bootle Borough Hospital.
(General, 160 Beds.)
Derby Road, BOOTLE.

Applications are invited from Medical Men for the posts of SENIOR RESIDENT MEDICAL OFFICER, with previous Hospital experience, and Two JUNIOR HOUSE SURGEONS, for the six months ending September 30th. Salaries at the rate of £200 per annum Senior Officer, and £125 per annum each Junior Officer, with board, residence and laundry.

Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned on or before February 7th.

J. A. BEARDSALL, Secretary-Supt.

West Suffolk General Hospital,
BURY ST. EDMUND'S. (102 Beds.)

Applications are invited for the post of HOUSE SURGEON which will be vacant immediately.

Salary £150 per annum, with board, residence, and laundry.

Applicants must be fully qualified and registered.

Applications, giving particulars of experience and three recent testimonials, to be sent to the undersigned.

E. E. HARDWICKE,
January 20th, 1930. Secretary.

The Kidderminster and District
GENERAL HOSPITAL.

The Committee invite applications for the post of HONORARY ORTHOPÆDIC SURGEON.

Applications are also invited for the position of SECOND HONORARY ASSISTANT SURGEON.

The Assistant Surgeon must reside within five miles of the Hospital, and will be required to assist the Honorary Ophthalmic Surgeon.

Applications should be sent by Tuesday, February 4th, to the Assistant Secretary, Miss SUSAN SMITH, South Cliff, Kidderminster.

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty at once. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before Wednesday, February 5th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of CASUALTY OFFICER (male), which will become vacant on March 11th.

The appointment will be for a period of six months, at a salary of £120 per annum (ceteris paribus preference will be given to abstainers). Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, February 7th, addressed to the Secretary.

Birkenhead & Wirral Children's
HOSPITAL.
Woodchurch Road, BIRKENHEAD.

HOUSE SURGEON.

The Board invite applications for the post of House Surgeon (female), for a period of six months from April 1st. Applications, together with copies of testimonials, should be addressed to the Secretary, at the Hospital, not later than February 6th.

The Infants Hospital,
Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN (female). The appointment is for six months. Salary at the rate of £75 per annum, with board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned by February 15th.

ALFRED J. SMALL, Secretary.

Westminster General Dispensary
9, Gerrard Street, W.1.

There is a vacancy for a RESIDENT MEDICAL OFFICER (male and unmarried) at the above Institution. Salary £150, with rooms, coal, gas, and attendance, but no board.

Applications, with testimonials, to be sent immediately to the Secretary, who will give full particulars.

D. DAWKINS, Secretary.

ASSISTANCIES.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£450 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Male Assistant. Industrial area, Manchester. Good house (unfurnished). Must be experienced in midwifery. £400 p.a., commission on midwifery fees, etc., rent and taxes. Usual bond. Good prospects. — Address, No. 625, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, British, Country Practice, South-East Devon. Mixed panel and private. Pleasant country, sporting district, about 2 miles from coast. Two cars. Salary £250, increasing to suitable man.—Address, No. 615, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, single, abstainer, exp. panel and private Practice, for permanency in indus. area, Midlands. Commencing salary £300 p.a., with furn. rooms and attend. (only). Usual bond. Tests.—No. 708, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, permanent outdoor male ASSISTANT (must be British, unmarried, under 30), some experience essential, for mixed Practice, Glamorganshire. Salary £450.—Address, No. 610, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Well-qualified male ASSISTANT, Protestant, for Practice adjacent large Midland Town. No dispensing. Previous experience essential. Prospects to suitable man.—Address, No. 638, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, male, for mostly panel Practice in Liverpool. Salary £275, increase if suitable. Send full particulars. — Address, No. 628, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an Assistant, with a view to Partnership in a South Wales Colliery Practice. An ex House Surgeon preferred. A knowledge of Welsh an advantage.—Address, giving full particulars, No. 617, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, indoor. Pleasant Birmingham suburb. Private and small panel. Car provided. Salary £300.—Apply, giving full particulars and experience, Dr. GRETTON WATSON, King's Heath.

Wanted.—Indoor Male Assistant for panel and private Practice in Midlands. Salary £250 to £300. Recently qualified or experienced. British. Usual bond.—Address, No. 529, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Newcastle-on-Tyne, male indoor ASSISTANT, single; ex H.S. or H.P. preferred. Motor cyclist. English or Scotch. Good-class Practice, small panel. Salary £300, all found. Send references and photo. Usual bond.—Address, No. 704, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, in a Colliery Practice in Glamorgan. A Dispenser kept. Usual bond. Salary £350 per annum, with furnished rooms, attendance, etc. —Address, stating age, references, etc., No. 616, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, British, for panel Practice. Salary £276 per annum.—Apply, enclosing copies of testimonials, to Dr. S. J. B. FOX & SON, South Moor, West Stanley S.O., Co. Durham.

Wanted. — Male Assistant, indoor (British). Panel and private Practice. Salary £300. Some experience desirable. —Address, giving full particulars, No. 632, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, male, for East London panel and private Practice.—Address, giving full particulars, No. 621, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, 50 miles London, preferably with view, by M.B., Ch.B., aged 26; 2½ years' Hospital, also G.P. experience. Good Anæsthetist and Obstetrician.—Address, No. 631, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, energetic, experienced panel and private. Newcastle-on-Tyne. — Address, No. 709, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Assistantship (country preferred) by M.R.C.S., L.R.C.P., aged 39, in general and panel Practice. Free now. Had own Practice. Would accept post in Hydro. estab. or locum work. Excel. testa. Member B.M.A. —No. 614, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by young Glasgow Graduate, ASSISTANTSHIP, with view early Partnership; ex H.S. and H.P. Good experience of G.P. (panel and private). Excellent references and testimonials.—Address, No. 629, B.M.A. House, Tavistock Sq., W.C.1.

Assistant wanted for Lancashire Town, male, abstainer. Bond. £300, indoor; outdoor terms if married. Preferably able to drive car. £60 extra if willing to dispense, etc.—Address, No. 634, B.M.A. House, Tavistock Square, W.C.1.

Ex-H.S., H.P. (Teaching Hospital), Public School, æt. 28, good appearance, well received, recommended, 3 yrs.' gen. practice, exper. anæs., mids., minor surg., seeks ASSISTANTSHIP, definite early view Partnership (£1,000—£1,500) or succession; part premium instalments; energetic, loyal.—No. 612, B.M.A. House, Tavistock Sq., W.C.1.

Opening for an Assistant desirous of introduction to the systematic working of a general practice. Elementary radiology, vaccine therapy, and clinical lab. work available. Indoor. Bond. Abstainer. Lancashire. £250 if little experience; £300 if held Hospital appointments.—Address, No. 635, B.M.A. House, Tavistock Square, W.C.1.

Woman M.R.C.S., L.R.C.P., keen worker, well received, experienced panel and private, desires ASSISTANTSHIP or LONG LOCUM.—Address, No. 639, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.—Fully qualified Doctor for service in the Tropics. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passages provided. Candidates must be unmarried. Ladies not eligible.—Address, with copies of testimonials (not returnable), No. 522, B.M.A. House, Tavistock Square, W.C.1.

Wanted by F.R.C.S. (Ed.), PART-TIME WORK with or without hospitality. 5 years' resident experience London Hospitals. Reading higher degree. London preferred. —Address, No. 712, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced Coach for M.R.C.P.Lond., for theoretical as well as practical work. One attached to Teaching Hospital preferred.—Address, No. 619, B.M.A. House, Tavistock Square, W.C.1.

Wanted, by qualified Lady DISPENSER-BOOKKEEPER, Post in North London district. Whole or part-time.—Address, No. 701, B.M.A. House, Tavistock Square, W.C.1.

An important Provincial House requires the services of a SENIOR ASSISTANT in their Surgical Instrument Department. Must possess a thorough knowledge of the business and be capable of taking charge. —Address, with particulars regarding experience, age, salary required, etc., No. 713, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Dispenser (Lady) desires RE-ENGAGEMENT with Doctor, or at Institution. Apothecaries' Hall certificate, 20 years' experience, capable all duties, panel, bookkeeping. Moderate salary.—Miss M. HOLMES, "Moyleen," Marlow-on-Thames, Bucks.

Dispenser-Bookkeeper (Lady), 3 years' nursing experience, desires post with country Doctor, preferably in North Wales. — JONES, "Penygongl," Rhydyclafdy, Pwllheli.

Evening Surgeries.—An experienced Doctor in panel and private, had own Practice, desires to take THREE EVENING SURGERIES weekly at £2 p.w. for a Practitioner in London, within easy distance.—"MEDICUS," c/o Pocleart, 24, Colville Road, Bayswater, W.11.

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Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Tuesday, January 28th.

LESLIE SPENCER, Secretary.

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Wanted at once, SECOND HOUSE SURGEON, male. Salary at the rate of £150 per annum, with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

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A. E. HANRAHAN, Secretary.

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W. H. BOOTH,
January 20th, 1930. Supt. & Secretary.

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ARTHUR L. BOURNE, Secretary-Supt.
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ELLIS C. SMITH, F.C.I.S.,
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EXETER. (225 Beds.)

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By Order of the Committee,
S. S. COLE,
Jan. 17th, 1930. Secretary & Manager.

National Hospital, Queen Sq., W.C.1.

HONORARY DENTAL SURGEON.

Applications are invited for the post of HONORARY DENTAL SURGEON and should be sent to the undersigned on or before February 1st. The qualifications required are F.R.C.S. or M.R.C.S. and L.D.S. Any further particulars may be obtained in the Secretary's office.

GODFREY H. HAMILTON, Secretary.

French Hospital and Dispensary,

172, Shaftesbury Avenue, W.C.2.

Applications are invited for the post of HONORARY ASSISTANT DENTAL SURGEON. Candidates must be duly qualified Dental Surgeons and able to speak French. Attendance twice per week. Applications and copies of three recent testimonials to be sent to the Secretary of the Hospital on or before February 3rd.

Royal Victoria Infirmary,

NEWCASTLE-UPON-TYNE.

WHOLE-TIME JUNIOR SURGICAL REGISTRARS.

Applications are invited for Six Junior Surgical Registrars. These posts are designed for Graduates who desire to gain surgical experience and who have already held a post as House Surgeon. Certain duties in the allied departments at the College of Medicine will offer opportunities for post-graduate study. The appointments will in no case extend beyond three years, and will be for one year in the first instance, renewable for two further periods. A payment of £150 per annum will be made to each Registrar.

Applications, with copies of not more than three recent testimonials, must be lodged on or before February 4th with the House Governor, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male).

Salary at the rate of £150 per annum for the first six months and £175 for the second six months, with residence, board, and laundry.

The appointment is for six months and is renewable.

The Resident Staff consists of a Resident Surgical Officer, House Surgeon, and House Physician.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

ARTHUR H. LIMB, Secretary.

Central London Ophthalmic

HOSPITAL, Judd Street, W.C.1.

There is a vacancy for the post of ASSISTANT SURGEON to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons (Eng.) or hold the Degree of M.S.London in Ophthalmology, and must have held the post of Clinical Assistant for two years at least at a recognized Ophthalmic Hospital.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than January 31st, and candidates must attend at the Hospital on Thursday, February 13th, at 4.30 p.m.

H. R. S. DRUCE, Secretary.

City of London Hospital for

DISEASES OF THE HEART & LUNGS,
Victoria Park, E.2.
('Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on March 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Monday, February 10th.

GEORGE WATTS, Secretary.

Derbyshire Hospital for Sick

CHILDREN. (52 Beds.)

RESIDENT MEDICAL OFFICER (lady) wanted February 22nd. The appointment is for six months, but may be extended by mutual arrangements. Applicants must be fully qualified. Salary £150 per annum. Applications, with three testimonials, one relating to anæsthetics, to be sent by January 30th to the undersigned.

ARTHUR N. WHISTON,
25, St. Mary's Gate, Secretary.
Derby.

Chester Royal Infirmary.

(211 Beds.)

Wanted, HOUSE PHYSICIAN (male) to commence duties February 10th. Salary £150 per annum, with board, lodging, and washing.

Application list closes on January 31st.

Application forms may be obtained from the undersigned.

W. H. GRACE, M.D., M.R.C.P.,
Hon. Supt. of Resident Medical Staff.

Woking and District Victoria

HOSPITAL.
(General Hospital. 50 Beds.)

Female RESIDENT MEDICAL OFFICER (unmarried) required for February 15th. Applicants must be doubly qualified and registered. Salary £100 per annum, with board, residence, and laundry. Appointment for six months, and renewal for forth r six months.

Applications, stating age, etc., and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained. They must be received not later than February 7th. Personal canvassing not allowed.

R. MANNING DRIVER,
Woking and District Hon. Sec.
Victoria Hospital.

St. Bartholomew's Hospital.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, February 18th, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Saturday, February 1st.

THOMAS HAYES,
Jan. 9th, 1930. Clerk to the Governors.

Liverpool Psychotherapeutic

CLINIC,
56, Bedford Street, North Liverpool.

The Committee invite application for the post of ASSISTANT HONORARY PHYSICIAN. Applicants will be required to have had previous experience in Psychological Medicine and to attend on Mondays and Wednesdays at 1 p.m. and on Saturdays at 10 a.m.

Applications, stating qualifications, may be forwarded, together with any testimonials or information relating to experience, to the undersigned at the Clinic before January 28th.

J. REGINALD GIBBONS, Hon. Treas.

Rochdale Infirmary and

DISPENSARY. (110 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £175 p.a., including board, residence, and laundry. Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the Secretary, endorsed "House Surgeon." Conditions of appointment may be had on application to the Secretary.

Infirmary Office, W. WYNNE,
Rochdale. Secretary.

The Sheffield Royal Hospital.

The appointment of Two HONORARY CLINICAL ASSISTANTS will shortly be made, and applications are invited from local registered Medical Practitioners who are prepared to devote one session (1 to 5 p.m.) per week in the Medical Out-patient Department. The appointment will be for twelve months, and applications should be addressed to—

W. H. BOOTH,
January 16th, 1930. Supt. & Secretary.

Ancoats Hospital, Manchester.

ASSISTANT PATHOLOGIST required, which with a coexisting Research appointment will allow of a salary of £350 per annum. Applications, stating age, experience, qualifications, appointments held, etc., to be forwarded to the undersigned on or before January 28th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Newark General Hospital.

(50 Beds).

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

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Cambridgeshire. — Partnership in old-established Practice. Share £800, increasing. Premium 1¾ years. Good house, large garden, with tennis court. Rent £55 per annum.—Apply, No. 2516.

Bristol General Hospital.

SENIOR RESIDENT MEDICAL OFFICER (male). The Committee invite applications for this appointment. Salary at the rate of £200 per annum, with board, residence, etc., provided in the Hospital. Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability. The duties attaching to the post are chiefly surgical, but being also in part administrative, experience in this direction is therefore essential.

Applications, accompanied by copies of testimonials, three of which must preferably be given in support of the application, to be forwarded to the undersigned on or before Wednesday, February 5th next, from whom forms of application and copies of the duties may be obtained.

The Hospital contains 256 beds and is a School of Medicine attached to the University of Bristol.

THOMAS W. GREGG, Secretary.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for eight months, from February 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before January 28th. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
January 13th, 1930. Secretary-Supt.

West Herts Hospital, HEMEL HEMPSTEAD.

(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on February 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties early in February. Salary £100, with rooms, board, and laundry.

There are 110 beds.

Particulars to be obtained of, and applications, stating previous experience and essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

The Liverpool Eye and Ear INFIRMARY, MYRTLE STREET.

Applications are invited for the post of HOUSE SURGEON to the Ear, Nose, and Throat Department of the above Institution. Salary £100 per annum, with board and lodging.

Applications, stating age and qualifications, together with copies of not more than three recent testimonials, should be sent in not later than January 28th to—

CHARLES W. WRIGHT, Esq.
9, Harrington St., Liverpool.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

CLINICAL ASSISTANTS are required in the Medical Department under the Honorary Physicians, to attend on Monday, Tuesday, Wednesday, and Friday afternoons.

CLINICAL ASSISTANTS are also required in the X-ray Department, to attend on Monday, Tuesday, and Thursday afternoons.

Applications for appointment to be sent to—

FREDK. W. DREWETT, Director.

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W. J. HICKS, *Secretary.*

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19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Birmingham Maternity Hospital

Applications are invited for the post of RESIDENT MEDICAL OFFICER AND REGISTRAR, to commence duties on April 1st next. The appointment is made for one year at least and can be renewed if desirable. Salary £200 per annum.

Applicants must have had previous experience in Obstetrics and be reading for Higher Examinations.

Applications and copies of testimonials to be sent to Mr. HUGH C. ASTON, 45, Newhall Street, Birmingham, not later than February 15th.

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Shropshire Town. — £1,300 p.a. Panel and appts. worth £800 p.a. Mids. 3 to 5 gns. Visits 3/6 to 21/-. Good house, 5 beds., box, 2 recep., surgery, etc., to rent. Premium £1,800, part down.—No. 8596.

Lincs.—Unopp. Country PRACTICE. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 5/- to 10/-. House, 5 bed., etc., to rent; large garden.—No. 8592.

Eastern Counties.—Rapidly increasing. 1/3 share of £2,500 p.a. Country Town. Appts. £65 p.a. Panel over £750 p.a. Clubs, etc., £150 p.a. Mids. from 3—5 gns. up. Visits from 5/-. Alternative accommodation. Personally visited.—No. 8591.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8585.

Eastern Counties.—Old-estab.—ONE-THIRD SHARE of £2,400 p.a. Panel over 1,600 names. Appts. £100 p.a. Usual fees. Nice house and garden to rent. Prem. 1¾ years, part down.—No. 8584.

Hants Country. — About £700 p.a. Appts. about £55 p.a. Panel about 500. Visits 5/6—10/6. House, 3 bed., etc., to rent or buy.—No. 8582.

N. W. Scotland. — About £860 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premium, including furniture, only £1,200.—No. 8577.

Glos.—Over £750 p.a., increasing annually. Clubs £40 p.a. Panel 550. Mids. 2—10 gns. Visits 5/6—10/6. Good house, 5 bed., etc.—No. 8578.

Wiltshire.—About £1,000 p.a. Small panel. No midwifery. Appt. £20 p.a. Visits 5/- to 10/6. Suitable house to rent at £70 p.a.—No. 8574.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd of £3,300 p.a. Panel over 1,300. Appts. £280 p.a. Mids. 2 to 10 gns. Visits 5/- to 31/6, etc. Suitable accommodation.—No. 8573.

Home Counties.—Country Town. Share worth £1,000 or more p.a., in old-established Practice. Appts. £250 p.a. Panel over 2,700. Personally visited.—No. 8563.

Continental Coastal Practice.—About £450 p.a. Visits 10/6 to 21/-. Cons. 5/- to 10/6. No appts. or mids. Good flat to rent, 3 bed., etc.—No. 8561.

Lancs.—1/3 or 1/2 share of over £2,400 p.a. Prelim. Assistancy. Panel £500. Mixed-class. Good house, 4 beds., attics., etc.—No. 8454.

Lancs.—£4,000 p.a., increasing. Panel over 2,650. Fees 2/6—7/-. Mids. 2—5 gns. Suitable for two. Two adjoining houses to rent or buy. Premium, including drugs, book debts, surgery furniture, etc., only £4,750.—No. 8509.

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GLOS.—Non-dispensing General Town PRACTICE. Excellent freehold house to rent or for sale. Receipts over £700 p.a. Panel 550. Suitable for lady doctor. *Premium* £1,050.

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HANTS.—Seaport.—Well-established mixed-class G.P. Good house, with garden, to rent or for sale. Receipts £800 p.a. Panel 900. Two appointments. *Premium* 1½ years' purchase.

MIDLANDS.—Large Town.—Well-established G.P. Receipts £2,500. Panel 1,900. Choice of two residences for sale or to rent. Premium 1½ years' purchase. Partnership up to half share would be entertained.

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HOME COUNTIES.—Well-established country PRACTICE. Receipts £1,400. Panel 705. *Excellent freehold house with large garden and* garage. Scope for surgery. Premium 1½ years' purchase.

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LANCS.—Old-established middle-class PRACTICE in manufacturing area. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. Premium for Practice 1½ years' purchase, payable part down and balance by arrangement. Partnership would be *considered.*

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7. WEST OF ENGLAND.—PARTNERSHIP (half share) in well-established industrial and middle-class Practice. Receipts over £900 p.a (for share) including panel and appts. over £600. Good house to rent.
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Practices and Partnerships for Disposal.

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1 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £750. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

2 N.E. COAST.—Partnership (after short preliminary Assistantship) in Practice in Seaport Town. Suitable house to rent. Share worth over £1,800 p.a. at 1½ years' purchase. Young energetic Englishman (about 30) required.

3 EASTERN COUNTIES. — Partnership in Country Practice over £2,000 p.a. in prosperous agricultural district. Panel 1,070. Nice detached house (6 bedrooms), electric light, etc., for sale or rent. Premium two-fifths share £1,400.

4 Near BIRMINGHAM.—Partnership in very sound Practice, nearly £3,000, in large and rapidly growing residential country district. Panel 930. Suitable house obtainable. Premium one-third share 2 years' purchase.

5 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

6 SUSSEX. — Partnership in increasing Country Practice nearly £3,000 p.a. Panel nearly 1,500. Good society and sport. One-third share at 2 years' purchase. Scope for increase.

7 LONDON, N.—Practice of £1,100 p.a. in populous district. Panel 1,150. House to rent. Premium 1½ years' purchase.

8 LONDON, W.—Partnership in non-dispensing Practice about £2,500 p.a. No panel or appointments. One-third share, with view to ultimate succession. Premium 2 years' purchase. Purchaser must be well qualified and used to good-class Practice.

9 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

10 MIDLANDS.—Partnership in Practice in agricultural district in beautiful part. Small panel. Not much midwifery. House (7 bedrooms), with very nice garden and orchard, to rent. Share worth £1,200 p.a. at 2 years' purchase.

11 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

12 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

13 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase after preliminary assistantship.

14 MADEIRA.—Season Practice. — Receipts last season over £900. Easily worked. Practically no night work or midwifery. Excellent climate. Premium £1,000.

15 LONDON, S.E.—Cash and Panel Practice in thickly populated area. Receipts 1929, £860. Panel 250. Rent of premises £9 per month. Premium £750.

16 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable rooms could be obtained. Premium £950.

17 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

18 SOUTH MIDLANDS.—Partner required in Country Town Practice over £4,500 p.a. Panel 2,500. House available, with 6 bedrooms, etc. One-fourth share at 2 years' purchase after preliminary assistantship. Applicant must be married and about 30/35 years of age.

19 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

20 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

21 SOUTH OF ENGLAND.—Partnership in Practice nearly £2,600 in small industrial town. Panel 2,200. One-third share at 2 yrs.' purchase after preliminary assistantship.

22 SOUTH COAST.—Ophthalmic Practice over £1,900 p.a. in residential town. House, containing 5 bedrooms, etc., for sale or rent. Premium £1,800.

23 WEST OF ENGLAND.—Country Practice about £500 p.a. in mining and agricultural district. Panel £550. House (6 bedrooms), with fine garden and paddock, to rent. Premium £500.

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25 SOUTH MIDLANDS. — Easily worked Country PRACTICE upwards of £1,000 p.a. in beautiful part. Panel 470. Excellent and most pleasantly situated modernised house (6 bedrooms), in old-world garden, for sale. Sport and schools. Premium £1,350.

26 HEREFORDSHIRE.—Practice about £400 p.a. in beautifully situated Market Town. No panel. Centrally situated house (5 bedrooms) for sale. Great scope. Premium 1 year's purchase.

27 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

28 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

29 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

30 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,500 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

31 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

32 LIVERPOOL. — Increasing Practice of nearly £1,500. Panel 560. House (4 bedrooms), garage and garden, for sale. Golf near by. Premium £1,550 (£500 by instalments, without interest).

33 ESSEX.—Practice of £1,100 p.a. in Rural District. Panel 670. Old-fashioned house (6 bedrooms), with large garden, to rent. Scope. Premium £1,650.

34 EASTERN COUNTIES. — Partnership in Country Practice of £2,380 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

35 W. OF ENGLAND. — Ophthalmic PRACTICE, between £850 and £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,300.

36 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering-place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,100.

37 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

38 INLAND WATERING-PLACE. — Good-class PRACTICE of nearly £2,000 p.a. (General and Spa work). No midwifery or panel. Excellently situated house to be purchased.

39 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

40 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

41 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

42 BRITISH EAST AFRICA. — Assistant required (with view to Partnership) in General and X-ray and Electro-therapeutic Practice. Assistant must hold the F.R.C.S., and Experience in X-ray would be advantageous. Share of about £1,200 p.a. offered to suitable man after preliminary assistantship.

43 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 800. Suitable and convenient house.

44 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained.

45 SOUTH WALES. — Practice over £1,200 p.a. in Country Town. Panel about 300. Attractive old house (6 bedrooms). Garage and garden. Good facilities for sport. Premium £1,500.

46 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

47 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

48 SOUTH COAST. — Increasing Practice £1,515 p.a. in favourite Seaside Resort. Panel 400/500. Large house for sale. Scope for increase. Premium 1½ years' purchase.

49 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (6 bedrooms) for sale. Sport. Premium 1½ years' purchase.

50 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

51 WEST OF ENGLAND.—Steadily growing Country PRACTICE of about £650 in delightful part of the Cotswolds—easy reach of two good Towns. Panel 497. House (6 bedrooms), with garage, ¼ acre garden, and paddock, for sale. Good scope. Premium £200.

52 WILTSHIRE. — Country Practice about £550 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

53 SOUTH COAST.—Practice of about £1,400 p.a. in popular resort. Panel 785. House (5 bedrooms), on main road, to rent.

54 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms) and garden for sale. Premium £750.

55 NORTH MIDLANDS. — Partnership in Practice £2,525 p.a. in one of the principal cities. Panel about 1,500. Share up to one-half at 2 years' purchase after preliminary Assistantship.

56 SHEFFIELD.—Practice about £800 (including appointments worth £155 p.a.). No panel or dispensing. Convenient house (6 bedrooms) to be sold or let. Premium £200 or offer.

57 WEST MIDLANDS.—Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

58 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

59 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

60 LONDON, S.W.—Good middle-class non-dispensing PRACTICE in pleasant residential suburb. Receipts year ended September 30th, 1929, £2,422. No panel. Excellent detached corner residence (7 bedrooms). Premium—house and Practice—£4,000.

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3. KENT.—LARGE TOWN.—Well-established middle and better working-class non-panel PRACTICE, producing last year £3,000 p.a. Visits 5/- up. Suitable house, 3 reception, 4—5 bedrooms, etc. Rent on lease £63 p.a. Prem. £3,500, £2,000 down, balance as arranged.
4. NORTH LONDON.—Old-established middle and working-class PRACTICE, averaging nearly £2,200 p.a. Panel of 1,356 and appointments worth about £500 p.a. Visits 3/6 up. Very little midwifery 2½ to 5 gns. Nice house, in excellent repair, 3 reception, 4 bedrooms, etc., and professional rooms. Rent on lease £65 p.a. Premium £3,500.
5. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-fourth share in an exceptionally sound non-dispensing mainly mixed and better-class Practice, averaging over £8,500 p.a. Small selected panel of 700. Fees 5/- to 21/-, average 7/-. Suitable house can be obtained. London, Oxford, or Cambridge Graduate preferred, age 30 to 35, and experienced in anæsthetics. Premium £4,000.
6. NEAR LEICESTER.—Old-established good middle-class Country PRACTICE, in attractive district. Average income £1,453, including panel of 1,250. Fees from 3/6. Mid. 3 gns. upwards. Good house in excellent repair, 3 reception, 6 bedrooms, etc., separate professional rooms. Garage. Garden of 3½ acres. Price freehold £2,800. £1,750 on mortgage. Premium £2,175.
7. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Premium £2,300. Cottage Hospital, and good scope for major surgery.
8. MADEIRA.—SEASONAL PRACTICE.—Receipts for immediate past 12 months £900. Fees 10/6 to 21/-, and a few at 7/6. Easily worked and good scope. Excellent climate. Premium £1,000.
9. BORDERS OF NORTHANTS AND LINCS.—Unopposed old-established Country PRACTICE, within easy reach of large town, and worth over £1,500 p.a., including panel (with mileage) £675, and appts. about £80. Visits 5/- to 20/-. Suitable house available. Rent £70 p.a., or can be bought. Premium 1½ years' purchase. Held by Vendor, who is retiring, over 30 years. Sport of all kinds.
10. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—A share producing about £1,200 p.a., with prospects, is for disposal owing to the retirement of one of the partners in an old-established Practice. Ingoing partner would reside in a pretty country district about 5 miles from pleasant country town, where main practice lies. No opposition. Total income about £8,000, including valuable appointments worth about £2,000, and panel. Very desirable residence (ample accommodation) with 2½ acres of ground available on lease at low rental of £60. Premium 2 years' purchase.
11. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 350. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
12. GLOS.—Favourite Town.—Mixed general non-dispensing PRACTICE. Income last year over £700, including panel of 550. Visits 3/6 to 10/6. Mid. 2 to 10 gns. Good house, in excellent position, with 3 reception, 3 bedrooms, etc. Rent on lease £75 p.a. Premium 1½ years' purchase. Suitable lady doctor.
13. PARTNERSHIP.—COUNTY TOWN within easy reach of London.—A one-third share is offered, owing to retirement through ill health of one of two partners, in an old-established better and mixed-class Practice, averaging over £3,600 p.a., including panel of 1,100. Fees 3/6 to 42/-, medicine extra. Good house, with 3 reception, 6 bedrooms, etc. Garden. Rent on lease £83 p.a. Excellent society, sport, and schools. Prem. £2,700, to include share of surgery.
14. LONDON, W.—Chiefly middle-class PRACTICE, averaging about £700 p.a., including panel of 750. Visits 3/6, 5/-. No midwifery. Suitable house, with 4 beds., etc. Rent on lease £96 p.a. Prem. £1,100.
15. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
16. SOUTHERN COUNTY.—PARTNERSHIP.—Third share of very old-established increasing Practice situated in a beautiful residential and agricultural district within 10 miles of the sea. Cash receipts last year over £3,000, including panel and appointments. Visits 5/- to 21/-. Suitable house can be arranged for ingoing partner. Prem. 2 years' purchase. District is developing rapidly and offers good scope.
17. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visit 5/- to 21/-. Panel of about 380. Appts. worth about £50 p.a. Convenient house, with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' pur.
18. WITHIN TWENTY MILES OF LONDON.—Old-established good mixed-class PRACTICE, in attractive residential district. Receipts average £1,000 p.a. Panel of nearly £500 and appts. worth £60. Visits 3/6 to 21/-. Very nice house, with all modern conveniences and half acre of garden. Price for freehold £1,800. Premium £1,400.
19. ESSEX.—(Within 15 miles of London).—Old-established unopposed and increasing PRACTICE, in pretty country district. Income last year over £1,150, including Union £90 and panel £432. Comfortable house, with ample accommodation and large garden. Rent £70 p.a. on lease. Premium £1,650. Ill health reason for sale.
20. HOME COUNTIES.—Within few miles of large town.—Old-established unopposed and increasing PRACTICE, in pleasant district, worth over £3,000 p.a., including panel, with mileage, producing about £1,000 and appts. £260. Visits 3/6 to 10/6, medicine usually extra. Very little midwifery. Good house (7 bedrooms, etc.), garden, garage. Price, freehold, £2,000. Premium 1½ years' purchase.
21. CHESHIRE.—Industrial Town within easy reach of Manchester.—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
22. DEATH VACANCY.—SOUTH WALES.—Seaside Resort.—Old-established mixed-class PRACTICE in favourite locality. Receipts for past 12 months £1,400, including panel of 607. Visits 3/6 to 21/-. Convenient house, with 2 reception, 4-6 bedrooms, and professional rooms, etc. Rent on lease £80 p.a. Good sport and schools. Prem 1 year's purchase.
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26. SOMERSET.—Near Hospital Town, in very pleasant residential district, an old-established unopposed Country PRACTICE averaging over £900 p.a., including panel (producing about £400 p.a., with mileage and appts. Visits 3/6 to 21/-. Railway station in place. Nice house (5 bedrooms, dressing and bathroom, etc., garden). Price, freehold £1,250, part on mortgage. Prem. £1,250, to include drugs, etc.
27. LONDON, EAST.—(Within 1 mile of Liverpool Street).—Old-established PRACTICE in thickly populated district worth last year £84 including panel of 520. Small house (surgery, waiting room, dispensary, lounge sitting room, 2 bedrooms, bathroom, etc.). Rent lease £60 p.a. Premium £1,400, or near offer, to include fit carpets, linoleum, and curtains.
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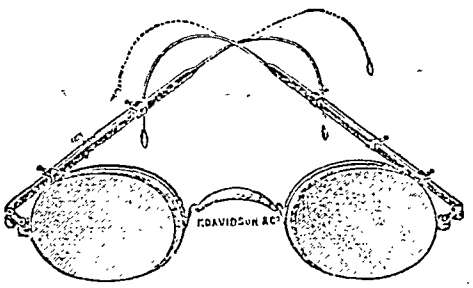
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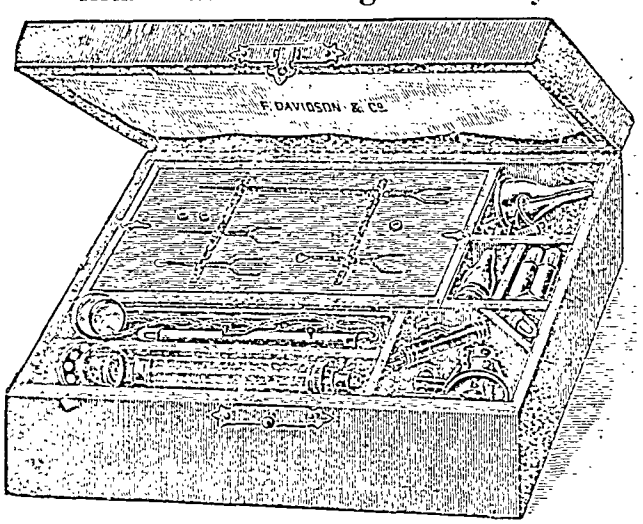
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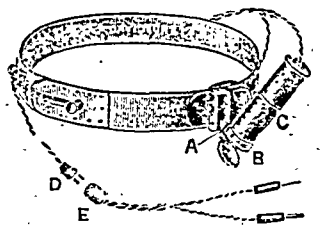


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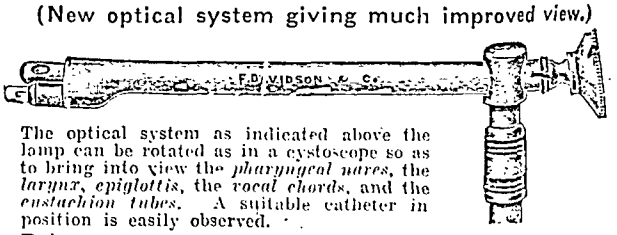
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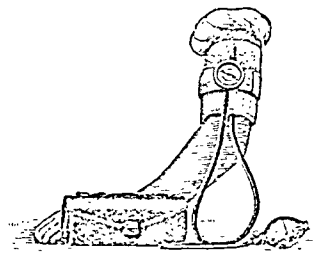
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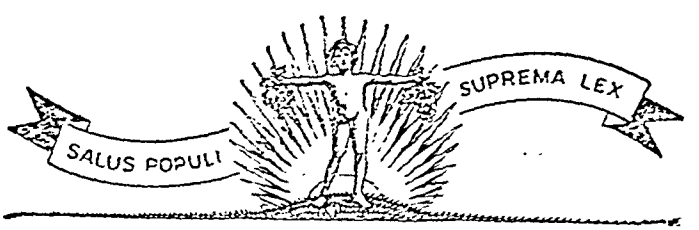
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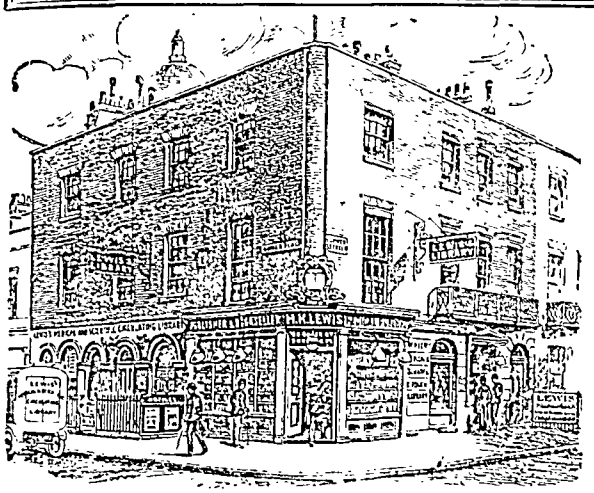
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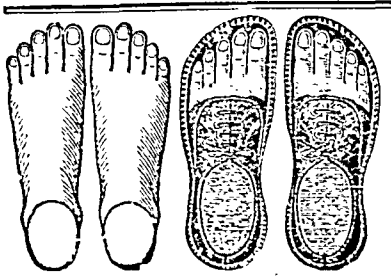
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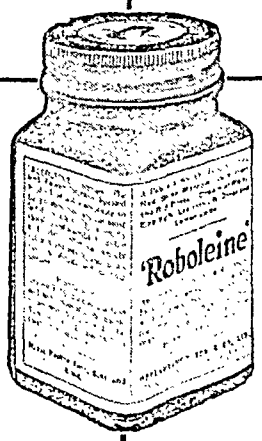
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20 units per c.c. Packed in bottles containing:

5 c.c. (100 units or 10 doses)	2/-	each
10 c.c. (200 „ 20 „)	4/-	„
25 c.c. (500 „ 50 „)	10/-	„

40 units per c.c. Packed in bottles containing:

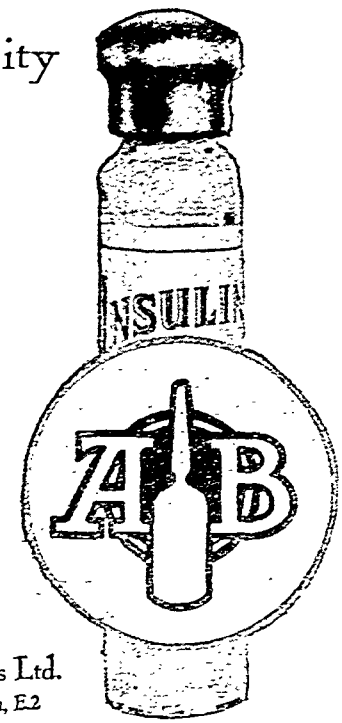
5 c.c. (200 units or 20 doses)	4/-	each

Full particulars and the latest literature will be sent free to members of the Medical Profession.

Joint Licencees and Manufacturers:

The British Drug Houses Ltd. Graham Street, London, N.1

Allen & Hanburys Ltd. Bethnal Green, London, E.2



ALOCOL

Colloidal Hydroxide of Aluminium

For Chronic Irritations of the Gastric Mucosa

WHEN alkaline therapy is indicated "Alocol" is the preferred form of treatment. Its advantages over the usual oxides and alkalis are manifest. Whilst the preparations in common use give momentary relief to painful symptoms they aggravate the morbid condition. Consequently such remedies are contraindicated, especially in stubborn, chronic cases.

The action of "Alocol" is superior in every way, because it does not merely confine itself to combating the symptoms of the trouble, but attacks the origin itself.

"Alocol" fixes the acid, not by neutralization, but by adsorption. It relieves pain, is slightly astringent, and limits the acid secretions. "Alocol" is always well borne; no harmful secondary action follows its administration, and its therapeutic effect is not diminished with prolonged use.

Complete chemical history of "Alocol," with convincing clinical reports and supply for trial, sent free to physicians on request.

A. WANDER, Ltd., Manufacturing Chemists,
184, Queen's Gate, London, S.W.7.
Works: KING'S LANGLEY, HERTFORDSHIRE.

M 230

CREMOR ALKALINUS 'A. & H.'

Presents in a convenient and effective form the powders recommended by Professor MacLean for the intensive alkaline treatment of duodenal and gastric ulcers. Cremor Alkalinus "A" is the standard formula; where it proves to be too laxative in effect, formula "B" may be employed. In formula "K" the bismuth carbonate is replaced by colloidal kaolin, which possesses marked toxin-adsorbing properties.

CREMOR ALKALINUS "A. & H." "A"		CREMOR ALKALINUS "A. & H." "B"		CREMOR ALKALINUS "A. & H." "K"	
Sod. Bicarb. ...	2 parts	Sod. Bicarb. ...	2 parts	Sod. Bicarb. ...	2 parts
Mag. Carb. ...	4 parts	Mag. Carb. ...	3 parts	Mag. Carb. ...	3 parts
Calcii Carb. ...	4 parts	Calcii Carb. ...	4 parts	Calcii Carb. ...	4 parts
Bismuth Carb....	1 part	Bismuth Carb ...	2 parts	"Osmo" Kaolin	2 parts

In 8-oz. bottles for prescribing and 80-oz. bottles for dispensing.

Descriptive literature and clinical trial sample will be sent on request.

Allen & Hanburys Ltd., London, E.2

Telephone: 3201 Bishopsgate (10 lines). *Telegrams*: "Greenburys, Edo London."

If your patient must stop sugar

It is well known to the Medical Profession that a child's craving for sweets is natural, as a child requires a large supply of an easily assimilated hydrocarbon. Unfortunately ordinary sugar upsets the digestive functions of some children, and "glucose," recommended in its place, is too often of unknown composition and too expensive.

The mono-saccharides of fruit-sugar offer obvious advantages over the di-saccharide, sucrose, and a pure and very palatable mixture of dextrose and lævulose is now available under the trade name of SUNNYCOMB.

SUNNYCOMB was first made at the request of some members of the Medical Profession who desired a reasonably cheap monosaccharide for sweetening baby-food for babies who were not flourishing. The results were so satisfactory, and the product so palatable to both young and old, that it was decided to make it generally available.

SUNNYCOMB supplies the necessary carbohydrates in an easily digestible form, being so readily assimilated that it does not upset the digestive functions as ordinary sugar sometimes does, yet it is at the same time a pleasing and appetising delicacy.

SUNNYCOMB is made by Macfie & Sons, Limited, who first started in 1788 and have been sugar refiners in Liverpool continuously since 1837. They guarantee it to be a pure wholesome product and will willingly supply free samples and full information about it to any member of the Medical Profession on receipt of a postcard.

MF

MACFIE
& SONS LIMITED
34 MOORFIELDS
LIVERPOOL

GUAIACOL COMPOUND
IN
RHEUMATOID ARTHRITIS

The successful treatment of Rheumatoid Arthritis by the use of a special combination of Iodine, Guaiacol, and Camphor, in ampoule form, has been fully described in the Medical Press.

Vide BRITISH MEDICAL JOURNAL, October 10th, 1925; March 6th, 1926.

GUAIACOL COMPOUND AMPOULES
(DUNCAN)

for intramuscular use.

LITERATURE AND PRICES ON APPLICATION.

DUNCAN, FLOCKHART & CO.,
EDINBURGH & LONDON (155/7, Farringdon Road, E.C.1).

Put your patient on

'WHITE BEAR' BRAND Cod Liver Oil

THERE is no finer grade of Norwegian Cod Liver Oil imported into this country than White Bear Brand.

It is exceptionally free from taste and odour, well-tolerated and easily assimilated. The process of refinement is scientifically controlled, hence the Vitamin activity of the oil is fully retained. Thus, the utmost benefit obtainable from cod liver oil is assured to the patient. The price, too, is advantageous.



TRADE MARK.

Supplied in 4 oz., 8 oz., 12 oz., 16 oz., and 20 oz. bottles by all Chemists.

HIRST, BROOKE & HIRST, LTD., Leeds.

London Distributors: JOHN BELL & CROYDEN, 50-52, Wigmore Street, W.1.

The Medical Profession when prescribing "Liquor Carbonis Detergens" SHOULD ADD THE WORD

Wright's

On receipt of your professional card, a package will be sent containing a sample of each of the following—

Wright's Coal Tar Soap.
Wright's Coal Tar Ointment.
Wright's Lysol.
Wright's Liquor Carbonis Detergens.

Although there is no secrecy as to the composition of Liquor Carbonis Detergens (it is described as "an alcoholic solution of coal tar"), the method of manufacture is unique. Imitations will be found to be produced by simple digestion, usually accompanied by some primitive, perfunctory, and inadequate stirring; whereas, in the case of the genuine product, the intimate contact required, for the complete extraction of all the soluble antiseptic constitutents, is attained by a series of complicated processes, involving the use of highly specialized machinery.

WRIGHT, LAYMAN & UMNEY LTD., 66, Park Street, Southwark, S.E.1

COMPOUND SYRUP OF HYPOPHOSPHITES

"FELLOWS"

Trade Mark

The first line of Body Defense assured through

"CHEMICAL TISSUE FOODS"

combined with the dynamic action of strychnine and quinine

Samples on request

Fellows Medical Mfg. Co., Inc.
26 Christopher Street
New York City

DEMINERALIZATION
CONVALESCENCE
MUSCULAR ATONY
NEURASTHENIA
PREGNANCY
DEBILITY

The FOOD TONIC

POTASSIUM
MANGANESE
PHOSPHORUS
CALCIUM
SODIUM
IRON

a new antiseptic

QUINANIL

ANIL - QUINOLINE 48 S

THIS important new antiseptic is the result of Research carried out by a group of workers at the University of Leeds under the auspices of the Medical Research Council. It has been subjected to thorough clinical trials in the General Infirmary, Leeds.

Boots Pure Drug Co. Ltd. have been supplying QUINANIL for these clinical trials, and the results were reported in the LANCET of November 9th, 1929.

Every batch of QUINANIL-BOOTS is submitted to the University of Leeds for approval before issue, and ample supplies are now available for the use of the Medical Profession.

QUINANIL is usually employed in solution in normal saline. The strengths used have varied from 0.005% (1 : 20,000) to 0.1% (1 : 1,000). See LANCET of November 9th, 1929, p. 983.

Supplied in :

BOXES OF 6 TUBES
EACH CONTAINING 0.5 gm. - - PRICE 7'6

VIALS
EACH CONTAINING 2.5 gm. - - PRICE 5'-

For further information apply to
Wholesale & Export Dept.,
BOOTS PURE DRUG COMPANY LIMITED
Manufacturing Chemists and Makers of Fine Chemicals
NOTTINGHAM, ENGLAND
Telephone : NOTTINGHAM 45501
Telegrams : "DRUG," NOTTINGHAM

BOOTS PRODUCTS

Boots Pure Drug Co. Ltd., Nottingham

Invaluable as a Galactagogue

This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

Horlick's is rich in valuable malt-sugars, but contains neither cane sugar nor free starch. It is therefore extremely easily digested, and highly productive of energy.

These characteristics make it valuable as a galactagogue. Its abundant nutriment supplements any deficiencies in the mother's regular diet, and promotes a regular and nourishing supply of milk, and its easy digestibility makes it acceptable when other forms of nourishment are unwelcome.

Taken during pregnancy, it builds up the mother and helps to maintain her vitality. A cupful taken regularly first thing in the morning frequently abolishes and almost invariably alleviates the discomfort of morning sickness.

Horlick's is now obtainable in two forms — the original, natural-flavoured Malted Milk, and the new Chocolate Flavoured form — identical in its constituents with the original Horlick's, but flavoured with fine chocolate. Horlick's is sold in sealed glass bottles, price 2/-, 3/6, 8/6, 15/-. Also in tablet form.

Further details may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

PLEASANTER FOR PATIENT—

MORE CONVENIENT FOR YOU—



For internal examination, manual or instrumental, K-Y Jelly gives the freest lubrication. It flows readily, cannot bind, and is quickly and conveniently squeezed out of its tube in exactly the quantity required. It does not soil clothing and is easily removed from hands or instruments by rinsing them in water.

K-Y Jelly is a blend of certain vegetable substances with carefully balanced proportions of boric acid, and does not interfere with the application of local remedies.

Physicians and Surgeons are invited to write for samples to *Dept. B*, Johnson & Johnson (Gt. Britain) Ltd., Slough, Bucks, stating the name of their local supply house.

* * *

K-Y Lubricating Jelly is obtainable from medical supply houses and pharmacists throughout the world. Tubes in cartons, 1/3 (Hospital size, 2/6).

K-Y JELLY

EXTREMELY "SLIPPERY"— RINSES OFF IN WATER

JOHNSON & JOHNSON (GT. BRITAIN) LIMITED, SLOUGH AND LONDON



Regesan

CREAM OF MAGNESIA

A pure, finely divided Magnesium Hydroxide ($Mg(OH)_2$) suspended in water. A simple antacid and valuable laxative. Digestive troubles and gastric conditions indicating the necessity of a corrective of this type quickly respond to treatment with Regesan Cream of Magnesia.
It does not gripe nor cause discomfort, and is mild in action.

Price 1/3 per bottle.

Full size trial sample free to Medical Practitioners in the British Isles on application to Boots The Chemists, Station Street, Nottingham.

The Boots Chemists

670 BRANCHES IN GREAT BRITAIN

Boots Pure Drug Co. Ltd., Nottingham.

On the Absorption of Sanatogen

Why it is that Sanatogen is absorbed with ease even by the weakest stomach.

The tonic influence of the glycero-phosphoric-acid in the chemical combination casein-sodium glycerophosphate (Sanatogen) makes the use of casein possible in cases where the patient has to a great extent lost his capacity of absorption (Tunnicliffe, Tischer-Beddies, Chajes, a.o.).

French authorities (Robin and others) ascribe to the glycero-phosphates a great influence on the utilization of the albumin in the body. The manufacture of Sanatogen is conducted under the strictest scientific control ensuring absolute purity, sterility and uniformly high dietetic value.

Samples and Literature will gladly be sent on request to:

GENATOSAN LTD., LOUGHBOROUGH, LEICESTERSHIRE.

BY APPOINTMENT

FIRST PERFECTED NEARLY A CENTURY AGO THEY HAVE GAINED INCREASING FAME EVER SINCE

ORIGINATED nearly a century ago by Mr. Brand and one of the most famous doctors of the day, Brand's Essences have steadily grown in fame.

Under scrupulous supervision and by an exclusive process, the juices of freshly killed chickens, beef and mutton are extracted. These pure juices without adulteration or addition of any kind are the essences that reach the consumer — full of the restorative and stimulating properties of the fresh meat.

For Brand's Essences have a stimulating action on the digestive organs. They excite the appetite and in all cases of exhaustion and during convalescence help the patient to want more solid food.

Brand's Essences (Beef, Chicken and Mutton) are obtainable at chemists and stores throughout the world in small and large-sized tins and jars. Brand & Company Limited, Mayfair Works, South Lambeth Road, S.W.8.

BRAND'S ESSENCES

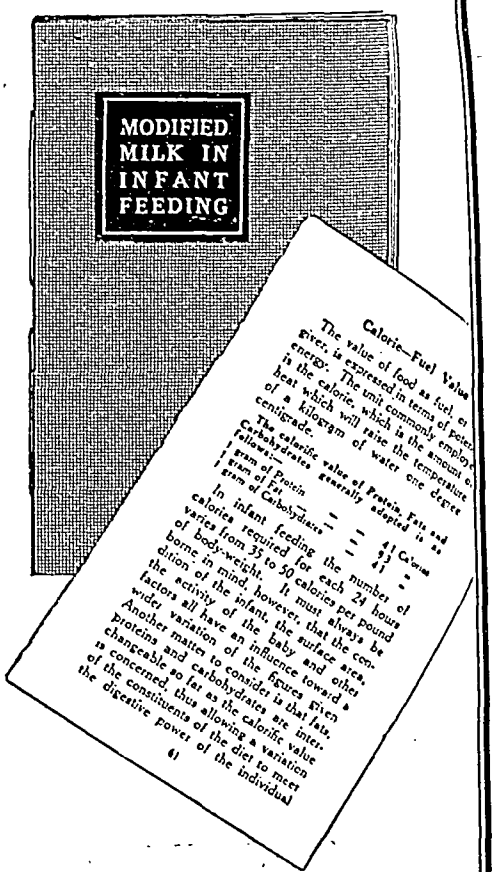
BOTTLE-FED BABIES.

The difficulties that attend hand-rearing are minimised by the use of cow's milk modified by

Mellin's Food

The physical texture of the casein is thereby modified, the carbohydrate constituent raised, and the saline ingredients adjusted, so that the resulting mixture gives most satisfactory results under all average conditions.

Samples and directions for feeding, as well as suggestions for the modification of milk by means of Mellin's Food in cases of malnutrition, diarrhœa, constipation, will be gladly forwarded by:



JOHNSON'S FOOD Ltd., LONDON, S.E.15

WHOOPING COUGH

Whooping Cough is a condition in which treatment with a suitable vaccine has proved remarkably successful. Some Practitioners, however, are deterred from using Vaccines, owing to fear of reactions, but this objection may be overcome by employing Detoxicated Whooping Cough Vaccine (Genatosan). In the preparation of this vaccine all the toxic elements of the germ are removed; as a result it is given to young children and infants without any harmful reaction and produces a high degree of immunity.

The following extract from a Practitioner's letter may prove of interest:—

"..... Some time ago, I resolved to try for the first time a vaccine in whooping cough and the results were so excellent, that I thought you would be interested to hear from me.

(*a*) Three children aged 3 years, 2 years and 8 months, were treated when the disease was about 10 days established; all were completely cured after the third injection—the mother described the effect to me as simply miraculous.

(*b*) Two aged 6 years and 3¼ years, who had relapses, were well after they had got the 2nd injection.

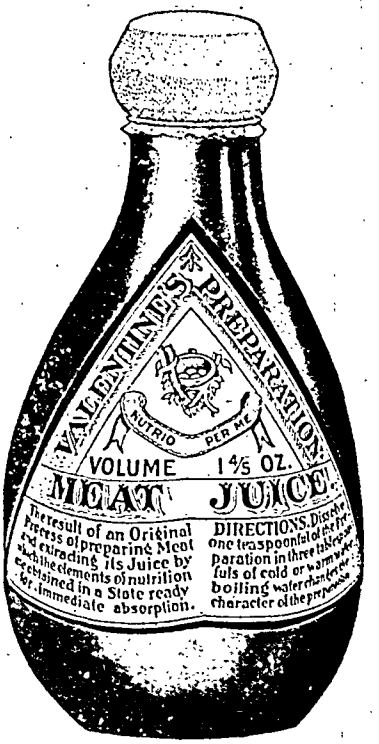
(*c*) An infant aged 8 months—the whoop disappeared after 1st injection. The cough was gone after 2nd injection, and the mother, who had tried everything and despaired of the child's life, was exceedingly grateful and assured me it was simply wonderful to see how the child had slept for the first time for days and was able to retain its food and rapidly put on weight. The Vaccine used was your Detoxicated Whooping Cough Vaccine. Speaking for myself, I can only describe the effects as magical, as the children were worn out and emaciated from coughing, vomiting, and loss of sleep."

Additional information regarding the above Vaccine will gladly be supplied to any Practitioner who writes to The Vaccine Department, Genatosan Ltd., Loughborough, Leicestershire.

Valentine's Meat-Juice

In the **Treatment** of **Weak Babies**, in the **Gastric** and **Enteric Troubles** of **Infants** and in the **Wasting** and **Febrile Diseases** of **Children**, the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Sustain** and **Strengthen** has been **Demonstrated** in

Hospitals for Children.



The quickness and power with which **Valentine's Meat-Juice** acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

Physicians are invited to send for Clinical Reports.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
Richmond, Virginia, U. S. A.

JB 95

PLASMONA

IS THE

SOVEREIGN RESTORATIVE & NERVE FOOD

in fatigue, general debility and exhaustion due to illness or nervous overstrain, in convalescence, and for those engaged in strenuous work, either physical or mental.

Plasmona has proved of the greatest value in

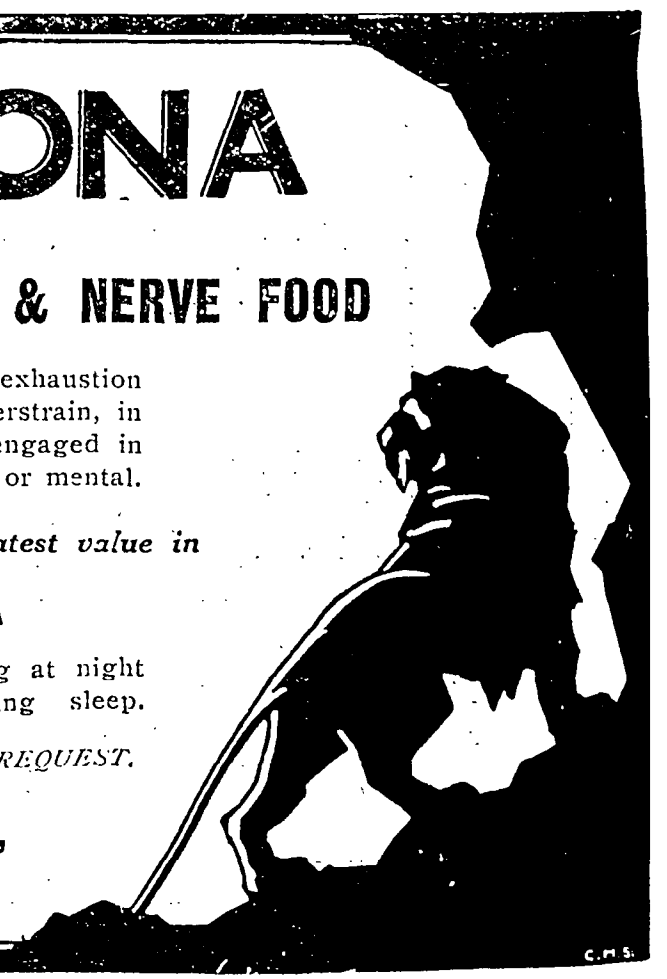
INSOMNIA

A cup of Plasmona last thing at night ensures sound and refreshing sleep.

CLINICAL SAMPLE ON REQUEST.



PLASMON LTD.,
FARRINGDON ST., LONDON, E.C.4.



For the Child

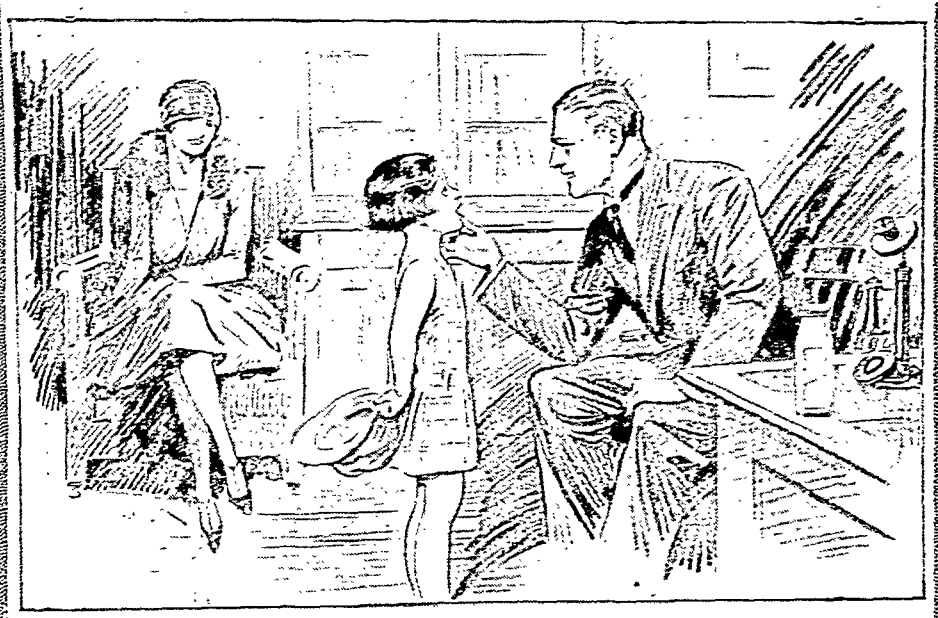
Facts confirm the belief that 'Petrolagar' Brand Emulsion is best for children as it will establish regular habit time of bowel motion with no irritation whatsoever.

No more castor oil, senna or laxative syrups; they act by irritating the tender mucous membrane of the bowel.

'Petrolagar' Emulsion has a bland, soothing, mechanical action—Children like its pleasant taste.

Petrolagar Laboratories Limited,
Braydon Road, London, N.16.

'Petrolagar'
(Regd. Trade Mark)



Gratifying results attend its use.

NATURALLY RICH IN VITAMIN "D"



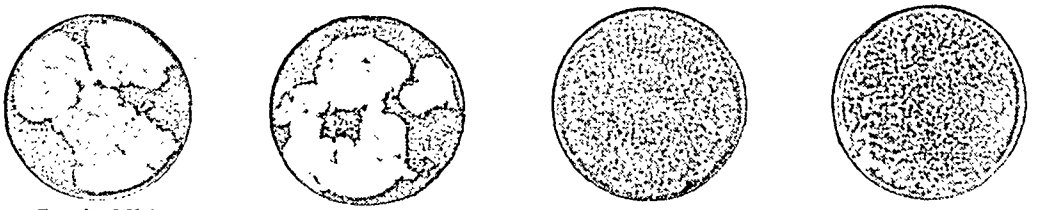
DIGESTIBILITY

In contradistinction to the heavy, large, and indigestible curds which are given by the action of rennin on Cow's milk and milks dried by the spray process, reconstituted Cow and Gate Milk gives a light flocculent precipitate, very similar to that of Breast Milk. A recent investigation has shown that the same results are obtained by using enzymes from human sources and that the improved Cow and Gate Roller Process does not alter the proteins to an extent which interferes with their subsequent easy digestion.

The use of such alkaline agents as Sodium Citrate and Lime, to prevent this leathery curd formation, is therefore entirely superseded. In fact, it has been shown (Hess: Feeding and Nutritional Disorders in Infancy) that these agents, while retarding the formation of hard curds, also inhibit, most decidedly, peptic digestion owing to their increased buffer action, and in addition they have a destructive effect on Vitamin C.

This denaturisation of the proteins in Cow and Gate is brought about by an improved Roller Process, which also preserves intact the Vitamin and mineral content of the original rich milk of Somerset and Dorset.

RENNIN CURDS OF VARIOUS MILKS.



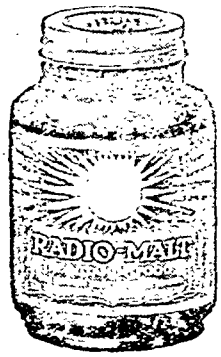
Cow's Milk. Spray Milk. Cow & Gate. Breast Milk.

The makers will gladly supply samples for Clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

COW & GATE Ltd.,
GUILDFORD ENGLAND

EVERYONE LOVES COW & GATE CHOCOLATE MILK

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Building up Disease-Resisting Power

A RELIABLE vitamin product which not only makes good deficiencies of those vitamins usually lacking in the ordinary daily diet, but which also builds up disease-resisting power, is obviously a product to be desired at this time of the year.

Radio-Malt fulfils both these desiderata.

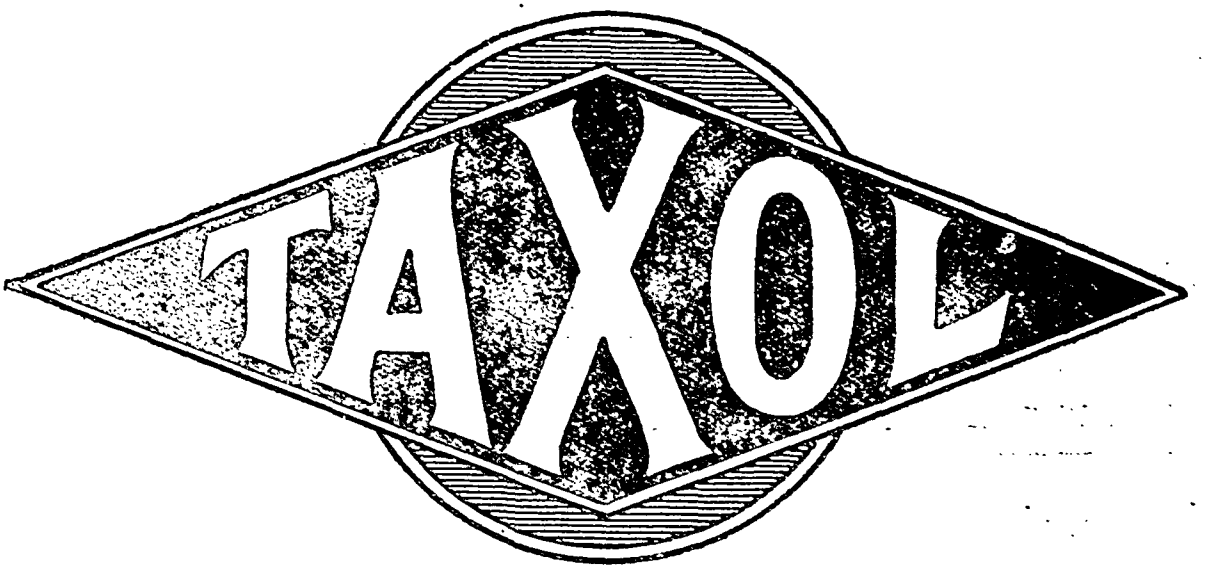
It contains ample quantities of the three Vitamins A, B and D, the vitamins not usually present in adequate quantities in the daily diet; moreover, the content of these vitamins is correctly balanced and accurately standardised.

By aiding the normal metabolic processes of the body, Radio-Malt prevents rickets and other diseases due to vitamin deficiencies; in addition, by reinforcing the natural resistance of the body it fortifies the system against the invasion of harmful micro-organisms—hence its remarkable value in the prevention of the common seasonal epidemics.

RADIO-MALT

Vit. Pr. 87

PHYSIOLOGICAL TREATMENT OF CONSTIPATION



COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS

which strengthens the glandular secretions of the organ

BILIARY EXTRACT

which regulates the secretion of the bile.

AGAR-AGAR

which rehydrates the contents of the intestines.

LACTIC FERMENTS

anti-microbian and anti-poisonous action.

IN TABLET FORM.

ITS USE DOES NOT LEAD TO HABIT

LABORATORIES

LOBICA

46, Avenue des Ternes, PARIS (17e)

3. FABRITIUS, OSLO.

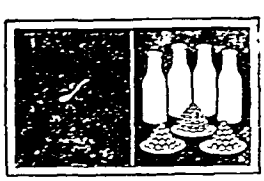
National Committee for Promoting the Consumption of Norwegian Cod Liver Oil, Bergen, Norway.

To combat wasting diseases; to accelerate the process of convalescence; to maintain health: Norwegian cod liver oil is a sure and trusted ally which no doctor can afford to disregard.

Thanks to its prolific content of vitamins A and D, Norwegian cod liver oil is a strong adjuvant in the fight against micro-organisms that cause colds, pneumonia, bronchitis, diarrhoea and rickets. It has been found of the greatest value in restoring to health arrested cases of tuberculosis. It also helps to maintain a healthy skin action.

There is no efficient substitute for cod liver oil.

A TEASPOONFUL OF NORWEGIAN COD LIVER OIL CONTAINS MORE VITAMINS THAN



ALL THE BUTTER AND MILK ANY INDIVIDUAL CAN EAT AND DRINK IN A DAY

NORWEGIAN COD LIVER OIL



He walks well because of correct Feeding

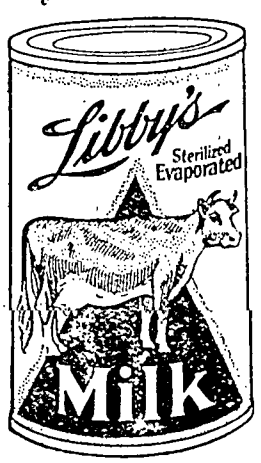
Libby's Milk not only makes certain that baby is being correctly fed day by day—it also contains the essential vitamins A and B, which growth and health demand. It is astonishing to watch the progress of babies fed on Libby's Evaporated Milk. Almost immediately there is a noticeable contentment and the beginning of a steady, progressive growth.

Libby's Milk is sterilized as well as "homogenized." These two scientific processes not only make the curds soft and flocculent, but break-up and emulsify the milk, making the fat and other food constituents readily available for the digestive system of even the most delicate infant. With the advantages of ready digestibility and uniformity of quality—you can safely recommend Libby's Milk for general use as milk for infants.

Libby's

Evaporated Milk

☆ £1,000 *will be paid to any Hospital or other public charity if it can be proved that the claims made for Libby's Milk are not in accordance with scientific facts.*



Libby, McNeill & Libby, Ltd.,
(Dept. 22), 8, Gt. Tower Street, London, E.C.3.

ESTABLISHED IN 1868

IF. 7E-29.



Pure
Accurate
Reliable

'TABLOID' Digitalis Leaf meets every demand of digitalis therapy. The cultivation of digitalis at the Wellcome Materia Medica Farm in Kent, England, and scientific methods of production at the Wellcome Chemical Works, Dartford, have given the Burroughs Wellcome & Co. digitalis products a world-wide *reputation which* 'TABLOID' Digitalis Leaf maintains

TRADE MARK 'TABLOID' BRAND *(Physiologically Standardised)*

Digitalis Leaf

First introduced to the Medical Profession in 1925

presents:—

(1) The full therapeutic activity of the dried leaf.
(2) The highest degree of uniformity.
(3) All the glucosides of digitalis.
(4) Every constituent of the leaf, except the water.

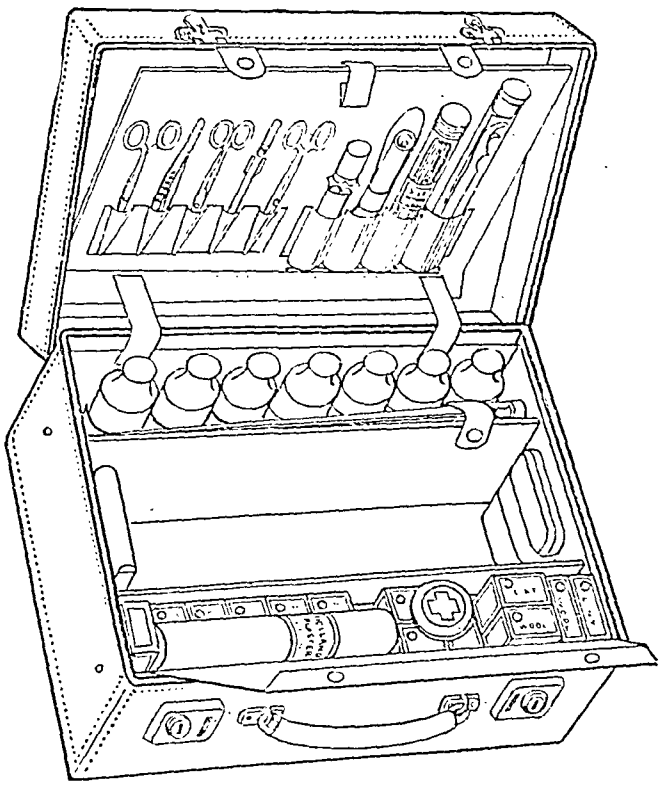
Prices in London to the Medical Profession:
Bottles of 25 and 100
gr. 1/2, 6d. and 1/3
gr. 1, 7d. and 1/6

BURROUGHS WELLCOME & CO., LONDON

H 2768

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THE PARATUM PRACTITIONER'S FITTED BAG.



AS the name implies, this is an equipment at all times in readiness. It can be carried in the car, and there, or in the house, is complete for an emergency call, thus obviating trouble and delay. It contains only those articles which a doctor is likely to require at any time—the central space is left vacant to suit individual requirements.

The bag is of the best leather on a strengthened frame and as light as is consistent with lasting qualities; with contents it weighs 13 lbs.

Dimensions 16 in. by 11 in. by 5¼ in.

The arrangement of the contents is as follows:

LID.
2 Artery Forceps.
1 Dissecting Forceps.
1 pair Scissors.

2 Stainless Knives in Sterilizable Glass Tube.
1 Combined Electric Throat Lamp and Tongue Depressor.
1 Hypodermic Syringe in Spirit-tight Case.

1 Half Min. Magnifying Clinical.
1 Tube Silkworm Gut Medium.

REAR COMPARTMENT. Seven stoppered bottles in nickel screw-capped cases, each with contents engraved outside as follows:

CHLOROFORM	LYSOL	SOL. ACID PICRIC 5%	SUTURE AND HYPODERMIC
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An Oration
ON
THE USE OF FOXGLOVE AT THE BEDSIDE.*

BY
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THE kind invitation to address this distinguished assembly I deem a very great honour. It was unexpected, and at first I even felt a little surprised, having been in close relationship neither with Birmingham nor with the General Hospital and its physicians. But one name appeared in your letter which gave a key to why this great honour might have been bestowed upon me. The name of the discoverer of the wonderful qualities of the foxglove, William Withering, doubled the honour of the invitation, the pleasure of accepting it, and, at the same time, gave me an imperative and welcome hint as to the most suitable subject to offer for my lecture.

Digitalis is one of the most famous drugs in our pharmacopoeia; it interests the profession profoundly, even more than many of the most modern forms of treatment. Articles of every size and in every tongue, written for practical use, or of a more or less purely scientific character, fill the medical weeklies and the big archives all over the world. When by superficial judges, sometimes even among medical men, drug treatment and internal medicine are estimated as of no real value, often to be stupid and dangerous, the effects of digitalis treatment supply us with the most impressive and convincing arguments to silence the ignorant. Administered at the right moment, in the right case, and in adequate form, it may work little short of a miracle. Not only the commencing young doctor, but also the older and experienced physician, is surprised by its continued success.

Those who organized this meeting approved my wish to speak exclusively on the practical problems of digitalis, and not on the numerous experimental investigations of its action on heart muscle and vessels. I have good and sound reasons for this restriction. With his growing experience the older physician learns by and by how much individual treatment is necessary in nearly every case. Withering met with the same experience, developing his methods only in the course of many years. "Scientific" evidence and reasoning, often only superficially accurate, cannot yet be accounted the final argument for or against the administration of digitalis in a special case. The dose and form of treatment have to be determined by the real benefit the patient derives from it. What helps the individual patient most is to be taken as the best treatment for him, whether it be possible or not to analyse its action in every detail. It is the old question of the abstract science of medicine on the one side, and the practical art of healing on the other—or, in more popular form, of the old saying about the pudding and its proof.

I will now try to answer some of the more important questions concerning digitalis treatment. I do not in any way intend to put my words before you as final arguments. I personally do not regard them as such: my views were born and grew up at the bedside, and are still developing. Every day brings new facts, and from these ever-growing personal experiences I will try to tell something perhaps interesting to my medical listeners.

INDICATION.

Digitalis is indicated in all cases of heart failure—that is, where insufficient functioning of the heart is the cause of the pathological condition. This holds good irrespective of the cause of the heart failure itself. On these two points I fully agree with Eggleston's conclusions. I even used part of this author's words. It must be realized, however, that these conclusions are very far from being generally accepted. In all countries I know, and in the majority of textbooks, important exceptions are still brought forward. In arterial hypertension, aortic valvular disease and aortitis, as well as in cases with a marked slow pulse, there is a strong belief that digitalis should never be given—a belief highly detrimental to the patient.

Nearly twenty years ago I had the honour of speaking to the British Medical Association at its meeting in London on the subject of digitalis.† The purpose was to establish a parallel between experimental and clinical evidence of its action on the heart. My final words were at that time, "Give digitalis a fair trial in every case"; and "if ever I should acquire a reputation for treating heart patients with success it will be from giving digitalis in cases where authorities and textbooks forbid it." After my sometimes even dramatic experiences during the two last decades I am still, and even more strongly, of the same opinion.

DOSAGE.

The difficulties of exact and correct dosage of digitalis are well known and greatly lamented by nearly every author. Complaints about the lack of knowledge of the exact content of active substance in our digitalis drugs are abundant, especially so in the hundreds of pamphlets about new and ever-better preparations of digitalis thrown on the market. Every new product is recommended as giving the best opportunity for exact dosage, which is looked upon as the one and principal condition for correct treatment. I never felt this lack of knowledge as a real difficulty, but daily observation is absolutely essential in every case to decide how much should be given, and how long the treatment should be continued. The most perfect dosage instructions will not absolve us from this imperative command and from our serious responsibility. I do not in the least despise or deny the great value of exact work at the bedside, and lack of exact knowledge of the active value of a special digitalis drug need never hamper us in deciding between larger or smaller doses.

Following the old custom I have made use of large, medium, and small doses, a distinction which needs no special explanation and is easily followed at the bedside. The only requirement is to adopt a certain unit of activity which may be the basis of our dosage. For such a unit it seems easier to select small doses, which can be given singly or multiplied to any extent, rather than to adopt larger doses to be divided into smaller portions.

What quantity of which digitalis preparation should be chosen as a unit?

THE BEST FORM IN WHICH DIGITALIS SHOULD BE GIVEN.

As many chemical factories exist, so many different preparations of digitalis are produced, under most promising names and with the strongest recommendations. By this ever-increasing number of products and names our choice becomes more difficult every day, and a really dangerous state of affairs results. Digitalis treatment is one of the most important and serious duties of the general physician: it demands a great deal of skill, power of observation, keen interest, and experience. A long life is too short to learn enough about this wonderful drug. To make use of all those preparations would complicate further our already numerous difficulties, and would necessitate as many subdivisions of experience as there are different preparations. It is for this reason that I have been led to restrict as far as possible the number of preparations given: as a matter of fact there is, at the end, only one form with which I have become really familiar. It is the standardized (or titrated) powder of dried leaves, obtained as far as possible from the same reliable source. Experience has driven me back to the leaves every time I had been led astray and made regular use of any other preparation. As to the unit required, a simple logical argument helped me. All modern digitalis derivatives are, or are said to be, standardized to one decigram of the powdered leaves; then why should I not take this quantity of leaves itself as my unit?

It may be that even the standardized leaves are variable in their composition; nevertheless they may be looked upon as containing all the active substances with which Nature endowed this exceptionally important plant. On the other

* Delivered in connection with the celebration, on December 16th, 1929, of the 150th anniversary of the opening of the General Hospital, Birmingham.

† Brit. Med. Journ., 1914, ii., 1.

hand, most digitalis preparations contain only part of the substances. As a matter of fact, this can be used to advantage. A long time ago I had many pleasant and interesting discussions with your lamented pharmacologist Arthur Cushny, perhaps the very best connoisseur of digitalis, as to whether it might be feasible to separate the different active substances of digitalis and to put them together again in various combinations. This would make it possible to avoid such factors as were undesirable in certain cases—for instance, the vagus influence causing slow pulse or disturbance of conductivity, the constrictor influence in high blood pressure, and so on. But this plan has not yet materialized, and it seems very improbable that it will be established in the near future. Even so, it would prove extremely difficult to select those cases in which such special combinations should be used. At present I believe it to be better tactics to give digitalis with full active power and to combine it with such substances as may counteract undesirable influences. I shall have to deal with such adjuvants a little later. Therefore in the present state of knowledge I prefer to use the original foxglove in the form of titrated powdered leaves as my basis for digitalis treatment, and to administer special preparations for generally recognized special purposes only.

Such a special purpose is the immediate effect required in an emergency; here subcutaneous and intravenous injections of certain digitalis derivatives are of the greatest use. This form of treatment, initiated by Albert Fraenkel, has in the course of time developed greatly, and is now a valuable and generally accepted means for treatment, not only in urgent cases, but also where the stomach absolutely refuses to retain the drug, or where the onflow of the blood to the heart is slowed so much by abdominal stasis that the effect of administration by the mouth is too greatly delayed and diminished.

Not only are digitalis derivatives used for intravenous injections; the pure active substances of strophanthus—strophanthine and ouabain—have come into use. This form of treatment is impossible without a most exact dosage. Its effects are instantaneous, which makes such exactness possible.

Rectal administration in the form of microclysters, or in suppositories, is very helpful in the same category of cases where oral administration is impossible.

ADJUVANTS IN DIGITALIS TREATMENT.

I have previously mentioned the combination with digitalis of such active substances as might alter the action of digitalis in some direction. One such adjuvant is atropine, which may be expected to lessen the stimulating influence on the vagus—one of the most powerful functions of the foxglove. It is indicated, or is at least rational, in cases of marked bradycardia of different origins, and where disturbance of conductivity is present or is to be feared. It should be given under careful observation, and should not be pushed on theoretical reasoning only. Caffeine may also be named in this connexion, in so far as it may help in combating further increase of bradycardia.

Diuretics have a greatly appreciated value in digitalis treatment. Caffeine and the various forms of theobromine render invaluable services. Among the most active of these substances euphyllin, in suppositories or intravenously injected, is now generally used in German-speaking countries, and with increasing success.

The new valuable mercury preparations novasurol and salyrgan have been introduced by Paul Saxl, one of the assistants at the First Medical Clinic in Vienna. Careful use of these injections at the right moment and in the proper dosage constitutes perhaps the greatest recent progress in the treatment of heart patients. The resulting depletion of the body relieves the overfilled circulation, lessens the circulatory resistance, and frees the heart and kidneys from a great part of their task, so that it smooths the way for better action by the foxglove.

Diet, of course, is an indispensable adjuvant in dropsical cases; it is so well known that I will not dwell upon this subject.

Venesection is generally accepted as one of the most beneficial factors in plethoric arterial hypertension and in extreme stasis of the lungs or liver. It is important to withdraw blood immediately before the beginning of digitalis treatment; this often permits the use of large doses of digitalis which might seem dangerous otherwise. Multiple tapping of the dropsical limbs may have the same effect, and in long-standing cases may be the only means left of freeing the body of its burden. Nevertheless, it is doubtless a great advantage that the above-mentioned novasurol and salyrgan make it possible to avoid venesection and tapping in most cases.

Adjuvants Regulating the Heart Rhythm.

From the very beginning of the studies on cardiac arrhythmia, which over thirty years ago opened a new chapter of cardiology, James Mackenzie and I contended that most arrhythmias were not signs of heart failure, as had been generally believed up to that time. On the contrary, by disturbing the pumping mechanism of the heart, they must be looked upon as a most serious cause of *insufficient heart function* and consequent circulatory trouble. This now generally acknowledged, but not yet consequently applied opinion, made me feel the urgent need for forms of treatment which would abolish irregularities and restore the normal mechanism of the heart. At a loss for theoretical and experimental suggestions, I had to try what sort of drugs might help. Digitalis itself, which in large doses may be the cause of regular extra-systoles, may in very small doses abolish this phenomenon and be very helpful in combating auricular fibrillation. The "nervines," bromides, valerian, camphor, and other sedatives, gave unsatisfactory or only temporary results.

Strychnine, from olden times given in your country for routine heart treatment, was my first success. A good friend of mine, not yet 50 years of age, dying slowly from aortic incompetence, never complaining but having a terrific Corrigan pulse, felt extremely miserable as soon as the periods of extra-systolic beats occurred. He suffered badly under the gigantic "post-compensatory" pulse waves, and one day told me very clearly that as an old friend and a professor of medicine I ought to be ashamed of not being able to free him from this unbearable trouble. Thus stimulated to further experiments, I tried *strychnine* also; two milligrams a day at once abolished the extra-systoles, and every time his arrhythmia returned the drug proved faithfully effective to the end. After this truly experimental evidence I have been giving strychnine in hundreds of cases. It helps, but not always sufficiently, and seems to lose its influence after a certain lapse of time. Later, after becoming aware of the marvellous action of quinine, I prescribed strychnine in combination with this drug, and with immediate and lasting success; it is still my favourite combination in cases of extra-systolic irregularities without marked heart failure.

Quinine is the greatest regulator of the arrhythmias of extra-systolic character, including auricular fibrillation, though in many cases quinidine has a stronger action. It is unnecessary to dwell upon quinine therapy,[3] which has found its way all over the world, and I may limit myself now to the combination of quinine and digitalis.

This combination seems to be a very old one—at least, it was very popular in the second half of the last century, and quinine had a reputation as a heart drug little short of the foxglove,[4] but I did not know this. During my search for heart-regulating drugs I carefully excluded quinine from my efforts, having seen from the experimental work of Stokvis and of Santesson that it is a heart-paralysing poison. On asking a well-known older clinician why under such conditions he treated his heart patients with digitalis *plus* quinine, he said, "Because my patients and myself are, in the long run, equally satisfied by this combination." That this seemingly unwise saying contained a great deal of wisdom I realized the moment a patient told me, and demonstrated, that he was able to stop his paroxysmal auricular fibrillation with the help of one gram of quinine. Since that time I have prescribed the combination of quinine and digitalis in the great majority of my heart cases, not only where arrhythmia is present, but also where large doses of digitalis seemed urgently needed and where

concomitant disturbance made quinine desirable. Shortly after the war, when quinidine treatment for abolishing auricular fibrillation became known among the English-speaking profession, it was said, but on theoretical arguments only, that this combination must be avoided. As far as my information goes, this not justified opinion is now generally abandoned.

Vasomotor Adjuvants.

Vasomotor drugs are desirable in hypotonic cases for increasing the tone of widened peripheral vessels, and conversely in hypertonic heart cases to counteract the vasotonic influence of digitalis. The vaso-constrictor strychnine seems indicated in the first instance, and apparently fulfils this task to a certain extent. The second indication is of far greater importance, especially when we take into account that high blood pressure has been a very strong contraindication against digitalis. In this connexion it would be interesting to know whether Withering's cases, in which, as he phrased it, "the fibre is tense," are comparable with our patients with arterial hypertension of to-day. The two adjuvants that had the best effect in my hands are papaverine and quinine, mostly given together. Both have a marked dilator action on the peripheral circulation. In the case of quinine, vaso-dilatation and fall of blood pressure are a regular event after intravenous injection, as well as in the treatment of malaria and in attacks of paroxysmal tachycardia, in which it nearly always stops the paroxysm instantaneously. Therefore it is quite reasonable to add these two substances to our digitalis doses in all cases where a constricting action of digitalis on the arteries should be avoided. The wonderful vaso-dilator action of the nitrites is of such short duration that it is not very helpful in chronic treatment. Theobromine should not be omitted from our list; it is given alternately with digitalis with fairly good success.

The practical issue of what I have been relating here very superficially is that I make a regular use of the quinine-digitalis combination, adding strychnine in hypotonic cases, especially when it seems desirable to counteract the depressing action of quinine, conversely adding papaverine in hypertonic cases. Apart from the logical reasoning and experimental evidence that may underlie this form of treatment, I may repeat the words of that already quoted old colleague, that "my patients and myself and the many physicians who adopted this method are quite satisfied with its results in cases where strong digitalis treatment otherwise might seem more or less risky."

PROLONGED DIGITALIS ADMINISTRATION.

In speaking about this very important problem it will be necessary to distinguish between prolonged treatment (*1*) *with very small doses*, and (*2*) *with larger doses*.

1. *Treatment with Very Small Doses.*

Rather contradictory opinions exist about the usefulness, or the complete inactivity, of very small doses of digitalis. Experimental work on the normal dog's heart cannot help us. At the bedside we are treating diseased hearts, where the different functions may be reduced or exaggerated in an endless number of grades, combinations, and varieties. Very small doses may, theoretically, have a distinct influence in certain functional disturbances which is not manifest so long as the functions are normal. You may be surprised at my making such commonplace remarks, but the fact is that among doctors experimental proof is very often looked upon as the one decisive argument. Because there are doses so small that they have no influence whatever on the auriculo-ventricular conduction, or on the ventricular complex of the electro-cardiogram, it is thought unwise to give such doses to a patient. However, there is available clear clinical experimental proof of the beneficial action of very small doses, and, as I have said repeatedly, this puts us under the obligation of not omitting this safe clinical experiment in suitable cases. I call a daily dose of 5 centigrams or less of the powdered leaves a very small dose.

I remember how, some twenty-five years ago, I had my first opportunity of demonstrating the benefit of it before a large audience, the patient being a very popular and well-known man in his country. He was 73 years old, and had slipped into one of those very precarious states between the Scylla of suffocation by lung stasis and the Charybdis of painful liver swelling and oedema. The larger doses of digitalis were not tolerated by the stomach, and the doctors refused to give it any further chance. Seeing the absolute necessity of at least some digitalis, I advised that they give the patient 4 centigrams of the leaves daily, which by the attendant older doctors was deemed ridiculous. I insisted on giving the dose a fair trial, and after a few weeks it proved a great success. Of course, there could not be any question of complete cure, but the patient felt much better and was grateful, finding that his respiration was better and the distressing nightly attacks of suffocation had disappeared. The diuresis improved and the somewhat stormy swellings of the liver subsided. At that time this success was not new to me, and since then very often such small doses have had a marked visible effect. Recently I have been changing this sort of treatment for another form, with regard to which a few words should be spoken now.

2. *Treatment with Larger Doses.*

Every physician's experience shows that in the treatment of the great majority of serious cases of heart failure there comes a moment at which further progress seems, and really is, impossible. Whatever may have been our first success, we cannot remove the valvular defects or the anatomical lesions of the heart muscle, nor can we prevent further narrowing of the mitral or aortic valves. The beginning was wonderful; the pulse became slower, even regular, the heart became smaller and stronger, the urinary secretion was abundant, the liver, which had been distended to an unbearable extent, diminished in size, dyspnoea was lost, and that greatest blessing to the sufferer—sleep, the friend of mankind—returned to the patient without the need of any more morphine and hypnotics. But improvement stopped at a certain point, and further treatment seemed to have become useless. Very often it is the digitalis itself which, by its cumulative toxic action, makes continued administration impossible. We stop the drug, which now is abhorred by the patient, and after only a few days we see that part of our gain is lost; the body weight increases, the liver becomes more bulging again, and it grows clear to us that without digitalis we shall not be able to keep the patient in his individual optimal condition. After a few days of renewed digitalis treatment this same sequence of events recurs, and at the end the doctor sees that this intermittent digitalis treatment imposes upon him the very unsatisfactory task of trying to recover again and again what had been lost as soon as the digitalis was omitted for a period of some length. As every physician knows, the repeated very small dose is of no value here, and cannot help us any more.

It was clear, however, that some change in this form of intermittent digitalis treatment might be devised, and in the course of time I evolved a method which might be called the "every second day scheme." I gradually shortened the intervals in this treatment to the smallest extent—that is, to one day only: the interval might occur every second, third, or fourth day. It proved possible to continue full daily doses of 3 or 2 decigrams of the leaves as soon as such intervals occurred. This may be explained from the fact that a sufficiently large dose works at least during the next day; at the same time accumulation is prevented by the fact that on the following day the drug has left the organism.

There is no better case for studying the effects of this treatment than that of auricular fibrillation without serious muscular damage, and in which defibrillation by large doses of quinidine is not yet possible. The action of the drug and the improvement of the heart may be exactly measured from the decrease of ventricular rate and of the pulse deficit. By our first offensive of large daily doses we reduce in a few days a rate of, let us say, 150 to 170 per minute to one of something like 100 to 120. This means already a great improvement in the general condition of the patient. Our aim must now be to bring the ventricles down to a rate of 80 to 90, perhaps less, and to stabilize their activity at this level. We may do this without giving

rise to stomach trouble, not by reducing the original daily dose, but by introducing after every two days, later every second day, a free day—that is, a day without digitalis.

Of course, regular observation of the patient must determine which scheme we adopt in each individual case. Once we reach a frequency of 80 in the recumbent position it may be wise to reduce the daily dose from, let us say, 3 decigrams to 2, but not less. With further improvement we may even find it possible to give the full dose every third day only; and, curious to say, this method allows us to keep the patient and his heart continuously under a fully active dose of digitalis without any signs of intoxication. This treatment may be continued for an indefinite number of relatively healthy years.

Clinical experimental proof of the excellent success of this simple scheme is easily obtained in this category of patients. By carefully gauging the ventricular rate and the pulse deficit, and especially by making graphic records, it will be found that in regularly living patients both values are lower on the free days than on the days of digitalis administration. It is quite clear that the dose works most actively on the second day. If the patient is well you can introduce a second free day, and find out by counting the pulse whether digitalis action is still operative. This objective evidence will give the decision of how long intervals may be allowed. The same very simple tactics may have the same beneficial effect in treating other forms of heart trouble which require continuous digitalis treatment.

The only real difficulty to overcome is the opposition of the doctor, who has been taught, and found out for himself, that digitalis treatment should not be pushed for too long a period. In such cases it is the doctor who has to be treated, and his opposition may be overcome by making it clear that although this may involve treatment continued for years, as a matter of fact it is really intermittent treatment, which differs from the routine methods only in respect of shortness of the intermittences.

There are two important advantages in this scheme. First, the free days can be used for carrying out another treatment—for instance, with diuretics. The stomach is thus not overburdened by drugs, and we are assisted in this other treatment by the fact that it also is being prosecuted every second or third day. The other advantage is that after having stabilized the heart rate and having found out with what dosage this success was attained, we can send the patient home and tell the doctor, and even the patient, that the treatment should be continued until the next visit of the patient, and that the daily dose should never be altered, but longer intervals should be introduced when the pulse becomes too slow. On the other hand, the intervals should be shortened or the drug be given day by day continuously if signs of a worse condition begin to appear.

Ladies and gentlemen, it would have been very pleasant, at least to me, to illustrate what I have said with the histories of a great number of convincing cases. But this would be completely out of place, and every physician has the means to provide himself with proof at the bedside. On the other hand, I must be prepared to hear that I have not brought any news to you, but only that which you all knew and did already. In this case I can only state that what I have been saying is concordant, even almost identical, with the conclusions William Withering gave us out of his own experience. At any rate, I am in the very best company.

Perhaps one word more may be added. I wish to impress again upon my audience, particularly upon the students present, that I do not despise scientific research in the field of medicine. On the contrary, anyone who has watched my work must know that I have dived deeply into pure biology to get to an understanding of the intimate nature of certain clinical phenomena. But, as I said, medicine has two faces, and asks for two sorts of faithful servants: the pure scientist, and he who is solely the practitioner. You need not leave your own country to find the most wonderful examples. There is William Harvey, the thinker and the first experimenter, the author of *De Motu Cordis*, the tercentenary of the publication of which was celebrated less than two years ago; there is also William Withering, whose digitalis work was purely clinical, and whose name is now celebrated here, where he worked out his problems. Let us try to follow both of these men, to the benefit of mankind; but be pure and careful scientists in all your theoretical work, and whole-hearted physicians at the bedside. To the physician I say, never forget Withering, who, knowing nothing at all about the intimate action of digitalis on the heart, nevertheless gave the profession a work of undying value in his account of the foxglove.

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An Address ON CHOLECYSTITIS AND GALL-STONES.*

BY

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CHOLECYSTITIS due to infection of the gall-bladder is one of the commonest of abdominal affections. In the course of time it often leads to the formation of gall-stones, from which about 10 per cent. of the population suffer. The causes of gall-stones may be considered under three headings.

(A) *Infection.*

This may be derived from any septic source anywhere in the body. The most important sources are the mouth, nose, throat, intestines, and especially the appendix. The most common organisms found in the walls of the gall-bladder are the streptococcus and the *Bacillus coli*; the staphylococcus, pneumococcus, *Bacillus pyocyaneus*, *Bacillus welchii*, and *Bacillus typhosus* are also sometimes discovered in the walls or contents of the gall-bladder.

1. The organisms may reach the gall-bladder through the blood, either by the cystic artery direct to the gall-bladder, or through the portal vein to the liver. The former is probably the most common, and carries organisms from distant parts, such as the mouth and throat, whereas the portal vein carries infection from the intestines. The organisms are then excreted by the liver into the bile, and thus reach the gall-bladder. *B. coli communis* infection of the urinary organs is very common in women, especially during pregnancy and after labour. This condition is frequently associated with cholecystitis, probably due to vascular spread of the infection.

2. The infection may spread through the *lymphatics*, especially from the liver, pancreas, or appendix.

3. It may invade the gall-bladder directly from any *inflamed organ* in contact with or adherent to it, such as an inflamed appendix or duodenal ulcer.

4. Infection may spread up from the duodenum along the *bile ducts*, especially if there is achlorhydria, as there is in about 40 per cent. of gall-stones. The absence of free hydrochloric acid allows the *Bacillus coli* to flourish in the duodenum.

It is very doubtful if gall-stones ever form in the absence of infection, which generally lurks deeply in the walls of the gall-bladder; but it is commonly believed that the single cholesterin stone forms in an aseptic gall-bladder, for there may be little sign of inflammation. It is probable, however, that the inflammation which may cause the stone to form subsequently disappears.

The stones generally form round a nucleus made of agglutinated bacteria, precipitated mucus, or debris from the epithelial walls, and above all from broken off papillae, perhaps laden with cholesterol. The crystalline deposits of cholesterin, calcium salts, or pigment are held together by an organic matrix derived from the inflamed gall-bladder.

(B) *Cholesteraemia.*

An excess of cholesterol in the blood may be due to obesity, pregnancy, menstruation, or a diet too rich in

* Delivered before the Croydon Branch of the British Medical Association on November 19th, 1929.

fats. This may lead to deposition of cholesterin crystals from the bile and to the formation of gall-stones in an inflamed gall-bladder.

(C) *Stasis.*

Stasis of bile in the gall-bladder or elsewhere naturally tends to infection, concentration of bile, and the deposition of stones. Stasis may be due to lack of exercise; to obstruction of the cystic duct, which is less than one-tenth of an inch in diameter, by a swollen mucous membrane due to cholecystitis; by valvulation, kinking, or torsion of the neck of the gall-bladder; and frequently stones are associated with new growths, such as adenoma, papilloma, and primary or secondary carcinoma of the gall-bladder.

Symptoms and Signs.

In 1918 Moynihan described the inaugural symptoms of cholecystitis. It is difficult to say when gall-stones begin to form in an inflamed gall-bladder. The following are the most important symptoms of cholecystitis: flatulent dyspepsia of an irregular and most intractable type; a feeling of fullness, weight, oppression, or sinking in the epigastrium and right hypochondrium; attacks of chilliness, with gooseflesh; pain over the right hypochondrium, passing through to the lower part of the right shoulder-blade. Later, belching, nausea, and vomiting. Flatulence may be so troublesome that the patient frequently has to loosen her garments. There is often a distaste for eggs and fatty and acid foods.

During the presence of symptoms, there may be cutaneous and deep tenderness in the right hypochondrium and epigastrium, and, as pointed out by Ryle, superficial tenderness over the third to the tenth dorsal spine. An enlarged gall-bladder may be felt, especially on deep inspiration.

The above symptoms are, in the main, due to cholecystitis. When gall-stones have formed, and especially when they tend to invade and travel along the ducts, more severe and striking symptoms develop, such as biliary colic. This is very severe, comes on quite suddenly, lasts from a few minutes to several hours, and then it disappears as suddenly as it came. When it is not accompanied or followed by jaundice, it is due to a stone blocking the orifice or channel of the cystic duct. Relief may come by the stone falling back into the gall-bladder, or occasionally passing into the common bile duct. Later in the disease biliary colic may be associated with jaundice, and then indicates obstruction of the common bile duct. As the orifice of this duct at the duodenal papilla is very small (less than 1/12 inch in diameter), quite small stones may fatally obstruct it. More commonly, however, stones of larger size, having passed through a dilated cystic duct, become impacted in the upper reaches of the common bile duct. Stones may lurk in the common bile duct for years without causing jaundice, because they may not obstruct for a sufficient length of time.

Diagnosis.

A careful study of the clinical history, symptoms, and signs generally enables us to make a correct diagnosis of cholecystitis or of gall-stones, but as the two conditions merge into each other it is not always easy to tell when gall-stones have actually formed.

An enlarged gall-bladder, or persistent or recurrent tenderness under the right costal margin, is very suggestive of inflammation of the gall-bladder. The tenderness is higher and further out than that over a duodenal ulcer; but there may be considerable difficulty in distinguishing these two conditions, especially when there is hunger pain and hyperchlorhydria. When severe colic, with or without jaundice, develops it is much in favour of gall-bladder disease, but sometimes the pains associated with duodenal ulcer may be very severe and due to pylorospasm. Radiography after an opaque meal, and the examination of the faeces for blood, are then invaluable.

Appendicitis may be easily confused with cholecystitis, especially when the appendix or gall-bladder is misplaced. For instance, the inflamed appendix may be high up and in contact with the gall-bladder, or lying high up behind the ascending colon, and give local signs closely resembling those of cholecystitis. Similarly, the gall-bladder may be very low down, and give local signs closely resembling those of appendicitis. Sometimes right renal colic closely resembles biliary colic; radiography, cystoscopy, pyelography, and cholecystography are then invaluable.

In doubtful cases simple radiography should always be tried first, for this may show opaque gall-stones, renal calculi, or other characteristic opacities, which may or may not make an opaque meal or cholecystography superfluous. The shadow of an opaque meal in the stomach, duodenum, or colon may be distorted and indicate pressure or traction of the gall-bladder upon the stomach, duodenum, or colon.

The discovery of cholecystography by Graham and Cole in 1923 was a great advance; it has already borne much fruit, and promises more to come when its merits and possibilities are widely appreciated. Whether with the aid of opaque meals or of cholecystitis or of gall-stones, Graham's method [illegible] diagnosis of all [illegible] strating obstruction [illegible] has developed [illegible] cystic duct by [illegible] torsion, valvulation [illegible] or bands, can [illegible] radically treated [illegible] an early stage. [illegible] power of the gall-bladder to concentrate it. These [illegible] and of the liver [illegible] and prognosis [illegible] and value of dia[illegible] is invaluable [illegible]

Graham's method [illegible] the gall-bladder [illegible] differential diagnosis of disease [illegible] from those of the alimentary and [illegible] y tracts. The [illegible] dyes,* given in care and in suit[illegible] doses, rarely [illegible] any harm, but ought not to be [illegible] in to patients [illegible] suffering from disease, atheroma [illegible] normal blood [illegible] suffering from affected with chl[illegible] jaundice, obstruction, or to those with uraemia or [illegible] tic insufficiency, or threatening more accurate w[illegible] he drug is given by the mouth. The test is a it is more conven[illegible] and is often [illegible] given by the mou[illegible] various writers [illegible] of this method of [illegible] osis as from 85 per cent.

Gastric analysis [illegible] of an examination of the bile, sometimes he[illegible] siderably in [illegible] or the stomach [illegible] duodenum from the bladder. The di[illegible] of abnormal [illegible] pus cells, or cho[illegible] in crystals, [illegible] through the duod[illegible] bile points strongly to [illegible] biliary tract.

When jaundice is associated with [illegible] gnosis becomes much easier, for these [illegible] indicate obstruction of the common bile duct by stone or other foreign body.

In over 80 per cent. of cases [illegible] of the common bile duct the gall-bladder is not enlarged as pointed out many years ago by Courvoisier and Murchison; but occasionally there [illegible] struction of the cystic duct, and then the gall-bladder may be palpable.

So far, cholecystography has [illegible] showing the smaller stones that [illegible] common bile duct.

When the obstruction is due to [illegible] the gall-bladder is usually enlarged [illegible] typical biliary colic is absent. These facts and the absence of colic, serve to distinguish [illegible] from that due to gall-stones.

Indications for Operation.

If the symptoms of cholecystitis or of gall-stones fail to subside, or recur after careful medical treatment, it is generally wise to operate early in order to prevent serious complications. Early operations have a mortality of under 2 per cent., whereas late ones, especially for perforative cholecystitis or for stones impacted in the common bile duct, with infective cholangitis, may have a very high mortality.

The mere demonstration of gall-stones or of cholecystitis is not always a sufficient indication for operation. In

* Graham and [illegible] (*Diseases of the Gall-Bladder and Bile-ducts*, 1928, pp. 22 and 25) [illegible] under the intravenous administration of 2.5 grams of phenoltetrachlorphthalein. For oral administration they use 4 to 5 grams of tetrachlorphthalein.

many people gall-stones cause no appreci
or only such as can be relieved by medi
But we have no medical means of dissolving
gall-stones; and although they sometim
taneously along the ducts, or escape throu
the gastro-intestinal tract, they are very r
evacuated in either of these ways.

The following are some of the serious
delay before operating for the removal of g

1. Suppuration, perforation, peritonitis,
septicaemia, osteo-arthritis.
2. Jaundice and cholangitis, with risk
haemorrhage.
3. Cancer of the gall-bladder, which d
to Rolleston and others, in at least 5 per
of gall-stones. The danger of this comp
than that of operation.
4. Intestinal obstruction by gall-stones
ated into the bowel.
5. Pancreatitis.
6. Hepatic insufficiency.
7. Cardiac degeneration.

When possible, it is safer to wait for
before operating, so as to allow thorough
preparation of the patient. Fortunately
ptoms, such as colic, jaundice, and fever,
under careful medical treatment; for, unl
the gall-bladder rarely perforates or se
peritonitis.

When signs of spreading peritonitis d
enlarged, tender gall-bladder can be fel
such as vomiting, fever, and rigors do n
of acute pancreatitis develop, an immed
necessary. Similarly, when jaundice, asso
fails to clear up under medical treatment
tion offers the best hope.

These emergency operations should be
drainage of the gall-bladder or common b
operations can be carried out later wh
better, the liver function is restored,
subsided.

OPERATION.

Medical treatment having failed, ope
cystitis and gall-stones should be carri
disease has spread beyond the gall-bladde
so that the disease can be eradicated b
at a comparatively small risk. In later
the gall-bladder or common bile duct may
lished in order to save life. These delaye
a much higher mortality, and are mo
by recurrence of symptoms, often dem
operation.

REFERENCE.

[1] E. A. Graham and W. H. Cole: *Journ. Amer. Me*

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Assoc., 1924, 82, 613.

SOME RECENT ADVANCES IN TH E DIAGNOSIS AND TREATMENT OF DISEA SES OF THE NERVOUS SYSTEM*

BY

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NEUROLOGY is a branch of medicine which I often have to defend, because I am told that, altho gh it is a most interesting exercise in applied physiol gy, what treatment is possible in organic diseases of the nervous system? We maintain, however, that therapeutic s in neurology compares very favourably with that of other organic medical diseases—of the heart, kidney, and liver, for instance. I propose, therefore, to revie w some of the more recent developments not only in t he diagnosis of nervous system diseases, but also in their treatment.

One of the most important advances o recent years is the procedure known as "cisterna punctu "—that is, the insertion of a needle into the cisterna m agna, that large portion of the subarachnoid space which lies between the inferior surface of the cerebellum and the posterior aspect of the medulla. The puncture consists in penetrating the tissues between the occipital bone and the atlas vertebra, and withdrawing cerebro-spinal fluid. This may sound rather heroic, but is really quite as simple as lumbar puncture. The needle used should be graduated in centimetres, a depth of from 5 to 6 cm. being the maximum distance that the needle can be safely introduced in the adult before the medulla is reached. The surface point taken is the spine of the axis vertebra; the needle is inserted just above this and directed upwards at an angle of 30 degrees from the horizontal. After penetration of the skin it is advisable to remove the stylet from the needle before the latter is pushed onwards into the cisterna magna; then, as soon as the subarachnoid space is reached, a drop of cerebro-spinal fluid appears.

As regards the practical application of cisterna puncture, it may be mentioned that, apart from its use for the withdrawal of cerebro-spinal fluid for diagnostic purposes, it is of great value in the treatment of various forms of meningitis. In meningococcal and pneumococcal meningitis, for instance, the therapeutic serum can be introduced through the cisterna puncture needle and the serum thus brought into close contact with the site of maximum inflammation, which is invariably at the base of the brain. It thus replaces the older method of introducing the serum through a lumbar puncture needle. The puncture can also be used for injecting salvarsanized or mercurialized serum in the treatment of various forms of neurosyphilis. Further, it is of great value for the introduction of lipiodol in the localization of spinal cord tumours—a subject which I shall consider later.

A great deal may be learned from the pathological examination of the cerebro-spinal fluid. It is quite possible by this means to confirm a clinical diagnosis of compression of the spinal cord by tumour or abscess. In this condition the cerebro-spinal fluid shows fairly its characteristic reactions, which include a considerable increase in the amount of total protein present as compared with the normal of 0.02 to 0.04 per cent., but no increase in the normal number of cells (2 to 4 per cubic millimetre) and no alteration in the glucose and chlorides. This phenomenon has been termed "dissociation albumino-cytologique" by French physicians. Occasionally, in addition to the excess of protein, the cerebro-spinal fluid may be yellow in colour (xanthochromia) and may even coagulate spontaneously on standing; to this latter condition the term "Froin's syndrome" is applied, but the essential feature is the excess of protein with no increase in the number of cells. In addition to spinal cord tumour, dissociation albumino-cytologique may occur in cases of meningitis and certain forms of polyneuritis; and I have also seen it in cerebro-spinal arterio-sclerosis.

Another useful cerebro-spinal fluid test is Lange's colloidal gold reaction. The exact physio-chemical changes are complicated, but, briefly, the procedure consists of the application of the protective action of colloids on the precipitation of gold suspensions by sodium chloride to the protein in the cerebro-spinal fluid. Lange found that normal cerebro-spinal fluid, when diluted with 0.4 per cent. of sodium chloride, does not affect a solution of colloidal gold, whereas pathological fluid produces changes often characteristic for various diseases. Dilutions of cerebro-spinal fluid with salt solution, ranging from 1 in 10 to 1 in 5,120, are put up in a series of ten test tubes, each successive tube containing a higher dilution. A measured quantity of colloidal gold solution giving a purple coloration is added to each tube, and the series is examined after an interval of twenty-four hours for any colour changes that may have occurred. With normal cerebro-spinal fluid the purple colour is unchanged in each of the tubes. In abnormal reactions the colour changes range from blue to white in different tubes of the series. According to the resulting tints we can plot out a graph—the horizontal representing the series of tubes and the vertical the colour changes. Certain neurological conditions are indicated by typical curves. In general paralysis, for instance, we find what is known as a "paretic" curve. The first three or four tubes of the series undergo almost complete

* An address delivered to the City Division (A Branch) of the British Medical Association.

decolorization to white; from the fifth onwards gradual gradations occur until in the last few tubes no colour change takes place. Whereas the normal graph consists of merely a straight line along the base line, the "paretic" curve starts high on the vertical line, keeps straight on for a short distance, and then gradually falls to reach the base line; the curve therefore resembles one side of a tableland. This "paretic" curve is so characteristic of general paralysis that, personally, I hesitate in an untreated case to make a diagnosis of this condition in its absence. The cerebro-spinal fluid also yields a positive Wassermann reaction, but so do forms of neurosyphilis other than general paralysis.

In tabes dorsalis we usually find what is known as a "luetic" curve. The colour change occur in the middle tubes of the series; the graph, therefore, rises from the base line and then gradually falls to the same level. In meningitis, and in some cases of cerebral tumour, the curve is often the reverse of the "paretic" curve, the maximum colour change occurring in the last tubes of the series. The colloidal gold test is frequently of great assistance in the diagnosis of disseminated sclerosis. In this disease the cerebro-spinal fluid yields a negative Wassermann reaction, and there is little, if any, increase in the number of cells, while the protein shows only a very slight increase. The only really positive test, therefore, may be that of Lange. In acute forms of disseminated sclerosis, and particularly in those in which there is cerebral or cerebellar involvement, the colloidal gold curve is "paretic" in type, though the curve does not reach such a high level as that of general paralysis. In more chronic cases of disseminated sclerosis, and when the spinal cord is chiefly involved, the curve may be "luetic" in type. It is difficult to arrive at an exact estimate as to the percentage of cases of disseminated sclerosis giving a positive Lange reaction, since the actual clinical diagnosis is often uncertain. Our investigations at the West End Hospital for Nervous Diseases, however, show that in almost every case in which the clinical diagnosis is practically certain some change occurs in the colloidal gold curve. It is usually only in those cases in which the diagnosis is tentative, and therefore uncertain, that a completely negative result is found.

Following the examination of the cerebro-spinal fluid, we are able to confirm the diagnosis of obstruction in the spinal subarachnoid space—by a spinal cord tumour, for instance—and to localize its level accurately by the intrathecal injection of lipiodol and subsequent *x*-ray examination. Lipiodol is a heavy oily substance consisting of iodine in firm combination with oil of poppy; it is opaque to *x* rays, quite harmless, and very slowly excreted. Cisterna puncture is performed and 1 to 2 c.cm. of lipiodol injected. On reaching the subarachnoid space the lipiodol rapidly sinks down the spinal canal, and can be seen in the sacral region of a normal subject within half an hour. On the other hand, if the spinal canal is obstructed—for example, by a tumour—the lipiodol is held up at the level of the upper limit of the tumour. [Dr. Worster-Drought then exhibited *x*-ray films illustrating the value of lipiodol in the exact localization of spinal cord tumours. The first film showed the normal condition, the lipiodol being seen in the form of a tapering opacity, with its point downwards, at the upper end of the sacrum.]

In one case the diagnosis suggested an intramedullary spinal cord tumour; there was, however, no obstruction to lipiodol in the spinal canal, and subsequently the case proved to be one of syringomyelia with central pain.

In another case the lipiodol was held up at the level of the ninth thoracic vertebra, and subsequently an intramedullary tumour was removed from this situation.

A third case had been regarded as chronic sciatica and the presence of a tumour was only suspected when the cerebro-spinal fluid, removed by lumbar puncture, was found to contain excess of protein but no increase in the number of cells. The lipiodol was seen to be held up, with a horizontal lower border opposite the body of the third lumbar vertebra, thus confirming a diagnosis of tumour of the cauda equina; an endothelioma was successfully removed by Mr. C. P. G. Wakeley.

A fourth case was remarkable. Clinically the diagnosis was either syringomyelia or compression by tumour, affecting the upper cervical region of the cord. On puncturing the cisterna magna no flow of cerebro-spinal fluid occurred; it was obtained only after some difficulty and 1 c.cm. of lipiodol was injected. In the *x*-ray film the lipiodol was seen not to have passed but remained in the region of the foramen magnum. At operation a tumour was found actually compressing the lower part of the medulla.

During recent years much more attention has been paid to detail in radiography of the skull, and it is often possible to demonstrate the presence of a cerebral tumour. For instance, we sometimes find a general thinning of the bones of the skull due to increased intracranial tension. If the tumour is near the surface of the brain, as in the case of some meningiomata, we may see local erosion of the bone adjacent to the tumour. Also, the tumour itself may occasionally calcify and so reveal its presence in the *x*-ray film. A further point is possible displacement of the pineal body. It has been shown that in about 60 per cent. of individuals the pineal body is calcified and can be demonstrated on *x*-ray examination. Any displacement to one side or the other may indicate the side on which the cerebral tumour lies.

A method recently introduced for the lateralization and possible localization of cerebral tumour is "air-ventriculography," in which the cerebro-spinal fluid in the cerebral ventricles is replaced by air. The lateral ventricle is punctured as follows. A point is taken about one inch above and one inch behind the external auditory meatus; with an ordinary bone drill a small hole is made in the bone, and a needle is inserted into the lateral ventricle, which lies at a depth of about two inches. Cerebro-spinal fluid flows as soon as the needle enters the ventricle. The fluid is gradually withdrawn and replaced by air by means of a special two-way tap joining the needle and a syringe. Care must be taken not to introduce more air than the amount of cerebro-spinal fluid withdrawn. Having completed the replacement on one side, the opposite ventricle is then dealt with. According to the changes in symmetry of the ventricles one can often lateralize the tumour, and sometimes localize it. Internal hydrocephalus is shown by symmetrical dilatation of both ventricles.

Another similar method of investigation known as encephalography consists in the introduction of air into the subarachnoid space through a needle inserted in the lumbar region. Personally, I do not favour this method, since it is easy to inject too much air, and the after-effects are often severe.

A further method is known as "ventricular estimation." The ventricles are punctured in the same manner as in air-ventriculography, and as much cerebro-spinal fluid as possible is withdrawn from each. The quantities of fluid from each ventricle are then carefully measured and compared. Normally, the amounts are approximately equal on the two sides; any pronounced difference indicates partial or complete obliteration of that ventricle yielding the smaller quantity of fluid, usually on the side on which the tumour is situated.

In hydrocephalus and in some cases of cerebral tumour the intraventricular injection of dyes may be of assistance. The substance phenol-sulphonephthalein when injected is excreted in the urine, and an estimate is made of the quantity excreted in the first two hours following the injection. If this amount is small, some obstruction to the ventricular outflow is indicated.

I will now refer to a few of the conditions to which attention has been drawn during the past few years, and, first, to one which has been rescued from the heterogeneous group of epilepsies and is known as "pyknolepsy." This is a species of petit mal occurring in children; in it numerous attacks occur up to forty and even one hundred a day. It differs from ordinary epilepsy in that it is entirely resistant to treatment by bromides and luminal, and no intellectual deterioration occurs; also, it has the advantage that quite a good prognosis can be given, since the attacks entirely disappear in time. A second is "narcolepsy"—a condition in which I have for long taken a special interest. In the last few years many more cases have been reported, probably owing to the fact that attention has been drawn to the disease. The condition consists of two phases: (1) the narcoleptic attack, in which the patient falls asleep at any time and in any place; (2) the cataplectic attack, or cataplexy, which consists of a "crumpling-up"

—a sudden and general muscular hypotonia, occurring particularly when the patient laughs heartily or is emotionally disturbed. I am sure that if you bear the condition in mind you will meet with cases of this description. Treatment is very difficult, because we do not know the cause; a disturbance of the hypothalamic region of the brain—that part lying above the pituitary body—has been suggested. Having tried many forms of treatment, including bromides, thyroid and pituitary extracts, strychnine, and hyoscine, the only substance that seems of any help is caffeine given in full doses (caffeine 5 grains or caffeine citrate 10 grains) every four hours during the daytime.

Another disease of the nervous system described in recent years has been termed "Schilder's periaxial encephalitis." It is quite distinct from encephalitis lethargica, particularly as it affects only the white matter of the brain—hence the term periaxial—in contradistinction to encephalitis lethargica, which involves the grey matter. In its selection of the white matter Schilder's disease somewhat resembles disseminated sclerosis, but in this latter condition the sclerosis occurs only in patches, while in Schilder's encephalitis the degeneration of the white matter of the brain is diffuse. Gradually increasing blindness or deafness occurs, or insidious mental deterioration, according to the region of the brain affected; or gradual spastic paralysis, involving all four limbs owing to implication of the motor fibres; or we may see all the above symptoms occurring together.

A considerable amount of attention has recently been paid to head injuries, mainly on account of the work of Trotter, who has described a syndrome which is best termed "chronic cerebral contusion." This condition has undoubtedly in the past been confused with that of so-called traumatic neurasthenia. Sometimes even a comparatively slight head injury, which at the time causes a simple concussion or a localized trauma, may be followed by a characteristic group of symptoms. These include headache—usually paroxysmal—vertigo, insomnia, mental irritability, apprehension, and occasionally some impairment of memory. A feature of the headache is that it may not be experienced until the patient is up and about, and that it is made worse by changes in position such as stooping. This fact often helps to distinguish a contusion syndrome from a traumatic neurosis, since the headache complained of in the latter condition is usually constant, unvarying in intensity, and unaffected by changes in position. Further, in cerebral contusion a relatively slow pulse rate and a raised blood pressure may also be present. Another important point is that in every case of true concussion there is a period of retrograde amnesia preceding the accident—that is, the patient has no recollection of anything that occurred for the fifteen to twenty minutes preceding the head injury.

It must be borne in mind that most cases of cerebral contusion show no evidence whatever of fracture of the skull on clinical or *x*-ray examination. In head injuries the underlying soft structure (the brain) is far more likely to suffer than the hard bone, and it cannot be sufficiently emphasized that the brain may be very seriously damaged without any evidence of bone injury. In assessing the effects and possible consequences of head injuries far too much stress has been laid upon the radiographic appearance of the skull, and, if negative, the injury is often assumed to be slight, not only in legal but also in medical circles.

The pathology of chronic cerebral contusion is as follows. Quite apart from any laceration of the brain or compound fracture of the skull, the injury causes diffuse bruising, with serous exudation and petechial haemorrhages. The effect of such exudation is to cause an increase in the normal intracranial tension; on this the symptoms depend. This rise in intracranial tension can be confirmed by manometric reading of the cerebro-spinal fluid pressure taken through a lumbar puncture needle. One of the effects of increased intracranial tension is to embarrass the cerebral circulation by compressing the veins, which have a lower internal pressure than either the arteries or the capillaries. A localized cerebral contusion therefore becomes surrounded by an area of impaired circulation, which prevents absorption and removal of the exudate. A vicious circle is thus formed which can only be broken by bringing about a lowering of the general intracranial tension. Such relief will allow the veins to dilate and the transudate to be absorbed. There are several methods of applying this treatment; probably the best and most direct is repeated lumbar puncture and the removal of the excess of cerebro-spinal fluid. Puncture may be performed every other day until the symptoms are relieved. Another method is the intravenous injection of hypertonic saline solution. The effect of the introduction of such a solution is to cause an active shrinkage of the brain by the absorption into the blood stream of its extravascular fluid contents and so lower the intracranial tension; 50 to 100 c.cm. of a 30 per cent. solution has been advised, but I prefer 50 to 75 c.cm. of a 15 per cent. solution. The effect of the injection is temporary, and it may have to be repeated at intervals of two or three days. An alternative method of cerebral dehydration is the oral administration of large amounts of magnesium sulphate; 3 ounces of a 50 per cent. solution is the dose given. The magnesium sulphate solution can also be given rectally (6 ounces of a 50 per cent. solution), or, if this is too irritating, 8 ounces of a 25 per cent. solution.

As one of the striking advances in treatment may be cited the malaria treatment of general paralysis. Provided cases are obtained in a sufficiently early stage, arrest and even improvement result in the majority of patients. I first used this method of treatment in 1923, and several of my patients treated that year are still progressing satisfactorily. The technique is comparatively simple, and there are two methods: the patient can either be injected with blood (2 c.cm.) from another patient while the latter has malaria, or he can be exposed to the bite of a malarial mosquito. Personally, I prefer the blood injection method. With the mosquito-induced method the malaria starts with a period of irregular pyrexia, and one is often uncertain when rigors actually begin; moreover, it is most exhausting for the patient and more difficult to control. The number of rigors allowed is usually ten to twelve—that is, if the patient develops a tertian ague. Often, however, he develops a quotidian form—that is, a rigor every day. In these circumstances one can seldom allow more than eight rigors. Following the cessation of malaria, the patient is given six injections of novarsenobillon at intervals of ten days, and apparently no further treatment is necessary, unless the patient relapses; in this case a second course is sometimes given. A remarkable fact is that malaria is the only treatment that has produced a negative Wassermann reaction in the blood and cerebro-spinal fluid in cases of general paralysis, but this does not occur until after the elapse of two or three years from the termination of the malarial treatment.

A great problem at present awaiting solution is the treatment of encephalitis lethargica. I think I have tried every form of treatment advocated, and have reached the conclusion that the best for acute and subacute cases is the intravenous injection of sodium salicylate, or sodium salicylate combined with glucose; 30 c.cm. of a 2.5 per cent. solution of sodium salicylate is given once or twice daily, and continued until the patient improves.

The chronic stage—and especially when accompanied by myoclonus or a Parkinsonian syndrome—is even more difficult to treat; some degree of relief only is possible. In most cases improvement can be maintained by giving hypodermic injections of hyoscine hydrobromide in gradually increasing doses—up to 1/50 grain three times daily. So frequent hypodermic medication, however, is difficult to arrange outside an institution, and it also becomes irksome for the patient. Unfortunately, the effect of hyoscine orally administered in no way compares with that when the drug is given hypodermically; it would indeed be a boon if some substance were forthcoming which when taken by the mouth gave an equally good result. Quite recently, at the post-encephalitis unit of the Metropolitan Asylums Board, we have tried a drug known as harmine, but after an extensive trial it did not give satisfaction—either by the mouth or injected—excepting in the possibility of its controlling the respiratory disorders that occasionally accompany chronic encephalitis. We are now obtaining more hopeful effects, however, with dried stramonium, but it is too early to report any definite results.

PHYSIOLOGICAL DILATATION OF THE HEART.

A STUDY IN CLINICAL PHYSIOLOGY.

BY

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IN *De Motu Cordis*, published in 1628, Harvey described the outstanding facts about the heart's action and the circulation of the blood. But it has remained to the twentieth century to probe into "the most essentially vital of the characteristics of the heart . . . its power of adaptation, of altering its activity—that is, the amount of work it performs at each beat, according to the requirements of the body."[1]

This subject may, I believe, still be said to be in its infancy, but a good deal is known as to the nature of the response both to local and general requirements.

As to local needs, something is now known of the mechanism by which the circulation in whole areas is switched on and off by means of neuro-arterial control. We know, too, that the capillary system—which, if dilated all over the body at the same time, would accommodate the whole of the blood, so that in such circumstances the individual would rapidly "bleed to death into his capillaries"—is also possessed of a marvellous arrangement for the control of local areas, opening up those required and closing down the rest.

It is, however, with the total output of the heart, and especially with certain aspects of it, that the present communication deals. It would indeed be strange if the heart—"the Sovereign within, from which all power proceeds," as Harvey puts it—was unprovided with some arrangement for varying its activities. As a matter of fact it contains two such mechanisms, one for altering the pace at which it beats, and another for varying the output per beat; and to state that the activity of the heart is constantly varying within wide limits is merely to bring it into line with what is true of every organ in the body. While variations in frequency are obvious, and alterations of output are admitted, it appears that *physiological dilatation*, which seems to be a necessary corollary, is denied as a fact and even as a possibility by certain authorities. Consequently I came to review what I knew, or thought I knew, about this matter, with the result that my convictions are confirmed. Until starting on this investigation I had not realized that conceptions which I had held for years, and regarded as known truths, were based upon premisses concerning which but little is to be found in works upon the heart or in the ordinary textbooks on physiology. Personal experiences, conversations, and correspondence, confirming information to be found only in isolated monographs and scattered papers, were what I had to rely upon; and the bringing together in orderly sequence of the grounds on which these views depended has proved to be no very simple task.

Calculations, stated here in cubic centimetres and litres and elsewhere in ounces and pints, were involved; and the mere matter of weights and measures proved somewhat confusing, until it was realized that a simple unit, representing one of the elemental premisses, was available: for, as will be seen, the gallon may conveniently be taken as an average unit of the circulation, and variations between one and seven gallons are more easily visualized than are the relatives in litres (4.5 to 31). Consequently in what follows I have made use of British standard measures, inserting the corresponding metrical equivalents in brackets. Approximate figures are all that are aimed at or required; for, apart from the fact that the results of different workers using different methods are not in exact agreement, the individual differences in human beings, in bulk, weight, activity, and pulse rate, are sufficient to vitiate exact generalizations. Useful conclusions can, however, be stated simply, though doubtless open to criticism in detail, and making no appeal to those who do not accept the premisses—which I understand are taught by physiologists generally.

THE HEART'S RESPONSE TO EFFORT.

The Output of the Heart per Minute.

The amount of blood in the body of a healthy human being is kept constant by an elaborate physiological mechanism, and is about one-fourteenth of the body weight; so that in a man weighing 10 st. (63.5 kilos) the blood weighs about 10 lb., which means about 8 pints or 1 gallon (4.53 litres). By the "minute volume" is meant "the amount of blood circulating per minute"[2]; and in an individual in complete repose it is found that the whole of the blood circulates about once a minute, and consequently in a 10 st. man the minute volume is one gallon. This gallon of blood goes twice through the heart in the course of the minute, once through the right side and once through the left, so that the minimum total output of the heart in a minute is 2 gallons (9 litres), while the output of each ventricle corresponds with the "minute volume" and is 1 gallon.

In sedentary work the minute volume is doubled; in ordinary muscular work it rises to about 4 gallons (18 litres), while in the extremes of athletic effort, to quote A. V. Hill, "the total amount of blood in such a man's body . . . must circulate about seven times every minute."[3] Consequently the normal "minute volume" may vary from 1 to 7 gallons (31 litres). This last figure corresponds exactly with E. H. Starling's estimate. Quoting Krogh's researches, based on quite different methods from those employed by A. V. Hill, Starling says[4] of an athletic individual undertaking very hard work: "this means that the heart can pump the total blood contained in the body round the whole circulatory system six or seven times in the course of a minute." Douglas and Haldane,[5] working on yet another system, got a higher minimum and a lower maximum, and found considerable dissimilarity between different individuals. Yet Haldane, when discussing the matter in 1923, and supplying me with figures which imply a minimum minute volume of 1¼ gallons, agreed to my statement that this minimum "is increased several-fold as muscular work is undertaken."[6]

Halliburton (1923)[7] accepts Starling's figures, and says, "In fact, the heart may increase its normal output sevenfold." While gratefully accepting this additional authority, I submit that the sevenfold output, though due to "exceptional" is not dependent on "abnormal" conditions, and that the word "normal" in the above sentence should be replaced by "minimal." The *normal* output is liable to constant variation, and has wide limits.

Samson Wright[8] accepts Hill's figures and appears to find confirmation from sources to which I have not had access. Personally I accept unreservedly A. V. Hill's statement[9] that "there is no possible flaw in the argument or calculation, otherwise it would be difficult to believe the conclusion."

In this connexion it is interesting, as Hill suggests, to compare the output of the heart with that of a bathroom tap. Such a tap turned to a gentle stream (about a quarter on) will yield about a gallon (4.5 litres) a minute, the equivalent of the output of one ventricle in a resting subject. The same tap turned on full rush with good power behind it will yield 5 or 6 gallons (27 litres) in the same time. Both taps turned on full yield 11 to 12 gallons (54 litres) in the minute—less than the equivalent of the maximum output of the two ventricles working together. "It is extraordinary," says Hill,[9] "that a pump weighing only about a pound" (when empty about 10 ounces) "can have such an enormous output."

To take a familiar contrast at the other end of the scale the maximum output of a Higginson syringe per minute is a pint and a half (840 c.cm.), or about one-fifth of the output of one ventricle in an individual at rest—that is, the minimum minute output of one ventricle. But, of course, the Higginson syringe is not supplied by an auricle.

The Frequency of the Heart Beat.

The normal frequency of the heart beat in healthy adults is stated by physiologists as between 70 and 80 per minute,[10] and clinicians commonly place it at 72. Some healthy people have a pulse rate in the sixties, ... in the nineties, or higher.

When we speak of "normal" in this relationship we refer to an individual at rest. The pulse often sinks lower during sleep; sedentary work will send it up into the eighties; while with muscular effort it commonly rises to over a hundred; and, apart from pathological conditions, emotion may quicken or slow down the pace. All these variations are within the true normal range, as is also the very rapid action induced by extreme athletic exercise, which A. V. Hill has recorded with a string galvanometer as high as 180 per minute.[8] Consequently, for the purposes of this paper, the minute frequency of the heart beat may be regarded as ranging from 72 to 180, corresponding to a range of from 1 to 7 gallons in the minute volume of the blood in circulation. It is obvious that the extremes of frequency cannot alone account for the extremes of volume.

The Output of the Heart per Beat.

The output of the heart per beat, like the volume of the blood in circulation and the frequency of the heart beat, is constantly varying, the common limits being from about 5 to 10 fl. oz. (150 to 300 c.cm.), while in exceptional effort it may rise to 13 or 14 fl. oz. (420 c.cm.). The "minute volume" divided by the pulse rate will give the ventricular output per beat, and the total cardiac output is just double.

A few examples will suffice to illustrate the range of these variations. A subject at rest with a minute volume of 1 gallon (160 fl. oz.—4.5 litres) and a pulse rate of 72 will have a ventricular output of about 2¼ fl. oz. (67 c.cm.) and a cardiac output of 4½ fl. oz. (135 c.cm.) per beat.

Sedentary work is said to double the minute volume (2 gallons or 320 fl. oz.—9 litres). The pulse commonly rises during such work, and my own at this moment is 86. Consequently my ventricular output should be 3.7 fl. oz. As, however, my weight is 11 st. and not 10 st., the calculation brings the ventricular figure to 4 fl. oz. and the cardiac to 8 fl. oz. (240 c.cm.) per beat.

In moderate muscular exercise the minute volume rises to 3 or 4 gallons (14 to 18 litres). The frequency of the pulse varies a good deal in different people, but a rise to 110 or more is common. If we take a 3½ gallon (16 litres) minute volume with a pulse rate of 110, we get a ventricular output of 5 fl. oz., and a cardiac output of 10 fl. oz. (300 c.cm.) per beat. Finally, with the extreme "minute volume" of 7 gallons, a pulse rate of 160 necessitates a ventricular output of 7 fl. oz., and a cardiac output of 14 fl. oz. Compare this with A. V. Hill's statement,[10] about which he says "there is no possible flaw in the argument or calculation"; "this means that each side of the heart ejects some 200 c.cm. (close on 7 fl. oz.) per beat," at a pulse rate of 180.

Enough has been said to serve the purpose of this paper. But if the heart can vary its "minute output" by gallons, and its "stroke output" by half-pints, it doubtless has a fine adjustment by means of which its output can be varied by drachms, minims, and cubic centimetres. Indeed, when one realizes the constantly varying requirements of the human body—muscular, digestive, metabolic, excretory, mental, and emotional—one soon comes to look upon the heart as an organ of such perfect adaptability that no two consecutive beats are likely to have a precisely identical output.

The Varying Capacity of the Ventricles.

Though the auricles doubtless participate in the changes of volume which the heart undergoes, it is convenient to concentrate on the ventricles. In Starling's *Principles of Human Physiology*[11] the capacity of both ventricles is stated to be approximately equal, and to amount in man to about 140 c.cm. (nearly 4.7 fl. oz.) for each ventricle when "the heart is completely relaxed." The cavities of the auricles are stated to be somewhat smaller. Halliburton[12] says that "during life each ventricle is capable of containing about three fluid ounces of blood. The capacity of the auricles is rather less than that of the ventricles, the latter being partly filled with blood before the auricles contract.

From a general survey of the premisses already studied this estimate of the capacity of each ventricle would seem to conform with what must be very usual in the case of an individual neither at complete rest nor at work, and I think we may take it as representing the condition of the normal heart as commonly seen on the screen or in a radiogram. The outline in the photograph is that of the peripheral pericardium, with the heart in full diastole. The smaller shadow of systole is lost in the larger one; and though, on the screen, one can observe the flicker of the systole, it does not last long enough for the eye to appreciate its extent before it is again overwhelmed by the diastolic picture. Moreover, the peripheral pericardium is non-contractile, and must to some extent obscure the movement. Neither a screen picture nor a radiogram of the heart has yet been obtained during active physical work; nor is it easy to examine the heart clinically under such circumstances. A. V. Hill has managed to get a string galvanometric record of the frequency of the heart beat in the case of an athlete at hard work. If it should ever prove possible to attach a small cinematograph apparatus to the chest of a man rowing in a boat race—or on some laboratory equivalent—a moving picture of the heart will be obtained, and the picture will be one of varying volume.

As we have seen in the previous section, the output of the heart per beat may vary from 4½ to nearly 14 fl. oz. (135 to 420 c.cm.), so that a capacity of 6 fl. oz. (180 c.cm.), to take Halliburton's figures, must be subject to some mechanism for reducing it by an ounce and a half (45 c.cm.), and for increasing it by 8 fl. oz. (240 c.cm.)—an increase which should about double the heart's size.

The diminished output need not detain us; the heart adapts its activities to a nicety to deal with a diminished income. It is with the capacity for *increasing* output that we are more particularly concerned. There is a difference of 3 fl. oz. (90 c.cm.) between Halliburton's "life capacity"—6 fl. oz. (180 c.cm.)—and the "complete relaxation" referred to by Starling—9 fl. oz. (270 c.cm.) Any increased capacity beyond this must be due to dilatation; but the process is probably all one. The dilatation, and subsequent contraction, are *vital* processes. "Each of the muscle fibres which make up the heart wall is lengthened," and with the lengthening the energy of contraction is increased.[1] "Within physiological limits the larger the volume of the heart the greater the energy of contraction."

There appears to be no valid reason why this vital lengthening should stop at the level of post-mortem "relaxation"; and, as I read it, this is Starling's view. "In these circumstances, therefore, the heart is dilated, . . ." and "it remains dilated over the whole period of increased work." "But in a healthy individual this condition is only temporary." "A contracted heart may be in a bad condition, and a dilated heart may be in a good condition."[1]

Nor does Starling leave us in any doubt as to the mechanism by which the dilatation is brought about. Though other factors are at work, it is the increased venous inflow that starts the process. "If a man starts to run, his muscular movements pump more blood into the heart, so increasing the venous filling, while the central nervous system, by contracting the arteries of the abdomen, increases the peripheral resistance, raises the arterial pressure, and forces all the available blood through the active muscles. As a result the heart is overfilled during diastole, and is impeded from emptying itself in systole. . . . Its volume, both in systole and diastole, enlarges progressively, its muscle fibres lengthening and its energy of contraction increasing" until a balance is attained, and the ventricles have dilated to a capacity sufficient to equal the increase of the venous inflow.

For this process to be possible an adequate increase of coronary circulation is essential, and the point is strongly stressed in Starling's lecture. No less is it impressed on the mind of A. V. Hill. "During such activity," says Hill,[9] "the heart is consuming as much oxygen as the whole of the body does when at rest." "Probably one of the factors which limit the capacity of the heart is the amount of blood which can circulate through the coronary system, and this may vary in different individuals."

Another factor is the physiological capacity for the lengthening of the individual fibres of which the wall of

the heart is composed. This, too, "may differ in different individuals," and it differs in the same individual at different ages.

PHYSIOLOGICAL DILATATION.

"The demonstration of the connexion between dilatation of the heart and energy of contraction does more than merely bring the behaviour of the organ into line with that of voluntary muscle. It enables us to form a picture of what is occurring in the heart in all the vicissitudes and changes in stress to which it is exposed in the course of a man's life."

Since, some ten years ago, I first read Starling's Linacre Lecture,[1] from which the above quotation is taken, the idea of physiological dilatation of the heart has formed a part of my general conception of its mode of action—the Higginson-like contraction, it has a kind of concertina-like adaptability.* I have welcomed every circumstance, in my reading and experience, that has seemed to confirm this conception; and I have not doubted that clinically recognizable degrees must occur in individuals with youth, health, and a good coronary circulation. It would seem needless to stress what appears to me so obvious, were it not that there is little to be found about the matter in textbooks and treatises; and also that, as already stated, it is denied as a fact, and even as a possibility, by men of eminent scientific attainments.

It was only after these views had been impressed upon me that I came to realize the fact that the heart's action has never been observed while performing its most arduous tasks; and also that recognizable phases of dilatation are unlikely to occur except under very exceptional conditions of strictly limited duration. A man in the thirties and the forties may have more staying power than he had at twenty, but he can no longer "sprint," and it is during the short-lived efforts of extreme competitive athletics—limited by minutes even in the longest bouts, such as the Boat Race—that the maximum of the elastic stretching property, common to all youthful tissues, is likely to be elicited. Such extremes of effort are of necessity of short duration; all the fibres of the heart are at full stretch and the whole of them are in action at the same time. As soon as the sprint is over the heart seeks rest, and its action changes.

Among minor experiences which have seemed to illustrate this condition two stand out in prominent relief, and I conclude with a brief description of these, both of which I believe to be recognizable examples of physiological dilatation.

I was greatly impressed by one of the experiments exhibited in the Harvey film. As soon as the aorta is tied the volume of the heart commences to grow larger, and, with increased vigour of action, it appears to reach about twice its original bulk. Presently, the height of the struggle over, the beats become irregular and feeble, and, as the organ ceases to beat, it reverts to its original size. It would appear that nothing except an active and vital dilatation can account for an expansion which disappears so promptly.

Finally, though I have been told that there must be "some other explanation," I have never doubted that the following clinical experience of my own, which seems to be an isolated one, furnishes an example of the condition under discussion. I believe that similar experiences will occur to others; but it is only of late that I have realized how rare must be the opportunity for encountering this condition accidentally, and how difficult it may prove to observe it, even if arranged for.

A CASE.

The boy, aged 16, convalescent from influenza at school—where the doctor, having some doubts about his heart, had kept him fairly quiet till the holidays—was brought to me by his parents, then occupying a country house for a few months, at the beginning of the Easter vacation in 1923. He had been convalescent for a fortnight; he seemed perfectly well, and I could find no evidence of cardiac mischief or weakness. Consequently I advised that he should spend a week in getting fit, and then do what he liked.

About a month later the parents rang me up and asked if I could see him that afternoon to decide if he might join in the school games and sports during the coming term. The family left the district a month or two later, and I have lost all trace of them; but I am sure I should have heard if anything untoward had occurred. I gave the opinion that he was all right, and might do anything and everything; but this decision was based upon the views I held about physiological dilatation of the heart.

The boy's appointment was for 3 o'clock, and, as he had not turned up at five minutes past, I looked down the road, and soon saw him pounding up the hill on a bicycle. He had cycled for about three miles when, passing a clock, he noticed that he was late. Consequently he sprinted the last mile, mostly uphill, jumped off his bicycle, and without pausing or speaking, burst into my room, stripped to the waist, and stood at attention still puffing. To my surprise I saw a very rapid, regular, and rather diffuse impulse, not obviously below the fifth interspace, but extending on a line with the nipple as far as the axilla. The pace was too rapid for easy counting, but before I had time to consider that phase and had just noted the limit of palpable pulsation as "out to the anterior axillary line at the nipple level," the picture changed with dramatic suddenness. In a moment, "in the twinkling of an eye," the impulse disappeared from beneath my fingers, the visible pulsation was gone, and a normal apex beat in the normal position was all that could be found. Concurrently, and instantaneously, the rate changed; the rapid action was gone, and was replaced by a regular normal action, with a frequency I think, in the seventies, though here, again, I regret to say my scant notes do not state the pulse rate. I was profoundly interested and impressed, for I did not doubt, nor do I now, that I had seen the counterpart of the 7 gallon (31 litre) minute volume of the circulation, and the 14 ounce (420 c.cm.) output of the heart beat. All four chambers of the heart must have been dilated, and probably both ventricles were involved in the visible and palpable enlargement. The suddenness of the change, recalling the sudden ending of paroxysmal tachycardia, puzzled me; and yet, on reflection, it seemed but to add one more item of information as to the marvellous adaptability of the heart to all exigencies. "The muscular movements" which "pump more blood into the heart" came suddenly to an end, and the "minute volume" of the blood in circulation dropped from the 7 gallon to the 2 gallon equivalent. There was no excess of blood entering the auricles to fill the dilated ventricles, and there was no further occasion for rapid action. Consequently the "concertina" action ceased, leaving the "Higginson pump" working at a normal pace, to carry on the requirements of the diminished circulation. If I am wrong in these surmises, then "there must be some other explanation."

What I had seen, though it impressed me, did not much surprise me. Though the extent of the dilatation was greater than I should have expected, yet it seemed to fit in with what might have been reasonably anticipated, and I supposed that the condition was familiar to other observers. I did not then realize, as I do now, that my opportunity depended on a series of fortunate coincidences —a healthy youth, in good condition, observed at the immediate conclusion of a bout of severe effort. The circumstances could not have been more ideal if they had been planned. Had I not been waiting for him, had he not been late and conscious of it, or had he paused before (still at full strenuous effort) tearing off his garments, nothing unusual would have been observed.

If, in such a case, the pace slows down, as in the "run out" in a hundred yards race, the subsidence of the cardiac dilatation will be gradual, as noted in Starling's brochure. If, however, cessation of effort is abrupt, the change is instantaneous, as in the case described above. In either instance the heart regains its resting volume before, in ordinary circumstances, it can be examined; and the fact that the "shadows of hearts examined radiologically immediately after the race were not increased at all—in fact, they were smaller than on the following day"[14]—is only what would be expected. The whole system seeks rest at the earliest opportunity, and cardiac intake and output are both reduced to a minimum.

* I am indebted to Dr. K. D. Wilkinson of Birmingham—an uncompromising opponent of the views here advocated—for this excellent musical metaphor.

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RETENTION OF URINE.*

BY

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RETENTION of urine is one of the most distressing symptoms affecting the human race. It is, moreover, a symptom which may be overlooked when present, or diagnosed when absent. The first of these pitfalls is due to retention with overflow being mistaken for true incontinence. I once saw a patient in the padded room of a mental ward, whither he had been transferred from a general hospital, where the diagnosis of mania had been made. The patient was rolling about the floor and scratching his hypogastrium with his finger-nails. He had been in the padded room about twelve hours. The attendant in charge of him informed me that the patient had been passing urine freely, but that he was incontinent. On examining the patient I found that his shirt was soaked with urine and that his bladder reached about to his umbilicus. He was barely able to appreciate what was said to him, his prostate was enlarged and in spite of treatment he died of uraemia. It cannot be too strongly emphasized that retention of urine with overflow must be distinguished from incontinence of urine. Before a diagnosis of incontinence is made a catheter should be passed. In true incontinence there will be, at most, a few ounces of urine under no great pressure. An error that is less often made is to mistake suppression of urine, a more rare condition, for retention of urine, because in this condition a catheter is almost invariably passed and the true state of affairs revealed.

Retention of urine may be complete or partial. In complete retention efforts at voluntary micturition will be unsuccessful, though when the bladder is sufficiently distended some overflow may take place. In partial retention the patient may partially empty his bladder by a voluntary effort, but if a catheter be passed at the end of micturition a further quantity of urine will be withdrawn. In any obstruction to the evacuation of urine the amount of residual urine affords an indication of the ratio between the power of the bladder muscle and the degree of obstruction. The increase or decrease of residual urine will show the progress of the case.

Retention of urine is a symptom that has engaged the attention of the medical profession for many centuries, during which time many accurate observations have been made, though in early days curious theories were held. Before the time when Francis Bacon, by his synthetic reasoning, delivered science from the bondage of superstition, observers appear to have often started with a theory and attempted to make the facts fit it, rather than to have marshalled their facts and then formulated a theory in accordance with them.

In 1588 there was published in London a translation into English, by John Read, of the works of a Spanish surgeon, Francis Arceas. In this book Read incorporated an anonymous tract on urethral stricture by a West Country surgeon. This is full of accurate observations, combined with theories, the result of former teachings, which held that stricture—or caruncle, as it was called—was a form of new growth. We have become so used to the French word "bougie" that, for the moment, it strikes us as odd that, in these early writings, the word "candle" is used.

Ambroise Paré deals with retention of urine, but makes no distinction between suppression and retention. He describes most graphically, amongst other causes of retention, that of over-distension, for he wrote:

> "Thus of late a certain young man riding on horseback before his mistress, and therefore not daring to make water when he had great need to do so, had his urine so suppressed that, returning from his journey home into the city, could by no means possible make water."

Paré goes on to describe how he drew off two pints with a catheter, and in spite of the opinion of the young man's friends, who believed that he had a stone, Paré said that there was no stone, and the subsequent history of the patient confirmed this. While Paré gave much useful information, some of his treatment, such as fumigation of the patient with sulphur, appears to us unlikely to have been very successful. I could find no mention of enlargement of the prostate in Paré's writings.

The retention is dealt with by other early writers such as Hart, in his *Anatomy of Urines*, published in 1625; Record, in *The Urinal of Physic* (1547); and Johannes Scultetus of Ulm in Swabia, who published *The Chyrurgeon's Storehouse*, translated by E. B. and published in 1624. Record describes a delightfully homoeopathic treatment for stone, which he said could be cured by the patient obtaining a stone from a human being, crushing it with water and drinking the mixture so obtained. Scultetus quotes at length from Celsus (lib. 7, cap. 26) a description of catheterization which would do for a description of this manœuvre as practised to-day.

Charles Brandon Trye of Gloucester, writing in 1774, draws a distinction between retention and suppression. Among other things he describes enlargement of the prostate; though he knew of no treatment, he wrote that he could promise a cure of this condition. He also described an evacuator for clearing out the bladder. In 1778 Alexander Reid published *An Enquiry into the Merits of Operation used in Obstinate Suppression of Urine*. He was a strong supporter of the puncture of the bladder through the rectum, according to the method described by Flurant of Lyons in 1750, and quotes a high mortality for perineal puncture.

Percival Pott, in 1778, describes spasmodic retention of urine in such conditions as fistula in ano. He protested strongly against use of the catheter in these cases, and recommended purgings, baths, and hot applications to overcome the spasm. Later on, Cock of Guy's, in 1866, revived the use of perineal puncture.

Turning aside from this brief historical review of the subject, let us consider the question, What are the causes of retention of urine? The answers to this question may be grouped conveniently according to the patient's age.

CAUSES OF RETENTION OF URINE.

Males.

A. *Newborn.*
1. The meatus stuck together by a little dried blood or secretion.
2. Pinhole meatus.
3. Phimosis.
4. Congenital membrane or valve in the posterior urethra.

B. *Young Adults.*
1. Acute urethritis, prostatitis, or prostatic abscess.
2. Reflex spasm due to inflammation elsewhere—for example, appendicitis, ischio-rectal abscess, etc.
3. Trauma, locally or to reflex arc.
4. Over-distension.
5. Functional or hysterical.
6. Organic nervous disease.
7. Stone.

C. *Middle Life.*
1. Urethral Stricture.
2. Tabes dorsalis.
3. Causes under B.

D. *Old Age.*
1. Enlarged prostate.
2. Atony.
3. Causes under B and C.

Females.

1. Urethritis (gonococcal).
2. Retroverted uterus, especially if enlarged by fibroids or pregnancy.
3. Prolapse of urethral mucous membrane.
4. Caruncle.
5. Hysteria.
6. Nervous disease.
7. Vaginitis (Children).

Hamilton Bailey, in his most useful work *Physical Science in Clinical Surgery*, recalls Jaques's speech in *As You Like It*, and he applies the seven ages to the causes of retention of urine.

What would happen if retention of urine were not relieved? It is a popular belief among the laity that the bladder would burst. This does not happen. If the obstruction to micturition is at the neck of the bladder, overflow will occur when the intravesicular pressure reaches a certain point. If the obstruction is in the urethra extravasation of urine from the posterior urethra takes place

* Abstract of a paper read before the Brighton and Sussex Medico-Chirurgical Society.

and fistulæ are formed. The rise of pressure in retention of urine causes trabeculation of the bladder, due to degeneration of the muscle; dilatation of the ureters and kidney pelves with destruction of kidney tissue and function; and, finally, uræmia, anuria, and death.

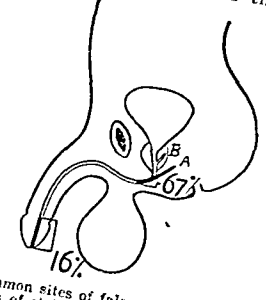
In the space at my disposal I shall be able merely to allude to some of the causes of retention and to discuss certain points of practical interest in connexion with them.

The treatment of most of the congenital causes is obvious. The congenital membrane or valve is interesting, owing to the fact that, while it obstructs the passage of urine, instruments passed from the external urinary meatus may not be obstructed. Until, therefore, the condition had been described in medical literature, it was often overlooked.

In retention of urine due to inflammation or reflex spasm it is best to avoid the use of a catheter, if possible, and to treat the inflammation. This will diminish the spasm. Other methods of diminishing spasm are a hot bath, hot local applications, morphine and atropine hypodermically, and calcium chloride intravenously.

The history of the patient will often indicate the probable cause, and is very helpful, since the method of examination suitable for one cause may be unsuitable for another; for instance, in stricture instruments of small diameter will be required, whereas in enlargement of the prostate it is easy to pass large instruments, and these are less likely to cause bleeding than small ones. I have never seen a case of adenomatous enlargement of the prostate in a man who has had gonococcal posterior urethritis. A history of gonorrhœa, or "strain," as the ignorant sometimes call it, suggests the probability of a stricture. Other conditions may be suggested by the symptoms. Stone would be indicated if the patient were to complain of pain, especially on movement, and the sudden stopping of free micturition.

In passing instruments, on a patient suffering from stricture, it is important not only to remember the common sites of strictures, but also the common sites of false passages; the position of these is indicated in the accompanying diagram. Thompson states that 67 per cent. of



A and B = common sites of false passages. Percentages indicate the common sites of stricture and their relative frequency.

urethral strictures occur in the region of the bulb of the urethra. Spasm must be eliminated if possible, because its presence makes it impossible to estimate correctly the diminution of the urethral passage by the stricture; it also increases the congestion, and the risk of a false passage. The position of the patient and his co-operation will help. He should be flat on his back with his head on a pillow, but not his shoulders. His knees may be slightly bent on a pillow, though this, as a rule, is not necessary, and may obstruct certain manœuvres. His hands should lie beside him in a position of rest and relaxation. On no account must he clench them, nor must he grip the couch or bed. His mouth should be open and he should sigh his breath in and out gently. He must not strain or hold his breath. If he cannot, or will not, relax himself, it is not only useless, but dangerous, to pass instruments, and resort should be had to some sort of anæsthesia. This may be local, neural, spinal, or general.

While local anæsthesia is the simplest, it is not always easy to get good anæsthesia in the case of a tightly closed stricture, owing to the difficulty of introducing the solution into the more sensitive posterior urethra. It works very well for dilating strictures that will admit a sound of moderate size, and also for cystoscopy. Various solutions have been used. Many surgeons recommend novocain. This is usually quite safe, although I have known alarming symptoms follow its use. In my experience, however, the degree of anæsthesia produced is poor. Cocaine produces a far better anæsthesia in a mucous membrane, and this, I believe, is the experience of rhinologists. It has, however, been considered too dangerous to use cocaine in the urethra. Canny Ryall, whose experience in this work is as great as that of any other surgeon, uses cocaine, and if his technique is followed I believe there is little or no risk. At any rate, I have never seen the slightest evidence of cocaine poisoning. The solution used is a very weak one, and it is necessary to follow the technique exactly.

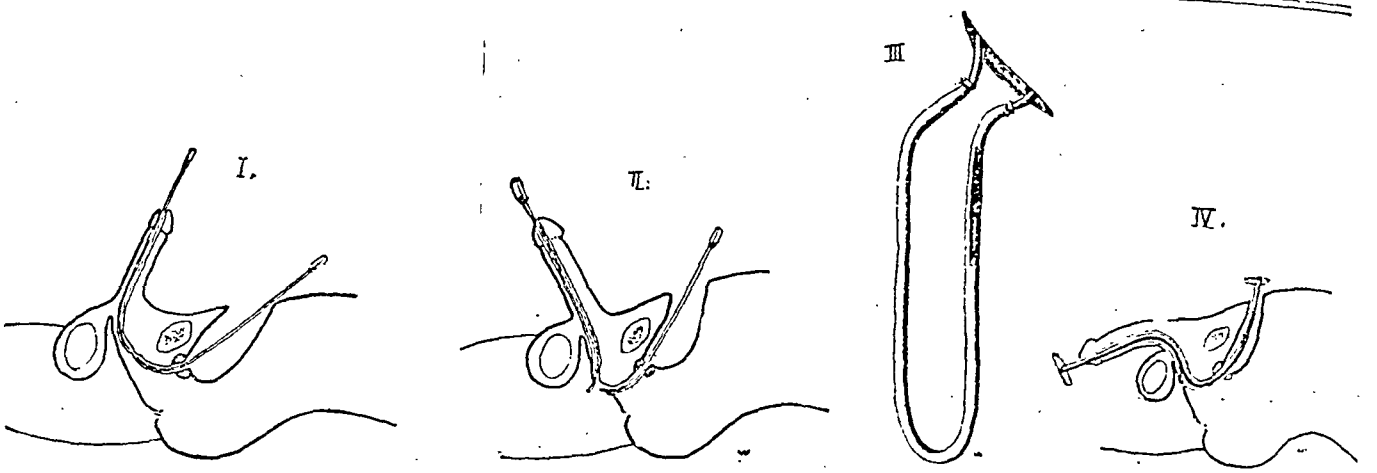
Sacral anæsthesia is recommended by Macalpine. He uses a novocain solution. The solution is injected into the lower part of the sacral canal below the level of the dura. It gives an excellent anæsthesia of the perineum. On two occasions in my experience this has produced convulsions and coma lasting for a few seconds. I think these symptoms were due to novocain idiosyncrasy, and in future I do not think I shall use more than 20 to 30 c.cm. of the solution recommended by Macalpine.

In spinal anæsthesia I have used various substances, but have found the most satisfactory to be a solution made according to the formula of Despas, which includes 3 per cent. stovaine solution with 5 per cent. of caffeine in normal saline. I use 1.5 c.cm. of this solution for an average-sized man. Spinal anæsthesia is the ideal anæsthesia for dealing with a difficult stricture. Relaxation is complete, and any fall in blood pressure that may occur diminishes the congestion. General anæsthesia may be used, but the relaxation is not so complete and congestion may occur.

The number of various catheters and sounds is immense, and I do not propose to deal with these in detail. Soft rubber catheters and metal catheters can be sterilized by boiling: gum-elastic and silk web instruments are sterilized by immersion in 1 in 1,000 mercury biniodide, or preferably by exposing them to formalin vapour. This can be carried out in hospital in special ovens or sterilizers. For private practice one may use a glass tube of sufficient length to take a bougie or catheter. The end of the glass tube is closed by a rubber stopper in which is inserted a perforated receptacle for carrying a formalin tablet. Dr. H. M. Galt, pathologist to the Royal Sussex County Hospital, has recently tested the efficacy of this instrument for sterilizing catheters, and has found the method very efficient. The catheters must be dry inside as well as outside, to prevent air-locks, and to ensure proper exposure to the vapour.

In dealing with strictures, my own preference is for metal instruments, and with spinal anæsthesia eliminating all straining, I have used the smallest size of metal sounds without any ill result. I prefer a metal sound, as I feel that it can be controlled so much better than a flexible gum-elastic bougie. Metal sounds should be fairly heavy, as a heavy sound passes more safely and is quite easy to control, whereas a light sound may require a little force behind it, and this increases the risk of a false passage.

In catheterizing a patient suffering from retention of urine due to an enlarged prostate Tiemann's catheter is the simplest and best instrument. It is a soft rubber catheter with a solid rubber tip, which is turned up like a ski tip. The turned-up tip rides over the enlarged middle lobe of the prostate, as does a ski over a mound of snow. The catheter is sterilized by boiling. It is useful to cut a small notch in the end of the catheter to correspond with the direction of the tip, so that if any rotation occurs the direction of the tip may be known. This should, of course, point anteriorly when passing over the prostate. This catheter is well known abroad, but does not appear to be so well known in this country. It may be safely used by a male nurse or by the patient himself. A useful method of lubrication of a catheter is by means of a tall jar almost filled with hot water, on which floats a layer of liquid paraffin. The catheter is warmed, and at the same



time picks up a very even layer of oil. I am indebted to Mr. Sidney MacDonald for teaching me this method. Instruments, especially metal ones, should be used hot, as cold ones produce spasm.

If, even under spinal anaesthesia, no instrument can be passed through a stricture—a very rare condition—suprapubic puncture with a fine needle may be performed. This can be done two or three times safely without risk of extravasation. The bladder should be emptied slowly, or only partially. Later it may be found that an impermeable stricture has become a permeable one. In some cases—for example, the case of an enlarged prostate in a patient whose condition contraindicates immediate prostatectomy—retention of urine may be relieved by a suprapubic drainage. This may be done by an open operation, or, more conveniently, a Depezzer self-retaining catheter can be introduced through a cannula. Local infiltration of the abdominal wall with novocain provides adequate anaesthesia for this. The advantages of the open method and the disadvantages of the closed method have been greatly exaggerated. In cases of enlargement of the prostate requiring a preliminary drainage a cystoscopy can be carried out first, and this will give the required information, or the probable state of affairs can be estimated by experience, a careful digital rectal examination, and the examination of the urine.

Operation is performed less often in cases of stricture than formerly. The urethrotomy may be internal or external. In the eighteenth century internal urethrotomy was occasionally performed by puncturing the stricture by a trocar or lancet. In 1827 Stafford described to the Westminster Society an instrument for cutting a stricture from before backwards, with a guide through the stricture to prevent the blade leaving the urethra. In 1836 he described an instrument for dividing the stricture from behind forwards.

For the performance of internal urethrotomy it must be possible to introduce a fine guide through the stricture. This operation is indicated in those cases of stricture which are unsuitable for dilatation; in the resilient stricture; in the stricture that bleeds very readily, no matter what care is taken; and also in peri-urethral abscess.

External urethrotomy, performed as a restorative operation, apart from puncture for the relief of retention, dates from the early part of the nineteenth century, and in this country is associated with the names of Guthrie and Syme, and later Wheelhouse. It is indicated when no instrument at all will pass through the stricture, and in cases of extravasation of urine, perineal abscess, and in fistulae. The disadvantage of Wheelhouse's operation is that great difficulty may be experienced in finding the way through the stricture when the urethra in front of it is opened. I have therefore devised the following operation.

The patient is anaesthetized spinally and placed in the lithotomy position. The bladder is opened suprapubically by a small incision into which a finger can be passed. Along the finger a sound is passed into the internal urinary meatus and along the prostatic urethra. The tips of the sounds are then only separated by the stricture—a perineal incision on to the tops of the sounds divides the stricture. The tips of the sounds are exposed; the anterior one is rotated to extrude its tip. Each end of a piece of tubing about the size of a No. 12 catheter is tied on to the sounds, a long window being cut close to the end tied on to the posterior sound. The sounds are withdrawn by the way they entered, the tube is drawn in with them so that it traverses the urethra, bladder, and suprapubic wound, and its window lies in the bladder. Each end of the tube is secured by a safety pin, so that, however restless and uraemic the patient is, there is little risk of his extracting the tube. Each day the tube may be moved to and fro by means of the pin at each end; in this way the urethritis associated with an indwelling catheter is diminished. The tube may be left in for seven to ten days. The subsequent treatment and dilatation are the same as for a Wheelhouse operation. I performed this operation first in 1925, and have performed it twice since. The fact that the tube traverses the suprapubic wound does not appear to delay healing in any way, and the feeling of security that it gives is very reassuring.

In concluding this paper it is my very pleasant duty to express my gratitude to Sir D'Arcy Power for permitting me to see one of the two copies of Read's book that exist, and for information on certain points of history; to Mr. H. E. Powell, librarian of the Royal Society of Medicine, for much help; and to the late Dr. W. E. Powell, for preparing the excellent diagrams and the drawings of my method of performing external urethrotomy, which are so clear that description of the operation is really superfluous.

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ABORTUS FEVER:

NOTES ON A CASE OCCURRING IN SCOTLAND.

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THE following case of *abortus* fever, which we have had under our observation recently, is, we believe, the first example of this disease to be recorded in Scotland.

A dairy farmer, aged 27 years, living in Ayrshire, developed a febrile illness in June, 1929. From the clinical features of the case his doctor suspected a typhoid or paratyphoid infection, but the Widal reaction was negative on two occasions, and the diagnosis remained in doubt. After five weeks the patient was transferred to the care of one of us in the Royal Infirmary, Glasgow. He remained there for four weeks, and was then sent home to complete his convalescence. There is a record of the temperature over a period of six weeks, commencing within one week of the abrupt onset of the illness. The fever was of an undulant type, with three distinct febrile periods, each of which lasted from five to seven days, and several ill-defined attacks of lesser intensity. The intervals between the attacks were not entirely afebrile, for the rectal temperature was above normal at some time during each day, even though on some occasions the skin temperature was not elevated.

The clinical course of the case showed few striking features apart from the fever and the rigors which accompanied its exacerbations. The only subjective symptoms noted were malaise, headache, and pains in the limbs during the febrile periods. The appetite and digestion were good, and the patient slept well. Sweating was moderate, but never excessive. During the initial stages of the illness, before the patient came under our observation, there had been slight dullness and increased vocal resonance over the left lung. There was enlargement of the inguinal, axillary, and cervical glands, which persisted until about the fifth week, but no enlargement of the liver or spleen was noted at any time. Physical examination revealed no other abnormality. Blood counts showed a persistent relative increase of lymphocytes and large mononuclear leucocytes, but the total white cell count never exceeded 11,000 per cubic millimetre.

In view of the peculiar type of fever present, and the patient's association with cattle, the possibility of infection with *Brucella abortus* was considered. A Widal test on the patient's blood serum gave a negative result for typhoid and paratyphoid, but showed a strongly positive reaction for *Br. abortus*. This test was repeated on several occasions, with the following results.

Agglutinin Titre of the Patient's Blood Serum.—August 5th: Titre for *Br. abortus* (a standardized emulsion from the Oxford Laboratories) = 1 in 2,560. August 9th: Titre for *Br. melitensis* = 1 in 2,560. August 20th: Titre for *Br. abortus* = 1 in 1,600. August 29th: Titre for *Br. abortus* = 1 in 800. A further sample obtained on October 26th, two months after recovery, had a titre for *Br. abortus* of 1 in 800.

Agglutinin Absorption.—An emulsion of *Br. abortus* removed completely the agglutinins of the homologous organism, but not entirely those for *Br melitensis*. Conversely, an emulsion of three serological strains of *Br. melitensis* removed all agglutinins for *Br. melitensis* and *Br. abortus*.

Blood cultures, taken on three occasions (August 2nd, 9th, and 20th), were all negative. The urine and faeces were examined and cultured repeatedly, but no growth of *Br. abortus* was obtained. Guinea-pigs, injected with the patient's blood and with three consecutive specimens of his urine, failed to show any agglutinins in their blood or any post-mortem evidence of infection with *Br. abortus* when killed six weeks later. Portions of axillary gland, removed from the patient shortly after admission to hospital, were sterile on culture. Histological examination of the gland tissue by Dr. Alice J. Marshall showed only lymphatic hyperplasia.

A diagnosis of *abortus* fever was made on the following grounds: (1) The presence of an undulant fever. (2) The presence of a high agglutinin titre (1 in 2,560) for *Br. abortus*, and the absence of a positive Widal reaction for the typhoid-paratyphoid group. (3) The absence of clinical, bacteriological, and serological evidence of any other infection likely to cause an undulant fever. (4) The patient's close association with cattle.

The absolute confirmation which isolation of the organism would have afforded is lacking, but the evidence seems sufficient to justify the diagnosis of *abortus* fever.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL

SOME DISEASES OF THE MOTORIST.

THAT the motor car is playing no small part in the etiology of diseases of widespread nature is daily becoming more apparent. Mr. Bertwistle's account of motorist's heel in the *Journal* of November 9th, 1929 (p. 855), has prompted me to look up records of those of my patients whose symptoms were referable to their activities as motorists.

I have notes of several cases of neuritis in the right arm. In every case the patient had been driving a small touring car for considerable distances in cold weather. The protection of the windscreen was insufficient to prevent a constant blast of cold air impinging on the right shoulder. The insertion of a thick plate of leather into the coat at this point proved effective in abolishing the painful symptom. Right-sided conjunctivitis, again, is common in drivers of the small touring car, and responds to no treatment until driving goggles are worn.

An interesting case came to my notice a few years ago of a veterinary surgeon whose work involved much motoring: his car had a central gear lever. He complained of shooting pain in the left leg and dragging of the left foot. He had noticed that when his foot was on the clutch pedal contact of the leg with the gear lever produced pain like that of an electrical shock passing down the limb. This he attributed to the presence of a short circuit. His explanation was, of course, untenable, the true one being that, with the leg in the posture to which he referred, the common peroneal nerve in its course round the fibula was pressed upon by the knob surmounting the gear lever. Repeated trauma of this nature had resulted in persistent tenderness of the nerve, with marked weakness of the muscles which it supplied. Careful padding of the top of the gear lever resulted in early disappearance of symptoms.

Two patients suffered from the effects of cranking-up the old-fashioned type of Ford car in cold weather. The first, a man aged 21, had been exerting himself on the starting handle for ten minutes before success crowned his efforts. The same evening his right leg felt "queer," and he became alarmed when he found that the temperature of his morning cold bath was not appreciated by this limb. On examination I found that the pain and thermal sense were lost over the right leg and thigh and the right side of the abdominal wall for an inch above Poupart's ligament. The outer border of the foot and knee and the lower external surface of the leg were normal in respect of sensation. The sense of position and appreciation of touch were unaffected. The reflexes and cerebro-spinal fluid were normal; the Wassermann reaction was negative. Within seven days the dissociated sensory loss was reduced to the skin of the thigh, and two weeks later no abnormal signs could be discovered. There has been no further symptom in the intervening five years. Presumably an intraspinal haemorrhage had resulted from rupture of a blood vessel during the excessive physical effort.

The second case occurred in a man of 30, who had had similar difficulty in starting the engine. At the last few swings of the handle he felt a bursting sensation in his chest, and then a violent thud, as if he had been struck. At this point he fell to the ground. I found him collapsed, with faint heart sounds. As improvement developed, a loud aortic diastolic murmur became audible and persisted over the next three years, after which time I lost touch with him.

The real point of interest lies in the fact that this last patient was a perfectly fit man before he tackled the "gummed up" pistons. I had examined him at an earlier date for life insurance and found no traces of abnormality. He was highly athletic, playing football and sculling frequently. There was no history of rheumatic fever, growing pains, etc. The Wassermann reaction of the blood was persistently negative. There seems no escaping the fact that this was a true case of rupture of a healthy valve cusp.

London, W.1. A. H. DOUTHWAITE, M.D., F.R.C.P.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

EGYPTIAN BRANCH.

A WELL-ATTENDED meeting of the Egyptian Branch was held at the Kasr-el-Aini Hospital, Cairo, on November 22nd, 1929, under the chairmanship of the president, Dr. W. H. WILSON, when an address on puerperal sepsis was given by Sir EWEN MACLEAN, immediate Past-President of the British Medical Association, during a visit to Cairo on his way home from the Australasian Medical Congress in Sydney. The CHAIRMAN pointed out how stimulating it was that distinguished members of the Central Council should from time to time visit the Branch.

Address on Puerperal Sepsis.

After conveying the cordial greetings of the Central Council, Sir EWEN MACLEAN remarked that maternal mortality was a world problem, but its extent in particular countries was difficult to determine, owing to variations in the inclusion or omission of certain factors in the different national tables, and inaccuracy in compilation. The Medical Section of the League of Nations was considering the defining of a common composite formula. In all recorded national tables of maternal mortality infection was the largest factor—in many instances 50 per cent.; while ante-natal examination and care were undoubtedly diminishing other factors the degree of reduction in this one was far from satisfactory. The speaker defined the clinical varieties of septic infection, and discussed their pathology briefly. Bacteriologists everywhere were paying much attention to the streptococci, unquestionably the most potent of the bacteria concerned, but there was, perhaps, some risk of the highly important factor of resistance being overlooked. This point was stressed, for whatever the variety of infection the maintenance or reinforcement of the general tone of the patient by fresh air and appropriate diet was indicated. Sir Ewen Maclean had been much interested to learn from the members of the staff of the Kasr-el-Aini Hospital that, notwithstanding the unsatisfactory condition of a large proportion of the patients from bilharziasis and ankylostomiasis, ill feeding before admission, and the prevailing finely divided dust, speedy aseptic healing of wounds in all operations of election was the rule and septic infection the exception. This was regarded as referable to a measure of immunity conferred by multiple puncture inoculations of a kind readily understood when the domestic conditions of this class of the people were considered. Puerperal infection was in the great majority of cases conveyed from without, though auto-infection undoubtedly occurred. He agreed that the abrasion of the vaginal mucosa, resulting sometimes from the use of contraceptive pessaries containing strong medicaments, might, under given conditions, facilitate inoculation. After some detailed consideration of the manner in which infection might be conveyed, the alleged drop in the forceps rate in Great Britain was quoted. So far as could be ascertained, the forceps was not frequently employed in Egypt, and in this connexion the relative frequency of vesico-vaginal fistula and its association with cases of excessively prolonged labour had been brought to his notice in some of the hospitals he had visited. He deprecated the extreme non-interference policy, especially in cases of sapraemia with clear or strongly presumptive evidence of the presence of retained products. Everyone recognized the dangers of the use of the curette, but the digital exploration of the uterus in such cases was more than justifiable. Transfusion of whole blood, he believed, was a good prophylactic measure where haemorrhage had occurred. The same claim could be made for immediate perineal and cervical repair. No outstanding success could be attributed to the use of serums and vaccines, but he had not personally seen evidence of harmful effects. Glycerin drainage was good, but the intravenous injection of eusol, mercurochrome, and similar substances was by no means free from certain risks. The results of laparotomy drainage, hysterectomy, phlebectomy, and the like were uniformly discouraging, and it had to be confessed that, in general, the treatment of puerperal infection was very unsatisfactory. He hoped that by close co-operation between the clinician and the biochemist new light would be forthcoming as to the factors and conditions concerned in resistance to infection.

Dr. SHAFIK BEY and Mr. DOLBEY discussed certain points in the paper, and a vote of thanks to Sir Ewen Maclean concluded the proceedings.

Reports of Societies.

ETIOLOGY OF GALL-BLADDER INFECTIONS.

AT the meeting of the Medical Society of London, on January 27th, with Mr. DONALD J. ARMOUR in the chair, Professor D. P. D. WILKIE of Edinburgh gave an address on the etiology of gall-bladder infections.

Professor Wilkie, in justifying the tackling of this subject by a surgeon, declared that what was known of gall-bladder pathology was largely due to surgical observation. The history of surgery of the gall-bladder might be divided into four phases. The first operations were performed by gynaecologists for a large cystic tumour of the abdomen, the swelling being mistaken for an ovarian cyst. Then came operations carried out for obstructive cholecystitis. In the third phase, the operation was done because the patient had gall-stones causing recurring attacks of colic, with or without jaundice. Finally, it came to be recognized that disease of the gall-bladder due to pathological change in the walls, apart from stone, called for operation, and a number of patients were operated on because they had chronic persistent flatulent dyspepsia, associated with some degree of ill health, apart altogether from attacks of biliary colic. The idea had gradually evolved that the gall-bladder might be not only the seat of inflammation, causing local symptoms, or stone formation, giving rise to colic, but itself a focus of infection.

With the aid of lantern slides Professor Wilkie discussed some facts of gall-bladder anatomy and physiology on which the theory of the gall-bladder as a focus of infection was based. The gall-bladder had a definite mucous lining and muscular coat, but in the common bile duct muscular fibres almost entirely disappeared. The cystic artery was relatively large, the lymph drainage was free, and, on cutting sections of the cystic duct, a large nerve supply was evident, including sympathetic fibres which went to the hepatic plexus and the phrenic plexus, with connexion also with the left vagus nerve, which probably explained the gastric symptoms in gall-bladder disease, and might possibly explain to some extent the cardiac symptoms. Occasionally, in gall-bladders which appeared normal, the cystic duct did not conform to the normal anatomical description, being bound to the gall-bladder by loose peritoneal folds, and this had been stressed as a possible factor in the initial stage of gall-stone formation. Doubt had existed as to whether the gall-bladder had the power of spontaneous contraction—whether it could empty itself by its own musculature—but there was now little doubt that that was the case. As to what stimulated contraction, the injection intravenously of cholecystokinin, a secretion liberated from the duodenum, had been found in animals to cause the gall-bladder to contract.

The lecturer next inquired into the origin of cholecystitis. Did it always precede gall-stones, and were they due to it, or might the order be reversed? A good deal of evidence had been produced to show that certain types of gall-stones, particularly the pure cholesterin stones, might become impacted in the neck of the gall-bladder, giving a typical biliary colic. With obstruction an infective condition was likely to arise, and a muco-purulent fluid was formed in the gall-bladder. Septic stones might form secondarily to the primary cholesterin stone or independently of it. There was no doubt that the gall-bladder was very commonly infected, but the route by which infection reached the gall-bladder had been a matter of controversy. Some had held that infection travelled upwards from the duodenum and up the bile duct; others that it travelled

from the liver downwards to the gall-bladder. In favour of the first view, Bond of Leicester brought forward an experiment with indigo, which demonstrated to him a retrograde mucous current up the bile duct. The main volume of evidence, however, was against this. If 40 c.cm. of an emulsion of *B. coli* were injected into the portal vein of an animal it was impossible to recover this from the gall-bladder. Graham of St. Louis had brought forward strong evidence that infection travelled from the liver to the gall-bladder, but the lecturer thought that that was not the usual route. Then the view obtained that infection occurred through the systemic blood stream, and was very often streptococcic in type, with a special streptococcus which had acquired an elective affinity for the gall-bladder walls. At one time it was thought that typhoid infection was the most potent cause of cholecystitis. It was certainly true that typhoid did attack the gall-bladder, but this was not a common type of infection. Both typhoid and colon bacilli were capable of living in bile, and no doubt in many infected gall-bladders *B. coli* could be recovered, but it was only in grossly diseased gall-bladders that it was obtained in any large percentage. What was most striking on examining gall-bladders by the bacteriological and histological methods at first pursued was the number of cases in which no growth of organisms in culture was obtained; but later on, taking a more extended series, and altering the method, it was possible in quite a number to demonstrate chains of micro-organisms in the section. This work had been carried out during the last three and a half years —by Illingworth in the first place, Wilkie of Montreal, and others. Cultures had been made on all operations, and something like 50 per cent. of gall-bladders gave a positive growth of streptococcus. The frequent occurrence of this organism in the pathological gall-bladder was now quite impressive. The question remained whether it was the real cause of cholecystitis. Professor Wilkie described a series of experiments with rabbits, showing that consistently with this organism a spreading cholecystitis was obtained. This organism had the peculiar effect of producing a progressive inflammatory change in the gall-bladder, though the sequence was not obtained every time. Such chronic inflammation in the gall-bladder might give rise to different changes, one of which was the so-called "strawberry gall-bladder."

Professor Wilkie then gave the following particulars of his gall-bladder cases in the period 1919–29, with the operation done, and, in brackets, the number of deaths.

	Males.		Females.			
	No.	Average Age.	No.	Average Age.	Cholecystectomy.	Cholecystostomy.
Hospital cases ...	61	48	293	45	265 (6)	59 (1)
Private cases ...	92	56	207	51	185 (6)	85 (1)

The following particulars refer to cases of stone in the common bile duct.

	Males.		Females.			
	No.	Average Age.	No.	Average Age.	Total.	Deaths.
Hospital cases ...	5	54	33	48	33	3
Private cases... ...	7	62	25	56	32	1

He concluded that cholecystitis, in the majority of cases, was a blood-borne intramural infection of the gall-bladder. The only means whereby it could be eradicated were by measures for raising the patient's resistance to the particular organism, possibly by giving some drug which would be absorbed by the gall-bladder wall, and by removing the infected organ. The operation of cholecystectomy had been criticized, but if the cases were investigated it would be found that the residual symptoms were due to some such cause as stone left behind, coincident appendicitis, perhaps malignant disease of the colon. Unless the whole pathology had been assessed at the original operation, and dealt with, cholecystectomy could hardly be blamed. With an indolent, chronic type of streptococcal intramural infection he felt that little could be done by giving drugs, and that surgery was the only rational form of treatment.

At the close of the address Mr. WARREN LOW proposed and Mr. H. W. CARSON seconded a hearty vote of thanks. Mr. A. J. WALTON was able from the clinical side to express agreement with Professor Wilkie on the pathological. In his view even a pure cholesterin stone was due to inflammatory change. In no circumstances was a cholesterin stone formed in the bile duct; if it was found there it had come from the gall-bladder.

Dr. J. W. MCNEE said that although the radiate cholesterin stone was very commonly single, this was not always so; he had seen as many as three in a single gall-bladder. With regard to treatment, he believed that no drug could pass into the gall-bladder and be absorbed in sufficient quantity to influence the infection, but from the medical point of view the formation of gall-stones could be prevented to some extent, either by duodenal drainage or by giving concentrated magnesium carbonate by the mouth.

Dr. H. W. CROWE mentioned that a woman under his care with rheumatoid arthritis developed gall-stone colic, and after a dose of magnesium sulphate he examined the faeces and got from them an almost pure culture of a streptococcus which invariably caused rheumatoid arthritis in a rabbit.

Professor WILKIE, in replying, referred to an organism which he had not mentioned earlier—namely, *B. welchii*, which he had found in three cases of acute cholecystitis of the gangrenous type, and in two cases of the chronic condition. All these cases showed the curious pallor one was accustomed to see during the war in cases of gas gangrene.

PSITTACOSIS.

AT a meeting of the Section of Medicine of the Royal Society of Medicine on January 22th, with the president (DR. R. A. YOUNG) in the chair, the subject for discussion was psittacosis.

Dr. A. P. THOMSON (Birmingham), in opening, said that his interest in this subject dated from July, 1923. He had seen 17 cases, 5 of which had proved fatal, following contact with sick parrots. The first group of cases he described occurred in a house in Cheshire, where a parrot had died. The man of the house, who had been fond of the bird, and had allowed it to take food out of his lips, became ill at the time of the parrot's death and collapsed at his work, with a temperature of 103°. His case was accepted as one of typhoid fever. He complained of intense headache, and tended to drift into mild delirium. The temperature fell by lysis, he never developed any physical signs, and had an uneventful convalescence. His son was also ill for a fortnight, but with no definite symptoms; his wife, however, who had had an inoculation for typhoid, became extremely collapsed and ill. The speaker believed that she had been incubating a condition akin to that of her husband, and the inoculation had precipitated the result. Another case was that of a lady in Worcestershire, who developed a temperature of 103°, headache, mainly occipital, some diarrhoea, and occasional vomiting. There were no abnormal physical signs, apart from sharp crackling rales in the upper lobe of the left lung. This lady did not keep a parrot, but she was interested in birds, and had looked after a friend's parrot that was sick. A striking feature of the case was that, as the temperature fell, the general condition became worse. The physical signs in the lung and abdominal distension did not clear up until the temperature had been normal for ten days. She was drowsy and stuporous, and practically oblivious of her surroundings; for days she did not speak, and she lay like a log. Her case was very similar to one of Parkinsonism. The serological reactions were curious. A culture of *B. psittacosis* was obtained, and she agglutinated this up to 1 in 500. The agglutination disappeared very rapidly, and had practically gone within a very few days.

An interesting case was that of a Jewish girl who, according to Jewish custom, had been given a pair of love-

birds on her betrothal, and one of the birds was very ill. The girl developed intense headache, temperature 104°, and cervical rigidity. In the lung there was absolute silence, exploration yielded no fluid, and when the needle was pressed into the lung one had the feeling that it was going into something solid. The temperature remained at 104° to 105° for eight days. This patient also showed the appearance of Parkinsonism. Dr. Thomson also quoted an earlier case which he had not himself seen, but which, in retrospect, must have belonged to the same category. A Birmingham man returned from West Africa in 1926, bringing with him three parrots, all of which sickened and died of diarrhoea. The man became ill with what was thought to be typhoid, developed consolidation of the lung, which on the left became absolutely silent, and he died in the fourth week of his illness. In November last, in Kidderminster, a middle-aged man developed a similar illness. There was no known association with a parrot, but he was a pigeon-fancier and was accustomed to judge at bird shows. On treatment with serum he made a dramatic recovery. At Moseley, in a house where two parrots had died, both obtained from the same dealer, a woman complained of headache and shivering. This was in January of the present year, and, alive to the diagnosis of psittacosis, the doctor sent her to hospital. It was a mild case, and within a week her temperature returned to normal. Her husband was admitted in a much worse condition, and died. The post-mortem appearance of the lungs was important. They were free from adhesions. A few minute petechial haemorrhages were seen beneath the visceral pleura. The upper lobe of the left lung was completely consolidated. The consolidated lung substance was of a dusky red colour and of a dry, almost crumbling consistency. There was nothing abnormal in the abdomen, except that the spleen was enlarged and soft.

In reviewing the clinical aspect of these cases, Dr. Thomson said that it was fairly accurate to state of the severer cases that they resembled typhoid septicaemia in retaining a relatively slow pulse, despite a high continuous fever. Even before the development of the usual pulmonary signs, however, certain features distinguished them from true typhoid: the onset was usually more sudden, and the temperature rose more rapidly. Headache was intense, generally occipital, and often associated with slight cervical rigidity. Epistaxis occurred in one patient. Sweating was sometimes severe. Diarrhoea and vomiting occasionally occurred in the early stages, but as a whole the alimentary symptoms, apart from distension, had been trivial. The outstanding feature was the involvement of the lungs. At the onset signs of slight shifting bronchitis appeared, to be followed in a few days by extensive consolidation, manifested by impairment of percussion note and presence of tubular breath sounds. Still later the percussion note became completely flat, and breath sounds in the affected area disappeared. The silence of the lung might persist for some days after the temperature had fallen and the general condition had improved. Resolution occurred rapidly and completely, accompanied by fine crepitant rales. Although cough was frequent, and at times incessant, it was never painful; expectoration was scanty, and frequently absent. Respiration was not hurried unless the area of lung involved was very extensive. Although the clinical course of most of the cases formed a fairly characteristic picture, it was clear that the symptoms and signs might be but slight and equivocal, even when the disease proved fatal, and a diagnosis would be frankly impossible unless the history of contact with sick birds were elicited.

The bacteriological findings were as yet incomplete. The early investigations, based on such literature as was available, led to a concentration of attention upon the discovery of an organism of the typhoid or salmonella type. In one case a bacillus corresponding fairly well with this group was recovered from a local parotid swelling, but in none of the other cases had there been any success up to now. A remarkable feature was the recovery of an organism similar in its sugar reactions to *B. faecalis alcaligenes* from the lung in three cases, and also from the love-bird responsible for the infection in two others. Whether this organism was responsible in any way for the human infection was a problem still under investigation. The results of agglutination tests were irregular and capricious. In two cases positive agglutinations to a typhoid organism were obtained, but in nine others there was none. Not much reliance was to be placed on the positive agglutinations with *B. psittacosis* or the salmonella group generally as a means of exact diagnosis, particularly when, as in this series, they were often so transient and variable.

Dr. ROBERT HUTCHISON said that a case came under his observation at the London Hospital at the beginning of December, and since then he had had cognizance of about 20 cases, two of them fatal. These had been mostly house outbreaks—two to four cases occurring in a house where there had been a parrot. The parrot had been in practically every case a green parrot. It used to be said that green parrots were alone responsible, but he did not think this was quite true. The infection seemed to be direct from the bird to the human being, though there was one case in which the patient had not been in close contact with the parrot, but had nursed her sister, who had first taken the infection. The incubation period was roughly ten days. The cases had the appearance of typhoid or paratyphoid, but there were curious lung symptoms, with actual consolidation in one case, though the London Hospital cases had not shown the dense consolidation of which Dr. Thomson had spoken. In one of the fatal cases there was definite pleurisy, verified post mortem; that same case had a condition of pneumonia, reported by Dr. Turnbull as being unlike any ordinary kind of pneumonia—it was pneumonia *sui generis*. The diagnosis, he agreed, must be circumstantial at present. He believed that many cases were scattered about. As the result of a letter in the *British Medical Journal* of January 18th he had received information of four or six cases which had been diagnosed retrospectively, and from these it had been possible to trace others. A great many cases were probably overlooked. As to the origin of these cases, he understood that there was a bad outbreak in Argentina last July, and probably it was from Argentina that these parrots had been exported to this country and other parts of Europe. Germany, with Teutonic thoroughness, had stopped the importation of parrots altogether. In this country quarantine had been suggested, but it appeared that the quarantine must be for a long period if it was to be effective. In one house outbreak at the end of December, involving two persons, the parrots had been purchased in September, and the dealer declared that they came into his possession in July. Thus it looked as if parrots could develop the disease in this country—a disquieting possibility.

Dr. E. STOLKIND described two cases, one in a man of 24, who had fed his sick parrot by putting its bill into his own mouth, and the other in the nurse who attended to the first patient, and who had also petted the parrot. The man made a complete recovery, but the nurse developed double pneumonia and died. He also described an epidemic in Germany in the summer of 1929, where, in one locality, there were twenty-six cases with six deaths. The cases were characterized by a severe form of pneumonia.

Dr. G. T. WESTERN of the bacteriological department, London Hospital, described some investigations which were proceeding on the bacteriological side. In one case which came to autopsy the bacteriological and serological findings were entirely negative. Twelve human cases and six parrots had up to now been investigated, and bacteriologically it had not been possible to show the presence of any member of the salmonella group in any of them. Dr. S. P. BEDSON, who was associated with the work of the last speaker, said that there was some suggestion that the disease was due to a filterable virus. The investigations at the London Hospital were not far enough advanced to permit of any definite statement being made, but evidence of a filterable virus had been obtained in one parrot, and it seemed possible that this virus was responsible for the disease, both in man and in bird.

Dr. H. LETHEBY TIDY urged that *B. psittacosis* should not be overlooked in these investigations. The filter-passer was, of course, the fashionable thing at the moment, but the organism which was first isolated in 1892 should not be passed over. It was only in a certain proportion of

cases that one expected to isolate this organism. But the fact had to be explained that in the great outbreaks of food poisoning there were isolated and sporadic cases in which a condition occurred indistinguishable from psittacosis, and in which Aertrycke's bacillus had been found. He thought that this line of inquiry should not be neglected.

Dr. MACNAMARA described a case in which three persons who had had to do with a parrot fell sick, undoubtedly with psittacosis. The remarkable thing was that two of them had had no contact with the bird until after it was dead, when they had to do with the disposal of its body.

Dr. LEVY SIMPSON thought that a possible explanation of the cases cited by the last speaker was to be found in the fact that the dried faeces of the bird, which definitely contained the infective agent, could be disseminated as dust particles. With regard to the incubation period, in the majority of cases investigated from the London Hospital it had not been possible to fix a definite time, but in some of them it was quite certain that the period was ten days. As to the origin of the cases, he quoted from the epidemiological record of the League of Nations particulars as to the extent of the epidemic in the Argentine during the summer of 1929. It appeared that altogether several hundreds of human cases, all connected with sick parrots, had been reported in that South American country. It was the largest epidemic of psittacosis hitherto known.

Dr. R. A. YOUNG, from the chair, expressed thanks to Dr. Thomson for this careful review, clinical and bacteriological, of a perplexing condition, and Dr. Thomson briefly replied.

ACTINOMYCOSIS COMMON TO MAN AND ANIMALS.

AT a combined meeting of the Sections of Comparative Medicine and of Surgery at the Royal Society of Medicine, on January 22nd, with Captain S. R. DOUGLAS, I.M.S. (ret.), in the chair, a special discussion was held on actinomycosis common to man and animals.

Dr. LEONARD COLEBROOK, commenting on the nomenclature, said that the various chronic suppurative processes which had been termed actinomycosis included some which were not mycoses at all, and others to which the prefix "actino" was not appropriate; a stricter use of terms was very desirable. Classification by clinical characteristics was not possible, nor could a complete bacteriological classification be made at present. The term "actinophytosis" might be reintroduced with advantage to cover the whole group of suppurative granulomata associated with granules bearing clubs, and the terms "actinomycosis," "actinobacillosis," and "streptothricosis" be retained for subgroups with strictly limited application. The old hypothesis which attributed actinomycotic infection to the impaction of vegetable foreign bodies, such as grasses, no longer found much support: *Actinomyces boris* had never been isolated from these supposed sources. The recent work of Naeslund in Sweden suggested that infection was usually endogenous by actinomyces attached to broken-off fragments of carious teeth or tartar, or to foreign bodies which had been impacted in the mouth long enough to become encrusted with actinomyces. Naeslund claimed to have produced in cattle progressive suppurative lesions re-embling actinomycosis by the inoculation of cultures or of materials taken direct from human teeth. Pus from the cattle lesions so produced showed granules with clubs. The same worker had demonstrated the precipitation of lime salts from saliva by the growth in it of these actinomyces strains *in vitro*. The growth of these organisms, both *in vivo* and *in vitro*, was thought to have a twofold effect—namely, biochemical, diminishing the hydrogen-ion content of the saliva in their neighbourhood so that it could no longer hold all its lime salts in solution, and physical, affording a framework on which the precipitated lime salts were readily deposited. This latter conception was supported by microscopical sections of tartar.

Mr. ZACHARY COPE, who dealt with the subject from the point of view of surgery, said that actinomycosis was probably the most interesting, and certainly the most neglected, of the infective granulomata. In England and Wales forty people died each year from actinomycosis. Only about one in 3,000 of the admissions to the big hospitals was afflicted with this disease, but in many such cases hospital treatment was not needed. He had obtained figures from St. Bartholomew's and from Middlesex Hospital showing that during the last ten years there had been 27 and 25 cases respectively of this disease. Curiously enough, the disease appeared to be much rarer in Scotland: during ten years at the Glasgow Royal Infirmary there had been only 5 at the Edinburgh Royal Infirmary and nine and 8 cases respectively. Although doubt had recently been cast on the association of the streptothrix of actinomycosis with cereals and grasses, they certainly remained the most probable sources of infection. Entry into the body was nearly always through the alimentary tract, either from carious teeth or through abrasion in the gum, cheek, tonsil, œsophagus, cæcum, or appendix. Infection by inhalation into the lung was a subsidiary method of ingress. About three-fourths of the cases of actinomycosis affected the face and neck; next in frequency came the ileo-cæcal region. The clinical picture when the disease affected the face and neck might vary greatly: occasionally it spread to the deeper tissues, and might enter the skull and erode the vertebræ; pain might be present, but was often very slight. In the right iliac fossa infection almost always spread from a diseased appendix, but occasionally when no operation had been performed. The liver might be affected by portal metastasis many months after the primary operation for the diseased appendix. Thoracic actinomycosis might take the form of a chronic bronchitis, but more commonly the inflammatory infiltration appeared to spread from the mediastinal tissues to the pleura and lung. Diagnosis of lesions was often difficult in the early stages, when the condition might be mistaken for subacute sepsis, and in the later stages for syphilis, tuberculosis, or malignant disease. Most patients with facial, maxillary, and cervical actinomycosis recovered; most cases of thoracic infection with the fungus were fatal, while infection of the ileo-cæcal region gave an even chance of recovery. In treatment iodine was still the drug which appeared to have most influence over the pathological condition; vaccines had a very doubtful beneficial effect on the process. Excision of large masses of the dense filtration and the removal of bony sequestra had their place in treatment. The injection of formalin had been recommended, but the method was painful and had little to commend it.

Mr. T. J. BOSWORTH, speaking from the veterinary aspect, agreed that it was very desirable that a more definite nomenclature should be devised. In the domesticated animals to which his own experience of the condition was confined, the term "actinomycosis" had been used in connexion with any progressive infections of a chronic character in which club-bearing granules were present. The tendency in veterinary teaching was to emphasize the necessity of distinguishing actinomycosis proper, due to the streptothrix of Israel, from actinobacillosis, and either of these infections from infections due to the staphylococcus. The speaker described the appearances of actinomycosis in the bovine and the equine species.

Dr. PARKES WEBER commented on the absence of salivary calculi in association with actinomycosis in the face and neck in cases recorded in England, although in other countries the connexion was said to be frequent. But he mentioned the case of a man, aged 36, in whom a salivary calculus had been found, and an actinomyces-like organism had infected the tissue outside the salivary duct to a considerable extent.

Mr. PHILIP TURNER agreed that actinomycosis was a subject of great interest to every general surgeon. The disease spread in a peculiar way, healing in one part and breaking out elsewhere; a very striking feature of the spread was the way in which the disease leapt over what were usually regarded as very definite anatomical boundaries. Cases were encountered occasionally in which organs such as the testicle or kidney, or even the central nervous system, were involved, and sometimes no other lesion could be found. In these cases it must be assumed that there had been some primary deposit which possibly had disappeared altogether, and that the lesion was either

due to a metastatic deposit or else to direct extension with complete disappearance of the original focus. Mr. Turner said he always made it a rule, in a case of obscure suppuration in the abdominal cavity, to bear in mind the possibility of actinomycosis as the cause.

Dr. W. S. GORDON thought that a great advance could be made if serology were applied to the identification of the actinomycotic infection. The disease was repeatedly found in situations where it was entirely unexpected. Mr. E. W. RICHES mentioned a case in which employment of a stock vaccine had resulted in definite improvement, and another case, intractable to other means of treatment, which had responded well to radium. Mr. MCDOUGAL, speaking as a veterinarian, said that while improvement followed treatment with potassium iodide, he had personally obtained better results by giving rather heavy doses of mercury iodide as well. Sir HOLBURT WARING said that his experience in connexion with actinomycosis was mainly with its appearance in the abdomen and in the face and neck. In his view the wall of the caecum and not the appendix was the primary focus. He had never been satisfied that there was any advantage in using vaccines, nor had he encountered good results under x-ray treatment. While he had had an extensive experience of salivary calculi, and had operated in a considerable number of such cases, he had never seen a salivary calculus associated with actinomycosis.

Mr. COPE, replying on the discussion, remarked that he knew of no disease which was so often overlooked by expert surgeons as actinomycosis; he had no doubt that he had missed many cases himself, but he had also seen cases which others had failed to diagnose.

PATHOLOGY OF THE SENILE PSYCHOSES.

AT a meeting of the Section of Psychiatry of the Royal Society of Medicine on January 14th, Dr. MACDONALD CRITCHLEY read a paper on the psychology of the senile psychoses.

Dr. Critchley traced the modern histological conception of the senile psychoses from the work, in 1892, of Alzheimer, who was the first to draw a clear distinction between brain changes due to cerebro-vascular disease and those due to senility. The distinction between arteriosclerotic dementia and the group of senile dementias was, Dr. Critchley remarked, rather of theoretical than of practical importance. Probably the best manner of approaching the question of the pathology of the senile psychoses was to consider first the anatomical changes in the brain occurring in healthy old age. The speaker discussed the pathological changes in the normal senile brain, so far as histology was concerned, under three headings: neuronal changes, neuroglial alterations, and depositions of amorphous material. Neuronal changes comprised first the disappearance of a number of nerve cells from the cortex, and among those that remained certain pathological changes took place, including fatty degeneration, the intracellular fibrillary tangles of Alzheimer, and a large alteration in the Purkinje cells occurring in advanced age, the typical appearance being a spindle-shaped swelling of the proximal portion of the axons. Glial changes of both a regressive and a proliferative character were commonly encountered; the proliferative changes usually took the form of a diffuse gliosis of the brain, more intense in certain regions. In the senile cerebellum neuroglial changes were essentially patchy. The gliosis was limited to the perivascular zones, the depth of the fissures, the white matter surrounding the dentate nuclei, and the regions immediately around the Purkinje cells. The combination of diffuse cerebral gliosis with neuronal atrophy led to shrinkage and loss of weight of the whole brain, resulting in an internal and external hydrocephalus *ex vacuo*. Among the various types of deposition within the senile brain, Dr. Critchley mentioned corpora amylacea, especially in the fimbria, senile plaques in the cortical grey matter, and the "fatty plaques" of Laignel-Lavastine and Tinel. The pathological anatomy of senile dementia in the majority of cases was characterized by an exaggeration of the various histological processes noted in the case of the senile brain. Examination of a large series of specimens indicated that in dementia the intensification of the pathological changes of senility was not necessarily an evenly distributed process, but might exhibit a selective tendency. The usual pathological picture of dementia senilis simplex, therefore, comprised an exaggeration of the microscopical changes of senility with a preponderating development of senile plaques. Consideration of the pathology of some of the atypical and "pre-senile" varieties of dementia revealed that changes might here also show different varieties of selective development. Pick's disease might be regarded from the standpoint of pathology as a type of involutional process in which cell atrophy was the all-important feature. Alzheimer's disease was a type of premature involutional change within the brain, in which the preponderating tissue reaction comprised the development of alterations in the intracellular fibrils. The psychosis of Claude and L'Hermitte, which they described as a diffuse atrophic cortical sclerosis, might be regarded as a subtype of senile dementia in which neuroglial proliferation was the outstanding pathological feature.

Dr. Critchley struck a note of caution as regards any slavish attempts to associate clinical and pathological phenomena, and also with regard to the plea that histopathology could set the seal of finality to this neuropsychiatric problem. The chemical and physical reactions of nerve tissue to various dyes were at the best a very rough measure of the functional integrity of that tissue during life. It should not be lightly assumed that the presence of scarred or degenerated structures in the brain had necessarily any direct or even indirect connexion with signs or symptoms observed during life. These pathological debris were rather the outward signs of a particular type of tissue reaction to a factor which, while perhaps incapable of ocular demonstration, must nevertheless be regarded as the original basis of both clinical and pathological anomalies. It was probably nearer the truth to regard the pathological findings in the senile psychoses as the marks of the reaction of a senile tissue to some outside agency. As the nature of the agent varied, so the histological reaction altered. Dr. Critchley emphasized the urgent need of more detailed information with regard to cases of senile dementia.

HODGKIN'S DISEASE.

A MEETING of the Section of Pathology of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on January 10th, with the president, Dr. J. LAIT, in the chair.

Dr. V. M. SYNGE described a case of Hodgkin's disease in a woman, aged 37. Death occurred eighteen months after the first enlarged glands had appeared in the right side of the neck. Unusual features in the case were: (*a*) deposits in the sternum, causing much enlargement; (*b*) dermatitis, with crusted raw areas and shallow ulcers on both legs and on the back; (*c*) a white cell count of 42,000, the differential count being: polymorphs 86 per cent., lymphocytes 3 per cent., large hyaline 1 per cent. In this case x rays produced only a very temporary improvement. Other earlier cases treated with deep x rays had shown very considerable improvement. The early diagnosis of Hodgkin's disease was difficult, as a definite microscopical picture in sections from a gland was not often present in the early stages.

Dr. R. STUMPF gave details of the effects of deep x-ray therapy on Hodgkin's disease. He dwelt on the clinical improvement which was caused by radiation, and, by reference to the microscopical changes in the glands, explained why this improvement could not be permanently maintained. He also stated that chronic cases responded very much better than those which, without radiation, would run a more acute course. He considered that Dr. Synge's case belonged to the latter category. The patient was in a very debilitated condition before treatment started. In describing the technique Dr. Stumpf laid stress on the fact that frequent small doses rather than single large doses were to be preferred.

The PRESIDENT said that he had seen only three cases in which the sections were so typical of Hodgkin's disease

as those in this case. The giant cells were comparatively numerous, and there were many eosinophils, typical of Hodgkin's disease. The increase of polynuclear cells with relatively few lymphocytes as found in the blood was characteristic. Diagnosis, in his experience, was most difficult. As regards leucocytosis, he said it was quite common to get a case of Hodgkin's disease in which the white cell count was normal. In the majority of cases there was an increased white cell count, something in the region of 15,000 to 20,000. One point of diagnostic importance was an increase in eosinophils to 5 or even 7 per cent. The value of *x*-ray treatment, he thought, depended on the nature of the case. In localized forms deep *x*-ray treatment was an excellent, if not the only, line to adopt; but in the generalized forms it seemed hopeless to try *x* rays. In mediastinal Hodgkin's disease, *x*-ray treatment was ideal, as it relieved the pressure symptoms. He believed that the same system was involved in this disease as in Gaucher's disease—namely, the reticulo-endothelial system.

Dr. W. D. O'KELLY said he had seen about fifty cases, and in his experience diagnosis was not difficult. Regarding leucocytosis, he agreed with Dr. Synge that one rarely found more than 10,000, and never over 12,000 cells.

Dr. G. E. NESBITT mentioned the case of a boy admitted to hospital as suffering from typical Hodgkin's disease. There were enlarged glands in the axilla. The spleen was not definitely enlarged, and the liver was slightly enlarged. The Wassermann reaction was negative. There was no increase in the white cells, but the lymphocytes were 79 per cent. of the total. From the films the case was classed as a leukanaemic leukaemia. Hodgkin's disease was definitely excluded by Professor McNee, who diagnosed a lymphosarcoma of highly malignant character from sections of the glands. Following *x*-ray treatment the glands in the neck disappeared, but the patient became paler and weaker, the blood count fell rapidly, and the boy eventually died. The immediate cause of death was unknown, unless it was due to the effect of the *x* rays on the glands. There was an increase in the lymphocytes in the later stages.

Dr. J. MCGRATH said that in four cases in which Hodgkin's disease was undoubted the white cell count was not above 10,000. The earlier the case the more likely was the white cell count to be normal. Leucocytosis in Hodgkin's disease was common, and occurred in untreated cases; it was not present in the earlier cases. He thought it might be due to some secondary infection and not to Hodgkin's disease at all.

Dr. J. T. WIGHAM said he agreed with the President about the difficulty of diagnosis in Hodgkin's disease. In many cases in which the glands had been sent for diagnosis, all that could be found was evidence of chronic inflammation in the gland, increased fibrosis, and a very occasional large cell. The cases in which the glands were typical of the disease were comparatively few. In these were to be found a large number of the typical giant cells with two to three nuclei. There still existed some doubt among the authorities as to the connexion between tuberculosis and Hodgkin's disease. Since tuberculosis often followed Hodgkin's disease, it was thought by many that there was some connexion between them.

Dr. A. R. PARSONS said there was a close connexion between tuberculosis and Hodgkin's disease. He cited a case of a young man, aged 20 years, with marked enlargement of glands in the neck and enlarged spleen, and with no increase in the white cells. Treatment by deep *x* rays had a dramatic effect. In four to five months the glands enlarged again, and the patient was taken into hospital, but this time *x*-ray treatment had no effect. He developed signs in his lungs, and died of tuberculosis.

Dr. SYNGE, in replying, said that as regards eosinophilia, in none of the bloods examined were less than 200 cells counted. He had seen 5 per cent. of these cells in one case.

Oriental Sore.

Dr. M. DRUMMOND read notes on a case of leishmaniasis caused by *Leishmania tropica*. The patient, an officer on leave from Persia, was brought to Dr. Drummond three weeks before Christmas. He stated that a month previously he had cut himself on the left cheek while shaving. A small papule or growth had occurred. He had been treated by a doctor in the country with ultra-violet rays. There was considerable enlargement of the submaxillary gland, and a nodule about the size of a threepenny-bit, hard, vascular, and reddish, and slightly necrosed in the centre, was present on the cheek. From the history the fact was elicited that the middle finger of the left hand had been bitten by a mad dog in Persia. An ulcer had formed and healed up, but had broken down again three months ago. There were no constitutional symptoms whatever. The appearance of the man's face suggested some form of erysipelas. It also suggested a case of extragenital chancre. A Wassermann reaction was negative. Under local treatment the redness and inflammation—the reaction to the ultra-violet rays—cleared up, and ten days later the patient looked better. He was then brought to Professor Bigger, who diagnosed the condition as one due to *Leishmania tropica*, and variously known as oriental sore, Biskra button, Delhi boil, etc. This was first described by Peacock in 1845 in Aleppo. A red papule, usually single, appeared on the skin and developed until it became the size of a pea or a grape. In this case there were two lesions, but there was no certain evidence that infection from the finger was carried to the face. As far as treatment was concerned, the old treatment was either excision, cauterization, or intravenous injections. An expert in tropical medicine in London treated the case with neostibosan. The patient had ten injections of this, and when he came back to Dublin the swelling had disappeared from the submaxillary gland, though the boil was still there. He is to have another course of injections. The lesion on the finger had healed.

Dr. J. W. BIGGER said this was an unusual case in these countries. When the patient came to him with a chronic lesion on the cheek and a history of having recently come from Persia, he suspected it was an oriental sore. It was not, however, a very typical one. Examination for spirochaetes was made and was negative. He made films, and found large numbers of epithelioid cells, containing typical leishmania. Two types of bodies could be detected, one round or oval, the other elongated. He was unable to satisfy himself that flagella were present in the elongated forms. It was rather improbable that the flagellate form would occur in a lesion of this type, since this form is more usually found under artificial conditions of growth and in the intestines of the phlebotomies. As to how long it took for the condition to develop, Dr. Bigger said the patient had been in this country at least a couple of months before the lesion developed, and he (the patient) thought that the lesion on the cheek and that on the finger had developed at about the same time. Dr. Bigger said that there was still some doubt regarding the method of infection, but there was no doubt that a lesion of this sort was inoculable. It was probably conveyed by some insect or fly. The incubation period was anything varying from sixteen days to six and a half months. It was certain that in this case the patient was infected before he came to this country, and the incubation period was one of several months. As regards treatment, these conditions did heal themselves, but it might take two to three years; therefore he thought some form of antimony was the best line of treatment in order to hasten the healing.

The PRESIDENT asked for Dr. Bigger's views as to the relationship of oriental sore to kala-azar. He wondered how the disease was transmitted if the organism was unable to get through unbroken skin, and what the transmitting agents were.

Dr. T. O. GRAHAM said that he had seen many of these cases, and Europeans were as much affected as Indians. It was, in his experience, not uncommon to find it multiple. In a number of cases it was found on arms, face, wrists, and hands. It was easily diagnosable on examining a smear. He said treatment by neostibosan was a great advance on the old methods, as it was not so toxic. Usually quite a short course of injections would effect a cure. As to the transmission of the condition, it was still an open question. That the sand-fly was the carrier had never been proved.

Dr. DRUMMOND, in replying, said that the finger was healing; the nodule was not quite healed, but was in the process of healing. Some authorities held the bites of a wild dog to be a common cause; there was also infection of some sort by flies or insects. It was considered by some to be more commonly due to a bite from an insect. Dr. Drummond said that similar conditions occurred in non-tropical countries—for example, espundia, which occurred in South America.

Dr. BIGGER, in replying, said that the condition caused by *L. donorani* was more widespread than that caused by *L. tropica*, the latter being simply a local condition occurring in the skin or mucous membranes. Despite the fact that the two organisms were different, morphologically they were identical. The condition of oriental sore was directly inoculable.

Granuloma of Ear.

Dr. J. MCGRATH read notes on a case of granuloma of the ear, and showed lantern slides of films. This exhibit was of two tumours which arose in the lower lobes of both ears. He was indebted to Dr. P. J. Keogh for permission to show the specimen and for clinical details. The histological picture showed a condition in the ear of which he could find no description in the literature, and Dr. Keogh could find no records of a similar clinical condition.

The patient was a well-nourished man, a gardener, 49 years of age, married, who said that "he had been healthy all his life," and had never been outside Ireland. He attended the ear, nose, and throat department of St. Vincent's Hospital on July 10th, 1929, because of the unsightly appearance of his ears. The lower lobes of both ears were greatly enlarged, and two pendulous masses, about the size of a small tangerine orange, hung down to his collar. The condition had been first noticed about seven years before, and the patient thought that no further enlargement had taken place in the last few years. The skin over the masses was cyanosed and purple, but was intact. The masses were firm, but not hard, and there was no pain. The patient had not pulled at his ears, had never worn earrings, nor had he had his ears "pierced." The man was admitted to hospital on November 10th, 1929, and the next day Dr. Keogh removed the lower portion of one ear, and sent the specimen for examination. Clinically, it was thought to be a fibroma or a lipoma. The wound healed rapidly, and the patient was discharged on November 25th. The Wassermann reaction was negative, and there was no history or evidence of syphilis.

The specimen was covered with unbroken skin and measured about 4 by 3 by 2 cm. It was moderately firm and fleshy in consistence, and showed no degenerated or caseous areas. Sections were prepared by the frozen and paraffin methods. They showed masses of lymphoid cells supported by a small amount of connective tissue. The centres of the masses were composed of epithelioid cells, large, with fairly well stained protoplasm and faintly staining nuclei, which showed one or more nucleoli. No definite giant cells could be found, though there were a few large cells which somewhat resembled giant cells. Blood vessels were comparatively numerous, and some of these showed thickened walls. No tubercle bacilli could be found in the sections, nor could any other organisms be found in the Gram-Weigert preparations. Leprosy bacilli were not discovered, nor was any foreign body seen. Some dilated lymph spaces were seen.

The condition was not a neoplasm. It was rather like tuberculosis histologically, but there were no fine giant cells and no tubercle bacilli, and there were numerous thickened blood vessels. Further, it was clinically unlike tuberculosis or syphilis. Lymphatic obstruction alone could scarcely give rise to the histological characters, and the dilated lymphatics, like the cyanosis of the skin, were probably secondary.

LOW BLOOD PRESSURE.

AT a meeting of the Liverpool Medical Institution on January 9th, Dr. E. NOBLE CHAMBERLAIN read a paper on low blood pressure.

Dr. Chamberlain dealt first with the physiological principles underlying the maintenance of normal blood pressure, and then described the various ways in which the blood pressure could be reduced in disease, such as by weakening of the myocardium and diminution of the vasomotor tone. He called attention to the occurrence of low blood pressure in normal individuals. In a group of sixty medical students and doctors of ages between 18 and 33 as many as fifteen showed systolic pressures below 110 mm. They appeared to fall into two groups: one had good physique, athletic habits, and complete freedom from symptoms; the other included persons subject to minor circulatory disturbances such as chilblains and cold hands, and often of a neurasthenic disposition. The first group was in no way below par either physically or mentally, and was capable of both sudden and sustained efforts. In view of the hypotension in this group, it was considered not proven that the circulatory disturbances in the second group were necessarily related to the hypotension. Hypotension was then discussed in shock, haemorrhage, acute and chronic infections, and cardio-vascular and endocrine disorders. Shock and haemorrhage were held to illustrate types of extreme hypotension which might be fatal if the systolic blood pressure fell below 60 mm. The low blood pressure in these cases was due largely to diminution of the blood volume, resulting from increased vasomotor dilatation and increased permeability of the capillary walls, which possibly were due to the toxic effects of bodies resembling histamine produced at the site of the trauma. Direct diminution of the blood volume occurred in haemorrhage. In acute infections, such as diphtheria, pneumonia, and typhoid fever the blood pressure usually fell gradually during the illness, rising again slowly during convalescence. Sudden drops were usually of ill omen, indicating the presence of such complications as cardiac failure in pneumonia or haemorrhage in typhoid fever. Sudden rises were also apt to occur in the acute delirium of pneumonia or the perforation of typhoid ulcers. The cause of the hypotension in these conditions was probably to be sought in the effect of bacterial toxins and the products of bacterial activity in the tissues on the vasomotor system—a theory with some experimental substantiation. In chronic infections, hypotension was very constantly present in tuberculosis, and was usually proportional to the severity and activity of the disease. In a series of cases investigated by Dr. Chamberlain there did not appear to be any direct relation between the temperature and the hypotension, though low pressure was nearly always present when the patient was much emaciated. The hypotension in these cases was partly due, as in acute infections, to the effect of bacterial toxins and the products of bacterial action on the tissues, but might, Dr. Chamberlain suggested, be due to histamine-resembling substances formed in the process of caseation. In cardio-vascular diseases it was to be noted that hypotension was comparatively rare, except as a terminal event. In 100 cases analysed by Dr. Chamberlain there was only one case of hypotension, in a patient who died twelve hours later. These cases were classified as: mitral disease 29; aortic disease 42; myocardial disease 29. Cases were only accepted as myocardial damage which showed gross electro-cardiographic changes such as heart-block and bundle branch block.

Dr. Chamberlain called attention to the fact that in a number of cases of infective endocarditis examined by him the blood pressure was low in about half, and never above normal, although the majority of cases were lesions of the aortic valve, where high systolic pressures were usual. He considered, therefore, that hypotension occurring in valvular disease of the heart, unless accompanied by marked signs of cardiac failure, was suggestive of infective endocarditis, particularly if the course of the blood pressure was progressively downwards. Here, as in all cases, the value of knowing the individual's blood pressure variations in health was to be emphasized. That a fall in blood pressure would occur in infective endocarditis was to be expected, when the frequency of hypotension in other infections was considered. In endocrine disorders it had long been known that hypotension was a common feature of Addison's disease, but cases had been described recently where the blood pressure remained normal in spite of the advance over many years of all the other characteristic symptoms of the disease. This, and the experimental evidence that destruction of the suprarenal medulla in animals were often accompanied by no ill effects, and that the amount of adrenaline in the blood of normal beings was not sufficient to produce vaso-constrictor effects, made untenable the theory that the low blood pressure of Addison's disease was due to deficiency of adrenaline owing to destruction of the suprarenal medulla. The cause of the hypotension remained unexplained. In cases of pituitary insufficiency, as in Fröhlich's syndrome, low blood pressure was also common, probably due to lack of pituitrin, which might exert a pressor effect in the normal animal.

Reviews.

ALOPECIA AREATA.

EVEN the labours of Hercules were accomplished in due course, and it appears probable that the six volumes projected by Dr. ROBERT SABOURAUD for the discussion of diseases of the scalp will soon reach completion. That now before us, the fifth, is entirely devoted to alopecia areata,[1] a disease for which the French have a real name—*la pelade*. It is strange that there should be no English word to distinguish alopecia areata from other forms of baldness. Of the real nature of this baffling complaint we still know nothing, in spite of the most intense study by dermatologists of all nationalities; nor can it be said that towards the solution of the problem Sabouraud has made a contribution in any way comparable to his fascinating researches which have thrown so much light on microbic and mycelial infections of the scalp. But it need hardly be said that the present volume is a mine of information in which can be found all that is known, thought, or imagined about this disease, whether by clinicians, pathologists, neurologists, or biochemists.

Alopecia areata, as is well known, varies greatly in severity; it may show itself as a single evanescent bare spot no larger than a sixpence, which renews its covering within a few weeks, and doubtless has often come and gone without either the patient or anyone else becoming aware of its presence; on the other hand, the sufferer may lose every hair, both on the scalp and the body, within a few weeks or even a few days and never recover at all. This book is worth reading if only for its exhaustive account of the clinical appearance and manifold varieties of the disease; furthermore, the eloquent descriptions of the different forms are much assisted by admirable photographs illustrating not only every sort of clinical appearance known, but also all the various changes in the diseased hairs and the histology of the tissues affected. But the author has to confess that, after all, he is unable to draw any conclusions about the etiology of the condition. He is satisfied that heredity plays a part, and that syphilis, both acquired and congenital, accompanies the affliction more frequently than pure chance would warrant. In his experience no less than 70 per cent. of juvenile sufferers from alopecia areata exhibit the stigmata of congenital syphilis, even if they do not give a positive Wassermann reaction. Jacquet's observation, that the disease may arise as an accompaniment of displacements of internal organs, hypotony of the tissues, and sympathetic disturbances, is confirmed, and also that it may follow glandular tuberculosis, other grave infections, or operations so severe as to produce a radical alteration in the patient. But when all is said and done a vast number of cases remain for which none of these explanations is available. Twice, with an interval of ten years between, Sabouraud has made a statistical inquiry into the age of incidence of alopecia areata, and the most important point that has come to light is that it occurs now much less often in children than formerly, a fact which he attributes to the better treatment of syphilis in the parents. In addition it is much rarer in women than men. His statistics demonstrate also the influence of the menopause as a causal factor. On the other hand, even when the importance of these various factors is admitted, the way in which they exercise their influence in producing the disease remains a mystery. Moreover, we are still quite unable to give a prognosis of any accuracy in an early case; we cannot say whether it will follow a mild or a severe course; we do not even know whether under the same name we are including two or more different diseases which present similar symptoms.

The author's final conclusion is that the only remaining hope for the elucidation of the problems associated with alopecia areata lies in experimental methods; clinical medicine and histology have failed. Nevertheless, Sabouraud, the clinician, has produced a fascinating book, which no doubt all dermatologists will read with great interest.

[1] *Pelades et Alopécies en Aires. Maladies du Cuir Chevelu.* Vol. v. Les Syndromes Alopéciques. Par Dr. R. Sabouraud. Paris: Masson et Cie. 1929. (6½ × 10, pp. 378; 179 figs. 80 fr.)

DIXON'S "PHARMACOLOGY."

WE have pleasure in welcoming the appearance of the seventh edition of *A Manual of Pharmacology*,[2] by Professor W. E. DIXON. This is deservedly one of the most popular of the textbooks in its subject, and the present edition maintains the high standard set by its predecessors. No extensive alterations have been made in the form or size of the work, but it has been revised to include advances in knowledge made since the appearance of the sixth edition in 1925. Among the new therapeutic substances dealt with are liver extract, ephedrine, hexyl-resorcinol, and stovarsol. Moreover, the chapter dealing with organotherapy has been extensively revised. A few mistakes have slipped through from previous editions—for example, on page 382 we observe that the statement is made that salvarsan contains arsenic in the pentavalent form, although on the previous page the correct structural formula of the drug is shown. As the users of this textbook are well aware, it gives an excellent and concise summary of the modern science of pharmacology, while its clear illustrations render it particularly attractive to students.

MALARIA TREATMENT OF GENERAL PARALYSIS.

TREATMENT of general paralysis of the insane by induced tertian malaria is still the method of choice in the treatment of this previously hopeless malady. Evidence is slowly but surely accumulating of the value of this empirical procedure, which was introduced by Wagner-Jauregg in 1917. FRIBOURG-BLANC[3] has now added a valuable piece of further evidence, although the number of cases which he quotes is small. He gives a brief summary of the history of malarial therapy, and then describes the technique and effect of the treatment in both general paralysis and tabes. The author does not consider that other varieties of protein shock—that is, injections of tuberculin, T.A.B. vaccine—are as effective as malarial treatment. He points out that the risk of infection of other patients or of nurses is practically *nil*. In discussing the various theories as to the rationale of malaria therapy, he does not commit himself to any one of them, nor does he indicate preference for any one theory from his own clinical material. He notes, however, the resemblance, from an anatomo-pathological point of view, between cases successfully treated with malaria and cases of stationary paralysis, described by Alzheimer and Jakobi. After treatment of tabetics there was no evidence of improvement of motor or reflex symptoms—that is, these due to permanent neuronic dissolution.

ELECTRO-CARDIOGRAPHY.

DR. WIGGERS's book on the *Principles and Practice of Electrocardiography*[4] is a comprehensive introduction to the subject for American physicians; it embodies also a useful account of American opinion about the value of electrocardiograms and other graphic records in the diagnosis of cardiac affections. The author enunciates no new principles, but on the practical side he gives fuller descriptions of all the forms of apparatus than are to be found elsewhere, except perhaps in the catalogues of instrument manufacturers. In the first part of the book are discussed the physical and physiological principles on which the methods of electro-cardiography are based. Here again the author describes all the apparatus in general and occasional use, including, however, a number of portable galvanometers, in which many cardiologists have as yet incomplete confidence. The description of the method of using control boxes is not so clear as that given in the standard English work on the subject, and is liable to lead the reader into developing a faulty technique. In the second part the author explains the mode of production of the normal graphic records, and describes the abnormal curve. The reader who has mastered this part of the work should find it easy to make a correct diagnosis of the

[2] *A Manual of Pharmacology.* By Walter E. Dixon, M.D., B.Sc., D.P.H., F.R.S. Seventh edition. London: E. Arnold and Co. 1929. (Demy 8vo, pp. xi + 435; 97 figures. 18s. net.)

[3] *Traitement de la Paralysie Générale et du Tabès par la Malaria Prolongée.* Par A. Fribourg-Blanc. Médecine et Chirurgie Pratiques. Paris: Masson et Cie. 1929. (5½ × 8, pp. 112; 7 figures. 15 fr.)

[4] *Principles and Practice of Electrocardiography.* By Carl J. Wiggers, M.D. London: H. Kimpton. 1929. (6½ × 10½, pp. 256; 61 figures. 31s. 6d. net.)

simpler disorders of rhythm, though he may encounter difficulty in attempting to interpret the graphic records of the rarer abnormalities. The third part includes exercises in the analysis of curves. The author presents an extreme view of what may be learnt from such an analysis: "As the pathologist, in viewing a microscopic section of the kidney, can construct a probable picture as to the cause of the disease previous to death, so the cardiologist is able, from an intelligent analysis of the electro-cardiogram, to state the probable pathologic changes existing during life, and to outline the probable signs and symptoms which characterize the cardiac affection. Indeed, he can often go further and predict the probable clinical course which the disease will follow." Most British cardiologists would hesitate before accepting this estimate of the potentialities of the electro-cardiogram; they would feel that the galvanometer can do little more than confirm, or act as an adjunct to, the clinical diagnosis of some of the rarer disorders of rhythm. In view of the fact that the nature of the relation between the process of excitation and the contraction of cardiac muscle is as yet unknown, they would not concede that the condition of the myocardium can be adequately judged from the electro-cardiogram.

MEDICAL MEMORIES OF WAR SERVICE.

EX-CIVILIAN soldiers are divided into two main classes: those who regard the war as an ill-timed upheaval, disturbing the well-ordered programme of their lives, and those who still recall the days of 1914–18 as the great episode of their lives. To the latter group, and especially to the medical men who served with front line troops in France, Dr. DAVID RORIE'S book, *A Medico's Luck in the War*,[5] will make the strongest appeal. This is an account of the work of the field ambulances of the 51st (Highland) Territorial Division from the time they landed in France, in May, 1915, until the end of hostilities. The wanderings of the different units from place to place, in France and Flanders, are faithfully chronicled, and a host of memories, grave and gay, are conjured up by the mention of familiar names of villages, dressing stations, billets, and estaminets. The numerous allusions to the eventful past, in a country brimful of history, are evidence that in the midst of his arduous duties as a field ambulance officer and as A.D.M.S. of a hard-fighting division, the author could find time for other pursuits. The book has a certain medico-military interest, and the various schemes for the evacuation of the wounded deserve attention. This is especially so in the description of the German offensive in 1918 (chapter ix), when the field ambulances, under Colonel Rorie, conducted with efficiency and devotion that most difficult of military operations—the evacuation of large numbers of wounded in the face of an advancing enemy. One of the best things in the book is the description of a trip of a horse ambulance wagon loaded with wounded during the battle of the Somme. Many who have been in charge of wounded under similar trying circumstances will appreciate the inwardness of this vivid narrative.

The book is written in a light and humorous vein, teeming with amusing stories of incidents in the French and Flemish villages near the line. The tale is on the whole well told. It is a chronicle of daily events set down as they happened. But it is disappointing. The author's high reputation as a writer in many different spheres had encouraged a hope for something better. That, and the retrospect of more than ten years with its altered perspective, would call for more than a mere "rough and ready record." It is a pity that the tale of the curé of Fletre and of the alleged "crucifixion outrage" should be revived in 1929; these stories, whether true or untrue, are best forgotten. Colonel Rorie's remarks on the Germans generally, mainly from hearsay evidence, are in marked contrast to the restrained narrative of Captain Bruce, who was actually a prisoner among them and contributes chapter viii. Again, Colonel Rorie is hardly kind to the troops from the Overseas Dominions. The tale of the Canadian sergeant (p. 116) might well have been omitted, remembering how gallantly the Canadians fought alongside the 51st Division at Festubert, at Vimy, and at Cambrai. It is liable to create a wrong impression in the minds of those who were less in touch with the facts. In fairness to our brothers from across the Atlantic we should not forget that in the early days, when the Canadians were scarcely the well-disciplined troops they afterwards became, a great many of their number were natives of this country. Later, when they had become what was often described as the finest corps in France, they were almost entirely Canadian-born.

[5] *A Medico's Luck in the War.* By David Rorie, D.S.O., T.D., M.D., D.P.H., Colonel late R.A.M.C., T.A., Retired. Aberdeen: Milne and Hutchison. 1929. (Demy 8vo, pp. xiv + 264; illustrated. 8s. 6d. net.)

HEREDITY AND PARENTHOOD.

To say that an author meant well is surely to damn him; and yet, having read Professor SCHMUCKER'S *Heredity and Parenthood*[6] the impression that is clearest in our mind is that he, in writing this book, did indeed mean well. It is addressed to the type of mind that one would hope is rare in this country. The biological sections of the book are clear and tolerably sound, though bedecked with a somewhat florid sentimentality. It is strange to meet in biological text the suggestion that one of the most important of all problems in biology is, "Why is it that God has given to most of His higher children in the plant world, and to all of His higher children in the animal world, two parents instead of one?" To illustrate the chapter "Heredity on the farm" there are pen-and-ink sketches of horses, of cattle, and of fowls which must shock both artist and breeder. The sociological sections are obviously second-hand, and, though fairly sound in their presentation of principle, are certainly inaccurate in detail. The author writes with understanding, and with almost extravagant affection, of children's love affairs and of the age of romance, and concludes that no life has realized its finest possibilities that does not include among its experiences a happy marriage and some healthy, hearty children.

One either enjoys such a book as this for the reason that it exhibits a point of view similar to one's own, or else one loathes it. The consciously enlightened Victorianism and the excessively grandparental sentimentality which ooze from every page must either uplift or sicken. The author evidently experienced a sense of great daring when he introduced his own children to sex by letting them see the bitch litter. The act of human copulation is translated into: "God got Papa to put some of his qualities beneath my [mother's] heart." There can be no doubt that there are regions in which such antique parochialism can enfold humanity, and in addressing the victims of such circumstances the author, no doubt, is playing a very noble part. But surely we may hope that Britain cannot provide a public for such a book as this. If eugenics stands for the spread of such attitudes of mind, then its preachers must be condemned. There is still room for a book on this subject, freshly and vividly written, but we hope that when it appears its appeal will be more to reason.

[6] *Heredity and Parenthood.* By Samuel Christian Schmucker, Ph.D., Sc.D. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1929. (5½ × 8¼, pp. x + 322; 42 figures. 10s. 6d. net.)

NOTES ON BOOKS.

DR. G. FANCONI, in his new work entitled Intestinal Infantilism,[7] presents an exhaustive monograph on the etiology, pathology, and treatment of all the common forms of chronic alimentary dysfunction in childhood, with special reference to coeliac disease and tetany. His essential theme is that coeliac disease is a disorder of mineral salt metabolism with secondary phenomena of acidosis, and that these conditions can be rectified in coeliac patients by a diet rich in fresh fruit and vegetables. The book more resembles a treatise in pure physiology than a clinical handbook. Diagrams and numerous case reports amplify the text, and there are striking photographs of apparently healthy adolescents who had passed through Dr. Fanconi's own hands while suffering from coeliac disease in infancy. But it is the therapeutic charts, in which the dietetic regime is presented, which will most appeal to clinicians in this country. Dr. Fanconi's results are impressive, and his work should be consulted by all interested in children's ailments.

[7] *Der intestinale Infantilismus und ähnliche Formen der chronischen Verdauungsstörung.* Von Priv.-Doz. Dr. G. Fanconi. Berlin: S. Karger. (Sup. roy. 8vo, pp. vi + 202; 42 figures, 26 tables, 20 charts, 9 plates M.11.)

The value of Dr. MAX HUHNER'S work on *Disorders of the Sexual Function*,[8] of which the third edition has now appeared, lies in the fact that it is written by a genito-urinary specialist who has widened his outlook by a neurological training. The subjects discussed include masturbation, impotence, satyriasis, nymphomania, frigidity, dyspareunia, enuresis, and some unusual forms of sexual neurosis. A chapter on dysmenorrhœa is a feature of the new edition. The work should be a useful guide to the general practitioner as well as to the neurologist and genito-urinary specialist.

The rat occupies a well-recognized place in the economy of mankind, and it is now universal knowledge that he not only causes millions of pounds worth of damage each year, but that he is in many ways an important transmitter of human disease. In a short volume[9] of about one hundred pages Mr. MOORE HOGARTH, who is actively identified with anti-rat campaigns in this country, has attempted to summarize the existing knowledge of rats and their doings—and undoing. Most of the book is devoted to methods of extermination and control, and is a valuable summary of the subject. The chapter on the rat as a carrier of disease, though accurate, is inclined to be alarmist in tone.

The fourth issue of the *International Health Year Book*, *1928*,[10] is considerably larger than its predecessor, which we noticed on June 9th, 1923. Particulars are now given of health progress in twenty-nine countries, and the omission of Scotland and Northern Ireland has been made good. The present volume differs from its predecessors in the arrangement of the vital and nosological statistics of the majority of the reports. Twenty-eight standard tables have been prepared and divided into seven groups, devoted respectively to general demography, birth rates, general death rates, causes of death, infant mortality, public health statistics, and data on curative medicine. The reports on health administration in various countries are followed by sections dealing with industrial hygiene in Germany, Belgium, and Great Britain, the League of Red Cross Societies, the public health work of the Rockefeller Foundation, and the Health Organization of the League of Nations.

[8] *A Practical Treatise on Disorders of the Sexual Function in the Male and Female*. By Max Huhner, M.D. Third edition. Philadelphia: F. A. Davis Company. 1929. (Demy 8vo, pp. xv + 342; illustrated. 3 dollars net.)

[9] *The Rat*. By A. Moore Hogarth, F.E.S. With Preface by Sir Thomas Horder, Bt., K.C.V.O., M.D., F.R.C.P. London: J. Bale, Sons and Danielsson, Ltd. 1929. (Demy 8vo, pp. vi + 112; illustrated. 7s. 6d. net.)

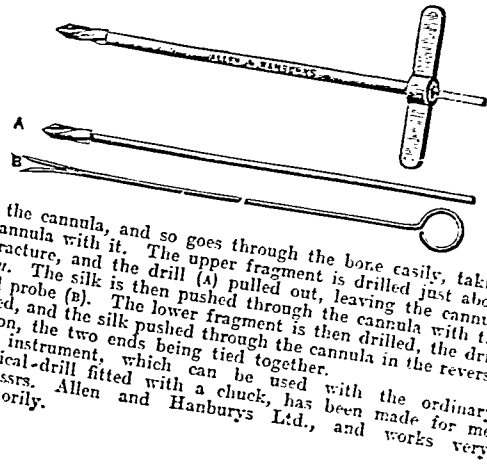
[10] *International Health Year Book, 1928* (Fourth Year). Reports on the Public Health Progress of Twenty-nine Countries in 1927. C.H. 733. Geneva: League of Nations. 1929. (7¼ × 9½, pp. 1173; illustrated. 20s.)

PREPARATIONS AND APPLIANCES.

A Drill for Patella Suturing.

MR. HERBERT J. PATERSON (London, W.1) writes: Thick rope silk is a very efficient and reliable material for the suture of a fractured patella, but it is not easy to apply the silk with ordinary instruments. To facilitate this operation I have had an instrument made which renders the procedure comparatively simple.

The instrument, here illustrated, consists of a drill and cannula, the feature of which is that the drill is a little larger



than the cannula, and so goes through the bone easily, taking the cannula with it. The upper fragment is drilled just above the fracture, and the drill (A) pulled out, leaving the cannula *in situ*. The silk is then pushed through the cannula with the forked probe (B). The lower fragment is then drilled, the drill removed, and the silk pushed through the cannula in the reverse direction, the two ends being tied together.

The instrument, which can be used with the ordinary mechanical-drill fitted with a chuck, has been made for me by Messrs. Allen and Hanburys Ltd., and works very satisfactorily.

A Proteinometer for Cerebro-spinal Fluid Examinations.

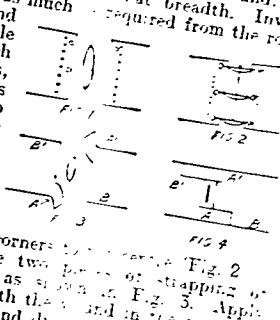
DR. F. TEMPLE GREY (London, W.1) writes: An analysis of 103 cerebro-spinal fluid specimens from children in whom acute meningitis was suspected revealed that all (55) showing less than 0.04 per cent. protein were normal; that 4 out of 13 with protein 0.04 per cent. were cases of tuberculous meningitis; that those 127 in which the percentage fell between 0.05 and 0.15 were without exception cases of tuberculous meningitis; and that those (11) in which it was between 0.3 and 0.72 per cent. were cases either of pneumococcal or of meningococcal meningitis.

I have devised, and Messrs. Baird and Tatlock of Cross Street, Hatton Garden, have prepared for me, a proteinometer (which can be slipped in the pocket and taken to the bedside) by the aid of which it is possible rapidly to decide whether acute meningitis can be excluded. The outfit is a modification of my proteinometer for urine, and, together with the record, upon which it is based, was demonstrated before the Pathological Society on January 3rd.

An Emergency Surface Suturing Method.

DR. G. S. SAMUELSON (Sydney, N.S.W.) writes: I wish to suggest two trivial modifications of the emergency surface suturing method described by Mr. H. de P. B. Veale on August 17th, 1929 (p. 313). The apparatus needed is usually at hand in one's bag or even in the patient's house—ordinary adhesive plaster, a sewing needle, and thread will serve. I assume we are dealing with a bald shaved surface, and an incision.

Choose strapping broader than the length of the wound, or if not available narrower strips up to that breadth. Invert 1/6 inch of the edge, and cut as much as required from the roll; do the same with a second piece. With a round needle and thread make a puncture stitch 1/6 inch from each corner of the inverted folds, and at about 1 2-inch intervals between them. Apply the two strips thus prepared to the sides of the wound, leaving about 1 inch between the folds, as in Fig. 1. Still using an intestinal or round needle, place the sutures, and commence to tie them from the corners [illegible] Fig. 2



A simpler method is to take two pieces of strapping of similar breadth, and cut them as shown in Fig. 3. Apply them, leaving 1 inch between, with the aid of a ruler or the edge of the space thus left. With one hand draw A across to B with the flat of the other push B towards A; when secure, repeat sufficient closing of the cut, fix A firmly on B. Repeat the process with A' and B'. The length of the strapping must, of course, vary with the mobility of the surface; three inches sufficient for a 1-inch incision. The proportion between breadth and the length of the wound also varies; the longer the cut the greater the disproportion. Finally, give the plaster a free coat of collodion, extending over its edges to the skin. To make all secure use a turn or two of bandage for an hour, till the plaster becomes well and truly fixed.

Instruments for Colorimetric Work.

Two new instruments of interest to the worker in chemical and biochemical analysis are being introduced by the Bausch and Lomb Optical Company of Hatton Garden, London and Rochester, N.Y. The first is called a "coponeter" and involves a new method of colorimetric and turbidimetric measurement. The criterion used is the di-appearance of an illuminated target against a field of much lower intensity, which di-appearance is brought about by adding to the density of the sample to be measured a second density derived from a variable neutral wedge. The same technique is used for both turbid and coloured solutions. The method, while not reaching the high precision of the more refined Dubosq technique, meets the demand for quick and repeatable results, combined with sufficient accuracy for a great deal of clinical colorimetric work. The other instrument is a hydrogen-ion colorimeter, based on the standard Dubosq pattern, additional cups being provided for the use of both alkaline and acid forms of the indicator in either light path, and further auxiliary cups for the balancing of body colour according to the Walpole technique. A newly designed prism system is employed, completely symmetrical with respect to light transmission. A constant temperature control tank is also provided, by means of which the auxiliary cups may be held at any desired temperature between that of the source of water supply and 100° C. The unit is designed particularly for the study of body fluids where it is desired to have the substance under normal body conditions.

British Medical Journal.

SATURDAY, FEBRUARY 1ST, 1930.

THE CLASSIFICATION OF BRIGHT'S DISEASE.

THE centenary of the publication of Bright's work is not long past, but we are still in a state of confusion about the classification of the disease which goes by his name. There has just appeared as one of the special reports of the Medical Research Council a large monograph[1] devoted to this very subject, written by Miss Dorothy S. Russell, M.B., and founded on her work since 1923 as a Beit Memorial Fellow at the London Hospital. There she has had, as she freely acknowledges, full access to the abundant collection of material both in the wards and in the pathological laboratory of Professor H. M. Turnbull. The result is a remarkable piece of work, the future significance of which is difficult to grasp while the views are fresh before us and have not been reconsidered by others interested in renal disease.

All who have to teach students the rudiments of renal disease are driven to state that there are many clinical and many pathological classifications of Bright's disease, but that in no case do the two coincide. A clinical classification given in the wards often seems wide of the mark in the cold review of the necropsy. Nothing but ceaseless reiteration of the difficulties, and the use of two separate classifications—one clinical and one pathological, and each chosen to suit the teacher's taste—makes any impression on the student's mind. Obviously the same doubts and difficulties bred in student days pass out and remain with the practitioner. Dr. Dorothy Russell boldly classes the various histological groupings of older date as obsolete. Those interested in the subject have lately been driven to the work of Volhard and Fahr (1914) for help, but, even so, the jig-saw puzzle of nephritis never seems to fit—there are always gaps that cannot be filled in.

One of the chief bugbears in pathological classification has always been the question of the relations of arterial disease and renal disease. Is the disease from which the patient suffers primarily arterial, with secondary kidney troubles because the renal vessels are involved, or are the renal changes primary, with resulting high blood pressure and cardio-vascular change? Sometimes a probable or correct answer can be given, sometimes not. Dr. Russell has attempted quite a new kind of pathological classification, and has considered how this fits in with the clinical facts of many cases. She then suggests a clinical classification with which to correlate it. We shall perhaps do best by giving straight away a shortened version of her histological classification and nomenclature, since this shows the new terminology suggested by her, side by side with some (but not all the best known) of the older pathological terms. It is to be hoped that the older and frankly confusing term "parenchymatous nephritis" may soon disappear from all pathological textbooks, though it may linger long in clinical works of reference.

I. PRIMARY ISCHAEMIC NEPHRITIS. Syn: Arteriosclerotic kidney.
  1. Due to vascular degeneration without cardiovascular hypertrophy.
  2. Due to vascular degeneration complicating cardiovascular hypertrophy. Syn: Kidney of essential hypertension.

II. TOXIC NEPHRITIS, with secondary cardiovascular hypertrophy and ischaemic nephritis in late stages.

  A. *Low grade or mild toxic nephritis.*
    1. *Mild nephritis. Nephritis mitis.* Syn: Genuine nephrosis (Volhard and Fahr). Lipoid nephrosis (Munk). One form of parenchymatous nephritis of most textbooks.

  B. *High grade or intense toxic nephritis.*
    1. *Intense nephritis. Nephritis acris.* Syn: Commoner form of parenchymatous nephritis of most textbooks. Glomerulo-tubular nephritis.
    2. *Creeping or insidious (intense) nephritis. Nephritis (acris) repens.* Syn: Chronic interstitial nephritis.

III. TOXIC NEPHRITIS COMPLICATING PRIMARY ISCHAEMIC NEPHRITIS.

The first term that is new is *ischaemic nephritis*, and the author claims that in this type the glomeruli are destroyed by a process of chronic infarction or slow cutting off of the blood supply. The glomerular lesion is the essential one, and atrophy of the tubules is a natural consequence. The characteristic histology of the glomerular change is difficult to describe in few words, but the essential thing seen histologically is a progressive, often semilunar, hyaline thickening of Bowman's capsule, quite unlike the proliferative cellular changes in the second group. Dr. Russell considers that some degree of ischaemic destruction of glomeruli is constant in all healthy individuals over the age of 30, and is dependent on vascular degenerative changes, especially of the intima, in the interlobar and arcuate arteries of the kidneys. Her second great group is *toxic nephritis*, a term not new, but here used in a new setting and with new applications. Under toxic nephritis she includes changes of very complex kind in glomeruli, tubules, and interstitial tissue. It is only possible here to refer to the glomerular changes, to contrast them with those of the ischaemic group. In toxic nephritis destruction of glomeruli is brought about by inflammatory processes of different degrees of activity—proliferative glomerulitis, capsulitis, hyaline necrosis, focal necrosis, glomerular adhesions. All these terms are already well known as expressing histological changes seen in the kidneys in Bright's disease and in infective diseases in which the kidneys are damaged.

These two terms—ischaemic nephritis and toxic nephritis—are the fundamental changes proposed for this new histological nomenclature. The author considers and weighs the evidence for these two broad types, and makes out a fair case for the ischaemic variety, showing that this slowly progressive glomerular atrophy occurs not only in actual Bright's disease, but in healthy individuals, in cases of cardio-vascular hypertrophy, and even in compression of the kidneys by tumours or hydronephrosis. The matter is far more complex with regard to toxic nephritis, with its very variable picture. In ischaemic nephritis the glomeruli are the crux of the problem, and, given changes in them, the rest follows automatically. In toxic nephritis, on the other hand, all the diverse glomerular lesions, the degenerative changes in the tubules, and the inflammatory changes in the interstitial tissue must be fitted in. Dr. Russell brings evidence from a number of conditions in which the whole body is subjected to toxic or infective influences, and in which the kidneys are incidentally damaged. Such conditions include the damage to tubules in

[1] Medical Research Council. Special Report Series, No. 142. *A Classification of Bright's Disease.* By Dorothy S. Russell. London: H.M. Stationery Office. 1929. 8s. 6d. net.

uranium poisoning and the toxaemias of pregnancy; bacteriaemias such as infective endocarditis and chronic septicaemias; renal disease following quinsy, pneumonia, or otorrhoea; and ascending and descending septic nephritis of progenic origin. In these diseases it must be admitted by all pathologists that changes occur in the kidneys which are often quite comparable with those found in what may be termed for clearness the idiopathic varieties of chronic nephritis. Next, it is pointed out that whereas ischaemic nephritis remains pure, toxic nephritis only does so in its early stages, and "there is a manifest tendency for ischaemic changes in the cortex to become increasingly conspicuous as the toxic nephritis proceeds." This just leads us again, from another direction, to the old problem—are the vascular changes in a given case primary or secondary?

In the later chapters of her monograph Dr. Russell turns to the clinical manifestations of the abundant cases she has had at her disposal, and reviews her classification in the light of clinical evidence and tests of renal function. She concludes that ischaemic and toxic nephritis are fundamentally different processes, both leading, but in quite different ways, to destruction of renal tissue, and both on *a priori* grounds capable of giving rise to similar clinical symptoms of renal insufficiency. She finds, however, that the clinical features of the two types are in strong contrast. In the ischaemic variety, with glomerular atrophy and secondary tubular atrophy, there have often been no symptoms of renal insufficiency at all during life, even when at necropsy the changes in the kidney are very widespread. This variety of nephritis is chiefly met with in individuals beyond middle life, suffering from the complications of high blood pressure. Toxic nephritis, on the other hand, is commoner below the age of 40, and is characterized in its several varieties by failure to eliminate water or by nitrogen retention. In chronic cases of this kind the changes of the ischaemic variety are superadded, and such cases are readily distinguished by the marked renal failure from examples of pure ischaemic nephritis in high blood pressure. Finally, Dr. Russell gives in a table her suggested clinical classification alongside the histological grouping:

Histological.	*Clinical.*
I. Pure or primary ischaemic nephritis...	Primary arteriosclerotic nephritis.
II. Toxic nephritis:	
(1) Nephritis mitis in early stage. Nephritis mitis in intermediate stage	Subacute hydropigenous nephritis.
(2) Nephritis acris in early stage.	Acute nephritis.
Nephritis acris in intermediate stage	Subacute azotaemic nephritis.
Nephritis acris in chronic stage.	Chronic azotaemic nephritis.
(3) Nephritis repens	Insidious chronic azotaemic nephritis.

It is impossible to consider the merits and importance of this monograph on nephritis without having set out the width of its scope, as illustrated in the preceding paragraphs. Nor is it possible to foretell at present how valuable this suggested classification of Bright's disease may be to pathologists and to physicians. At first sight it looks all new, and although the whole monograph bristles with detail, so as to make it complex for those not thoroughly familiar with the subject, the views are expressed with great clearness and force. But is it new? And could not anyone who has carefully read the important papers available on nephritis simply fit old terms long familiar to him to any part of the proposed pathological nomenclature? The clinical classification suggested agrees well with present-day teaching, including as it does the well-known grouping of hydraemic (hydropigenous) and azotaemic nephritis. Such clinical grouping is so simple that it seems almost too good to be true! At any rate, Dr. Dorothy Russell and all who have helped her at the London Hospital are to be warmly thanked for a most inspiring effort, and one that must encourage many others to ponder anew over the knotty problems of classification of Bright's disease.

MALARIA IN EAST AFRICA.

THE report[1] of Colonel S. P. James on antimalarial measures in Kenya and Uganda, recently issued by the Crown Agents for the Colonies, is, in our judgement, one of the most interesting documents dealing with the eradication of malaria which have ever appeared. It is well worthy of close study by administrative and medical officers of any country in which malaria is a major problem. It may come as a surprise to many, perhaps even to those who sought the advice of Colonel James, that the substance of that advice is, not to proceed at once to this or that scheme of drainage, oiling, quininization, or other accepted "antimalarial measure," but to set up a special organization for the study of the local problem in detail, in order to decide what are the appropriate measures to be applied.

Colonel James makes quite plain the reasons for his recommendation of a new and permanent organization to do the very things which, perhaps, some had thought he himself was sent out to do. His advice is governed throughout by three factors, one particularly affecting Kenya and the others operative wherever malaria prevails. It is the stated aim of the Government of Kenya to stamp out the disease, an aim requiring different action from that needed when only reduction of the damage due to malaria is sought. The second governing factor is that in every malarious country separately an immense amount of patient labour in the field and in the laboratory has to be performed before it can be stated definitely on what lines antimalarial measures may proceed with hope of success." It is made plain throughout the report that not only does every country have its special problem, but that the measures suited to towns will not suit rural areas. Rural areas will differ *inter se* in their needs, and two neighbouring farms may present essentially different problems. The third factor, brought out in detailing the duties of the special staff proposed for this work, is that the modern practice regarding actual measures employed in attacking the malaria problem differs from that employed up to the early war years. Those who have been in constant touch with malarial matters will find little that is novel in much that Colonel James has to say on these points: how it is no longer thought necessary always and in all circumstances to base antimalarial measures on knowledge of the malaria-mosquito cycle; how malaria is a social disease; how diet, housing, economic status, general sanitation, and other factors play a part. But the report is addressed to lay authorities, and emphasis on these points is very necessary. Indeed, the report should be read by all beginning the study of tropical medicine and hygiene, for, as its author truly says, there is as yet no textbook of tropical medicine which describes the modern line of thought regarding malaria.

[1] Report on a Visit to Kenya and Uganda to Advise on Antimalarial Measures. By S. P. James, M.D., D.P.H., Lieutenant-Colonel I.M.S.(ret.). Published by the Crown Agents for the Colonies. 1s.

A lay contemporary,[1] in a review of Colonel James's report and in a leading article, takes vigorous exception to his recommendation that "until a properly screened house is available, a new settler should not be accompanied by wife or children." It is, however, a recommendation deserving the strongest support. Against it there is urged, first, that "the value of screening as a practical problem in East African conditions" is a "debatable question," and that "the report itself supplies ample evidence that the method is a failure." We can find no such evidence in the report, though there is record of mosquitos found within badly screened houses, and the antimalarial value of screening (real screening) under any conditions is emphatically not debatable. The leading article referred to contains the following passage: "No wonder that many men of long tropical experience . . . screen only a portion of a verandah for use when mosquitos are excessively bad." In practice this generally means regular exposure to the dangerous anopheles and protection against the merely annoying culicine. The second objection is equally ill founded. Where, it is asked, would Kenya be to-day had the present settlers waited for properly screened houses before bringing out their families? This is an example of that spurious wisdom, far too common among old colonists, which thinks that because the early pioneers there is no harm, and even positive advantage, in inflicting the same hardships upon those who follow (all honour to them!) faced abominable conditions after. It is the same attitude of mind which causes "old stagers" to boast (as some whom Colonel James met boasted) of having passed through several attacks of blackwater fever; the same attitude which prompts them to brag to the medical officer: "I don't use a net; mosquitos don't bite me." So far from Colonel James's recommendation as to screening going far, as our contemporary says, "to vitiate the value of what is otherwise a useful and stimulating document," it is a recommendation which, if put into operation, will do much towards wiping out one of the greatest barriers to the successful colonization of Kenya, and abolishing those tragedies of lost health and lost hope which disfigure the history of the white man's attempts to establish himself with his family in malarious countries.

[1] *East Africa*, January 23rd, 1930.

THE ILLICIT TRAFFIC IN DANGEROUS DRUGS.

EVIDENCE continues to accumulate in confirmation of the gigantic proportions and widespread distribution of the illicit commerce in dangerous drugs, and the League of Nations, through its Assembly and Advisory Committee on Opium, appears to be at length convinced that the arrest of such contraband traffic is only possible by stopping the supply at the source. So long ago as 1912 the Hague Convention, to which nearly all the Powers are now parties, provided for the prevention of surplus production of morphine and cocaine and their derivatives by limiting manufacture to what is required for medical and legitimate purposes only. The same treaty contemplated the suppression of the traffic in "prepared" opium for smoking, either at once or as soon as possible, while the production of, and trade in, raw opium was to be brought under strict regulation. At the conferences held in Geneva in 1924 and 1925, which resulted in a new Convention, the same principles were approved, though with some relaxation in the case of the requirements in regard to smoking or "prepared" opium. The American and Chinese delegations, it will be remembered, withdrew from the Geneva conferences because they considered insufficient attention was being paid to the production of the raw materials, to the surplusage of which they attributed the appalling dimensions of the illicit traffic in drugs of addiction.

Recent exposures laid before the Advisory Committee at Geneva, while acknowledging that the figures vouchsafed represent but a fraction of the contraband involved, are sufficiently startling. Thus Major-General T. W. Russell Pasha of the Cairo police reported the discovery of a drug factory in Alsace, working through Switzerland and Vienna, whence 7,562 kilograms of narcotics, mostly heroin, were manufactured and exported in 1926–29. He estimated that in one year (1928) this one firm manufactured 4,349 kilograms of heroin, or two and a half times the legitimate annual requirements of the world. From this mid-European source a steady stream of "dope," it is alleged, passed to Genoa, Trieste, Piraeus, Constantinople, and Cairo. The traffic, presumably, does not stop there, but in Egypt alone it is estimated that there are probably no fewer than 500,000 drug addicts, who, it is stated, spend £13,500,000 annually on the purchase of these narcotics. These exposures led Russell Pasha to remark that "while the countries suffering from the traffic thought in grams and kilograms, the unit of calculation in the Central European manufacturing countries was in terms of the metric ton."

The policy in favour of limitation of the world production of narcotic drugs to the world's medical and legitimate needs, which had been endorsed by the last Assembly of the League at the instance of its fifth Commission, has accordingly been accelerated by these fresh exposures. A committee of ten has been appointed "to study the problem of limitation of manufacture." From the discussion which led up to the appointment of the committee it would appear that not only manufactured products, but raw materials, must be included in the limitation; otherwise, as M. Sirks, an assessor, observed, "so long as raw materials are available, means will always be found to manufacture for illicit traffic." Thus the hope may be indulged that the principles solemnly endorsed by the parties to the Hague Convention of eighteen years ago, and which received legislative application, so far as this country was concerned, in the Dangerous Drugs Acts of 1920–25, will by their universal adoption greatly reduce, if not completely arrest, the surplus production which feeds the illicit traffic.

THE WINNIPEG MEETING.

THE holding of the Annual Meeting of the British Medical Association this year in the Dominion of Canada is an event which ought to stir the imagination and elicit the active support of a very large body of medical practitioners from these islands. Quite apart from the pleasure to be derived from the warm welcome that awaits those who will cross the Atlantic next August, and the enjoyment of a stimulating holiday in novel surroundings, there is the opportunity for members to do something to justify the familiar saying that our Association is "one of those impalpable yet mighty links which bind together the Empire." At the annual dinner during the Manchester meeting last July, Dr. A. T. Bazin, who represented the Canadian Medical Association, spoke of the gain derived from the affiliation of the two professional bodies six years ago, and expressed the hope that the coming Annual Meeting at Winnipeg would be memorable in Association history. It can only be memorable if the energetic preparatory work now in progress in Canada is rewarded by

a large attendance from the homeland. We are well aware that the considerable outlay of time and money presents difficulties to many of our readers. The duty is incumbent, however, upon individual members to play their own very definite part in strengthening the comradeship between the B.M.A. and the C.M.A., each of which has already afforded many instances of that self-sacrifice and conquest of difficulties on which the Empire was based, and to which it owes its continued existence. Canadian doctors have always seized every opportunity of visiting Great Britain, and so have helped to keep the two countries together. Members of the medical profession on this side, less active in such ways in the past, should surely make a special effort to respond this year, when their own Association holds its Annual Meeting in Canada, staffed largely by its own officers, and bearing witness to the fact that its interests and its outlook are not parochial, but Empire-wide. The attendance in the scientific Sections at Winnipeg should prove that the British Medical Association yields first place to no other society in its ability to organize an important congress in a far country. As an example of the reunions contemplated may be cited one which is now being arranged to bring together during the meeting former officers of the Royal Army Medical Corps and the Canadian Army Medical Corps in a renewal of old ties. The possibilities of excursions suited to widely differing lengths of purse and freedom as regards time have been explored to the full. Everything that can be done to make the journey well worth while is being done by our Canadian colleagues. Here, indeed, is an opportunity for proving that, though islanders, we are not insular. Such considerations prompt the hope that each member in Great Britain and Ireland will ponder seriously, and without delay, the great issues involved, and that very many will decide to take some personal part in a historic demonstration by the British Medical Association of its imperial outlook. Full particulars about the journey by sea and land may be obtained from the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1.

MODERN TRAFFIC PROBLEMS.

MR. HERBERT MORRISON, Minister of Transport, presiding on January 14th over a conference called to consider what steps should be taken to reduce the number of street accidents in London, stressed the importance of training children how to react adequately to road traffic—that is to say, in a manner most conducive to their personal safety. He quite rightly refrained from expressing any view about how, and by whom, such training of the children should be carried out. This is essentially a matter for psychologists and educationists. Some problems are common to childhood in all ages and in all places, and adults with long memories may therefore equip themselves to deal sympathetically and helpfully with most of the problems of children by recalling their own childhood and the adjustments they had to make for themselves. The modern child, however, is unique in that it is the first to be faced with a large traffic problem, and no adult in this matter he has no subjective experience to draw upon. It is to be hoped, therefore, that, while using every possible mechanical expedient for simplifying the traffic problem of children—for example, by building sub-ways at some of the most dangerous and congested crossings—the transport authorities will go still further, and get the best expert advice on how the essential problem of, so to speak, conditioning the child's traffic reflexes may most properly be met. That steps in this direction are already being taken was pointed out in the course of the conference by Mr. T. Cautrey, who said that the fall in the number of fatal accidents to children last year could be attributed to the voluntary work of the teachers who were instructing the children under their care in the methods of avoiding the dangers of the streets. A proposal that some definite test of skill and capacity, in addition to any mere declaration of physical fitness, should be made a qualification for obtaining a driver's licence, though not accepted, gave rise to an interesting discussion. Speaking to this motion, Mr. Inglehy Oddie said that his experience as a coroner had shown that trained drivers had the fewest number of accidents; the object in view might therefore be achieved if it was made compulsory for people who applied for driving licences to produce evidence that they had had some kind of training in driving. Dr. D. A. Cole expressed his general agreement with the view that there should be a definite test to show that an applicant was not blind or deaf, and, so far as was known, was not an epileptic or a person suffering from acute heart disease, and liable to be a great danger to the community. Sir Henry Maybury said that the Traffic Advisory Committee had come to the conclusion that any test of driving skill they could impose would not be worth the trouble and irritation it cost. How could they test, unless a test was carried out under both ordinary and extreme traffic conditions, whether a person could fitly be entrusted with a vehicle in all circumstances? In the committee's view medical tests also were impracticable; it recommended that there should be a declaration as a condition precedent to a person getting a licence, and that if, in practice, a declaration was found to be wrong, the person making it should be guilty of an offence. When the conference met again on January 15th Mr. Inglehy Oddie moved, on behalf of the London County Coroners Association, that speed limits should be retained for Inner London. Whatever case might be made out for abolishing them in country districts, there was none, in his association's view, for doing so in London. Coroners' juries derived great help, when dealing with questions of dangerous driving, from the fact that the proper speed was defined by statute. If excessive speeds were allowed even the careful pedestrian, who looked first to the left and then to the right to see that all was clear, might be caught in crossing by a fast-driven car bearing down on him unseen from the left. On behalf of the Pedestrians' Association Mr. T. C. Foley urged that a fixed speed limit enabled the pedestrian to judge whether or not he could get safely across the road before an approaching motor car reached him. Dr. Alfred Salter, M.P., suggested that most street accidents were due to non-observance of the speed limit. Colonel F. Lindsay Lloyd (Royal Automobile Club) expressed the view that the careful motorist was influenced more by the circumstances of the moment than by the speed limit. Local option was impracticable, because motorists could hardly be expected to know the varying speed limits in the districts through which they passed. Lord Ponsonby, Parliamentary Secretary to the Ministry of Transport, explained that the object of the proposal to abolish the speed limit was to ensure that the motorist, anxious to drive safely, should give less attention to the speedometer and more attention to the road. The motion was carried, however, and the conference decided also that the speed limit should be retained in Outer as well as in Inner London.

EXTRUSION OF INHALED FOREIGN BODIES.

By a remarkable coincidence both the *Lancet* and the *British Medical Journal* published on the same date (January 11th) notes of cases in which foreign bodies had eventually reached the outer world from a bronchus through the chest wall. In the first case a boy, aged 3½, inhaled an ear of grass during a game of grass-throwing. About three weeks later, after a febrile illness, a swelling developed in front of the angle of the scapula. A nurse removed the ear of grass, which was beginning to project from the centre of the swelling. The child recovered after drainage of an empyema. In the second case a flowering

head of barley was removed from a baby of 9 months, through an incision in the chest wall, where an inflammatory tumour had developed. A sinus persisted into the right bronchus for a short time, but there was eventually good healing. An editorial note on this coincidence, published in the *Lancet* of January 25th, refers to four more similar cases, one of which was recorded by Sir Rickman Godlee, another by Mr. R. W. Parker, and a third by Mr. Golding Bird. The fourth case is from a correspondent, who describes a similar accident to her son. This unusual path, whereby the patient has been safely delivered of a foreign body, is possibly less rare than might be supposed, for in the *Revista Española y Americana de Laringologia* for January, 1929 (p. 22), Dr. Raphael Tapia reported the case of a girl, aged 4. She had swallowed a Spanish half-penny, which had been seen with an oesophagoscope, but not extracted. This had been followed by dysphagia, cough, and fever lasting a fortnight, but these symptoms had gradually diminished and swallowing became normal. On arrival at the clinic in Madrid there was extraordinary wasting, with attacks of sharp pain in the chest. Oesophagoscopy showed a scar in the gullet, and a skiagram revealed a coin in the costo-diaphragmatic space. Dr. Olivares resected a rib and removed the coin successfully from a mass of granulation tissue in the pleural cavity. Dr. Albert Gray has also communicated to us personally notes of a child brought to him when a year old with symptoms directed to the throat. The child seemed to have pain on swallowing, and put its hand in its mouth. The left tonsil was found congested and swollen, but apparently it soon recovered. Three months later an abscess formed on the left side of the manubrium sterni. The abscess burst, and a feather, half an inch in length, escaped with the pus. It was ascertained later that the child had passed several feathers per rectum. He never had any bronchial or pulmonary symptoms, and Dr. Gray thinks that the irritation of the tonsil was caused by the entrance of the feather into a tonsillar crypt, whence it ultimately escaped, as already described. The last two cases are not so strikingly similar as those in the first group, but all have the feature in common that the foreign body eventually escaped from the cavity of an abscess, which either pointed on the surface or was opened by a surgeon from outside. Any one of these cases might be regarded as little more than a surgical curiosity, for the effects of foreign bodies which have reached such remote situations are usually disastrous, and such happy endings are beyond ordinary expectation. However, a collection of such cases suggests that a foreign body may be eliminated from the respiratory or upper alimentary tract by this process more commonly than is recognized.

THE W. H. WELCH LIBRARY, JOHNS HOPKINS UNIVERSITY.

AFTER having made history as professor of pathology from 1884 to 1916, as director of the School of Hygiene and Public Health at the Johns Hopkins University, Baltimore, and as adviser to the Rockefeller Foundation, and in many other ways, Dr. W. H. Welch in 1927 became professor of medical history in the University he has done so much to make, and is in charge of the library named after him. At the formal opening of this library, which took place on October 18th last, Professor Harvey Cushing, formerly associate professor of surgery at the Johns Hopkins University (1902–12), and since then professor of surgery at Harvard University, gave an eloquent dedicatory address "On the binding influence of a library on a subdividing profession."[1] In this scholarly message, containing many "future quotations," the Johns Hopkins University is graphically described as "a crucible in which experiments in education have fearlessly been put to the test," and the hope is expressed that yet another will centre in the great library—namely, the binding together of the scattered subdivisions of medicine. He rapidly, and with obvious regret, draws a picture of the decentralization and cleavage of medicine into separate compartments. There is a cryptic reference to a proposal made "by some of the junior members of the Faculty," when Osler resigned, that "the structure of the school should be reorganized in such a way that the existing departments could be brought together, Hippocratized as it were, by the creation of a super-professor of medicine." There was one person marked out by training, experience, and personality for this post, but he could not be induced to accept. As he is referred to as a pathologist with broad vision and wisdom, it is not very hazardous to guess that this is one of several skilfully oblique tributes paid to Professor Welch, though his name was obviously too much in the audience's mind to be ever mentioned. The diagnosis of the ancients is neatly defined by Professor Cushing as largely "a matter of prophecy wrapped up in divination and zodiac horoscopes, of which we still have a trace in the modified emblem of Jupiter that traditionally begins all our prescriptions." As illustrating the neglect of medical history by the profession, he mentions that once, at a meeting of the American Medical Association, he and Dr. E. C. Streeter set up an exhibit of books and pictures of Andreas Vesalius, and labelled it "the Vesalian exhibit"; this was near the stalls of medicines and instruments shown by enterprising firms; hardly any attention was paid to the Vesalian show; one doctor, however, inquired for a sample, and when politely asked what he meant, pointed to the sign, and said very tartly, "Samples of vaseline, of course!" This story reminds Professor Cushing of what he says is a common belief—namely, that the discovery of "listerine" was what brought Lord Lister his fame.

STAMMERING.

DR. MAX TRUMPER of the University of Pennsylvania presents, in his thesis[1] on stammering, a detailed account of his investigation of the condition in 101 consecutive cases from the speech clinic of Professor Twitmyer. In each patient he carried out the following tests: basal metabolic rate, volume per breath, respiratory rate, ventilation per minute, haemoglobin estimations by two methods, erythrocyte count, red cell volume, white cell and differential blood counts, and the vital capacity. The personal equation was eliminated by dividing certain portions of the work between assistants. It is calculated that there are half a million stammerers in the United States. The term is used as a collective name for persons with various nervous forms of speech disorder, but does not include those with mechanical defects of speech. There is ample evidence that the sufferers are of average mentality; many indeed, are above average. The disorder, as is widely recognized, may follow physical shock, as from a blow or fall, or psychic shock, as from fright. Shock, whether physical or psychical, checks or temporarily obstructs breathing, and thereby is apt indirectly to lead the patient to believe that he has lost his normal ability to speak. Dr. Trumper gives a list of fifty odd means of "cure," from the 2,000-year-old direction to economize the breath during speech to the latest prescriptions of Christian Science, osteopaths, and chiropractors. Observations with the fluoroscope show that in stammerers the diaphragm quivers while remaining in a fixed position. Often this movement starts before the stammerer begins to speak and as soon as he is addressed. The series of investigations undertaken by the author suggests that in stammerers

[1] *Science*, 1929, lxx, 485–491.

[1] *A Hæmato-respiratory Study of 101 Consecutive Cases of Stammering.* By Max Trumper. A thesis presented at the University of Pennsylvania. Philadelphia, 1928. (Pp. 72.)

there is a fundamental disturbance of the respiratory mechanism, probably of nervous origin, which results in an alteration in cerebral circulation leading to congestion before speech is actually begun. The respiratory centre is particularly sensitive to changes in circulation and to variations in the composition of the blood. Thus, superimposed upon an existing respiratory dysfunction of nervous origin there is a periodic respiratory abnormality of chemical origin due to changes in the pressure of oxygen and carbon dioxide in the blood supplying the higher cerebral centres. It therefore seems reasonable to conclude that one of the most prominent features of stammering, if not a primary factor in its production, is a disturbance of the mechanism of respiration. The "hematologic" compensation, concomitant with rapid shallow breathing, found in these cases supports Blumel's theory of cerebral congestion with resulting transitory auditory amnesia as the explanation of stammering.

NATIONAL RADIUM TRUST.

A MEETING of the National Radium Trust was held on January 23rd at the Privy Council Office, under the chairmanship of Lord Parmoor. It was reported that the Radium Commission had arranged for the allocation of the first five grams of radium bought by the Trust, and that further supplies would be needed to meet impending demands. The Trust accordingly decided to proceed with instructions for the filling and delivery of a further five grams of radium, for the purchase of which arrangements have already been made. The Trust also decided to exercise the option to buy the four-gram "bomb" which was lent to it gratuitously for a period of three months by the Union Minière Belge, and is now in use at the Westminster Hospital.

THE Arris and Gale Lecture, entitled "Anatomy, orthodox and heterodox, in relation to surgery," will be delivered before the Royal College of Surgeons of England by Mr. W. McAdam Eccles, M.S., F.R.C.S., on Wednesday, February 19th, at 5 p.m.

IT is announced in the *Times* that Sir Thomas Legge, M.D., has joined the staff of the Trades Union Congress as adviser to its social insurance department on the health of workers as affected by conditions arising out of their employment. Sir Thomas Legge retired in 1925 from the post of senior medical inspector of factories under the Home Office.

WESTMINSTER HOSPITAL RADIUM ANNEXE.

LORD LEE OF FAREHAM ON RADIUM DISTRIBUTION.

THE Westminster Hospital Annexe for Radium Treatment, situated at Hampstead, three miles distant from the hospital itself, was opened on January 29th by Lord Lee of Fareham, chairman of the National Radium Commission. The building, originally a large private residence (No. 66, Fitzjohn's Avenue), has been purchased, adapted, and equipped to house the unexpectedly large supplies of radium which Westminster Hospital possesses and holds on trust. In the autumn of 1928 the hospital issued an appeal for funds for radium purchase, with the result that nearly £25,000 was contributed in less than six months. By the end of that year the hospital possessed three-quarters of a gram of radium in the form of needles; and one gram which could be used as a unit. The question of accommodation for the increasing number of patients under radium treatment then became pressing; the advisability of bringing together under one roof the team of workers engaged on various sides in radium application and investigation was also brought home to those concerned, with the result that it was determined to provide the new annexe. Meanwhile the National Radium Commission had decided to entrust to Westminster Hospital four grams of radium for use as a single unit in the experimental treatment of certain types of cancer. This "bomb," which has been used at the hospital for the last three months, has now been transferred to the annexe.

At the opening ceremony, in the presence of a company which included, in addition to the medical and surgical staff of Westminster Hospital, representatives of the radium departments of other hospitals, and others interested in radium treatment, Mr. WOLFE BARRY, chairman of the hospital, outlined the circumstances which had led to the construction of the annexe. He emphasized the fact that, although separated geographically from the hospital, the annexe was as much a part of it as any special department in the main building. The building, which contained twenty-two beds for patients, special rooms for radium and deep *x*-ray treatment, a theatre, accommodation for nursing and domestic staff, as well as laboratories for routine and research work, was being opened free from debt.

Lord LEE congratulated the authorities of the hospital on the enterprise and foresight which they had shown in establishing the annexe. It represented a remarkable departure from usual hospital practice. Administratively speaking, it was part of the hospital, but it was devoted entirely to a special purpose, on which the whole efforts of a team could be concentrated, free from the distractions and bustle of general hospital existence. There were obvious dangers in connexion with the use of radium, which were perhaps better circumvented in a building devoted entirely to this one aspect of therapy. Radium was a weapon to which extravagant hopes and sometimes absurd fears attached. Some people imagined that everyone afflicted with malignant disease would at once be cured. Others thought such a mass of radium as the hospital possessed in its "bomb" might be dangerous to the neighbourhood, might even imperil the Abbey and compel the Dean and Chapter to seek refuge in an underground sacristy. Westminster Hospital had won the prize which had to be awarded by the Commission to only one recipient. Radium was too costly and the whole matter at present in too experimental a stage, for it to be scattered about all over the country. The hospital had established its priority through its foresight and general merit, and he did not think the choice had occasioned any ill-feeling among other hospitals. Here he paid a tribute to the members of the surgical staff specially concerned in the working of the "bomb" who had voluntarily imposed upon themselves a self-denying ordinance by refusing to accept any fees for the work they did in connexion with the use of the "bomb." They recognized that it was a national possession, and they were conducting their investigations with it for the benefit of the whole country.

"I want to emphasize the importance," Lord Lee went on, "of not running away with the idea that all that is necessary is to acquire and distribute a sufficient quantity of radium throughout the country. Nothing may be more dangerous than the indiscriminate distribution or use of radium. The idea one finds expressed—that radium ought to be as much a part of every general practitioner's equipment as his scalpel—is, I am quite sure, fallacious. I hope my words may reach people who would spend money in buying radium and handing it over to the general practitioner. I cannot conceive a more unwise course, not only for the patient, but for the practitioner himself, nor anything more calculated to give a setback to radium therapy. The Commission are exercising very great caution in distributing the radium entrusted to them, and are distributing it only in centres where the actual treatment can be combined with teaching. In their view the paramount need is not so much the supply of additional amounts of radium as an additional supply of people capable of using it properly. I and my colleagues will concentrate our main effort upon the promotion of education and training in the use of radium rather than on its widest distribution. We are seeking to set up here in London a centre for post-graduate training in radium therapy, and we shall allocate a considerable proportion of our limited supply of radium to that centre so that post-graduate instruction may be organized on a scale to serve the entire country."

After Mr. WILLIAM TURNER, senior surgeon, had expressed the thanks of the company to Lord Lee, the building was inspected by those present.

We hope to give a brief account of the arrangement of the departments in our next issue.

THE TRAINING IN MIDWIFERY OF MEDICAL STUDENTS AND NURSES.

SOME REFLECTIONS AND A SCHEME.

BY

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OBSTETRIC SURGEON, ST. GEORGE'S HOSPITAL; VISITING PHYSICIAN, GENERAL LYING-IN HOSPITAL, YORK ROAD, LAMBETH; EXAMINER IN MIDWIFERY, CAMBRIDGE UNIVERSITY, SOCIETY OF APOTHECARIES, AND CENTRAL MIDWIVES BOARD.

IN these days when the air is humming with schemes, some of them doctrinaire rather than practical, for the improvement of the maternity service of the country, it is perhaps time for those of us who have been for many years on the active staffs of lying-in hospitals, and are still active and not consultant, to make some observations based on practical experience and reflection. Otherwise it may very easily be too late to pick out a practicable plan in the plethora that will exist.

It is not my intention to write anything much about the general practitioner's part in a maternity service, except as regards his early training. My main concern is with any measures that exist, or that may be proposed, for the improvement of the teaching in midwifery of medical students and midwives.

It ought not to be necessary to point out that, before producing a detailed scheme, some consideration should be given to principles, were it not the fact that some plans have lately been produced which run contrary to important principles, and which, instead of utilizing and building on existing and well-tried foundations, involve financial injury to, or the destruction of, the institutions of highest standing in the training of midwives and all they stand for in midwifery. I refer to the suggestion that the lying-in hospitals of London should be converted into training schools exclusively for medical students. Now as to the principles that ought to lie behind any scheme for improving the teaching of midwives and students very little has, I think, been written in the sense of what I have to say.

Here I must ask for patience while, for the purpose of my argument, I cite some facts which are perfectly well known in midwifery circles.

The Most Satisfactory Method of Employing Midwives and Medical Practitioners.

There is, I believe, substantial agreement in nearly all quarters that the most satisfactory results in midwifery have been obtained by well-trained midwives working in conjunction with medical men experienced in midwifery (be they general practitioners or obstetric specialists). By this means the reliable midwife, if working by herself, conducts normal labour to its completion, calling in the doctor in certain specified conditions or when she is in doubt. If she is working with a doctor she looks after his patient mainly in the early stages of labour, summons him at the time his presence is most needed, but sets him free at other times to attend to the more urgent calls of his practice, so that he need never be forced by pressure on his time to undertake untimely and unnecessary methods of intervention with normal labour. This course is only possible when the practitioner employs reliable and well-trained midwives whom he can trust, and does trust, and not handy-women.

This ideal state of things is, I believe, still found relatively only rarely in industrial areas, where the bulk of midwifery is practised and is seen at its best in the service of some few lying-in charities. But this, or something like it, is surely the ideal to aim at in general throughout the country. One principle is, then, that not only skilled doctors and midwives should be available, but that their training should instil the wish to co-operate in their respective spheres. How is this principle to be aimed at, and, if possible, carried out?

Reasons for Lack of Co-operation between Midwives and Practitioners.

The past history of midwifery in this country is one of many struggles between midwives and doctors for the upper hand, and for, one supposes, the greater share of the loaves and fishes. The passing of the Midwives Act marked the first stage, but only the first stage, in getting a satisfactory maternity service, by ensuring that there should at all events be available, for those who needed them, women who were trained up to the level for attendance with safety to the mothers and babies on cases of normal labour. It is generally admitted that, for the particular work for which they are intended, the training of midwives is more satisfactory than that of medical men. But an unfortunate legacy of past struggles has remained in the considerable degree of distrust and dislike of midwives that still lingers among doctors. This is probably based on the tradition of a struggle between two sets of people for the same work and livelihood, and is sometimes reinforced by individual unhappy experiences. Whatever its reasons, it is found among both doctors and midwives, and causes, in some cases, difficulty in real co-operation between them. It may not be wholly possible to overcome this feeling in this generation, but it is surely necessary to see in what respects the future midwives' and future doctors' training can be modified to improve it, and to raise the whole question of a maternity service on to a higher basis of real co-operation between the two branches which must work together in the future, if its success is to be assured. Mistrust in this case, as in most others, is due to lack of knowledge and understanding of one another the two parties, and is due in some respects to the growing separation between the training of midwives and that of doctors, which leads to many other disadvantages as well.

Disadvantages of Separate Training for Midwives and Doctors.

The disadvantages that come from this separation may be considered generally now, and will be considered later in more detail. If it is desired to build up in this country a coherent plan for a good midwifery service consisting of midwives and doctors, it should be plain that the teaching of both divisions should be in essence the same, and should come mainly, therefore, from the same teachers under the same conditions. The teaching should be only modified to fit each part of the service for the different role it should play, while ensuring that the two departments of work should dovetail into one another and make a sound joint. Medical students are taught midwifery in all sorts of ways in all sorts of institutions, but the basis of their teaching is what is imparted at the maternity department of the general hospital to which they are attached. Probably the larger proportion of the midwives are taught at institutions, including the Poor Law hospitals, where there are no medical students.

It is probably in the lying-in hospitals, however, rather than in the general hospitals (with some exceptions) that the good and true tradition of teaching sound method of conservative midwifery now resides, and it is on this sound basis that the present teaching of the best trained student midwives now rests. The general hospital is to a considerable extent, and probably quite rightly, imbued with the idea of the old traditions of treating grave and established medical and surgical diseases, and does not take kindly to the preventive aspect of treatment and the wise guidance of a natural process, which is the life and spirit of modern midwifery. There is also, unfortunately, in general hospitals often an atmosphere of slight disparagement and contempt of midwifery and its practitioners, which soon communicates itself to the student, with bad results on his keenness. Furthermore, it is hardly ever possible to have sufficient maternity beds in a general hospital to give to the student in three or six months a proper idea of the just proportion of normal to abnormal labour, so his training loses perspective either in the direction of the need for too much interference with labour or, more rarely, too little.

The Solution of the Difficulty.

It is therefore to the lying-in hospitals, with their greater resources, that we must look for most help. It

is by extending their activities to embrace the teaching of both student midwives and medical students, and not by separating the two, that a change for the better in the teaching of both can be effected, with its enormous influence for good on the future of a maternity service. There is only one way in which this can be done without inflicting injury on the great lying-in hospitals, with their excellent traditions of midwives' training built up by the devotion of teaching midwives and medical staff over a number of years. For this purpose the activities of the lying-in hospitals must be widened and extended as far as possible, and their surplus of clinical material, which is not in fact at present great, should be used for medical students.

Attachment of Poor Law Midwifery Beds to Lying-in Hospitals.

Secondly, to provide better opportunities for both midwives and students, it will be necessary for each lying-in hospital to have attached to it the nearest or most suitable Poor Law midwifery beds, and to have control of them for teaching purposes, in return supplying the extra teaching facilities for the pupil midwives of the Poor Law hospital. By a plan of this kind not only will the resources of both institutions be available to provide a really satisfactory training for midwives and medical students, but these will be trained together so far as that is possible, and on common lines.

Avoidance of Expense and Difficulty of Providing Nurses.

The nursing difficulty, and the expense of providing it in any institution devoted to medical students exclusively, would be solved by this arrangement. The student midwives could, as part of their curriculum, act as monthly nurses for the medical students' cases during the period in their training when they were not themselves taking cases.

The objection has been raised, and will be raised, that where nurses and medical students are trained together the nurses filch away the bulk of the cases. There is definite substance in this difficulty, which springs from the greater keenness of the nurses to get their money's worth out of what is to them a most expensive training; and it must be added that there is also in such cases the connivance of people whose duty it should be to arrange things impartially. In any case, in the plan I have outlined a new teaching organization would have to be built up, and that point could be readily provided for.

Suggestions for Reorganization of Combined Teaching Institution.

In a scheme of the kind outlined a fairly senior man experienced in midwifery, and also capable of organizing, administering, and co-ordinating the two hospitals, would be needed. He would have to organize the work of this midwifery unit or division, and adjust the claims and spheres of the midwives and medical students; he would have working under him on one side the teaching midwives, and on the other the teaching staff of the students. These teachers would be in some degree interchangeable, with advantage to both sides. At first his duties would be exacting, and a picked man would be needed. His position, one suggests, should be something like that of the registrar of a military hospital in war time—that is, an executive second in command with very wide powers. He should have a direct appeal to the managing body. He would also combine some of the position and duties of a resident obstetric surgeon, corresponding to the resident assistant surgeon at a general hospital. He would take an active part in the clinical teaching with his subordinates, and one or other of them would be always available for that purpose.

Continuance of Honorary or Visiting Staff.

The members of the visiting staff during their times of duty would represent the officer commanding a military hospital, but their role would be chiefly consultative and teaching, and they would constitute a final appeal in difficulties of all kinds. They might also be available for consultative work for different classes in the district served by the hospital, and might see special ante-natal cases of all classes in a room at the hospital at specified times.

The visiting staff might be found ultimately to be redundant, as the organization found itself, but at first the clinical and general experience of its members would be a valuable restraint in hospital and committee on ill-judged departures, and I think they would continue to be needed. If not, this method would prove a safe and valuable approach to the Rotunda system of a whole-time master, if and when suitable men were available.

Midwifery Teaching Requirements of London.

In London the three largest separate lying-in hospitals—Queen Charlotte's, City Road, and the General Lying-in Hospital—with a neighbouring Poor Law midwifery institution attached to each, would probably cover most of the ground at first. In large towns with maternity hospitals a similar arrangement could be started if it were needed there. From this sort of plan of improved teaching all the other benefits that constitute a good maternity service could be gradually developed, including the practitioner's service.

Disadvantages of Separate Teaching Considered in More Detail.

The disadvantages that come from the separation of student midwives' training from that of medical students may be considered in more detail.

1. From the standpoint of the midwives' training. This is, so far as it goes, good and practical, but, owing to the great variation in intelligence and education of the student midwives, it tends to be too dogmatic and rule-of-thumb, especially that part of it—and it is the main part—at present taught by teaching midwives. The corrective of more teaching in broad principles, to exercise their reasoning powers and teach them to think, is needed. This can best be given by men of wide experience and education, combined with practical obstetric training and examining experience. There is an unfortunate tendency in some midwives to get the idea that their knowledge is in all respects superior to the doctors', and it must be confessed that in some instances they meet with evidence to support this assumption, but only in the restricted field a midwife's training covers. If practitioners and midwives shared as students in some degree a common training, both sides would gain in that better understanding and appreciation of their own and each other's limitations and excellences which comes from working together at a common task under properly regulated conditions. As things are at present the midwife, with her ideas of her knowledge uncorrected by a true comparison with the wider training of a good medical student, often develops *tête montée* and an entirely unwarranted contempt for the doctor, which will lead to trouble later on, especially if she encounters a doctor with some of the ideas referred to earlier in this paper.

2. The medical student loses in many cases at present the advantage of learning at least some of his midwifery in an institution where sound methods of conservative midwifery are in the air of the place (I speak of the place I know best—the General Lying-in Hospital, York Road). Here he would see the midwife's part in midwifery clearly defined and understood. He would learn to appreciate and trust her. He would learn also the limitations of her teaching and knowledge, and when, where, and how to take over control of a case himself. In this connexion it is time to correct the idea that a nurse has special aptiture and training for, for example, the feeding of infants. The feeding of normal infants and the right principles of feeding and managing difficult infants should be even more the business of the medical student than of the midwife. It is certainly not suggested by one's experience of teaching that many individuals in either branch of midwifery regard knowledge of that department of midwifery as of enough importance.

Conclusions.

It seems to me, therefore, that on all grounds, practical and economical, and in the interests of good feeling, the teaching of midwives and doctors should be drawn together and not separated, and that the only practical way of doing

this is by extending and improving the existing lying-in hospitals in the way I have outlined. Any other course involves maiming these valuable institutions for their present function, without doing the education of medical students in midwifery any proportionate service.

I am aware that any article dealing with midwifery training is liable to produce a storm of vituperation from all quarters. This at least shows that someone has read it, though not necessarily that he has understood it. I can only hope that this article will be no exception, as that will show that it has caused someone to think about these problems a bit more.

Since writing the above I have glanced at Mr. Comyns Berkeley's Lloyd Roberts Memorial Lecture, and see that he has incorporated therein some of the objections I raised to his plan in conversation with him. I do not see, however, that he has seriously modified it for the better, and I believe my plan meets most of the objections to his: and although at first sight it appears more complicated, it is really the only practicable plan that at present exists for dealing with this great problem.

Scotland.

Vital Statistics of Edinburgh.

A REPORT to the Public Health Subcommittee of Edinburgh Town Council by Dr. W. Robertson, medical officer of health for the city, was presented at a meeting on January 21st, and showed that the death rate from all causes for the city during the year had been 15.1 per 1,000, as against 13.7 in 1928. This increase had been due to an epidemic of influenza, and, in addition, a considerable number of deaths had been caused by pneumonia. The epidemic disease rate for 1929 had, however, been lower than that of 1928, the figures being respectively 0.3 and 0.6 per 1,000 of the population. A striking fact was that no death from measles had been recorded in the city since July, 1928. Infantile mortality had been greater than in 1928, the figures for 1929 and 1928 being respectively 80 and 75 per 1,000 of the population. New housing schemes were gradually changing the numbers of inhabitants in various districts of the city, with an increase of the suburban districts, and a decrease in the more crowded districts as, for example, in St. Leonard's ward, where there was a decrease of 1,850, and in Leith a decrease of 1,104 in the population.

Edinburgh Royal Infirmary Extension Scheme.

The committee appointed by the Court of Contributors of the Edinburgh Royal Infirmary to consider the annual report by the managers of the institution, has issued its statement; the various items dealing with the numbers of patients and with the satisfactory financial situation, were recorded in the *Journal* of January 18th (p. 125). It is noted that a definite scheme for the utilization of George Watson's College grounds, adjoining the Infirmary, has now been generally approved by the managers, who propose to build upon this ground an up-to-date maternity and gynæcological department, and a nurses' home. These buildings are urgently required, the first to replace the Royal Maternity and Simpson Memorial Hospital, which will then become part of the Infirmary, although retaining its distinctive name, and the second to provide adequate accommodation for the large staff of nurses which in future will be required in the institution. This extension will materially increase the number of beds available in the Infirmary for general patients, and more particularly for surgical cases. The plans show two pavilions on the new ground in line with the four existing pavilions facing the north, the new nurses' home will be capable of accommodating 300 nurses, with the necessary recreation, sitting, and other rooms. To meet the expenditure that will be required, it is proposed to launch an appeal for funds in the spring of the present year, when the public will be invited to subscribe £300,000. The estimated cost of the ground will be £90,000, and of the new buildings approximately £200,000. In addition to this the reconstruction of Beechmount, Murrayfield, to adapt it for a radium institute with accommodation for thirty-six patients, will probably cost about £40,000, which is to be defrayed from the reserve funds of the Infirmary.

Glasgow Maternity and Women's Hospital.

The third annual medical report of the Glasgow Maternity and Women's Hospital deals with the year 1928, during which 114 beds were in use, 25 being reserved entirely for the ante-natal department. Dr. J. N. Cruickshank, the registrar of the hospital, explains, however, that there is nearly always a considerable number of extra beds in use, so that the average number of patients in residence daily is well above this figure, and, by arrangement with the Glasgow Parish Council, additional extra beds in Stobhill Hospital are available. This co-operation with the parish council has enabled the Maternity Hospital to continue its policy of not refusing treatment to a woman in labour, without increasing the already serious overcrowding of the wards. In presenting the statistical matter of the report Dr. Cruickshank has followed as closely as possible the standard scheme suggested by a committee appointed by the Royal Society of Medicine for unification of the clinical reports of maternity hospitals, but the simple division of cases into "booked cases" and "emergencies," which the committee suggested, has been found capable of full application. The cases admitted to the wards have been placed in three categories: those which had been under ante-natal supervision for a sufficient length of time for the diagnosis and treatment of any abnormality present (1,612); patients sent in as emergency cases by outside doctors or midwives, or by doctors, nurses, or students working in the outdoor department (1,496); and patients applying for admission who had not been under previous ante-natal supervision (—). The last class was made up for the most part of women who applied for admission at the onset of labour without having been seen by a doctor or midwife. Thus, of the total of 5,941 patients treated in the wards of the hospital 40.8 per cent. had been under ante-natal supervision of some kind, 38.9 per cent. came in as emergency cases, and 21.1 per cent. were admitted without having been under previous supervision. The total number of cases treated in the wards of the ante-natal department was 1,345; of these patients were admitted directly to the obstetrical department from the outdoor (ante-natal) dispensary. With this ante-natal dispensary are combined a post-natal department, a pensary and an infant consultation (child welfare) council, the total attendances at this group of institutions during 1928 numbered 16,830. The hospital is also responsible for a great deal of obstetrical work in the homes of patients, and from this source emergency cases admitted to the wards.

Care of the Mentally Unfit.

At a meeting of the Edinburgh District Board of Control, on January 20th, Colonel A. Young, the chairman, presented a statement dealing with the past work of the Board, and the plans for the future care of lunatics and mental defectives under the new administration. He said that the great achievement of the Board, the construction of the mental hospital known as Bangour Village, was recognized by mental experts throughout the world as an outstanding model of what such an institution should be; this would stand as a monument to the work of the Board. The Board was at present engaged in the construction of a great complementary institution at Gogarburn. When completed by the successors of the Board, it would form a home for patients of all ages, and of every possible variety of character and disposition, through grades of human intelligence up to the level at which mental defect could with difficulty be detected. There would be an immense opportunity for those concerned in training mental defectives to grade them according to their diverse capacities. Each patient would be kept interested so far as the individual ability permitted, and in order to awaken and cultivate latent powers, every variety of objects lesson and of handicraft as well as games and amusements would be provided. Education as comprised in books did not stand very high in such an institution, where many

patients would never pass beyond the intelligence level ordinarily expected in a child aged 7 to 12. Kindergarten schools, dancing, and drilling, laundry and kitchen work, craft workshops under trained instructors, garden and farm work would be the main educational forces, and for this purpose the outlay of the institution had been carefully studied, amended, and adjusted. The speaker said that the members of the Board were desirous of advancing as far as they could while they still continued to function, so that their successors might find the way prepared for them to complete the establishment of an institution to rival Bangour.

Ireland.

Maternity and Child Welfare Scheme for Belfast.

A NEW maternity and child welfare scheme, at an estimated expenditure of £33,634, came before the Maternity and Child Welfare Committee of the Belfast Corporation recently, and was eventually left over for further consideration at an early date. Dr. C. S. Thomson, medical superintendent officer of health, who made the recommendation, stated that during the twelve months ended November 30th, 1928, the infant mortality rate in Belfast was 119 per 1,000; during this period 8,952 babies died before they were 1 year old. Allowing for the influenza epidemic of 1929, the ominous fact remained that their infant mortality rate had been round about 105 for successive years. There were no comparative figures for 1929, but he drew attention to the following infant mortality rates for 1928: Belfast 103, Sheffield 73, Bradford 70, Leeds 77, Manchester 80, Liverpool 94, Birmingham 65, Glasgow 107, Dublin 103, Edinburgh 75, Dundee 102, Newcastle-on-Tyne 82. Dr. Thomson said the key to a low infant mortality rate was an educated and safeguarded motherhood, with provision for attention to the nutrition and health of expectant and nursing women and of infants. Most of the existing welfare centres were unsuitable for the purpose, and while the city was spending just over £6,000 per annum on maternity and child welfare—the springs of life—£48,000 was being spent on the prevention and cure of one disease—tuberculosis. Dr. Thomson then proceeded to make the following recommendations: The appointment of two additional whole-time medical officers, additional health visitors; a new centre in the east end, where a new building was required and a tentative plan had been made for a joint infant welfare centre, antenatal centre, and school clinic, at an estimated cost of £7,000 unfurnished; and centres in the extreme north of the city, and also in the south-east. Centres should be provided with cookery appliances where necessary, and dinners provided for poor expectant and nursing mothers, free or at a charge of threepence or sixpence, according to means. He further recommended that the sum of £4,000 should be set aside for the supply of milk to infants and children between 3 and 5 years of age; that the present Maternity Hospital, which will shortly be vacated for a new building, should be bought and used for the special treatment of children; that a day nursery should be established; and that a fund of £300 should be provided toward the payment of convalescence of approved cases. Dr. Thomson pointed out also that arrangements had been made to supply home help, on application to his department at the City Hall, Belfast.

Proposed Public Health Conference in Dublin.

The Minister for Local Government and Public Health, General Richard Mulcahy, announces his intention to convene a conference in Dublin to discuss problems of local government and public health. The subjects to be discussed will include: the dispatch of business at meetings of boards of health and public assistance; the county medical officer of health and his functions; the economy of preventive measures in health administration; the health of the school child; the improvement of the county homes; rural health problems; the welfare of children in the care of the public assistance authority; health education and the methods by which it can be promoted; and the administration of home assistance. The date of the conference has not yet been fixed, but it will be held before the end of next June. In connexion with the project the Minister has addressed a circular letter to every county board of health and every urban sanitary authority in the Free State, pointing out that, although in recent years much has been done to improve the organization of public hygiene and the services for the care of the sick and poor, it is felt that a stage has now been reached when an exchange of opinion and experience and a discussion of difficulties would be of considerable value in supplementing ordinary official methods and in promoting a closer understanding between the agencies concerned in these services. The procedure contemplated is that a speaker will read a short paper, and each subject will then be thrown open for discussion. The object of preparing an agenda at this stage has been rather to suggest the nature and scope of the conference than to restrict the discussions to particular subjects. Suggestions for new subjects are cordially invited, although only a small part of the field of administration can be covered. It is desirable that the attention of the conference should be devoted to matters of practical importance and to improvements within existing resources rather than to any idealistic solutions of problems. It is suggested that each authority should nominate the chairman, the secretary or clerk, and another member to attend the conference. The medical superintendent officer of each county borough, and the county medical officer of health should also be nominated to attend.

Correspondence.

THE DIAGNOSIS AND TREATMENT OF CATARRHAL COLITIS.

SIR,—The paper by Dr. Letheby Tidy on this subject in your issue of January 25th (p. 135) is in many ways so good that one is the more surprised, when he is discussing the diagnosis, to find the statement that "in my opinion sigmoidoscopy gives no useful information, may do definite harm, and should never be employed." In these days, when we are striving, however inadequately, to make medicine and surgery exact sciences, one is amazed by such a statement. It would be as reasonable to suggest that inflamed throats should be diagnosed by the symptoms and should not be examined. We shall at this rate have someone suggesting treating colitis by correspondence.

As you very properly pointed out in your leading article, the sigmoidoscope can be used by skilled hands with perfect safety in even the most serious cases of ulcerative colitis, and gives quite invaluable information. The sigmoidoscope, especially if the small bore instrument is used, can be passed without the necessity for any kind of anaesthetic, and without causing any pain to the patient. The mucosa can be examined and the type and severity of the colitis properly judged, and the results of the treatment can be watched and checked. Periodic examinations are an essential of proper treatment in all cases of colitis. But even more important is the value of the sigmoidoscope in making a differential diagnosis between colitis and other conditions producing similar symptoms. As Dr. Tidy rightly points out, the diagnosis between colitis and cancer is very important, but without a sigmoidoscopic examination such mistakes are easily made. Dr. Tidy relies on a radiogram with a barium enema, and believes that by this method he can safely exclude the presence of cancer. Such a radiogram may show a large stenosing growth of the bowel, but will almost certainly fail to show anything in the early stages of carcinoma, when the growth is small and has not produced any narrowing of the bowel lumen, and it is just this type of growth which gives rise to the greatest difficulty in diagnosis.

Apart from cancer, the diagnosis from tuberculous ulceration and between simple ulcerative colitis and amoebic dysentery is a matter of chance, unless a sigmoidoscope is used to examine the disease.

I am pleased to see that Dr. Tidy condemns the all too prevalent practice of starving patients with colitis, a practice which in the past has largely contributed to the bad results so often obtained in cases of ulcerative colitis. But I do not understand why he refuses to let his patients have meat. Meat is entirely digested in the small intestine, which is unaffected, and leaves less residue than vegetables and carbohydrates, which he allows. At St. Mark's Hospital, where we treat many of these cases, a full diet, including meat, is encouraged and no attempt is made to put food through a sieve. After all, what is the object? The stomach and small bowel are quite capable of reducing ordinary food to the necessary liquid state for digestion. Most patients, unless very ill, with a high temperature, etc., can digest solid plain food much better than a lot of slops and purées.

Medicated and antiseptic enemas I do not think are any use. As Dr. Tidy points out in his paper, they are dangerous in the acute stages: but I would go further and say that they are useless in any stage. Isotonic saline enemas give the best results.

With regard to surgical treatment, it has been my experience that appendicostomy should be performed under local anaesthesia as soon as it is obvious that the patient is not improving on purely medical treatment. Temporizing too long may cost the patient his life, as operation is no use as a last resort, when the patient is almost dead. Operation is also indicated when there are frequent relapses, a not uncommon feature of ulcerative colitis.—I am, etc.,

London, W.2, Jan. 25th. J. P. LOCKHART-MUMMERY, F.R.C.S.

LEAD POISONING FROM TAP WATER.

SIR,—During the past few months several cases of lead poisoning in the county areas of Lancashire have come under notice. The common factor in all the cases is the habit of drinking hot water from the hot-water service in the home. The greater part of the water supply of Lancashire comes from upland catchment areas, and in many cases is definitely plumbo-solvent. The solution of lead is very materially accelerated in hot-water systems, especially in the type in which lead service piping is used from the hot-water cylinder.

It is not in my province to suggest a remedy; that rests with the public authorities and with the medical attendants. But I feel compelled to pen this letter because cases coming under my own notice must be merely a tithe of the cases of lead poisoning existing in Lancashire to-day.—I am, etc.,

Wigan, Jan. 21st. W. E. COOKE.

TRAVELLING SCHOLARSHIPS IN TUBERCULOSIS.

SIR,—It will be fresh in the memory of many that the Sun Life Assurance Company of Canada generously gave scholarships to a number of Canadian medical men engaged in tuberculosis work which enabled them to undertake an extensive and carefully planned tour to Great Britain and the Continent in 1928, to visit the more important tuberculosis institutions, to study the methods of treatment employed, and to become personally acquainted with their European and British colleagues similarly occupied. The tour was a great success—enjoyable, instructive, and inspiring.

Through the Joint Tuberculosis Council the Sun Life Assurance Company of Canada has offered fifty scholarships of £100 each to British medical men engaged in tuberculosis work, towards the cost of a visit this year to Canada and the United States. The duration of the tour will be from Friday, August 8th, to Friday, September 12th, and the cost, including an estimate of personal expenses, will be about £150. £50 of which will be found by each successful candidate or the local authority which employs him. £5 must be paid as a deposit by each candidate on selection, and a further £45 one month before the journey. The itinerary has been planned by Dr. Wodehouse, the secretary of the Canadian Tuberculosis Association, and is a very comprehensive and interesting one. Visits will be paid to many notable centres in both Canada and the United States, including Ottawa, Toronto, Chicago, and New York, the scholars will be in Winnipeg during the Bri Medical Association Meeting. The time of the scholars v be very fully occupied.

The object of the tour is educational, and everyone wi accepts a scholarship will be expected to follow the schedul sickness only being accepted as a reason for exemptions. Nothing will be given for transport or accommodation beyond what is listed in the schedule. The tour as planned offers an exceptional opportunity of visiting Canada and the United States under very agreeable conditions. Married scholars may be accompanied by their wives, but for these and other dependants the full passage money will have to be paid.

The Joint Tuberculosis Council is desirous of giving the opportunity of accompanying the party to any British medical men eligible to whom the tour appeals, and for this purpose it has formed a selection committee comprising Sir Henry Gauvain (the chairman of the Joint Tuberculosis Council), Drs. McNalty and Glover (representing the Ministry of Health), Professor Cummins (representing the National Association for the Prevention of Tuberculosis), Dr. Lissant Cox, Dr. James Watt, and Dr. E. Ward (honorary secretary, Joint Tuberculosis Council). The selection committee now invites applications, which should be received by Dr. Ernest Ward, 123, Torquay Road, Paignton, not later than February 14th, but those who have already applied need not repeat their application. The £5 deposit must be paid within fourteen days of the allotment of the scholarship, of which due notice will be given to candidates.—I am, etc.,

Alton, Jan. 27th. HENRY GAUVAIN.

DELAYED TREATMENT OF APPENDICITIS.

SIR,—I read with much interest and approbation the article by Mr. Hamilton Bailey in the *Journal* of January 25th (p. 140) on the Ochsner-Sherren treatment of late cases of acute appendicitis. The suggested system of requiring patients who have been tided over an acute attack to sign a declaration expressing their intention to return later for appendicectomy should do much to diminish further the small percentage of patients who fail to reappear for their quiescent operation.

I notice that Mr. Hamilton Bailey advocates immediate operation in all cases up to the age of 5 years, irrespective of the length of history, but I would venture still to suggest that up to the age of 10 symptoms and signs are misleading and that it is probably wiser to deal with all cases during the first decade by immediate operation. I feel sure that this admirable paper will do much to standardize the selection of cases suitable for delayed treatment. Surgery still remains an art, and I know of no condition in which so many lives are jeopardized by rule-of-thumb surgery as in acute appendicitis, owing to the tendency to operate indiscriminately on all late cases of this condition.—I am, etc.,

London, W.1, Jan. 25th. R. J. MCNEILL LOVE, M.S.Lond., F.R.C.S.Eng.

SIR,—Unfortunately I find there is an important error in my article on appendicitis which appeared in your last issue. On page 142, column 2, last paragraph, "Those that *do not* require evacuation of pus" should read "Those that *do* require evacuation of pus."—I am, etc.,

Birmingham, Jan. 26th. HAMILTON BAILEY.

TONSILLECTOMY OR X-RAY TREATMENT.

SIR,—Since the tonsil is one of the most radio-sensitive parts of the body, the advantages of *x*-ray treatment for tonsil enlargement and sepsis might well be considered by those who have had reason to agree with Dr. Donald Hall's interesting observation reported in the recent Brighton epidemic of sore throat, "Patients who had previously been deprived of their tonsils by surgical operation appeared to many practitioners to suffer more severely than their fellows who still possessed those organs." Such an alternative to operation should also interest some who

have been impressed by the recent discussions on the complications of tonsillectomy, and the difficulties and risks of operating on out-patients; also those who have patients who dread the possibility of a change in their voice after operation, or have haemophilic or other patients who are not good operative risks.

As a method leading to the therapeutic ideal of a *restitutio ad integrum* x-ray treatment has no rivals; it is safe, painless, and rapid. None of those who have seen after a few treatments the tonsils shrinking, crypts opening out, pus no longer present on expression, together with the striking improvement in appearance and well-being of the patient, could doubt that we have here a notable therapeutic advance.

I may note that I have not found necessary the rather large x-ray doses advised by some American writers on the subject; I believe, on the contrary, that large doses are contraindicated. I have found in young children sometimes that doses of even $1\frac{1}{2}$ H (skin pastille) repeated weekly or at longer intervals for four times suffice for a most remarkable local and general improvement. In adults I have not given doses larger than 4 H (= 50 per cent. or less of the erythema dose) with 4 mm. Al. filter. Radium also can be employed, as by Berven in Stockholm: if the beta rays are used in any large proportion there may be a painful local reaction. To use x rays appears to me to be a simpler method, and in every way satisfactory. Incomplete results are only likely to be found in adults with hard fibrous glands; if a few treatments lead to no satisfactory response, suction, diathermy, or operation methods should be resorted to.—I am, etc.,

London, W.1, Jan. 18th. J. H. DOUGLAS WEBSTER.

THE ZONDEK-ASCHHEIM TEST FOR PREGNANCY.

SIR,—Allow me to make a correction in the report of the discussion on the Zondek-Aschheim test for pregnancy which appeared in the *Journal* of January 25th (p. 150). The sentence "In five instances where a positive result was given there was definite evidence of the foetus having died," should read "In five instances where a negative result was given there was definite evidence of the foetus having died." The termination of pregnancy, whether it be premature or at full time, is normally succeeded by the disappearance of the hormone which gives the positive reaction in the urine.—I am, etc.,

Pregnancy Diagnosis Station, The University, King's Buildings, Edinburgh, Jan. 25th. EDWIN M. ROBERTSON, M.B., Ch.B.

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN.

SIR,—I have read with great interest the article of Dr. H. Marcus Bird on anaesthesia for short operations on children, published in the *Journal* of January 25th (p. 147). But it would be unwise to allow to go unchallenged his remark that "all those who have employed it [ethyl chloride] will realize its disadvantages when given by the ordinary open or closed methods."

For over twenty years in the dental department of the Hospital for Sick Children, Great Ormond Street, there have been each week from 30 to 60 cases of extractions under ethyl chloride. During the greater part of this period I have myself administered these, having personally given over 20,000 of these anaesthetics. The closed method, with a bag originally invented by Dr. Loosely, is used, and no disadvantage has ever accrued. So long as a free airway is maintained there is no cyanosis, induction takes from 30 to 50 seconds, and a duration of from 60 to 180 seconds' surgical anaesthesia can be obtained and with practice regulated. This gives ample time for the surgeon to extract all the temporary teeth—or in some cases the 4 "sixes," as well as many others. No fatality has occurred, and in 40,000 cases only a very few, at most 8 or 10, have needed the administration of oxygen. There have been no post-anaesthetic complications.

As the guillotines at the Hospital for Sick Children, Great Ormond Street, were relegated to the museum before this method of administering ethyl chloride came into general use, my remarks must of necessity be limited to the experience of the dental department alone.—I am, etc.,

January 27th. HAROLD SINGTON, Senior Anaesthetist, Hospital for Sick Children, Great Ormond Street.

THE NATURE OF "PSYCHOGENIC PAIN."

SIR,—Whilst, in the course of a letter, it is impossible to deal comprehensively with the subject of psychogenic pain, Dr. Walshe's analysis of its nature in the *British Medical Journal* of January 18th confuses more than ever an issue that demands for its elucidation personal introspection coupled with the results of similar exercises in others. I take it that psychogenic pain is a sensation of pain produced wholly in the mind, but projected thence to some part of the body. Physiogenic pain is a sensation of pain produced in the mind, but resulting from a painful stimulus applied to some part of the body.

The pain of a crushed hand is not in the hand. It is an entity in consciousness. The cause is in the hand, but neither the cause of the pain nor the path by which it is conveyed to the mind is the pain itself. That pain can be felt in a situation which does not exist is shown by the cases of pain in an amputated extremity. This might be claimed by some as psychogenic and by others as physiogenic in origin, but I am concerned only with its projection in space. I submit that the conscious mind can project pain to any region of the body independent of the origin of the pain, and that there is no essential difference between psychogenic pain and physiogenic pain in their effect on consciousness.

With reference to the different effect of drugs in pains of different origin, physiogenic pain may be relieved either by reducing the excitability or conductivity of some part of the conducting apparatus in the nervous system or by removing the consciousness essential for its perception. The only sure way of relieving psychogenic pain by drugs is to use those which aid in removing consciousness. Dr. Walshe's inference from the effect of drugs does not disprove the essential identity of the two conditions, but rather suggests that psychopathology is as helpful in dealing with psychogenic pain as pathology is in dealing with physiogenic pain.

Dr. Walshe's observations on the physical consequences of long-continued physical pain (I mean, of course, physiogenic pain), and his inferences from these, would seem to me to need qualification. No clinician would allow his patient to suffer long-continued pain without attempting to relieve him, and if for this purpose he administers drugs, why should pain be singled out as the cause of the wasting, pallor, sweating, etc., without reference to the possibility that the symptoms might be the result either of the treatment or of the condition causing the pain? Some at least of the symptoms might even have been caused by the psychological effects of the pain—that is, they might themselves be psychogenic in origin.

Such sentences as "If a perfectly normal man can so deceive himself as to suppose he has pain . . . are very confusing indeed. The man either feels pain or he does not, and I agree with the psychologist who says that the sufferer either has pain when he says he has, or is a liar. With regard to after-memory of pain, if we modify the statement that the memory of pain in man is short, by saying normal man, there is no justification for Dr. Walshe's definite pronouncement that it is an unconvincir evasion of the issue, because abnormal mental states ca and do produce conditions which are incomprehensible t the normal mind.

The clarifying process of thought mentioned by Dr. Walshe is therefore necessary for those who choose to use the word "pain" for two wholly different things, especially for those who imagine that any individual can truthfully say that he has pain when he is only thinking of pain. Physiogenic pain and psychogenic pain are certainly produced in a different manner, but, once present in consciousness, they cannot be differentiated by the sufferer; therefore in essence they are identical.—I am, etc.,

Stafford-hire, Jan. 20th. J. H. MALIOY.

SANITATION ON THE RIVIERA.

SIR,—I have read with much interest the remarks, printed in your issue of January 18th (p. 124), on my letter published in the *Journal* of December 28th last (p. 1220). Your correspondent covers a much larger field than I did, as I confined myself deliberately to the one side of the question—that of the conditions affecting the health of visitors to the Riviera. In view of the interest that this subject has excited, both in your pages and outside them, will you allow me to amplify a little what I originally wrote? I shall do so as succinctly as possible.

As medical men, our object in sending our patients away to the Riviera or elsewhere is to enable them to rest and recuperate under favourable health conditions. I think that many medical men who have not visited the Riviera are possibly unaware of the conditions that prevail in a number of the larger towns.

1. A system of sanitary disposal of sewage and rubbish is practically non-existent. In this your correspondents have borne me out. Despite the influence of a sterilizing sun, this cannot be favourable to invalids.

2. I have good reason to believe that enteric fever is endemic in some of the larger towns, and that in this they resemble India, where enteric in one form or another is widely prevalent.

3. The conditions that prevail in the large hotels where, under central heating, a great number of people congregate daily in stuffy common rooms, favours the dissemination of a disease like influenza, which, under such conditions, runs like wildfire through the big hotels.

4. Your correspondent has referred to the noise made by, and the dangers incurred from, motors on the Riviera. In a number of the big hotels in the large towns rest in the afternoon is almost impossible, owing to the continuous and irritating nature of the motor horns used. Nor is it a good thing for a patient enfeebled by disease, or suffering, for instance, from heart disease, to have to calculate the moment for getting quickly across one of the crowded roads of these towns. The driving is often, and at some spots nearly always, very inconsiderate.—I am, etc.,

London, W.1, Jan. 23rd R. H. ELLIOT, M.D., D.P.H.,
Lieutenant-Colonel I.M.S.(ret.).

SIR,—With reference to Colonel Elliot's letter in your issue of December 28th, 1929 (p. 1220), perhaps some of your readers would be interested to hear the views of another English medical visitor to Nice. I have been living here with my wife and daughter for the past eighteen months on account of my wife's tendency to septic throats, to which she has been subject for many years. Since our sojourn in Nice—never very far from the sea front—she has been entirely free from such attacks.

That there are unsavoury smells in every Continental town of any size in Southern Europe no one who has visited France or Italy will contest; the majority of people who have travelled at all will take that for granted, and will generally be more concerned about the purity or otherwise of the drinking water. The water supply of Nice is held to be exceptionally pure and abundant, and Nice is probably the only town on the coast between Marseilles and Genoa where it is safe to drink the water direct from the tap in one's hotel or villa, as we constantly do.

Most visitors to the Riviera, I fancy, come for the sunshine, and in that they will seldom be disappointed, unless they are unlucky enough to happen on a dull or wet spell in autumn or winter. Throughout the whole of last summer I, myself, spent part of every forenoon at one of the bathing shelters of one of the popular cafés on the foreshore mentioned by your correspondent, while my daughter bathed or took a sun bath. Neither she, nor any of the young people I knew, had any ailment whatsoever, nor did we hear reports of anyone having been laid up, with defective drainage cited as a possible cause.

The suggestion, then, that the place must be unhealthy and dangerous on account of insanitary conditions prevailing last winter may, therefore, be safely disregarded; furthermore, I am in a position to state that the conditions described do not exist to-day, for, since reading Colonel Elliot's letter, I walked from one end of the foreshore to the other, and saw no trace of the sewage of the town being emptied thereon. What were referred to in his letter as drains are not so; they are small streams coming from the hills behind Nice. The foreshore I regard as exceptionally clean, and it consists of small gravel.—I am, etc.,

Nice, Jan. 22nd. MEDICUS.

We have also received from the President of the Syndicat d'Initiative de Nice a long letter, the gist of which appears in the extracts we have selected for translation:

"The authorities at Nice have long since made the most vigorous efforts to secure for the city all the advantages of modern sanitary methods. Its drains, above all, are continually being improved, and their actual placing is excellent. Only the sanitation of the sea may lend justification to some criticism, but in this matter also the municipal authorities are not inactive, and it is certain that they will bring about, in common with the other resorts on the Riviera, a complete and absolutely perfect sanitary system of the sea. I would also have you know that refuse is not conducted to the sea by the drains [les détritus ne sont pas conduits à la mer par les égouts], but that it is sometimes blown back to the middle of the beach when the wind is very strong, and it is in this matter that necessary changes are being considered.

"Colonel Kilkelly has also drawn a parallel between Alassio and Nice with respect to the cleanliness of the streets; he certainly cannot maintain that the streets of Nice are badly looked after. A comparison is not very justifiable between a great city of 250,000 inhabitants and a much smaller place, where road cleanliness can evidently be secured more easily. Rubbish is quickly removed from the streets each morning in covered motor refuse vans; it is carried to a field set aside for the purpose and incinerated. In this matter the municipality of Nice has of late completely reorganized its services, and when the changes on which it has decided are carried out —that is to say, very soon—the problem of refuse will have been solved in Nice in the best way possible.

"As far as the water is concerned, it is no exaggeration to say that, thanks to the sun, and also to the very perfect system of ozonization which has just been installed, the city of Nice has abundant and perfectly pure water."

IRRADIATED ERGOSTEROL.

SIR,—While the possibility of producing vitamin D by the action of ultra-violet light on ergosterol is now universally known to members of the medical profession, the real significance of this knowledge is not, we venture to suggest, as generally recognized. Your admirable leading article in the *British Medical Journal* of January 25th (p. 160) upon this subject is most timely.

The ability to produce vitamin D in a highly concentrated form, free from the bulky constituents of no therapeutic value associated with it in natural products, has made possible very definite advances in therapy. The doctor is no longer tied to cod-liver oil, with its variable vitamin D potency, among other disadvantages. To-day he may choose from a wide range the particular pharmaceutical product he judges to be most suitable for the individual patient. In this country all such products have without exception, been biologically standardized; their potency may be relied upon.

As you, Sir, have pointed out, overdosage of vitamin D, though possible, is highly improbable, since the margin of dosage between its therapeutic and its toxic effects is so great that objectionable sequelae could only result from gross negligence in its administration over a considerable period. It is significant to note that no case of overdosage has been reported in this country; such cases as have been recorded on the Continent refer to products which are not obtainable in England, nor have we any information as to their biological standardization.

Foodstuffs like margarine, for which on economic grounds there is a large sale, present a different problem. It is a patent advantage to add to them, if it can be done without appreciable increase in cost, such absent and essential vitamins as are present in the more expensive foods for

which they are substitutes. With infant foods, also, the addition of minute quantities of a tasteless, highly concentrated, vitamin product has rendered possible improvements which theoretical considerations suggested and two years' practical experience has since completely confirmed. But it remains necessary to define clearly the distinction between a pharmaceutical or medicinal vitamin D product, to be used under medical advice, and an "activated" foodstuff. In our view the latter should contain only a quantity of vitamin D necessary, on a conservative estimate, for prophylaxis. In this direction we have been in a position to exert considerable influence. We can state quite definitely that in this country "activated" foods are under such control that, though they have a definite and measurable content of vitamin D, untoward effects are inconceivable, even from their much extended use.

The irradiation of milk, for example, according to a recent report,[1] cannot possibly justify fears of vitamin D hypervitaminosis. According to Dr. Burn,

"much irradiated milk is now sold, and an account of the potency of different samples has been given. . . . The commonest potency appears to be about 0.2 unit per gram. The benefit which accrues to the child consuming this milk may be judged by comparing with the amounts of cod-liver oil ordinarily consumed. If the potency of the milk be 0.2 unit per gram, then half a pint is equivalent to 30 drops, or five and a half pints to two teaspoonfuls of cod-liver oil."

This activity, which would be altogether inadequate if the irradiated milk were to be regarded as a therapeutic product, renders it an admirable prophylactic foodstuff.—We are, etc.,

H. JEPHCOTT, F.I.C., Ph.C.,
Director.
A. L. BACHARACH, F.I.C.,
Chief Chemist.

Glaxo Laboratories, N.W.1, Jan. 27th.

SIR,—As the first manufacturers of irradiated ergosterol for clinical use, we are naturally interested in the leading article on this subject in your issue of January 25th.

Radiostol, our preparation of irradiated ergosterol, has, ever since its introduction early in 1927, been tested biologically; the most accurate methods of standardization by physiological test are employed. The potency of radiostol has been maintained at 10,000 antirachitic "units" per c.cm., the "unit" being that described by K. H. Coward (*Quarterly Journal of Pharmacy*, 1928, vol. i, p. 27). In other words, radiostol may be considered to have a vitamin D potency one hundred times greater than that of a high-grade cod-liver oil. The American manufacturers are now standardizing their products at the same strength, and have therefore closely followed the standard originated by this company.

The possibility of overdosage can only arise if the doses recommended are exceeded to an extent beyond all contemplation. As you, Sir, have stated, "there is a wide margin of safety with irradiated ergosterol—indeed, this margin is greater than that for almost any other drug known to produce a definite action." It appears from the work already carried out that in the rat 10,000 to 100,000 times the therapeutic dose is required to produce a recognizable toxic effect. It will be seen, therefore, that the statement that "little regard has been paid hitherto to the possibility of overdosage" does not apply to a product such as radiostol, the therapeutic potency of which is maintained within narrow margins of variation by careful biological assay.—I am, etc.,

CHARLES ALEX. HILL,
Managing Director, The British Drug Houses Ltd.

January 28th.

THE ACETIC ANHYDRIDE TEST IN CEREBRO-SPINAL FLUID.

SIR,—The above test has been employed in this hospital as a part of the routine examination of cerebro-spinal fluids since the appearance of Dr. Grossman's paper in the *Journal of Mental Science* in 1925. In 520 fluids examined (201 from general paralysis of the insane, 15 non-paretic, and 304 non-syphilitic), only one non-syphilitic fluid has given a positive Boltz reaction. The non-syphilitic class included patients with epilepsy, cerebral tumour, cerebral degeneration, and hysteria. The technique employed has been that described by Dr. Herbert in an article in the *British Medical Journal* (vol. ii, 1929, p. 953). Of the non-syphilitic fluids, forty-three gave a positive globulin and a negative Boltz.

The tentative conclusions published by Dr. Nicole of this hospital in the *Journal of Neurology and Psychopathology* (vol. 9, 1928, p. 33) have been, in my opinion, well established—namely:

"The Boltz . . . is not usually positive in the cerebro-spinal fluid except in the presence of general paralysis of the insane. The test does not always agree with the globulin test, and may be positive when the latter is negative, and vice versa. The positive Boltz is almost invariably an indicator of general paralysis. A negative Boltz is not a reliable indicator of the absence of general paralysis."

A small number of borderline cases with a luetic Lange colloidal gold curve must now be allowed to give a positive Boltz reaction. We have had no difficulty in interpreting the colour change in Boltz's test, a lilac colour only being taken as a positive result. The depth of colour change may be due to impurity in the acetic anhydride, the sulphuric acid, in both, as we have found that fresh reagents do not give as strong or as constant positive results as old reagents.

Dr. Newman (*British Medical Journal*, January 4th, 1930, p. 46) is only right when he advances the opinion that the test is valuable in asylum practice, as the non-syphilitic insane are not associated with a high protein content in the cerebro-spinal fluid. As regards the chemistry of the reaction, I would suggest that the combination of protein in the cerebro-spinal fluid in syphilitic insane patients is a large factor in determining the colour change in Boltz test. Our results have led us to no other conclusion that in mental hospital practice a positive Boltz test in a non-syphilitic fluid is very rare—indeed—less than 1 in 500.

Investigation into the Boltz test is still proceeding in this laboratory, and it is hoped, with the permission of my medical superintendent, Dr. F. M. Rodgers, to publish the results. I am indebted to Dr. Rodgers for permission to quote hospital results in this letter.—I am, etc.,

E. J. FITZGERALD, M.B., B.Ch.,
Assistant Medical Officer, County Mental Hospital, Winwick, Warrington.

January 18th.

MODERN TREATMENT OF VARICOSE VEINS.

SIR,—The following sentence appears in your review (December 7th, 1929, p. 1059) of [illegible] entitled *The Treatment of Varicose Veins of the [illegible] Extremities by Injection*: "It is difficult to reconcile this statement that 'embolism (after injection) can never [illegible] without infection' with the observed fact that [illegible] are far more liable to give rise to this complication than others." But I suggest that the difficulty would disappear if the principal qualification for my assertion had not been omitted—namely, that "an explosive [illegible] never can form without infection . . . (under the most careful injecting and *the solutions used*)."

Professor Linser of Tübingen, replying to a letter I sent him, states that he has treated over 7,500 cases and given 45,000 injections of NaCl solutions with one death, and seen one case presenting symptoms of embolism. Both patients presented local or general complications prior to the injections. The patient in the latter case had tropical lymphadenitis; the other had an acute ulceration of the leg. The symptoms came on in the first one two weeks, and in the second ten days, after the injections. I have given over 8,000 injections, but have never seen a symptom of embolism, nor have I found the injections to be more painful or productive of more untoward complications than are any of the other solutions now in common use. McPheeters[1] says: "This solution [20 per cent. sodium

[1] McPheeters, H. O., *Varicose Veins*, ch. xi, pp. 87 and 88, Philadelphia, 1929.

[1] Fourth Annual Report of the Pharmacological Laboratories of the Pharmaceutical Society of Great Britain, quoted in the *Pharmaceutical Journal and Pharmacist*, January 25th, p. 75.

chloride] is, perhaps, the least harmful of all the solutions used, though the technic of its administration is, perhaps, more exact than that of any other." "It is, however, the safest of all to use as far as the systemic reaction is concerned."—I am, etc.,

London, S.W.7, Jan. 18th. T. HENRY TREVES BARBER.

A FUND FOR ANAESTHETICS IN MIDWIFERY.

SIR,—May we, through the courtesy of your columns, bring home the need of anaesthetics for mothers in childbirth? We all know and deplore the growing maternal mortality, and we believe that if anaesthetics were given the mother would be in a far stronger state of health to combat any possible after-effects than she would be if she had previously passed through hours of suffering. The shock to the nervous system also would be lessened.

The official statistics show that the maternal mortality rose from 2,690 in 1927 to 2,920 in 1928—the highest rate since these statistics were first compiled in 1911. Is it not time that the use of anaesthetics was extended? The mother who can afford it pays her fee for an anaesthetist, the mother who cannot has, as a rule, to pay a fuller penalty of suffering. Surely we cannot stand by without protesting that every mother should be entitled to an anaesthetic if she wishes it.

That the administrative difficulties involved can be surmounted with a comparatively small expenditure has been proved by the experience of Queen Charlotte's Hospital, where 60 per cent. of the mothers have received this benefit since May last, as the result of the appointment of a single anaesthetist. The results there have been so excellent—not only from a humane, but also from a medical and administrative standpoint—that University College Hospital (Obstetric Branch) has now appointed a resident anaesthetist without waiting for the necessary funds to be collected.

If the difficulty is on the score of expense, may we mention that we are trying to raise a fund for anaesthetics for mothers in hospitals and institutions in conjunction with the National Birthday Trust Fund (for the extension of maternity services), and we want it known far and wide, for it is unfair that our mothers should still be allowed to suffer as they do because of lack of money to have their pain relieved. All subscriptions, which should be sent to Mrs. Stanley Baldwin at 10, Upper Brook Street, W.1, marked "Appeal Fund," will be gratefully acknowledged.—We are, etc.,

LUCY BALDWIN,
ETHEL DAWSON OF PENN,
MARGARET EBBISHAM,
JULIET WILLIAMS (Hon. Treasurer, Queen Charlotte's Hospital Anaesthetics Fund),
E. G. DARE (Matron, Queen Charlotte's Hospital).

January 27th.

Medico-Legal.

THE DOCTOR IN COURTS OF LAW.

Discussion by the Medico-Legal Society.

SOME interesting reminiscences of various courts of law were given by Dr. L. A. WEATHERLY in a paper before the Medico-Legal Society on January 21st.

Dr. Weatherly told the Society that many years ago he himself occupied the position of deputy coroner in Somerset, and at his first inquest he was astonished to find on the table around which the jury were seated a steaming bowl of punch, with a tumbler, a screw of tobacco, and a clay pipe before each juryman. The landlord was chagrined when the young coroner ordered these things to be removed; he protested that it had been the custom for many years, and no coroner had objected before. During his ten years' deputy-coronership in a large area in the West of England Dr. Weatherly was called upon to inquire into only one road accident, whereas in the town in which he now lived (Bournemouth) there were 54 deaths from motor accidents last year. With regard to police court procedure, Dr. Weatherly said that he had often urged that in more serious cases, such as murder or manslaughter, in which the only defence was irresponsibility due to mental disease, an alienist should not only see the prisoner as soon as possible after the commission of the crime, but the magistrates should allow the alienist's evidence to be given in their court and so be placed on the depositions. In two instances in which this plan was carried out he was able to get on the depositions proofs of mental disease at the time of the act which were absolutely wanting after some weeks on remand in the prison hospital. He criticized the M'Naghten rules by which the judge had to put to the jury the question whether the accused at the time of the commission of the crime was labouring under such a defect of reason or disease of mind as not to know the nature of the act or that he was doing that which was wrong. The attitude of judges had varied very greatly with respect to the plea of irresponsibility, and he mentioned two cases, one in 1887 and the other in 1908, in which the judge had directed the jury to bring in a verdict of "Guilty," though the prisoner was palpably insane. Each case should be decided on its merits, and latitude allowed to medical witnesses for the defence to prove that the prisoner was insane at the time he committed the act, and that the murder was the direct or indirect outcome of the prisoner's insane mind. One learned judge had stated to the Medico-Legal Society that he believed no insane murderer had ever gone to the scaffold. Dr. Weatherly was quite sure that that was not the fact. Insane men and women had suffered the death penalty, and others had been sentenced to death under the strict M'Naghten ruling and had been saved from the scaffold only by the report of an alienist not subject to cross-examination. Here Dr. Weatherly mentioned the case of Ronald True in 1922, where medical evidence given at the trial that the prisoner was insane did not avail him; he was sentenced to death, but evidence given after examination in the condemned cell resulted in the commutation of the death penalty, and True was sent to Broadmoor. Dr. Weatherly finally suggested grades of penalty for murder. The motive behind murder varied very greatly, and he thought there should be degrees of murder, the jury to place the crime in its special class, and the judge to decide the punishment, with the death penalty reserved for crimes which, as the present Home Secretary had said, were so horrifying and foul that the community would feel that no punishment could be too great.

In some discussion following the lecture, Mr. JUSTICE HUMPHREYS said that Dr. Weatherly had chosen an unfortunate instance—that of True—to illustrate his point that the M'Naghten rules were unfortunate. In that case the judge (Mr. Justice McCardie) said to the jury: "Never mind about the M'Naghten rules at all. The defence has urged that this man is insane because he suffered from uncontrollable impulse. You may find him insane, if you like, because of uncontrollable impulse." But the jury said, "Guilty," and it was only when the case came to be considered by a committee of medical men that a different view was taken. It was not the M'Naghten rules which were to blame, but, apparently, on Dr. Weatherly's argument, the system of trial by jury. Was it Dr. Weatherly's view, asked Sir Travers Humphreys, that such cases should be tried by a panel of medical men? So long as there was a jury, so long would it be found, whatever the ruling of the judge as to what was permissible for the jury to consider, that the jury would take an independent view, and if they thought that the man was a horrible depraved beast who ought to be hanged they would say so in their verdict. Sir Travers Humphreys, speaking purely in his personal capacity, and not as a judge of the High Court, agreed that, if there was alteration of the law in respect to the death penalty, it would have to come about on some such lines as Dr. Weatherly had suggested.

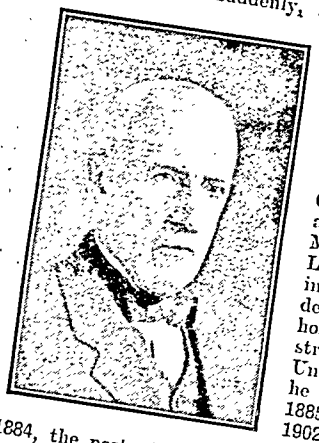
Dr. LETITIA FAIRFIELD remarked that "impulsive insanity" was a lawyer's diagnosis, not a diagnosis understood in psychiatry. It was a diagnosis made in solicitors' offices, after which the prisoner's legal advisers went up and down Harley Street trying to find some medical authority to support it. She also pointed out that a jury which would not think of asserting its own opinion in face of medical evidence that a person was suffering from tuberculosis or other physical disease would decide on the mental condition without any misgivings. The points which were diagnostic of insanity to anyone with medical knowledge of the case might mean nothing at all to the ordinary juryman.

Obituary.

PHILIP BOOBBYER, M.D., M.S.,

Late Medical Officer of Health for Nottingham.

IN our last issue we announced the death, on January 21st, in his seventy-third year, of Dr. Philip Boobbyer, who for forty years held the appointment of medical officer of health for the city of Nottingham. Dr. Boobbyer retired from his official duties early in January, 1929; his death, which occurred suddenly, following a heart attack, was quite unexpected.



Philip Boobbyer was descended from an old Huguenot family, and received his early education at Brighton College. After two years in an engineer's office, he entered King's College as a medical student, and obtained the diplomas M.R.C.S. in 1881, and the L.S.A. in 1883. After holding the appointment of resident medical officer at that hospital, he became a demonstrator in anatomy at the University of Durham, where he graduated M.B., M.S. in 1885, and proceeded M.D. in 1902. While he was still studying for his degree in 1884, the post of medical officer of health to the Basford rural sanitary authority fell vacant, and Dr. Boobbyer was appointed to it. Five years later, at the age of 31, he succeeded Dr. (now Sir Arthur) Whitelegge as medical officer of health for Nottingham.

During the forty years of his connexion with Nottingham the health services over which he presided expanded and multiplied; he was appointed in due course medical superintendent of the isolation hospital, and superintending school medical officer in the city. His initiative and encouragement brought into being the pathological laboratory, departments for the treatment of tuberculosis and syphilis, the maternity and child welfare service, hostels for mothers, and a sun-ray clinic. He attacked the prevailing pail-closet system for many years in vain, attributing to it the high local prevalence of typhoid fever, infantile diarrhoea, and other epidemics; when this system was at length abolished there was an immediate fall in the incidence of these diseases. In 1923 he was appointed small-pox commissioner for the East Midlands. When he retired last year from the public health service in Nottingham he was presented with valuable gifts and tokens of the gratitude felt widely for his long and successful labour for the welfare of the community.

Dr. Boobbyer watched with interest the growth of the Section of Public Medicine in the British Medical Association, of which he was a zealous member. He was secretary of this Section at the Annual Meeting at Nottingham in 1892, vice-president of the Section three years later in London, and president of the Section of State Medicine at the Annual Meeting in 1905 at Leicester. When the advance of what proved to be his fatal illness prevented Dr. W. J. Howarth from occupying the post of president of the Section of Public Health at the Annual Meeting at Nottingham in 1926, Dr. Boobbyer filled the vacancy at short notice. From 1904 to 1907 and again from 1925 to 1929 he was a member of the Midland Branch Council. He was a member of the Executive Committee of the Nottingham Division from 1910 to 1911 and from 1925 to 1928.

His interest in public health extended into other fields also, and he held a commission as major in the Sanitary Service Section of the R.A.M.C.T. He was a Fellow of the Society of Medical Officers of Health and of the Royal Sanitary Institute. He was also an examiner in public health in the Universities of Birmingham and Sheffield, and for the Royal Sanitary Institute. He contributed various articles on public health topics to the *British Medical Journal* and other periodicals. He was the author of a special report for the Home Office in 1907 on the health of lace dressers, and contributed special articles and reports on pail-closets in relation to enteric fever and other diarrhoeal diseases in the course of the campaign he conducted between 1891 and 1912. In all his relations, whether professional or otherwise, with his fellow men, Dr. Boobbyer won admiration for his warm-hearted generosity, as well as for his wide knowledge and practical ability.

A former colleague of Dr. Boobbyer's sends the following tribute:

By the death of Dr. Boobbyer the city of Nottingham has lost one of its most loyal servants and one of its most notable citizens. Endowed with a robust physique (he had been a "weight putter" in his youth), strong features, and a fine head which, in his prime, was crowned with a wealth of glossy black hair, Philip Boobbyer was a notable figure in any assembly. To this was added the charm of a cultured gentleman, a full, pleasant voice, and an integrity which was proof alike against the blandishments of the crafty and the threats of the bully. Fashioned thus, he lacked few of the qualifications of the ideal public official. If he had a shortcoming it was due to the fact that, combined with an encyclopaedic knowledge of his own branch of medicine, he had a lively imagination and a natural flow of words, and he found it difficult to avoid wandering into by-paths in the course of a statement. This at times proved irksome to his committee of busy men, who wanted to get on with the agenda. Nevertheless, they could not but be tolerant, for there was something inherently wrong with the man who did not regard Boobbyer with respect and affection. Probably, also, his lack of experience in general practice prevented him from realizing fully the difficulties which beset men whose work is done under pressure amid difficult and depressing surroundings. His heart was perhaps too tender for an administrator, his judgement of persons being apt to be warped by sympathy for their needs. Boobbyer was at his best when dealing with an outbreak of small-pox. An intimation by a doctor of the existence of a suspicious rash on a patient brought him to the spot like a flash, and out would come a large pocket lens, with which he demonstrated the peculiarities of the small-pox vesicle. I remember once on an occasion of this kind we found the house locked up and the key not forthcoming, but that did not daunt him. Discovering that we could gain access to the first story windows by way of the roof of an old greenhouse, he led the way over its crazy timbers and cracked panes, and I followed, wondering whether his fifteen stone or my fourteen would go through first! His annual reports were able and instructive, and it was unfortunate that zeal for economy led his committee to stop printing them during the war. When he retired, however, he was permitted to issue a final account of his work for the city.

A. F.

[The photograph reproduced is by Lafayette Limited.]

WILLIAM MACRAE TAYLOR, M.B., C.M., F.R.C.P.Ed., F.R.C.S.Ed.,

Surgeon Apothecary to His Majesty's Household, Holyrood Palace.

WE regret to announce that the death occurred in London, on January 17th, of Dr. W. Macrae Taylor, a well-known Edinburgh practitioner. He had been in ill health for some months, but his death occurred with startling and unexpected suddenness.

William Macrae Taylor was born in 1872, the son of the late Dr. William Taylor of 12, Medville Street, to whose practice he succeeded. He was educated at Edinburgh Academy and afterwards at Edinburgh University, where he graduated M.B., C.M. in 1895. After graduation, he acted as resident in the Royal Infirmary successively with Sir Thomas Grainger Stewart, Mr. C. W. McGillivray, and Sir Halliday Croom, and afterwards as resident in the Royal Maternity Hospital. His inclinations for specialization tended towards gynaecology; he became a Fellow of the Royal College of Surgeons of Edinburgh in 1899; at a later period, in 1923, he obtained the Membership of the

Royal College of Physicians of Edinburgh, proceeding to the Fellowship four years later.

In addition to conducting a busy general practice, Dr. Taylor acted for over twenty-five years as medical officer to the Cargilfield School for boys near Cramond; he was regarded as an authority of special experience in the diseases and physical condition of school children. He was appointed apothecary to the King's household at Holyrood house in the spring of 1929, in succession to the late Dr. D. J. Graham. Apart from his professional work, Dr. Taylor interested himself actively in many of the practical and social medical activities of Edinburgh, and several societies owed much to his fostering care. For a number of years he acted as treasurer, and for a time he was president, of the Royal Medical Society, and did much to restore the prestige of this ancient society at a time when it was in considerable difficulties. He was for a period treasurer of the Obstetrical Society and of the Medico-Chirurgical Society of Edinburgh, as well as of the Tuberculosis Society of Scotland.

Dr. Taylor rendered valuable services both in the South African and the great war. In the Boer war he served as a surgeon-lieutenant attached to the Northamptonshire regiment, and at the commencement of the great war he held the commission of major in the R.A.M.C., being attached to the 1st Lowland Brigade, Royal Field Artillery. With his unit, in 1915, he went to France, and was appointed D.A.D.M.S. to the 69th Division. He served subsequently on the Italian front, and was officer in charge of the medical division of the 38th Stationary Hospital, later being in charge of the convalescent home at Porto Fino, Italy. Dr. Taylor's death will leave a great gap in Edinburgh medical circles, where he did much hard work gratuitously in the organization of medical activities. His pleasant and cheerful personality will be greatly missed by his medical colleagues and his patients. He is survived by a widow and three children.

Professor G. Grey Turner, F.R.C.S., writes: As the direct result of the ignorance which surrounded *x*-ray workers in the early days, before the necessity for protection was understood, another operator has died—namely, Mr. THOMAS DODD of Newcastle, who succumbed in his sixty-fourth year in the early days of last December. Dodd was a remarkable man, for he began his working life as a porter in the old Infirmary in that city, but by his own efforts he qualified as an engineer, and it was in that capacity that he was occupied when the *x*-ray department was started, or rather when the first machine was installed in a sort of cellar in the old hospital. Dodd was appointed as technician, and from that time, twenty-eight years ago, he was continually at work in the departments as one succeeded another. Many years ago the condition of his hands attracted attention, but it was only during the last ten years or so that the more serious developments occurred which finally led to his death. Losing first one finger and then another, and all the time enduring an advancing dermatitis, he firally developed a secondary mass of glands in the axilla. This became infected, and there rapidly followed an extension of the growth, which soon involved a large area of the parietes and ultimately involved the chest and mediastinum. His end brought relief to a period of long suffering borne with remarkable fortitude, for he was by then only too familiar with the sequence of events which invariably follow in similar cases. Dodd was a keen worker, intensely interested in his subject, and very expert at its technical details. During the war, when the department was sadly depleted and at the same time immensely overtaxed, he undertook an enormous amount of work, and was in every way extremely helpful. His powers of localization by the simplest technique were really exceptional, and whenever he had the co-operation of the surgeon it was seldom that the methods he employed failed to localize an errant foreign body. One of his hobbies was photography, and he made a collection of pictures illustrating the days in the old Infirmary and the various developments associated with the present institution. Mr. Dodd was buried at St. Andrew's cemetery, his funeral being attended by his co-workers in the *x*-ray department, as well as by many members of the staff of the Royal Victoria Infirmary and of the College of Medicine, who were anxious to pay a last tribute to his memory.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has this week approved the ratification by Britain of the "optional clause" accepting arbitration in international disputes. The economic and fiscal relations of the Empire have been debated, and the Collecting Charities (Regulation) Bill read a second time.

On January 28th the Parliamentary Medical Committee was addressed at the House of Commons by Sir Hubert Bond on the Mental Treatment Bill. After two hours' discussion the meeting was adjourned. Mr. Greenwood, the Minister of Health, has arranged to receive several deputations to put points of view about this bill, and he hopes to prepare amendments which will make it more nearly a non-controversial measure when it comes before the House of Commons. The relationship of local authorities with the Board of Control, and the wisdom of certification of the insane, are two contested aspects of the bill. It is understood that Mr. Greenwood will not agree to propose the abolition of certification in all cases, though there is a suggestion that he may consider a statutory probation of a fortnight.

It is anticipated by members of the Government that when the Commons considers the Lords' amendments to the Road Traffic Bill it will accept that in which—as reported hereafter—the House of Lords inserted a provision to secure that voluntary hospitals should be compensated for treating third persons injured in motor accidents.

Mr. R. A. Taylor has given notice that when the House of Commons goes into committee on the Civil Service Estimates he will move a resolution on maternity and child welfare. On the same vote Mr. D. R. Grenfell will open a general debate upon public health.

Miss Bondfield states that the Government hopes to introduce the Hours of Industrial Employment Bill before Easter.

On January 24th the Midwifery, Maternity, and Child Welfare Bill was withdrawn. The measure had failed to secure second reading. It was introduced by a private member.

In the House of Commons, on January 28th, the Children (Employment Abroad) Bill was read a second time.

In the House of Lords, on January 27th, the Unemployment Insurance Bill was read the third time and passed.

Road Traffic Bill.

Motor Accidents and the Voluntary Hospitals.

In the House of Lords, on January 27th, the report stage of the Road Traffic Bill concluded. Earlier in this stage, on January 23rd, Lord LUKE moved to add a new subsection to Clause 35. This clause lays down requirements in respect of the insurance policies to be taken out by motorists. Lord Luke's proposed addition ran:

Where any payment is made by an authorized insurer under a policy issued under this part of this Act in respect of the death of or bodily injury to any person arising out of the use of a motor vehicle on a road and the person who has so died or been bodily injured has to the knowledge of the authorized insurer received treatment in a hospital in respect of the fatal or other bodily injury so arising, there shall also be paid by the authorized insurer to such hospital the expenses reasonably incurred by the hospital in affording such treatment to an amount not exceeding twenty-five pounds for each person so treated.

Lord Luke said the amendment concerned the hospitals near trunk roads. In these hospitals beds were filled with people injured in motor accidents, to the exclusion of local patients. He recalled that the same proposal, when brought forward in committee, had been strongly supported by the Peers. Since then those who put it forward had visited the Ministry of Transport, taking with them an amendment which had been approved by the Voluntary Hospitals Committee of King Edward's Hospital Fund. They had understood that Earl Russell, who was in charge of the bill, would move the amendment himself, but had later learnt that he could not do so. Lord Luke suggested that a premium of a shilling or two would cover the risk to the hospitals of the expense of attending the injured.

Lord KNUTSFORD said it would disappoint hospitals all over the country if the Government did not accept the amendment. Under the clause and the amendment the duty of an insurance company would be first to pay damages to injured persons for loss of limb, and so on, and, after satisfying those damages, to pay up to a maximum of £25 for treatment of what might be a serious case, involving the hospital in much expense. Already insurance companies had to fix their premiums to cover medical expenses. It seemed unreasonable that when the expenses were incurred in a hospital which made no charge the companies should escape a reasonable payment. The hospitals did not wish to make any legal charge against any patient. The movers of the amendment realized that an insurance company was only liable to cover the legal liabilities of the holder of a policy, whereas there was no legal liability to a hospital.

Lord PONSONBY OF SHULBREDE, the newly appointed Parliamentary Secretary to the Ministry of Transport, said that what seemed a clear case had been put for the hospitals. The Ministry was sympathetic to the principle underlying the claim, and wished it could be made practicable. It was irrelevant to the present bill, and the Government could not accept the amendment, which involved an entirely new principle of insurance. If, as Lord Knutsford said, the hospitals were reluctant to put forward a legal claim on a patient, how could the Government place the liability on the insurance companies by Act of Parliament? The Government would like to assist the hospitals, but must resist the amendment.

The Earl of OXSLOW contended that as the clause before the House was headed "Requirements in respect of policies" and dealt with insurance, the question of hospitals was germane to the bill. The principle of the amendment had been strongly recommended by the Voluntary Hospitals Commission. To prove the difficulties of hospitals Lord Onslow cited figures from the Royal Surrey County Hospital, which was situated near the Portsmouth road. The hospital received 156 road accident cases in 1927, 170 in 1928, and 153 in 1929. The average number of days in hospital of each case was 2.34, and during the whole time fifteen beds were constantly occupied by road cases. Most were men, and the hospital only had seventy beds for men. The hospitals did not complain at taking these cases, but when compensation was paid it seemed fair that they should receive some.

Earl HOWE said the number of motor cars in the country was not going to decrease, and the bill, as it stood, would, he thought, decrease public safety on the roads.

Lord ARMSTRONG said he was chairman of the Royal Victoria Infirmary, Newcastle, which had 550 beds. A ward of thirty beds had to be reserved entirely for motor accidents, and the cost to the infirmary was estimated at £5,000 a year.

Lord STANLEY OF ALDERLEY pointed out that the only extra burden the insurance companies would be called upon to pay would be in the case of a patient taken to a voluntary hospital. They already had to pay if he were taken to a private doctor or to a Poor Law infirmary. He pointed out that the amendment did not cover persons injured by their own driving. It was possibly undesirable to give hospitals the right to claim in such cases except against a voluntary fund. Might not motorists' associations be invited to agree that there should be a small amount added to the cost of a driving licence, which sum should be administered by the Ministry of Transport or the Ministry of Health for the benefit of hospitals to which motorists were taken after accidents caused by the carelessness and negligence of drivers or pedestrians?

The Earl of DONOUGHMORE said that, as chairman of a bureau of hospital information that dealt only with the provinces, he knew this grievance was found all over the country. He appealed to the Government not to resist the amendment. He would have liked to go further, as he knew the circumstances.

Lord SALISBURY also hoped that the Government would reconsider its attitude.

Earl RUSSELL said Lord Stanley of Alderley's proposal of a levy on each driving licence to form a central fund was a new departure, yet free from technical and legal objections. He had admitted the foundation of the case for the amendment. Since the committee stage there had been conferences at the Ministry of Transport which showed that advocates of the amendment were firm that in no circumstances should hospital charges be a legal liability. Moreover, these noble Lords did not like his suggestion of a flat rate collection on every driving licence. He had pointed out that under the amendment the hospitals would not recover in all cases of accident, but only where the injured person was himself entitled to recover from an insurance company. The advocates of the amendment had said that would satisfy them for the moment. He thereupon had promised that an attempt would be made to draft some clause of a reasonable and practicable character. The Ministry was unable to draft such a clause, either to be moved by the Government or accepted from the other side. The amendment, as moved, violated fundamental principles. It would place on the insurance company a liability imposed by statute but no part of their original contractual liability to the insured person. There was another aspect. It was difficult to go on talking about voluntary hospitals when money was compulsorily raised for them by statutory obligation. In making this claim voluntary hospitals were upon a slippery slope. He could not guarantee that if the obligation were imposed a small increase of insurance premiums would suffice. In the case of the person whom the bill allowed to be his own insurer, the amendment would add £10 or £12 to the claim which he had to pay for damages. Moreover, if there was a substantial increase of insurance premiums, or if anything else caused a sense of grievance in the minds of motorists, voluntary contributions to hospitals might fall off. It was impossible for the Government to accept the clause, but if the House liked to impose a flat rate of a shilling or so on licences no principle would be violated.

Despite this declaration the House agreed, without a division, to insert in the bill the subsection proposed by Lord Luke.

Prevention of Venereal Disease.

Mr. ALEXANDER, in reply to Mr. Cecil Wilson on January 23th, said that the Committee of Inquiry on Venereal Disease, over which Lord Trerethin presided in 1923, concluded that substantial results might reasonably be expected to follow from the use of prophylactic measures. The committee did not think that there was any justification for putting obstacles in the way of individuals who desired to procure disinfectants as a measure of protection against venereal disease. It was therefore proposed to continue to provide such facilities for the voluntary use of naval personnel. No coercion was employed to induce men to make use of these facilities. On the other hand, every endeavour was made, by means of lectures, to warn them of the dangers of promiscuous sexual intercourse, and to inculcate a healthful morale by the provision of organized games, recreation, and entertainments at all ports, at home and abroad.

On the same day Mr. SHAW informed Mr. C. Wilson that he was advised that the method of prevention of venereal disease by means of early disinfection had been shown to be generally efficacious. It had therefore been retained in the army with a view to reducing venereal disease.

Mr. WILSON, in his question, asked whether Mr. Shaw's attention had been called to the statements in the official reports on the health of the army concerning the provision of prophylactic outfits for self-disinfection after exposure, and, in particular, to the statement in the 1925 Health Report, which showed that out of 968 cases of venereal affection 181 men endeavoured to use the prophylactic outfit but used it incorrectly, that 207 men used it correctly but were infected, and that 580 men, although carefully instructed, did not use the prophylactic; and if, "having regard to the youth of many of the personnel of the army, the repugnance of many people to the State provision of such prophylactic packets, and their doubtful medical value," he would order that such provision be discontinued.

Radium.

Mr. ARTHUR HENDERSON, in reply to Mr. Mander, on January 22nd, said that up to now the League of Nations had taken no action with regard to the production and sale of radium. He was not aware that any action by the League was under consideration.

Mr. GREENWOOD, replying to a question on January 27th, said no part of the moneys voted by Parliament for the purchase of radium, which were limited to £100,000, had been placed at his disposal. The whole of this £100,000 from public funds formed part of the money held by the Radium Trust, which was not appointed by him, but was constituted by Royal Charter.

Psittacosis.

In reply to Captain Eden, on January 23rd, Mr. GREENWOOD said that all recent alleged cases of psittacosis in this country which had come to the notice of the Ministry of Health had been studied by that department, in some instances medical officers of the Ministry taking part in investigations. Further administrative action would be considered as soon as present inquiries were completed. Dr. VERNON DAVIES asked the Ministry to consider the possibility of inviting all port medical officers of health to pay particular attention to all parrots being brought into the country. Captain EDEN asked whether there was at present no obligation to report cases of psittacosis, when diagnosed, to the medical officer of health, and whether notification should be compulsory. Mr. GREENWOOD said he believed all relatively rare diseases were reported to the medical officers of health as soon as they occurred.

On January 27th Dr. VERNON DAVIES asked the Minister of Health if he was aware that, owing to the fact that four deaths had taken place in Germany recently from psittacosis, the authorities there had placed a ban on the import of parrots into that country. Dr. Davies asked the Minister to consider the advisability of taking similar action in this country. Miss S. LAWRENCE replied that Mr. Greenwood had seen newspaper reports that the action referred to had been taken in Germany, but he had no official information. On the advisability of taking similar action in this country, he could not at present add anything to the answer given on January 23rd to Captain Eden.

Small-pox.—Mr. GREENWOOD, on January 23rd gave provisional figures for small-pox cases in England and Wales during the fifty-two weeks ended December 28th, 1929. They were: 9,026 cases in England and Wales, excluding London and 1,903 in London. Among these cases, 39 deaths occurred which were classified as small-pox.

The School Age.—Answering Dr. Vernon Davies, on January 23rd, Sir C. TREVELYAN stated that the raising of the school age would not in itself involve any material increase in the personnel and cost of the school medical service. England, he said, was the only country in which compulsory education began at 5 years of age.

Slum Clearance.—Mr. GREENWOOD told the House of Commons, on January 23rd, that he could not state what amount of overcrowding now existed in London. The latest complete statistics available were those of the census of 1921, since when the population of the County of London was estimated to have decreased by 55,000 and the number of houses to have increased by 39,099. In England and Wales work had been in progress since last May on eighty-nine slum clearance schemes, three of which, involving provision of accommodation for 697 persons, were completed by the end of September.

Sale of Poisons as Disinfectants.—Mr. CLYNES told Lord Fermoy, on January 27th, that his attention had not been called to the increasing sales of poisons in the form of disinfectants. The report of the Departmental Committee on the Poisons and Pharmacy Acts was expected shortly, and would be laid before Parliament. Under the existing law he had no power to add to the schedule of poisons, such powers being vested in the Pharmaceutical Society, whose action had to be approved by the Privy Council.

National Health Insurance.—Lord ELMLEY asked Mr. Greenwood, on January 23rd, whether in the case of men who had been insured under the National Health Insurance Act for three years or more he would consider abolishing the existing period of three days before any benefit could be drawn. Mr. GREENWOOD replied that payment of sickness benefit from the first day of incapacity, instead of the fourth, might be made under the present law where an approved society was able to make the necessary financial provision out of a disposable surplus and the members decided to do so. Any general abolition of the normal waiting period of three days would necessitate an increase in the contributions, and would entail difficulties in administration. He was not aware that there had been any demand for such a change from the societies.

Registration of Nurses.—Mr. GREENWOOD, replying to Dr. Morris-Jones on January 23rd, said he did not intend to introduce legislation to amend the Nurses Registration Act, 1919. Dr. MORRIS-JONES asked if Mr. Greenwood knew that dissatisfaction had been expressed by representative organizations against recent decisions of the General Nursing Council. Mr. GREENWOOD answered that there might be dissatisfaction, but there were many more pressing subjects for legislation. Dr. MORRIS-JONES further asked Mr. Greenwood to draw the attention of the General Nursing Council to their duties and to the Act. Mr. GREENWOOD said he must assume the Council was familiar with the Act.

Inflammable Films in Cinemas.—In reply to Dr. Forgan, Mr. CLYNES stated, on January 23rd, that in the present state of development it was not feasible, on technical grounds, to forbid the use of inflammable types of films in cinema theatres, but that present regulations, properly carried out, reduced the risks to a minimum. If investigations into the recent Paisley disaster showed that these regulations required amendment at any point, immediate action would be taken.

Medical Examination of Young Persons at Sea.—On January 28th Miss BONDFIELD informed Sir Basil Peto that the draft convention relating to the compulsory medical examination of children and young persons employed at sea, adopted by the International Labour Conference at Genoa in July, 1920, had been ratified by twenty-one countries, including Great Britain, Canada, and India.

Opium Consumption in Calcutta.—Mr. WEDGWOOD BENN, replying to Major Pole on January 27th, said the consumption of opium per 10,000 of the population in Calcutta was 86 seers in 1928–29. The League of Nations standard of the limit of legitimate consumption per 10,000 of the population was suggested for the medical and scientific requirements of countries possessing a highly organized medical system. It had little applicability to the conditions of India, and was equivalent to about 6 seers per 10,000.

Notes in Brief.

Mr. Clynes is considering the question of extending the Metal Grinding (Silicosis) Scheme under the Workmen's Compensation Acts to employment on the machines known as Slack's machines, and hopes to come to a decision within a fortnight. Representations on the subject had been received from Sheffield workers and employers.

The commitments of the Government render the introduction of legislation dealing with excessive noise caused by faulty machinery, sirens, hooters, and mechanical appliances impracticable. Other considerations than those of public health would also arise in such legislation.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on January 23rd the degree of B.M. was conferred on G. Secker-Walker.

UNIVERSITY OF CAMBRIDGE.

A. B. APPLETON, M.D., University lecturer in anatomy, has been elected to a non-stipendiary Fellowship at Downing College.

At a congregation held on January 24th the degrees of M.B., B.Chir., were conferred on E. L. Graff, J. I. Sapwell, and T. K. S. Lyle, and the B.Chir. on C. D. Politeyan.

UNIVERSITY OF MANCHESTER.

DR. E. ST. G. GILMORE has been appointed an assistant lecturer in bacteriology.

CONJOINT BOARD IN SCOTLAND.

THE following candidates have been approved at the examination indicated:

FINAL EXAMINATION.—*Medicine:* E. T. Buck, W. H. Taylor, G. L. Chadha, B. W. Advani, R. K. Pal, K. Mikhail, M. D. D. Jayawardana, A. Paterson, J. A. R. Lavoipierre. *Surgery:* B. W. Advani, A. Paterson, J. A. R. Lavoipierre, N. Y. Labib, D. Millar. *Midwifery:* H. O. Parkinson, W. H. Taylor, G. L. Chadha, S. J. B. Collins, T. Y. Bhide, R. T. A. Morrow, R. K. Pal, K. Mikhail, M. K. Thiruvilangam. *Medical Jurisprudence and Public Health:* J. P. Walsh, E. R. Fothergill, C. M. Douglas, H. W. C. Robertson, T. F. Kirkpatrick, L. Ahmed, A. W. Turnbull, J. T. M. Fenton-Fyfe, G. D. Morgan, G. L. Whitton, B. A. Armitage, H. L. Lucas.

Out of 76 candidates entered the following were admitted L.R.C.P.Edin., L.R.C.S.Edin., L.R.F.P. and S.Glas.:

W. S. Lee, M. Freed, D. P. Dow, J. Schwartz, J. Kinnear, O. Y. Short, W. E. Faulkner, J. H. McGibbon, J. C. Coetzee, L. H. Abeyewardene, Margaret Leslie, T. G. Ward, E. O. Hagedorn, Florence L. M. Millard, H. S. Hamilton, G. Henderson, R. F. L. V. Harver, G. R. Parker, P. van der Lith, I. El-Aroussi.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—M. Asaad, L. P. Clarke, K. Graftdyk, H. W. Maurer, M. Naylor, M. S. Rappoport, Z. Risk, T. G. Robinson, F. A. Yarde.

MEDICINE.—R. F. M. Child, V. J. H. Coidan, C. E. P. Davies, W. J. D'Rosario, K. Graftdyk, C. B. Jennings, A. Kellner, C. Skinner, P. Somasunder.

FORENSIC MEDICINE.—T. Chandrasekharon, A. R. Edwards, E. A. Freyswirth, C. B. Jennings, E. Lethem, P. Somasunder.

MIDWIFERY.—H. C. Halge, E. Jacomb, F. Lethem, M. S. Rappoport.

The diploma of the Society has been granted to Messrs. R. F. M. Child, C. E. P. Davies, W. J. D'Rosario, A. Kellner, H. W. Maurer, T. G. Robinson, F. A. Yarde.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

A COUNCIL meeting of the British College of Obstetricians and Gynaecologists was held in London on January 21st.

It was reported by the honorary secretary that a large number of names had been received from the Dominions in regard to the election of Foundation Fellows and Members of the College.

Two memorandums, one on the use of anaesthetics in labour and another on maternal mortality, drafted at the request of the Ministry of Health, were submitted to the council by a special committee elected for the purpose; both memorandums were approved by the council.

It was agreed that the election of the council by popular vote should take place in May, as foreshadowed at the annual meeting held in December last.

Medical News.

THE annual dinner of past and present students of the Royal London Ophthalmic Hospital will be held at the Langham Hotel, Portland Place, on Thursday, February 13th, at 7 for 7.30 o'clock. The chairman will be Mr. J. Herbert Fisher, consulting surgeon to the hospital. The price is 15s. (excluding wines). An early reply is requested to Mr. Rupert Scott, 70, Harley Street, W.1.

PROFESSOR FRANCIS R. FRASER will give an address entitled "Before the finals; and after," at a meeting of the Metropolitan Counties Branch of the British Medical Association to be held in the Association's House, Tavistock Square, W.C., on Tuesday, February 11th, at 5.30 p.m. Fourth and fifth year students and recently qualified practitioners are cordially welcome. Tea and coffee will be served at 5 o'clock.

THE next quarterly meeting of the Royal Medico-Psychological Association will be held on February 4th at the Davis Lewis Colony, Warford, near Alderley Edge, Cheshire. Papers will be read by Dr. Alan McDougall, Dr. Richard Handley, and Major D. E. Dhunjibhoy.

AT a meeting of the Pharmaceutical Society of Great Britain, to be held in the lecture theatre of the society's House, 17, Bloomsbury Square, W.C., on Tuesday, February 11th, a lecture, illustrated with lantern slides, will be given at 8.30 p.m., by Dr. T. G. Hill, professor of plant physiology in the University of London, on the biologic factor in plant anatomy. Scientific friends of members will be welcomed.

THE opening meeting of the winter session of the South West London Post-Graduate Association will be held at St. James's Hospital, Ouseley Road, Balham, S.W., on Wednesday, February 5th, at 4 p.m. Dr. R. G. Canti will demonstrate his cinematograph film on the biological aspect of radium. Tea will be served at 3.30.

THE Fellowship of Medicine announces that Professor Hugh MacLean will lecture in the House of the Medical Society, 11, Chandos Street, W., on Tuesday, February 4th, at 4 p.m., on the present position of gastric physiology and its bearing on gastric diseases. On February 6th, at 5 p.m., Mr. E. T. C. Milligan will demonstrate rectal cases at St. Mark's Hospital; and on Saturday, February 8th, Dr. Batty Shaw will demonstrate allergic pneumonia in the theatre at the Brompton Hospital for Consumption. There is no fee for attendance at this lecture or these demonstrations. From February 4th to March 1st (on Tuesdays and Saturdays), at 11 a.m., Dr. Porter Phillips and members of his staff will give lecture-demonstrations at the Bethlem

Royal Hospital. From February 10th to 21st, a special course in gynaecology will be held at the Chelsea Hospital, occupying some afternoons and some mornings. From February 11th to March 6th, on Tuesday and Thursday afternoons, at 2 o'clock, a course will be held at the Hospital for Tropical Diseases, by Dr. Carmichael Low and Dr. Philip Manson-Bahr. A four weeks' course in dermatology will be conducted at St. John's Hospital for Diseases of the Skin, from February 17th to March 15th, consisting of instruction in the out-patient department in the afternoons and evenings, and a series of lectures twice a week. Practical pathological demonstrations can be arranged if desired. A comprehensive course in diseases of children will be held at the Children's Clinic, in association with several other hospitals, from February 24th to March 9th. An afternoon course, consisting of demonstrations on the diagnosis and treatment of the eye, will be conducted at the Royal Eye Hospital from February 24th to March 8th. Copies of all syllabuses and of the *Post-Graduate Medical Journal*, with information regarding the general course of work at the associated hospitals, may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE West London Medico-Chirurgical Society will hold a cinematograph demonstration in the out-patients' hall of the West London Hospital, Hammersmith, on Friday, February 7th, at 8.30 p.m., when films will be shown of (1) William Harvey and the circulation of the blood, and (2) the mechanism of the brain (Pavlov).

THE Minister of Health and the Minister of Labour received a deputation on January 22nd from the Trade Union Congress General Council on the subject of social insurance. Mr. A. Hayday, M.P., drew the attention of the two Ministers to the following resolution passed at the Trade Union Congress held at Belfast in September last: "This Congress resolves that the Government be requested to appoint a commission of inquiry with a view to consolidating and merging the various contributory schemes of social insurance, to be administered by a department charged with the special duty of social insurance administration. Further, that the commission should also inquire into the various non-contributory social services for the purpose of reporting upon the possibility of reorganizing same." Mr. Hayday then referred to the anomalies inherent in the present piecemeal methods of administration, and expressed the hope that the inquiry proposed in the resolution would be undertaken. The Minister of Health said that the Government realized the need for an inquiry into the possibility of co-ordinating the national social services, but the subject was so large that he felt the inquiry could only be undertaken by the Cabinet itself. A Cabinet Committee had been appointed with wide terms of reference to make this investigation, and was already at work. The Minister of Labour said that any suggestions from the T.U.C. General Council would be carefully examined by the Cabinet Committee.

THE sixth annual report of the Ella Sachs Plotz Foundation for the Advancement of Scientific Investigation gives details of the twenty-four grants made during 1929. In the six years of its existence the Foundation has made ninety-five grants, aiding those engaged in scientific research in Europe, Asia, and Africa, as well as in America. Two of the recipients of grants during 1929 were British. Applications for grants tenable during the year 1930 to 1931 should be sent before May 1st to Dr. J. C. Aub, Huntington Memorial Hospital, 695, Huntington Avenue, Boston, Massachusetts.

REFERENCE was made in our columns on November 16th (p. 907) to a paper read by Dr. Cuthbert Dukes before the Society of Public Analysts on the subject of the heat resistance curve: a new bacteriological test for pasteurized food. His paper has now been published in the January issue of the *Analyst*.

DR. DONALD MCINTOSH JOHNSON of Bury was called to the Bar at Gray's Inn on January 27th.

GEHEIMRAT SPATZ has recently resigned the editorship of the *Münchener medizinische Wochenschrift*, which he had held for forty-four years, and has been succeeded by his son, Dr. Hans Spatz.

WE are informed by the directors of the Carlsbad Post-Graduate Medical Course that the next (twelfth) course will take place from September 14th to 20th, 1930. Particulars may be obtained from the director, Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

DR. PAUL RAVAUT, physician to the Hôpital St. Louis, has been elected a member of the Académie de Médecine.

THE following appointments have recently been made in the Lille Faculty of Medicine: Dr. E. Doumer, professor of therapeutics; Dr. Duhot, professor of therapeutic hydrology and climatology; and Dr. Ingelraus, professor of morbid anatomy and general pathology.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9561, 9562, 9563, and 9564* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

OSTEITIS DEFORMANS.

"H. G." asks for suggestions as to the treatment of Paget's disease of bone in a case of three years' duration. Has light therapy been tried, and, if so, with what results?

INTESTINAL FLATULENCE IN THE AGED.

"NEMO" writes: I should be grateful for suggestions for the relief of flatulence, particularly in the large bowel, in a patient, aged 69, who has cardiac disease, is an old asthmatic, and has viscero-ptosis. Most drugs have been tried without effect; even charcoal and the flatus tube do not afford relief. The patient is fairly well except for this distressing distension, which occurs mostly in the evenings. There is no obstruction in the bowel.

EFFECT OF TROPICS ON MENORRHAGIA.

DR. MARY N. FYSH (Whitstable) writes in reply to the inquiry in the *Journal* of January 25th (p. 177): My experience in Ceylon was that menorrhagia was made much worse by residence in the low country, and I should say that any patient suffering in this way should be advised against going to the tropics.

THE ETERNAL COLD QUESTION.

MR. W. S. T. NEVILLE (Harrogate) writes: In answer to the inquiry of "H. H." (January 18th, p. 133), his colds are probably due to an ethmoiditis. The only sure way of diagnosing the cause is to have an *x*-ray photograph taken by one who owns a Potter-Bucky screen. Without this, sinus *x* rays are not clear. The septum operation would not benefit him if he had sinusitis also.

DR. A. E. DEDITT (Southampton) writes: I submit that the constantly recurring colds may be due to a chronic pharyngitis assuming the subacute form whenever so provoked by a gastric catarrh; that this gastric catarrh (manifested perhaps only as "a cold") should be prevented by abstaining from tea, coffee, and cocoa, fried foods, and pastries; alcohol in all its forms should be avoided, and, in fact, no drink should be taken at any meal excepting milk and thick soups. Water, however, or lemonade should be freely drunk between the meals, and an evacuation of the bowels obtained twice daily—that is, once every twelve hours. A tablespoonful of plain bran with the morning or evening meal, or both, should be sufficient to overcome all tendency to constipation, provided other dietetic rules are observed, such as the free eating of fruit at morning and evening meals; of vegetables at the midday or evening meal, without fruit; and avoidance of excess of flesh foods.

"B. H." writes: Since "H. H." suffers from colds from November to March this might be due to insufficient ventilation. It is astonishing the number of houses which are kept hermetically sealed during the winter months: windows are painted up, to prevent their ever being opened; doors are kept shut and heavily curtained; fireplace chimneys are also blocked up. Free ventilation by day and night is highly necessary. If a change of climate is possible mountain air is the best—better even than sea air. "H. H." need not be in a room with open windows; these can be shut when he comes in and opened while he is out. For the rest, avoid being with people with infectious colds and see that all underclothes and sheets are well aired. When clothing has been worn it becomes very damp and should be hung by the fire. A bedroom gas-fire is a necessity. Otherwise clothing is taken off at night warm and damp, and put on in the morning cold and damp.

INCOME TAX.

Break in Professional Work; Motor Expenses.

"A. M." retired from general practice in March, 1925, but retained the car which he had been using. Since then he has done professional work in various capacities, including locumtenencies and colliery appointments. He is unable to agree with the inspector of taxes as to the amount to be allowed for motor car expenses.

*** It is, of course, clear that the whole of the expenses cannot be allowed, and the circumstances render it unusually difficult to arrive at a reasonable amount. We think that the inspector of taxes might accept, without the suggested corroboration, our correspondent's statement that under the arrangements made for his locumtenent work he had agreed to use his motor car. We suggest that in order to bring the matter to a definite issue "A. M." should make a careful estimate of the mileage per mile, having regard to the power, etc., of the car actually used. On the facts stated we agree that the allowance proposed by the inspector seems clearly inadequate. When "A. M." has made his computation on the basis suggested, he might find it helpful to see the inspector by appointment and discuss the question with him personally.

Partnership: Double Succession in One Year.

"W., M., and B."—W. and M. were in partnership until August 21st, 1929, when W. died; M. then bought the deceased's share in the practice and carried on as sole proprietor to December 31st, 1929; as from that date the practice has been owned by M. and B. in partnership. M. and B. have decided that it would be best for them to apply under Section 32 (1) of the Finance Act, 1926, for the tax liability to be dealt with as if the practice had been discontinued and set up again at December 31st, 1929. The inspector claims that if they exercise that option he will have to increase the assessment for 1928–29 to the amount of the profits of that year, to which W.'s executors very naturally object. What is the legal position?

*** As our correspondent very pertinently says, it seems strange, and opposed to the general principle underlying the provision in question, to make W.'s liability for 1928–29 depend on a decision taken in 1929–30 by his successors, leaving his executors (or himself if the change at August 21st, 1929, had arisen through retirement) no voice in the matter. As the section stands, however, we see no sound argument in law against the inspector's contention. The words used seem clear—after the change require . . ." (The italics are ours.) It seems from this that the consent of the partners before the first change is not necessary for the adoption of the current year's basis. Further, the adoption of that basis is linked quite definitely with the requirement that "the tax payable for all years of assessment by the person who until that time carried on the . . . profession . . . shall be computed as if it had been discontinued." The provisions dealing with discontinuance—Section 31 of the same Act—require the assessment for "the year preceding the year of assessment in which the discontinuance occurs" to be revised, so as to bring into charge the amount of the profits of that year. The matter has not, so far as we are aware, been before the Courts, though one can conceive circumstances which would justify a taxpayer in incurring that expense to obtain a judicial decision. In the meantime the words used in the section appear to us to put W.'s executors at the mercy of M. and B. if they desire to adopt the actual year so far as they are personally concerned.

LETTERS, NOTES, ETC.

COULD PREHISTORIC MAN SEE IN THE DARK?

MR. KEITH HENDERSON (Burleigh, Gloucestershire) writes: Dr. Todd-White in your issue of November 9th, 1929 (p. 884), which has only just been shown to me, asks if prehistoric man could see in the dark, or how, otherwise, were the cave drawings done? The answer is that prehistoric man, even as early as the Aurignacian period, had lamps. These, still preserved in most of the larger museums, are of stone—bun-shaped stones hollowed out at the top so as to contain oil. The oil (as chemical analysis of the charred residue shows) was animal fat, which gives out practically no smoke.

THE USE OF THE TONSILS.

DR. G. A. MOULDEN (Cheshire), with reference to the letter on the above subject by Dr. P. G. Dane (December 28th, 1929, p. 1228), writes: During the past two months I have seen seven cases of "cold" which have been a distinct departure from the usual type of case. The symptoms have been those of an ordinary cold—fullness and discharge from nose, general symptoms of aching in the limbs, cutis anserina, etc. In addition to these there has been complaint of severe sore throat, and in four cases vomiting has been a marked feature. On examination of the nose the turbinals were seen to be reddened, stringy muco-pus being present, but there was no noticeable congestion. On examination of the pharynx a vertical fold of inflamed tissue was seen on the posterior wall of the pharynx, immediately behind the posterior pillar of the fauces on either side. The tonsils showed no signs of inflammation at all. In one case, which I had the opportunity of examining with the post-nasal mirror, the reddening and swelling had extended to the region of the Eustachian opening and the fossa of Rosenmüller, and bilateral Eustachian obstruction was present, giving rise to an attack of acute catarrhal otitis media. This band of tissue, which extends from the tubal region to the tonsil region, appeared to be lymphoid tissue in a state of inflammation. Waldeyer's lymphatic ring seems to me, therefore, to be not merely aggregations of lymphoid tissue connected together by lymphatic vessels, with appreciable intervals between the aggregations, but to be a nearly complete ring of lymphoid tissue. Pharyngeal (adenoid) tissue being in continuity with tubal tissue and this tissue being nearly continuous with the faucial tonsil by means of the band of tissue I have described, the lower pole of the tonsil is intimately connected with the lingual tonsil, thus completing the ring. These different portions of the lymphatic ring are prone to attacks of inflammation, and these attacks may be limited to one or more distinct parts of the ring—for example, adenoiditis tonsillitis, or enlargement of the lingual tonsil, which is seen in influenza. To these I should add, on clinical grounds, an inflammation of the lymphoid tissue, behind and above the tonsil.

UNUSUAL CASE OF ATROPINE POISONING.

DR. F. C. PLUMMER (Liverpool) writes: I saw a lady, aged 67, in consultation with Dr. Caroline Lowe. The history was that there had been an attack of facial erysipelas, following a tour in Scotland in an open motor car. Four weeks later the patient complained of mistiness of vision. On examination iridocyclitis with posterior synechiae and vitreous opacities were found to be present in each eye. Three drops only of 1/2 per cent. atropine sulphate were instilled into each lower conjunctival sac. Half an hour later acute atropine poisoning set in, and one and a half hours later the patient was almost pulseless and much collapsed, and not till then were we informed of this alarming condition. It was several hours before recovery took place. As such an extraordinary reaction, following such weak atropine, was unknown to us, we sent the drops to be analysed. A well-known firm of analytical chemists was approached and reported 0.39 per cent. of atropine sulphate in the drops. This seems to be such an unusual condition of idiosyncrasy that we would be very glad to learn if any of your readers know of a similar case.

THE EPIDEMIC OF SORE THROAT AT BRIGHTON.

THE Chairman of the Brighton and Hove Hotels and Restaurants Association writes: I think it should be known among members of the medical profession, who so often send their patients here, that there have been no further cases of illness in Brighton and Hove as a result of what has been called the "sore throat scare." I have the personal assurance of the medical officers of health, Dr. A. Griffith of Hove and Dr. Rutherford Cramp, that no cases have come under their notice since the end of last year. The cause, as you may know, was traced to a certain milk supply in a particular part of the county; the source was fortunately found, the supplies stopped, and the danger removed. In no case, so far as it was possible to ascertain, was there any illness in the hotels, and this at a time when they were full to overflowing on account of the Christmas holidays.

THE GULF STREAM MYTH.

DR. A. MACBETH ELLIOT (London, S.W.7) writes: May one tilt a friendly lance at the "windmills" set flying by Dr. McNamara's theories for the variations in climate on either side of the Atlantic (January 25th, p. 172)? With Sancho Panza we are inclined to exclaim, "I know not these philosophies!" The solutions are further to seek, and the "two-way" theory, though fascinating in its simplicity, must call for deeper investigation. If Dr. McNamara would kindly indicate the title of his published article, and where it may be obtained, a further reply to the destruction of to-day's conceptions for the existence of the Gulf Stream might be forthcoming.

GENETIC RELATIONSHIPS.

DR. J. BARCROFT ANDERSON writes: In your abstract (January 11th, p. 76) of Professor J. P. Hill's Croonian Lecture on embryology, you represent him as claiming that there can, on embryological grounds, be no question of the genetic relationship of the anthropoid apes and man. If he has seriously attempted to prove this without the use of a hypothesis, I would greatly like to see that proof. But for those of us who agree with Darwin that the great majority of animal species to-day resulted by crossing from a much smaller number, and to those of us who hold that a genetic relationship between man and monkeys is necessitated by belief in the complete accuracy of the Scriptures, researches such as his might give some clue as to whether bears and other animals have also this genetic relationship, if any good purpose could be served by such research.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 35.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

7. **Late Sequels of Cardiac Infarction.**

CH. AUBERTIN and J. LEREBOULLET (*Arch. des Mal. du Cœur*, November, 1929, p. 705) point out that fibrotic areas and aneurysms of the heart are the most important pathological sequels of cardiac infarction. While the morbid anatomy of these lesions and the electro-cardiographic changes depending upon them have been closely studied, little attention has been paid to their symptomatology. The authors give a clinical account of a patient who had left ventricular insufficiency with relative mitral incompetence, and who was found at the necropsy to have a large fibrous plaque in the left ventricle. They have supplemented their report of this case by the study of fourteen others from the literature. In all of them similar post-mortem findings were made, and a study of their clinical histories revealed three principal clinical varieties: first, a latent form in which the patient died suddenly or from some intercurrent disease, the fibrotic area in the myocardium being discovered accidentally at necropsy; secondly, a type in which death had occurred in the last of a series of anginal attacks, without the development of cardiac insufficiency; and, thirdly, a variety showing cardiac failure and often mistaken for chronic myocarditis. The stages in the evolution of the last group are described. The initial phase of infarction is followed by gradual improvement and a period in which symptoms are latent; dyspnœa or oedema occurs subsequently, and is succeeded by tachycardia and cardiac enlargement; gallop rhythm, albuminuria, and Cheyne-Stokes breathing may appear. Lastly, a stage of gross mitral insufficiency supervenes, cardiac failure and death following. With the aim of establishing the symptomatology corresponding to aneurysm of the left ventricle, the authors have studied thirty-eight cases from the literature in which the condition was discovered at the necropsy. In these patients there were manifestations attributable to aneurysm, and those relating more directly to infarction of the heart. The symptoms of the latter group corresponded exactly with those due to gross myocardial fibrosis, while the principal indications of aneurysm formation were extension of cardiac dulness to the left, a diffuse cardiac impulse, and an expansile prominence of the upper part of the left border of the heart demonstrated by *x*-ray investigation.

98. **Tuberculosis of the Aorta.**

L. J. ADAMS (*Arch. Int. Med.*, November, 1929, p. 711) gives a clinical and pathological account of a case of tuberculosis of the aorta, and reviews the thirty-five other cases which have been found in the literature. Tubercle bacilli may reach the aorta by the blood stream, directly infecting the intima or being conveyed by the vasa vasorum; more commonly, the aorta is invaded by spread of a tuberculous process from without, in which case perforation of the intima may occur and death from acute miliary tuberculosis follow. Direct implantation of the bacilli upon the intima gives rise to chronic or acute tuberculous endaortitis, the former being liable to cause acute miliary tuberculosis, while the latter is more likely to constitute part of a previously established general miliary infection. Various pathological pictures may be presented where there is extension of disease to the aorta from without. The infection may spread from caseous glands, from tuberculous mediastinitis or pericarditis, or from vertebral disease. From these pathological processes aneurysm or rupture of the aorta may arise, or, on the other hand, death may be the result of generalization of the infection. The patient who was observed by the author had been ill for seven months and complained chiefly of cough and breathlessness, swelling of the legs, and pain on the right side. The tentative diagnosis was chronic interstitial nephritis with cardiac failure, while nocturnal paroxysms of dyspnœa, precordial pain, and a positive Wassermann reaction suggested the presence of syphilitic aortitis. The patient died with gradual failure after five months in hospital: at necropsy he was found to have old tuberculous scars and calcified nodules in the lungs, acute tuberculous involvement of the left pleura, and dense adhesions extending to the pericardium. The aortic involvement was considered to be an extension from the diseased pericardium, no gross tuberculous tissue being found attached to the aorta outside the pericardial cavity. Microscopic examination showed a tuberculous process involving the first part of the aorta and penetrating into the media.

99. **Influenza in the Aged.**

P. THIBAULT (*These de Paris*, 1929, No. 373), who records 29 illustrative cases in patients aged from 23 to 87, states that epidemics of influenza have occurred every year in the home for the aged at Angers during the period 1921 to 1929. The epidemic appears during the cold season, and its course is closely connected with the external temperature. The gravity of the outbreaks is always very great, the mortality ranging from 28 to nearly 70 per cent. The onset is sometimes sudden, but as a rule is insidious. Respiratory disturbance dominates the scene, and pneumonia is a frequent occurrence. The physical signs are very slight at the time of the first few examinations, though there is usually considerable constitutional disturbance. Fall of temperature occurs after an aggravation of the general condition, but there are frequently one or more recurrences of fever four or five days later. Convalescence is protracted. The chief complication, for which a careful search should be made since its onset is very insidious, is empyema. In bedridden paralytic patients the onset of influenza is very gradual, and the disease is liable to be complicated by bedsores. In cardiac cases loss of compensation or oedema of the lung may occur either as a complication or as a mode of onset. A dry tongue, intense dyspnœa with rapid superficial respiration, dark and scanty urine, delirium, especially of a quiet kind following a condition of restlessness, and the development of bedsores are unfavourable signs. Neither prophylactic nor therapeutic vaccination has yielded the results expected. Isolation of the patients is imperative.

100. **Pneumococcal Meningitis.**

R. S. KUNKEL (*Clifton Med. Bull.*, October, 1929, p. 210) records five cases of pneumococcal meningitis in patients aged from 8 to 86 years. In one case it followed an injury, one patient had rhinitis, while the other three gave no history of recent trauma or acute infection. All the cases ended fatally after the disease had lasted from twelve hours to nine days. The most persistent symptoms were pain in the neck and headache. Albuminuria was present in three cases and hyperglycaemia in two, in one of which there was glycosuria; the pressure of the cerebro-spinal fluid was markedly increased in any. The fluid in all was not yellow in colour. The sugar content of the spinal fluid was low, in a few cases indeterminable. Kunkel concludes that primary pneumococcal meningitis is more frequent than has hitherto been supposed, the portal of entry being the upper respiratory tract. It may be associated with other conditions which may mask the diagnosis, and in obscure cases a history of severe head injuries may be important. Conservative symptomatic treatment is practically useless, and at present there is no definite means for combating the disease.

101. **Cerebellitis in Varicella.**

R. RENDU (*Journ. de Méd. de Lyon*, December 5th, 1929, p. 767) records the case of a girl, aged 6 years, the subject of bilateral otorrhœa since an attack of measles at the age of 3; three weeks after adenoidectomy she developed during convalescence from varicella a severe cerebellar syndrome consisting in intense vertigo with astasia-abasia, nausea and vomiting, torpor, prostration, asynergy, disturbance of speech, and slowing of the pulse. The symptoms suggested a cerebellar abscess, but permission for operation was refused. Complete recovery followed a fortnight later. Galli in 1925 recorded two similar cases of involvement of the cerebellum in varicella (see *Epitome*, November 28th, 1925, para. 477). BERTOYE and GARCIN (*Lyon Méd.*, December 1st, 1929, p. 651) report a similar case, in a girl aged 3½ years, who, while recovering from a typical attack of varicella, developed a cerebellar syndrome consisting in ataxia, adiadokokinesis, and generalized tremor. Complete recovery ensued within a fortnight without any special treatment.

102. **Immunization against Diphtheria in a Boarding School.**

L. MARTIN, G. LOISEAU, and A. LAFFAILLE (*Bull. de l'Acad. de Méd.*, November 19th, 1929, p. 336) record the results of active immunization against diphtheria by Ramon's anatoxin at the departmental boarding school at Vitry during the period January, 1926, to November, 1929. As the ages of the patients ranged from 6 to 13 years, the Schick test was first applied, and those who were found to be susceptible were given three injections of anatoxin with an interval of a fortnight between each. A fortnight after the last injection the Schick test was

again applied, and from 95 to 97 per cent. were then found to be immune. Those who still gave a positive reaction received a fourth dose of anatoxin, and at the end of another fortnight all gave a negative reaction. The result of this systematic method of immunization was that no case of faucial diphtheria occurred among those who had received the three doses of anatoxin, in spite of frequent exposure to infection.

103. Lamblia Infestation.

J. N. NOOTHOVEN VAN GOOR (*Nederl. Tijdschr. v. Geneesk.*, November 30th, 1929, p. 5557), who records six illustrative cases in patients aged from 4 to 38, states that lambliae may be found in the contents of the upper part of the small intestine without cysts being present in the stools. No proof has yet been adduced that lamblia is pathogenic for the duodenum; the evidence for this in recent literature rests almost exclusively on clinical data, whereas pathological confirmation is entirely lacking. The duodenal juice in which lambliae are found does not as a rule show any inflammatory products. The presence of a large quantity of lambliae in the bile does not justify the conclusion that these flagellates have come from the gall-bladder. The author comes to the conclusion that it is very improbable that *Lamblia intestinalis* causes an infection of the gall-bladder and bile ducts.

104. J. M. MADINAVEITIA (*Arch. de med., cir. y esp.*, November 30th, 1929, p. 525), who records fifteen illustrative cases in patients aged from 19 to 46, performed duodenal intubation to detect the presence of lambliae in eighty-eight patients, one half of whom had a history of cholelithiasis and the other half had not; he found lambliae present in fifteen, or 18 per cent. Nine of these patients were females and six were males, four suffered from diarrhoea and four from constipation, while in the rest the stools were normal. Study of the gastric chemistry in twenty-five cases showed that only five had complete achylia, while eight had more or less intense hyperchlorhydria, and the remainder a normal gastric juice. A great variety of drugs were used to get rid of lambliae, but none was successful. The only method of any avail was repeated duodenal intubation, though this had the drawback of causing considerable inconvenience to the patient.

105. Jaundice during Antisyphilitic Treatment.

LAFOURCADE, J. FOUQUET, and NATIVELLE (*Bull. Soc. Française de Derm. et de Syph.*, November, 1929, p. 1080) remark that jaundice occurs so frequently during arsenobenzol treatment that it would seem that the majority of cases of icterus in syphilitic patients ought to be found among those treated with that drug. They found, however, that in only 5 out of 23 cases did it occur in patients under arsenobenzol treatment, the remaining 18 being patients who were receiving mercurial or bismuth treatment and who had not had novarsenobenzol for two or three months. The authors remark that it may be objected that since the majority of these patients had had novarsenobenzol previously, the jaundice was due to a delayed toxic effect; however, of the 13 cases under grey oil treatment the jaundice disappeared after a further course of novarsenobenzol, and usually after the second or third injection. They conclude, therefore, that toxic icterus does not occur more frequently after arsenical treatment than after the administration of bismuth or mercury.

106. Haemoglobinuria in Chicken-pox.

A. D. KAISER and W. L. BRADFORD (*Arch. of Pediat.*, September, 1929, p. 571) record the case of a boy, aged 2½ years, who developed haemoglobinuria in the incubation stage of chicken-pox six days before the appearance of the eruption. The Wassermann reaction was persistently negative. Although examples of haemoglobinuria associated with various exanthemata have been recorded, no case of its occurrence during varicella has previously been described. The Donath-Landsteiner chilling reaction was positive in the serum during the attack, but was not demonstrated after recovery. The complete restoration to health which took place is attributed to blood transfusions.

107. Generalized Vaccinia.

J. J. ZOON (*Nederl. Tijdschr. v. Geneesk.*, November 23rd, 1929, p. 5484) records a case of a previously unvaccinated woman, aged 31, who had suffered from Hebra's prurigo with eczematization since childhood. As the result of dressing the arms of her husband and son, who had recently been vaccinated, she developed an almost confluent eruption on the back, abdomen, and axillae, while on the face, neck, scalp, and limbs it was less profuse. The temperature was 102.2°, and the patient appeared very ill. Inoculation of a rabbit's cornea with the contents of a pustule showed a large number of Guarnieri's corpuscles. The patient was then injected with 50 c.cm. of sheep's antivaccinal serum, and rapid and complete recovery took place. The case is exceptional in that generalized vaccinia in most instances has occurred when the patient himself has recently been vaccinated. Opinions are divided as to whether generalization of vaccinia takes place along the blood or lymphatic stream; most writers, however, are in favour of an endogenous extension. Zoon adds that this case shows how the production of generalized vaccinia is furthered by the existence of an irritable dermatosis.

Surgery.

108. Tuberculosis of the Thyroid Gland.

T. B. JONES (*Amer. Journ. of Surg.*, November, 1929, p. 629), who records two cases, states that tuberculosis of the thyroid gland is a very rare condition, and some pathologists have even insisted that it never occurs. The first of his cases presented the more unusual pathological type, that of a tuberculous abscess; from the appearance at the operation it seemed as if the gland had been the seat of rather extensive and active inflammation. The second case showed diffuse involvement, with some fibrosis and numerous tubercles, but very little hyperplasia of the gland structures. Opinions differ as to the types of glands involved, whether normal, hyperplastic, or adenomatous; ten out of fourteen cases from Crile's series showed evidence of hyperthyroidism. It is probable, however, that the different types of pathological pictures met with depend on the factors influencing infection anywhere in the body—namely, the resistance of the patient and the virulence of the organism. Jones remarks that the diagnosis of tuberculosis of the thyroid gland is difficult, since there are no diagnostic points peculiar to the condition. The glands appear firm, hard, and fixed, in some cases with adherent skin suggesting carcinoma; but even these features are not constant enough to be of much value, and the diagnosis can only be made by microscopical examination of the tissue removed. Treatment, which should be subtotal thyroidectomy, gives excellent results, and even in the most extensive cases wounds heal by first intention and the symptoms are relieved.

109. Fracture of the Lumbar Vertebrae.

P. A. QUAINTANCE (*Arch. of Surg.*, December, 1929, p. 963) reports thirty-three cases of fracture of the transverse processes of the lumbar vertebrae, and concludes that this condition may follow indirect internal violence (muscular action) as well as direct external violence. In two of his cases the fracture was undoubtedly indirect. The injury occurred for the most part in the transverse processes of the second, third, and fourth lumbar vertebrae, and in four instances it was bilateral. The patient's body was in an attitude of acute flexion in rather more than half the cases at the time when the fractures were sustained. In twenty-five cases in which the transverse processes alone were fractured temporary disability lasted, on the average, slightly more than ten weeks. No patient was permanently disabled, and in no case was resection of the fractured processes found to be necessary. The author remarks that the duration of disability depends very markedly on psychic and personality factors. Union of the fragments did not occur in fourteen cases owing to wide displacement.

110. Treatment of Pendulous Breasts.

C. F. DOWKONTT (*Med. Journ. and Record*, December 4th, 1929, p. 624) describes an operation for pendulous breasts which aims at permanent replacement to the original position and restoration of the normal contour with the minimum of risk and scarring. Two incisions are made, one around the periphery of the entire breast through the skin and fatty tissue, and the other circularly through the skin at such a distance from the nipple as to allow just sufficient skin to cover the gland. After the skin with the subcutaneous tissue between these two incisions has been removed an incision is made in the pectoral fascia beneath the topmost part of the first incision; a tissue lip is everted, and the corresponding margin of the gland is sutured to its under surface. The two skin incisions are then carefully approximated with Michel clips to avoid suture marks and the patient is kept in bed for a week or ten days, after which a supporting bandage is worn for a fortnight. The author considers this to be the operation of choice in most cases, though for cases in which the gland is not large, and where there is only a moderate amount of subcutaneous fat, he has successfully employed a method which places the scar at the areolar margin and in the lower half of the breast. The advantages claimed are that the gland and its function are preserved in full and

any existing chronic mastitis disappears. Time has proved that recurrence is extremely unlikely, and that artificial supports are unnecessary. The breasts being normal in position and contour, the patient's appearance and mental attitude are benefited; one patient afterwards obtained employment as an artist's model.

111. Sigmoido-vesical Fistulae.

V. C. DAVID (*Annals of Surgery*, December, 1929, p. 1015) ascribes the most frequent cause of sigmoido-vesical fistula to an abscess developing from a diverticulum of the sigmoid which ruptures into the bladder; carcinoma of the upper rectum is noted as the causal factor which is the next in frequency. Diverticula occurred in about 33 per cent. of all *x*-ray examinations of the colon made at the Mayo Clinic in 1924; the average age of the patient was 55 to 58 years, the outstanding contributing factors being adiposity and constipation. It is suggested that the condition is a disease and the result of an infectious process. Diverticula of the colon are generally multiple and consist of hernial protrusions of the bowel mucosa through the muscularis into the fat of the mesentery or into the appendices epiploicae. Enteroliths may develop in the pouches of the diverticula and become marble-shaped; there may be as many as fifty with no signs of gross inflammation. When infection develops a chronic inflammatory process ensues with induration of the fat about the diverticulum, adhesions between it and surrounding structures, and sometimes the formation of an abscess which usually ruptures into the structure to which it is attached. If the diverticulum is surrounded by omentum, or is adherent to the pelvic peritoneum, a perirectal abscess or a retroperitoneal abscess develops. If the infection is acute the diverticulum sometimes ruptures into the free peritoneum, causing generalized peritonitis. Symptoms vary from chronic spastic colitis to perforative pericolitis with pelvic abscess, retroperitoneal abscess, bladder fistula, acute perforative peritonitis, or chronic stenosis of the colon with an inflammatory tumour. There are usually recurrent attacks of abdominal pain and gas distension with constipation. Blood, pus, and mucus are frequently present in the stools, while if the diverticulum is near the bladder frequency and burning urination are present. If the inflammatory process attaches itself to the bladder, pus occurs in the urine, and if the diverticulum ruptures into the bladder, gas and faeces pass from the bladder on urination. Diagnosis of the presence of diverticulosis is by *x* ray as well as by the history and examination of the patient. Carcinoma of the upper part of the rectum and at the recto-sigmoidal junction often attaches itself to the base of the bladder, and later the disease may rupture into the bladder with the formation of a sigmoido-vesical fistula. Tuberculous peritonitis with abscess formation often results in fistula formation after the abscess has ruptured through the abdominal wall or into the abdominal viscera, in which case the bladder may become involved in an entero-vesical fistula. Carcinoma of the ovary may involve the bladder and bowel, with a fistulous communication between the two. Chronic infection or tuberculosis of the tubes may cause a sigmoido-vesical fistula. In fistulae between the bladder and large bowel due to diverticulitis, treatment must depend on the severity of the symptoms; if there is marked cystitis and evidence of ascending infection, colostomy should be performed and the bladder drained. If the symptoms are not acute the inflammatory mass may subside with rest. Where the fistula is a chronic process a laparotomy should be performed and the communication between the bladder and the bowel separated with layer suturing of each viscus, a temporary colostomy usually being indicated.

112. Spinal Fusion Operations.

FOR the treatment of sciatic and low back pain F. A. CHANDLER (*Journ. Amer. Med. Assoc.*, November 9th, 1929, p. 1447) reports that definite relief of symptoms has been obtained by spinal fusion operations. He records a series of 29 cases, all chronic in nature, 17 patients being females and 12 males. The age at the time of operation ranged from 16 to 53 years, the group average being 31.9 years. The preceding period of symptoms extended over four to five years. Lumbar pain or backache was the outstanding feature in each case, the degree of discomfort being directly proportionate to the degree of strain. Tenderness in the mid-line posteriorly at the lumbo-sacral juncture was the most constant finding, and was frequently associated with tenderness over the posterior short sacro-iliac ligaments. Radiological investigations revealed a variety of anomalous bony conditions. In the operative stabilization of these backs Hibbs's spinal fusion of the lumbo-sacral region was performed in 11 cases. In one instance the right sacro-iliac joint was fused at the time of lumbo-sacral fusion. In the remaining 17 cases the combined fusion of the lumbo-sacral spine and both sacro-iliacs (trisacral fusion) was performed. At the operation the great relaxation between the segments of the lower spine was evident after the wide exposure of the posterior portion of the laminae and articular processes. For post-operative treatment a hard bed with a double mattress was used in all cases, and a heavy fabric corset was worn on the resumption of weight bearing. The patients were re-examined after the lapse of sixteen months. In 15 cases there was complete relief of symptoms; in 9 the results were good, but there was some discomfort with certain spinal movements. Two cases were classed as fair—they showed general arthritic changes—and two were classed as failures, there having been no relief of the symptoms.

113. Submucous Lipoma of the Hypopharynx.

G. A. D. MCARTHUR (*Med. Journ. of Australia*, November 23rd, 1929, p. 750) states that lipomata rarely occur in the hypopharynx and larynx, and reports a case which presented some difficulty in diagnosis and treatment. The chief symptom complained of by the patient was a gradual alteration in the tone of his voice during the course of two years; on examination a tumour was seen in the pharynx. Tonsillectomy was performed, and then, on exposure of the hypopharynx by means of Killian's suspension laryngoscope, the tumour was found to be pedunculated and attached to the left lateral wall of the hypopharynx just above the pyriform fossa, and also lightly adherent to the left edge of the epiglottis just below the tip. The growth was excised, persistent oozing from the site of attachment being controlled by a ligature. Microscopically the tumour proved to be a typical lipoma covered with mucous membrane. The author recalls Shattock's case of a large lipoma growing from beneath the mucosa of the anterior surface of the epiglottis and the base of the tongue, which caused sudden death by suffocation. In addition to growing from the base of the tongue and the pharyngeal wall, a lipoma may also arise from the ary-epiglottic folds and from the posterior wall of the larynx. Shattock stated that fat cells were normally present in these situations, hence the actual site of these tumours presents no histological difficulty. McBride reported a lipoma growing from the base of the tongue and epiglottis which showed some tendency to recur. In McArthur's case the patient did not experience any difficulty with deglutition or respiration as the tumour had become adherent to the epiglottis; it was thus anchored in an upright position, and prevented from falling down over the larynx or into the oesophagus. McArthur emphasizes the absolute command of the situation obtained by the use of the suspension laryngoscope for work in this region. Not only was the tumour itself easily removed, but the ligation of a bleeding point low down in the pharynx was a matter of little difficulty.

Therapeutics.

114. Treatment of Diabetic Coma in Children.

GLADYS L. BOYD (*Canadian Med. Assoc. Journ.*, November, 1929, p. 520) remarks that diabetic coma in children is an emergency still frequently encountered, and responsible for a large proportion of the fatalities in diabetes. It is best treated by preventive measures, such as the early diagnosis and adequate treatment of the disease, and the wise handling of its complications. Preventive treatment consists essentially in the provision of a suitable diet, or diet together with insulin, and in the adequate removal of all foci of infection. Carbohydrate tolerance is lowered by infections, and in their presence the food must be lessened or the insulin increased; the latter must on no account be discontinued. If the child is too ill to take food, carbohydrate must be administered parenterally by giving 5 per cent. glucose subcutaneously, followed by insulin in the proportion of one unit of insulin for each gram of glucose. If coma develops the following measures should be adopted. The metabolism should be reduced to the lowest possible level by putting the patient to bed and the careful application of external heat. Large quantities of fluid (1½ to 4 litres, according to the age) must be given to overcome the dehydration. The bulk of this must be administered parenterally owing to the condition of the patient. The metabolism must be converted to a carbohydrate one. In severe cases 10 per cent. glucose should be injected intravenously at a slow rate, the total amount given not exceeding 10 c.cm. per pound of body weight. If any weakening of the pulse occurs the injection should be stopped at once. Immediately afterwards normal saline solution should be given subcutaneously. The fluid injections must be repeated every four to six hours until the patient is able to take and retain fluids by the mouth; in less urgent cases all the fluid may be administered subcutaneously or by the rectum. Chlorides must be supplied in sufficient amount to make up for the depletion usually present; if this is neglected an alkalosis will develop. This may be suspected from the deepening coma or prolonged respiration, and, should it arise,

2 to 4 grains of ammonium chloride should be given by the stomach tube. The gastro-intestinal tract usually demands, and should receive, attention. Circulatory failure, often a contributory cause of death, must be guarded against. Insulin is the specific treatment in diabetic coma, and 40 to 50 units may be given immediately. This dose may be reduced to 10 or 15 units every four hours as soon as the patient can take fluids by the mouth. It is not advisable to keep the patient aglycosuric until consciousness fully returns because of the danger of hypoglycaemia.

115. Action of Digitalis in Auricular Fibrillation.

A. WILMAERS (*Le Scalpel*, December 14th, 1929, p. 1341) considers that the best method of administering digitalis is that of Eggleston, which consists in rapidly giving the doses necessary to obtain full digitalization, and, afterwards, maintaining this saturation by administering daily the amount of the drug equivalent to that destroyed or eliminated by the organism. He briefly reviews the pathogenesis of auricular flutter and fibrillation, and discusses the value of digitalis in these conditions. In these affections, according to Lewis, the sinusal impulses are replaced by contraction waves running round rings of the musculature (circus movements) in the different annular zones of the auricle, and chiefly around the venae cavae. A regular and relatively slow movement in circuit of 200 to 400 revolutions a minute produces flutter; a much more rapid and irregular one of 500 to 600 a minute constitutes auricular fibrillation. In the latter the ventricle receives the impulses and contracts very irregularly (perpetual arrhythmia or delirium cordis), and at the same time the rhythm is often extremely irregular (tachy-arrhythmia). In flutter the ventricle can rarely respond by a single contraction to each influx, and a regular or irregular auriculo-ventricular block occurs, usually with excessive tachycardia. As a consequence, the duration of the systole remaining more or less constant, the duration of the diastole is much diminished. The ventricle has not time to empty before contracting again, the sigmoid valves do not open, and thus a feeble impulse is sent into the arterial system, which is impalpable at the wrist. This difference between the cardiac contractions and the radial pulsations is called the pulse deficit. The principal aim of treatment is to suppress this pulse deficit by diminishing the frequency of the ventricular contractions. Employed in doses of full digitalization, digitalis accomplishes this. The drug apparently acts by more or less completely blocking the auriculo-ventricular bundle by diminishing the number of impulses to the ventricle. Observations of 21 cases of auricular flutter and fibrillation are cited to show the beneficial effects of digitalis in these conditions. The crystalline form of the drug was employed, the initial saturation dose varying from 2 to 3 mg., and the daily maintenance one from 0.25 to 0.375 mg. Transient visual troubles and olfactory hallucinations were sometimes encountered, but no untoward symptoms were noted. The lessening of the frequency of the ventricular rhythm was usually accompanied by a marked improvement in the general condition.

116. Anti-scarlet Fever Serum in Erysipelas.

M. S. THOMSON (*Brit. Journ. Derm. and Syph.*, November, 1929, p. 417), who records six illustrative cases of erysipelas treated by scarlet fever antitoxin, in patients aged from 3 weeks to 32 years, emphasizes the following points. (1) The dosage must not be small, but should be as large as can be conveniently given, particularly in very young infants. (2) The serum must be administered for three days at least, and possibly be continued after apparent recovery. (3) In septic cases appropriate surgical intervention is essential. (4) It is important to formulate a prognosis early in any particular case, especially in a patient who is either very young or very old. In such cases serum is advisable when there is much toxicity, and when there is no immediate reaction to the usual forms of treatment.

117. Parathyroid Extract in Radium Poisoning.

F. B. FLINN and S. M. SEIDLIN (*Bull. Johns Hopkins Hosp.*, November, 1929, p. 269) report on three cases of radium poisoning treated by the injection of parathyroid extract. This therapeutic possibility was suggested to the authors by the effect of parathyroid on calcium and lead excretion described by Aub. The patients were women, aged about 20 to 25; they were luminous dial painters who had acquired the habit of pointing the brush between the lips. Because of the ingestion and absorption of small amounts of radio-active material by the gastro-intestinal tract, and the subsequent deposition of the material in all the bones of the body, the organism was exposed to all three rays—alpha, beta, and gamma. In addition to general under-nutrition, the patients presented irregularities or necrosis in the jaws, with round, sharply circumscribed areas of rarefaction in the skull, revealed by *x*-ray examination. Collip's parathyroid extract (parathormone) was given intramuscularly every other day for one month, beginning with ten units and gradually increasing to forty. After a break of two weeks the treatment was continued for a further period of two weeks, the dosage being forty to fifty units. Blood calcium determinations were made at frequent intervals, one always preceding the parathormone injection, and electroscopic tests were made of the stools and of the patients themselves. Following the treatment, in seven weeks there was a loss of radio-activity in the three cases of 45.6, 57.7, and 50.5 per cent. respectively, with an increase of several pounds in weight and an improvement in the general condition.

118. Malarial Therapy and Gastric Crises.

M. R. CASTEX and A. V. DI CIÓ (*Arch. Argentinos de enf. del Apar. Digest. y de la Nutrición*, October-November, 1929, p. 81), who record an illustrative case, state that von Jauregg first applied malarial therapy for tabes in 1921, since when the method has been employed by several others. R. Marot, in his Paris thesis of 1927, asserts that the most remarkable results of experimental malaria have been obtained in the treatment of gastric crises, as is shown by the fact that of 100 patients so treated 63 made a complete recovery and 25 showed some improvement, while in only 12 did the treatment fail. Malarial therapy should be followed by specific treatment fifteen to twenty days after the last febrile attack. The present case was that of a man, aged 45, who developed signs of tabes twenty-one years after contracting syphilis. Three days after the intramuscular injection of 10 c.cm. of malarial blood he had a rise of temperature, but it was only on the eighth day that he had a frank malarial paroxysm. Twelve febrile attacks in all occurred, but the gastric crises ceased after the first attack and the patient rapidly put on weight. Examination of the cerebro-spinal fluid after the last attack showed a negative Wassermann reaction, but there were no changes in the reflexes. Mercurial treatment was then instituted and hastened his recovery.

119. The Dietary in Typhoid Fever.

C. GARIN and J. BOUCOMONT (*Journ. de Méd. de Lyon*, November 5th, 1929, p. 709) state that the earlier writers, such as Brown in England and Broussais in France, restricted their typhoid patients strictly to a water diet. Graves, who "fed fevers," was one of the first to feed his patients cautiously with decoctions of cereals. At a later date two conflicting views were sustained: Liebermeister, Senator, Fürbringer, Lebert, and Legendre were determined supporters of abstinence, and did not even allow milk, whereas Jaccoud, Dieulafoy, Debove, Chantemesse, Ziemssen, and Leyden were in favour of an adequate diet, but one consisting entirely of fluids and milk. Garin and Boucomont also advocate an adequate diet, but hold that it should be fluid and semifluid in every case. Milk and the yolk of an egg should form the basis of the diet, but fruit, raw meat juice, clear and thick soup, coffee, and sweet drinks may be added. There is said to be no contraindication to this diet apart from intestinal haemorrhage and perforation.

Anaesthetics.

120. Post-anaesthetic Acidosis.

T. A'B. TRAVERS and E. M. BURT (*Med. Journ. of Australia*, November 16th, 1929, p. 703) agree that in the course of general anaesthesia there is a disturbance of the carbohydrate metabolism similar to that in diabetes mellitus; post-anaesthetic acidosis, however, is seldom recognized in the wards, since the characteristic clinical sign—deep "Kussmaul" breathing—is only apparent when there is great depletion of the alkali reserve. They have therefore, by laboratory tests, tried to correlate the degree of post-anaesthetic nausea and vomiting with the severity of the acidosis. In a series of twenty-two patients submitted to ether anaesthesia evidence of acidosis was invariably obtained, the plasma bicarbonate content falling and the titrable acidity of the urine rising. In all except two instances the ammonia coefficient of the urine increased. When these patients were grouped according to the severity of the vomiting it was found that this was more pronounced when there was a greater increase of acidity in the urine, and usually, though not invariably, a lower initial CO_2 combining power of the plasma. In another series of seventeen cases, in which food and insulin were given to the patients before they were anaesthetized, the CO_2 combining power of the plasma fell only slightly during the anaesthesia, and no patient vomited severely; the initial combining power being high. Ten patients before being anaesthetized received carbohydrates, but were not given insulin. None of these patients suffered from severe vomiting, and the CO_2 combining power of the blood remained high.

121. Nitrous Oxide Anaesthesia.

E. JECKL (*Schmerz Narkose-Anaesthesie*, November 15th, 1929, p. 283) records his observations on 184 cases in Professor Hans Finsterer's surgical clinic in Vienna, in which nitrous oxide was used as an anaesthetic. In 142 it was combined with a local anaesthetic, and in 42 it was used by itself; 108 patients (59 per cent.) were men, and 76 (41 per cent.) were women. Almost half were over the age of 50; 27 were between 60 and 69, and 9 were over 70, the oldest being 83. The operations for which nitrous oxide anaesthesia was used, with or without local anaesthesia, were 149 laparotomies (including 59 resections of the stomach, 31 operations on the bile ducts, 10 resections of the small intestine, 13 exploratory operations, 13 resections of the large intestine, and 12 appendicectomies) and 35 operations on the trunk and extremities, including 11 urological operations and 5 radical operations for mammary cancer. Jeckl is of opinion that, owing to its lack of toxicity and the absence of any injurious effect to any organ, nitrous oxide anaesthesia can be employed even in patients who could not tolerate another general anaesthetic owing to disease of the lungs, heart, vessels, or other organs. Its field of application can be considerably extended by combining it with local anaesthesia. The only risk of nitrous oxide anaesthesia consists in cyanosis, which can be avoided by an experienced anaesthetist and the use of a good apparatus.

122. Intratracheal Ether Anaesthesia.

P. J. FLAGG (*Anaesthesia and Analgesia*, November–December, 1929, p. 327) discusses the advantages of intratracheal inhalation, and describes a simplified method of ether anaesthetization by this route. A clear operating field is thus obtained for operations on the nose, throat, and face without complicated apparatus or devices for warming the vapour. The author uses a metal intratracheal inhalation tube, based on the standard bronchoscope, in place of rubber tubes. To a short section of standard bronchoscopic tubing a length of tightly coiled spring bronze wire is attached; the proximal end of this terminates in a metal coupling for uniting it with the tubing from the ether container, the spring section being covered with thin rubber drainage tubing. The tube is made in three sizes consisting of 5, 7, and 9 mm. intratracheal tips, and the spring section, about 7 inches in length, is highly flexible but non-collapsible. A simple ether reservoir is formed by an empty ether can with four holes about ¼ inch in diameter punched in the top, the rubber tubing being attached to the nozzle of the can, which ordinarily receives the cork. A drachm or two of ether is poured through one of the ¼ inch holes into the can, and the patient exhales through the tube into the can and out through the holes; during inhalation air is drawn through the holes and becomes laden with the ether in the bottom of the can. By this modification of the extratracheal portion of the bronchoscope a flexible, air-tight, non-collapsible, self-retaining inhalation tube is formed. It is claimed that by its use full continuous unobstructed respiration is obtained, with lowered blood pressure and reduced haemorrhage, while the patient is protected from post-operative pulmonary abscesses through the accidental aspiration of blood and pus during the operation.

123. A Local Anaesthetic in Urology.

CHAIGNON (*Paris Méd.*, October 26th, 1929, p. 377) submits observations of cases in which he has used a compound of para-amino-benzoate with di-butyl-amino-propanol sulphate, a substance allied to novocain, but of greater molecular weight. Its toxicity is said to be less than that of cocaine, and it has been used in oto-rhino-laryngology, ophthalmology, and urology. Chaignon has tried it for urethral and vesical injections in a 1 to 5 per cent. solution. He also employs Bonain's mixture (cocaine, menthol, and phenol), substituting this compound for the cocaine in the original formula; 10 c.cm. of a 5 per cent. solution permitted dilatation of the urethra in a case of vesico-prostatic tuberculosis, and 20 c.cm. of a 1 per cent. solution was sufficient for catheterization of the ureters in a case of renal and vesical tuberculosis. In patients who had reacted badly to a 1 per cent. solution of cocaine the same strength of the compound was well tolerated. A polypus at the base of the bladder was cauterized electrically at two sittings under local anaesthesia with 10 c.cm. of a 5 per cent. solution; a polypus in the urethra was similarly dealt with after five minutes' application of a tampon impregnated with the modified Bonain's mixture. Anaesthesia induced in this way enabled an anal polypus to be successfully treated with the actual cautery; 10 c.cm. of a 1 per cent. solution on one occasion, and of a 5 per cent. solution on another, overcame the spasm in two cases of chronic blennorrhagia. Anaesthesia was usually well established in five minutes, except in the case in which the electrical cautery was used, when ten minutes was necessary.

Obstetrics and Gynaecology.

124. Spinal Anaesthesia in Abnormal Labours.

J. MONTAGNE (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, October, 1929, p. 545) reports sixteen cases of dystocia treated by version and the application of forceps under spinal anaesthesia. In five cases rapid manual dilatation of the cervix was employed after the method of Delmas, while in nine the anti-infective technique carried out by Rivière was used. In each case, subsequent to the subcutaneous injection of 0.25 gram of caffeine, 6 to 8 cg. of allocaine were introduced into the spinal canal. Montagne claims that the advantages of this method of delivery are many. The suffering of the mother is lessened and no ill effects result to mother or child. The anaesthetic is never given unless the general condition is satisfactory, while low forceps cases and easy versions do not demand this treatment. For the operator the restlessness of the patient is stilled. The hypertonicity of uterine muscle under spinal anaesthesia, recently noticed by Metzger, was not a feature in any of the cases in this series where version was practised, but manipulation was aided by the effect of the anaesthetic on the cervix. The high foetal mortality in the five cases where the method of Delmas was used is explained by the fact that four were cases of placenta praevia, while in one there was prolapse of the cord. In these cases dilatation of the cervix, with rupture of the membranes and extraction of the child, was performed in from ten to twenty minutes, and Montagne is convinced that this rapid delivery saved the life of at least one mother and minimized the risks of infection in all. In addition to the greatest aseptic precautions in all cases, nine were treated after the manner of Rivière, where daily intramuscular injections of 12 cg. of sulfarsenol are given. The dose was increased to 18 cg. if the temperature was raised. This treatment is especially applicable to cases of dystocia where there has been intrauterine manipulation, and is stopped on the fourth day if no rise of temperature has occurred. In the series of sixteen cases the puerperium in eight showed a slight rise of temperature; in eight there was complete apyrexia; while in no case did the mother die.

125. Cervical Injury and its Repair.

N. H. WILLIAMS (*Journ. Amer. Med. Assoc.*, October 5th, 1929, p. 1040) emphasizes the importance of cervical as well as of perineal repair in birth injuries; he quotes the observation of De Lee, that cancer of the cervix is usually associated with an old cervical injury that has not been repaired. While admitting that opinion is divided as to the time of election for repair operations, he advocates "intermediate" treatment—namely, on the ninth day of the puerperium; by this time sufficient involution has taken place to render stenosis of the os uteri by too close approximation of torn surfaces less likely to ensue. According to his technique, operation is performed under local anaesthesia, preceded by morphine-scopolamine narcosis; sensation in the cervix is almost absent on the ninth day in any case. A lightly weighted speculum is used, and traction is reduced to a minimum, to avoid breaking down perineal sutures. To reduce the discomfort caused by traction on externally tied tension sutures in the perineum Williams uses deep forty-day catgut sutures, introduced from the vaginal surface and passed deep to the subcuticular tissues; this procedure usually approximates the torn skin edges fairly closely, and complete approximation is made by ordinary soft catgut stitches. The deep sutures are removed after the cervical repair is completed. It has been found possible, in hospital practice, to discharge patients so treated on the fourteenth day—that is, on the same day as those who have had no need of cervical repair.

126. Treatment of Eclampsia and Allied Conditions.

THE work of Meakins and McCann concerning the effects and diuretic action of thyroid extract on patients with nephritis led R. E. LÓPEZ (*Surg., Gynecol. and Obstet.*, November, 1929, p. 689) to try it in cases of pre-eclamptic toxaemia, and the results were so satisfactory that the treatment was extended to more advanced cases in which eclamptic convulsions or coma were present. The etiology and pathogenesis of eclampsia is briefly reviewed, together with the calcium deficiency theory as to its causation. López believes that the differences of appreciation relative to the deficiency or lack of deficiency of blood calcium are due more to the fact that the amount of calcium present in the blood cannot always be used as an index of the healthy activity of the parathyroid glands, but that in eclampsia there is evidently a deficiency in the functioning of these glands. To illustrate the efficacy of thyroid therapy in this condition, five cases are reported in which parathyroid extract was administered in doses ranging from 10 to 80 units; the unit, as defined by Collip, is one-hundredth of the amount of extract which

will produce an average increase of 5 mg. in the blood serum calcium of normal dogs weighing approximately 20 kilos, over a period of fifteen hours. All the cases here reported were more or less advanced stages of the same condition—namely, eclampsia parturientum. A few units of the extract initiated a diuresis, usually beginning on the second or third day after injection; this increased daily for four or five days until the oedema disappeared. In two cases there was a decrease in blood pressure of 40 mm. of mercury. The subjective signs of dizziness, headaches, disturbances of vision, and muscular cramps disappeared in the same ratio as the oedema. Convulsions and other signs of tetany in two patients ceased shortly after the first injection. In no case was labour started by the injections, and in a patient who was in labour the pains disappeared and did not return during treatment. In the patients with live foetus the foetal heart suffered no injury and acted normally until labour started. The calcium in the blood serum did not show an appreciable increase after the use of the parathyroid extract.

127. Immunization against Puerperal Fever.

A. F. LASH (*Amer. Journ. Obstet. and Gynecol.*, November, 1929, p. 639) concludes from an analysis of recent work that there is satisfactory clinical evidence that streptococcal inoculation of pregnant and parturient women is a valuable protective against streptococcal infection during and after labour; immunological studies have confirmed the presence of specific antibodies in the patients' blood. Washed streptococci have previously been used, but the present communication describes the results of employing a mixture of (1) haemolytic streptococci from the blood of patients with puerperal fever, and (2) exotoxins prepared from streptococci from a similar source. The incidence of puerperal fever was 0.87 per cent. in a series of 1,200 inoculated patients, as compared with 2.8 per cent. among a similar number of control cases. No evidence of a negative phase was noted. The 1,200 patients were inoculated within twenty-four hours after delivery. Smaller groups were so treated (1) three to four weeks before, and not after delivery; (2) three to four weeks before, and also within twenty-four hours after delivery. The smallest proportion of puerperal fever cases was noted in the last-named group. Puerperal fever is taken in these statistics to be denoted by continuous fever for at least four to five days, with pain in the lower part of the abdomen, and tenderness over the uterus and broad ligaments. The incidence of "pyrexia of 100.4° or over between the second and tenth days" was about equal in the control and various vaccinated groups; local (pelvic) morbid symptoms were absent. Lash remarks that it is questionable whether such temporary rises of temperature are due to true infection of the uterus.

Pathology.

128. The Pathogenesis of Glomerular Nephritis.

BRIGHT'S disease presents problems which in many respects resemble those of morbus cordis. Both conditions are common, both affect vital organs, and are responsible for many deaths. The two diseases are frequently chronic, and in the heart or kidney anatomical changes may interfere so seriously with the function of the other organ that entirely different forms of the disease may become indistinguishable in the terminal stages. Any condition which leads eventually to a uniform destruction of a large part of both kidneys will finally result in serious impairment of the functions of these organs, and such impairment, whether rapid or gradual, is accompanied by profound changes that affect the body as a whole. W. T. LONGCOPE (*Bull. Johns Hopkins Hosp.*, December, 1929, p. 335) records a study of glomerular nephritis in which the literature has been extensively reviewed, attention being particularly paid to the association of the disease with acute infections and the possible causative organism. In summarizing the information elicited, Longcope divides primary glomerular nephritis into the focal and the diffuse forms. The first of these occurs during acute infections, and in the embolic type is usually ascribed to the deposition of bacteria in the capillary loops of the glomeruli, where they lead to a necrosis or to an inflammatory reaction. The diffuse form so frequently follows acute infections proved to be due to haemolytic streptococci that at least one variety of acute glomerular nephritis may be regarded as a manifestation of streptococcal infection. It cannot be proved that the disease depends on infection by a particular type of streptococcus, or on the invasion of the blood or the involvement of the kidney by streptococci. There is some evidence, however, that patients suffering from acute nephritis are abnormally susceptible to the products of the growth of haemolytic streptococci, and possibly some altered reaction of the tissue, such as occurs in allergy, is the determining factor in the development of the disease in individual cases. Longcope suggests, therefore, that there is a primary, specific glomerular nephritis which is a manifestation of streptococcus infections in individuals who may be allergic to this microbe or its products of growth, or who possess some other peculiar form of tissue response to a local streptococcal infection.

129. The Relation of Cl. septique to Cl. chauvoei.

M. WEINBERG and M. MIHAILESCO (*Ann. de l'Inst. Pasteur*, November, 1929, p. 1408) have made a comparative study of 72 reputed strains of *Cl. chauvoei*, received from different parts of the world. They would regard the classical *Cl. chauvoei* as an organism growing poorly in deep glucose agar or in glucose broth; fermenting sucrose but not salicin; occurring as isolated rods, not filaments, on the surface of the liver of experimentally inoculated guinea-pigs; and agglutinating with a serum prepared against a strain of *Cl. chauvoei* but not with one prepared against *Cl. septique*. According to these criteria very few strains of the series could be classified as *Cl. chauvoei*. The majority presented characteristics intermediate between those of the classical *Cl. chauvoei* and *Cl. septique*. Thus, though a few strains were agglutinated solely by a specific anti-*chauvoei* serum, most of them were agglutinated by a serum prepared against *Cl. septique*. The affinity to this latter organism was shown more clearly by the complement-fixation test; even those strains that failed to agglutinate with an anti-*septique* serum, yet fixed complement in the presence of this serum. Similarly it was found that nearly all strains of so-called *Cl. chauvoei* were neutralized by an anti-*septique* serum, as tested by guinea-pig inoculation, though it was noted that the actual dose necessary to produce this effect was rather high—0.5 to 2 c.cm. Dealing with the etiology of blackleg in cattle, they conclude that most cases are caused by *Cl. chauvoei*, but that some cases may be due to *Cl. septique*, *Cl. welchii*, or to *Cl. oedematiens*. In the treatment of this condition they recommend the immediate injection of anti-*chauvoei* serum with polyvalent anti-gangrenous serum.

130. Antigenic Differences between the Serums of Young and of Old Animals.

C. PICADO (*C. R. Soc. de Biologie*, November 29th, 1929, p. 631) inoculated a rabbit at weekly intervals for two and a half months with serum from children 7 to 10 years old; another rabbit of the same weight was inoculated in a similar manner with serum from men aged 62 to 76. The serum of each of these rabbits was found to precipitate serum from human beings of any age, but each serum precipitated most markedly serum from persons corresponding to the age of the donors whose serum had been used for the immunization of the rabbits. The best way to demonstrate this was to mix in equal parts serum from children and from old men, and then to add this mixture to the anti-young and the anti-old rabbit serum. The tubes were left for twenty-four hours in the ice-chest, and then were kept for two hours at 37° C. The affinity of the precipitins for the corresponding precipitinogens was very clear. This experiment is held to have demonstrated the existence of an antigenic difference between the serum of children and of aged persons. In a second experiment the author claims to have shown the existence of iso-antibodies in the rabbit. Three young rabbits were injected once a week for six months with the citrated whole blood of old rabbits, the donor being changed at each inoculation. The resulting antiserums had no haemolytic properties, but they contained precipitins acting on the serum of old, but not of young, rabbits. The serum of the old animals, which was precipitated by the antiserums, was not precipitated by the serum of control non-inoculated rabbits of the same age as those injected. Picado concludes that it is possible to demonstrate the formation in young animals of antibodies active towards the blood of old animals of the same species.

131. Detection of Scarlet Fever Streptococci.

E. FAUVET (*Münch. med. Woch.*, December, 1929, p. 2048) has made comparative observations with human blood and sheep blood to determine which is the most suitable medium for detecting the haemolytic streptococci of scarlet fever on blood agar plates. In 100 cases there was a slight advantage with human blood, the use of 5 per cent. freshly obtained and not defibrinated human blood appearing to be the most suitable nutrient medium. In a series of 268 swabs from the throat and from the nose the author obtained haemolytic streptococci from 14 nose swabs (5.22 per cent.) where the swabs from the throat were negative; in 41 cases the throat swabs were positive and the nose swabs were negative. It is concluded, therefore, that control observations from nose swabs may confirm the diagnosis though they prolong the investigation.

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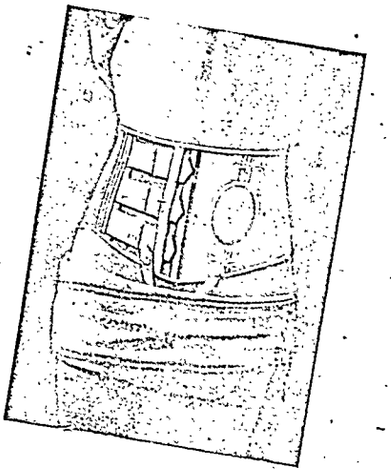
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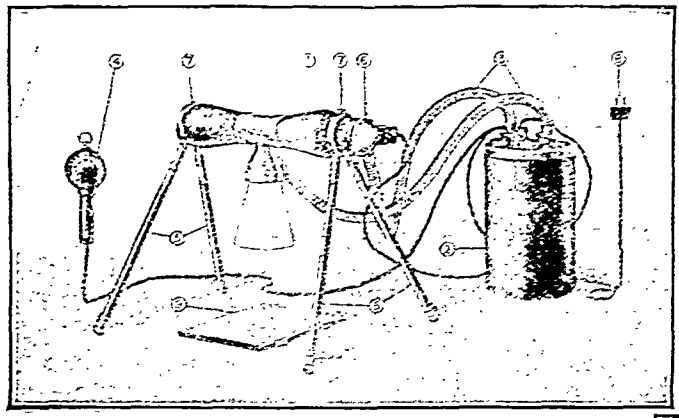
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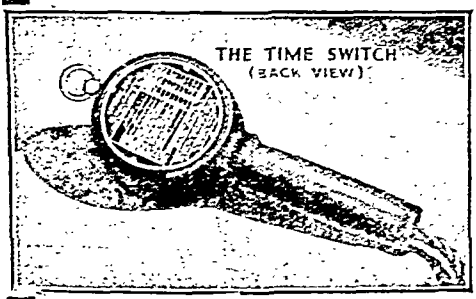


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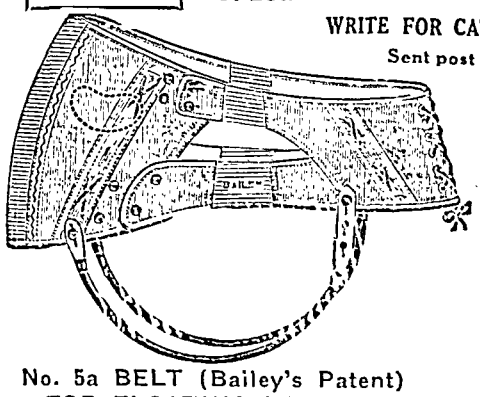
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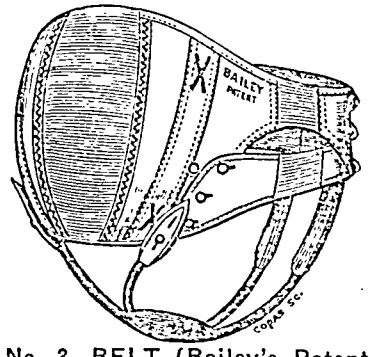
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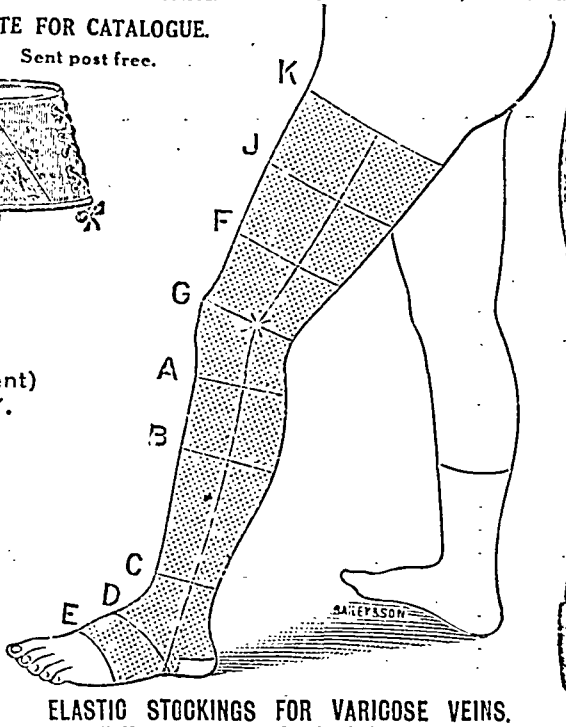
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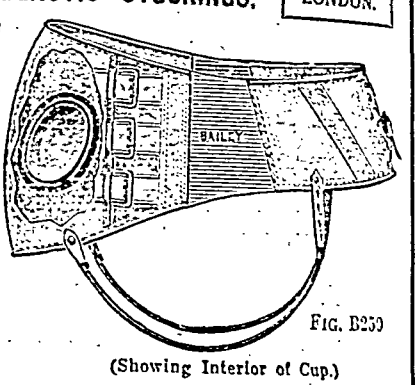


FIG. B250
(Showing Interior of Cup.)
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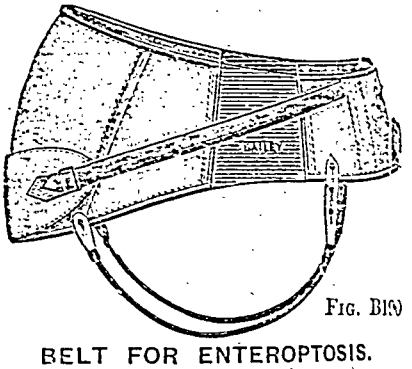


FIG. B190
BELT FOR ENTEROPTOSIS.

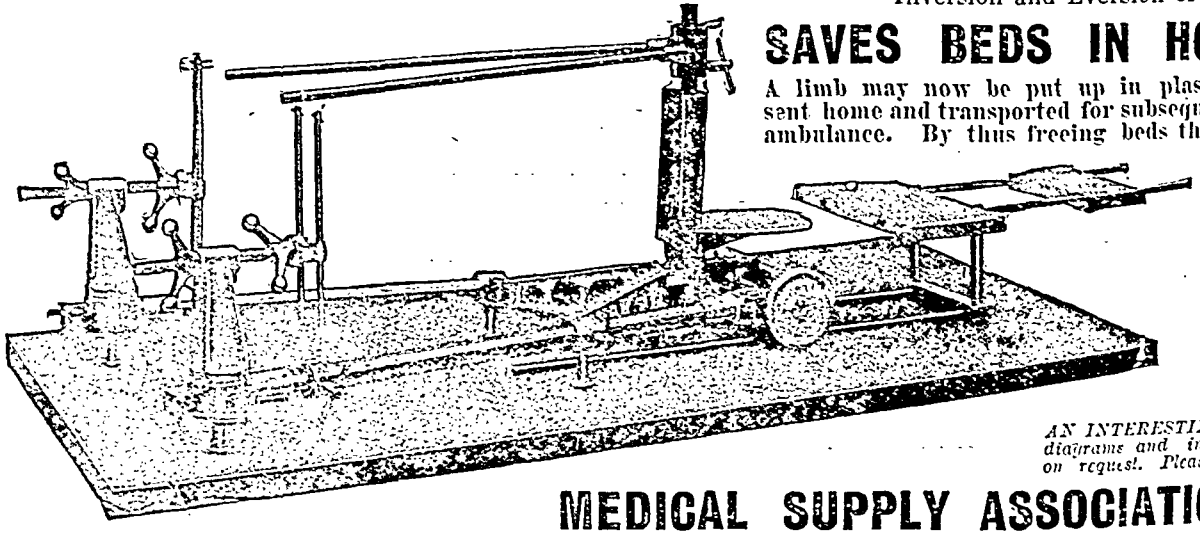
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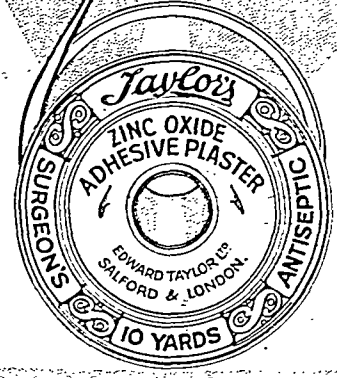
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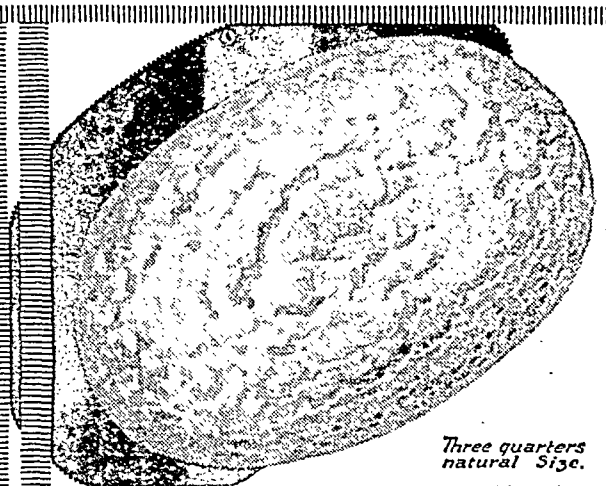
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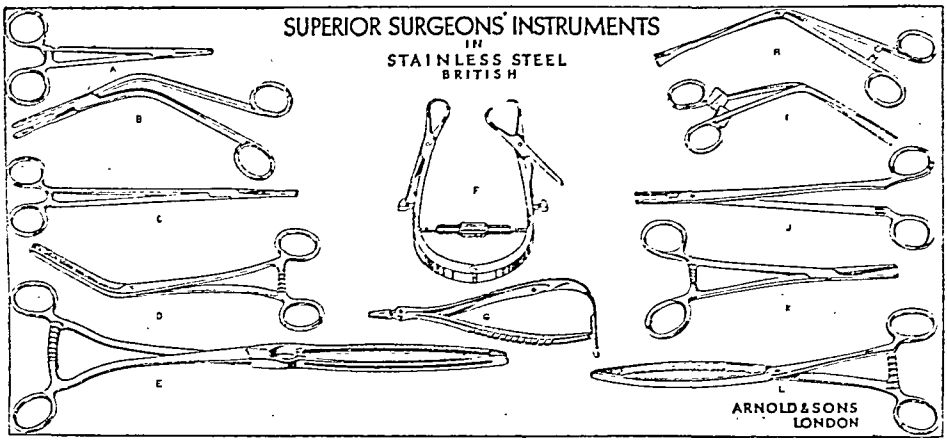
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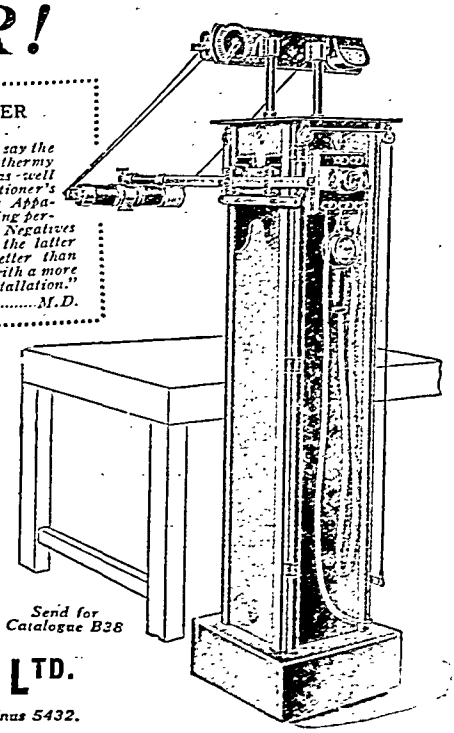
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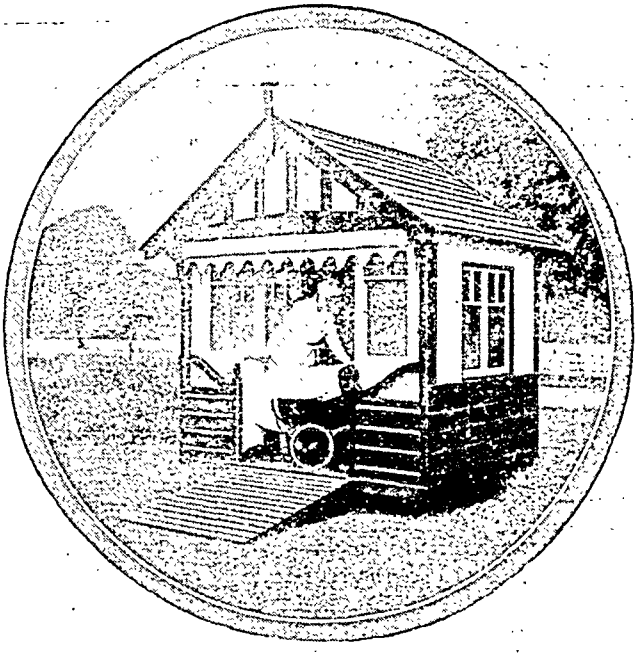
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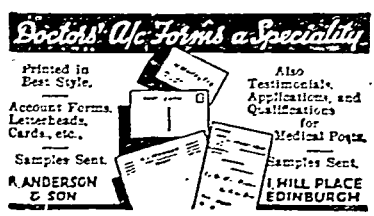
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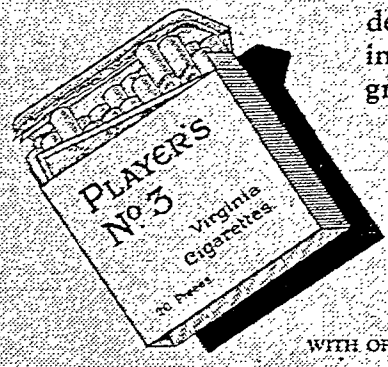
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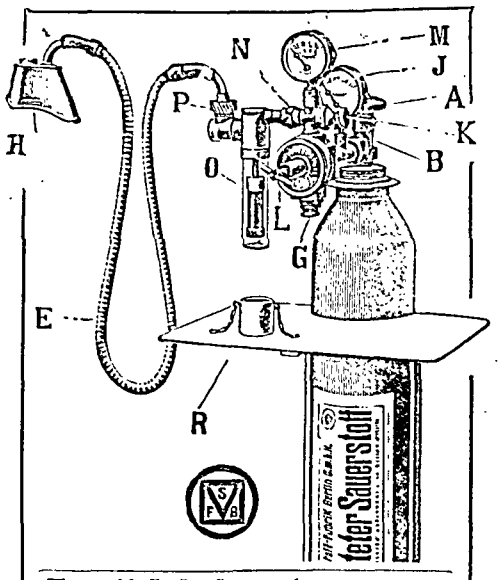
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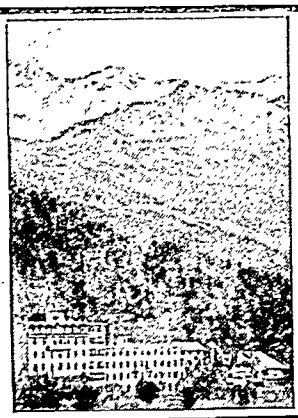
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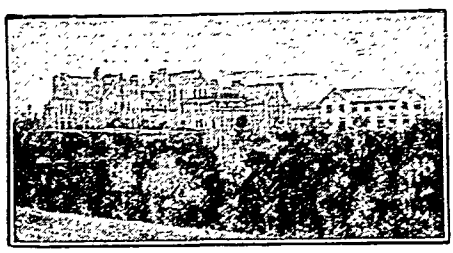
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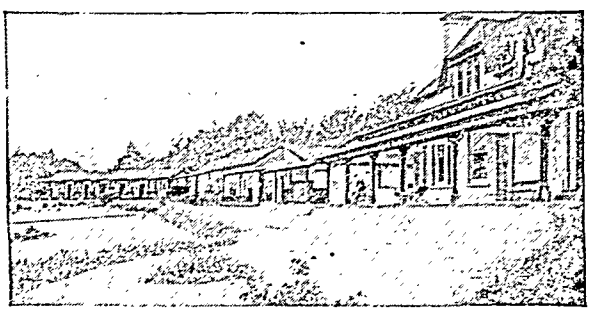
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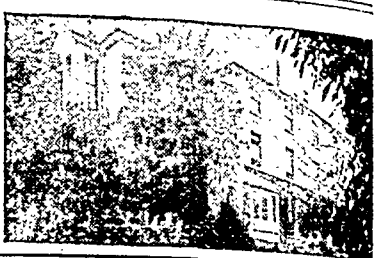
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THE GRANGE,

near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park. 5 miles from Sheffield. Station: Grange Lane, Midland Railway, Sheffield. Telephone: No. [illegible]. Resident Physician: Gilbert Partington, C.P., M.R.C.S.

LADIES. Ten o[illegible] Officer or Mrs. P[illegible]OUSE, BUXTON.

Grove Hou[illegible] of Ladies and Gentlemen Church Str[illegible] Voluntary Boarders re-[illegible]200 ft. above sea-level, [illegible] of grounds.—For terms, A Private Home for S[illegible] of a limited number of Medical Superintendent, Climate healthy and br[illegible] Nat. Tel. 130. Medical Superintendent

The Stanboroughs

WATFORD HERTS

Specially equipped for treating cases of functional nervous disorders, alcoholism, and drug addiction. Fees moderate. 200 acre park. Inspection invited.

S. McClements, M.R.C.S., L.R.C.P., Medical Superintendent.

'Phone - - - Watford 1751.

BOREATTON PARK,

BASCHURCH, SALOP.

A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

Apply for particulars to Dr. Sankey.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the Med. Superintendent.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE

From Specialist Tutors, in conformity with the Regulations of the various Universities.

Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the Secretary, Medical Correspondence College, 19, Welbeck Street, London, W.1.

ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. Francis Hare, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: Walter E. Masters, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent). *'Phone:* Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

BAILBROOK HOUSE, BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders. Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to Samuel J. Gilfillan, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Bathea[illegible]ston 8189.

CLARENCE LODGE,

CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Medical Specialist Visiting Physician.

Station: Clapham Common Tube. *Telephone:* Brixton 0494. Apply, Mrs. Thomas.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of the University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to

The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, and rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to Edgar Dibden, the Secretary.

F.R.C.S.(Edin.).

Prep. Classes and Museum Demons. for next Fellowship Exam. will commence Jan. 27th. Correspondence course for July and later exams. should begin now. Partics., H. C. Quick, F.R.C.S., at Surgeons' Hall, Edinburgh.

POST-GRADUATES!

Special Courses will be held in February at the following Hospitals:—BETHLEM, CHELSEA, ST. JOHN'S, TROPICAL, ROYAL EYE AND CHILDREN'S CLINIC.

Weekly Lectures and Clinical Demonstrations are also arranged.

Write to-day for all Literature to:

FELLOWSHIP OF MEDICINE, No. 1, Wimpole Street, London, W.1.

Telephone: MAYFAIR 2236.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

UNIVERSITY EXAMINATION. POSTAL INSTITUTION

7, RED LION SQ., LONDON, W.C.I.

(FOUNDED IN 1832.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.).
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

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M.S.(Lond.),	1901-29 (including 4 Gold Medallists)	21
M.B.,B.S.(Lond.),	*Final* 1906-29 (Completed Exam.)	257
F.R.C.S.(Eng.),	*Primary* (1906-29)	154
	Final	149
M.R.C.P.(Lond.),	1914-29	168
D.P.H.	(Various) 1906-29 (Completed Exam.)	286
F.R.C.S.(Edin.),	1918-29	43
M.R.C.S.,L.R.C.P.	*Final* 1910-29 (Completed Exam.)	433
M.D.(Dur.)	(Practitioners) 1906-29	37
M.D.	Various. By Thesis. Numerous successes.	

Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

UNIVERSITY OF LONDON.

A Course of Six Lectures on "*Cytology in Relation to Physiology and Pathology*" will be given by Dr. R. J. LUDFORD (Imperial Cancer Research Fund; Honorary Lecturer in Cytology, Department of Anatomy (Embryology and Histology), University College, London) at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAYS, FEBRUARY 5th, 12th, 19th, 26th; MARCH 5th and 12th, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

MEDICAL CORRESPONDENCE COLLEGE

19, WELBECK ST., LONDON, W.1. Tel.: Langham 1166.

PROVIDES HIGHLY SUCCESSFUL ORAL AND POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS.

Special Preparations for all Surgical Qualifications.

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F.R.C.S.EDINBURGH.
CH.M.EDINBURGH.
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And all other Surgical Degrees and Diplomas.

¶ The remarkable success of Students of the Medical Correspondence College at the higher Surgical Examinations is specially noteworthy.

¶ Both at the Primary and Final F.R.C.S. England the majority of our Students are successful at the first attempt, and Candidates who have failed at these Examinations on several previous occasions get through without difficulty after going through our courses.

¶ The Surgical Tutors of the College all hold either the M.S.Lond. or F.R.C.S.England, or both, and are highly experienced teachers.

¶ The Postal Courses are thoroughly clear, concise, and up to date, and the text questions are carefully selected from those set at previous Examinations, so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time, and much unnecessary reading is saved.

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"How to Pass the F.R.C.S.," free on application to the Secretary.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1222. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Monday, March 3rd.

Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character. (Non students only are eligible for admission.)

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, February 10th. The fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

EPSOM COLLEGE.

APPLICATIONS for the ADMISSION of CANDIDATES for PENSIONERSHIPS and FOUNDATION SCHOLARSHIPS at the next Election must reach the office by the morning of February 15th.

An EXAMINATION will take place in due course for the admission of boys as COUNCIL EXHIBITIONERS. These pay £50 a year instead of the usual fee of £120. Candidates must be the sons of such duly qualified medical men as shall, in the opinion of the Council, be among the less fortunate members of their profession. Applications must reach the office by the morning of February 15th.

J. BERNARD LAMB, Secretary.

Office: 49, Bedford Square, W.C.1.
January 24th, 1930.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD,

Specialises in

CAREERS FOR GIRLS.

List and Prospectus from Principal.
Special Terms to Medical Men.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BESTIANS, F.R.C.S., Dean.

Rossall School. — Some twelve Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £50 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £2 2s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

CALEDONIAN MEDICAL SOCIETY.

JUBILEE PRIZE ESSAY.

THE Society is offering in 1931 a Prize of Thirty Guineas for an Essay on

"Some Phase of the Celtic Contribution to Medicine or Science."

Essays to be sent by March 31st, 1931, to **Dr. S. R. Macphail, 11, Dryden Place, Edinburgh,** who will be glad to furnish further particulars.

District Medical Officer for INDIAN STATE RAILWAYS.

The Secretary of State for India proposes shortly to make one appointment as District Medical Officer on the Indian State Railways. Candidates must be European British subjects of non-Asiatic domicile, and must be under 32 years of age. They must possess a qualification registered in Great Britain and Northern Ireland under the Medical Acts in force at the time of appointment. Commencing pay Rs.650 per mensem, including overseas pay. The officer selected will, in addition, be permitted to take private practice subject to the sanction of competent authority. Leave, Provident Fund, Gratuity, and passages in accordance with the rules generally applicable to officers of Indian State Railways.

Copies of the regulations and forms of application can be obtained from the Secretary, Services and General Department, India Office, S.W.1, to whom applications should be addressed not later than February 8th.

India Office. January 16th, 1930.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

RESEARCH TRAVELLING SCHOLARSHIP IN MEDICINE.

The Trustees invite applications for the Dickinson Research Travelling Scholarship in Medicine.

The Scholarship is of the value of £300, tenable for one year. Candidates must be University Graduates who have taken out the full course of Clinical Instruction required by their examining bodies in the Manchester Royal Infirmary and the University of Manchester, and have earned distinction in so doing. They may apply for the Scholarship within any period of years after qualification as may be approved by the Trustees.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Saturday, February 15th.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

Manchester Royal Infirmary.

THE DICKINSON SCHOLARSHIPS.

PATHOLOGY SCHOLARSHIP.

The Trustees invite applications for the Dickinson Pathology Scholarship.

The Scholarship is of the value of £75, tenable for one year. Candidates must be University Graduates who have received their full course of instruction in Pathology, Medicine, and Surgery at the University of Manchester and the Manchester Royal Infirmary.

A copy of the Regulations governing the Scholarship can be obtained from the undersigned, to whom six copies of application should be sent not later than Saturday, February 15th.

FRANK G. HAZELL,
Secretary to the Trustees, Manchester Royal Infirmary.

B.P.A. Diploma of the Society of APOTHECARIES.—Classes are now being formed at the LONDON LIGHT AND ELECTRICAL CLINIC for the 1st and 2nd parts. Intending students please apply: SECRETARY, London Light and Electrical Clinic, Ranelagh Road, S.W.1.

Gresham College.—Four Lectures on "*How England Learned to Control Disease,*" will be delivered by Sir GEORGE NEWMAN, K.C.B., M.D., D.C.L., LL.D., on the 4th, 5th, 6th, and 7th FEBRUARY, 1930, at GRESHAM COLLEGE, Basinghall Street, E.C.2. Each Lecture will commence at six o'clock. Admission free.

MIDDLESEX HOSPITAL.

The Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Monday, January 20th, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1.

ANATOMY.

Personal instruction is given daily by Professor T. YEATES, M.B., C.M.

PHYSIOLOGY.

The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

BIOCHEMISTRY. GENERAL PHYSIOLOGY.

HISTOLOGY.

A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

Instruction is given daily except on Saturdays; there is a three weeks' vacation at Easter, after which classes are resumed until the examination.

FEES.—£12 12s. each subject or £21 for both.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(UNIVERSITY OF LONDON).

ADVANCED SURGERY COURSE.

A Course suitable for the M.S. and F.R.C.S. Examinations, lasting nine weeks, will commence on March 3rd.

Further particulars may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, Denmark Hill, S.E.5.

David Lewis Northern Hospital.

LIVERPOOL.

(CLINICAL SCHOOL.)

Applications are invited for the post of MEDICAL TUTOR and REGISTRAR to the above Hospital, from April 1st to September 31st.

Remuneration £175 per annum.

Successful candidate will be eligible for reappointment for a further period of twelve months

Applications, with testimonials, to be sent to the Hon. Secretary, Medical Board, on or before February 14th.

Royal Society.

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATIONS.

Applications for the year 1930 must be received at the offices of the Royal Society not later than March 31st next, and must be made on printed forms to be obtained from the Clerk to the Government Grant Committee, Royal Society, Burlington House, London, W.1.

Borough of Ealing.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified Medical Men, with a Public Health qualification, for the position of Assistant Medical Officer of Health.

Candidates will be required to carry out medical inspection of school children and child welfare work and perform such other duties as may be allotted as Assistant to the Medical Officer of Health and School Medical Officer.

The person appointed will be required to devote his whole time to the duties, and will not be allowed to engage in private practice. Salary will be at the rate of £600 per annum, rising to £650 by £25 per annum.

A deduction of 5 per cent. will be made from the salary in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the Council's medical examination in connection therewith.

Copies of application form and terms of appointment can be obtained from the undersigned, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than February 13th.

THOMAS ORR,
Town Hall, Ealing, W.5. Medical Officer of Health.

Liverpool Maternity Hospital,

Oxford Street.

HOUSE SURGEON required for six months commencing April 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Hon. Secretary of the Medical Board on or before February 22nd.

County Borough of Walsall.

ASSISTANT MEDICAL OFFICER (Maternity and Child Welfare)—Female.

Applications are invited from Medical Women under the age of 35 years for the post of an Assistant Medical Officer in the Public Health Department.

Salary £600, rising to £625 per annum on July 1st, 1931, and thereafter rising by annual increments of £25 to a maximum of £700 per annum, subject to approved service.

Applicants must be duly registered Medical Practitioners.

The possession of a Diploma of Public Health will be considered an advantage.

Practical experience in Midwifery practice and in Ante-natal work is essential.

The duties will mainly consist of work in connection with the Council's Maternity and Child Welfare Scheme. The person appointed will be required to give her whole time to the service of the Council, and to work under the direction of the Medical Officer of Health.

Applications, on forms to be obtained from the undersigned, stating age, qualifications, training, and experience, together with three copies of testimonials, and endorsed on the envelope, "Assistant Medical Officer," should be sent to the Town Clerk not later than February 22nd.

The appointment will be subject to the approval of the Ministry of Health, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Canvassing, directly or indirectly, will be a disqualification.

HERBERT LEE,
Council House, Walsall. Town Clerk.
January 25th, 1930.

City of Oxford.

APPOINTMENT OF DEPUTY MEDICAL OFFICER OF HEALTH.

The Oxford City Council invite applications from duly qualified registered Medical Practitioners possessing a recognized Diploma in Public Health, under the age of 40 years, and of not less than three years' standing in their profession, for the post of Deputy Medical Officer of Health.

Salary £600 per annum, together with a motor car allowance of £75 per annum.

The appointment is subject to the Council's conditions of service and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The successful candidate will be required to pass a medical examination.

The successful candidate will be required to devote the whole of his time to the duties of the office, such duties to include the School Medical Service, Tuberculosis, Infant Welfare and Infectious Diseases.

The appointment will be subject to determination by three months' notice on either side.

Applications, accompanied by ten copies thereof and by ten copies of not more than three recent testimonials, must be received by the undersigned, endorsed "Appointment of Deputy Medical Officer of Health," not later than February 14th.

Canvassing, either directly or indirectly, will be a disqualification.

A. HOLT,
Town Hall, Oxford. Town Clerk.
January 22nd, 1930.

Parish of Newcastle-upon-Tyne.

ASSISTANT RESIDENT MEDICAL OFFICER (Male).

The Guardians of the Poor of the Parish of Newcastle-upon-Tyne invite applications for the appointment of an Assistant Resident Medical Officer (male) at their WINGROVE HOSPITAL, Westgate Road, Newcastle. Salary £250 per annum, with residential allowances valued at £100 per annum. The appointment will, in the first instance, be for a period of six months, but may subsequently be extended at the discretion of the Guardians. The Hospital contains 650 beds and offers valuable clinical experience to keen students in mental, venereal, maternity, X-ray, and electrical therapy. The Hospital is a training school for nurses and midwives, and has a consultant and resident staff. The person appointed will act under the direction of the Medical Superintendent and may be required to lecture to probationers. The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, and to the provisions of the Local Government Act, 1929. Application must be made on forms which may be obtained at the office or on receipt of a stamped addressed foolscap envelope, which forms, duly completed, must be received by me not later than Saturday, February 8th.

By Order,
GLADSTONE WALKER,
127, Pilgrim St., Newcastle-upon-Tyne. Clerk to the Guardians.
January 27th, 1930.

County Council of Essex and URBAN DISTRICT COUNCIL OF CHINGFORD.

APPOINTMENT OF ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH.

Applications are invited for the following appointments:

(*a*) Assistant County Medical Officer for the County Council. Salary £580 per annum.

(*b*) Medical Officer of Health for the Urban District of Chingford. Salary £220 per annum.

An allowance will be made by the County Council for travelling expenses as Assistant County Medical Officer.

The appointments are subject to the approval of the Ministry of Health, and also subject to the conditions set out on the front page of the form of application.

Applicants must be duly qualified men, with experience in Public Health duties, and hold a Diploma in Public Health. Applicants should not be over 45 years of age.

Applications on the prescribed form, which may be obtained from the undersigned JOHN H. GOOLD, accompanied by copies of not more than three recent testimonials, which will not be returned, should be addressed to the undersigned JOHN H. GOOLD, and delivered at the Shire Hall, Chelmsford, not later than 10 a.m. on Monday, February 10th.

JOHN H. GOOLD,
Clerk of the County Council.
G. H. GREEN,
Clerk to the Urban District Council of Chingford.

Shire Hall, Chelmsford.
January 20th, 1930.

Derbyshire County Council.

BRETBY HALL ORTHOPÆDIC HOSPITAL. (147 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Assistant Medical Officer at the above Institution, at a salary at the rate of £150 per annum, with board, residence, and laundry. The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council. The officer appointed will work under the direction of the Medical Superintendent. Preference will be given to candidates who have held resident hospital appointments and who are competent Anæsthetists. Orthopædic experience is not essential, but will be considered an additional qualification.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should be addressed to the undersigned not later than February 17th.

New County Offices, St. Mary's Gate, Derby.
W. M. ASH, County Medical Officer.

January 29th, 1930.

City of Leeds.

ASSISTANT RESIDENT MEDICAL OFFICER, KILLINGBECK SANATORIUM.

Applications are invited from registered Medical Practitioners (male) for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the Tuberculosis Sanatorium, Killingbeck (220 beds). Applicants must be unmarried, and preference will be given to those who have held previous Hospital appointments.

The appointment will be for one year at a salary of £250 per annum, with board, residence, and laundry.

Applications, stating age and experience, together with copies of three recent testimonials, endorsed "Tuberculosis Officer," should be delivered to the Medical Officer of Health, 12, Market Buildings, Vicar Lane, Leeds, not later than the first post on Wednesday, Feb. 12th.

THOS. THORNTON,
Leeds. Town Clerk.

Borough of Watford.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE CENTRE.

Applications for this post are invited from qualified Medical Women residing in the neighbourhood of Watford (within 10 miles radius).

The duties consist in attending at an Infant Consultation Clinic on one afternoon per week at a salary of 1½ guineas per session.

Applications, stating age and previous experience of this work, together with copies of three recent testimonials, should be forwarded to Dr. W. J. Cox, Medical Officer of Health, 1, St. Albans Road, Watford, not later than Friday, February 7th.

Municipal Offices, High Street, Watford.
W. HUDSON, Town Clerk.

County Borough of Croydon.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER.

Maternity and Child Welfare Work and School Medical Service.

Applications from qualified Medical Women are invited for the position of Assistant Medical Officer for the purposes of Maternity and Child Welfare and School Medical Service.

Applicants must have been qualified for at least three years, and have had special experience in the Diseases of Childhood, and recent special experience in Ante-natal Clinics and Obstetric work.

The successful candidate will be required to live within the Borough.

Salary £600.

Applications, upon forms to be obtained from the Public Health Department, Town Hall, Croydon, to be sent (accompanied by copies of not more than three testimonials of recent date) to the Medical Officer of Health, Town Hall, Croydon, not later than 11 o'clock in the forenoon of Monday, February 17th.

The appointment is subject to a three months' notice of termination on either side.

Canvassing in any form is prohibited.

Town Hall, Croydon.
JOHN M. NEWNHAM, Town Clerk.

January 22th 1930.

County Borough of Croydon.

JUNIOR DENTAL SURGEON.

Applications are invited from Male Licentiates in Dental Surgery for the post of Whole-time JUNIOR DENTAL SURGEON.

Commencing salary £450 per annum.

The duties will consist chiefly in the inspection, re-inspection, and treatment of children attending the elementary schools of the Borough, but will also include dental work under the Council's Maternity and Child Welfare and Tuberculosis Schemes. The person appointed will also be expected to give instruction in dental hygiene as and where required.

Applicants must have had at least one year's previous experience in the dental treatment of children.

Canvassing will be a disqualification.

Applications, on a form to be obtained from the Public Health Department, Town Hall, Croydon, accompanied by copies of not more than three recent testimonials, must be sent to the Medical Officer of Health, Town Hall, Croydon, not later than 11 o'clock in the forenoon on Monday, February 17th, endorsed "Junior Dental Surgeon." The appointment is subject to two months' notice of termination on either side.

Town Hall, Croydon.
JOHN M. NEWNHAM, Town Clerk.

January 28th, 1930.

City of Stoke-on-Trent Education COMMITTEE.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of Assistant School Medical Officer to the above Education Authority.

Salary £500 per annum, rising to £600 per annum after the completion of one year's satisfactory probationary service. No bonus is payable in addition.

The duties consist in the carrying out of medical inspection and treatment, under the direction of the School Medical Officer, of pupils attending the elementary and secondary schools of the City.

The successful candidate will be required to devote the whole of his time to the duties of the appointment.

Canvassing will be a disqualification.

Form of application may be obtained from the Director of Education on receipt of a stamped addressed foolscap envelope, and completed forms should be submitted by Feb. 8th.

Education Offices, Town Hall, Hanley, Stoke-on-Trent. January 21st, 1930.

Borough of Cambridge.

APPOINTMENT OF WOMAN MEDICAL OFFICER.

The Council invite applications for the appointment of Medical Officer to their Ante-Natal Clinic from qualified Medical Women.

The Clinic will be held once a month at 35a, Parkside, Cambridge, and a fee of one and half guineas per session will be paid in accordance with the scale of the British Medical Association.

Applications should be sent to the undersigned on or before February 14th.

C. H. KEMP.
January 22nd, 1930. Town Clerk.

Northumberland County COUNCIL.

WOOLEY SANATORIUM, near HEXHAM, for the Treatment of Adults suffering from Tuberculosis. (120 Beds.)

Applications are invited for the appointment of an ASSISTANT MEDICAL OFFICER at the above Sanatorium. Salary £350 per annum, with board, lodgings, and laundry; less deductions for superannuation, returnable or transferable on leaving the Council's service.

Applicants should be unmarried.

The appointment may be terminated by three months' notice on either side.

Application forms, to be obtained from the undersigned, should be returned to him, together with copies of three recent testimonials, as soon as possible.

WILLIAM F. J. WHITLEY,
South Granville House, Jesmond, Newcastle-upon-Tyne.
County Medical Officer.

Sheffield Union Hospital.

MALE RESIDENT ASSISTANT MEDICAL OFFICER.

The Guardians of the Poor of the Sheffield Union invite applications for the appointment of a Male Resident Assistant Medical Officer at the UNION HOSPITAL, FIRVALE, SHEFFIELD. The Hospital is a large separate institution containing 840 beds, and is equipped in accordance with modern requirements, and facilities are provided for Pathological and Bacteriological work.

The staff at present consists of a Resident Medical Superintendent, a Resident Deputy Medical Superintendent, and five Resident Assistant Medical Officers, a Visiting Physician, a Visiting Surgeon, and a Visiting Radiologist. The Assistant Medical Officer to be appointed will be required to take duty in such parts of the Hospital or at other Institutions under the control of the Board as may be directed.

Applicants must be duly registered under the Medical Acts, and qualified by law to practise Medicine and Surgery in England and Wales.

The appointment will be limited to two years, the salary being at the rate of £250 for the first year, and £300 for the second year, together with residence, rations, and other usual allowances, the salary being subject to the statutory deductions required by the Poor Law Officers Superannuation Act, 1896.

Letters of application, stating age, qualifications, and experience, together with copies of testimonials of recent date as to professional ability and personal character, to be sent to me without delay.

By Order,
Union Offices, West Bar, Sheffield.
LAWRENCE RICHMOND, Clerk to the Guardians.

January 28th, 1930.

South Devon and East Cornwall HOSPITAL, PLYMOUTH. (240 Beds.)

Applications are invited for the following post on the Honorary Medical Staff:

HONORARY ASSISTANT SURGEON in Charge of the Obstetric and Gynæcological Department. (A Member of the Assistant Staff is a candidate for this post.)

Candidates for the above-mentioned office must hold the Fellowship of a Royal College of Surgeons in Great Britain, or shall hold a Mastership of Surgery at Oxford, Cambridge, or London.

Applicants must send twelve copies of their applications and testimonials to the undersigned by February 22th.

Plymouth. Feb. 28th, 1930.
ARTHUR R. CASH, Gen. Supt. & Sec.

Nottingham Hospital for Women

HOUSE SURGEON, female or male, required to commence duties on March 15th. Appointment for period of not less than six months. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous Hospital experience essential.

Applications, stating age, experience, and qualifications, accompanied by copies of three testimonials, to be sent to the Secretary, Mr. A. L. HORELL, Burton Buildings, Parliament Street, Nottingham, not later than Feb. 12th.

Chelsea Health Society and SCHOOL FOR MOTHERS.

MEDICAL OFFICER (woman) required to take charge of weekly Ante-natal Clinic (2 hours, usual fee). Duties to commence April next. Wide experience essential. Written applications, enclosing copies of testimonials, by February 28th, to—

HON. SECRETARY.
1, Manor St., Chelsea, S.W.3.

Devonshire Hospital, Buxton,
DERBYSHIRE (300 Beds.)
(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties February 1st. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory, and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
General Superintendent & Secretary.

Ancoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic) required, to commence duty on March 1st. Appointment for six months.

Also

HOUSE PHYSICIAN required. To commence duty on March 1st. Appointment for six months.

Salary for each post at the rate of £100 per annum, with board, apartments, and washing.

Applications, stating age, qualifications, experience, if any, and full particulars to be forwarded to the undersigned on or before February 14th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Ancoats Hospital, Manchester.

RESIDENT MEDICAL OFFICER required to commence duty at once. Salary £150 per annum, with board, residence, etc. Previous experience in a similar position preferred. Applications, stating age, qualifications, previous experience (including appointments held), together with copies of three recent testimonials, to be forwarded to the undersigned on or before Wednesday, February 5th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

West Norfolk and King's Lynn HOSPITAL.

The Governing Board of the West Norfolk and King's Lynn Hospital propose to appoint an HONORARY PHYSICIAN. Applications are invited from suitably qualified gentlemen who are desirous of engaging in consulting practice. The Hospital serves a wide area, and there is at present no consulting physician in this area. A substantial honorarium will be available.

Applications, giving particulars of experience, together with three recent testimonials, should be sent to the undersigned on or before February 28th.

HAROLD MANNOCK,
House Governor & Secretary.

Princess Alice Memorial Hospital
EASTBOURNE. (96 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male) to commence duty on March 1st. Candidates must be unmarried, fully qualified, and registered. The appointment is for six months. Salary at the rate of £125 per annum, with board, lodging, and laundry.

Applications, stating age, qualifications, etc., and accompanied by copies of not more than three recent testimonials (one of which must be from Medical School), should reach the Secretary not later than February 13th.

Doncaster Royal Infirmary.

HOUSE SURGEON (SECOND, male) required at once. Staff of three. Experience in Anæsthetics essential.

Appointment offers opportunity to gain good surgical experience. New Hospital to be opened shortly.

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Tuesday, February 4th.

J. LAWRENCE MEARS,
January 27th, 1930. Secretary-Supt.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) for eight months, from February 12th (during first four months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital at once.

Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by the undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
January 27th, 1930. Secretary-Supt.

Norfolk and Norwich Hospital,
NORWICH.

APPOINTMENT OF HONORARY SURGEON.

The Board of Management, in compliance with Law 42, hereby gives notice that there is a vacancy for an Honorary Surgeon, which will be filled on Saturday, March 8th, at 12.30 p.m.

Candidates for the office of Surgeon shall produce evidence of being Masters or Bachelors of Surgery of one of the Universities of the British Empire, or of being Fellows of one of the Royal Colleges of Surgeons of the British Empire, and of being registered according to the provisions of the Medical Act.

Applications, with copies of testimonials, must be sent not less than fourteen days before the day of election to the undersigned, from whom further particulars regarding the post may be obtained.

By Order,
FRANK INCH,
Feb. 1st, 1930. House Gov. & Secretary.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male) who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Tuesday, February 11th.

FRANK INCH,
Feb. 1st, 1930. House Gov. & Secretary.

The General Hospital,
BIRMINGHAM.

Applications are invited for the post of RESIDENT SURGICAL REGISTRAR.

This officer will be attached to Two Surgical Units and to the Gynæcological Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by February 17th.

A. H. LEANEY, House Governor.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

CLINICAL ASSISTANTS are required in the Medical Department under the Honorary Physicians, to attend on Monday, Tuesday, Wednesday, and Friday afternoons. Also CLINICAL ASSISTANT in the Ear, Nose, and Throat Department, to attend on Thursday afternoons.

CLINICAL ASSISTANTS are also required in the X-ray Department, to attend on Monday, Tuesday, and Thursday afternoons.

Applications for appointments to be sent to—
FREDK. W. DREWETT,
January 27th, 1930. Director.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON (male) vacant February 28th.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned on or before Tuesday, February 11th.

R. J. CARLESS,
January 27th, 1930. House Governor.

St. Bartholomew's Hospital,
E.C.1.

CLINICAL ASSISTANT TO THE VENEREAL DEPARTMENT.

Applications are invited for the post of Clinical Assistant to the Venereal Department. The candidate appointed will be required to attend in the Department for two sessions per week of two hours each—viz:

Mondays, 5 p.m. to 7 p.m.;
Thursdays, 12 noon to 2 p.m.

A fee of not less than one guinea per session will be paid.

Candidates, who must be registered Medical Practitioners, are required to lodge their applications with the undersigned on or before Tuesday, February 18th.

THOMAS HAYES,
Clerk to the Governors.
January 27th, 1930.

Royal Northern Hospital,
Holloway, N.7.

Applications are invited for the following posts:

HOUSE SURGEON for nine months (six months as House Surgeon and three months as Casualty Officer) from March 15th.

RESIDENT OUT-PATIENT CASUALTY OFFICER AND ANÆSTHETIST for six months from March 15th.

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by February 8th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

North Middlesex Hospital,
Edmonton, London, N.18.

SECOND RADIOGRAPHER required, age not over 45 years. Candidates must be in possession of Diploma as Member of Society of Radiographers and have had experience in electricity, especially regarding X-ray radiography and Roentgen therapy, also photographic experience. Some experience in Radium would be an additional qualification. Hours 9–5 daily, free half day on Saturday and full day on Sunday unless urgently required. Salary £250 per annum, with meals when on duty, valued at £20 16s. per annum. Applications should be in writing and addressed to the Surgical Director at above address.

No personal interviews at present.

The Royal Liverpool Children's
HOSPITAL, Myrtle Street, LIVERPOOL.

The Committee invite applications from Graduates with previous Hospital experience for the appointment of RESIDENT CASUALTY OFFICER (male). The appointment will be for a period of one year from April 1st, and the holder of the post will be eligible for re-election.

Salary at the rate of £250 per annum.

Further particulars may be obtained from the Secretary of the Hospital, to whom applications should be sent, with copies of recent testimonials, on or before Monday, February 17th.

The Sheffield Royal Hospital.

There are vacancies for Male Residents; one to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. The Hospital is a Medical School with 340 available beds, and there are twelve resident medical officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry.

Applications should be forwarded at once to—
W. H. BOOTH,
Jan. 27th, 1930. Supt. & Secretary.

Stroud General Hospital,
STROUD, GLOS.

HOUSE SURGEON required to commence duty at once. Salary £150 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the undersigned.

C. FORD SPENCER, Secretary.

Stirling District Mental Hospital,
LARBERT.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (male). Salary £300 per annum, with board, lodging, and laundry. Appointment subject to provisions of Asylums Officers Superannuation Act.

Apply, stating age, with testimonials, to the Medical Superintendent.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
January 29th, 1930. ALFRED COX, Medical Secretary.

East Suffolk and Ipswich HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the post of ASUALTY OFFICER, who will rank next to e Resident Medical Officer in seniority. lary £150 per annum. Board, residence, d laundry. Previous experience essential. Applications from British (male) candidates, ating age, qualifications, and experience, and companied by three recent testimonials, to sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.
January 4th, 1930.

Derbyshire Hospital for Sick CHILDREN. (52 Beds.)

RESIDENT MEDICAL OFFICER (lady) wanted ebruary 22nd. The appointment is for six onths, but may be extended by mutual rangements. Applicants must be fully quali-d. Salary £150 per annum. Applications, ith three testimonials, one relating to anæs-etics, to be sent by January 30th to the ndersigned.

ARTHUR N. WHISTON,
25, St. Mary's Gate, Secretary.
Derby.

Macclesfield General Infirmary. (100 Beds.)

Wanted at once, SECOND HOUSE SURGEON, ale. Salary at the rate of £150 per annum, ith board and residence. Anæsthetic experi-ice essential.

The appointment is for six months, subject one month's notice on either side.

Applications, stating age, nationality, and alifications, with copies of their testimonials, be sent to the undersigned.

A. E. HANRAHAN, Secretary.

Bristol Royal Infirmary.

Applications are invited for the following Resident appointments for the six months commencing March 1st.

Two HOUSE PHYSICIANS.
Four HOUSE SURGEONS.
One HOUSE PHYSICIAN to the Cancer Research Dept.
One HOUSE SURGEON to the Gynæcological and Ophthalmic Departments.
One OBSTETRIC HOUSE PHYSICIAN.
One CASUALTY HOUSE SURGEON.
One ASSISTANT HOUSE SURGEON and H.S. to the Dermatological Department.

Salaries at the rate of £60 per annum, board, apartments, and laundry, except in the case of the Casualty House Surgeon, when the salary will be at the rate of £80 per annum, with board, apartments, and laundry.

One DENTAL HOUSE SURGEON.

If resident, salary at the rate of £80 per annum, but if non-resident, salary at the rate of £116 per annum, with board.

Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned on or before Monday, February 3rd.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

Royal Victoria Infirmary, NEWCASTLE-UPON-TYNE.

WHOLE-TIME JUNIOR SURGICAL REGISTRARS.

Applications are invited for Six Junior Surgical Registrars. These posts are designed for Graduates who desire to gain surgical experience and who have already held a post as House Surgeon. Certain duties in the allied departments at the College of Medicine will offer opportunities for post-graduate study. The appointments will in no case extend beyond three years, and will be for one year in the first instance, renewable for two further periods. A payment of £150 per annum will be made to each Registrar.

Applications, with copies of not more than three recent testimonials, must be lodged on or before February 4th with the House Governor, Royal Victoria Infirmary, Newcastle-upon-Tyne, from whom further particulars may be obtained.

National Hospital, Queen Sq., W.C.1.

HONORARY DENTAL SURGEON.

Applications are invited for the post of HONORARY DENTAL SURGEON and should be sent to the undersigned on or before February 1st. The qualifications required are F.R.C.S. or M.R.C.S. and L.D.S. Any further particulars may be obtained in the Secretary's office.

GODFREY H. HAMILTON, Secretary.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

ASSISTANCIES.

Histological Assistant.

A skilled Assistant is required for Research Work in Histology. Previous experience in staining and microscopical examination of nervous tissue desirable. Salary £4 weekly

Applications, stating capacity and experience, with copies of three testimonials, should be received not later than March 1st, addressed to the Director, Joint Board of Research for Mental Disease, City and University of Birmingham, Hollymoor, Northfield, Birmingham. January 28th, 1930.

Wanted. — Male Assistant, Industrial area, Manchester. Good house (unfurnished) or rooms and attendance if single. Must be experienced in midwifery. Commission on midwifery, etc., rent and taxes. £400 p.a., rising annually. Usual bond. Recent references. Car provided.—Address, No. 811, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, British, for panel Practice. Salary £276 per annum.—Apply, enclosing copies of testimonials, to Dr. S. J. B. FOX & SON, South Moor, West Stanley S.O., Co. Durham.

Wanted. — Assistant (married or single), with Hospital and general experience. Willing to learn refractions. Six guineas weekly (indoor), with prospects if suitable. Usual bond. Send photo.—Address, No. 821, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, Country Practice, Cornwall. Car provided. Own dispensing. Usual bond. Age, photograph, and full essential particulars.—No. 802, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant (man or woman) for a Two Partner private and panel Practice in W. Riding town. Outdoor. Previous experience.—Address, stating essential particulars, No. 870, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, in a Colliery Practice in Glamorgan. A Dispenser kept. Usual bond. Salary £350 per annum, with furnished rooms, attendance, etc. —Address, stating age, references, etc., No. 813, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£450 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant, outdoor, young, Protestant, for mixed Practice in Midlands. Salary £400—£450 to begin, according to experience. Prospects.—Address, No. 816, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an Assistant, with a view to Partnership in a South Wales Colliery Practice. An ex House Surgeon preferred. A knowledge of Welsh an advantage.—Address, giving full particulars, No. 814, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, with view, male, Scotch or English. Good working-class private and panel Practice, 50 miles London. Salary £300.—Address, No. 824, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, for mixed Practice. Salary £250 to £300, if experienced. Usual bond. State age, testimonials. British.—Address, No. 878, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an energetic Assistant, private and panel Practice, East End. Salary £400, outdoor. — Address, No. 827, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Recently qualified Lady ASSISTANT, outdoor. Private and panel Practice. Salary £350. —Address, No. 874, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Woman M.B. Excellent experience private and panel. Good references. Own car. —Address, No. 817, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Lancashire Industrial Practice. Indoor £300, or outdoor £450, with coal, light, rent, but provide own maid. Abstainer. Bond. Drive car. Copy testimonials.—Address, No. 879, B.M.A. House, Tavistock Square, W.C.1.

Assistant (male), outdoor, required for busy general Practice in Yorkshire. Salary £370.—Address, No. 801, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.S.(Lond.), studying for D.P.H., would ASSIST busy London Practitioner with morn. or even. surg. in return for board, resid., and slight remuneration; æt. 23; 4 years' exper. G.P. Excellent references.—No. 804, B.M.A. House, Tavistock Sq., W.C.1.

Outdoor Assistancy in or near London wanted by experienced Practitioner; accustomed to panel. Has own living accommodation. Would conduct morning or afternoon or evening surgery. — Address, No. 826, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B., B.Ch., desires ASSISTANTSHIP about the middle of February; two years' experience, keen, energetic, cyclist, or drive car.—Address, No. 818, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.D., F.R.C.S., experienced, PART-TIME WORK (London or suburb) in Clinic or good-class Surgical Practice. —No. 829, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Full or part-time MEDICAL SECRETARIAL POST (London) by lady. 9 years' experience. Speeds 120-60. Knowledge French. Good references. — Write, Miss BROWN, 30, St. Nicholas Road, London, S.W.17.

Applications are invited for the appointment of MEDICAL OFFICER OF HEALTH to the MUNICIPAL COUNCIL OF NAIROBI, at a salary of £1,100 per annum, rising by annual increments of £50 to a maximum of £1,500.—Applications should be addressed to Messrs. LAURIE & Co., 28, Basinghall Street, London, E.C.2, from whom full particulars may be obtained.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Capable, well-educated woman, aged 32, as WORKING HOUSEKEEPER or CARETAKER to Doctor, highly recommended for position of trust by Mrs. ALLGOOD, Tarset, Northumberland.

Doctor's Widow (young) desires POST. Practical, domesticated, travelled. Some nursing training. Apothecaries' Hall certificate. Temporary or permanent. — No. 815, B.M.A. House, Tavistock Square, W.C.1.

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Queen's Hospital, Birmingham.

Applications are invited for the following posts:

(1) THIRD PHYSICIAN for Out-patients. Candidates must be Graduates in Medicine of a University in Great Britain or Ireland, also Fellows or Members of the Royal College of Physicians of London, Edinburgh, or Ireland.

(2) THIRD SURGEON for Out-patients. Candidates must be Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland.

Honorarium for each of the above posts £50 per annum.

Further particulars may be obtained from the undersigned, to whom applications must be sent not later than first post on Monday, February 17th next, stating date of birth and accompanied by testimonials.

G. HURFORD,
Birmingham. House Governor
January 28th, 1930. & Secretary.

Salford Royal Hospital.
(253 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) attached to the Orthopædic Department.

Salary at the rate of £125 per annum.

The appointment is for a period from February 8th to September 30th, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before February 5th.

By Order of the Board,
Salford Royal GEORGE RUDDLE,
Hospital. Gen. Supt. &
January 27th, 1930. Secretary.

Woking and District Victoria Hospital.
(General Hospital. 50 Beds.)

Female RESIDENT MEDICAL OFFICER (unmarried) required for February 15th. Applicants must be doubly qualified and registered. Salary £100 per annum, with board, residence, and laundry. Appointment for six months, and renewable for further six months.

Applications, stating age, etc., and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained. They must be received not later than February 7th. Personal canvassing not allowed.

R. MANNING DRIVER,
Woking and District Hon. Sec.
Victoria Hospital.

Westminster Hospital,
Broad Sanctuary, S.W.1.

Applications are Invited for the office of ORTHOPÆDIC SURGEON (Out-patients and in charge of five beds). Candidates must be Fellows of the Royal College of Surgeons of England, practising exclusively in Orthopædic Surgery.

Applications (35 copies), with 35 copies of each of three recent testimonials, should be addressed to the undersigned on or before February 21st. Each candidate will be required to transmit to the Secretary a certificate of his health, and to attend the House Committee on Tuesday, February 25th, at 4 p.m.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

Applications are invited for the part-time post of ASSISTANT SURGICAL REGISTRAR. Gentlemen desirous of becoming candidates should have held a resident appointment at a General Hospital. The appointment is for six months, with an honorarium at the rate of £50 per annum.

Applications should be submitted to the undersigned on or before Friday, February 7th.

CHARLES M. POWER, Secretary.

Miller General Hospital,
Greenwich Road, S.E.10. (151 Beds.)

Applications are invited for the three following posts:

RESIDENT MEDICAL OFFICER (the Senior of five resident posts). Salary £250 p.a.
CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from April 1st next.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary.

January 27th, 1930.

Bootle Borough Hospital
(General. 100 Beds),
Derby Road, BOOTLE.

Applications are invited from Medical Men for the posts of SENIOR RESIDENT MEDICAL OFFICER, with previous Hospital experience, and Two JUNIOR HOUSE SURGEONS, for the six months ending September 30th. Salaries at the rate of £200 per annum Senior Officer, and £125 per annum each Junior Officer, with board, residence, and laundry. Duties to commence April 1st.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned on or before February 7th.

J. A. BEARDSALL,
Secretary-Superintendent.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male).

Salary at the rate of £150 per annum for the first six months and £175 for the second six months, with residence, board, and laundry.

The appointment is for six months and is renewable.

The Resident Staff consists of a Resident Surgical Officer, House Surgeon, and House Physician.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

ARTHUR H. LIMB, Secretary.

Warrington Infirmary and DISPENSARY.

The Board of Management invite applications for the post of JUNIOR HOUSE SURGEON (male), unmarried. Vacant owing to promotion of present occupant. Applicants, who must be of British nationality, must be duly qualified Medical Practitioners.

Salary £175 per annum, with board, apartments, and laundry. Applications, stating age, with copies of three recent testimonials, should be sent in not later than February 4th.

By Order,
HENRY L. BOOT,
Jan. 21st, 1930. Supt. & Secretary.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.
(BOSCOMBE BRANCH. 170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty at end of January. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act.

Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
January 20th, 1930. Secretary.

Huddersfield Royal Infirmary.
(200 Beds.)

Male HOUSE SURGEON required immediately for Specials Dept. Salary £150 per annum, with board, residence, and laundry.

Appointment for six months, subject to renewal.

Applications, with testimonials, from qualified candidates to the Secretary.

Park Hospital, Davyhulme.
RESIDENT MEDICAL OFFICER.

Applications are invited for the appointment of JUNIOR RESIDENT MEDICAL OFFICER at the Park Hospital, Davyhulme.

The salary will be at the rate of £200 per annum, in addition to which will be provided rations, furnished apartments, etc.

The appointment will be made, in the first instance, for a period of six months, but applicant will be eligible for re-appointment for a further period of six months.

The appointment may be terminated by one month's notice in writing, given by either side.

The Hospital accommodation is 500 beds, divided into Medical, Surgical, Gynæcological and Obstetrical, etc., sections. There are X-ray, Electro-therapeutic, Massage, and Sunlight departments. A Medical Superintendent is in attendance and there is a Consulting Staff.

Applications must be made on printed forms, which may be obtained from the undersigned, accompanied by not more than three recent testimonials, and a description of diplomas, certificates of degrees, etc., held by the candidate, must be returned to me in envelopes marked "Resident Medical Officer," not later than Saturday, February 8th.

By Order,
Park Hospital, CHARLES FAULKNER,
Moorside Road, Clerk to the
Flixton, Management Committee.
Near Manchester.
January 27th, 1930.

Liverpool Stanley Hospital.

There will be vacancies on April 1st for One Male HOUSE PHYSICIAN, Two Male HOUSE SURGEONS, and One Female GYNÆCOLOGICAL HOUSE SURGEON. Engagement for a period of six months. Salary at the rate of £100 per annum, with board, laundry, etc.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before February 12th.

E. W. OSBORN, Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of CASUALTY OFFICER (male), which will become vacant on March 11th.

The appointment will be for a period of six months, at a salary of £120 per annum (ceteris paribus preference will be given to abstainers). Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Friday, February 7th, addressed to the Secretary.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, JUNIOR (male), at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains over 100 beds, is one of the premier Provincial Hospitals in Scotland, and offers exceptional opportunities of gaining experience in all branches of the profession. Salary £100 per annum.

Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street, Dumfries, by February 5th.

Taunton and Somerset Hospital,
TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male), required at beginning of February. The appointment, which will be for six calendar months, is approved by the University of London for the purpose of the M.D. examination. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

Bristol Eye Hospital.

Applications are invited for the post of HOUSE SURGEON. Vacant February 22nd next. Salary £150, with board, residence, and laundry. Applications should be sent to the Secretary not later than February 14th.

Central London Throat, Nose, and Ear Hospital,
Grays' Inn Road, W.C.1.

OUT-PATIENT STATISTICAL REGISTRAR.

There is a vacancy for the above-named officer, who must have had experience in the Speciality.

The duties are mainly statistical, but the Registrar is also required to assist the Surgeons in seeing patients when required, and to undertake elementary Post-graduate Teaching in conjunction with the In-patient Registrar.

There are small honoraria attached to the post, which is tenable for one year, subject to annual re-election for a period of not more than five years in all.

FIRST ASSISTANT.

There is a vacancy for a First Assistant in the Out-patient Department.

The post is an honorary one, tenable for one year, subject to re-election.

Attendance is required at two Clinics each week to assist the Surgeons in seeing the patients.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a Third Resident House Surgeon to enter on duty on March 1st next.

The appointment will be for a period of nine months—three months as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon.

Remuneration at the rate of £75 per annum.

Applications for any of these appointments, accompanied in each case by copies of not more than three testimonials, should be sent to the undersigned on or before February 8th.

JOHN H. YOUNG, Secretary-Supt.

Royal Devon & Exeter Hospital,
EXETER. (225 Beds.)

HOUSE PHYSICIAN (Male).

Applications are invited for the post of House Physician at this Hospital, vacant on February 28th next. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with certificate of registration and copies of three recent testimonials, should be sent to the undersigned on or before Monday, February 3rd next.

By Order of the Committee,
S. S. COLE,
Secretary & Manager.

Jan. 17th, 1930.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital. 338 Beds.)

Applications are invited for the posts of:
OPHTHALMIC HOUSE SURGEON.
HOUSE SURGEON (General Surgery).
ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER.

Candidates must be qualified and registered under the Medical Acts.

The appointments are tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than February 14th. Duties will commence on March 1st.

WALTER BANKS,
Supt. & Secretary.

Jan. 22nd, 1930.

Accrington Victoria Hospital.

The Governing Body of this Hospital invites applications for the post of HOUSE SURGEON.

Candidates may be male or female and duly qualified and registered. Number of beds, 50. Salary £150 per annum, with board and lodging.

There are Two Honorary Anæsthetists on the staff who attend on regular operation days.

Conditions of appointment and particulars of duties may be obtained from the undersigned, to whom application, with copies only of testimonials, should be sent on or before Feb. 4th.

W. H. WARHURST,
Hon. Secretary.

Town Hall, Accrington.

King Edward VII Hospital,
WINDSOR. (181 Beds.)

HOUSE SURGEON (male or female) required for six months from date of appointment. Applicants must be fully qualified and registered, and should have had experience in Ear, Nose, and Throat work.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than February 12th.

ARTHUR E. CHURCHER, Secretary.

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Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on February 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties early in February. Salary £100, with rooms, board, and laundry.

There are 110 beds.

Particulars to be obtained of, and applications, stating previous experience and essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

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Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £280 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,000.—No. 8608.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Small house about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage.—No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8593.

Australia. — Over £1,000 and great scope. Hosp. appt. worth £400. Fees 10/6 up. Prem. £700. New bungalow, 2 bed., 1 large sitting room, surgery, etc.—No. 8594.

London, S.E. — About £750. Panel 1,200. Mids. refused, ample scope. Visiting fees 3/6 up. Surgery, waiting room, and dispensary, and small flat, with garage. Premium £1,500.—No. 8600.

Shropshire Town. — £1,300 p.a. Panel and appts. worth £800 p.a. Mids. 3 to 5 gns. Visits 3/6 to 21/-. Good house, 5 beds., box, 2 recep., surgery, etc., to rent. Premium £1,800, part down.—No. 8596.

Lincs.—Unopp. Country Practice. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 5/- to 10/-. House, 5 bed., etc., to rent; large garden.—No. 8592.

Eastern Counties.—Rapidly increasing. 1/3 share of £2,500 p.a. Country Town. Appts. £65 p.a. Panel over £730 p.a. Clubs, etc., £150 p.a. Mids. from 3—5 gns. up. Visits from 5/-. Alternative accommodation. Personally visited.—No. 8591.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8555.

Eastern Counties.—Old-estab.—ONE-THIRD SHARE of £2,400 p.a. Panel over 1,600 names. Appts. £100 p.a. Usual fees. Nice house and garden to rent. Prem. 1½ years, part down.—No. 8584.

Hants Country. — About £700 p.a. Appts. about £55 p.a. Panel about 300. Visits 3/6—10/6. House, 5 bed., etc., to rent or buy.—No. 8582.

N. W. Scotland. — About £800 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premises, including furniture, only £1,200.—No. 8577.

Glos.—Over £750 p.a., increasing annually. Clubs £40 p.a. Panel 553. Mids. 2—10 gns. Visits 3/6—10/6. Good house, 5 bed., etc.—No. 8578.

Wiltshire.—About £1,000 p.a. Small panel. No midwifery. Appts. £20 p.a. Visits 5/- to 10/6. Suitable house to rent at £70 p.a.—No. 8574.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd share £3,500 p.a. Panel over 1,300. Appts. £220 p.a. Mids. 2 to 10 gns. Visits 5/- to 21/-, etc. Suitable accommodation.—No. 8573.

Home Counties.—Country Town. Share worth £1,000 or more p.a., in old established Practice. Appts. £250 p.a. Panel over 2,700. Personally visited.—No. 8563.

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DERBYSHIRE.—PARTNERSHIP in old-estab. non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share, at 2 years' purchase.

HOME COUNTIES.—We have several small PRACTICES for disposal. Incomes from £100 up, with scope for development. Full details on request.

HOME COUNTIES.—Within easy distance of Town.—PARTNERSHIP in well-established G.P. Share worth approx. £1,000 p.a. Premium 2 years' purchase. Preliminary assistantship. Suitable only to experienced man aged 30 to 35, preferably single.

MIDDLESEX (N.).—On the borders of London.—Well-established small PRACTICE in growing residential locality. Excellent scope. Large house, part sublet for professional purposes, on long lease. Large garden and garage. Premium, to include furniture, fittings, drugs, and lease, £1,200.

BERKS.—PARTNERSHIP, with view to Succession.—Country Practice. Receipts average £1,120 p.a. Panel nearly 600. House to rent. Premium for half share 2 years' purchase. Suitable only to single man.

DURHAM.—PARTNERSHIP in increasing Practice situated in colliery district. Receipts £1,600. Panel 1,350. Premium for half share 2 years' purchase.

GLAMORGAN.—Country PRACTICE, near manufacturing area. Receipts average £1,100 p.a. Panel 1,300. Good-sized house for sale, or to rent at £50 p.a. Premium £1,000, cash, for quick sale.

YORKS.—PARTNERSHIP in middle- and working-class Town Practice. Receipts approx. £3,000 p.a. Panel over 2,000. House to rent. Premium for 1/4th share 2 years' purchase.

WEST COUNTRY.—Oxford or Cambridge 'Varsity Graduate desired as PARTNER, with view to Succession in three or four years' time, in old-established good-class non-panel Practice situated in country town. Receipts over £2,000 p.a. Half share is offered to well-qualified man, aged about 30, at 2 years' purchase.

LEICESTERSHIRE. — Old-established Country PRACTICE. Receipts £1,450. Panel 1,350. Suitable accommodation available. Premium 1½ years' purchase.

LONDON, S.W.—PARTNERSHIP in middle-class Suburban PRACTICE. Receipts £2,800. Panel about 2,500. Suitable accommodation available. Premium for half share 2 years' purchase.

GLOS.—Non-dispensing General Town PRACTICE. Excellent freehold house to rent or for sale. Receipts over £700 p.a. Panel 550. Suitable for lady doctor. Premium £1,050.

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LANCS.—Seaside Resort.—Middle-class G.P. Receipts average £1,198. Panel 600. House to rent at £80 p.a. Scope for surgery. Premium 1½ years' purchase.

YORKS.—Well-established middle and working-class Town PRACTICE. Receipts approx. £1,520. Panel nearly 1,700. House to rent. Premium £2,250.

SUFFOLK.—DEATH VACANCY.—Old-established G.P. situated 6 miles from large Country Town. Receipts average £900 p.a. Small panel. Good house with garden. Premium 1 year's purchase.

LANCS.—Old-established middle-class PRACTICE in manufacturing area. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. Premium for Practice 1½ years' purchase, payable part down and balance by arrangement. Partnership would be considered.

N. WALES.—DEATH VACANCY.—Good-class PRACTICE situated in Health Resort. Large house for sale or to rent at £85 p.a. Receipts approx. £1,200 p.a. Small panel. Premium 1 year's purchase.

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CORNWALL.—DEATH VACANCY.—Old-established Country Town PRACTICE. Receipts £1,300 p.a. Panel 900. Appointments. Hospital Locum in charge. Premium 1 year's purchase. House to rent.

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SHROPSHIRE.—Good Town.—Old-established PRACTICE. Receipts average over £1,200 per annum, including panel 1,339. Nice house, rent £85. Good introduction. Premium moderate.

WILTS.—Old-established PRACTICE. Receipts stated to be £500, including panel. Six-roomed flat, rent £40. Opposition weak. Premium £400.

LONDON (10 mins. Charing Cross).—Old-established PRACTICE. Receipts £1,000 p.a. Panel nearly 800. Good house, rent £80, several years' lease to run. Prem. £1,600.

LEICESTERSHIRE.—Old-estab. PRACTICE. Receipts last year £1,483, including panel 1,250. Large house, with grounds, to be sold. Premium for Practice 1½ years' pur.

WELL-ESTABLISHED mixed-class PRACTICE in rapidly developing district, 20 mins. Golders Green. Receipts last 12 months nearly £500, including panel of 400. Excellent house on lease, rent covered by subletting. Premium moderate.

NOTTS.—Old-established PRACTICE. Receipts over £3,000 p.a., including panel of 2,799. Detached modern house. Would suit two partners. Premium 1½ years' purchase. House to rent.

LONDON, S.E. (15 mins. Charing Cross).—Cash and Panel PRACTICE in densely populated district. Receipts about £1,400 p.a., panel 750. House, rent £78. Premium £2,000, cash preferred.

BERKS.—Half share, with view to succession later, of old-established Practice. Receipts £1,250 p.a., including panel. Excellent chance for energetic practitioner. Any reasonable premium or terms considered.

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2 WEST OF ENGLAND.—Practice averaging £1,350 on outskirts of important City. Panel 1,787. Pleasantly situated house (4 bedrooms), garage and large garden, for sale. Premium £2,100. Considerable scope.

3 WEST MIDLANDS.—Practice in first-rate Town. Cash receipts average £1,300 p.a. (about £800 from appointments and panel). House containing 4 bedrooms, etc., to let on lease. Premium 1½ years' purchase.

4 DORSET.—Country Practice over £1,000 p.a. in beautiful part. Panel over 600. Detached house (6 bedrooms) in own grounds, with garage, to rent. Premium 1½ years' purchase.

5 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £730. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

6 N.E. COAST.—Partnership (after short preliminary Assistantship) in Practice in Seaport Town. Suitable house to rent. Share worth over £1,800 p.a. at 1½ years' purchase. Young energetic Englishman (about 30) required.

7 EASTERN COUNTIES. — Partnership in Country Practice over £2,000 p.a. in prosperous agricultural district. Panel 1,070. Nice detached house (6 bedrooms), electric light, etc., for sale or rent. Premium two-fifths share £1,400.

8 Near BIRMINGHAM.—Partnership in very sound Practice, nearly £3,000, in large and rapidly growing residential country district. Panel 930. Suitable house obtainable. Premium one-third share 2 years' purchase.

9 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

10 SUSSEX. — Partnership in increasing Country Practice £3,154. Panel nearly 1,500. Good society and sport. Premium one-half share at 2 years' purchase. Scope for increase.

11 LONDON, N.—Practice of £1,100 p.a. in populous district. Panel 1,150. House to rent. Premium 1½ years' purchase.

12 LONDON, W.—Partnership in non-dispensing Practice about £2,500 p.a. No panel or appointments. One-third share, with view to ultimate succession. Premium 2 years' purchase. Purchaser must be well qualified and used to good-class Practice.

13 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

14 MIDLANDS.—Partnership in Practice in agricultural district in beautiful part. Small panel. Not much midwifery. House (7 bedrooms), with very nice garden and orchard, to rent. Share worth £1,200 p.a. at 2 years' purchase.

15 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

16 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

17 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase after preliminary assistantship.

18 MADEIRA.—Season Practice. — Receipts last season over £900. Easily worked. Practically no night work or midwifery. Excellent climate. Premium £1,000.

19 LONDON, S.E.—Cash and Panel Practice in thickly populated area. Receipts 1929, £860. Panel 250. Rent of premises £9 per month. Premium £750.

20 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable rooms could be obtained. Premium £950.

21 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

22 SOUTH MIDLANDS.—Partner required in Country Town Practice over £4,500 p.a. Panel 2,500. House available, with 6 bedrooms, etc. One-fourth share at 2 years' purchase after preliminary assistantship. Applicant must be married and about 30/35 years of age.

23 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

24 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

25 SOUTH OF ENGLAND.—Partnership in Practice nearly £2,600 in small industrial town. Panel 2,200. One-third share at 2 yrs. purchase after preliminary assistantship.

26 SOUTH COAST.—Ophthalmic Practice over £1,900 p.a. in residential town. House, containing 5 bedrooms, etc., for sale or rent. Premium £1,800.

27 WEST OF ENGLAND.—Country Practice about £500 p.a. in mining and agricultural district. Panel £550. House (6 bedrooms), with fine garden and paddock, to rent. Premium £500.

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29 SOUTH MIDLANDS. — Easily worked Country PRACTICE upwards of £1,000 p.a. in beautiful part. Panel 470. Excellent and most pleasantly situated modernised house (6 bedrooms), in old-world garden, for sale. Sport and schools. Premium £1,350.

30 HEREFORDSHIRE.—Practice about £400 p.a. in beautifully situated Market Town. No panel. Centrally situated house (5 bedrooms) for sale. Great scope. Premium 1 year's purchase.

31 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

32 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

33 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

34 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

35 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

36 LIVERPOOL. — Increasing Practice of nearly £1,300. Panel 560. House (4 bedrooms), garage and garden, for sale. Golf near by. Premium £1,550 (£500 by instalments, without interest).

37 ESSEX.—Practice of £1,100 p.a. in Rural District. Panel 670. Old-fashioned house (6 bedrooms), with large garden, to rent. Scope. Premium £1,650.

38 EASTERN COUNTIES. — Partnership in Country Practice of £2,380 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

39 W. OF ENGLAND. — Ophthalmic PRACTICE, between £850 and £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,300.

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41 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

42 INLAND WATERING-PLACE. — Good-class PRACTICE of nearly £2,000 p.a. (General and Spa work). No midwifery or panel. Excellently situated house to be purchased.

43 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

44 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

45 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

46 BRITISH EAST AFRICA. — Assistant required (with view to Partnership) in General and X-ray and Electro-therapeutic Practice. Assistant must hold the F.R.C.S., and experience in X-ray would be advantageous. Share of about £1,200 p.a. offered to suitable man after preliminary assistantship.

47 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 800. Suitable and convenient house.

48 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained.

49 SOUTH WALES. — Practice over £1,200 p.a. in Country Town. Panel about 300. Attractive old house (6 bedrooms). Garage and garden. Good facilities for sport. Premium £1,500.

50 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

51 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

52 SOUTH COAST. — Increasing Practice £1,515 p.a. in favourite Seaside Resort. Panel 400/500. Large house for sale. Scope for increase. Premium 1½ years' purchase.

53 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (6 bedrooms) for sale. Sport. Premium 1½ years' purchase.

54 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

55 WEST OF ENGLAND.—Steadily growing Country PRACTICE of about £650 in delightful part of the Cotswolds—easy reach of two good Towns. Panel 497. House (6 bedrooms), with garage, ¼ acre garden, and paddock, for sale. Good scope. Premium £800.

56 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

57 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms) and garden for sale. Premium £750.

58 NORTH MIDLANDS. — Partnership in Practice £2,585 p.a. in one of the principal cities. Panel about 1,500. Share up to one-half at 2 years' purchase after preliminary Assistantship.

59 SHEFFIELD.—Practice about £800 (including appointments worth £155 p.a.). No panel or dispensing. Convenient house (6 bedrooms) to be sold or let. Premium £200 or offer.

60 WEST MIDLANDS.—Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

61 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

62 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

63 LONDON, S.W.—Good middle-class non-dispensing PRACTICE in pleasant residential suburb. Receipts year ended September 30th, 1929, £2,428. No panel. Excellent detached corner residence (7 bedrooms). Premium—house and Practice—£4,000.

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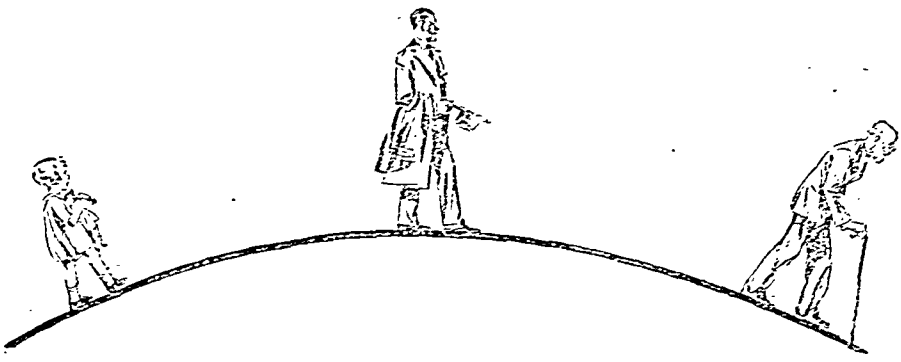
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3. PARTNERSHIP.—SOUTH-WEST COAST.—Fashionable Watering-place. —Third or smaller share (producing about £1,200 p.a.) if wished, to commence with, is for disposal in an old-established non-dispensing Practice worth last year over £6,000, owing to the retirement, through ill health, of one of three partners. Ingoing partner must be competent to undertake surgical work. Good house, with garden, etc., available on rent or purchase. Premium for share 2 years' purchase.
4. SUSSEX COAST TOWN.—PARTNERSHIP.—A one-fifth share, to commence with, is offered in an old-established mixed-class Practice producing last year over £4,000 p.a., including panel of 2,200. Fees 3/- to 10/6. Good house, with 2 reception, 6 bedrooms, and professional rooms. Electric light. Garden. Garage. Rent on lease £100 p.a. Premium 2 years' purchase. Short preliminary assist'ship.
5. KENT.—LARGE TOWN.—Well-established middle and better-class non-panel PRACTICE, producing last year £5,000 p.a. Visits 5/- up. Suitable house, 3 reception, 4—5 bedrooms, etc. Rent on lease £63 p.a. Prem. £3,500, £2,000 down.
6. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-fourth share in an exceptionally sound non-dispensing mainly mixed and better-class Practice, averaging over £8,500 p.a. Small selected panel of 700. Fees 5/- to 21/-, average 7/-. Suitable house can be obtained. London, Oxford, or Cambridge Graduate preferred, age 30 to 35, and experienced in anæsthetics. Premium £4,000.
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8. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Premium £2,300. Cottage Hospital, and good scope for major surgery.
9. MADEIRA.—SEASONAL PRACTICE.—Receipts for immediate past 12 months £900. Fees 10/6 to 21/-, and a few at 7/6. Easily worked and good scope. Excellent climate. Premium £1,000.
10. BORDERS OF NORTHANTS AND LINCS.—Unopposed old-established Country PRACTICE, within easy reach of large town, and worth over £1,500 p.a., including panel (with mileage) £675, and appts. about £30. Visits 5/- to 20/-. Suitable house available. Rent £70 p.a., or can be bought. Premium 1½ years' purchase. Held by Vendor, who is retiring, over 30 years. Sport of all kinds.
11. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—A share producing about £1,200 p.a., with prospects, is for disposal owing to the retirement of one of the partners in an old-established Practice. Ingoing partner would reside in a pretty country district about 5 miles from pleasant country town, where main practice lies. No opposition. Total income about £8,000, including valuable appointments worth about £2,000, and panel. Very desirable residence (ample accommodation) with 2½ acres of ground available on lease at low rental of £60. Premium 2 years' purchase.
12. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 330. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
13. GLOS.—Favourite Town.—Mixed general non-dispensing PRACTICE. Income last year over £700, including panel of 550. Visits 3/6 to 10/6. Mid. 2 to 10 gns. Good house, in excellent position, with 3 reception, 3 bedrooms, etc. Rent on lease £75 p.a. Premium 1½ years' purchase. Suitable lady doctor.
14. LONDON, W.—Chiefly middle-class PRACTICE, averaging about £700 p.a., including panel of 750. Visits 3/6, 5/-. No midwifery. Suitable house, with 4 beds., etc. Rent on lease £96 p.a. Prem. £1,100.
15. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
16. CHANNEL ISLANDS.—Old-established better and middle-class PRACTICE, averaging about £1,000 p.a., but capable of increase. Fees 5/- to 21/-. Little midwifery. No panel. Large well-situated house with garden. Garage for 3 cars. Very pleasant social conditions. Premium for Practice and house £4,000, of which £1,500 to £2,000 could remain on mortgage.
17. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visit 5/- to 21/-. Panel of about 380. Appts. worth about £50 p.a. Convenient house, with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' purchase.
18. WITHIN TWENTY MILES OF LONDON.—Old-established good mixed-class PRACTICE, in attractive residential district. Receipts average £1,000 p.a. Panel of nearly 500 and appts. worth £60. Visits 3/6 to 21/-. Very nice house, with all modern conveniences and half acre of garden. Price for freehold £1,800. Premium £1,400.
19. DEATH VACANCY.—NORTH WALES.—Easily worked PRACTICE, offering large scope, in beautiful seaside and country district. Cash receipts for last twelve months about £1,200. Very convenient and commodious house can be rented on lease at £85 p.a. Premium £800. Very good Locum in charge.
20. ESSEX.—(Within 15 miles of London).—Old-established unopposed and increasing PRACTICE, in pretty country district. Income last year over £1,150, including Union £90 and panel £432. Comfortable house, with ample accommodation and large garden. Rent £70 p.a. on lease. Premium £1,650. Ill health reason for sale.
21. HOME COUNTIES.—Within few miles of large town.—Old-established unopposed and increasing PRACTICE, in pleasant district, worth over £3,000 p.a., including panel, with mileage, producing about £1,000 and appts. £260. Visits 3/6 to 10/6, medicine usually extra. Very little midwifery. Good house (7 bedrooms, etc.), garden, garage. Price, freehold, £2,000. Premium 1½ years' purchase.
22. CHESHIRE.—Industrial Town within easy reach of Manchester.—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
23. DEATH VACANCY.—SOUTH WALES.—Seaside Resort.—Old-established mixed-class PRACTICE in favourite locality. Receipts for past 12 months £1,400, including panel of 607. Visits 3/6 to 21/-. Convenient house, with 2 reception, 4-6 bedrooms, and professional rooms, etc. Rent on lease £80 p.a. Good sport and schools. Premium 1 year's purchase.
24. SOUTH AFRICA.—HEALTH RESORT (Inland Spa).—Old-established increasing PRACTICE (held over 20 years) on a main line of rail, and in a healthy pleasant township much frequented by visitors in the Season. Cash receipts average over £1,750 p.a., including several appts. One opponent. Price for house £1,250, to include furniture, instruments, and motor car (original cost £2,000), and for goodwill £1,250, part by instalments. Efficient introduction. A knowledge of Hydrology would be a big asset.
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26. WORCS.—COUNTRY PRACTICE within easy reach of two good towns. Old-established, and averaging over £1,000 p.a., including panel of about 600. Fees 2/6 to 10/6. Good house, with ample accommodation. Rent on lease £85 p.a. Premium £1,350, £1,000 down, balance easy instalments.
27. SOMERSET.—Near Hospital Town, in very pleasant residential district, an old-established unopposed Country PRACTICE averaging over £900 p.a., including panel (producing about £400 p.a., with mileage and appts. Visits 3/6 to 21/-. Railway station in place. Nice house (5 bedrooms, dressing and bathroom, etc., garden). Price, freehold, £1,250, part on mortgage. Prem. £1,250, to include drugs, etc.
28. MANCHESTER.—Rapidly growing Suburb within 5 miles of the City.—Old-established mainly middle-class PRACTICE, producing a steady average income of £2,000. Panel of nearly 1,400. Fees 3/6 to 10/6. Large house and garden. Price, freehold, £2,500, or would be let on lease at £120 p.a. Premium £3,500.
29. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A one-third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, on rental. Premium £2,250.
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31. SOUTH-WEST OF ENGLAND.—GOOD HOSPITAL TOWN.—A one-half share in an old-established mixed-class PRACTICE is offered owing to the retirement of the Junior Partner. Gross cash receipts average £2,300 p.a., including good appts. Small panel. Low expenses. Commodious house, with garden and garage, rent £70 p.a. Premium 2 years' purchase. Vendor on staff of Hospital, and scope for surgery.

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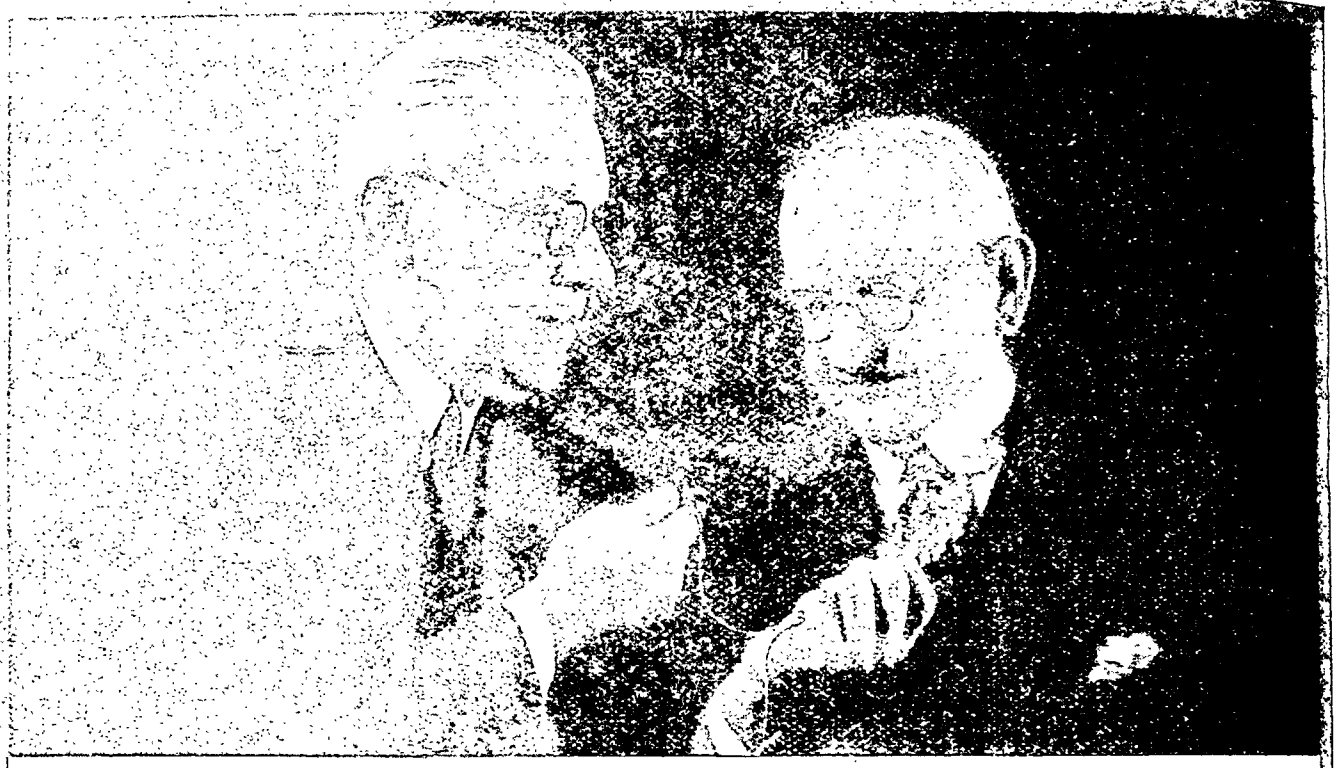
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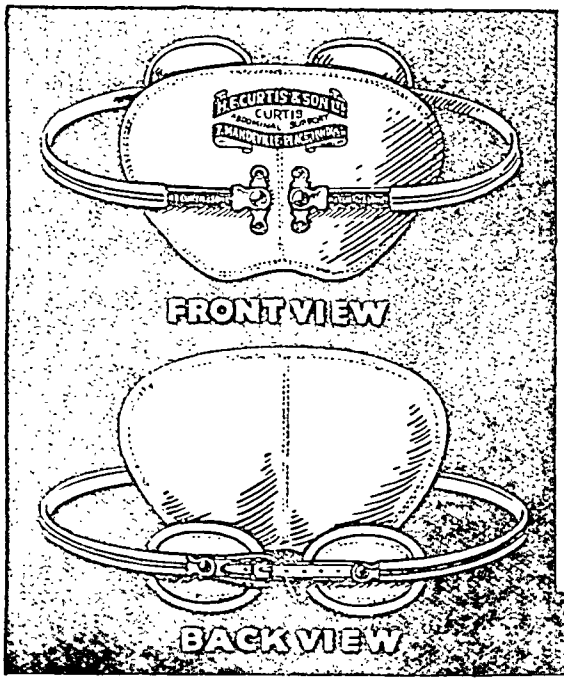
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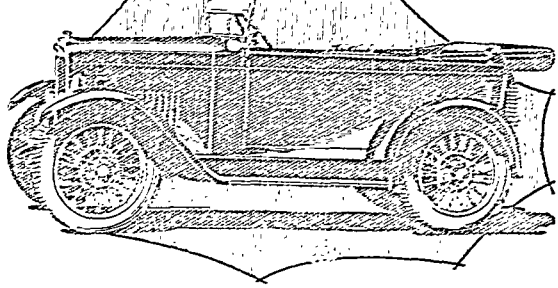
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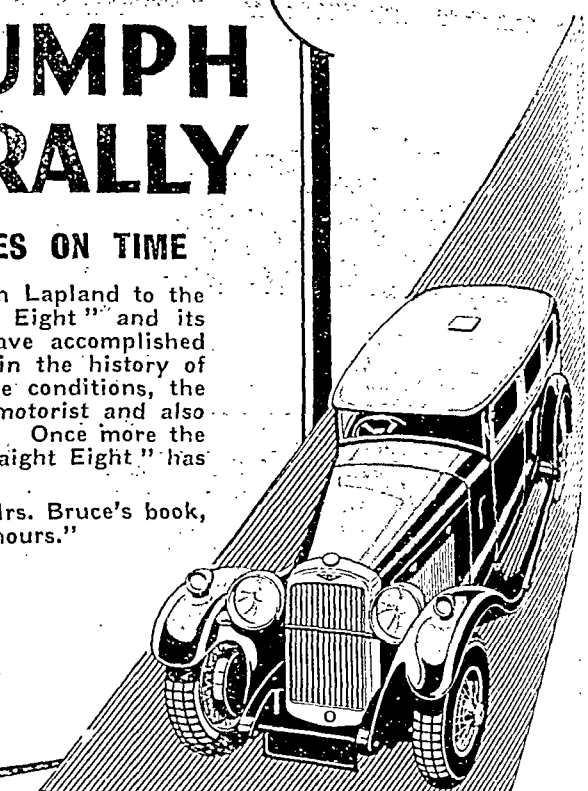
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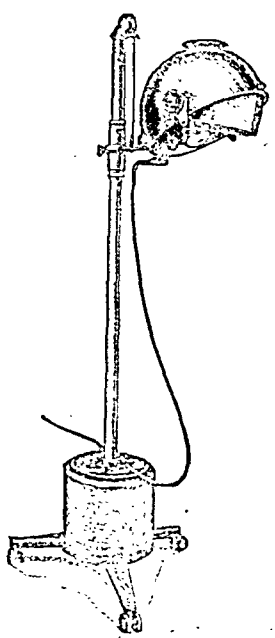


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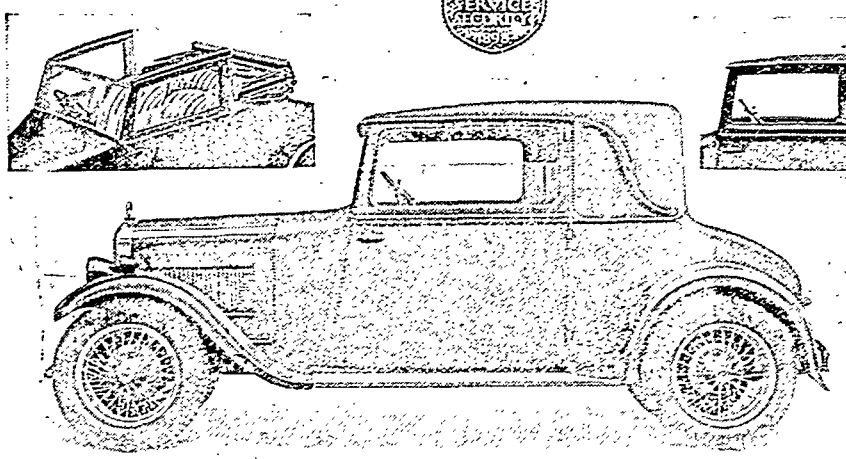
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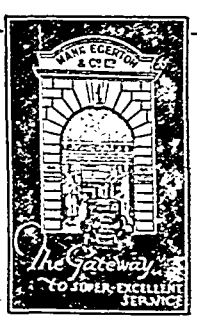


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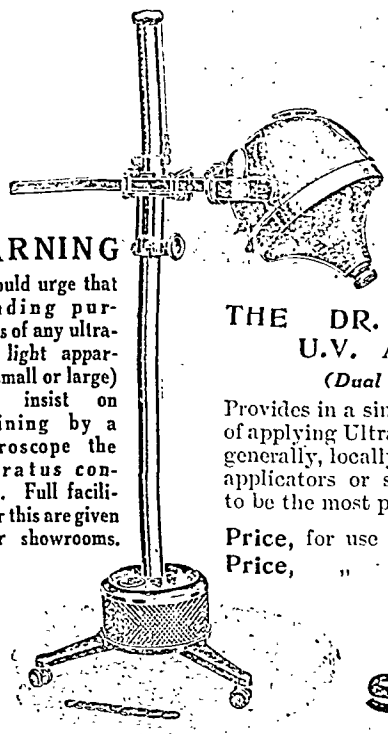
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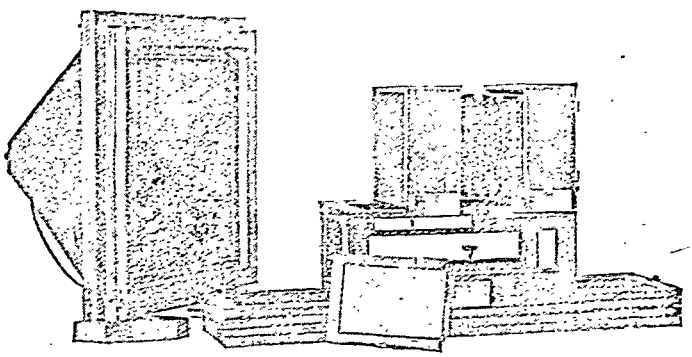
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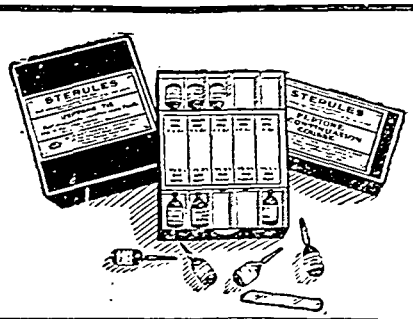
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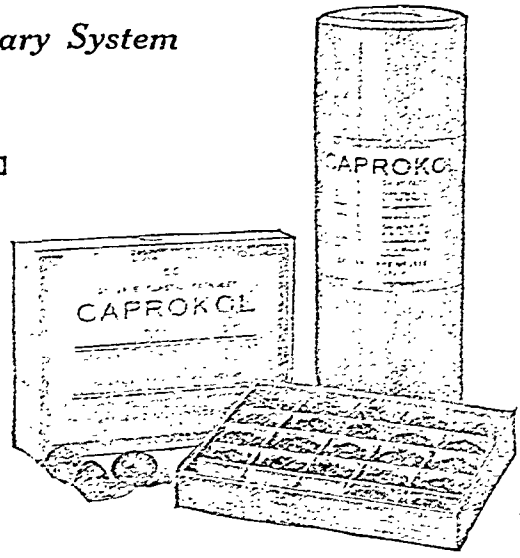
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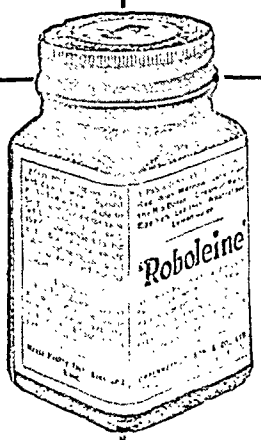
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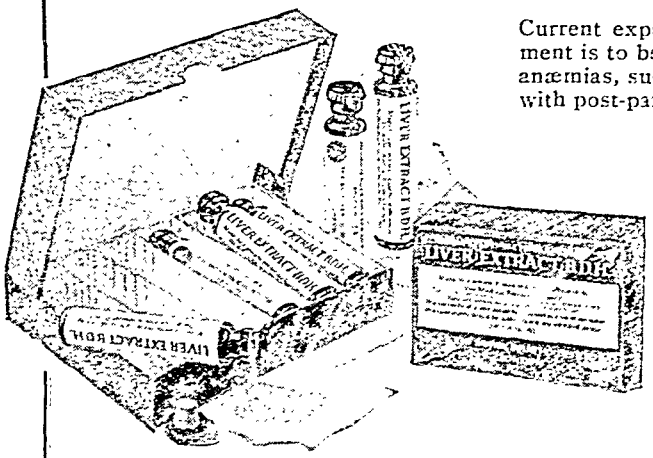
Bethnal Green, London, E.2

Telephone: Bishopsgate 201 (10 lines) *Telegrams: "Greenburys Edo London."*

LIVER EXTRACT B.D.H.

Results obtained in a series of 80 cases of pernicious anæmia reported upon recently (*B.M.J.*, Dec. 14, 1929) confirm the fact that liver therapy is remarkably beneficial in this distressing disease.

Current experimental work indicates that liver treatment is to become a routine measure also in secondary anæmias, such as those associated with pregnancy and with post-partum hæmorrhage.



Literature on request

The clinical value of Liver Extract B.D.H. in all the conditions mentioned above is now well established. Liver Extract B.D.H. is made under rigid supervision in the B.D.H. laboratories by a special process tested and found efficient by the Medical Research Council.

In it all the therapeutic activity of fresh liver is maintained, the resulting product being highly potent and at the same time so palatable that it is regarded by the patient as a savoury rather than as a medicine.

THE BRITISH DRUG HOUSES LTD. LONDON N=1

Liv. Ext. 14

BOOTS PRODUCTS

Acriflavine (BOOTS)

One of the most potent of modern antiseptics, physiologically pure and extremely soluble in water. ACRIFLAVINE (BOOTS) kills organisms in a concentration of 1 in 100,000. Its potency is actually increased when brought into contact with serum. Now recognized as the routine preparation for irrigations in the treatment of gonorrhœa. Ideal for suppurating wounds and septic conditions of all kinds.

ACRIFLAVINE (BOOTS) is supplied in 5 gm. and 20 gm. bottles, and in tablets (1.75 gr. and 2,187 gr.).

NEUTRAL-ACRIFLAVINE (BOOTS) is specially prepared for internal use in the form of enteric-coated tablets, and also for hypodermic or intravenous injections.

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Address all enquiries to
WHOLESALE AND EXPORT DEPT.,
BOOTS PURE DRUG Co. Ltd.
NOTTINGHAM, ENGLAND
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Boots Pure Drug Co., Ltd., Nottingham

HOW GIBBS HELPS THE DOCTOR

The Scope of Gibbs Educational Work

The educational work carried on by Gibbs is of tremendous value to the Doctor. By means of this highly organised effort a very large section of the public is reached during the most impressionable age—childhood. They are taught a great deal about their teeth—their construction and how Nature builds them—how they are finally formed—and the best way to preserve them in all their natural beauty.

Not only is this of great value in impressing upon the children the vital need that great care should be taken of the teeth, but this educational background is a useful field in which the Doctor may plant his special advice or instructions. More intelligent heed is given his words. Gibbs educational programme includes:—

IVORY CASTLE LEAGUE AND CRUSADE

The primary object of the League is to put into the hands of all who are interested in the promotion of Oral Hygiene the means of interesting the rising generation in their own welfare.

Membership of the League is open to all bona fide Teachers and accredited persons interested in the state of Children's teeth. Crusaders are enrolled by their teacher.

BOOKS AND CHARTS

For the Juniors, Fairy Books are provided. For Seniors, the booklet, "My teeth and how to defend them."

A set of eight Charts has been prepared illustrating the Formation, Structure and Care of the Teeth.

TOOTH BRUSH SCHEME, FILM AND SLIDES

To establish the Tooth Brush Habit the House of Gibbs will supply at nominal cost, SETS consisting of one Tooth Brush and tin of Dentifrice.

Four sets of slides with a lecture on Dental Hygiene, and/or a fascinating fairy film free on loan.

GIBBS DENTURE TABLET

Gibbs new Denture Tablet is for cleaning Dental Plates, Bridgework (both gold and vulcanite) and artificial teeth. It gives a high polish, removes stains, makes plate or teeth sterile and antiseptic without in anyway injuring the softest gold or the finest vulcanite or platinum. The formula has been submitted to and approved by important members of the Medical Profession.

Gibbs Dentifrice

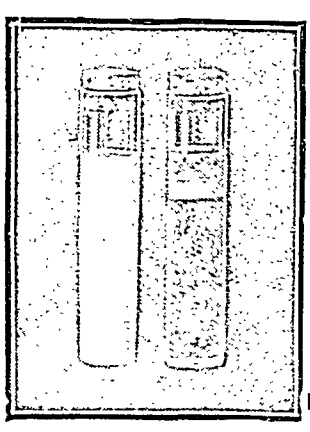
BRITISH MADE

Literature, propaganda material, kinematograph films, leaflets, etc., as well as samples, are always freely at your disposal. Address: Dental Dept. D. & W. Gibbs Ltd., London, E.1.

GD/Dr/2a

Action of Lysolat compared with that of Carbolic Acid on Pathogenic Organisms

The exceptional germicidal value of Lysolat is due, in great part, to its solubility and stability even in circumstances that destroy other antiseptics. The left-hand test tube below shows Lysolat in a state of perfect emulsification in a 3% solution of Sodium Chloride, whilst a well-known liquid Lysol (right-hand test tube) has broken down under the same conditions.



A number of significant experiments have been made by Prof. Edmund Huynen of the State Veterinary University of Brussels to test the efficacy of Lysolat as a germicide. He used 1% solutions of Lysolat and of Carbolic Acid. It was ascertained that while the Lysolat solution represented a cresol concentration 3.5 times weaker than the carbolic acid solution, it was actually 5 times more powerful.

The following are the results of Prof. Huynen's experiments:

(1) Bacilli Pyocyaneus and Coli were destroyed by the Lysolat solution in 8 mins. at 18°, in 5 mins. at 26°, and in 2 mins. at 37°.

(2) Bacilli Bang and Paratyphoid were destroyed by the Lysolat solution in 1 min. at 37°.

(3) Bacillus Staphylococcus was destroyed by the Lysolat solution in 4 mins. at 37°.

In the latter case the carbolic acid solution required a contact of 120 mins. to destroy the Staphylococcus under identical conditions. At 26° the Lysolat solution proved to be 15 times stronger, and at 18° 12 times stronger than the solution of carbolic acid.

Lysolats

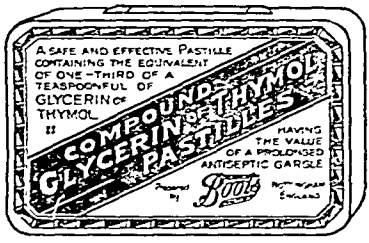
PATENT 118667 (LYSOL TABLETS)

Lysolats are packed in handy tins containing 40 and 80 tablets (at 1/3 and 2/- respectively), and also in tins of 1,000 tablets.



Members of the Medical Profession are invited to write for free samples of Lysolats to Solidol Chemical Ltd., Ashmead House, Disney St., London, S.E.1

COMPOUND GLYCERIN OF THYMOL PASTILLES



Full size trial tin free to Medical Practitioners in the British Isles on application to Boots The Chemists, Station Street, Nottingham.

The increasing use of Compound Glycerin of Thymol as an antiseptic and anti-catarrhal wash has suggested to us the introduction of this Pastille. Each Pastille contains the equivalent of 20 minims of Glycerinum Thymol Co. B.P.C., fortified by the addition of a powerful new antiseptic, Amyl-Meta-Cresol, discovered in the Research Laboratories of Boots Pure Drug Co. Ltd.

This antiseptic has a R.W. co-efficient of 250, and the equivalent of 2½ grains of pure Phenol has been added to each pastille.

The Pastilles have a refreshing flavour and will be found entirely pleasant in use.

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The Boots Chemists

NEARLY 900 BRANCHES IN GREAT BRITAIN

Boots Pure Drug Co., Ltd., Nottingham.



Intestinal Debility

"Cristolax" is worthy of careful trial in all cases of constipation. It is composed of 50 per cent. of the purest medicinal paraffin in combination with 50 per cent. of "Wander" Dry Malt Extract. The paraffin content acts mechanically for expelling the fæces, while the high diastatic property of the malt extract assists digestion and improves nutrition.

Where the patient has been accustomed to use an ordinary laxative regularly it is recommended that this should be continued in diminishing doses with the "Cristolax" treatment. It is quickly found that the "Cristolax" method of intestinal lubrication will alone ensure adequate and regular defecation.

Patients highly approve the pleasant flavour of "Cristolax," the complete absence of oiliness and its cleanly form.

'CRISTOLAX'
BRAND
MALT EXTRACT WITH PARAFFIN
Lubricant-Laxative-Nutrient-Digestive

A supply for Clinical trial sent free on request.

Of all Pharmacists, in bottles at 3/6 & 2/- each.

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M129

Irritable Bowel

Nujol is of great assistance in the treatment of chronic irritable bowel. Unlike cathartics, whose action is stimulating to the muscles or irritating to the lining of the intestines causing excessive secretion of mucus, Nujol acts merely as a gentle lubricant and solvent of impacted fecal matter. Though it absorbs intestinal toxins to a high degree, it cannot, itself, be absorbed. Consequently, toxemia is prevented, peristalsis is at a natural rate, and the stool is normal and properly formed.

Nujol

REGISTERED TRADE MARK.

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R AND D

Specially indicated in

NEPHRITIS - URÆMIA - ECLAMPSIA - ALBUMINURIA

and allied conditions.

PROMPT and proper diagnosis of kidney conditions is necessary in cases of Bright's disease and all types of renal disorders. In nine cases out of ten the administration of a specific capable of producing real results in compensating for the loss of kidney function is also necessary.

For more than a quarter of a century Nephritin has been a sheet anchor to physicians in treating such disorders. Nephritin Tablets induce a marked increase in nitrogenous waste elimination. They reactivate the cells of the kidney, increase urinary secretion, and induce a greater output of urea.

Given in sufficient dosage these tablets produce marked results, and restoration to normal is quickly stimulated. They are invaluable also as a prophylactic in renal complications of infectious diseases and during pregnancy. The tablets are composed of the hormones of the normal kidney as they appear in nature—*absolutely unaltered.*

Samples and Descriptive Literature from Sole Distributing Agents for U.K. and Irish Free State: COATES & COOPER, 41, Great Tower Street, London, E.C.3.

Nephritin

TRADE MARK BRAND

DIURETIC RE-ZYME TABLETS

Manufactured by

REED AND CARNRICK

Pioneers in Endocrine Therapy

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BY APPOINTMENT

NEARLY A CENTURY OF ACHIEVEMENT LIES BEHIND THEIR MAKING

THE exclusive process known only to Brand & Company of extracting their essences was first evolved nearly a century ago by Mr. Brand in collaboration with a celebrated physician.

The valuable restorative and stimulating properties of these essences were immediately recognized by the Medical profession which has prescribed them ever since.

When appetites are failing and patients are reluctant to eat, Brand's Essences promote appetite. For by stimulating the gastric juices they prepare the patient for more solid diet.

By a special process Brand's Essences are made entirely of the pure juices from freshly killed meats.

Brand's Essences (Beef, Mutton and Chicken) can be obtained throughout the world at chemists and stores in small and large-sized tins and jars. Brand & Co. Ltd., Mayfair Works, South Lambeth Road, London, S.W.8.

BRAND'S ESSENCES
(BEEF & CHICKEN)

OVARNON in DYSMENORRHŒA

_____ *London,*
Jan. 14, 1930.

" *Dear Sir,*

In answer to your enquiry of the 30th ult., I have been able to try Ovarnon in the case of Dysmenorrhœa in a girl of 20. She has been so ill each month during her menstrual period that she has been confined to bed for the greater part of four days. She has taken one Ovarnon tablet each day since her last menstrual period, with the consequence that she has just finished the first painless menstrual period she has ever experienced.

Believe me,
Yours faithfully,
_____ *M.R.C.S.*"

Each dragée contains 5 mouse units of the STANDARDISED ovarian hormone (Menformon) and 150 mg. of desiccated ovarian powder.
In boxes of 50.

Manufactured by The ORGANON LABORATORIES, OSS (Holland).

Clinical sample and descriptive literature sent free on request to:

H. W. BRAUN, 16, Water Lane, Great Tower St., London, E.C.3.

Telephone: ROYAL 7076. *Telegrams:* ILCHEMBRAU, BILGATE, LONDON.



(*Aesculapius*)

ANÆMIAS

The healthy state implies a balance between blood destruction and blood formation. The duty of the blood is to maintain proper nutrition and restoration of the tissues, to preserve itself in the face of hæmorrhage by clotting, and to act as a common carrier for immune substances, hormones and vitamines; the normal function of both blood-forming and blood-destroying organs is to maintain the elements of the blood in normal characteristics and numbers; the blood count at any given time is necessarily a numerical expression of the balance of this, what might be termed, profit and loss system. In the anæmias this balance is upset, and alarming decreases in the actual number of cells present occur. This may be brought about by any one of the following factors:—

(*a*) There may be greatly decreased production.
(*b*) There may be greatly increased destruction.
(*c*) There may be a combination of decreased production with increased destruction.

The evidences we get of abnormal blood destruction are primarily oligocythæmia, or diminution in the number of cells, the appearance of small microcytes, fragmented red cells, the phagocytosis of corpuscles by the clasmatocytes, the deposits of iron pigment, and the abnormal features of bile pigment metabolism. Indications of abnormal blood formation may be found in the appearance of macrocytes and microcytes in the circulation as well as occasionally the occurrence of nucleated red blood cells, especially of the group known as megaloblasts. Evidences of blood regeneration consist in the appearance of immature red blood cells, which include nucleated forms, reticulocytes, etc., together with an increased red cell count, and increased hæmoglobin percentage.

HEPATEX

Prepared by a standardised process from carefully selected livers, Hepatex is so concentrated that each dose of one fluid drachm contains the essential therapeutic principles of two ounces of fresh liver. It is recognised to be the most convenient form of Liver Extract for the treatment of Pernicious Anæmia.

Issued in 4-oz. bottles @ 12/- each.

HEPATEX WITH IRON

In this combination the special form of iron used is superior to the ordinary iron preparations, being easily assimilable and producing no disagreeable after-effects. One fluid drachm contains one grain of iron and the equivalent of two ounces of liver. It is strongly recommended for cases of stubborn secondary anæmia where powerful stimulation of the blood-regenerating organs is desirable.

Issued in 2-oz. bottles @ 7/6 each.

HÆMEX

An improved adaptation of classical remedies in which the tonic and blood-forming properties of hæmoglobin and iron are presented in palatable form. Each dessertspoonful dose contains 1½ grains metallic iron. Patients suffering from a secondary anæmia due to any chronic infection will benefit from its use. It is also indicated in anæmia following any of the acute fevers, particularly after influenza.

Issued in 8-oz. bottles @ 3/- and 16-oz. bottles @ 5/6.

EVANS SONS LESCHER & WEBB LTD.

56, Hanover Street, LIVERPOOL. DUBLIN. 50, Bartholomew Close, LONDON, E.C.1.

Milk Intolerance.

For many years Benger's Food, as is well known, has been used by practitioners throughout the world as a routine diet in all gastric cases, debility, and in cases of milk intolerance. The reason for this may be briefly stated:—

Benger's Food is a special wheaten flour preparation containing, in suitable amount, the two natural digestive principles — Amylopsin and Trypsin — in a latent state.

It is devised and expressly intended to be used in conjunction with fresh cows' milk, or diluted milk, if desired.

The two enzymes are in such condition as to exert their digestive powers under the condition which obtains during the preparation for use.

The Amylopsin acts on the carbohydrates (Starch) of the Food and gradually changes it into soluble sugars (Dextrins and Maltose mainly, with a little Dextrose) more or less according to the length of time allowed for digestion.

The Trypsin acts on the gluten of the flour and on the proteins (Casein, etc.) of the milk so that the curd which forms is softened, and as a result it separates in the stomach in fine readily-digestible flocculi instead of large, often indigestible curds. The extent of digestion can be varied; *it is important to note that complete pre-digestion can never take place.*

Benger's Food contains no preservatives. It is palatable and is free from rough irritant particles.

These considerations show that Benger's Food is not merely a mechanical milk modifier — it is a real modifier of a peculiar character.

THE "LANCET"
describes it as "Mr. Benger's admirable preparation."

A Physician's sample will be sent post free to any member of the Medical Profession making application to the Proprietors:—

BENGER'S FOOD, Ltd., Otter Works, MANCHESTER.

NEW YORK (U.S.A.): 90, Beekman Street. SYDNEY (N.S.W.): 350, George Street. CAPE TOWN (S.A.): P.O. Box 573.

Benger's Food, in sealed tins, is on sale throughout the world by Chemists, etc.

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BENGER'S Food

REGD. TRADE MARK.

NATURALLY RICH  IN VITAMIN "D"

Smiler, fed on Cow & Gate

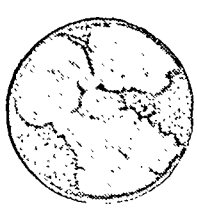
DIGESTIBILITY

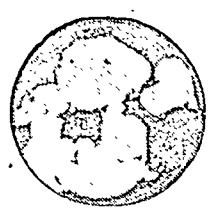
In contradistinction to the heavy, large, and indigestible curds which are given by the action of rennin on Cow's milk and milks dried by the spray process, reconstituted Cow and Gate Milk gives a light flocculent precipitate, very similar to that of Breast Milk. A recent investigation has shown that the same results are obtained by using enzymes from human sources and that the improved Cow and Gate Roller Process does not alter the proteins to an extent which interferes with their subsequent easy digestion.

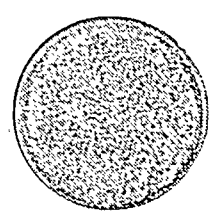
The use of such alkaline agents as Sodium Citrate and Lime, to prevent this leathery curd formation, is therefore entirely superseded. In fact, it has been shown (Hess: Feeding and Nutritional Disorders in Infancy) that these agents, while retarding the formation of hard curds, also inhibit, most decidedly, peptic digestion owing to their increased buffer action, and in addition they have a destructive effect on Vitamin C.

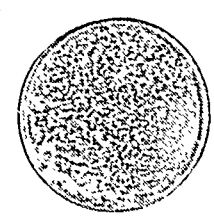
This denaturisation of the proteins in Cow and Gate is brought about by an improved Roller Process, which also preserves intact the Vitamin and mineral content of the original rich milk of Somerset and Dorset.

RENNIN CURDS OF VARIOUS MILKS.


Cow's Milk.


Spray Milk.


Cow & Gate.

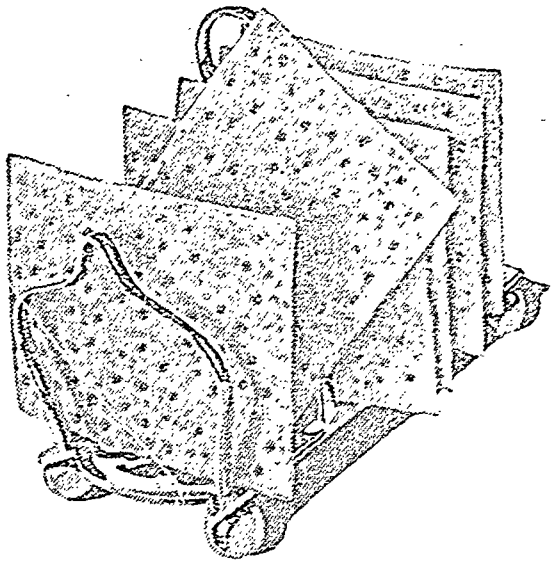

Breast Milk.

The makers will gladly supply samples for Clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

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EVERYONE LOVES COW & GATE CHOCOLATE MILK

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Vita-Weat—the perfect "staff of life"

Analysis and tests of Vita-Weat, the British whole-wheat crispbread, show that it possesses in a marked degree the six essential constituents—carbohydrates, fat, proteins, mineral salts, water, *and the essential vitamins.*

100% Whole Wheat.

Being made from the whole wheat berry, from which nothing has been removed in manufacture, Vita-Weat yields the highest natural percentage of cereal proteins, and by the process of manufacture the starch present is rendered easily available for the solvent action of the amylolytic ferments of the human digestive juices.

Further, Vita-Weat is specially valuable as a natural stimulant to peristaltic action of the intestines, and when forming a suitable proportion of the daily diet effectively counteracts constipation.

Vitamins A, D, and B.

The dry condition of Vita-Weat is of distinct advantage in cases of flatulence in which moist foods are largely contra-indicated, and the crisp character of the sections also helps to reduce the intake of soft foods, giving the teeth and masticating muscles something to do and ensuring complete and thorough salivation of the food bolus.

Vita-Weat crispbread presents the whole wheat berry in a concentrated, attractive and digestible form with the Vitamins A, D & B in an active condition, and it forms a valuable addition to rational diet, presenting a dainty and advantageous alternative to soft wholemeal or white bread.

Peek Frean's

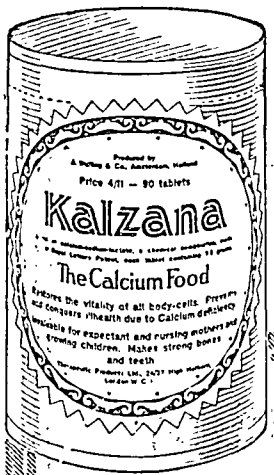
Vita-Weat

REGD.

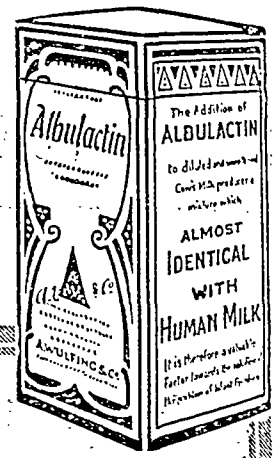
THE *BRITISH* WHOLE-WHEAT CRISPBREAD

A generous Free Sample, together with analysis and reports by various medical authorities, can be had on application to:

PEEK FREAN & CO., LTD., DRUMMOND ROAD, S.E.16.



Wulfing Products



The Pale and Weakly Child

Particularly the type in which a definite pathology cannot be demonstrated, generally responds well to calcium therapy in the form of Kalzana. For instance, a recent clinical report states:

> *"I gave Kalzana to a child with peculiar symptoms of apathy, listlessness, etc. There has been a marked improvement—she sleeps better, and takes her food with some appetite."*

The clinical results produced by Kalzana are equally satisfactory in diseases of children amenable to calcium medication, especially in tubercular disease, and the type of malnutrition associated with acute infectious disorders.

Kalzana is a definite chemical combination of calcium-lactate and sodium-lactate in the form of a double salt. The special virtue of the product is due to the action of the sodium in raising the blood alkalinity to the extent necessary to secure the adequate retention of the calcium constituent. Therefore Kalzana therapy means calcium retention. It is used in over 200 British Hospitals and Sanatoria, including many leading Children's Hospitals.

Dispensed by Chemists in air-tight packets containing 50 and 100 tablets.

Kalzana

THE LIME FOOD

Precision in Infant Feeding

Every requirement needed to provide a correctly balanced infant's food is supplied by properly modified cow's milk and Albulactin. The all-important proteid and lactalbumin percentages are exactly correct, and *always* within the control of the physician; an important consideration when the food has to be adapted to the peculiar digestive capacities of individual infants.

Albulactin is pure lactalbumin—the vital proteid of human milk—supplied in the form of an impalpable powder. It is quite simple to prepare, and may be prescribed with confidence in all cases of artificial feeding, from the premature weakling to the normal healthy infant.

The British Medical Journal says:

> *"There appears to be every reason to expect this preparation to prove of great value in the 'hand feeding' of infants."*

Supplied in bottles at 1/9, 3/6 and 7/-

Albulactin

Made by A. WULFING & CO., Amsterdam, Holland.

Supplies for your own dispensing, and for Hospitals, Sanatoria, etc., are available on special terms. Adequate samples for clinical trial sent with pleasure upon request.

THERAPEUTIC PRODUCTS LTD. (Dept. B.M.J.14), 24/27, HIGH HOLBORN, W.C.1.

Wulfing

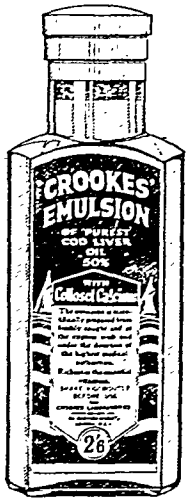
A new Collosol Product

CROOKES'
EMULSION WITH COLLOSOL CALCIUM

Special attention is called to this valuable addition to the range of Collosols.

The emulsion itself contains 50% cod liver oil, from livers of cod freshly caught in British waters, and expressed actually on board the trawler, so that otherwise harmful putrefactive processes do not impair the vitamin content.

This vitamin value is verified by laboratory assay, which gives 19/20 blue Lovibond units, or nearly twice as high as that of ordinary cod liver oil.



The combination of Crookes Emulsion with Collosol Calcium is the outcome of the general acceptance that vitamin D affects absorption, deposition and excretion of calcium. Such indications as Rickets are due to an alteration in the absorption of the latter element, and it is obvious that the effects of vitamin D present in Crookes Emulsion will be greatly enhanced by the readily absorbable form of Collosol Calcium.

As thyroid secretions control iodine metabolism, and insulin controls glucose metabolism, so is vitamin D control responsible for the fate of calcium in the body.

Sample supplies obtainable on application will enable practitioners to confirm, from a clinical standpoint, the great value of Crookes Emulsion with Collosol Calcium.

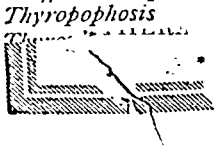
Issued in bottles, 6 ozs. 2/6, 12 ozs. 4/-

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Galactis
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Orchitic
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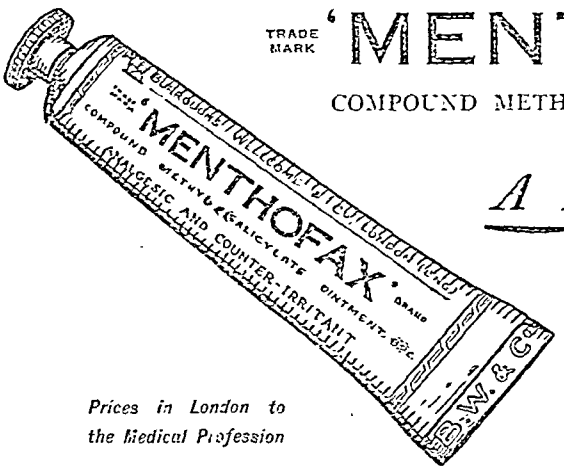
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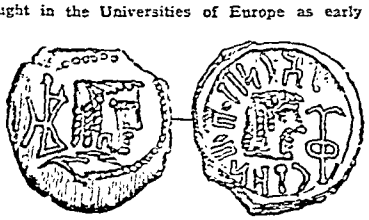
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A British Medical Association Lecture

ON

THE DIAGNOSIS AND TREATMENT OF RHEUMATIC HEART DISEASE IN ITS EARLY STAGES.

DELIVERED BEFORE THE NORTH GLAMORGAN AND BRECKNOCK DIVISION

BY

CAREY F. COOMBS, M.D., F.R.C.P.,
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WE have, I believe, learnt from the study of the rheumatic infection a good deal that is applicable to a comprehension of the general behaviour of infective disease. We have gradually been compelled to realize that this, one of the deadliest forms of disease, is provoked by micro-organisms that do not seem to be radically different from the streptococci that inhabit the normal mouth. Thus we have been once more reminded of the fact that the soil is as important as the seed. A healthy child does not become rheumatic because of any dire bacterial visitation, but because defects of inheritance and of environment combine to lay him open to invasion by organisms that the healthy child is able to resist. It seems certain that in at least a third of all cases this invasion takes place through the tonsils. In this proportion the opening of the campaign announces itself in a frank attack of tonsillitis. What are we to say of the rest? It is probable that in some, if not in all, the infection slips in through the tonsils without exciting any perceptible protest at the site of entry. Some observers think that they have detected gastro-intestinal disturbances which mark a transgression of the lymphoid areas of the bowel by the rheumatic streptococci, but this has not been my experience, though I have been on the look out for these phenomena.

Two-thirds of the rheumatic children appear to be first infected between the ages of 5 and 15, and a large proportion of them are drawn from the elementary school population. We are in the midst of an inquiry into the meaning of these facts—an attempt to find out why these children, and not others, are damaged—in Bristol, with the three neighbouring counties, and as this is not yet complete I shall make no comment, except to remark that so far we have not discovered anything likely to help us in the treatment of the child who is already rheumatic. It would be a great relief to find that these children are infected because of some definite lack or defect, such as an avitaminosis or an endocrine shortage; both of these views have been advocated by experienced observers, and we can only hope that they will succeed in persuading us to agree with them. At the moment, however, we do not seem to have gained anything applicable to the treatment of the rheumatic child from either of these schools.

I am going to assume, in this brief sketch, that the lesions of rheumatism in childhood are provoked by the immediate action of organisms which are themselves present in the injured tissues. The alternative view, that it is the toxins only and not the organisms themselves, does not appear to me to cover all the facts. Organisms have been grown from the pericardial sac, the subcutaneous node, the cerebro-spinal fluid, and so forth; and if we accept any of the bacteriological evidence about the disease we must also accept these findings. There is, then, an actual bacteriaemia.

About the lesions we are in no doubt. The principal tissues attacked are the heart, the joints, the meninges, and the subcutaneous tissues. Recent workers have shown that the lesions are more widely scattered than we used to teach. I may refer you to a recent paper by A. F. Bernard Shaw[1] as an illustration of these newer views, to the work of Nash and Fraser on the pulmonary lesions of acute rheumatic infection, and also to Vincent Coates's papers on the prevalence of small subcutaneous nodules in these children. The damage done is therefore more widely diffused than was at one time thought.

Another fact that is more and more impressed on me by extended clinical and pathological observation is the persistence of the infection. Formerly we thought of the course of the disease in terms of a series of periods of activity, separated by intervals of quiescence. I am learning to think that these intervals, during which there is neither fever nor any other clinical sign of active infection, are nevertheless spent by the infective agent in a kind of subdued but not suspended animation. In order to unmask these activities Dr. Perry[2] has conducted a series of observations on the leucocyte picture of rheumatic carditis in childhood, but without discovering any change that we can depend on to betray the presence of progressive infection. What one notices as undeniable proof of this progress is that a child whose general condition is fair, his temperature normal, his cardiac signs unaltered, is nevertheless found after a period of apparently uneventful weeks to have definitely worsened, and the heart, examined post mortem, if this deterioration should end fatally, displays unmistakable proof of infection which must have been active for weeks before death.

These two new lessons, then, we have to assimilate: the infection is more widespread and also more persistent than we had supposed. We may perhaps limit ourselves here to a brief notice of the cardiac lesions. These are manifestly distributed along the course of the coronary arteries and their finer ramifications, so that we meet them wherever we look in the tissues of the heart, whether in the pericardial covering, the endocardial lining, or the myocardial mass. It is by their action on the muscle itself that the bacteria of rheumatic infection involve their victim in immediate danger; for example, on the day of writing I was told of a child who had died in the hospital, within a week of the onset of his illness, with acute ventricular dilatation and failure. Many of those who escape this fate survive for a few years only, and then succumb to a recrudescence of the infection, which deprives the ventricular muscle of such little margin of safety as had been spared to it by previous activities. Of those who are more fortunate than this, a majority pass on into a condition of permanent valvular disease which has the effect of limiting the scope and length of life. What is to prevent this? Can it be in any way prevented? Some years ago, when Dr. Poynton[3] consented to write an introduction to the book of which I have already spoken, I was greatly struck by one comment which he made, to the effect that an interesting result from the following up of a group of cases of undoubted early cardiac rheumatism was the discovery that a quarter of them lost all signs of the disease in fifteen years. Dr. Poynton went on to say that this was in accord with his own experience. He had known recovery from undoubted carditis so complete as to throw doubt on the validity of the original diagnosis. "Such facts," he concluded, "are very comforting to those who believe in the future of prevention."

Now, since this was written we have in Bristol had over two years' experience of a cardio-rheumatic clinic. In that period we—Dr. Perry and I—have seen 1,100 children referred to us by the school medical service for an opinion on the state of the heart. Of these, 653 have been judged by us to be suffering from rheumatic heart disease. I can give you no statistics in support of the statement that this organization is doing good in the arrest of the disease in an appreciable proportion of these children; yet I am convinced that this statement is true, convinced enough to derive encouragement for the prosecution of a campaign against an enemy that sometimes looks invincible. Now there is no secret or special means by which this progress is achieved. It depends on the same principles as those which ought to guide us in the fight against all infections—early diagnosis and persevering treatment.

If rheumatic injury to the heart is to be recognized in an early stage, it can only be done by remembering that symptoms of cardiac insufficiency do not appear till the lesions are already established and severe. This is merely an illustration of two great principles of pathology: the first, that no lesion of any organ can be considered apart from disease in the rest of the body; the second, that in

every vital organ there is so wide a margin for emergencies that symptoms of imperfect function do not appear till the disease has been in progress some time, long enough to encroach seriously on that margin. If we apply these principles to the consideration of rheumatic carditis, we shall note, first, that hints as to the possibility of rheumatic infection of the heart may be furnished by symptoms of other rheumatic phenomena; and second, that constitutional symptoms are likely to precede those which indicate a decrease in the mechanical efficiency of the heart.

Coming to details, we may say that there are four different approaches to a diagnosis of cardiac rheumatism in its early stages.

1. The easiest of these is that in which the rheumatic infection declares its presence within the body by provoking either arthritic pains or chorea. Even this is not always as easy as it sounds. Sometimes, for example, an attack of what looks like acute rheumatism turns out to be something else, such as osteo-myelitis. More often, however, the joint pains themselves are so trivial that the child makes but little complaint, and that little receives no notice. One cannot but feel some sympathy with this point of view. We do not want to encourage children to make a fuss over every little ache or pain, and it is not easy to tell parents how to lay stress on the pains that matter, while ignoring those that do not. Perhaps one might say this: that pain persisting more than a day, or pain which makes the child lame, ought to be noticed; also that if the child looks ill or has a rise of temperature, however small, with the pain, the doctor ought to be called in.

Then, again, supposing there is no doubt as to the rheumatic nature of the illness, how are we to know whether the heart is damaged or not? On this point I am inclined to say that every child who has rheumatic polyarthritis that can be recognized as such may be assumed to have an infected heart also, even if there are neither symptoms nor signs of this. I cannot recall any example within my own observation of a child who passed through an attack of articular rheumatism without showing either at the same time, or later on, evidences of cardiac rheumatism. With chorea it is different. Many children develop, sustain, and recover from an attack of chorea without displaying any evidence of cardiac infection. It is to be remembered, however, that if these more fortunate ones be followed up, a considerable proportion will be found later to exhibit signs of cardiac infection. Of the other rheumatic phenomena I need say little, except to remind you that the subcutaneous node is always to be regarded as a proof that the body is heavily infected. If these nodes are found, therefore, it must be assumed that carditis is sure to develop also, and that it is likely to be severe.

2. Rheumatic carditis is so often preceded by an attack of tonsillitis that one ought to consider repeated examination of the heart (and also, one may add, of the urine) an essential part of the care of any child with inflamed tonsils. It is not enough to do this throughout the attack of tonsillitis itself. Often the signs of cardiac inflammation do not appear till a week or more after the tonsillitis and its constitutional symptoms appear to have died down. If possible, therefore, one ought to see children convalescent from tonsillitis a few days after every obvious symptom has cleared up.

3. The most important of all these methods of securing an early diagnosis of cardiac rheumatism is that which it is hardest to practise and easiest to forget. It turns on the fact that the heart may become definitely and permanently damaged by rheumatic infection without any other perceptible manifestation of the infection. It is perhaps putting it too strongly to say that one ought to think of carditis as the disease, and arthritis, chorea, and so on, as the complications. That is not a true account of the pathology of this infection, which ought rather to be looked on as causing four chief manifestations: carditis, polyarthritis, chorea, and nodes. Yet from the point of view of their ultimate importance these other phenomena are almost negligible. Their real significance is that of indicators warning us of the possibility—indeed, as we have seen, of the probability—of a concomitant carditis. The particular difficulty that we are now discussing is that of the child whose heart is infected before these other phenomena have developed; indeed, in many cases they never develop at all, and the cardiac lesion is not found until the chest is examined, either as a result of some other illness or in the course of a routine inspection such as that of the school medical service. The work of which I spoke just now has convinced me that this group of cases is a large one. During the same period that has brought to light in the elementary schools a total of 653 cases of cardiac rheumatism we have been receiving, through a system of voluntary effort, reports of cases arising in the private practices of medical men within the area under review. In Bristol we have had 238 of these cases reported, and I do not believe that many cases have escaped detection either by the medical men who have so kindly furnished these reports or by the school medical officers. It seems, therefore, as if for every case of rheumatic carditis that makes itself known to a medical man at the time when it is established there are two that are not found until the child is examined as a part of the school routine. This is a serious state of affairs, and I shall make some observations on it again presently. Here let me say only this, that the earliest symptoms of such cases are not cardiac but constitutional—loss of appetite, vague seediness, increasing pallor, and, above all, loss of weight. The practical lesson to be learnt is that every child brought to us for these vague symptoms must be stripped and examined thoroughly. I do not say that this will do away with the delay in diagnosis that results in the establishment of serious disease before its presence is first recognized. It would, however, reduce appreciably the numbers of these overlooked lesions.

4. Finally, there are a few children to whom we are first called because of cardiac symptoms. These fall into two groups. First, there are children who are taken with an acute febrile illness with chest symptoms. Not infrequently the first diagnosis made is that of pneumonia or pleurisy, and it is only after a few days that the development of a pericardial rub, or a rapid widening of the area of cardiac dullness, teaches us to look to the heart for an explanation of the illness. Then there is another group of children who are brought to us because of breathlessness. This is a very small group. It takes a severe degree of cardiac disease to make a child visibly breathless. We may say, therefore, that whether the carditis is acute or chronic it must be severe if it is to produce symptoms of cardiac insufficiency, and it would therefore be a grave mistake to regard such symptoms as essential to a diagnosis.

To sum up what has so far been said as to the possibility of an early diagnosis: We ought to examine thoroughly every sick child that is brought to us; we ought to examine early, thoroughly, and repeatedly every child with tonsillitis; and we ought to regard as a probable cardiac victim every child with any definite manifestation of rheumatic infection.

Before we leave this subject of early diagnosis you may be interested by a few observations on the physical signs which may be relied on to indicate to us the existence of a carditis. As in so many of our attempts to make an early diagnosis of visceral disease, we have to steer a narrow and difficult course between two dangers—that of overlooking the lesion, on the one hand, and, on the other, that of being deceived by some counterfeit.

My first point is that arrhythmia in a child means nothing unless it is supplemented by signs of serious organic heart disease. An exaggeration of the physiological sinus irregularity is seen in most children at one time or another, and particularly during convalescence from an acute illness. To regard it as a sign of cardiac disease is therefore a serious mistake. It is true that very rarely one sees the total arrhythmia of auricular fibrillation, and more rarely still arrhythmia due to abnormalities of auriculo-ventricular conduction, in children with rheumatic heart disease; but this is only in the presence of very acute or serious phases of the disease. We may therefore take it that arrhythmia alone is not to be accepted as the basis of a diagnosis of organic heart disease in childhood.

It is almost as true to say that a murmur alone is not to be regarded as evidence of cardiac disease in childhood.

There is one exception to this—the diastolic murmur of aortic incompetence may, very rarely, be the only sign of cardiac disease in a rheumatic child. Even this exception is so rare that we might almost accept my dictum as it stands. If we amend it to run thus, "A systolic murmur alone is not to be regarded as evidence of cardiac disease in childhood," we shall not be overstating the case. The earliest phase of cardiac rheumatism that can be diagnosed with absolute confidence is that in which there is a coincidence of four physical signs: increase in the area of impulse in the leftward direction; accentuation of the first sound at the apex; a systolic murmur limited to, or at all events maximal at, the apex; and an accentuation of the pulmonic second sound. To make a diagnosis in the presence of these signs is an easy matter. Even if there is no rheumatic history and the child is free from symptoms of any kind at the time, the discovery of these signs justifies a diagnosis of cardiac rheumatism.

What is not so easy is a right decision as to children who display part only of this picture. There are two principal groups exemplifying this kind of difficulty. Among children of school age systolic murmurs are very common. Sometimes they are heard at all parts of the precordium; sometimes at basic areas only; sometimes at the middle of the precordium, at the inner end of the fourth left space; sometimes at the apex only. I wish there were time to discuss all these in detail, but this alone would occupy the whole of our available time if we were to do it thoroughly. It is a little disturbing to find how much uncertainty still surrounds the explanation of so simple a physical sign as *the systolic murmur. Those of you who would like to read* something more of the systolic murmurs heard in childhood will be interested by a paper published in the *Archives of Disease in Childhood* by Dr. Dunstan Brewer.[4] This includes some valuable observations on the course of murmurs of the "doubtful" or "haemic" type, which showed that a majority were found to disappear if the children were re-examined over a period of years.

All that I need add here to the general dictum as to the unwisdom of making a diagnosis of organic disease on the strength of a systolic murmur alone is that, first, a murmur heard at the apex alone, even if unsupported by other signs, justifies a waiting attitude; and also that, even if the murmur is general, heard all over the heart, this also may be regarded with suspicion if it arises in the appropriate circumstances—for example, after an attack of tonsillitis or in a child with chorea. Speaking generally, the younger the child the more likely are these signs to prove evanescent. When they appear in a child of 10 or more, suspicion is more likely to pass into certainty. But, even so, we are *not often justified, I think, in keeping a child in bed on* the strength of the murmurs alone.

There is one little point that I think worthy of notice in relation to this question of systolic murmurs, and that is their reaction to a change of position. I find that it adds very little to the time spent in an examination to observe this, if it is made a matter of routine to examine the child standing up first, then *lying flat on his back*, then lying on his left side with the heart underneath. The value of this routine lies in the fact that many organic murmurs heard at the apex are inaudible when the patient is standing, but are brought out clearly when he lies down flat, and even more so when he is on his left side.

There is much more that might be said about these murmurs, but I must devote a few moments to a consideration of the value of the other signs. Let me put it briefly thus—that an increased area of impulse by itself, even without alteration in the sounds, is to be treated with respect. If it is noted in a child who, there is reason to think, is the subject of recent and active infection, it is enough to impose on us the duty of keeping the child in bed, or on light exercise, till we are satisfied that evidence of active infection is at an end. If it is found in a child who gives a history suggestive of previous though extinct rheumatic infection, it is a reason for re-examination from time to time over a period of twelve months at least. These precautions are all the more necessary if there are changes in the sounds—*accentuation of the first sound at* the apex or of the second sound at the pulmonary base; or doubling of the second sound at the apex. I do not think we are called upon to regard these signs as evidence of a definite carditis, as it is clear from the course of a group of 34 cases of this *kind*—cases that I *labelled* "doubtful and suspicious"[5]—that the odds are against their evolution into serious organic disease. Of these 34 cases, 15 lost their signs entirely, 11 developed a permanent valvular fibrosis, and 8 remained unchanged after a period of observation varying from five to fifteen years.

I find I have been betrayed into the very thing that I wished to avoid—I have said a great deal more about physical signs than about symptoms. It will be found that under the present conditions of practice the children that we see are those with symptoms. I wish it were possible to take a leaf out of the school medical service books, and get every child, whether ill or well, examined periodically by the family doctor. This may seem an absurd dream as things are at the moment, but I believe it is not altogether outside the purview of practical politics.

Let me in conclusion devote a few minutes to a consideration of the principles of treatment of rheumatic heart disease detected in an early stage. It may help to illustrate some of these principles if I mention that, of the 653 children with rheumatic heart disease seen in the clinic to which I have referred, we have allowed two-thirds to continue attendance at school. More than half of these are allowed to attend only under restriction of exercise. Our reason for asking for this restriction is not that we fear mechanical overstrain of a damaged heart. We restrict exercise in rheumatic infection of the heart just as we should in any other persistent infection, because we want the child to devote as much as possible of his physical energies to his fight against the infection. If their exercise could be adequately supervised I am sure it would be possible to give them a freedom in this respect that, under present conditions, seems imprudent; for the principle that underlies all our ideas as to treatment is that we are dealing with a disease in which periods of activity alternate with periods of quiescence. During quiescence restrictions are not necessary and may even be harmful; while during the active phases the degree of treatment ought to be proportioned to the degree of activity. We are cautiously beginning to employ *supervised exercise in convalescent cases.*

Complete rest in bed is only advised in about a tenth of the cases that come to us in the clinic. This we advise whenever there is any symptom of active infection, such as fever, wasting, joint pains, or chorea—at all events at first. We shall probably increase the proportion of children recommended for institutional treatment if and *when the accommodation can be found. This period of* rest not only gives the patient a better chance of overcoming his infection; it also gives the doctor a better chance of assessing the degree of activity and deciding what to do. If the child shows continued signs of activity, or if the initial symptoms of infection are severe, prolonged rest is needed, even up to six months in bad cases. The symptoms that make me most anxious, and therefore most insistent on the need for prolonged rest, are continued pallor and wasting, fever, nodes, chorea, recurring joint pains, and progress in the definition of the physical signs.

One might enlarge on the significance of fever in this disease, but there is only time for one or two points. Two kinds of fever are seen in this disease. Sometimes an otherwise normal temperature is disturbed by periods of pyrexia varying from two or three days to as many weeks. These mark outbursts of infection so severe that they are not likely to be overlooked. The other kind of fever is more insidious. The child shows an excessive daily fluctuation rising but little above the normal line, but persisting for weeks. This is associated with progressive injury to the cardiac tissues of a very damaging kind. In other cases, again, the absence of fever by no means proves an absence of active infection. Some of the worst cases run an afebrile course, which is perhaps a sign of unusually poor resistance. In such cases there is *generally abundant evidence that matters are not going* well; the child remains pale and thin, the cardiac signs

are either stationary or ingravescent, and there are hints of circulatory failure such as faint cyanosis, increase in the size of the liver, puffiness under the eyes, and so forth. Fever, then, is not an infallible guide in the treatment of this disease. In search for some other guide Dr. Perry has made an extensive inquiry into the value of leucocyte counts, but here again we have been disappointed, as I have already said. It will be seen, therefore, that we find it impossible to lay down any rules as to the duration of rest in bed in this disease. What I would suggest is that any febrile event of more than four days' duration indicates a subsequent rest of not less than four weeks. Return to activity after this must be gradual and tentative, and conditioned not only by what has happened during the period of rest, but also by the child's response to increasing exercise.

About the use of salicylates there is a wide diversity of opinion. It is useless to weigh the pros and cons here, for the evidence is so misty and inconclusive. My belief is that it is practically always safe to give salicylates in big doses. Occasionally—in perhaps one case in a hundred—you find that it is doing harm, and then, of course, it must be stopped. Often it will be found that it is not doing good. Sometimes this is because the dose is too small, and sometimes again it is worth while to substitute some other preparation—for example, aspirin may suit a particular child better than the sodium salt. We find that 5 to 10 grains of the former, or 10 to 20 grains of the latter, seldom cause toxic symptoms, even if given every hour or two hours for more than a day at a time. We have tried all sorts of other plans designed to kill off the infection, for this, I suppose, is the way in which the salicylates act; but we have not found anything that can be proved to have the desired effect, and I am not going to weary you with a catalogue of our failures.

Similarly, we have experimented with many means of enhancing the child's resistance, without much success. I feel sure that when the periods of rest are conjoined with free access to fresh air and sunlight, and with a liberal diet in which fats are given generously, the child gets on better. We have lately found it well to give cod-liver oil and iron to children even while they are still taking salicylates, and this I believe is worth bearing in mind. Tonsillectomy is thought by many experienced observers to be indicated as a routine measure. The evidence for and against this view is very difficult to appraise, and there is no time to attempt it here. Our own practice is to have tonsils removed if they are obviously diseased, if there is an associated adenitis, or if by reason of their size their removal would be indicated even apart from the coexistence of rheumatic infection. More than once I have seen a severe recrudescence of the infection follow an excision of tonsils which have recently been the seat of an acute inflammation, and it seems, therefore, that anything of this kind should be allowed plenty of time to settle down before operation is advised.

This account of treatment is very unsatisfactory, and seems to amount to nothing more than watching the course of a disease which we are powerless to arrest. Yet I feel sure that much is achieved merely by patience and perseverance in those homely measures by which we are accustomed to encourage the fight against bacterial activity. What we need is a clear realization of the tenacity and persistence of this infection. It is not a matter of days or even weeks, but of months or even years. One of the fruits of this attitude of mind is the increased provision for prolonged institutional treatment of these children, but even where this is not essential, or is impracticable, the mere fact that we realize the need for patience and perseverance in the application of an enlightened common sense to the management of this disease is going to make a sensible reduction in the number of cripples for which it is responsible.

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An Address ON THE DIAGNOSIS OF EARLY JUVENILE RHEUMATISM.*

BY

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JUVENILE rheumatism is an environmental disease, and until the mass production of it can be stayed by public health measures the best contribution to the problem which can be made by us as individual clinical physicians is to get each separate case of rheumatism in a child diagnosed, treated, and under supervision at the earliest possible stage of the disease. It is to this matter that I now direct attention, and I emphasize at the outset that the diagnosis of early rheumatic infection in a child is at least as difficult a matter as that of early tuberculosis.

Two preliminary questions arise. First, have we a chance of diagnosing rheumatism before serious harm has occurred in the child's heart? Secondly, if we do make such an early diagnosis, have we a sporting chance of preventing serious heart disease?

In answer to the first question it is undoubtedly true that we have a chance of early diagnosis. However abrupt the onset of a serious attack of rheumatism may appear to be—and we all know how rapid, how ruthless, and how overwhelming the onslaught of rheumatic infection can be—it is almost invariably the case that premonitory symptoms have preceded the attack for weeks or months, and that they have been overlooked, neglected, or misinterpreted. Those who doubt this have not taken their clinical histories correctly; in nearly all cases there is this premonitory stage. And if we make a diagnosis in this premonitory stage, shall we have a chance of preventing more serious attacks, particularly the more serious forms of heart disease? Frankly I do not see why we should doubt it. It is in line with what we do in other diseases. We can remove foci of infection, combat the environmental factors, and protect against exciting causes of acute attacks. Sometimes we shall fail; perhaps we start too late, perhaps the environment is too heavily against us, perhaps there are factors we cannot control or even recognize, but I see no reason to doubt that often we do really help. Some require mathematical proof of this: they will not get it; you cannot make a statistical comparison of known results with unknown possibilities. The real proof comes to the clinical worker who is supervising his own patients. When he sees, as I have seen in dozens of instances, the removal of tonsils and the adoption of other measures lead to increased weight, strength, and colour, and the gradual loss of rheumatic pains, he will not doubt that in a certain proportion of cases he has actually prevented serious rheumatism and heart disease.

EARLY DIAGNOSIS.

Before I come to the study of the prodromal symptoms of juvenile rheumatism there are two factors of possible diagnostic value to be considered—the rheumatic diathesis and the so-called pre-rheumatic child. Are these realities? Can we recognize them? Are they an aid to diagnosis?

The Rheumatic Diathesis.

Some recent writers have professed great faith in the rheumatic diathesis, in the sense that they think that certain children, if they lose good health, turn naturally into cases of rheumatism. I do not share this view. The older physicians laid great stress upon the familial tendency towards rheumatism, and this rather tended to a belief in a rheumatic diathesis. Recent investigations, undertaken on very accurate and strict lines, show that the family tendency has been exaggerated and is not more than can be accounted for by the frequency of the disease and

* Delivered to the Hull Division of the British Medical Association.

the environmental causative factors. Naturally where a disease is very common and is powerfully predisposed to by environment, its incidence in families will be high. Several points can be adduced against the view that a rheumatic diathesis is of moment. Does a diathesis, for instance, show a class incidence as juvenile rheumatism does? Again, we must bear in mind the Poor Law residential schools. Here thousands of children from the rheumatic stratum of the population in urban districts, in whom there is not the slightest doubt that dozens of cases of rheumatism would have developed had they been left in their own homes, live year in and year out without a case appearing amongst them. How does this happen? Have they left their diatheses at home? Clearly, we need not go in fear of the rheumatic diathesis.

The Pre-rheumatic Child.

As a clinician I have even less liking for the term "pre-rheumatic child" than for the "pre-tuberculous child." These are administrative labels and have little to do with the realities of clinical medicine. It is difficult for us to envisage a condition which is all prognosis and no pathology. However, the term has come into use, and I can only give it as my opinion that the pre-rheumatic child as described is the ordinary rheumatic child, and that there is nothing "pre" about it, save that it has not yet suffered a knock-out attack of the infection. It is in the stage when repeated minor infections are wearing down the child's resistance and so paving the way to a major attack.

Is there, on the other hand, a pre-rheumatic child in the proper sense—namely, a child whose resistance to streptococci is lowered, though not by repeated minor rheumatic infections? The post-scarlatinal child ought perhaps to be reckoned as this, but apart from this I cannot say that I can recognize such a child. Some have endeavoured to associate intestinal indigestion and toxaemia with future rheumatism, but for my own part I do not consider the case proven. It is true that early cases of rheumatism suffer sometimes from intestinal dyspepsia, but in my experience the really bad cases of intestinal toxaemia are not prone to develop juvenile rheumatism. Nor are, perhaps it is as well to add, the ordinary cases of enlarged tonsils and adenoids.

Premonitory Symptoms.

I have already said that in most cases of acute rheumatism in children there is a prodromal stage lasting for weeks or months before the onset of severe symptoms; and that this is due to the method of invasion by the infecting micro-organism. Both clinically and histologically we have proof that the invasion by rheumatism is by means of repeated minimal infections, which ultimately may wear down the child's resistance and so result in an acute attack. It is the symptoms in this prodromal stage that we now have to study, and for this purpose I define the prodromal stage as that of rheumatic infection before an attack severe enough to send the child to its bed.

Let me emphasize one important aid that we have to the study of the child in the prodromal stage of rheumatism—namely, the convalescent rheumatic child. As a child recovers from an acute attack it passes back into a condition similar to that it was in during the prodromal stage or stage of invasion. We cannot therefore study the convalescent child too carefully from this point of view.

In studying the premonitory symptoms of juvenile rheumatism, or rather the child in the prodromal stage of that infection, four groups of symptoms may be usefully described; but I want to make it clear at the outset that not every child who could be included in any of these four groups is rheumatic, only that it is out of these groups that you will get your rheumatic cases.

1. *Constitutional Symptoms.*

Juvenile rheumatism is the result of a generalized systemic infection, but its slighter and earlier symptoms are for the most part due to a general rheumatic toxaemia. Consequently there is a condition of general constitutional ill health, not in itself very specific or diagnostic, but recognizable by its association with the rheumatic symptoms to be described later. The chief importance of this state of ill health, and the reason why it must be carefully studied, is that, unless the occurrence of definite rheumatic symptoms is inquired into, it may easily be mistaken for some other condition.

The rheumatic child is pale, rather sallow, and unhealthy in appearance. Its most prominent symptom is its tiredness. Its appetite is poor, its nerves irritable, its sleep not too good. Often it is a little short of breath, and may have a throat cough. Its temperature and pulse rate may be raised by evening. Perhaps the only thing characteristic about its appearance is the flush which appears on the cheeks in a hot room; there is in this a *rather typical mauve tinge in the pink flush.*

Now a child who looks toxic, who is pale, tired, off its food, and running a little fever at night, is not unlikely to be regarded as tuberculous. Add to these symptoms a cough from the presence of septic tonsils, and slight shortness of breath from myocardial poisoning, and the similarity to the symptoms of early pulmonary tuberculosis becomes even greater. It must be emphasized that the symptoms which in a young adult should suggest the possibility of consumption do not necessarily, or even usually, mean the same in a child. This is important, for although it is bad for a rheumatic child to remain undiagnosed, it is still worse for it to be diagnosed as tuberculous. The diagnosis between the two types of child is not as a rule difficult: the appearance of a rheumatic child is very different from that of a tuberculous child, and in cases of difficulty the occurrence of typical rheumatic pains may be a decisive point.

2. *Throats and Pains Group.*

This is the most easily recognizable group. Sore throats are common enough in rheumatic children, but they may be absent where the tonsils are small and buried—a type which is associated in my mind with ultimate mitral stenosis. Not much is heard in children of the persistently uncomfortable throat, such as is complained of by adults with septic buried tonsils. Of much more importance than the symptom of sore throat are the signs of tonsillar infection. Septic tonsils are present in 80 to 90 per cent. of rheumatic children, and spontaneous cure in them is very exceptional. In my own cases not 5 per cent. of tonsils thought at one time to be infected have later been passed as normal, and these would consist chiefly of examples of acute tonsillitis.

What criteria shall we adopt as indications of chronic tonsillar sepsis? It is worth while spending a moment on this matter. (1) The size of the tonsil does not matter. The tonsils in rheumatic children are seldom very large, and do not often cause real obstruction; indeed, they may be very small and buried. (2) The surface of the tonsils is red in acute phases, and cryptic and irregular in chronic cases. (3) The faucial pillars show crescentic areas of red where they cover the buried parts of the tonsils. (4) The tonsillar glands at the angles of the jaw are enlarged. (5) Purulent material can be squeezed from the mouths of the crypts.

These signs are not all of equal value. I do not know, for instance, that we have any right to insist that the tonsillar glands should always be enlarged in rheumatic tonsillitis, for we are well aware that lymphatic glands in rheumatism do not swell and do not seem to put up any barrier to the infection. Again, I do not personally know how much stress should be laid upon the appearance of purulent material from the crypts when the tonsil is squeezed: does it necessarily mean a chronic infection capable of harming the child? Therefore I lay the greatest stress on the reddening of the faucial pillars. This last is applicable to the buried as well as to the visible tonsil; it shows infection of the hidden part of the tonsil, and it means that that infection is active and sufficiently virulent to be producing a reaction outside the tonsil, and so is presumably capable of poisoning the child to some degree.

Rheumatic pains are so well known that they may be considered briefly. Their characteristics are that they occur in the neighbourhood of joints, that they are made

better by rest and worse by exercise, and that they may be accompanied by slight fever. They may be sharp or more in the nature of a dull aching pain. We cannot possibly maintain that all muscular pains in children are truly rheumatic. Delicate nervous children with intestinal toxaemia, acidosis, and vasomotor disturbances get similar pains, and therefore in diagnosis the whole picture of the child has to be taken into consideration. Pains in the arms, wrists, and fingers are usually rheumatic; and the same may be said of stiff neck, in the absence of enlarged glands.

In this group with sore throats and pains a certain number of children will develop serious rheumatism, usually arthritis and heart disease, with perhaps nodules. The association between tonsillitis and chorea is less close than that between tonsillitis and arthritis.

3. *The Nervous Group.*

Rheumatism is a nerve poison. When it damages the brain with sufficient severity, by toxaemia or infection, we get the syndrome which we know as chorea; but long before this condition is reached there is clinical evidence that the nervous system is affected in rheumatism. No child with any degree of rheumatism fails to show some symptoms referable to the brain; there is much truth in the saying attributed to a physician of the last generation that "all rheumatic children have chorea, only some more so." For this condition I suggested many years ago the term "latent chorea."

The fundamental change which occurs is that of general nervous instability. The child becomes sharpened up; it is quick, responsive, excitable, emotional, and easily depressed or excited. It smiles at you readily and its hands are rather fidgety. These attributes make it very friendly and explain why the rheumatic children are so popular in hospital. They also explain why such children do so badly at convalescent homes.

Engrafted on this general nervous instability of rheumatic origin may be other disorders which we usually class as functional—sleeplessness, sleep-walking, night terrors, nocturnal enuresis, ties, and so on; and the point which I wish to make is that a certain number of rheumatic children will come first under observation on account of such disorders; or, put the other way round, a proportion of cases seeking treatment for various functional nervous disorders will be instances of rheumatic infection.

The association between rheumatism and general nervousness is well recognized. I used to be taught that nervous children were particularly prone to rheumatism. I am sure this is the wrong way round: a child does not become rheumatic because it is nervous, it becomes nervous because it is rheumatic. There are, of course, many children who conform to this group who are not rheumatic; nevertheless it is out of this group that many cases of rheumatic infection, chiefly chorea, will develop.

4. *The Cardiac Group.*

I come now to the consideration of those signs in a heart which make one suspect rheumatic infection. Sometimes, as we all know, in an individual case the condition of the heart is the one and only diagnostic proof of rheumatism. More often we search the heart for signs of rheumatism to confirm a suspicion of the presence of the disease. In examining the heart of a child for such evidence it is absolutely essential that the examinations should be made when the patient is lying down as well as when he is standing up. Frequently, too, it is well to auscultate the heart with the child lying on its left side.

The signs suspicious of rheumatic heart disease, starting with the least important, are as follows: (1) Increased pulse rate. This is of no diagnostic value unless accompanied by (2) dilatation of the left ventricle—that is, the apex is outside the nipple line. Such a condition probably means the presence of myocarditis, and is therefore suspicious of rheumatism. (3) If with enlargement of the left ventricle there is an apical systolic murmur, audible in any of the postures already mentioned and clearly not a cardio-respiratory bruit, the diagnosis of rheumatism is practically certain. (4) The presence of a reduplicated apical second sound, or of a mid-diastolic apical murmur, is also good evidence of rheumatism. This "third sound," as it is called, requires careful listening for; it is audible over a very small area internal to the apex beat, and is usually more clearly heard when the child is lying down than when it is standing.

In addition to these changes, which are the ordinary ones found in early rheumatic heart disease, there are certain cases of rheumatism which present themselves as examples of persistent tachycardia. In such instances it may be very difficult to distinguish the neurotic from the toxaemic group, and it is therefore well to remember that certain of the cases of persistent tachycardia met in children will ultimately be found to be of rheumatic origin.

SUMMARY.

Now I have been through most of the early signs and symptoms of rheumatic infection in a child. It will be seen that they are very various, and for the most part slight and rather indefinite. It is this that makes the diagnosis of early rheumatism difficult. It can only be reached by the due consideration of all the signs and symptoms. Where there are several such, even though each one separately is no more than suspicious, a positive diagnosis may be reached with some certainty. For my own part I think the diagnosis is most easily reached in two stages: first, by a consideration of the general appearance and deportment of the child, often enough very characteristic to one familiar with rheumatic children; secondly, by a detailed consideration of the various signs and symptoms, including a careful examination of the heart.

RADIUM TELETHERAPY.

NOTE ON THE APPARATUS AT PRESENT IN USE AT THE WESTMINSTER HOSPITAL WITH FOUR GRAMS OF RADIUM.*

BY

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THE apparatus to be described was designed at the Westminster Hospital to meet the problem of making the most effective though economical use of the 4 grams of national radium that had been lent to the hospital for use as a "bomb," and, at the same time, of protecting from the emanations all persons except those actually under treatment.

The difficulties of affording proper protection were much simplified by housing the bomb in one of the theatres, which happens to be so situated that below it is a stairway, while above there is an open space, and on each side are two main walls and an area that must be traversed before reaching the wards. It was then anticipated that, by limiting the radiation to an approximately vertical direction, complete safety would be assured. Subsequent investigation by the usual electroscope method showed that the amount of radiation that could be received from the bomb by anyone in the hospital, other than those attending in the bomb room, had no biological significance.

The apparatus is constructed so that two patients may be treated simultaneously, one above and one beneath the radium container (Fig. 1). The lower stretcher is placed as close to the ground as is convenient in order that the upper stretcher shall not be so high as to offer great difficulty of access. Each stretcher can be raised, lowered, and traversed longitudinally and laterally, and the lower stretcher can be tilted as well. The stretchers run on wheels, and can easily be moved to and from the bomb.

The radium is held in twenty containers arranged in four groups of five; each group can be withdrawn from use, if required, by pulling the appropriate knob provided outside the bomb (Fig. 2). When not required the radium is all withdrawn so that it is buried in lead. The average protection provided, whether the radium is in use or withdrawn, amounts to some six inches of lead in the horizontal plane, and, when withdrawn, to three inches on the neutral axis. When the apparatus is in use the radium sources are

* See *British Medical Journal*, May 11th, 1929.

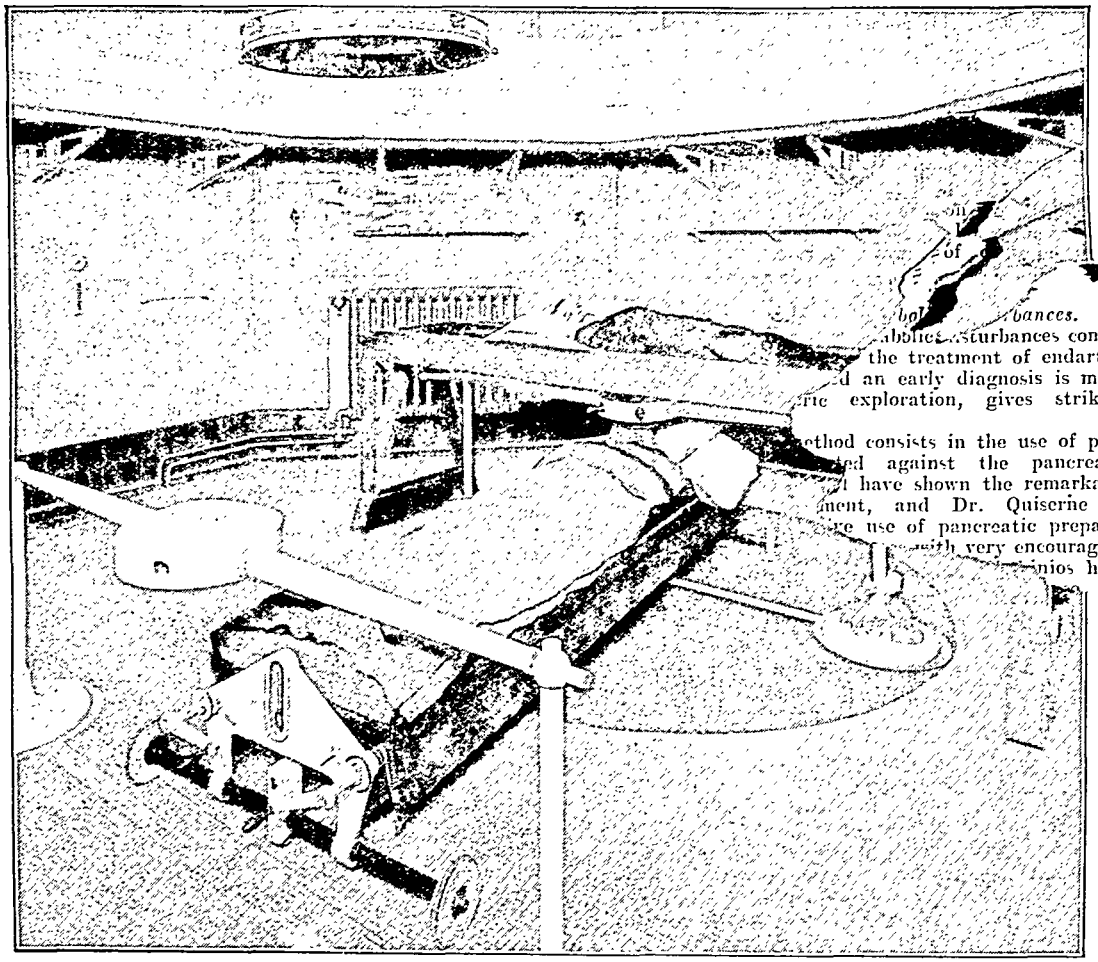


FIG. 1.—The apparatus in use.

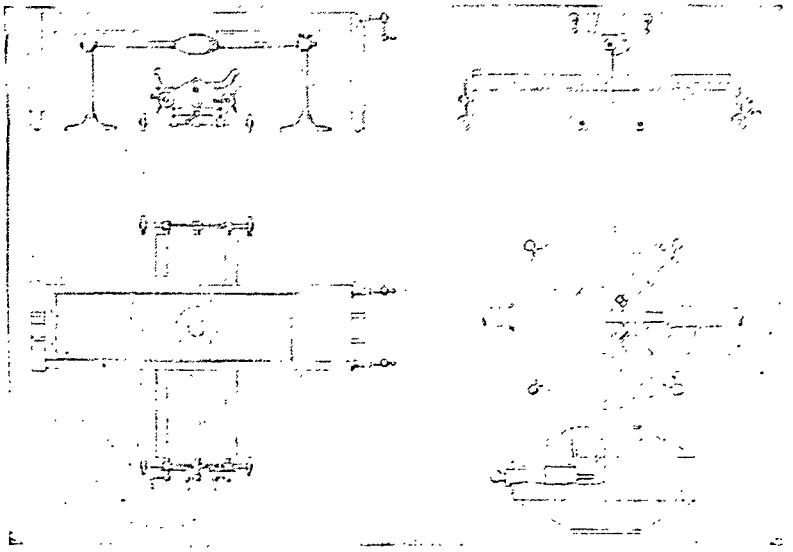


FIG. 2.—Side and end elevation, and plan of apparatus. Detail of container.

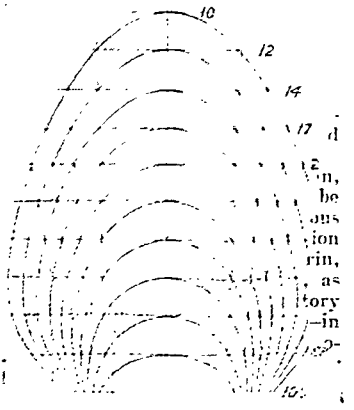


FIG. 3.—Iso-intensity curves in air [illegible] diagonal between two sources.

approximately at the corners of a four-inch square. The separation of the sources reduces the skin intensity and flattens the isodose lines, while only slightly reducing the intensity at a depth. In the upper and lower face of the container is a circular recess six inches in diameter, four holes in the bottom of which expose the radium. Into these recesses can be inserted lead plugs having various openings, which to some extent control the dimensions of the "radiant beam." The bomb can be tilted about one axis. The screenage, amounting to the equivalent of just over 1 mm. of platinum, consists of monel metal, brass, aluminium, and wood.

So far charts of the "radiant beam" have been obtained experimentally in air, but for various technical reasons charts of the "radiant beam" in tissue are not yet available.

The procedure is as follows: The radium being placed in its container, the patient lies at the end of the room most remote from the bomb. Rheumatism is a nervous disease, and before this condition is reached the best position can be got with sufficient severity, the syndrome which we know as "rheumatism" which is on the way to that the nervous system is affected—whether is then moved on to the actual radium is effected. When both child with any degree of rheumatism is symptoms referable to the brain the saying attributed to a physician is put into the working that "all rheumatic children have of exposure to the radiation. so." For this condition 1 hour to be in the room during the treatment term "latent rheumatism" is the fun itself as far away from the radium as possible, and never further protected by a lead shield.

ENDARTERITIS OBLITERANS OF THE EXTREMITIES.

A DISEASE OF METABOLISM.

BY

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ENDARTERITIS obliterans of the extremities is nowadays found much more frequently than it was some years ago, because we are more on the look out for this disease, for which a precise method of exploration, based on the oscillometric examination, has been introduced. The frequency of the occurrence of this morbid condition raises important problems as to its physio-pathology and its treatment.

ETIOLOGY.

Following the modern conceptions of general pathology, endarteritis obliterans must be considered essentially a disease of metabolism. A series of external "causes," acting on an individual specially predisposed on account of deficiencies of his regulators of metabolism, determine metabolic disturbances bearing principally on the lipoid metabolism—disturbances which, aided by certain localizing factors, result in the proliferation of the intima of the arteries of the extremities. In the etiology of endarteritis obliterans we have therefore to consider, not a unique cause, but a "constellation"* of external, constitutional, and localizing factors. The most important external evictors are tobacco intoxication, infection, and emotional shocks. The internal or constitutional factors are more as important, and consist in constitutional inadequacies of certain "regulators of metabolism"—namely, of the pancreas, of the adrenals, and of the sympathetic nervous system—inadequacies which are found in certain families with a peculiar frequency, as, for example, in Polish Jews. The factors participating determine the localization of the metabolic disturbances at the apex is on the arterial wall consist in infection of the means of the arterial wall (from typhus, typhoid fever, syphilis, and perhaps from focal infection), and in constitutional metabolic deficiencies of the arterial wall, the arterial hypoesthesias described by F. Parkes Weber.

It must be realized that the constellation of etiological factors can be described only in a general outline. Each individual patient has his own "structure" of constellation—that is, there are individual differences as to the proportionate importance and the mode of combination of the various factors constituting the etiological constellation.

Physio-pathological and Clinical Evolution of Endarteritis Obliterans.

Three phases or periods must be distinguished in the physio-pathological and clinical evolution of endarteritis obliterans of the extremities—a pre-arteritic phase of metabolic disturbances, a phase of incompletely obliterating arteritis, and a phase of thrombo-arteritis.

The Pre-arteritic Phase.—The features of the pre-arteritic phase can only be inferred by considering the metabolic disturbances which have been found in confirmed endarteritis, and which probably precede for many years the endarteritic localization. These disturbances bear on the lipoid metabolism, as can be demonstrated by the occurrence of hypercholesterinaemia (J. Heitz) and the presence of cholesterol deposits in the endarteritic lesions. They are due to disturbed function of the pancreas, adrenals, and sympathetic system. The frequency of endarteritis obliterans in diabetes, and the results obtained by Vaquez and Yacoel with insulin in non-diabetic patients suffering from endarteritis obliterans, show the role of the pancreas, and the results of unilateral adrenalectomy in certain cases (Stulz and Stricker) allow us to admit the role of the adrenals.

The Period of Incompletely Obliterating Arteritis.—After a long period of purely metabolic disturbances the endarteritic lesion occurs, a lesion which is principally trophic—metabolic—although its localization may be aided by infection. The initial and principal phenomenon in this endarteritis consists in the proliferation of the intima—that is, in the multiplication and stratification of the cells of this arterial coat—and, more than that, in the neoformation of connective tissue rich in cells. The lamina elastica interna is often divided; cholesterol deposits are frequent in the proliferating intima; calcium deposits are more tardive, and much less frequent. The involvement of the other coats of the artery is tardive, inconstant, and atypical. The proliferation of the intima causes a narrowing of the arterial lumen, and therefore a diminished irrigation of the limbs. In periods of rest or quiet movements this diminished irrigation is sufficient, but where there is a greater demand for blood, as in more active movements, the incompletely obliterated artery, instead of dilating as it normally does to increase the circulation, contracts spasmodically, and this vascular spasm is felt as pain of "intermittent claudication." Thus the symptoms manifested in this period do not depend on the arterial stenosis, but principally on the adjunction of an abnormal vascular reflex.

The Thrombo-arteritic and Thrombo-angiitic Phase.—This is the terminal phase of endarteritis obliterans, and may occur, as in young individuals, very early. Thrombosis adds itself to the clinical and pathological picture, and dominates it. This thrombosis may begin in a small artery, and extend much further upwards; it may occur also in the satellite veins, this being explained either by a concomitant phlebitis, or by the secondary disturbances of the venous outflow due to the insufficiency of the *vis a tergo*. In this thrombo-arteritic or thrombo-angiitic period of endarteritis obliterans collateral anastomoses develop to relieve the arterial obstruction.

The Place of Endarteritis Obliterans in Nosography.

Endarteritis obliterans is a special localization of athero-sclerosis. In fact, in athero-sclerosis the same constellation of etiological factors, and the same physio-pathological conditions (proliferation of the intima, disturbances in cholesterol metabolism, etc.), are found; and, on the other hand, there are cases which I described as polyarterial syndromes, in which endarteritis of the extremities coincides or alternates with coronaritis, and with endarteritis of the mesenteric arteries. The clinical and physio-pathological history of endarteritis obliterans is identical with that of the other localizations of athero-sclerosis. In

* For nearly all morbid conditions, not only for endarteritis obliterans, we no longer look for "one cause," but for multiple etiological conditions—that is, for a constellation of etiological factors, to use the happy expression of Tendeloo.

athero-sclerotic coronaritis there is first a phase of metabolic troubles, then comes the endarterial localization with vasomotor disturbances, manifested clinically as angina pectoris, and later a thrombosis may occur, resulting in myocardial infarct. In athero-sclerosis of the mesenteric arteries there occurs also, after the prodromic obscure phase of metabolic troubles, the phase of incompletely obliterating endarteritis with vasomotor disturbances manifested by attacks of abdominal pain and constipation, and the terminal phase of thrombo-arteritis with intestinal infarct. The terms used point to that identity. Angina pectoris is often called intermittent claudication of the heart; the pain in mesenteric endarteritis is often described as abdominal angina, or as "dysbasia angio-sclerotica abdominalis" (Ortner). It would be well never to use these terms in clinical diagnosis, as they are liable to bring confusion, but to hold to the precise anatomical diagnosis of the syndrome—coronaritis, mesenteric arteritis, endarteritis obliterans of the extremities.

Thrombo-angiitis obliterans, or Buerger's disease, must not be considered as a special disease differing from endarteritis obliterans. The special etiological features, such as occurrence in young men, predominance in Polish Jews, are not sufficient to justify this absolute separation. Neither are the anatomical features described by Buerger absolutely specific. Arterial thrombosis occurs in endarteritis obliterans. Involvement of the veins with venous thrombosis is also found in endarteritis obliterans of the extremities, and is especially frequent in endarteritis of the mesenteric arteries.

The absence of calcium deposits or of cholesterol deposits in thrombo-angiitis is not absolutely demonstrated, and at all events is not sufficient to separate Buerger's disease from endarteritis obliterans. The giant cells described in the clot are found in all organizing thromboses. The argument put forward by the American authors—namely, that Buerger's disease is due to infection, whereas endarteritis is a trophic disease—is purely theoretical, because the exclusive role of infection in Buerger's disease is only hypothetical, whereas the trophic element is much more apparent. In Buerger's disease the same constellation of etiological factors, the same basic metabolic disturbances, the same clinical evolution, the same action of various therapeutical measures as in endarteritis obliterans, have been described. Endarteritis obliterans and Buerger's disease are therefore one and the same disease, and the most we can say is that on account of a special structure of the etiological constellation (predominance of certain racial constitutional factors) Buerger's disease is a special form of endarteritis obliterans.

Diabetic endarteritis obliterans is also a special form of endarteritis obliterans, and is simply characterized by the preponderance of the pancreatic element in the constellation of etiological factors.

This is the "synthetic" or "metabolic" conception of endarteritis obliterans. It is based on the modern physiopathological researches, is confirmed by the clinical observations of the polyarterial syndromes, and has the merit of offering a sound scientific basis for the treatment of this condition.

Importance of Early Diagnosis for Treatment.

The diagnostic problem is very important, since most cases of endarteritis obliterans are diagnosed as rheumatism, sciatica, varices, flat-foot, etc. These errors will be avoided by bearing in mind the relative frequency of the arterial obstructions of the extremities at all ages and in all countries, and by exploring the circulation of the extremities with the oscillometer. The oscillometric method remains the most simple and the most precise diagnostic procedure, because radiology can give us results only in the rare cases in which calcium deposits exist in the arterial wall, and radiography after injection of *lipiodol* is much more difficult in its application, does not give more precise information than the oscillometer, and is not always innocuous.

In the intensive injection treatment of varices care must be taken not to mistake for real varices the venous dilatations met with in cases of endarteritis obliterans, and which are provoked by the venous stasis frequent in this condition. Injection treatment of such "varicose veins" may lead to disaster, as Sicard himself has pointed out, and this demonstrates the importance, for the internist and the surgeon, of a precise exploration of the arterial circulation of the limbs.

Treatment of the Etiological Factors.

Interdiction of smoking is necessary, and there is always a relief in the symptoms of patients who give up smoking. Syphilis must be looked for, and even, in doubtful cases, treatment with mercury or arsphenamine must be instituted. Active foci of naso-oral infection must be treated in consequence. In a disease which so largely affects the vegetative nervous system the role of careful psychotherapy need hardly be emphasized.

Treatment of the Basic Metabolic Disturbances.

The treatment of the basic metabolic disturbances constitutes the principal element in the treatment of endarteritis obliterans, and, provided an early diagnosis is made through the oscillometric exploration, gives striking results.

The most important method consists in the use of pancreatic preparations directed against the pancreatic element. Vaquez and Yacoel have shown the remarkable results of insulin treatment, and Dr. Quiserne of Bagnolles has made extensive use of pancreatic preparations in peripheral vascular diseases with very encouraging results.* Recent researches of Gley and Kisthinios have demonstrated in the pancreas a special substance, independent of insulin, but existing in insulin as an "impurity," and which has a definite vascular action.

Various protein shock preparations must be used after treatment with insulin has been tried. During these last four years I have used yatren casein, which I prefer to the intravenous administration of T.A.B., advocated by Goodman and Gottesman—a method which may result in strong reactions. Lipiodol, which, on the advice of Professor Vaquez, I have used for many years, acts probably through the same mechanism of shock. There is, however, a special action of the iodine on the metabolic disturbances of the arteries, and that is why preparations such as lipiodol, tincture of iodine, and colloidal iodine are valuable as alternative methods.

Spas, the great modifiers of metabolism, show their action in endarteritis obliterans. I have seen remarkable results from Royat treatment, and although this spa acts principally on the vasomotor element, we cannot exclude a more general regularization of metabolism.

Adrenalectomy belongs also to these metabolic treatments. I have no personal experience of the effect of this method, but I cannot consider the published results as very encouraging.

The methods advocated—insulin, protein shock, lipiodol, spa treatment—very frequently bring about a striking amelioration of the subjective symptoms, and, what perhaps emphasizes their efficiency, an increase of the oscillometric index.

Treatment of the Circulatory Disturbances.

The second objective of the clinician in endarteritis obliterans consists in the diminution of the vascular spasm and the fostering of vaso-dilatation of the vessels of the limbs, so as to bring about as normal an arterial irrigation as possible. The effects of the various methods advocated, which will be used alternatively, must be followed with the oscillometer.

Among the pharmaceutical agents, the nitrites, aspirin, and acetylcholin will yield good results. Nitrites may be given either by the mouth or in the form of injections of sodium nitrite (twenty 1 c.cm. injections of a solution containing 0.01 sodium nitrite per c.cm.). Aspirin, although a banal drug, has real therapeutical effects, as Erb has shown, which are due to the central vaso-dilatory action of the salicylates (Wiechowski). Acetylcholin—in series of daily injections of 0.05 or 0.10—has been introduced in the treatment of this condition by Professor Villaret, and the reports of the French clinicians are very encouraging. Quinine also is used by certain physicians.

* Oral communication.

Among the physio-therapeutical methods, the simplest consists in the application of warm foot-baths, or radiant heat, but the best is diathermy (A. Wilson Gill, L. Newell Moss), which must always be applied. I have not seen any special results from *x*-ray applications, nor from galvanic foot-baths. Massage is strictly contraindicated, as also is any undue strain (exercise), because these can only accentuate the spasmodic condition. Balneotherapy is very important, and it is to the action on the vasomotor centres that must be attributed, in great part at least, the effects of Royat. Artificial carbon dioxide baths are not effective.

Among surgical methods Leriche's operation—arterial perisympathectomy—which also enhances vaso-dilatation, has given some good results, but must be applied only in the last resort. Before its application a careful oscillometric exploration must be made, so as to determine that the artery is not completely obliterated, and also for the localization of the obliteration. Gangrene may be the result if these precautions are not taken.

If to all these methods is added the scrupulous care of small wounds and excoriations of the lower limbs, a very effective treatment can be instituted in a disease which is relatively frequent, is met with in all countries and in all races, and has not, thanks to the possibility of an early recognition, the dark prognosis which was often attached to it.

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PERNICIOUS ANAEMIA.

PRELIMINARY REPORT ON THE RESULTS OBTAINED BY TREATMENT WITH CERTAIN PREPARATIONS OF STOMACH.*

BY

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THE unfailing regularity with which gastric achylia is encountered in pernicious anaemia has often been pointed out. Almost invariably the gastric secretion is deficient in hydrochloric acid and pepsin, even after the use of powerful gastric stimulants; in some hundred cases which I have examined only three exceptions were found.[1] That this achylia is of some significance has been pointed out by Castle,[2] who fed patients suffering from Addisonian anaemia with beef that had been predigested in a normal stomach, or with normal gastric juice *in vitro*, and obtained reticulocyte responses and increased erythrocyte counts comparable with those ordinarily seen after small doses of liver. He failed to obtain any improvement using beef (*a*) alone, (*b*) predigested with hydrochloric acid and commercial pepsin, or (*c*) incubated with 150 grams of mucous membrane of hog's stomach. The negative result in the latter case is somewhat surprising in view of the results described below.

These observations and the success of the liver therapy have suggested the hypothesis that pernicious anaemia might be a deficiency disease in which the gastric juice was unable to elaborate some necessary principle (normally formed in a healthy individual) from the proteins of the food. This substance is present in liver and kidney, as was originally shown by Murphy and Minot, and, in consequence, these organs can be readily administered in the treatment of the disease. Attempts to identify the active principle with certain vitamins and investigations upon the effects of various foodstuffs have been made by Elders,[3] and Koessler, Maurer, and Loughlin[4] among others.

The experiments described below were based upon a somewhat different view—namely, the possibility of pernicious anaemia being a type of deficiency disease, in which some factor of paramount importance was absent from the gastric juice. Despite some of the negative results obtained by Castle, it did not seem improbable that the stomach itself might be a potent source of the anti-anaemic substance, and the complete lack of gastric enzymes suggested the importance of investigating this possibility more closely.

Action of Normal Gastric Juice.

It was decided in the first place to try the effect of normal gastric juice. This was obtained, as required, either with or without the use of histamine, and administered in a daily dose of 150 to 200 c.cm., *given during meals* to ensure its action upon the protein foodstuffs. Each individual sample of gastric juice was examined carefully beforehand for the presence of free hydrochloric acid and normal peptic activity to ensure that an active and fresh preparation was being used. All samples containing bile, or less than 0.036 per cent. free hydrochloric acid, were discarded.

The following case illustrates the type of response obtained in this group.

CASE I.

A male cotton operative, aged 59, was admitted to hospital complaining of weakness in the legs and lack of energy, so that he was unable to carry on his work. Apart from bacterial food poisoning in 1906, he had enjoyed perfect health until March, 1929, when he had an attack of influenza lasting for four weeks. Since that time he had had slight paraesthesias, more pronounced in the cold weather. These became gradually worse, so that, having ceased work, he had difficulty in using his limbs accurately. He had lost 14 lb. in weight in six months. His appetite was good and there was no history of indigestion, diarrhoea, nausea, vomiting, or marked flatulence. He had soreness of the tongue and gums in cold weather. More recently, he had had some slight pains in the lower abdomen, lasting for a few minutes only; his bowels were constipated.

The previous medical history contained nothing of note. As regards the family history, one sister had died at the age of 30 from an "anaemic wasting disease."

Examination.—The patient's teeth were artificial; there was nothing abnormal in the cardio-vascular, respiratory, alimentary, or genito-urinary systems. The knee-jerks and abdominal reflexes were exaggerated; no muscular wasting was present, but there was marked weakness in the limbs and some difficulty in walking. The blood Wassermann test was negative. A cytological examination showed: red blood cells 3,650,000 per c.mm., white blood cells 4,800; haemoglobin 100 per cent.; colour index 1.4; platelets normal; slight anisocytosis and poikilocytosis; no nucleated red cells or abnormal staining detected. Repeated fractional gastric analyses revealed complete achylia.

The case was diagnosed as one of early pernicious anaemia with subacute combined degeneration of the cord and achlorhydria syndrome.

Treatment.—No liver had been taken prior to admission, when he was given hydrochloric acid and commercial pepsin. After seven days this was discontinued and replaced by 150 to 200 c.cm. of normal fresh gastric juice once daily, taken with the midday meal. During the first week, while on acid and pepsin therapy, the patient's condition became worse. The reticulocyte count remained at the normal low level, while the red blood cells diminished by nearly 300,000; anisocytosis and poikilocytosis became

* From the Laboratory for Clinical Investigations and Research, Manchester Royal Infirmary

marked, and the platelets were reduced in numbers considerably. The introduction of normal gastric juice, however, gave a remarkable response. Within three or four days the reticulocytes showed an increase (Chart 1) somewhat greater than that obtained with liver in similar cases. (It should be noted that Minot, Murphy, and Stetson[5] have shown that the height to which the percentage of reticulocytes rises in the usual case is in inverse relation to the level of the red blood cells. Cases with more than three million red blood cells per cubic centimetre never exhibit more than a slight response (about 1 per cent.) of the reticulocytes.) Simultaneously the red blood cells showed an increase in numbers to over four million. The patient was obviously much better and felt stronger, so that he was able to walk and use his hands and arms almost as normally. He had now improved so considerably that he asked to be discharged from hospital, and liver extract was substituted in place of the normal gastric juice for several days, the reticulocyte percentage falling immediately without any secondary rise, a significant point in the diagnosis and treatment of this condition. He was discharged on a liver diet.

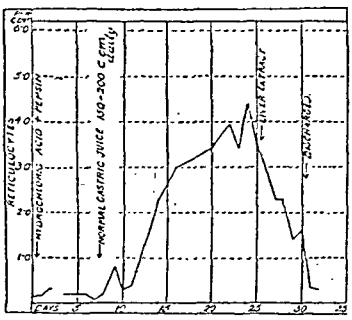


CHART 1.

Uncooked Fresh Hog's Stomach.

Freshly obtained hogs' stomachs were employed in the next group of cases. In order to differentiate, if possible, between the value of the mucous membrane and the muscular layer of the stomach, these were separated. This was readily accomplished by stripping and slight dissection. In this manner the two portions were obtained free from each other, weighed, minced, and fed to patients suffering from pernicious anaemia. One stomach daily was thus sufficient for the treatment of two patients. It was found subsequently that the two portions were equally potent, even when kept in a refrigerator for several days—an important practical point in treatment extending over periods of weeks or months.

It may be pointed out that the separation of the two portions of the fresh stomach as received each day successfully disposes of the argument that the potency of the stomach muscle, at any rate, is due to the action of pepsin present in the stomach post mortem.

The minced daily doses were readily administered to the patients in the usual ways as employed with fresh liver therapy, no cooking or heating being permitted (compare Wilkinson and Brockbank, loc. cit.). No hydrochloric acid or other drugs were administered during the periods of observation. The following cases illustrate the typical results obtained.

CASE II.

A woman, aged 41, who was engaged in housework, had complained of lassitude and loss of energy since 1922. She improved for a time, and then attacks of nausea, persistent vomiting, and some diarrhoea began, lasting for periods of about a week. This continued, with some intervals of freedom, from 1925 until the spring of 1929, when an appendicectomy was performed. From this time onwards she became progressively weaker and more anaemic. She had neither nausea nor diarrhoea until the day of admission to hospital, but gave a history of occasional indigestion, soreness of the tongue, and slight oedema of the ankles. There was no definite flatulence or loss of weight.

The previous medical history contained a reference to an attack of bacterial food poisoning in 1914. As regards the family history, the father died of phthisis, and the mother has a weak chest.

Examination.—The teeth were carious; the tongue was pale, but there was no marked glossitis; the skin had a pale yellowish tinge. The spleen was slightly enlarged; there was a systolic bruit over the pulmonary area, but nothing else of note was observed. A blood count showed: red blood cells 660,000 per c.mm., white blood cells 3,200; haemoglobin 17 per cent.; colour index 1.3; platelets scanty; anisocytosis and poikilocytosis marked; nucleated red cells, polychromasia, punctate basophilia, and megaloblasts all present. Fractional gastric analysis showed achylia gastrica.

This patient had not had any liver therapy prior to admission. A blood transfusion (Group IV, 350 c.cm. whole blood by the direct method) was given, followed by a daily dose of 250 grams of freshly prepared raw mucous membrane of hog's stomach. The patient was troubled from the day of admission with severe diarrhoea, which commenced before the raw stomach therapy had been inaugurated, persisted for four or five days, and responded to large doses of hydrochloric acid.

The reticulocytes began to show a rapid response, increasing in numbers. Simultaneously, the subjective and objective conditions of the patient improved progressively and rapidly. Further supplies of desiccated mucous membrane being now available (see below), 100 grams daily was substituted for the raw preparation (Chart 2). It will be observed that after the first peak had been reached the percentage of reticulocytes fell to below 5 per cent. and then gave a secondary rise in the course of some five days to 10.6 per cent. The significance of this is not quite clear, and, so far in my series, this is the only example. The erythrocytes showed a steadily increasing count, rising from 660,000 per c.mm. before transfusion to 1,022,000 two days later, and 3,910,000 after fifty days.

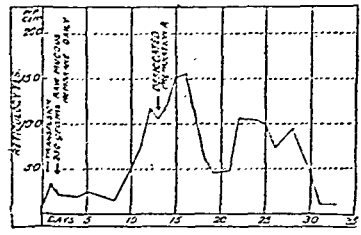


CHART 2.

CASE III.

A male clerk, aged 56, complained of weakness, lack of energy, pallor, and tingling and numbness in the fingers and toes, so that he was unable to follow his employment. The onset had been insidious, but had become more pronounced during the three months prior to admission to hospital. With the onset of constipation and the passage of frequent small motions he had noticed a change of colour of his skin, and developed a very marked heaviness about the eyes. There was no history of flatulence, indigestion, diarrhoea, or soreness of the tongue. Thirty-four years previously he had had jaundice, which lasted for six to seven weeks; he was in hospital twenty years later on account of abdominal pain; no operation was performed.

The family history showed that several members of the family had had jaundice; a cousin died of gastric cancer; his mother was troubled with indigestion for years.

Examination.—The teeth were artificial; the skin a lemon-yellow colour; there was impairment of muscular power in the upper and lower limbs, and evidence of chronic bronchitis; nothing else of note. A blood count showed: red blood cells 1,910,000 per c.mm., white blood cells 7,600; haemoglobin 50 per cent.; colour index 1.3; platelets scanty; anisocytosis and poikilocytosis marked; nucleated red cells, polychromasia, and megaloblasts present. Fractional gastric analyses on several occasions showed complete achylia.

Prior to admission this patient had taken small doses of cooked liver at irregular intervals. As in the previous case, he was given a diet containing 250 grams of fresh raw mucous membrane daily. Again the improvement in the patient's general condition was profound, so that he was able to attend the laboratory without assistance in less than a week.

Table (abridged) showing Improvement in the Blood Count.

Day of Treatment.	Red Blood Cells.	White Blood Cells.	Haemoglobin.
			Per cent.
First day	1,910,000	7,600	50
Twenty-first day	2,820,000	6,400	60
Thirty-sixth day	3,740,000	14,100	74
Fifty-fourth day	4,390,000	13,200	72
Sixty-eighth day	4,570,000	11,100	74
Seventy-eighth day	5,072,000	8,300	84

The blood picture showed similar improvement (see table), to such an extent that, having continued the dietary after discharge from hospital, his erythrocyte count had increased from 1,910,000 to 5,072,000 per c.mm. in nine weeks *from the commencement of fresh stomach therapy.* He is now very well indeed, *having returned to work with an almost normal blood picture* within two and a half months from the original diagnosis of the condition. This compares very favourably indeed with the results obtained on a liver diet.

CASE IV.

A foreman gasworker, aged 36, was admitted to hospital complaining of progressive loss of energy, dyspnoea, and general weakness for three months prior to admission, becoming very marked during the latter portion of this time, when a yellowish pallor was also observed. In January, 1929, he had been operated

upon in another part of the country for appendicitis, since when he had had occasional slight discomfort after food and exertion. There was no history of soreness of the tongue, nausea, vomiting, flatulence, diarrhoea, or loss of weight. Slight paraesthesiae were present in the toes. There was nothing of note in previous medical and family histories.

Examination.—A slight yellowish pallor of the skin was noticed; nothing else abnormal was found. A blood count showed: red blood cells 3,180,000 per c.mm., white blood cells 5,200; haemoglobin 66 per cent.; colour index 1.04; platelets scanty; anisocytosis and poikilocytosis marked; no nucleated red cells; no abnormal staining. Fractional gastric analyses on four separate occasions showed achylia.

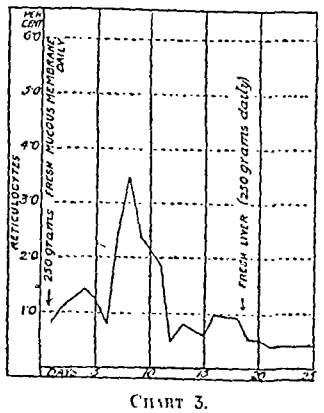


CHART 3.

The diagnosis was obviously one of pernicious anaemia. Prior to admission the patient had taken small amounts of cooked liver for some seven days, but no treatment was given for a week preceding the administration of fresh stomach muscle (250 grams daily). This, of course, does not entirely preclude the possibility that the earlier liver treatment may have initiated a remission. However, the response of the reticulocytes (Chart 3) to the stomach therapy is significant, following as it does a preliminary liver diet (compare Minot, Murphy, and Lawson[6]).

Here again, as in Case i, the prompt response was quite equal to that obtainable with liver therapy in cases showing an initial red cell count greater than three million (loc. cit.). No further response was obtainable with a liver diet subsequently. The patient showed a very marked improvement in his condition, and his paraesthesiae disappeared entirely on the raw stomach diet.

This case is included here in order to illustrate the type of response that is usually observed in cases with an initial high red blood cell count. It is typical for both stomach and liver therapy.

Desiccated Preparations of Hogs' Stomachs.

The obvious difficulties attending the supply and use of fresh raw hog's stomach after the patients have left hospital suggested the substitution of the corresponding dried preparations. Whilst these experiments were in progress Sturgis, Isaacs, and Sharp[7] reported the treatment with desiccated whole stomach of three cases, which showed very similar results to my own.

I employed dried mucous membrane and dried muscular layer of hogs' stomachs in cases as described below. The preparations were obtained by desiccation at 40° C. *in vacuo*, with the addition of lactose to facilitate manipulation. Thus obtained, both portions of the stomach were in the form of light powders, which were readily administered in the following ways: (*a*) suspended in water or milk; (*b*) in lukewarm soup, etc.; (*c*) mixed with other previously cooked foods, particularly potted meat, in which guise the patient was unable to detect its presence; and (*d*) in the form of tablets to be swallowed with water or other fluid at intervals during the day. Later preparations were flavoured with chocolate and made a very palatable drink with milk. As employed at the present time these two preparations are:

Preparation A.—The usual dose of 100 grams contains 66 grams of desiccated mucous membrane of the hog's stomach, equivalent to about 280 grams of fresh mucous membrane. The remainder consists of chocolate and lactose.

Preparation B.—The usual doses employed were 150 grams, and later 100 grams. The former dose contains 100 grams of desiccated stomach muscle (equivalent to 300 grams of the fresh product), the remainder consisting of added chocolate and lactose.

The bulk of both these preparations can be considerably reduced by omitting the chocolate and lactose, but this is of little advantage in practice.

The following cases are typical examples from my series.

CASE V.

The illness in this patient—a woman teacher, aged 47—commenced in May, 1926, with soreness of the tongue and mouth, which continued with remissions for fourteen months. From this time onwards she was troubled with weakness and lack of energy to such an extent that most of her week-ends were spent in bed, although she managed to remain at her work. In April, 1929, she had an attack of jaundice which lasted for five weeks, although the yellowish colour had never been completely lost. She had had tinglings and numbness in the hands and feet for several years, together with some indigestion and flatulence, and in the summer of 1929 complained of pain in the chest and both iliac fossae. The bowels had been constipated, and vomiting had occurred at irregular intervals after food. She had suffered from cystitis and pyelitis in 1927. There was nothing of note in the family history.

Examination.—Her tongue was clean, no evidence of glossitis; teeth good; skin lemon yellow colour; nothing else found abnormal.

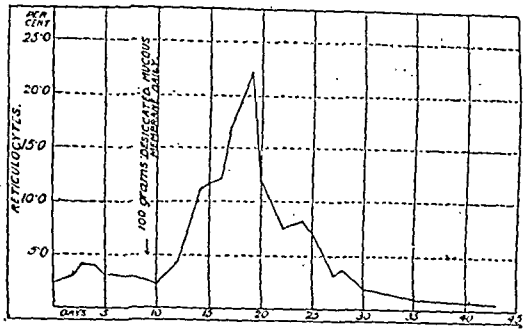


CHART 4.

Van den Bergh reaction: delayed direct. Radiological examinations of alimentary tract and gall-bladder were negative. A blood count showed: red blood cells 1,890,000 per c.mm., white blood cells 5,300; haemoglobin 55 per cent.; colour index 1.45; platelets very scanty; anisocytosis and poikilocytosis very marked; no nucleated red cells. Fractional gastric analyses showed complete achylia.

This patient was sent into hospital as a case of cholelithiasis, but the diagnosis was obviously one of pernicious anaemia. She had not had any liver therapy.

For the first ten days she was given hydrochloric acid and pepsin with each meal without response. This was then amplified by the addition of 110 grams of desiccated mucous membrane (preparation A) of hog's stomach daily, but was later reduced to 100 grams daily. Chart 4 shows the almost immediate response in the reticulocyte percentage, and the progressive rise in the erythrocyte count. There was no secondary rise in the curve after it had fallen to normal (less than 1 per cent.), where it remained subsequently. The clinical condition began to show an extremely rapid rate of improvement, the paraesthesiae and icteric colour having completely disappeared within a week after the commencement of the treatment.

After thirty-five days the patient had shown an increase from 1,890,000 to 4,136,000 erythrocytes per cubic millimetre, and was discharged from hospital.

CASE VI.

An engineer's fitter, aged 45, complained of excessive tiredness after work or exercise, together with a feeling of "being run down" during the six weeks prior to admission to hospital. Since that time he had become progressively worse, and had noticed that he was getting paler in colour and very anaemic. There was dyspnoea on slight exertion, and a history of swelling of the feet and ankles, and much indigestion. There had not been any cough, pain, loss of weight, nausea, vomiting, diarrhoea, or paraesthesia. His bowels were regular. His previous medical and family histories contained nothing of note.

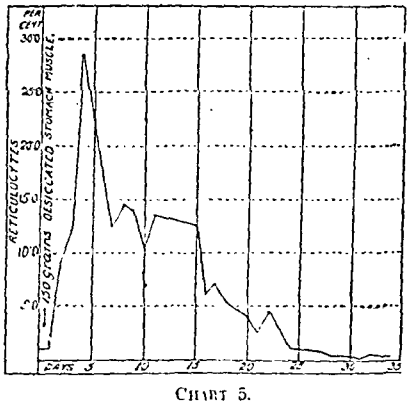


CHART 5.

Examination.—He had pale yellow sclerotics, with faint yellow colour in the skin; teeth artificial; tongue clean, dry; no oedema; liver enlarged; spleen just palpable; nothing else abnormal. The blood Wassermann test was negative. Radiological examination of the alimentary tract was negative. A blood count showed: red blood cells 1,224,000 per c.mm., white blood cells 6,100; haemoglobin 45 per cent.; colour index 1.8; platelets very scanty; anisocytosis and poikilocytosis very marked; nucleated red cells, megaloblasts, polychromasia, and punctate basophilia all present. Fractional gastric analyses showed complete achylia.

The patient was treated with desiccated stomach muscle (preparation B), initially 150 grams daily, with a rapid response in both erythrocyte and reticulocyte counts. The reticulocytes (Chart 5) rapidly rose to 23.3 per cent., but had not reached a normal level again until the twenty-eighth day after commencement of the treatment, when the dosage was reduced to 100 grams daily. The red blood cells rose steadily and progressively until their count was 4,008,000 per c.mm. on the thirty-seventh day, when the patient was discharged from hospital.

Summary.

The present communication is a summary of the results obtained in a preliminary series of nine cases of pernicious anaemia. These were divided into three groups, which were treated respectively with (*a*) normal gastric juice, (*b*) raw fresh mucous membrane or muscular layer of hogs' stomachs, and (*c*) desiccated preparations from these two portions of the stomach of the hog.

The results were controlled by daily reticulocyte counts, frequent regular full blood examinations, and the clinical conditions of the patients, both before and after discharge from hospital.

Cases of pernicious anaemia in various stages of the disease have been examined, and the final results obtained in all cases are at least equal to, whilst the immediate clinical results appear to be distinctly better than, those obtained in corresponding cases on a fresh liver diet.

Representative cases from each group under observation have been described to illustrate points brought out in the present communication.

It is not proposed to discuss here the theoretical considerations raised until the series has been extended more fully. Briefly, however, the results are these:

1. Normal gastric juice (150–200 c.cm. daily *with* meals) has given a definite improvement in the clinical condition, blood picture, and reticulocyte response slightly better than is observed with a fresh liver diet under similar conditions. This tends to support some of the observations made by Castle.

2. Hydrochloric acid and commercial pepsin alone have no effect in the improvement of the haematological condition of pernicious anaemia, nor are they essential for successful treatment with stomach of the hog.

3. The mucous membrane and the muscular layer of the stomach of the hog are both active in the treatment of pernicious anaemia. The results so far obtained show that this diet, weight for weight, is at least equal to or better than a liver diet.

4. Similarly, desiccated preparations of these two separated portions of hog's stomach are potent in the successful treatment of the disease. This form is convenient and easy to administer.

5. Clinically there is little difference in the potencies of all the preparations of hog's stomach described above, whilst fresh stomachs, both whole and dissected, have been kept for several days at a low temperature without noticeable loss in activity.

6. Compared to liver, the results appear to be slightly better, and the improvement in the condition of the patients in my short preliminary series has certainly been more rapid with hog's stomach therapy. Glossitis and paraesthesiae, in particular, have been found to respond more readily.

7. Since both the peptic-enzyme-containing (mucous membrane) and the non-peptic-enzyme-containing (muscle) portions of the stomach of the hog are active, they may be placed in the same category as liver and kidney as very potent sources of the active haematopoietic substance.

8. Eosinophilia occurs with this form of therapy as with liver.

It is proposed to give fuller details at a later date of these investigations, together with certain other work now in progress, when the series will have been much extended.

I have again to thank the honorary physicians of the Manchester Royal Infirmary for kindly allowing me to use their patients in this investigation, Professor H. S. Raper, F.R.S., for his unfailing interest and help, and Drs. Agnes Bodoano and Bessie Cadness for their careful determinations of the reticulocyte and blood counts. I gratefully acknowledge, also, the invaluable assistance rendered by Messrs. Benger's Food, Ltd., of Manchester, and Dr. Bullock, who kindly went to considerable trouble to prepare for me the desiccated preparations from the fresh hogs' stomachs.

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THE INJECTION CURE OF HYDROCELE.

BY

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IT must be presumed that the old procedure of injection for the cure of hydrocele of the tunica vaginalis was unsatisfactory, either because of the uncertainty of its results or on account of its painful character, and it fell into disuse. The substitution of operative measures, while satisfactory in their respective technique and results, was a somewhat severe procedure for old patients. The use of general anaesthesia, the stay in bed for some ten days or longer, and the difficulty in finding hospital accommodation for such cases, made the need for a simpler procedure desirable.

The risk of general anaesthesia might be obviated by the substitution of local, which was entirely satisfactory, but the period of convalescence was not abolished. An extended use of quinine and urethane for the injection of varicose veins suggested that one had a solution which might serve an equally useful purpose to damage the endothelium of the tunica, and that with a minimum of pain and reaction.

The method was first tried in June, 1928, at the Royal Victoria Infirmary, on a patient aged 54, who had had a right hydrocele for two years, during which time it had been tapped ten times. It regularly filled up in two months. A small area of the front of the scrotum was infiltrated with novocain, and the tunica tapped by the ordinary hydrocele trocar. As far as possible the tunica was emptied and 2 c.cm. of quinine and urethane introduced through a spinal anaesthetic needle passed through the cannula. The needle was withdrawn, and later the cannula, care being taken to avoid any contact between the solution and the other tissues. By gentle massage the solution was distributed over the whole surface of the tunica. Fluid gradually re-accumulated and was aspirated seven days later, and was found to be slightly turbid. No pain, discomfort, oedema, or fever was manifested, and the patient was then discharged. At the present time, eighteen months later, there has been no return of the fluid.

Shortly after, a second case, a patient aged 72, in whom the hydrocele had been present for some years and who had been tapped several months before, presented himself with the tunica again very tense and about the size of a coco-nut. A similar procedure was carried out, except that the hydrocele was aspirated through a spinal anaesthetic needle and injected through the needle without withdrawal—that is, by means of a single puncture. No pain was experienced. Fluid again accumulated and was aspirated a week later, it being slightly turbid as in the first case. At the present time there has been no return of the fluid; the testicle is slightly thickened, but a suspensory bandage previously worn has been discarded.

The first patient was admitted to hospital as a precaution, but all others have been dealt with as out-patients, and the treatment in no way interfered with their ordinary duties.

Since then three further patients have been treated, over a year ago, with correspondingly satisfactory results; although tapping was practised after operation in these cases, further experience may prove that this is unnecessary, the fluid being gradually absorbed.

It appears that we have now a satisfactory injection treatment for hydrocele, which is painless and, like the similar method in use for varicose veins, can be carried out without invalidity.

A STUDY OF CUTANEOUS SENSITIVENESS TO SCARLATINAL TOXIN IN PREGNANCY AND THE PUERPERIUM.

BY

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THIS paper is primarily concerned with the relation between cutaneous sensitiveness to streptococcal toxin in pregnant women and the incidence of puerperal sepsis.

The work was undertaken at the suggestion of the Streptococcal Committee of the Medical Research Council following the report of a hundred cases similarly investigated by one of us (H. B.-W.). The relationship between a positive Dick test and susceptibility to scarlet fever is now well appreciated. The close relationship between haemolytic streptococci isolated from cases of puerperal sepsis and of scarlet fever suggested that the incidence of streptococcal puerperal infection might be governed to some extent by a similar condition of sensitiveness to streptococcal toxins.

Kunz and Nobel published in 1926 the results of Dick tests carried out on 117 women before labour, and 327 within forty-eight hours of delivery. Of these 444 women, 392 (88 per cent.) gave negative reactions, and 52 (12 per cent.) positive. In the Dick-negative group 32 (8 per cent.), and in the Dick-positive group 12 (23 per cent.), experienced febrile puerperia. The febrile standard was not defined, but cases were excluded which showed a rise of temperature on one day only.

Weiss, in 1927, recorded the results of 140 Dick tests carried out during pregnancy. Of the Dick-negative women 34 per cent., and of the Dick-positive 22 per cent., were febrile during the puerperium. The febrile standard was not defined. He was of the opinion that the results were of little value, because in many cases the skin reactions were inconstant. In neither of these investigations, nor in that of Salmond and Turner, were bacteriological examinations carried out to determine specifically the incidence of *S. pyogenes* infection. It was felt that to make the investigation complete such a bacteriological examination should be made.

Method.

The Dick test was employed. A supply of standardized scarlatinal toxin prepared at the Wellcome Physiological Research Institute has been used for all tests. The Dick toxin was a filtrate of the Dochez strain grown in nutrient broth for eighteen hours at 37° C. No serum or blood had been added. The filtrate gave reactions in very sensitive people in a dilution of 1 in 6,000 and even lower, the dose used being always 0.2 c.cm. Various dilutions had been tested clinically in a number of patients suffering from scarlet fever over a long period. 1 in 1,000 was considered on the clinical results to be the most suitable dilution. Two intradermal injections—one of 0.2 c.cm. of a dilution of 1 in 1,000 of toxin, the other of heated control—were made into the skin of the ventral surface of the forearm, different arms being used for toxin and control. A positive reaction consists in the appearance within twenty-four hours of an erythematous patch measuring at least 1 cm. by 1 cm. at the site of injection, all lesser reactions being regarded as negative. In the majority of cases the test was carried out during the last four weeks of pregnancy. All cases were delivered in hospital; cases in which the reactions were ambiguous have been excluded, so that a high standard of accuracy is assured in the observations. This communication comprises the results of two separate and independent inquiries, conducted simultaneously, at the City of London Maternity Hospital and Queen Charlotte's Hospital. The purpose of the two inquiries was identical, the results are in harmony and have therefore been published jointly. In all cases with morbid puerperia cultures were taken from the cervix whenever possible. The cervical swabs taken at Queen Charlotte's Hospital were plated out on blood agar plates; those taken at the City of London Maternity Hospital were treated by two methods: (1) the swabs were plated out on blood agar plates, and (2) were shaken up in blood broth, which was incubated for eighteen hours and then plated out on blood agar. The standard of morbidity employed was that of a rise of temperature to 100.4° F. or over, maintained for twenty-four hours, or recurring on two occasions within twenty-four hours during the first twenty-one days of the puerperium.

Results.

It has been thought best to show the main results in three tables. Table I is a summary of the 1,000 cases considered as a whole. Tables II and III represent the cases at the City of London Maternity Hospital and Queen Charlotte's Hospital taken separately.

TABLE I.—*Total results of 1,000 Cases at the City of London Maternity Hospital and Queen Charlotte's Hospital.*

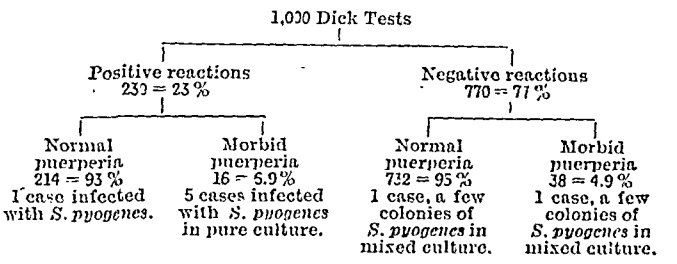
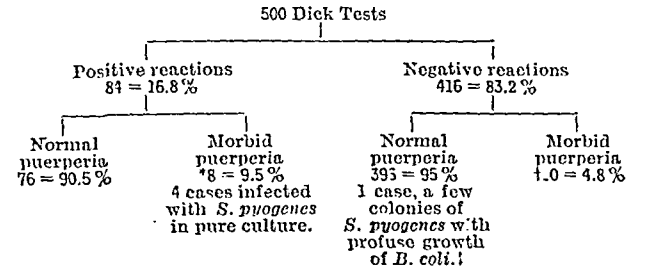
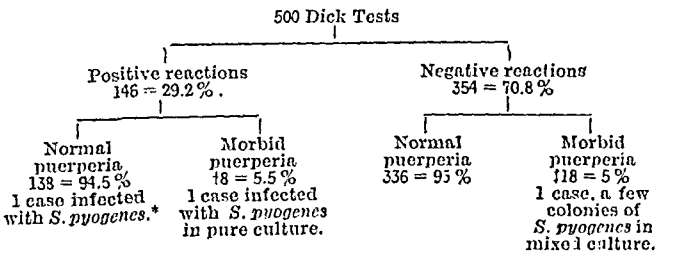


TABLE II.—*The City of London Maternity Hospital.*



* Includes 1 case of breast abscess from which *S. pyogenes* was isolated.
† Includes 3 cases of urinary infection, and 1 case of mastitis.
‡ Pyrexia just short of the morbid standard.

TABLE III.—*Queen Charlotte's Hospital.*



* This case just failed to reach the standard of morbidity. The patient's temperature was on one occasion 100.8° F., and remained for a few hours at 100° F.
† Includes one case of breast abscess.
‡ Includes three cases in which the fever was probably due to infection of the respiratory rather than the genital tract.

The results show that in a series of 230 women giving positive Dick reactions in pregnancy 16 (6.9 per cent.) experienced morbid puerperia, and in 5 cases a pure growth of *S. pyogenes* was isolated from the cervix; in one other case a pure growth of *S. pyogenes* was isolated from a breast abscess. In the Dick-negative group there were 770 women, and of these 38 (4.9 per cent.) experienced morbid puerperia. In this Dick-negative group, over three

times larger than the Dick-positive, 2 cases showed a few colonies of *S. pyogenes* in mixed culture. Considered purely from the point of view of the incidence of *S. pyogenes* infection the results are as follows:

In the Dick + group of women, 6 cases out of 230 = 2.6%
In the Dick − group of women, 2 cases out of 770 = 0.26%

Supplementary Investigations.

1. The Dick test was applied to 38 women at Queen Charlotte's Hospital during the puerperium—that is, either shortly after delivery or within twenty-four to thirty-six hours after the onset of fever. These were cases not included in the larger investigation. Since many of them were already febrile when the Dick test was carried out, the incidence of "morbidity" in the positive and negative groups is of no significance. Of the 38 cases, 8 gave a positive Dick reaction, and of these 5 were "morbid." Bacteriological investigation of these morbid cases showed only one infection (that is, 1 in 5) by haemolytic streptococci—a case of slight uterine sepsis. Of the 30 cases with a negative Dick reaction, 20 were febrile and were investigated bacteriologically. Three cases (that is, 1 in 6.6) showed infection by haemolytic streptococci—two being mild local infections, and the third a moderately severe case in which the fatal result was due chiefly to secondary haemorrhage.

2. The Dick test was repeated in some 26 cases at Queen Charlotte's Hospital in order to determine whether the skin reaction to streptococcal toxin changed from time to time as claimed by Weiss.

15 cases were tested before labour and once during the puerperium.
4 cases were tested before labour and twice during the puerperium.
7 cases were tested twice during the puerperium.

Ten of the patients tested were Dick-positive, 16 of them Dick-negative. In only one case was there a different reaction on re-testing—a positive before labour changing to a negative after labour in a patient whose puerperium was afebrile.

Conclusions.

1. There is a suggestion that women with positive Dick reactions show an increased susceptibility to puerperal morbidity. In this series the morbidity in the Dick-positive was 41 per cent. greater than in the Dick-negative group.

2. The Dick-negative group was three times as large as the Dick-positive, but the actual number of cases infected with *S. pyogenes* was greater in the positive group.

3. Even if the pure cultures of *S. pyogenes* in the positive group be considered to be on an equal footing with the mixed cultures of *S. pyogenes* occurring in the negative group, the incidence of *S. pyogenes* infection in the puerperium was ten times greater in the Dick-positive group (6 cases out of 230) than in the Dick-negative group (2 cases out of 770).

4. It is suggested that skin sensitiveness to scarlatinal toxin may indicate a special liability to streptococcal infection, but definite conclusions cannot safely be drawn from a series including so small a number of cases of *S. pyogenes* infection. It would have been necessary to extend the inquiry to a group of not less than 10,000 women to obtain anything like conclusive evidence on this point.

5. In view of the comparative rarity of streptococcal infection (0.8 per cent.) which is demonstrated by the present investigation, *there would seem to be no case for* the active immunization of all expectant mothers, nor even of all who are Dick-positive. Until data are available which show more conclusively whether there is a close correlation between Dick-sensitiveness and streptococcal infection in the puerperium, it is suggested that Dick testing should be confined to women who have passed through complicated labours, and that the positive reactors among these might be immunized passively by the injection of streptococcal antitoxic serum.

We wish to express our thanks to the committees of management and the staffs of Queen Charlotte's Hospital and the City of London Maternity Hospital for permission to utilize their cases. Our thanks are also due to the resident medical officers of these hospitals (Drs. R. J. Cox and M. Hoggs of Queen Charlotte's and Mr. E. R. Rees and Mr. J. H. O. Roberts at the City of London Maternity Hospital) for help in the work; and to the Wellcome Physiological Research Laboratory for the generous supply of toxin. All of us, with the exception of one (H. B.-W.) were in receipt of grants from the Medical Research Council.

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THE FREQUENCY OF STREPTOCOCCUS PYOGENES INFECTION IN PUERPERAL FEVER.

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PUBLISHED reports from all over the world have made it clear that the most common infecting agent in severe puerperal fever is *Streptococcus pyogenes*. It has been commonly assumed that this microbe is responsible also for most of the less severe infections of the puerperium. Some recent investigations, however, have thrown doubt upon that assumption. White (1927) in Melbourne found only one *S. pyogenes* infection out of a series of 25 cases of so-called "sapraemia" bacteriologically examined; Lucy Bryce (1928), also in Melbourne, reported 6 cases out of 50; and more recently Armstrong and Burt-White reported 8 such infections in a series of 34 mildly febrile cases.

The Dick test inquiry reported in the preceding article by Burt-White, Colebrook, and others, afforded a suitable opportunity for obtaining further data about the incidence of streptococcal infections. For a period of nine months practically every case at Queen Charlotte's Hospital which developed a temperature of 100° F. or more at any time after the first fifteen hours of the puerperium has been investigated bacteriologically—that is, by culture (on blood agar plates) from the cervix uteri, and in some cases also from the blood and urine. The cases so examined include all those classed as "morbid" in the Dick test inquiry.

S. pyogenes was identified by the following characters: its colonies, after twenty-four hours' incubation on horse or human blood agar (3 to 5 per cent.), were surrounded by a zone of 1 to 2 millimetres in which the red corpuscles were destroyed and the haemoglobin decolorized. (Later this zone increased somewhat in width.) These colonies were always round, slightly convex, semi-transparent at their periphery, becoming rather more opaque at the centre; their surface was usually matt, they did not adhere to the medium, and they were of soft consistency, allowing the platinum loop to sink into them. The stained cocci from such surface colonies were round. In a word, they correspond to the beta type of Brown (1919). The total figures obtained were as follows:

Deliveries	1,626
Febrile (all grades except those limited to the fifteen hours following labour)	134
Infections by *S. pyogenes*	19

It appears, therefore, that infection by S. pyogenes is a comparatively infrequent cause of the minor febrile disturbances of the puerperium. Much more commonly these were associated with infection by *B. coli*, diphtheroid bacilli (minute colonies on blood agar), non-haemolytic streptococci, and various unclassified Gram-negative organisms. Whether the presence of these organisms indicates actual infection of the tissues or not, has not been determined.

One or two other points of interest may be noted. First, the cases infected with *S. pyogenes* were not all of a clinically severe type. Only one died from secondary

* Working with a part-time grant from the Medical Research Council.

haemorrhage), and only one other gave rise to any anxiety—chiefly on account of her mental condition. This was the only case of septicaemia. The remaining eight cases were all mild infections; two of them were scarcely ill at all. It would seem, therefore, that though the presence of haemolytic streptococci in a culture from the uterus—especially if it is an abundant, nearly pure growth—should be looked upon as a potentially serious matter, it does not necessarily justify a grave prognosis. Secondly, it may be noticed that though strict isolation of the 10 patients who harboured haemolytic streptococci was impossible, the infection was not transferred—except possibly in one instance—to another patient in the hospital.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

GASTROSTAXIS FOLLOWING BURNS.

THE tannic acid treatment of burns and scalds has given us very satisfactory results; of 80 children under 16 years of age admitted for these conditions during 1929 only 6 died, these deaths occurring either in children admitted several days after the accident, or in those treated with oil before admission. Yet recently a child, in spite of early and efficient tannic acid treatment, died on the nineteenth day, although at the time the wounds had almost healed, and we are in doubt as to the precise relation of the injury and of the tannic acid treatment to the fatal result.

K. G., aged 2 years and 10 months, at 11.30 a.m. sustained scalds of the first and second degree on the abdomen, left thigh from groin to knee, and left forearm. Tannic acid spray was used at 2 p.m. with the hot air bath. The coagulum was quite satisfactory. Two days later the child was restless and vomited; on the next day there was considerable thirst, but no vomiting. In a week the thigh crust was separating with slight purulent discharge, and by the end of the second week the coagulum on the abdomen had separated, healing being satisfactory. The thigh showed a small raw area. The arm wound was quite healed.

On the evening of the eighteenth day the child collapsed, being blue and cold with gasping breathing. There was slight persistent twitching, but no definite convulsion or loss of consciousness. Stimulants revived her slightly, but at 12.45 a.m. on the nineteenth day she died after vomiting altered blood.

Post-mortem examination showed ample subcutaneous fat, healed scalds of abdomen and arm, and a small unhealed clean wound of the thigh. The cerebral vessels were much engorged, but there was no haemorrhage or excess of fluid. There was no evidence of pneumonia. The stomach was full of coffee-ground material. The vessels were engorged and the mucous membrane showed punctiform haemorrhages, but no ulcer was present here or in the duodenum, nor could any source of the blood be detected in the pharynx or oesophagus. No naked-eye evidence of septic absorption or degeneration could be seen.

At the inquest the father pertinently inquired why a child making such satisfactory progress should die so suddenly. A satisfactory answer to this question will be much appreciated.

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ANAPHYLAXIS FOLLOWING INJECTION OF PITUITARY EXTRACT.

THE following case seems of sufficient interest to merit recording.

The patient was a married woman who suffered from a mild attack of lupus erythematosus, localized on the eyebrows and nose, and whose blood test by the Abderhalden method had shown an impairment in the function of the pituitary gland. I had prescribed and given to her injections of total pituitary extract. These injections were started on August 10th, 1929, at the rate of two a week, hypodermically. Five injections were given, with a definite improvement of her erythematoid patches. The patient had no ill effects after the injections, but complained of a little giddiness a few minutes later. I ascribed this to the presence of a certain amount of the posterior lobe in the solution.

The sixth injection was given on September 2nd. Twenty minutes afterwards the patient was taken suddenly ill at home with all the classical symptoms of anaphylaxis. Her eyes and face became puffy, her hands and feet were swollen, her respiration was characteristic, and a rash developed, covering the whole body. Itching was terrific. I gave her 2½ grains of calcium chloride, with the result that all the symptoms disappeared in twenty-four hours.

This was the first time that such an incident had occurred after dozens of injections of pituitary extract that I have given in the last four years, using always the same solution; but Fournier, Pomaret, Alexander, Besredka, and many other authors have described similar incidents when experimenting with infinitesimal doses of opotherapeutic extracts in the veins of animals, and it is therefore quite possible that a certain amount of the pituitary solution which I injected into my patient had been absorbed too quickly through a venule, thus producing an anaphylactic attack of urticaria. The patient, however, does not remember having been injected before with any sort of serum.

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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

SWANSEA DIVISION.

Estimation of the Basic or Diastolic Blood Pressure.

AT a meeting of the Swansea Division, at the Swansea Hospital, on December 12th, 1929, Dr. G. ARBOUR STEPHENS, consulting cardiologist to King Edward VII Welsh National Memorial Association, read a paper entitled "A new method of estimating the basic or diastolic blood pressure."

Dr. Arbour Stephens said that the importance of ascertaining the blood pressure demanded that the method of ascertaining it should be both simple and reliable, and he believed that his method complied with these requirements. The ordinary definition of the blood pressure was "that pressure which the blood exerts against the vessel wall in which it is contained." The speaker preferred, however, to define the blood pressure as "the pressure which the vessel walls exert on the blood inside them." He remarked that blood was composed of living cells which performed their work by exuding through the vessel walls; in order that the exudation might be satisfactory there must be a satisfactory blood pressure, or, in other words, the blood cells required an optimum pressure range. A knowledge of the systolic blood pressure was of little value without the diastolic, or what the speaker termed the "basic," blood pressure. The systolic pressure was fairly easy to determine by the present methods, but the determination of the basic or diastolic pressure presented difficulties to the majority of medical men. The optimum pressure range extended between the highest point of the systolic and basic pressures. The systolic pressure varied throughout the whole contraction of the heart muscle, whereas the basic pressure was relatively steady.

Determination of the basic pressure gave: a measure of the vasomotor tone; the lower limit of pressure commensurate with an adequate supply of blood to the vessel walls themselves; the constant pressure on the blood, to which the variable systolic pressure was additional; and an index of what the heart force had to overcome. The basic pressure was increased by: vaso-constriction; increased rapidity of the heart; increased intracerebral pressure, as, for example, in meningitis and tumour; and exercise. There was a consequent retention of products in the blood which tended to disturb the system. The basic pressure was lowered by: vaso-dilatation, as in fevers, neurasthenia, and hypothyroidism; heart-block; thickening of the arteries in the absence of increased capillary resistance; and aortic insufficiency.

The systolic pressure was estimated by means of the sphygmomanometer, and was just that pressure which was able to stop the pulse, or, in other words, that pressure

which stopped the driving onwards of the blood. The basic pressure was estimated by the tactile, oscillatory, vibratory, and auscultatory methods. The auscultatory method seemed to be the only one used at present, and depended on the recognition of the right sound at the right time during the deflation of the armlet. The chest-piece of the stethoscope had to be placed over the artery just below the armlet, in order to determine the correct sound. There were in this method several sounds to be considered—namely, murmurs, clicks, thuds, dull sounds, as well as the absence of any sound—but to say which sound was the true indicator was a matter of doubt and difficulty. There were admitted limitations of the auscultatory method, such as (1) in cases of irregular hearts there was a difference of intensity between successive sounds; (2) the arm might be covered with too much fat; (3) there might be no blood vessel large enough to auscultate; and (4) many doctors had no ear for differences of sounds, and were unable to detect the right sound at the right time, even if there was really a right sound. As to the sounds themselves, there was apparently no definite opinion regarding their nature or causation. It was said that the sounds were due to whorls in the blood vessel, but when it was recalled that a whorl had been defined as "a number of leaves round a stem," or "a turn in a spiral shell," it became evident that there was something wrong. The presence of a whorl of this sort would not be conducive to good health. There was obviously no whorl in the blood vessel of a living man. It was said that the sounds might be produced in the vessel wall, but how or why was unknown. If the muscular wall was responsible for these sounds, how was it that the weakened, ill-nourished wall of an anaemic patient can produce a very loud sound? Muscles, however, did not produce sounds when they contracted. In the speaker's opinion the sounds heard were those which were conducted from the heart; they were intensified when the stream was rapid or the pressure high, just as a toned or tautened violin string vibrated more readily than a slack one.

Dr. Stephens said that his method depended on a knowledge of the condition of the blood in the artery below the inflated armlet. When the armlet of the sphygmomanometer was inflated the artery below it was still full with blood under a certain pressure due to the vessel walls and the tissues generally. Many doctors thought that as soon as the pulse ceased to be felt, owing to the pressure of the armlet, the artery below the armlet became emptied, but they forgot that the armlet prevented the blood leaving the arm because it pressed on the veins as well. A statement of this sort might seem puerile, but teachers were not aware how badly their lessons were learned, even if they were given properly, and for this reason it was desirable to point out this common mistake. The artery below the armlet was full of blood from which the systolic pressure had been removed, leaving only the basic pressure, due to the tone of the vessel walls and tissues, to act on the blood. This point was of importance, and could be readily missed. A little pressure on this full artery by means of the finger caused the needle of the sphygmomanometric dial to move upwards. This occurred also when the chest-piece of the stethoscope was applied to the artery in the auscultatory method, and the pressure so introduced had much to do with the modification of the sound heard or conducted. This little additional pressure which made the dial needle move upwards could be measured by means of a second sphygmomanometer placed just below the first.

The procedure suggested was carried out as follows. The armlets of two sphygmomanometers were placed on an arm, one below the other. The upper armlet was inflated until the pulse ceased to be felt, and the reading on the upper dial gave the systolic blood pressure. The second armlet was then inflated until the needle on the upper dial was moved upwards one or two points, and the reading of the lower dial gave the basic blood pressure. The speaker added that his method was mechanical and objective, and required the minimum of skill and judgement, whereas the auscultatory method was not, in his opinion, based on scientific grounds, and depended on the capacity of the doctor to detect and discriminate between various sounds which were not readily heard.

Reports of Societies.

OVARIAN TUMOURS.

A MEETING of the Edinburgh Obstetrical Society was held on January 8th, with the president, Dr. H. S. DAVIDSON, in the chair. By invitation, Dr. J. W. BRIDE of Manchester read a paper on the investigation of a series of 100 cases of ovarian tumours.

Dr. Bride included in this series only tumours which could be considered as distinctly new growths, all cysts due to chronic ovarian inflammation and endometrioma having been excluded. The average age of the patients was 42 years, but 53 per cent. of these tumours appeared between the ages of 30 and 60, 72 per cent. occurring in women of over 30 years of age; the average age for carcinomata was 52, and for sarcomata 47. It was not found that ovarian cysts were more common in unmarried women than in married women; in the case of tumours in married women, 63.4 per cent. of these women were fertile. Abortions were met with in only 2.7 per cent., though miscarriages occurred in 20.5 per cent.—17.2 per cent. of these having also had full-term living children. In all, 59 of the tumours were cystic, 20 were solid, and 21 were malignant. Pseudo-mucinous cyst adenomata formed the largest number of tumours, there being forty cases. In no case of papillomata was ascites found, nor was hydro-peritoneum present in any of the three cases of solid fibromata, this being contrary to the usual teaching. Either ovary was equally affected, and in twelve cases both ovaries were implicated. With regard to symptoms there was very little disturbance of the menstrual function in simple cases, dysmenorrhoea being present only in 17 per cent., and menorrhagia in 15 per cent. It was also noted that in only three (14.2 per cent.) of the malignant cases was there irregular bleeding after the menopause, though such bleeding is often regarded as a feature of malignant growths. Pain was present only in 47 per cent. of cases of simple growths, but in the case of malignant growths, 66.6 per cent. of the patients complained of pain. Unilateral pain appeared to be a guide to the affected side. The most constant symptom was abdominal swelling, but there were a large number of patients who did not notice the swelling, or attributed it to fat or the menopause. Pain and frequency of micturition were present only in the case of simple tumours impacted in the pelvis, but such symptoms were present in 28.5 per cent. of malignant tumours where the bladder had obviously been involved secondarily. In the malignant cases ascites was observed in 52.3 per cent., but no cases of ascites were found with simple tumours. The greatest diagnostic difficulty was that between an ovarian cyst and a very large cystic kidney. Ovariotomy was performed in 43 per cent. of the cases, and subtotal hysterectomy with removal of both ovaries in 3½ per cent. Dr. Bride stressed the importance of performing a subtotal hysterectomy with removal of both appendages when both ovaries were definitely cystic or diseased, since the uterus, if left, might be the seat of malignant disease at a future date. Such a contingency had occurred in one case in the earlier part of his series, where Dr. Bride had performed a double ovariotomy, and had previously left the uterus *in situ*. The cyst was tapped eighteen times where an enormous incision seemed prejudicial, either on account of the condition of the patient or on account of a coexisting pregnancy. As regards complications, rupture occurred only in one case, but there was torsion of the pedicle in eleven, and in four of these during the puerperium.

With regard to malignant cases, the prognosis was found to be bad, though the operation seemed to hold out some hope of recovery; ascites appeared to be of very bad prognostic import. Dr. Bride advocated that, in large cysts in older women, the cyst should be separated from its adhesions to the parietal and visceral peritoneum by sweeping round the fingers before the cyst was tapped, if such a procedure had been decided upon. Secondly, before beginning to remove the cyst, the other ovary and the uterus should be inspected so as to save delay later on,

since a hysterectomy might be required instead of an ovariotomy. With regard to future treatment, careful attention should be paid to the tone of the bladder in the case of very large tumours. The mortality after operation in Dr. Bride's series was 5 per cent., in the simple cases 3.7 per cent., and in the malignant 9.5 per cent.; this compared favourably with Munro Kerr's series of 250 ovariotomies with a mortality of 4.4 per cent. Old age appeared to be no bar to operation. Five of Dr. Bride's patients were over 70 years old, and all did well.

DIAGNOSIS OF DISEASES OF THE ORBIT.

AT a meeting of the Aberdeen Medico-Chirurgical Society on January 16th, with the vice-president, Dr. HENRY PETERKIN, in the chair, Dr. W. CLARK SOUTER showed a series of lantern slides illustrating a number of recent cases of affections of the orbit. The material was classified as follows: a group of cases of acute and chronic ethmoidal infection with orbital implication; a series of cases of neoplasm of the antrum and outer wall of the orbit; a case of orbital tumour secondary to cancer of the breast; cases of head injury with fracture of the orbit; a case of osteoma of the medial orbital wall; and a group showing orbital cellulitis. Dr. Souter pointed out the diagnostic value attached to the secondary displacement of the eye in cases of proptosis where the cause was not simply in the orbital connective tissues. In his photographs he demonstrated downward displacement due to tuberculous periostitis of the upper wall of the orbit, outward displacement with osteoma of the medial wall, inward displacement with sarcoma of the outer wall, upward displacement where an epithelioma of the antrum had invaded the floor of the eye socket, and several cases of acute ethmoidal suppuration where the displacement was both downwards and outwards. The lecturer said that radiographical and rhinological examination were of the greatest help in all cases of acute orbital inflammation as well as in many other lesions in the immediate neighbourhood of the orbit. Anatomical preparations lent by Professor Low and Dr. R. D. Lockhart were shown to illustrate the anatomy of the orbit and the structures surrounding it.

ILLUMINATION AND PRINT.

A MEETING of the Section of State Medicine of the Royal Academy of Medicine in Ireland was held on January 17th, when the president, Professor W. D. O'KELLY, read a paper on illumination and print.

Professor O'Kelly dealt first with illumination, and discussed the necessity for fixing standards of adequate and correct illumination and not merely minima. The question of obliquity of illumination was illustrated by slides showing the diminution in the amount of light falling on a book when tilted so that light no longer fell on it at right angles to the source; it was shown that in many cases an object was only receiving indirect and often totally inadequate illumination. The questions of glare and its avoidance and of surface brightness were then considered. In connexion with the lighting of schools the speaker suggested that a foot candle meter should be used on a dull day, actual readings being taken in the rooms. The provision of artificial lighting in schools was essential in most cases on dull days; no pupil should be condemned to sit the whole year in a badly lighted place, and pupils should change their positions during the day unless the conditions were ideal. Installation of artificial illumination could not be considered as being an alternative to adequate daylight, but merely a stopgap arrangement in existing buildings. In the section dealing with print Professor O'Kelly discussed first the question of faces and sizes of type, and showed the difficulty, for the non-technical person, of determining what size of type was used in a given case. The standards laid down in other countries specified the minimum height of the small letters, and the speaker agreed that children under the age of 12 (but not beginners) should not be allowed to use school books with small letters less than 1.75 mm. high, or less than 1.55 mm. high at any time during school life. If it were necessary to economize he would prefer a page and type twice the size printed on a cheaper paper. One of the objections to the use of small type was that the ascending and descending parts of the letters were reduced more than the remainder. The eye picked out in reading the upper part rather than the whole letter, and, since all the capitals were ascending letters, and ascending lower-case letters occurred more frequently than descending ones, it was rendered doubly difficult for the child to read small type. When the eye was fatigued and the illumination insufficient a great strain was thrown on the eye, and damage frequently resulted. The Irish type was pleasing to the eye. Irish texts set up in Roman type did not look so well, especially when "h" was substituted for the aspirate mark. Professor O'Kelly did not think the Irish type would be replaced by the Roman for this reason, any more than would the Venetian black letter have replaced the English black letter, although the former was a simpler type; it had, however, a very ugly face. The Gothic varieties, although more difficult, were more ornate and pleasing. The communication was illustrated with lantern slides and specimens of print of various sizes and faces.

Dr. W. C. MACFETRIDGE agreed that the question of the illumination of school buildings was very important, but the illumination of blackboards was sometimes entirely neglected. The importance of the illumination of buildings in general was not fully realized; it should be remembered that the proportion of the population working in buildings was very large and was becoming larger. Dr. M. O'LEARY said that even in schools which conformed to the rules laid down by the Local Government Department the percentage of cases of bad vision was nearly as high as in those which did not. It had recently been stated that 50 per cent. of the eye troubles in children were hereditary and were not in any way due to faulty illumination in the schools. Dr. R. J. ROWLETTE said that the Local Government Department in its regulations had now demanded a report as to the lighting of schools to be included in the work of school inspectors; he thought that in doing this the department was going beyond the powers which had been given them by the Act, which did not relate to the inspection of schools, but to the inspection of school children. He hoped that school medical officers would in the future be given much more power. The surface of the paper supplied in many journals and books at present—glazed paper—was extremely irritating. The reason for this was, perhaps, to save the printer using two different types of paper, one for the text and one for the illustrations. This tendency should be criticized in the hope that publishers would consider the eyesight of their readers.

The PRESIDENT, replying, said that the illumination of blackboards in schools was a great source of trouble. More care was now being taken to see that all modern buildings were efficiently lighted. He thought that medical officers of health could object to some of the school buildings on the ground that the light was insufficient to enable them to inspect the school children.

CAPILLARY HISTOLOGY OF THE SPLEEN.

AT a meeting of the Liverpool Medical Institution, on January 16th, Dr. R. H. MOLE read a paper on the histology of the vascular system of the dog's spleen, based on work in the pathological laboratory of the Medical College, Mukden, Manchuria. Drs. P. L. Li and H. S. D. Garven had collaborated in the work and in the writing of the paper.

Dr. Mole said that the spleens of ten dogs were distended by partially clamping the veins, and were washed out with saline or Ringer's solution in the distended condition. The red blood corpuscles of chickens, or Indian ink, were injected either into the artery or into a vein. The spleens of a stillborn baby and of a pig were similarly treated. The organs were fixed *in situ*, and preserved in formol. Serial sections were made, and various staining

methods, including silver impregnation, were employed. It was found that the artery when it left a trabeculum to enter the pulp was a four-coated artery, the outer coat being composed of trabecular tissue. This became a three-coated vessel by intermingling of the adventitia with trabecular coat. Four-coated and three-coated arteries might acquire Malpighian corpuscles, as well as two-coated arteries after the disappearance of the adventitia. The Malpighian corpuscles seemed to be situated where branches left the artery, and might provide a mechanical support for the artery at these points. The *penicillia* or subterminal capillaries had an endothelium and a thin connective tissue sheath external to this. Each penicillar branch acquired one or more ellipsoids. The ellipsoids were sheaths surrounding the capillary, composed of reticulo-endothelial cells with a small amount of reticulum. The innermost layer of cells was attached to the capillary wall by cell processes. The ellipsoid cells contained greater aggregations of iron pigment than did the cells of the pulp. The ellipsoid capillary, after emerging from the ellipsoid, bifurcated, and ended in the so-called "blind chamber," which was lined in its terminal part, not by endothelium, but by reticulo-endothelial cells. The ellipsoids were in close relation to the venous sinuses. The ellipsoid capillary was the narrowest part of the arterial system. No openings were observed in the wall of the ellipsoid capillary of the dog or of the baby, but these were evident in the capillary wall of the pig's ellipsoid.

No evidence was found of direct arterio-venous communication, though plasma passing through the gaps in the wall of the pig's ellipsoid capillary might flow directly into a venous sinus. Small particles escaped through the wall of the ellipsoid capillary, and were taken up by the cells of the ellipsoid sheath. In the spleens injected with Indian ink the peri-Malpighian zone and the ellipsoids appeared black with carbon particles. Ellipsoids were particularly found at the periphery of the Malpighian corpuscle. A distinct peri-Malpighian blood zone existed, since chickens' corpuscles and Indian ink injected through the artery were found chiefly in this situation. Into this zone three sets of capillaries opened: (1) derived from its own Malpighian artery, acquiring ellipsoids, bifurcating and turning back in a recurrent manner; (2) derived from its own Malpighian artery, which opened into it without acquiring ellipsoids; and (3) derived from the arteries of other Malpighian corpuscles. Venous sinuses were absent in this peri-Malpighian blood zone. The wall of the venous sinus had an outer layer of coarse, transversely arranged reticulum, and an inner layer composed of reticulo-endothelial cells lying at right angles to the transverse reticulum. These cells, together with their processes, formed, with the reticulum, the fenestrations of the sinus wall. The cells might control the size of the fenestrations. Splenic contraction caused blood to pass by pressure from the pulp to the venous sinuses. Suction had also a part to play, since splenic contraction must dilate the veins owing to the connexion of their walls with the capsule.

At a meeting of the Optical Society on January 16th Mr. J. N. MORRIS, of Messrs. Raphael's, Ltd., demonstrated a visual test involving a new system of equi-photic illumination. The apparatus shown was the drum type, illuminated by strip lights contained within a lamp tube of a length approximately equal to that of the Snellen chart on each face of the drum, the tube being placed about twelve inches in front and a short distance at the side of the chart. This arrangement gave perfect illumination in the vertical meridian; uniformity in the horizontal meridian was secured by making the horizontal section of the drum slightly concave. Mr. J. COLE, of the same firm, exhibited scientype occluding glasses for use in the treatment of squint. One side of the spectacle glasses had one surface regularly patterned with depressions, which were so arranged that the vision of the corresponding eye was reduced without alteration of its external appearance. In order to compel the deviating eye to make the effort to see, it was necessary to reduce the vision of the fixing eye below that of the deviating one.

Reviews.

BACTERIOLOGY AND IMMUNITY.

THE recognition of the importance of bacteriology, not only in its application to human and veterinary medicine, but also to agriculture and many industrial processes, entails the training of an ever-increasing number of individuals in this science. The elementary instruction in bacteriology given to the medical student, and even that of the D.P.H. syllabus, is inadequate for this purpose, and in order to cater for this demand the diploma course in bacteriology has been evolved. Students of this category require an adequate textbook with which to guide and augment their studies, and up till now a book of this nature has not been available in the English language. It is fortunate, therefore, that Professor W. W. C. TOPLEY, through whose initiative the diploma course has come into being in this country, should have decided to supply this need, and we heartily welcome the appearance of *The Principles of Bacteriology and Immunity*,[1] written by him in collaboration with his colleague, Dr. G. SELBY WILSON. This book is divided into two volumes, the first of which deals with the purely scientific side of bacteriology, the second with its applications to animal pathology. At first sight this division may strike the medical reader as somewhat unusual and awkward, for in volume i he will find, say, the typhoid-paratyphoid group discussed as a purely botanical problem, whereas the disease states produced by them in man and other animals are dealt with in volume ii; the usual procedure would have placed the two sections together. This latter method of dealing with the problem has its origin in the fact that bacteriology has developed very largely as an applied science; it is only comparatively recently that an effort has been made to remedy this one-sidedness. The authors are primarily concerned with presenting bacteriology as a science, and it is this attitude which is responsible for the unusual division of the subject found in the two volumes; there is much to commend it.

Volume i is divided into two parts—general bacteriology and systematic bacteriology. The former opens with an excellent, though brief, historical outline and then proceeds to deal with the morphology of bacteria, their physiology, growth and death, resistance and disinfection, the serum reactions, bacterial variation, the classification of bacteria, methods of isolation and identification, and the Twort-d'Herelle phenomenon. The chapter on the physiology of bacteria is very good. This is a branch of the subject which, though of fundamental importance, has been persistently neglected, and we are glad to find it so clearly dealt with here. It would have been better, perhaps, in the chapter on disinfectants if the work of Geppert had been given more than a mere reference. He drew attention to a fundamental error in the testing of the action of antiseptics which has been largely ignored by subsequent workers, as Bulloch has had reason to point out in his researches on catgut. It is a pleasure to read an account of the serum reactions which is at once so clear and well balanced. The hypothesis of Ehrlich, which for so long has dominated this subject, is adequately discussed, but not to the detriment of alternative views. The sections on the antigenic structure of bacteria and bacterial variation are admirable. When dealing with the classification of bacteria the American nomenclature has been adopted with but few alterations. Everyone will agree with the authors when they deplore the chaotic state into which bacterial nomenclature has fallen, and there is much to be said for the American system, but doubtless many will think the authors' adoption of it premature. The second part of this volume is concerned with descriptions of the different bacterial species. It is clearly put out and well illustrated, and terminates with a short but well-balanced account of the filterable viruses.

[1] *The Principles of Bacteriology and Immunity.* By W. W. C. Topley, M.D., M.Sc., F.R.C.P., and G. S. Wilson, M.D., M.R.C.P., D.P.H. In two volumes. London: E. Arnold and Co. 1929. (6½ × 9½, vol. i, pp. xvi + 537 + xvi; 163 figures; vol. ii, pp. viii + 713 + xx; 74 figures. 50s. net the two volumes.)

Volume ii treats of applied bacteriology. Like the first volume it is divided into two parts, the first on infection and resistance, the second on the applications of bacteriology to medicine and hygiene. It is difficult to find material for criticism. The same clear exposition which characterized the first volume is not lacking here. One turns instinctively to such a question as the diagnosis of enteric infections, because to the bacteriologist concerned with routine diagnosis, who has become lost in the maze of the antigenic complexity of the typhoid-paratyphoid group, this is rather a thorny problem. Even here, however, there is no ambiguity. Clear indications are given as to how this problem should be tackled, and, though nine different suspensions are required, the logical necessity for so many is clearly indicated. In dealing with infection with the virus of herpes it is perhaps unfortunate that experimental work with the rabbit should have been given undue prominence. Herpes is a disease of man characterized by a localized vesicular eruption, and this condition can be reproduced in rabbits and guinea-pigs by applying the vesicle fluid to the scarified skin. The lesions produced are no more insignificant than in man, and the encephalitis which follows corneal implantation in the rabbit, though interesting, is a peculiar accident of the experimental disease. This, however, is a minor point, and, generally speaking, the virus diseases are well and critically treated.

The authors' task has been an extremely difficult and arduous one, for in the present state of bacteriological knowledge it is no mean undertaking to keep in touch with all the different lines of progress. They have read widely and critically, and a short though useful bibliography is appended to each chapter. The book is admirable in its conception and excellent in its execution, and should prove of the greatest service, not only to the post-graduate student of this subject, but also to bacteriologists in general.

NEUROLOGICAL STUDIES.

WHEN Dr. GUILLAIN publishes a series of papers on neurology we expect good quality, and in this third series of *Etudes Neurologiques*[2] we are not disappointed. The work is divided into eight parts, devoted to cerebral tumours, to the pathology of the brain, spinal cord, and cranial nerves, to the muscular trophies, and to several miscellaneous subjects. The studies have all been carried out at the Salpêtrière, and all the cases have been presented in the author's clinics. Most of the papers had previously appeared in the *Revue Neurologique*.

In the section devoted to cerebral tumours the first three chapters are concerned with cerebral cysticercosis, and Guillain emphasizes the great value of the examination of the cerebro-spinal fluid. He then describes a glioma of the corpus callosum, a median cyst of the third ventricle, in which the tumour was entirely limited to the cavity of the third ventricle itself, a fibro-glioma of the anterior pillars of the trigone, multiple metastatic melanotic sarcomata, and an angio-glioma of the cerebello-pontine angle. The next two chapters describe the pure motor and sensory aspects of the nervous system; in the first, Guillain cites extra-cortical Jacksonian epilepsy, and in the second, a softening of the parietal lobe giving rise to well-marked sensory symptoms.

The next portion of the book is given over to a variety of lesions in the region of the cerebral pedunoles, pons, and cerebellum. The chapter on olivo-ponto-cerebellar atrophy is particularly good, and represents the French school of neurology at its best. This chapter is followed by a study of syphilitic progressive cerebellar atrophy; a section on a variety of lesions of the spinal cord—syphilitic, traumatic, neoplastic, and otherwise; and a section on the cranial nerves, illustrated by some excellent radiograms of the skull, which serve to show very forcibly the importance of making complete examinations in all cranial nerve lesions.

The book is extremely well illustrated, and it may be regarded as a presentation well worthy of the Salpêtrière.

[2] *Etudes Neurologiques.* Par Georges Guillain. Troisième Série. Paris: Masson et Cie. 1929. (Med. 8vo, pp. viii + 453; 119 figures. 70 fr.)

DIVERTICULA OF THE BLADDER.

THE second edition, now issued, of Professor BLUM'S excellent and authoritative monograph on the Surgical Pathology and Treatment of Diverticula of the Bladder[3] incorporates the results of the eight years' experience gained since the first appearance of the book. The subject has been closely studied by surgeons during that period, and more than three hundred works have been published in connexion with it. From the author's account there appears now to be a general consensus of opinion as to the nature of diverticula and their surgical treatment.

Leaving out of account the small, multiple pressure-sacculi which are met with in hypertrophied and fasciculated bladders in cases of chronic obstruction, it is now considered that diverticula have a congenital basis in the form of weak areas in the bladder wall, more especially in the neighbourhood of the ureteric openings and at the apex of the bladder. The diverticulum is formed by the gradual yielding of the weak area; it may apparently remain latent for many years, but finally gives rise to characteristic symptoms, and if untreated induces fatal complications. Such appears to be the regular course of the affection. The fact that the onset of symptoms may be delayed until a comparatively advanced period of life led to the belief that early operation was unnecessary and unjustifiable, and that the patient might be permanently tided over complications by suitable palliative treatment. According to the experience of Blum and other surgeons this view is untenable; a fatal termination is to be anticipated sooner or later, and accordingly the rule is laid down that as soon as the diagnosis of a diverticulum has been securely made a radical operation should be carried out if possible. The ideal operation is the suprapubic, extra-peritoneal isolation and extirpation of the diverticulum without opening the bladder. This is applicable to diverticula of the apex and the anterior, lateral, and posterior walls; it is not suitable for those connected with the base of the bladder occupying the hollow of the sacrum. According to the author the latter are best treated by Pagenstecker's sacral operation, Kreuter's perineal section, or the parasacral method of Völker. Other possibilities are the transperitoneal and transvesical routes.

Blum's book is probably well known to those more especially interested in genito-urinary affections; it gives a complete account of the diverticula in their etiological, pathological, clinical, and surgical aspects.

HYDATID DISEASE IN AUSTRALIA.

THE *Collected Papers*[4] of the Walter and Eliza Hall Institute of Research in Pathology and Medicine in Melbourne for the period 1927-29 naturally include much new and important work on hydatid disease. General surveys of the great prevalence of this disease are given by Dr. N. Hamilton Fairley and Mr. J. S. Penrose, and a very pessimistic note is struck in the matter of prophylaxis on account of the laxity of the regulations in the smaller abattoirs and the difficulties of effective educational propaganda. Indeed, it is said that until the regulations are materially strengthened in the matter of the disposal of slaughterhouse offal "no substantial decrease in the incidence of hydatid disease in herbivora and man can reasonably be anticipated." The ease with which complete taeniae can be obtained from dogs taken at random from the streets, and the comparative failure of the order making hydatid disease notifiable, are commented upon in strong terms, and a plea is made for nation-wide grappling with the problem. The same authors, in assocation with Dr. R. J. Wright-Smith, give a pathological survey of hydatid infestation in sheep, oxen, and pigs, with special reference to pathological anatomy and the evolution of exogenous cysts. Diagnostic tests in hydatid disease are discussed by Dr. C. H. Kellaway, the director of the institute, who contributes also shorter papers on the source

[3] *Chirurgische Pathologie und Therapie der Harnblasendivertikel.* Von Professor Dr. Victor Blum. Zweite, vermehrte und verbesserte Auflage. Leipzig: G. Thieme. 1929. (6½ × 10, pp. 157; 77 figures, 5 plates. M. 13.50.)

[4] *Collected Papers.* The Walter and Eliza Hall Institute of Research in Pathology and Medicine, Melbourne, 1927-29. Vol. iv. (Med. 4to.)

and nature of the hydatid antigen. The Casoni diagnostic test resembles somewhat the original tuberculin test, and has a high range of utility and efficiency. In the institute the test used as a routine was devised by Dr. Fairley, and is akin to the Wassermann reaction. A good many other tests based on dermal sensitiveness are under investigation.

There is a very instructive and interesting article by Mr. H. R. Dew on hydatid anaphylaxis. The symptoms of this are extremely variable, and are due to the presence of some degree of sensitization which a patient experiences when he harbours a cyst and absorbs therefrom varying amounts of specific hydatid antigen. Anaphylactic phenomena may be provoked by trauma, puncture, or surgical intervention, by suppuration, or by anything that permits the leakage of fluid. There are often small unnoticed leaks from deeply placed visceral cysts, and the effect of these leaks will depend on the extent of the patient's previous sensitization. Five types of anaphylactic manifestation can be recognized. Pruritus, urticaria, and erythema are, of course, well known. Gastro-intestinal disturbances may be very severe. The severity of the dyspnœa and pulmonary œdema may exceed that seen in any other anaphylactoid condition. Cardio-vascular collapse may be alarmingly sudden; and, finally, nervous conditions include convulsions, delirium, and coma. From his studies Mr. Dew draws a number of practical conclusions. In the first place he emphasizes that exploratory puncture of even a simple cyst may be fatal through anaphylaxis. The matter is extremely difficult because the degree of sensitization varies very much in different patients, and means of determining this sensitization are, as yet, not fully elaborated. The sensitization is certainly highest during the two or three weeks immediately following some structural change or traumatic interference with the cyst. Secondly, general anæsthesia, so far as the prevention of anaphylaxis is concerned, is preferable to local anæsthesia, but delayed anaphylactic reactions are possible after general anæsthesia if insufficient care is employed in the isolation of the cyst fluid. These practical studies are supplemented by Dr. Kellaway on the lines of experimental medicine, with special reference to the hydatid antigen and the theoretical aspects of hypersensitiveness.

SLEEP AND HYPNOTICS.

WE have received a volume[1] of 167 pages, containing short monographs on sleep by various teachers of the Viennese school. The editor, Dr. SARASON of Berlin, contributes a preface in which he indicates the great importance of hypnotics, and also puts forward a reasoned defence of symptomatic treatment. His argument is that in every disease some vicious circle becomes established, the exact form of which varies in every patient. The initial aim of treatment should be to find and to treat the weakest point in the circle, and thus relieve the patient preparatory to attempting to treat the fundamental cause of the disease. Following this line of reasoning, Dr. Sarason considers the production of sleep and the allaying of pain as two of the most important benefits that the doctor can confer on his patients.

Professors Pötzl and von Economo contribute a series of articles on the psychology and physiology of sleep, and give a short account of the views of the Viennese school. These views are to a large extent based on the careful study of encephalitis lethargica that has been carried out in Vienna. Professor Pick and Dr. Molitor deal with the pharmacology of hypnotics, a subject upon which they have done a large amount of original work. Their opinions are based on the belief that there is a sleep-regulating centre in the mid-brain, a centre that is controlled by the cortex. They divide hypnotics into two classes, those that act chiefly on the cortex and those that act directly on the mid-brain centre. Chloral hydrate and paraldehyde are examples of the former class, while most of the derivatives of barbituric acid and also chloretone belong to the latter class. They believe that it is advantageous to combine hypnotics belonging to two classes—for example, paraldehyde and chloretone—because narcosis can thus be induced with a smaller total dose of hypnotics. They agree that the ideal hypnotic has still to be discovered, but they point out that the number of fairly satisfactory hypnotics is remarkably large, and the doctor has a very wide choice in this field of therapeutics.

[1] *Der Schlaf.* Herausgegeben von SAJ. RAT. DR. SARASON. München: J. F. Lehmann. 1929. (6½ × 10, pp. 167. Bound, M.5.50.)

THE STHENICS.

SIR JAMES KINGSTON FOWLER writes so pleasantly and can turn an epigram so adroitly that his recent utterance, *The Sthenics: the Chord Incisible*,[2] will attract readers to find out the meaning of this cryptic title. The sthenics he defines as hypersensitives, or those whose nervous systems are more highly sensitized than the average, and yet they are not neurotics or neurasthenics: they are endowed with great vitality and power of work, fertile imagination, clear vision, and wide interests; but they are not good judges of character, do not inspire complete confidence or affection in their subordinates, as they are not considerate and are prone to reject able men who might detract from their own glorification. Physically the hypersensitive skin and mucous membranes may cause pain, muscular spasms, asthma, and nervous attacks, liable, as in the case of Napoleon, to be erroneously regarded as epilepsy; these attacks are, it is suggested, due to excessive discharge of adrenin into the circulation. An interesting analysis of the characteristics of Napoleon, Lord Curzon, and Sir E. Marshall Hall leads to the conclusion that they were sthenics, and that Lord Haldane and Lord Moulton were not.

NOTES ON BOOKS.

DR. C. F. BOLDEAN'S work on *Public Health and Hygiene*,[3] which is appropriately dedicated to the late Dr. Hermann Biggs, a former general medical officer of the New York City Department of Health, forms an excellent introduction to the study of the subject. The book is divided into five parts. The first consists of five chapters, dealing respectively with the historical aspects, micro-organisms and disease, the transmission of communicable diseases, the life-history of certain important insects, and disinfection. The second part contains fourteen chapters on the principal communicable diseases. In the third part other important preventable diseases and conditions are discussed, such as nutritional disorders, diseases of middle and later life, endocrine disturbances, mental disorders, and accidents. In the fourth chapter the various branches of community hygiene are considered, such as the water and milk supplies, sewage disposal, ventilation, industrial hygiene, infant welfare, school medical inspection, and quarantine. The fifth part is devoted to epidemiology.

The third edition of Tropical Diseases and Hygiene,[4] by RUGE, MÜHLENS, and ZUR VERTH, preserves the high standard of its predecessors. The volume is intended primarily for the practitioner, and so the section on formal hygiene is limited in extent and treatment to 53 pages out of a total of nearly 500; it deals briefly with climate, housing, water, and such subjects. The remainder of the book deals with tropical diseases. Commencing with a consideration of the blood, it continues with malaria, trypanosomiasis, and leishmaniasis. This is followed by amœbiasis and diseases due to other protozoa and to spirochætes. The succeeding sections deal with metazoan parasites; skin conditions; poisonous animals and plants; tropical surgery; and with cosmopolitan diseases, which are as important in the tropics as in temperate lands, and often much more so. The book contains nearly five hundred illustrations, not only of the causal organisms of the various diseases, but also of clinical conditions. There are included among these illustrations many graphs and charts of considerable value; while at the end of the volume are several coloured and half-tone plates of the blood, blood organisms, and helminth eggs. Many of the illustrations are drawn from the collection of the Hamburg Tropical School. The volume is printed on a heavy glazed paper; it is very well produced, and is unusually free from errors. It should continue to be of great service to German-reading practitioners in the tropics.

[2] *The Sthenics: the Chord Incisible.* By Sir James K. Fowler, K.C.V.O., C.M.G., M.D. London: Macmillan and Co., Ltd. 1929. (Cr. 8vo, pp. 62. 3s. 6d. net.)

[3] *Public Health and Hygiene.* By Charles Frederick Boldean, M.D. Philadelphia and London: W. B. Saunders Company. 1929. (8½ × 5½, pp. 732; 122 figures. 12s. 6d. net.)

[4] *Krankheiten und Hygiene der Warmen Länder.* Von Professor Dr. Reinhold Ruge, Professor Dr. Peter Mühlens, Professor Dr. Max zur Verth. 3. vollständig umgearbeitete Auflage. Leipzig: G. Thieme. 1929. (Sup. roy. 8vo, pp. x + 494; 488 figures, 8 plates. M.33.60.)

Applied Anatomy,[9] by G. G. DAVIS, and revised by G. P. MULLER, has reached its eighth edition, and the new edition retains the high standard of its predecessors. This treatise on the clinical application of anatomy is well known. It may be earnestly recommended for the use of students and clinicians as a book of great practical value. Moreover, it is a convincing exposition of the fundamental importance of anatomy in relation to the pathology and treatment of diseases and injuries. We may not agree with the claim in the preface that "this book has occupied a unique place in surgical literature," but we readily believe that it has not been surpassed in its own line. We would suggest that in future editions the sections on the brain and spinal cord be brought up to the same level of excellence as the rest of the book.

The *Laboratory Guide to Vertebrate Dissection*,[10] by A. B. APPLETON, is designed for students who are taking the curriculum in anatomy for the Natural Science Tripos in the University of Cambridge. This is essentially a practical dissection manual, and the author has confined himself to giving the necessary instructions for such gross dissections of vertebrate types as the average student may reasonably be expected to carry out. The vertebrate types have been reduced to a minimum, examples of specialized groups, such as birds, being purposely omitted. An equivalent book for use in New York University, by M. E. LITTLE and R. T. KEMPTON, is called *A Laboratory Manual for Comparative Anatomy*,[11] and thus, as its title indicates, has a wider scope. This manual deals not only with the gross dissection of vertebrate types (including the alligator, which is too expensive and difficult to obtain for use in this country), but with osteology and the histological study of tissues. The method employed in this book, of dissecting one type as a whole by way of introduction, and subsequently studying other vertebrates systemically instead of systematically, is to be commended. The practical objections to such a scheme of work are adequately met in a useful appendix.

Properties of Food,[12] by W. M. CLIFFORD and V. H. MOTTRAM, is a small handbook of qualitative food analysis. It is written in a delightfully simple and entertaining style, and we feel sure that, by following the directions which it contains, the reader could obtain a very definite insight into the composition of the common foodstuffs. The authors have been at great pains to describe how best the necessary outfit of chemicals and reagents can be obtained (they put the total cost at about £2). We cannot help feeling that, to students of domestic science, the knowledge gained by working through this simple course of experiments would be worth many hours' attendance at lectures to which no practical work was attached.

CORRECTION.

We regret to find that the publishers of Jellett and Madill's *Manual of Midwifery* were incorrectly stated in a footnote to our review in the *Journal* of January 25th (p. 154). This book is published by Messrs. Ballière, Tindall and Cox.

[9] *Applied Anatomy*. By Gwilym G. Davis, M.D. Revised by George P. Muller, M.D. Eighth edition. London: J. B. Lippincott Company. 1929. (Sup. roy. 8vo, pp. xii + 637; 631 figures. 42s. net.)

[10] *Laboratory Guide to Vertebrate Dissection*. By A. B. Appleton, M.D. London: Cambridge University Press. 1929. (Cr. 8vo, pp. xix + 152. 6s. net.)

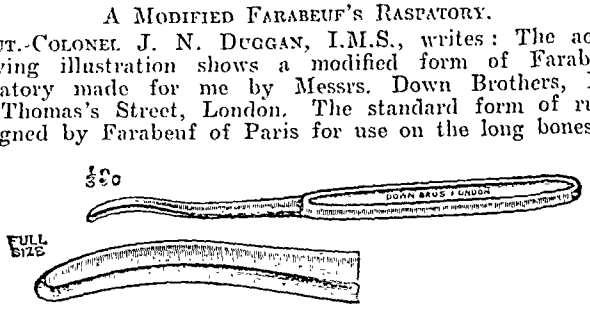
[11] *A Laboratory Manual for Comparative Anatomy*. By Malcolm E. Little and Rudolf T. Kempton. New York: The Macmillan Company; London: Macmillan and Co., Ltd. (Demy 8vo, pp. xix + 286; 19 plates. 10s.)

[12] *Properties of Food*. By W. M. Clifford, M.Sc.Lond., and V. H. Mottram, M.A.Cantab. London: University of London Press, Ltd. 1929. (Cr. 8vo, pp. 128; illustrated. 2s. 6d.)

PREPARATIONS AND APPLIANCES.

A MODIFIED FARABEUF'S RASPATORY.

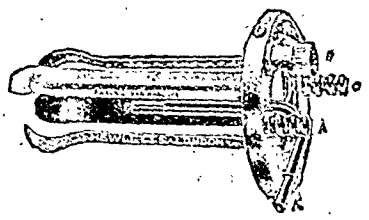
LIEUT.-COLONEL J. N. DUGGAN, I.M.S., writes: The accompanying illustration shows a modified form of Farabeuf's raspatory made for me by Messrs. Down Brothers, Ltd., St. Thomas's Street, London. The standard form of rugine designed by Farabeuf of Paris for use on the long bones was



found to bring the hand somewhat inconveniently near the work, while the longer rugines designed by Pierpoint and Mitchell are rather heavy for fine work round the orbit, and it is thought that the rugine illustrated above will be found convenient for the delicate and precise work which falls to the lot of an ophthalmic surgeon.

THE VAGINASCOPE.

Dr. EDWARD BARON (London, N.) writes: I have devised an instrument, named the vaginascope, which is illustrated here in the open position; it eliminates many of the disadvantages of the specula in use. In the closed position it is of small cross-section, and can be introduced painlessly, the patient being either in the dorsal or the lateral position. Illumination is provided by a bulb attached to a battery and flex by means of a long tube running in a groove along one of the blades. A slight up-and-down movement at K makes or breaks electrical contact. Excellent visibility is obtained of the whole tract, including the vagina, cervix, cervical canal, and fornices, by loosening screw knob B, then placing the thumb on peg A and the forefinger on B; a single grip effects a simultaneous outward and parallel movement of the four blades, resulting in a rapid dilatation of the vagina. Full dilatation having been obtained, screw knob B is tightened, thus locking the instrument. Additional expansion and increased field of vision at the inner end of the vagina are obtained by the bulbous extremity of the instrument, which also makes the vaginascope self-retaining. Owing to this, and to the electrical illumination incorporated in the instrument, no assistant is required to hold the vaginascope in place, and the hands of the examiner are free to use additional instruments. On completion of the examination for diagnostic or therapeutic purposes, the screw knob B is loosened; then, gripping B and C, a single movement tends to close the instrument, which is easily removed in its partially closed form.



This vaginascope provides a compact, self-retaining, and self-illuminating speculum. It is made, complete in case with battery and flex, by Messrs. C. J. Hewlett and Son, Ltd., 35–42, Charlotte Street, W.C.2.

TABLETS OF STANDARDIZED DIGITALIS LEAF.

Messrs. Allen and Hanburys' tablets of digitalis leaf A and H are a preparation of powdered digitalis leaf, which is standardized physiologically. Each tablet contains 0.033 gram (1/2 grain) of international standard digitalis leaf, equivalent to 1/3 of an international unit. The recognized daily dose is 1/3 to 1 international unit—that is, one to three tablets. Although the *British Pharmacopoeia* of 1914, which is still current, does not recognize biological standardization, yet the necessity for such standardization has been generally acknowledged in the case of digitalis preparations. Powdered digitalis leaf is very widely employed on the Continent and in America, but in this country the tincture is generally preferred. On this account there are comparatively few reliable and convenient preparations of the powdered leaf available, and the preparation under notice is therefore a welcome addition.

ANIMAL PRODUCTS.

The price list of Messrs. Armour's glanoid compounds for January, 1930, contains descriptions of a large variety of animal products, such as endocrines, peptones, ligatures, digestive ferments, etc. The endocrine preparations are the most important feature, and about thirty of these are listed. The list reflects in a striking manner the present position of endocrinology. Apparently Messrs. Armour have adopted the principle of giving the medical profession what it asks for, and as a result preparations of the most varying status are listed. There are a number of preparations of well-established therapeutic value, such as liver substance, pituitary extract, thyroid, suprarenalin, etc. At the other end of the scale are preparations such as bronchial (lung) substance, cardin (heart) substance, cerebrinin (brain) substance. It seems a pity to include preparations of such wholly different status in a common list, for this association seems unfair to substances whose value has been proved by exact scientific and clinical tests. Included with the price list is a brochure giving an account of recent work by Professor von Zumbusch of Munich. Results obtained in his school indicate that hypodermic injection of large doses of spleen extract produces a beneficial effect in chronic eczema, in pruritus, and in urticaria.

PEROXIDE STICKS.

Peroxtik (Arthur H. Cox and Co., Ltd., Brighton) is peroxide of hydrogen dissolved in a substance of semi-solid consistency. It contains a 10-volume strength of hydrogen peroxide in stable form. The preparation as sold is made up in stick form, and is intended for application to the skin as an antiseptic or haemostatic, and also can be used for bleaching superfluous hair.

British Medical Journal.

SATURDAY, FEBRUARY 8TH, 1930.

THE EARLY DIAGNOSIS OF JUVENILE RHEUMATISM.

OUR vital statistics are bringing into increasing prominence the part played by heart disease in limiting the duration and full enjoyment of human life. In this country at all events, and in others sharing similar climatic conditions, many cases of this disease follow the rheumatic infection of childhood, or, to use Dr. Reginald Miller's brief and expressive term, "juvenile rheumatism." The widespread interest in the prevention and arrest of this infection reflects a growing recognition of the fact that it is a serious menace to the national health. Undoubtedly it is to prevention that we should devote the greater part of our energies if the problem were merely economic. It has, however, a humanitarian aspect, which presses heavily on the attention of the medical profession. This aspect is brought home daily to everyone working in the medical wards of our great hospitals. In one bed is a child in an early phase of rheumatic heart disease, in the next a young woman dying of mitral stenosis. How is the child to be saved from a similar fate? The more this kind of question is considered the more urgent seems the need to carry the possibility of diagnosis further and further back in the course of the disease. It is to this problem that the two addresses on juvenile rheumatism reported elsewhere in this issue are devoted. The two speakers—Dr. Carey Coombs and Dr. Reginald Miller—have approached it from slightly different aspects. The first has in his mind the damaged heart, the second the sick child. Yet both arrive at similar conclusions and emphasize the same lessons.

Recent studies, such as that by Dr. A. F. Bernard Shaw, lately published in the *Archives of Disease in Childhood*,[1] have brought new evidence in support of the view upheld by the last generation of British physicians—Cheadle, Lees, and their contemporaries—that the rheumatism of childhood is a generalized disease which must not be considered as a form of polyarthritis with cardiac complications, but rather as an infection which is dangerous to all the organs as soon as it enters the body. Dr. Miller thinks that there is a prodromal period during which this invasion may be detected before serious harm is done, and he directs attention to the various symptoms that may arise in that period. These he divides into four groups—the constitutional symptoms, the "throats and pains" group, the nervous disturbances, and, lastly, the symptoms of cardiac disease. He lays stress on the indefiniteness of many of the symptoms that may be presented by the rheumatic child, but claims that together they constitute a picture that can be recognized by the experienced observer. He does not, however, believe much in the diagnosis of a pre-rheumatic type—of a child foredoomed to rheumatic infection—as a practical measure. Dr. Carey Coombs's four categories of children in whom an early diagnosis of cardiac rheumatism may be made are a little different. There are children with frank rheumatism, whether of joints or of brain; those with tonsillitis; those with vague ill health; and a small group with cardiac symptoms.

In spite of these divergences in detail, it is clear that both Dr. Miller and Dr. Coombs view the task of reducing the ravages of cardiac rheumatism in the same way. The condition, they insist, must be regarded as a general infection with serious local manifestations. In all attempts to save vital organs from serious damage by infective agents there are certain principles to be observed. The first of these is to prevent the infective agent from entering the body at all, and in this connexion we may note that both addresses allude, though with differing emphasis, to the tonsils as the breach in the body's defences through which rheumatic infection makes its entrance. Whatever may be the final view of the place of tonsillectomy in the treatment of juvenile rheumatism, no one can dispute the urgent necessity for remembering that the tonsils are the only proved and known portal by which this infection invades the body. The second principle to be observed in all attempts to limit the injury of vital organs by infection is that an early diagnosis will be achieved more often by attention to the general than to the visceral symptoms of infection. In cardiac rheumatism some of these general symptoms are striking and unmistakable. It is both fortunate and unfortunate that the child who is attacked by this infection should suffer from articular and muscular pains; fortunate because these pains call attention to the infection in a way that cannot be ignored; unfortunate because we have grown accustomed to think of some such manifestations as essential to the diagnosis of rheumatic infection. Nothing could be more dangerous than this misconception. A large proportion, possibly a majority, of the children in whom signs of cardiac rheumatism are found have never been under treatment for articular pains or chorea, or any other overt evidence of rheumatic invasion.

How are these principles to be applied in daily practice? By no other means, we believe, than by taking trouble. If the possibility of a rheumatic origin is borne in mind in dealing with every case of vague ill health in childhood, early, careful, and repeated physical examinations will be made; and if the tenacious and obstinate character of the infection is appreciated the need for a defence as dogged and persevering will be borne in mind. The true social unit is not the factory or the school, but the family; and if children are to be safeguarded from the ravages of the rheumatic infection it is essential that every one of them, no matter of what social status, shall have the opportunity of seeing a doctor whenever necessary. In saying this we do not overlook the immense value of the work done by the school medical service; but we are sure that the school medical officers would be the first to agree that if it is to succeed the campaign against juvenile rheumatism must be carried into the child's own home.

[1] *Archives of Disease in Childhood*. Vol. 4, No. 22, August, 1929, p. 155. Published by the British Medical Association. 25s. per annum, 4s. 6d. single number.

THE DEVELOPMENT OF MEDICAL SERVICES.

THE main immediate business of the authorities to whom the administration of the Poor Law will be transferred from April 1st next must necessarily be to secure that any persons who are at that time in receipt of public assistance, in whatever form, shall continue to receive such help and relief as they are entitled to have. It is no doubt this prime concern which has resulted in the disappointing absence of declarations by local authorities, in the schemes which have been sanctioned by the Ministry of Health, that they propose, from the appointed day, to give any assistance which may be provided either by way of poor relief or by virtue of certain alternative enactments, exclusively by virtue of such enactments and not through the Poor Law. A reasonable boldness in the making of such declarations was hoped for, and the excess of caution displayed—in some cases by the local authority, and in others by the Ministry in refusing to sanction some schemes which contained such declarations—does not seem to augur well for those early steps towards the reform of health administration and the break-up of the Poor Law which are so eminently desirable. Nevertheless, the fact remains that the Local Government Act, 1929, declares "the desirability of securing" these things "as soon as circumstances permit"; and not much harm will have been done if the councils of counties and of county boroughs regard the first year of the operation of that Act as an experimental period, and if both those authorities and the Ministry of Health really endeavour during that year to settle those reforms and developments of services and distributions of function which shall become effective at its close. A proper administration of the Act not only requires a full survey of the appropriate allotment of work to various committees of the councils, and of the provision and usage of hospital and institutional accommodation, but offers an admirable opportunity for the complete overhaul of those medical services for which the authority is responsible, with a view to their co-ordination or unification, or to the improvement of the methods by which they are conducted.

In these circumstances something may well be learnt from experiments which have already been in operation. One such experiment is the Gloucestershire scheme of medical services, which is reviewed in the *Supplement* to our present issue (p. 37) by Dr. J. Middleton Martin, the medical officer of health for the county. Some account of the inception of this scheme was given in the *British Medical Journal* of February 22nd, 1919 (p. 218), and it was again referred to on July 17th, 1920 (p. 87); and, in fact, the scheme has now been in operation for some nine years—long enough to prove its advantages, and to bring out any weaknesses which may accompany them. The area and circumstances of the county of Gloucester may have afforded an unusually favourable field for some of the detailed arrangements that have been made, and it is probable that in county boroughs and in some other counties these details would have to be varied; but the aims of the scheme and the principles on which it is based may be regarded as of almost universal application. Generally the object may be said to be "to co-ordinate the work of the general practitioners, the hospitals, and the nurses in the locality for the public benefit," to develop these services "to include extended treatment for insured persons and for the sick and infirm coming within the scope of the Poor Law," and to promote research and "the practice of preventive medicine in relation to both physical and mental illness." Broadly, the methods may be described thus: (1) the division of the county into areas in which the hospitals could be grouped so that they could be brought into close relationship with one another and the opportunities they afforded to the public and the profession could be fully utilized; (2) the conducting at one centre in each area, associated if possible with a hospital, of all the medical services for which the county council was responsible; (3) the close association of the private practitioners of each area with these centres, the clinical work being done, wherever possible, by these practitioners; (4) the establishment of a medical advisory committee to the county council, to which committee should be referred all medical matters ("medical personnel of the scheme, treatment, fees, development of work, etc."); (5) the appointment of a special medical services committee of the county council, on which the chairman of the medical advisory committee is co-opted without a vote, all reports being presented through him.

This Gloucestershire model is obviously susceptible of a number of variations to suit different circumstances, but Dr. Middleton Martin claims for it in Gloucestershire a great measure of success. It is worthy just now of the closest attention, for recent and impending changes have made it of growing importance that in every locality the private medical practitioners should be made to feel that they are an essential part of public health administrative arrangements, and are used as such, and that it is part of their daily duty to take their share in the advance of preventive medicine.

PSITTACOSIS.

PSITTACOSIS is a disease of a somewhat indeterminate nature found in parrots and a variety of other birds. It has been known for a long time to those whose business brought them into contact with birds; but it was not until fifty years ago, when several outbreaks of an obscure pneumonic disease in human beings were attributed to an infection contracted from sick parrots, that the condition attracted any scientific attention. Ritter, in 1879, observed in Switzerland a number of cases of an atypical pneumonia in man, which were associated with a disease in parrots imported from Germany. Various other outbreaks were subsequently recorded. One, in Paris in 1892, attracted the attention of Nocard, who isolated from both avian and human cases a species of bacillus closely related to, if not identical with, *B. paratyphosus* B. Later workers have recovered the same organism from both sick and healthy birds, but most accepted it as the causal organism. In 1906, however, Stuzzi associated the condition with a filterable virus, and claimed that psittacosis was none other than fowl plague, a disease not uncommon in domestic poultry, but communicable to most species of birds. Cases have since then appeared sporadically in various countries. Some of these have been shown to be definitely associated with parrots; others have equally definitely had no connexion with them. In 1929, however, there was a considerable outbreak of disease in human beings in the Argentine, all associated with sick parrots. The outbreak involved several hundred human cases. Parrots from the Argentine have been exported to various countries, and in some at least of these similar outbreaks have occurred. The s.s. *Arkona* arrived in Germany in November last, and her cargo of parrots was distributed to Hamburg and Berlin. A considerable number of human beings who purchased these parrots became ill, and some of them died. Meanwhile similar outbreaks have been reported from the United

States, and the source there appears to be similar to that in Germany. Other cases have been noted from Europe, and steps have been taken to prevent the import of parrots into Germany and Switzerland as a consequence. According to the *Journal of the American Medical Association*, Surgeon-General Cumming has detailed Dr. Charles Armstrong, an epidemiologist of wide experience, to conduct a field investigation of the cases reported in the United States and to trace the source of the infection, which has been ascribed in practically every case to association with recently imported parrots. In England cases have been appearing sporadically for several years past. In our issue of August 23rd, 1924, Professor Lovell Gulland drew attention to the possible dangers of psittacosis. That same year a veterinary surgeon, his wife, and his lieutenant contracted what appears to have been this disease from a private menagerie in England. The epidemic there involved a variety of birds—parrots, cockatoos, love-birds, and finches—as well as monkeys, Tasmanian devils, and an ant-eater. A number of other cases have been recorded from Birmingham and elsewhere in the past few years. In last week's issue we published at page 197 a full report of the January meeting of the Section of Medicine of the Royal Society of Medicine, when Dr. A. P. Thomson recorded seventeen cases which had come under his notice within the past six months; and Dr. Robert Hutchison recorded twenty London cases within the last two months. While, however, these cases appear to have been due to the same infection, and to present a picture of a paratyphoid fever with pneumonic symptoms, the evidence that the disease is in fact psittacosis is still largely circumstantial. It is highly probable, but there is as yet no definite proof that it is caused by an organism acquired from parrots. There have been no cases in places such as the London Zoological Gardens, where hundreds of birds are concentrated and where fresh birds are always arriving. There have been few, if any, cases associated with laboratories where post-mortem examinations of birds are habitually carried out. It is possible, of course, that those who are always handling birds may develop an immunity to psittacosis; it is conceivable that the disease in parrots associated with this human condition *may* be coincidence, or even that parrots may have contracted the disease from human sources. The parrot, almost alone among birds, may contract human tuberculosis, and there seems no reason why it should not contract other infections from man. Our knowledge of the present outbreak is still very limited. The only conclusions to which we may come at present are, first, that there exists a human disease in this country and elsewhere which is probably associated with a disease in parrots and other birds; and secondly, that the actual cause of this condition is unknown. There appear to be no grounds for the excited apprehension which exists in certain lay quarters. If this is an instance of an animal disease transmitted to man, it is by no means the first or the most important. Every medical man knows of dozens which are as serious and much more widespread. It is certainly most important that research work, veterinary as well as human, should continue on the etiology of the conditions in both birds and men, and on their intercommunicability. It is advisable that care should be taken to avoid contamination of food and fingers with excreta from parrots—such excreta may be present on the plumage of dead birds. It is particularly desirable that parrots' beaks should not be introduced into the mouth. One would have thought that coroners investigating recent cases would have pointed the moral of close personal contact between man and his pets, but they do not appear to have seized the opportunity. It is also desirable that measures should be taken to isolate sick birds and have them properly examined; but whether it is expedient, at present at least, to impose a quarantine on imported birds is not so clear. According to present information, the incubation period may last many months, and carriers of the disease may suddenly develop symptoms after years of isolation from other birds. Until the laboratories have pronounced on the etiology of this mysterious human disease and its connexion with parrots, simple and obvious measures of personal hygiene seem to be the only precautions necessary to keep the disease in check.

THE DEVELOPMENT OF PREMATURE INFANTS.

In any out-patient department it is a very common observation that mothers will attribute all the diseases and disorders from which certain children suffer to the fact that they were premature. Of recent years several observers have endeavoured to trace a series of premature infants to see what really did happen to those that grew up, and in a recent paper[1] Dr. Sigurd Ranke describes his experience with a group of 190 such children. He bases his definition of prematurity entirely upon the weight of the baby at birth, ignoring completely the estimated duration of pregnancy in these cases. Thus only children who weighed 2,500 grams or less (approximately 5½ lb.) were considered as premature. Of these 190 children 82 have died, the majority during the first year of life, and 35 could not be traced. This left 73 children who have been re-examined and form the basis of Dr. Ranke's observations. With regard to general bodily development he finds that, while heights reach the average or exceed it, the weights tend to keep below or at the average, so that, broadly speaking, these children are relatively taller with a small weight than the corresponding normals; the general impression he has gained of them is that they are long, lean, and slim. Traces of rickets could be found in over a quarter of the cases examined, and as regards walking and speech these premature children were, as a rule, behindhand. A curious feature of Dr. Ranke's investigation is that he has formed the impression in dealing with these children that a large number of them are neuropathic subjects—actually 14 out of his series of 73; and that while training, environment, and other factors undoubtedly play their part, premature birth may perhaps also have something to do with the nervousness that such children show. On rather surer ground are his observations in regard to real mental deficiency among premature children. There is a great difference of opinion about this subject among different observers. It has long been held that the chances of development for premature children, if they survive at all, are on the whole the same as for full-time infants, and this applies also to their mental development. Unfortunately, according to Dr. Ranke's experience, the conditions cannot be regarded as so favourable, for among these children are many who in the course of their development prove to be mentally abnormal. He finds that over 5 per cent. of the survivors showed such a condition, while a further 9 out of the 73 showed a definite state of mental "backwardness." With regard to Little's disease, which is held to be relatively common among premature children, he has not been able to discover a single case among those examined. The results here summarized diverge considerably from many of the already published observations, but since the discrepancies are in both directions it would seem that there is room for further work on the subject. It is a matter of some importance, especially for the obstetrician, to know what is the likelihood, not only of survival, but of normal development, for the premature baby. The existing differences of opinion should be capable of settlement by extensive statistical studies.

[1] *Acta Paediatrica*, vol. ix, fasc. 1-2, October, 1929, p. 46.

THE CREATIVE PERIOD OF GREEK MEDICINE.

A RECEPTION to the members of the History of Medicine Section of the Royal Society of Medicine took place at the Wellcome Historical Medical Museum on January 30th, when Mr. L. W. G. Malcolm demonstrated some recent acquisitions, and Dr. A. P. Cawadias gave a short address on the principal currents of ancient Greek medicine. Dr. Cawadias dated the creative period in Greek medicine from the seventh century B.C. to the time of Galen (or, as he preferred to call him, Galenus), the eighteenth centenary of whose birth falls this year. He divided the period into four stages, but antedating or contemporary with the first of these was the "religious medicine" of Epidaurus, where patients went to consult the gods. Even so, Epidaurus took care to send its cases which could not be cured by suggestion to the physicians. From the seventh to the fifth century rationalizing and scientific influences began to shape Greek medicine, but Epidaurus continued its faith-healing unaffected. The first of the four periods of Greek medicine Dr. Cawadias referred to as the physiological period, when the outstanding figures among the physiologists were Thales and Anaximander of Miletus, with their vague talk of "elements" as explaining the construction of man. Based on this simple study of elements arose two schools of physicians, one represented by Pythagoras, Alemeon, and Democedes of Croton, and the other by Empedocles and Acron of Agrigentum. These physicians regarded health as the equilibrium of the elements, and disease as the disturbance of that equilibrium. This period in Greek medicine had been overlooked by those who began their studies with Hippocrates. The second period—the late fifth and the fourth century—might be called the period of clinical medicine. The physiologists were Anaxagoras, who described the humours, including the black and yellow bile, Diogenes, who conceived of the "pneuma," and Democritus, who dimly foresaw the modern atomic theory. The great schools of medicine of this period were those of Cnidos and Cos. The supposed opposition between these schools—Cos being extolled because its followers paid regard to the individual patient, and Cnidos demeaned because its followers thought only of the disease—was, said Dr. Cawadias, quite fictitious. Both schools followed the same principles of diagnosis, but Cos was ever to be associated with the fame of Hippocrates, who remained for all centuries the classic physician. The third or clinico-physiological period extended from the third century B.C. to the second century A.D. Physiologically it was dominated by Aristotle, who conceived not the vague "elements" of his forerunners, like Thales, but organs, a nervous system, the development of the embryo. Hippocrates had used physiology simply as a guiding star—indeed, it was difficult to say what were the physiological principles of Hippocrates; but by the third century B.C. it was seen that physiology must be more than a guiding star—that it must be the basis for diagnosis and treatment. The Aristotelian philosophy was worked out in the school of Alexandria, whose founders were Herophilus and Erasistratus. Dogmatic schools afterwards arose, such as the methodists of the first century B.C., with their theory of all disease as due to some simple occurrence like constriction of the pores, the pneumatists, and others. Then there were the empiricists, such as Philinus of Cos and Serapion of Alexandria. With the dogmatists everything was physiology, but with the empiricists physiology no longer existed. They said, "We can never explain what happens in the living body. Let us look simply at the symptoms." Ensuing from this there took place a reaction towards Hippocrates. Three great neo-Hippocratists of the first century A.D. were Aretaeus of Cappadocia and Rufus and Soranus of Ephesus. The fourth and last phase of the creative period was concentrated in the single name of Galenus. Dr. Cawadias refuted the notion that Galen was a Roman. The Roman conquest involved no mixture of peoples. The Romans had their governors and soldiery in many places; but, with a certain mutual contempt between Roman and Greek, there was no fusion. The Greeks maintained their purity, as they had done from the eighth century B.C. Galen was a Greek who spoke his native tongue. His physiology was something much more than the physiology of Aristotle, and he it was who introduced the experimental method whereby such enormous progress in physiology had been made. To Hippocrates and Galen medicine owed an equal debt. With the latter, however, the creative period of Greek medicine came to an end. There followed a period of compilation and transmission. The great transmitters of Greek learning were the scholars of the fifteenth century, whom the final breaking of the Eastern Empire and the passing of Constantinople into the hands of the Turks dispersed to Italy and the West. It was in the same period that a great English scholar and humanist studied Greek in Italy, became absorbed in the spirit of classical philosophy, and brought back the new learning to England, where he founded the Royal College of Physicians—Thomas Linacre.

CONTROL OF IRRADIATED PRODUCTS.

THE conflicting experimental evidence on the subject of toxic effects produced by excessive quantities of irradiated food substances is well summarized in a paper entitled "Irradiated products and public health," by Drs. F. Bordas and Jules Renault,[1] who are members of the Conseil supérieur d'Hygiène publique. Nearly all the workers, it would seem, agree that excess of irradiated substances can produce pathological effects, but here the agreement ends. Some state that the effects are due to excess of irradiated ergosterol; others blame toxic side products; some describe toxic effects which appear only when the dose is many thousand times greater than the therapeutic dose; others state that doses of the same order of magnitude as the therapeutic dose can do harm. Finally, there is wide variation in the nature of the toxic effects described. But whatever may be the contradictions in the experimental evidence—and these will obviously have to be cleared up—its general tendency leads the authors to conclude that irradiated foodstuffs should be regarded as medicinal substances which can be used safely only under skilled control. In order that the medical profession should know exactly what it is handling, they suggest that with every irradiated product sold there should be a statement about the method of irradiation that has been used, the date of manufacture, and the antirachitic potency of the product. They recommend also that irradiated products should be sold only by pharmacists, because by such means the Faculty of Pharmacists of Paris could exercise a supervision which would be effective in eliminating from the problem those added difficulties that arise from the sale of products "irradiated only on the label."

[1] *Revue d'Hygiène et de Médecine Préventive.* Tome lii, No. 1, 1930.

THE WINNIPEG MEETING: MOUNTAINEERING IN CANADA.

IN reply to inquiries made by British medical men as to the possibility of engaging in mountain climbing during their visit to Canada next summer, Dr. F. C. Bell, superintendent of the Vancouver General Hospital, writes that the Canadian Alpine Club, of which he is past-president, will hold its annual camp at Lake Maligne from July 28th to August 16th. Lake Maligne is one of the most beautiful mountain lakes in Canada, and at the same time one of the most inaccessible for individual climbers. Should any members of the British Medical Association attend the camp they will be well repaid for any time or expense

which may be necessary. The camp will probably be one of the best achievements of the Alpine Club. There is also a club house at Banff with very comfortable accommodation, pleasant surroundings, and an interesting library of works on Canadian travel and mountaineering. From this point there can also be arranged a great many interesting climbs, most of which could be single efforts, and would not necessarily involve so much time as the trip to Lake Maligne. Privileges of membership of the Canadian Alpine Club will be extended to members of the British Medical Association. Those unable to attend the camp at Lake Maligne, which will be held prior to the date of the Winnipeg meeting (August 26th to 29th), might visit the club house at Banff and the better-known mountains in that neighbourhood either before or after their attendance in Winnipeg. Those desiring further information may communicate with *Dr. F. C. Bell, Vancouver General* Hospital, Vancouver, B.C., or Dr. William Boyd, General Hospital, Winnipeg, Manitoba.

COSMETICS.

THE advice given by Dr. W. A. Pusey in his little book on the care of the skin and hair[1] is, as one would expect from a dermatologist of his standing, essentially sound. The chief criticism we can offer is that it is so sound that it begins to partake of the nature of platitudes. The author says he could not have written this little book without his wife; we rather suspect that his wife could have written it without him. This is not the first occasion on which a distinguished dermatologist has produced a slim volume on the care of the healthy skin. We wonder sometimes to what public they are addressed. There is nothing in them that the doctor does not know, and they are not thrilling enough for lay consumption. They do not contain the information that would be gratefully received by our profession, revealing the composition of face creams of various kinds and other secrets of the toilet. For the most part these are still the exclusive property of "beauty specialists" and pharmacists, to whom they afford a profitable field for commercial exploitation. They are hardly medical subjects, but they are full of medical interest. One group of these preparations, the hair dyes, has been well dealt with from the chemical and the technical point of view in a book lately noticed in these columns,[2] and there is undoubtedly an opening for a good treatise on the same lines on skin foods, creams, lotions, powders, and so forth. Physicians really know very little about these matters, and Dr. Pusey imparts nothing on the subject, for he gives only one formula for a glycerin skin lotion. Apparently, however, he is an enthusiast for the application of soap and water to the face. This may be all very well for the hardy male, but in our experience ladies who, with reason, are proud of their complexion have to be very cautious in the use of soap, because excess easily leads to a troublesome dermatitis, and many women of great beauty rely entirely on creams and oily preparations for cleansing the face and neck. We venture to doubt also whether he is right in suggesting that Europeans eat to greater excess than Americans, and in consequence experience earlier deterioration of the complexion. Our impression is that the American complexion is prone to coarseness at an earlier age than the British, possibly due less to overeating than to central heating. But discussion on these delicate matters, even in a medical journal, may lead to recrimination rather than finality, and is better avoided. If we may end on the same note as we began, let us conclude by saying that this little volume will be found most useful by governesses, school teachers, and others who undertake the care of the rising female generation.

[1] *The Care of the Skin and Hair.* By William Allen Pusey, M.D., LL.D. New York and London: Appleton and Co. 1929. (5s. net.)
[2] *British Medical Journal*, June 8th, 1929, p. 1043.

PLASMOCHIN IN THE CONTROL OF MALARIA.

ADMIRABLY produced and expensively illustrated, the latest annual report of the United Fruit Company's medical department[1] is an interesting record of the practice of medicine and surgery in the tropics. We note with interest the reiteration that malaria is the major disease problem confronting the company's staff on its numerous properties, and particularly that the economic importance of malaria is being more and more grasped by plantation overseers, while the employees themselves are beginning to seek thorough treatment. Some interesting experimental work has been done with a view to applying to preventive ends the effect of plasmochin upon the gametocytes of the malaria parasite. If the experiments (p. 34) of Barber and his colleagues in the Panama division of the United Fruit Company are confirmed, it would appear that plasmochin, in doses much smaller than are used in treatment, has the power of so affecting the gametocytes that oöcysts are not formed by those ingested by mosquitos, although exflagellation occurs. The wholesale production of this effect throughout a labour force should do much to extinguish malaria. There is described what purports to be a test of the value of plasmochin as the sole preventive agent, the result of which seems to be regarded as discouraging. In our view the test was no test, since the population examined varied widely in successive surveys, and even if it had not, the method adopted—treatment of those with positive blood—was not likely to yield favourable results within the period of study. It is a pleasure to see in this report attention given to the study of tuberculosis in the tropics, which is too often forgotten by teachers of tropical medicine.

INTERNATIONAL CONGRESS ON MENTAL HYGIENE.

THE first International Congress on Mental Hygiene will be held at Washington from May 5th to 10th. In connexion with it the National Council for Mental Hygiene has undertaken to act as a liaison body in Great Britain, and the Study Tours Subcommittee of the Royal Medico-Psychological Association is organizing an expedition on the lines of its recent successful tours to the Netherlands and Paris. Attendance at the Congress is not limited to members of particular organizations or official delegates, but is open to all interested in mental hygiene. The travel arrangements are in the hands of Thomas Cook and Sons, Ltd., and special rates are available on liners leaving Southampton on April 19th, 25th, and 26th, or Liverpool on April 26th. Copies of the preliminary programme, with details of the tours and forms of application for membership, can be obtained from the secretary of the National Council for Mental Hygiene, 78, Chandos House, Palmer Street, S.W.1. The names and addresses of those deciding to participate should be sent at once to the honorary secretary of the National Council for Mental Hygiene, Dr. J. R. Lord, Horton House, Epsom. Those who are members of the Royal Medico-Psychological Association should notify also the honorary secretary of the Study Tour Subcommittee, Dr. A. Edward Evans, 3, Rotherwick Court, Golders Green, N.W.11; it will then become possible to circulate lists of names of those intending to join the congress. Early notification of travel requirements should be made to the nearest Cook's office, and all other inquiries should be addressed to Dr. J. R. Lord.

THE veteran American surgeon, Emeritus Professor William Williams Keen, M.D., LL.D., Hon. F.R.C.S., celebrated his ninety-third birthday on January 19th at his home in Philadelphia. His many friends on this side of the Atlantic will be glad to know that Professor Keen continues to enjoy good health and vigour of mind.

[1] United Fruit Company. Medical Department. Seventeenth Annual Report. 1, Federal Street, Boston, Mass. U.S.

A MODERN ASPECT OF IMMUNITY.

HUNTERIAN LECTURE BY DR. MONOD.

A HUNTERIAN LECTURE, entitled "Immunity from a new point of view," was delivered by Dr. GUSTAVE MONOD of Paris and Vichy at a meeting of the Hunterian Society of London at the Mansion House on January 27th, with Dr. ERNEST YOUNG in the chair. Dr. Monod dealt with the subject of immunization from the standpoint of a spa physician, paying special attention, naturally, to the waters of France, with which he is familiar, but commenting on the need for further study of spas in Great Britain in order that their special merits in this respect might be disclosed.

Dr. Monod opened his address by remarking that the present generation had been trained to consider the chemical constitution of bodies, and more especially drugs, as the dominating and determining principles, but there was little doubt that the new generation would consider the matter from a wider angle. All the phenomena of life were derived, Dr. Monod argued, from chemico-physical reactions in water; it was important, therefore, that physicians should understand the modern teaching of physics with regard to molecular and electronic action, the manifestations of which were seen in diffusion, in osmotic pressure, in the reaction of colloids, and in many other forms which were not even imagined a quarter of a century ago. Immunization had been considered up to the present as merely a biological phenomenon, but he desired to show that immunity—even specific immunity—could be acquired from non-organic antigens. It had been shown experimentally that certain mineral waters, for example, had a protective action against toxic invasions, although this subject was only in the early stages of its elucidation. Châtel Guyon water neutralized the venom of the adder; St. Nectaire water acted in a similar manner against diphtherial toxin; the toxin of tetanus was checked by La Bourboule water, and there were many other examples. He would not pretend that these minerals waters had any sort of monopoly in this respect; they were an easy and cheap way of producing immunization, but other electrolytes endowed with the same property would certainly be discovered or invented. The protective or immunizing action of mineral waters, however, was a new and startling discovery, and one worthy of close attention. Mineral waters played a striking part in connexion with the phenomenon known as anaphylaxis. It had been shown that if animals were injected with horse serum, and treated for twenty-one days with Vichy water, after which treatment a second dose of horse serum was given hypodermically, they did not show the slightest reaction; this contrasted with control animals which, if not so treated, had been found to die or to become gravely ill after the second serum administration. A similar protective action was afforded by the Royat and La Bourboule waters. It was a true defensive reaction, due to the bivalent bodies of the mineral water creating around the cells an electrostatic field of protection.

The story of how the discovery of the immunizing properties of mineral waters was made was entitled to be described as romantic. In the picturesque volcanic district of the Auvergne Mountains in France a few years ago, when a shepherd was giving an outing to his flock after the long winter stabling under snow, the late Professor Billard, the pioneer in this field of investigation, happened to be in the district, and entered into conversation with the shepherd. Billard learned from him that in the early spring the animals were depressed, stupid, and so clumsy that poachers had been known to outrun a wild goat. The shepherd also told him that if bitten by a viper at this season the animals suffered no ill effects from the bite. These facts suggested to Billard that the broom on which the sheep were feeding contained sparteine—in other words, that the sheep were doped. Sparteine was known to be antagonistic to the toxin of tetanus, and Billard thought, therefore, that the antagonism might extend to snake venom, which also had a special affinity for the nerve centres. The professor tried the various mineral waters gushing up in his district, and discovered one which neutralized the sparteine with which he was experimenting.

By what means could a certain mineral water protect against a specific toxin? It might be conceived that certain toxins—that of tetanus, for example—had a special affinity for stearates; therefore, if a mineral water existed with electrolytes combined in such a way that with stearates it formed an insoluble soap, a barrier could be built by means of which the tetanic toxin was prevented from invading the neuron. It was the working hypothesis of Billard that the sensitizing action was undertaken not by proteins, but by lipoids. This was the more likely when it was considered that coagulation by heat did not hinder in any way the anaphylactic effect of antigens. One classic instance of anaphylaxis by lipoids was the celebrated case described by Weigal of a sheep merchant who developed asthma from the mere smell of crude wool. If such a hypothesis was admitted, then the part which mineral waters played became easier to understand. It was a fact experimentally ascertained that the mineral waters which dissolved soap most readily were exactly the waters which were endowed with the greatest power of desensitization against anaphylaxis. These waters introduced active electrolytes which dispersed the soaps and mobilized the lipoids more easily. If this was established, then a new class of drugs could be foreseen which acted merely by virtue of their physical properties. The production of such material had been achieved by Roger in his laboratory at La Sorbonne, and the results appeared to be quite satisfactory. The material was used externally, in the same way as an embrocation, but how it really acted was still a problem. Dr. Monod said that he would not go so far as to suggest that proteins played no part in anaphylaxis, but he thought they were controlled and determined by soaps and lipoids. It was through the latter that mineral waters played their protective part against anaphylaxis.

That mineral waters were very complex substances was not a matter for surprise when their origin was remembered. The waters which gushed up in volcanic districts were not surface waters absorbed and rejected, but synthetic waters from distillation at a very high temperature and under extreme pressure of carbonic acid gas. They came from what might be called an underground melting-pot. In other words, mineral water was a very complex solution of electrolytes, which had not yet found, when it reached the surface, its normal equilibrium. That these waters—he spoke particularly of Vichy—must be considered as a biological *milieu* there were many proofs. If an animal were bled, and the blood replaced by the same quantity of La Bourboule water, an active reaction started, and the normal ratio of haemoglobin was promptly restored. Another curious fact was that, whereas a surgical wound normally bled for twenty minutes, if the animal was treated with these waters the bleeding time was reduced to three minutes. Billard and Ferreyrolles had kept a frog muscle living and active for five days in Bourboule water.

It was an open question whether the effects of mineral waters were always beneficial; at any rate, the physician needed to be careful, for he dealt with a two-edged weapon. Billard himself wrote, "Nowadays, if I practised in a spa, it would not be without some sort of apprehension every time that I wrote out a prescription." Most spa physicians to-day had adopted what might be called the mild type of cure, as compared with the thorough-going cure of their predecessors. But why should not injections of waters be used in certain cases—before operation, for example—to prevent bleeding? Was it possible that injected mineral water might check post-vaccinal encephalitis? For the time being, no more could be done than theorize on these points. The anti-anaphylactic effect of waters might be tried on most chronic affections; it had been tested empirically, and had been successful, for centuries. As regards the waters of Great Britain, there was no doubt but that their special virtues were only waiting to be discovered. If an echo of this lecture reached the ears of British spa physicians who were endowed with pioneering enthusiasm he would feel himself well repaid.

Replying to a vote of thanks moved by Sir WILLIAM WILLCOX, Dr. MOXON added that he deprecated any idea of nationalism in science. He had spoken only of the waters of France because he knew them best. Other waters only needed to be studied in order to be utilized in the same way. One physician had told him that he could obtain the same results by getting his patient to hop three times round Trafalgar Square and sip at the fountains, to which his reply was, "Why don't you?" In conclusion, he referred to the link between professions in different countries, and said how much he was indebted to one great man of the British race, but of international sympathy—William Osler.

Scotland.

St. Andrews University.

AT the half-yearly meeting of the General Council of St. Andrews University, held on January 25th, with Principal Sir James Irvine in the chair, the question of reopening the Marine Laboratory for biological research was considered. A motion was passed suggesting that the University Court should consider the question of reopening this laboratory. It was pointed out that valuable research had been carried out, on the development and life of fishes for food, in a small cabin, which had been acquired in 1882. Between 1896, when the Gatty Marine Laboratory had been opened, and 1914, a great volume of work of a high standard had been produced under Professor M'Intosh, who had continued research work and published a book quite recently. Since the war, however, the laboratory had not been kept up. It was explained by Professor D'Arcy Thompson of the chair of zoology at St. Andrews that towards the end of last century biological research work had been of a simple nature because it was then only beginning. Now it had become very specialized, and at the other biological laboratories round the coast the services of large sea-going vessels were needed as well as staffs of experts. The cost of a research laboratory at St. Andrews that would be of national value was prohibitive, and, in any case, St. Andrews was not a suitable place for such a laboratory, so that there was little hope of getting a Government grant for the purpose of establishing one there. At the same meeting it was reported that there had been an increase of fifty students attending St. Andrews University as compared with last year.

Animal Disease Research in Edinburgh.

A meeting of the directors of the Animal Diseases Research Association was held in Edinburgh on January 29th. It was resolved to appoint Dr. John Russell Greig, professor of medicine and materia medica in the Royal (Dick) Veterinary College, Edinburgh, to be director of the institute at Moredun, Edinburgh, in succession to Mr. W. A. Pool, who has been appointed deputy director of the Imperial Bureau of Animal Health at Weybridge. Professor Greig, after graduation at the Royal (Dick) Veterinary College in 1911, engaged in post-graduate study, and was appointed to the veterinary staff of the city of Glasgow. After service in France during the war as veterinary officer to the field artillery, and later as officer in joint charge of the Royal Army Veterinary Corps Laboratory at Rouen, he returned to a post with the Ministry of Agriculture, and in 1919 was elected to a chair in the Royal (Dick) Veterinary College. During the war he investigated several war-conditioned diseases in army horses, and determined the cause of ulcerative cellulitis, which was producing heavy losses among horses in all the armies of the Western front. With Dr. E. A. Watson, chief veterinary pathologist to the Dominion of Canada, he demonstrated the fungoid organism of epizootic lymphangitis, and in 1915 introduced a method of treating wounds in horses by lymph lavage, a method which was adopted throughout the army veterinary hospitals. The important disease known as milk fever was investigated by him in collaboration with Dr. Dryerre, and for the solution of this problem he recently received the degree of Ph.D. from Edinburgh University.

Physical Welfare of Students.

The University Court of Edinburgh University has created a new post in the appointment of Colonel Ronald B. Campbell as director of the physical welfare of students from May 1st, 1930. About two years ago a committee of the University Court studied the question of physical welfare in the University, and as a result increased the matriculation fee in order to form a physical welfare fund. The committee at the same time recommended that an officer of the University should be appointed to direct the athletic activities and the physical culture of students. The appointment is not merely for the organization of games, but rather for the promotion of physical well-being in association with mental development. Colonel Campbell, after service with the Gordon Highlanders, was appointed inspector of physical training in the army, and has shown keen interest in the movement for the welfare of youth. He served in the South African war and the European war, receiving the D.S.O. for services in 1917, and being created C.B.E. in 1923.

Dunfermline and West Fife Hospital.

The annual meeting of the Dunfermline and West Fife Hospital was held on January 27th. Mr. H. M. Brownlie, who presided, said that the sums which had been subscribed towards the fund for the extension of the hospital, at present being carried out, exceeded £51,000. This amount had been raised in a period of less than two years, and under the present existing industrial conditions this was a great tribute to the generosity of the community in the hospital area. In the current year the directors would be able to provide an additional forty-four beds, as well as other new services. They had every confidence that when the extension was opened the subscribers would provide the necessary increased income to obtain efficient running of the enlarged hospital. Dr. J. Finlayson Fleming, a member of the advisory committee of the hospital, said that the extensions of the building had been well and carefully planned, and an excellent operating theatre had been provided, which he thought was one of the finest in Scotland at the present time.

Treatment of Gastric Disorders.

At a meeting of the Pharmaceutical Society of Great Britain, held in the society's hall, Edinburgh, on January 25th, a paper was read by Mr. J. Rutherford Hill on the use of calcium carbonate in treating gastric disorders. He said that in the intensive alkaline treatment of gastric and duodenal ulcers at the present time powders containing calcium carbonate were very extensively used. It should be noted that in the *British Pharmacopœia* there were two substances of this chemical composition. One was called precipitated calcium carbonate, which was crystalline in form, and, if this was used, it was liable, on account of its crystalline form, to cause much gastric irritation, and it should not therefore be used in the treatment of any gastric ailment. The other substance was known as prepared chalk, and, being amorphous, was better adapted for internal medicinal use. The language of the *British Pharmacopœia* was ambiguous as to what should be dispensed when calcium carbonate was ordered, and it was important that dispensers should supply the amorphous prepared chalk, which contained 97 per cent. of pure calcium carbonate.

England and Wales.

The Birmingham Hospitals Centre.

FOR many years past the executive board of the Birmingham Hospitals Centre has considered the question of securing a closer co-ordination of hospital facilities in Birmingham, and has devoted its activities to the preparation of a practical scheme for this purpose. In 1920, when the city was able to resume normal conditions after the war, both of the leading voluntary hospitals (the General and the Queen's) had an increasing deficiency of beds in relation to the demands that were being made upon them. These hospitals work in connexion with the medical

school of the University, and the medical staffs are closely linked up with the members of the medical faculty. About 1923 or 1924 a feeling grew up that the right solution of the hospital problem was not, as had been contemplated, to develop separate and independent extension schemes of the General and Queen's Hospitals, but to go right outside the main centre of population and build up a hospital centre where subsidiary and specialized institutions, such as eye, ear and throat, maternity clinics, and so forth, would also have free ground for expansion and be in touch with the central institutions. The advocates of a hospitals centre for Birmingham believed that even a considerable extension of the General and Queen's Hospitals would fail to meet the demands of the future, and at best would be but a temporary solution of the hospitals problem for this generation. The scientific departments of the University had already been settled at Edgbaston, and the University authorities held that as long as the two central teaching hospitals were on their present sites it was impossible to transfer the medical faculty to the University site. When Messrs. Cadbury Bros., Ltd., gave the city 150 acres of land immediately adjoining the University buildings it seemed that a practical solution of the site question might be found; it was necessary, however, to bring the two hospitals into agreement, and to this end a joint committee was formed under the chairmanship of Sir Charles Grant Robertson. This committee recommended that the new hospitals centre should be established at Edgbaston, and should be under the joint control of the General and Queen's Hospitals, and that for the satisfactory working of the scheme it was necessary that the two hospitals should be amalgamated for all purposes. These and other recommendations of the joint committee were accepted by the hospitals, and as a result an Executive Board, with Sir Charles Robertson as chairman, was set up for the purpose of making a detailed and technical scheme. This Board sent commissions to the Continent and the United States to study the most recent developments in hospital design, organization, etc., and on the basis of the reports of these commissions it framed its own scheme. In 1929, having worked out a schedule of all its requirements, it chose twelve architects to take part in a limited competition for designs of a general hospital, containing 740 beds, a paying patients' block of 100 beds, and buildings for the medical faculty. The assessor's award has now been made, the winners of the first prize being Messrs. Lanchester and Lodge of 19, Bedford Square, London, W.C.1. The Board draws special attention to the following features of the scheme.

(1) The hospital proper will represent the latest ideas and experience in the design, planning, and administration of a hospital considered simply as an institution for the treatment and cure of disease. Birmingham will have, when the scheme is completed, a hospital which, in these respects, is equal to any hospital in the world. (2) In accordance with modern needs there will be a large block for paying patients, whereby Birmingham citizens who do not come into the category of the ordinary patients of a voluntary hospital may have the advantages of hospital and institutional treatment at the lowest cost possible. The Board regards this feature as an indispensable part of its scheme, because it wishes the new hospitals centre to serve the needs of all classes of citizens. (3) There will be a close and integral connexion between the scientific departments and buildings of the medical school with those of the hospital proper. Both the Executive Board and the medical faculty agreed that there must be such an association between the laboratory worker and the clinician, not only from the point of view of the treatment of disease, but for the training of medical students and the advancement of medical knowledge.

It is estimated that the scheme will cost about £1,250,000, and to collect this amount an appeal will be launched in Birmingham in March of this year.

Small-pox in London.

The Public Health Committee of the London County Council has been considering a communication from the St. Pancras Borough Council drawing attention to the number of cases of small-pox occurring in St. Pancras and other London boroughs, and to the fact that the present procedure of tracing contacts and keeping them under observation during a long incubation period was adopted years ago when small-pox was of a severe type. As the type of disease now prevalent is extremely mild, the borough council expresses the opinion that the present procedure is not warranted, as it occupies a large amount of the time of the public health staff, and occasionally leads to loss of employment when the fact that a person is a small-pox contact is notified to the employer. In reply to the request to modify the present procedure with regard to small-pox contacts, however, the Public Health Committee of the County Council points out that it is the specific obligation of a local sanitary authority to take all necessary measures to prevent the spread of infectious illness, and that with regard to small-pox, definite duties were imposed upon sanitary authorities by the Ministry of Health in a memorandum issued in 1922 and reissued in 1926. These duties include domiciliary inquiries, supervision of contacts, action in regard to vaccination, and the taking of all necessary precautions in the homes of the patients.

"The fact that the disease happens, at present, to be associated with a negligible fatality rate can hardly be held to render unnecessary the need for taking proper precautions, especially having regard to the possibility of the occurrence, at any time, of the more toxic variety of small-pox and the difficulty of differentiation between the two types, especially when a case of the severe type is modified by vaccination carried out many years before. Furthermore, although, on the whole, the disease is mild, many cases are associated with severe illness and a copious eruption. The important factor of dislocation of businesses and workplaces through outbreaks of small-pox among employees must also be taken into account, as well as possible loss of home and foreign trade either through fear of infection or owing to restrictions imposed by the routine precautions taken."

The Ministry of Health expressed the view, in a memorandum issued in 1926, that it is unnecessary to keep small-pox contacts away from their work, subject to the necessary precautions being taken, and to their being kept under surveillance for the full incubation period. The Public Health Committee states that this practice is being followed by medical officers of health throughout London, and if a small-pox contact remains away from work it is entirely due to the action of the employers, save, possibly, in exceptional cases in which it is done on the advice of the medical officer of health. The Public Health Committee is unable to recommend the London County Council to adopt the St. Pancras suggestion, and it is stated that a reply has been sent by the Ministry of Health to a similar communication from St. Pancras, in which the Ministry states that the tracing and supervision of small-pox contacts is a routine duty of the borough council, that it is only by such means and by vaccination that the spread of the disease can be controlled, and that no relaxation of the prescribed precautionary measures can be contemplated at present.

Westminster Hospital Radium Annexe.

The Westminster Hospital Radium Annexe at Fitzjohn's Avenue, Hampstead, the opening of which was recorded in our last issue (p. 211), although an adapted private residence, is admirably fitted for its purpose. The radium "bomb" room is on the ground floor, lined with barium for the protection of workers in rooms adjacent. This room contains the apparatus devised for employing the four grams of radium entrusted to the hospital by the National Radium Commission. The apparatus is so constructed that the radium rays can be directed on two patients simultaneously, as described by Mr. Francis Rock Carling in the *Journal* this week at page 232. On the same floor there is a deep *x*-ray therapy department, containing apparatus for the irradiation with *x* rays (generated at 230,000 volts) of deep-seated malignant growths. This apparatus has been installed in accordance with the wishes of the Commission in order that the value of irradiation by *x* rays may be compared with the value of irradiation by means of the single radium unit. The *x*-ray diagnostic department is largely for localizing tumours preparatory to their treatment. Adjoining is a dark room, the walls of which, in accordance with modern practice, are painted

cream, and all work is done by reflected light. The provision for patients consists of a male ward (six beds) and a female ward (four beds) for those unable to contribute, and seven one-bed rooms, one two-bed room, and one three-bed room for paying patients, making accommodation for twenty-two patients in all. At present the second floor is allocated for nurses' accommodation, but it is hoped that donations may be provided whereby it will be possible to take an adjacent building for the nursing staff, and so set free an additional floor for patients' beds, which would add greatly to the value of the annexe. An operating theatre, with sterilizing and anaesthetic rooms, is on the first floor, and in the basement are three laboratories, respectively for pathological, for biochemical, and for physics research. The basement also contains the emanation room, with the apparatus for the preparation of radium "seeds." Here the radio-active gas, radon, is filled into small platinum shells, which are used in the same manner as needles containing the active element. All the usual administrative offices are accommodated in the building, as well as a consulting room for the medical staff, dining and sitting rooms for the nurses (there are two sisters and ten nurses), together with kitchens and larders and so forth, and in the grounds a garage to house a motor ambulance which has been presented by Hovis, Ltd. On the walls of the entrance hall of the annexe are recorded the names of 850 founders, headed by H.R.H. The Prince of Wales, who is president of the hospital.

British Dental Hospital.

The annual dinner of the British Dental Hospital (Camden Road, N.W.1) was held on January 14th, with Sir Harry Baldwin, president of the hospital, in the chair. Sir Thomas Oliver, proposing the toast of "The Hospital," emphasized the importance of toxins generated by micro-organisms in the mouth or of gastro-intestinal origin in causing physical inefficiency among workers in factories, and in preventing industrial life from being as health-promoting as it otherwise might be. He described the steps that had been taken to prevent various industrial conditions from causing ill health, and urged that, in addition to the medical examinations of the mouths of candidates for work in lead factories, there should be a further examination a few months later. The value of school dental clinics was undeniable, but, unfortunately, the subsequent period of life was unguarded by any definite arrangements for supervision of the teeth. Dental clinics in factories would undoubtedly have an economic value, but the provision of such benefits had definite limits. Sir Thomas Oliver commended the British Dental Hospital in that, while they treated the necessitous poor gratuitously, they recognized that many patients were willing to make some financial return for the benefits received. He thought that employers in large industrial firms could render valuable services to their employees by subscribing to dental hospitals, thereby securing for the workers any treatment they might require. He welcomed the opportunity of supporting the British Dental Hospital in its effort to secure the necessary extension of its buildings, and to bring its scientific equipment up to date. Sir Harry Baldwin, replying to the toast of "The President," mentioned the urgent need of funds to enlarge the premises or to undertake other building operations. The large number of patients made better accommodation imperative.

Association of Clinical Pathologists.

The third annual meeting of the British Pathologists' Association was held in the Pathological Department, University College Hospital Medical School, London, on January 25th. At the general meeting it was decided to change the name of the association to the Association of Clinical Pathologists. The morning session was devoted to the consideration of the technique and interpretation of the fractional test meal. Communications were made by Dr. Emma Pillman-Williams, who described the technique of the withdrawal and analysis of the meal, and by Dr. G. W. Goodhart, who dealt at length with the interpretation of results. Dr. Goodhart laid special stress upon the importance of the determination of the chlorides, and expressed the opinion that the findings could best be accounted for on the assumption of regurgitation of alkaline duodenal contents. Both papers were followed by lively and informative discussion. During the afternoon session demonstrations were given as follows:—Dr. H. D. Wright: Medium for growing pneumococci; Haemolytic power of streptococci. Dr. G. W. Goodhart: Diphtheria of the vulva; Pernicious anaemia without achlorhydria. Dr. D. Embleton: Blood from recovered case of agranulocytic angina. Dr. G. W. Barnard: Hearts injected to show the coronary circulation; Hearts showing coronary thrombosis. Professor Hadfield: Specimens from case of Lindau's disease and other pathological specimens.

France.

[FROM OUR OWN CORRESPONDENT.]

"1930."

THIS year will mark a turning-point in our professional history. For many years we answered only with a sceptical smile when the wild prophets spoke of a possible law, "les assurances sociales," insuring the French working class against practically every risk they could run. This is first of all a political question, and as such it does not come within the scope of the medical profession. But as the health insurance law is one of the most important parts of the general scheme, and as it cannot be enforced without the agreement of the medical profession as a whole, the problem has now reached an acute stage. The Government has made a declaration that the law shall be enacted this month. But, as I have mentioned before in these columns, as soon as we realized the danger of being turned into a flock of State doctors, our hands tied behind our backs with red tape, the whole profession found out that salvation meant unity, and all our dissensions were put away. A confederation of all our professional local syndicates was created, with Professor Balthazar in the chair, uniting about 12,000 practitioners. Every one of them sent a special subscription to provide for a war fund, and signed an agreement declaring they would not accept any individual proposition from the administration. The result proved to be immediate. The principal points to which we object in the law have been withdrawn, and as we never objected to the principle of the law, but to its mode of application, we can congratulate ourselves on the first innings. But the Ides of March are pretty near. The modifications which have been granted to us must be sanctioned by Parliament. We trust they will be: if not there will be a law in France providing for insurance against sickness which will have to be put into force without the collaboration of the only people who could make it effective. Thanks to the campaign that has been started in the press, the public begins to understand that the medical profession is not fighting for any personal advantage. It is easy enough to make the man in the street recognize that it is his right and privilege to choose his own doctor, and that it is a question of personal dignity that his various ailments, with diagnosis, treatment, and history of the case, should not be entered up in plain language on the files of the administration. "Libre choix et secret professionnel"—that is our platform. It seems very likely that the law, which was passed rather hastily by Parliament, will be largely amended for the benefit of the public; and, in any case, even if the medical profession fails to carry through the whole of its programme, we shall have realized unity in our ranks and earned the right to call ourselves, as we do, confrères.

A New Faculty?

Anyone who has visited the Paris Faculté de Médecine must have walked out with a feeling of cramp. It is a terrible experience to have to grow without expanding. And such has been the case with our Alma Mater. Very few of our visitors realize what an amount of courage and will power some of our teachers must possess to work under the existing laboratory conditions. No doubt it is difficult to provide for the student from abroad when space is so much restricted for our own students. The fact

cannot be concealed—very fortunately, as it happens—for it struck the attention of the Rockefeller Foundation, which has made a generous offer of six million dollars for reconstruction, on condition that the City Council gives the ground where the wine market is now located, and that the State subscribes the same amount of money as the Rockefeller Foundation offers. It is easy to imagine the enthusiasm such a plan has aroused, to say nothing of the deep sense of gratitude. It was a similar gift, under similar conditions, that allowed the city of Lyons to construct a new medical school, and it is to be trusted that the official world will find its way through a labyrinth of difficulties.

Georges Clemenceau, M.D.

Dr. Roux, the director of the Pasteur Institute, recently read a paper on the most famous, and least conspicuous, member of the Académie de Médecine—Georges Clemenceau. "The Tiger" was elected a member in 1918, and at the same time he became a member of the Académie Française. He behaved to both bodies alike, and never attended a meeting, much to the surprise and to the indignation of those who might have thought that they had done him some honour. The Grand Old Man was too grand and too old. He had long forgotten that he had ever been a medical man or a literary man. All his interest was now in personal meditation, and he devoted the small hours of the day to philosophy and the study of religions. Dr. Roux told his audience the now well-known story of Clemenceau's medical career, and it was interesting to learn from the beloved disciple of Pasteur that the only scientific paper Clemenceau ever wrote was to advocate the cause of spontaneous generation, which was to be attacked by Pasteur a few years later. But young Clemenceau stood by the side of Robin. Perhaps the fact that he represented a fourth generation of doctors made him more of a traditionalist in science than he proved to be in politics. He graduated in 1865, and left for the United States, where he taught French to young ladies. Perhaps he forgot medicine, but at any rate he acquired a strong and lasting knowledge of English, which may have been the reason of his devotion to political international policy. In 1871 Dr. Clemenceau started a private dispensary in Montmartre, showing great interest in the social side of medicine, and becoming a strong advocate of breast-feeding, but very soon he was elected mayor of his district and his public life began. From his medical training he derived his constant interest in hygiene and in all scientific questions, and his last writings dealing with philosophy show throughout a biological basis. Dr. Roux concluded his eulogium by stating that, although Clemenceau never attended the meetings of the Académie de Médecine, his seat never looked empty, as in heart and spirit they always felt his presence amongst them. One word more. We may speculate wildly about what might have happened if young Dr. Clemenceau had shown more enthusiasm towards what he might have thought to be his real vocation. But France would have lost her statesman. Possibly she might have gained a great physician, though I have my doubts. "The Tiger," as his public life showed, was more inclined towards the call of surgery.

G. MONOD.

Correspondence.

COLITIS.

SIR,—I read with much interest Dr. Letheby Tidy's paper on this subject, published in the *Journal* on January 25th. It is an important and instructive contribution to a difficult subject. There are just two points in connexion with the question of diagnosis which I think merit further comment.

Dr. Tidy deprecates the use of the sigmoidoscope, and discourages investigation by means of the barium enema and meal. I would like to associate myself with Mr. Lockhart-Mummery (February 1st) when he takes exception to the statement that "sigmoidoscopy gives no useful information," may do definite harm, and should never be employed." The lack of early recognition of cancers of the rectum, recto-sigmoid, and pelvic colon is notorious. The surest way to avoid mistakes is by the routine use of the sigmoidoscope. Furthermore, the instrument can be employed with safety by the practitioner if a few elementary precautions are observed. Dr. Tidy thinks that serious results may follow such examination in catarrhal inflammations, but I have never seen a patient suffer afterwards when it is properly carried out.

Dr. Tidy also suggests that radiograms may be relied upon almost absolutely to establish the presence or absence of a neoplasm of the colon, but that in cases of colitis the barium meal and enema may occasionally be definitely injurious. In my experience early growths are frequently missed, even in the hands of the most expert radiologists. I have never seen a patient suffering from colitis injured by a barium enema or meal.

Although Dr. Tidy obviously refers to cases in which the diagnosis presents little difficulty, there are others in which uncertainty prevails. In this latter group delay or error may be fatal. On the whole, the advantages gained by sigmoidoscopical and radiographical examinations so outweigh any possible disadvantages that they should be employed as a routine.—I am, etc.,

Dublin, Feb. 2nd. W. I. DE C. WHEELER.

SIR,—There can be few diseases in which one method of treatment is absolutely right and all variations from it are absolutely wrong. I gather that the results of treatment of ulcerative colitis by the methods of Mr. Lockhart-Mummery, the Guy's physicians, and those described in my article are all far better than the appalling mortalities often recorded, especially by "medical treatment." "There are nine and sixty ways of constructing tribal lays, and every single one of them is right," but there must be some common basis. I believe that the essential factor is the feeding. A case of ulcerative colitis which is starved has scarcely a ghostly chance; with proper feeding the colon, *ipso facto*, has its opportunity. I know that Mr. Lockhart-Mummery agrees as to its importance. He has criticized some small points in my diet: I would accept his suggestions without hesitation for a patient under proper observation.

There are two special points on which the writers in the *British Medical Journal* have disagreed with my article. The writer of your editorial comment retains an affection for antidysenteric serum. Undoubtedly some dramatic cures were recorded when it was first employed. This is a common phenomenon. "Let us hasten to drink these waters," said Trousseau, "while they still continue to cure." I am afraid that the day of this treatment has passed, though, no doubt, from time to time remarkable results will be published.

The question of sigmoidoscopy is of greater importance. Both Mr. Lockhart-Mummery and the writer of the editorial have, in my opinion, missed the point where it does harm—namely, in the passage into the rectum. The passage of a speculum is equally to be deprecated, digital examination should be reduced to a minimum or avoided altogether, and an enema nozzle should never be employed. The arguments given for its use still leave one unimpressed. The writer of your editorial considers that it enables one to judge when "the mucous membrane has regained its normal aspect," and that the treatment must be continued until this has occurred. I have no hesitation in saying that the mucous membrane in ulcerative colitis never regains its normal aspect. Anyone who expects to find this with a sigmoidoscope must have made some mistakes in observation. This is so evident that I think the statement must have been penned in haste, but it is given as the principal argument for sigmoidoscopy.

Mr. Lockhart-Mummery refers to the diagnosis of cancer, in which he has, admittedly, a very large experience. He mentions especially the difficulty of diagnosing a small early carcinoma. Of course this is so. The point is that a small early carcinoma below the splenic flexure does not

reproduce the symptomatology of ulcerative colitis. I have given the distinctive features in my article. When the possibility of ulcerative colitis has been thus excluded, sigmoidoscopy may be used to diagnose carcinoma from other conditions. It is this mistaken argument which has been used as the strongest support for sigmoidoscopy. The other arguments for the use of sigmoidoscopy all deal with very rare conditions—for example, primary tuberculosis of the intestine or amoebic dysentery in persons who have never been out of England and who pass no amoebic cysts.

The writer of your editorial mentions that at Guy's Hospital medicated enemata are given from the onset, but that albargin was found too irritating. Certainly this would be so. It is almost fatal to employ albargin at the beginning. At such stages saline is preferable even to tannic acid.—I am, etc.,

London, W.1, Feb. 3rd. H. LETHEBY TIDY.

ETIOLOGY OF GALL-BLADDER INFECTIONS.

SIR,—In Professor Wilkie's interesting and valuable address on the *etiology of gall-bladder infections* at the Medical Society of London, reported in the *Journal* of February 1st (p. 196), reference is made to some early experiments by myself, which were described in the Address in Surgery to the British Medical Association in 1905. In these experiments indigo particles introduced into the duodenum were subsequently recovered from the gall-bladder in several cases of fistula following cholecystotomy. This suggested to me the occurrence of a reverse current or flow of mucus (and other materials) along the common and cystic biliary ducts from duodenum to gall-bladder. From similar observations on the urinary system in cases of ureteral and kidney fistula, the suggestion was also made that, among the predisposing conditions which may lead to these reversed mucous currents, one of the most important was stasis leading to regurgitation at some point in the tubular system or the mucous canals concerned.

There is one fact about the function of the gall-bladder, established by Continental observers, and not alluded to in Professor Wilkie's address, which has an important bearing on this theory of a backward mucous current as a factor in the production of local infections. I refer to the capacity of the mucous membrane lining the gall-bladder to absorb water, by which a considerable degree of concentration of the contained bile is brought about. Now this reduction of volume and tension in the contents of the gall-bladder, so produced, may become a powerful agent in causing stasis or even a backward flow along the ducts; and, while I fully admit the possibility that organisms may reach the gall-bladder in some cases by descent from the hepatic duct, in others by the blood stream or by the lymph stream, I still think that ascending infection takes place from the duodenum by way of the common and cystic ducts in a number of cases.—I am, etc.,

Leicester, Feb. 3rd. C. J. BOND.

ANTIMALARIAL MEASURES.

SIR,—In your issue of February 1st (p. 207), commenting on the report of Colonel S. P. James *on antimalarial* measures in Kenya and Uganda, there occurs the following:

> "The third factor, brought out in detailing the duties of the special staff proposed for this work, is that the modern practice regarding actual measures *employed in attacking the malaria* problem differs from that employed up to the early war years. Those who have been in constant touch with malarial matters will find little that is novel in much that Colonel James has to say on these points: how it is no longer thought necessary always and in all circumstances *to base antimalarial measures on* knowledge of the malaria-mosquito cycle; how malaria is a social disease; how diet, housing, economic status, general sanitation, and other factors play a part."

As one who has been in constant touch with malarial matters during the past twenty-nine years, I should like to point out that my experience of malaria in the tropics has led me to conclusions directly opposite to those of Colonel James. My experience is that malaria is not a social disease; that diet, housing, economic status, and general sanitation are factors that play a practically negligible part in the spread of malaria in intensely malarial regions in the tropics.

In Malaya nothing was more striking than how malaria struck the best-educated and the best-fed people, living under the best sanitary conditions, if their houses were close to the breeding places of the species of anopheles which carried the disease; while the ignorant, poorly housed and poorly fed entirely escaped if they lived only half a mile from such *breeding places*. An ever-increasing knowledge of the malaria-mosquito cycle acquired, *not less by unremitting practical work than by research*, has enabled malaria to be controlled over ever-widening areas in Malaya. Control has spread from small towns to large towns, to estates, mines, private undertakings and public works, villages and many rural areas, and a great organization was created in 1926 to cover the whole country.

Already there has been a saving of tens of thousands of lives (over 58,000 in the city of Singapore alone since 1911), and an enormous, indeed incalculable, saving of money. Two examples of the latter must suffice. At the recent opening of the new water supply for Singapore the president said the antimalarial work had saved the commissioners "at least one million dollars (£120,000) in the construction"; and the commissioners showed their appreciation of Dr. Hunter's work by voting him a bonus of 25,000 dollars, equal to nearly £3,000. (Other councils please note.) The consulting engineer's representative on another work assured me that the antimalarial measures had resulted in a saving (in wages, coal bill, and loss of profit and interest on capital) to the company of over £26,000 a month.

There are sound reasons for believing that malarial control, based on a knowledge of the malaria-mosquito cycle, could be used successfully even in many poverty-stricken villages in countries outside Malaya, where the present attitude of the authorities is that malaria is an insoluble problem. I am afraid, however, that these villages must wait until they get the type of man described recently by one of our greatest scientists: "There is a certain type of man who is badly wanted at the moment. This is the scientific man who can administer; the administrative man who knows science. . . . We have men who can explore in the laboratory, but we have not enough men who can take what is discovered into the world. . . . We want people who are not merely scientists, we want people willing to take responsibility."

Judging from a recent communication by Colonel James to the Royal Society of Medicine, the best advice he can offer to the people of the great malaria-stricken tracts of the earth is to improve their houses and economic position and to wait patiently until they have acquired such a racial immunity to the disease that it will no longer sicken and kill them as it does now. Those who have seen native races acquiring partial immunity (and it is never *more than partial*) are aware of the appalling loss of life that occurs among both children and adults during the process, throughout which they are a danger to themselves and others who visit them, and possibly always in danger from infection by a new strain of parasites.

My observations in many tropical lands lead me to believe that hundreds, probably thousands, of years must elapse before any considerable amount of racial immunity is acquired. An example of it can be seen among the aboriginal tribes of India, who have been driven by successive conquerors into isolated hill tracts like the Jeypore Agency of Madras. The adult inhabitants of this region have certainly acquired a comparatively high degree of immunity. But it is dangerous in the extreme for any non-immune person to visit them; and the record of both Indians and Europeans who attempt to live in an administrative centre like Koraput in the Agency is one of intense malaria, constant invaliding, blackwater fever, and, too often, death. Forty years ago the Malay Peninsula had a similar record. Sir Hugh Clifford, the late Governor of Malaya, whose forty-seven years of administrative work included service in the West Indies, Gold Coast, Nigeria, Ceylon, and Malaya, described the Malay Peninsula as having been "by far the most malarious tropical country with which I have any personal experience," and he added that "it must be quite obvious to all that its great development would have been totally impossible unless the danger of malarial infection had first been successfully combated."

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN.

SIR,—In the *Journal* of January 25th (p. 147) Dr. Marcus Bird gave an interesting account of his revival of the use of oxygen with ethyl chloride as a general anaesthetic for operations of short duration. This combination was tried at the Central London Throat Hospital in 1908. Given early in the inhalation oxygen seemed to excite the patient and prolong the period of induction; given towards the end of the inhalation it seemed to be rather useful in promoting a long and quiet anaesthesia. Even without oxygen, ethyl chloride has been given at that hospital to many thousands of children (seated in chairs) without cyanosis or syncope; the preservation of a good colour in the vast majority of cases having, indeed, been rather remarkable, the more so in view of the unavoidable haemorrhage from the upper air passages.

Dr. Bird seems to use rather large doses for children over 8 years old, but I believe, and I dare say he will agree, that removal of the mask at the right moment is a good deal more important than meticulous accuracy of dosage. Of 11,723 patients subjected to ethyl chloride at the Central London Hospital before 1908, only about three required formal artificial respiration, and they all recovered. Oxygen given scientifically, as Dr. Bird suggests, with ethyl chloride will probably prove of great value whenever a little loss of time is of no importance.—I am, etc.,

BERESFORD KINGSFORD, M.D.,
January 28th. Consulting Anaesthetist, University College Hospital.

SIR,—I was interested to see that Dr. Harold Sington has emphasized the safety of ethyl chloride given to children by the usual open and closed methods without the use of oxygen. During the last ten years at the Queen's Hospital for Children over 30,000 cases have been anaesthetized with closed ethyl chloride for dental extractions. So far as I am aware there has been no serious difficulty at the time, or afterwards, with any of these patients. Thus, with the series of 40,000 administrations at Great Ormond Street Hospital, we arrive at the very respectable total of 70,000 consecutive anaesthesias without ill effects. —I am, etc.,

C. LANGTON HEWER,
Senior Anaesthetist, Queen's Hospital for
London, N.W.1, Feb. 1st. Children.

TONSILLECTOMY OR RADIOTHERAPY.

SIR,—In support of Dr. Douglas Webster's letter in the *Journal* of February 1st (p. 216), I wish to add my testimony as to the value of *x*-ray treatment in cases of enlarged chronically inflamed and septic tonsils. I have employed this method of treatment in preference to operation during the past eighteen years, with eminently satisfactory results.

Dr. Webster is certainly correct in saying that the tonsil is one of the most radio-sensitive parts of the body, as is evidenced by its rapid response to a few small doses of *x* rays suitably filtered. The process is painless and rapid, and requires neither the administration of an anaesthetic nor after-treatment in any shape or form, and it is quite free from danger. I also agree with Dr. Webster that small doses are preferable to large ones, and that the softer rays should be excluded, but, of course, each case must be treated upon its individual merits with regard to quantity and quality of the rays administered for each dose; there is also a fairly wide range in the number of doses required, some tonsils reacting more rapidly than others; the interval, too, between the sittings must be determined by result obtained, but that is a matter which comes by experience.

The *x*-ray treatment is by no means confined to children; some of the most satisfactory results are obtained in adults with chronic septic tonsils of many years' duration; and therein, in my opinion, lies the special value of *x*-ray treatment, because it is in these adult cases that there is special danger to the patient during the operation of tonsillectomy, and often a painful and prolonged period of after-care.—I am, etc.,

London, W., Feb. 1st. CHRISTOPHER KEMPSTER.

POISONING BY HYDROCYANIC ACID GAS.

SIR,—It was with great interest that I read the report of a death from hydrocyanic acid gas poisoning on page 152 of the *British Medical Journal* of January 18th, and a further reference to the same case in your issue of January 25th.

During the war I was engaged for some time on a plant manufacturing hydrocyanic acid gas. On two occasions I had the misfortune to be "gassed." The sensation was curious. It felt as if someone of Carnera physique, wearing outsize boxing gloves, had hit me on the face and chest, then oblivion. The treatment consisted of large doses of sal volatile, and then three men ran me up and down the parade ground for about fifteen minutes.

I am not surprised that traces of HCN were found in the lungs, as I could distinctly feel the taste in my mouth twenty-four hours after the accident, though I suffered no after-effects.—I am, etc.,

JOHN R. GRAHAM,
January 31st. Deputy Medical Officer of Health, Oldham.

THE NATURE OF "PSYCHOGENIC PAIN."

SIR,—Dr. Walshe's letter (January 18th, p. 126) raises an interesting question, which can hardly be passed without criticism.

Are there two kinds of pain having different "natures"? When we experience any sensation the end organs of sensory nerves are stimulated and nerve impulses are carried to central neurone groups. Whatever these neurone groups are specialized for determines the nature of the sensation which arises in consciousness. These sensations arise in what is the domain of the psyche; they are psychical, but their origin is physiogenic. After these central neurones have been stimulated on one or more occasions, and have become associated with other groups, it is possible to rouse the memory of such stimulations in thought (psychogenically) without again experiencing a fresh sensation from the end organs (physiogenically).

When one recalls a sensation it is usually supposed that the same central nerve elements are concerned as were stimulated when the original sensation was experienced. When we think of a sensation, say of "red," we are raising in consciousness the previous sensations of "red." We produce psychogenically what was orginally physiogenic. We may, of course, only *think* about "red," as Dr. Walshe says we do about pain, but we do more than that; we recall what "red" appears to be. The difference in normal individuals between recalling a sensation and actually experiencing it is probably one of degree only; some can recall past sensations so vividly that they may have nearly the same intensity as a new experience. In abnormal states of the brain we see analogous conditions. In fevers, alcoholic poisoning, etc., the patient may raise in memory scenes so vivid, and combine them in such a way, that they become hallucinations—that is, the scenes and events are, in the consciousness of the patient, appearing and taking place before his eyes.

Pain differs very little from other sensations as regards the points I have referred to. Happily it is perhaps more difficult for normal individuals to recall pain in its intensity than to recall many other sensations. To my mind there is no doubt that in many persons, and especially those suffering from some functional neuroses, sensations of pain can arise and can be intensified psychogenically. They do not just think *about* pain, they think pain—that is, the pain is raised psychogenically. In physiological terms the neurone patterns concerned in the pain are stimulated by the neurone groups or patterns concerned in the thought.

One can, in an analogous way, explain the pains raised and cured by suggestion, or the disappearance of pain when the patient reaches the dentist's door. I see no reason why the pain which has a psychogenic origin should be different in "nature" from the pain having a physiogenic origin, any more than the colour red which we think of should be of a different "nature" from the colour red which we see before us.—I am, etc.,

WILLIAM ELDER, M.D.
Leith, Jan. 23rd.

AN OPTICAL ILLUSION.

SIR,—The following is possibly the most remarkable optical illusion that has yet been discovered, and very few fail to see it with ease.

Take a piece of black cardboard eight inches square, and place it on a wallpaper with a coloured pattern. The light in the room should not be too bright, but the experiment can be done easily in the daylight of the present time. The cardboard should be looked at with one eye at a distance of six feet, the eye being kept as immovable as possible. It will then be noticed that portions of the colours of the wallpaper will appear to detach themselves from the wallpaper and move with a slow spiral motion into the black area. This will go on until the whole black area has completely disappeared, the surface being covered with a mixture of colours similar to those on the wallpaper.

If a Persian carpet be used for the purpose of the experiment the area will be covered with a mixture of the colours of the carpet. If the background is of a uniform colour the black area will be covered by that colour. It may even make another colour disappear. For example, if a piece of red paper an inch and a half square is placed on a piece of yellow-green cardboard, the yellow-green will appear to invade the red until only a yellow-green surface is seen. If any difficulty is experienced the experiment should be tried in a dimmer light.

This experiment was deduced from my theory of vision—namely, that the cones of the retina are the percipient elements and the rods of the retina are the nervous elements which sensitize by means of the visual purple the liquid surrounding the cones, and are not themselves percipient elements. The central portion of the retina, the fovea, corresponding to the area of most acute vision, contains only cones, and therefore is sensitized from the periphery, there being a steady flow of sensitized liquid into this area.—I am, etc.,

Board of Trade, S.W., Jan. 22nd. F. W. EDRIDGE-GREEN.

Obituary.

DR. PHILIP HEDGELAND ROSS, who died last year while on a visit to England, was the first director of laboratories in the British East African Protectorate. He was born in New Zealand in 1876, and received his medical education at the University of Otago and at St. Bartholomew's Hospital. He obtained the diplomas M.R.C.S., L.R.C.P. in 1900, and the D.P.H.Cambridge two years later. In 1903 he was appointed to the East African Medical Service, and subsequently became Government bacteriologist to the East African and Uganda Protectorates, where he rendered most valuable services in combating epidemic diseases such as plague, and in research work relating to the transmission of trypanosomiasis and African relapsing fever. In March, 1916, he became honorary adviser to the Director of Medical Services in East Africa, and at Nairobi reduced the death rate from bacterial dysentery by means of a carbolized polyvalent vaccine which he prepared. Owing to failing health he was invalided out of the East African Service and returned to New Zealand in 1919. He published a large number of articles in various medical journals relating especially to vaccine therapy and tropical diseases. Dr. Ross was a member of the British Medical Association. He leaves a widow and one son.

DR. JOHN HOWIE SMITH, who died on January 8th, was born in 1857, and received his medical education in Edinburgh, where he graduated M.B., C.M. in 1888. He had practised in Stockport for more than forty years, holding the appointments of medical officer to the Union Workhouse and Stepping Hill Poor Law Hospital, district medical officer and public vaccinator, and medical officer to the Cottage Homes. He had completed the full term of twenty-five years as an honorary surgeon to the Stockport Infirmary. J. T. B. writes: Dr. Smith possessed ability, wide experience, and sound judgement, and was always ready and willing to advise or assist a colleague. He was a man of the highest professional integrity, and was deservedly one of the most popular and most highly respected members of the medical profession in the district. He took a great interest in all kinds of outdoor sport, and in his younger days he was a footballer, and latterly a golfer, of no mean ability. Dr. Smith will be affectionately remembered by a large circle of patients and friends.

We regret to announce the death, on January 1st, in Cairo, of Dr. C. FLOYD HAVILAND, superintendent of the Manhattan State Hospital, Ward's Island, New York. Dr. Haviland had a distinguished career in psychiatry. He was formerly State Commissioner in Mental Hygiene, and in 1926 president of the American Psychiatric Association. The news of his unexpected death at the age of 54 came as a shock to his American colleagues, and to a still greater number of other friends and admirers.

The death occurred, on January 22nd, of Dr. JOHN CROMIE, Auchencairn, Castle Douglas. Born in the North of Ireland in 1855, he studied medicine at Belfast and Newcastle-on-Tyne, and obtained the diplomas L.R.C.P., L.R.C.S. Edinburgh in 1885. For a time he acted as assistant to the late Dr. Trotter at Blyth, Northumberland, and afterwards conducted an extensive practice at Auchencairn. He took a great interest in the public affairs of the Stewartry, serving for many years on the education authority for Kirkcudbrightshire, of which he was vice-chairman at the time of his death. He had recently been elected to the Stewartry County Council; he was chairman of the National Health Insurance Committee, secretary to the local branch of the British Red Cross Society, and a Justice of the Peace for the county. He rendered valuable services to the British Medical Association, being secretary of the Dumfries and Galloway Division from 1923 to 1928, and chairman from May, 1929. He was a member of the Scottish Committee in 1924–25.

DR. WILLIAM EIDINOW died from heart failure at the early age of 34, on January 23rd, at Hampstead. After studying medicine at the London Hospital he obtained the diplomas of M.R.C.S., L.R.C.P. in 1917, and held the appointments of emergency officer and surgical clinical assistant. He served during the war from 1917 to 1920 as captain in the R.A.M.C. in France, Italy, and Montenegro, and was awarded the Italian silver medal for valour for conspicuous bravery in the field. After demobilization he took up a busy practice among the working classes of Islington, where he was much esteemed and appreciated by all who knew him. Much sympathy is felt for his relations in their great loss.

News has reached this country of the death of Dr. DARWIN MILLS KEITH, who practised for more than thirty-five years in Rockford, Illinois. Darwin Keith was born in 1855, and his early education was received in Ohio and New York; he later attended the Universities of Michigan and Columbia, and subsequently studied at St. Bartholomew's Hospital, London, and the University of Brussels. He obtained the diplomas M.R.C.S., L.R.C.P. in 1906, and the M.D.Brux. degree. After graduation, and while he was practising in Rockford, he frequently engaged in post-graduate work in London, Vienna, Paris, Brussels, and Copenhagen, specializing in diseases of the eye, ear, nose, and throat. At one time he was clinical assistant in the throat department at St. Bartholomew's Hospital. Dr. Keith was a Fellow of the American College of Surgeons, a member of the American Academy of Oto-laryngology and Ophthalmology, and of the American Medical Association. During the war he served with the American Forces with the rank of captain, and subsequently held a commission as major in the Medical Reserve Corps until his death. He was head of the medical staff of the Rockford Eye, Ear, Nose and Throat Hospital. He had many friends in England and on the Continent. He leaves a widow and one daughter.

The following well-known foreign medical men have recently died: Professor DANIEL SABOLOTNIJ, president of the Ukrainian Academy of Sciences, and one of the most eminent Russian bacteriologists; Dr. FRANK STADLER, formerly director of the Austrian Public Health Office,

aged 68; Geh. Med. Rat Dr. WALTER OERTEL, who took an active part in the campaign against tuberculosis; Dr. D. IONESCO, professor of clinical medicine at Bucarest, well known for his work on angina pectoris, aged 53; Dr. VIALLETON, professor of histology and embryology at Montpellier; Dr. N. VAN RIJNBERK, an eminent Amsterdam ophthalmologist, aged 84; Dr. RÓMULO H. CHIAFFONI, a Buenos Aires neurologist; Dr. HARRY MONROE MCCLANAHAN, emeritus professor of paediatrics, University of Nebraska College of Medicine, aged 72; Dr. VICTOR CLARENCE VAUGHAN, formerly dean of the medical school and professor of hygiene at Michigan University; Dr. PAUL HEIM, professor of children's diseases at Budapest, and one of the editors of *Archiv für Kinderheilkunde*; Dr. CARLOS SEIDL, professor of public health at Rio de Janeiro, and formerly director of public health in Brazil; and Dr. ANTONIO JOSÉ D'ALMEIDA, formerly President of the Republic of Portugal.

Universities and Colleges.

UNIVERSITY OF LONDON.

UNIVERSITY COLLEGE.

A COURSE of six public lectures on antiseptics will be given in the department of pharmacology, University College, Gower Street, W.C.1, by Mr. H. R. Ing, M.A., D.Phil., on Mondays and Thursdays at 5.15 p.m., commencing on February 13th. The lectures are open, without fee, to students of the University and others interested in the subject.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary comitia of the Royal College of Physicians of London was held on January 30th, when Sir John Rose Bradford, the President, was in the chair.

Mackenzie Mackinnon Research Fellowship.

The President announced that the Mackenzie Mackinnon Research Committee had elected Dr. G. Scott Williamson and Dr. Thomas Cecil Hunt to Mackenzie Mackinnon Research Fellowships.

Appointment of Representatives.

Sir John Rose Bradford was appointed to represent the College at the ceremonies of inauguration of the University buildings presented by the C. R. B. Educational Foundation and of the School of Medicine presented by the Rockefeller Foundation, to be held at Brussels in June next. Dr. S. A. Monckton Copeman was appointed delegate to the congress of the Royal Sanitary Institute to be held at Margate in June next.

Diploma in Gynaecology and Obstetrics.

The College adopted the regulations drawn up by the Committee of Management of the Conjoint Board for the institution of a Diploma in Gynaecology and Obstetrics.

Anaesthetics in Confinements.

In response to a request from the Ministry of Health for the views of the College on the use of anaesthetics in confinements and on the subject of maternal mortality and morbidity, reports on these subjects were considered and adopted for presentation to the Ministry.

Membership.

Dr. J. W. Springthorpe, who resigned his Membership in 1919, was re-elected a Member of the College.

The following candidates, having satisfied the Censors' Board, were admitted Members of the College:

John Bevan-Jones, M.D.Lond., Arnold Clark, L.R.C.P., Reginald Charles Clifford, D.S.O., M.C., L.R.C.P., Cuthbert Leslie Cope, M.B.Oxf., Gordon Cripwell Dewes, L.R.C.P., Hugh Alexander Dunlop, M.B.Lond., Florence Mary Edmonds, M.D.Lond., John St. Clair Elkington, M.B.Camb., Leonard Findlay, M.D.Glas., Saradindu Mohan Ghosal, M.B.Calcutta, Robert John Gittins, M.D.Birm., Leo Barclay Heath, M.B.Sydney, Albert Remington Hobbs, M.D.Brux., L.R.C.P., Benjamin Brian Hosford, M.D.Lond., Harold Parnell Jameson, M.D.Birm., Pandipeddi Kutumbiah, M.B.Madras, Sydney Charles Lewson, L.R.C.P., Thomas Mortimer Ling, M.B.Oxf., Gunvantrai Bhagwatidas Mankad, M.D.Bombay, Hugh Leslie Marriott, M.B.Lond., Stanley Melville, M.D.Brux., Ralph Henry Morley, M.B.Lond., Nathoobhai Dayalji Patel, M.D.Lond., William Gilchrist Patterson, M.D.Edin., Walter Maurice Ramsden, M.D.Lond., Sris Chandra Ray, M.B.Calcutta, Brian Fitzgerald Russell, M.D.Lond., John Howard Simmons, M.B.Lond., John Gordon Thomson, M.B.Edin., Gilbert Reynolds Troup, M.B.Melb., George Jasper Wherrett, M.D.Manitoba, John Wolstencroft, L.R.C.P.

Licences.

Licences were granted to the following candidates (including 17 women), who had passed the Final Examination in medicine, surgery, and midwifery of the Conjoint Board in England:

W. Addey, S. Ahmad, H. F. Apthorpe Webb, P. B. Ascroft, F. I. Ashton, J. C. Banerjea, A. Barber, F. R. Beetham, J. E. L. Bendor-Samuel, K. C. Bhattacharyya, J. G. Bowen, B. R. Bramwell, W. J. Burgess, A. C. Byles, W. H. N. Cant, A. Caplan, C. L. Carter, *†Rosa E. Chamings, F. W. Chippindale, D. O. Clark, †B. S. Cornell, D. W. C. Cox, H. J. Croot, J. E. Curnock, R. E. S. Dalliwall, H. L. G. Davies, E. Dikshitulu, *C. de M. Dorey, †A. N. Duggal, C. M. Duncan, F. B. P. Evans, H. R. Ferguson, *Doreen P. Firmin, R. H. Franklin, J. F. Galpine, A. J. Gibbs, E. J. Goldsmith, *Rebecca Goldstein, R. T. S. Goodchild, D. R. Goodfellow, R. K. Goyal, *Charlotte Gray, †A. H. Gurney, B. Halfpenny, R. S. Harrison, J. E. McC. Harrisson, W. Heard, *Aureval Heaton, *Katherine M. Heberlet, L. Hershfield, P. Y. Hicks, R. S. Hodge, H. B. Hough, *Eugenie C. Illingworth, H. B. Jackson, W. D. G. James, J. L. Jekyll, E. K. Jones, G. L. Jones, H. J. Knight, E. O. Lakey, G. F. Langley, L. J. Lannaman, R. O. Lee, A. Lister, E. L. Littler, W. E. B. Lloyd, V. J. Lopez, P. A. T. Lowden, F. D. MacCarthy, *Laura H. Macfarlane, H. A. McGregor, G. K. McKee, F. M. Macleod, J. S MacVine, †E. Marks, I. W. Matheson, F. C. Mayo, B. R. Medlycott, S. J. Mehta, P. D. Mottet, G. na-Ranong, L. B. Neel, A. H. Nelson, †H. P. Nelson, J. E. Newton, A. P. M. Page, H. N. Palmer, R. A. H. Pearce, A. Phillips, W. Phillips, L. D. Pringle, *Ruth Pumphrey, *†Alison J. Rae, D. S. Raju, H. Ramsay, P. V. Reading, J. G. Reid, B. C. Rennie, *Colleen Rice, J. F. Riches, E. H. Rink, S. L. Robert, B. P. Robinson, *(Mrs.) Alice I. Roughton, H. K. Said, J. F. Sandow, N. D. Sane, S. Segalov, R. L. Sethi, D. P. Settna, G. C. Sheldon, *Helana Sidarous, H. Silverstein, *Margaret Skelton, L. A. H. Snowball, R. G. Sowter, H. H. L. Spitz, R. T. Squires, R. Stanley, A. E. Stevens, E. N. Stevens, N. Stevens, F. H. Stevenson, *Ada M. W. Stewart, T. S. Stone, S. Le R. Switzer, P. H. Taylor, D. M. Thomas, V. Thorne Thorne, D. P. Turner, S. C. Wake, *Doris E. C. Walker, E. M. Ward, J. N. Warren, A. J. Whitaker, A. J. White, G. W. Whittall, R. C. Williams, E. R. Willis, H. M. Yardley, B. Yuill.

* Women Candidates.
† M.R.C.S. previously granted.

Diplomas.

The following diplomas were conferred jointly with the Royal College of Surgeons:

PUBLIC HEALTH.—D. D. Anderson, S. Atta Ullah, B. N. V. Bailey, M. K. Biswas, Gwenddolen J. Brooke, I. Caley, H. D. Chalke, Victoria M. Crosse, Jane G. E. F. Cummins, N. C. Dasgupta, A. N. Duggal, J. B. Ellison, R. F. Fidler, S. J. Firth, Annie M. Gamble, T. S. Gill, S. A. U. Haque, L. W. Hearn, G. H. Hogben, J. D. Hourihane, D. F. Johnstone, M. L. Kalra, Y. M. Khan, R. A. V. Lewys-Lloyd, E. A. Lumley, R. M. Macfarlane, M. Mitman, S. K. Mitra, P. McG. Moffatt, C. G. MacM. Nicol, P. Pattabhiramaiya, J. R. Pierre, S. L. Rikhye, Dora F. M. Rose, A. C. Sinclair, E. R. Smithard, R. C. Suri, H. W. Tilling, P. M. Wagle, Ethel M. Weir.

PSYCHOLOGICAL MEDICINE.—D. I. Cameron, J. Carse, H. A. Cooper, R. T. Hay, J. F. MacMahon, J. D. W. Pearce, Margaret A. Quine, A. Shepherd, J. G. T. Thomas, G. S. Wilson, H. L. Wilson.

LARYNGOLOGY AND OTOLOGY.—W. M. Brown, S. Debono, D. N. Ghosh, G. B. Girgis, S. K. Jatar, V. Kathirgamatamby, J. G. Kingsbury, F. E. Littlewood, M. MacGregor, N. M. Macindoe, H. G. Mitchell, J. H. Otty, M. D. Patel, D. R. Paterson, P. Pattabhiramaiya, T. Prasad, D. H. Rao, S. L. Vella.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week discussed the Consolidated Fund Bill and went into committee on the Coal Mines Bill. The House differed with the House of Lords about the period for which the Unemployed Insurance Bill is to be valid. The Lords proposed one year, but the Government suggested three. A Slaughter of Animals Bill was down for discussion in the Commons on February 7th. In the House of Lords, on February 4th, the Road Traffic Bill was read a third time.

The second reading of the Mental Treatment Bill was put down for February 3rd in the House of Commons, but was not reached, and there appeared to be no likelihood of the Government moving it later in the week.

The Parliamentary Medical Committee's conference with representatives of the British Medical Association will not be held on February 11th, as at first arranged, but the committee will that day meet representatives of nursing organizations to hear statements about the registration of nurses and the work of the General Nursing Council. Mr. Remer's bill on the registration of mental nurses is postponed pending this month's meeting of the Royal Medico-Psychological Association.

At its meeting, on January 28th, the Parliamentary Medical Committee agreed unanimously on the desirability of Government inquiry into the general conditions of deaf and dumb persons and of those deafened by disease or accident. The committee arranged that Mr. Somerville Hastings should write to the Minister of Health on the subject. The committee discussed the position under the new Poor Law system of doctors who are employed by an authority and are also members of that authority. Representatives of the British Medical Association are to confer with the committee on this issue. The committee also talked about the General Nursing Council and the retention on the list of nurses of the names of nurses convicted of misdemeanours. In the discussion with Sir Hubert Bond which followed, members of the committee asked many questions concerning the Mental Treatment Bill. Discussion turned on two points: the first was whether the supervision of voluntary boarders by the Board of Control might prevent people seeking early treatment; the second was whether the bill would give more powers to the Board of Control at the expense of the Ministry of Health. The Medical Committee took no decisions on these questions. It did not arrange to see the Minister of Health concerning them, nor did it suggest amendments to the bill.

The Conservative Health and Housing Committee also considered the Mental Treatment Bill, Dr. Fremantle presiding.

It was arranged that Sir Kingsley Wood and Sir Boyd Merriman should speak on the second reading. The Conservative party will not divide against this, but will raise legal points in committee.

Psittacosis.

Mr. Greenwood was asked by Mr. P. J. Hannon, on January 30th, whether his attention had been called to a statement by the medical officer of health for Birmingham that several cases of psittacosis, definitely caused by infection from parrots, had occurred in Birmingham within the past two years, and that out of eleven cases four had proved fatal. Mr. Greenwood replied that this medical officer had made no public statement. Investigations into the disease were still in progress. Dr. Vernon Davies asked whether Mr. Greenwood knew that both Germany and the United States of America had prohibited the importation of parrots. No answer was returned.

Children on Canal Boats.

In the House of Commons, on January 31st, Mr. Harry Gosling moved the second reading of the Canal Boats Bill, the purpose of which is to prohibit, under penalty, the residence of children under 15 years of age in canal boats. He said the measure was strongly supported by the National Society for the Prevention of Cruelty to Children, which had found no adequate way to prevent child labour and to provide for education save by removal of the children from the boats. He said that at Paddington sanitary inspectors allowed house refuse to be shot into barges where there were women, and perhaps babies, in the cabins. These women and children were associated with the rubbish during a seventeen-mile journey to the dump, because the women were useful in the manipulation of the boats.

Sir Herbert Nield quoted from the report for 1928 made to the Ministry of Health by Mr. Llewellyn, that department's inspector under the Canal Boats Acts. The inspector reported that infectious disease had been very rare on the boats, and cases of infringement of the regulations seemed fewer each year. The medical officer of health for Birmingham reported that the general health of canal boat people was good; no case of illness was discovered among 3,522 persons who occupied the boats examined by him during the year.

Mr. Beaumont pointed out that Mr. Neville Chamberlain's Committee on Canals said it could not assert that the health of the canal boat children was worse than those living in crowded cities. The same committee found that the children did not appear so liable to infectious diseases as those on shore, but it had recommended that they should not live on the barges during the school terms.

Mr. West quoted Mr. Llewellyn's report for 1926, which said there was no need for any person other than the steersman on boats carrying street refuse and other unpleasant substances.

Miss Susan Lawrence said the Public Cleansing Commission reported that children should not be allowed to live on barges loaded with refuse. When these barges reached their destinations the children got out and played on the dumps.

Sir Donald Maclean announced that the friends of the bill were willing to limit its penal provisions to those who kept children of school age on canal boats. The promoters of the bill were prepared to say that children should be taken from the refuse boats and housed ashore.

Mr. Somerville Hastings contended that, on grounds of health and well-being, a good case could be made out for the exclusion of all children from barges. The inspector of canal boats wrote, in 1926, that, so far as narrow boats were concerned, there was no decrease in the numbers of women and children, and the personal conditions on these boats left much to be desired. Mr. Hastings declared that on a wet and windy night it was practically impossible to keep the barge cabins ventilated without water falling on the beds. Bargees as a class suffered much from respiratory diseases and pneumonia, and the conditions of the life were equally bad for children. Where children were crowded in illness they did badly.

Dr. Fremantle said that, from the point of view of health, he remained unconvinced even after hearing Mr. Hastings. The bill concerned 3,000 children at most. The life of the people on the barges was chiefly outside the cabins, to which they resorted only to sleep—hardly ever for food. People living an open-air life did not find rain a serious inconvenience. He found no evidence in the records of any damage to health. The medical officer of health for Birmingham said nothing on the subject of health. There was less infection for these children in these close, confined cabins, because it could only come from their own families. Would members who supported this bill bring in another bill forcibly to remove children from tuberculous families?

The Duchess of Atholl reminded the House that the Chamberlain report pointed out how unsuited a cabin 9 ft. long and 6½ ft. wide was for a woman's confinement. Yet 1,500 children had been born in these boats in the last nine or ten years. It was not always easy to get medical attention for the woman. There was danger of drowning and of death by fire for young children on a canal boat. Children were employed in steering, in opening locks, and even in hauling boats at some of the locks. The great mass of the boatmen on the canals had their families on shore, and the problem affected fewer than 500 families.

The bill was read a second time by 189 to 64, and by 153 to 44 was committed to a standing committee.

Leprosy in India.

In a reply to Major Graham Pole, on January 31st, Mr. Wedgwood Benn said the number of persons in India returned as lepers at the census of 1921, the last official figure available, was 102,513, but the actual number was probably considerably in excess of that returned. There were about forty institutions with about 8,000 inmates. The Indian Lepers Act provided that the compulsory segregation of pauper lepers might be enforced in areas to which the Act was made applicable by the Provincial Governments, but the number of compulsorily segregated lepers was at present inconsiderable. The number of lepers segregated in their homes and the total amount contributed from Indian revenues for the extinction of the disease could not be stated. Mr. Benn added that the following note had been supplied by Sir Leonard Rogers:

"Any attempt at general compulsory segregation is impossible on account of the prohibitive cost, and now that the improved treatment enables most early, but few advanced, cases to be cleared up, compulsion does more harm than good by causing the early, largely uninfective, cases to be hidden until they have become advanced, infectious, and incurable. At the present time about one hundred doctors are being trained in the modern treatment at the Calcutta School of Tropical Medicine, and thousands of lepers are now being treated by them all over India at clinics, with far greater effect in reducing leprosy than attempts at segregation, which have invariably proved very expensive failures in all tropical countries where they have been tried."

Medicine in India.

Mr. Benn told Major Pole, on February 3rd, that the Government of India was anxious to introduce the necessary legislation to establish an All-India Medical Council at the earliest possible date. It was, however, doubtful whether that would be possible during the present session of the Indian Legislature.

Dr. Fremantle asked Mr. Benn to do his utmost to impress on the Government of India that, unless there was reciprocity between the two Governments and the two Medical Councils, Indian practitioners would be debarred from the possibility of practice throughout the rest of the British Empire, and that it was therefore extremely important to keep the General Medical Council and the Medical Council in India working together. Mr. Benn replied that the Government of India was fully aware of the facts mentioned by Dr. Fremantle.

Mr. Benn, on February 3rd, informed Major G. Pole that the Government of India had decided, after full consideration, to adhere to the proposal to locate the Central Research Institute at Dehra Dun. Their reasons were explained in a debate in the Council of State on September 17th. In his question Major Pole alleged that there was a scarcity of clinical facilities at Dehra Dun.

Diphtheria Death Rate in Certain Countries.

On February 3rd Mr. Greenwood, in reply to Mr. Freeman, circulated the following statement in tabular form, showing the death rate from diphtheria per 10,000 of the population in certain countries for the years 1920 to 1928.

Country.	1920.	1921	1922.	1923.	1924.	1925.	1926.	1927.	1928.
England and Wales ..	1.5	1.3	1.1	0.7	0.6	0.7	0.8	0.7	0.8
Scotland	1.5	1.3	1.1	1.0	0.9	1.0	1.0	1.0	1.0
United States of America*	1.5	1.8	1.5	1.2	1.0	0.8	0.8	0.8	0.7
Germany† (including deaths from croup)	1.3	1.0	0.7	0.7	0.6	0.5	M. 0.4 F. 0.3	M. 0.5 F. 0.4	Not available
Canada‡	Not available	2.0	1.6	1.3	1.3	0.9	0.8	1.1	1.0

M. = Male. F. = Female.

* Rates for years 1920-26 are taken from *Mortality Statistics*, 1926, and relate to registration area of 1920. Rates for years 1927 and 1928 are taken from Public Health Report No. 51, 1929, and relate to registration area of 1922.

† The rates given refer to deaths from diphtheria and from croup, and in respect of the years 1920-25 are taken from *Die Bewegung der Bevölkerung im Jahre 1924*, and relate to the Deutsches Reich; the rates for 1926 and 1927 are taken from *Statistisches Jahrbuch für das Deutsche Reich*, 1929, and are exclusive of the Saargebiet.

‡ The rates given for the years 1921-26 are taken from *Vital Statistics*, 1926, and relate to registration area as of 1921—that is, excluding Provinces of Quebec, Yukon, and North-West Territory; the figures for 1927 and 1928 are taken from *Preliminary Vital Statistics*, 1927 and 1928, and relate to registration area as above, but including Province of Quebec.

Silicosis.

On January 30th Mr. CLYNES told Mr. Cecil Wilson that he had generally approved the medical arrangements recommended by the departmental committee on the diagnosis of silicosis, and a bill to give effect to them was in preparation. He had already acted on the committee's recommendation for further research by arranging with the Medical Research Council for appointment of an expert committee. Mr. Clynes also informed Mr. Morley, on the same day, that the Medical Research Council, at his request, were setting up a committee to institute and co-ordinate research into the subject of scheduling fibrosis of the lungs under the Workmen's Compensation Act. This committee was practically complete and would be appointed shortly. In reply to Mr. Lambert, Mr. Clynes said he had not received any protests from local authorities against the inclusion in the Sandstone Industry (Silicosis) Scheme, 1929, of workmen engaged in the open-air quarrying of stone for road work. He did not propose to modify the statutory rules to exclude such workmen. Cases of silicosis found among quarrymen and others engaged in manipulating sandstone proved that, notwithstanding that the industry was an open-air one, the risk was by no means slight, and there was no evidence of any immunity among those so employed.

Tuberculosis in the Services.—Mr. SHAW told Dr. Vernon Davies, on January 29th, that 165 men were discharged from the Regular Army in 1927 for pulmonary tuberculosis. Of these cases 57 were accepted as attributable, and awarded pensions, while 77 were awarded non-attributable gratuities. To 31 neither gratuities nor pensions were granted. In 1928 the number discharged for the same reason was 184, of whom 58 were accepted as attributable and received pensions, 77 were awarded non-attributable gratuities, and 23 received neither. Mr. MONTAGUE, answering a question on the same day from Dr. Vernon Davies about pulmonary tuberculosis in the Royal Air Force, said that in 1928 pensions were granted to 5 post-war cases and refused to 13 non-attributable cases. In 1929 pensions were granted to one great-war case and 10 post-war cases, but were refused to 15 cases.

Notes in Brief.

Statutory declarations of conscientious objection to vaccination in England and Wales were 277,169 in the year 1928. The figure for 1929 was not available on January 30th.

Mr. Greenwood does not consider it necessary in present circumstances to introduce legislation making it obligatory upon a medical practitioner to view a body after death before giving a death certificate.

Of 52,727 blind persons registered in England and Wales on March 31st last, 37,563 are unemployable.

In the year ended March, 1929, 2,781,877 dog licences were issued in England and Wales, and 171,141 in Scotland. The total for Great Britain in that year was 2,953,018, against 1,978,440 in 1914.

On January 28th Mr. Greenwood said he could not give a definite date for legislation amending the Children Act, 1908, to make it compulsory upon intending foster parents to apply to the local authority concerned for registration of their premises for the reception of infants before reception.

Mr. Buxton is considering a scheme for developing research into animal diseases. He proposes to include swine fever in the expanded programme of work.

Fifty-five local authorities have desired the Ministry of Health to consider the question of allowing municipalities to provide facilities for reliable and private information concerning birth control.

The Services.

ARMY GOLF MEETING, 1930.

THE annual meeting of the Army Golfing Society will be held on the links of the Prestwick Golf Club at Prestwick, Ayrshire, on Tuesday, April 29th, and following days.

The officers of the Royal Army Medical Corps have always taken a great interest in this society, and the present honorary secretary and treasurer is Major T. J. Mitchell, D.S.O., R.A.M.C. (12, Moray Place, Edinburgh). The present Director-General A.M.S. captained the following R.A.M.C. team, which won the Army Golf Challenge Cup at St. Andrews four years ago: Lieut.-General H. B. Fawcus, Major T. J. Mitchell, Major D. C. Monro, and Major P. E. D. Pank. General Fawcus and Major Mitchell have also won the chief handicap cups, and two other officers of the R.A.M.C.—Major F. Chandler and Major E. A. Strachan—won the foursome competition. Intending competitors at this year's Army Golf Meeting should send their entries to Major Mitchell not later than Monday, March 31st.

DEATH IN THE SERVICES.

Lieut.-Colonel Charles Alfred Stone, R.A.M.C. (ret.), died at Frinton-on-Sea on January 20th, aged 63. He was born at Bermuda on June 21st, 1866, was educated at Queen's College, Cork, and graduated as M.B. and Ch.B. in the Royal University, Ireland, in 1889. Entering the army as surgeon on February 1st, 1890, he attained the rank of lieutenant-colonel on May 21st, 1912, and retired, on reaching the age of 55, on June 21st, 1921. He served throughout the South African war of 1899–1902, when he took part in the relief of Mafeking, in operations in Rhodesia in 1899–1900, and in Cape Colony in 1900–2, and received the Queen's and King's medals, with two clasps each.

Medical News.

MEMBERS of the Panel Conference and many other readers will be interested to hear that Dr. Charles W. Graham of Silloth has been invited by the B.B.C. to broadcast vocally from Glasgow on Tuesday, February 11th, from 5 to 5.15 p.m.

A DINNER of the London Jewish Hospital Medical Society, in honour of Professor Neumann of Vienna, will be held on Sunday, February 9th, at 7.15 p.m. for 8, at the First Avenue Hotel, High Holborn. Application for tickets (price 6s. 6d.) should be made to Mr. M. Sourasky, 59, Queen Anne Street, W.1.

THE annual general meeting of the Medical Officers of Schools Association will be held at 11, Chandos Street, Cavendish Square, W.1, on Friday, February 21st, at 5 p.m.; tea at 4.30. Dr. G. E. Friend will deliver the presidential address, entitled "Some notes on the value of clinical, dietetic, and physical records in public schools" (illustrated by lantern slides and diagrams).

A PROVINCIAL meeting of the Maternity and Child Welfare Group of the Society of Medical Officers of Health will be held at Bristol on February 20th and the two following days. Papers will be read on nasal hygiene in infants, the difficult child, respiratory disorders of infancy, congenital and postural deformities in children, and eye conditions in the pre-school child. Visits will be paid to various medical institutions in the neighbourhood, and excursions will be arranged. Further information may be obtained from Miss Grace Calver, 1, Holly Terrace, Highgate, N.6.

AT the meeting of the Royal Sanitary Institute on February 15th, in the Town Hall, Ipswich, discussions will take place on new methods of sewage disposal in Ipswich, and on meat inspection. The chair will be taken at 10.30 a.m. by Dr. Charles Porter.

THE eighteenth annual series of Chadwick Public Lectures will begin on Thursday, February 13th, when Dr. B. Blacklock, recently Director of the Alfred Lewis Jones Research Laboratory in Sierra Leone, and now professor of parasitology in the Liverpool School of Tropical Medicine, will lecture on "Health in West Africa." Dr. Blacklock will show pictures of the country and of methods of combating the diseases formerly so devastating. Sir James Crichton-Browne will preside. Admission is free. Particulars of future Chadwick Lectures may be obtained from the Secretary, Mrs. Aubrey Richardson, at the offices of the Trust, 204, Abbey House, Westminster.

A NEW post-graduate course at the National Hospital, Queen Square, W.C.1, began on February 3rd. It consists of out-patient clinics, clinical lectures and demonstrations, lectures on the pathology, anatomy, and physiology of the nervous system, and clinical demonstrations on methods of examination. The fee for the course, including pathology demonstrations, is £6 6s.; for those holding perpetual tickets or clinical clerks, £4 4s. Full particulars can be obtained from the Dean of the Medical School.

THE Fellowship of Medicine announces that Dr. M. B. Ray will lecture on the role of hydrology in medical practice on Tuesday, February 11th, at 4 p.m., in the lecture room of the Medical Society, 11, Chandos Street, Cavendish Square. There will be a clinical demonstration by Mr. Cecil Rowntree at the Cancer Hospital, Fulham Road, at 2.15 p.m., on February 13th. At the Paddington Green Children's Hospital, on February 14th, at 4 p.m., Dr. D. W. Winnicott will give a lecture-demonstration on anxiety in children. This lecture and the demonstrations are free to medical practitioners. A course in gynaecology at the Chelsea Hospital for Women, from Monday, February 10th to 21st, will consist of lectures and demonstrations in the operating theatre. A course of eight clinical demonstrations will be given at the Hospital for Tropical Medicine, from February 11th to March 6th, on Tuesday and Thursday afternoons, at 2 o'clock. A four weeks' course in dermatology at St. John's Hospital, Leicester Square, from February 17th to March 15th, will comprise clinical work every afternoon and lectures twice weekly; instruction in pathology can also be arranged. From February 24th to March 8th a course in the diseases of children will be held at the Children's Clinic and other hospitals, occupying the afternoons and some mornings. An afternoon course in the diagnosis and treatment of diseases of the eye will be given at the Royal Eye Hospital from February 24th to March 8th. In March there will be courses in diseases of the chest at the Brompton Hospital, neurology at the West-End (Nerve) Hospital, and venereal diseases at the Lock Hospital. A special two weeks' course of lectures and demonstrations will be held at the Royal National Orthopaedic Hospital, Great Portland Street, from March 10th to 22nd. Those taking the course will have access to operations and the practice of the hospital. Application

should be made to the secretary of the hospital or to the secretary of the Fellowship of Medicine, 1, Wimpole Street, London, W.1, from whom may be obtained syllabuses of the various courses.

THE Child-Study Society, London, has arranged the following lectures and discussions to be held on Thursdays at 6 p.m. at the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.: February 20th, "Homeless children," Miss Muriel A. Payne; March 13th, "The new prospect for our adolescents," Mr. R. A. Raven; April 10th, "Parent education: the home and the school," Dr. Ralph H. Crowley; senior medical officer, Board of Education; May 8th, "The re-education of the difficult child," Mr. T. J. Faithfull.

A SERIES of lecture-discussions on mental health and the child will be delivered under the auspices of the National Council for Mental Hygiene in the lecture room of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1, on Wednesdays, at 5 p.m., from February 26th to April 2nd. Dr. Hugh Crichton-Miller will open the course with a lecture on the new psychology and the parent, and on March 5th Dr. Letitia Fairfield will speak on the subject of the child and the teacher. Mr. W. Clarke Hall will give an address on the delinquent child, on March 22nd, and on the following Wednesday Dr. William Moodie will discuss the problem of the difficult child at home and at school. Mrs. Neville-Rolfe will speak on sex education on March 26th, and Dr. R. D. Gillespie will close the course, on April 2nd, with an address on choosing a career. Tickets, price 1s. 6d. for each lecture, or 7s. 6d. for the course, may be obtained from the secretary of the National Council for Mental Hygiene, 78, Chandos House, Palmer Street, S.W.1, or at the lecture room.

THE William Julius Mickle Fellowship, awarded annually to the graduate of the University of London "who has done most to advance medical art or science in the preceding five years," has been awarded to Dr. H. A. Harris, assistant professor of anatomy, University College, and assistant to the medical unit, University College Hospital.

THE committee of management of Queen Charlotte's Hospital has, on the recommendation of the medical staff, decided to appoint a paediatrician to the hospital, and Dr. Eric Pritchard has, at their invitation, accepted this office. It is understood that this appointment, which is allowed by the courtesy of the committee of management of the Infants Hospital, will not in any way conflict with Dr. Pritchard's work as medical director of that institution. Dr. J. Hartley Gibbens has been appointed assistant to Dr. Pritchard.

THE January issue of the *Journal of the Association of American Medical Colleges* appears in two parts. The first includes the address delivered by the president, Dr. Burton D. Myers, at the fortieth annual meeting of the association, held in New York last November, together with statistical accounts of the achievements of candidates for admission to various medical schools in the United States during recent years. There is also an article on State Boards and medical schools by the secretary for the Board of medical examiners in the University of New York, and one on the teaching of therapeutics. The second part—issued as a supplement—gives a list of fellowships and prizes available for medical graduate work offered by the medical schools of the United States and Canada. This periodical—which now appears six times a year—is published from 25, East Washington Street, Chicago, at 3 dollars a year; single copies, 75 cents.

WITH a view to reporting more widely the medical and surgical investigations in progress in South America a new journal, entitled *Revue Sud-Américaine de Médecine et de Chirurgie*, has now appeared, and will be published monthly in French in Paris. The first issue, dated January, 1930, contains original articles by medical practitioners in the Argentine, Bolivia, Brazil, and Chile, together with reviews of publications in South American countries, and summaries of the contents of various journals and bulletins. The *Revue* is published by Masson et Cie, 120, Boulevard St. Germain, Paris, and the stated price for an annual subscription of twelve copies is, in France and her colonies, 100 fr., and for other countries 120 fr., or 12 fr. for a single issue.

THE centenary of the birth of the Freiburg gynaecologist, Alfred Hegar, who was born on January 6th, 1830, and died on April 5th, 1914, has been commemorated by Professor Ernst Sonntag, his son, Professor Karl Hegar, and Professor Paul Diepgen of Freiburg in the issue of the *Deutsche medizinische Wochenschrift* for January 10th.

AN outstanding feature of the Malayan Medical Service list for October, 1929, is the high proportion of appointments above the time scale, of which there are no fewer than 57 as against 88 on the scale. The Service includes 17 women, who seem to enjoy the status of full establishment, as their names are not (like those of their fellows in West Africa) relegated to a separate list, which does not indicate any fixed scale of pay.

PROFESSOR K. F. WENKEBACH, who recently resigned his chair of clinical medicine at Vienna, has succeeded the late Professor Clemens Pirquet as president of the Austro-American Institute of Education in Vienna.

THE Department of Health for the Commonwealth of Australia has issued an epidemiological record of the Austral-Pacific Zone for the year 1928. This annual publication makes available a systematic record of the principal facts and occurrences of interest to medical men concerning numerous Pacific islands about which information is often difficult to obtain. It is published by authority of the Minister for Health by H. J. Green, Government Printer, Canberra.

A PARTY of doctors, conducted by Dr. Friedrich Barach, will leave Vienna on April 18th, on a visit to Spain, for the purpose of studying medical organization. The journey will be broken at Venice, San Remo, Mentone, Monte Carlo, and Nice. The party will visit Dr. Voronoff at Château Grimaldi, and then proceed to Barcelona and Madrid. Medical practitioners who wish to accompany the party are invited to apply for further information to Aerztliche Auslandsstudienreisen, Biberstrasse 11, Wien, I.

ALTHOUGH small-pox was less prevalent and not so virulent in the United States during the first six months of 1929 as in the corresponding periods of 1928 and 1927 three States had mortality rates of more than 1 per cent. No State reported cases in excess of 2,000, and no case was reported in the District of Columbia. The Province of Saskatchewan in Canada reported three deaths in the first half of 1929 among 65 cases, giving the relatively high case fatality of 4.62 per cent.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medisecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

LANOLINE AND THE GROWTH OF HAIR.

"SENEX" writes: I should be glad to have the opinions of some of your readers on the following: A good-looking, athletic young lady, aged 20, suffers from general dryness of the skin, especially on the face and neck. To improve her appearance she has been in the habit of frequently using lanoline. Both she and her mother are now worried about a growth of hair on her face, which they attribute to the lanoline. I should like to know: (1) does lanoline stimulate the growth of hair; (2) would a course of thyroid extract improve the dryness of the skin?

INTESTINAL FLATULENCE.

"FLATULENTISSIMO" would like to know if saxin, 1½ to 2 grains taken daily for about twenty years, would be at all likely to aggravate extreme intestinal flatulence. The patient suffers from pancreatic insufficiency, with negligible glycosuria, but extreme intestinal flatulence and atony of the colon. Intestinal antiseptics and endocrine preparations are absurdly futile in their effect.

BUCCAL ULCER.

"R. D." writes: A healthy woman, about 40, has had for the past three years, with only short intervals of complete freedom, successive crops of ulcers appearing on the inside of the cheeks and lips, also on the tongue, soft palate, and uvula. Having tried most of the known remedies, I should be grateful for suggestions as to treatment.

THE ETERNAL COLD QUESTION.

"CURED" writes: "H. H." should improve the vasomotor tone of the mucosae (he may then let organisms take a second place in his treatment). Thus:—*Fauces, tonsils, pharynx:* Make a habit of swabbing out daily before retiring with 3 per cent. silver nitrate solution, later increasing to 5 per cent. Use a thin wooden aural applicator dressed with smallest quantity of cotton-wool, and dab on quickly before a hand mirror; the retching reflex with practice becomes insignificant. *Nasal mucosae:* Make a habit of spraying by "glaseptil" pocket nebulizer with chlore-tone inhalant; it is best to do this also at night and after contact with infectious persons. Occasionally swab the mucosae with 5 per cent. argyrol; later on change for 3 per cent. silver nitrate solution. *Laryngeal mucosae:* A pinol and menthol inhalant vehicle—rectified spirit) may be used, a few drops being placed on the handkerchief daily; also keep down the irritation with menthol and eucalyptus lozenges. Having suffered previously for years, the above routine now keeps me free.

EFFECT OF TROPICS ON MENORRHAGIA.

"O. M.," replying to the inquiry in the *Journal* of January 25th (p. 179), writes: With the experience of twenty years' general practice in the tropics, and being well acquainted with the climatic conditions mentioned, I would advise decidedly against the patient being allowed to go out—first, on account of the menorrhagia, and secondly, on account of her not being robust. None but quite physically fit women should go out; ignoring climatic conditions only leads to invalidism, and she would almost certainly have to be sent back to a temperate climate before the end of a few months.

ABDOMINAL SURGERY AT SEA.

CAPTAIN A. F. W. DA COSTA, I.M.S. (Camp Sibora, India), writes: With reference to the inquiry by "T. S. S." in the *Journal* of September 28th, 1929 (p. 604), about a book on operative surgery (abdominal) for emergencies, I think he could not do better than invest in a copy of *Lejar's Urgent Surgery*. I consider that Treves and Hutchinson's *Handbook of Surgical Operations* is much on the short side.

INCOME TAX.

Resident Patient.

"W. E. M." has a resident patient who pays £5 5s. per week. Would he be justified in deducting £100 per annum for her board and lodging?

*** On the facts stated we think the amount is justifiable, provided that our correspondent is not claiming to deduct, say, one-half of the cost of rent, rates, etc., and a part of the cost of domestic service from general practice profits. If he is in such practice and has made such a claim, he should bear in mind that it is only that part of the general expenses not deducted from general profits which can properly be allocated to the expense of lodging the resident patient.

Subscriptions to Professional Societies.

"A. J. W." asks whether the annual subscription to a particular medical society can be treated as a professional expense.

*** Yes; but if the income from which the deduction is sought to be made is a salary, then the amount cannot legally be deducted unless the employer has made it a condition of the appointment that membership of the society in question shall be maintained.

"A. H. C." inquires similarly with regard to other subscriptions.

*** (1) London and Counties Medical Protection Society: if the local inspector of taxes is not convinced by production of the society's printed statement that the subscription can be deducted, "A. H. C." might ask the society to communicate direct with the inspector. (2) British Medical Association: the subscription is usually allowed under Schedule D. (3) Society of Medical Officers of Health: we have no evidence that this subscription is allowable. It may be that the difficulty in "A. H. C.'s" case is not the identity of the professional societies, but the condition referred to in the reply to "A. J. W." printed above.

LETTERS, NOTES, ETC.

FOXGLOVE AT THE BEDSIDE—AND ELSEWHERE.

DR. F. J. ALLEN (Cambridge) writes: Some fifty years ago a friend of mine in Somerset met a rustic carrying a large bundle of foxgloves, when a conversation occurred somewhat as follows: "What are you going to do with those foxgloves?" "Take them home to my wife; she makes foxglove tea of them." "*Foxglove tea!* Why, don't you know they are rank poison?" "No; *that* I don't. My wife has got the dropsy, and foxglove tea does her a world of good." Thus this drug, which doctors administer with so much caution, was being taken in a perfectly casual way by an ignorant person. I have met with no other similar case; but it seems possible that the use of foxglove for the treatment of dropsy was traditional, and had existed from time immemorial.

MENTAL DISORDER AND INTESTINAL SEPSIS.

DR. JAMES CRAIG (Glasgow) writes: I am sure we are all indebted to Dr. Joyner of Torquay for his description of the illustrative case in the *Journal* of January 11th (p. 89). I have seen many such in my lifetime. When lecturing on jalap my old materia medica teacher used to hold up a piece of the root and say, "Gentlemen, Shakespeare says in one of his plays, 'Canst thou not minister to a mind diseased?' Well, then, this is my verdict, that jalap is the most effective remedy in mind disease." How often in these long years of practice have I found the truth of this statement! Every mother knows the magical effect of castor oil on refractory or bad-tempered children who suffer from constipation. A good deal of my work is among the aged, and I find many of them irritable, opinionative, and difficult to deal with on account of constipation or imperfect evacuations of the bowel. Grey powder, rhubarb, and soda administered four-hourly have a most beneficial effect on such cases. I am afraid free purgation is being neglected in these days of over-refinement in drug treatment, and special appeals to the palate in food and other things.

LARGE HYDROCELES.

DR. P. M. SHEPHERD (Uburu, Southern Nigeria) writes: Medical men in practice in tropical countries are familiar with cases of large hydroceles; I wonder how the following compares with the experience of others as regards size? An old man came here recently with double hydrocele. The fluid in the left sac measured 61 oz. and in the right 40 oz. The usual radical operation was performed, and the patient made a good recovery.

ST. DUNSTAN'S.

BEARING the title "Fifteen Years After," the fourteenth annual report of St. Dunstan's, for the year ended March 31st, 1929, takes the form of a historical survey of the activities of St. Dunstan's during the period which has elapsed since its foundation. The council pays the highest tribute to those people all over the Empire who, from the beginning, have given the organization their sustained and generous support, and it is interesting to read that the Empire-wide work of St. Dunstan's has been rendered possible entirely by voluntary financial effort. Last year the council initiated an exhaustive inquiry to discover as nearly as possible how much further financial help the organization would require, and for how long it would be needed. It was estimated that if St. Dunstan's continued to receive its present measure of financial support it would be able, within the next fifteen years, to set aside from its necessary annual expenditure a sum which would provide a capital endowment sufficient to make further appeals unnecessary, and yet to ensure the continuance of the present standard of benefit to every war-blinded man coming under the influence of the organization. It is gratifying to note that already there is a surplus of income over expenditure, and that the first step towards the endowment has therefore been taken. At the present time the St. Dunstan's community comprises 1,907 ex-officers and men and 4,977 wives and children. The report is illustrated throughout by photographs depicting every phase of life at St. Dunstan's.

THE BRITISH INDUSTRIES FAIR.

THE British Industries Fair, organized by the Department of Overseas Trade, is being held at Olympia, London, from February 17th to 28th. An advance copy of the catalogue which has reached us contains descriptive entries relating to the exhibits of some 1,800 British manufacturers. Drugs and pharmaceutical preparations have an entire and representative section to themselves, and so have medical and surgical instruments and appliances, though this latter section seems unexpectedly small, with only five exhibitors of surgical instruments and only three of *x*-ray and electro-medical apparatus. Scientific and optical instruments, however, will be shown in great profusion, and illustrate every class of optical requirement. Fifteen firms show manufactures of hospital ware. A valuable feature of the catalogue is the alphabetical list of the exhibits, which is really a dictionary of trade and technical equivalents in nine languages. The catalogue as a whole ought to be a corrective to pessimism concerning British manufacturing enterprise.

THE GULF STREAM MYTH.

DR. J. M. MCNAMARA (London, W.) writes: I have pleasure in replying to Dr. Elliot's friendly letter. The article I referred to is "The lore of the wanderer," in the *Castleknock Chronicle*, June, 1927. Should Dr. Elliot want more information on the subject he will find it in *Physiography*, by Huxley and Gregory (Macmillan and Co., 1919 edition, p. 199, etc.). Under the article "Atlantic Ocean," in the ninth edition of the *Encyclopaedia Britannica*, the subject is ably treated by Dr. W. B. Carpenter. I may add that my being set right on the subject of the Gulf Stream I owe to the courtesy of the editor of *Nature*.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, 48, 49, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 46 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 43.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

132. Established Hypertension without Cardiac Hypertrophy.

CH. AUBERTIN (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, December 9th, 1929, p. 1371) finds that a certain small proportion of patients in whom hypertension exists as the sole cardio-vascular defect show no signs of cardiac enlargement either clinically or by *x*-ray examination. An account of three such patients is given; they were all between 50 and 60 years of age, and had blood pressures in the neighbourhood of 230 systolic and 120 diastolic. In two of them hemiplegia had previously occurred, and indicated a long-standing high blood pressure, but in none of them was any enlargement of the heart found by orthodiagram. Similar findings have also been made at necropsies by Dumas when the death had supervened from such accidental and unrelated causes as epilepsy or malignant disease, in patients suffering from permanent hypertension. The present author admits that cases of this kind are relatively rare, and quotes a number of cases in which cardiac enlargement of varying degree was found after death resulting from cerebral lesions, bronchitis, or cardiac failure. Where hypertension had been associated with chronic renal disease and insufficiency, gross cardiac enlargement was the rule, these hearts being twice as heavy as those found in the author's quoted series of necropsies on cases of uncomplicated hypertension. The scarcity of observations on cases of this kind is commented upon, and Vaquez and Bordet are cited as noting the occasional absence of left ventricular hypertrophy in aged subjects of hypertension, and as remarking upon the predominance of atheroma in the pathological picture. From his observations Aubertin concludes that while hypertension associated with renal or cardiac disease gives rise to cardiac enlargement fairly early, pure hypertension reacts in this way very late, if at all.

133. Circulatory Failure in Diphtheria

F. F. SCHWENTKER and W. W. NOEL (*Bull. Johns Hopkins Hosp.*, November, 1929, p. 276) divide all cases of circulatory failure in diphtheria into two groups: in one the collapse occurs at the height of the disease, and in the other at a later stage. The circulatory disturbance of the early type is due either directly or indirectly to the action of diphtheria toxin upon the circulatory system. According to Warthin the essential pathological lesion in the diphtherial heart is a marked parenchymatous degeneration of the heart muscle, varying in degree with the severity of the process and with the stage of the disease. In almost every case there is hyaline degeneration or necrosis; the hyaline change may be the only parenchymatous lesion present, or it may be associated with fatty degenerative infiltration, or with cloudy swelling, or with both. Occasionally there is simple necrosis of individual fibres. In late cases, in addition to the above changes there is a regenerative process which consists of a lymphocytic and polymorphonuclear infiltration about the small vessels in the stroma of the damaged portions of the muscle. The regeneration of the heart muscle is accompanied by a parallel proliferation of the stroma.

134. Reaction of Old Vaccination Scars in Revaccination.

O. J. POOL (*Nederl. Tijdschr. v. Geneesk.*, December 7th, 1929, p. 5720) vaccinated a girl, aged 13, with three insertions in the right thigh. Fourteen years previously she had been vaccinated for the first time on the left arm over the deltoid in five places, where the scars were still distinct. Not only was the revaccination successful, but each of the five scars of the primary vaccination became red and swollen, and subsequently became covered with fine brown scabs. Although this phenomenon has not been previously described, Pool states that several of his colleagues have had a similar experience.

135. Trophic Ulceration following Lethargic Encephalitis.

E. SCHITTLER (*Schweiz. med. Woch.*, November 9th, 1929, p. 1121), who records an illustrative case, remarks that while the psychical sequels of lethargic encephalitis are well known, records of vasomotor and trophic sequels are much rarer. It is generally supposed that they are associated with changes in groups of ganglion cells which are situated in the region of the third ventricle and possess vegetative and trophic functions. These trophic changes consist in dystrophia adiposo-genitalis, vasomotor skin changes, such as a greasy face, Quincke's oedema, vesiculo-squamous eruptions, gangrene, increase of diminished sweat secretion, sialorrhoea, and facial atrophy. Schittler's patient was a boy, aged 14, who developed extensive ulceration of the right nostril and adjacent region of the cheek as a sequel of an attack of lethargic encephalitis in association with typical symptoms of Parkinsonism. The ulceration gradually healed, but the patient died the following year from pneumonia.

136. Remote Prognosis in Pneumonia.

H. P. JAMESON (*Arch. Dis. Child.*, December, 1929, p. 365) examined the after-histories in a series of fifty-eight children treated during the last ten years for pneumonia lasting more than three weeks at the Hospital for Sick Children, Great Ormond Street, London, and the Children's Hospital, Birmingham. He found that one-third were without symptoms and one-third suffered severely with pulmonary catarrh. During the examinations evidence accumulated that two factors were almost of equal importance in the production of symptoms: first, the amount, duration, and recurrence of the interstitial inflammation; and secondly, periodic infections from the upper respiratory tract. It seemed over and over again that both were necessary for the production of severe symptoms of chronic or recurrent pulmonary catarrh. Second and third attacks are of importance as another cause of mischief.

137. Prodromal Rashes of Small-pox.

ACCORDING to M. TSUREMI (*Bull. Off. Internat. d'Hyg. Publ.*, November, 1929, p. 1891), during the period of June, 1917, to May, 1918, of 103 cases of small-pox admitted to the hospital for infectious diseases at Darien, 39 showed a prodromal eruption. It is probable that the actual incidence was higher, and that in several patients the rash had faded on admission to hospital; it assumed one of three forms: scarlatiniform, morbilliform, or haemorrhagic. The eruption was most marked on the outer side of the upper arm—that is, in the site chosen for vaccination—unless more than ten years had elapsed since the last vaccination, when the tendency was no longer observable. Although it is generally supposed that prodromal eruptions are almost confined to mild cases, 9 of the present series were severe and 4 fatal. A prodromal eruption, therefore, cannot always be regarded as a favourable sign.

Surgery.

138. Acute Prostatic Abscess.

W. G. S. HOPKIRK (*Kenya and East African Med. Journ.*, November, 1929, p. 230) reports a case of prostatic abscess which illustrates the damage that may result from unskilled syringing and the taking of alcohol. He considers that these are the two most important factors in the causation of posterior urethritis and therefore of chronic gonorrhœa. The patient had been treating a urethral discharge by syringing himself with a permanganate solution. Acute posterior urethritis followed, and acute retention ensued, necessitating suprapubic puncture of the bladder. Perineal prostatotomy was performed, and an abscess cavity was found and drained: complete recovery followed. Hopkirk remarks that, although acute prostatitis and prostatic abscess are most commonly gonorrhœal in origin, they are not infrequent in cases of senile enlargement of the prostate, and may occasionally appear also in the course of a general infection, such as influenza, pyæmia, or furunculosis. The abscess originates in a number of necrotic spots scattered through the substance of the gland. These enlarge, coalesce, and form an abscess cavity. Both lobes of the prostate are usually affected; the abscess lies posteriorly and in the closest contact with the urethra, into which it usually bursts, when spontaneous cure may result, though the imperfect drainage afforded by the small opening renders it more probable that chronic prostatitis will ensue. In view of this and also of the danger of a recto urethral fistula resulting, Hopkirk advises drainage of a prostatic abscess by the perineal route. He thinks this should always be undertaken if marked improvement does not quickly follow spontaneous rupture into the urethra; if spontaneous opening is delayed and the general symptoms are severe; or if there is evidence of inflammation round the prostate. The principal difficulty of the operation is the liability to tearing of the rectal wall; this occurred in Hopkirk's case.

139. Congenital Dislocation of the Hip.

F. MANDRUZZATO (*La Chirurgia degli Organi di Movimento*, October, 1929, p. 200) has studied the statistics of cases of congenital dislocation of the hip dealt with between 1899 and 1927 in the orthopaedic clinic of the University of Bologna. His report is based on 2,578 patients, of which 2,192 (85.02 per cent.) were females and 386 (14.58 per cent.) males. Bilateral dislocations amounted to 42.94 per cent. and unilateral to 57.06 per cent.; of the latter variety, 39.02 per cent. affected the right hip and 21.83 per cent. the left. The percentages in the two sexes were as follows. (1) Females: bilateral 36.96, unilateral—right-sided 29.82, left-sided 17.72; (2) males: bilateral 5.97, right-sided 5.39, and left-sided 4.11 respectively. The influence of heredity was clearly indicated in 502 cases out of 2,276, a direct causation being evident in 6.54 per cent. and an indirect familial in 16.69 per cent. These percentages of congenital causation are lower than those of Vogel (30 per cent.) and Le Damany (42 per cent.). Birth injury as a factor seems to have little influence in causing dislocation; of 2,297 cases 83.45 per cent. were born normally. The percentages in respect of age in 2,482 children were: in 88.43 per cent. the disability appeared with the first attempts to walk; in 5.03 per cent. within the first five years of life; and in 1.08 per cent. after the age of 5. Out of the total number of patients 88.48 per cent. received treatment by circumduction, and 3.16 per cent. by operation.

140. Treatment of Renal Lithiasis.

A. L. CHUTE (*Minnesota Med.*, December, 1929, p. 731) advocates the early removal of renal calculi, though he is prepared to watch those of less than 5 to 6 mm. in diameter. Early removal is especially important if the kidney is infected or single; with bilateral calculosis the better kidney should be operated on first. When both the kidney and the ureter of the same side contain stones they should be operated on at the same time, or the renal stone may be removed first and the ureter dealt with as soon as possible thereafter. Relatively small uninfected calculi in the renal pelvis should be removed by pyelolithotomy, the pelvis being generally opened on its posterior surface and in the direction of its long axis. Nephrolithotomy is the operation the author generally performs, and he incises the kidney on its convex surface just behind the mid-line. Care should be taken that every fragment of a stone or all multiple stones are removed, the kidney being irrigated with sterile water if necessary. The author passes a soft drainage tube of one-quarter inch diameter with a "fishtail" end down to the renal pelvis, bringing together the kidney tissue by deep catgut sutures on either side of this tube. His rule for ureteral calculi is removal if there is any particular degree of infection, or if more than moderate pain or occasional disability is caused. Immediately before the operation he verifies his diagnosis by the passage of an *x*-ray catheter. In cases of non-infected small stones low in a ureter, "dilatation" with one or more ureteral catheters may be tried. The usual oblique kidney incision is used for ureteral calculi down to the lower border of the third lumbar vertebra. In stones still lower the incision should start a fingerbreadth internal to the anterior superior spine, and extend downwards parallel with the fold of the groin, and about three-quarters of an inch internal to it, ending above the pubis; or a straight incision should be made along the outer edge of the rectus muscle. The ureter should not of choice be opened in the depths of the pelvis, the stone being either "milked" up, or grasped and withdrawn with a curved stone forceps introduced through an incision an inch or two above the impacted stone, or pushed through into the bladder with a probe. Closure is expedited if the edges of the incision in the ureter are brought together with 0 or 00 catgut. A rubber wick should be carried down to the incision.

141. Secondary Megoesophagus.

G. PECO (*Rev. Med. Lat.-Amer.*, November, 1929, p. 208), who records four illustrative cases in patients aged from 31 to 62, maintains that in every case of megoesophagus it is important to exclude any local organic lesion of the oesophagus. When an oesophageal cause has been excluded, a gastric factor must be suspected, especially gastric cancer, ulcer, or gastritis. Duodenal ulcer and cholelithiasis are the next most important possibilities. Causes not connected with the alimentary tract include any visceral or nervous lesions which can act reflexly on the nerve supply of the oesophagus. It is important to determine whether stenosis of the oesophagus is produced by spasm or achalasia. Obstruction at the lower end of the oesophagus may be due to hypotonus of the vagus or hypertonus of the sympathetic. In two of Peco's cases the megoesophagus was due to a gastric tumour; in one it was secondary to well-marked neurosis in an arterio-sclerotic subject; and in the fourth to an ulcer of the lesser curvature of the stomach.

Therapeutics.

142. Contraindications to a Saltless Diet in Nephritis.

P. DELAFONTAINE (*Paris Méd.*, December 7th, 1929, p. 506) states that though a diet from which salt is excluded is of remarkable efficacy in nephritis, there are cases in which such a regimen is contraindicated. An azotaemic syndrome of hypochloridation due to a lack of sodium chloride may occur in certain nephritic patients. Blum, van Caulaërt, and Grabar divide cases of nephritis into two groups—those with and those without oedema. In the former the adoption of a saltless diet is definitely indicated, but in the latter it is necessary to distinguish azotaemic and non-azotaemic forms. In the latter of these there is no chloride deficiency, and a saltless diet is not contraindicated, though the reduction of salt must be governed by the degree of chlorine retention. In the non-oedematous types with azotaemia, salt should not be prohibited. The diagnosing of hypochloridation is not always easy, and laboratory examinations of the serum or plasma chlorine are indispensable, and also of the alkaline reserve; if this reserve is normal there is a chloride deficiency. Should the acidosis be very marked, with only a moderate chloride diminution, the chloride is to be considered excessive; if these conditions are reversed there is a chloride shortage. In certain cases additional tests are necessary, such as the establishing of the ratio between the whole blood chlorine and the plasma chlorine. Blum believes that the lowering below normal of the chloride titre of the cerebro-spinal fluid is a certain indication of hypochloridation. Delafontaine states that salt should be given in nephritis whenever a chloride deficiency can be proved, but that its administration should be controlled by careful observation and repeated laboratory investigations.

143. Treatment of Cerebro-spinal Syphilis.

E. C. MENZIES (*Canadian Med. Assoc. Journ.*, November, 1929, p. 534) describes the active treatment of cerebro-spinal syphilis as carried out at the Verdun Protestant Hospital, Quebec. Before the introduction of tryparsamide in 1923 practically all cases of this disease terminated fatally. Of 41 patients treated with tryparsamide and mercury from 1923 to 1925, 9 are still progressing satisfactorily; and of 40 patients treated by means of malaria followed by tryparsamide and bismuth, 16 show improvement. Malaria followed by tryparsamide is a much more adequate treatment than the latter alone, as it is much quicker, and in some cases forestalls hopeless degeneration; the danger of optic atrophy is much less; and a much higher percentage of patients obtained satisfactory remissions. Though the use of tryparsamide alone is to be deplored, it has distinct value when used subsequently to fever therapy, and may possibly be beneficial when the patient's physical condition is clearly such that malarial inoculation would be fatal. Induced malaria is easy to stop, and is not infective. In the present series the improvement among women was, if anything, better than among men. The results have been so marked that Menzies maintains that no patient suffering from any form of neurosyphilis should be certified before malaria is tried. Non-specific therapy succeeds not so much because of a direct spirochaeticidal action, but because it enlists and stimulates the natural resistive forces of the patient—the same means whereby any infection is overcome. The value of careful nursing, good food, fresh air, and sunlight must be remembered in connexion with treatment.

144. Vaccine Treatment of Whooping-Cough.

N. J. SPYROPOULOS (*Paidoterapia*, October, 1929, p. 5487) has treated large series of cases of whooping-cough by injections of ether, protein therapy in the form of sterilized milk, and specific vaccines respectively, and comes to the following conclusions. Injections of ether are valueless; there was no evidence in favour of their efficacy either in complicated or uncomplicated cases. Heterologous protein therapy also has no value in the treatment of complicated or uncomplicated whooping-cough; moreover, subcutaneous injections of sterilized milk almost always produce a febrile reaction. Specific vaccine therapy can be applied on a large scale with a certain degree of confidence. Its success is undoubted during the catarrhal stage, its administration is harmless and painless, and the results are all the more likely to be successful the earlier it is applied. The same vaccine has hardly any effect when used at the height of the disease, and especially in old-standing cases.

145. K. KYRIAZIDÈS (*Paris Méd.*, November 30th, 1929, p. 473) records his observations on 113 cases of whooping-cough treated in the Evangelismos Hospital at Athens during the epidemic of 1924–25; in 88 the diagnosis was confirmed by bacteriological examination. His conclusions were as

follows. Vaccine therapy undoubtedly exercises a very favourable influence on the disease, the best results being obtained by a mixed vaccine prepared from the various organisms swarming in the pharynx and upper respiratory tract. The number of injections ranged from two to five, and the dose from 25 to 500 million bacilli, according to the severity of the case. The injections were given in the gluteal region. The result of the treatment was to shorten the course of the disease, prevent complications, and to cure them when they developed. In cases where an autogenous vaccine was not available good results were also obtained from a mixed stock vaccine; the earlier it was employed the better were the results; when given in the catarrhal period it had an abortive effect.

Neurology and Psychology.

146. Intestinal Origin of some Personality Changes.

G. W. DRAPER and R. K. JOHNSON (*Amer. Journ. of Surg.*, October, 1929, p. 568) describe the personality of a child as a growing and expanding thing which is subject to variations very early in life. Unfavourable personality changes in childhood, unless checked, may take on a directional trend or may be the first symptom of important physical derangement. Children who show abnormal alterations in personality are always physically ill in some form or other; sometimes the removal of focal infections of the throat and nose may cure them, and sometimes the trouble is caused by gastro-intestinal disorders. In 50 per cent. of cases mental dysmorphism, with angular, rotatory, and constricting deformity of the bowel, is found; various degrees of megacolon, megasigmoid, and megacaecum are encountered, while acute appendicitis is not uncommon. There may also be persistent urinary changes with early nephritis, under-nutrition, secondary anaemia, diabetes insipidus, asthma, and neurological disturbances, chiefly psychotic and epileptiform. Treatment of such cases must involve the prevention of colonic degeneration based upon surgical therapeusis. It is contended that the groundwork for many forms of chronic disability is laid down during intrauterine life and can be found in early childhood, and that the gastro-enterologist is best fitted to discover and correct fundamental abdominal defects. Out of 41 children and adolescents with enteric dysmorphism, 35 exhibited personality changes; 23 were operated on, with good results in many cases, the degrees of improvement varying from complete to partial restoration of personality.

147. Tumours of the Fourth Ventricle.

CERTAIN authors, notably van Bogaert and Martin, have attempted to attach a specific syndrome (the cerebellar syndrome of the median line) to tumours of the fourth ventricle, which would facilitate their recognition and permit of an early surgical intervention. J. A. BARRÉ, J. STOLZ, and ALFANDARY (*Rev. de Méd.*, November, 1929, p. 869) do not consider that this is possible; they maintain that the diagnosis of these tumours remains extremely difficult, if not impossible in certain cases, and they agree with Cushing that a symptomatology exists for each tumour. In support of this view a case is reported of a lad, aged 18, who developed in the course of a year a syndrome of cranial hypertension and vestibular troubles, very prominent on the right side, and with a special alteration of the caloric sense which could be considered as expressing a left labyrinthine are reflectivity. Only a few days before operation some very discrete cerebellar troubles, limited almost exclusively to the right side, developed. There were no violent headaches with pains radiating to the neck, shoulders, and arms, no rigidity of the cervical muscles, and no hyperflexion or hyperextension of the head. Early troubles of micturition, which many authorities ascribed to disturbances of the pyramidal tracts, were absent, as was also ataxia of both the upper and lower extremities. The patient died, and the post-mortem examination revealed a large tumour, which filled the whole of the fourth ventricle, infiltrating its roof and floor; from it there passed a large prolongation through the greatly deformed foramen of Magendie, and two others through the foramina of Luschka. The latter covered the sides of the ponto-bulbar region, separated the base of the almonds, and involved the trunks of the seventh and eighth pairs of nerves. In reality three tumours existed: a central ventricular was associated with two lateral ones which merited the name of ponto-cerebellar. The right one of the lateral growths was hard, and was situated between the mammillary tubercle and the optic chiasma; the left, which was larger and soft, was found between the almond and the bulbo-protuberantial axis. Histologically the tumour proved to be a young, very cellular ependymoma.

148. The Early Diagnosis and Treatment of Anterior Poliomyelitis.

R. G. GORDON (*Bristol Med. Chir. Journ.*, Winter, 1929, p. 283) draws attention to the three stages, described by Walshe, in the development of the illness. The first stage is that of general invasion, with coryza, tonsillitis, or diarrhoea and vomiting, the discharges being infective material. In the second, the meningeal stage, there is headache, with pain in the limbs and back, fretfulness, sometimes apathy and coma, and rarely delirium and convulsions. The meningeal stage may follow the general stage rapidly, or there may be an interval of one or two days. The third stage is that in which the virus attacks some part of the neuraxis. Wickman's classification, modified by Collier, of the types of the disease is as follows: (1) the sub-clinical type, carriers; (2) the abortive case, stages 1 and 2 only, with complete recovery in a few days; and (3) the spinal case with involvement of the anterior horn cells, pain and tenderness in the affected muscles, and, possibly, a transverse myelitis with spastic paralysis below the lesion and paralysis of the bladder reflexes; (4) the neuritic type; (5) the spreading type; (6) the meningeal type; (7) the cerebellar type; (8) the so-called brain-stem type, probably encephalitis lethargica; (9) the cerebral type; (10) relapsing cases; and (11) mixed types. For treatment massive doses of one to two drachms of hexamine daily, with alkalis, may be useful. Lumbar puncture is of value in establishing the diagnosis and in relieving symptoms, such as pain and restlessness. The author is of opinion that every case which is not abortive should be nursed on a frame for at least two months, when the patient may be taken off for a few minutes daily for careful massage of weak muscles. Electricity should be given late. Fatigue or over-stretching of the affected muscles will destroy all chances of recovery.

149. Disseminated Sclerosis.

L. H. ZIEGLER (*Minnesota Med.*, December, 1929, p. 778) presents a study of 529 cases of disseminated sclerosis, and comments on the variability of the symptomatology. Charcot's triad—scanning speech, intention tremor, and nystagmus—is classic, but many and varying combinations of symptoms occur. Neither heredity nor sex seems to be a causal factor. The disease is usually insidious in onset, and makes its appearance chiefly in the second and third decades of life. The most frequent symptoms of onset are motor or sensory disturbances of the lower extremities, and visual disturbances, including diplopia and central scotoma. The patients associated the disease mostly with pregnancy and parturition, but in a number of cases there was a history of injury. Remission is common as regards single symptoms and signs, but rarely in the case of all the symptoms and signs; striking and long remissions occur. Patients with multiple sclerosis often have emotional disorders; they are euphoric and happy in contrast with what would be expected from the severity of the disability. The clinical causes of death, so far as they could be determined, were pyelonephritis, septicaemia, pneumonia, and intercurrent infection. The disease is progressive and very disabling; the etiology, so far, has not been established, and treatment has to be based on a system of "trial and error." Typhoid vaccine, sodium cacodylate, salvarsan, silver compounds, hydrotherapy, heliotherapy, rest, and good general care have all been recommended, while Eurich has reported that infection with the parasite of benign tertian malaria has given encouraging results in a series of cases.

Obstetrics and Gynaecology.

150. Scanty Menstruation.

I. C. RUBIN (*Amer. Journ. Obstet. and Gynecol.*, November, 1929, p. 603) reports a study of 157 cases of diminished menstruation; the patients applied for treatment on account of abnormality of menstruation, or because of sterility, relative or absolute. In about half the cases the menstrual interval was from six to fifteen weeks; in about one-quarter from sixteen weeks to nine months; and in the rest longer than normal, though less than six weeks. Of the 147 married women in this series 70 per cent. were sterile, and a further 12 per cent. had conceived but not carried to term, or had borne one child only. These figures are compared with a 15 per cent. incidence of sterility among the married female population in general. About one-third of the patients showed aberration of the secondary sexual characters—masculine distribution of the pubic and abdominal hair, with or without general hirsutism. One-third had become markedly heavier, and one-third showed symptoms, mostly mild, of endocrine disturbance. It appeared from examination of 1,000 gynaecological out-patients that about 8 per cent. had some type of diminution in the menstrual flow—38 cases of scanty flow,

24 of delayed periods with normal flow, 15 of delayed and scanty menses, and 9 of delayed and profuse menses. In both series of patients the incidence of sterility was proportional to the prolongation of the menstrual interval, so that patients having an interval of less than one month appear to have five to eight times better chance of conceiving than those whose periods are delayed from four to six months. The delayed character of the periods, their paucity, and the associated sterility are regarded as expressive of ovarian hypofunction, towards the restoration of which treatment must therefore be directed. General stimulant treatment, with improvement of hygienic and psychic conditions, is essential. The administration of ovarian and pituitary extracts, which on theoretical grounds might be expected to be of great benefit, has so far proved disappointing. Mild *x*-radiation of the ovaries has yielded better results, and was followed by speedy pregnancy in 16 out of 33 cases, but Rubin recommends that it be preceded by mild irradiation of the hypophysis. Such a procedure, followed if necessary by *x*-ray applications to the ovaries, was found to cause an approximation of menstrual periodicity to normal in four-fifths of cases, and to increase fertility by 50 per cent.

151. Conduct of the Third Stage of Labour.

M. LEFF (*Amer. Journ. Obstet. and Gynecol.*, December, 1929, p. 868) discusses the value of vaginal examination in the third stage of labour as a guide to its management, basing his conclusions on a study of 1,000 cases. He criticizes the view that the placenta requires ten to forty-five minutes to separate, and that it is therefore necessary to wait before attempting to express it. By making a vaginal examination soon after the child has been born he has found that the placenta separates promptly after the infant leaves the uterus. He insists that the only positive way of knowing when the time has come to express the placenta is by vaginal examination. The retroplacental hematoma is not a factor in the separation of the placenta, but is the result of its retention in the uterus after separation. The author has found that the cervix frequently closes down on the placenta, and he maintains that no attempt at expression should then be made until it reopens. Although the Credé manœuvre is quite applicable when the placenta presents according to the Schultze method, it is not effective in a great number of cases when the placenta is laterally situated. In the author's 1,000 cases the average time for the delivery of the placenta was four and three-tenths minutes. He adds that, with prompt expression of the placenta, the uterus contracts sooner and more firmly, bleeding being greatly diminished.

152. Treatment of Syphilis during Pregnancy.

J. TORLAIS (*Gaz. Hebd. des Sci. Méd. de Bordeaux*, December 8th, 1929, p. 770) describes the case of a woman, aged 32, who had a series of miscarriages; she eventually gave birth to an infant with stigmata of congenital syphilis which died shortly afterwards. The mother's and father's blood showed a negative Wassermann reaction, but the case was regarded as one of latent syphilis, and when she was again two months pregnant treatment with novarsenobillon was begun. Doses of 0.15 gram and 0.30 gram were well tolerated, but after a third injection of 0.45 gram a morbilliform eruption with fever appeared on the tenth day after beginning treatment, and abortion ensued. Torlais quotes various opinions as to the administration of antisyphilitic treatment to pregnant women. Statistics show that a greater proportion of healthy infants are born after treatment of the mothers with organic arsenical preparations than after mercurialization; opinion is divided as to the dosage, but in general it is recommended that a start should be made with doses from 0.10 to 0.15 gram, gradually increasing for five or six injections, and repeating the course after an interval of two months. Some authors do not give treatment during the last two months of pregnancy, while others advise a very slow rate of increase from a minimal dose, and continue throughout pregnancy; on the whole, opinion seems to be against the supposition that arsenical preparations have any special abortifacient action. Torlais quotes the recent thesis of Garnier, in which it is laid down that cutaneous erythema due to arsenobenzol may be of two main varieties: (1) occurring about the ninth day, corresponding to the eruptions of infectious fevers, and essentially due to exacerbation of the syphilitic infection; and (2) more rare, appearing later and more gradually, of graver import, and showing a true arsenical intoxication. Normal subjects who have had no previous arsenobenzol treatment give a negative reaction to intradermal injection; 90 per cent. of those who will have a "biotrophic" reaction—that is, those coming under the first group—will give a negative reaction, whereas 100 per cent. of those who will show toxic reactions will give a positive reaction. A "biotrophic" reaction is no contraindication for continuation of treatment, whereas a "toxic" reaction should at once forbid it.

Pathology.

153. Crystalline Menformon.

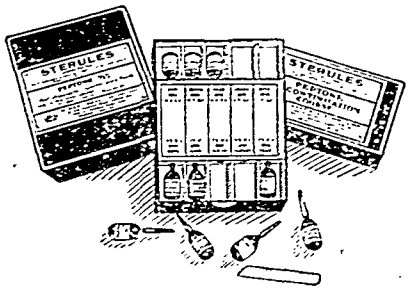
E. LAQUEUR, E. DINGEMANSE, and S. KOBER (*Nature*, January 18th, 1930, p. 90) state that four years ago they gave the name "menformon" to a female sexual hormone—the name indicating a certain degree of purity of the product; about a year and a half ago they obtained a degree of purity amounting to 10 million units per gram. Last August Doisy recorded the preparation of crystals containing 8 million units per gram, and more recently Butenandt described crystals again of the same degree of purity. The present authors remark that, since this substance of Doisy and Butenandt's is no purer than the product they originally described, the giving of the new name "progynon" to the crystalline hormone seems unnecessary. They add that recently J. R. Katz, studying menformon by *x*-ray spectrography, found the structure to be crystalline, and they have now succeeded in obtaining macro-crystals similar to those of Doisy and Butenandt, and containing 78.6 per cent. carbon and 8.25 hydrogen. They agree that it is uncertain at present whether crystalline menformon really constitutes the pure hormone, even when the purity reaches 8 to 10 million units per gram, since, in spite of careful recrystallization, adsorption of the active substance on the crystals cannot be excluded. Moreover, they have already succeeded in three cases in producing a substance of an activity of 14 million units per gram.

154. The Complement Fixation Test in Gonorrhœa.

T. E. OSMOND and J. O. OLIVER (*Brit. Journ. Vener. Dis.*, October, 1929, p. 281) review the results of tests upon more than 5,000 serums from unselected patients, some of whom suffered from gonorrhœa or syphilis, or both, while others gave no evidence or history of venereal infection. After describing their own technique and referring to other methods they conclude, from a classification of the results, that the complement fixation test is remarkably specific, since the percentage of false positive results was as low as 0.6; in all but very early cases a high percentage of positive results was obtained, ranging from 50 to almost 100 per cent. in the cases of gonorrhœa with complications. Usually a positive result is not to be expected during the first ten days of the disease unless complications have arisen; an early positive result probably indicates an extension of the infection to the posterior urethra in the male and to the cervix uteri in the female. A positive result in any stage of the disease is practically diagnostic, while a negative result has a similar significance to a negative Wassermann reaction, since it may occur in any stage, and, except in the differential diagnosis of such complications as arthritis and epididymitis, its value is limited. With regard to the disappearance of the positive reaction with cure, the authors differ from other observers in not regarding the persistence of a positive reaction as absolute proof of a failure to cure; in their experience the change from positive to negative following clinical cure occupies in many cases a relatively long period, while a negative reaction is of value if the case has previously given a positive reaction. They are of opinion that stock vaccines, in the doses usually administered, have but little effect on the result of the reaction, which is more liable to be influenced by an autogenous vaccine.

155. Hepatic Sequels of Disease of the Central Grey Nuclei.

C. OBERLING and A. KALLO (*C. R. Soc. de Biologie*, December 20th, 1929, p. 916) refer to the work of Ricker on the influence of the nervous system on hepatic pathology, and state that a direct relation between the nervous system and the liver is clearly indicated in certain well-known clinical syndromes, such as Wilson's disease. The majority of authors consider that lesions of the lenticular nuclei are consecutive to hepatic lesions, but the converse may be true, and in order to elucidate this point the present authors have made a series of experiments on animals in which the central grey nuclei were destroyed by thermocauterization. On examination the livers showed an intense congestion with small subcapsular haemorrhages, and the parenchyma revealed an exaggerated lobular design resembling the nutmeg appearance of human cardiac liver. On microscopical examination marked evidence of circulatory disturbance was found, with considerable dilatation of the centrolobular capillaries. The hepatic lesions were undoubtedly of a circulatory and angioneurotic order, and appeared to demonstrate that lesions of the central grey nuclei do cause circulatory disorders in the liver. This finding is considered by the authors to be important because it is evident that prolonged disorders of this kind bring about complete alteration of the hepatic structures, and to this can be attributed the nodular hyperplasia which is characteristic of the hepato-lenticular syndrome.



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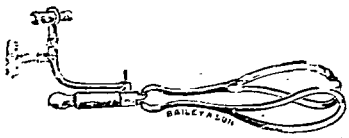
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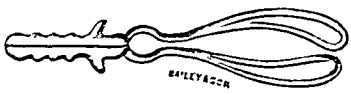
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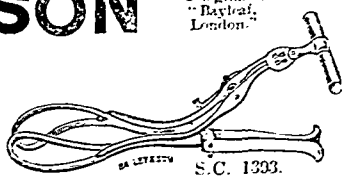
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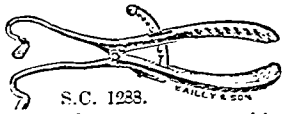
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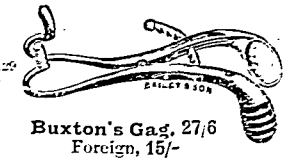
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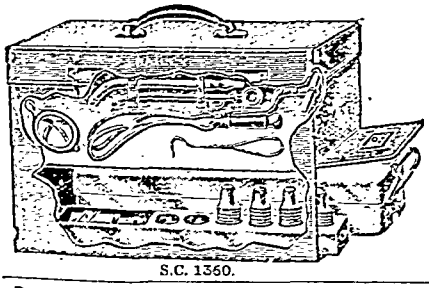
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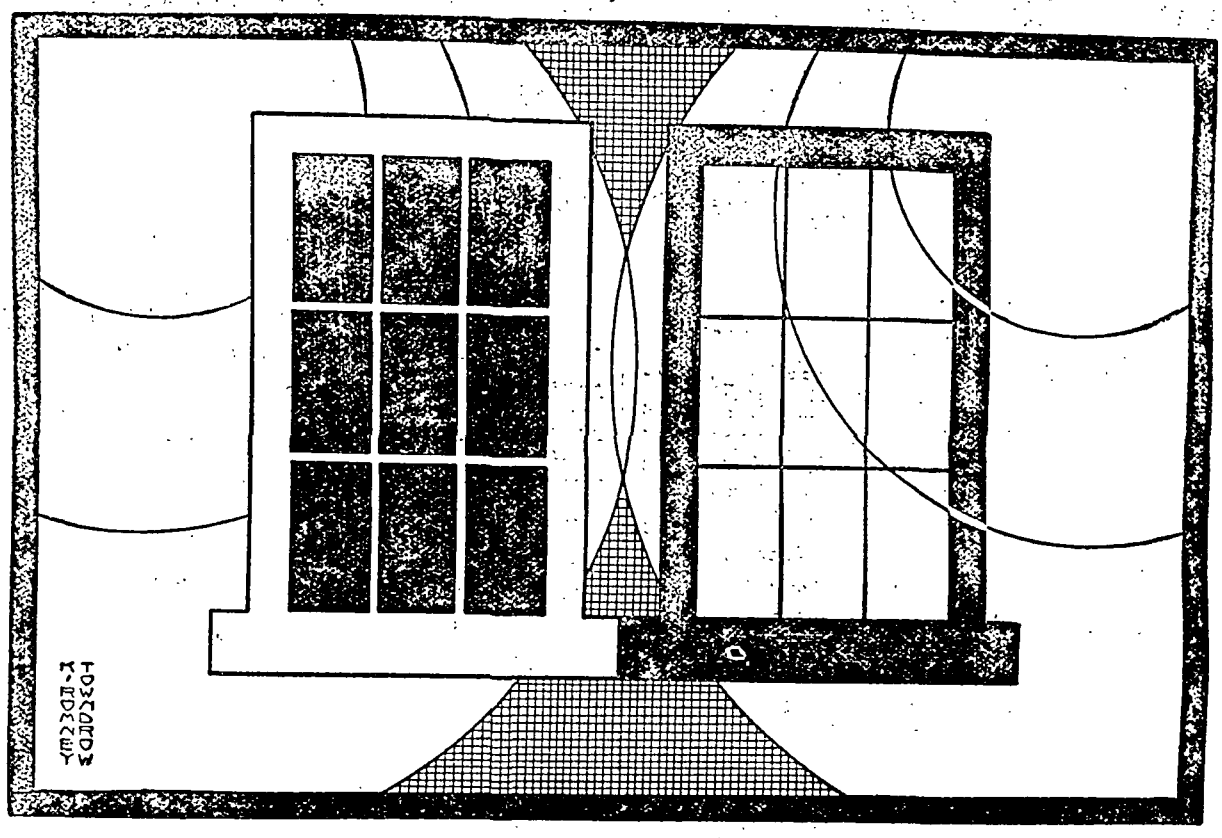
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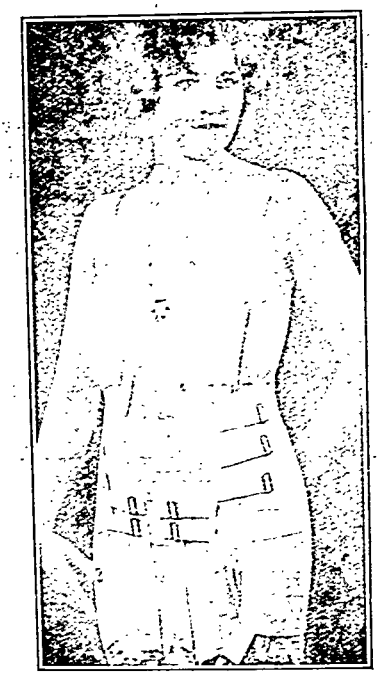
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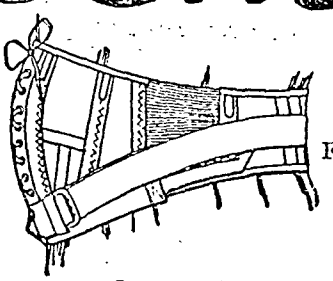
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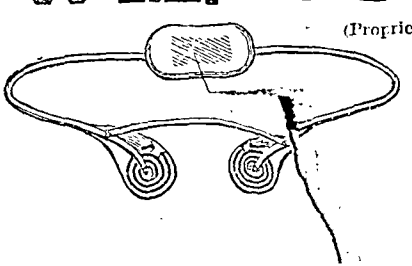
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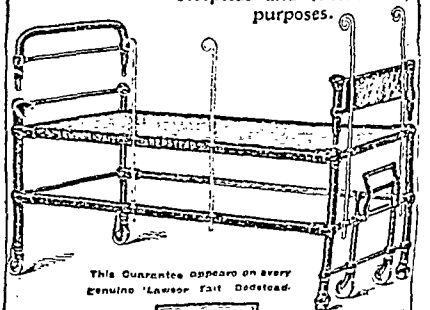
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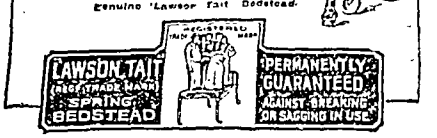
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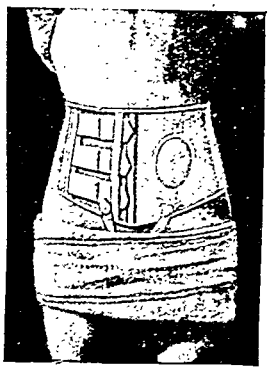
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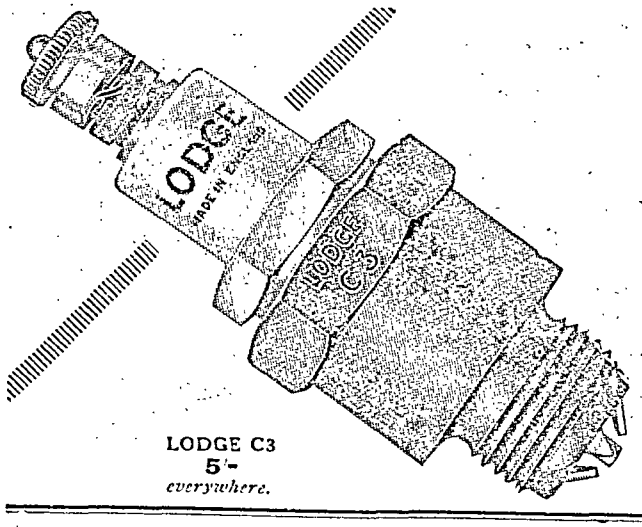
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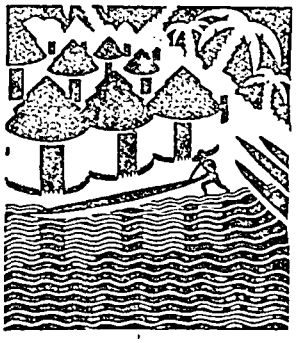
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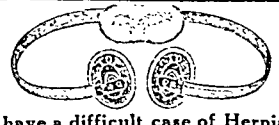
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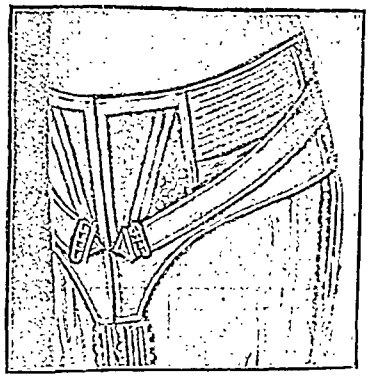
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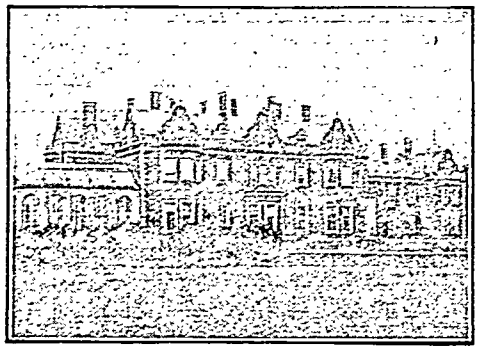
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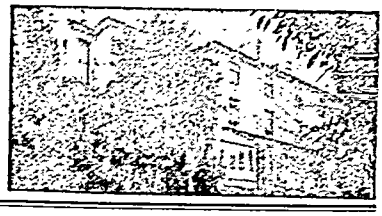
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FOR MENTAL DISORDERS,
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one or the numerous villas in the grounds of the various branches can be provided.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The Seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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Telephone: *Teignmouth* 289.

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FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

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'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent.*

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DENMARK HILL, S.E.5.

Telephone: RODNEY 4841—2.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.

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Terms:

(*a*) **£5** a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

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DAVID LEWIS COLONY

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Colony life gives to most people who have epilepsy the best chance of happiness and contentment.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

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For particulars as to terms, etc., apply to—
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Telephone: No. 7 Barnwood.

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CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

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Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0222.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1926, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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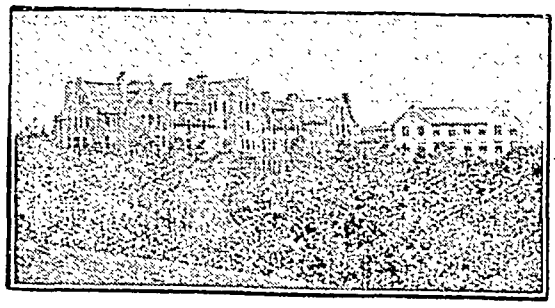
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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 23.)

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Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

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For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

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Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

CALEDONIAN MEDICAL SOCIETY.

JUBILEE PRIZE ESSAY.

THE Society is offering in 1931 a Prize of Thirty Guineas for an Essay on

"Some Phase of the Celtic Contribution to Medicine or Science."

Essays to be sent by March 31st, 1931, to Dr. S. R. Macphail, 11, Dryden Place, Edinburgh, who will be glad to furnish further particulars.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

SPEECH DISORDERS.

Remedial instruction for Stammer, Aphonia, Neurotic hesitation and lisp, Cleft palate and disturbed or undeveloped co-ordination.

Resident and non-resident cases.

ERIC J. MIALL, A.L.C.M.,
Instructor, Middlesex Hospital, London.
39, WELBECK STREET, LONDON, W.1.
Telephone No.: WELBECK 3238.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(University of London).

ADVANCED SURGERY COURSE.

A Course suitable for the M.S. and F.R.C.S. Examinations, lasting nine weeks, will commence on March 3rd.

Further particulars may be obtained on application to the Dean (H. Willoughby Lyle, M.D., F.R.C.S.), King's College Hospital Medical School, Denmark Hill, S.E.5.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

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F.R.C.S.(Edin.).

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Telephone: TEMPLE BAR 8993 (3 Lines). Telegrams: "TUBERCLE, WESTRAND, LONDON." W. J. CURRY, Secretary.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

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SOME SUCCESSES:

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F.R.C.S.(Eng.), *Primary* (1906-29)		154
	Final	149
M.R.C.P.(Lond.), 1914-29		168
D.P.H. (Various) 1906-29 (Completed Exam.)		286
F.R.C.S.(Edin.), 1918-29		43
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Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

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CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Rossall School. — Some twelve Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications?

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STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 39 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Monday, March 3rd.

Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.

A separate entry can be made for all Classes other than those of a strictly Clinical character.

(Men students only are eligible for admission.)

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

LONDON HOSPITAL MEDICAL COLLEGE.

Primary Fellowship Examination.

A COURSE OF INSTRUCTION for the above Examination will begin on Monday, February 10th. The fee for the Course is 15 guineas.

Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, Mile End, E.1.

MARLBOROUGH COLLEGE,

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Specialises in

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Special Terms to Medical Men.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5 for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIEDEN, the Secretary.

Society of Apothecaries of LONDON.

BIO-PHYSICAL ASSISTANTS EXAMINATION.

The first Examination for Part I will take place on Monday, June 23rd, and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY EXAMINATION.

The next Examination will take place on Monday, May 19th, 1930, and following days. For regulations apply to—

FRANK HAYDON, Secretary.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PRE-MEDICAL EXAMINATION.
This Examination will commence on Tuesday, March 25th, 1930.
FIRST EXAMINATION (OLD REGULATIONS).
This Examination will commence on Tuesday, March 25th, 1930.
SECOND EXAMINATION (OLD REGULATIONS).
This Examination will commence on Thursday, March 27th, 1930.
FIRST EXAMINATION (NEW REGULATIONS).
This Examination will commence on Thursday, March 27th, 1930.
FINAL EXAMINATION.
This Examination will commence on Monday, March 31st, 1930.

Students who have completed the required professional study and have fulfilled the other necessary conditions, and desire to present themselves for examination, must forward the necessary schedules through the post to the Examination Hall, Queen Square, London, W.C.1, fourteen days before the Examination commences.

HORACE H. REW,
February 1st, 1930. Secretary.

London School of Hygiene and TROPICAL MEDICINE.

DIVISION OF BACTERIOLOGY AND IMMUNOLOGY.

Applications are invited for the post of DEMONSTRATOR in the Division of Bacteriology and Immunology. Initial salary £400 per annum, with the usual contributions under the Federated Superannuation Scheme for Universities.

Candidates, who should possess a Degree in Medicine and have had experience in Bacteriology since qualification, will be expected to assist the Professor of the Division in teaching and also to carry out research work.

Applications, which must be accompanied by three testimonials, should be lodged with the Secretary of the School, Keppel Street, London, W.C.1, not later than February 24th.

Further particulars can be obtained from the Secretary at the above address.

County Borough of Croydon.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER.

Maternity and Child Welfare Work and School Medical Service.

Applications from qualified Medical Women are invited for the position of Assistant Medical Officer for the purposes of Maternity and Child Welfare and School Medical Service.

Applicants must have been qualified for at least three years, and have had special experience in the Diseases of Childhood, and recent special experience in Ante-natal Clinics and Obstetric work.

The successful candidate will be required to live within the Borough.

Salary £600.

Applications, upon forms to be obtained from the Public Health Department, Town Hall, Croydon, to be sent (accompanied by copies of not more than three testimonials of recent date) to the Medical Officer of Health, Town Hall, Croydon, not later than 11 o'clock in the forenoon of Monday, February 17th.

The appointment is subject to a three months' notice of termination on either side.

Canvassing in any form is prohibited.

Town Hall, JOHN M. NEWNHAM,
Croydon. Town Clerk.
January 28th, 1930.

Royal Society.

GOVERNMENT GRANT FOR SCIENTIFIC INVESTIGATIONS.

Applications for the year 1930 must be received at the offices of the Royal Society not later than March 31st next, and must be made on printed forms to be obtained from the Clerk to the Government Grant Committee, Royal Society, Burlington House, London, W.1.

B.P.A. Diploma of the Society

of APOTHECARIES.—Classes are now being formed at the LONDON LIGHT AND ELECTRICAL CLINIC for the 1st and 2nd parts. Intending students please apply: SECRETARY, London Light and Electrical Clinic, Ranelagh Road, S.W.1.

P. & O. CADETS.

THE PENINSULAR & ORIENTAL STEAM NAVIGATION COMPANY will, on Thursday, June 26th next, hold an examination at their offices for the entry of CADETS, with a view to their future employment as Officers in the Company's service. Candidates must be between 14½ and 16 years of age, and must pass the Company's Medical Inspector.

The successful candidates will be entered the following September for two years' training on board the "Worcester," the Company paying one-half of their annual educational fees. After the "Worcester" Course they can be appointed to serve the usual apprenticeship of three years (unpaid) on board the Company's steamers, without premium.

Particulars on application to the Secretary, Peninsular & Oriental Steam Navigation Co., 122, Leadenhall Street, London, E.C.3.

Doctor-Schoolmaster, ex Public

School Resident Medical Officer and Master and Preparatory School Housemaster and Doctor, has opened Sunny House on Kent coast as small HOME-SCHOOL for DELICATE and BACKWARD BOYS from 9 to 15 years of age. Individual care and tuition. Preparation for Preparatory Schools, or Common Entrance Examination, etc. Resident trained Nurse, ex Public and Preparatory School Matron and Nurse in charge. Home Doctor's orders carried out.

Prospectus and all particulars from W. R. L. DRAWBRIDGE, M.R.C.S., L.R.C.P., St. Aidans Junior House, Westgate-on-Sea, Thanet.

Borough of Ealing.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified Medical Men, with a Public Health qualification, for the position of Assistant Medical Officer of Health.

Candidates will be required to carry out medical inspection of school children and child welfare work and perform such other duties as may be allotted as Assistant to the Medical Officer of Health and School Medical Officer.

The person appointed will be required to devote his whole time to the duties, and will not be allowed to engage in private practice. Salary will be at the rate of £600 per annum, rising to £650 by £25 per annum.

A deduction of 5 per cent. will be made from the salary in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922, which has been adopted by the Council, and the appointment will be subject to passing the Council's medical examination in connection therewith.

Copies of application form and terms of appointment can be obtained from the undersigned, to whom applications, accompanied by copies of not more than three recent testimonials, must be delivered not later than February 13th.

Town Hall. THOMAS ORR,
Ealing, W.5. Medical Officer of Health.

County Council of Durham.

DEPUTY COUNTY MEDICAL OFFICER OF HEALTH.

The County Health Committee invite applications for the appointment of a Deputy County Medical Officer of Health at a commencing salary of £1,000, rising by annual increments of £50 to £1,200 per annum. Reasonable travelling and out-of-pocket expenses will be paid by the County Council.

Applicants must be duly registered Medical Practitioners holding a degree or diploma in Public Health, and the gentleman appointed will be required to devote the whole of his time to the duties of the office and to reside in the City of Durham or other approved centre.

He will be required to undertake any duties required of him by the Council bearing on the health and medical services of the county.

He will be required to act under the administrative control of, and to be responsible to, the County Medical Officer of Health for his duties.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary.

Applications, marked "Deputy County Medical Officer," together with copies of not more than three recent testimonials, must be sent to the County Medical Officer, Shire Hall, Durham, not later than February 19th.

HAROLD JEVONS,
Clerk of the County Council.
Shire Hall, Durham, Feb. 3rd, 1930.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (Male).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. The duties will include work under the Maternity and Child Welfare Service. Experience in this work and in the administration of anæsthetics is essential.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, February 24th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

New County Offices, W. M. ASH,
St. Mary's Gate, School Medical
Derby. Officer.
January, 1930.

Derbyshire Education Committee

SCHOOL MEDICAL SERVICE.

ASSISTANT SCHOOL DENTIST.

Applications are invited from fully qualified Dental Surgeons for the appointments of two additional whole-time Assistant School Dental Officers under the Derbyshire Education Committee.

The successful candidates will be required to devote their whole time to the duties and will work under the supervision of the School Medical Officer and Senior Dental Officer.

The salary will be at the rate of £450 to £500 per annum, with travelling expenses. Apparatus, premises, etc., are provided by the Committee. Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to the undersigned on or before Monday, February 24th. No official form of application will be issued.

New County Offices, W. M. ASH,
St. Mary's Gate, School Medical
Derby. Officer.
January, 1930.

Derbyshire County Council.

BRETBY HALL ORTHOPÆDIC HOSPITAL. (147 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Assistant Medical Officer at the above Institution, at a salary at the rate of £150 per annum, with board, residence, and laundry. The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council. The officer appointed will work under the direction of the Medical Superintendent. Preference will be given to candidates who have held resident hospital appointments and who are competent Anæsthetists. Orthopædic experience is not essential, but will be considered an additional qualification.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should be addressed to the undersigned not later than February 17th.

New County Offices, W. M. ASH,
St. Mary's Gate, County Medical
Derby. Officer.
January 29th, 1930.

West London Hospital,

Hammersmith Road, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, Two HOUSE SURGEONS, and One RESIDENT ANÆSTHETIST for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, March 7th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, March 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

County Borough of Walsall.

ASSISTANT MEDICAL OFFICER (Maternity and Child Welfare)—Female.

Applications are invited from Medical Women *under the age of 35 years for the post of an* Assistant Medical Officer in the Public Health Department.

Salary £600, rising to £625 per annum on July 1st, 1931, and thereafter rising by annual increments of £25 to a maximum of £700 per annum, subject to approved service.

Applicants must be duly registered Medical Practitioners.

The possession of a Diploma of Public Health will be considered an advantage.

Practical experience in Midwifery practice and in Ante-natal work is essential.

The duties will mainly consist of work in connection with the Council's Maternity and Child Welfare Scheme. The person appointed will be required to give her whole time to the service of the Council, and to work under the direction of the Medical Officer of Health.

Applications, on forms to be obtained from the under-signed, stating age, qualifications, training, and experience, together with three copies of testimonials, and endorsed on the envelope, "Assistant Medical Officer," should be sent to the Town Clerk not later than February 22nd.

The appointment will be subject to the approval of the Ministry of Health, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Canvassing, directly or indirectly, will be a *disqualification.*

Council House, Walsall. HERBERT LEE, Town Clerk.

January 25th, 1930.

Northumberland County COUNCIL.

WOOLEY SANATORIUM, near HEXHAM, for the Treatment of Adults suffering from Tuberculosis. (180 Beds.)

Applications are invited for the appointment of an ASSISTANT MEDICAL OFFICER at the above Sanatorium. Salary £350 per annum, with board, lodgings, and laundry; less deductions for superannuation, returnable or transferable on leaving the Council's service.

Applicants should be unmarried.

The appointment may be terminated by three months' notice on either side.

Application forms, to be obtained from the undersigned, should be returned to him, together with copies of three recent testimonials, as soon as possible.

WILLIAM F. J. WHITLEY, South Granville House, Jesmond, Newcastle-upon-Tyne. County Medical Officer.

City of Leeds.

ASSISTANT RESIDENT MEDICAL OFFICER, KILLINGBECK SANATORIUM.

Applications are invited from registered Medical Practitioners (male) for the post of ASSISTANT RESIDENT MEDICAL OFFICER at the Tuberculosis Sanatorium, Killingbeck (220 beds). Applicants must be unmarried, and *preference will be given to those who have held* previous Hospital appointments.

The appointment will be for one year at a salary of £250 per annum, with board, residence, and laundry.

Applications, stating age and experience, together with copies of three recent testimonials, endorsed "Tuberculosis Officer," should be delivered to the Medical Officer of Health, 12, Market Buildings, Vicar Lane, Leeds, not later than the first post on Wednesday, Feb. 12th.

THOS. THORNTON, Town Clerk.

Leeds

Chester Royal Infirmary. (211 Beds.)

Wanted, HOUSE SURGEON (male) to commence duties March 17th. Salary £150 per annum, with board, lodging, and washing.

Application list closes on February 22nd.

Application forms may be obtained from the undersigned.

W. H. GRACE, M.D., M.R.C.P., Hon. Supt. of Resident Medical Staff.

Stirling District Mental Hospital, LARBERT.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (male). Salary £300 per annum, with board, lodging, and laundry. Appointment subject to provisions of Asylums Officers Superannuation Act.

Apply, stating age, with testimonials, to the Medical Superintendent.

Willesden Urban District COUNCIL.

APPOINTMENT OF MEDICAL OFFICER (ASSISTANT, Male).

A Whole-time Medical Officer (Assistant, male), holding a registrable qualification in Public Health, is required in the Health Department of the Willesden Urban District Council.

The salary will be £600 per annum, rising *after three years' satisfactory service by in*crements of £30 per annum to £750 per annum. No bonus will be paid.

The appointment is subject to the Local Government and Other Officers' Superannuation Act, 1922, and no candidate over 40 years of age will be appointed.

Applicants should have had experience in Ante-natal and Maternity work, Diseases of Children, Refraction work, and Infectious Diseases.

Application forms, with full particulars of the appointment, may be obtained from the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6, and must be returned to him not later than 9 a.m. on Saturday, February 22nd.

Envelopes containing communications relative to this appointment must have "Medical Officer" written on them on the top left-hand corner.

Town Hall, Dyne Road, Kilburn, N.W.6. February, 1930. E. A. PRATT, Clerk of the Council.

Borough of Cambridge.

APPOINTMENT OF WOMAN MEDICAL OFFICER.

The Council invite applications for the appointment of Medical Officer to their Ante-Natal Clinic from qualified Medical Women.

The Clinic will be held once a month at *35a, Parkside, Cambridge, and a fee of one and* half guineas per session will be paid in accordance with the scale of the British Medical Association.

Applications should be sent to the under*signed on or before February 14th.*

C. H. KEMP, Town Clerk.

January 22nd, 1930.

Borough of Hornsey.

APPOINTMENT OF LADY ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the above appointment at a salary of £600, rising by annual increments of £20 to £750 per annum.

Intending applicants should obtain particulars of the duties and conditions of the appointment from the Medical Officer of Health, Town Hall, Highgate, N.6.

Applications should be sent to the undersigned on or before February 22nd.

E. B. CROASDELL, Town Clerk.

Hornsey Town Hall, Highgate, N.6.

Taunton and Somerset Hospital, TAUNTON.

There will be a vacancy on March 25th next for either One Full HONORARY VISITING SURGEON, or Two ASSISTANT HONORARY *VISITING SURGEONS.*

A Visiting Surgeon must reside sufficiently near the Hospital to enable him to discharge his duties efficiently.

Applications are invited, and should be sent, *with copies of not more than four testimonials,* on or before March 1st to the Secretary.

Manchester Victoria Memorial JEWISH HOSPITAL, CHEETHAM, MANCHESTER. (Non-sectarian.)

Applications are invited for a vacant post of ANÆSTHETIST to the above Hospital, payment to be made on a sessional basis of one guinea per session. Applications, together with copies of recent testimonials, to be addressed to the undersigned not later than February 15th.

FRED BARNES, Superintendent.

The Infants Hospital, Vincent Square, Westminster, S.W.1.

Applications are invited from qualified Medical Practitioners for the post of CLINICAL ASSISTANT in the Out-patient Department.

Attendance on two afternoons each week for a period of six months.

Applications, stating previous experience, should be addressed to the Secretary.

Gloucester County and City MENTAL HOSPITALS, WOTTON and COney HILL.

The Committee of Visitors invite applications for the post of MEDICAL SUPERINTENDENT of *these Hospitals, which contain about 1,223* beds.

Applicants, who must not be more than 45 years of age, must be duly qualified to practise in Surgery and Medicine and be duly registered.

Preference will be given to those with previous Mental Hospital experience.

The salary attached to the post is £1,000 per annum, together with unfurnished house and garden, rates and taxes free.

The appointment will be subject to the provisions of the Asylums Officers Superannuation Act, 1909, and for this purpose the emoluments are valued at £100 per annum.

Applications, which should be on forms to be obtained from the undersigned, must be received, together with not less than three copies of recent testimonials, not later than Feb. 28th next.

Canvassing, either directly or indirectly, will disqualify any applicant, but candidates if they desire may supply me with 21 copies of their testimonials for circulation to the Visitors.

By Order,

County Mental Hospital, Gloucester. January 28th, 1930. EDGAR B. KEY, Clerk to the Visitors.

Salford Royal Hospital. (263 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) attached to the Orthopædic Department.

Salary at the rate of £125 per annum.

The appointment is for a period *from February 22nd to September 30th, with board* and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before February 12th.

By Order of the Board,

GEORGE RUDDLE, General Supt. & Secretary.

Salford Royal Hospital, February 3rd, 1930.

Cumberland and Westmorland MENTAL HOSPITAL.

DEPUTY MEDICAL SUPERINTENDENT.

The Committee of Visitors of the above Hospital are prepared to receive applications from persons holding the necessary qualifications for the post of Deputy Medical Superintendent of the above Mental Hospital, vacant on March 8th next by the resignation of the present Deputy Medical Superintendent.

The salary commences at £550 per annum, rising by four annual increments of £25 each to £650, with emoluments of the value of £120. An award of £50 per annum will be made to the officer appointed if and when he obtains the Diploma in Psychological Medicine.

Full details of the post, and forms on which *alone applications will be considered,* can be obtained on receipt of a stamped addressed foolscap envelope from the undersigned.

C. W. ALLAN HODGSON, County Offices, Carlisle, Feb. 3rd, 1930. Clerk to the Visitors.

Shropshire Orthopædic Hospital AND AGNES HUNT SURGICAL HOME, OSWESTRY.

HOUSE SURGEON (male) required on April 1st, but it is possible that arrangements could be made for the successful candidate to commence duty at an earlier date.

Appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board, residence, and laundry. Two weeks' holiday after each six months' service.

Applications, stating age, with copies of three recent testimonials, should be received by the Secretary-Superintendent on or before Feb. 24th.

Victoria Hospital, Burnley. (120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £125 per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING, Feb. 3rd, 1930. Secretary-Superintendent.

Coventry and Warwickshire HOSPITAL, COVENTRY.

Applications are invited for an HONORARY ASSISTANT DENTAL SURGEON, who must possess a Diploma in Dental Surgery recognized by the General Medical Council of Great Britain, and must be duly registered.

Candidates shall be resident in the City of Coventry, or within six miles thereof, or shall take up their residence within that radius within six months from the date of appointment.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Applications, with original testimonials and registration certificates, must reach the undersigned on or before February 18th.

Candidates will in due course receive notice of their eligibility or otherwise from the Secretary, and after receipt of such notice eligible candidates are at liberty to send through the post printed copies of their application and testimonials to the Members of the Board of Management of the Hospital, a list of whose names and addresses will be furnished by the Secretary.

No such applications or copies of testimonials shall be sent until receipt of such notification from the Secretary.

The appointment shall be made for twelve months, and the candidate appointed shall be eligible for re-election at the end of that period.

The appointment may be terminated at any time by the Board of Management.

By Order of the Board,
(Miss) R. HOOPER,
February 4th, 1930. Secretary.

St. Bartholomew's Hospital, E.C.1.

APPOINTMENT OF DENTAL HOUSE SURGEON.

Applications are invited for the office of House Surgeon to the Dental Department.

Candidates must hold a registrable Dental qualification. A Medical qualification in addition is desirable but not essential. Appointment will be made for six or twelve months. The salary attaching to the office is £80 per annum, non-resident.

Applications must be left with the undersigned on or before Friday, February 21st.

THOMAS HAYES,
Feb. 1st, 1930. Clerk to the Governors.

St. Bartholomew's Hospital, E.C.1.

OFFICE OF ASSISTANT DENTAL SURGEON.

Notice is hereby given that Three Assistant Dental Surgeons to this Hospital will be appointed at a Committee of Governors to be held on Thursday, March 13th, at 11 o'clock in the forenoon.

Candidates must hold a registrable British Medical qualification as well as a registrable British Dental qualification.

Applications and testimonials must be left with the undersigned on or before Friday, February 21st.

THOMAS HAYES,
Feb. 1st, 1930. Clerk to the Governors.

Nottingham Hospital for Women

HOUSE SURGEON (female or male) required to commence duties on March 15th. Appointment for period of not less than six months. Salary at the rate of £150 per annum, with board, residence, and laundry. Previous Hospital experience essential. Applications, stating age, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the Secretary, Mr. A. L. MORELL, Burton Buildings, Parliament Street, Nottingham, not later than February 17th.

General Hospital, Gt. Yarmouth. (72 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male, unmarried). Salary £150 per annum, with board, residence, and laundry. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

Royal Cornwall Infirmary, TRURO. (70 Beds.)

HOUSE SURGEON required with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

Devonshire Hospital, Buxton, DERBYSHIRE (300 Beds.)

(A Special Hospital for Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties immediately. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Medical Staff consists of eight Honorary Physicians, an Honorary Surgeon, a Bacteriologist, a Radiologist, a Biochemist, and two Resident House Physicians. The Hospital contains a Pathological Laboratory, and X-ray Department. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
General Superintendent & Secretary.

Royal Northern Hospital, Holloway, N.7.

Applications are invited for the following posts:

HOUSE SURGEON for nine months (six months as House Surgeon and three months as Casualty Officer) from March 15th.

RESIDENT OUT-PATIENT CASUALTY OFFICER AND ANÆSTHETIST for six months from March 15th.

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by February 15th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

South Devon and East Cornwall HOSPITAL, PLYMOUTH. (240 Beds.)

Applications are invited for the following post on the Honorary Medical Staff:

HONORARY ASSISTANT SURGEON in Charge of the Obstetrical and Gynæcological Dept.

Candidates for the above-mentioned office must hold the Fellowship of a Royal College of Surgeons in Great Britain, or shall hold a Mastership of Surgery at Oxford, Cambridge, or London.

Applicants must send twelve copies of their applications and testimonials to the undersigned by February 28th.

Plymouth. ARTHUR R. CASH,
Feb. 4th, 1930. Gen. Supt. & Secretary.

The Royal Liverpool Children's HOSPITAL.

The Committee invite applications from Graduates, with previous Hospital experience, for the post of RESIDENT MEDICAL OFFICER, at the HESWALL BRANCH of the Institution, vacant on April 1st next. Salary at the rate of £120 per annum.

The appointment will be for a period of six months. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Wednesday, Feb. 19th.

The Royal Liverpool Children's HOSPITAL.

There will be vacancies on April 1st next for Two RESIDENT HOUSE PHYSICIANS and Two RESIDENT HOUSE SURGEONS at the CITY BRANCH, Myrtle Street. The appointments will be for a period of six months. Salary in each case at the rate of £60 per annum. Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool, on or before Wednesday, February 19th.

Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.

There will be a vacancy on March 1st for a HOUSE PHYSICIAN (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence.

Application, with copies of testimonials, should be forwarded not later than Tuesday morning, February 18th, to the Secretary at the above address, from whom further particulars can be obtained.

County Borough of Belfast and BELFAST PORT SANITARY AUTHORITY.

APPOINTMENT OF BACTERIOLOGIST AND PATHOLOGIST.

The Public Health Committee, acting for the County Borough Council and the Belfast Port Sanitary Authority, invite applications from male Medical Practitioners, duly registered under the Medical Acts, with not less than five years' practical experience in Pathology and Bacteriology, including research and work of a biochemical nature, together with the care and upkeep of a first-class Bacteriological Laboratory, for the above-named appointment.

Salary £750 a year.

Conditions of appointment and form of application may be had from the undersigned, with whom the application, endorsed "Bacteriologist and Pathologist," must be lodged not later than February 21st.

Canvassing will be a disqualification.

R. MEYER, Town Clerk.

Kent County Ophthalmic and AURAL HOSPITAL, MAIDSTONE. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, which becomes vacant on March 1st next. The Hospital is recognized by the Examining Board for the D.L.O. and D.O.M.S. Diplomas. Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The appointment will be for six months, with an option of a further six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

The Sheffield Royal Hospital.

There are vacancies for male residents; one to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. The Hospital is a Medical School, with 340 available beds, and there are twelve Resident Medical Officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry. Applications should be forwarded at once to—

W. H. BOOTH,
Feb. 4th, 1930. Supt. & Secretary.

A Second Assistant Resident MEDICAL OFFICER

(single, male) is required. Salary is at the rate of £400 per annum, together with the usual residential emoluments. The duties of the post are primarily concerned with Observation (Mental) Wards. Previous experience or possession of the D.P.M. is essential. Forms of application and further particulars can be obtained from the Medical Superintendent at the ST. JOHN'S HOSPITAL, St. John's Hill, Wandsworth, S.W.18.

Golden Square Throat, Nose, AND EAR HOSPITAL, London, W.1.

HOUSE SURGEON (male) required for May 1st. Salary £100 per annum, with board and lodging. Applications, stating age, qualifications, and experience, together with copies of three testimonials, to reach the undersigned on or before February 28th.

F. P. CARROLL, Secretary-Supt.

St. Mark's Hospital for Cancer, FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months. Applications, with copies of testimonials, must reach the Secretary (from whom further particulars may be obtained) not later than 10 a.m. Saturday, February 15th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.).*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
February 5th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

Applications are invited for the office of ORTHOPÆDIC SURGEON (Out-patients and with charge of five beds). Candidates must be Fellows of the Royal College of Surgeons of England, practising exclusively in Orthopædic Surgery.

Applications (35 copies), with 35 copies of each of three recent testimonials, should be addressed to the undersigned on or before February 21st. Each candidate will be required to transmit to the Secretary a certificate of his age, and to attend the House Committee on Tuesday, February 25th, at 4 p.m.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Macclesfield General Infirmary.
(100 Beds.)

Wanted at once, SECOND HOUSE SURGEON, male. Salary at the rate of £150 per annum, with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

Applications, stating age, nationality, and qualifications, with copies of their testimonials, to be sent to the undersigned.

A. E. HANRAHAN, Secretary.

Chelsea Health Society and
SCHOOL FOR MOTHERS.

MEDICAL OFFICER (woman) required to take charge of weekly Ante-natal Clinic (2 hours, usual fee). Duties to commence April next. Wide experience essential. Written applications, enclosing copies of testimonials, by February 28th, to—

HON. SECRETARY.
1, Manor St., Chelsea, S.W.3.

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the post of CASUALTY OFFICER, who will rank next to the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, and laundry. Previous experience essential.

Applications from British (male) candidates, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.
January 4th, 1930.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON (male) vacant February 22th.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned on or before Tuesday, February 11th.

R. J. CARLESS,
January 27th, 1930. House Governor.

The Royal Eye and Ear Hospital,
BRADFORD.

Wanted JUNIOR HOUSE SURGEON, male. Salary £150, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned on or before February 11th.

F. BRIGGS, Secretary-Supt.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital. 238 Beds.)

Applications are invited for the posts of:
OPHTHALMIC HOUSE SURGEON.
HOUSE SURGEON (General Surgery).
ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER.

Candidates must be qualified and registered under the Medical Acts.

The appointments are tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than February 14th. Duties will commence on March 1st.

WALTER BANKS,
Jan. 22nd, 1930. Supt. & Secretary.

King Edward VII Hospital,
WINDSOR. (181 Beds.)

HOUSE SURGEON (male or female) required for six months from date of appointment. Applicants must be fully qualified and registered, and should have had experience in Ear, Nose, and Throat work.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than February 12th.

ARTHUR E. CHURCHER, Secretary.

Bristol Eye Hospital.

Applications are invited for the post of HOUSE SURGEON. Vacant February 22nd next. Salary £150, with board, residence, and laundry. Applications should be sent to the Secretary not later than February 14th.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.

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All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Assistant, outdoor, semi-rural Practice, 10 miles Manchester, with view Partnership. Ex H.S., some exper. panel and private practice, Eng. or Scotch. Salary £300, with rooms, board, and attendance. If married, house to rent shortly. Drive car. Dispenser kept. Recent refs., tests., and photo. —No. 904, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, an Assistant, at once, used to panel and private practice, in industrial area in the Midlands, for permanency. Commencing salary £275, all found. Half emergency midwifery and dental anæsthetic fees. Abstainer. Usual bond. Testimonials.—No. 920, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, outdoor, married man between 30 and 40, or lady. Good Country Practice. Dispenser, little night work. Able to drive car. Must have good address. Small modern house.—Address, No. 926, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£450 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, keen and energetic ASSISTANT, outdoor, for mixed Practice near Newcastle-on-Tyne; ex House Surgeon and total abstainer preferred. Salary £360 p.a., with furnished house, rates, and reasonable light provided.—Address, No. 913, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Male Assistant (motor cyclist) for panel and private Practice in a Yorkshire Town. Salary commencing £250. Suit recently qualified man. British. Usual bond.—Address, No. 901, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, preferably with view. Seaside Town, Cornwall. Must be young and energetic. £300 per annum, indoor.—Address, No. 918, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, in a mining Practice in Glamorgan. No dispensing. Usual bond. Salary £350 per annum, with furnished rooms, light, and attendance.—Address, stating age, references, etc., No. 914, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Keen, energetic male ASSISTANT for private and panel practice. Liberal salary, with rooms and attendance. Usual bond. State all essential particulars, with recent references.—Address, No. 917, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistant in a pleasant small Country Town (with Hospital) in North Wales. Able to drive car. Work light. Usual bond.—Address, No. 923, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant (indoor). Salary £300—£350, according to experience. Usual bond. — Address, No. 936, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, energetic, experienced panel and private. Newcastle-on-Tyne. — Address, No. 1025, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, with view, male, Scotch or English. Good working class private and panel. Practice, 50 miles London. Salary £300.—Address, No. 930, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Highly qualified man ASSISTANT, with view to early Partnership. Rapidly growing Northern Coast Town. Last year's receipts £7,000. — Address, No. 929, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor. British. Good references essential. Suit young married man. Apply personally 11 a.m. (not Sunday), Dr. RIDEWOOD, 103, Bethnal Green Road, E.2.

Wanted. — Male Assistant, indoor, for mixed Practice. Salary £250 to £300, if experienced. Usual bond. State age, testimonials. British.—Address, No. 878, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, with or without view. Industrial Practice near Manchester. Protestant. Single. Age, height, photo., and full particulars. Prospects to suitable man. — Address, No. 907, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, prospects, Protestant, for mixed Practice in Midlands. Salary £300.—Address, No. 916, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistantship, with good prospects, by exper. man; highest refs. and tests., total abstainer, single, energetic; drive car or motor cycle. Used sole charge. Free now. N. of Eng. pref. Interv. —No. 902, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or PART-TIME WORK, in or near Belfast, by Woman M.B., Ch.B.Edin., 4½ years' good experience private and panel practice. Excellent testimonials. State terms.—Address, No. 921, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Woman M.B., B.S., London or easy reach. Experienced hospital, general and children, anæsthetics, and some general practice.—Address, No. 933, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with definite view, by M.R.C.S., L.R.C.P., aged 28, male, English. In or within 50 miles London preferred, but not essential. Good references. — Address, No. 919, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B., B.Ch. N.U.I., æt. 28 years, single, 4 years' experience G.P. (panel and private), 2 years manager branch. Excellent testimonials. Free now.—Address, No. 925, B.M.A. House, Tavistock Square, W.C.1.

Assistants and Locum Tenens required.—For further particulars apply Messrs. R. SUMNER & Co., LTD., Manufacturing Chemists, 40, Hanover Street, Liverpool.

Histological Assistant. A skilled Assistant is required for Research Work in Histology. Previous experience in staining and microscopical examination of nervous tissue desirable. Salary £4 weekly. Applications, stating capacity and experience, with copies of three testimonials, should be received not later than March 1st, addressed to the Director, Joint Board of Research for Mental Disease, City and University of Birmingham, Hollymoor, Northfield, Birmingham. January 28th, 1930.

M.B., Ch.B., aged 34, ex H.S. and A.M.O., wide Hospital experience, 1½ years' private and panel, requires ASSISTANTSHIP, with view. Would manage Branch. Excellent refs. Interview.—Address, No. 1024, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.—Fully qualified Doctor for service in the Tropics. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passages provided. Candidates must be unmarried. Ladies not eligible.—Address, with copies of testimonials (not returnable), No. 522, B.M.A. House, Tavistock Square, W.C.1.

Applications are invited for the appointment of MEDICAL OFFICER OF HEALTH to the MUNICIPAL COUNCIL OF NAIROBI, at a salary of £1,100 per annum, rising by annual increments of £50 to a maximum of £1,300.—Applications should be addressed to Messrs. LAURIE & Co., 28, Basinghall Street, London, E.C.2, from whom full particulars may be obtained.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Capable, well-educated woman, aged 32, as WORKING HOUSEKEEPER or CARETAKER to Doctor, highly recommended for position of trust by Mrs. ALLGOOD, Tarset, Northumberland.

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West Riding.—Half Share, worth £900, of old-established middle and working-class PRACTICE in large University town for sale. Panel 1,300. Nice house on lease. Premium 1½ years' purchase.—Address, No. 928, B.M.A. House, Tavistock Square, W.C.1.

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Wanted, early summer, Country PRACTICE, with panel, suitable two partners. West of England, within easy reach Bristol. Adjacent single Practices considered. Two good houses and gardens essential. Income about £4,000. Capital available.—Address, No. 922, B.M.A. House, Tavistock Square, W.C.1.

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Seaside Resort, Lancs.—Ladies' PRACTICE in very pleasant district. Roomy flat, with lawn in front, rent £104. Receipts about £1,000, with much scope. Panel 225. Price £1.050. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

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APPOINTMENTS.—Contd.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH. (BOSCOMBE BRANCH. 170 Beds.)

A HOUSE SURGEON (male, British nationality) required to commence duty immediately. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act.

Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
January 20th, 1930. Secretary.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing March 1st. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, February 19th. Selected candidates will be invited for an interview Saturday, February 22nd.

Southport General Infirmary. (120 Beds.)

Special Departments for Eye, Ear, Nose, and Throat, X-rays, Massage, Skin, Pathology, etc.

Wanted to take up duties on or about March 1st, a SENIOR HOUSE SURGEON, fully qualified and registered, unmarried. Salary £200 per annum. Free residence, board, and laundry.

Applications, stating age, nationality, and experience, with copies of testimonials, to be sent in by February 17th to the Secretary, The Infirmary Office, Pilkington Road, Southport.

The Royal Liverpool Children's HOSPITAL, Myrtle Street, LIVERPOOL.

The Committee invite applications from Graduates with previous Hospital experience for the appointment of RESIDENT CASUALTY OFFICER (male). The appointment will be for a period of one year from April 1st, and the holder of the post will be eligible for re-election.

Salary at the rate of £250 per annum.

Further particulars may be obtained from the Secretary of the Hospital, to whom applications should be sent, with copies of recent testimonials, on or before Monday, February 17th.

The Royal Infirmary, Doncaster. (121 Beds.)

THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work. Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.

Salary £150 per annum, with board, residence, and laundry. Applications, with full particulars, should be addressed to the undersigned by Tuesday, February 11th.

J. LAWRENCE MEARS,
February 5th, 1930. Secretary-Supt.

CAVENDISH NURSES (Male and Female)

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Manchester Royal Infirmary.

CLINICAL ASSISTANTS.

MEDICAL OUT-PATIENT DEPARTMENT (Two).
SURGICAL OUT-PATIENT DEPARTMENT (One).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments. Surgical Out-patient Department—now vacant; Medical Out-patient Department—Two vacancies on April 1st.

Applicants (either sex) must be registered and hold a Medical and Surgical qualification.

The appointments (non-resident) are for six months, subject to the provisions of the By-laws as to notice, etc. Attendance is required daily (except Sundays) from 9 a.m. Salary £35 for the six months. Applications, together with testimonials, and stating age, should be received by the Chairman of the Medical Board not later than February 17th.

By Order,
FRANK G. HAZELL,
Feb. 3rd, 1930. Gen. Supt. & Secretary.

Cumberland Infirmary, Carlisle.

Applications are invited for the following posts (male). Six months' appointments. Previous experience in each case desirable.

(1) HOUSE PHYSICIAN, vacant March 8th.
(2) HOUSE SURGEON to Special Departments (Eye, Ear, Nose, and Throat), vacant April 1st.

Salary in each case at the rate of £155 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 19th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.
J. G. HOWITT,
February 3rd, 1930. Secretary.

Liverpool Stanley Hospital,

LIVERPOOL.

Applications are invited for the post of HONORARY GYNÆCOLOGICAL SURGEON (female), vacant through the resignation of Miss Frances Ivens, C.B.E., M.S.

Applicants must possess special qualifications for the post.

Applications and testimonials, addressed to the Chairman of the Honorary Medical Officers Election Committee, to be sent on or before Monday, 17th inst.

The canvassing of any member of the Election Committee will disqualify, but candidates are at liberty to send to the members copies of their applications and testimonials.

FRANK WHITE, Hon. Secretary.

Liverpool Stanley Hospital.

There will be vacancies on April 1st for One Male HOUSE PHYSICIAN, Two Male HOUSE SURGEONS, and One Female GYNÆCOLOGICAL HOUSE SURGEON. Engagement for a period of six months. Salary at the rate of £100 per annum, with board, laundry, etc.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before February 12th.

E. W. OSBORN, Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON (male).

Salary at the rate of £150 per annum for the first six months and £175 for the second six months, with residence, board, and laundry.

The appointment is for six months and is renewable.

The Resident Staff consists of a Resident Surgical Officer, House Surgeon, and House Physician.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

ARTHUR H. LIMB, Secretary.

Miller General Hospital,

Greenwich Road, S.E.10. (151 Beds.)

Applications are invited for the three following posts:

RESIDENT MEDICAL OFFICER (the Senior of five resident posts). Salary £250 p.a.
CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from April 1st next.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary.

January 27th, 1930.

The Royal Infirmary, Sheffield.

The Weekly Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Board Room, General Supt. &
February 3rd, 1930. Secretary.

West Norfolk and King's Lynn HOSPITAL.

The Governing Board of the West Norfolk and King's Lynn Hospital propose to appoint an HONORARY PHYSICIAN. Applications are invited from suitably qualified gentlemen who are desirous of engaging in consulting practice. The Hospital serves a wide area, and there is at present no consulting physician in this area. A substantial honorarium will be available.

Applications, giving particulars of experience, together with three recent testimonials, should be sent to the undersigned on or before February 28th.

HAROLD MANNOCK,
House Governor & Secretary.

Royal Sea Bathing Hospital for SURGICAL TUBERCULOSIS, MARGATE. (302 Beds.)

Applications are invited for the post of RADIOLOGIST to this Hospital, which will be vacant on March 31st next.

Attendance on two afternoons per week is required, and an honorarium of 100 guineas is offered.

Candidates should have had previous Hospital experience.

Applications, accompanied by one testimonial, should reach the Secretary, R.S.B.H. Offices, 15, York Buildings, Adelphi, W.C.2, on or before February 22nd next.

North Lonsdale Hospital, BARROW-IN-FURNESS.

Applications for a HOUSE SURGEON are invited from fully qualified male Practitioners experienced in the administration of Anæsthetics. Salary £150 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary so as to reach him not later than February 17th.

Worthing Hospital.

Applications are invited for the post of HOUSE SURGEON (male), vacant on February 14th. The appointment is for six months, renewable. Salary at the rate of £150 per annum, with board, lodging, and washing. Applications, stating age, qualifications, and experience, with copies of testimonials, to be sent to the undersigned as soon as possible.

A. O. KAYE, Secretary.

Applications are invited for the position of TEMPORARY MEDICAL SUPERINTENDENT at the ABERGELE SANATORIUM, NORTH WALES, for a period of at least three months.

The Sanatorium contains 62 beds, 52 of which are for early cases of Tuberculosis of the lungs in adults, and 10 beds for Surgical Tuberculosis in children. The remuneration is at the rate of £15 15s. a week, with board, lodging, and laundry.

Applications, containing a statement of qualifications should be sent to me not later than February 20th, and should have marked on the envelope "Medical Superintendent, Abergele."

Town Hall, F. E. WARBRECK HOWELL,
Manchester. Town Clerk.
January, 1930.

The General Hospital,

BIRMINGHAM.

Applications are invited for the post of RESIDENT SURGICAL REGISTRAR.

This officer will be attached to Two Surgical Units and to the Gynæcological Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance and be subject to renewal for two further years. Candidates must have had previous surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by February 17th.

A. H. LEANEY, House Governor.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

CLINICAL ASSISTANTS are required in the Medical Department under the Honorary Physicians, to attend on Monday, Tuesday, Wednesday, and Friday afternoons. Also CLINICAL ASSISTANT in the Ear, Nose, and Throat Department, to attend on Thursday afternoons.

CLINICAL ASSISTANTS are also required in the X-ray Department, to attend on Monday, Tuesday, and Thursday afternoons.

Applications for appointments to be sent to—
FREDK. W. DREWETT,
January 27th, 1930. Director.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male) who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Tuesday, February 11th.

FRANK INCH,
Feb. 1st, 1930. House Gov. & Secretary.

Newcastle-upon-Tyne City MENTAL HOSPITAL, GOSFORTH, NEWCASTLE-UPON-TYNE.

Wanted, on April 1st next, JUNIOR ASSISTANT MEDICAL OFFICER (male). Commencing salary £350, rising by annual increments of £25 to £450 per annum, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

West Kent General Hospital, MAIDSTONE.

RADIOLOGIST.

Applications are invited for the post of Honorary Radiologist at the above Institution. Any information may be obtained from the undersigned to whom applications must be sent on or before February 15th.

EDWARD J. GREGG,
House Governor & Secretary.

PROSPECTIVE PURCHASERS

OF PRACTICES

and those seeking

PARTNERSHIPS

should consult

The

BRITISH MEDICAL BUREAU

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12, Stratford Place, Oxford St., London,

or its Northern Branch at

33, Cross Street, Manchester,

or its Newcastle Branch at

7, Windsor Place, Newcastle - on - Tyne.

Those requiring additional

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Medical Insurance Agency

(Limited by Guarantee)

B.M.A. House, Tavistock Sq., London, W.C.1.

Arcoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic) required, to commence duty on March 1st. Appointment for six months.

Also

HOUSE PHYSICIAN required. To commence duty on March 1st. Appointment for six months.

Salary for each post at the rate of £100 per annum, with board, apartments, and washing.

Applications, stating age, qualifications, experience, if any, and full particulars to be forwarded to the undersigned on or before February 14th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Bristol Homœopathic Hospital,
(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER at a salary of £120 per annum, with board, laundry, residence, etc., in the Hospital.

Good Surgical and general experience. A good opportunity for a man reading for higher surgical examination.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned.

Applicants should state the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

Manchester and Salford Hospital
FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for twelve months from April 1st. Salary £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Monday, February 17th.

JOHN NALL, Secretary.

BRITISH MEDICAL BUREAU

NORTHERN BRANCH.
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W. J. HICKS, *Secretary.*

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Apply to Lady Superintendent,
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Hants. — Old-estab. — Average £2,750 p.a. 1/3 share after present assistancy. Panel about 2,000. Usual fees. Prem. 2 years' pur., part down.—No. 8521.

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Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8603.

Australia. — Over £1,000 and great scope. Hosp. appt. worth £400. Fees 10/6 up. Prem. £700. New bungalow, 2 bed., 1 large sitting room, surgery, etc.—No. 8604.

Lincs.—Unopp. Country PRACTICE. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 3/- to 10/-. House, 5 bed., etc., to rent; large garden.—No. 8592.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8535.

Hants Country. — About £700 p.a. Appts. about £55 p.a. Panel about 500. Visits 3/6—10/6. House, 3 bed., etc., to rent or buy.—No. 8582.

N. W. Scotland. — About £860 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premium, including furniture, only £1,200.—No. 8577.

Glos.—Over £750 p.a., increasing annually. Clubs £40 p.a. Panel 550. Mids. 2—10 gns. Visits 3/6—10/6. Good house, 5 bed., etc.—No. 8578.

Wiltshire.—About £1,000 p.a. Small panel. No midwifery. Appt. £20 p.a. Visits 5/- to 10/6. Suitable house to rent at £70 p.a.—No. 8574.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd of £3,300 p.a. Panel over 1,300. Appts. £280 p.a. Mids. 2 to 10 gns. Visits 5/- to 31/6, etc. Suitable accommodation.—No. 8573.

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ASSISTANTSHIPS.—We have several ASSISTANTSHIPS, with and without view, on offer. Suitable to well-qualified men. Personal application essential.

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NORFOLK.—PARTNERSHIP in County G.P. *Medium-sized house* (5 beds.) to rent at £69 p.a. Receipts (approx.) £2,000. Panel 1,600. Suit married Practitioner, aged about 30.

DEVON.—PARTNERSHIP in good-class non-panel and non-dispensing Practice. Suitable to experienced man used to better-class Practice; *good at medicine and capable at anæsthetics. Receipts over £3,200.* Premium for 1/4th or 1/3rd share, 2 years' purchase (larger share in to 2—3 years' time).

HOME COUNTIES (S.).—PARTNERSHIP in old-established County G.P. Medium-sized house to rent. Receipts over £2,200. Panel nearly 1,200. Premium for 1/2 share 2 years' purchase. Suitable to well-qualified man not less than 30, preferably married.

BEDS.—PARTNERSHIP in Town Practice. Receipts approx. £1,300 p.a. Panel 1,760. Half share for disposal, with view to Succession, at 2 years' purchase. Preliminary assistantship entertained.

DERBYSHIRE.—PARTNERSHIP in old-estab. non-panel Practice in best part of large town. *Receipts approx. £3,000 p.a. Quarter share now,* with view to larger share, at 2 years' purchase.

HOME COUNTIES.—We have several small PRACTICES for disposal. Incomes from £100 up, with scope for development. Full details on request.

HOME COUNTIES.—Within easy distance of Town.—PARTNERSHIP in well-established G.P. Share worth approx. £1,000 p.a. Premium 2 years' purchase. Preliminary assistantship. Suitable only to *experienced man aged 30 to 35, preferably single.*

BERKS.—PARTNERSHIP, with view to Succession.—Country Practice. Receipts average £1,120 p.a. Panel nearly 600. House to rent. Premium for half share 2 years' purchase. Suitable only to single man.

DURHAM.—PARTNERSHIP in *increasing* Practice situated in colliery district. Receipts £1,600. Panel 1,550. Premium for half share 2 years' purchase.

YORKS.—PARTNERSHIP in middle- and working-class Town Practice. Receipts approx. £3,000 p.a. Panel over 2,000. House to rent. Premium for 1/4th share 2 years' purchase.

WEST COUNTRY.—*Oxford* or Cambridge 'Varsity Graduate desired as PARTNER, with view to Succession in three or four years' time, in old-established good-class non-panel Practice situated in country town. Receipts over £2,000 p.a. Half share is offered to well-qualified man, aged about 30, at 2 years' purchase.

LEICESTERSHIRE. — Old-established Country PRACTICE. Receipts £1,450. Panel 1,350. Suitable accommodation available. Premium 1½ years' purchase.

LONDON, S.W.—PARTNERSHIP in middle-class Suburban PRACTICE. Receipts £2,200. Panel about 2,500. Suitable accommodation available. Premium for half share 2 years' purchase.

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YORKS.—Well-established middle and working-class Town PRACTICE. Receipts approx. £1,520. Panel nearly 1,700. House to rent. Premium £2,250.

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LANCS.—Old-established middle-class PRACTICE in manufacturing area. Receipts over £4,250. Panel 2,600. House (corner) for sale at £1,100. *Premium for Practice 1½ years' purchase,* payable part down and balance by arrangement. Partnership would be considered.

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4. WEST MIDLANDS.—Well-estab. PRACTICE in Market Town and Agricultural District. Receipts £1,572. Panel 500. *Appointments worth £118, transferable.* Good house, garage, garden, and all conveniences.
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HIS HOME
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AND
HIS CAR

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5 SOUTH MIDLANDS. — Partnership in Practice of £3,500 p.a. in country town 40 miles from London. Panel 1,900. Small house (5 bedrooms) to rent. Partner should be 30/40, married, and able to do minor surgery. Premium 1/3rd share £2,600.

6 SOMERSET. — Country Practice about £900 p.a. Panel 400. House (7 bedrooms), garden and garage, to be let or sold. Nice society and sport. Premium 1½ years' pur.

7 SOUTH AFRICA.—Practice nearly £3,000 p.a. in one of the pleasantest Towns in the Cape Province. House (4 bedrooms) to rent. Excellent surgical centre. Purchaser should be able to undertake major surgery. Premium £2,200, part by instalments.

8 LONDON, N.W. — Partnership in non-dispensing Practice in outlying residential district. No panel. Share worth about £1,000 at 2 years' purchase.

9 WEST OF ENGLAND.—Practice averaging £1,350 on outskirts of important City. Panel 1,787. Pleasantly situated house (4 bedrooms), garage and large garden, for sale. Premium £2,100. Considerable scope.

10 DORSET.—Country Practice over £1,000 p.a. in beautiful part. Panel over 600. Detached house (6 bedrooms) in own grounds, with garage, to rent. Premium 1½ years' purchase.

11 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £730. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

12 N.E. COAST.—Partnership (after short preliminary Assistantship) in Practice in Seaport Town. Suitable house to rent. Share worth over £1,800 p.a. at 1½ years' purchase. Young energetic Englishman (about 30) required.

13 EASTERN COUNTIES. — Partnership in Country Practice over £2,000 p.a. in prosperous agricultural district. Panel 1,070. Nice detached house (6 bedrooms), electric light, etc., for sale or rent. Premium two-fifths share £1,400.

14 Near BIRMINGHAM.—Partnership in very sound Practice, nearly £3,000, in large and rapidly growing residential country district. Panel 950. Suitable house obtainable. Premium one-third share 2 years' purchase.

15 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

16 LONDON, N.—Practice of £1,100 p.a. in populous district. Panel 1,150. House to rent. Premium 1½ years' purchase.

17 LONDON, W.—Partnership in non-dispensing Practice about £2,500 p.a. No panel or appointments. One-third share, with view to ultimate succession. Premium 2 years' purchase. Purchaser must be well qualified and used to good-class Practice.

18 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

19 MIDLANDS.—Partnership in Practice in agricultural district in beautiful part. Small panel. Not much midwifery. House (7 bedrooms), with very nice garden and orchard, to rent. Share worth £1,200 p.a. at 2 years' purchase.

20 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

21 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

22 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

23 MADEIRA.—Season Practice. — Receipts last season over £900. Easily worked. Practically no night work or midwifery. Excellent climate. Premium £1,000.

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Practices and Partnerships for Disposal (continued).

24 LONDON, S.E.—*Cash and Panel Practice* in thickly populated area. Receipts 1929, £360. Panel 250. Rent of premises £9 per month. Premium £750.

25 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

26 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

27 SOUTH MIDLANDS.—Partner required in Country Town Practice over £4,500 p.a. Panel 2,500. House available, with 6 bedrooms, etc. One-fourth share at 2 years' purchase. Applicant must be married and about 30/35 years of age.

28 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

29 SOUTH COAST.—Partnership in Practice about £4,000 p.a. *in favourite watering place.* Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

30 WEST OF ENGLAND.—Country Practice about £500 p.a. in mining and agricultural district. Panel £550. *House (6 bedrooms), with fine garden and paddock,* to rent. Premium £500.

31 NURSING HOME in favourite Town on Kent Coast. Clear net profit £750 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. *Highly recommended.*

32 SOUTH MIDLANDS. — Easily worked Country PRACTICE upwards of £1,000 p.a. in beautiful part. Panel 470. Excellent and most pleasantly situated modernised *house (6 bedrooms),* in old-world garden, for sale. Sport and *schools. Premium* £1,350.

33 HEREFORDSHIRE.—Practice about £400 p.a. in beautifully situated Market Town. No panel. Centrally situated house (5 bedrooms) for sale. Great scope. Premium to effect quick sale £100 only.

34 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

35 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

36 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

37 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

38 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house *(6 bedrooms) to rent.* Premium £1,000.

39 ESSEX.—Practice of £1,100 p.a. in Rural District. Panel 670. Old-fashioned house (6 bedrooms), with large garden, to rent. Scope. Premium £1,650.

40 EASTERN COUNTIES. — Partnership in Country Practice of £2,330 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

41 W. OF ENGLAND. — Ophthalmic Practice about £900, in residential seaside resort. *Semi-detached* house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium 1½ years' purchase.

42 S.W. OF ENGLAND. — *Partnership in* Practice about £4,000 p.a. *in watering place.* Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,100.

43 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

44 INLAND WATERING-PLACE. — Good-class PRACTICE of nearly £2,000 p.a. (General and Spa work). No midwifery or panel. Excellently situated house to be purchased.

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46 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

47 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

48 BRITISH EAST AFRICA. — Assistant *required (with view to Partner-ship) in General and X-ray and* Electro-therapeutic Practice. Share of about £1,200 p.a. offered to suitable man after preliminary assistantship.

49 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 600. Suitable and convenient house.

50 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained.

51 SOUTH WALES. — Practice over £1,200 p.a. in Country Town. Panel about 300. Attractive old house (6 bedrooms). Garage and garden. Good facilities for sport. Premium £1,500.

52 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

53 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

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56 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

57 WEST OF ENGLAND.—Steadily growing Country PRACTICE of about £550 in delightful part of the Cotswolds—easy reach of two good Towns. Panel 497. House (6 bedrooms), with garage, ½ acre garden, and paddock, for sale. Good scope. Premium £800.

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3. DEATH VACANCY.—LONDON, S.W.—Old-established non-panel PRACTICE, producing over £1,600 p.a. Fees from 2/6 to 21/-. Convenient house, with 2 reception, 4 bedrooms, and professional rooms, etc. Rent on lease £110 p.a. Premium £1,500. Locum in charge.
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5. HOME COUNTY.—Near Sea.—Old-established unopposed Country PRACTICE in pretty district. Receipts last financial year £1,123, including union, etc., £55, and panel 400. Railway station near. Good house in own grounds (about one acre, but more can be had if wished), containing 2 reception, 6 bedrooms, etc. Water laid on and electric light available. Price, freehold, £1,650. Premium £1,625. Educational facilities and sport.
6. PARTNERSHIP.—OXON.—Delightful residential district near good town.—A one-third share (to commence with) in an old-established *good mixed-class Practice, averaging for the past three years £1,540,* and offering good scope. Panel of nearly 1,000. Fees 3/6 to 21/-. Choice of two houses at rentals of £100 and £50 p.a. Sport of all kinds. Premium 2 years' purchase.
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8. MIDLANDS.—COUNTY TOWN.—PARTNERSHIP.—A one-fourth share in an exceptionally sound non-dispensing mainly mixed and better-class Practice, averaging over £8,500 p.a. Small selected panel of 700. Fees 5/- to 21/-, average 7/-. Suitable house can be obtained. *London, Oxford, or Cambridge Graduate preferred,* age 30 to 35, and experienced in anæsthetics. Premium £4,000.
9. NEAR LEICESTER.—Old-established good middle-class Country PRACTICE, in attractive district. Average income £1,453, including panel of 1,250. Fees from 3/6. Mid. 3 gns. upwards. Good house in excellent repair, 3 reception, 6 bedrooms, etc., separate professional rooms. Garage. Garden of 3½ acres. Price freehold £2,800. £1,750 on mortgage, or might be rented. Premium £2,175.
10. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in *its own grounds with ample accommodation.* Price freehold £1,900, £1,200 on mortgage. Premium £2,500. Cottage Hospital, and good scope for major surgery.
11. BORDERS OF NORTHANTS AND LINCS.—Unopposed old-established Country PRACTICE, within easy reach of large town, and worth over £1,500 p.a., including panel (with mileage) £675, and appts. about £80. Visits 5/- to 20/-. Suitable house available. Rent £70 p.a., or can be bought. Premium 1½ years' purchase. Held by Vendor, who is retiring, over 30 years. Sport of all kinds.
12. NEAR LIVERPOOL.—Mainly better working-class PRACTICE, producing about £700 p.a., including panel of 854. Fees 2/6 to 5/-. Mid. 3 to 5 gns.; about 20 cases yearly. Suitable house available on rental. Premium £1,000.
13. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—A share producing about £1,200 p.a., with prospects, is for disposal owing to the retirement of one of the partners in an old-established Practice. Ingoing partner would reside in a pretty country district about 5 miles from pleasant country town, where main practice lies. No opposition. Total income about £8,000, including valuable appointments worth about £2,000, and panel. Very desirable residence (ample accommodation) with 2½ acres of ground available on lease at low rental of £60. Premium 2 years' purchase.
14. LIVERPOOL.—Middle and working-class PRACTICE. Receipts for immediate past twelve months £1,247, including panel of 602. Fees from 2/6. Suitable house, with 2 reception, 4 bedrooms, etc. Large garden. Price for leasehold £1,550, of which £1,300 could remain on mortgage. Premium £1,550.
15. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
16. SOUTH COAST.—FAVOURITE HEALTH RESORT.—*Old-established mixed-class* PRACTICE, producing about £1,000 p.a. *Small panel of* 283. Fees from 2/6. Suitable house, with 3 reception, 5 bedrooms, etc. Large garden. Price for leasehold £1,400, £1,250 on mortgage. Premium £1,200.
17. YORKS.—(North Riding).—*Country PRACTICE in beautiful district. Average income* over £750, including panel of about 350. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
18. LONDON, W.—Chiefly *middle-class PRACTICE*, averaging about £700 p.a., including panel of 750. Visits 3/6, 5/-. No midwifery. Suitable house, with 4 beds., etc. Rent on lease £96 p.a. Prem. £1,100.
19. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, *and capable of increase.* Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate *premium accepted.*
20. CHANNEL ISLANDS.—Old-established better and middle-class PRACTICE, averaging about £1,000 p.a., but capable of increase. Fees 5/- to 21/-. *Little midwifery.* No panel. Large well-situated house with garden. Garage for 3 cars. Very pleasant social conditions. Premium for Practice *and house £4,000, of which £1,500 to £2,000* could remain on mortgage.
21. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visits 5/- to 21/-. Panel of about 380. Appts. worth *about £50 p.a. Convenient house,* with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' pur.
22. WITHIN TWENTY MILES OF LONDON.—Old-established good mixed-class PRACTICE, in attractive residential district. Receipts average £1,000 p.a. Panel of nearly 500 and appts. worth £60. Visits 3/6 to 21/-. Very nice house, with all modern conveniences and half acre of garden. Price for freehold £1,800. Premium £1,400.
23. DEATH VACANCY.—NORTH WALES.—Easily worked *PRACTICE*, offering large scope, in beautiful seaside and country district. Cash receipts for last twelve months about £1,200. Very convenient and commodious house can be rented on lease at £85 p.a. Premium £800. Very good Locum in charge.
24. HOME COUNTIES.—*Within few miles of large town.—Old-established* unopposed and increasing PRACTICE, in pleasant district, worth over £3,000 p.a., including panel, with mileage, producing about £1,000 and appts. £260. Visits 3/6 to 10/6, medicine usually extra. Very little midwifery. Good house (7 bedrooms, etc.), garden, garage. Price, freehold, £2,000. Premium 1½ years' purchase.
25. CHESHIRE.—Industrial Town within easy reach of Manchester.—*Well-established PRACTICE producing £2,600 p.a., with panel of* 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000; or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
26. SOUTH AFRICA.—HEALTH RESORT (Inland Spa).—*Old-established increasing* PRACTICE (held over 20 years) on a *main line of rail* and in a healthy pleasant township much frequented by visitors in *the Season. Cash receipts average over £1,750 p.a.,* including several appts. One opponent. Price for house £1,250, to include furniture, instruments, and motor car (original cost £2,000), and for goodwill £1,250, part by instalments. Efficient introduction. A knowledge of Hydrology would be a big asset.
27. PARTNERSHIP.—*STAFFORDSHIRE.—LARGE TOWN.* — A *one-third* share is offered in a very sound old-established chiefly working-class *Practice, averaging* £3,700 p.a., including panel of nearly 5,000. Very suitable house, with 2 reception, 3 bedrooms, etc. Moderate rent. Premium only 1½ years' purchase, part by arrangement.
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29. SOMERSET.—Near Hospital Town, in very pleasant residential district, an old-established unopposed Country PRACTICE averaging over £900 p.a., including panel (producing about £400 p.a., with mileage and appts. Visits 3/6 to 21/-. Railway station in place. Nice house (5 bedrooms, dressing and bathroom, etc., garden). Price, freehold, £1,250, part on mortgage. Prem. £1,250, to include drugs, etc.
30. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A one-third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, *on rental. Premium* £2,250.
31. PARTNERSHIP.—SOUTH COAST.—Favourite Residential and Holiday Resort.—A one-third share, with increase later, in a well-established non-dispensing chiefly better-class *Practice. Average income over* £3,000 p.a., with large scope. Fees 5/- to 21/-. Very little mid. Good corner house, with 4 *reception, 6 bedrooms,* etc. *Premium* 2 years' purchase. Scope for surgery.
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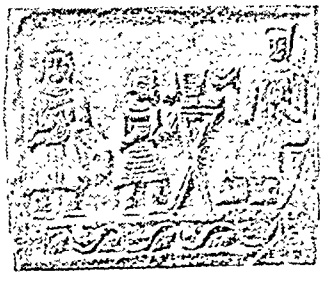
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SCENE TYPICAL OF THE LIVES OF ANCIENT ARABIAN PIONEERS CARVED UPON A STELE.—In this illustration we see a man seated upon a chair resembling our folding-stools, and partaking of a meal set out upon a table. Before him stands a servant apparently bringing vessels containing food. To the left is a woman with what is believed to be a two-stringed musical instrument. The pre-Islamic Arabs were real pioneers of poetry and song, and loved the presence of harp and singing women at their meals.



DATE: c. 115 B.C.—(?) A.D. c. 300

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FEBRUARY 15TH, 1930.

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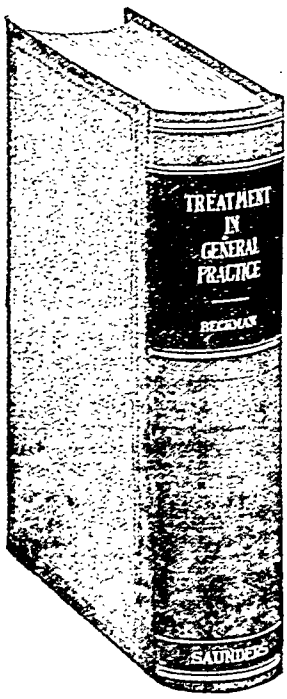
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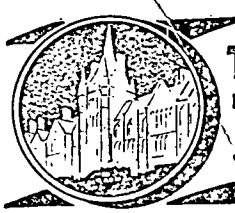
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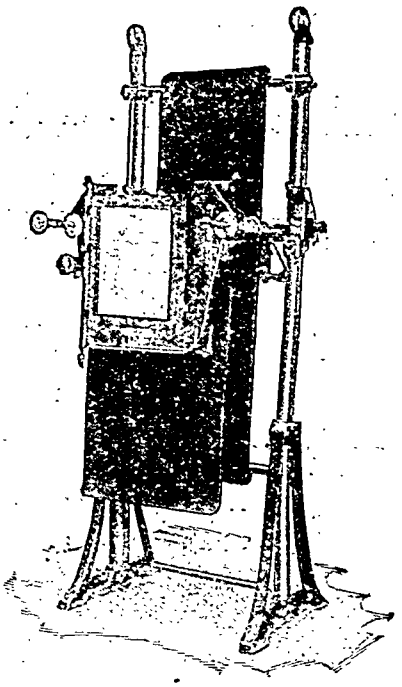
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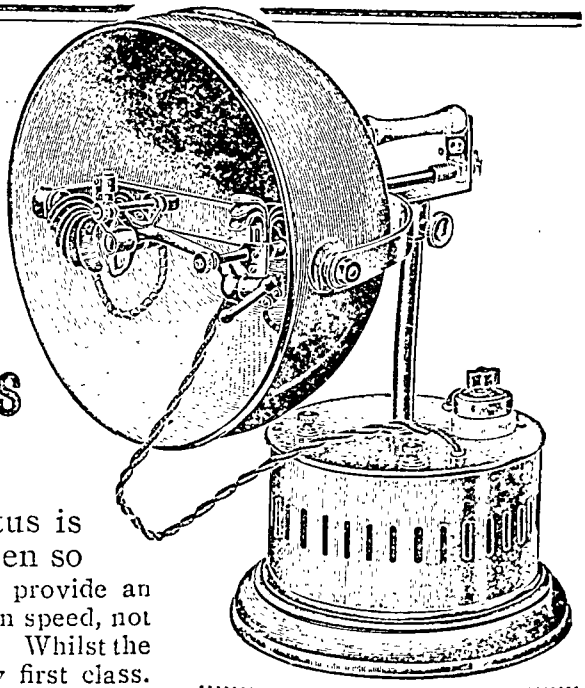
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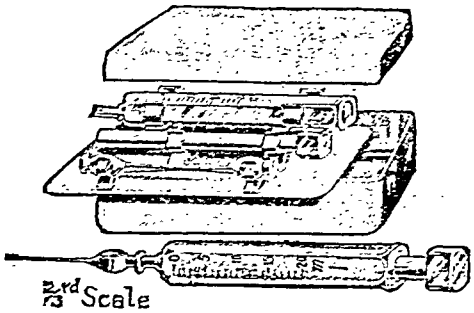
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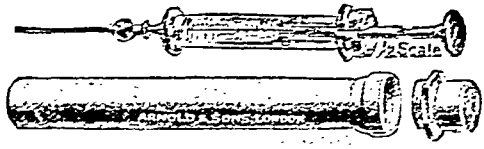
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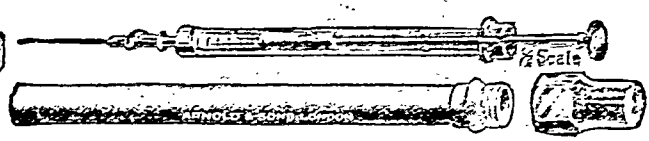


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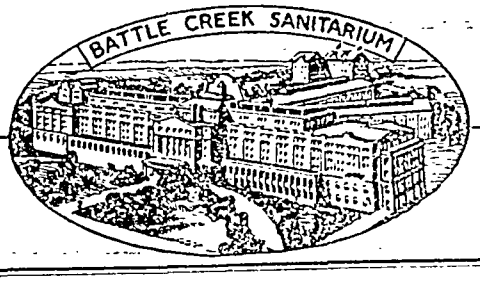
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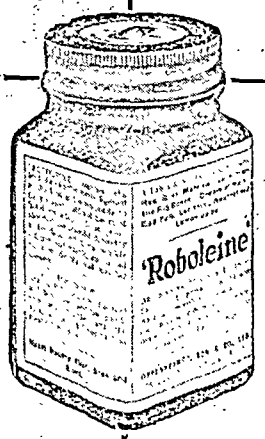
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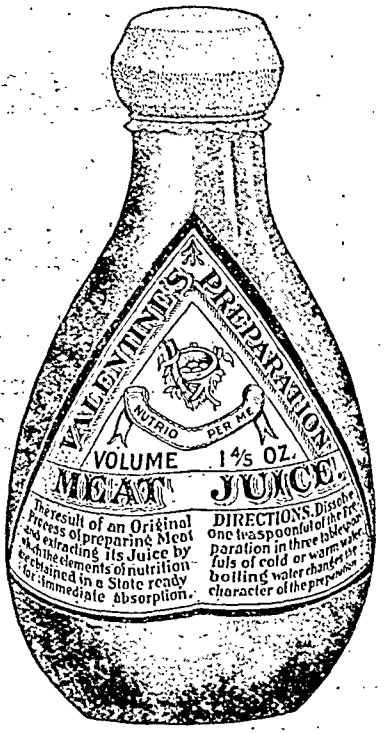
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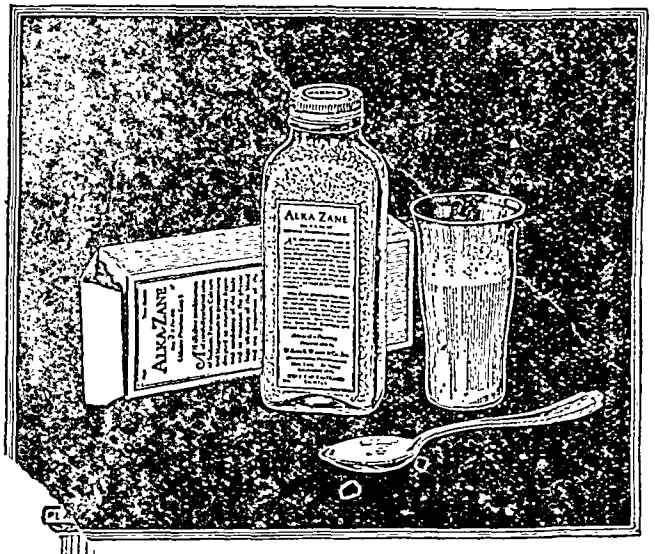
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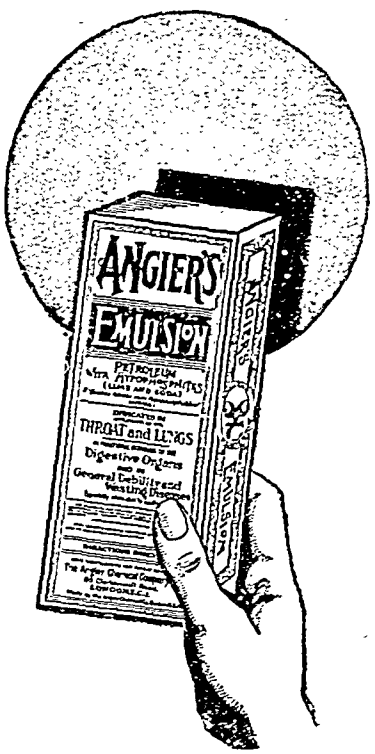
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The above extract from *The Lancet* (January 4th, 1930, p. 42)

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ON
MATERNAL MORTALITY.*

BY
DAME LOUISE McILROY, D.B.E., M.D., D.Sc.GLAS.,
PROFESSOR OF OBSTETRICS AND GYNAECOLOGY, UNIVERSITY OF LONDON, ROYAL FREE HOSPITAL.

THE problems in the causation of maternal mortality have been so much before the profession and public that I feel I have little to contribute that is new except the results of my own experience. We are all trying to find an explanation for the stationary, if not increasing, maternal death rate, and we are to some extent groping in the dark. I shall limit myself more or less to the obstetrical rather than the administrative aspect of the problem.

Two recent publications have appeared and have given us much material for discussion—Dr. Kinloch's report (Scottish Board of Health, 1929) on the maternal death rate in Aberdeen, and the Government report of the Midwives Committee.[1] We are awaiting with much interest the Government report of the Committee on Maternal Mortality.

On page 7 of the report on midwives the following statement appears: "In spite of all efforts to lessen the death rate amongst women in childbirth, the position is now little better in this respect than it was twenty years ago." This committee has endeavoured by its suggestions to fit the midwife into a scheme on a broad and national basis for the reduction of maternal mortality. We can never be Utopian enough to hope to eliminate deaths from childbirth, but we can reduce them considerably. This is the faith of all of those who are concerned with maternal welfare. If over 27,000 women lost their lives in England and Wales in the last ten years because of pregnancy or childbirth, we cannot but feel that some of these deaths were due to inadequate treatment of the patient. We must be muddling our prevention somewhere. It is not only the death rate we are concerned with, but the enormous amount of ill-health among women which is due to unskilled handling during pregnancy and childbirth. The morbidity alone should be a reason for energetic research. Some day gynaecological beds will diminish in numbers as maternity beds increase. If the maternal death rate has not decreased in the present century what are the outstanding factors to be considered in the changes which have taken place in midwifery practice? These are mainly the increase in the institutional treatment of patients, the establishment of ante-natal clinics, the introduction of panel practice, and the training of midwives.

Institutional Treatment.

The increase in the number of maternity beds throughout the country, especially since the war, has been a marked feature of the present century. There is a great demand for a further increase because of the difficulties of housing.

Dr. Kinloch's report—the result of the most careful research and courageous conclusions on the part of him and his staff, which includes Dr. Steven—is sad reading. In Scotland the maternal death rate in 1928 was 7 per 1,000, and sepsis accounted for 2.4 per 1,000 of these patients. During the preceding ten years the rate was 6.4. An analysis of the sources of the deaths in the Aberdeen area shows that in the practice of midwives the deaths were 2.8 per 1,000, among practitioners 6.9, while in institutions the death rate was 14.9.

If such a result of hospital treatment applies to other maternity institutions we would all feel it was time for us to dispense with the segregation of obstetrical patients and have them treated in their own homes, preferably by midwives only. But this is not the general mortality rate of hospitals, and presently I will show a less gloomy result from the Royal Free Hospital. It may be a good thing to make the worst of it in order to make the best of it. We must, however, have made some progress in hospital practice in all the years we have struggled to conform to the best surgical methods of cleanliness and asepsis. It may be, perhaps, that surgery has been more of a danger than a blessing, especially if practised by inexperienced obstetricians. In the past no doubt many maternal deaths from puerperal sepsis were not registered as being due to childbirth. Now these deaths are being properly investigated, as in the year 1928 in Aberdeen. The mortality rate may even be increased all over the country because of more efficient registration. There must be less sepsis than in the days when a friendly neighbour supervised the confinement and a doctor was called in who had little knowledge of the researches of Lister or Pasteur. Civilization no doubt increases the risks of parturition. Mental development, we are told, means increase in the size of heads while no corresponding increase in pelvic measurements has been observed. This may in time tend to increase disproportion.

Dr. Kinloch explains the cause of sepsis as due to contagion in hospitals and to carriers in the medical profession. The midwife, because of her special work and strict regulations, is less likely to be a carrier. He considers more cubic space should be given to patients in hospitals and fewer numbers admitted. His report is very encouraging with regard to ante-natal care. Dr. Kinloch is of the opinion that 90 per cent. of the cases of puerperal sepsis are due to the haemolytic streptococcus, and that early notification and treatment will prove of great value.

Dr. Jellett, in his recent book on the *Cause and Prevention of Maternal Mortality* (Churchill, 1929), writes from New Zealand and gives many explanations of the problem. He states that in the Rotunda Hospital, Dublin, during the five years preceding 1893, the death rate was 3.1 per 1,000. He states that, while asepsis was unknown, intervention during labour was limited. At present intervention is frequent and asepsis occasional. In the future it will be necessary to avoid intervention as far as is possible, and asepsis must be positive. He considers knowledge, skill, and suitable environment to be essential.

In the obstetrical unit in the Royal Free Hospital the maternal death rate for the last eight years is 2.7 per 1,000. The chief causes of death are obstetric shock, including haemorrhage (10 cases), and sepsis (6 cases, all of which were operative cases). Toxaemia was accountable for 4 cases, embolus for 2, broncho-pneumonia for 1, heart disease for 1, and acute suppurative appendix for 1.

The value of ante-natal care is proved by the small number of cases of accidental or toxaemic haemorrhage which now occur in hospital practice.

Sepsis and its Prevention.

It is essential, when possible, that all cases of sepsis should be treated in the isolation wards of maternity hospitals. Much valuable experience is gained by the obstetrical staff in the treatment of sepsis, and students are more easily impressed with the necessity for preventive measures against sepsis when they see the results of its attacks.

The avoidance of contagion is essential. Attendants should not suffer from carious teeth or septic tonsils. But the most common source of infection is the patient herself. Precautions against sepsis are taken in every case, and yet a normal patient dies, and another, after a serious intervention, has an afebrile puerperium. A parallel example is found in deaths from the sting of insects.

Attention to general health during pregnancy will help to prevent sepsis, especially if carious teeth and any other focus of infection are treated. Coitus is a not infrequent source of infection, and should not take place within two months of term.

The vaginal bacillus of Döderlein, when present, is an important factor in preventing sepsis. If this bacillus is absent, or if pathological germs are present in the ante-natal period, vaginal pessaries of 1 per cent. lactic acid encourage the growth of Döderlein's bacillus.

On admission to hospital a patient ought to be cleansed in a special receiving room. Dr. Jellett strongly deprecates the use of the sitting bath, as it conveys sepsis to the vulva and vagina. The patient's, when washed, should be shaved, and the vulva washed and disinfected with biniodide or other solutions. Swabbing out of the vagina or douching is not necessary and is dangerous, even in

* Delivered to the Glasgow and West of Scotland Branch of the British Medical Association, October 25th, 1929.

operative cases, unless a definite septic condition is present. An electric hair drier is a great convenience in a receiving room.

As to antiseptics in labour, they all have their day. Acroflavine is the one I prefer, but biniodide is hard to beat. "Blue paint" has its followers, but an antiseptic which stains the linen and remains on the skin until after the patient returns home does not appeal to the aesthetic sense of most women.

Nurses or assistants should not scrub their hands with brushes and strong antiseptics. Abrasions and cracks of the skin are the result, and these may become septic, especially in winter time. Swabs of wool in ethereal soap solution are the best means of cleansing the hands or the vulva of the patients; this is followed by biniodide alcohol solution. Gloves should be dry when ready to wear. Dr. Lachlan Grant has pointed out the advantages in domestic practice of washing in water running from a tap.

Vaginal examinations should be quite unnecessary in normal cases which have had ante-natal supervision and where abdominal methods of diagnosis are efficient. Vaginal examinations are a source of sepsis, and are only required when other methods of diagnosis have failed or where some emergency, like sudden failure of the foetal heart, suggests prolapse of the cord. If an examination is made as a routine, it is safer before the membranes rupture, although prolapse of the cord occurs after rupture. It has always seemed to me a pity that vaginal examinations should be insisted upon in the training of pupil midwives. The rules were made before ante-natal examinations came into use. I am glad to see, on page 92 of the Midwives Report, that there is a suggestion for the modification of this rule. Students should be taught to make their diagnosis of a presentation before labour begins, if possible. The position, fixation, and descent of the head can be ascertained in the average case by external palpation. In the unit labour wards of the Royal Free Hospital a student may only make a vaginal examination in the presence of a member of the staff, and the time and the result must be carefully recorded in the case sheet. As few examinations as possible are made, and in some cases they are omitted entirely.

Rectal Examination.—Dr. Jellett lays stress upon the advantages of this. Some time ago, for a period of eighteen months, we tried rectal examinations. The sepsis rate was increased rather than diminished in that period of time. I think it is an objectionable method of examination. The patients dislike it. It causes pain if the head is low or if haemorrhoids or oedema are present. If the rectum has cracks or sores the risk is increased. The finger in the rectum tends to push up the posterior lower vaginal wall and infect the cervix. It is difficult to diagnose the degree of dilatation of the cervix, the presenting part if a caput is present, and also to feel a prolapsed cord if pulseless. Can we trust every student and midwife to see that the gloves are sterilized after a rectal examination before using them for delivery?

In the third stage of labour the patient should lie on one her back and so prevent the entrance of air and m[illegible] organisms into the uterus because of the apposition[illegible] anterior and posterior vaginal walls. The ute[illegible] left alone, as manipulations upon be[illegible] tend to cause suction [illegible] cervix from the vagina, [illegible] with the walls and [illegible] and lacerations shou[illegible] septic organisms. [illegible] carefully sought for, [illegible]

During the puerp[illegible] who does not change [illegible] I almost think it would [illegible] own washing up. Bed[illegible] of infection, as they are [illegible] the ward, and are only di[illegible] innocuous disinfectant. Ea[illegible] bedpan in her locker. Afte[illegible] in an ever-boiling cauldron o[illegible] be disinfected before a new p[illegible] would be better if bedpans co[illegible]

much as possible, and patients encouraged to get out of bed; they are very much disliked by working-class women. If a lacerated perineum does not heal, the stitches should be removed and antiseptics applied. If healing is slow, scarlet red ointment for a few days has a stimulating effect. When clean, secondary suturing of the freshened edges in about ten days gives excellent results. Tightly applied vulvar pads and binders prevent proper uterine drainage. It is difficult to persuade women that this traditional method has its disadvantages, if not dangers.

Treatment of Sepsis.

This subject is too long and too controversial for discussion. Early isolation and treatment is essential. In acute cases the treatment comprises nursing in the open-air ward, daily colon lavage, antistreptococcus serum 20–40 c.cm. in a daily dose, quinine hydrochloride 5–10 grains daily into the buttock, and blood transfusion. Drainage of the uterus by glycerin also helps in acute blood infections, but it is more beneficial in localized sepsis. Douching of the uterus and hysterectomy have been entirely given up by me. Instrumental curettage seems to be an obsolete operation in Britain. Sometimes a piece of retained placenta may have to be removed later, but, as a rule, glycerin causes the uterus to expel it spontaneously.

Abortion, especially when criminally induced, is an increasing cause of maternal mortality. It accounts for many gynaecological affections and may cause sepsis at a subsequent confinement. If the placenta is retained and offensive, it should not be removed until the patient's resistance is raised, as there is grave danger of disseminating septic emboli and organisms into the blood stream. Glycerin drainage, serum, and quinine should be employed in acute cases. The placenta can be removed in a few days, if not expelled spontaneously. Since employing this method of treatment we have not lost a case of septic abortion, even in patients where perforation has been suspected. It is a mistake to perform hysterectomy in these cases of criminal septic abortion except later on, if injury to the uterus is known to have taken place. Intervention, other than drainage, is the cause of some deaths from sepsis. Criminal abortion requires investigation, and is a serious cause of the increase in maternal deaths, more especially in Continental countries. I have advocated for some years the notification of all abortions, just as stillbirths are notifiable.

Toxaemia.

Ante-partum haemorrhage, due to toxaemia, is now very rarely met with among patients who have had ante-natal care. Eclampsia has decreased. Fulminating types of eclampsia occur in spite of any preventive treatment. The death rate from eclampsia has much decreased because of the use of the Tweedy-Stroganoff treatment and the decline in Caesarean section, and also because of the abandonment of accouchement forcé. Maternal deaths in cases of toxaemia [illegible] get work. [illegible] cine and surgery they would be of additional value in looking after medical or surgical complications, and their relationship to the practitioner would be more easily defined. Registration with a doctor of an expectant mother would ensure that the midwife has prompt assistance if required at labour. Many midwives undergo great anxiety because medical help is unobtainable; I have known of cases where four or five doctors have been sent for before one could be found or induced to attend. I have always expressed the opinion that midwives should be inspected by senior members of their own profession and not by women doctors. If a doctor is employed, he or she should be allowed to carry out treatment if required, and not merely report on the conditions found.

Finance is the greatest problem of all, both in public health and in private practice. The public must learn that if they want efficiency this has got to be paid for. It is for us to point out the way and let those concerned find the financial support.

We look forward to a new era now that the advice and help of the obstetricians of the country is available as a corporate body—namely, the College of Obstetrics and

sleep," or adaline in 10 grain doses by the mouth. Sedatives and intermittent anaesthesia should be used for the second stage. It will be found that the dose of morphine can be reduced and its effect prolonged by dissolving it in a 50 per cent. solution of magnesium sulphate and giving intramuscularly. Gas and oxygen is the best anaesthetic for the mother and least harmful to the foetus. Indeed, the oxygen is beneficial if the nitrous oxide gas is removed and the oxygen continued after delivery and before the cord is severed in cases of blue asphyxia. Deep anaesthesia should be employed for the delivery of the head. Midwives, who attend 60 to 70 per cent. of the cases in the country, should be taught the use of sedatives in labour under the supervision of the doctor with whom the patient is registered as an ante-natal case. In our unit nearly every patient is given a sedative, and quite a number are given anaesthetics, apart from those who have operative intervention. Patients must be prepared to pay for an anaesthetist in private practice, just as they pay for a surgical operation. Nothing is too good in the way of skilled help for a woman who is bringing a child into the world.

Embolus is the nightmare of all obstetricians. It is due to sepsis in most cases. Exercises during the puerperium and drainage of the uterus by sitting up in bed all help in its prevention.

Caesarean Section.

The Caesarean section rate in the unit in eight years is 1.6 per cent. with a death rate of 3.9 per cent. This is about the average mortality of the teaching hospitals in Britain. Professor Whitridge Williams, quoted by Jellett, gives his hospital rate as 3.35 per cent. when he excludes deaths from general conditions. He estimates the general death rate in the United States as about 10 per cent. Dr. Jellett gives the general mortality rate in the most favourable circumstances as 2 per cent. In unfavourable conditions it is 10 to 50 per cent. Caesarean section has its uses and its risks. So far as possible it should never be a substitute for natural labour. In some small institutions it is performed by a general surgeon who has little experience of obstetrical methods and who only undertakes the case because of its surgical aspect. It is an operation which appeals to everyone, as it takes under thirty minutes to perform, as compared with the possibility of a labour of as many hours. It is an easy way out of the difficulty when in doubt. The Caesarean section rate has been reduced since we began to operate only when the patient had been in labour for a few hours. A considerable number of patients deliver themselves in a most unexpected manner when it has been decided beforehand that Caesarean section may be necessary. In cases where Caesarean section has been definitely decided upon it is better to wait until labour has started, as there is less risk of haemorrhage, owing to better uterine contractions. The partially dilated cervix gives better drainage. Caesarean section after prolonged labour, when the patient [illegible] menstrual period [illegible] has enquired about. It is remarkable how definite the majority of patients are on this point; this is fortunate, as the period of amenorrhoea still constitutes the most exact method we have of estimating the approximate date of confinement. The history of previous pregnancies and labours (if any) is also of great value. If one patient says that in the previous pregnancy the legs and face became very swollen, it would indicate the necessity for a very strict examination of the urine, while if another reports that, of several previous pregnancies, only one child is alive, the others being born dead after prolonged labours with instruments, a careful examination of the relative size of head and pelvis would be indicated. In the primigravida, of course, we have no previous history to guide us, and we have to form our own opinion from the beginning.

Other points to be inquired about are the condition of the bowels. Most women suffer from more or less constipation, and this has to be borne in mind when advising the patient about her habits. It has to be emphasized that if a satisfactory daily motion of the bowels is obtained, the likelihood of toxaemia or eclampsia is remote. The amount

* A paper read before the South-West Wales Division of the British Medical Association at Carmarthen, December 18th, 1929.

Obstetrics in Dublin last April the opinion was unanimously expressed that forceps should not be applied unless the head was close to the pelvic outlet. High forceps have no longer a place in obstetrics. "Failed forceps" means that they should never have been attempted. The risk of sepsis and lacerations is increased by the use of forceps, not to mention the great danger to the foetal head. Substitutes for forceps, or, rather, the prevention of their use, are to be found in the employment of frequent hot sitz-baths before and during labour and the administration of sedatives. I have found that the squatting position in the second stage helps to drive the head downwards. If the foetus gives signs of distress, forceps should not be applied until the results are observed of giving the mother a hypodermic injection of 3 grains of camphor. This stimulates the foetal heart and enables it to bear better the stress of labour.

Students should be taught not so much the indications for forceps applications as their risks, and also what can be done to avoid them. The blades are often badly applied, and the newborn may carry a groove over its forehead or in the neighbourhood of the eye for some hours after birth. Neo-natal deaths or subsequent cranial complications owe, in many cases, their origin to maladjustment of the blades. This would prove a valuable field of research for infant welfare clinics and school inspection. Each blade should be applied so that the ear lies in the centre. The head should be as completely flexed as possible, as it is only the suboccipito-bregmatic diameter which can bear the pressure with the least injury on its way through the pelvis. Manual rotation of an occipito-posterior position will save many a case from forceps, as it does from craniotomy. Slow delivery, with relaxation between the pains, helps to prevent undue pressure from the blades. The midwife should not expect a doctor to apply forceps in every case of delay in labour in which she has sought his aid. Patients' relatives should not object to the doctor's full fee on the score that no forceps were applied. There is always a temptation on the part of a busy practitioner "to get the case over," and at the same time to relieve the suffering of the patient and the anxiety of the relatives. If the patient is under the influence of sedatives the demand for forceps is less pronounced. Dr. Jellett quotes a case where Sir William Smiley was asked by an anxious husband if he could not do anything to relieve his wife. Sir William gave the characteristic reply, "Yes, mischief!"

Pituitrin is given in labour more extensively in private practice than in hospital. It should only be used when the head is on the perineum and delivery has been delayed because of weak pains. It must be remembered that a dose of pituitrin given before delivery inhibits the effect of a subsequent dose which may be required for post-partum haemorrhage after the third stage is over. Labour is always more easily borne if its aesthetic aspect is considered. The first stage should be spent in a room other than the delivery room, which in private practice is usually overheated and smells of antiseptics and airing baby clothes. In the new Royal Free Hospital building, we have planned to have a waiting room where the patient [illegible] about and pass the time with magazines, etc., until even in [illegible] progressed. A second room is provided for the pregnant accordi[illegible]

a patient with, let us[illegible] three[illegible] will show the uterus enlarged to the [illegible] five months—and while in the majorit[illegible]ision is one of the discrepancy is due to an error in the [illegible]ry practice. The possibly to some menstruation occurring [illegible]ise the expectant or so of pregnancy, still the possibility [illegible] by a doctor, regis- as hydatidiform mole or an associated [illegible]fife if it is to be a be borne in mind. On the other hand [illegible]her at intervals—at much smaller than for the duration [illegible] after the thirty-sixth may not increase in size even after [illegible]mplication arises at examinations. Such a condition w[illegible]ate with this doctor, the ovum without expulsion, the [illegible] the patient when she and steps should be taken to evac[illegible]escence. A midwife has

But if all is normal here [illegible] to attend an ante-natal should be taken *and should be*[illegible] doctor. I consider ante- intercrestal, external, and d[illegible]anch of obstetrics. In all taken with an ordinary pelvi[illegible] clinics in connexion with and from the two last the tri[illegible]t clinics, however, are under It is very useful to take al[illegible]

the public health authority. The staffing of these clinics is carried out in some cities by whole-time medical officers with a special knowledge of obstetrics. These medical officers attend when summoned by the midwife for complications of labour. This arrangement is found to work so well that it is being extended to more towns. This work is, of course, restricted to the poor patients. In most areas, however, the clinics are staffed by part-time practitioners who may, or may not, be engaged in the practice of midwifery and may have little actual experience of labour and its complications. It may be impossible for them to follow up a case, especially if they do not reside in the district. These practitioners cannot be expected to take the whole responsibility of the case, and they tend to become critics of the doctors or midwives who attend the confinement. The local practitioners called in at the confinement take no responsibility for the complications, which could have been avoided by more efficient ante-natal examinations. They in turn become critics of the methods of the clinic, and the poor patient is thus the loser. It is a wrong system altogether, but it will take time to make any suitable readjustment. The practitioner who does the ante-natal work should supervise, if necessary, the labour and puerperium, and should be made responsible for the whole welfare of the patient with the midwife. It therefore means that the patients must be under a whole-time medical officer or under the general practitioners in the locality. In rural districts the patients can visit the doctor or midwife or be visited in their homes, as the case may be. Ante-natal centres are obviously more difficult to arrange in country districts than infant welfare clinics, nor are they necessary if the work can be done individually. In theory it seems ideal that the local practitioners, or those of them who have an aptitude for midwifery, should do the work. But we have to reckon in some cases with professional ill feeling where a family practice is thus acquired by one who is not bound by the rules of etiquette of the specialist. Much as the whole-time officer or one from outside the district may be criticized, he or she is at least a non-competitor in family practice.

It is stated occasionally that the general practitioner has little knowledge of ante-natal work. This can be remedied by post-graduate courses, especially of an intensive kind. But the new generation of practitioners and assistants has a good knowledge of ante-natal diagnosis and treatment as it is taught in hospital. They mean to exercise this knowledge in practice. Ante-natal examinations should be paid for in addition to the fee for a confinement.

General Practitioner or Specialist?

Some specialists take the view that midwifery should be in the hands of specialists and midwives. This cannot apply to anything but large towns and to hospitals; in smaller areas it is impracticable. There is no doubt that the general practitioner has lost a considerable amount of his midwifery practice in the last ten years. Some of the patients go to hospitals, some to specialists, but since the war the main midwifery among the working classes has been undertaken by the midwife. The panel system may have an influence upon this diminution of practice. If the general practitioner has relinquished so much midwifery practice he cannot be held responsible for the stationary mortality. Trained midwives have in a large measure helped in its decrease, and yet we cannot find a solution of the problem. There is much to be said for the family doctor who undertakes midwifery. He knows the homes and circumstances of his individual patients. This is a knowledge which a specialist cannot acquire first-hand. The practitioner has perhaps treated the mother for conditions pre-existing to pregnancy. He is trusted and is easy of access. He can follow up the progress of the health of the mother and the welfare of her child. Continuity of supervision is the aim of all health authorities, and nowhere can this be so well attained as by the supervision of the local practitioners and midwives.

From the point of view of a teacher of midwifery the role of the general practitioner is of very great importance to me. How very few students specialize in midwifery compared with the large number who go into general practice. Specialists are not born, but are made by their post-graduate studies. If we are to become teachers of a particular type of student, I consider it would be waste of time and money on the part of medical schools if midwifery were taught and not practised by their graduates. Why, our whole aim is to train our students in the best way possible to fit them to be efficient in midwifery of the domestic practice. The bulk of the midwifery of the country—among the middle classes at least—must be in the hands of the family practitioner, who should be well trained and willing to undertake it. The employment of a consultant is a different matter, and should always be available when possible. In outlying districts, where the mortality is still high because of the absence of skilled and prompt assistance, the specialist is out of the question for at least 50 per cent. of the population.

The training of students has been most deficient in clinical obstetrics, especially with regard to attendance on normal labour. Operations are demonstrated by the senior staff which will never be done by the average practitioner, whilst ordinary cases are either taken under the supervision of a midwife or alone. If there is a slight complication, a house-surgeon undertakes the demonstration of the case. Many students conduct only about six or eight cases out of the twenty laid down by the regulations of the General Medical Council. If a placenta is seen being expelled, that counts as "a case," or even if its expulsion is observed from a distance that is sufficient. Students should be signed up by the senior staff for work done and not for the number of cases attended. In our unit the students must deliver the patient completely before it is counted as a case; if delivered by forceps or by other operative methods by the staff it is not counted. Pupil midwives, by their regulations, must conduct the case entirely and record the patient's name. Resident assistants, rather than house-surgeons, should do the teaching in the labour wards. The medical student as a rule does not acquire anything like the same experience in clinical midwifery as the pupil midwives—I am speaking of the London area more especially. A practitioner must have the knowledge and experience of normal cases in order to cope efficiently with complications. It is well to teach students that most patients will do better if carefully guided into natural ways, and that intervention is the resort of the inexperienced.

Midwives.

It is hoped that the position of the midwife will be more clearly defined and that the present unsatisfactory rate of remuneration will be improved. The service of midwives must be subsidiary to that of the medical profession, not a rival one. There should be less criticism and much more co-operation between doctors and midwives. This I feel confident will be brought about by ante-natal work. If midwives were trained in the rudiments of medicine and surgery they would be of additional value in looking after medical or surgical complications, and their relationship to the practitioner would be more easily defined. Registration with a doctor of an expectant mother would ensure that the midwife has prompt assistance if required at labour. Many midwives undergo great anxiety because medical help is unobtainable; I have known of cases where four or five doctors have been sent for before one could be found or induced to attend. I have always expressed the opinion that midwives should be inspected by senior members of their own profession and not by women doctors. If a doctor is employed, he or she should be allowed to carry out treatment if required, and not merely report on the conditions found.

Finance is the greatest problem of all, both in public health and in private practice. The public must learn that if they want efficiency this has got to be paid for. It is for us to point out the way and let those concerned find the financial support.

We look forward to a new era now that the advice and help of the obstetricians of the country is available as a corporate body—namely, the College of Obstetrics and

Gynaecology. In co-operation with the Boards for the training of midwives, it will prove of value to the public health authorities in the future.

I have touched on many points of a controversial nature, but I only speak from the small area of my own experience.

REFERENCE.

[1] *British Medical Journal*, September 28th, 1929, p. 592.

THE PREVENTIVE ASPECT OF OBSTETRICS.*

BY

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THE importance of this branch of preventive medicine needs no stressing at this time of day, when a large and constantly increasing experience has demonstrated, not only to our profession but also to the lay public, the enormous value of preventive methods in obstetrics and the large amount of foetal and maternal life that can be saved by their appropriate application.

Much has been written on this subject, especially from the institutional point of view, but I wish to speak now more particularly of the methods which may be used in carrying out ante-natal investigation in domestic practice, either in the consulting room or in the patients' homes. It will be found, I think, that the matter is much less formidable than might at first sight appear, and that the application of common-sense rules will clear away the greater proportion of difficulties. I would recall that this was the main subject for discussion in the Obstetrical and Gynaecological Section at the Bradford Meeting of the Association in 1924, and the papers then read will well repay perusal.

Ante-natal examination may vary in extent and thoroughness, but what I want to indicate in this paper is the minimum which should be expected of any general practitioner, and which is expected under such a scheme as the National Maternity Service Scheme of the British Medical Association.

When a pregnant woman comes, either of her own free will or on the recommendation of a midwife, to consult her doctor, the first glance will tell him whether she is of a healthy appearance or poorly nourished, of normal stature or undersized, and whether she walks normally or with a limp, so that even now a definite number of important points can be noted.

The next thing is to take her history, and here again a few minutes' conversation will bring out several more important points. The duration of amenorrhoea and the date of the onset of the last menstrual period should be inquired about. It is remarkable how definite the majority of patients are on this point; this is fortunate, as the period of amenorrhoea still constitutes the most exact method we have of estimating the approximate date of confinement. The history of previous pregnancies and labours (if any) is also of great value. If one patient says that in the previous pregnancy the legs and face became very swollen, it would indicate the necessity for a very strict examination of the urine, while if another reports that, of several previous pregnancies, only one child is alive, the others being born dead after prolonged labours with instruments, a careful examination of the relative size of head and pelvis would be indicated. In the primigravida, of course, we have no previous history to guide us, and we have to form our own opinion from the beginning.

Other points to be inquired about are the condition of the bowels. Most women suffer from more or less constipation, and this has to be borne in mind when advising the patient about her habits. It has to be emphasized that if a satisfactory daily motion of the bowels is obtained, the likelihood of toxaemia or eclampsia is remote. The amount of urine passed is best ascertained by asking if she passes about the usual amount, or more or less. The necessity for emptying the bladder during the night is often the first thing that will bring home to a patient the fact that she is passing more urine than normal. Oedema of legs or face, indigestion, sickness, headaches, interference with sight, and the occurrence of any bleeding should also be inquired into. Finally, and especially if she appears to be in the later months of pregnancy, the date when foetal movements were first felt should be inquired into, as this usually indicates mid-term and may, along with the period of amenorrhoea, give further information regarding the present duration of pregnancy. Usually, however, the patient is seldom so exact about this date as about the last menses.

Only after settling these points should we proceed to the physical examination. The first point to be determined now is this: *Is the patient pregnant?* While it can be taken for granted that, in the great majority of cases, when a woman says she is pregnant, she is pregnant, this is not always so. I have known a patient with a fibroid, who had several children, declare, even on the morning of operation; that she distinctly felt foetal movements; while in another case, a lady who was several weeks "post-mature" showed no signs of going into labour, merely a fat abdomen and a uterus ten months post-menopausal being found. Many other instances in both directions could be quoted. It is common knowledge that pregnancy may be very difficult to diagnose, and mistakes are often made in this way, but this is not evident to the lay public.

Certain points may be noted here. First, before the tenth week it is not possible to be certain that the uterus is pregnant, and often time has to be allowed for confirmation or the reverse. Secondly, before the uterus becomes an abdominal tumour it is felt on bimanual palpation as enlarged, of a peculiar doughy consistency, globular shape, and strongly anteverted, so that the cervix may be pushed far posteriorly. If it should be retroverted with the cervix anterior, incarceration must be suspected, and steps taken to lift the uterus clear of the sacral promontory, and if necessary to keep it up for a few weeks with a pessary. Thirdly, when the uterus comes up into the abdomen it forms a swelling whose outlines are characteristically vague, and in this way it is unlike even an ovarian cyst and much more so a fibroid, whose outlines are usually clear-cut.

There are certain points characteristic of the pregnant uterus, and among these may be mentioned the presence of a uterine bruit. This is caused by the distended uterine vessels, and is therefore heard at the sides of the uterus. Theoretically any uterine tumour—for example, a fibroid—may exhibit such a bruit, but in practice it is not usually found apart from the pregnant uterus. While the palpation of foetal parts and of a presenting part indicates a pregnancy and nothing else, the elicitation of foetal movements and of foetal heart sounds demonstrates not only pregnancy but a live pregnancy. These are all, therefore, positive signs, but one or more, seldom all, may be absent even in normal pregnancy.

The next point to determine is whether the patient is pregnant according to the duration of amenorrhoea. Often a patient with, let us say, three months' amenorrhoea, will show the uterus enlarged to the umbilicus—that is, to five months—and while in the majority of such cases the discrepancy is due to an error in the patient's dates, or possibly to some menstruation occurring in the first month or so of pregnancy, still the possibility of such a condition as hydatidiform mole or an associated pelvic tumour must be borne in mind. On the other hand, the uterus may be much smaller than for the duration of amenorrhoea, and may not increase in size even after waiting and several examinations. Such a condition would indicate death of the ovum without expulsion, the carneous or fleshy mole, and steps should be taken to evacuate the uterus.

But if all is normal here the pelvic measurements should be taken *and should be noted*. The interspinous, intercrestal, external, and diagonal conjugates can be taken with an ordinary pelvimeter in a very short time, and from the two last the true conjugate can be estimated. It is very useful to take also the transverse at the outlet,

* A paper read before the South-West Wales Division of the British Medical Association at Carmarthen, December 13th, 1929.

between the two ischial tuberosities and in a line just in front of the anal orifice. Blair Bell points out that in certain cases unsuspected contraction of this diameter will cause the head to be pushed posteriorly, with a severe perineal laceration.

Vaginal discharge should be looked for and its significance gauged. In the multipara it is usually due to a chronically infected cervix lacerated at a previous labour, but in a primipara, and especially if associated with inflammatory urethral and vulval signs, it is more likely to be gonorrhoeal. In the latter case special advice should be sought and the child's eyes treated with silver nitrate at labour. The danger to the mother is mainly puerperal and inflammatory, and frequent cleansing during pregnancy with a douche and absence of manipulation at labour are called for.

The tongue and teeth should be examined and the conjunctivae inspected for any anaemia, and finally a specimen of urine should be tested. This may be drawn off by catheter, but it usually suffices if the patient brings a specimen in a bottle, and this can be tested at leisure.

Now many and elaborate tests may be carried out on the urine, but much may be learned from the usual tests; it is advisable, however, to concentrate on two main points. The presence of albumin is obviously the most important of these, and it must be remembered that it is the presence more than the amount of albumin that matters. It must also be borne in mind that although eclampsia may follow albuminuria, the most common grave sequel is chronic nephritis, with all its later dangers, as has lately been shown by Young and Gibberd. If no albumin be present the next important point to determine is the specific gravity of the urine. A persistently low specific gravity below 1010 may be an even earlier sign than albuminuria of breakdown of renal function.

It is hardly necessary to recapitulate the valuable information that has been gained by this examination. The patient is pregnant to a certain duration, the pelvis is full-sized, she is in general good health, there is no oedema or other toxic sign, and the urine is normal. Or the reverse of one or more of these points may be present.

The next thing is to advise the patient about her habits in pregnancy. This advice will often be disregarded, but it should always be given. It is important to give a few points of clear guidance which she will remember rather than much advice which will be blurred in memory and soon forgotten.

The first and most important is to guard against constipation; seldom will toxaemia develop if the bowels are acting daily. While purges may be necessary, the best usual means of overcoming constipation is by taking daily exercise, but not excessively or to the point of exhaustion, and by increasing the intake of fluids; a glass of warm water first thing in the morning and last thing at night is most beneficial, not only in this way but also in stimulating renal action. Green vegetables and fresh fruit may also be advised, but these are often relatively expensive. An occasional dose of magnesium sulphate is advisable, even if the bowels are reported as acting normally.

Regarding diet, the best thing is to tell the patient what she must not take. Red meat, because of the high protein content, should be taken sparingly and in the later months of pregnancy especially so, until the patient is allowed meat not more often than three times weekly. Pastry, highly spiced food, and fried dishes should also be forbidden, and, in general, boiled or stewed food is better than fried. The value of oatmeal as a cheap, nourishing, easily digested and bowel stimulating diet must not be forgotten.

Another appointment should now be made, the date depending on circumstances, but it should be impressed on the patient that if swelling of legs, scantiness of urine, indigestion, jaundice, headache, or disturbances of vision should occur at any time before that date she must come to see you or send for you at once.

When should the next visit be? This will, naturally, depend on circumstances, and it may be that several visits may be necessary. From a purely theoretical point of view it may be argued that even in a case progressing normally in pregnancy such visits and physical and urine examinations should be frequent, in order that any mechanical or urinary abnormality may be detected in its earliest stage; while it may quite properly be laid down that in the second half of pregnancy the patient and the urine should be examined every month. In any event, if conditions are found which cause uncertainty or concern in the mind of the medical attendant, such as doubt of pregnancy or doubt regarding presentation, he should fix another examination after a time sufficient for these doubtful points to have resolved themselves, and in most cases an interval of one month will suffice for this. If grounds for doubt on any point still remain, consultation with an obstetrical specialist should be recommended.

Now on the one hand most pregnant women will want to be handled and examined as seldom as possible, while; on the other hand, from the practitioner's point of view, it is important that such examinations should take place at a time or times when the maximum of information can be obtained. It is safe to say, however, that every pregnant woman should be examined at least twice in pregnancy. At about the third month the general appearance, pelvic measurements, estimated date of labour, and the other points previously indicated can be ascertained; but a number of other points cannot as yet be determined, and a second and final examination to determine these should be carried out about four weeks before the estimated date of labour—that is, at the end of the thirty-sixth week. Most important final points can now be ascertained.

The condition of the bowel should again be carefully inquired into; also the general health, oedema, and the presence and duration of foetal movements. A glance at the abdomen may convey an almost subconscious impression that the uterine enlargement is not as high as might be expected, and that the abdomen is unduly bulging in the flanks. Such a state of affairs may indicate a transverse lie. In another case undue distension may lead one to suspect twin pregnancy or hydramnios. Generally the fundus, however, is felt at this stage up near the ensiform cartilage, with the long axis of the uterus in the line of the patient's trunk, and this part should be carefully palpated. If the consistency of the fundus is like that of the rest of the uterus it can be taken that the fundus is occupied by the breech of the foetus, and that it is a head first presentation, but if the hard and globular foetal head be felt here it is, of course, a breech presentation.

The uterus should now be carefully palpated on each side to determine on which side is the foetal back and on which are the limbs, and great difficulty may be found here. In many cases few or no foetal limbs can be palpated with certainty on either side, and this is a good sign, as it indicates the great improbability of an occipito-posterior lie. In other cases the limbs can be palpated with ease, it may be with suspicious ease, and such a condition should always make us suspect this complication.

In examining next the lower uterus our main object is to find out what is the presenting part, and, secondly, does that presenting part fit into the pelvic brim? Palpation on each side may show the bony skull, which cannot be completely followed down as it is entering the pelvis; or it may not yet be in the pelvis, and the two hands may be brought together above the symphysis and below the presenting part. Again, in a breech the presenting part will not be hard and globular, but of a softer consistency.

Before making a vaginal examination it is well to listen for the foetal heart, and the best place to begin is near the umbilicus. From here it may be followed in a radiating direction and the position of greatest intensity, above or below and to right or left, determined. If the foetal heart cannot be satisfactorily auscultated here it should be listened for in either flank. If heard distinctly in the flank and not in front, and if foetal limbs have been easily palpated, the suspicion of an occipito-posterior lie becomes almost a certainty.

A careful vaginal examination should now be carried out. The round globular vertex may be found here, and, if so, its size relative to the pelvic brim can be easily determined by Munro Kerr's manipulation. In carrying out this test the thumb of the pelvic hand is placed on the front of the symphysis, while the index

and middle fingers in the vagina touch the presenting head. With the other hand the head should be strongly pressed down into the pelvis. If the head fits the pelvis it will be felt to descend on to the vaginal fingers, while if there is just a little tight fit there will be no descent. If the pelvis should, however, be definitely contracted or the head enlarged, as in hydrocephalus, it will not only fail to descend, but on pressure from above will impinge on the thumb placed on the pubis, thus indicating the presence of definite overlapping. Sometimes, however, it will be difficult or even impossible to feel the presenting part at all, and in such a case, and especially in conjunction with abdominal findings, the suspicion of a malpresentation is greatly strengthened. Finally, in the case in which a head appeared to be palpated at the fundus, a head may also be palpated below. There are two possible explanations here: the first impression may have been a mistaken one, and it may be a normal vertex, or, again, it may be a case of twins. This may be the only sign of twin pregnancy, as in a large proportion of these cases no undue abdominal distension is to be found. In such a case it may be that two foetal hearts beating at different speeds can be auscultated, and this should always be sought for. In doubt in a case of this kind, or in other cases such as suspected breech or suspected extended legs, an *x*-ray plate should be ordered. *X* rays constitute an everyday and valuable adjunct to the other forms of physical diagnosis, but it must be used as an adjunct and never as a quick means of seeing that all is well without the trouble of detailed physical examination.

Finally, a complete urinary examination must never be omitted at this stage. If all is normal, good and well, but definite albuminuria may be present without any obvious symptoms, and may lead to an acute disaster such as eclampsia or to the even more formidable chronic nephritis.

I have said enough, I think, to indicate the large number of obstetrical abnormalities which can and should be discovered by ante-natal examination at a time when appropriate and deliberate steps can be taken for their rectification. The nature of the steps is, in many cases, obvious.

While many points and possibilities have been discussed, the examinations I have detailed can be carried out by any general practitioner in a few minutes, and if all is found normal his mind can be at rest with the practically certain knowledge that the labour will be normal, and this is surely worth having.

There are few branches of medicine in which preventive methods can be practised to such good effect as in obstetrics, and it is in this direction that the art is progressing and will continue to progress. How much foetal death can be prevented by the rectification of a breech, especially in a primipara? How much maternal death or morbidity from shock or sepsis can be prevented by the early recognition of a contracted pelvis? How much eclampsia and nephritis can be prevented by the early recognition of albuminuria, the first danger signal of toxaemia? These and other calamities can and should be prevented, and it is in this direction that the State and the public will expect more efficient service from us in the future.

But when labour comes on, in spite of the most careful supervision, unforeseen complications may occur. Rarely, for instance, is a face presentation diagnosed before labour, and often the necessary extension of the head occurs only with the onset of uterine contractions. Again, the gush of liquor amnii at rupture of the membranes may wash down a loop of the cord. Or a case which, by all criteria seemed occipito-anterior is found at labour to be occipito-posterior.

These points are mentioned merely to emphasize the fact that extended use of preventive ante-natal methods must never allow our manual dexterity at the actual labour to lack efficiency. Attendance at confinement and the relief which we can give at that time is the sheet anchor of the faith which the pregnant woman has in us, and while our skill in emergency obstetrics of this sort should be supplemented by the acquiring of ante-natal skill, it is to be hoped that the time will never come to the general practitioner when his hand has lost its cunning.

ANTE-NATAL, NATAL, AND POST-NATAL PROBLEMS.*

BY

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AFTER working for many years at prophylaxis applied to midwifery, I feel convinced that no great progress will be made in this comparatively newly developed art until it is recognized by the profession and impressed upon our governing bodies that the co-operation of all concerned—doctor, midwife, and patient—is necessary. And in our profession itself all branches have their special part to play: the General Medical Council, to see that the student is properly educated; the obstetric specialist, to do the teaching and to help the general practitioner in difficult cases; the members of the public health service, to educate the mother in mothercraft and in the need for taking advantage of the facilities provided for her; and, lastly, the general practitioner, whose duty it is to be ready at all hours of the day and night to help the midwife and to guide back to the physiological path all mothers who show the slightest tendency to deviate therefrom.

The official maternal death rate has been stationary for many years, and many causes which are beyond the control of the profession are responsible for this—social, such as the reduction in the size of families since the war, and the consequent higher proportion of first labours with their added risk; administrative, such as differences in classification adopted by the Registrar-General from time to time. I have no doubt that such factors mask a fall which has in fact taken place. There is no doubt, however, that avoidable clinical factors are also at work, and I hope to indicate some ways in which improvement in these may be brought about.

The medical student has had in the past, and still has, insufficient practical experience, however good the theoretical teaching may be; and therefore, when he comes into private practice, and is forced by economic pressure to do midwifery under adverse conditions, he is unable to use his knowledge to the best advantage. Nay, more: I would say that the importunities of the patient and of her relations and the handy-woman, the doctor's tiredness of the case through having had many unnecessary calls, his expectation of a busy time next morning, and the many other trials which we all know well, would lead any man who had not an iron will to get the case over, even if doing so should imply a certain lapse from the strictest professional rectitude. I feel convinced that this is the true reason for the many cases of "failed forceps" which are reported in the journals. If that is so, we must see that the teaching is of such a kind as to imbue the student with what may be called an obstetric conscience, and that he will, when qualified, be able to take his part in a national midwifery service, his special duties in which will be defined and the means provided for carrying them out efficiently.

I am lucky in that I have had the advantage of working for many years under such a system as is envisaged in the British Medical Association's national scheme, and I think it may be useful to indicate briefly what this has been able to accomplish.

The East End Maternity Hospital was founded in a small way in 1884, and since then has increased until we now have 56 beds and attend 2,000 cases yearly, about half of which are in patients and the other half attended in their own homes. There is no resident doctor. The hospital is under the direct management of the lady superintendent, who is a midwife, and the routine work is done by midwives. Doctors selected from among the general practitioners of the neighbourhood form the medical staff, the senior member of which pays daily visits, conducts a clinic for abnormal ante-natal cases, and he or one of the junior men is called by the midwives for abnormalities.

The cases are unselected, no patient is refused except on the ground that she is able to pay for her own doctor, and no patient is sent elsewhere on account of obstetric abnormality. That is to say, it is worked on pretty much the same basis as the service recommended by the British Medical Association and by the Midwives Committee of the Ministry of Health.

* A British Medical Association Lecture delivered to the Gateshead Division of the Association on December 15th, 1929.

Table showing Deaths in the East End Maternity Hospital throughout its History.

Period.	No. of Confinements.	No. of Deaths.	Rate per 1,000.
IN-PATIENTS:			
1884–89	427	1	2.34
1890–97	1,629	12	7.37
1898–02	1,278	2	1.57
1903–07	1,966	6	3.05
1908–13	3,223	10	2.13
1914–20	4,970	7	2.01
1921–26	6,373	3	1.10
1927–28	2,517	47	1.19
	22,383		2.10
OUT-PATIENTS:			
1830–97	1,548	3	1.94
1898–02	1,530	5	3.27
1903–07	2,384	1	0.42
1908–13	5,597	1	0.18
1914–20	7,490	8	1.07
1921–26	7,027	2	0.29
1927–28	1,608	—	—
	27,184	20	0.74

This gives a death rate of 2.1 in the hospital and 0.74 on the district. On district and in hospital combined the rate is 1.35 for the whole period.

Now if such a system is to come into being over the whole of England and Wales, and to get good results, it follows that every doctor undertaking the work must know how to apply the principles of prophylactic midwifery in all cases, and must have at his finger-ends the technique necessary to deal to the best advantage with those in which prophylaxis has failed. This means technique of a very high order, because, although the number of maternal deaths taken as a whole is large, yet the number of dangerous cases which fall to the lot of any one doctor in the course of a year is few or even none at all, and yet he has to be at concert pitch all the time.

Sufficient stress has not been laid in the past on the prophylactic side of midwifery, with the result that all except the recently trained men have had to learn it for themselves, and perhaps some of them do not even now realize its value. Prophylactic midwifery does not apply only to ante-natal work; it continues throughout labour and the puerperium, and even further, for we know that mistakes made in one confinement may have effects reaching to future pregnancies, and even through the whole of a woman's life. Thus a neglected albuminuria in one pregnancy may lead to concealed accidental haemorrhage and death of the mother in the next, and many instances of the same kind could be cited. We must therefore look upon the process of reproduction as one whole, the problems of each stage overlapping one another. In the title proposed to me for this paper the division into three parts—ante-natal, natal, and post-natal—is made for descriptive purposes only.

The next table shows the advantage of ante-natal work in lowering the maternal death rate. Although this had been done to some extent from the foundation of the hospital, it was not until after the war that the full benefits of such work were realized, and steps taken to so organize the department that every patient had necessarily to be examined.

Period.	Cases.	Deaths.	Rate.
1884–1913	19,584	37	1.9
1921–1928	17,525	12	0.68

The institution of full ante-natal work with compulsory attendance has been followed by a drop in the already low mortality to a third of its former level.

There is no mystery in ante-natal work. The idea that the average general practitioner is unable to look after the health of a pregnant woman, to search for septic foci, to examine her urine, to gauge the size of the pelvis, and to find out whether the child is lying correctly, is not in accordance with facts. If he is given the incentive to do it, and the advantage of a few demonstrations at a good clinic to see what should be done, the rest depends upon himself. He will make mistakes, especially as to the relative size of head and pelvis, as we all do, but his skill will increase with experience, and this experience will be impressed upon him by the many unnecessary night calls he will get if he shows any tendency not to profit by it.

For this reason it is of the utmost importance that the person who does the ante-natal work should be responsible for the confinement.

It is not only the doctor who has to keep up to the mark—there is the patient, her negligence, and the prejudice of her friends. Patients in the past have been lost to the doctor through insistence on ante-natal care, but now those days are going, and anyone who neglects it will be rightly blamed should untoward results follow. The doctor ought to be well paid for ante-natal work, and the financial provisions should be so arranged that success in preventive midwifery should not reduce his income.

Ante-natal care is the foundation of good midwifery; it can eliminate eclampsia, and has an important indirect effect upon the two other principal causes of maternal deaths; but it is the foundation only, and no amount of ante-natal care can do away with the necessity for really good midwifery throughout labour and the puerperium. One feels that the authorities, acting on the analogy of the child welfare centres, which have done so much to save infant life, have not quite realized that ante-natal work is simply the preparation for an emergency; the labour, and that its full benefit cannot be obtained without complete co-operation with the man who is bound to look after the patient in her emergency. This want of co-operation has been so marked in some quarters that there appears to have been an attempt to side-track the general practitioner altogether. Now, however, that idea has gone, for in the Memorandum on Ante-natal Clinics, recently issued by the Departmental Committee on Maternal Mortality, and in the report published this year by the Ministry of Health on infantile mortality, definite recognition is made of the possibility (it is only a possibility at present) that the general practitioner may have to take over a large part of the examinations now being done by the ante-natal clinics, leaving to them the work which they can most usefully do, such as the teaching of mothercraft, the following up of cases, and work of that nature. The reason for this is clear: that the general practitioner must, from the very nature of things, be the man upon whom the nation must depend at the crucial time, and anything which tends to diminish his skill or his interest in midwifery, however good it may be in itself, is bound in the long run to raise maternal mortality. Unless the general practitioner is to be cut out of midwifery altogether, which is impossible, any new service that is devised must depend for its success upon increasing his skill and interest.

Although forced to cast strictures upon part of the present working of ante-natal clinics as often conducted, nothing but praise can be given to the consultative and educative clinic. The aims of this are well known in the North of England through the work now being carried on by Dr. Farquhar Murray and his colleagues. Such a clinic will play a most important part in the midwifery service of the future, one of its chief duties being the helping of general practitioners to become efficient in this branch of the work. I am also pleased to see that the somewhat thinly veiled antagonism between general practitioner and medical officer of health has now, in most areas, been broken down, and that the two are now anxiously awaiting a lead as to how the necessary co-operation can best be obtained in practice.

Let us now consider what part the general practitioner can play under this new midwife-doctor-hospital system in diminishing the three chief causes of maternal mortality—eclampsia, haemorrhage, and sepsis.

Elimination of Eclampsia.

I use the word elimination advisedly, for, under the treatment we employ at the East End Maternity Hospital, out of the last ten thousand consecutive confinements we have had only one slight case. This occurred in a patient who had escaped the ante-natal net for three weeks. She had one fit after delivery and an uneventful recovery.

The first link in the chain is the regular examination of the urine by the midwife at least every fortnight, and the reference to the doctor at once of all cases of albuminuria, however slight. At present she does not always do so, arguing to herself that slight albuminuria means

a slight illness. It must be clearly laid down that what concerns her is simply the fact that albumin is present. The case is abnormal and one for the doctor. The next link is the admission of the patient to hospital. Home treatment, especially among the working classes, is extremely unsatisfactory. All cases should be admitted at once, with the possible exception of women at term who show no physical signs or symptoms and have no rise of blood pressure (albuminuria of labour).

In hospital energetic eliminative treatment must be carried out—hot baths, packs, castor oil, Epsom salts, enemata, and starvation. Nothing is so impressive as the effect of this treatment. A patient waterlogged, passing only one or two ounces of urine, solid with albumin, and with a blood pressure of 180 mm. or more, in most cases presents an entirely different picture in twenty-four hours and is on the high road to recovery. In a private house, surrounded by her friends, the patient will not stand the treatment.

A few cases do not clear up altogether: the symptoms disappear, the blood pressure goes down to normal, but a cloud of albumin remains. The danger of eclampsia has gone, but now comes the question how long this condition can continue without causing permanent damage to the kidneys—either a definite chronic nephritis or such slight impairment as to show itself only as a recurrent toxaemia when the kidney has to undergo the increased strain of another pregnancy. A complete answer cannot be given at present, but a rough guide which has been adopted at the East End Maternity Hospital is to induce labour at the end of a fortnight. There is a temptation to wait a little longer for the sake of the child, but it is a mistake to do so. If induction is delayed it will nearly always mean a stillborn child or permanent injury to the kidneys. In a pre-eclamptic patient induction is indicated if improvement does not take place in twenty-four hours. Albuminuria occurs frequently in multiparae, but as it does not give rise to pronounced signs it is apt to be overlooked. Energetic treatment of the first toxaemia diminishes its recurrence.

Whether or not it will be found practicable in the new service for general practitioners to continue in charge of their patients in hospital, I am sure it is an end to be aimed at, for these patients do dislike removal, and this dislike would be much diminished if their own doctor were to continue attendance. Eclampsia is nearly always due to neglect on the part of the patient, and if things are not made easy for them there will be no chance of eliminating it.

Ante-partum Haemorrhage.

Although we cannot at present do much in the prevention of ante-partum haemorrhage, we can do a little. Efficient treatment of toxaemia does reduce the number of those horrible cases of concealed accidental haemorrhage connected with albuminuria in which the uterus is so riddled with haemorrhages that if the mother is delivered alive she dies from post-partum haemorrhage owing to the inability of the damaged uterus to contract.

The greatest attention should be paid to all slight haemorrhages in the last two months of pregnancy. All such cases should be removed to hospital and treated by rest in bed. If left at home they may get a severe haemorrhage at an awkward time. The same principle applies when the bleeding is severe; a case loses half its terrors when once admitted to a well-equipped labour ward. Many patients, however, are not seen until they are too ill to be removed, and must be treated at home. If the bleeding is still going on it must be stopped—that is an essential; but in many cases the doctor will find on arrival that the patient is collapsed and pulseless, and that there is no actual bleeding at the moment. Here I should like to put in a warning about the danger of intrauterine manipulations in a collapsed patient. Judgement must be used in each individual case, for if version is done at once in such a patient, especially if the os admits only two fingers, the shock and the fresh bleeding, which goes on all the time the foot is being coaxed through the os, are sufficient to turn the scale against the patient. The right thing to do in such cases is to treat the collapse with blankets, hot-water bottles, and saline injections. The doctor should remain with the patient. Unless the bleeding recurs intrauterine treatment should be put off until she has recovered from her collapse. A restless patient should be given morphine, because if she exposes herself to cold by kicking off the bedclothes she will die.

The value of saline injections under the breasts for all cases of haemorrhage can hardly be overestimated; they are so simple to give, and the apparatus, consisting of a rubber douche bag and a couple of needles, should be carried in every midwifery bag. The filling of the subcutaneous tissues with two to four pints of saline should in most cases be started before the intrauterine work is begun. The fluid acts as a reservoir upon which the tissues can draw at need. Blood transfusion is not of much value in private practice. The technique is complicated, a donor is not always handy, and the apparatus is likely to be out of order when wanted.

For stopping the bleeding in placenta praevia turning is still the most useful form of treatment; it gives one such a sense of security, and rightly so, for a pull on the leg will always control any further bleeding. Champetier de Ribes's bag often leaks when wanted, and is difficult to sterilize in emergency. Willet's forceps are of value in cases where the os is not sufficiently open to allow of turning, but are somewhat difficult to apply in just those cases. Some cases in multiparae, or where the labour is premature, are best treated with pituitrin. For emergencies any method which requires fingers and not instruments always has the advantage.

After turning it is tempting to hurry proceedings, but that may be fatal. The uterus should be allowed to empty itself, even if it takes some hours, and no attempt at extraction should be made, with the exception of a 2 lb. weight attached to the leg to keep it *in situ*. The doctor must be within call all this time, as his presence is absolutely necessary when the baby is delivered in order to check the slightest tendency to further haemorrhage. I have never seen a mother die from her first haemorrhage, but even half a pint coming after delivery may prove fatal in an already exsanguinated mother.

No case has occurred within the history of the hospital which could not be successfully treated by one of these methods. The foetal death rate is high, but if we thought more of the foetus I doubt whether we should show an unbroken series of maternal recoveries.

We have lately been adopting a procedure for central placenta which has been successful in saving the life of the foetus.

If the patient is first seen with an os too small to allow of turning, the placenta is separated around the lower uterine segment with the finger. This causes smart haemorrhage, which soon stops with rest in bed and morphine. In the course of a day or two the os will be found sufficiently dilated to allow of turning. When doing this the placenta is held down with tissue forceps, and another pair is used to make carefully a hole in it for the finger. As no further separation of placenta takes place there is no bleeding during this operation, and sufficient placenta remains attached to allow of the foetal respiration.

In accidental haemorrhage the bleeding is stopped in nine cases out of ten by rupturing the membranes and applying a tight binder, again using saline injections to replace the fluid which has been lost. In only a very few cases is it necessary to plug the vagina.

The next table gives the cases of ante-partum haemorrhage which occurred during the last four years and were

Cases of Ante-partum Haemorrhage treated during the Years 1925–28.

	1925.	1926.	1927.	1928.	Total.
Placenta praevia:					
Number of cases	9	11	14	6	43
Maternal deaths	0	0	0	0	0
Foetal deaths	2	10	10	0	22
Accidental haemorrhage:					
Number of cases	15	14	10	15	54
Maternal deaths	0	1	0	0	1
Foetal deaths	5	7	5	4	21

treated on the principles I have just described. The one maternal death was an unbooked case of concealed accidental haemorrhage. On the arrival of the midwife the patient was collapsed; she was delivered alive, but died of post-partum haemorrhage.

Avoidance of Sepsis.

No doubt the only certain method of avoiding sepsis is to follow the full surgical procedure of guarding against the admission of germs by all possible routes. This includes the bathing of the patient, the sterilization of cervix and vagina by some such preparation as brilliant green, the wearing of sterile stockings to the thigh, the shaving of the vulva, the wearing of sterile gown, gloves, and mask, with the possible exclusion from the labour room of any person found on bacteriological examination to be harbouring haemolytic streptococci. The patient should then be restrained from movement lest she touch any unsterile article, and the whole process have to be gone over again. This sterile life should last from the first labour pain until the raw placental site has become covered with fresh mucous membrane. The above procedure is simply bringing things to a logical conclusion, or (considering the number of emergencies which occur in midwifery) perhaps I should say "illogical." We may have to do it all, but before we go so far I venture to think that we may do many things to obviate its necessity.

In the first place, it seems to me that the predisposing causes are not sufficiently foreseen and guarded against. With us nearly every case of septic absorption occurs after a difficult or prolonged labour, perhaps terminated by manual rotation or forceps, and with an unsatisfactory third stage due to uterine exhaustion. In other words, the problem is largely one of ante-natal care combined with careful midwifery during labour. Avoid trauma and exhaustion, and see that the uterus is empty, and cases of morbidity will be few. Low forceps carefully used is not followed by more morbidity than is normal labour.

The next table shows clearly the relation of abnormal labour to sepsis. Sepsis is here taken to be any rise of temperature to 100.4° for twenty-four hours which cannot be accounted for by physical signs elsewhere than in the genital organs. It will be seen that it is over twenty times as frequent after abnormal as after normal labour. Incidentally, this table shows the greater incidence of sepsis in primiparae—nearly three times as much. I think this is probably due to the trauma inevitable in a first labour.

Incidence of Sepsis.

	Hospital.		District.		Total.	
	Cases.	Sepsis.	Cases.	Sepsis.	Cases.	Sepsis.
Cases following normal labour.						
Primiparae	1,769	8	294	0	2,063	8
Multiparae	2,672	3	3,275	4	5,917	7
Total	4,441	11	3,569	4	8,010	15
Cases following abnormal labour.						
Primiparae	212	11	20	0	232	11
Multiparae	170	7	74	2	244	9
Total	382	18	91	2	476	20

The incidence of abnormal labour is ... ... 5.6 per cent.
The incidence of sepsis following normal labour is ... 0.19 "
Multiparae 0.13 per cent.; primiparae 0.38 per cent.
The incidence of sepsis following abnormal labour is... 4.2 "

Secondly, there is a wealth of evidence showing that the risk of contagion to normal cases in hospital is one that cannot be ignored. This risk is especially great in those hospitals which take in infected or potentially infected cases, but it is by no means absent in others. It must always be considered before advising admission in abnormal cases whether the benefit derived from the increased facilities for doing good work in hospital outweighs this added risk. It seems as though until we have discovered some certain routine to avoid infection, the normal case is more safely treated at home.

The third point concerns sterilization of the hands. The wearing of gloves in domiciliary midwifery is not quite comparable with their use in surgical operations. The doctor has necessarily during the course of labour to touch many things which are not sterile, and therefore the most important thing, whether gloves are worn or not, would seem to be to recognize the necessity of frequent rewashing and dipping of the hands in an effective solution such as mercury perchloride 1 in 1,000.

Here let me refer to the importance of thorough investigation of the state of the vaginal mucous membrane after every forceps case. We all know that the application of forceps is often accompanied by the appearance of a trickle of bright red blood from the vagina, but do we all realize that this means a tear of the upper part of the vagina which may need repair? These vaginal wounds are less frequent if really thorough lubrication is carried out. I often think there was a good deal of reason for the practice of old obstetricians who stuffed the vagina with butter before introducing the hand.

When the temperature rises it is important to regard it as due to sepsis until the contrary is established. I often try to hoax myself that it is due to loaded bowel or some other cause, only to be proved wrong later on. I am a great believer in thorough examination of the patient in the lithotomy position in every such case. I know that many obstetricians do not agree with me, but I have not found that there is any risk in careful washing out of the uterus with iodine and in digital exploration and removal of retained products. Such treatment, in cases where there is doubt, will time after time result in the removal of decomposing debris or in the letting free of lochia, retained in the uterus owing to anteversion or retroversion. Raised temperatures due to retained lochia occasionally occur fairly late in the puerperium—say from the eighth to the twelfth day—and are very puzzling; the midwife correctly says that the uterus is not felt, and yet several ounces of offensive discharge may be let out on straightening the cervical canal. If the finger at this stage can be insinuated into the cervix without stretching there is something there which should be removed.

That is a brief outline of our procedure, and it seems to show that prevention of trauma and exhaustion, and the obtaining of an empty uterus, together with careful washing and the use of plenty of mercury perchloride, are of more importance than the full surgical ritual.

As I was one of the first to start a post-natal clinic, it will not be misunderstood when I say that, given good midwifery all through, there is no need to make a vaginal examination in normal cases. In fact, I think the chief value of the post-natal consultation advised in the British Medical Association scheme is that it will act as a check on the work of the midwife. To this end the perineum of every primipara should be inspected, the general and special health of the mother should be inquired into, and if this interrogation discloses possible subinvolution, retroversion, injury to urethra or vagina, or other abnormality, further examination should be made and the appropriate treatment given. If the examination is made too searching it will defeat its own ends because the women will cease to attend. In fact, for both ante-natal and post-natal examination a thorough following-up scheme will be necessary.

I have tried in this lecture to show that the problem before us is by no means insoluble. If you agree that the stationary position of maternal mortality is due not wholly to want of progress in midwifery but to social causes, if I have made it clear that the deaths from the three great causes can be very largely reduced under the general practitioner-midwife-hospital combination, my lecture will not have been given in vain. Much has to be learned by research, but I see no reason for holding a "non possumus" attitude, and firmly believe that, even in the present state of our knowledge, well-considered administrative action will result in a drop in the true maternal mortality rate of over 50 per cent.

THE USE OF PARALDEHYDE BEFORE ANAESTHESIA.

BY

HUGH R. PHILLIPS, M.D.,

ANAESTHETIST, ST. JOHN AND ST. ELIZABETH, ST. VINCENT'S ORTHOPAEDIC, FREEMASONS', AND ITALIAN HOSPITALS.

AFTER using paraldehyde before operations in over 250 cases of all kinds I have come to the conclusion that, so far as my experience goes, its uses are somewhat limited.

Dr. Harold Sington, in the able paper he read before the Anaesthetics Section of the Royal Society of Medicine in the early part of last year, showed the great value of this drug when dealing with children. With most of his deductions I entirely agree, but even in their case the results are not always absolutely satisfactory.

At St. Vincent's Orthopaedic Hospital I have for nearly two years used paraldehyde in every case for operation, and the sister in charge of the surgical division reports that after being put back to bed the patients are usually very sick and often excitable for half an hour, but when that period is over they go to sleep and remain quiet for twelve to eighteen hours. Gas and oxygen, with occasionally a small quantity of ether, is the anaesthetic given. She also states that there is considerable difficulty in getting small children to retain the whole dose, and in such cases apparently the small dose tends to make them excited. At the Hospital for Sick Children, Great Ormond Street, the results are quite satisfactory, and there has been very little vomiting, as also in other nursing homes and hospitals where it has been used by me for children. With them I do not care to use it for abdominal work or with those children who are suffering from shock or much sepsis.

In my series of cases administration of paraldehyde to adults has not been so satisfactory, even with a preliminary dose of omnopon (or morphine), atropine, and scopolamine, as advocated by Rowbotham. To many patients the mere introduction into the rectum is distasteful; many others cannot stand the smell.

As to whether it is going to be a success, a great deal depends upon the nurse who gives the injection; she must be tactful and very patient, because it is most important that the solution should be run in very slowly, as, if it is not, some of the fluid may be returned, in which case the full dose has not been absorbed, with the result that there may be much excitement, occasionally verging on delirium. This possibly necessitates manual restraint for some hours, and at all events very careful watching. Abdominal pain, sometimes acute and which lasts until it is deadened by the action of the drug, is another result of too rapid injection.

In order that full benefit be obtained the administration of paraldehyde should be commenced one and a half hours before operating. It must be given very slowly, and then the patient moved about as little as possible; therefore it is best to place the patient on a trolly either before or soon after the introduction. It is still better to give the solution on the operating table if the patient does not mind the surroundings.

Induction by general anaesthetics is certainly smoother, and a smaller quantity is required; special care must be taken to be sure that the airway is free. It is not, however, easy to be certain when anaesthesia is sufficiently advanced to allow the surgeon to commence his work. Complete relaxation is more difficult to obtain for abdominal work, as one is apt to be misled by the quiet and rather shallow breathing. In brain surgery and profoundly toxic subjects paraldehyde is contraindicated.

The after-effects in adults vary considerably, but I am convinced that among patients who have paraldehyde there is a higher percentage who vomit than among those who do not have it. The vomiting, while it lasts, is severe, but as a rule does not continue for very long. A feeling of general misery for some days is not an uncommon phenomenon after the use of the drug, and one occasionally finds patients who are actually mentally unbalanced for the time being. The excitement or delirium already mentioned places a considerable strain on the resources of the nursing staff, as such cases frequently necessitate two nurses to restrain them.

After the patient returns to bed just as much care must be exercised in preserving the airway free as during the operation, so that until the patient is showing signs of recovering his reflex he must be constantly under supervision.

There are many advantages in the use of paraldehyde, particularly for nervous people and for those who have a strong objection to the smell of ether, or have a dread of losing consciousness. In a satisfactory case the patient knows nothing of going up to the theatre and having an operation, and for many hours time is blotted out. Thyroid cases especially appear to be suitable, and these require a minimum of general anaesthetic.

Tonsillectomy lends itself to a successful exhibition of the drug, because, if the patient is amenable, the first few hours of great pain and discomfort are got over before return to consciousness. Still, even these cases are not without risk, as it is easy to overlook oozing owing to the comatose state of the patient. In orthopaedic work the advantages are similar, except that it may not be wise to use it when the operation is in the region of the hip, pelvis, or upper part of thigh, since some patients, especially young ones, occasionally evacuate some of the fluid.

Undoubtedly certain individuals have an idiosyncrasy towards paraldehyde, and the following two cases exemplify this.

A young healthy man, aged 23, weighing 10 st. 4 lb., was operated on for removal of tonsils; this being one of my early cases, I had ordered 8 drachms in saline to be given an hour beforehand, and soon after an injection of atropine, but no morphine. He arrived in the theatre quite comatose, and did not regain consciousness for forty hours, though the reflexes were active, and during the first thirty hours he could not be roused. His pulse being regular, quiet, and of good volume, I was not worried, but the condition gave rise to much alarm among the nursing staff and also to the patient's relatives.

The second case was that of a boy, aged 9, and weighing 4 st. 5 lb., who was having fasciotomy, wrenching, and plaster done on both feet. He was given 4½ drachms in saline, commencing at 7.30. Atropine was given three-quarters of an hour later, and he was brought up to the theatre at 9 a.m. During induction he was extremely restless and had to be held down. At 4.30 the same evening the youngster was sitting up in bed, very lively, and having a good tea.

I have used paraldehyde in conjunction with spinal injection in a few cases with good results; also together with local infiltration of novocain; men who have used this more than I have speak favourably of this combination.

In conclusion, I consider that paraldehyde should not be given as a routine before every operation, but only in selected cases. Its great advantage is that, when successful, the patient knows nothing from soon after the introduction of the drug until some hours after the operation.

CHOLECYSTO-COLIC FISTULA WITH UNUSUAL RADIOGRAPHIC FINDINGS.

BY

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PHYSICIAN TO THE ROYAL DEVON AND EXETER HOSPITAL; LATE FIRST ASSISTANT, MEDICAL UNIT, UNIVERSITY COLLEGE HOSPITAL.

THE following case is of interest, both from the unusual radiological findings and from the long clinical history.

The patient, a married woman, aged 63 in 1929, with four children, was admitted to University College Hospital under Dr. Batty Shaw in April, 1923, with a history of a sharp attack of pain in the abdomen lasting about twelve hours and accompanied by vomiting immediately after food. At that time a smooth, oval, hard mass could be felt in the right hypochondrium reaching to just below the level of the umbilicus and measuring 3½ by 3 inches. The lower and median borders of this tumour were smooth and rounded, and the lateral border ill defined. The mass was dull to percussion and was apparently in continuity with the liver. There was no jaundice. A radiogram of an opaque meal showed no abnormality in the alimentary tract, and an occult blood test was negative. She was then regarded as a case of cholecystitis with a Reidel's lobe.

The patient was readmitted in August, 1928, as a surgical emergency, with pains of a severe griping character, irrespective of taking food. These had been present for thirteen days, and were worse for the three days immediately preceding admission. She had vomited once only, immediately after a dose of castor oil taken at home. She was subsequently transferred to my care on the medical side whilst acting as deputy to Dr. Batty Shaw. Between the two attacks the patient had been treated for rheumatoid arthritis, but had complained of no symptoms which might draw attention to her abdomen.

Her condition was as follows: There was no evidence of jaundice. Examination of the abdomen showed considerable divarication of the recti. The liver, spleen, and kidneys could not be palpated, but there was an indefinite mass deep in the right hypochondrium. The tumour noted at the previous admission had disappeared. An occult blood test was positive.

Radiograms of an opaque meal taken at this time showed no abnormality in the stomach, but an unusual shadow was seen passing outwards and to the right from the second part of the duodenum (Fig. 1). The true significance of this abnormality was not realized until an opaque enema several days later was screened and photographed. This was found to pass directly from the colon to the duodenum, while at the same time the biliary passages and even the intrahepatic bile ducts were outlined in an unmistakable manner (Fig. 2).

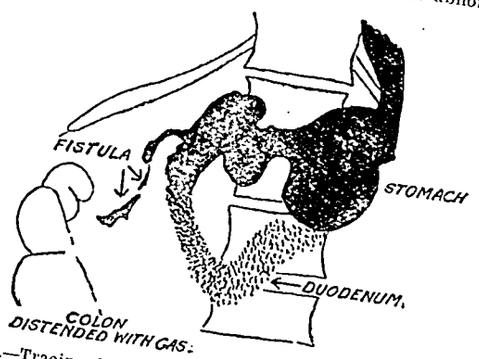


FIG. 1.—Tracing from a radiogram of a barium meal taken in the supine position a quarter of an hour after the meal was given. It shows the stomach partially filled with barium and undergoing active peristalsis. The duodenum is normal, with the exception of a fistulous track passing downwards and to the left from the second part.

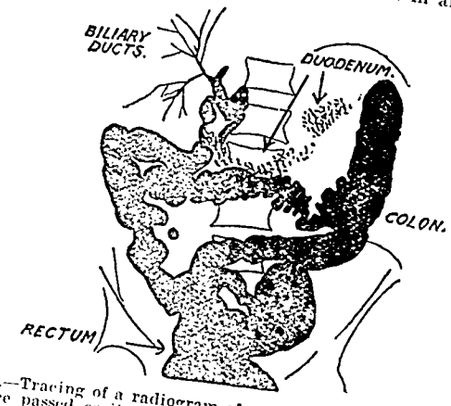


FIG. 2.—Tracing of a radiogram of a barium enema. The opaque substance passed easily into the colon. From a fistulous opening in the transverse colon the barium can be seen to have entered the duodenum and the bile ducts. There was no evidence of barium in the alimentary tract immediately preceding the enema.

A cholecystography was attempted three months later, the dye being given by the oral method. No evidence of gall-stones could be detected, nor was the gall-bladder outlined.

It was decided to adopt an expectant method of treatment, owing to the age of the patient and the absence of any urgent symptoms. This course has, I think, been fully justified, as I have recently (September, 1929) been in communication with the patient, who states that she feels well and has had no abdominal discomfort for some time.

Comment.

The most probable explanation of the case would appear to be that, at the time of her first admission to University College Hospital in April, 1923, she had a mucocele of the gall-bladder due to impaction of a stone in the neck of that viscus. This remained in a quiescent state until August, 1928, her second admission, when the stone ulcerated through the gall-bladder into the alimentary tract. It is well known that an impacted gall-stone may ulcerate either into the colon or the duodenum. In this case, however, it would appear that there is a connexion between all three viscera—namely, the biliary passages, duodenum, and transverse colon. The possible explanations are three:

1. That a single large stone passed into the duodenum and then ulcerated into the colon.
2. That there were two separate stones, one of which ulcerated into the duodenum at the first attack, and the other into the colon at the second.
3. That a stone ulcerated from the biliary passages into the colon, damaging the subjacent duodenum in its passage.

Against the first hypothesis is the fact that a stone sufficiently large to obstruct the duodenum and ulcerate thence into the colon would almost certainly have produced urgent signs and symptoms of acute intestinal obstruction with vomiting. With regard to the second possibility, there was no radiological evidence of ulceration into either the colon or duodenum at the time of the first admission, the occult blood test was negative, and the patient was discharged with what was probably an enlarged gall-bladder. One is left with the third suggestion, which would seem to fulfil all requisites.

Apart from this somewhat academic discussion of the methods by which an undoubted short-circuit has been produced between the biliary apparatus and the large intestine, the really interesting point is that the patient had barium from her colon forced into the intrahepatic bile ducts without any apparent ill effect at the time, and has subsequently remained in good health.

I have decided to call this case one of cholecysto-colic fistula, as although there is no very definite evidence of the gall-bladder in the radiograms, yet, from the absence of obstructive jaundice, the stone could not have been lodged in the common bile duct, but, as has been previously stated, was probably impacted in the neck of the gall-bladder.

I have searched through the *Quarterly Cumulative Index* for references to similar cases. There are several instances reported of barium leaving the duodenum as in Fig. 2, but none, so far as I am aware, in which the intrahepatic bile ducts have been filled.

I wish to thank Dr. Batty Shaw for giving me permission to publish the case.

THE ESTIMATION OF PROTEIN IN URINE AND ITS RELATION TO CASTS.

BY

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IN the routine examination of a large number of nephritics during 1925-26 certain facts came to light which are not without interest to the general practitioner. The first was that the general impression that protein stands in close relation to casts was borne out. In order, however, to arrive at this result it was necessary to have a fair idea as to the amount of protein present and that casts should be properly looked for.

As to casts, I am indebted to Dr. Broughton-Alcock for the following method of search, which I am convinced is the best:

Take up the material to be centrifuged from the bottom of the container, which has been allowed to stand (not too long in the case of children). After centrifuging at a fairly high speed, take up with a bacteriological pipette, which has been thoroughly rinsed between-whiles, about 0.5 c.cm. from the bottom of the centrifuge tube, and spread out in a large flat oblong layer on a slide, the large area thus provided being carefully explored on the mechanical stage with the one-third objective. A good deal of practice is necessary before certainty can be attained, but by this method casts will rarely be missed.

It was evidently of interest to determine the value (if any) of the conventional terms used in estimating protein at a glance, and though it must be admitted at once that those who deal with a large number of specimens are rarely

far out in their estimates, yet, because the general practitioner has not the opportunity to deal with large numbers, and because greater accuracy is desirable, if readily attainable, the following opacity method is proposed:

Add to 5 c.cm. of urine (filtered through two layers of filter paper, and if necessary through sand also[1]) 0.5 c.cm. of 25 per cent. salicyl-sulphonic acid. (It is convenient to have a set of test tubes with the 5 c.cm. level marked.) If the resulting turbidity is outside the range of the standards of the author's proteinometer,* reject that test tube and dilute, say, 1 in 5 with physiological saline, when (after the addition of the precipitant) the resulting turbidity will (unless the amount of protein content be unusually high) be brought within the range of the standards. If the protein content is unusually high, the urine can be diluted to 1 in 10 with physiological saline. The turbidity produced is then compared, by the aid of the green glasses supplied, with the standards, and with practice a good reading is quickly obtained.

With regard to these turbidities, it is to be noted that the turbidity which just obscures print (using a test tube of 5/8 in. bore) corresponds to 0.020 per cent. albumin, or 20 mg. per 100 c.cm.; a turbidity presenting a frosted appearance through which light ceases easily to be transmitted corresponds to 0.070 per cent., or 70 mg. per 100 c.cm.; while at 300 mg. per 100 c.cm. the fluid is so opaque that light is not transmitted at all.

To return to the evaluation of terms in common use in the estimation of protein by the eye, the protein was determined in 401 cases by the method of Roberts and Stolnikow, and averages taken of these values under the heads supplied by the original rough eye estimation—namely, a trace; fair amount; considerable amount; large amount; very large amount. The results are shown in the following table.

Determination of Protein in 401 Cases.

	Cases.	Average Protein.
For a trace	34 gave ...	0.010 per cent.
For fair amount	159 ,, ...	0.050 ,,
For considerable amount ...	101 ,, ...	0.110 ,,
For large amount	60 ,, ...	0.440 ,,
For very large amount ...	56 ,, ...	1.050 ,,

These figures are reasonable, but the unreliability of rough estimation in individual cases is shown by the fact that the column "fair amount" showed occasional variations from 0.030 to 1 per cent., only the average of a large number giving a reasonable figure. On the other hand, quite low values were at times found in the column "considerable amount," and comparatively low values even in the column "large amount."

The next step was to consider what relation, if any, existed between the amount of protein and the incidence of casts. It having been shown that the conventional expressions have a value where large numbers are concerned, it became permissible to include a further 814 cases in which the protein had not been actually measured (but only roughly estimated), with the following striking result.

Relation between Protein Content and Incidence of Casts.

Of 759 cases with a trace of protein ...	18% had casts
Of 197 with fair amount	53% ,,
Of 152 with considerable amount	49% ,,
Of 80 with large amount	77% ,,
Of 27 with very large amount	78% ,,

Rewriting in round figures we may say that 20 per cent. of cases show casts for a trace of protein; 50 per cent. for a fair amount and a considerable amount; and 80 per cent. for a large amount and a very large amount. This simple progression is very striking, though it would seem at first sight that cases showing averages of 0.050 and 0.110 per cent. protein are clinically on the same footing. On carrying the analysis further, however, so as to take into consideration the type of casts, the more serious view taken of granular casts will be seen to be justified, for the following table shows that from 0.110 per cent. protein upwards granular casts show a sudden increase at the expense of hyalogranulars.

Percentage Incidence of Types of Casts at varying Protein Content.

	0.010% Trace.	0.050% Fair Amount.	0.110% Considerable Amount.	0.440% Large Amount.	1.05% Very Large Amount.
Hyalogranular	55	63	47	43	40
Granular ...	20	19	32	33	40
Epithelial ...	5	2	7	9	20
Hyaline ...	20	16	14	15	—

The work of which these studies are the outcome was done in the Central Laboratory of the Ministry of Pensions.

REFERENCE.

[1] *British Medical Journal*, 1922, ii, 616.

* Obtainable from Messrs. Baird and Tatlock.

OPERATIVE TREATMENT OF CIRRHOSIS OF THE LIVER.

BY

THOMAS TANNAHILL, M.B., CH.B.,

GLASGOW.

THE following case, one of alcoholic cirrhosis of the liver, in a man 70 years of age, is worthy of record principally because of the excellent result of the surgical treatment employed, the technique of which I am sure is not widely known.

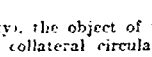
Mr. X first came under my care in January, 1929, and a diagnosis of cirrhosis of the liver was made. At that time there was some free fluid in the abdominal cavity and signs of arteriosclerosis throughout the body, with gradual loss of weight and of strength. In March his condition became decidedly worse; his weight decreased rapidly, his abdomen became more distended with fluid, and a caput medusae was apparent; the daily output of urine dropped to about 20 oz. and a very grave prognosis was made.

On March 30th he was tapped and 170 oz. of fluid were withdrawn from the abdominal cavity. No improvement followed, and on April 4th Mr. G. C. Swanson of Glasgow was called in consultation. The patient was removed to a nursing home, and the following operation was performed.

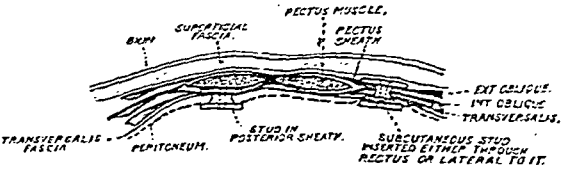
A vertical incision, slightly to the right of the middle line, and extending from the ensiform cartilage above to within an inch of the umbilicus below, was made through the skin and subcutaneous tissue. The anterior sheath of the rectus was opened in the same line, the rectus pushed aside, and the abdominal cavity entered through the posterior sheath and peritoneum. On opening the abdomen bile-stained ascitic fluid welled out of the wound in large quantity.

The diagnosis was confirmed by an examination of the liver, which was typical of cirrhosis. The spleen and kidneys were not unduly affected in size.

The great omentum was drawn upwards and sutured into an opening in the upper part of the posterior sheath of the left



rectus muscle (epiplopexy), the object of this being twofold: first, in order to establish a collateral circulation or by-pass between the portal and systemic venous systems and so relieve the portal obstruction, and, secondly, in order to keep the omentum from



interfering with the second procedure adopted. The second procedure was carried out in order to cause absorption of the ascitic fluid by the lymphatic and circulatory systems. This was done by insertion of two Paterson's buttons (devised by Professor Peter Paterson of Glasgow University), one on each side of the incision. These buttons are made of smooth glass, in shape they are like collar-studs, but with both discs equal in size, and with

the stem hollow. One stud was inserted so that it made a communication between the abdominal cavity and the space underneath the anterior sheath of the left rectus; the other, between the abdominal cavity through the right rectus into the subcutaneous tissues. The studs were inserted at the level of the lower end of the incision and about two inches to either side of it, in order to keep them as far away from omentum as possible. The wound was then sutured in layers.

The after-results have been surprisingly good. From the date of the operation Mr. X has not ceased to improve. It was thought advisable to tap him once more, ten days after the operation, owing to a reaccumulation of fluid; 70 oz. were withdrawn, but since then there has been no more accumulation of fluid, and on examining him, on October 10th, I failed to detect any free fluid in the abdominal cavity. His weight had increased rapidly, sometimes 4 lb. in a week, until on the date mentioned it had reached 11 st. 8 lb. He then felt exceedingly well, and had an excellent appetite. His complexion was fresh and healthy, and his mental outlook bright and alert. In other words, the operation had "made a new man" of him.

I feel sure that an operation capable of producing such results in a condition commonly considered almost hopeless by general practitioners should be given wider publicity and further trial.

DERMATITIS ARTEFACTA DUE TO CANTHARIDES PLASTER.

BY

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CASES of artificially produced dermatitis are always interesting, and this one is especially so, because of the agent used and the psychology of the patient and friends. The details of the case are as follows.

An unmarried woman, aged 26, had suffered from a bullous eruption on the front of the neck and the chin down to the sternum; there were also some lesions on the backs of the hands. The lesions were markedly angular and showed definite blisters in places, and I thought that heat would be a likely cause. They were reported to have persisted off and on for nine months. She had an operation for appendicitis in February, 1928, the wound remaining open until October, and the eruptions date from about that period. Menstruation had been absent for about eighteen months.

Her first doctor stated that the condition was artefact, and then he admitted that he was mistaken—at least, so the sister avers. The other doctor consulted later maintained that, in his opinion, it was artefact. She was admitted to the ward and lesions still developed, until a nurse found that she carried a handkerchief to the bathroom. In the handkerchief there were subsequently found several fly blisters; she had even put them on under starch poultices while in the ward. Later the matter was further cleared up by her sister finding fly blisters in her bed in the bedroom she had vacated at home.

When admitted to the ward she was sleepless and had a furtive expression. After the discovery of the blisters, and after the evil of her ways was pointed out to her, she was very quiet for a day or two. Thereafter she became one of the most obliging and cheerful patients in the ward.

The communications with the friends form another point of interest. When first seen, the sister, who, the doctor states, is a good housewife and mother, asked me if I thought the condition was artificially produced, and on my answering in the affirmative, she said that it was a lie. I naturally suggested that such a statement was not tolerated in the infirmary, and she was dismissed with an admonition and assurance that her sister would be well looked after. Two days later, over the 'phone, she asked me if I had found out the cause, and on my replying that blisters were ascertained to be the cause, she retorted that she would report the matter to the managers of the infirmary, and barged down the telephone. The next day, instead of carrying out her threat, she sent a letter, from which the following is extracted:

"How did you diagnose the case so quickly? My husband and I watched the blisters for six months and have not discovered their origin. Of course, you are a professional, we are not, only we have eyes. Did you personally observe blisters being put on or who observed blisters being put on? If you have found what blisters are put on with please keep same as I wish to see personally that specific article a thing. I know now that you have not seen them personally, starting and finishing, as it takes a considerable time for them to appear. Of course, if a nurse told you that she observed blisters being put on naturally you would believe her, whereas I would say she was hypnotized into believing so by some *Higher Force*, so be very careful how you treat her. I demand that my sister should be observed carefully for a considerable time. The whole trouble now is that she is aware of your suspicions. She is very sensitive, and does worry so about these silly suspicions; first one doctor says blisters are caused by boiling water, another says a poker, another suggests acids, a truly interesting case with a final suggestion of fly blisters (Cantharides). Please give her a chance before you come to conclusions.

"Pardon me if I seem impertinent, I am merely determined that my sister will have attention. I know you will be the first to do your best *when disillusioned*."

Finally, when the blisters were found not only in the ward but in her home, the sister wrote a very complete apologetic letter.

The humour of the situation will doubtless strike some readers. Evidently there are also marked psychic abnormalities in both the patient and her married sister. In the circumstances it would not have mattered if we had not been able to clinch the diagnosis so satisfactorily, but in dealing with a private patient there might have been more serious trouble and loss of kudos.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A GENERAL METHOD FOR MALLORY'S TRIPLE STAIN.

IT is generally stated in textbooks of histology and microtomy that Mallory's connective tissue stain can only be employed successfully with material that has been fixed in Zenker's fluid or, at a pinch, with other sublimate solutions. This does not seem to be invariably the case, judging by the reports of workers with whom I have come in contact. For my own part I have found the following method to give uniformly good results with ordinary fixatives, especially as regards the fuchsine and orange components of the stain. Since most pathological materi is sent up in formol or alcohol there is no need to stre the advantages of having a routine method of renderin such amenable to the Mallory technique.

The modification consists in the use of a mordanting bath prior to immersing the sections in acid fuchsine. T make the bath prepare the following solutions:

(*a*) Potassium bichromate	3 grams
Distilled water...	100 c.cm.
(*b*) Hydrochloric acid (conc.)	10 c.cm.
Spirit	to 100 c.cm.

One part of (*b*) is mixed with three parts of (*a*) when required. The mixture should be used while fresh—within four hours; after that time the greater part of the alcohol will have been oxidized by the bichromate. Sections which have been fixed in alcohol, formol, or piero-formol (Bouin) are brought from xylol through absolute alcohol to spirit in the usual way; they are then transferred to the mordant prepared as above and left in it for five to seven minut If desired they can now be rinsed (not washed) in wat although this is unnecessary. They are then placed in t acid fuchsine solution, and the subsequent procedure is in the standard Mallory technique. Five to seven minut in each of the stains is ample time with this method. Th finished sections show the same colours and differentiation as do those made from Zenker material.

In the course of "controls" on the method given it was found that acidulated bichromate (without alcohol) was unsatisfactory. The fuchsine overstained in practically every case and the orange-G scarcely showed up at all. Probably the good results from the use of acid alcohol and bichromate, freshly mixed, are due to some "nascent" condition of the chromium element as a result of the interaction of the constituents of the mixture. Further, it was found that the best results were obtained by transferring the sections directly from spirit to mordant without intervening grades of alcohol.

It is well to remember that the preparation of the aniline blue-orange-G mixture has a great deal to do with the success of this stain. I find it a good plan to mix the powders well with a spatula after weighing. The mixture is then added slowly to the water in which the oxalic acid has previously been dissolved. The bottle should be well shaken after each small addition.

Grübler's stains were used throughout this research.

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TWO CASES OF AXILLARY BREAST.

I HAVE come in contact with two cases of engorged axillary breast giving rise to pain during the puerperium, which seem of sufficient interest to put on record.

CASE I.

The patient, a 2-para, aged 23, was admitted to the maternity wards of Dundee Royal Infirmary on June 20th, 1929, and was delivered on the following day. On the second day of the puerperium she complained of pain in both axillae which kept her from moving her arms freely. On examination it was found that the axillae were occupied by swellings the size of half an orange; they were tense, very tender, and on pressure exuded milk from the pores of the skin. No tail of breast tissue stretching into the axilla could be made out by palpation, and the breast and the swelling in the axilla seemed to be separate. There was marked engorgement of both breasts, and the milk literally ran from the nipples. Treatment with axillary pad and bandage relieved the symptoms, and the pain had gone almost entirely by the seventh day. There were no supernumerary nipples.

Previous History.—Similar swellings had been present at her last confinement, but they were not so painful nor so large, and had been diagnosed as axillary adenitis. It was on this occasion that she first noticed any swelling of the axillae. She had become aware of a swelling in the armpits about the fourth month of her first pregnancy.

Family History.—The mother of the patient and one multiparous sister had had similar swellings. Two nulliparous sisters had not any.

CASE II.

A 3-para, aged 27, was delivered on September 8th, 1929, on the "district." On the third day of her puerperium she complained that she felt pain in both axillae, but worse on the left side, and pain on moving the arms. On examination a large tense swelling about the size of half an orange was found in the left axilla, and a small tense swelling about the size of a walnut in the right axilla. They were too tender to permit of pressure to see if milk exuded. There was no apparent tail connecting them with the breast. Associated with the condition was engorgement of the breasts, especially of the left breast. The swellings were treated with axillary pad and bandage, and the tenderness and pain had gone almost completely by the seventh day, and the swellings were quite soft. Incidentally, the patient felt less pain in the axillae after the baby had taken the breast. She had a temperature of 99° F. on the fourth day, probably due to breast engorgement.

Previous History.—The patient had been aware of a fullness in the axillae at the age of 15, shortly after menstruation began, but it did not trouble her until her first confinement, and recurred in each succeeding confinement in the first week of the puerperium. She noticed that the swellings got gradually bigger during pregnancy.

Family History.—The mother of the patient had similar swellings; one multiparous sister had not, and one nulliparous sister had not, but menstruation has not yet begun.

Comment.

The prominent features of the cases are as follows:

1. The swellings in the axillae are evidently breast tissue, because (*a*) they increase in size during pregnancy and at each pregnancy; (*b*) milk can be expressed from them; (*c*) of their subsidence by treating them as engorged breasts; (*d*) there is marked increase in size during lactation.

2. Although no connecting strand of breast tissue could be made out by palpation or inspection, it is probable that there is some connexion between the swelling and the breast, because of the immediate relief after suckling the child.

3. Engorgement of the breasts seems to be an accompaniment.

4. The marked familial tendency to inherit the swellings, as the mother of the patient in both cases had swellings in the axillae.

5. No nipples were present on the swellings and no supernumerary nipples were detected elsewhere on the body.

I am indebted to Professor McGibbon, under whose care these patients were, for permission to publish these two cases.

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TREATMENT OF HAEMORRHAGIC DISEASES BY WHOLE BLOOD.

THE two cases here recorded show the value of the subcutaneous injection of whole blood in haemorrhagic diseases.

CASE I.—*Melaena Neonatorum.*

A baby, born on October 13th last, after a natural labour, developed considerable melaena on October 17th. Between 12.30 a.m. and 6 p.m. the child passed four large stools containing blood, and became extremely shocked and pale. An ounce of whole blood was given subcutaneously at 1.30 p.m., and again in the evening. However, as the haemorrhage continued, the infant was given two more injections of one ounce of blood the next day. The melaena stopped on the third day, after another subcutaneous injection had been given. Blood serum was given by the mouth in teaspoonful doses, together with salines, glucose, and breast milk. The infant has regained its colour and now appears quite normal.

It is interesting to note that this child had a temperature of 101° to 102° F. during the illness, which persisted for seven days after cessation of the haemorrhage. This is said to point to an infective origin of this obscure disease. As three direct blood relations of the infant have died from pernicious anaemia, there may possibly be some connexion with this condition.

CASE 2.—*Haemophilia.*

This patient, a man aged 37, had been suffering from haematuria, melaena, and bleeding from the gums for seven days before he came under my care. He was ordered calcium lactate, calcium injections, haemoplastin, horse serum, glucose, and rectal salines. The blood loss was worse next day and the patient became almost moribund, with rapid thready pulse, extreme pallor, sweating, and air hunger. He was given 25 c.cm. whole blood into the gluteal region at 9 a.m., and by 1 p.m. the haematuria had ceased and his general condition had greatly improved. From that time the haemorrhage ceased altogether, and he has been free for nine months.

It is of interest to note that in the first case a large quantity of blood was required, and only a relatively small amount for the haemophilia.

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ARTHUR PEREIRA, M.R.C.S.
London, N.10.

Reports of Societies.

SURGICAL TREATMENT OF PULMONARY TUBERCULOSIS.

AT a meeting of the Medical Society of London, on February 10th, with Mr. DONALD J. ARMOUR in the chair, a discussion on the surgical treatment of pulmonary tuberculosis was opened by Dr. GUSTAVE MAURER of Davos, who demonstrated the method he used combining diathermy current and the electro-cautery.

Dr. MAURER described his method of dividing adhesions by galvano-cauterization under the guidance of the thoracoscope, with preliminary diathermy to obtain tissue coagulation. He classified adhesions into four categories: those in which neither the pulmonary nor the thoracic insertion was broadened out; those in which the thoracic end only was broadened; those with a conical expansion of the pulmonary insertion; and hour-glass adhesions in which both insertions were expanded. He discussed the possible dangers and the relative value of the cautery in each. The decision with regard to pneumolysis must depend upon a proper thoracoscopic interpretation of the adhesions. For the purpose of probing from the point of entry it was his practice to use a Saugman needle provided with a bored olive-shaped indicator which could be slipped over the point of the needle, and was so smooth as to move up and down the needle easily. He first introduced the needle at a right angle to the chest wall at the point chosen for thoracoscopy, at the same time moving the indicator forward. During the process of pushing the needle further into the pleural space, on encountering an adhesion of the lung itself the indicator was pressed back, and the distance of the obstacle from the skin could then be measured. Saugman's needle was thereupon withdrawn some centimetres and reintroduced in all directions in succession, thus giving approximately exact information about the conditions in the pleural space. Dr. Maurer expressed himself strongly against the use of a cutting diathermy, which was

a fruitful cause of empyema. It was his own practice to employ high-frequency currents of 0.1 to 0.3 ampere, which were quite sufficient to ensure a sharply defined area of coagulation in the tissues. With this strength of current the tissue was never divided, and deep coagulation did not occur. In the case of string adhesions, he made a continuous coagulation sleeve around the thoracic insertion, and in the case of sail-like adhesions a coagulation line; these sleeves and lines should be about 3 to 4 mm. wide. The time spent on the preparatory coagulation was quickly made up during the galvano-cauterization, since the cautery could now be used at red heat without danger. The risk of haemorrhage was averted by this combined method, that of empyema was reduced, it was possible to divide adhesions at the thoracic insertion, and the field of operation was enlarged. In 130 cases operated on by this method only one patient developed empyema, and one tuberculous exudate; there was no death directly or indirectly resulting. The cautery should be so introduced that its loop could be placed as nearly as possible at right angles to the thoracic insertion of the main adhesion. The galvanic current was regulated so that the tip of the platinum loop just showed a red glow. This feebly heated loop clung well to the tissues, and was therefore pressed hard against the diaphragmatic end of the adhesion; it fixed itself at once to that position. As soon as the guiding hand had accustomed itself to the respiratory rhythm a strong current was switched on, and the loop then made a deep furrow in the adhesion. Dr. Maurer showed colour slides and *x*-ray photographs of typical cases.

Mr. MORRISTON DAVIES said that when collapse of the lung was necessary the simplest, if not the easiest, procedure was artificial pneumothorax, and when it could be employed it was undoubtedly the best surgical method in uncomplicated cases. Complications were frequent, however, and other forms of surgical treatment had to be considered. The first of these was phrenic evulsion, a relatively simple operation designed to secure hemidiaphragmatic paralysis. The indications for this method were cases of purely basal tuberculosis, of basal pleurisy, especially with thickened pleura, and also cases of generalized tuberculosis in which pneumothorax had failed and a more extensive operation was contraindicated. One of the great drawbacks of pneumothorax was that the lung was constantly expanding between each refill, but with thoracoplasty the collapse, once produced, was permanent. It was not necessary in every case, unless there were cavities in the lung or dilatations of the bronchi, to obtain a complete collapse in order to bring about healing. In many cases what was wanted was a partial collapse with immobilization and resting of the lung. Thoracoplasty should not necessarily be a rigid eleven-rib operation as originally suggested; there were many cases in which thoracoplasty with excision of parts of the first eight, or seven, or even six, would result in sufficient collapse to produce the healing effect on the lung. The indications for thoracoplasty were, in the main, those for artificial pneumothorax, but, except in one set of cases, thoracoplasty should not be employed until pneumothorax had been tried and had failed. The one type of case in which a thoracoplasty was indicated in preference to pneumothorax was the old long-standing type, where the mechanical changes in the lung, with extensive dilatation of all the tubes, were the predominant trouble and not the tuberculosis. The contraindications for thoracoplasty were much stronger than those for pneumothorax. In pneumothorax the presence of activity in the opposite lung did not necessarily preclude it, but in thoracoplasty it should be an absolute contraindication except in cases of persistent and uncontrollable haemorrhage endangering the patient's life.

Dr. F. G. CHANDLER remarked that artificial pneumothorax was one of the most effective methods of treatment, but even to-day many members of the profession neglected it. The effectiveness of artificial pneumothorax was to a large extent dependent on its completeness. With regard to internal operations, Mr. Morriston Davies's first essays in adhesion-cutting by means of a tenotome with the patient on the *x*-ray table had historical interest, but it was too dangerous to become a routine procedure. Later, Jacobeus interested the medical world with his endoscopic methods. That there were difficulties with these, especially in respect to orientation, was proved by the numerous modifications made of the original instrument. Then the diathermy current had been introduced, and Dr. Maurer had adopted a very ingenious method of electro-cauterization; but it involved two openings, and to many workers it would seem very desirable to carry out the whole operation through one opening. Dr. Chandler exhibited an instrument which he had modified from an American pattern; it involved only one puncture. The field of vision for the thoracoscope in this arrangement was excellent; it was almost direct, being only 30 degrees off the axis, thus simplifying orientation. Diathermy current was employed, absolutely under the control of the operator by means of a foot-switch; with a large electrode coagulation was obtained, and so the risk of haemorrhage was minimized. He had operated on seventeen patients, and had had no unfavourable reactions. Dr. Chandler added a few words about the procedure of oleothorax; the chief indication for which was obliterative pleurisy.

Mr. TUDOR EDWARDS said that the division of adhesions in this country was usually carried out with a modification of the instrument of Jacobeus; he had not found it so difficult to use as Dr. Chandler had suggested. The risk in using diathermy as a means of cauterizing before division arose from the absence of control over the extension of the coagulation into the bands. All chest surgeons attempted to divide the bands as near the pleura as possible, however long or narrow the adhesion might be. There was, however, a danger in dividing an adhesion so close to the pleura at the apex as Dr. Maurer had advised. The speaker was not quite happy about the value of partial thoracoplasty, which in his view resulted in a considerable limitation of the degree of collapse, as compared with the amount of rib removed. Unless the thoracic cage were divided completely collapse would be greatly limited. Mr. J. E. H. ROBERTS pointed out that Mr. Morriston Davies had not mentioned the great difficulty arising in phrenic evulsion from the presence of the lymphatic glands. He had seen several cases where the lymphatic glands were extensive, and in pushing these aside the vessels were torn, and local effusions in the neck had resulted. He was not very much in favour of partial collapse, and he also preferred, in the majority of cases, to perform thoracoplasty in stages.

Dr. MAURER, in reply, praised Dr. Chandler's instrument as being the best he had seen for single puncture: his own method, which involved a more extensive operation, necessitated two punctures.

INTRATHORACIC TUMOURS.

A special discussion on intrathoracic tumours was held at a meeting of the Section of Surgery of the Royal Society of Medicine on February 5th, with Sir HOLBURT WARING in the chair.

Mr. A. TUDOR EDWARDS opened by asking whether the apparently growing incidence of primary malignant disease in the thoracic cavity represented a true increase, or was due to the more exact diagnosis which had become possible. The greater number of cases of benign growth reported would suggest that the diagnostic factor was partly responsible. Intrathoracic tumours might be classified as mediastinal, pulmonary, or pleural, according to the site of their origin. Benign mediastinal tumours comprised intrathoracic goitres, mediastinal dermoids, and teratomas. The earliest and most characteristic symptom of intrathoracic goitre was dyspnoea, constant in some cases and paroxysmal in others. The physical signs included an area of dullness of varying extent on percussion over the sternum, and also the presence of large dilated veins; *x*-ray examination showed a well-defined opacity in the upper substernal arch. Mediastinal dermoids and teratomas never gave rise to symptoms due to their mediastinal position, although when they extended outwards quite distinct symptoms made their appearance. Intrathoracic goitres should be removed as soon as symptoms of interference with respiration intervened. The speaker gave an account of the operative exposures, and said that he had operated on seven cases of intrathoracic goitre, with one

post-operative death, the necropsy disclosing an enlarged thymus. With regard to mediastinal tumours, an operation was rarely possible, and, even when performed, freedom from recurrence was unusual. The majority of cases of sarcoma in the mediastinum were inoperable, and should be treated by radium. He had been disappointed with the results of deep x-ray therapy.

Passing to pulmonary tumours, Mr. Tudor Edwards remarked that benign tumours were extremely rare. Dermoid of the lung had been reported, but it had probably originated in the mediastinum and burrowed into the lung. The most common cyst was the hydatid, which might be single or multiple. Primary carcinoma might arise in the bronchi or the alveoli. Sarcoma was much rarer in this situation than carcinoma. In bronchial carcinoma dyspnoea appeared to be the earliest and predominant symptom. Endothelioma occasionally arose as a central growth, and could be differentiated from carcinoma only by microscopical examination. Bronchial carcinoma only rarely allowed of radical extirpation; he had yet to see any great improvement, still less any cure, result from deep x-ray therapy. It was too early to say whether radon seeds led to a definite disappearance of the growth, but there was such an improvement as to warrant a trial. Central carcinoma and endothelioma offered a much better chance for operative treatment: with secondary deposits in the lung, treatment would rarely be of any value. Pleural tumours gave rise to symptoms of pain and irritative cough. An x-ray examination would confirm the diagnosis of tumour, and the clear outline would distinguish the growth from infiltrating tumours. Surgical removal should be advocated, if the general state of the patient permitted, as soon as the diagnosis was made. As regards malignant tumours in the pleura, endothelioma might be localized or diffused, the latter being the more common. Localized thoracic pain was the most frequent symptom. The physical signs were those of pleural effusion, always haemorrhagic in the later stages. A localized growth might be removed if diagnosed before secondary deposits made themselves evident. In conclusion, Mr. Edwards said that in spite of modern aids to diagnosis there would remain a proportion of cases in which exact diagnosis was impossible, and in these cases exploratory thoracotomy should be performed. If certain precautions were taken, this procedure was no more serious than exploratory laparotomy, and convalescence was shorter. In the case of benign intrathoracic tumours, it should be borne in mind that these would destroy life by pressure on vital structures within the thorax.

Mr. W. H. C. ROMANIS limited his remarks to four classes of tumours: goitres, dermoids, hydatids, and malignant growths of the lung. Surgeons were accustomed to see cases of Graves's disease with large extensions of thyroid tissue down behind the sternum; also, more rarely, they saw the so-called plunging goitre, which was situated in the neck, but moved up and down in the chest as the patient coughed or swallowed. The real thoracic condition was a mass of thyroid tissue deep down inside the chest. One important diagnostic possibility should be borne in mind. In an x-ray photograph there might be a rounded shadow just below the sternal arch; if it was remembered that this might be a retrosternal goitre there was less liability to miss many of them. Retrosternal goitres could be very easy to remove, or the reverse. The speaker had only found it necessary to split the sternum once, but he would have no hesitation in doing this if it was required. One of the most interesting features of dermoids was the variety of manifestations to which they gave rise; the main symptom sometimes was the bringing up of sputum. For removal he had little doubt that the best approach was from the side, making a large incision between two ribs. Hydatids were rare in this country; here the chief precaution was to bear in mind that it was just as deleterious to let out into the pleura the contents of a hydatid cyst as it was to let out pus, and something must be done to shut off the pleura. The old warning against putting needles into hydatid cysts in the lung had quite a sound foundation. With regard to malignant growths in the lung, the percentage of operable cases that any surgeon saw was lamentably small. The speaker, though not altogether a radium enthusiast, had had the opportunity of trying radon seeds on growths in the lung, with certainly beneficial effects in a number of cases. He had one case at present classifiable as a surgical failure but a radium success. There would be a fair number of good results with radium, but for the present it appeared to be better to use radon seeds rather than radium itself, because in that way the difficulty of taking the material out afterwards was obviated. With regard to exploratory thoracotomy, one procedure before operation which he regarded as essential was the production of artificial pneumothorax.

Dr. L. S. T. BURRELL suggested as a rough classification: (1) benign tumours, such as fibroma and dermoid; and (2) malignant cases, including endothelioma of the pleura, carcinoma of the lung, and sarcoma of the mediastinum. The most common symptoms numbered three: pleural effusion; pressure, including pressure on the bronchus, which might occur rather suddenly; and haemoptysis as the initial manifestation. With regard to diagnosis, the patient with a neoplasm did not have any constitutional symptoms, or very few, thus contrasting with tuberculosis. The great majority of these cases were diagnosed by x-ray examinations, which would reveal a tumour in some instances, but more commonly collapse of lung as a result of the tumour. Sometimes it was difficult to tell which shadow indicated collapse and which the actual tumour. When there was effusion with tumours it was often blood-stained, but a more important sign was an excess of endothelial cells when one would have expected small lymphocytes on the assumption that a chronic infection was present. It was very important to have the x-ray photograph taken from the lateral as well as from the antero-posterior point of view. Dr. Burrell emphasized the importance of injecting lipiodol; many of these tumours produced symptoms by blocking the bronchus. He agreed as to the importance of preliminary artificial pneumothorax, which would show whether the tumour was inside the lung or not, and enable a thoracoscope to be introduced into the chest, thus establishing the diagnosis beyond doubt. In his opinion there was only one treatment for these cases, and that was surgical—the sole chance of saving the life of a patient with malignant disease of the chest. He had had several patients who had improved as a result of deep x-ray therapy, but in every single instance there had been recurrence. He thought that in time radium might be a cure for neoplasms in general, but at present, in his experience, it was absolutely useless in any case of intrathoracic growth. The size of the growth need not deter the surgeon.

Dr. F. G. CHANDLER showed a number of lantern slides illustrating some of the conditions in a slightly unusual form. He said that primary malignant tumour of the chest was common, but the evidence suggesting that it was now more common than previously was fallacious; the diagnosis of chest diseases generally had become more accurate during the last ten or twenty years. Primary malignant growths might arise in the mediastinal glands as sarcoma, in the walls of the bronchi as carcinoma, and, very rarely indeed, in the pleura as endothelioma. They might be difficult to diagnose in the early stages, and also in their later stages because of breaking down. The surest means of diagnosis were (1) x-ray examination as soon as possible; (2) bacteriological investigation to exclude tubercle bacilli; and (3) bronchoscopy. Innocent tumours should be dealt with surgically if they were causing symptoms and growing in size. The treatment of intrathoracic malignant tumours resolved itself into: x-ray therapy, radium therapy, surgical removal, and relief of symptoms. The greatest hope in lung carcinoma was early removal. The medical practitioner must be quite frank with his patients if there was the slightest chance for them, for in certain cases the boldest surgery and the biggest risk were advisable, and the patient's co-operation was, as a rule, readily forthcoming.

Mr. W. H. WHITE stated that the most frequent condition to be dealt with was carcinoma of the lung; the inoperable type was the most usual, and the commonest symptoms were the dry unproductive cough and the cyanosis associated with such attacks. He thought that some error was often made when radium was implanted into the lung, the technique of implantation being such as to cause

dissemination of cells. He described a device he had made for the purpose in which diathermy was used to coagulate the tissues on implantation, so that there was no oozing of blood and no cell dissemination. The speaker was also of opinion that the opening of the thorax under spinal anaesthesia was to be recommended.

Dr. JAMES MAXWELL said that as a result of an investigation of 184 cases of primary bronchial carcinoma, which had been collected at St. Bartholomew's Hospital and at the Royal Chest Hospital, it seemed possible to place the cases from the pathological point of view in four groups. In the first group (6 per cent.) the growth started in the root of the lung, surrounding or infiltrating the bronchus, and that alone; that type was not prone to metastasis. In the second group (20 per cent.) there was infiltration of the lobe of the lung alone; cases in this group were amenable to treatment fairly easily, and radium or x rays would be the probable method of treatment for the next few years. In the third group (25 per cent.) there was infiltration of the mediastinum, but not of the lung, and the pericardium was always involved early. This condition would never come within the scope of surgery, though it might possibly enter that of radium therapy. In the fourth type there was infiltration both in the lung and in the mediastinum; this was the commonest condition, and by far the most difficult to treat. With regard to methods of treatment, in carcinoma of the first group the intrabronchial application of radium seemed to be helpful. He had seen several cases recently in which x-ray treatment had caused the growth to metastasize far more readily than it would otherwise have done. He was not at all convinced that x rays were of use, or that they prolonged life.

Mr. J. E. H. ROBERTS said that he also had never seen any case of carcinoma of the lung which had received permanent benefit from x rays; on the other hand, he thought that there was going to be a field for radium, because the majority of cases of primary carcinoma of the lung, at the time when first seen, were certainly inoperable. He did not see how that condition of affairs was going to be altered. The condition was already inoperable at the time the patient went to see his first doctor. Not enough was known as yet about the effect of radium on normal lung tissue, nor what thickness of screening might be necessary. He had no doubt that radium, in cases in which he had applied it, had had a permanently beneficial effect, though in no case could he yet say that it had cured the patient. With regard to sarcoma, the primary condition in many cases had disappeared completely after insertion of radium, and although the patient had died subsequently of metastasis, the primary growth had not recurred.

ANAESTHESIA IN THORACIC SURGERY.

AT a meeting of the Anaesthetic Section of the Royal Society of Medicine, on February 7th, with Dr. R. E. APPERLY in the chair, Dr. C. LANGTON HEWER opened a discussion on anaesthesia in thoracic surgery.

Dr. Hewer said that it was largely owing to the diminution in anaesthetic risk brought about by improvement in anaesthetic methods that the field of thoracic surgery had been enlarged and extended so rapidly of recent years. Starting with the preparation of the patient for operation, drastic purgation was to be avoided, and plenty of fluid should be given between meals. In this way circulating toxins were diluted. Glucose could be administered with advantage. Small quantities of hypnotics could be given to adults, such as morphine gr. 1/4 and hyoscine gr. 1/100 to an adult man, with lesser quantities to women. He next touched on after-treatment. An important thing was the administration of relatively large quantities of saline, or saline and glucose, while the patient was still in an unconscious condition, given at a temperature of 115° F. One of the essential conditions in avoiding post-operative shock was the maintenance of heat. In hospital wards electric cradles or electrically heated blankets were of the greatest use, and replaced hot-water bottles with advantage. Patients were best treated in small rooms, which could be easily heated, and he pleaded for the installation of small recovery rooms, preferably adjacent to the theatre, in all hospitals. Important anaesthetic problems arose in connexion with thoracic surgery. The patients, as a rule, were in poor general condition, suffering from conditions such as phthisis, tumour, or bronchiectasis. The chest wall was vascular, which meant increased risk of shock. Pressure relationships in the lungs were interfered with, and had to be regulated by the anaesthetist. The anaesthetic should have no depressant effect on the normal lung tissue; (3) the cough reflex should not be abolished; (4) recovery should be rapid; (5) the anaesthetic should be able to be administered when one or both cavities of the lung were opened; and (6) oxygenation should be adequate even when these cavities were opened.

Local analgesia by infiltration, paravertebral block, etc., was useful in some types of cases, and after-effects were rare, except that pain seemed to be increased. The coughing reflex was not abolished, though its efficacy might be impaired to some extent. Pleural shock, however, existed, and might lead to general shock. There was also some danger of toxic symptoms occurring if large quantities of drugs, such as novocain and adrenaline, were injected, and there was a risk of heart failure if the solution got directly into a vein. The great disadvantage of the local method was, however, that there was no protection against lung collapse or respiratory obstruction. Chloroform had a definite place in thoracic surgery, especially during induction. Its disadvantages were the abolition of the cough reflex, the possibility of vomiting, and the slow recovery. Ether in quantity was disadvantageous, but could be used by the open method in small quantity, and possibly added in minimal quantity to nitrous oxide and oxygen. Paraldehyde and avertin gave rise to post-operative depression. Nitrous oxide and oxygen, having no immediate deleterious effects, being non-irritating, and causing no marked increase of saliva or mucus, was the anaesthetic of choice in thoracic surgery. It had usually no after-effects, and, if vomiting occurred, it was usually due to causes other than the anaesthetic. The poor muscular relaxation accorded by this combination was of small importance in thoracic surgery. Ethylene and oxygen could be used in the same way as nitrous oxide and oxygen. Its only advantages were that it gave slightly better relaxation, and could be used with slightly higher oxygen percentages. It had three great drawbacks: its unpleasant smell, the subsequent nausea it caused, and its high explosiveness. Acetylene behaved in much the same way as ethylene, and had much the same disadvantages.

In superficial operations upon the thoracic wall, including carcinoma of the breast, the choice of anaesthetic was not of great importance. When the whole thickness of the chest wall was involved the best anaesthetic was nitrous oxide and oxygen. This could be given with an ordinary gas mask and the pressure of oxygen and nitrous oxide regulated by any suitable machine. When the thoracic wall was opened a positive pressure up to 10 mm. of mercury was an advantage. Where one pleural cavity was to be opened the use of differential pressure was essential. Endotracheal insufflation was of use in some cases, but was often unnecessary, and in a few cases a positive disadvantage. Where the trachea was much deformed by the pressure of a growth the passage of the tube, while immediately effective, later was a disadvantage, in that on its withdrawal the trachea might collapse and lead to obstruction, or the passage of the tube might lead to such swelling that on its withdrawal complete occlusion of the lumen of the distorted trachea might result. The anaesthetist should therefore use a well-fitting face-piece on a gas and oxygen apparatus, and have all apparatus ready at hand to pass an endotracheal or intranasal tube, should such be necessary. Dr. Hewer disclaimed anything original in his communication, but hoped that it would lead to animated discussion.

Dr. IVAN W. MAGILL preferred to divide the operations into two groups. In the first were the superficial cases where a positive pressure was not absolutely necessary. In the second group were the tumours, retrosternal goitres, and removal of larynx. In these cases it was as well to

induce a pneumothorax beforehand so that the sound lung could accommodate itself to the changed conditions. In many cases, however, a positive pressure was essential. For minor operations local anaesthesia was best, and it might be employed for major operations also, but, for these, combined local and general anaesthesia was probably best. In most cases ether and chloroform could be dispensed with; and face-piece administration was better than endotracheal. In the second group, when dealing with tumours, intubation and insufflation usually gave the best results. The best anaesthetic was nitrous oxide-oxygen and perhaps a minimal amount of ether. Immediate recovery was not always advantageous. In conclusion, Dr. Magill summarized his opinions as follows. Local anaesthesia was best for minor operations; nitrous oxide and oxygen with intercostal nerve block for major cases. Endotracheal insufflation was to be used in selected cases only.

Mr. TUDOR EDWARDS, speaking as a surgeon, in general supported the statements of the openers of the discussion. He thought local anaesthesia best for superficial operations such as empyema and abscess. Strong positive pressure was necessary only in cases where both pleurae were opened at the same time, which was a rare event. The thoracic surgeon had the advantage that the viscera tended to fall away when the cavity was opened, instead of the reverse happening as in abdominal surgery. It was thus possible to view the chest contents under an anaesthesia much lighter than would be the case in the abdomen.

Mr. J. E. H. ROBERTS, speaking also as a surgeon, said that the anaesthetist should be familiar with serious thoracic cases. He agreed that nitrous oxide and oxygen was the best anaesthetic. Ether in quantity was prejudicial to patients. As regards local infiltration he differed from other speakers. It was unnecessary and was followed by more after-pain, and, moreover, the cough reflex was interfered with. Intratracheal insufflation was unnecessary except where great pressure is needed, as when the opposite lung is opened.

Mr. T. P. DUNHILL made a plea for the use of chloroform in suitable cases. He also pleaded for proper apparatus for the anaesthetist. It was impossible to do complicated surgery with primitive anaesthesia. Dr. F. T. EVANS did not like chloroform on account of its liability to cause prolonged sickness. In cases such as substernal goitres it was the anaesthetic of choice. Dr. Z. MENNELL believed that cases should be divided into two classes. In the first an artificial pneumothorax was produced at the outset. In the second adhesions were present which prevented the pneumothorax being produced. For the first class light intratracheal ether anaesthesia was suitable. In the second class ether was contraindicated and intratracheal anaesthesia was not essential. Chloroform to the obstetrical degree was suitable. He believed that there was a bigger field in sight for local analgesia in chest surgery, especially if speed in operating were cultivated.

Mr. H. E. G. BOYLE was in reminiscent mood, and recounted some of the demonstrations given by Meltzer at a meeting of the Section many years ago. He also pleaded for better team work between surgeon and anaesthetist.

The PRESIDENT referred to the after-pain following novocain injections for intercostal block.

ABSCESS OF THE BRAIN.

DR. HEINRICH NEUMANN, professor of otology in the University of Vienna, was the principal speaker at a discussion on brain abscesses in the Section of Otology of the Royal Society of Medicine on February 7th. The president of the Section, Mr. W. M. MOLLISON, was in the chair.

Professor NEUMANN began with a reference to Macewen's fundamental work on this subject, and his extraordinary percentage (about 80) of successful results on operation. Such a level of success had not been reached by later workers on the Continent. In the speaker's clinic there had been operations during the last ten years on 47 cases of temporal lobe abscess, with healing only in 16; the remaining 31 patients had died. Other clinics had recorded similar figures. This was the more astonishing because otology had made great progress both in diagnosis and in operative technique. It was true that Macewen operated on selected material, but even excluding from his own list the cases which Macewen would have excluded, he had below 50 per cent. of successes. The same difference occurred in cerebellar abscess; out of 27 cases the speaker had succeeded in obtaining healing only in 2. Macewen operated on abscesses without waiting for the characteristic cerebellar symptoms, such as nystagmus. More recent workers, on the other hand, believing in the value of the symptoms described in modern neurology, had underestimated and neglected the general symptoms. Professor Neumann's study of brain abscess had led him to the conclusion that the focal symptoms were relatively late in appearing, and that it was not wise to wait for them. Puncture should be made as soon as, from the general state of the patient, it seemed likely that abscess was present. The study of cerebellar abscess showed that nearly all cases began with symptoms which, seen retrospectively, should have led the clinician from the very beginning to suppose that an abscess was present, even in the absence of the specific symptoms which appeared later, or in some rare cases not at all. The study of his own cases had led him to pay great attention to general symptoms. All his patients with cerebellar abscess, for example, had complained of dizziness from the beginning, while constant occipital headache was found in nearly all cases. The most reliable diagnostic help in brain abscess was a positive puncture; in future, to verify his diagnosis based on general symptoms only, he intended to puncture at an earlier stage. The possible dangers of puncture had hindered its employment, but this consideration was not always justified. The surgical treatment of brain and cerebellar abscess must be varied to suit the individual case. Study of the pathological anatomy proved that each abscess needed its special method of operation, and that a uniform treatment could never be successful. Some recent work of Lemaitre and certain Danish clinics pointed to the employment of filiform drainage tubes. The speaker had tried to treat a few cases by this method, but he had to fall back on his old plan of stretching, plugging, or making a contra-incision. The filiform drain, placed in the abscess after the puncture, worked well at first, but in the course of treatment it proved insufficient, probably as a result of the changed conditions of circulation and tension in the brain and spinal fluid. At present the healing of an abscess must not be looked upon as a definite condition. There was not sufficient tissue material for the solid cicatrization of a great defect in brain substance, so that it was possible for one part of the resulting cavity to heal as a solid mass, while another part formed a cyst, which cyst, sooner or later, even after years, might be reinfected by an acute exacerbation, and so there occurred what must be regarded as a relapse of the abscess. In all complications of the brain the effort should be made to perform the operation in such a way that not only was the life of the patient saved, but he was prevented from permanent crippling; at the same time, in such a dangerous condition it was a mistake to operate too timidly.

Mr. HUGH CAIRNS, dealing with the subject from the point of view of the neurological surgeon, remarked that the methods of diagnosis rather than of surgery were faulty. Success in treatment depended in the first instance on the power of the brain to localize the infection. The brain had very good powers in this respect, not only with regard to its own connective tissue, the microglia, but also to the mesoglia, the common connective tissue of the body. The symptomatology of brain abscess was not yet clearly defined. Some mistakes in diagnosis might be assigned to neglect of the ophthalmoscope and perimeter. Mistakes might also arise from the too frequent conception that brain abscess must produce a high temperature, whereas in the majority of cases there was a subnormal temperature for the most part. The partially subsiding abscess during convalescence should be carefully watched; it was like a volcano, liable to erupt rapidly. Sometimes the onset of an abscess was clearly signalled by an easily distinguishable symptom, such as a Jacksonian fit; more often, however, the time of onset was uncertain, and one could not always be sure that there had not been some intracerebral infection before the onset of the illness. In temporo-sphenoidal

abscess repeated daily perimetry was important. As for localizing signs, the difficulty was to elicit them on account of the drowsiness of the patient. One useful resort was *x*-ray examination, for the abscess very often contained gas, which was revealed by *x* rays. The speaker added a few remarks on exploratory puncture of the brain—the only way in which a number of these conditions could be differentiated in the present state of knowledge. One point of negative evidence was notable; if pus was found when a very little cut was made in the dura, it was almost certain that there was not a brain abscess. Purulent pachymeningitis, from pus in the subdural space, might sometimes follow mastoiditis, and produce symptoms identical with those of temporo-sphenoidal abscess. Serous meningitis or arachnoiditis was sometimes confused with cerebellar abscess. Finally, diagnosis must be continued during treatment. The operation required often to be performed in stages; there was a right and a wrong way to operate in each case. In no disease was repeated clinical investigation more important than in abscess of the brain.

Mr. J. S. FRASER described in detail 17 cases of temporal lobe abscess on which he had operated during the last twenty years; 10 of the patients were males and 7 were females, and most of them were under the age of 30. The right side was affected in 9, and the left in 8; in only 3 cases was there otitis media. The labyrinth was functioning in 13, was negative in 2, and in the other 2 cases it was not examined. Headache was a marked feature in 15, and vomiting in 13; the temperature on admission was subnormal in 7, normal in 2, and fever was present in 8. The pulse was slow in 5 and rapid in 8. Two patients were drowsy or even comatose on admission; in 4 slight delirium alternated with drowsiness. Six patients had meningitis on admission, of whom 5 died. The total results were 6 recoveries, 11 deaths.

Mr. E. MILES ATKINSON spoke of the pathology of adjacent brain abscess. The essential point at issue in the pathology of this condition, he said, was the route by which infection entered the brain substance. He described, with the aid of graphs and sections, the distribution and direction of the vessels in the brain, and in particular pointed out the layer of white matter left behind by the central and cortical vessels after passing through the cortex and up through the base of the brain—which he termed an avascular zone. It was in this area poorly supplied with blood that the abscess made its first appearance. Of the three channels by which infection entered the brain the perivascular route was the most common; this was the route in 8 out of 14 cases he had investigated. The second was the venous route, perhaps most likely to be taken in connexion with a lateral sinus thrombosis; the third was the arterial route. If the artery was caught up by thrombosis a small embolus might be shut off and cause an abscess. The speaker touched on capsule formation—criticizing the term "capsule" as a misnomer, for all that was meant was the wall of the abscess cavity, which differed in no respect from the wall of an abscess in any other part of the body. He believed that if the mortality of this condition was to be diminished, surgeons must be prepared to explore the brain on much less evidence than that insisted upon up to the present.

Dr. W. H. JEWELL, Mr. A. D. SHARP, and other members described cases, but discussion had to be curtailed owing to the lateness of the hour, and Professor NEUMANN contented himself, in reply, with saying what pleasure it had given him to discuss these points with the inheritors of the Macewen tradition.

CARDIAC SYMPTOMS WITHOUT MURMUR.

THE annual meeting of the Devon and Exeter Medico-Chirurgical Society was held on January 23rd, with the newly elected president, Dr. F. A. ROPER, in the chair. Dr. G. L. THORNTON read a paper entitled "The heart without murmur."

Dr. Thornton opened with a warning against the too-ready dismissal of symptoms which suggested cardiac disease, even though no heart murmurs were present, and there was no evidence of enlargement or displacement of the heart, or of definite arrhythmia. He suggested a classification into seven groups of the alleged or inferred causes of conditions which gave rise to symptoms rightly or wrongly referable to the heart. These groups were: (1) cases in which the symptoms were referable to affections more or less remote from the heart; (2) cases with a history of strain but without a primary cause; (3) cases associated with hyperthyroidism; (4) cases associated with neurasthenia, but without hyperthyroidism; (5) acute or chronic cases of myocardial affections; (6) cases of mechanical embarrassment, as in nephritis with high blood pressure, hyperpiesia without nephritis, and chronic bronchitis and emphysema; and (7) cases of valvular disease of the heart where the murmur only became audible later in the history. Examples were given to illustrate these various groups as they had occurred in general practice, or under the conditions of active service during the war, or as sequels of such service. Dr. Thornton paid a tribute to the value of the wooden stethoscope in affording valuable information in doubtful cases. He had also found the differential stethoscope very helpful in myocardial cases to detect the first signs of cardiac abnormality, and to enable a prognosis to be given both at the first examination and during subsequent treatment. Recognition of a low systolic blood pressure was also helpful in revealing any progressive myocardial failure in advanced valvular disease, or in clinching an early diagnosis of degeneration of the myocardium. The speaker emphasized the point that diagnosis and prognosis could only be based on the sum of all the subjective and objective findings. In some cases the patients had been discharged from the army with a diagnosis of cardiac embarrassment, when they were really suffering from early pulmonary tuberculosis. In the course of some references to treatment Dr. Thornton remarked that as regards the labouring classes it was often very difficult to find suitable employment for patients with cardiac disease, many of whom were obliged to return to work under unsuitable conditions. He thought it should be possible when big employment schemes were launched at the public expense for the less technical work to be graded so as to offer openings for those who were not physically strong. He added that both diagnosis and prognosis would be made more certain in the future if a minute examination of the heart was conducted by a pathologist in all cases of sudden death.

The PRESIDENT discussed present views in regard to the significance of apical and precordial systolic murmurs, and the necessity for seeking concomitant signs and symptoms before assessing them as of valvular ill omen. His experience had coincided with that of Dr. Thornton in respect of many men discharged from the services with a diagnosis of disordered heart action, pulmonary tuberculosis having proved eventually to be the true interpretation of their symptoms. Touching on strain he said he had had personal experience of a case where over-exertion at a game had proved to be the immediate provocative cause of auricular fibrillation in a young girl in whose previous history there could not be discovered rheumatism or any acute fever of a predisposing nature. From his experience on medical boards Dr. Roper also testified to the elusive character of the diastolic murmur in aortic disease as pointed out by Dr. Thornton.

Dr. R. V. SOLLY mentioned that the late Dr. William Gordon had attached importance to a modified form of the old wooden stethoscope as a means of control auscultation in cases where a murmur was inaudible in a suspect case of valvular disease. Mr. NORMAN LOCK, speaking from the point of view of an operating surgeon, asked if there were any cardiac conditions which could at once be stated as contraindicating surgical intervention. Dr. GIDLEY mentioned the sudden heart failure which so often occurred in cases of malignant disease where a normal pulse rate with regular rhythm had given no preliminary warning.

Dr. THORNTON, replying, said that where the myocardium was suspect, and there was a low reading in the systolic blood pressure, a clear case was made out for due estimation of the patient's outlook, if operation were abandoned, as compared with the immediate risk during the operation in question. It had to be admitted, however, that many patients survived severe and prolonged emergency operations in spite of cardiac conditions which would have caused considerable hesitation in other circumstances.

Reviews.

RICKETS, OSTEOMALACIA, AND TETANY.

IT would be difficult to find anyone more fitted than Dr. ALFRED F. HESS to write a book on *Rickets, including Osteomalacia, and Tetany*.[1] He is a clinician of high repute, an investigator of standing, and an active participant in the fight made during the past ten years to obtain more insight into the etiology of rickets and its allied disorders. Dr. Hess has changed his views about these disorders, for at one time he was opposed to the present writer on the question of the dominating part played in their production by the antirachitic vitamin, or "factor" as he prefers to call it; even as regards the curative effect of ultra-violet radiations on rickets he is a convert. The experience of conversion, in medicine as in some well-known non-scientific subjects, seems to ensure success in the writing of books, for Dr. Hess's book is certainly an excellent production. Its style is most attractive; modern work is, on the whole, well and critically described; and the historical aspect of the subject, from the description of rickets by Glisson in 1650 down to the present time, is exhaustively treated. As might be expected, most of the book is taken up by the consideration of rickets. The history of rickets; its geographical distribution; experiments on animals made to elucidate its etiology; and its metabolism, pathology, diagnosis, prognosis, and treatment are dealt with in different chapters. Other chapters are devoted to late rickets, osteomalacia, and infantile tetany.

It is now universally recognized that the antirachitic or calcifying vitamin, or vitamin D, whether present in natural food or prepared by the action of ultra-violet radiations on ergosterol, completely dominates bone calcification. Dr. Hess was associated with Rosenheim, Webster, and Windaus in the important discovery that ergosterol is the parent substance of vitamin D. By this discovery the two apparently unrelated observations—namely, that rickets could be prevented or cured both by the antirachitic vitamin and by sunlight—were brought into complete harmony. Hess, in his book, lays greater stress on the absence of sunlight as an etiological factor in rickets than on the absence of vitamin D from food, and in the past this allocation of responsibility may have been justified. But it would be a sorry look-out for civilized man, especially in this country, if this should hold true now and in the future. With all the good will in the world, even if we were prepared to go about naked, we would find it difficult in England to procure from the sun enough ultra-violet radiations to keep our bones straight and well calcified. It cannot be too much emphasized that rickets can be completely prevented in this and in other countries, independently of sunlight, if sufficient vitamin D is included in the diet from birth, and pre-natally in the mother's diet. It is equally certain, though Hess, as judged by the section on teeth (chapter viii), has not appreciated the fact, that calcification of the teeth is controlled by the same factors as those that calcify the bones. Of course, in comparing teeth and bones it must be remembered that the common defects of the temporary teeth are not usually obvious unless they are looked for with great care; also that the deciduous incisors (the teeth most easily seen in the mouth) are developed in large part during foetal life and lactation, at a time when there is least danger of a vitamin D deficiency. It would appear probable that gross rickets will soon disappear now that our knowledge of its etiology is so advanced, but this achievement will not be sufficient if minor forms of rickets and dental hypoplasia, and, to a large extent, dental caries, are not also banished. If the intake of vitamin D were sufficient throughout growth, including the pre-natal period, not only would all rickets disappear, but the teeth of civilized man would become white, shiny, and evenly arranged like those of the African native living in his natural habitat, and dental caries would be as rare among us as among these people.

Another aspect of rickets etiology which receives only a passing reference in this book is the effect of cereals in producing defective bone formation. It is true that the rickets-producing effect of cereals can be antagonized by an abundant vitamin D intake; but the deficiency of vitamin D in our food would not be such a pressing social problem were it not for the fact that cereals form 60 per cent. of the average English diet. The baneful effect of cereals must be taken into account not only in the etiology of rickets, but in infantile tetany, and especially in osteomalacia, where calcium is actually taken from the bones. Considering the importance that many clinicians have attached to the part played by cereals in the etiology of rickets—to say nothing of the experimental evidence—it might have been expected that more attention would have been given to this point.

The elucidation of the etiology of rickets and its allied disorders is one of the finest instances of international teamwork in medical science; and, for this reason alone, Hess's account of the investigations ought to be read. Like everything "sublime," the position has its "ridiculous" side—although some would probably apply a stronger epithet—in the fact that English people have the privilege of paying a substantial tax to America for making vitamin D by irradiation. Fortunately cod-liver oil is still untaxed. This, however, has nothing to do with Hess's book.

Much could be written about the book, especially in terms of praise, but sufficient has been said to give the reader an idea of its excellence and its limitations. If there is anyone interested in medicine who does not know the difference between "observation" and "experiment and observation" he should read this book; so, too, should anyone who wishes to become a leader in medical science and thinks he can attain this position without becoming familiar with laboratory methods of investigation. Again, anyone who does not know that "what Manchester thinks to-day the rest of the world will think to-morrow," should at least read the part that tells how the Manchester Royal Infirmary, in 1768, used a hogshead of cod-liver oil annually in the treatment of disease. Finally, all those interested in public health and who write so glibly of "preventive" medicine would probably begin to realize, if they read this book, that in vitamin D they have one of the two greatest dietetic weapons at present known—the other is vitamin A—for preventing widespread bodily defect and ill health. They might even be persuaded to advocate its use in preventive medicine and help to rid the country of rickets and defective teeth.

EDWARD MELLANBY.

[1] *Rickets, including Osteomalacia and Tetany.* By Alfred F. Hess, M.D. London: H. Kimpton. 1930. (6 × 9½, pp. xv + 365; 52 figures, 1 plate. 28s net.)

TUBERCULOSIS PROBLEMS.

IN a work of 125 pages[2] Dr. R. KNUD-PEDERSEN has covered a wide field, which includes the reform of tuberculosis statistics, an account of the clinical picture and diagnosis of pulmonary tuberculosis, a denunciation of sanocrysin and all its works, an appreciation of treatment by artificial pneumothorax, a polemical essay on tuberculosis in childhood, an appraisal of the achievement of Papworth Village Settlement almost as eulogistic as an obituary notice, an account of the work of the tuberculosis station in Copenhagen, which the author has directed for the past ten years, and a chapter on "Tuberkulose Kultur"—by which is meant education of the public, beginning with children at school age, in the elements of tuberculosis and the campaign against it. Wide fields are apt to be barren; but in this case the author has so much interesting information to impart, and he infuses it with so much didactic vigour and eloquence, that his work is pregnant with ideas and possibilities. On the principle that "whom the Lord loveth he chasteneth," the author shows his appreciation of the tuberculosis work in his own country chiefly by criticizing it. His complaint is not merely that the whole system of tuberculosis statistics and calculations of the expectation of life of the consumptive is inaccurate and misleading. While, during the last few years, other countries, such as Germany, have effected epoch-making advances in the patho-

[2] *Tuberkulosespørgsmaalene.* Dr. med. R. Knud-Pedersen. Copenhagen: V. Thaning und Appel. 1929. (6 × 9, pp. 125. Kr. 3.50.)

logy and treatment of tuberculosis, Denmark has lagged behind, partly, he suggests, because she has been too much occupied with sanocrysin, on the evils of which he seems to find it difficult to express himself adequately. It would, however, be unjust to Dr. Kjer-Petersen to suggest that his criticisms are mainly destructive; in fact, for every problem discussed in his book he suggests some useful and constructive solution.

In the chapter on artificial pneumothorax the author quotes the following remark made to him by Professor Saugmann, a few days before his death: "We shall make no further advance with pneumothorax treatment before we learn to begin it much earlier." The author then shows how Saugmann's prophecy has been vindicated by the researches of the modern German school led by Assmann and Redeker, whose work on "Frühinfiltrater," and all that this term connotes, has upset the old pathology which saw in apical lesions the beginning of pulmonary tuberculosis. As the author points out, in 80 per cent. of all cases pulmonary tuberculosis in the adult begins, according to this new teaching, as an acute unilateral "Frühinfiltrat"; and if the symptoms associated with this state of affairs do not subside in a couple of weeks an artificial pneumothorax is indicated. So the time may not be far distant when, with the help of x rays, most cases of pulmonary tuberculosis will be detected at a very early stage and the patients will be hustled off to hospital and treated by an artificial pneumothorax next day. Dr. Kjer-Petersen has written a book which might well be studied, not only by the specialist in tuberculosis, but by the practitioner of any other branch of medicine.

THE SURGERY OF CHILDHOOD.

THE surgery of childhood is a subject of growing importance. In France it is considered a specialty in itself, and before very long we in England may have our children's surgeons as we now have children's physicians. In paediatrics America seems to possess much the same outlook as ourselves, and we welcome an authoritative textbook representative of their teaching. Dr. SAMUEL WALTER KELLEY appears to have been first in this particular field, and the third edition of his *Surgical Diseases of Children*[1] has recently been published. It is a work of some importance, and covers the whole subject in two substantial volumes. Their arrangement, printing, and paper are excellent, and the 615 illustrations are well chosen and well produced.

Dr. Kelley has a ripe experience, and is at his best when he mixes the soda of anecdote with the strong waters of wisdom. He seems familiar with every part of the child's disordered system, and admits no specialist preserves on his estate. We had hoped, however, to find in a book of this size something about prognosis in children's diseases. How many umbilical hernias spontaneously disappear? How many bronchiectatics die young? What are the chances of survival with double empyema, and what are the late results of operation for undescended testis? These and a hundred other questions remain unanswered and await an index of prognosis which nobody will be able to write until we have a series of organizations on the lines of the American Commission on Bone Sarcoma. Perhaps it may seem ungenerous to take Dr. Kelley to task for one of the few attempts at prognosis which he does make, but we cannot agree that only 5 per cent. of herniae in children "need operation to effect their cure." The author tells us that he has been laughed at in Europe for advising trusses up to the age of 2 or 3 years, and he attributes this attitude to the bad trusses and indifferent home care which prevail over here. He pleads for removal of the cause as a first step in the treatment of inguinal hernia, and then enumerates the dreary list of "cough, constipation, phimosis, calculus, crying, malnutrition, and emaciation." Surely the presence of a sac is the cause of inguinal hernia, just as the presence of a Meckel's diverticulum may be the cause of acute intestinal obstruction.

Orthopaedic subjects are well described. Fractures and tuberculosis, poliomyelitis, and congenital deformities are fully considered. Cerebral diplegia is particularly well done, and the five pages describing Stöffel's operations on motor nerves give useful practical details. Dr. Kelley speaks very highly of these admirable little operations, but at the same time is careful to emphasize the importance of training and education. Modern surgery has done much for children: perhaps the greatest advances within recent years have been in the treatment of poliomyelitis, cerebral diplegia, and congenital pyloric stenosis. The last-named condition receives due notice, but the author hardly lays sufficient stress on the palpation of the pyloric tumour, which should be the sheet anchor of diagnosis. He considers pyloric stenosis to have two forms—the hypertrophic and the spasmodic; whereas we in England are accustomed to look upon pylorospasm as a separate condition requiring quite different treatment. Dr. Kelley makes it clear that hypertrophic stenosis demands Rammstedt's operation, but he seems to imply that operation may be necessary in pure spasm, and that a tumour is sometimes palpable in that condition.

In a work of this size by one writer there are certain to be some shocks for the reader, and we admit to surprise on several occasions. "English hospitals are too cold" may be true, though we doubt it. Coley's fluid may have an effect on sarcoma, but radium surely deserves mention. "Treatment of osteomyelitis of the spine is by laminectomy," and "most cases" (of tuberculous peritonitis) "terminate in death by exhaustion" leave us unconvinced. Such minor blemishes, however, only serve to emphasize the solid worth of the book as a whole. Weighty and statesmanlike sometimes, but always critical and sane, Dr. Kelley deserves to make many new friends on this side of the Atlantic.

HEREDITY IN MAN.

THE subject of heredity does not, perhaps, throw that glamour upon ardent minds which it cast when those who are now middle-aged were young. To anybody who has read that masterpiece, *The House of the Seven Gables*, seemed to connect the romance of human experience with the methods of exact science, while the work of Galton's greatest pupil, Karl Pearson, on the one hand, and the rediscovery of Mendel's work on the other, opened up paths of research congenial to persons of different psychological types, and both likely to lead to new and fascinating adventures. These hopes have been fulfilled, but the reader of Professor R. RUGGLES GATES's inventory of the objects discerned by the adventurers will probably feel that, although knowledge of particular facts is accumulating with rapidity, the interrelation of these facts is obscure, and that the time when a Newton or a Darwin will be able to give us a comprehensive philosophy of the subject is far beyond the horizon of our generation.

The task Professor Ruggles Gates set himself was this. Having prefaced his work, *Heredity in Man*,[2] with a short but clear sketch of what seems to be the fundamental mechanism of hereditary transmission, he proposed to make a reasoned inventory of the observed facts, and to state the provisional interpretation of these facts, which we owe to modern investigators. He has performed this task with commendable impartiality, and the medical reader in search of a précis of what is known respecting the hereditary transmission of any human character, normal or pathological, will find the book a useful guide. The chapter on blood groups will be particularly valuable, when one remembers the importance this subject has assumed in connexion with modern work on the artificial immunization of the population against various diseases and the interpretation of such reactions as the Schick test.

No doubt a medical reader—particularly if he is interested in psychopathology—may question whether "left-handedness" and "asthma" are sufficiently simple "states" or "diseases" for the summarizing method of

[1] *Surgical Diseases of Children.* By Samuel Walter Kelley, M.D., LL.D., F.A.C.S. In two volumes. Third edition, revised and enlarged. London: H. Kimpton. 1929. (Sup. roy. 8vo; vol. i, pp. xxv + 701, 287 figures; vol. ii, pp. xiv + 663. 65s. net the two volumes.)

[2] *Heredity in Man.* By R. Ruggles Gates, Ph.D., LL.D., F.L.S., F.R.A.I. London: Constable and Co., Ltd. 1929. (5½ × 9, pp. xiii + 365; 87 figures. 24s. net.)

description to be satisfactory. But a perusal of Professor Ruggles Gates's chapter on racial crossing—perhaps the most interesting in the book—will convince even a sceptical reader that the author is well aware of the complexity of the phenomena of inheritance, of the danger of unqualified affirmations. Those politicians who feel moved to predict the advantages (or disadvantages) of racial crossing may be exhorted to read Professor Ruggles Gates's chapter on the subject; if they do so some nonsense will remain unuttered. Professor Gates does not, however, shirk definite statements on racial problems when, in his opinion, the general trend of the evidence authorizes them. He thinks that we may safely hold that the intermixture of unrelated races is eugenically undesirable. "It is possible," he writes, "that crosses between an advanced and a native race may be advantageous as leading to progress in certain tropical regions where the white man cannot survive, although the results of such interbreeding in various tropical countries do not lead to a very hopeful outlook. But the melting-pot conception is being discredited by eugenic writers in the United States, where intercrossing has been taking place on a great scale. It may now be recognized that, while interbreeding of related races or strains may give increased vigour, at least in the F_1 generation, crosses on a large scale between more distant races which have for ages been separately evolving create unnecessary problems, and are, for the most part, wholly undesirable in their results. The more advanced race is diluted and degraded by such intermixture, and primitive mental and moral characters are placed on a level with the more highly evolved."

The book is not easy reading, partly because of the multitude of facts described, partly because the author's literary style is undistinguished; but it is an important contribution to scientific literature.

FLIGHT.

This Bondage: A Study of the "Migration" of Birds, Insects, and Aircraft,[1] by Commander BERNARD ACWORTH, is a charming work that will be welcomed by all his fellow bird lovers for the very clear exposition which it contains of the principles of bird flight. It is also notable for its vigorous prose style and its hearty and seamanlike onslaught on those whom the author regards as his opponents in bird-lore—biologists, palaeontologists, physiologists, anthropologists, pestologists, *et hoc genus omne*, with their speculations and theories of evolution and adaptation. To him all such, with few exceptions, are false prophets, by whom ornithologists have been led into the path of error. Birds, he considers, are animate machines bound by natural law, whose behaviour is to be interpreted on mechanical and physical principles alone, without the necessity of postulating the evolution of mental attributes. This point of view is familiar to students of the history of science, and is generally considered to have been proved to be inadequate when applied to vital phenomena; and with regard to erroneous speculations, there is much truth in von Baer's dictum, that science is better served by a clearly expressed theory, even though erroneous, than by a cautious reserve. It is at least doubtful whether we should ever have had Commander Acworth's delightful little volume had it not been for the alleged erroneous speculations of the ornithologists and other scientists above mentioned. In the final chapters a comparison is drawn between birds and aircraft as regards their efficiency in long-distance flight. Birds are believed to possess a sense of locality which enables them to reach their destination however great the drift from the bee-line may be, provided their strength holds out. Aircraft, on the contrary, when out of sight of land, have no means of ascertaining to what extent they have been carried out of their course by cross-winds. The author does not conceal his opinion that the ultimate results of the present efforts in the development of aircraft are unlikely to justify the appalling expenditure in life and money.

[1] *This Bondage: A Study of the "Migration" of Birds, Insects, and Aircraft, with some Reflections on "Evolution" and Relativity.* By Commander Bernard Acworth, D.S.O., R.N. London: J. Murray. 1929. (Cr. 8vo, pp. xxiv + 223. 7s. 6d. net.)

NOTES ON BOOKS.

ONLY a year has passed since the publication of the second edition of Dr. SAMSON WRIGHT'S *Applied Physiology* (reviewed in these columns on June 15th, 1929), but in the interval the work has been thoroughly revised, and the third edition,[2] recently issued, embodies much new material. Of special interest in the present edition is the section on conditioned reflexes; in a dozen pages Dr. Wright provides an epitome of the more important aspects of Pavlov's work and theories that may well serve the student and practitioner as a guide to the intricacies of Pavlov's own writings. Keeping in mind the special needs of two classes of readers—namely, clinicians seeking a sound physiological basis for their work, and students of "pure" physiology—Dr. Wright has indicated in italics in the table of contents and in the synopsis at the head of each section those parts of the subject which are wholly or mainly of clinical interest.

Although it is thirty years since the death of Professor Joseph Coats (1846–1899), who did so much for pathology in Glasgow, many students in the final quarter of the last century will welcome the pious action of his daughters in publishing *Dr. and Mrs. Joseph Coats: A Book of Remembrance*.[3] Mrs. Coats lived on till 1927, and her daughters have naturally much to say about her most charming personality. Coats belonged to the family of J. and R. Coats, the prosperous thread manufacturers, but he had not the advantage, or handicap, whichever form it may take, of wealth, as may be seen from his brief autobiographical notes (or, as he called them, "My book of egotisms") with which the volume begins. In them the reader has the opportunity of gathering from meditations, never intended for publication, the mental attitude of a deeply religious, grave, and thoughtful man of the mid-Victorian era. It is curious that he regarded introspection as one of the worst forms of disease. After some months as assistant to Lister in the Royal Infirmary, and two visits to Germany, where he worked at Leipzig with Ludwig and at Würzburg with von Recklinghausen, Coats settled down in the now rare combination of a throat specialist and a pathologist. Marrying in 1879, he was a candidate for the chair of pathology at Cambridge in 1884, when C. S. Roy was elected, and continued the uphill fight for the recognition of the vital importance of pathology as the pioneer, and for many years the only teacher, of the subject in Glasgow, now the Alma Mater of so many professors of pathology in Great Britain. In 1894, after having lectured for twenty-four years, he became the first professor of pathology in the University, but unfortunately, too soon after the reward of his life's work had come, his health began to fail. This volume contains appreciations from his friends and colleagues and some of his speeches and addresses.

Within a few months of the publication of its predecessor (see *Journal*, November 30th, 1929, p. 1014) the fourth volume[4] —Gelenkerkrankungen (chirurgisch) –Herzkrankheiten—of the new German dictionary of practical medicine, edited by Professors GEORG and FELIX KLEMPERER, has made its appearance. The articles, like those in the previous volume, are the work of well-known authorities, and give an excellent insight into German medicine. The twenty subjects discussed comprise surgical joint diseases by Professor E. Payr of Leipzig, articular rheumatism by Professor A. Schwenkenbecher and Dr. K. Eimer of Marburg, tuberculosis of the bones and joints by Dr. Kotzeborn, industrial diseases by Dr. E. W. Baader of Berlin, gout by Professor O. Minkowski of Wiesbaden, glaucoma by Professor K. Wessely of Munich, gonorrhoea by Professor W. Fuci of Breslau, the medical referee by Dr. Scholtze of Berlin, haematuria and haemoglobinuria by Professor G. Klemperer of Berlin, haemophilia and haemorrhagic diathesis by Professor E. Frank of Breslau, diseases of the throat and larynx by Professor A. Seiffert of Berlin, skin diseases by Dr. A. Joseph of Berlin, tuberculosis of the skin, including lupus, by Dr. Walther Krantz of Cologne, hernia by Professor L. Schönbauer of Vienna, herpes febrilis and herpes zoster by Professor Hetsch of Frankfort, examination of the heart by Professor E. Stadler of Plauen, congenital malformation of the heart and large arteries by Dr. Katz of the Moabit Hospital, Berlin, and Dr. F. Lehr of Bad Nauheim, acquired valvular disease by Professor Pässler of Dresden, and diseases of the myocardium and cardiac nerves by Professor W. H. Weil of Jena.

[2] *Applied Physiology.* By Samson Wright, M.D., M.R.C.P. With an introduction by Swale Vincent, M.D., LL.D., D.Sc., F.R.S.Ed. and Canada. Third edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xxviii + 552; 128 figures. 18s. net.)

[3] *Dr. and Mrs. Joseph Coats: A Book of Remembrance.* Compiled by their Daughters. Glasgow: Jackson, Wylie and Co. 1929. (Post 8vo, pp. viii + 330; 13 illustrations. 5s. net.)

[4] *Neue Deutsche Klinik.* Herausgegeben von Professor Dr. Georg und Professor Dr. Felix Klemperer. Vierter Band. Berlin and Vienna: Urban und Schwarzenberg. 1930. (Sup. roy. 8vo, pp. 811; 209 figures, 15 plates. Paper cover, R.M.33; bound, R.M.45.)

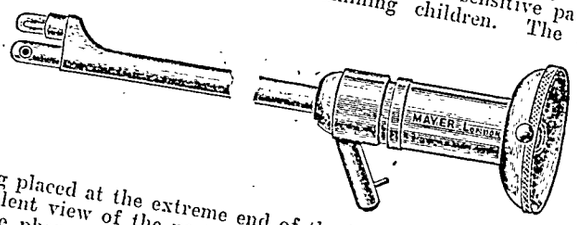
The appearance of the sixth edition of *Lippincott's Quick Reference Book for Medicine and Surgery*,[2] by Dr. GEORGE E. REHBERGER, two years after the fifth edition is ample proof of the wide popularity of this compendium. The present issue has been brought up to date by substantial changes in about thirty articles.

[2] *Lippincott's Quick Reference Book for Medicine and Surgery.* By George E. Rehberger, M.D. Sixth edition, revised. London: J. B. Lippincott Company. (Sup. roy. 8vo; illustrated. 65s. net.)

PREPARATIONS AND APPLIANCES.

MODIFIED HAY'S PHARYNGOSCOPE.

DR. E. E. BURNIER (Margate) writes: This instrument, which has been made to my design by Messrs. Mayer and Phelps, is a modification of Hay's pharyngoscope. It is very much smaller, and consequently better borne by a sensitive patient, and is especially useful in examining children. The lens,

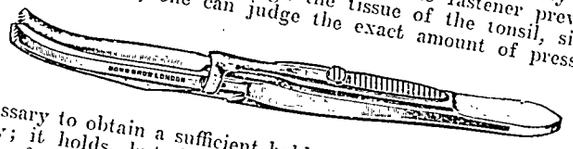


being placed at the extreme end of the instrument, gives a most excellent view of the post-nasal space and of the larynx.

The pharyngoscope should be introduced in the mouth with the light switched on, pressing lightly on the tongue to get under the arch of the soft palate; the patient should be told to close his mouth and breathe through the nose so as to bring the soft palate forward.

A TONSIL-HOLDING FORCEPS.

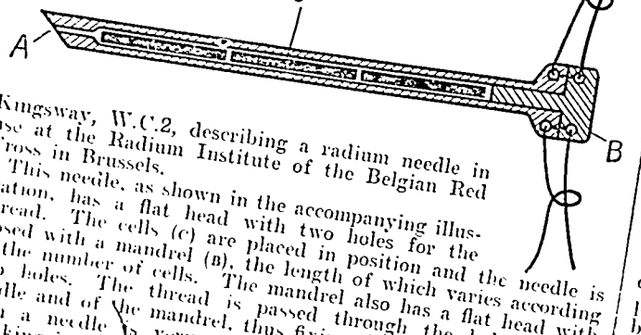
Dr. A. G. VARIAN (Watford) calls attention to the merits of a new tonsil-holding forceps, here illustrated. He writes: The advantages of the instrument over others I have personally used are as follows: (1) The sliding, detachable fastener prevents the teeth from biting through the tissue of the tonsil, since, by means of it, one can judge the exact amount of pressure



necessary to obtain a sufficient hold. (2) It never slips or tears away; it holds, but does not bite through. (3) It is solidly built of stainless steel, has strength to stand hard work, and can be taken apart for cleaning. I have found it highly satisfactory in every way, and can thoroughly recommend it to those who know the annoyance of most types. It has been made for me, on my instructions, by Down Bros., Ltd.

A SAFETY RADIUM NEEDLE.

Attention was called in the *Journal* of January 4th (p. 29) to the mechanical problems of radium therapy, and, in particular, to the danger arising from the liability to detachment or breakage of radium needles and tubes. In this connexion we have received a letter from the managing director of Watson and Sons (Electro-Iedical), Ltd., of Sunic House, Parker Street, Kingsway, W.C.2, describing a radium needle in use at the Radium Institute of the Belgian Red Cross in Brussels.



This needle, as shown in the accompanying illustration, has a flat head with two holes for the thread. The cells (c) are placed in position and the needle is closed with a mandrel (B), the length of which varies according to the number of cells. The mandrel also has a flat head with two holes. The thread is passed through the holes of the needle and of the mandrel, thus fixing the two firmly together. such a needle is very strong, and the danger of a thread breaking is minimized by two being used. At the point of the needle there is a narrow channel (A) which allows the passage of a very thin mandrel for the expulsion of the radium cells after use.

ETIOLOGY OF DENTAL CARIES.

MRS. MELLANBY'S REPORT ON DENTAL STRUCTURE IN DOGS.

"IT is well known that some people with neglected mouths have teeth free from caries, whereas others who take great care in matters of oral hygiene have extensive caries. In fact, the most rigid adherence to the commonly accepted rules of dental hygiene constitutes no safeguard against a dental disease." This passage, taken from the introduction to *Diet and the Teeth: An Experimental Study*[1] by May Mellanby, expresses in a nutshell the criticism on clinical grounds, of the hitherto generally prevailing view that the production of dental caries depends almost exclusively on conditions external to the teeth. It suggests moreover, that, in looking for the etiology of dental disease the possibility must not be neglected that some constitutional factor might be responsible; in short, that in dental structures there might be a defensive mechanism, in maintaining whose integrity the body as a whole may take some part. A hint as to the direction in which such a defensive mechanism is to be sought appeared in Professor Edward Mellanby's well-known work on the function in the animal economy of vitamin D. This vitamin, Professor Mellanby showed, has a specific controlling effect over the function of bone formation, as much over the development of the jaws as over that of other bony parts. Mrs. Mellanby, following up this point, made the further observation that, not only the formation of the jaws but the architecture of the teeth was directly dependent on the presence at the right time of vitamin D in the diet.

During the twelve years that have elapsed since this observation was made, Mrs. Mellanby, with financial support from the Medical Research Council, the panel practitioners of Sheffield, and the Dental Board of the United Kingdom, has continued her investigation of the etiology of dental disorders, and in the volume issued this week by the Medical Research Council (the first of a series of three) she gives an account of her experimental studies on diet and dental structure in dogs. Her main conclusion is that "the minute structure of the developing tooth and the reaction of the developed tooth to caries are influenced by the chemical nature of dietetic ingredients, which, after being digested and absorbed, are carried into the blood stream to the tissues of the body, and thus to the teeth. They also indicate that the structure of the periodontal tissues is dependent on the chemical nature of the food during the developmental period, and that the diet during this early period is also related to the future onset of periodontal disease."

The Earlier Group of Experiments.

Having, in the earlier chapters of the report, cleared the ground by describing the normal processes of development, eruption, and shedding of the teeth in dogs, and given a detailed account of the methods adopted in her investigation, Mrs. Mellanby sets out the experimental evidence for the conclusion that dietetic factors play a predominant part in determining the character of the teeth and jaws as regards both their general development and their microscopic structure. The first group of experiments concerned the influence on dentition of vitamine associated with fats, and showed in general that calcification was largely dependent on the presence in the diet of a vitamin of somewhat similar distribution and properties to vitamin A. The differences in distribution between this vitamin and the unknown factor favourable to calcification were sufficiently marked, however, to suggest that the two substances were not identical, and the latter, eventually differentiated as a separate entity, is now known as vitamin D, or the calcifying or antirachitic vitamin.

[1] Medical Research Council. Diet and the Teeth: An Experimental Study. Part I. Dental Structure in Dogs. By May Mellanby, M.D. H.M. Stationery Office. 1929. 17s. 6d. net.

When this investigation was started the distinction between vitamins A and D had not yet been established, and Mrs. Mellanby, presenting her account in historical sequence, does not identify the calcification-promoting substance with vitamin D till chapter x, in the earlier chapters referring to it as the "calcifying vitamin" or a "fat-soluble vitamin."

Such a method of presentation has undoubted advantages; the reader watches the facts as they accumulate, and at the appropriate moment sees the conclusions in the process of formation. On the other hand, perhaps some greater clarity might have been gained if, in the course of the narrative, earlier experiments had been consistently interpreted in the light of more recent discoveries.

Influence of Vitamin D.

The development of perfect teeth, it was found, could be ensured by giving an adequate supply of vitamin D, either as it appears in natural foods—for example, egg-yolk, milk, suet, and cod-liver oil—or as it may be artificially produced, by irradiating the ergosterol content of food, or by irradiating the animals' skins. In the presence of this vitamin it was difficult to choose a diet so low in its calcium and phosphorus content, or otherwise so unfavourable to calcification, as to interfere materially with the normal development of the dental tissues. On the other hand, it was easy to choose a diet deficient in vitamin D, for the foods containing this substance are few in number and, in general, expensive. It would seem to follow—if the factors controlling the dentition of the dog and the human subject are the same—that the ordinary diet of the poorer classes in this country, which consists in the main of bread, oatmeal, barley, sugar, fruits, jam, vegetables, lean meat, and white fish—all of them vitamin D deficient substances—will tend to produce imperfect teeth.

Other Food Constituents.

Proteins, carbohydrates, most vegetable fats, and foods such as cereals, oranges, and egg-white, gave no evidence of calcifying power. Bacon fat appeared to have but little effect, and hydrogenated animal fats none at all. An increase in the cereal intake had a deleterious effect on calcification, apart altogether from its effect on the rate of growth. Of the cereals tested, oatmeal had the greatest decalcifying power, and white flour the least; intermediate between these were maize (next to oatmeal), then barley, rye, wholemeal flour, and rice. Wheat and maize germs also had an unfavourable effect on calcification. In every case, however, the influence of cereals could be entirely overcome by including in the diet a sufficiency of vitamin D.

It was not found possible to ascribe the anti-calcifying effect of cereals to any one known constituent, such as (*a*) the absolute or relative amounts of calcium and phosphorus, or (*b*) the carbohydrate, fat, or protein, or (*c*) the acid-base ratio of the mineral substances. The evidence suggested that cereals contain an anti-calcifying factor ("toxamin") of unknown composition, which actively interferes with the normal development of the teeth. This unknown substance is destroyed by boiling with dilute hydrochloric acid, and, to a less extent, by boiling with alkalis; it may also be destroyed or antagonized in the process of malting. When present in the grain it is stable to fairly high temperatures, and it resists digestion with diastase and, partially, with trypsin.

Calcium and Phosphorus.

For the production of perfect teeth the diet must naturally contain some calcium and phosphorus, though only small quantities of these are required if the diet is rich in vitamin D. If the vitamin D intake is very low extra calcium may have some beneficial effect, but in the complete absence of vitamin D perfect calcification will not occur, however much calcium and phosphorus is given in the diet.

Maternal Feeding.

Proper maternal feeding on the lines indicated is of great importance in the production of good teeth in the developing offspring. Poorly calcified deciduous teeth were produced in the offspring by feeding the mother on a diet deficient in vitamin D. The defects so produced were, however, less marked than those found in the permanent teeth when the puppy itself was fed on the same diet. It seems probable that, under certain conditions, stored vitamins may be drawn upon, the maternal organism sacrificing to the embryo the factors essential for its normal development and calcification, even though she herself suffers through doing so. The character of the defects in the deciduous teeth probably depends on the amount of vitamin stored in the mother's tissues before pregnancy and the amount present in her diet during pregnancy and lactation. The maternal feeding was found to affect also the future structure of the permanent teeth, for when the mother's diet contained abundant vitamin D, and the offspring, after weaning, were fed on a diet deficient in this substance, the permanent teeth, though defective in structure, were not nearly so defective as those of puppies whose mothers' diet had also been deficient in this vitamin. In short, a deficiency in the mother's diet during pregnancy may influence the offspring throughout its life. Further evidence of vitamin storage was afforded by the fact that when the diet of a puppy was changed from one rich in vitamin D to one deficient in this substance, decalcification did not occur at once, and defective formation of the dental structures appeared after a comparatively long interval.

Effect of Irradiation.

Though vitamin D has such a limited distribution it can be produced by ultra-violet irradiation of foods containing the pro-vitamin ergosterol. Thus, olive oil and peanut oil, though ordinarily without effect on the teeth, became powerful calcifying agents after irradiation. The activity of milk and butter was greatly enhanced by irradiation, and substances which normally interfered with calcification—for example, oatmeal and flour—by this means were made to assist the process. The application of ultra-violet radiations to the skin was not nearly so effective in promoting calcification as a diet rich in vitamin D. Exposure of dogs to sunlight, though beneficial to calcification of the teeth in certain conditions, proved in some of the cases to be practically ineffective when the diet was markedly anticalcifying.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meetings of the committee of the Royal Medical Benevolent Fund the following sums were voted: December £1,342. January. £1,037—making a total of £2,379; no fewer than 113 necessitous medical men, their widows, or families being helped thereby.

During the winter months the number of applicants is inevitably large; for some the occasion is illness or the lack of ordinary comforts, but for most it is the death of a husband or father who has been unable to make provision for wife or family. The committee urgently appeals for subscriptions, donations, and legacies. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, London, W.1.

The following are particulars of five cases recently helped.

Widow, aged 50, of L.R.C.P. and S., whose husband died suddenly in September, 1929, at the age of 51, from heart failure. The widow, who is in very delicate health, was left an income of £50 per annum with children dependent on her. Voted grant of £26 and a special gift of £14.

M.D., aged 60, married, suffering from tuberculosis and in a sanatorium. Practice has been sold, and when proceeds are invested will give an income of £135. Applicant has one son and two daughters; the two eldest have secured posts. Voted £40.

Widow, aged 60, of M.R.C.S., L.R.C.P. Her husband suffered ill health all his life, and was never able to work sufficiently to save any money. At his death in November the widow and one daughter were left with a capital of £200. The daughter fortunately has been trained and will obtain employment. Voted £26 and special gift of £10.

Two daughters, aged 61 and 52, of L.F.P.S., whose only income is £17 each, gifts from friends, and deposit interest on the sum of £57. Voted £36 each.

Daughter, aged 70, of M.R.C.S. Has been in bed during the whole of the last twelve months. Income from charities £30, old age pension £26. Voted £30.

The Royal Medical Benevolent Fund Guild still receives many applications for clothing, especially for coats and skirts for ladies and girls holding secretarial posts, and suits for working boys. The Guild appeals for second-hand clothes and household articles. The gifts should be sent to the Secretary of the Guild, 53, Great Marlborough Street, W.1.

British Medical Journal.

SATURDAY, FEBRUARY 15TH, 1930.

MATERNAL MORTALITY.

In recent years few medical problems have caused more anxiety to both the profession and the general public than those connected with the dangers of childbirth. While the maternal death rate alone is serious enough to excite alarm, there is also a vast amount of ill health, and therefore of impaired maternal care of children, resulting from the injuries and infections of difficult labour. It is impossible to measure these disabilities, but anyone who has managed a gynaecological out-patient department knows how widely spread is the invalidism directly traceable to childbirth. In a general survey of the problem perhaps nothing is more striking than the fact that, in spite of all that has been done since the war by ante-natal clinics, increased training of nurses, and wider diffusion of knowledge, the mortality associated with childbirth has not declined. Indeed, the figure for 1928—4.42 per 1,000 births registered—is actually higher than that for any year since 1900. An analysis of these figures shows an even more extraordinary state of affairs. The mortality from sepsis in 1928 (1.79) was the highest since 1905, with the single exception of 1920; and from toxaemia the mortality was higher than during the previous seven years, in spite of the widespread practice of urine testing in hundreds of ante-natal clinics and private consulting rooms.

The difficulties of the problem are apparent the moment an attempt is made to find a solution. Attention is first arrested by the number of persons and institutions concerned with the care and treatment of the child-bearing woman. In the complexity of the present-day system we have the general practitioner, the obstetric specialist, the midwife, the local authority through its ante-natal clinics, the health visitor, and the maternity hospital. Confusion is created by divergent views and varied teaching presented in scores of papers, reports, memorandums, and contributions to our correspondence pages. Some feel that the system of domiciliary midwifery is wrong; others that nursing homes and hospitals are apt to increase the risk of contact infections. More State supervision, better training of student and midwife, increased facilities for research, wider use of ante-natal care—all these and many other expedients are put forward in the hope of improving the results of midwifery practice. Examples of contributions to the solution of the problem are three instructive and illuminating papers—by Dame Louise McIlroy, Dr. Gilbert Strachan, and Dr. W. H. F. Oxley—published in our present issue.

In her paper Professor McIlroy discusses, among other matters, the chief causes of death—namely, sepsis, haemorrhage and shock, and toxaemia—and, by referring to the practice in her own unit at the Royal Free Hospital, shows how the application of rigid principles and strict technique can reduce the mortality rate, not indeed to zero, but to a figure substantially less than that for the whole country. Professor McIlroy's hospital figures are in sharp contrast with those published in the Scottish report of Dr. Parlane Kinloch,[1] in which he stated that the maternal death rate in institutions in the Aberdeen area was 14.9 during 1928. It is clear that the maternity institution is not a solution of the problem, but, while some variation exists, it is certainly true that the results obtained in a well-run hospital department lend considerable support to the demand for more obstetric beds. Professor McIlroy says, "some day gynaecological beds will decrease as maternity beds increase."

Similar experiences are related by Dr. Oxley from the East End Maternity Hospital. Here the in-patient death rate since 1884 has amounted to only 2.10 per 1,000, while the "district" deliveries show the astonishingly low mortality figure of 0.74 per 1,000 in over 27,000 confinements. It is the last figure that is particularly worthy of notice, for the experience it represents is common at other maternity hospitals. In several large district services some years have recently passed without a single maternal death; indeed, it is probable that over a period of years no other system of midwifery service could show results in any way comparable to those obtained on the hospital "districts," even in quite poor housing conditions. It is no effective criticism to say that the dying patients are sent into hospital, thereby saving the statistics, for the death rate of the in-patients at Dr. Oxley's hospital, and at others, is still only half that for the whole country, in spite of the fact that dangerous abnormalities tend to become segregated in institutions. Both Dr. Oxley and Dr. Strachan lay stress on the great prophylactic value of ante-natal care, and the former attributes the excellent results of his hospital largely to thorough ante-natal attention.

In the long run good midwifery must rest upon prophylactic care and the conduct of labour itself with cleanliness, patience, and skill; the individual responsible for the one should be responsible also for the other, and must, in general, be the private practitioner. It is widely felt that the staffing of ante-natal clinics by whole-time, mostly junior, officers, who never see the ensuing labour, is fundamentally wrong. In the ideal system the patient would be under the care of the same doctor from the beginning of her pregnancy to the end of the puerperium, and within this system there would be the closest co-operation between the doctor and the midwife. The purely ante-natal specialist, divorced from experience of labour, cannot play any useful or permanent part in the national service. Nor, we may suggest, can the independent ante-natal clinic. As far as possible every ante-natal centre or system of ante-natal care should be definitely associated with a neighbouring maternity hospital, or with the maternity department of a general hospital, whose specialist services should be available in all cases of doubt, both before labour and at the confinement itself. Doctors and midwives should feel that the maternity hospital is behind them and forms part of the scheme. In many rural districts it is obvious that distance might give rise to difficulties, but transport improvements are rapidly overcoming the isolation of village communities, and increasing the contact between the local town and outlying areas. Even so, as Dr. Oxley says, "the general practitioner may have to take over a large part of the examinations now being done by the ante-natal clinics, leaving to them the work which they can most usefully do, such as the teaching of mothercraft."

[1] See *British Medical Journal*, January 12th, 1929, p. 79, and January 19th, 1929, p. 115.

No solution of the problem of maternal mortality can be complete that fails to take account of the training of the midwife and the doctor. The difficulties of this latter problem are strikingly emphasized by Mr. Comyns Berkeley in his Lloyd Roberts Memorial Lecture on the teaching of midwifery, published in the current number of the *Journal of Obstetrics and Gynaecology of the British Empire*. Two main facts emerge from his investigation of the system of teaching: there is a paucity of what is called clinical material available for teaching, and some educational and hospital-school authorities are failing to offer the student sufficient time and opportunity for him to acquire a thorough practical knowledge of midwifery. Until the authorities concerned get down to these fundamental weaknesses in training it seems certain that we shall continue to deplore the high rate of death and disablement in childbirth.

EPIDEMIC ENCEPHALITIS AND ITS LITERATURE.

If for a moment we allow ourselves to fancy, with certain of the ancients, that the manifestations of disease are due to the workings of devils who take possession of human bodies, then we might imagine that the devil responsible for encephalitis lethargica, or epidemic encephalitis, feels flattered at the amount of attention he has attracted. He would recall the mystery surrounding his first appearance on this earth, and the efforts made by several countries to claim him as a national; he might acknowledge that his attempt to masquerade in England as the Botulinus imp was quickly exposed, but he would chuckle over the clinical confusion which for some time he created, and at the various descriptions given of him as he appeared now in this country, now in that. The failure of all medicinal measures to exorcise him, and the anxieties and difficulties he causes those concerned with the care of the many victims from whom he never departs, are no doubt a source of grim satisfaction. But this comparatively modern devil probably derives most enjoyment from the fact that more has been written about himself than about any of his contemporaries.

The literature of epidemic encephalitis, indeed, shows signs of reaching almost overwhelming proportions, and it has occurred to a liberal-minded American that the time has come to overhaul and analyse this heap of literary material, so that it can be the more easily probed by those in search of information on any particular point. Accordingly a team of ten American investigators, known as the Matheson Commission (*in honour of the promoter, Mr. W. J. Matheson*), and with Dr. Josephine B. Neal as director, was appointed for the purpose about three years ago, and has recently issued a report of its survey.[1] Primarily the commission busied itself with a library study of the world's literature on the subject of epidemic encephalitis, but its members visited various parts of America, as well as England, France, Holland, and Belgium, for the purpose of interviewing physicians and others interested in the subject. The 4,643 references which have been collected and set out in the report occupy 428 pages, or just over half the total volume of the book. This bibliography, in itself, emulates the character but exceeds the scope of two or three notable predecessors in our own country; the new and more valuable feature of this survey of literature, however, is provided by the abstracts which have been made from the various reports and articles dealing with three aspects of the disease—namely, etiology, treatment, and epidemiology. The chief points in the story of the efforts to discover the cause and nature of the infection are judicially set out, and the reader is left to draw his own conclusions. Most, however, will agree with the commission's single comment that "in spite of the vast amount of experimental work that has been done, there are still widely varying opinions in regard to the etiology of epidemic encephalitis." The balance of evidence seems to point to the hypothesis that a filterable virus closely allied to the herpes virus is the specific agent. The more recent literature concerning other types of encephalitis, including post-vaccinal encephalitis, is briefly surveyed. It is suggested by the reviewers that, in the case of post-vaccinal encephalitis, the age limit is far wider than is usually stated, that a purely clinical distinction between encephalitis lethargica and post-vaccinal encephalitis is often difficult, if not impossible, and that "the study of a larger group of cases [of post-vaccinal encephalitis] revealed residuals in a number of instances."

The list of remedies which have been tried, as revealed by the summary of the literature, is extraordinarily varied: apart from a large number of drugs, it includes such measures as the use of vaccines and serums, blood transfusion, injection of foreign proteins and the organisms of malaria and recurrent fever, organotherapy, psychotherapy, and various forms of physiotherapy. Many of these remedies are apparently "shots in the dark." The few useful remedies include atropine, hyoscine, bulbocarpine, and stramonium, but reports show that even these drugs have only a limited use in the symptomatic treatment of certain chronic cases; it is no surprise to find that the survey has not discovered evidence pointing to any specific remedy for this form of encephalitis.

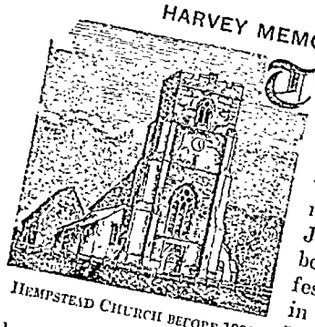
In their analysis of the literature pertaining to the epidemiological side of the disease, the authors have realized that it is impossible to measure at all accurately from official records the total incidence of encephalitis lethargica throughout the world. For one thing, the disease is by no means universally notifiable, either throughout the countries as a whole or even in all parts of a country from which cases are officially reported; again, in certain countries deaths only are reported. In other instances there is a certain amount of obscurity about the nature of reported cases such as exists with regard to the Australian "x disease" of 1917–18 and the extensive Japanese epidemic of encephalitis in 1924. The League of Nations, however, through its monthly *Epidemiological Reports*, has evidently been of considerable service to the commission. The fairly reliable returns—for example, from England and Wales, Sweden, Finland, Denmark, Switzerland, and Italy—show that from these countries collectively there were 31,995 cases reported during the period 1920 to the end of June, 1928, the peak years being 1920 and 1924. Encephalitis lethargica is, in general, more prevalent during the winter months, but the League's epidemiological report for February, 1927, stated that "the disease . . . during the last two years has shown a tendency towards attaining an endemic level subject to moderate seasonal fluctuations." From the histories of 9,680 cases derived from the general literature the commission tabulates certain other findings. The sex incidence seems to be greater upon the males (58.7 as against 41.2), and the greatest proportion of

[1] Epidemic Encephalitis: Etiology, Epidemiology, Treatment. Report of a Survey by the Matheson Commission. New York: Columbia University Press. 1929.

cases—25.3 per cent.—occurs during the age period 20 to 29; the present more comprehensive survey confirms the conclusions reached in this country that neither occupation nor sanitary circumstances have any direct bearing on the occurrence of cases. As regards mortality, it is recorded that of 7,876 cases collected from the literature, 3,980 were reported as fatal; this gives a fatality rate of 50.52 per cent., but due allowance must be given to the fact that very few mild cases of encephalitis lethargica find their way into the general literature, even when they are recognized.

The Matheson Commission has successfully accomplished the task for which it was formed, and the hard labour involved in an undertaking of this sort will doubtless be rewarded by the gratitude of those who will find in this first report an unusually comprehensive and handy book of reference.

HARVEY MEMORIAL AT HEMPSTEAD.



HEMPSTEAD CHURCH BEFORE 1882.

THE appeal, of which a preliminary announcement was made in our issue of December 7th, 1929 (p. 1072), and to which Sir John Rose Bradford referred in a note published on January 4th (p. 25), has now been issued to the medical profession. William Harvey died in his eightieth year, on June 3rd, 1657, and his remains were deposited in a vault adjoining the parish church of Hempstead in Essex. By the middle of the last century this vault underneath the Harvey Chapel had become ruinous. On January 28th, 1882, the massive tower of the church fell towards the south-west; it is still a heap of stones in the churchyard. In 1883 the mortal remains of the founder of scientific medicine were removed from the vault and placed in a handsome marble sarcophagus, erected by the Royal College of Physicians of London, in the chapel above the vault, which also contains memorials to other members of the Harvey family who achieved distinction. Some years ago a committee was formed for the purpose of restoring the fallen church tower as a further memorial to William Harvey. About £1,000 was raised, in part locally and in part from the medical profession. The committee has now been reconstituted, and its appeal is addressed to the medical profession of the British Empire in the hope that the sum required to restore the tower (about £5,700 in all) may be obtained with as little delay as possible. The village of Hempstead lies in a sparsely populated district seven miles from the railway station of Saffron Walden, and some fifty from London. Local resources are wholly inadequate for carrying out this pious project. Thus the medical profession has the opportunity of providing, in the words of the President of the Royal College of Physicians, "a suitable memorial of a striking character to one of the greatest of men. . . . It may be that in years to come the tower of this ancient church of Hempstead, in Essex, will be known as the Harvey Tower, and this tower will not only commemorate Harvey and his work, but it will also be a token of the esteem and admiration with which Harvey's work is regarded by those best qualified to judge its real value." Donations should be made payable to the Harvey Memorial Fund, and may be sent to the joint honorary secretary, Dr. Arnold Stott, 58, Harley Street, W.1, who will gladly supply printed copies of the appeal to any reader who is willing to circulate them among possible subscribers.

THE B.C.G. CONTROVERSY.

AT a meeting of the Académie de Médecine in Paris on January 14th, at which Sir Almroth Wright, foreign associate of the Académie, was present, Professor Calmette presented a further communication on preventive vaccination against tuberculosis by means of the B.C.G. (*Bacillus Colmette-Guérin*). A special laboratory for the preparation of the vaccine has been installed at the Institut Pasteur in Paris, and supplies of the vaccine are sent out for a daily average of 300 infants. Professor Calmette claims that in no case has any accident been shown to be attributable to the vaccine, and that, while acid-resisting bacilli have been recovered from lymphatic glands in necropsies on vaccinated infants who have died of other diseases, tuberculous lesions have never been found, and inoculation of guinea-pigs has always proved negative. In deference to the criticisms of Professor Major Greenwood, Professor Calmette now bases his statistics on a comparison with the general mortality from all causes in infants under the age of 1 or 2 years, and finds that the statistics confirm his conclusion that infants vaccinated with the B.C.G. show greater resistance to infantile diseases and have a lower mortality than the non-vaccinated. He quotes returns from various districts showing the difference in the death rate of as much as 50 per cent., and notes especially returns from two mining districts, Béthune and Liévin, where the majority of infants born were vaccinated with B.C.G. Professor Calmette's statistics still seem somewhat sketchy, and he does not appear to have laid before the Académie the full returns for all the districts where the vaccine is used. Moreover, it is still possible to suggest that some part of the reduced mortality among the vaccinated infants may have been due to the fact that these have been better looked after by anxious parents, watchful nurses, and interested observers, who recorded the results, than the general unvaccinated infant population.

THE LIMITS OF SANOCRYSIN TREATMENT IN PULMONARY TUBERCULOSIS.

WHEN Professor Holger Moellgaard, more than five years ago, suggested that sanocrysin might prove to be beneficial in the treatment of tuberculosis, he based his belief on experimental investigations of the effect produced by injecting this gold preparation into tuberculous animals. In a subsequent article in the *British Medical Journal* (1925, vol. i, p. 643) he pointed out that the extent and gravity of the tuberculous process set a limit to the probable success of this treatment, and he defined the limit as regards calves and goats as being not greater than a weight of 7 cg. tubercle bacilli culture per 100 kg. body weight. He added that the presence of a mixed infection had been shown similarly to militate seriously against the efficacy of sanocrysin. Dr. J. Gravesen, who has succeeded Professor Saugman at Vejlefjord Sanatorium in Denmark, recently called attention to this proviso of Moellgaard, which has not always been kept in mind. One very important claim has survived the controversy which has since raged over the value of sanocrysin; Moellgaard certainly did show that animals exposed to a recent and moderate infection by tubercle bacilli recovered under treatment with sanocrysin, whereas the controls died. Gravesen accordingly, in his employment of this treatment, has endeavoured to select patients who corresponded as closely as possible with Moellgaard's experimental animals, inasmuch as the disease was recent and spreading, and in an article in the *Ugeskrift for Laeger* of December 12th, 1929, he reviews the results of sanocrysin treatment on these lines at his sanatorium between February, 1924, and May, 1929. Gravesen points out first the significant facts that, among the 270 patients whose treatment with sanocrysin was completed in this period, only 26 (less than 10 per cent.) com-

formed to this requirement, and that the results achieved in these 26 cases were remarkably uniform. The treatment was well tolerated in every case, complications playing a much less important part than in the remainder of the patients. In each of these 26 patients striking clinical improvement immediately followed the treatment, accompanied by a corresponding decrease of the stethoscopic and the *x*-ray signs. All the *x*-ray signs of an active spread of the disease disappeared completely in every case, and all the 18 patients who were sputum-positive before or during the treatment became sputum-negative after it. The permanent results were as good as the immediate results, and though the greatest care was taken to follow up these 26 patients in the five-year period under review, not a single case of relapse or reappearance of tubercle bacilli in the sputum could be found. The remainder of the cases treated represented at the one extreme an actively progressive stage of the disease, with comparatively little fibrosis or cavity formation, and at the other extreme a minimum of recent activity and a maximum of chronic changes. The measure of the success of sanocrysin treatment was that of the recent extension of the disease and of the slightness of chronic stationary disease. Gravesen determined, therefore, that he would hardly ever give sanocrysin in chronic "tertiary" forms of the disease unless there was evidence of recent extensions of it. In mixed forms, however, when chronic disease is associated with recent extensions, he combines sanocrysin with collapse therapy, and has found that this combination is more effective than either of these two treatments alone. He usually administers sanocrysin in two courses. The initial dose of the first course is 0.10, 0.25, or 0.35 gram, the doses rising to 0.50, 0.60, 0.75 to 0.85, and up to 1 gram in heavy patients whose tolerance proves satisfactory. The number of days between each injection is calculated according to the dosage of the last injection, four free days being allowed after a dose of 0.35 gram and eight free days after a dose of 0.75 gram. From 5 to 6 grams were given during the first course of injections. After an interval of a couple of months the second course was started, with the same spacing of the injections but with a higher initial dose and a more rapid increase of the dosage; a total of 3 to 5 grams was given. various complications were observed, but only in 2 of the 270 cases did the treatment prove fatal. Gravesen publishes in his report two elaborate tables showing the immediate and late results of this treatment; in properly selected human material these coincided with those observed by Moeilgaard in his experimental work on animals.

A SON ON HIS FATHER.

In a forgotten play by H. D. Traill one of the characters says:

> "Remember what our old friend Flaccus says,
> 'Mighty men lived ere Agamemnon's days,
> Forgotten now, thro' having,' he continues,
> 'No bard to celebrate their thews and sinews.'"

To which the cynic answers:

> "The march of science
> Has taught us to set that fate at defiance,
> For fear no bard should be an aftercomer,
> Each Agamemnon now is his own Homer."

This generalization is too sweeping, even when applied to the species Miles Gloriosus, and still less is it applicable to the mighty dead of medicine. Therefore has it been left to the filial piety of the son to put on record some of the sayings and doings of a distinguished father, whose reputation has been eclipsed by that of the offspring whom he trained, and who owe and acknowledge some of their debt to the founder of St. Mary's Hospital at Rochester, Minnesota. In the *Proceedings of the Staff Meetings of the Mayo Clinic* (December 4th, 1929) Dr. W. J. Mayo tells how "in my father's time" diagnosis and treatment were conducted at Rochester. England claims William Worrell Mayo for her son, for he had his birth and breeding and professional education in Lancashire, as we noted in an annotation in our issue of February 16th, 1929. America gave him that free scope for his abilities which enabled him and his sons to make of a little country town, remote from the great lines of rail and far from great cities, a surgical Mecca to which patients come on pilgrimage from afar, seeking cure with more justifiable hope than the holy wells of Europe can offer to their devotees. Dr. Mayo does not exactly define the "time" in question, but from internal evidence we are led to suppose that it was before the development of abdominal surgery, which was marked by the publication of Sir Frederick Treves's book in the eighties of the last century, for the operative surgery described in this article is scarcely more than minor surgery, restricted to the opening of abscesses, the palliative relief of intestinal and urinary obstruction, the closure of fistulæ, and the removal of small superficial tumours and skin growths. (No doubt the ordinary operations of what was then major surgery—amputations and excisions, etc.—were performed in the classical manner of the works on surgical operations.) The methods described were simple, and in some cases original, and some practical hints which may lead to the greater comfort of the patient may be gleaned from a study of this paper. The sketch drawn is a pleasing one. Its few but clear strokes give the impression of a man of resource and sound common sense, who had profited by experience, "by industry achieved and perfected by the swift course of time." Ripe wisdom is shown in his dictum that if the physician really knew from three to five things of importance about the condition of the patient he probably was a good diagnostician for the case, but that if he thought he knew many things he was probably doing some guessing. We are reminded by the son's descriptions of some of his father's methods of the curious tendency of surgical fashion to abandon some useful proceedings, which become obsolete. Such are the method of treating troublesome moles by transfixion with needles and ligature, or warts with nitrate of mercury. Dr. W. J. Mayo tells us that he still uses the latter, and that he has never known an infection to follow its use.

CARDIAC EFFICIENCY OF YOUNG MALE ADULTS.

THE fact that, eleven years after the conclusion of the war, 16,000 ex-service men are receiving pensions on account of functional heart disease was cited by Wing Commander H. A. Treadgold, R.A.F., in a paper which he read before the United Services Section of the Royal Society of Medicine on February 10th, as affording ample justification for laying stress on the importance of a careful scrutiny of the cardio-vascular system as a whole prior to entrance into the services. The problem, he said, was not merely the elimination of organic heart disease, but the equally important question whether the heart was likely to withstand the acute physical and mental stress inseparable from modern war. Wing Commander Treadgold discussed first certain points of value in routine clinical examination: inspection, palpation, percussion, and auscultation. Percussion might be of value, he said, in determining the size of the heart in a thin individual, but it was at best an unreliable and misleading sign in well-covered or emphysematous patients. An apex beat definitely seen and felt internal to the nipple line in the fifth space in an otherwise normal chest was far stronger evidence of the probable absence of cardiac enlargement than a problematical dullness to the right border of the sternum was of its presence. When the apex beat could be neither seen nor felt recourse to *x* rays was essential before enlargement was definitely negatived. The orthodiagraph was of the greatest value in this connexion. He showed some typical orthodiagraphs, including one of Carnera, the Italian giant boxer, who submitted himself

willingly for examination, and who was found, notwithstanding his immense weight and height and bulk of heart, to be perfectly fit. The stethoscope was the best means of studying alterations in rhythm. Extra-systoles were evidence of irritability in the myocardium, and when they disappeared on exercise, as they usually did, they could be safely disregarded in an otherwise normal heart, but if exercise increased them they should be looked upon with suspicion, especially if auricular. The only method of satisfactorily diagnosing a doubtful arrhythmia was by the electro-cardiogram. Turning to heart sounds, Wing Commander Treadgold said that a reduplicated first sound could be distinguished at the apex in well over 50 per cent. of young adult hearts. Widening of reduplicated sounds after exercise, especially when associated with a poor quality first sound, a tick-tack rhythm, an increased pulmonary second sound, or a triple rhythm at the apex, was suggestive of myocardial mischief. One of the most difficult problems was the differentiation between a reduplicated first sound at the apex and the presystolic murmur of a suspected mitral stenosis, and he instanced a number of points of value in distinguishing the conditions. There was little doubt that in the past undue importance had often been attached to apical systolic murmurs, and there must be a large number of perfectly normal individuals who had been diagnosed as having valvular disease of the heart, whereas in fact there was nothing whatever the matter. A soft apical systolic murmur accompanying the first sound, and varying with position or respiration, in an otherwise normal heart, was of slight or no significance. Turning to the estimation of the degree of stability of the cardio-vascular system, he spoke of the pulse response test, remarking that the average pulse rate of officers selected for permanent commissions in the Royal Air Force, as a result of their flying efficiency, was rarely above 72, and usually below, and practically all the well-known civil pilots had varying degrees of bradycardia, usually about 60 per minute. As for blood pressure, that of a healthy adult under 40 varied as a rule between 110 and 140 systolic and 65 and 85 diastolic. The pulse pressure—the difference between the two—varied between 40 and 50. Small pulse pressures, in the normal individual, even down to 25 mm., were a most valuable sign of cardio-vascular stability, and were usually associated with a slow pulse. It had been found at the Central Medical Establishment that rotation in a chair ten times in twenty seconds, the blood pressure being taken immediately before and after, revealed the fact that the stable individual's blood pressure did not change materially, that faintness and nausea accompanied a fall in an already low diastolic, and giddiness a rise in a high diastolic. An increased pulse pressure of over 10 mm. was unsatisfactory. Wing Commander Treadgold concluded by saying that the characteristics of a stable cardio-vascular system were a slow pulse, with a relatively slight increase on exertion, frequently a bradycardia, and a small pulse pressure, which again tended to remain relatively constant on exertion. In some remarks at the close of the paper Dr. Strickland Goodall said that he was glad that the author had tried to assess the efficiency of the vasomotor mechanism as well as that of the heart, for in connexion with flying it had always seemed to him that the vasomotor mechanism was perhaps even more important. He expressed surprise at the statement that 50 per cent. of young adults had a reduplicated first sound at the apex; this certainly did not hold good for the very large number of young people who passed through his hands in connexion with one of the big industries. Fleet Surgeon Home, with reference to the Royal Air Force tests, quoted an apposite passage written by Boerhaave in 1747: "They who buy slaves count their pulse and respirations in a given time, and then order them to run. If now they find the respiration and pulse not much altered by that violent motion, they know that they are of strong habit of body."

YELLOW FEVER ON THE GOLD COAST.

THE serious outbreak of yellow fever in West Africa in 1927 brought home to the British and French authorities the advisability of some form of co-operation in their endeavours to check the disease. Outbreaks had occurred in the past and were likely to occur in the future; and unless, when a case appeared in any one colony, the various colonies concerned were informed at the earliest possible moment, the necessary precautions could not be taken till the most favourable opportunity had passed. With a view to discussing the best method of procedure, a conference between delegates from the French and British colonies was held at Dakar, at the invitation of the Governor General of French West Africa, and the report of the proceedings by Dr. P. S. Selwyn-Clarke, the delegate from the Gold Coast, which, with Senegal, was most seriously afflicted by the epidemic, forms very interesting and instructive reading.[1] During 1927, from May to December, there were 190 cases of yellow fever in Senegal, with 135 deaths. It is noteworthy that none of these cases was in a native, whereas in the Gold Coast for the whole year there were 107 cases, of which 88 were in Africans. Of the Africans 25 died, and 15 of the 19 Europeans or Syrians. The discrepancy between the native incidence in Senegal and in the Gold Coast is not explained, but it seems hardly conceivable that the native of Senegal is entirely immune. It is significant that during the year the mortality among natives increased, but this is attributed to plague followed by a severe outbreak of malaria. Whatever may be the explanation, the discovery that the native may contract yellow fever in a mild form is of the utmost importance, and is the first step towards the discovery of the reservoir of infection. The fact is in accord with the recommendation that the European should be segregated and placed as far away as possible from the native population. One of the greatest difficulties has always been the early diagnosis of the disease, which does not exhibit its characteristic features till some days have elapsed. During the whole of this initial period mosquitos may infect themselves from the case. The necessity, therefore, of screening any suspicious case from these insects was duly emphasized at the conference. In a febrile disease which was not malaria or other easily recognizable condition, the occurrence in the urine of albumin in increasing quantities was regarded as a diagnostic sign of great importance. Great help in the diagnosis of atypical cases was hoped for from the discovery made by the Rockefeller Commission that the oriental monkey *Macacus rhesus* was very susceptible to the disease. It has been shown that in blood removed from a case during the early stages of yellow fever the virus will survive for relatively long periods, so that the collection of blood for inoculation into susceptible monkeys becomes a practical procedure for diagnosis. As regards treatment, the report admits that there is no known remedy; the use of vaccines should, it is suggested, be optional, since, though innocuous, they have given contradictory results. A resolution was adopted expressing the view that it would be desirable to hold similar conferences for the discussion not only of yellow fever, but of other epidemic diseases. It was suggested further that the directors of the medical departments of the several colonies should communicate directly to each other detailed information about outbreaks of such diseases, and that the West African colonies should establish an epidemiological bureau, whose members could be authorized to act as liaison officers between the various Governments. Lastly, attention was drawn to the importance of organizing measures to prevent the introduction of epidemic diseases at land frontiers. It had to be recognized, however, that it was undesirable

[1] Report by Dr. P. S. Selwyn-Clarke on the Yellow Fever Conference at Dakar, 1928. Gold Coast: Government Printing Office, Accra, and from the Crown Agents for the Colonies, 4, Millbank, London, S.W.1. (Illustrated. 2s.)

to apply strict quarantine measures to ships and persons arriving from a colony where only isolated cases of yellow fever—namely, cases occurring at intervals of more than twelve days—had been reported.

PSITTACOSIS.

SINCE the publication last week of our note on psittacosis (p. 250), the Ministry of Health has issued a short memorandum on this subject for the guidance of medical officers to local authorities. The memorandum states that since July, 1928, some thirty or forty suspected cases of human psittacosis have been brought to notice in England, principally in Cheshire, Warwickshire, and the London district, all being associated to some extent with sick parrots. After a brief reference to the literature of the subject, it goes on to say that in general the disease in human beings takes the form of an illness, usually acute, with typhoidal and pneumonic symptoms. The pulmonary condition varies from a slight bronchial catarrh to massive consolidation of whole lobes of the lung; the "typhoid" symptoms may be severe or consist merely of headache and pyrexia, though frequently epistaxis, rose spots, abdominal distension, and, sometimes, diarrhoea are also present. The presence of the organism named *B. psittacosis* by Nocard in 1892, and shown by Perry in 1920 to be identical with *B. aertrycke* (Mutton), has not been established so far in any of the recent English cases or in the birds associated with them. The possibility of some or all of the cases being attributable to another bacterial species is being investigated in several laboratories. There is some evidence pointing to a filterable virus in certain of the London cases,[1] though it is as yet too early to say what significance these discoveries may have. The usual history is that a patient with an illness resembling typhoid, or more rarely with an atypical pneumonia, is found to have been in close contact with a sick parrot (more rarely a parrakeet or love-bird). The chief symptoms in the parrot are nasal catarrh and diarrhoea, which may be infective. Some reported cases where there has been exposure to bird infection on a single date suggest that an incubation period in the person attacked has been as long as ten days. Transmission of the disease from one human being to another has been suspected from time to time, but has not been definitely proved to occur. Cases of human illness so far reported appear to have been infected by recently imported birds, though in at least one instance the parrot is believed to have been in this country for some five months before falling ill. It is alleged that most of the birds associated with recent human cases in England have been of South American origin, but their history is not usually traceable with any certainty. The duration of the disease and its incubation period in the parrot are uncertain. Discussing precautionary measures, the memorandum says that nothing in recent occurrences gives any ground for apprehending danger from domestic parrots or other cage birds of the parrot family which have been kept in a household for many months or years apart from any introduction of new birds. On the other hand, this cannot be said as confidently of most newly purchased birds. Hence, until further investigations have cleared the situation, it is not unreasonable for the public to be chary of buying birds which have recently arrived in this country or whose history is unknown to the purchaser. Simple precautions in regard to cleanliness of cages, removal of sick birds, and disinfection of cages, etc., are advised, and a timely warning is given against fondling and petting newly acquired birds. Recent cases of presumed psittacosis have been under careful investigation by clinicians and pathologists, more particularly in the Birmingham area and in London. Medical officers of the Ministry of Health have taken part in certain of these inquiries, and efforts are being made to collate and study all the data available. When such cases come to light the following points of essential detail should be ascertained and noted by the medical attendant: (*a*) nature and period of association between the human case and the parrot, and the directness of contact; (*b*) history of bird, with dates; (*c*) date of attack in patient, and symptoms; (*d*) any evidence of association of patient with previous human cases. Such information regarding suspected cases of psittacosis would most conveniently be given to the local medical officer of health, but if desired it can be communicated direct to the senior medical officer (Med. 1), Ministry of Health, Whitehall, S.W.

[1] *Lancet*, February 1st, p. 275.

STERILIZED CATGUT.

IN an annotation dealing with surgical catgut, in the *Journal* of November 16th, 1929 (p. 918), reference was made to the addition of this preparation to the list of substances controlled under the Therapeutic Substances Act. Regulations have now been framed to ensure the sterility of catgut; they will come into operation on March 1st. It is enacted that before any ligature or other form of binding material prepared from gut or other animal tissue is "offered or intended to be offered for sale as sterile and ready for use in surgical operations upon the human body" tests for sterility according to the schedule shall have been satisfactorily applied. The regulations, including the method of performing the sterility test, have been published in leaflet form (Statutory Rules and Orders, 1930, No. 26), and may be obtained from H.M. Stationery Office, price 1d.

ROYAL COLLEGE OF PHYSICIANS.

THE Milroy Lectures before the Royal College of Physicians of London, on the incidence of rheumatic disease, will be delivered on February 27th and March 4th and 6th by Dr. J. A. Glover. The Goulstonian Lectures, on the significance to clinical medicine of studies in calcium and phosphorus metabolism, will be given by Dr. Donald Hunter on March 11th, 13th, and 18th. Dr. Carey F. Coombs will deliver the Lumleian Lectures, on syphilis of the heart and great vessels, on March 20th, 25th, and 27th. The Oliver-Sharpey Lectures, on diabetes as a physiological problem, will be given by Professor J. J. R. Macleod on April 29th and May 1st, and Sir Charles Martin will deliver the Croonian Lectures, on the thermal adjustment of man to external conditions, more particularly those pertaining to warm climates, on June 12th, 17th, and 19th. The lectures, to which any member of the medical profession is admitted on presentation of visiting card, will be delivered at the College, Pall Mall East, S.W.1, at 5 p.m. on each day.

AT a meeting of the Royal Statistical Society, at 5.15 p.m. on Tuesday, February 18th, in the hall of the Royal Society of Arts, John Street, Adelphi, W.C., Professor M. Greenwood will read a paper on the vaccination problem, dealing particularly with the work of Jenner, the nature of the statistical evidence in favour of vaccination, the epidemiology of small-pox, and the various hypotheses explaining changes in the epidemiological type.

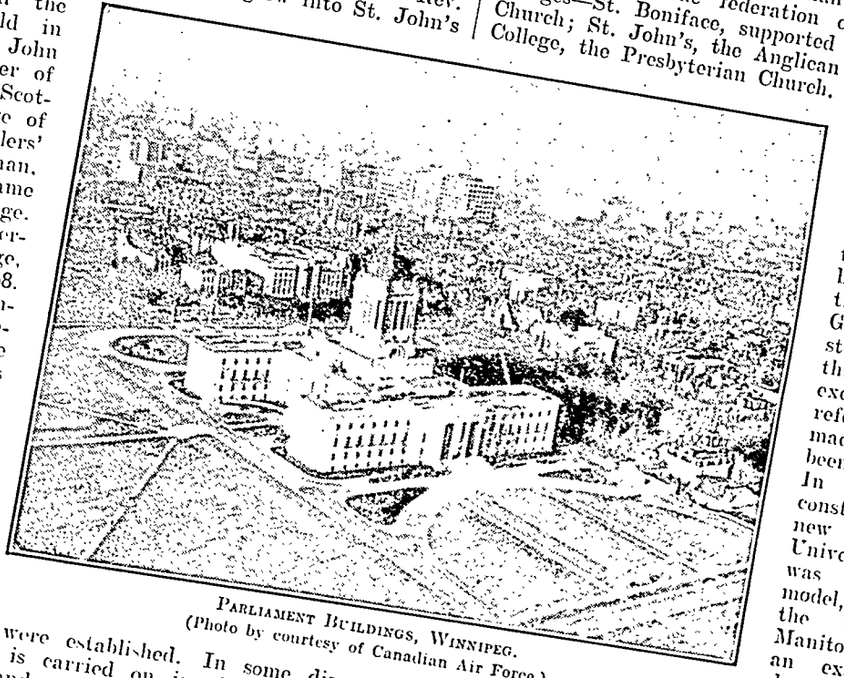
A PUBLIC lecture (with lantern illustrations) on the infirmary of the mediaeval monastery, with special reference to the Abbey of Westminster, will be given at University College, London, by Mr. Percy Flemming, F.R.C.S., emeritus professor of ophthalmic medicine and surgery, on Friday, February 21st. The chair will be taken at 5.30 p.m. by the Dean of Westminster.

NINETY-EIGHTH ANNUAL MEETING of the British Medical Association, WINNIPEG, 1930.

AT the invitation of the Canadian Medical Association, the ninety-eighth Annual Meeting of the British Medical Association will be held in Winnipeg next summer, under the presidency of Dr. W. Harvey Smith, Professor of Ophthalmology in the Manitoba Medical College, who will deliver his address to the Association on the evening of Tuesday, August 26th. The scientific and clinical business of the meeting is being organized in fourteen Sections, which will hold their sessions on Wednesday, Thursday, and Friday, August 27th, 28th, and 29th, the mornings being given up to discussions and the reading of papers, and the afternoons to demonstrations and special addresses. The names of the Officers of Sections are given in this week's *Supplement*, together with other preliminary information, and further details of the arrangements will appear from time to time in later issues. Members who propose to take part in the meeting should write for particulars about the journey by sea and land to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1. The Winnipeg office is at 102, Medical Arts Building, Winnipeg, Manitoba. We publish below the second of a series of historical and descriptive articles on Winnipeg and its institutions, contributed by Dr. Ross Mitchell; the first appeared on January 4th (p. 32).

MANITOBA'S EDUCATIONAL INSTITUTIONS.

EVEN from the early years of the Red River Settlement attention was given to education. In those early years the Churches led the way, later the State became predominant. In 1819 the first Manitoba school was opened by Father (later Bishop) Provencher, and four years later this school had expanded to become St. Boniface College. In 1820 an Anglican school was established by the Rev. John West. This school afterwards grew into St. John's College. The Presbyterians entered the educational field in 1851, when Rev. John Black, a minister of the Church of Scotland, took charge of the Selkirk settlers' school at Kildonan, which in time became Manitoba College. Wesley Hall, afterwards Wesley College, was dedicated in 1868. In 1870 the government of the settlement passed from the hands of the Hudson's Bay Company and the new province of Manitoba was formed. The Provincial Legislature in 1871 formed a Board of Education in two sections—Protestant and Catholic. In 1890, after much agitation, free non-sectarian public schools were established. In some districts bilingual teaching is carried on in the primary schools. Both primary and secondary schools and also the University are under the control of the Government. The people of the province have always supported the schools loyally.



PARLIAMENT BUILDINGS, WINNIPEG.
(Photo by courtesy of Canadian Air Force.)

THE UNIVERSITY OF MANITOBA.

Properly to understand the position of Manitoba's University, one must realize three facts: first, that it originated in 1877, only seven years after the purchase by Canada from the Hudson's Bay Company of that vast district then known as Rupert's Land; secondly, that at the time of its founding the population of Manitoba, including Indians, was less than 65,000; and lastly, that it arose from the federation of three denominational colleges—St. Boniface, supported by the Roman Catholic Church; St. John's, the Anglican Church; and Manitoba College, the Presbyterian Church. Each of these colleges in that time and for several years had a hard struggle for existence. Manitoba has never been a wealthy province, and the University has been dependent on the support of the Government and students' fees. With three or four notable exceptions, to which reference will be made, there have been no endowments. In determining the constitution of the new University, the University of London was taken as the model, and until 1900 the University of Manitoba was merely an examining and degree-conferring body, all the teaching being done by the constituent colleges. Yet at the present time the University of Manitoba is the second in Canada in point of numbers of students enrolled—about 2,500—and there are 4,733 graduates in arts, theology, medicine, law, engineering, and agriculture.

When one reflects upon the large part that religious and denominational differences played in those early days—as, for example, the Manitoba school question, which caused a tremendous upheaval throughout Canada and led to the defeat of a hitherto strongly entrenched Federal Party—it says much for the breadth of vision and magnanimity

of the founders of the University that the progress of the institution has been comparatively so untroubled.

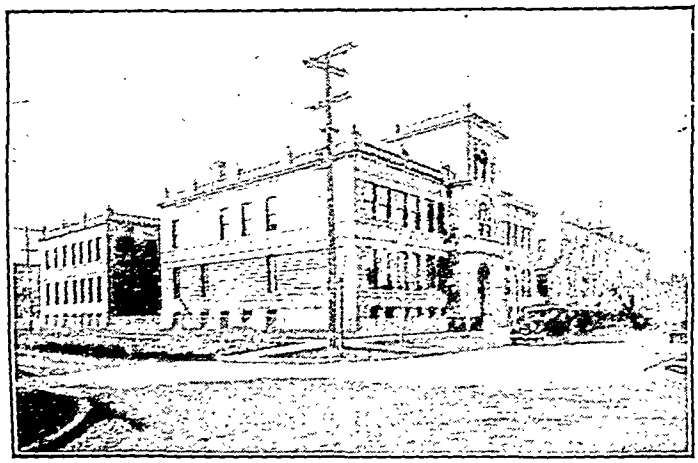
The first degree, that of Bachelor of Arts, was conferred in 1880. The first Master of Arts degree was conferred in 1884. After six years of discussion women students were first admitted to the University College in 1886. In 1883 the Manitoba Medical College was organized, and became affiliated with the University. In the following year a reading course in Law was arranged by the University and the Law Society jointly, and the first LL.B. was obtained in 1886. Wesley College represented the Methodist Church, and was affiliated in 1886.

The question of finances soon obtruded itself on the attention of the University Council. The Act of 1877 provided that a sum not exceeding 250 dollars should be placed at the disposal of the council of the University to meet the expenses incidental to the organization of the same. It did not seem to be realized that the University as constituted would need support from the public treasury beyond organization expenses. Nevertheless small grants were made annually. In 1887 the financial clause in the University Act was amended to read: "A sum not less than two hundred and fifty dollars shall be placed annually at the disposal of the University for the working of the same." This minimum had been granted from 1877 to 1884. It was then gradually increased until in 1890 it reached 3,500 dollars for the first time. It remained at that level until 1900. Between 1884 and 1889 the University revenue was increased by the assignment to it of the marriage licence fees which were earmarked for it by the Government.

In 1883 Dr. A. K. Isbister, a native of the Red River Settlement, bequeathed to the University 83,000 dollars for a scholarship fund. To this day Isbister Scholarships from this trust fund are being awarded. In 1878 application was made to the Dominion Government for a land grant as an endowment. For seven years this request of the University Council was urged upon the Dominion Government, and finally, in 1885, one hundred and fifty thousand acres of fair average quality were granted. The allocating of the land took another six years, and it was not until 1898 that the patents were issued, and it was 1900 before any revenue was derived.

In 1899, after prolonged discussion, the University Council decided that the University should become a teaching body. Chairs were to be established in natural science, mathematics, and modern languages. The Manitoba Government of that day pointed out that the establishment of a University staff carried with it the necessity of choosing a site for the University and the erecting of a permanent building. When approached, however, the Government was unwilling to take any definite action. As a temporary expedient, a property of 6.6 acres fronting on Broadway, recently conveyed by the Dominion Government to the Province of Manitoba, was placed at the disposal of the University, and on this, in 1904, a science building was erected. The corner-stone was laid by the Duke of York, now King George V. The building was made possible by the donation of $20,000 from Lord Strathcona. The Faculty of Science was organized at that time with six professorships.

The next few years saw the evolution of the University from a federation of denominational colleges to a provincial university. In 1907 the University Council asked the Government to appoint a Commission to investigate and report. In 1910 the Commission reported that its members had been unable to agree as to the extent of control of the University by the province. In spite of delays and disappointments, however, the University was growing, and a distinct step forward was made when a president was appointed—Dr. James Alexander MacLean, who still holds office. The question of a site was in 1905, and still continues to be, a vexed question. Three sites offered themselves—the small Broadway site, within the city; the Tuxedo site, about five miles from the centre of the city, and opposite the city's largest park; and the Agricultural College site, about seven miles from the centre of the city, but adjacent to the fine buildings of the Agricultural College, which had been erected by the Provincial Government at a very considerable expense. The Tuxedo Holding Company, in 1905, offered to donate 150 acres to the University on condition that the University should spend a certain amount on improvements and buildings. In 1916 the offer was repeated, to hold good for a term of ten years. The University Council voted to accept the offer, but the Government was opposed. In 1913 the Government, which at first had held out for the Broadway site, offered a tract of 137 acres between the Agricultural College and the Red River, and agreed to erect and equip an engineering building. August, 1914, however, saw the beginning of the great war, and a further postponement was necessary. It became increasingly plain that the University could continue to function most completely only as a provincial institution, and in 1917 control of the University was vested in a board of governors appointed annually by the Government, and responsible to the Government. During these years the University had been making progress. A course leading to a degree in pharmacy was established in 1905. In 1907 the Manitoba Agricultural College was affiliated with the University. In the same year a department of civil engineering was formed, and in 1909 a department of electrical engineering. Professorships of political economy, history, and English were also created in that year. In 1913 chairs were established in French, German, and architecture; and in 1914 departments of classics, pathology, and pharmacy were organized. In 1917 the Faculty of the Medical College agreed to transfer their buildings and equipment to the University on condition that the University carried on a Faculty of Medicine in an efficient manner. A department of philosophy and psychology was added in 1920.



FACULTY OF MEDICINE, UNIVERSITY OF MANITOBA.

The question of accommodation was temporarily met by the erection of a building to the north of the science building, by the utilization of the old school for the deaf, and the old law courts, and by the erection, during 1920–22, of temporary buildings on the Broadway site. A grant from the Rockefeller Foundation enabled a new medical building to be erected west of the General Hospital.

During the last session of the Provincial Legislature the Government appointed a University Committee from members of the Legislature to consider the question of a site and new buildings. This committee has now reported unanimously in favour of the Agricultural College site, and has recommended that a building to cost one million dollars be erected thereon to provide for the needs of the senior years of the University, while the junior years will be housed temporarily on the Broadway site within the city.

The report of the committee will be presented to the Legislature at its forthcoming session; nothing can definitely arrest the progress of a university which in a little more than fifty years, and in the face of tremendous obstacles, has come to occupy such a prominent place in the educational history of the Dominion, but a wise and liberal policy on the part of the Provincial Government will accelerate its advance and enable the University of Manitoba to take its rightful place in the cultural life of the community.

MANITOBA'S MEDICAL SCHOOL.

Manitoba Medical College may be said to owe its origin to the importunity of the medical students. In 1882 Winnipeg was a pioneer prairie town, the famous boom was at its height, and there were tremendous hopes for the future. A group of intending medical students, headed by John Fawcett, principal of the high school, called upon Dr. Agnew, and requested him, as one-time professor of the principles and practice of medicine at Victoria College, Toronto, to take steps to commence medical teaching in Winnipeg. As a result a meeting of the College of Physicians and Surgeons of Manitoba was held to discuss this proposal, but it was decided that the time had not yet come for the commencement of a medical school in Winnipeg.

In July, 1883, a young doctor, scion of a distinguished family, arrived from Toronto, and announced his intention to start a proprietary medical school. This project was energetically resisted by the doctors resident in the city, the leader being Dr. James Kerr. Dr. Kerr was a colourful personality. A native of County Antrim, he had taken part in the Ashanti campaign under Sir Garnet Wolseley in 1873–74, was a close friend of Osler and Shepherd of McGill, and a disciple of Lister. In the controversy over the Medical School he maintained two principles—first, that the established practitioners should be the founders; and second, that the granting of degrees should rest solely with the University and not with the Medical School. After two months' fight agreement was reached among the medical practitioners, and the Legislature of Manitoba was requested to grant a charter incorporating the Manitoba Medical College. Thirteen physicians, headed by Dr. Kerr, were named as incorporators.

The intention of the medical profession was that, once having obtained a charter which would preclude the starting of other medical schools in the province, nothing would be done until a more opportune time. Once more, however, the medical students came upon the scene, and, pointing out the hardships and expense consequent upon their attendance at medical schools in Toronto or Montreal, requested earnestly that the school be opened that fall. Circumstances did not seem auspicious, but the insistence of the students prevailed, and, after many difficulties had been surmounted, Dr. Kerr, who had been chosen dean, delivered the introductory lecture on November 15th, 1883; in that lecture the professors in the primary subjects were announced as follows: anatomy, Drs. Codd and Blanchard; materia medica, Dr. R. G. Brett; chemistry, Mr. John Fawcett; physiology, Dr. A. H. Ferguson. A word or two concerning the subsequent careers of some of these men may not be out of place.

Dr. Blanchard, who with Dr. John Stewart of Halifax had been one of Lister's dressers at Edinburgh, became a leading surgeon of Western Canada, a president of the Canadian Medical Association, and died in September, 1928, universally beloved. Dr. R. G. Brett moved to Banff in 1886, established a sanatorium at the sulphur springs, interested himself in public life, became Lieutenant-Governor of Alberta, and died on September 16th, 1929. Dr. A. H. Ferguson, after a notable career as a surgeon in Winnipeg, moved to Chicago, where in this wider sphere he made a notable name, particularly in the field of hernia.

At first the school had no settled abode, and various places were utilized. In 1884 the Faculty put their hands into their pockets and arranged for the building of a school at McDermot and Kate Streets, not far from the General Hospital. In this building, with additions, work was carried on until 1906, when a building was erected on the present site immediately to the west of the General Hospital.

In 1887 Dr. Kerr moved to Washington, D.C., and Dr. J. W. Good, one of the first in Canada to specialize in diseases of the eye, ear, nose, and throat, was appointed dean in his stead. In 1900, Dr. Good having joined the trail of '98 to the Yukon, Dr. H. H. Chown, a distinguished graduate of Queen's University, succeeded him and held office until 1917, when he became a member of the first board of governors of the University. Dr. S. W. Prowse, a native of Prince Edward Island, a graduate in medicine of Edinburgh University, and in 1917 the commanding officer of a casualty clearing station in France, was appointed dean, and still holds that office. During all these years the college had been self-supporting, owing to the disinterested action of the Faculty, with the exception of the full-time professors, in refusing to accept any remuneration. Up to 1918 the Medical School, though a constituent college of the University, and though all medical degrees were granted by that body, could at any time have withdrawn from the University. The unselfish and statesmanlike policy of Dr. Chown led to the college becoming, in 1918, an integral part of the University, transferring by deed its unencumbered property and equipment to the larger body on condition that the University establish a Faculty of Medicine and carry on the work of medical education in an efficient manner. The college then became the Faculty of Medicine of the University of Manitoba.

At the present time 275 students are registered, and since 1923 the school has had Class A rating. The course lasts five years, four years being spent in class work, while the fifth is a purely clinical year, the student being an intern at a recognized hospital. Graduates of the school may justly feel a thrill of pride in reflecting that from humble beginnings their Alma Mater is now recognized as one of the leading medical schools of the Dominion.

CARBON MONOXIDE POISONING.

AN AMERICAN MEMORANDUM.

On behalf of the American Medical Association's Committee on Poisonous Gases Dr. Yandell Henderson of the department of applied physiology in Yale University Medical School has drafted a memorandum entitled "The dangers of carbon monoxide poisoning and measures to lessen these dangers," which was published in the *Journal of the American Medical Association* of January 18th (p. 179).

The memorandum opens with an account of the conditions favouring the production of carbon monoxide. The combustion of organic materials tends to take place in two stages: the first producing carbon monoxide, the second carbon dioxide. Only the first stage is completed if the supply of air to the burning material is insufficient to provide the extra molecule of oxygen, or if the temperature of the gas, when it reaches the outside air, is too low to favour the second oxidation. In a coal fire, if the air supply is checked in any way, carbon monoxide may be produced by the reduction of carbon dioxide as it passes from the lower layer of red-hot coal through the upper, cooler layers. Yet a third way in which carbon monoxide may be formed occurs in the gas stoves used for cooking and in water heaters. Where natural gas is not available the manufactured gas supplied in most American cities usually contains about 20 per cent. of carbon monoxide. But even when natural gas, consisting of methane, is burned, the combustion may be stopped at its first stage by the chilling of the flame when it comes near a cooking utensil, or a pipe containing cold water, and, as a result, large amounts of carbon monoxide may thus be liberated. The death of persons sleeping in closed rooms containing such a stove or water heater is usually attributed to "exhaustion of oxygen in the air by the fire." This explanation is incorrect, as the flame would cease to burn in air in which the percentage of oxygen was reduced to 16 per cent., a far greater oxygen deficiency being needed to endanger life. All such fatalities are due to carbon monoxide, of which a

concentration of even a few tenths of 1 per cent. is sufficient to cause death. The defect in cooking stoves could be partially overcome by increasing the distance between the orifice of the gas burner and the cooking utensil or water pipe; these should be just above, not in, the visible flame. In burning buildings carbon monoxide is produced in large amounts, and in fires and explosions in mines carbon monoxide may cause more deaths than the explosions or the fires themselves.

Asphyxiation by Coal Gas.

Manufactured gas in American cities—"city gas"—is produced in two ways: (*a*) by the destructive distillation of coal, producing "coal gas" containing about 7 per cent. of carbon monoxide; (*b*) by blowing steam through red-hot coal, producing "water gas" containing 40 per cent. carbon monoxide. Commonly used is a mixture of these two products with vaporized petroleum, containing about 20 per cent. of carbon monoxide.

The problem of decreasing the number of deaths from city gas is largely economic; it costs more per cubic foot to manufacture gas of low than of high carbon monoxide content, but the difference in cost per heat unit of the two kinds of gas is much less than that per cubic foot. The public could further the introduction of city gas of higher calorific and lower carbon monoxide content by supporting efforts to fix the price of gas on the basis of the heat unit rather than of the cubic foot. It is probable that in future, as the use of gas for heating homes becomes even more prevalent, higher pressures will be needed in the pipes in the street, and reducing valves will be fitted on the supply to each house. In these circumstances a leak or a defective valve would be even more dangerous than it is at present. It is possible, however, that scientific advances may lead to the manufacture of a moderately priced gas low in carbon monoxide and high in calorific value. Still more advantageous would be the development of methods for manufacturing a fairly cheap liquid fuel from coal, and Dr. Yandell Henderson suggests that investigation directed to the development of methods for the manufacture of such a gas or liquid fuel deserves liberal financial support by the gas industry.

Much of the mortality from carbon monoxide poisoning Dr. Henderson attributes to the carelessness of public health authorities. If all the cases of gas poisoning in the United States were distributed into groups according to their common causes each group would show a definite mortality per 100,000 of population; a group in which asphyxiation results from using flexible hose that is old and defective or is accidentally disconnected; a group in which the tea kettle has boiled over and put out the fire; a group in which the hot-water heater is without a flue. Each group will continue to take its regular fraction of the fatalities until a general change in conditions is enforced by the public health authorities. The public health bureaux, public service commissions, and the building and plumbing inspection services of cities can do much by making and enforcing regulations against the sale to the public of badly made and unsafe appliances. All agencies should help to stop the use of flexible gas pipes; in homes gas should be burned only in appliances with fixed connexions. The municipal building and plumbing bureaux should insist on hot-water heaters being connected to flues. Above all, the gas industry should aim at reducing the amount of carbon monoxide in city gas. If it were reduced by one-half, the number of accidental deaths from gas would be reduced to a fourth, or less, of the present mortality.

Poisoning from Exhaust Fumes.

The internal combustion engine used in motor vehicles and aeroplanes gets its power from the explosion of air and petrol under pressure. The combustion occurring under these conditions is never complete, and the exhaust gas always contains an amount of carbon monoxide, varying according to the proportion of air and petrol vapour. When rich mixtures are used the amount of carbon monoxide in the exhaust gas may be as much as 7 per cent., and as a rough figure Dr. Henderson suggests that for each 20 h.p. of the motor, run on the usual mixture, one cubic foot of carbon monoxide is produced each minute. If this amount is discharged for five minutes into a small garage (cubic capacity of 2,000 cubic feet) the resulting concentration in the air rises to about a quarter of 1 per cent. Such an amount is sufficient to paralyse a man in a few minutes, and to produce death if he is not removed from the poisonous atmosphere within a short time. On account of this danger warnings should be issued each year, before the cold weather begins, against starting the engine of a car before opening the garage doors. Persons take risks under the impression that they will feel some effect, which will act as a danger signal; but carbon monoxide gives no warning. Often its first effect is a sudden muscular weakness, which causes the victim to fall helpless to the floor. For large garages the local authorities should enforce regulations against the discharging of exhaust gas from any car into the air of the garage for more than a short time; if this regulation is not enforced no amount of artificial ventilation will keep the air of the garage healthy. Dr. Henderson suggests that the use of the vertical exhaust on taxi-cabs and on commercial vehicles may, in congested traffic, do much to diminish the contamination of the air with exhaust gas.

Poisonous Action of Carbon Monoxide.

The poisonous action of carbon monoxide is due almost entirely to the fact that it combines with haemoglobin, and thus deprives the body of oxygen. Affinity of haemoglobin for carbon monoxide is more than two hundred times as great as for oxygen; but though the blood becomes highly charged with carbon monoxide, even when air containing only a few hundredths of 1 per cent. of carbon monoxide is breathed for a considerable time, the carbon monoxide, owing to the looseness of its combination with haemoglobin, may, in the presence of sufficient oxygen, be readily driven out of the blood again. If, however, there is much delay in replacing carbon monoxide ill effects may follow, especially intense headache, due to oedema of the brain, and occasionally impairment of the heart and nervous system. These effects are secondary to the injury done to the brain and to the heart when carbon monoxide was temporarily excluding oxygen from the blood; they are, in short, after-effects of asphyxia.

Generally, a person who has been partially asphyxiated by carbon monoxide recovers completely if he is resuscitated in time; less acute, but more prolonged, are the effects of repeated exposure to small amounts—such as a cook, working in a small, badly ventilated kitchen, with a defective gas stove, may breathe day after day. For such low-grade intoxications the only proper treatment is the improvement of the conditions under which the persons concerned live and work.

Gas Masks.

Each gas, or type of gas, has its own particular absorbent or catalyst, and a mask deficient in the requisite substance, or used too long, or allowed to get into disrepair, affords no protection. The so-called "all-service mask," containing some of each absorbent and catalyst, protects against practically all gases, but only for a short time. A wet handkerchief tied over the face gives no protection whatever against carbon monoxide; no mask of the absorbent type gives protection against an atmosphere deficient in oxygen. The best test for the quality of an atmosphere is afforded by a mouse or a canary; these small animals are overcome far more quickly than man, and thus give timely warning of danger. The safest form of mask is the so-called hose mask, in which a long hose is connected at one end to the mask, and at the other to an air pump. An assistant outside the gaseous chamber works the pump so as to supply fresh air to the man wearing the mask; the self-contained oxygen apparatus is liable to dangerous defects, and should never be used except by specially trained men, and even by them never when the other forms of mask will serve.

Method of Resuscitation from CO Poisoning.

The object of inhalational treatment is to eliminate carbon monoxide from the blood as soon as possible. It derives its value from the fact that carbon monoxide asphyxia, if untreated, may continue in almost full force for a long time after the victim has been removed from the poisonous atmosphere. If the victim is not breathing, artificial respiration by the prone pressure method should be started without delay and continued until spontaneous breathing returns or death is fully established. Inhalation of oxygen and carbon dioxide is a valuable adjunct to artificial respiration. If the victim is breathing, artificial respiration should not be attempted, but inhalation of oxygen and carbon dioxide, or, if these are not available, of oxygen only, should be started at once. The patient must be kept warm, and on no account handled roughly. After the return of spontaneous breathing the inhalation should

be continued till the patient's condition is once more virtually normal. The practice, formerly common, of making a partially resuscitated person walk, may injure the heart; unless, therefore, the patient is fully restored to normal, he should be prevented from making any exertion, even from sitting up. Blood transfusion, says Dr. Henderson, is quite useless; continued coma is due to oedema of the brain and to other post-asphyxial injuries to the nervous system, and these are not benefited by blood transfusion.

Inhalational Treatment.

The inhaler usually consists of one or two cylinders of oxygen under pressure, with which 7 per cent. of carbon dioxide has been mixed. The victim of asphyxia is made to breathe this mixture of gases by means of a mask and suitable valves. To ensure prompt treatment Dr. Henderson suggests that every hospital should have such inhalers as part of its equipment, and that one should be carried by every ambulance. Carbon dioxide is added to the oxygen in the inhaler to stimulate deep breathing; it thus causes a larger volume of oxygen to be inhaled, and helps in displacing carbon monoxide from the blood. Whereas in cases of moderate severity carbon monoxide may be almost entirely eliminated within half an hour by inhalation of oxygen alone, in serious cases oxygen may fail to bring about recovery. An additional reason for the use of carbon dioxide is that oxygen, having no displacing action of poisonous gases other than carbon monoxide, is of little benefit in the treatment of persons who have been overcome by other toxic vapours—for example, those of methyl alcohol, petrol, and benzene. Inhalation of carbon dioxide in these cases induces a rapid ventilation of the poison out of the body by way of the lungs.

Among the further advantages of using carbon dioxide mixed with oxygen Dr. Yandell Henderson claims the following: (*a*) full dilatation of the lungs after asphyxia tends to prevent subsequent pneumonia; (*b*) inhalation of carbon dioxide rapidly restores the acid-base balance of the blood and the body tissues, which under asphyxia is profoundly disturbed; (*c*) the inhaler may be used in the treatment of asphyxia neonatorum, the stimulation of the respiratory centre by carbon dioxide setting the machinery of breathing in operation. In the treatment of pulmonary oedema induced by irritant gases oxygen should be used without carbon dioxide.

HEALTH OF THE ARMY.

REPORT FOR THE YEAR 1928.

SOME years ago the annual report on the health of the army was remodelled and condensed, so as to bring out its salient statistical features and direct attention to the medical and surgical technique that had been practised in the army. These reports add a valuable contribution to the medical literature of the year. The report for 1928,[1] following familiar lines, has been published within the accustomed period of thirteen months, and medical officers are fortunate in having such a concise and modern statement to guide them in their professional work. To civil members of the profession the report should also prove of interest, as many societies and individuals appreciate reliable information about diseases which cause inefficiency in work and the benefits derived from well-thought-out methods of prevention.

The year 1928 has been the healthiest in the army since the war. The admission ratio has fallen from 467.7 in 1927 to 426.2 per 1,000 of the strength, which is the equivalent of a daily sick rate of 0.12 per cent., and probably represents a normal sick rate among a selected population, comfortably housed, well fed and clothed, systematically trained and constantly supervised by medical officers with special knowledge of preventive medicine. If the sick rate is analysed it will be found that there are three outstanding features. The first is the influence played by the commoner diseases of everyday life. Expressed as ratios per 1,000 of strength, diseases of the digestive system are responsible for 80.4; local and general injuries 53.3; venereal diseases 39.3; septic conditions 36.9; diseases of the skin 22.8; diseases of the respiratory system 18.3; and influenza 8.8; or a combined total of 269.8 out of the admission ratios for the year. The next salient point is the negligible effect on the admission rate of the ordinary infectious diseases, the ratios of which per 1,000 were: scarlet fever 1.6; mumps 1.4; measles 1.2; diphtheria 1.0; enteric 0.9; meningococcal infection 0.1; and small-pox 0.1; while the more virulent diseases of the East—namely, cholera, typhus, relapsing fever, and plague—are absent altogether. The third concerns two diseases which are known and perhaps feared in every household in the land—namely, pneumonia and pulmonary tuberculosis. They have an almost standardized but small ratio in the army, the former being 2.6 per 1,000 in 1928 and the latter 1.1. The reduction in the admission ratio for the year has been due to a decrease in the admission rate for malaria from 49.5 in 1927 to 35.7; for venereal diseases from 49.1 to 39.3; and for influenza from 24.1 to 8.8. Dysentery remains approximately the same. While the total figures for venereal diseases are reduced, the percentage of cases of gonorrhoea—namely, 69.8—remains practically the same as for the known cases occurring during the war and for the year 1927. It will be seen that if any great reduction in the sick rate is to take place in the future it must be by a decrease in the number of cases admitted for the commoner diseases. This offers a wide field for research, a field dulled perhaps by familiarity, but yet worthy of constant investigation by medical men, whether civil or military, if the science of medicine is to reduce the inefficiency caused by disease among civilian and army personnel, both at home and abroad.

The number of invalids discharged from the army during 1928 was 1,661, or 9.06 per 1,000 of the strength. This figure is approaching the lowest pre-war rate of 7.8 in 1913. The principal causes of invaliding were inflammation of the middle ear (246 cases) and tuberculosis (207 cases). We are glad to note that the medical directorate is alive to the need of careful examination for these conditions on enlistment and before service overseas, since continuation of the service in doubtful cases can only lead to further trouble to the individual, expense to the State, inefficiency in a unit, and the invaliding of the affected persons.

Medical officers have special opportunities for research work in different parts of the world, and some, like Leishman and Bruce, have become world-famed. For a time the incentive seems to have been lacking. It is all the more gratifying to note, therefore, that attention is being directed to the elucidation of dysenteric infections and pyrexias of three to seven days' duration.

Section II of the report, dealing with the special departments of medicine, surgery, hygiene, pathology, dental treatment, and the medical examination of recruits, gives a general survey of departmental work throughout the year. Section III, apart from the chapter on India, is composed mainly of standard statistical tables showing the incidence of disease in the different commands. The chapter on India is of great educational value, and should be carefully studied by senior and junior officers.

[1] *Report on the Health of the Army for the Year 1928.* Vol. lxiv. London: H.M. Stationery Office. 1930. 5s. net.

Ireland.

Dr. Steevens's Hospital, Dublin.

THE provost of Trinity College presided at the opening of a special ward in Dr. Steevens's Hospital, Dublin, for the treatment of patients suffering from tuberculosis and other bone diseases. Dr. T. P. Kirkpatrick, reviewing the history of the hospital, described how Richard Steevens, the son of an English clergyman who came to Ireland in the seventeenth century, graduated at Trinity College and became president of the College of Physicians in Dublin. On December 14th, 1710, Dr. Steevens made his will and died on the following day. He left £600 in trust for his sister for her lifetime, the proceeds, after her death, to go to the building of a hospital in Dublin. There was at the time no hospital for treating the sick poor, and in providing for one Dr. Steevens created a precedent in the city. In 1717, Dr. Steevens's sister executed a deed giving the trustees £2,000, which included some of her own money, to buy a site for the

hospital. The trustees were prominent citizens of Dublin, and in August of that year they met at the Archbishop's Palace, now the police barracks in Kevin Street, to consider the purchase of a site. Almost at once they began to clear and enclose the site, and in 1720 the building proper of the hospital was commenced. The building proceeded so rapidly that in 1726 the governors met there. In 1733 it was opened for patients, and since then patients had been received daily without interruption. In 1803 the top landing was taken over by the Government for the use of sick soldiers, and it was calculated that they could accommodate 200 patients; it was now proposed in that ward to accommodate some twenty to twenty-five patients. The military forces remained in occupation of that part of the hospital until 1814. In 1818 an epidemic of fever broke out in Dublin, and this portion of the hospital was requisitioned by the Government, accommodation being provided for eighty-seven patients. During a period of one year and eleven months 4,777 fever patients passed through that hospital, and the mortality rate was lower than in any other fever hospital. The ward was then used for ordinary patients until 1843, when the Government asked for the top landing for Royal Irish Constabulary patients, and it was used for this purpose up to 1922, when the Constabulary was disbanded.

Experimental Science Association of Dublin University.

Professor Bigger, in the course of his presidential address, "America as seen by a scientist," which he delivered recently to the Experimental Science Association of Dublin University, said that Americans had good reason to be proud of their universities. He could not tell them much about the universities because he was chiefly interested in the medical schools, which were largely post-graduate institutions, less closely connected with the parent universities than was the case in European countries. In a sojourn of sixty-three days in America, he had visited eighteen medical schools, three post-graduate medical schools, three schools of hygiene, and ten other institutions where bacteriology and hygiene were studied. Practically all the schools visited were built on a similar plan—the H plan—which was capable of infinite extension, the school being in physical contact, as all medical schools should be, with the hospital. The block plan, almost universal, gave structural simplicity and ensured the strictest economy, but in many cases, as he illustrated by lantern slides, the buildings were extremely ugly, and economy had been carried to excess. There were, however, notable exceptions, such as the Northwestern Medical School, Chicago; the Jefferson Medical School, Philadelphia; and the Columbia University College of Physicians and Surgeons, at Medical Centre, New York. The last-named was a colossal pile, containing the largest medical building in the world. As one might expect in a wealthy country, the equipment of the schools was excellent. Their staffs, he found, were well above the minimum necessary for mere teaching. Possibly the most liberal allowance was in the bacteriology department of Columbia University, New York, where there was a staff of 23, 17 of whom were engaged in teaching 108 students; 17 technicians and 3 secretaries were also employed. Teaching occupied only a small proportion of the time of the professors—their other function was research. There might be a modicum of truth in the charge that what science in America demanded was results in the form of papers. What really was demanded was work, even if results were slow in forthcoming. Work, hard work, was the gospel there, not only for the teacher, but for the student. That impressed him almost more than anything else in America. Hard work was inspired chiefly by keenness and enthusiasm for the chosen subject. Those qualities did not make a genius, and he did not imagine that America would produce more geniuses than any other country, but it had produced more well-trained, able men. He found that the normal lecture was fast losing ground; where it survived it was purely optional. Practical classes were regarded as of more importance. The student was encouraged to learn for himself from his practical work, and especially from original sources. Those he saw were medical students, all of whom must have completed two years in the university, or in certain schools, before entering the medical schools. It followed that the American student was older than the student here, and, for the most part, was more serious about his work. Competition to enter the better schools was severe, and even a degree was no guarantee of being accepted. The American medical student was a picked man or woman, and care was taken to ensure that he or she maintained a high standard of work while at school. The chronic medical student did not exist in America. This selection of candidates was one of the greatest differences between American and British schools. In the more progressive schools the tendency was to cut down, as far as possible, the compulsory classes, and leave the student free to work out his own curriculum. The medical student led a hard life. Saturday afternoon seemed to be his only free time. On other days he worked from 8 till 4 or from 9 till 5, and frequently much longer. At many of the universities the students worked during vacations, and even during term, to pay their way through college. Professor Bigger touched on the methods of teaching—the replacement of formal lectures by less formal discussions. In America bacteriology and hygiene were tending to become non-medical, and the tendency would, he thought, be followed here. In America there were great opportunities for the young bacteriologist, not only in the universities, but also in the State and municipal laboratories. In Ireland, he thought, they were following the lead of America in the teaching of bacteriology and hygiene. Even now in Trinity College bacteriology might be studied by non-medical science students, and a course in hygiene was available for non-medical men and women. He hoped that hygiene would soon find a place in the college arts course. The enthusiasm of the American youth for education was extraordinarily stimulating; in this the universities were no exception. The president of the University of Chicago, installed a few months ago, was 30 years of age. America was prepared to rely upon her youth, and in that, he believed, lay the explanation of much of America's success. Old age commanded her respect only when it followed a life of work and achievement, such as that of Welch of Baltimore, or Theobald Smith of Princeton. What America hated was senility, especially premature senility. So long as America held these opinions it might make mistakes, but it would never stagnate.

Legalization of Sweepstakes for Hospitals.

A deputation, consisting of Sir Thomas Myles, Sir Conway Dwyer, Sir William Taylor, Dr. MacCartan, Dr. P. McArdle, and Sir James Craig, waited recently on President Cosgrave, and urged upon him the need of funds for the hospitals of Dublin, pointing out the excellent work in progress at these institutions. They were handicapped through lack of funds, and one of the methods by which support could be given was by the passage through the Dail of the Public Charitable Hospitals (Temporary Provisions) Bill, which received its first reading in the Dail before its adjournment at Christmas. The bill provides for the granting of powers to enable funds to be raised by means of sweepstakes and drawing of prizes for the support of public charitable hospitals and sanatoriums in the Irish Free State.

Fees for Medical Substitutes.

At a recent meeting of the medical practitioners of County Wexford resolutions were passed protesting against the fee of £5 5s. a week allowed by the Health Board, and sanctioned by the Department of Local Government and Public Health. In the circumstances it was decided to rescind a former resolution passed by the Wexford medical practitioners fixing the fee for temporary work at £6 6s. a week, and to accept under protest the fee of £5 5s. a week sanctioned by the Department of Local Government and Public Health. The meeting, however, decided not to accept a lower fee than £1 1s. a day for temporary work arising out of incapacitation from illness or other causes. The question of applying again to the Minister for Local Government and Public Health to fix an increased scale of salaries for the medical officers of the County Home, and the Enniscorthy, Wexford, and New Ross Unions dispensary districts by sealed order, was discussed, and it was

decided to ask the honorary secretary to call a meeting in February to consider the matter further. Dr. W. W. Murphy tendered his resignation as honorary secretary, which was accepted with regret, and Dr. E. G. Connolly was unanimously elected to succeed him.

Scotland.

Infectious Diseases under the Local Government Act.

A CIRCULAR has been issued by the Board of Health dealing with infectious diseases, including tuberculosis and venereal diseases, as the arrangements for these are affected by the Local Government (Scotland) Act, 1929. The local authority responsible for dealing with these diseases will be the town councils in large burghs and the county councils elsewhere. This will have little effect on infectious diseases services in large burghs, but county councils will in future be responsible for these services in the whole of their landward areas, as well as in the small burghs in various counties. It is pointed out that bacteriological science has revealed the causes of an increasing number of infections, and has consequently required the setting up of an extensive laboratory equipment, and the development of a complex technique; while an increasing range of curative serums for the specific treatment of these diseases has been made available. There must therefore be an adequate provision of hospital and laboratory facilities with the necessary expert and specialist services, and councils will have to give consideration to these broad requirements. It is pointed out that the control of infection in hospitals is a matter of hospital administration and hospital consideration, and that there is no reason why the hospital provision for infectious diseases should not be contiguous to the hospital provision for general diseases. A council which is still content to provide hospital accommodation only for scarlet fever, diphtheria, and enteric fever cannot be regarded as giving an adequate service for the treatment of infectious diseases, and the possibility of having to deal with such diseases as poliomyelitis, encephalitis lethargica, spirochaetal jaundice, and perhaps rheumatism, should be kept in view, as well as the need for additional beds for non-pulmonary tuberculosis, measles, whooping-cough, pneumonia, and diarrhoea. The problem which most county councils will have to face is not how to remedy an immediate shortage of beds, but how to make the best use of existing beds, which are scattered over the county in small hospitals belonging to district committees and the town councils of small burghs. It is now recognized that with improved travelling facilities the maintenance of a series of small infectious diseases hospitals serving districts in their immediate neighbourhood is no longer desirable or necessary, and that concentration of patients in larger hospitals should be the ultimate aim of councils, although it may take some years to bring this to completion. Where combination hospitals exist, councils should not take steps to withdraw from the combination. The medical officer of health should be responsible for the general supervision of hospitals under the control of each council, and in the larger institutions there should be a whole-time resident officer, while smaller hospitals may continue to make use of the part-time services of local general practitioners. There is no provision authorizing recovery of charges in respect of maintenance and treatment from persons suffering from infectious diseases, and this position remains unaltered by the new Act. As regards the notification of infectious diseases, after May 16th, 1930, practitioners will be required to send these to the county medical officer, who will be obliged to make a weekly return of such cases to the Board of Health. In regard to tuberculosis, the same arrangements hold good as for other infectious diseases, and it is suggested that efforts should be made to secure earlier notification of cases of tuberculosis than is common at present. It is pointed out that there is still room for the development of clinics in many county districts, and that rural centres for the use of various health services might be established. With regard to venereal diseases, the local authorities will be county councils and town councils in large burghs, as for other diseases. In large burghs the schemes will not be affected by the Act, but the transfer of powers to county councils will necessitate the co-ordination of existing provisions for diagnosis and treatment, and the medical officer of health will be the chief administrative officer for such schemes. The new authorities will have to determine whether it is necessary to provide further treatment centres within their areas. Copies of this circular, price 2d., may be obtained from H.M. Stationery Office, 120, George Street, Edinburgh.

Criticism of Health Services under the New Act.

A series of addresses on the Local Government (Scotland) Act, 1929, has been arranged by the Edinburgh Women Citizens' Association, and the first of these was given on February 4th by Sir W. E. Whyte. Councillor Mrs. Somerville presided. The speaker mentioned that as regards administration there would be 229 local authorities in Scotland, as against 1,340 prior to the passing of the Act. A matter of interest to outside bodies, such as the Edinburgh Women Citizens' Association, was the provision in the new Act for co-option of outside persons by local authorities. People with special knowledge and experience of a particular branch of public work might prove to be of great assistance to a particular committee. One of the strongest arguments put forward in support of the passing of the Local Government Act was that it would be possible to secure unified control for all health services, and at the same time to avoid overlapping. There had been a need for reform in connexion with health administration in Scotland. It was proposed to keep medical inspection of school children under the jurisdiction of the education committee instead of under that of the public health committee of local authorities. With two or more committees dealing with health services, it would not be possible for the chief medical officer of health to interchange staff or to do many other things which would be possible if the whole health services were under one committee. The proposal, therefore, to continue a separate executive staff under the education committee would not seem to be a practical one. It was difficult to see why the health department should not undertake the duty of medical inspection and general health supervision of school children, quite apart from educational interests. In some respects the same observations applied to the administration of public assistance. If the medical aspect of the matter were divorced from the general public health administration, and supervised by a separate committee, the whole scheme of reform would be endangered. There would have to be the closest working arrangements between the committees concerned.

Glasgow Western Infirmary.

The fifty-fifth annual general meeting of contributors to the Western Infirmary of Glasgow was held on February 5th in the Merchants' House. Lord Provost Kelly presided. The report shows that the total ordinary income for the past year was £72,639, an increase of £670 over that of the previous year, while the ordinary expenditure was £82,305, this being a decrease of £2,000. The total revenue of £94,418, including legacies, exceeded the total expenditure of £90,783, thus enabling the managers to carry forward to capital account £3,635. The patients treated in the wards during the year had numbered 12,521, and the out-patients had been 38,437. The average daily number of patients in the hospital had been 592, and the average cost per patient per day had been 7s. 6d., as against 7s. 10d. during the previous year. The number of deaths was 826, making a rate of 7.3 per cent. of all cases, and with the deductions of deaths that occurred within forty-eight hours of admission this death rate was reduced to 5.1 per cent. The report further states that a new x-ray and electrical department is nearing completion, and is expected to be in full working order within the next three months. An ophthalmic department, for which funds were provided by the trustees of the late Dr. Tennent in 1916, is to be built as soon as the managers of the Infirmary can obtain possession of some house property in the neighbourhood. The number of cases treated by radium during

the past year with the radium purchased by means of a gift of £5,000 from Sir Henry and Lady Mechan had been greater than in any preceding year, and was steadily increasing. Colonel John A. Roxburgh, chairman of the managers, stated that the only item in the subscription list showing any marked decrease was that of employees' subscriptions, which were lower by £400 than in the previous year. He also pointed out that the David Elder Infirmary, Govan, an auxiliary hospital to the Infirmary, was proving a valuable addition to its accommodation, and had already enabled the waiting list to be materially reduced. The speaker said that with the coming into force this year of the Local Government (Scotland) Act, changes would inevitably take place in the hospitals, and it was of the utmost importance that there should be co-operation and not overlapping between the voluntary and the rate-supported hospitals. Continuous consultation between those responsible for the two kinds of hospitals would be necessary. Some rearrangement in the working of the voluntary hospitals might be required, but there would not be any interference with the voluntary principle. Professor Robert Muir, in moving a vote of thanks to the various subscribers, referred to the recent purchase of radium for the Infirmary, which would enable surgeons to apply radium under favourable conditions in the treatment of malignant diseases, and at the same time would enable a search to be made for improved methods of technique in exploring to the fullest degree the possibilities of treatment by radium.

Edinburgh Orthopaedic Clinic.

A new orthopaedic clinic was opened at 60, Pleasance, Edinburgh, on February 7th, by the executive committees of the Pleasance Trust and of the Chartered Society of Massage and Medical Gymnastics. The Very Rev. J. Harry Miller, D.D., presided. Miss Gertrude Herzfeld, F.R.C.S., explained that the work at this clinic had been inaugurated by members of the Chartered Society of Massage and Medical Gymnastics, which felt that there was a large gap between work at the hospitals, which was given entirely free, and work done by the private masseuse, for which fees were necessarily high. The masseuses had accordingly decided to start a massage clinic for people of limited means, who wished to pay but could not afford full fees, and, by the kindness of the Pleasance Trust, they had been allowed to start it in the Pleasance premises. The clinic would be self-supporting, and patients would, as a rule, be recommended by their own doctors, while the work would be done under medical supervision. The clinic would be open for patients three afternoons weekly from 3 to 7. The Rev. T. Ratcliffe Barnett, Ph.D., spoke of the close relation which would subsist between this clinic and the orthopaedic hospital that was to be built at Fairmilehead. He said that he had great sympathy with what was called "the middle wedge"—that is to say, people who could not afford expensive nursing homes, but who did not like to take everything for nothing.

Edinburgh Dental Hospital.

The annual dinner of the Edinburgh Dental Students' Society was held in the North British Station Hotel on January 24th, when Dr. A. Johnstone Brown presided over about 100 students and teachers of the school. In proposing the toast of "The Incorporated Dental Hospital and School," Dr. Drinkwater said he had always been impressed by the extraordinary development of the Dental Hospital in what might be described as half a lifetime. He remembered the institution occupying a flat in Cockburn Street, afterwards small premises in Lauriston Lane, and finally its transfer to Chambers Street, where at first it was situated in somewhat retired buildings. Since then it had come to the front in more senses than one, and now with its fine new building facing Chambers Street it was one of the best-equipped dental hospitals in the United Kingdom. This had been mainly due to the energy and ambition of the present dean of the school, Dr. William Guy. Dr. Guy, in reply, mentioned that his connexion with the Dental Hospital went back forty years, and in that period the dental profession had made a great general advance.

England and Wales.

The London County Council Hospitals Scheme.

THE General Hospitals Committee, a subcommittee of the Central Public Health Committee of the London County Council, has now been constituted. It consists of twenty members, five of whom are members of the medical profession—namely, Dr. C. W. Brook, Mr. H. L. Eason, Mr. Somerville Hastings, M.P., Dr. S. W. Jeger, and Dr. Adeline Roberts. The Special Hospitals Committee, consisting of twenty-one members, includes Dr. Stella Churchill, Dr. S. Monckton Copeman, and Dr. C. A. Fuller. It is stated that circumstances do not at the moment render it expedient to give full effect to the scheme recently approved by the Council for the appointment of hospital area subcommittees, and this part of the scheme has been deferred for not less than six months after April 1st. It is proposed, however, that some readjustment of staff arrangements should be made as a temporary measure. The primary effect of the postponement of the formation of the area subcommittees will be to concentrate the work in the General Hospitals Committee, and to bring to headquarters the proposed area medical staff which the Council had agreed should be set up to deal with the work connected with the district organization of general hospitals. This arrangement, it is considered, will have the advantage that, over the period during which the full operation of the scheme is suspended, the staff will work in close association with the principal medical officer in charge of the whole of the Poor Law work, and will be in close touch with all the developments during the difficult stages of transition and adjustment of the present year. The number of positions of senior medical officer in the public health department will temporarily be increased by three, which positions will be filled by officers selected from the existing central administrative medical staff. The Central Public Health Committee recommends as to two of the three (the other being in abeyance) that Dr. W. B. Knobel and Dr. Letitia Fairfield, divisional medical officers, should be granted temporary rank as senior medical officers.

Maudsley Hospital and the Central Pathological Laboratory.

In view of the fact that the work at the central pathological laboratory of the London mental hospitals service at Maudsley Hospital has increased largely during the last ten years, the Mental Hospitals Committee of the London County Council is proposing to add to the fixed staff of the laboratory a qualified medical assistant for research work, and also an assistant medical officer to effect liaison between the central laboratory and the mental hospitals. For the former position the basic remuneration suggested is £300 a year, which, with the present temporary additions, is equivalent to £423 a year. It is anticipated that such a position will attract young graduates who, after a few years, will leave research to take up some other branch of medicine. For the other position it is proposed that an assistant medical officer, selected from the more promising of the younger members of the medical staff of the mental hospitals service, should be seconded, full time, to the central pathological laboratory, the vacancy at the mental hospital being filled by the engagement of a locumtenent. It is stated that the number of routine examinations of specimens of body fluids and of post-mortem material carried out at the laboratory has risen from 313 in 1919 to over 8,000 a year, and is still increasing. During the past five or six years much instructional work on behalf of assistant medical officers and laboratory assistants from the mental hospitals has gone on at this central laboratory. This work is additional to duties in connexion with courses of instruction for the diploma in psychological medicine which are given at Maudsley Hospital under the supervision of the laboratory director. Two special departments of research have also been established, one for the investigation of the after-effects of encephalitis lethargica, and the other for the investigation of general paralysis. All this

additional work has limited the amount of time available for special research, and the director has to depend largely upon irregular aid from voluntary workers at the laboratory for assistance in experimental work undertaken by him personally.

Medical Cinematograph Display at the West London Hospital.

All the members of the medical profession in West London were invited by the West London Medico-Chirurgical Society to a special meeting at the West London Hospital on February 7th, when two cinematograph films of exceptional interest were shown, one being the well-known reconstruction of the experiments of Harvey and the other a film illustrating the conditioned reflexes, and prepared in Leningrad, partly in Professor Pavlov's laboratory. Dr. J. F. Halls Dally, president of the society, introduced the Harvey film, which has previously been shown on various occasions since its production under the auspices of the Royal College of Physicians in connexion with the celebration of the Harvey tercentenary. The captions of the film are chiefly extracts from Robert Willis's translation of Harvey's work, and the story opens with a representation of Harvey turning from the study of the treatises of Galen and Vesalius to experiment and dissection. The discovery of the phenomena of auricular and ventricular ejection, the passage of blood through the lungs, in particular the action of the pulmonary valves, and the general mechanism of the circulation are ingeniously depicted. In presenting the second film, Dr. G. M. J. Slot commented on the importance of the study of the conditioned reflexes in the development of neurology. The first part of the film showed the zoological gardens and playing fields of Leningrad to illustrate the behaviour of animals, children, and adults as indicating the mechanism of the brain. The usual expedients of the film studio were employed in order to demonstrate how various activities were built up by a series of reflexes or tracts in the nervous system. The film story then entered the region of elaborate physiological experiment, especially with frogs, indicating graphically the transmission of electrical and other impulses, and the reactions of the nervous system, even after the brain had been removed, to external irritation. The conditioned reflex, regarded for the purpose of this film as the unit of activity, was demonstrated in a manner of which textual description or even a succession of diagrams would be incapable. The captions of the film were originally in Russian, but they had been translated into English after the arrival of the film in this country. Another feature of the evening was the exhibition by Dr. Rickard W. Lloyd of a small painting of Harvey in his session, bearing the date 1647, which he believes, on n intrinsic evidence, to have been painted by Lely. unusual programme and the widespread invitation resulted in an excellent attendance, and the large out-patients' hall at the West London Hospital was almost filled.

Dr. C. J. Marsh and the Yeovil Hospital.

At the annual meeting of the Yeovil and District Hospital a special tribute was paid to the honorary secretary and treasurer, Dr. C. J. Marsh, who has for fifty years been actively associated with this institution; he was president of the Dorset and West Hants Branch of the British Medical Association in 1910. Dr. Marsh became a member of the hospital staff in 1880, when there were only four beds; there are now forty-six. Fifty years ago the number of in-patients for the whole year was fifty-eight; in 1929 the total number of patients admitted was no fewer than 731. The opening of the present hospital buildings in 1923, by the Prince of Wales, marked the turning-point between the old and the new institutions. In 1926 Dr. Marsh retired from his active work on the clinical staff, and his services were commemorated by the presentation of his bust in bronze; since 1924 he has been honorary secretary and treasurer of the hospital. In his annual report on this occasion both the receipts and the expenditure had risen considerably, but there was a credit balance of over £150. The annual subscriptions showed the largest increase on record, but contributions from villages had diminished. A striking feature of the report was the greater number of fees received for x-ray examinations; the new portable apparatus had proved a great boon. It was mentioned at the meeting that Dr. Marsh, in addition to his other work for the hospital, had developed more than 500 films during the year.

Correspondence.

EARLY JUVENILE RHEUMATISM.

SIR,—Dr. Carey Coombs and Dr. Reginald Miller have performed valuable service in calling attention, in the *British Medical Journal* of February 8th, to the insidious prodromal symptoms of acute rheumatism in children. The condition is of frequent occurrence among children living in the slum areas of large cities, but its true nature is only too rarely recognized; many patients who escape a false diagnosis of tuberculosis are simply labelled "anaemia" or "debility." Yet the treatment of these children is at least as important as the treatment of an obvious acute attack—possibly more so; I have no doubt that many cases of cardiac valvular disease in later years could be prevented, and the severity of others could be mitigated by rational treatment during this initial insidious stage.

The possibility of confusion of the early constitutional symptoms with those of tuberculosis and other conditions has been pointed out by Dr. Miller; to his admirable list of symptoms I would add vague abdominal pains, which appear to be a feature of some cases. I have seen acute rheumatism simulate appendicitis in one case; in two instances a diagnosis of "tuberculous abdominal glands", was made at the onset of acute rheumatism, and in one of these a later exacerbation of endocarditis was at first regarded as paratyphoid owing to the predominance of abdominal symptoms. Both the latter cases progressed unfavourably to a fatal pericarditis; a necropsy in one of them failed to reveal any intra-abdominal cause for the symptoms.

It is necessary, however, to go even further, and to point out that not all cases of genuine rheumatic infection ultimately develop a typical acute attack in one or other of its varied manifestations; on the contrary, certain cases remain insidious or "subacute" from beginning to end. The fact that, in a given case, these initial constitutional symptoms do not ultimately lead to an obvious acute attack of rheumatic arthritis, carditis, or chorea is not sufficient to refute a diagnosis of rheumatic infection. I have recently had the opportunity of following the development of mitral stenosis in such a case over a period of two years.

The boy never had a typical acute attack of endocarditis, arthritis, nor chorea, but he was never well, and never quite free from symptoms of one or other of the three. At times he was found to have a rather diffuse apex beat extending as far as the nipple line, with a faint apical systolic murmur, but the signs disappeared within twenty-four hours when he was confined to bed. At other times he was restless, with hyperactive reflexes, though choreiform movements were never observed; periodically he had vague pains in the limbs. For some days at a time he had an evening temperature of 99° F., with a pulse rate of about 100. Throughout, he had a poor appetite, was easily fatigued, and anaemic. In view of the ultimate development of a typically rheumatic valvular lesion there can be no doubt that he was suffering from a subacute or latent form of rheumatic infection.

Subacute cases of this nature are almost certainly responsible for many of the cases of mitral stenosis in adults who give no history of acute rheumatism, chorea, or other evident rheumatic manifestation; I have been unable to obtain a "rheumatic" history in some 20 per cent. of cases of mitral stenosis.

Much can be done in the treatment of these cases once they have been recognized. Restriction of activities in greater or less degree is necessary for all; in some, longer hours of sleep, with less violent exercise, will suffice, while others will require absolute confinement to bed for considerable periods. Each must be judged on its merits, and frequent examinations are essential. The parents should understand the necessity for informing the medical attendant of the occurrence of sore throats, "colds," pyrexial

attacks, or other suggestive symptoms. Many of the children are poorly nourished and in need of dietetic attention; the majority require treatment for their anaemia. The judicious use of salicylates—the exhibition of adequate doses at the proper time—may avert the more acute manifestations. Focal sepsis demands attention, particularly to the tonsils, but a word of warning is necessary, for much harm may result from an unnecessary tonsillectomy in a child with a cardiac infection. Where tonsillectomy is definitely indicated, it is important to choose the most suitable time, and to endeavour, first, to bring the child's general health to the highest possible level.—I am, etc.,

ALBERT A. FITZGERALD PEEL, D.M.,
February 8th. Electro-cardiographer, Victoria Infirmary, Glasgow.

RETENTION OF URINE.

SIR,—In the *British Medical Journal* of February 1st (p. 192) Mr. H. J. McCurrich gives an excellent summary of the treatment of retention of urine. His article is full of useful information and is eminently practical. There is, however, one piece of advice he gives which, if followed, may have disastrous consequences, as I know to my cost.

In speaking of suprapubic puncture in the treatment of impassable strictures, he says that "The bladder should be emptied slowly, or only partially." *Partial* emptying of a distended bladder by suprapubic puncture is, in my experience, a very dangerous proceeding. A house-surgeon of mine, who had been imbued with the idea that to empty completely a distended bladder entailed a great risk to the patient, half emptied the bladder by suprapubic puncture in a case of complete retention due to an impassable stricture. Twenty-four hours later I found the patient very seriously ill. After the trocar had been removed the bladder had continued to empty itself into the cellular tissues of the pelvis, and, as a result, serious pelvic cellulitis had developed. The patient was eventually saved with the help of suprapubic drainage and very free incision of the infiltrated tissues, but for two or three days his condition remained critical. If puncture is employed the bladder must be emptied very slowly, but must be completely emptied. Should complete emptying be contraindicated it is better to insert a Pesser catheter.

I point this out, not in a spirit of criticism, but because Mr. McCurrich's article is so excellent and so convincing that it would be dangerous to let a serious error pass unnoted.—I am, etc.,

London, W.1, Feb. 3rd. KENNETH WALKER.

THE CLASSIFICATION OF BRIGHT'S DISEASE.

SIR,—I was much impressed when reading your leading article on this subject (February 1st, p. 205) to find that the term "ischaemic nephritis" has made its debut. The fact that if the blood does not traverse the kidney properly a pathological change in the organ is induced is thus now expressly recognized. But, according to your leader, the author limits this term to conditions produced by changes in the vessels supplying the kidney—the glomeruli—with blood. In the classification there is not an "ischaemic nephritis" due to any other cause—for example, compression of the capillaries, caused, for instance, by a distension of the tubules (*plus* Bowman's capsules) reacting with the tension of the capsule of the whole kidney, and cured by incising that capsule. The lesions occurring in such a state as post-partum anuria seem not included in the category "ischaemic nephritis," but in that of "toxic nephritis."

Now apart from ascending surgical nephritis and that due to the tubercle bacillus—real inflammations—so-called "toxic nephritis" perhaps does not exist at all, chronic interstitial nephritis, the arterio-sclerotic kidney, and the kidney of essential hypertension being the only likely genuine examples. Certainly the changes occurring in the kidney during pregnancy and related with the clinical states called "toxaemias of pregnancy" are not due to a toxin of any sort. They are produced mechanically, and they are cured by mechanical means, as I showed in my paper of last year.[1] On the other hand, it is difficult to understand how a change in the blood supply to the kidney—even to the glomeruli—induced by a narrowing of the arterial path, however so caused, can occur, except as the result of a change in the blood—that is, by a toxaemia. But here not an "inflammation," but a "regression," is produced.

It would thus seem that there is something further to be said before finality on this matter is reached.—I am, etc.,

Rugby, Feb. 3rd. R. H. PARAMORE, F.R.C.S.

[1] Eclampsia and its Renal Lesion, *Journ. Obstet. and Gynaecol. of the British Empire*, 1929, xxxvi, 341.

PSYCHOGENIC PAIN.

SIR,—I have read with much interest the correspondence on this subject in the *Journal*. The impression I have gathered from it is that your correspondents seem at cross purposes; they wage a war about words, using the terms "psychogenic" and "physiogenic" with changing connotations. Whether centrally originated pain has at all been envisaged seems to me doubtful; but, if so, has it been classed as psychogenic or physiogenic?

To begin with, we have to be absolutely clear that pain is a psychical experience, pure and simple, and nothing else. That it has a neural basis—that is to say, that it is accompanied by (I should prefer to say that it is the subjective aspect of) an excitation of certain groups of cortical and subcortical neurones—is equally certain.[1] Without entering into the question of localization, let us call these neurone groups the "pain centre." The excitation of the pain centre, then, is the objective aspect of the pain experience. The pain centre may be stimulated in several ways: (1) by afferent impulses from the periphery (which includes the viscera, etc.); (2) by lesion in the centre itself[1]; (3) by impulses from other functioning parts of the brain, the subjective aspect of such functioning being a psychic experience. These psychic experiences arising through (1) and (2) I should be inclined to call physiogenic pain, while those caused through (3) psychogenic pain.

This last point, I believe, requires a little further elucidation. We speak—and we know that it exists—of psychogenic asthma, for example. A man is affected by certain grass pollen; he contracts hay fever and suffers from asthma. The experience is accompanied by the knowledge of the cause and the sight of the meadows with the grass in full bloom. The pollen is the exciting stimulus, and the sight of the grass meadows becomes the conditioned stimulus. The psychogenically originated asthma is the conditioned reflex which may possibly be elicited by the sight of a painting of a meadow in the absence of any pollen.

Do analogous cases in the field of pain experience exist? I do not know. Can the statement of an untrained person be taken as evidence? I should hesitate. Finally, it is most important to bear constantly in mind that the memory image of a pain is no more a pain experience than the memory image of St. Paul's Cathedral is the same as the visual experience while actually looking at the church. Another point likewise to be remembered is that a hallucination is an actual psychic experience. The patient who in delirium tremens sees rats that have no existence has nevertheless a visual sensory experience.—I am, etc.,

Shortlands, Feb. 8th. A. WOHLGEMUTH.

[1] A. Wohlgemuth: On the Feelings and their Neural Correlate, with an Examination of the Nature of Pain, *British Journal of Psychology*, June, 1917, p. 323.

THE FUNCTION OF THE ASTHMATICAL REFLEX.

SIR,—In a letter in your issue of May 18th, 1929 (p. 930), I suggested that it was important to start a study of asthma by reading the physiological work of Professors Brodie and Dixon on this subject. Your kind compliance (July 13th, 1929, p. 68) with my request that you should publish a summary of this valuable but inaccessible document made it possible for everyone to discuss the matter in a scientific rather than an empirical manner.

Brodie and Dixon's experiments showed that asthma is a physiological reflex, chiefly activated by stimulation of the nasal mucous membrane; but they do not show the purpose it is intended to fulfil. Such well-defined reflexes are commonly directed towards a useful object: it would

therefore seem important to recognize the use of the asthmatical reflex, in order to appreciate the nature of such deviations from the normal as may be described as morbid.

By irritating the noses of asthmatics it is possible to cause lacrymation, sneezing, coughing, and, in some cases, asthma. The presence of asthma among these other well-known defensive reflexes suggests that asthma may itself be a defensive reflex, and this view is confirmed by further evidence. During gas attacks in France it was a common experience that, while many victims were overwhelmed, and their lungs damaged by a large dose of poison gas of an irritant nature, numbers who at the time suffered from severe dyspnoea and wheezing escaped with little or no injury. Spasm of the bronchial muscle was noted at the time, but, in the presence of a greater evil, was not recognized as asthma of the morbid type, and rightly so. Evidence more scientific was provided by those who, in studying the effect of gas inhalations on the lungs of dogs which were introduced into gas chambers, found that although some were overwhelmed by heavy dilutions, others, which were submitted to lesser dilutions, suffered only from dyspnoea and wheezing, which were relieved by injections of adrenaline.

Brodie and Dixon's experiments were performed upon normal dogs which were not suffering from any recognizable or stated metabolic or other disorder. Similarly, healthy individuals, whether human or animal, show bronchial spasm when in certain kinds of poisonous atmosphere. It is obvious that under such conditions the coughing or sneezing reflexes, which are invariably preceded or followed by a deep inspiration, would have no protective effect. But when, as in asthma, the bronchial muscle is contracted, the tidal air limited, and a layer of mucus secreted in the bronchial tubes, the protective syndrome is complete. It is obvious also that the nose is the first organ to recognize dangerous atmospheric conditions, and significant that the reflex is set in motion from the nasal mucous membrane. Brodie and Dixon found that the further back and the higher up on the nasal septum a stimulus was applied the more effective it was in producing bronchial spasm. This is synonymous with saying that it is most effective on the olfactory mucosa. It seems, therefore, self-evident that the asthmatical reflex is a normal defence against an atmosphere which can be recognized by the individual as being poisonous or harmful to the lungs. I am not referring to those deviations from the normal which are to be found in asthmatics.—I am, etc.,

London, W.1, Feb. 1st. H. MORTIMER WHARRY.

"TENNIS ELBOW."

SIR,—Before you apply the editorial closure, may I be permitted to attempt to draw into some sort of pattern the tangled threads of this discussion? I have the details of the original debate and the subsequent correspondence before me, and, although no two opinions agree, the condition really seems to me as capable of interpretation as regards etiology, pathology, and treatment as any other minor lesion, say, a strained back or a sprained ankle.

As Mr. Denis Browne points out in his excellent letter (January 11th, p. 89), one of the difficulties in reaching relative truth in the matter lies in the tennis expert's ignorance of anatomical details, and in the medical orthopaedic authority's ignorance of the mechanical details of the stroke. I had the opportunity of discussing tennis elbow recently with the man who has been, and perhaps still is, the greatest living tennis player. His opinion was brief and dogmatic. There are two forms, he told me: one, inflammation of the joint requiring operation; the other, in which the bones of the forearm are out of line, requiring an osteopath! The medical expert, on the other hand, even when he has personal knowledge of the condition, concludes that one variety—his variety—covers all. *Ex uno disce omnes*, he seems to say, when, in fact, *ex uno, disce unum*.

Let me show, briefly, by a personal observation, how tennis elbow originates and what lesions it may ultimately produce. Last week, in a local club tournament, I played an open single, and was beaten after 34 games; in the afternoon I played a handicap and won after 31 games. Each game represents some 6 or 8 rallies or more, each rally some 6 to 10 or more strokes. Thus, in the course of a few hours, I had struck my half share of 65 × 8 × 10 strokes—that is, some two or three thousand blows, involving about all the movements of which the fingers, wrist, elbow, and shoulder are capable. Needless to say that, being no longer a youngster, I suffered that evening from weakness and tenderness of my whole arm, with definite pain at certain strategic points—over the flexor and extensor muscles, over the radio-humeral joint, over the styloid process of the radius, and over the inner end of the carpus. Equally needless to say, a hot bath and a night's rest put matters right. Such is the first stage of so-called tennis elbow or, better, tennis arm. If toxaemia from teeth or tonsils or intestine is present, this stage may be prolonged or accentuated, and the opinions of Mr. Ross Smith and Dr. Alfred Jordan (January 4th, pp. 43, 44) and of Mr. Jenner Verrall (December 14th, 1929, p. 1109) will be confirmed. . . .

If a few days' or weeks' rest does not suffice to give relief, a visit to the skilled surgeon is required; Depending upon his personality and upon the clinical aspect of the particular case the verdict will be as follows —taking, perhaps, Surgeon Commander Edgar's advice (December 28th, p. 1219), and saying, as we make pressure on some special area; "Ah, I was afraid that might hurt you." (1) If pain is more or less centred over the radio-humeral joint it is that variety of tennis elbow so well described by Mr. W. H. Trethowan—possibly requiring open operation. (2) If the maximal pain is over the extensor carpi radialis longus, near its origin, then it may be that form of tennis elbow experienced, studied, and described by Mr. Denis Browne. (3) If the pain is limited to the "orbicular ligament" it is a case of tennis elbow due to ligamentous strain as described by Mr. Paul Bernard Roth (January 4th, p. 42). In other words, the original strain, at the basis of all degrees of this lesion, results in congestion and exudation and inflammation that may involve one or several of the tissues of the arm.

Mr. Blundell Bankart (January 25th, p. 170) refuses to admit any explanation other than his own, "a little greyish-red nodule about the size of a pin's point" under the common origin of the extensor muscles. (Surely he means a pin's head, at least?) He sweeps aside, as negligible, evidence found by other men of other conditions in what seem to them cases of tennis elbow. He speaks of four cases, and adds, *ex quattuor disce omnes*. In spite of his objection, the term tennis elbow or tennis arm will persist just because it fitly describes lesions at the base of which lie "various pathological conditions." That is proved by the discoveries made by Mr. Trethowan, Dr. Denis Browne, and himself—all skilled observers. If we adopt Mr. Bankart's view and sacrifice the term tennis elbow, then we must use some such clumsy and, in the opinion of many, inaccurate phrase as "traumatic hypo-condylar muscular rupture resulting in the formation of a minute cicatrix."

Mr. Bankart insists upon local anaesthesia because the lesion is so minute that it can be found "with certainty only by searching with a probe, when the patient exclaims, 'That's the spot.'" But if there were the least excess of local anaesthetic, there might be a risk of the minute spot being anaesthetized and undiscoverable. In the same way Mr. Trethowan insists on a tourniquet and a bloodless field, the effect of which might render difficult of appreciation the hyperaemia he states is present in the synovial fringe of the joint.

With regard to "cure"—that consummation devoutly to be wished—we know, alas! that the word is differently understood by the medical profession and by the public. The latter believe that our remedies "cure" colds, "cure" pneumonia, "cure" typhoid fever. The profession uses the word in its original Latin sense of "care." Our treatment takes care of these ailments. In the same way we may take care of tennis elbows by rest, warmth, electricity, massage, operation. No one method can be styled a cure, for even operation will sometimes leave the last state of that joint worse than the first.—I am, etc.,

Cannes, France, Jan. 27th. A. A. WARDEN, M.D.

LEAD POISONING FROM TAP WATER.

SIR,—In the *Journal* of February 1st (p. 216) Dr. Cooke very rightly drew attention to the danger of lead poisoning from tap water, and especially from hot-water taps. For many years I have been aware of this source of lead poisoning, and as medical officer of health for the urban district of Ramsbottom, which has a moorland water supply, I wrote the following sentences in my annual report for the year 1912.

"One feature to which I should like to draw attention is that when hot it (the water) has a plumbo-solvent action, and in houses having a hot-water system the water from the hot taps contains a considerable quantity of lead (presumably dissolved from the pipes) in solution. In private practice within the last six years I have met with about a dozen cases of lead poisoning of a more or less minor degree, apparently all traceable to the habit of using water from the hot taps for cooking purposes and for filling the kettle when in a hurry to make tea."

Since writing this I have met with many more such cases, one significant feature being that in most cases the patients were inmates of public houses. Recently two very marked cases came under my notice; the victims were a clergyman and his wife. It was found that the drinking water—the source of which is the local moorland and is a private supply—was heavily loaded with lead, having passed for 40 yards through a lead pipe between the cistern and the rectory in which they lived. In this instance the water from the cold taps contained a dangerous quantity of lead, and that from the hot taps very much more. My annual reports almost without exception reiterate this warning.—I am, etc.,

Ramsbottom, Lancs., Feb. 3rd. H. LAWRIE.

SANITATION ON THE RIVIERA.

SIR,—Your correspondent "Medicus" (February 1st, p. 218) traverses my statement that sewage is emptied on the foreshore, and says that the streams I have referred to are small streams coming from the hills behind Nice. I would not have made such serious statements without very careful inquiries beforehand. They are, I am sure, absolutely true, and your correspondent is misinformed. I made very careful inquiries from people who were interested in putting the best possible complexion on the sanitation of Nice, and they told me regretfully that it was impossible for anyone to deny that these were actual sewers. I had it also on good authority, as I stated in my first letter, that bathers had found faecal matter floating about in the neighbourhood of these drains. The president of the Syndicat d'Initiative de Nice practically admits the same thing to you in his letter when he says, "Only the sanitation of the sea may lend justification to some criticism, but in this matter also the municipal authorities are not inactive, and it is certain that they will bring about, in common with the other resorts on the Riviera, a complete and absolutely perfect sanitary system of the sea."

With regard to the statement that refuse is not conducted to the sea by the drains, I never suggested that it was; what I said was that I actually saw rubbish carts tipping refuse over the cliffs into the sea in the neighbourhood of Nice and elsewhere along the Riviera. With regard to the evidence of an offensive smell from the drains, no one would suggest that this smell is to be detected when the tide is in or on cold days, but I repeat my assertion that on warm evenings, with the tide out, another doctor and myself had to skirt round inland opposite each of these drains because of the smell.

My experience is, in almost every respect, widely different from that of "Medicus." It is possible that the new water supply may be a great improvement on the old, but it is to be hoped that too much reliance is not being placed on the action of the sun alone, as might possibly be inferred from the last paragraph of the president's letter. I am glad to learn that the authorities at Nice are making most vigorous efforts to secure for the city all the advantages of modern sanitary methods, but the average English medical man will hesitate to send his patients there for health cures until he has an assurance that the sewage is being dealt with otherwise than by being emptied on the foreshore.—I am, etc.,

London, W.1, Feb. 1st. R. H. ELLIOT, M.D., Lieutenant-Colonel I.M.S. (ret.).

SIR,—I stayed at Nice some year or so ago, in a quite good hotel, and found the drains in the annexed bathroom so bad that the smell came into the bedroom. The bath overflow pipe was led into the emptying pipe on the far side of the trap (if any), so that I had to cover the overflow grid with rubber plaster while having a bath. It was indeed doubtful whether there was an efficient trap to the bath-emptying pipe at all. Also the water-closet soil pipe leaked gas very badly. As a result the bathroom had to be shut off by the double doors whenever possible, and the window left wide open irrespective of the weather. The management admitted that the installation was not what it should be, but it appears very difficult to get intelligent work put into the plumbing in some places.

The remarks of your correspondents about the totally unnecessary noise of motor traffic are by no means exaggerated. Every vehicle, going in every direction, seems to delight in making the greatest possible amount of noise at every crossing. Not infrequently their Southern exuberance leads them to blow their horns to the "om, tiddley-om-pom: pom-pom" rhythm which used to be considered humorous here, and which apparently has not lost its freshness for them; but when you hear it blown for half a dozen streets before the musician reaches you, and for another half a dozen after he has passed, you are apt to yearn for the comparative peacefulness of a Mills bomb—suitably placed.—I am, etc.,

Leigh, Lancs., Feb. 3rd. JOSEPH JONES, M.D.

POLLUTION OF RIVERS.

SIR,—During the past three months the press has contained an exceptional and deplorable number of reports of serious pollutions of rivers, in many cases accompanied by the destruction of immense quantities of fish. It is a notable fact that most of these have occurred below beet sugar factories, and at just that period of the year when the beet is being received at the factories and converted. The claims of the managers of the factories that they are not responsible cannot therefore be accepted. The facts speak for themselves.

How great has been the injury may be illustrated by two or three examples:

River Witham.—Thirty miles of river polluted. Loss of fish estimated at hundreds of tons. Stench from the river described as "unendurable," so that men in mills and on works on the banks could not continue at work. Scum and froth reported to float on the edges of the stream eighteen inches to two feet deep. Great anxiety is felt that the valuable shell fisheries at the river mouth near Boston will be destroyed.

Rivers Ouse and Wissey.—Great destruction of fish reported. The decaying fish are stated by the medical officer to be polluting the local water supplies, which are dependent on the river. In many cases inhabitants and their cattle had to drink water which stank and was dangerous to health. Fears were expressed that an epidemic might break out.

River Nene.—Vast quantities of fish in the river reported destroyed and rotting. Peterborough Corporation collected and destroyed several cartloads, and the Fishery Board stated it would take twenty years to replace the loss. The bathing place had to be closed. Complaints were received that the stench made it impossible to live or work near the river, and great anxiety is felt as to the results of the pollution on supplies of drinking water.

The list could easily be multiplied. It is obvious that the loss to owners and occupiers along the banks of the streams affected must, in the aggregate, have been enormous, while a very large number of anglers, mostly working men, have been deprived of a very innocent and health-giving means of recreation. It is no less than a disaster, which is made the more deplorable as it was so unnecessary.

The beet sugar industry is being fostered by the Ministry of Agriculture and Fisheries, and has already received over £14,000,000 of the taxpayers' money in subsidies. Before the industry was set up the nature of the effluents from the processes to be adopted was known or readily ascertainable, and the pollution was remediable. Yet, despite the fact that the Ministry is also charged with the care of our fisheries, the factories were in most cases placed on non-tidal waters containing fisheries, where the pollution was likely to have the worst possible results; moreover, other processes of beet production which do not produce these immense quantities of poisonous effluent are known and in successful operation.

The whole discreditable episode points once more to the urgent need for improvement both in the law relating to river pollution and in its administration. Clearly it should be made a condition of all grants of public money, whether for fostering industries, improving roads, or constructing sewage works, that such moneys shall not be applied so as to pollute our rivers and, incidentally, injure the taxpayer who himself has to contribute to the subsidy. Equally urgent is the need to prevent factories being set up without adequate purification plants and sufficient space to enlarge such plants in proportion to any increase in the size of the factory and its output of noxious effluents.

The anglers of the country, numbering many hundreds of thousands, are at one on the subject. The Pure Rivers Society, which represents also all interests concerned in the purity of our rivers and inshore waters, is engaged on the drafting of a bill to be introduced into Parliament dealing with these and other necessary amendments in the law. It appeals to all men and women of good will to give their help and co-operation in a campaign which is essential if our rivers are to be saved from becoming open sewers.—I am, etc.,

1, Linco'n's Inn Fields, W.C.2, Feb. 6th.

T. W. GOMM,
Honorary Secretary, Pure Rivers Society.

TREATMENT OF RELAPSING FEVER.

SIR,—It has been brought to my notice frequently that many medical practitioners in tropical countries persist in using novarsenobenzol for the treatment of relapsing fever (known as "tick fever" in Central Africa). This is expensive, and is in no way better than the treatment which has been in use in the David Gordon Memorial Hospital since 1925—namely, the use of intramuscular injections of sodium potassium bismuth tartrate. This type of fever is very common on the Central African plateaux, and a cheap and easy method of cure is the more desirable. My observations on the two methods of treatment are as follows.

Novarsenobenzol brings the temperature down within twenty-four hours, but relapses are quite common, and two, or even three, injections of the drug may be required (especially in Europeans) before the patient is entirely free from symptoms. Moreover, intravenous injections are unpleasant.

Sodium potassium bismuth tartrate does not reduce the temperature so quickly—thirty-six hours is the average—but once it is down it remains down. Relapses are almost unknown. I am quite certain of this in regard to Africans, but not so certain about Europeans. The drug is given intramuscularly—a very easy procedure which can be performed by assistants. The dosage in use here is as follows. For an adult, two injections (on consecutive days); each injection consisting of 0.2 gram of the drug dissolved in 2 c.cm. sterile water. For a child, 2 to 10 years old, two injections on consecutive days; each injection consisting of 0.1 gram of the drug. For a baby under 2 years old one injection of 0.1 gram is sufficient.

I hope these notes may be of use to some of my fellow practitioners in the tropics.—I am, etc.,

Livingstonia, Nyasaland, Dec. 26th, 1929.

JOHN TODD.

DISPOSAL OF THE DEAD.

SIR,—Comparative study of the obituary columns of the papers of to-day with those of some thirty or forty years back reveals a great change in the minds of educated people concerning the disposal of their mortal remains. The material from which I have gathered the general trend of this change is a differential classification of the specific wishes of individuals expressed before their deaths, and subsequently printed in the obituary columns of the *Times* for the twelve months ending September 3rd, 1929, as to the obsequies to be observed in connexion with the interment of their dead bodies. Many of the injunctions thus set forth were found to be quite modern features, conspicuous by their absence from obituary insertions of Victorian days.

During the year mentioned there were 16,338 death announcements in the *Times*, of which 14,116, or 86.4 per cent., pertained to ordinary conventional burials. The remaining 2,222 cases, or 13.6 per cent., referred to special disposals of remains, and from these the present analysis has been made. The change in public opinnon, as indicated by the classified results, lies mainly in an increased tendency towards—

1. Replacement of floral decorations at funerals by gifts of flowers to hospitals or by donations to charities instead of purchased wreaths, etc. There were 1,555 requests (9.5 per cent.) for "no flowers," and 32 (0.2 per cent.) for alternative donations to hospitals and other charities.

2. Discontinuance of such outward and visible signs of mourning as black habiliments and corresponding paraphernalia. Modern thought is demanding a less depressing effect of death upon the living, and is beginning to recognize the reality of a psychological basis for the old adage, "One funeral leads to another." Three hundred and forty-three requests (2.1 per cent.) were made for "no mourning."

3. Private funerals or, where public, requests that no ladies should attend. Seventeen (0.1 per cent.) persons desired the former, and 11 (0.06 per cent.) the latter.

4. Cremation instead of ordinary burial. The relatively rapid rise of this hygienic method of disposal is evidenced by the fact that in 1928 cremations in Great Britain totalled 3,436, a figure exceeding that for 1927 by 5.24 per cent., and representing an increase of nearly 30 per cent. over the average for the preceding five years. During the year examined there were 739 cremation announcements in the *Times*, a figure bringing the total for this country, since the introduction of the system by Sir Henry Thompson, to well over 47,500. So steadily, indeed, is this method of disposal increasing in the British Isles that, in addition to the already existing twenty crematoriums, the erection of further ones is being considered by various local authorities.

Contrasted with earth burial the benefits of cremation are so many and, indeed, so obvious, that it is a puzzle why the system does not advance with even greater rapidity than is the case. Undoubtedly general adoption is checked by the higher cost of cremation as compared with that of ordinary burial, but there is, I think, a weightier and more complex factor militating against common use. "The greatest obstacle would appear to be" (I quote from the *British Medical Journal* of a few months back) "a widespread reluctance to think of the matter at all. Many persons, it is true, are prepared to discuss the desirability of cremation in the abstract; some will even discuss it in concrete terms so long as present company is excepted. It is, however, a big step from an academic acquiescence in cremation to a willingness and a capacity to leave explicit instructions about the disposal of one's own dead body, a bigger step than most people are at present prepared to take."

In cremation the constituent elements of the body, through the cleanly agency of fire, the regenerative mechanism of glorious Apollo, are harmlessly and speedily restored into Nature's currency instead of such process being spread over many years through the mediation of saprogenic anaerobic micro-organisms, a process not merely intrinsically repellent, but one fraught with danger to the living, a danger, moreover, that must necessarily increase in proportion to the ever-increasing congestion of cemeteries.

The one argument of weight against the incineration of human remains is the so-called "crime argument," but the regulations governing cremation have been so carefully framed with a view to this possible contingency that, as Sir Henry Thompson once said, "A crematorium is the last place to which a murderer would bring his victim." It is a most significant fact that, out of the odd 48,000 cremations already conducted in Great Britain, not one has given rise to subsequent question as to the cause of death. Nevertheless, to make assurance doubly sure, certain additional precautionary measures suggested by Dr. Ernest Cook might well be incorporated in the existing regulations. He would disallow cremation in cases where death is not obviously a result either of accident or of

some well-known disease, the effects of which upon the human body are thoroughly familiar to the medical profession. He makes the further suggestion that the authorities might with advantage follow some line resembling that practised under the Food and Drugs Act, wherein the article that is suspect is divided into three parts, each duly labelled and sealed. One part is handed to the vendor, a second part is delivered to the public analyst, a third part being retained for corroborative analysis in case of dispute. Such procedure would render possible, should occasion arise, three separate and independent expert scientific opinions. These suggestions carry the greatest weight and are deserving of serious consideration in that they are made by a writer with forty years' expert analytical work behind him.

Other expressed wishes of interest included 11 "to be buried at sea"; 4 "*no* memorial service"; and 2 that there should be "no tears."

Taken in their entirety the various wishes analysed afford striking evidence of the change educated public opinion is undergoing in regard to this vital question. The next thirty years will, I think, witness further progress in such opinions, an advance many to-day would call revolutionary. Those who evince a desire to be cremated rather than interred by ordinary burial give proof of a personal concern to benefit, even though this be indirectly and passively, the communal hygiene.—I am, etc.,

CHARLES M. BEADNELL,
Surgeon Rear-Admiral.

Ringwood, Hants, Feb. 4th.

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN.

SIR,—I have been much interested in the letters in your correspondence columns from Dr. Harold Sington, Dr. Beresford Kingsford, and Dr. Langton Hewer. I quite agree that closed ethyl chloride is an admirable anaesthetic for children, especially in dental work; but my own experience of it is that an occasional case gives rise to some anxiety by developing signs of syncope in the early stages of the anaesthesia. Another cause for my objection to this type of anaesthetic is the spasm of the masseters which so commonly occurs. In my opinion both these drawbacks are completely overcome by combining oxygen with the ethyl chloride. I agree with Dr. Beresford Kingsford that when oxygen is used the induction period is slightly prolonged, but this is only a matter of a few seconds, and is more than compensated for by the extra period of anaesthesia.—I am, etc.,

H. MARCUS BIRD,
Honorary Anaesthetist, West Suffolk Hospital.

Bury St. Edmunds, Feb 8th.

TONSILLECTOMY OR RADIOTHERAPY.

SIR,—The letter of Dr. Douglas Webster is of great interest, as indicating a line of treatment for some cases of tonsillar enlargement. There is a definite place in laryngology for the treatment of enlarged tonsils by methods other than surgical ablation. This is particularly indicated in those cases of what might be termed symptomless enlargement of the tonsils. These cases confront the throat surgeon after the attention of the patient has been drawn to the condition by the personal medical attendant, the school doctor, or the doctor attached to the place of occupation.

No history can be elicited of symptoms referable to the tonsil, no rheumatic condition is present, nor can cervical adenitis be detected. As a rule the school or works doctor is in favour of surgical removal on the principle that "prevention is better than cure." Were tonsillectomy entirely devoid of risk, there might be some justification for this attitude.

This type of tonsillar enlargement is amenable to treatment with radium. Lymphoid tissue reacts specifically to radium emanations, and the tonsil tissue is no exception to this rule. Under local anaesthesia the radium needle is embedded in the substance of the tonsillar tissue and retained *in situ* for an adequate exposure—for example, a needle containing 20 mg. of radium element for, say, thirty hours. As this method of treatment requires the active co-operation of the patient it is inapplicable to children, who would pull the needle out.

While the method is suitable for the class of case mentioned, it must be remembered that by producing atrophy of the tonsil with radium it is not possible to prevent the tonsil from becoming subsequently the seat of any disease this organ is heir to.—I am, etc.,

N. ASHERSON.

London, W.1, Feb. 1st.

A FATAL CASE OF VARIOLA MINOR.

SIR,—A death from small-pox has occurred in Leicester, and as this is the first for over a quarter of a century (the last death having occurred in June, 1904) it calls for some comment. The victim was a weakly baby, bottle fed, the youngest of a large family, who was infected by an overlooked case in the family within a few days of birth. The child was taken ill on January 13th; the eruption appeared on the 15th, and the child was admitted to hospital, together with its mother and elder brother, both suffering from the disease, on the 18th. The child was then in an obviously serious condition. There was a fairly abundant rash, and the child had been refusing food and suffering from vomiting and diarrhoea for the last few days. It died the day after admission.

This case illustrates what is now well recognized—namely, that variola minor, although ordinarily a non-fatal disease, may occasionally, like varicella and other non-fatal diseases, prove fatal when it occurs in very young infants.—I am, etc.,

C. KILLICK MILLARD,
Medical Officer of Health, City of Leicester.

February 6th.

TRAINING IN MIDWIFERY.

SIR,—It seems to me that the article by Mr. Donald Roy in your issue of February 1st (p. 212) needs only to be read to be approved. The system of teaching students and midwives together has been the practice of the Rotunda Hospital for probably a century.—I am, etc.,

BETHEL SOLOMONS,
Master, Rotunda Hospital.

Dublin, Feb. 5th.

PAIN IN THE ILIAC FOSSA.

SIR,—Professor John Fraser's lecture on pain in the iliac fossa in the *Journal* of January 18th (p. 97) recalls to my mind the "via dolorosa," which I had to tread with weary feet for more than five years, before the cause, a renal calculus, was recognized and removed. Fortunately it was the left side which was affected; otherwise, I feel sure I should have been subjected to the "radical exclusion" method of arriving at a diagnosis.

My one and only symptom was a constant, boring ache, situated deep in the iliac fossa. It was quite localized, and never varied in position nor radiated in any direction. Its intensity varied from time to time, but, during the whole period, I was never free from it. As no local lesion could be found to account for it, I was variously diagnosed as suffering from "irritable colon," "neuralgia of the intestine," and that well-worn cloak of ignorance "neurasthenia." A point of interest to me was that when ureteral catheters were passed and the point of each hit the kidney (or its pelvis) I felt a sharp pain in the corresponding iliac fossa in exactly the same position as my former pain.

I should like to know if this is a very unusual position for the pain in a case of renal calculus, because I can find little reference to it in any literature that I have been able to get hold of. That may be the reason why it took so long to diagnose the cause of the trouble in my case, and the possibility that someone else may be travelling the same painful road as I did has prompted me to relate my personal experience.—I am, etc.,

M.B., CH.B.

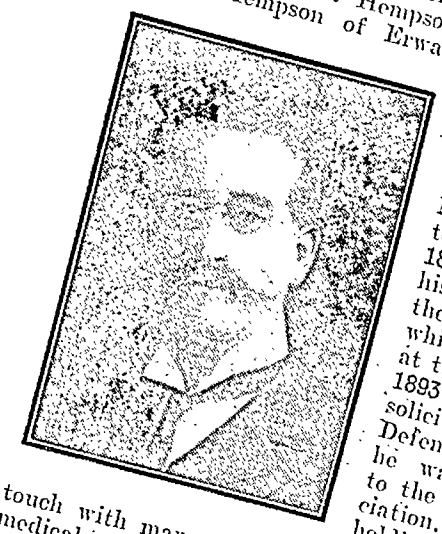
January 27th.

Obituary.

WILLIAM ERNEST HEMPSON,

Solicitor to the British Medical Association, 1900–1928.

WE have to record with much regret the death at Tunbridge Wells, on February 6th, of Mr. W. E. Hempson, who was for nearly thirty years the trusted legal adviser of the British Medical Association.



William Ernest Hempson, one of the sons of the late J. A. Hempson of Erwarton Hall, near Ipswich, was educated at Ipswich Grammar School. He was admitted a solicitor in September, 1880, at the age of 21, and for a time was associated with Messrs. Freshfields, solicitors to the Bank of England. In 1890 he started practice on his own account, and founded the firm of "Hempsons," of which he was senior partner at the time of his death. In 1893 he was appointed solicitor to the Medical Defence Union, and in 1900 he was appointed solicitor to the British Medical Association. In consequence of holding these appointments he was brought into close touch with many members of the medical profession and medical societies throughout his active professional life.

Mr. Hempson was always an indefatigable worker. As a result of overwork during the war years, when his sons and many members of his office staff were away on active service, he was advised in the year 1919 that he must reduce his activities. He accordingly ceased to take part in the general practice of his firm from the year 1920, but he continued to advise the British Medical Association until the year 1928, when he finally relinquished the personal appointment of solicitor to the Association, and his firm (of which his son Mr. Oswald A. Hempson now becomes the senior partner) were appointed in his place.

In recognition of his many years of work on behalf of the Association he was elected an honorary member at the time of his retirement, a distinction of which he was extremely proud. Three years ago he placed at the disposal of the Council, as a mark of esteem for the Association and appreciation of his happy relations with it, a sum of money to be awarded as a prize for the best essay on some phase or branch of public health.

For many years Mr. Hempson was intimately associated with the Medical Sickness, Annuity, and Life Assurance Society, Limited. Since 1921 he had lived at Tunbridge Wells, where he played an increasingly active and useful part in local affairs. For the past seven years he had been a valued member of the town council, and served on many committees, including the Health Committee, of which he was chairman. His enthusiasm for gardening led to his election as president of the Tunbridge Wells Horticultural Society, and he was a keen supporter of all local athletic clubs.

At the funeral service on February 10th, in Rusthall Church, the Council of the British Medical Association was represented by Dr. H. B. Brackenbury, Chairman of Council, and Dr. Alfred Cox, Medical Secretary. The Tunbridge Wells Division was represented by Dr. F. T. C. Linton (chairman), Dr. Claude Wilson, and Dr. E. A. Starling. Dr. Victor Jaynes represented the Medical Defence Union. There was a very large attendance at the church service, in which the municipal and hospital authorities, and the legal and medical professions were well represented.

MR. E. B. TURNER, F.R.C.S., writes: W. E. Hempson was above all things "a B.M.A. man." The interests and honour of the Association were predominant with him, and he was at any moment keen and eager to give of his very best in its service. His advice was wise in all cases, and by following it many pitfalls in difficult and uncertain times were avoided. His presence at Council and Representative Meetings was always looked forward to and appreciated by those of us who knew him well. With the saving grace of humour, and a ready and flashing wit, he was a delightful companion when "off duty." Without great eloquence, he was wonderfully clear and impressive whenever he had occasion to speak, and no one who heard him could ever go away without an exceedingly clear understanding of the subject, however involved and intricate it may have been, on which he had been giving advice and enlightenment. He was full of experiences, and as a narrator both of facts and fancies unequalled. The Association, during the entire period of his connexion with it, had a whole-hearted friend as well as a wise counsellor, and to those of us who knew him well his memory will ever be present, and the recollection of his many qualities enduring.

THE MEDICAL SECRETARY writes:

The death of W. E. Hempson is a sad landmark in the history of the British Medical Association for old hands like myself. My acquaintance with him began just after he had been appointed solicitor to the Association. Sir (then Mr.) Victor Horsley, who had been deeply impressed with Mr. Hempson's work as solicitor for the Medical Defence Union, did much to secure his appointment to the Association. I saw a good deal of him in connexion with the work of the Constitution Committee of 1900. Mr. Hempson was then in the prime of his professional career, and nobody could have taken a keener professional interest than he did in the delicate work which had to be done in the formulation of the new constitution and bringing it into operation, and in which he and Dr. Smith Whitaker, then Medical Secretary, shared a very congenial task. And I remember particularly very strenuous work of his in connexion with the proposed Royal Charter, which unfortunately did not materialize. But all through his professional connexion with the Association he gave to it loyal and devoted service, which was by no means limited by merely professional considerations. He loved the Association and was never happier than when he could be of service to it. There was no member of the Association who looked forward more gladly than he did to the Annual Meetings, where he was a prominent and very popular figure. When he retired from the solicitorship he did so with great regret. I had many letters from him at the time which showed that he felt the parting very keenly, but the severance was mitigated by the knowledge that the connexion was to be continued in his firm. In a letter dated October 12th, 1928 (referring to the fact that the firm had been appointed solicitors and not any person by name), he said: "I rather felt and almost hoped that my own appointment, which was so essentially personal, might stand on its own plane, and under present proposed circumstances it will. . . . Although a lawyer I am not without sentiment, a confession which might possibly inspire you with mirth, but true confession whitens the soul, and I do not mind saying that the Association has always been to me something much more than a mere professional client." He was immensely pleased when the Council made him an honorary member of the Association.

He kept a keen eye on the progress of the Association, and read his *Journal* assiduously, as frequent letters showed, right up to the last. When Sir Jenner Verrall died he wrote me alluding to his long friendship with him, and went on to say: "For his active brain and ready speech he will long be remembered amongst us, and the profession owe him much for his zeal and devotion to their interests. There were a 'Big Four' in Macdonald [for whom he had a strong affection], Bolam, Verrall, and Brackenbury. The privilege of knowing them as intimately as I have done has added much to the pleasure of professional life."

His last letter, only a few weeks ago, asked for my advice with regard to some questions connected with the hospital at Tunbridge Wells, on the Board of which he had become active. After his retirement he devoted a great deal of time to public work as a town councillor and in other ways, and might, I understand, have been mayor of Tunbridge Wells had he so desired, but he was restrained by the fear that his wife's health would not be

equal to the duties which would fall on her. He devoted himself particularly to public health matters, in which his knowledge of Association work helped him, as he said, very considerably. He was a man of strong family affections, and I never felt sure whether he was more proud that one of his sons was in his own profession and would continue the connexion with the British Medical Association and the Medical Defence Union, or of the fact that another son was a rising member of the medical profession. He was a very good friend, genial, sincere, always ready to do a good turn at the expense of his own convenience, and many of us will remember him, as I shall do, as a devoted and sagacious servant of our Association and an able, upright, and highly respected member of his own profession. The numerous members of the Association who know Mrs. Hempson, always a welcome visitor to the Annual Meeting, will join in offering sympathy to her and her family.

Dr. JAMES NEAL, general secretary of the Medical Defence Union, writes:

By the death of W. E. Hempson the medical profession loses a wise counsellor and a devoted friend. Few men have done more for the medical profession as a whole or for so many of its individual members. As legal adviser to the Medical Defence Union for upwards of twenty-five years he acquired a unique experience of the difficulties with which medical practitioners are liable to be confronted, and his vigorous, skilful, and usually successful handling of the many cases entrusted to him will be remembered with gratitude by all those concerned. In the early days of the union many important questions of principle in medical defence were decided with the help of his expert advice and sound judgement, and hold good to-day. His annual summary of the legal work of the union, published with the annual report of the council, was always interesting and instructive, and aptly illustrated the zeal and untiring energy with which he so successfully upheld the rights of the members. It was my privilege to work in close association with Mr. Hempson for a number of years, and I gladly take this opportunity of paying my humble tribute to his high character. He possessed lofty ethical ideals, inspiriting enthusiasm, and sound common sense. All his work was characterized by most painstaking thoroughness. His own delight when he brought a difficult case to a successful conclusion was positively delicious. He never forgot an old friend, and his bright, cheery disposition always made him welcome at medical meetings. As a lawyer he was always respected, but I think those who knew him best will desire to cherish with affection the memory of a kindly friend and a courteous gentleman.

[The photograph reproduced is by Elliott and Fry, London.]

EDGAR RALPH DIMSEY, D.S.O.,

Surgeon Rear-Admiral R.N.(Ret.).

SURGEON REAR-ADMIRAL E. R. DIMSEY, who died suddenly on February 5th, was the son of D. G. Dimsey, an Admiralty official, and spent all his professional life in the silent service, and certainly, therefore, never sought a place in the limelight. He was an extremely able clinician, a charming personality endowed with much kindly humanity, which prevented him from taking himself seriously. Most considerate and generous to his subordinates, he was quite fearless and forgetful of his own interests in standing up for what he thought right. From August, 1914, to 1916, when many civilians passed through the Royal Naval Hospital, Haslar, as temporary surgeons and surgeon probationers, R.N., he was deputy surgeon-general in charge of the medical side of the hospital, and many of those who were cordially welcomed to this new experience in perhaps the most interesting time of their lives will hear with real sorrow of the death of one who helped them so genially. Born in 1861, he was educated medically at the Middlesex Hospital, and obtained the M.R.C.S. and L.R.C.P. diplomas in 1883. Entering the navy in that year, he attained the rank of surgeon rear-admiral on April 22nd, 1918, and retired in 1920. As staff surgeon of H.M.S. *Phœbe* he served in the punitive expedition commanded by Rear-Admiral Ranson, C.B., which was landed from the squadron to punish the King of Benin for the massacre of a political expedition in 1897, ending in the capture of Benin city on February 18th, 1897. He was mentioned in dispatches, and received the Africa general service medal, with a clasp for Benin, and also the D.S.O.

In 1918 he was promoted to surgeon rear-admiral, and after serving as final medical examining officer at Great Scotland Yard for naval recruiting during 1919, he was placed on the retired list in 1920. Happy in a love of literature and gardening, he lived a placid ten years at Burford, in Oxfordshire, with his family, and leaves a pleasant memory behind him.

H. R.

The unexpected death has taken place, at his residence in Merrion Square, Dublin, of Dr. FRANK J. KENNEDY CAHILL, who was a well-known practising physician in that city. The son of the late Dr. Mark Cahill, who was also a well-known figure in Dublin social and medical life, Dr. Cahill, after taking his medical degree, started in dispensary practice in Dundrum, co. Dublin, where he remained for some years. Subsequently he decided to study for a special branch of the medical profession, and to this end went to Boston, Massachusetts, where he studied under Professor Hemmiter, a leading authority on disorders of the stomach. Dr. Cahill, on his return to Dublin, secured an extensive private practice, and came to the front rank of the profession in the city. He was consulting physician to the Royal National Hospital for Consumption, and examiner in medical jurisprudence at the Apothecaries Hall, Dublin. He was a Fellow of the Royal Academy of Medicine, Ireland, and also of the Royal Institute of Public Health. For several years he served on the committee of management of the Dublin Sanitary Association. In 1907 he was elected a Fellow of the Royal College of Surgeons, Ireland. Dr. Cahill took a deep interest in the various meetings of the Royal Academy of Medicine in Ireland and of the clinical clubs in the city. He was a prominent member of the Arts Club, and was keenly interested in the Drama League and the Abbey Theatre, and had been for many years a member of the British Medical Association.

Professor JOHN ORCHARD TODD, M.D., who died last October in Winnipeg, was one of the leading practitioners of that town. He was born in London, Ontario, and received his medical education at the Manitoba Medical College, where he graduated in 1890. He was appointed professor of practical anatomy in the University of Manitoba, and later, after post-graduate study at St. Thomas's Hospital (London), Edinburgh, Johns Hopkins University, and New York, he was appointed professor of surgery in Manitoba. He was also gynæcologist, and later surgeon, to the Winnipeg General Hospital, and when he retired from active teaching he was appointed emeritus professor of surgery in the University of Manitoba. He served for two years in France during the war, and on his return to Winnipeg became chairman of the staff of the Victoria Hospital.

The following well-known foreign medical men have recently died: Professor RADZIEJOWICZ, an eminent Polish psychiatrist; Dr. CHARLES SOULIGOUX, a prominent Paris surgeon, aged 64; Dr. RAOUL ROBERT BAYEUX, author of a well-known work on diphtheria and intubation published in 1899, aged 58; Dr. DUBOUÉ, a Bordeaux physician; Dr. JULIUS ELISCHER, professor of roentgenology at Debreczen, aged 54; Dr. LÉOPOLD DÉLAEY, editor of *Le Scalpel*, and Commander of the Order of the Crown of Belgium, aged 76; Dr. VAN DER VALK, professor of dermatology and venereology at Groningen; and Dr. DE BOISSIÈRE, radiologist at Havre, as a result of radio-dermatitis, aged 55.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

AT the quarterly meeting of the directors of the Naval Medical Compassionate Fund, on January 22nd, with Surgeon Vice-Admiral Arthur Gaskell, C.B., Medical Director-General of the Navy in the chair, the sum of £120 was distributed among the several applicants.

TERRITORIAL DECORATION.

THE King has conferred the Territorial Decoration upon the following officers of the Royal Army Medical Corps (Territorial Army), under the terms of the Royal Warrant of October 13th, 1920: Lieut.-Colonel G. H. R. Gibson, D.S.O., and Majors A. M. Johnson, *M.C.*, C. A. Webster, and J. A. C. Scott, *M.C.*

DEATHS IN THE SERVICES.

Lieut.-Colonel George Harrison Younge, R.A.M.C. (ret.), late of Oldtown, Rathdowney, Queen's County, Ireland, died at Clacton-on-Sea on January 2nd, aged 72. He was born on September 19th, 1857, was educated in the school of the Royal College of Surgeons, Ireland, and took the L.R.C.S.I. and L.K.Q.C.P. in 1879, also subsequently the F.R.C.S.I. in 1890. Entering the army as surgeon on July 30th, 1881, he attained the rank of lieutenant-colonel after twenty years' service, and retired shortly afterwards, on October 30th, 1901. He served in the South African war in 1900-1, when he took part in the relief of Ladysmith, including the actions at Colenso, Spion Kop, Vaal Krantz, Tugela Heights, and Pieter's Hill, and in operations in the Transvaal, Orange River Colony, and Cape Colony, was mentioned in dispatches in the *London Gazette* of February 8th, 1901, and received the Queen's medal with five clasps. He was also employed during the recent great war from April 15th, 1915.

Lieut.-Colonel Julian Carrington Carter Smith, O.B.E., Bengal Medical Service (ret.), died suddenly in Edinburgh, on December 19th, 1929, aged 75. He was born at Agra on August 7th, 1854, and was educated at Edinburgh, where he graduated as M.B. and C.M. in 1878. Entering the I.M.S. as surgeon on March 31st, 1879, he became lieutenant-colonel after twenty years' service, and retired on August 7th, 1909. Most of his service was passed in civil employ in the North-West, now the United Provinces. He served in the Afghan war of 1879-80, receiving the medal, and in the Burmese campaign in 1886-88, when he took part in the operations of the 6th Brigade, receiving the frontier medal with two clasps. He also rejoined for service during the war of 1914-18, and for his services received the O.B.E. on June 3rd, 1919.

Medico-Legal.

INSANITY PLEA IN MURDER TRIAL.

ON February 3rd the Court of Criminal Appeal (Mr. Justice Talbot, Mr. Justice Charles, and Mr. Justice Humphreys) dismissed the appeal of James Achew, who had been sentenced to death by Mr. Justice Avory, at the Central Criminal Court, on January 17th, for the murder of a woman with whom he had been living in Bayswater. The defence was that, at the time when he murdered the woman by cutting her throat, and then cut his own throat and put his head in a gas oven, the prisoner was insane. Mr. S. T. T. James, on behalf of the appellant, argued that on the evidence, medical and other, given at the trial, the only possible verdict which the jury could properly have returned was one of "Guilty, but insane." He asked the Court to exercise its powers by substituting that verdict for the verdict of "Guilty." Mr. Eustace Fulton was not called on to argue for the Crown. For the following account of the judgement dismissing the appeal we are indebted to the *Times* law report, published on February 4th.

Judgment Dismissing Appeal.

Mr. Justice Talbot said that the only question at the trial was whether at the time when the act was committed the man was or was not insane in the sense in which that word was used in law. A good deal of evidence on that question was called at the trial. There was the evidence of three people who spoke to the general demeanour of the prisoner as it appeared to the ordinary observer; and that of three medical witnesses, two for the Crown and one for the defence. No doubt on that evidence the jury might have found that the man was insane, but the question for the Court of Criminal Appeal was whether the jury were bound to find that verdict. After reviewing the medical evidence given at the trial, his lordship said that there was the sharpest difference between what medical men, and perhaps ordinary men, called insanity and the legal definition of insanity such as to justify a verdict of "Guilty, but insane." On the legal definition there was a definite ruling, which bound both the judge at the trial and the Court of Criminal Appeal.

His lordship, having read the fourth answer of the judges in M'Naghten's case, said that the application of that rule to the present case was quite clear. The prisoner had an insane delusion that the murdered woman was unfaithful to him, and so persistently unfaithful that, if she had really done the things which he suspected, she would have been a most abandoned woman. There was, in fact, no ground even for rational suspicion. But, assuming the dead woman had done all that the appellant insanely believed her to have done, it needed no statement that that did not justify a husband, or any other man, in putting an end to her life.

It appeared to the Court clear beyond all question that the appeal must be refused. That judgement, of course, could in no way affect any action which the Home Secretary, applying different considerations, might think fit to take.

JOINER MASQUERADES AS DOCTOR.

A WALTHAMSTOW joiner, Hugh McKay Rankin, was sentenced at Liverpool Assizes, on February 1st, to twenty-one months' hard labour, having been convicted of obtaining money by falsely pretending to be a medical practitioner. It was stated in evidence that in 1915 Rankin returned to this country from Canada, where he was said to have acted as a groom to a medical student; he then negotiated with a practitioner in East Ham to take over his practice, but failed to produce his diplomas when asked for them by the local Insurance Committee. Between February, 1916, and July, 1917, he made four voyages as ship surgeon, producing a diploma for inspection. His certificates of discharge from the ship were marked "Very good." Subsequently he undertook a locumtenency for a Glasgow practitioner, and was said to have performed the duties satisfactorily. In 1917 he was convicted of posing as a medical practitioner. Three years later he announced that he had a certain cure for cancer, and having obtained money to assist him in "research" was exposed and sent to prison. He then proceeded to the United States, whence he was sent back to Glasgow in 1925 after having been convicted of fraudulently giving himself out as a doctor. A year ago, in Cheshire, he masqueraded again as a medical practitioner, and became engaged to two or three women, from one of whom he obtained money by producing documents purporting to prove that he was a man of substantial standing.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on February 9th the following medical degrees were conferred:

M.B., B.CHIR.—G. N. Wood.
B.CHIR.—J. R. Peacock, S. R. Matthews.

UNIVERSITY OF LONDON.

MR. H. L. EASON, C.B., C.M.G., M.D., M.S., has been reappointed to represent the University on the General Medical Council.

Dr. W. W. Jameson, Professor of Public Health, has been appointed a representative to the Royal Sanitary Institute Congress at Margate in June next.

The William Julius Mickle Fellowship for 1930 has been awarded to Dr. H. A. Harris, Assistant Professor of Anatomy at University College, London, in respect of research during the past five years upon problems of growth in man and animals.

A diploma in public health for external students has been established.

UNIVERSITY OF DUBLIN.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

THE diploma in gynaecology and obstetrics has been awarded to Dr. C. B. Teck.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A MEETING of the Royal College of Physicians of Edinburgh was held on February 4th, when the President, Sir Norman Walker, was in the chair. Dr. Roy Mackenzie Stewart (Herts) and Dr. William Malcolm McAlister (Edinburgh) were introduced and took their seats as Fellows of the College. Dr. John Henry Douglas Webster (London), Dr. Arthur Oliver Gray (London), Dr. David Pieter Marais (South Africa), Dr. Sydney Watson Smith (Bournemouth), and Dr. James Kirkwood Slater (Edinburgh) were elected Fellows of the College.

Dr. David Rorie, D.S.O., was appointed Dr. Alexander Black Lecturer for 1930.

The College arranged to send a message of congratulation to the Royal College of Physicians and Surgeons of Canada on its creation.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons spent three days this week in committee on the Coal Mines Bill. For Wednesday a debate was arranged on rating in relation to housing, and the first order for Friday was a Local Authorities (Enabling) Bill to extend the powers of local authorities. A Protection of Dogs Bill was down as third order for Friday, but was unlikely to be reached.

The Government hopes to give Monday, February 17th, for the second reading of the Mental Treatment Bill in the House of Commons. On February 11th Mr. Greenwood met members of the Labour party at the House of Commons and explained the bill to them. His statement was favourably received, but some Labour members expressed a desire to have the Board of Control more closely under the Minister of Health. It was suggested that to ensure this "may" should be changed to "shall" at certain points in the bill. Mr. Greenwood promised to consider the suggestions.

The Parliamentary Medical Committee met at the House on February 11th, Dr. Salter presiding. A letter was read from Mr. Greenwood in which he said he was considering the committee's request for an inquiry into the condition of the deaf. He added that he himself was going into the question. Deputations were received from four nursing organizations, who spoke against the retention on the register of nurses who, though not convicted, had been found guilty of misconduct. The Medical Committee, after careful consideration, decided that it could not usefully act in the matter. Some discussion arose about milk, and the committee learnt that Mr. Greenwood had informed Dr. Fremantle of his intention to have prepared and to publish a report on bovine tuberculosis and its spread from cattle to man. Mr. Greenwood had added that he could not say how long the preparation of this report would require. The Medical Committee further discussed the position under the new Local Government Act of medical men on public bodies. A proposal was made that the Government should be asked to pass an Indemnity Bill protecting those doctors who are now on corporations and also in public posts. The committee showed no unanimity on the matter. It was, however, unanimously in favour of a proposal that the provision of first-aid apparatus should be compulsory on all road vehicles carrying more than six passengers. The honorary secretary of the committee, Mr. Somerville Hastings, was instructed to convey the proposal to the Minister of Transport.

On February 11th Mr. Benson presented a bill to abolish corporal punishment.

The Hairdressers and Barbers' Shops (Sunday Closing) Bill and the Mock Auctions Bill were read a second time without debate in the House of Commons on February 6th.

Psittacosis.

In the House of Lords, on February 5th, Lord OXSLOW asked the Government how many cases of psittacosis, or "parrot disease," had been recorded in the United Kingdom since June 1st, 1929. He further asked what steps had been taken to prevent the spread of the disease, and whether there were any restrictions on the importation of parrots, and, if so, what they were.

Lord DAWSON OF PENN said he wished, before the Government answer was returned, to draw attention to a few facts. This disease had been known for some time, but had only recently become a matter of anxiety in certain districts of England. There was no fear of it becoming rapidly diffused like influenza. It would not spread in a universal way, but would spread in patches. It broke out in families, or small communities of people, and in the patches where it did appear the mortality was liable to be depressing. He gave an instance of this. A boy had bought a parrot a little while ago, and during the incubation period of the disease, which was from ten days to three weeks, the mother noticed that the parrot was not very well. She attended to the bird and cleansed its eyes. Next, the parrot died, and a daughter, who had never had any contact with it during its life, took the body and deposited it in a dustbin. The girl died after a week's illness, and at the time Lord Dawson was speaking the mother and two sons were gravely ill from the disease. Parrots from South America were mainly responsible. Some months ago five hundred parrots were dispatched from the Argentine to France. About two hundred of them died on the way, and the result of the remainder being landed was that France had an outbreak of the disease. The Argentine itself had an outbreak last July. Two courses were open for consideration by the Ministry of Health. One was to put the parrots into quarantine on some remote island, like Lundy Island; the alternative was an embargo. The United Kingdom put an embargo on animals which were likely to be diseased when they were killed, and he suggested to the Government that it would be better to put an embargo on these parrots until the disease had passed. Parrots, after all, were only a luxury, and if they arrived in this country the public would now turn them out into the streets, as had been done frequently of late. Lord Dawson thought that the mere announcement of an intention to impose an embargo would probably stop for the time being the dispatch of parrots to the United Kingdom from the Argentine. He added that he did not think the patches of parrot disease would spread over the country, and he said it was very important that no alarm should arise beyond what was proper and fitting.

Lord MARLEY (Lord-in-Waiting) replied for the Government. He welcomed the intervention of Lord Dawson, who had spoken with authority on the matter. He said that the disease was not compulsorily notifiable, and that, therefore, the Ministry of Health had no complete records of it. Since June 1st, 1929, the Ministry had received information of forty cases in this country, in some of which the available particulars justified only a suspicion of the disease. The Ministry was advised that the danger of the spread of the disease from human cases was practically negligible. If there was no parrot the occupants of a house would appear to be safe. To check the spread of the disease, therefore, the Ministry should rely upon precautions with regard to the parrot itself. The Ministry was advised that the matter might become serious. It had therefore prepared a memorandum setting forth the available information about the disease, and the precautions which should be observed in the care and handling of parrots. This memorandum would be circulated shortly to local authorities, and would be on sale. There were at present no restrictions on the importation of parrots, and he was advised that, under the existing law, they could only be imposed if it were established that they were necessary in order to prevent the spread of the disease. The Ministry felt that further information was necessary before restriction on importation could be justified on grounds of health. Practically no commercial consignments of parrots reached the United Kingdom during the winter months.

Deaths due to Dangerous Drugs.—On February 5th Major CARVER asked the Home Secretary whether he could give any statistics showing the mortality in England and Wales from drugs. Major Carver made this request in view of a statement attributed to one of the British assessors at the recent meeting of the League advisory committee on the traffic in opium and other narcotic drugs. This statement was that the destruction of life caused by the illicit drug traffic could be compared to that of a modern battle. Mr. CLYNES, in reply, said he had seen a press report of remarks made by the president of the Central Opium Board. These remarks obviously related to the world traffic in drugs rather than to the state of affairs in any one country. The Registrar-General had furnished figures relating to deaths from drugs coming within the Dangerous Drugs Act which showed that in England and Wales, in the period 1921–22, there were 18 male and 15 female deaths from opium or other narcotic drugs; in 8 instances death was due to "drug habit" or to the use of narcotics. There were 37 male and 22 female deaths from suicide by opium and other narcotic drugs. Accidental death from opium and other narcotic drugs numbered 95 (male 64, female 31). There was one case of homicide by other means (morphine).

Maternity Benefit Schemes in India.—Mr. BENN told Major Pole, on February 6th, that in June, 1924, in pursuance of a resolution adopted at the Washington Conference, the Government of India undertook an inquiry regarding the extent to which maternity benefit schemes were enforced in India. The result of this inquiry had been published in a bulletin of Indian industries and labour. Since 1925 maternity benefit schemes had been introduced by various Indian employers. Legislation had been passed by the Bombay Legislative Council, taking effect from July, 1929, which provided for the grant of maternity benefit to women employed in factories within that province. A bill on similar lines was under the consideration of the Central Provinces Legislative Council.

Tuberculosis.—Dr. FREMANTLE, on February 6th, asked Mr. Greenwood if, with a view to effective co-ordination of efforts to prevent the spread of bovine tubercle bacilli from cattle to man, and to promote the consumption of milk, he would issue for the guidance of the public a review of the main facts and experience on this question, and set out the conclusions on which action should be based. Mr. GREENWOOD said he had given instructions for the preparation of a report summarizing existing information on this subject.

Tuberculous War Pensioners.—In a reply to Mr. Oliver Baldwin, on February 6th, Mr. F. O. Roberts said it was the practice of the Ministry of Pensions to make final awards in all cases of tuberculosis which were found to be suitable, but, having regard to the nature of the disease, it would not be in the best interests of the pensioners to make such an award as a matter of course.

Vaccination.—Mr. GREENWOOD told Mr. Winterton, on February 6th, that he was not in a position to make a statement on the desirability of a public inquiry into vaccination. Mr. WINTERTON asked whether such an inquiry, if granted, would be based on the model of the Royal Commission on Licensing, and whether the terms of reference would be wide enough to let the whole question be examined. Mr. GREENWOOD said that these questions did not arise.

Maternity and Child Welfare.—On February 3rd Miss LAWRENCE told Mr. West that the Minister of Health had received representations from the Metropolitan Borough Standing Joint Committee with reference to the maternity and child welfare scheme which

he proposed to make under Section 101 (6) of the Local Government Act, 1929. The Minister was satisfied that under the Act he was authorized to confer on the London County Council supervisory powers over certain voluntary associations which were specified in para. 3 of the scheme.

London Maternity Services.—Mr. GREENWOOD informed Sir Kingsley Wood, on February 6th, that he had received the observations of the Woolwich and other metropolitan borough councils on the proposed scheme for maternity and child welfare services under the Local Government Act, 1929, for the County of London. The observations of the borough councils on the scheme were now under consideration. He proposed to ensure the performance by the borough councils of their statutory duties in connexion with this scheme.

Hospitals and Road Traffic Accidents.—Mr. LOUIS SMITH, on February 5th, asked whether the Government was still ready to receive sympathetically representations from the hospitals on the proposal to allocate a certain proportion of money paid under motor car owners' third-party insurance policies to the treatment of injured persons by these hospitals. Mr. HERBERT MORRISON replied that an opportunity for raising this matter would occur on the Road Traffic Bill, and he preferred not to anticipate discussion. Replying to Sir Philip Richardson, on the same day, Mr. Morrison said the Road Traffic Bill contained provisions which would enable him to issue directions for the guidance of all users of the highway, including pedestrians.

Mental Defectives in Scotland.—Mr. JOHNSTON, on February 4th, informed Dr. Forgan that Section 38 of the Mental Deficiency and Lunacy (Scotland) Act, 1913, which authorized Exchequer contributions towards the expenses of societies assisting defectives, was repealed by the Local Government (Scotland) Act, 1929, as from May 16th, 1930. Under the last-mentioned Act contributions for the purposes mentioned might be made by county and town councils, and a scheme providing for such contributions might be made by the General Board of Control. The attention of county and town councils had been drawn to these provisions of the Act.

Flogging as a Punishment in Civil Cases.—Replying, on February 6th, to Mr. Freeman, who asked whether, as flogging, whipping, and birching had been abolished in the navy without discipline having suffered, the Home Secretary would consider abolishing these forms of punishment in civil cases in certain circumstances, Mr. CLYNES said that, though there was a widespread belief in the efficacy of corporal punishment for certain crimes, he thought the position might be reviewed in regard to some offences punishable in this way. He would be glad to take the matter up if a suitable opportunity arose. Mr. SOMERVILLE HASTINGS asked whether Mr. Clynes knew that a man had committed suicide at Wandsworth Gaol to avoid this punishment. He further asked the number of children and adults sentenced to the cat in 1929. Mr. CLYNES said the man in question had killed himself because he feared ten years' penal servitude. The last available figures were for 1928, when thirteen persons over 21 and three persons between 16 and 21 were ordered the cat. Mr. Clynes added that he had no power to forbid a form of punishment prescribed by Act of Parliament. Mr. HASTINGS then pointed out that Mr. Clynes had the right to remit any sentence in the public interest, whereupon Mr. Clynes agreed, and said he considered this in cases which came before him. In reply to a question by Mr. Benson on this subject, Mr. Clynes said he would consider setting up a Select Committee.

Silicosis.—On February 6th Mr. CLYNES informed Mr. Hoffman that he proposed to extend the scope of the Metal-grinding (Silicosis) Scheme to include workers employed on segmental wheels (Slack's machines) fitted with sandstone. He had sent a draft Amending Order to employers' and workers' organizations to give them an opportunity of submitting observations before it was finally made. The Amending Order would take effect on April 1st, and applied to all workmen employed in the processes on or after the date on which the Order was made.

Treatment of Cancer.—Mr. GREENWOOD told Mr. Young, on February 6th, that methods of treating cancer brought to the notice of his department were judged entirely on their merits, irrespective of whether they came from outside the limits of the recognized medical profession or not. Up to the present none had proved, when judged by scientific standards, sufficiently successful to call for action in its support by the Ministry. He had seen nothing of the methods proposed by a certain Mr. Ellis Barker, and was not sure that he was a practitioner. During the period January 1st, 1920, to September 30th, 1929, 42,687 deaths from cancer were registered, of which 23,060 were females. Of the total, 5,155 were persons resident in London. Asked by Major GLYN whether he would consider making cancer a notifiable disease, Mr. GREENWOOD said he would like notice of that question. Cancer was not an ordinary infectious disease. The National Radium Commission could not, he pointed out to Mr. Louis Smith, provide funds for the establishment in the provinces of radium institutions for the treatment of cancer. The Royal Charter by which the Commission was constituted prevented funds from being placed at its disposal for the purpose indicated in the question.

Hospital Treatment for Orthopaedic Patients.—Mr. GREENWOOD, on February 6th, informed Colonel Acland-Troyte that local sanitary authorities already had power to provide all necessary hospital treatment for orthopaedic patients. Under Section 11 of the Local Government Act, 1929, county councils would have this power from April, whether for children or adults.

Position of Medical Members of Local Authorities under the New Local Government Act.—On February 6th Major MCKENZIE Wood asked the Minister of Health whether he proposed to introduce legislation to relieve medical practitioners of disabilities arising out of contracts with local authorities of which they were members, and, if so, whether he would consider the position of other members of county councils who might have received contracts placed by bodies of which they are not themselves members, but whose duties are about to be taken over by committees of the new county councils. Mr. GREENWOOD replied that the recommendations of the Royal Commission in regard to medical practitioners were under his consideration. He did not contemplate legislation to remove disabilities of persons who were now members of local authorities and might become disqualified by operation of law on April 1st. The latter part of the question, therefore, did not arise, though he agreed that the principle would apply to a much wider circle of people.

Treatment of Mental Patients.—In reply to Mr. Freeman, on February 6th, Mr. GREENWOOD said the maintenance of lunatics in cottage homes as an alternative to large institutions was under consideration, though he was advised that the majority of patients could not be suitably provided for except in institutions. Mr. SCRYMGEOUR asked whether he knew of the poor results of placing patients in large institutions in contrast with private establishments. Mr. GREENWOOD replied that he feared Mr. Scrymgeour's facts were wrong, but he was prepared to discuss the question. In reply to Captain Gunston, he said that the Mental Treatment Bill would be dealt with as soon as possible. Mr. FREEMAN asked why mental patients were kept in large institutions at present. Mr. GREENWOOD replied that there were cases which required the constant assistance of people who understood mental diseases.

Chemical Warfare.—Mr. SHAW, on February 4th, told Mr. Ayles that research work on protection against chemical warfare was still carried out at the laboratories at Porton and Sutton Oak.

Medical Care of Soldiers' Families.—Answering Major Glyn, on February 4th, Mr. SHAW said that the families of soldiers on the married quarters roll were eligible for medical treatment at the public expense at all stations, but only provided that military medical facilities existed. At certain large stations, including the Cambridge Hospital, Aldershot, the Royal Herbert Hospital, Woolwich, and the Netley Hospital, Portsmouth, there was a military specialist in diseases of the ear, nose, and throat. Families of soldiers on the married quarters roll had the benefit of his services. In accordance with general policy, no payment was made from army funds for special civilian medical attendance for these diseases where no military specialist was available.

Foot-and-Mouth Disease.—On February 10th Mr. BUXTON, replying to Lieut.-Colonel Windsor-Clive, said that in the last five years there had been 783 outbreaks of foot-and-mouth disease in Great Britain, and 64,916 animals had been slaughtered. The total number of animals found affected with the disease during that period was 10,235.

Training of Veterinary Surgeons.—Dr. FREMANTLE, on February 10th, asked the Minister of Agriculture if it was not very important for the Minister to deal with the training of veterinary surgeons. Mr. BUXTON replied that the urgency of this matter was great. Arrangements were being made to deal with the reconstruction of the Royal Veterinary College by the department concerned.

Disposal of House Refuse.—Miss LAWRENCE, replying to Sir P. Cunliffe-Lister, on February 10th, said that she was aware that the Harrow Urban District Council proposed to use the space known as the Brickfield, West Harrow, for a dumping ground for house refuse. The Minister had received representations from householders in the neighbourhood protesting against the proposal, as being a serious menace to the health of themselves and their children. A public inquiry would be held into the proposal on February 12th by an inspector of his department. Dr. FREMANTLE asked whether the Minister of Health would accelerate the publication of the report of the Departmental Committee which he appointed to deal with the whole subject of the disposal of refuse. Miss LAWRENCE said that the Departmental Committee, after much delay, owing to the death of its chairman, was nearly at the end of its labours. She had every hope that it would report shortly.

Small-pox.—On February 10th Mr. GREENWOOD, replying to Mr. Groves, said that in 1929 six deaths were certified as due to small-pox among persons whose usual place of residence was in the administrative County of London. This figure was provisional. On February 11th Mr. Greenwood told Mr. Freeman that he was advised that there were many considerations affecting the duration of the protection against small-pox which was afforded by vaccination. He referred Mr. Freeman to para. 377 of the final report of the Royal Commission on Vaccination made in 1896, in which these considerations were reviewed and summarized. He had no information as to how many of the adult population were revaccinated.

Leave of Officers in the Colonial Medical Service.—On February 11th Dr. DRUMMOND SHIELS, replying to Dr. Morgan, said that the conditions governing the grant of leave to officers of the Colonial Medical Service were the same as those governing the grant of leave to other colonial Government officials, and were set out in the Colonial Regulations, which were reproduced in the Dominions Office and Colonial Office List. The conditions varied considerably in the different colonies, the main ground of variation being differences of climate. The grant of leave was in all cases at the discretion of the governor of the colony concerned, and dependent on the exigencies of the service, but an officer would only be refused leave for which he was eligible under the regulations on grounds of the right of the public interest. Medical officers, like other officers, had the right of appeal to the Secretary of State if they were dissatisfied with the decision of the governor. Special regulations were in force with regard to study leave for medical officers in various colonies.

Medical News.

THE 157th anniversary dinner of the Medical Society of London will be held at the Hotel Cecil on Thursday, March 6th, at 7.30 for 8 o'clock.

THE Countess of Birkenhead and Lady Northcote will hold a reception at the General Lying-in Hospital, York Road, Lambeth, on February 18th, at 3.30 p.m., to welcome Dame Janet Campbell, senior medical officer for maternity and child welfare, Ministry of Health, on her return from the Commonwealth of Australia.

A JOINT meeting of the Sections of Obstetrics and Electrotherapeutics of the Royal Society of Medicine will be held at 1, Wimpole Street, W.1, on Friday, February 21st, at 8 p.m., when there will be a general discussion on the position of radium in the treatment of gynaecological conditions. The debate will be opened by Mr. Malcolm Donaldson and Mr. Stanley Dodd on behalf of obstetrics, and by Mr. A. E. Hayward Pinch and Dr. J. E. A. Lynham from the electrotherapeutical standpoint.

THE monthly meeting of the British Institute of Radiology will be held at 32, Welbeck Street, W., on February 20th, at 8.30 p.m., when Dr. A. E. Barclay will read a paper on the mechanism of swallowing. Mr. J. Preston Maxwell one on osteomalacia and foetal rickets, and Dr. John Muir one entitled "The irritable colon."

A MEETING of the West Kent Medico-Chirurgical Society will be held at the Miller Hospital, Greenwich, S.E.10, to-day (Friday, February 14th), at 8.45 p.m. Dr. Harold Pritchard will read a paper on some points in diagnosis and treatment of peptic ulcer.

THE annual meeting of the Industrial Health Education Society will be held at the House of the British Medical Association, Tavistock Square, W.C.1, on February 18th, at 4 p.m., with Sir William S. Haldane in the chair. The annual report will be presented by the honorary secretary, Dr. G. Clark Trotter.

THE first Pan-Hellenic Health Conference will be held at Athens next April, and in connexion with it the Greek Medical Association is arranging an exhibition relating to hygiene in general, to which it is hoped that a large number of exhibits from other countries will be sent. It is announced that such exhibits will be exempt from customs duties, and should be sent before March 31st to the offices of the organizing committee of the conference, Odos Kriezotou 1, Athens.

A NEW series of conducted tours under the auspices of King Edward's Hospital Fund for London has been arranged to take place in February and March. On February 26th the Houses of Parliament will be visited, and on later dates the Foreign Office, India Office, and Home Office Industrial Museum. Particulars and tickets (price 10s. for each occasion) can be had from the secretary of the Fund, 7, Walbrook, E.C.4.

DR. THOMAS TENNENT will lecture for the Fellowship of Medicine on the malaria treatment of general paralysis at the lecture hall of the Medical Society, 11, Chandos Street, Cavendish Square, on Tuesday, February 18th, at 4 p.m. On February 19th, at 3 p.m., Dr. C. M. Wilson will demonstrate special cases and out-patients at St. Mary's Hospital, Paddington; and on the same date, at 2 p.m., Mr. Gill-Carey will demonstrate by operation on selected ear, nose, and throat patients at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road. *There is no fee for attendance* at the lecture and these demonstrations. From February 17th to March 15th there will be an afternoon course at St. John's Hospital, Leicester Square, consisting of instruction in the out-patient department and bi-weekly lectures; practical pathology classes can be arranged. From February 24th to March 8th a course in diseases of children will be held at the Children's Clinic in association with other hospitals, occupying some mornings and some afternoons, and including visits to interesting centres of infant welfare work. An afternoon course consisting of demonstrations on the diagnosis and treatment of the eye will be conducted at the Royal Eye Hospital from February 24th to March 8th. The courses in March relate to: diseases of the chest and nerves; orthopaedics; venereal diseases; medicine, surgery, and gynaecology, and gastro-enterology. Some of these courses continue into April. Copies of all syllabuses and of the *Post-Graduate Medical Journal*, together with information regarding the general course of work at the associated hospitals, may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE spring session of training courses arranged by the Royal Sanitary Institute for examinations for meat and food inspectors, and the associateship of the institute in food hygiene, will commence on Friday, February 21st. Syllabuses of the lectures and examinations are obtainable from the secretary of the Institute, 90, Buckingham Palace Road, S.W.1.

A MEMORIAL to the late Sir William Glyn-Jones was unveiled at the House of the Pharmaceutical Society of Great Britain, Bloomsbury Square, W.C., by Dr. Christopher Addison, M.P., Parliamentary Under-Secretary to the Minister of Agriculture, on February 5th. The memorial takes the form of a bronze bust surmounted by the arms of the society in enamel.

THE Committee for the Study of Medical Hydrology in Great Britain has at its disposal the services of a number of physicians in London and the spas of Great Britain who are *specially qualified to lecture on medical hydrology and spa* treatment. In addition to giving lectures to senior medical students, post-graduate associations, and medical societies, the committee will be glad to arrange for visits of such associations to any of the British spas for lecture-demonstrations. Further particulars may be obtained from the honorary secretary, Dr. Geoffrey Holmes, 11, Ripon Road, Harrogate.

AS will be seen from our advertisement pages, the Council of the Royal Society of Medicine has accepted as a trust the sum of £1,000 presented by Mr. Norman Gamble for the purpose of providing a prize of £50 every fourth year for the best original work in otology carried out by a British subject during the preceding four years. The balance of the fund is to be used for the purpose of awarding grants in aid of research work in otology. Copies of the regulations governing the award can be obtained on application to the secretary of the Royal Society of Medicine, 1, Wimpole Street, W.1, to whom applications for the prize and for grants in aid must be sent not later than September 30th.

THE following course of post-graduate lectures will be given at the Royal Dental Hospital of London, Leicester Square, W.C.: March 5th, Mr. Bowdler Henry—Inter-relationship of mouth and bowel; March 12th, Dr. I. H. Maclean—Rosenow's theory of elective localization; March 19th, Dr. E. W. Fish—A theoretical review of treatment of the dentine: March 26th, Mr. J. G. Turner—Extraction; April 2nd, Dr. F. P. de Caux—Recent advances in the methods of administering N_2O in the surgery of the mouth; April 9th, Dr. F. Talbot—Trigeminal neuralgia as it occurs in the electro-therapeutic department. The lectures will be delivered at 6 p.m. each day; they are open to practitioners and advanced students.

A SECOND tour for medical men to the climatic and hydromineral stations of Spain has been arranged for Easter. The party will leave Barcelona by special motor boat on April 13th, visiting Palma (Majorca), Alicante, Malaga, Seville (in time for the Good Friday procession), and Valencia, returning to Barcelona on April 23rd. There will be an opportunity of seeing the exhibitions at Barcelona and Seville. The price from Barcelona is from 1,000 to 1,600 French francs, according to the cabin occupied. Further information may be had from Dr. Mañeru, Ronda del Conde Duque No. 4, Madrid.

A SERVICE *in memory of the late Dr. Daniel L. Thomas*, medical officer of health for the borough of Stepney for twenty-nine years, was held on February 9th at St. Dunstan's parish church, Stepney. It was attended by the mayor and other municipal representatives.

THE People's League of Health tenth travelling scholarship will be competed for in connexion with the annual series of Sims Woodhead Health Educational Lectures. These lectures will be delivered by leading medical men and scientists at the headquarters of the National Union of Teachers, Hamilton House, Mabledon Place, W.C.1, commencing on March 3rd, for twelve consecutive Mondays, with the exception of Easter Monday (April 21st). At the end of the course, those who have attended nine or more lectures will be entitled to enter for the examination.

IN connexion with the first International Congress of Mental Hygiene in Washington, which will be held in May, a tour of North America has been arranged by the Hamburg-American Line, commencing on April 23rd, when members will meet in Hamburg. Two days later they embark on the ss. *New York*, which on the following day will call at Southampton and Cherbourg. The passenger agents in London for the Hamburg-American Line are Wm. H. Müller and Co., Ltd., 66–68, Haymarket, S.W.1.

DR. MARY THORNE has been appointed a justice of the peace for the county of London.

PROFESSOR LÉON BERNARD has been elected president of the French Council of Public Health.

DR. JULIUS DONATH, professor of nervous diseases at Budapest, has recently celebrated his eightieth birthday, and Professor Otto Lubarsch, who formerly held the chair of pathology in Berlin, his seventieth birthday.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863, and 9864* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SCARRING AFTER EPILATION.

"JUVENTAS" asks for advice in the treatment of a lady who had superfluous hairs removed—on the Continent—with diathermy, and who now has scarring where this has been done.

DANISH TREATMENT OF ITCH.

DR. T. DOUGLAS ROSS (Glasgow) writes: Following Dr. Cannon's direction in his recent article on the Danish treatment of itch (*Journal*, January 25th, p. 148), I find it impossible to dissolve 1 kg. of sublimated sulphur in 1 kg. 50 per cent. KOH completely, so as to give a clear yellow solution. Gentle heat merely blackens the mixture. I should be obliged if he would point a way out of this difficulty.

PRURITUS.

DR. W. H. DAVIES writes: I shall be grateful for any help your readers can give me for treating a case of "generalized pruritus," associated with impotence, in a man aged 43. He has had all the usual local and internal remedies, including gland therapy.

PRECIPITATE EJACULATION.

"N. D." writes: I should be grateful for suggestions as to treatment of a case of premature ejaculation in an otherwise healthy man of 45. He states that though erection and emission occur normally, the whole process is over in a few seconds, and he is therefore unable to satisfy his wife. In all other respects their marriage is a normal, fertile, and happy one, but the condition described is beginning to tell on their nerves. Various organic extracts of testicle, etc., have been tried and found useless. It is possible that Steinach's vaso-ligation might help, but before recommending this I should like the experience of others who have had to deal with such cases.

GLASS PERMEABLE TO ULTRA-VIOLET RAYS.

"FORTY YEARS A SUBSCRIBER" writes: I have been much interested in the articles which have appeared in the *British Medical Journal* about glass permeable to ultra-violet rays, but before adopting it in my new dwelling-house I would be glad to have independent and authentic information on several points which occur to me. What exactly are the virtues claimed for it? Does it really possess these virtues, and does it retain them unimpaired indefinitely, or does it lose them as time goes on? Is it injurious to the eyes or in any other way? Does its use result in fading of curtains, carpets, etc? Would it be desirable to put it in *all* windows of a dwelling-house?

*** We have submitted this query to a correspondent with special experience, who writes as follows:

The sun's radiance gives a very wide spectrum, of which only a very small part is visible; immediately beyond the violet end are radiations having a high actinic power, and commonly known as ultra-violet rays. These are filtered off to a large extent by the atmosphere; they are plentiful in the High Alps, but scarce in the smoky, misty air of many northern towns. Ordinary window glass also excludes them. The benefit to the body metabolism of a reasonable exposure to ultra-violet radiations, whether from a natural or an artificial source, is now known. Vita glass is one of a number of transparent substances that have been devised with a view to getting a form of window glazing that will admit these beneficial rays. There is no doubt that these glasses do achieve this aim; it is true that, after a time, the glasses lose some of their initial virtues, but they retain permanently a high degree of permeability to ultra-violet radiation. Their use does not result in injury to the eyes, any more than does the sunshine out of doors, though some people prefer their spectacle lenses to be impenetrable to ultra-violet rays. In excess, as on the snows of the High Alps, ultra-violet rays are injurious and cause snow blindness. The special glass is more costly—by some 25 per cent.—than ordinary window glass. Its advantage in town will depend on the clearness of the air and its freedom from smoke, and also on *the frequency with which the windows are cleaned*; a film of smoke on the glass speedily reduces its value. There is nothing gained by putting the glass into windows that have no clear skyscape. For those who spend much of their time out-of-doors there is small need for special provision; for invalids who cannot get out of doors the use of a special glass is an advantage. Paintings, curtains, and carpets are likely to be adversely affected, more than they are by exposure to light passing through ordinary glass, but fabric dyes are now greatly improved and are nearly fast.

INCOME TAX.

Temporary Cessation of Foreign Employment.

"E. C." is employed abroad by—we assume—a foreign or colonial concern, and proposes to come to England "for about a year" as from September next. He will receive a gratuity on arrival, and will arrange for the remittance to England from abroad of a sum of £1,000 to cover his expenses. Will he be liable to income tax in this country?

*** We assume that he has not been maintaining a residence in the United Kingdom during his absence. If he intends to return to colonial work it is clear that he will be coming to the United Kingdom "for a temporary purpose only," and therefore will not become a "resident" for income tax purposes unless he spends six months in any particular financial year in this country. Consequently he will not become a resident for the year ending April 5th, 1931 (unless he lands on or before October 5th, 1930), and therefore will not be liable in respect of the payment of £200. The £1,000 represents capital in this country, and would not be taxable, but if he is in the United Kingdom for six months of the year commencing April 6th, 1931, he will become an "occasional resident," and will be liable in respect of any income from investments that may be remitted to him here.

Keep of Assistant.

"L. H. E." inquires what figure is usually taken as a reasonable amount to charge in respect of the keep of an assistant who lives in.

*** Circumstances vary so much, according to locality, domestic conditions, etc., that it is almost impossible to suggest a "usual" figure, but the amount of £1 per week which the inspector of taxes suggests seems abnormally low. We should regard £2 per week as normal, to include bedroom and service, but that suggestion should be taken as only tentative. It is, after all, a question of fact—that is, by how much the food costs have been increased by the assistant, and what is a fair allocation of the general expenses, rent, rates, domestic service, etc.

LETTERS, NOTES, ETC.

LARGE HYDROCELES.

"E. M. L." (London, S.W.) writes: Dr. P. M. Shepherd's patient's double hydrocele of an aggregate of 101 oz. (February 8th, p. 263) was a respectable swelling, but I believe that the record for a single hydrocele is still held by the six quarts of Edward Gibbon the historian, which must have been very disfiguring in those days of tight breeches. Gibbon himself seems to have had doubts as to this, for he wrote to Lord Sheffield: "Have you never observed, through my *incrpressibles*, a large prominency, which, as it was not at all painful and very little troublesome, I had strangely neglected for many years?" Even if the six quarts were of only 32 oz. each, instead of the 40 oz. of imperial measure, the total of 192 oz. overtops the Nigerian's 61.

THE ACCOUCHEUR'S NAIL BRUSH.

DR. R. MACKINNON (Oldham) writes: In view of the correspondence about maternal mortality from sepsis, I wonder how many cases could be traced to the nail brush which is part of the equipment of every midwifery bag. It is impossible to get it efficiently sterilized, and is at any time a danger to patient and operator alike.

A WARNING.

DR. A. NELL, who was in this country for some months last year and attended the Manchester meeting as representative of the Ceylon Branch, writes: After my return to Kandy I have learnt that some-one calls on, or writes to, people in England pretending to be me. This is to warn my fellow practitioners.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 55.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

156. Chronic Idiopathic Secondary Anaemias.

C. H. WATKINS (*Journ. Amer. Med. Assoc.*, November 2nd, 1929, p. 1365) classifies chronic idiopathic anaemias into four morphological types. The first type occurs in young women or girls, and shows a moderately reduced haemoglobin percentage, a slightly reduced red cell count, and a lowered colour index of 0.5 to 0.6; the red cells have marked "anachromasia," a piling up of the haemoglobin in a narrow peripheral ring, leaving a colourless central area; the leucocytes are normal. This is known as the chlorotic type, and is treated with iron and improved hygienic conditions. In the second type there is a proportional reduction of the haemoglobin and red cells, so that the colour index remains about 1; the red cells show only slight anachromasia and anisocytosis; there is slight leucopenia with relative lymphocytosis, and the neutrophils are decreased in size but show increased lobulation of the nucleus; the blood picture is described as "aged," suggesting some dysfunction of the bone marrow. This is known as the semi-aplastic type, and is treated by transfusion of whole blood, extract of bone marrow, and a diet rich in iron. The third type appears as an insidious anaemia occurring in women aged 50 to 60, which may be associated with achlorhydria; the red cell count is normal or increased, but the cells are markedly hypochromasic or pale, the haemoglobin being reduced to 45 per cent.; reticulocytes are increased, and the leucocytes are normal in count and in appearance. Here the dysfunction is the synthesis of haemoglobin; treatment with a powder made from foetal calf liver, in doses corresponding to 300 grams of raw calf liver daily, has given good results. The fourth type occurs in young persons with a family history of pernicious anaemia; there is slight lowering of the haemoglobin percentage and the red cell count, with a colour index under 1; the increased lobulation of the nuclei of the neutrophil leucocytes resembles that met with in pernicious anaemia. These cases react quickly to raw liver or liver extracts.

157. Haemochromatosis.

F. C. WOOD and T. FITZ-HUGH, jun. (*Arch. Int. Med.*, December, 1929, p. 882) report a case of haemochromatosis in a metal worker. Clinical and laboratory studies were undertaken in order to ascertain the relationship, if any, between copper poisoning and haemochromatosis, the value of insulin in controlling carbohydrate disturbances in a progressive pancreatic disease complicated by hepatic disorder, and the effect upon other endocrine glands. A man, aged 48, had suffered for two years from attacks of epigastric pain three hours after meals; they were relieved by food and the administration of sodium bicarbonate, but for a year he had noticed a progressive dark coloration of his hands, forearms, and face. Two months before admission to hospital he began to lose weight, and diabetes mellitus developed, with blurring of vision, dyspnoea and palpitation on exertion, loss of libido, and numbness and tingling of the finger-tips. He had worked for twenty years mainly with steel and brass and rarely with copper, the dust from grinding impregnating his clothes. There was no history of venereal disease or intemperance. The diagnosis of haemochromatosis was based upon the classical picture of a man in middle life with hepatic cirrhosis, diabetes, and pigmentation. The course of the disease tended steadily downwards, a high blood sugar figure persisting in spite of large doses of insulin; there was recurrent ascites with progressive emaciation and diarrhoea. The urine contained sugar throughout; the urobilin reaction was strongly positive and there was a trace of bilirubin at times. A biopsy of the skin and a lymph gland showed haemosiderin in considerable amounts, but no copper was demonstrable. The patient died in coma from peritonitis. The post-mortem examination showed hepatic cirrhosis and marked haemosiderin pigmentation of the liver and pancreas; a considerable amount of haemosiderin deposit was found in the heart muscle, and especially in the retroperitoneal lymph glands in the neighbourhood of the liver and pancreas. The icterus index tests failed, owing to discoloration of the serum from haemolysis; this, the authors suggest, may point to some underlying factor not yet understood, and deserving further investigation. From this case and a review of the literature they conclude that chronic copper poisoning has not yet been proved to be a causative factor in this morbid condition.

158. Typhoid Fever due to a Surface Well.

E. G. MORALES (*Amer. Journ. Pub. Health*, September, 1929, p. 937) describes an epidemic of 42 cases of typhoid fever following a hurricane in September, 1928, in a semi-rural village in Porto Rico. The suddenness of the outbreak, together with the high incidence rate among the population in the village, immediately suggested a vehicle in use by a large proportion of the inhabitants as the chief causal factor. Water from the public supply was eliminated. The suspicion that water from a surface well used by about one-half the persons in the village was responsible was confirmed by epidemiological investigation. Although the persons who used water from the well formed only 51 per cent. of the population of the village, this group contributed 92 per cent. of the cases, and infection in two out of only three cases who did not use this water supply was attributable to contact with previous cases.

159. Eruptions in Meningococcal Septicaemia.

R. PITOU (*Thèse de Paris*, 1929, p. 6243), who records four illustrative cases, three of which were in soldiers and one in a soldier's son aged 4, states that meningococcal septicaemias are frequently accompanied by eruptions which may affect the skin and mucous membranes. The skin eruptions may be of three kinds: (1) erythema, which may be papulonodular, morbilliform, scarlatiniform, or lenticular rose spots; (2) vesicular, which may be herpetiform, varicelloid, or purpuric with secondary vesicle formation; and (3) due to vascular lesions giving rise to purpura. These meningococcal eruptions, which are due to the vascular and perivascular localization of the meningococcus, may accompany or precede cerebro-spinal meningitis. Pitou remarks that eruptions unaccompanied by cerebro-spinal meningitis are very important, since early treatment by the intraspinal and intramuscular injection of antimeningococcal serum may prevent its occurrence.

160. Prophylaxis of Measles in Scarlet Fever and Diphtheria Patients.

A. LICHTENSTEIN (*Acta Paediatrica*, September 30th, 1929, p. 77) has found that the ordinary doses of convalescent measles serum (2–3 c.cm.) which were successful in the case of healthy children completely failed to protect children who were suffering from scarlet fever or diphtheria. In the case of scarlet fever five to ten times the ordinary dose (15–30 c.cm.) was required, while in the case of diphtheria the dose had to be three to six times higher than usual.

Surgery.

161. Thrombosis of Superior Mesenteric Vein.

J. WULSTEN (*Zentralbl. f. Chir.*, December 14th, 1929, p. 3155), who records an illustrative case, states that a study of the literature since 1860 shows that, owing to the severity of the disease, recovery from mesenteric thrombosis after operation is very rare, only one example, published by Doerfler in 1923, having hitherto been recorded of recovery after total resection of the small intestine. Reich in 1913 collected 250 cases of mesenteric thrombosis which had been published since 1890. Of 214 cases, 100 (47 per cent.) were caused by arterial occlusion, and 114 (53 per cent.) by venous occlusion. Arterio-sclerosis was almost always the primary disease. Autochthonous occlusion was rarer than embolic. The causes alleged were cirrhosis of the liver, alcoholism, and obesity. Thrombophlebitis of the lower extremities was frequently present. The intestinal lesion was usually a haemorrhagic, and less frequently an anaemic, infarct. In venous occlusion more sero-haemorrhagic exudation is found in the abdomen than in the case of arterial occlusion. Most of the infarcts (199 cases) have been found in the superior mesenteric vessels, as compared with only 9 in the inferior. In 10 cases both superior and inferior mesenteric vessels were occluded. All the cases of venous thrombosis were aseptic. Of 91 patients operated on in Reich's series 75 died, including 43 in whom peritonitis was already present or developed subsequently. During the last sixteen years cases of mesenteric thrombosis have been recorded by W. Wolff (1919), Brütt (4 cases in 1922), Doerfler (1923), Bruns (1924), Klein (24 cases in 1926), and Petermann (1926). Wulsten's patient was a man aged 64, the subject of alcoholism and varicose veins, in whom the diagnosis of

mesenteric thrombosis was made before operation; eleven feet of the small intestine which showed typical haemorrhagic infarction were resected. The superior mesenteric vein and its finest branches were found to be completely thrombosed. Recovery ensued.

162. Fractures of the Pelvis.

S. W. BOORSTEIN (*Amer. Journ. of Surg.*, November, 1929, p. 633) points out that with the increase in the number of automobile and industrial accidents there is also an increase in cases of fractures of the pelvis. The fracture is almost always caused by great violence, falls from heights, or crushing between two moving objects, the motor car being the most frequent offender. Injuries of the pelvic ring comprise the following types: fracture of the rami of the pubis, multiple fractures of the pelvic ring, separation of the symphysis pubis, and dislocation of the sacro-iliac joint. The commonest type of fracture is that of the rami of the pubis. The diagnosis is comparatively easy if the irregular bones of the pelvis and ileum are examined both inside and outside. The two ilia should be pressed together to detect crepitus, rectal and vaginal examinations should also be included, and *x*-ray investigation will indicate the exact position of the fracture. The chief complications are rupture of the bladder, urethra, or bowel, and occasionally rupture of the kidney. The prognosis is good, union occurring in from eight to ten weeks. The patient can be up in six weeks, and complete recovery is attained in about three months, though men who have to do heavy work should not resume their occupation for six months. Treatment consists in placing the patient on a Bradford frame, which with strapping of the pelvis is all that is necessary in the majority of cases; manipulative reduction is considered unsafe and should not be attempted.

163. R. COLP and R. T. FINDLAY (*Surg., Gynecol. and Obstet.*, December, 1929, p. 847) state that, in this industrial and mechanical age, fractures are not unusual occurrences, and the incidence of certain fractures—for example, those of the pelvis—has increased materially. A series of 35 cases of pelvic fractures is reviewed, the group including not only fractures of the os innominatum, but also traumatic separations of the symphysis pubis and the sacro-iliac synchondroses. As would be expected, more than half of the patients were between the third and fourth decades, the period of greatest physical vigour. The nature of the trauma producing the injury may be one of three varieties: injury by falling, crushing, or collision. The diagnosis of fracture of the pelvis rarely presents difficulty. A fracture of the pelvis was, in the authors' series, invariably accompanied by other fractures, and, in addition to these, by other injuries; most of these complications were caused by the initial trauma. The chief symptom is pain, which is referred to various regions; other symptoms are tenderness, swelling, subcutaneous haemorrhage, haematuria when the bladder is injured, and shock. In many instances certain abdominal symptoms were present, due probably to reflex spasm incident to pelvic fractures. Crepitus is an unusual physical sign in this type of fracture. The treatment of these cases resolves itself into treatment of the fracture and complications. Rest in bed is most important, and in the majority of the cases was the only treatment given. Patients were kept in bed for an average of thirty days, and were allowed up only gradually, the length of time after injury that they were allowed to walk averaging thirty-eight days. Six patients, all with definitely complicated conditions, died, and the fractures of the pelves played only a small part in the causation of death. In the remaining cases the most prominent late symptom was pain. Physical examination revealed only slight deformity and bulging of the pelvis on one side, slight tenderness at the site of the fracture, and in only one case, a fracture of the acetabulum, was shortening present. The authors emphasize the simplicity of the treatment; operations were performed only when complicating injuries to soft parts required them.

164. Surgical Significance of Non-suppurative Encephalitis.

F. BREUER (*Deut. Zeit. f. Chir.*, December, 1929, p. 303), who records numerous examples, maintains that in a number of cases described as encephalitis surgical treatment may be of benefit, and that in many post-traumatic changes in the brain, where the inflammatory character is not very obvious, inflammation really does play an important part in the etiology of the condition. Epileptiform attacks following encephalitis have long proved to be suitable cases for surgical treatment, especially in the case of the residues of encephalitis in children. In one of such cases in which surgical treatment has consisted in excision or drainage the condition has been one of scar formation in the arachnoid or in the actual brain substance, or of cyst formation.

Therapeutics.

165. Cardio-vascular Treatment in Pneumonia.

J. BRODIE (*Canadian Med. Assoc. Journ.*, November, 1929 p. 541) states that it is generally agreed that failure of some part of the circulatory system is an important factor, often leading to a fatal outcome, in many cases of pneumonia. The mechanism of the failure of the circulation is not well understood, since pneumonia produces no definite anatomical changes in the heart, as do some other infectious fevers. But there are certain factors in this disease that must throw an extra burden on the heart; among these are impairment of the pulmonary circulation, disturbance of respiratory function which causes anoxaemia, and toxaemia. The strain on the right heart resulting from impairment of the pulmonary circulation, the widespread pernicious effects of anoxaemia on the whole cardio-vascular system, and the weakening of the peripheral circulation caused by the toxaemia, not to mention other factors, all affect the circulatory apparatus in so many vital points that it often becomes exhausted, and finally breaks down. In treating pneumonia complete physical and mental rest is of supreme importance, and to obtain this the administration of an opiate or morphine is often wise when signs of excessive secretion in the air passages are absent. Opiates should be replaced by milder sedatives after the fourth day of the disease. Digitalis may be given as a routine measure in all cases of pneumonia. In order to avoid over-digitalization, 40 to 60 minims of the tincture, or a corresponding dose of the powdered leaf, should be given daily until the fifth day, when the amount is reduced to 30 minims daily, watch being kept for the usual toxic effects of the drug. The effective administration of oxygen in adequate dosage is supportive, and tends to prolong life until the mechanism of immunity is able to accomplish recovery. Six of the so-called cardiac stimulants are discussed. Alcohol is only a sedative, and may be of value as such; the administration of large, repeated doses may do harm by hampering the production of immunity. Strychnine is unsatisfactory, both as a cardiac and as a respiratory stimulant. Adrenaline is useful when the blood pressure falls and the heart sounds grow feeble; its use needs caution, and small repeated doses are safer than a single large one. Pituitrin is also useful, but less so than adrenaline. The efficacy of caffeine is doubtful. There is no proof that camphor acts on the heart muscle, although it appears to exert some reflex influence on the medullary centres.

166. Treatment of Chronic Rheumatism.

A. GOVAERTS (*Bruxelles-Méd.*, November 24th, 1929, p. 89) claims to have had good results in chronic rheumatism from the intramuscular injection of iodine (3 per cent.) and salol (20 per cent.) in olive oil; 5 c.cm. of this mixture is injected into the gluteal region every second day. The number of injections necessary varies with the case; as a rule no change occurs until six or seven injections have been given. The author's cases were mostly muscular rheumatism or sciatica. Of 229 cases so treated complete and permanent amelioration followed in 60 per cent.; slight but persistent improvement in 10 per cent.; temporary benefit in 25 per cent.; and no good result in 5 per cent.

167. The Salt-free Diet in Tuberculosis.

G. APITZ (*Deut. med. Woch.*, November 15th, 1929, p. 1918) remarks that although a salt-free diet has been tried in several sanatoriums the results have been disappointing. Careful study of the reports of 53 children with surgical and pulmonary forms of tuberculosis who were so treated revealed that a salt-free diet had a definite influence on tuberculosis of the skin, but in all other cases the results were no better than those obtained from ordinary sanatorium treatment. Among 48 children suffering from pulmonary tuberculosis and treated by a salt-free diet, 29 were open cases, and of these 19 died, 4 are still under treatment, while the remaining 6 children were discharged "improved." The other 19 early cases of pulmonary tuberculosis were apparently non-infective and were discharged as definitely improved, but Apitz adds that since these latter patients were early cases, under ordinary sanatorium treatment, the improvement cannot be attributed to the salt-free diet. In all cases there was at first a rapid increase in weight. The course of the disease and the physical signs (confirmed by skiagrams) fluctuated as in other children who were taking ordinary diet. The combined experience of several sanatoriums shows that the final results were no better among patients on a salt-free diet than among those on an ordinary diet. Apitz observes that Sauerbruch's original article advocating this diet was based on a single case of tuberculosis, and he concludes that not only is it valueless as a method of treatment, but that it has been actually harmful when employed to the exclusion of older, well-tried methods.

Disease in Childhood.

168. Reduction of Infantile Mortality in Crèches.

D. LONGPRÉ (*Canadian Med. Assoc. Journ.*, October, 1929, p. 405) deplores the use of the loose term "crèche disease," commonly denoting a series of maladies frequent in crèches but also found in ordinary homes, the infections being particularly fatal. He asserts that the unfavourable statistics of such institutions in comparison with those of children's hospitals are attributable mainly to the unavoidable spread of infectious diseases in a large community, and to the large proportion of cases of prematurity. Of the most important diseases contributing to the crèche mortality, Longpré states that the definitely infective forms of diarrhoea are completely preventable by proper precautions; cholera infantum has been virtually banished, while diarrhoea due to over- or under-nutrition has become much more tractable since the advent of a better understanding of the principles of artificial feeding. Stress is laid on the frequency with which diarrhoea is symptomatic of septic infection, and particularly of unsuspected middle-ear infections. Diphtheria now causes fewer deaths than formerly, active immunization by toxin-antitoxin mixture, and subsequently antitoxin alone, having done much to reduce its incidence, not only in its usual form, but also in its masked form of diphtherial middle-ear infection and chronic rhino-pharyngitis. Measles and whooping-cough are still frequently fatal, through the pneumonias secondarily produced; the special danger attendant on the difficulty of recognizing the latter in its earliest stages emphasizes the necessity of isolating every suspicious case completely from the start. Scarlet fever has been much less frequently found since the commencement of immunization with streptococcal antitoxin. Chicken-pox, elsewhere often a trivial complaint, often proves fatal in crèches where many debilitated children are brought together, on account of the development of pyodermia; sufficiently rigorous isolation of the attendants as well as the patients in this, as in the other infectious diseases, is the only solution of the mortality problem. The common cold has its train of respiratory complications, and until a sufficiently large staff renders it possible to exclude from attendance on the children every person suffering from this complaint this cause of mortality will remain active. Another disease especially common in crèches is gonococcal vulvitis; this is always endemic, and a special danger to debilitated infants. The treatment of rickets and tetany has improved greatly in recent years, ultra-violet light being a useful adjunct to dietetic measures.

169. Pulmonary Embolism in Childhood.

ACCORDING to J. M. SMELLIE (*Arch. of Dis. in Childhood*, October, 1929, p. 328) pulmonary embolism in childhood is extremely rare; he reports a case which presents several unusual features. A boy, aged 9, who had always appeared to be healthy, died after an acute illness of only about nine hours' duration. The chief symptoms were shivering and cold, vomiting, and a yellowish discharge from the mouth and nostrils. At the necropsy a large, firm, ante-mortem clot of opaque, greyish-white colour was found firmly adherent only to the right auricular appendage, whence it extended through the right auricle, through the tricuspid valve, through the right ventricle and pulmonary valve into the pulmonary artery, finally terminating in each pulmonary artery just distal to the bifurcation. The thrombus lay entirely free in the artery; the terminal portion in the right artery had become dislodged, and formed an infarct in the lower lobe of the right lung. Many subepicardial petechial haemorrhages were found over the anterior and posterior aspects of the heart, but endocarditis was not present. Smellie remarks that the most important causes of thrombosis are changes in the composition of the blood and in the vessel walls, and mechanical factors causing a disturbance of the circulation. The last-named, though frequently met with (the cardiac thromboses in auricular fibrillation and myocardial failure), are most rare in children. Changes in the endocardium must therefore take first place, and these can only result from inflammation, and the necropsy findings in Smellie's case showed that the epicardium was the seat of a very early acute inflammation, just beginning to involve the myocardium. The most frequent cause of acute cardiac infection in childhood is acute rheumatism, and this infection may be more virulent and rapidly fatal than is generally recognized. Blumer has stated that all forms of thrombosis are exceedingly rare in rheumatic fever, and that cardiac thrombosis, except the form occurring with a complicating endocarditis and arterial thrombosis, is almost unknown. Smellie considers, however, that the infecting cause in the present case was the *Streptococcus rheumaticus*, though this cannot be definitely established, since no histological examinations were made.

170. Non-tuberculous Pneumothorax in Infants.

P. LEREBOULLET, M. LELONG, and R. EVEN (*Le Nourrisson*, September, 1929, p. 257) report two cases of this condition. A female infant had general convulsions and pneumonia at the age of 13 months; three months later she developed a sudden temperature of 103°F., with dyspnoea, rapid and shallow respiration, pallor, and cyanosis. The left lung was normal. The right lung gave no signs of dullness on percussion, but at the angle of the scapula a distant murmur was heard which was metallic in character; there were no rales. Twenty-four hours later there was tympanitic resonance of the right lung posteriorly, with amphoro-metallic breath sounds; anteriorly there was a tympanitic resonance, but no respiratory murmur. The left lung appeared normal posteriorly, but anteriorly there was tympanism with amphoro-metallic breath sounds which were much louder than on the right side and suggested a left pneumothorax. No rales were heard in either lung. Radiographic examination revealed the existence of a total right pneumothorax. The clinical signs disappeared in a few days, but it was fourteen weeks before the *x*-ray picture was normal. The cutaneous tuberculin reaction was negative throughout. In the second case *x*-ray examination of a male infant, 9 months old, who had a persistent cough, showed a total right pneumothorax, but there were no clinical signs; three months later the lung had almost recovered. Clinically the authors recognize two types, as evidenced in their cases—the acute and the latent, the latter being perhaps the more common. At this age period (under 2 years) the condition is less rare than a tuberculous pneumothorax. Pneumonia, broncho-pneumonia, pulmonary abscess, and whooping-cough were responsible for 32 of the 45 cases collected by the authors. Prognosis depends on the cause. If the pneumothorax remains dry, progressive recovery is the rule. The immediate treatment varies according to the symptoms. Oxygen is indicated if dyspnoea is marked, and puncture of the pleura if the pneumothorax is valvular, with cardiac tonics, such as adrenaline and camphor. Later treatment should be directed towards the cause and complications. A pyopneumothorax calls for surgical intervention, but the condition is nearly always fatal.

171. Egg Diet for Infants.

W. STOELTZNER (*Deut. med. Woch.*, January 3rd, 1930, p. 4) has considered the nourishment requirements of newborn children, especially those born prematurely and not ready for mother's milk, those who are unable to get mother's milk, and those with whom the mother's milk disagrees or is insufficient. Cow's milk contains nourishment suitable for a later developmental stage than human milk, and in view of the more rapid growth of the calf it is relatively poor in carbohydrates. The newly hatched chick is yet more developed than the newborn calf or newborn child, and the hen's egg contains nourishment suitable for the combined periods of both foetal life and breast-fed life. In view of these facts Stoeltzner comments on the method of the Finnish author Ylppö, and has devised a soup, composed of cow's milk, mondamin, "kinderzucker," and water, to a litre of which is added one fresh egg, the whole being then well stirred and passed through a sieve. This soup contains 2 per cent. protein, about 2½ per cent. fat, and 9 per cent. carbohydrate; it is found to give most satisfactory results in the three classes of infants referred to.

Obstetrics and Gynaecology.

172. Malignant Neoplasm in the Vaginal Scar after Total Hysterectomy.

ACCORDING to LAROYENNE and J. MARION (*Lyon Méd.*, November 24th, 1929, p. 617) the development of a malignant neoplasm in the cervical stump after subtotal hysterectomy is much more frequent than in the vaginal vault after panhysterectomy. The case is recorded of a woman, aged 52, who six years after abdominal total hysterectomy for myoma of the uterus complained of vaginal bleeding, and was found to have a projecting non-friable tumour in the roof of the vagina. It was removed by the abdominal route, and the patient, in spite of the appearance of a ureteric fistula, followed by pyonephrosis and nephrectomy, recovered. Microscopically the tumour was found to be a myoma with malignant metaplasia; eighteen months later there was clinical evidence that a secondary growth was present. No microscopical examination of the tumour removed at the first operation was carried out. Lucène has reported a case of malignant tumour appearing in the vaginal vault eleven years after total hysterectomy for adnexal inflammatory disease.

173. Treatment of Uterine Prolapse.

L. E. PHANEUF (*New England Journ. of Med.*, October 31st, 1929, p. 875) discusses various vaginal operations for uterine prolapse, and refers specially to the Watkins-Schauta-Wertheim interposition operation, which he has modified in certain details, employing it for patients whose uteri are normal or hypertrophied and where no pre-cancerous condition of the uterus is suspected. All interposition operations should be preceded by curetting and high amputation of the cervix if laceration, erosion, ectropion, or hypertrophy is present. The technique of the interposition operation is fully described. All patients were examined at the time of their discharge from hospital and again six weeks after the operation. Out of 148 cases 7 recurrences had been reported; five of these were classed as total failures, recurrence being due to the fact that the uteri were too atrophied for the operation to be beneficial. One failure was due to the too early absorption of the upper suture attaching the fundus to the upper angle of the vaginal denudation. These failures were permanently corrected by effecting a fixation of the interposed uterus to the anterior abdominal wall, using three linen sutures in each case. The mortality of the interposition operation was 2.7 per cent., but each of these cases had several operations. The author treats procidentia in young women during the child-bearing period by repairing the cervix, the anterior vaginal wall, and the perineum, shortening the utero-sacral ligaments, and performing a round ligament suspension of the uterus. In old women, where even an extensive vaginal operation is contraindicated, either a subtotal colpectomy (Le Fort operation) or the total colpectomy (Dujarier and Larget) is used. These operations ensure the minimum amount of post-operative shock and are followed by a comfortable convalescence.

174. Ventro-fixation and Ventro-suspension.

H. S. KENRICK (*New Zealand Med. Journ.*, October, 1929, p. 288) opposes the general employment of ventro-fixation and ventro-suspension, and considers that the particular advantages of these procedures are limited. Ventro-fixation should only be performed after the child-bearing age, with the exception of a few special conditions. If the uterus is small and atrophic it cannot be pulled up sufficiently high to perform a fixation, and, should this be attempted, the uterus will be fixed too low down on the abdominal wall, with consequent embarrassment of the bladder function. Ventro-fixation is also contraindicated in cases of extreme obesity. The objections to ventro-suspension are that the union may be drawn into such a long ligament that the displacement returns, and, secondly, the intestine may become twisted round the narrow band. In all ordinary cases of simple retroversion the author considers the operation of choice is the retroperitoneal modification of Gilliam's shortening of the round ligaments. If, however, all the details of technique of the ventro-fixation are carefully carried out on selected cases good results should be obtained.

175. Uterine Developmental Abnormalities.

THE occurrence of double uterus, due to variations in the fusion of the Müllerian ducts, is probably more frequent than is generally suspected, and its frequency and importance may be underestimated. J. F. PUDDICOMBE (*Surg., Gynecol. and Obstet.*, December, 1929, p. 799) gives a partial review of the literature on this subject, together with a report of 19 cases. Falls believes that 1 per cent. of all uteri are bicornuate, and another writer estimates that 14 per cent. of all uterine anomalies are of this type. The distal ends of the Müllerian ducts, being in apposition in the genital cord and flanked by the mesonephric ducts, which exert pressure in a medial direction, fuse at the 20 to 30 mm. stage of the embryo and result in the unpaired "anlage" of the uterus and vagina. The remaining parts of the ducts lying at the cephalic end of the genital core persist in pairs and become the uterine tubes. During the twelfth to the fourteenth week of embryonic life the formerly approximated medial walls disappear and fusion is completed. Canalization takes place from below upwards, thus forming the potential cavities of the vagina and uterus, the process being completed between the twentieth and twenty-fourth weeks. Theories as to the cause of uterine duplication are varied, the most acceptable being that of Ancel and Villemin. Finding 25 cases with a vesico-rectal fold, and noting that these occurred only in females and were always accompanied by uterine duplication, they stated that this fold is vascular in origin, the segment from the upper rectum to the bladder being produced by a branch of the superior haemorrhoidal artery, the remaining portion, which extends to the sigmoid, being formed by a collateral branch of that vessel. Puddicombe believes that the etiology of bicornuate uterus probably lies in some mechanical obstruction preventing complete union of the paired ducts of Müller, and that such a uterus is liable to the same conditions as a single one more frequently than to its unique tendency to dysfunction. The author adds that in obstetrics the possibility of the presence of a dual organ and its potential dangers must be remembered if labour is extremely slow; if the foetal heart is irregular and rapid before labour begins; in all malpositions; and particularly in primiparae, and when there is a history of repeated abortions before the fourth month. Superfoetation may be due to a bicornuate, septate, or didelphys (complete doubling both externally and internally) uterus.

Pathology.

176. Laboratory Tests of B.C.G.

P. MAURIAC and E. AUBERTIN (*Journ. Path. Méd. de Bordeaux et du Sud-Ouest*, November 30th, 1929, p. 919) believe that the evidence of the innocuity of B.C.G. is almost irrefutable. They have experimented on a large number of laboratory animals to which various poisonous substances, such as phosphorus, thyroxine, uranium nitrate, and alcohol, had been administered for the purpose of lowering their vitality. Some animals also had had their pancreas removed to produce diabetes. None of these pathological states appeared to influence the virulence of B.C.G. A sufficient inoculation of the vaccine caused in these animals, as in healthy controls, local reactions (caseous nodules and adenitis) varying in severity with the dose employed, but without evidence of tuberculous lesion. In surviving animals the local lesion disappeared, with or without ulceration, as in normal animals. When the animals died others were inoculated with material from their local lesions, but the virulence of B.C.G. was not augmented, and it generally disappeared after the third, fourth, or fifth passage. The authors found that diabetes and intoxication with thyroxine or alcohol were not influenced by concomitant injection with B.C.G. Conversely, it appeared to aggravate the renal and hepatic degenerations produced by uranium and phosphorus. The authors recommend that B.C.G. should not be administered to a human patient who has a renal lesion; they believe that it is a strain of tubercle bacilli definitely and hereditarily attenuated, not only harmless *per se*, but unable (with the single exception mentioned) to influence independent pathological processes. They discuss at some length the few alleged cases of deaths following inoculation with B.C.G. that have been brought to their notice. While admitting that a period of even five years is too short to prove that there is no latent infection, they believe that the preliminary experiments have shown that the employment of this treatment should not be postponed indefinitely. They conclude, for their own part, that at the present time practitioners can and should practise with confidence preventive inoculation with B.C.G., at any rate in all cases where it appears difficult to avoid danger of tuberculous infection.

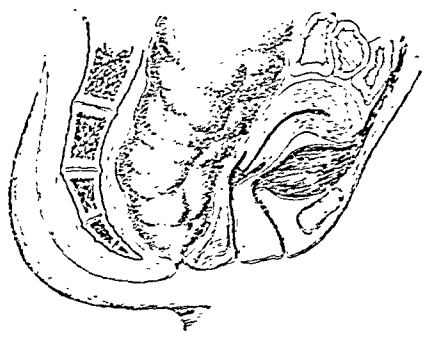
177. Spontaneous Tuberculosis in Guinea-pigs.

ACCORDING to H. A. REISMAN and ADELAIDE B. BAYLIS (*Journ. Lab. and Clin. Med.*, December, 1929, p. 205), the use, universally adopted, of guinea-pigs for the inoculation diagnosis of tuberculosis may lead to diagnostic errors, as it is possible that a pre-existing tuberculous infection may be present in the animals. Sewal found spontaneous tuberculosis in a notable number of laboratory guinea-pigs which had never been intentionally inoculated with tuberculosis; and Cooper and Petroff have demonstrated the presence of tubercle bacilli in the lymph nodes of 33 per cent. of normal guinea-pigs. The present authors record a series of experiments which they made along these lines on guinea-pigs, the results of which lead to the conclusion that tuberculosis may be present in apparently normal guinea-pigs, and that these animals may have a pre-existing tuberculous focus similar to that induced by inoculation; an intracutaneous tuberculin test will, however, reveal the presence of a tuberculous lesion. The authors point out the importance of this contingency in relation to the various laboratory investigations for detecting tuberculosis in human beings, and they advise that guinea-pigs of uncertain history should be tested with tuberculin before being employed for such purposes.

178. The Spinal Fluid in Poliomyelitis.

G. DE SIMONE (*La Clinica Pediatrica*, November, 1929, p. 1038) records eight cases of poliomyelitis in children aged from 6 months to 4 years in whom the meningeal reaction in the cerebro-spinal fluid was constant and in some instances well marked. The cytological reaction, when it was pronounced at the onset, subsequently showed a progressive decrease, but the globulin increase persisted for a considerable time. In some instances the meningeal reaction in the spinal fluid was accompanied by clinical symptoms of meningitis.

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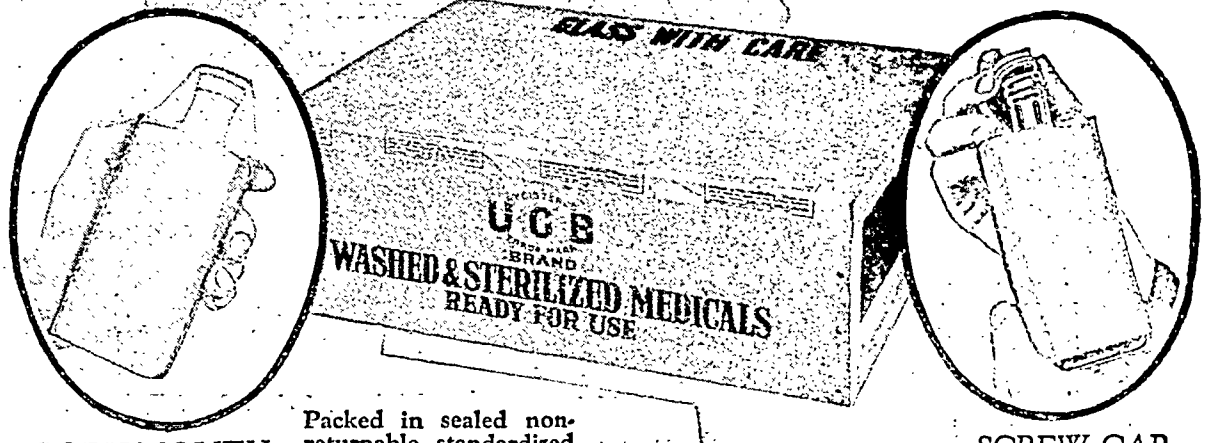
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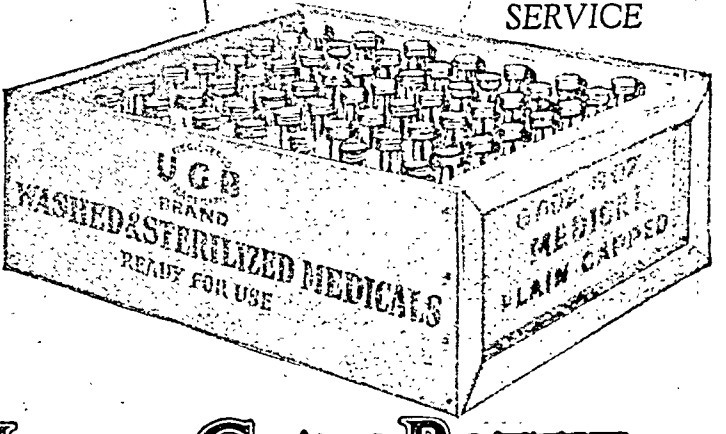
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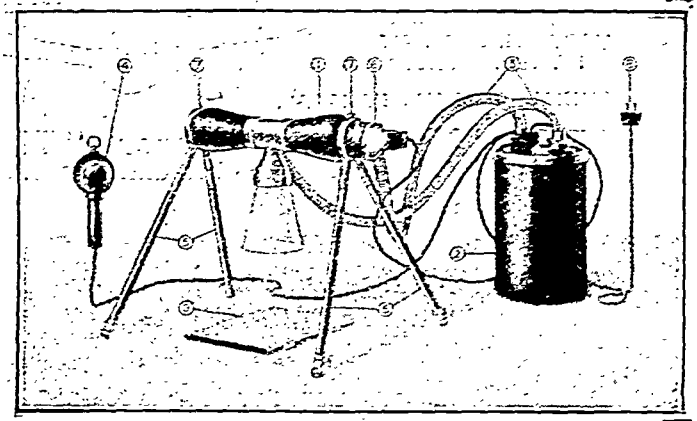
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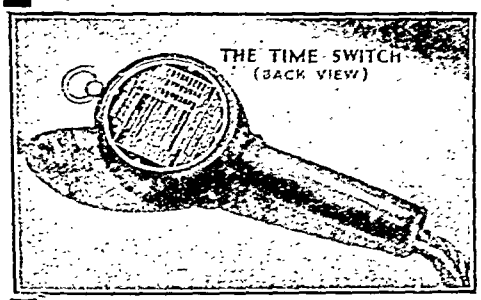


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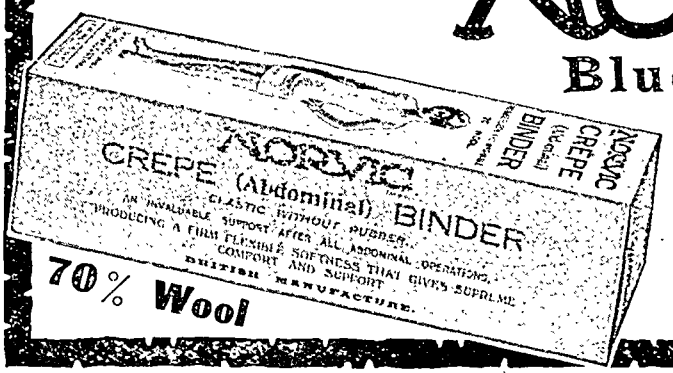
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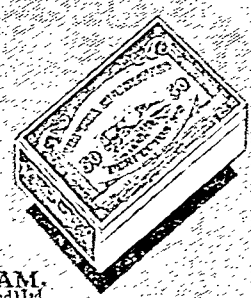
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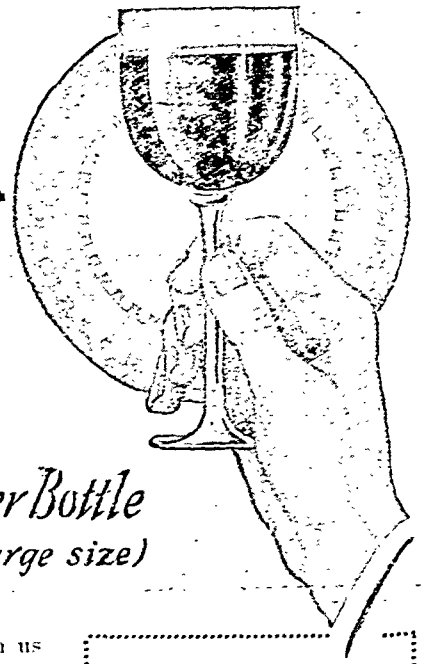


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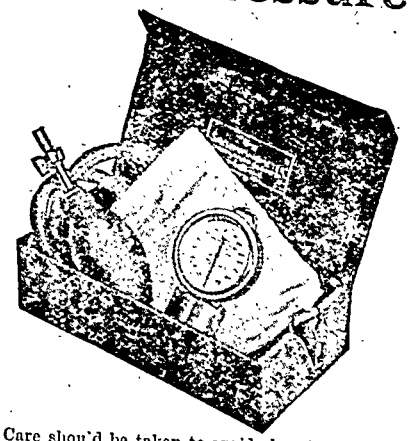
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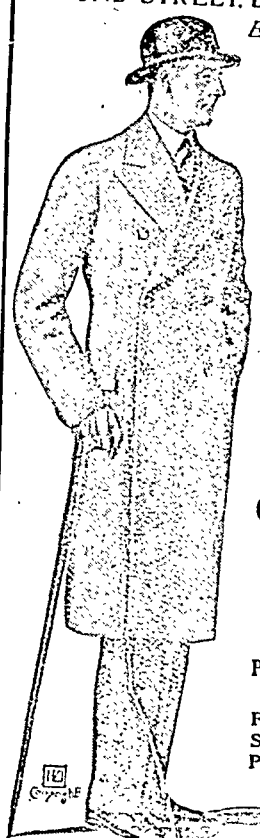
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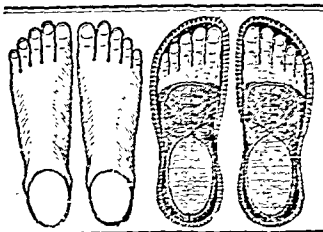
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For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

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FOR MENTAL DISORDERS,

NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

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Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

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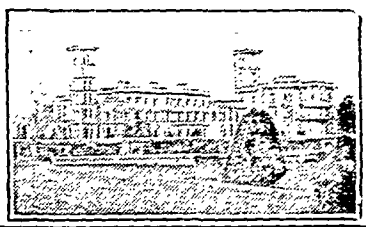
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A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
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For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

ALCOHOLISM, DRUG HABIT, AND NEURASTHENIA.

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A small comfortable Home charmingly situated in secluded gardens overlooking Torbay. Ladies and Gentlemen treated with a view to a rapid and permanent cure by modern methods, which give excellent results. Ample amusement, billiards, wireless, golf, tennis, etc. Good train service (3½ hours London). Moderate inclusive terms. Prospectus, report, etc., from—Stanford Park, M.B., CH.B., Res. Med. Supt., Bay Mount, Paignton.



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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—
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Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.
For particulars as to terms, etc., apply to—
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Telephone: No. 7 Barnwood.

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Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

THE GRANGE,

near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

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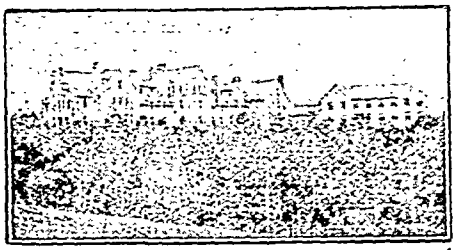
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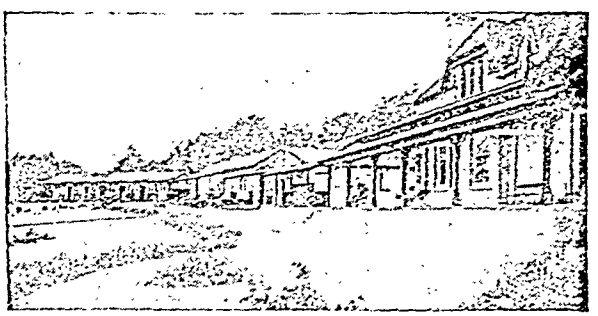
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Full day and night Nursing Staff.

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Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium *specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level.* Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis. Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras.

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Established 1900 *for the treatment of Tuberculosis. Miles of carefully graduated* walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, *etc.* X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4½ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

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Famous for Brine Baths, the Ideal Winter Tonic, and treatment for Rheumatism. Mixed Bathing. Stay at Raven or Park Hotel, adjoining Baths. *Brochure on request.*	RAVEN HOTEL PARK HOTEL RAVEN HOTEL PARK HOTEL RAVEN HOTEL PARK HOTEL

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEBLE. *Telephone*: 2708

Lady, delicate, neurasthenic, seeks PERMANENT HOME with experienced Medical Psychologist. £5 5s. a week. References. Particulars necessary. — Write, CHRISTIE, Cassel Hospital, Shaylands, Penshurst, Kent.

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Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.

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Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course. Prospectus from Manager. 'Phone: Peebles 2.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

Telegrams: "SMEDLEY'S, MATLOCK." 'Phone: No. 17.
For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

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Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
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High Frequency. Electric Lift.
Prospectus from Secretary. *Tele.* 341.
Resident Physician: W. JOHNSON SMYTH, M.D.

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Private Establishment for CHILDREN and YOUNG PEOPLE, delicate or predisposed to Tuberculosis, Pleurisy, Convalescents, Glands, etc. Near Davos, Switzerland. Terms from £5 5s. p.w.—Apply to the Physician in charge, Dr. BERNARD HUDSON, The Victoria, Davos-Platz, Grisons, Switzerland.

VICTORIA SANATORIUM

(an entirely British Sanatorium), DAVOS (GRISONS), SWITZERLAND. Terms from £5 a week. Medical Supt.: BERNARD HUDSON, *M.D.(Cantab.), M.R.C.P., Swiss Federal Diploma.*

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.
Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

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Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

Grove House, All Stretton,

Church Stretton, Shropshire.

A Private Home for the care and treatment of a *limited number of ladies mentally afflicted.* Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

Clacton-on-Sea. — A comfortable

HOME and ATTENDANCE offered to elderly or invalid ladies or gentlemen or *married couples needing special attention or diet.* Doctor's and Clergyman's references.—Mr. and Miss THORNE, Granville House, Granville Road.

Nursery Home. — Children

received with or without nurses. Experienced care. Massage and violet ray if desired. Certificated nurse.—18, Canteluпe Road, Bexhill-on-Sea.

A Barrister (M.D., M.R.C.P.

Lond.), practising law, PREPARES MEDICAL MEN FOR THE BAR. All the usual subjects. Papers through the post. No entrance exam. on entering. *No attendance at lectures necessary.*—No. 1167, B.M.A. House, Tavistock Square, W.C.1.

B.P.A. Diploma of the Society

of APOTHECARIES.—Classes are now being formed at the LONDON LIGHT AND ELECTRICAL CLINIC for the 1st and 2nd parts. Intending students please apply: SECRETARY, London Light and Electrical Clinic, Ranelagh Road, S.W.1.

Rossall School. — Some twelve

Open SCHOLARSHIPS for boys between the ages of 12 and 14, on March 1st next, value from £90 a year downwards, will be awarded by Examination, beginning March 4th, 1930. Boys examined at Rossall and in London.—Apply, THE BURSAR, Rossall School, Fleetwood.

Doctors attending Post-Graduate

Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

LONDON HOSPITAL MEDICAL COLLEGE.

F.R.C.S.

A COURSE OF INSTRUCTION for the Final Fellowship Examination will begin on Monday, March 3rd.
Fees: (exclusive of Operative Surgery) 20 guineas. Operative Surgery 5 guineas.
A separate entry can be made for all Classes other than those of a strictly Clinical character. (Men students only are eligible for admission.)
Further particulars may be obtained from Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Dean, London Hospital Medical College, Mile End, E.1.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD,
Specialises in
CAREERS FOR GIRLS.
List and Prospectus from Principal.
Special Terms to Medical Men.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL, N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

LONDON SCHOOL OF CLINICAL MEDICINE.

SEAMEN'S HOSPITAL, GREENWICH.

A Course will be held at the above, *commencing* February 24th, 1930, in SURGICAL PATHOLOGY (fee £6 6s.) and OPERATIVE SURGERY (fee £6 6s.). Fee for both sections £10 10s. *Those wishing to join the class should communicate with the Dean.*
Greenwich, February 6th, 1930.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)
For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

LEOPOLD SALZER PRIZE.

Attention is called to this CASH PRIZE of £100 to be offered on January 1st, 1931, to the author of the best Essay upon the treatment, according to the principles of Homœopathy, of INSANITY in all its forms.—*For full particulars* apply to the Secretary, British Homœopathic Association (Inc.), 43, Russell Square, W.C.1.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
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F.R.C.S.(Edin.), 1918-29	43
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Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations,* Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.
Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

FACULTY OF MEDICAL SCIENCES.

SPECIAL COURSE FOR THE PRIMARY FELLOWSHIP EXAMINATION OF THE ROYAL COLLEGE OF SURGEONS.

Special short Courses in Anatomy and Physiology will begin on Monday, March 10th, 1930, in preparation for the June examination.
Anatomy.—E. P. STIBBE, F.R.C.S.
Physiology.—W. H. NEWTON, M.Sc., M.B., Ch.B.; H. P. GILDING, M.A., B.M., B.Ch.
The Course in Anatomy includes Histology, and is made up of lectures and demonstrations. Students are permitted to use the Dissecting Room and Museum of Anatomy.
The Course in Physiology includes Biochemistry, and consists of lectures and demonstrations, together with revision of practical work on those branches of the subject which are of particular importance in medical practice.
Full particulars may be obtained on application to—
University College, London. C. O. G. DOUIE, Secretary.
(Gower Street, W.C.1.)

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from Sir Henry Simson, K.C.V.O., Dean, West London Hospital, Hammersmith, W.6.

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Sir,—Please send me a copy of your "Guide to Medical Examinations" by return

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Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
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F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS commence 6 weeks prior to each Exam. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £8 8s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

University of Birmingham.

FACULTY OF MEDICINE.

ASSISTANT LECTURER AND DEMONSTRATOR IN ANATOMY.

Applications are invited for the post of Whole-time Assistant Lecturer and Demonstrator in Anatomy. Stipend £300 per annum. Four copies of application, with testimonials, should be sent, not later than Monday, March 10th, to the under-signed, from whom further particulars can be obtained.

The University, Edmund Street, Birmingham. February, 1930.

C. G. BURTON, Secretary.

Doctor-Schoolmaster, ex Public School Resident Medical Officer and Master and Preparatory School Housemaster and Doctor, has opened Sunny House on Kent coast as small HOME-SCHOOL for DELICATE and BACKWARD BOYS from 9 to 15 years of age. Individual care and tuition. Preparation for Preparatory Schools, or Common Entrance Examination, etc. Resident trained Nurse, ex Public and Preparatory School Matron and Nurse in charge. Home Doctor's orders carried out.

Prospectus and all particulars from W. B. L. DRAWBRIDGE, M.R.C.S., L.R.C.P., St. Aidans Junior House, Westgate-on-Sea, Thanet.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Tropical Medicine and Hygiene.

The School provides two courses yearly, each of 20 weeks. The next course commences on September 30th, 1930. Composition fee, to include hire of microscope, etc., £34 5s.

Diploma in Public Health.

The next course of study, covering a period of 12 months, commences on October 1st, 1930, and is so designed that students wishing to do so can proceed to the new academic diploma instituted by the University of London.

The composition fee of £54 covers the cost of the necessary practical work and instruction in infectious diseases, etc.

Diploma in Bacteriology.

The course of study, covering one academic year, commences early in October. Composition fee, £47 15s.

Epidemiology and Vital Statistics.

Special three-monthly advanced courses. Fee £5 5s.

Applications for prospectuses and for other information should be addressed to the Secretary, Keppel St. (Gower Street), London, W.C.1.

Royal Society of Medicine, 1, Wimpole Street, London, W.1.

NORMAN GAMBLE FUND AND RESEARCH PRIZE.

The Council of the Royal Society of Medicine has accepted, as a trust, the sum of one thousand pounds (£1,000) presented by Mr. Norman Gamble for the purposes of providing a prize of £50 every fourth year for the best original work in Otology carried out during the preceding four years, the balance of the fund to be used for the purpose of awarding grants in aid of research work in Otology. The prize is open to any British subject, whether lay or medical.

Copies of the Regulations governing the awards can be obtained from the Secretary of the Royal Society of Medicine, 1, Wimpole Street, London, W.1.

The Committee of Award will consider applications for the prize and for grants in aid of research work in October, 1930. Applications for the prize and for grants in aid must be received by the Secretary of the Royal Society of Medicine not later than September, 30th, 1930.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence, and laundry.

Candidates should hold the Fellowship of the Royal College of Surgeons.

The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than Tuesday, Feb. 25th.

PERCY G. BROOKS, Secretary.

County Borough of Dudley.

MEDICAL OFFICER FOR THE TREATMENT OF VENEREAL DISEASES AND FOR MATERNITY AND CHILD WELFARE WORK.

The Dudley Corporation invite applications for the above post at a salary of £750 per annum. Applicants must be under 40 years of age and must be fully registered Medical Practitioners. Experience in modern methods of diagnosis and treatment of Venereal Diseases essential, and a D.P.H. will be considered an additional advantage. When not engaged in the treatment of Venereal Diseases the Medical Officer will be expected to conduct a Maternity and Child Welfare Centre and otherwise assist in the Health Department.

The officer appointed will be for administrative purposes under the Medical Officer of Health.

Applications, stating age, experience, and qualifications, endorsed "Medical Officer," and accompanied by copies of three recent testimonials, must be received by the undersigned not later than February 25th.

Municipal Buildings, GEO. C. V. CANT,
Priory Street, Town Clerk.
Dudley. February 11th, 1930.

Chiswick Hospital,

The Mall, Chiswick. (42 Beds.)

Applications are invited for the post of HONORARY DEPUTY ANÆSTHETIST from Medical Men in practice in the neighbourhood. The duties of the post are to give anæsthetics when the Senior Anæsthetist so desires. Major operations are usually performed on the afternoon of Wednesday, minor on Saturday.

The Board are also appointing a Senior Honorary Anæsthetist, but for this post the present Deputy is a candidate.

Applications, addressed to the Medical Secretary, should reach the Hospital not later than one week after the date of this notice.

The Royal Infirmary, Doncaster.

(121 Beds.)

THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work. Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.

Salary £150 per annum, with board, residence, and laundry. Applications, with full particulars, should be addressed to the undersigned by Tuesday, February 18th.

J. LAWRENCE MEARS,
February 5th, 1930. Secretary-Supt.

Royal Liverpool Babies' Hospital

WOOLTON.

Required on April 1st, RESIDENT MEDICAL OFFICER for the above Hospital. The appointment to be for a period of six months. Salary at the rate of £90 per annum. Applications, with copies of testimonials, to be sent to the Chairman of the Hospital, c/o The Child Welfare Association, 9, Copperas Hill, Liverpool, at or before twelve noon on Saturday, March 8th.

Gravesend and North Kent

HOSPITAL. (100 Beds.)

JUNIOR HOUSE SURGEON.

The Committee of Management invite applications from fully qualified men for the above post, which is of twelve months' duration, terminable by one month's notice on either side. There are three Resident House Surgeons.

Salary at the rate of £100 per annum first six months, £130 per annum second six months, plus board, lodging, washing, and certain fees as perquisites.

Applications, with one copy of three recent testimonials, to be sent to the undersigned immediately.

C. E. CHAPMAN, Secretary.

West Middlesex Hospital,

ISLEWORTH.

Wanted on six months' engagement, with prospects of permanency, a MEDICAL (gentleman) ASSISTANT to the Medical Officer. Salary at the rate of £250 per annum, with residential emoluments. Apply immediately to the Clerk to the Guardians, Toolands House, 34, Twickenham Road, Isleworth, Middlesex.

The Royal Eye and Ear Hospital,

BRADFORD.

Wanted JUNIOR HOUSE SURGEON, male. Salary £150, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned.

F. BRIGGS, Secretary-Supt.

County Council of Durham.

DEPUTY COUNTY MEDICAL OFFICER OF HEALTH.

The County Health Committee invite applications for the appointment of a Deputy County Medical Officer of Health at a commencing salary of £1,000, rising by annual increments of £50 to £1,200 per annum. Reasonable travelling and out-of-pocket expenses will be paid by the County Council.

Applicants must be duly registered Medical Practitioners holding a degree or diploma in Public Health, and the gentleman appointed will be required to devote the whole of his time to the duties of the office and to reside in the City of Durham or other approved centre.

He will be required to undertake any duties required of him by the Council bearing on the health and medical services of the county.

He will be required to act under the administrative control of, and to be responsible to, the County Medical Officer of Health for his duties.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary.

Applications, marked "Deputy County Medical Officer," together with copies of not more than three recent testimonials, must be sent to the County Medical Officer, Shire Hall, Durham, not later than February 19th.

HAROLD JEVONS,
Clerk of the County Council.
Shire Hall, Durham, Feb. 3rd, 1930.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (Male).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. The duties will include work under the Maternity and Child Welfare Service. Experience in this work and in the administration of anæsthetics is essential.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, February 24th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

W. M. ASH,
New County Offices, School Medical
St. Mary's Gate, Officer.
Derby.
January, 1930.

Derbyshire Education Committee

SCHOOL MEDICAL SERVICE.

ASSISTANT SCHOOL DENTIST.

Applications are invited from fully qualified Dental Surgeons for the appointments of two additional whole-time Assistant School Dental Officers under the Derbyshire Education Committee.

The successful candidates will be required to devote their whole time to the duties and will work under the supervision of the School Medical Officer and Senior Dental Officer.

The salary will be at the rate of £450 to £500 per annum, with travelling expenses. Apparatus, premises, etc., are provided by the Committee. Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to the undersigned on or before Monday, February 24th. No official form of application will be issued.

W. M. ASH,
New County Offices, School Medical
St. Mary's Gate, Officer.
Derby.
January, 1930.

City of Bradford.

MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S.

HOUSE PHYSICIANS and HOUSE SURGEONS required. Salary in each case £200 per annum, with board and lodgings.

These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to him not later than February 28th.

N. L. FLEMING,
Town Hall, Town Clerk.
Bradford.
February 5th, 1930.

Parish of Portsmouth.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the above-named Parish invite applications for the appointment of Third Assistant Resident Medical Officer for SAINT MARY'S HOSPITAL, INSTITUTION, AND CHILDREN'S HOME.

The appointment will be made for a period of not less than one year, and will be subject to one month's notice on either side. Salary £250 per annum, with furnished apartments, rations, and all other allowances.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which purpose the value of the emoluments has been fixed at £125 per annum.

Candidates must be single gentlemen, duly registered, and possessing the qualifications required by the Orders of the Ministry of Health, and preference will be given to candidates having a knowledge of the treatment of Mental Diseases.

A Resident Medical Superintendent is in attendance.

Applications to be made on printed forms, which may be obtained at the Guardians' Offices, 1, St. Michael's Road, Portsmouth, and must be returned to me, accompanied by not more than three recent testimonials, and description of diplomas, certificates of degrees, licences, and other instruments held by the candidate, by 10 a.m. on Monday, February 24th.

Selected candidates will have notice to attend, and third-class railway fare and reasonable personal expenses will be allowed.

By Order,
W. E. GODFREY,
Feb. 7th, 1930. Clerk to the Guardians.

County Borough of Dewsbury.

DEPUTY SCHOOL MEDICAL OFFICER AND DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Practitioners (men or women) for the post of Deputy School Medical Officer and Deputy Medical Officer of Health (Tuberculosis and Child Welfare).

Applicants should have had at least three years' experience since qualification. Experience in Eye work and Refractions is essential. The possession of the D.P.H., and previous experience in School Medical Inspections and the work of a School Clinic, and in Tuberculosis and Child Welfare, will be considered important additional qualifications.

The inclusive salary will be at the rate of £600 per annum. Particulars of the duties and conditions of appointment, together with the application forms, may be obtained from Dr. R. M. GALLOWAY, Medical Officer of Health, Market Place, Dewsbury, to whom all applications, accompanied by copies of not more than three recent testimonials, should be returned, endorsed "Deputy Medical Officer of Health," not later than Friday, February 28th.

HOLLAND BOOTH,
Town Hall, Town Clerk.
Dewsbury.
February, 1930.

County Borough of Halifax.

RESIDENT MEDICAL OFFICER.

HOSPITAL FOR INFECTIOUS DISEASES.

Applications are invited for the appointment of Resident Medical Officer at the Corporation's Isolation Hospital. Salary £350 per annum, together with board, residence, and laundry.

Applications must be made on a prescribed form which may be obtained from the undersigned, and should be sent, together with copies of not more than three recent testimonials, endorsed "Resident Medical Officer," to the undersigned not later than March 5th.

Canvassing, either directly or indirectly, will be a disqualification.

PERCY SAUNDERS,
Town Hall, Town Clerk.
Halifax.
February 7th, 1930.

Bristol Homœopathic Hospital,

(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER at a salary of £120 per annum, with board, laundry, residence, etc., in the Hospital. Good Surgical and general experience. A good opportunity for a man reading for higher surgical examination.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned.

Applicants should state the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

County Borough of West Hartlepool.

MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Council of the County Borough of West Hartlepool invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health for the appointment of Medical Officer of Health and School Medical Officer.

The salary will be £900 per annum, rising by two annual increments of £50 to £1,000 per annum.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, and will not be allowed to engage in private practice. He will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be, in future, assigned to him.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than Saturday, March 1st.

Town Clerk's Office, West Hartlepool. HAROLD W. STANTON, Town Clerk.

February 10th, 1930.

City of Manchester.

The Public Health Committee of the Corporation require the services of a fully qualified Whole-time Woman MEDICAL OFFICER, experienced in midwifery and children's diseases, to hold (under the direction of the Medical Officer of Health) consultations and infant clinics at the Maternity and Child Welfare Centres of the Manchester Corporation, and (under the like direction) to perform such other duties as appertain to the office.

The salary will be £600 per annum.

A statement of the duties and conditions of office may be had on application, in writing, to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester.

Applications, stating age and experience, and endorsed on the envelope "Medical Officer, Child Welfare," must be sent in addressed to the Town Clerk only, and not to members of the Committee or Council, not later than Saturday, March 1st, and be accompanied by not more than three recent testimonials.

The successful candidate will be required to contribute to the Corporation Superannuation Fund, and to execute their deed of service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, Manchester. F. E. W. HOWELL, Town Clerk.

February 11th, 1930.

Middlesbrough Union.

Vacancy for ASSISTANT RESIDENT MEDICAL OFFICER at HOLGATE HOSPITAL. Two districts with Hospital work until March 31st, 1930. Salary £6 6s. per week, with board, lodging, and washing. Possibility of a permanency after this date to a suitable man at a salary to be fixed later.

Please apply to the undersigned, with copies of three recent testimonials. Applications to be in by February 20th.

W. B. JONES, Medical Supt.

Preston and County of Lancaster ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen, doubly qualified and registered, for the post of HOUSE SURGEON under Honorary Surgeon (Consultant).

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with testimonials, to be addressed to the undersigned as soon as possible.

Royal Infirmary, Preston. JOHN GIBSON, Supt. & Secretary.

February, 1930.

Taunton and Somerset Hospital, TAUNTON. (104 Beds.)

JUNIOR HOUSE MEDICAL OFFICER (male) required. The appointment, which will be for six calendar months, is approved by the University of London for the purpose of the M.D. examination. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with testimonials, to—

F. J. J. STACEY, Secretary.

Birmingham and Midland HOSPITAL FOR WOMEN.

HOUSE SURGEON (man or woman) wanted for six months from April 1st next. Salary to be at the rate of £75 per annum. Applications, with copies of testimonials, to be sent to Mr. H. C. ASTON, 45, Newhall Street, not later than March 1st.

Kent County Council.

ASSISTANT MEDICAL OFFICER (MATERNITY AND CHILD WELFARE).

The Kent County Council invite applications for the post of an Assistant Medical Officer (female). Salary £600 per annum, increasing by £12 10s. increments to £650. Candidates should be not more than 40 years of age.

The person appointed will be required to devote her whole time to the duties of the office, and will be under the administrative control and supervision of the County Medical Officer.

The duties will mainly consist of work in connection with the maternity and child welfare scheme, but will include any other duties allotted to the officer as coming within the purview of the County Health Department.

Preference will be given to candidates who have had special experience in connection with maternity work, and the Diploma of Public Health is desirable.

The appointment is subject to the approval of the Ministry of Health and also to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and will be terminable by three months' notice on either side. The person appointed will be required to pass a medical examination as to physical fitness.

Applications, stating age, qualifications, training, and full particulars of past experience, and accompanied by copies of three testimonials, should be submitted to Dr. A. GREENWOOD, County Medical Officer, Sessions House, Maidstone, not later than February 28th.

No official form of application will be issued, and canvassing will be considered a disqualification.

ALFRED GREENWOOD, M.D., *Sessions House, Maidstone. February 10th, 1930.* *County Medical Officer.*

Manchester Union.

BOOTH HALL INFIRMARY FOR CHILDREN.

ASSISTANT MEDICAL OFFICER.

The Guardians of the Manchester Union invite applications from Medical Practitioners who have had previous Resident Hospital experience, for the appointment of Fourth Assistant Resident Medical Officer at the Booth Hall Infirmary for Children (750 beds), Charlestown Road, Blackley, Manchester.

The Hospital is a recognized Training School for Nurses and is equipped with all modern Hospital requirements.

The salary for the appointment is at the rate of £250 per annum, with rations and furnished apartments, subject to the usual deductions under the Poor Law Officers Superannuation Act, 1896.

Applications, endorsed "Medical Appointment, Booth Hall Infirmary," accompanied by not less than three testimonials, must be forwarded to the undersigned.

By Order.

Union Offices, All Saints, Manchester. F. W. GREENHALGH, Clerk to the Guardians.

February 5th, 1930.

Hackney Union.

The Guardians of the Hackney Union invite applications from fully qualified Dental Surgeons for the post of DENTAL SURGEON at their Hospital at High Street, Homerton, E.9.

The officer appointed will be required to attend at the Hospital one afternoon per week for a session of three hours, and to treat all dental cases referred to him by the Medical Superintendent from the Hospital, Central Institution, and the Out-patient Department (other than denture cases).

Salary £100 per annum.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Full particulars may be obtained from the Medical Superintendent, Hackney Hospital, Homerton, London, E.9.

Forms of application, to be obtained from the undersigned, must be returned by Feb. 18th.

Canvassing the Guardians, directly or indirectly, will disqualify candidates.

Clerk's Office, Hackney Union, 2, Sidney Road, Homerton, E.9. E. W. HARBOUR, Clerk to the Guardians. *February 5th, 1930.*

King George's Sanatorium for SAILORS, BRAMSHOTT PLACE, LIPHOOK, HANTS.

SISTER required for Medical Floor. General trained. Sanatorium experience essential. Salary £70 to £95, with uniform.

Apply to the Matron.

Radcliffe Infirmary and County HOSPITAL, OXFORD.

RESIDENT MEDICAL POSTS.

Applications are invited for the following posts, which will become vacant on April 1st:

Three HOUSE SURGEONS;
HOUSE PHYSICIAN;
OBSTETRIC HOUSE PHYSICIAN.

Appointments for six months, with salaries at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials, to be sent to the undersigned on or before March 6th.

A. G. E. SANCTUARY, Administrator.

Bootle Borough Hospital, DERBY ROAD, BOOTLE.

APPOINTMENT OF HONORARY LARYNGOLOGIST AND AURIST.

Applications are invited for the above vacancy. Candidates are requested to send particulars of their qualifications and experience, accompanied by testimonials, to the undersigned, not later than February 28th.

J. A. BEARDSALL, Secretary-Superintendent.

St. John's Hospital for Diseases OF THE SKIN, 49, Leicester Square, W.C.2.

Applications for the post of SENIOR and JUNIOR HONORARY MEDICAL REGISTRAR (male) are invited to be sent to the undersigned on or before Saturday, March 1st.

Applicants must be duly qualified and registered Medical Practitioners. Particulars of the duties can be obtained on application.

There are also vacancies for CLINICAL ASSISTANTS.

W. TODD, Acting Secretary.

Charing Cross Hospital.

REGISTRAR TO EAR, NOSE, AND THROAT DEPARTMENT.

The Council invite applications for the post of Registrar to Ear, Nose, and Throat Department. Honorarium £100 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, London, W.C.2. PHILIP INMAN, House Governor.

Charing Cross Hospital.

MEDICAL REGISTRAR.

The Council invite applications for the post of Medical Registrar. Honorarium £150 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, London, W.C.2. PHILIP INMAN, House Governor.

Charing Cross Hospital.

OBSTETRIC REGISTRAR.

The Council invite applications for the post of obstetric Registrar. Honorarium £100 per annum.

Applications, together with copies of three testimonials, must be submitted to the undersigned not later than Monday, March 3rd.

Charing Cross Hospital, London, W.C.2. PHILIP INMAN, House Governor.

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointments from March 15th.

HOUSE PHYSICIAN. Salary £70 per annum.
HOUSE SURGEON. Salary £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by February 28th.

A. H. LEANEY, House Governor.

Royal United Hospital, Bath.

Wanted, March 5th, a HOUSE SURGEON. Salary £150 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, are to be addressed to the Secretary not later than the 25th inst.

J. M. SHEPPARD, F.C.I.S., Secretary.

Salford Royal Hospital.
(265 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) attached to the Orthopædic Department.

Salary at the rate of £125 per annum.

The appointment is for a period from March 1st to September 30th, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before the 19th instant.

By Order of the Board,
GEORGE RUDDLE,
Salford Royal Hospital. Gen. Supt. &
February 10th, 1930. Secretary.

North Riding Infirmary,
MIDDLESBROUGH.
(General Hospital—150 Beds.)

Applications are invited for the posts of SENIOR HOUSE SURGEON and SECOND HOUSE SURGEON (males), which will fall vacant middle of March. The salary of the Senior post will be at the rate of £200 p.a., and of Second post £150 p.a., with board, residence, and laundry. Appointments for minimum of six months.

Applications, stating age, nationality, and previous experience, with three recent testimonials (copies), should reach the undersigned by February 21st, or as soon thereafter as possible. Applicants should state which post they wish to apply for and if willing to accept either.

CHARLES POSTGATE,
Secretary-Superintendent.

East Suffolk and Ipswich
HOSPITAL, IPSWICH.
(265 Beds—Seven Residents.)

Applications are invited for the post of CASUALTY OFFICER, who will rank next to the Resident Medical Officer in seniority. Salary £150 per annum. Board, residence, and laundry. Previous experience essential. Also a HOUSE SURGEON at £120 per annum.

Applications from British (male) candidates, *stating age, qualifications, and experience, and* accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.
January 4th, 1930.

Shropshire Orthopædic Hospital
AND AGNES HUNT SURGICAL HOME,
OSWESTRY.

HOUSE SURGEON (male) required on April 1st, but it is possible that arrangements could be made for the successful candidate to commence duty at an earlier date.

Appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board, residence, and laundry. Two weeks' holiday for each six months' service.

Applications, stating age, with copies of three recent testimonials, should be received by the Secretary-Superintendent on or before Feb. 24th.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing March 1st. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, February 19th. Selected candidates will be invited for an interview Saturday, February 22nd.

Chester Royal Infirmary.
(211 Beds.)

Wanted, HOUSE SURGEON (male) to commence duties March 17th. Salary £150 per annum, with board, lodging, and washing.

Application list closes on February 22nd.

Application forms may be obtained from the undersigned.

W. H. GRACE, M.D., M.R.C.P.,
Hon. Supt. of Resident Medical Staff.

Stirling District Mental Hospital,
LARBERT.

Wanted, JUNIOR ASSISTANT MEDICAL OFFICER (male). Salary £300 per annum, with board, lodging, and laundry. Appointment subject to provisions of Asylums Officers Superannuation Act.

Apply, stating age, with testimonials, to the Medical Superintendent.

Cardiff Royal Infirmary.
(Associated with Welsh National School of Medicine.)

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. The post is tenable for six months, but may be extended for a further six months.

Salary is at the rate of £75 per annum, with board-residence. Candidates must have experience of Refractions.

Application forms may be obtained from the undersigned, and should be returned completed, with copies of recent testimonials, at the earliest possible date, as the appointment commences on March 5th.

R. ARMSTRONG,
February 10th, 1930. Medical Supt.

The Cancer Hospital (Free)
(Incorporated under the Royal Charter),
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum. The appointment is for six months and subject to rules. Candidates must call upon each Member of the Medical Committee not later than March 10th. A copy of the rules and the names and addresses of the Medical Committee may be obtained from the Secretary. Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Monday, March 3rd.

J. COURTNEY BUCHANAN, Secretary.

The Staffordshire General
INFIRMARY, STAFFORD.

Applications are invited at once for the positions of HOUSE SURGEON and HOUSE PHYSICIAN (either sex). Candidates must be duly qualified and registered under the Medical Acts. Salary at the rate of £200 and £150 respectively, with board, lodgings, etc. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent forthwith to the undersigned.

Stafford. A. E. COLLINS.
February 7th, 1930. Secretary.

Royal Hospital, Richmond,
SURREY.

JUNIOR HOUSE SURGEON (male) required to take up duties on March 4th. Salary at the rate of £100 per annum, with board, furnished apartments, and washing. Candidates must be fully qualified and registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the Senior post. Applications, stating age, experience, and copies of three recent testimonials, must be forwarded to me not later than February 19th.

RICHARD ALLEN, Secretary.

Newcastle-upon-Tyne City
MENTAL HOSPITAL, GOSFORTH,
NEWCASTLE-UPON-TYNE.

Wanted, on April 1st next, JUNIOR ASSISTANT MEDICAL OFFICER (male). Commencing salary £350, rising by annual increments of £25 to £450 per annum, with the addition of £50 on obtaining the Diploma of Psychiatry, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

Royal Waterloo Hospital for
CHILDREN AND WOMEN,
Waterloo Road, S.E.

There will be a vacancy on March 1st for a HOUSE PHYSICIAN (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence.

Application, with copies of testimonials, should be forwarded not later than Tuesday morning, February 18th, to the Secretary at the above address, from whom further particulars can be obtained.

Accrington Victoria Hospital.

The Governing Body of this Hospital invites application for the post of HOUSE SURGEON.

Number of beds 50. Salary £150 per annum, with board and lodging.

There are two Honorary Anæsthetists on the staff who attend on regular operating days.

Applications, with copies of three testimonials, should be sent to the undersigned on or before the 19th instant.

Town Hall, W. H. WARHURST,
Accrington. Hon. Secretary.

Birkenhead General Hospital.
(155 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (gentleman), salary £150, with board and residence, to take up duties March 17th; also HOUSE PHYSICIAN (gentleman), salary £100, with board and residence, required about March 12th.

Both appointments are for a period of six months, but may be extended with the Committee's approval.

Applications, stating qualifications, experience, and nationality, to be sent to the undersigned as early as possible.

W. H. DANIELS, A.C.I.S.,
Secretary-Superintendent.

Plymouth Royal Eye Infirmary.

A vacancy in the office of HONORARY SURGEON has occurred in this Institution, and the Committee will fill the vacancy at its next meeting on Thursday, March 6th.

Candidates must be legally qualified Practitioners, and are required to forward their applications (stating age and qualifications), with testimonials, to the Honorary Secretary, at No. 7, Princess Square, Plymouth, on or before Tuesday, March 4th.

Canvassing by intending candidates is not allowed.

ERNEST HOWARD,
February 10th, 1930. Hon. Secretary.

Whitehaven and West Cumberland Hospital, Whitehaven.
(90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," not later than Wednesday, Feb. 26th.

R. HIGGINS, Secretary.

The Jessop Hospital for Women,
SHEFFIELD.

The Board of Management invite applications for an unexpected vacancy in the office of ASSISTANT HOUSE SURGEON (male) from February 28th, to terminate on July 15th.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, with copies of recent testimonials, should be addressed at once to the undersigned.

H. B. SHELSWELL, Secretary.

Royal National Orthopædic
HOSPITAL,
234, Great Portland Street, W.1.

Applications are invited for the post of HOUSE SURGEON (Two). Salary £150 per annum, with board, quarters, and laundry. The appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board. Applications, with copies of testimonials, should reach the Secretary not later than March 7th.

(AMENDED NOTICE.)

Golden Square Throat, Nose, and
EAR HOSPITAL, London, W.1.

HOUSE SURGEON (male) required for April 1st. Salary £100 per annum, with board and lodging. Applications, stating age, qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before February 28th.

F. P. CARROLL, Secretary-Supt.

Tiverton Hospital, Devonshire.
(36 Beds.)

Applications are invited for the post of HOUSE SURGEON at the above Hospital. Salary at the rate of £100 per annum, with board, residence, and laundry. The appointment is for six months, and duties to commence as soon as possible.

Applications, with copies of testimonials, to be sent to the undersigned.

C. H. DEEKS, Hon. Sec.

General Hospital, Gt. Yarmouth.
(72 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male, unmarried). Salary £150 per annum, with board, residence, and laundry. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.).*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 155, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. ... Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1. February 12th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Gloucester County and City MENTAL HOSPITALS, WOTTON and CONEY HILL.

The Committee of Visitors invite applications for the post of MEDICAL SUPERINTENDENT of these Hospitals, which contain about 1,223 beds.

Applicants, who must not be more than 45 years of age, must be duly qualified to practise in Surgery and Medicine and be duly registered.

Preference will be given to those with previous Mental Hospital experience.

The salary attached to the post is £1,100 per annum, together with unfurnished house and garden, rates and taxes free.

The appointment will be subject to the provisions of the Asylums Officers Superannuation Act, 1909, and for this purpose the emoluments are valued at £100 per annum.

Applications, which should be on forms to be obtained from the undersigned, must be received, together with not less than three copies of recent testimonials, not later than Feb. 28th next.

Canvassing, either directly or indirectly, will disqualify any applicant, but candidates if they desire may supply me with 21 copies of their testimonials for circulation to the Visitors.

By Order,
EDGAR B. KEY, Clerk to the Visitors.
County Mental Hospital, Gloucester.
January 28th, 1930.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

East Ham Memorial Hospital, Shrewsbury Road, E.7.

The Management Committee invite applications for the post of HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applicants must be either a Master of Surgery of a University of Great Britain or Ireland, or hold the Diploma of F.R.C.S., and must not be engaged in General Practice.

Applications, together with copies of three recent testimonials, must be sent to the Secretary (from whom all particulars can be obtained) not later than first post on Saturday, March 1st.

The Royal Infirmary, Sheffield.

The Weekly Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S., General Supt. & Secretary.
Board Room, February 3rd, 1930.

A Second Assistant Resident MEDICAL OFFICER (single, male) is required. Salary is at the rate of £400 per annum, together with the usual residential emoluments. The duties of the post are primarily concerned with Observation (Mental) Wards. Previous experience or possession of the D.P.M. is essential. Forms of application and further particulars can be obtained from the Medical Superintendent at the ST. JOHN'S HOSPITAL, St. John's Hill, Wandsworth, S.W.18.

Kent County Ophthalmic and AURAL HOSPITAL, MAIDSTONE. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ear, Nose, and Throat Department, which becomes vacant on March 1st next. The Hospital is recognized by the Examining Board for the D.L.O. and D.O.M.S. Diplomas. Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The appointment will be for six months, with an option of a further six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

Manchester and Salford Hospital FOR SKIN DISEASES.

HOUSE SURGEON.

Applications are invited for the post of House Surgeon. Must be registered. The appointment is for twelve months from April 1st. Salary £100 per annum, with board and residence.

Applications, with copies of three testimonials, to be sent to the undersigned, Quay Street, Manchester, on or before Monday, February 17th.

JOHN NALL, Secretary.

Royal Cornwall Infirmary, TRURO. (70 Beds.)

HOUSE SURGEON required with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

ASSISTANCIES.

Wanted. — Male Assistant, British, for semi-rural private and panel Practice in West Riding, Yorks, with view to Partnership. University Graduate preferred. Must be good Anæsthetist, keen and energetic, Protestant and abstainer, and able to drive car. Dispenser kept, little night work. Pleasant surroundings. Salary £300 per annum, indoor, with half midwifery and anæsthetics fees. References required. Usual bond. — Address, No. 1070, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant, male, indoor, about 3 months or longer. Under 30. Eng. or Scot. Private and panel. No mid. Southern town. State experience. Refs. essential. Salary £250 per annum.—No. 1065, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant (married or single), with Hospital and general experience. No clubs. £6 10s. weekly (indoor). Usual bond. State age, height, and enclose photo. — Address, No. 1153, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, in a mining Practice in Glamorgan. No dispensing. Usual bond. Salary £350 per annum, with furnished rooms, light, and attendance.—Address, stating age, references, etc., No. 914, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, pref. Irish. £450, rising. Some experience.—Dr. SHEAHAN, Carcroft, Doncaster.

Wanted. — Male Assistant, in- door, for mixed Practice. Salary £250 to £300, if experienced. Usual bond. State age, testimonials. British.—Address, No. 1075, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, married man, Protestant, abstainer. House provided. Own car preferable. Prospects if suitable. Middle-class Practice, North-West Coast. Photo. and full particulars. — Address, No. 1083, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Outdoor Assistant in a pleasant small Country Town (with Hospital) in North Wales. Able to drive car. Work light. Usual bond.—Address, No. 923, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Male Assist- ANT for Cornwall in March. Salary £450. Must have Hospital and General Practice experience. Able drive car. British. References.—Address, No. 1160, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, with view, male, Scotch or English. Good working-class private and panel Practice, 50 miles London. Salary £300.—Address, No. 1076, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for Practice in London Suburb. £250 per annum. Must have some panel experience.—Address, No. 1163, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Experienced Assist- ANT, single or married, with view to succession in the near future. Large Practice. Excellent opportunity for hard worker. Large amount of capital not essential.—Address, No. 1057, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant, indoor. Good-class Country Practice in Midlands. One with good Hospital experience preferred. Prospects if suitable.—Address, No. 1166 B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Welsh-speaking ASSISTANT. Abstainer, and late H.S. preferred. Salary £500 per annum. Usual bond. On door.—Address, No. 1165, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Keen, energetic ASSISTANT, April 1st, growing Country Practice, S. Midlands. English, abstainer preferred. Usual bond. Fourth share, approx. £500, after 6 months to suitable man.—Address, No. 1171, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for Industrial Practice. Dispenser kept. £350 p.a., with rooms and attendance. British qualification preferred. — Address, No. 1055, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—A University Graduate, ex-H.S. and H.P., aged about 30. Must have had experience in both private and panel practice, and capable of taking SOLE CHARGE. Rooms and attendance. Liberal salary to a good man, Protestant, and one prepared to take over the Practice at an early date.—Address, No. 1072, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Permanent Post by capable, experienced, energetic man. Married. Used to sole charge. Act. 38. Own car and furniture. South preferred. Locums acceptable, pending suited.—Apply, Dr. NORGATE, Derby Road, Heanor, Notts.

Wanted. — Assistantship or LOCUMS, London or Manchester preferred (not essential), by Woman M.B., D.P.H. Few years' experience in private and panel. Excell. tests. Interv. Free now, in London.—No. 1156, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or MANAGEMENT OF BRANCH PRACTICE, by M.B., Ch.B. (Honours, Dublin), married, aged 34; ex H.S., 3½ yrs.' Hosp., 4 yrs.' exper. panel and priv. Competent Anæsth. and Obstet. —No. 1161, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, BRANCH MANAGEMENT, or LONG LOCUM, by L.R.C.P. & S., D.P.H., aged 29, married; ex R.M.O., experienced in panel and private. Free now. Lond. or S. Eng. Ex. tests. —No. 1154, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or LOCUM by Woman M.B., Ch.B., D.P.H., married, experienced in General Practice and in Public Health. Can drive car. Interview preferred. At present South England.—Address, No. 1159, B.M.A. House, Tavistock Square, W.C.1.

Histological. Assistant.

A skilled Assistant is required for Research Work in Histology. Previous experience in staining and microscopical examination of nervous tissue desirable. Salary £4 weekly

Applications, stating capacity and experience, with copies of three testimonials, should be received not later than March 1st, addressed to the Director, Joint Board of Research for Mental Disease, City and University of Birmingham, Hollymoor, Northfield, Birmingham. January 28th, 1930.

Part-time Assistant wanted by G.P. (panel and private) for three morning Surgeries and week-ends. Hospitality and small remuneration, or live in at week ends only. — Address, No. 1074, B.M.A. House, Tavistock Square, W.C.1.

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A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

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Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Experienced Practitioner, with small quiet Practice, FREE TO TAKE CHARGE Thursdays and Week ends. Moderate terms. N. or E. London preferred.—Address, No. 1084, B.M.A. House, Tavistock Square, W.C.1.

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Lady Dispenser - Bookkeeper (qualified) seeks ENGAGEMENT; 20 years' practical experience in hospital and private practice, including panel. Nine years present post. North preferred. Excellent testimonials.—No. 1052, B.M.A. House, Tavistock Sq., W.C.1.

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The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

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Telephone—CENTRAL 3925; after office hours: 2549 RUSHOLME.

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Wanted, a young, energetic man, good appearance and social attainments, in old-established non-dispensing Practice in Midland residential suburb. Appointments and small panel. Gross income about £1,200. *Great scope for increase*. SMALL SHARE, offered with view. Moderate capital. — Address, No. 1086, B.M.A. House, Tavistock Square, W.C.1.

Experienced Partner (age 30-40) wanted for Practice in West End of London. Audited receipts last year £3,400, increasing. 2/5—1/2 share for disposal at 2 years' purchase. House to rent on lease. Senior Partner remaining. No agents.—Add., No. 1056, B.M.A. House, Tavistock Sq., W.C.1.

Good Surgical Partnership wanted by M.Ch. (8 years on Hon. Surgical Staff of General Hospital) in residential district in or within 60 miles of London. Chance of Hospital appointment appreciated.—No. 905, B.M.A. House, Tavistock Sq., W.C.1.

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Partner wanted in Country Practice. Turnover £1,800 approx. Appointments and panel worth approx. £950 p.a. Should yield about £900 p.a. 2 years' purchase. Capital essential. Successor later.—Address, No. 1162, B.M.A. House, Tavistock Square, W.C.1.

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Radiologist, aged 43, at present working in department Hospital in *London, would be pleased to hear of suitable opening either in PARTNERSHIP SUCCESSION, or opportunity for PRACTICE. Hospital appointment* essential. — Address, No. 1151, B.M.A. House, Tavistock Square, W.C.1.

Surgical Partnership required by young Surgeon with exceptional practical experience in major surgery and good-class general practice. Chance of Hospital appointment appreciated. Capital available.—Address, No. 1058, B.M.A. House, Tavistock Sq., W.C.1.

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Wanted, by experienced Radiologist, a Radiological PRACTICE or PARTNERSHIP, with Hospital appointment. Scotland or South of England.—Address, No. 1069, B.M.A. House, Tavistock Square, W.C.1.

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Lady Doctor's Practice in Lancs Town, near Manchester.—Cash receipts £2,275. Panel 1,459. Good House, 4 bedrooms. Rent £60 p.a. Partnership, view to succession considered. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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BY ORDER OF EXECUTORS.
EMINENTLY SUITABLE FOR A DOCTOR OR DENTIST.

Bournemouth West. — To be Sold by Auction at Bournemouth, on *February 26th, the well-built* detached Residence, "HOLMBURY," occupying an important position, corner of Poole Road and Prince of Wales Road. Six bedrooms, dressing room, bathroom, 3 reception rooms, kitchen, etc. Half acre garden. — Particulars of FOX & SONS, Auctioneers, Bournemouth West.

Liverpool. — Commodious Detached RESIDENCE, *containing* morning room, two entertaining rooms, six bedrooms, two bathrooms, etc. Electric light. *Garage, and* fine old garden. Neighbourhood of St. Michael's, Liverpool, close to golf links and train. Suitable for Doctor's residence, or could be easily converted into a Nursing Home. No reasonable offer refused for quick sale.—Write Box 0.250, LEE & NIGHTINGALE, Liverpool.

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Muswell Hill, summit of hill, one min. station.—A spacious HOUSE, with room for small garage. *Fine ent.* hall, 3 receps. (all large), 5 large beds. Well-fitted kitchen, c.l., and power. Price £1,800 or offer. Early possession.—Apply NORMANS, 6, Broadway, N.W.10. Tudor 3333.

Sheffield.—Prominent Corner HOUSE, 4 bedrooms, bath, w.c. Prominent position in thickly populated suburb. Middle and working-class. Ideal position for opening for smart qualified person. Rent £75.—Address, No. 1158 B.M.A. House, Tavistock Square, W.C.1

Tunbridge Wells.—Central position, south aspect. Spacious modern *BUILDING, practically on two floors.* Five public rooms, 21 bedrooms, 3 staff bedrooms, 2 bathrooms, central heating, etc. Garage, gardens, tennis court, etc., about 1 acre. Freehold for sale at moderate figure. Suitable for Private Hotel, Nursing Institution, Convalescent Home, Private School, etc.—Sole Agents, WICKENDEN & SONS, Tunbridge Wells.

To Let.—Prescot Road, Old Swan, Liverpool. — CONSULTING and WAITING ROOMS. Suit Doctor. Attendance if required. Busy locality.—Address, No. 1080, B.M.A. House Tavistock Square, W.C.1.

Two Rooms, every comfort, Doctor's House (radiologist), adjoining his private residence, for sole Patient. South Coast. Terms from 10 gns.—Address, No 1064, B.M.A. House, Tavistock Square, W.C.1.

To Let, in modern House in Devonshire Street.—CONSULTING ROOM, full or part-time. Plate, attendance, waiting room. Immediate possession. — Address, No. 1077, B.M.A. House, Tavistock Square, W.C.1.

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For Sale.—M.D. Gown and HOOD (Durham). Pre-war make. Perfect condition, only worn once. Suit fairly tall man. —Apply, Dr. TYRRELL, 33, Cornhill, E.C.3.

Microscope, Bausch & Lomb. Three objectives, one 1/12 oil immer., one 1/6, one 2/3. Two eyepieces. Abbé Cond. High magnification. Absolutely new, in case. Cost £35. Accept £20.—99, Grosvenor Terrace, Camberwell, S.E.5.

Zeiss Microscope in case; new condition. Two eyepieces and objectives A and D, with *nosepiece* and swing-out condenser, Price £16.—Address, No. 1172, B.M.A. House, Tavistock Square, W.C.1.

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Showroom: 97, Swinderby Road, Wembley.

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Bean 14 h.p. Car; Saloon Body; convertible open landaulette. Specially designed by Doctor for Arthritic Patient. Original cost £650. Car equipped with detachable rails up which patient can be wheeled in Wardway chair into car. Excellent condition. Price, complete with Wardway chair, £280.
Full details, 76, Rodney Street, Liverpool.

APPOINTMENTS.—Contd.

Western Ophthalmic Hospital, Marylebone Road, N.W.1.

OPENING OF NEW BUILDING.

Applications are invited for four new appointments of CHIEF CLINICAL ASSISTANT, two to attend on Mondays and Thursdays at 2 p.m., and two on Tuesdays and Fridays at 2 p.m. There will be an *honorarium* of 1 guinea per session. Seven copies of applications, with not less than three *testimonials, should be sent* to the undersigned by March 1st.
H. W. BURLEIGH, Hon. Sec.

Harrow Hospital.
(40 Beds increasing to 65.)

The Managers desire to appoint an *HONORARY* ASSISTANT GYNÆCOLOGICAL SURGEON. Applications should be sent to the Secretary, Harrow Hospital, Harrow-on-the-Hill, Middlesex.

CAVENDISH NURSES (Male and Female)

Head Office: 94, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

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Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on April 4th and 14th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 5th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
Secretary.

February, 1930.

Cumberland and Westmorland
JOINT MENTAL HOSPITAL.

DEPUTY MEDICAL SUPERINTENDENT.

The Committee of Visitors of the above Hospital are prepared to receive applications from persons holding the necessary qualifications for the post of Deputy Medical Superintendent of the above Mental Hospital, vacant on March 23rd next by the resignation of the present Deputy Medical Superintendent.

The salary commences at £500 per annum, rising by four annual increments of £25 each to £600, with emoluments of the value of £120. An award of £50 per annum will be made to the officer appointed if and when he obtains the Diploma in Psychological Medicine.

Full details of the post, and forms on which alone applications will be considered, can be obtained on receipt of a stamped addressed foolscap envelope from the undersigned.

C. W. ALLAN HODGSON,
Clerk to the Visitors.

County Offices,
Carlisle.

Leicester Royal Infirmary.
(420 Beds.)

HOUSE SURGEONS.

PRELIMINARY NOTICE.

A vacancy or vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post, or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 10th, 1930.

Leicester Royal Infirmary.
(420 Beds.)

HOUSE PHYSICIANS.

PRELIMINARY NOTICE.

A vacancy or vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post, or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 10th, 1930.

Liverpool Stanley Hospital.

There will be vacancies on April 1st for One MALE HOUSE PHYSICIAN, Two MALE HOUSE SURGEONS, and One FEMALE GYNÆCOLOGICAL HOUSE SURGEON. The engagement will be for a period of six months. Salary at the rate of £100 per annum, with board, laundry, etc.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before 21st inst.

F. W. OSBORN, Secretary.

West Bromwich and District
GENERAL HOSPITAL. (139 Beds.)

Applications are invited for the posts of:
(1) HOUSE SURGEON;
(2) HOUSE PHYSICIAN;
(3) CASUALTY HOUSE SURGEON.

Candidates (male) must be doubly qualified and unmarried. Salary, in each case, at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on April 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned on or before March 8th.

The present House Surgeon and House Physician are applicants for two of the posts.

By Order,
Edward Street, FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, Two HOUSE SURGEONS, and One RESIDENT ANÆSTHETIST for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, March 7th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, March 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Evelina Hospital for Children,
Southwark, S.E.

The Committee of Management invites applications for the post of SURGEON TO OUT-PATIENTS (Hony.) (attendance Friday mornings at 10). Candidates (male) must be Graduates in Surgery in a recognized University, or F.R.C.S., they must not be engaged in general practice.

Applications, with copies of not more than four testimonials, to be addressed to the Secretary, at the Hospital, before February 25th.

Candidates must call on the members of the Hony. Medical Staff, whose names, also Standing Orders relating to the post, will be furnished by the undersigned.

By Order of the Committee of Management,
H. C. S. SMITH,
Secretary-Supt.

Feb. 11th, 1930.

Cumberland Infirmary, Carlisle.

Applications are invited for the following posts (male). Six months' appointments. Previous experience in each case desirable.

(1) HOUSE PHYSICIAN, vacant March 8th.
(2) HOUSE SURGEON to Special Departments (Eye, Ear, Nose, and Throat), vacant April 1st.

Salary in each case at the rate of £135 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 19th, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT,
Secretary.

February 3rd, 1930.

Cumberland Infirmary, Carlisle.

HOUSE SURGEON required April 1st (male). Six months' appointment. Previous Hospital experience desirable. Salary at the rate of £175 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 26th, by the undersigned, who will supply further particulars if desired.

J. G. HOWITT, Secretary.

February 10th, 1930.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN, with charge of Out-patients, at the DREADNOUGHT HOSPITAL, Greenwich.

The elected candidate will have beds allotted to him and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before March 8th, to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX,
Secretary.

February 7th, 1930.

Queen Charlotte's Maternity
HOSPITAL, Marylebone Road, N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (male) required to commence duty on April 1st. Applicants must be registered. Appointments for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months), on the recommendation of the Medical Staff.

The salary of the Assistant Resident Medical Officer is at the rate of £80 per annum, and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials, will be received by the Secretary up to February 27th.

Canvassing is prohibited.

ARTHUR WATTS, Secretary.

Queen Charlotte's Maternity
HOSPITAL, Marylebone Road, N.W.1.

DISTRICT RESIDENT MEDICAL OFFICER (male or female) required to commence duty on April 1st. Applicants must be registered. The appointment is for six months. The salary is at the rate of £80 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials, will be received by the Secretary up to February 27th.

Canvassing is prohibited.

ARTHUR WATTS, Secretary.

Queen Charlotte's Maternity
HOSPITAL, Marylebone Road, N.W.1.

RESIDENT ANÆSTHETIST required to commence duty on April 1st. Applicants must be registered. Appointment for six months. Salary at the rate of £60 per annum, with board, residence, and washing allowance (4/- weekly).

Copies (not originals) of not more than three testimonials will be received by the Secretary up to February 27th.

ARTHUR WATTS, Secretary.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON (male) vacant February 28th.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned on or before Tuesday, February 18th.

R. J. CARLESS,
House Governor.

February 11th, 1930.

Macclesfield General Infirmary.
(100 Beds.)

Wanted at once, SECOND HOUSE SURGEON, male. Salary at the rate of £150 per annum, with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

Applications, stating age, nationality, and qualifications, with copies of their testimonials, to be sent to the undersigned.

A. E. HANRAHAN, Secretary.

City Mental Hospital,

HUMBERSTONE, LEICESTER.

THIRD ASSISTANT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST.
(Male, single, under 30.)

Applications for the above combined post are invited. Salary as Assistant Medical Officer £500 a year, and as Assistant Pathologist £50 a year. A further allowance of £50 a year will be made in the event of the successful candidate holding a Diploma in Psychological Medicine. Married quarters are not at present available, but board, lodging, washing, and attendance are provided in the Hospital, at the rate of £150 a year.

Candidates must have held a Resident House appointment in a Teaching Hospital for at least six months.

Preference will be given to those holding a University Degree.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, marked "A.M.O.," with full particulars and copies of not more than three testimonials, to be sent to the Medical Supt.

City of York Hospitals.

RESIDENT MEDICAL OFFICER.

Applications are invited from fully qualified Medical Women for the post of Resident Medical Officer at the MATERNITY HOSPITAL AND SANATORIUM.

The person appointed will be under the clinical supervision of the Medical Superintendent and the Assistant Medical Officer of Health.

Salary at a rate of £350 per annum, less deduction of £125 in respect of emoluments, which will include board-residence at the Maternity Hospital, and laundry.

Term of appointment is limited to twelve months.

Applications, stating age, qualifications, and previous experience, should be sent in not later than Wednesday, March 5th, to the Medical Superintendent, 50, Bootham, York.

National Hospital for Diseases of the Heart,

Westmoreland Street, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (male).

The appointment is for a period of six months from April 1st, but may be renewed for a further period not exceeding six months.

Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Hon. Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital not later than Monday, March 3rd.

ROBERT G. E. WHITNEY, Secretary.

St. Peter's Hospital for Stone, etc.,

Henrietta Street, Covent Garden, W.C.2.

Applications for appointment as HOUSE SURGEON are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of his term of office, which is for six months from April 1st, the House Surgeon, subject to the recommendation of the Medical Staff, is appointed Resident Surgical Officer for a further period of six months.

Applications, accompanied by copies of testimonials, will be received by the undersigned not later than first post on Monday, March 3rd.

BEECHEY ROGERS, Secretary.

West Kent General Hospital,

MAIDSTONE.

Applications are invited for the appointment of HOUSE SURGEON, who must be a male and of British nationality. Salary at the rate of £220 per annum, with board, apartments, and washing. Candidates must possess registered Medical and Surgical qualifications.

Write in the first instance to the undersigned for form of application, which must be returned completed by Saturday, February 22nd.

EDWARD GREGG,
House Governor & Secretary.

Eccles and Patricroft Hospital,

near MANCHESTER.

SENIOR HOUSE SURGEON required March 1st. Hospital experience essential. Commencing salary £150, board, etc. Apply, with testimonials, to Secretary, Medical Board.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

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19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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Applications are invited for the position of TEMPORARY MEDICAL SUPERINTENDENT at the ABERGELE SANATORIUM, NORTH WALES, for a period of at least three months.

The Sanatorium contains 62 beds, 52 of which are for early cases of Tuberculosis of the lungs in adults, and 10 beds for Surgical Tuberculosis in children. The remuneration is at the rate of £15 15s. a week, with board, lodging, and laundry.

Applications containing a statement of qualifications should be sent to me not later than February 20th, and should have marked on the envelope "Medical Superintendent, Abergele."

Town Hall, F. E. WARBRECK HOWELL,
Manchester. Town Clerk.
January, 1930.

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Hants. — Old-estab. — Average £2,750 p.a. 1/3 share after prelim. assistancy. Panel about 2,000. Usual fees. Prem. 2 years' pur., part down.—No. 8601.

Cheshire Town. — About £900 p.a., increasing. Visits 3/6—5/-. Mids. 3 gns. Panel about £400. Small house for sale. Urgent sale.—No. 8597.

S. Wales. — Town Nucleus. About £600 p.a., increasing. Mids. from 2 gns. Visits 2/—3/6. Panel about 400. House, 4 bed., etc. Sep. surg. and dispensary. House-Practice £2,100 or offer, part down.—No. 8609.

Home Counties.—Country Practice. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 230. Mids. 2 gns., dicouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £280 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250. —No. 8608.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Small house about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage. —No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house garage, garden. Prem. 1 yrs. pur.—No. 8603.

Australia. — Over £1,000 and great scope. Hosp. appt. worth £400. Fees 10/6 up. Prem. £700. New bungalow, 2 bed., 1 large sitting room, surgery, etc.—No. 8604.

Lincs.—Unopp. Country Practice. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 5/- to 10/-. House, 5 bed., etc., to rent; large garden.—No. 8592.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Visits 5/- to 21/-. Good house 2—10 gns. Small panel, but scope. Mids. and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.—£1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8585.

Hants Country. — About £700 p.a. Appts. about £55 p.a. Panel about 300. Visits 3/6—10/6. House, 3 bed., etc., to rent or buy.—No. 8582.

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4 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

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19 EASTERN COUNTIES. — Partnership in Country Practice over £2,000 p.a. in prosperous agricultural district. Panel 1,070. Nice detached house (6 bedrooms), electric light, etc., for sale or rent. Premium two-fifths share £1,400.

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29 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

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3. LONDON, S.W.—Very old-established chiefly middle-class PRACTICE, rapidly increasing and offering still further scope. Gross cash receipts for the immediate past twelve months approximately £5,000. Panel of about 1,500; could be much increased. Fees from 2/6 to 21/-. Two houses available, on rental. Very suitable for two friends in partnership. Premium 1½ years' purchase.
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8. DEATH VACANCY.—LONDON, S.W.—Old-established non-panel PRACTICE, producing over £1,600 p.a. Fees from 2/6 to 21/-. Convenient house, with 2 reception, 4 bedrooms, and professional rooms, and containing lounge hall, 2 reception, 7 bedrooms (3 fitted h. & c. water basins, dressing and 2 bathrooms, etc. Central heating. Electric light. Garage. Price, freehold, £3950. Premium £1,650.
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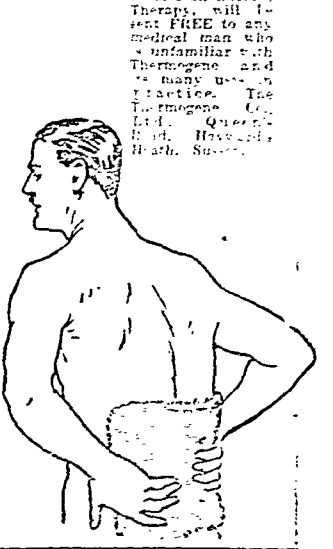
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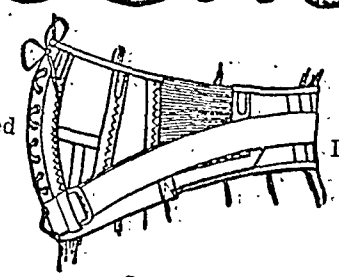
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White or *Natural* "*Taffeta*"	54" × 90" 33/6 each.
" "	70" × 90" 42/- each.
Flannel " ... "	70" × 90" from 31/6 each.

THE JAEGER HOUSE, 352, OXFORD STREET, W.1.

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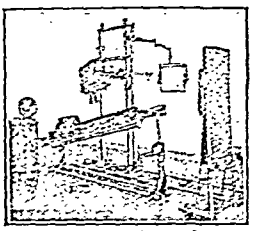
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There are Agents in every Town.

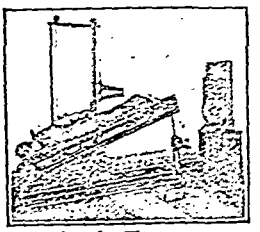
Radiography Made Safe

with the Victor Shock-Proof X-Ray Unit

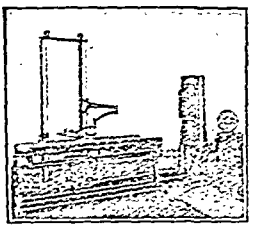
It's Oil Immersed



Angular Radiography
A crank and worm-gear arrangement facilitates tilting the table from either end.



Angular Fluoroscopy
Tube head lowered and swung under table, also revolved on its axis to direct the rays upward. Note how conveniently the fluoroscopic screen is brought into position.



Horizontal Fluoroscopy from Under the Table
Observe the extension arm attached for operating the shutters and manipulating the tube head. The fluoroscopic screen and tube head move in unison.

Other Features

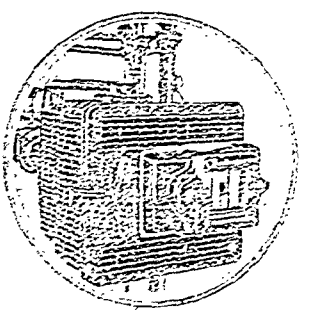
100% electrically safe. Compact.
Silent operation. Self-contained.
Greater Flexibility.
Increased diagnostic range.
Eliminates overhead system.
Longer tube life.
Same tube used over and under table.
Not affected by altitude or humidity.

THEY said it couldn't be done. To eliminate *all* danger of shock from X-ray apparatus does seem impossible. Yet Victor engineers have succeeded.

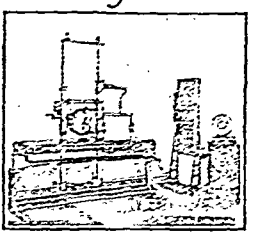
The secret of the Victor Shock-Proof X-Ray Unit, as you will see from study of the illustration, lies in the tube head. Both X-ray tube and high tension transformer, *immersed in oil*, are sealed inside this container. Completely insulated, the high tension current that has made X-ray apparatus dangerous, is kept where no one can come in touch with it.

Handle any part of this Victor Unit while in operation. There is no possibility of shock. Scientific publications the world over are proclaiming this one of the most remarkable achievements of recent years. Truly this unit represents, as they say, the most important development in roentgenology since the Coolidge tube itself.

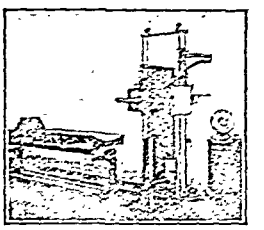
May we send you a folder illustrating and describing this remarkable unit?



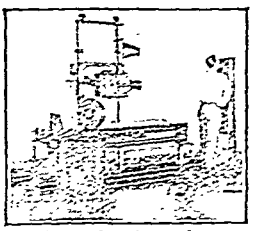
Close-up of tube head of Victor Shock-Proof X-Ray Unit in which both the X-ray tube and high tension transformer are mounted in oil, completely insulated and sealed, thus confining all high voltages within this head.



Fluoroscopy Crosswise the Table
Offers new possibilities in routine X-ray diagnosis. The tube head may also be adjusted angularly for this purpose. Thus the tube is adjusted to the patient rather than the patient to the tube.



Vertical Fluoroscopy
The tube head is behind the vertical fluoroscope. Note how the fluoroscopic screen swings into its normal position. The tube head and screen move in unison.



Vertical Radiography
A cassette tunnel is mounted on the back of the vertical fluoroscope. A vertical stereo unit (motor operated) is provided on the tube head carriage.

Other Features

Introduces a new principle of control.
Consistent results.
Complete diagnostic service.
Unit construction permits variation according to specialty.
Minimizes danger around ether, as when setting fractures, etc.
Few mistakes—longer tube life.

CHANGE OF ADDRESS FROM FEBRUARY 24

The need for increased office and display room accommodation has necessitated our moving to larger quarters. Not only will this permit a more adequate demonstration of Victor products, but the greater facilities will aid in giving that type of service which has become associated with the name of Victor.

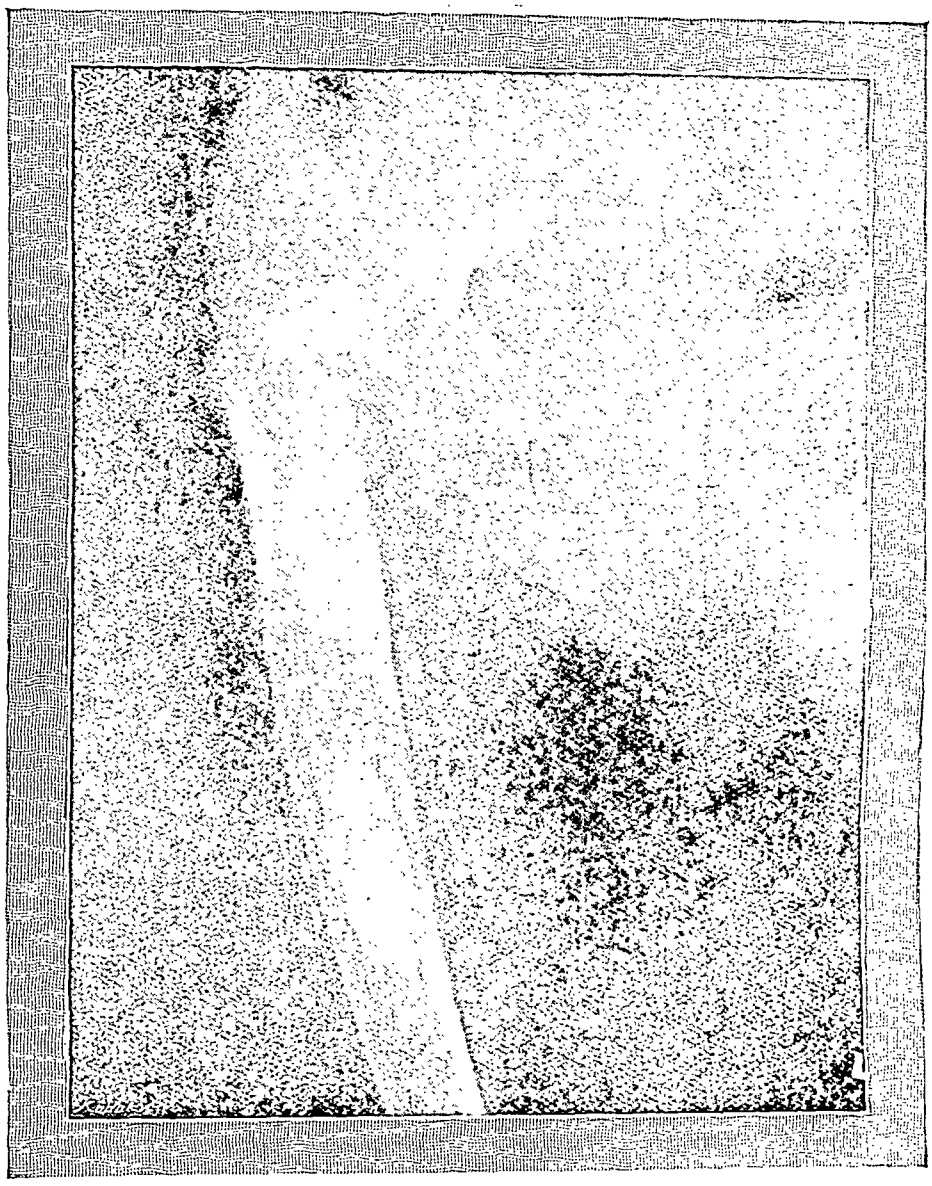
VICTOR X-RAY CORPORATION LTD.

15-19 CAVENDISH PLACE (Cavendish Square), LONDON, W.1

(One minute from Morley House)

Tel phone: LANGHAM 3043-4 *Telegrams:* STABILIZER

VICTOR



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X-Ray Film
– for reliable readings

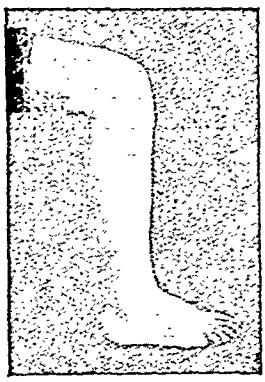
Kodak Limited,
(Medical Department,)
Kodak House, Kingsway, London, W.C.2

INTRODUCING

Elastoplast

ELASTIC PLASTER

A NEW AND HELPFUL PRODUCT for the MEDICAL PROFESSION

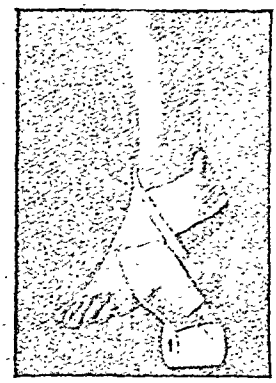


Elastoplast
Application for Varicose Veins.

ELASTOPLAST comes to aid you in your daily work. It represents the greatest advance in surgical dressings technique that has been discovered for many years. ELASTOPLAST is an entirely new product—a specially woven, resilient material, covered with an antiseptic, non-irritant adhesive. It can be instantly applied, adheres firmly, and will remain in situ for any length of time, without creasing, yet allows perfect mobility. It is easily removed and can be used several times.

ELASTOPLAST BANDAGES are manufactured in two styles, plain and ventilated, and are invaluable for all chronic affections of the leg, sprains, strains, dislocations, sealing after operations, and for all orthopædic and surgical purposes.

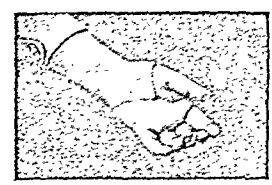
ELASTOPLAST forms the base of a number of speciality dressings, complete with pads of medicated gauze and lint. In various sizes, for every need, they are time-savers for the surgeon and are exceptionally comfortable for the patient. There are various dressings for wounds, fingers, eyes, boils, vaccinations, and Capsicum and Belladonna Plasters.



Elastoplast
Ankle or Foot Dressing.



Large Wound Dressing.



Small Wound Dressing.

ELASTOPLAST PRODUCTS ARE RECOMMENDED AND PRESCRIBED BY LEADING SURGEONS AND ARE ALREADY IN CONSTANT USE IN SEVERAL LONDON AND PROVINCIAL HOSPITALS.

London Specialist

——— presents his compliments, and begs to say that he is impressed with the good points about ELASTOPLAST.

K.C.V.O., C.B., M.S.

"Extremely useful, and I am glad you have been successful in producing a plaster both adhesive and ventilated. This removes the cause of troublesome 'plaster rash,' and the patient experiences a degree of comfort unknown with rigid plaster. The wound dressings are a boon in a busy surgery, being so readily adaptable."

——, M.B., Ch.B., R.A.M.C.

Provincial Specialist

It is the only plaster I have ever put on my own skin which has caused no irritation.

M.B., C.M., F.R.C.S.

You are invited to write for free samples and literature direct from the manufacturers, or they may be obtained from your usual surgical supply house.

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THE TRUTH ABOUT ULTRA-VIOLET RAY GLASS



is fully explained in the "Daylight Illumination" issue of Holophane Illumination, a free copy of which is offered to every interested reader of this paper.

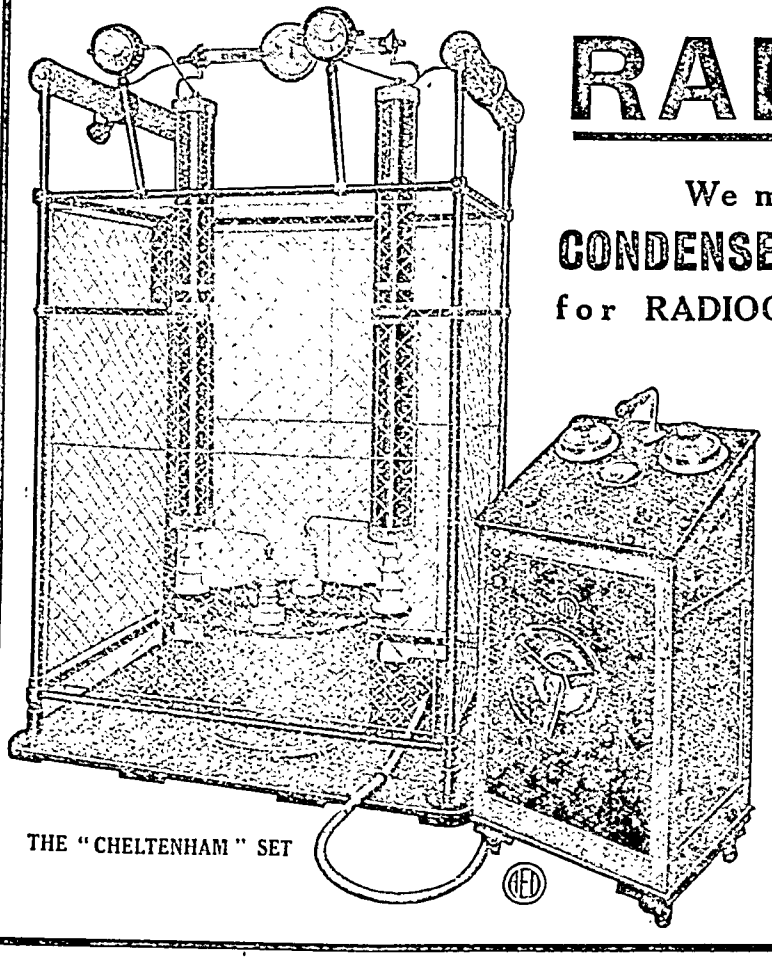
In this issue the whole subject is fully discussed, and a detailed description given of HOLVIglass, the new and improved ultra-violet ray glass which is sold under a definite guarantee that it is permanently transparent to the full range of the sun's spectrum.

HOLVIglass gives the highest permanent transmission to ultra-violet rays.

THE GUARANTEE SEAL reproduced above appears on every sheet of HOLVIglass. It is your guarantee of permanent efficiency, backed by over 30 years' scientific reputation of Holophane Ltd.

HOLVIGLASS
The Guaranteed Permanent ULTRA VIOLET RAY GLASS

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We manufacture a full range of
CONDENSER DISCHARGE APPARATUS
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Perfectly silent in operation.
No revolving parts.
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Manufacturers of X-Ray and Electro-Medical Apparatus of the Highest Grade.
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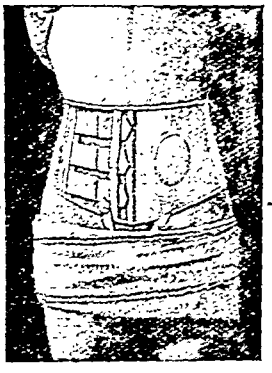
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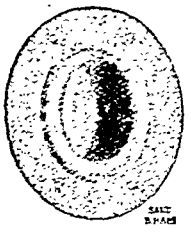
SALTAIR SURGICAL SERVICE

Guarantee

"We guarantee to alter, exchange, or accept the return of any appliance without cost, ordered by the Medical Profession, if not found suitable within fourteen days from date of supply."

Salt and Son Ltd.





View of Cup showing moulded rubber pad which fits snugly against the body.



Side view of Cup. The Cup flange and circular pad are made as one moulding.

SALT'S COLOSTOMY BELT

WITH STERILIZABLE RUBBER CUP

(REGISTERED No. 749046).

This Belt is specially designed for cases where fæces are of a solid nature or the amount is small.

The special feature is the Cup, which is made of moulded rubber in one piece.

It has no corners or crevices and therefore does not retain the odour.

The advantages in this Belt are:—

1. Detachable Cup sterilizable by boiling, repeatedly without deterioration.
2. No crevices or metal fittings to hold fæces.
3. Smell reduced to a minimum.
4. Minimum of bulk.
5. Cups easily and economically replaced.

Write for Full Particulars.

SALT AND SON LTD.

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ESTABLISHED 1793

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Doses :—0.10 gm. 0.45 gm.
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0.30 gm. 0.90 gm.

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BOOTS PURE DRUG Co. Ltd.
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AN EFFICIENT GALACTAGOGUE.

In addition to its value as a means of promoting the nutritional welfare of the mother and child, clinical experience extending over many years has conclusively shown that "Ovaltine" has specific galactagogue properties. As a result of its administration, there almost invariably follows a marked improvement in the flow and quality of the milk.

The following is an example of many reports received:

"In more than one case I have found 'Ovaltine' bring back the milk supply after everything else had been tried. In one case I discontinued the use of 'Ovaltine' after the desired result had been obtained, but I found at the same time the milk supply also diminished, necessitating the resumption of the use of 'Ovaltine.'"

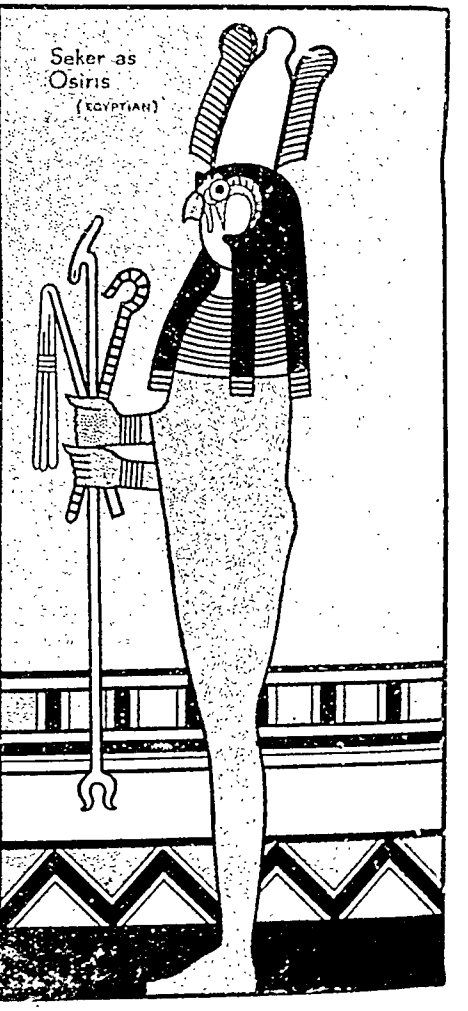
To ensure adequacy of the milk supply many physicians order the use of "Ovaltine" to commence during the eighth month of gestation and to be continued throughout the nursing period. In this way the mother is not only enabled to withstand the extra strain which the childbirth throws upon the system, but to nurse her child from the outset in the best possible way. "Ovaltine" is delicious as well as highly nutritious, and involves no troublesome preparation.

A liberal supply for clinical treatment sent free on request.

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Works: KING'S LANGLEY, HERTS.

M. 206



If your patient must stop sugar

It is well known to the Medical Profession that a child's craving for sweets is natural, as a child requires a large supply of an easily assimilated hydrocarbon. Unfortunately ordinary sugar upsets the digestive functions of some children, and "glucose," recommended in its place, is too often of unknown composition and too expensive.

The monosaccharides of fruit-sugar offer obvious advantages over the di-saccharide, sucrose, and a pure and very palatable mixture of dextrose and lævulose is now available under the trade name of SUNNYCOMB.

SUNNYCOMB was first made at the request of some members of the Medical Profession who desired a reasonably cheap monosaccharide for sweetening baby-food for babies who were not flourishing. The results were so satisfactory, and the product so palatable to both young and old, that it was decided to make it generally available.

SUNNYCOMB supplies the necessary carbohydrates in an easily digestible form, being so readily assimilated that it does not upset the digestive functions as ordinary sugar sometimes does, yet it is at the same time a pleasing and appetising delicacy.

SUNNYCOMB is made by Macfie & Sons, Limited, who first started in 1783 and have been sugar refiners in Liverpool continuously since 1837. They guarantee it to be a pure wholesome product and will willingly supply free samples and full information about it to any member of the Medical Profession on receipt of a postcard.

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SYRUP EPHEDRA COMPOUND-MULFORD

PHEDROS is a new cough syrup containing the antispasmodic properties of the Chinese drug Ephedra (Ma Huang), the expectorant properties of Squill and Ipecac, and the stimulant property and salt action of Ammonium Chloride.

PHEDROS is recommended to relieve the paroxysms and allay acute symptoms of coughs, bronchitis, etc.

Each fluid ounce contains:

Chloroform	2 minims
F. E. Ephedra	40 minims
Syrup Squill	180 minims
Syrup Ipecac	40 minims
Ammonium Chloride	8 grains
Syrup Tolu	q.s.

DOSE: One to two teaspoonfuls according to age.

Descriptive Literature and Samples sent on Request.

H. K. MULFORD Co., Ltd.

REGENT ARCADE HOUSE, 252, REGENT STREET, LONDON, W.1.

Telephone: Regent 2567.

Builds up in underweight conditions and provides a perfectly balanced, highly nutritive diet for growing children

TO the problem of the "underweight" child Horlick's Malted Milk provides a convenient solution.

For many years it has been successfully used by the medical and nursing professions for fast-growing children, for invalids, for expectant and nursing mothers — in all cases where it is particularly important to sustain strength and replenish natural energy quickly.

Excellent results obtained by adding Horlick's to the diet of growing children have been strikingly recorded in many thousands of letters written by parents and members of the medical profession.

Made from fresh, full-cream cows' milk, selected wheat and malted barley, Horlick's Malted Milk constitutes a perfectly balanced food — containing fat, proteids, and soluble carbohydrates in correct nutritive ratio.

The vitamins of its constituents are unimpaired by the Horlick process.

Horlick's contains neither cane sugar nor unaltered starch, but presents in proper proportions a sufficiency of valuable malt sugars, for which children have a greater toleration. Moreover, Horlick's is partially pre-digested during manufacture, thereby assuring perfect assimilation.

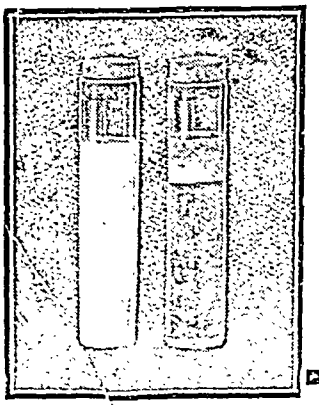
In addition to its important body-building qualities, Horlick's has the advantage of being an extremely palatable beverage. Most children like the natural flavour of malt and will drink Horlick's with pleasure. And it is now obtainable also in a new Chocolate Flavoured form — identical in constituents with the original Horlick's, but with fine chocolate added.

Horlick's Malted Milk (both forms) is obtainable everywhere in sealed glass bottles, at 2/-, 3/6, 8/6 and 15/-. Also in tablets.

Further details and supplies for tests may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

Action of Lysolat compared with that of Carbolic Acid on Pathogenic Organisms

The exceptional germicidal value of Lysolat is due, in great part, to its solubility and stability even in circumstances that destroy other antiseptics. The left-hand test tube below shows Lysolat in a state of perfect emulsification in a 3% solution of Sodium Chloride, whilst a well-known liquid Lysol (right-hand test tube) has broken down under the same conditions.



A number of significant experiments have been made by Prof. Edmund Huynen of the State Veterinary University of Brussels to test the efficacy of Lysolat as a germicide. He used 1% solutions of Lysolat and of Carbolic Acid. It was ascertained that while the Lysolat solution represented a cresol concentration 3.5 times weaker than the carbolic acid solution, it was actually 5 times more powerful.

The following are the results of Prof. Huynen's experiments:

(1) Bacilli Pyocyaneus and Coli were destroyed by the Lysolat solution in 8 mins. at 18°, in 5 mins. at 26°, and in 2 mins. at 37°.

(2) Bacilli Bang and Paratyphoid were destroyed by the Lysolat solution in 1 min. at 37°.

(3) Bacillus Staphylococcus was destroyed by the Lysolat solution in 4 mins. at 37°.

In the latter case the carbolic acid solution required a contact of 120 mins. to destroy the Staphylococcus under identical conditions. At 26° the Lysolat solution proved to be 15 times stronger, and at 18° 12 times stronger than the solution of carbolic acid.

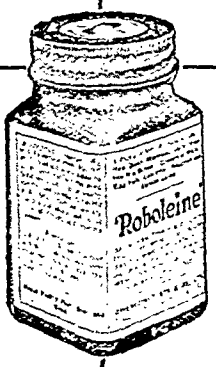
Lysolats (LYSOL TABLETS)

PATENT 118667



Lysolats are packed in handy tins containing 40 and 80 tablets (at 1/3 and 2/- respectively), and also in tins of 1,000 tablets.

Members of the Medical Profession are invited to write for free samples of Lysolats to Solidol Chemical Ltd., Ashmead House, Disney St., London, S.E.1



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The Food that Builds the Body.

Recommended for nearly a generation by the Medical Profession in cases of *Malnutrition, Debility,* Sleeplessness, Loss of Weight. All Tuberculous conditions. For Nursing and Expectant Mothers as a galactagogue. An adjunct in the dieting of infants, etc.

A product of

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Nujol is of great assistance in the treatment of chronic irritable bowel. Unlike cathartics, whose action is stimulating to the muscles or irritating to the lining of the intestines causing excessive secretion of mucus, Nujol acts merely as a gentle lubricant and solvent of impacted fecal matter. Though it absorbs intestinal toxins to a high degree, it cannot, itself, be absorbed. Consequently, toxemia is prevented, peristalsis is at a natural rate, and the stool is normal and properly formed.

Nujol
REGISTERED TRADE MARK.

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M.C. 24

For the Nervous and Physical Depression of the late Winter Months

℞ Bynin Amara

Sig. 3ss ac. p. c. t.d.s.p.c.

COMPOSITION:

Quinine Phosphate 1½ gr.

Iron Phosphate 2 gr.

Nux Vomica Alkaloids equal to Strychnine 1/16th gr.

'Bynin' Liquid Malt 1 oz.

Further particulars and clinical trial sample will be sent on request.

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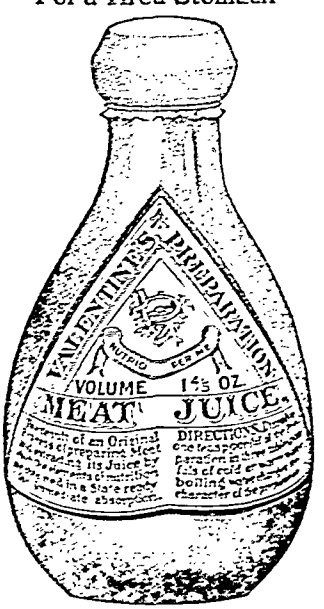
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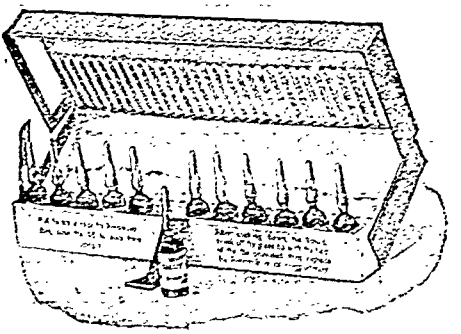
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It is an interesting and important fact that Monsol, which is well known to have a selective action on Gram-positive organisms, has a particularly selective action on the strain Haemolyticus among the Streptococci.

The following table showing the relative dilutions at which Monsol is effective illustrates this.

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DESIGNATION OF STRAIN	*SOURCE*	*DILUTION OF MONSOL*
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Salivarius. Barnes 445	Mouth-Tonsillitis	1-100
Erysipelatis. 226	Lesion	1-150
Enterococcus Tissier 775	Faeces	1-150
Urine 8213	Urine	1-150
Rheumaticus. Beattie	Joint	1-300
Sputum A	Unresolved pneumonia	1-700
Sputum B	Unresolved pneumonia	1-700
Viridans 1080	Tonsil	1-1000
HAEMOLYTICUS 2060	—	*1-1500*
HAEMOLYTICUS B.C. 1498	—	*1-1500*
Mastitidis 2470	Mastitis	1-1500
Scarlatinae. Sherman 1892	Scarlet Fever	1-1500

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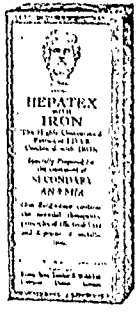
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For the treatment of the severe secondary anæmias the use of liver in itself is of inconstant value. Likewise the administration of iron, while undoubtedly beneficial, does not always ensure that degree of improvement which is desirable. Liver and iron combined, however, have proved most effective.



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Brochure on application.

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Lymphatic
Mammary
Mam-Ovarian
Mam-Placenta
Meduphites
*Multigland**
Myelin
Orchitic
*Ovarian**
*Ovarian Residue**
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Ovo-Thyroid
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Pancreas
Pancreatin
*Parathyroid**
*Parathyroid Compound**
Pepsin
*Peptone**
Pineal
*Pituitary, Whole Gland**
" *Anterior Lobe**
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ALBUMEN FREE

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SOLUTION

FOR THE TREATMENT OF

ECZEMA & URTICARIA

Dr. Thos. M. Paul, in "The Urologic and Cutaneous Review," Vol. XXXIII, No. 11, 1929, states in the opening paragraph:—

"To state that hives will disappear in fifteen minutes, that the itching and oozing of an eczema will cease in half an hour, and that an eczematous lesion, regardless of its degree of lichenification, will vanish in a few days, as the result of a hypodermic injection, seems preposterous, yet such has been the writer's experience in a series of sixty-one cases."

We have a few copies of the actual article for loan to interested Dermatologists.

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ONE OUNCE (the Daily dose) = HALF POUND
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"Medical Officer,"
Jan. 4th, 1930.

This resumé shows clearly the advance made in medical opinion during the last few years. Figures such as these show conclusively that raw cows' milk—"Nature's food for the calf"—is unsafe and unsuitable for the human infant. Discrimination in the choice of a dried milk food is, however, essential.

The makers of Cow & Gate have for over a quarter of a century endeavoured by every means known to science to produce each year a better product, and in the light of this experience they postulate without fear of contradiction that there is a great gulf fixed between ordinary commercial dried milk and that specially prepared for infant feeding.

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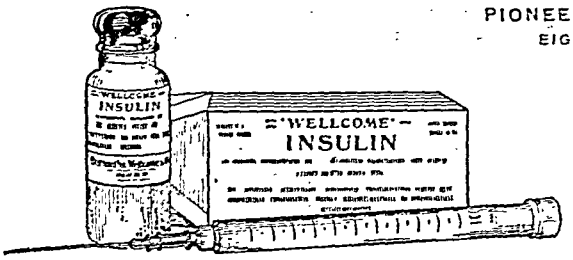
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(See, for example, *The Biochemical Journal*, vol. xxiii, No. 3, p. 565, 1929)

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PORTIONS OF TWO SABEAN INSCRIPTIONS IN WHICH ARE RECORDED RESPECTIVELY THE BURSTING OF A GREAT DAM AT MA'RIB AND ITS REPAIR.—The extract from an inscription here reproduced on the left tells how there came to the king alarming news from Ma'rib—the dam had burst, as well as the walls, the tanks and the cisterns. That on the right describes the repairing of the several parts and notes the different kinds of stone employed. The monograms enclosed within a cartouche have not definitely been deciphered. Remains of the actual reservoir and canals have been traced among the ruins of Ma'rib. These provide evidence of skilful engineering work carried out by the pre-Islamic pioneers who brought about in Arabia a degree of civilisation higher in some directions than she has ever maintained since. According to tradition it was the bursting of the dam that brought about the decay of pre-Islamic Arab civilisation. This would, however, constitute an anachronism, for the deterioration set in about 115 B.C. and is attributed to the loss of prosperity following upon the establishment by the Ptolomies of an overland route from India to Alexandria, which deprived the Arabs of the carrying trade through their own land. The kingdom was finally destroyed by the Aksumite invaders from Abyssinia in the sixth century.

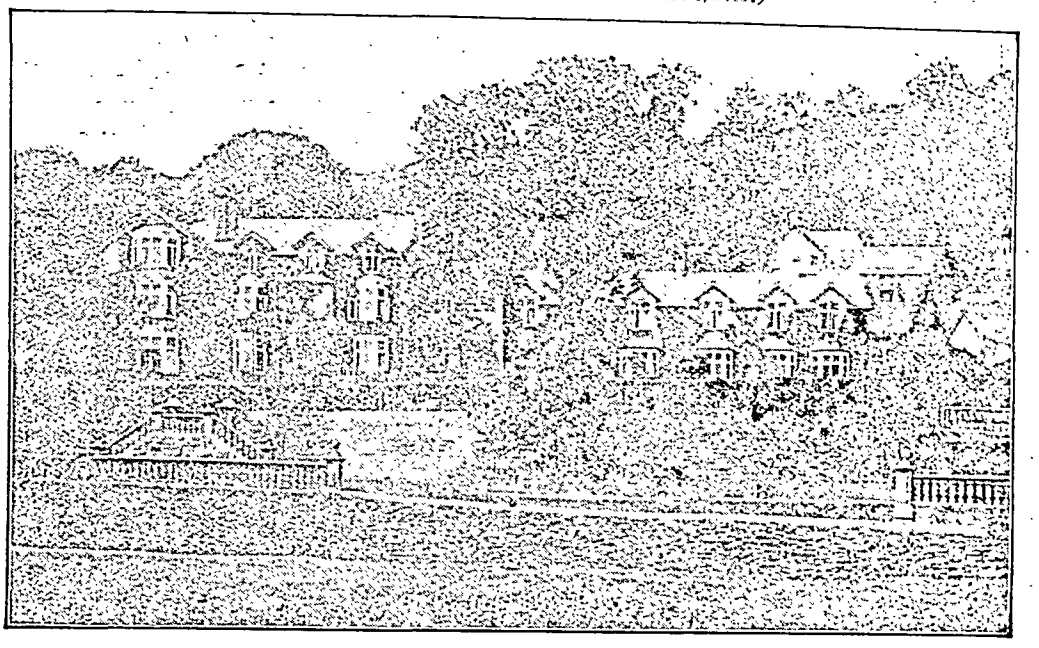
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Mobility and freedom from pain in crippling arthritis of the hip and knee can often be obtained, even after shortening and contraction have occurred. This is effected by the extension appliances, which maintain continuous extension by day and by night. The appliance usually permits the patient to walk, and not only supports the weight but replaces the undesirable state of compression of the leg by one of active stretching.

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Hunterian Oration
ON
HERO WORSHIP IN SURGERY.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON FEBRUARY 14TH, 1930,

BY

ERNEST W. HEY GROVES, M.S., F.R.C.S.,
PROFESSOR OF SURGERY IN THE UNIVERSITY OF BRISTOL.

"*One comfort is, that Great Men, taken up in any way, are profitable company. We cannot look, however imperfectly, upon a great man, without gaining something by him.*"—CARLYLE, *Hero Worship.*

WE have met to-day on the birthday festival of John Hunter, one of the greatest heroes of English surgery. Considerably more than a century has elapsed since, in 1814, this Oration was founded by Hunter's executors, Dr. Matthew Baillie and Sir Everard Home, "in honour of surgery and in memory of men by whose labours it has been advanced." In pursuance of this bequest the Oration has now been delivered seventy-five times, thirty-eight of which have been in the present theatre. Of these, sixty-eight have been published and are now in our library. It would be presumptuous on the part of the present speaker to utter one word without having first read all these published orations. They now cover a sufficient period of time (1814 to 1928), and that a period of the greatest growth and activity in surgery, to make their perusal one of great interest and instruction, especially in marking notable landmarks in the history of surgery and of this College.

Some Notable Hunterian Orators.

The first Oration was delivered in 1814 by Everard Home. He was Hunter's brother-in-law, and will always be famous as one of the founders of this festival and infamous as the destroyer of the great bulk of Hunter's manuscripts.

William Norris, in 1817, after tracing the beginning of the improvement in modern surgery to the teaching of anatomy, states that "in London there are seven large hospitals." In 1818 Sir David Dundas enlarges on a theme already mentioned by Home in the first Oration—namely, the emancipation of surgery from medicine. He says: "If at any former period surgeons allowed themselves to be under the control of physicians, that is not likely to happen again." In 1819 John Abernethy makes a plea for a legal provision of bodies for dissection. Of Hunter he says: "Those who far precede others must necessarily remain alone." Sir Everard Home, giving the Oration for the second time in 1822, and now raised to the dignity of a baronetcy and the Presidency of this College, refers to the granting of the Charter by George the Fourth, by which this College became "The Royal College of Surgeons."

Sir William Blizzard, in 1823, states the "council of this College are unshaken in their confidence in the efficacy of vaccination." The same orator deplores the practice of surgery by unqualified persons, and also the establishment of special military and ophthalmic hospitals. Samuel Cooper, in 1832, refers to the "noble and opulent as the patrons and dupes of murderous quackery."

Sir Benjamin Brodie, in 1837, speaks of Hunter's work being the first instance of the inductive method of philosophy being applied to pathology. He refers to the completion of the new building. Babington, in 1842, says: "John Hunter's discoveries are great in themselves, but their true value is to be found in numbers of other discoveries to which they have given birth." Arnott, in 1843, discusses Hunter's operation for aneurysm, and refers to 389 cases in which the operation had been done, with 277 successes.

Sir William Lawrence, in 1846, mentions that Paget had been appointed to prepare a catalogue of the pathological specimens in the Museum. He enters into a heated defence of the policy of the Royal College of Surgeons and a criticism of the proposal for a Royal College of General Practitioners. Joseph Henry Green, in 1847, refers to the recent institution of the Fellowship of the College and speaks most eloquently on the value of a liberal education. Richard Grainger, in 1848, speaks of the recent development of the science of embryology.

In 1849 the Oration was for the first time graced by the presence of Royalty. Caesar Hawkins, speaking before Prince Albert about the great progress of the Museum, notes the increasing international co-operation by scientific workers. He refers to the discovery of anaesthesia.

In 1859 John Bishop refers to the work of Virchow and of Lister. In 1861 Coulson mentions that Hunter's remains had been transferred to Westminster Abbey. In 1875 Le Gros Clark refers to the proposed co-operation between the Colleges of Physicians and Surgeons in the conduct of a conjoint examination.

Sir James Paget, in 1877, speaking before the Prince of Wales, says: "In the world of mind, he that is mortal may produce that which becomes immortal." Sir George Murray Humphrey, in 1879, makes the first reference to the antiseptic treatment of wounds; he refers to the practice of ovariotomy by Keith and Spencer Wells. Spencer Wells, in 1883, speaks of the progress of abdominal surgery, the discovery of bacteria, and of Cheyne's visit to Koch's laboratory. Henry Power, in 1889, speaks of the experiments and research of Sir Joseph Lister and of the erection at the College of special rooms for research. Christopher Heath, in 1897, makes the first reference to the agitation by the Members for a share in the government of the College. In 1899 Sir William MacCormac, speaking before the Prince of Wales, says: "Lister has finally crowned the edifice whose corner stone John Hunter laid." Sir Henry Morris, speaking in 1909 before the Prince and Princess of Wales, discussed the conflict of inductive and deductive philosophy in Hunter's work. Edmund Owen, in 1911, tells us that John Hunter was examined by the Court of Examiners in July, 1763, at the age of 40, and received his diploma. He describes Hunter's inoculation with venereal disease and the effect of this in causing his death. Sir Rickman Godlee, in 1913, mentions that the original 13,600 specimens in the Hunter Museum had been increased to 64,766.

The controversial subjects referred to have been: the teaching of anatomy as the foundation of sound surgery; the emancipation of surgery from medicine; the problem of procuring bodies for dissection; the menace of quackery; and the agitation by Members of the College for a share in its government. The chief matters of surgical advance have included: vaccination; scientific physiology and embryology; anaesthesia; bacteria and antiseptics; abdominal surgery and ovariotomy. Notable stages in the advance of the College referred to have been: the granting of the Charter by George IV; completion of the present building; foundation of the Fellowship; formation of the Conjoint Board; moving of John Hunter's remains to Westminster Abbey; and the growth of the Museum from 13,600 specimens, bequeathed by Hunter, to 64,766. Six times the Oration has been delivered before members of the Royal Family, the first time by Caesar Hawkins, before the Prince Consort in 1849, and the last by Sir Berkeley Moynihan in 1927, before the Princess Mary.

Recent Losses.

When I undertook to deliver this Oration I had hoped to say that all the orators subsequent to 1913, its first centenary, were still with us, but now we have to deplore the death of Sir Anthony Bowlby, who gave the Oration in 1919 and was our President from 1920 to 1922. Intimately known and dearly loved by all the Bart's students who came under his kindly supervision, a sound surgeon and a wise teacher, Bowlby, during the time of the great war, reached the zenith of his fame and influence. He served at the front in France during the entire conflict, and he was largely responsible for the organization and equipment of the casualty clearing stations. No one in trouble at home or in the war ever applied to him for help without receiving it in the form of wise counsel and true comradeship.

Three other men notable in this College have also been recently claimed by death. Thelwall Thomas of Liverpool was a Member of the Council from 1921 to 1927. His skill as a surgeon and his kindliness as a friend will always keep him in our memory, but in addition he has bequeathed the generous sum of £5,000 to the College, which the Council has determined to devote to the benefit of the Library. Thomas Horrocks Openshaw, for many years surgeon to the London Hospital, and chiefly known for his pioneer work in orthopaedic surgery, was a member of the Council from 1916 to 1924. He was a safe surgeon and yet always abreast of the times, and his genial personality and splendid fortitude in the tragic death of his brilliant son greatly endeared him to us. Mr. Victor G. Plarr was the librarian of this College from 1897 to 1929. His quiet and unobtrusive personality made him a stranger to many of our Fellows and Members, but he was always working for the good of the College. That by which he will be best remembered is the work he did in writing lives of the Fellows. The publication of these lives under the editorship of Sir D'Arcy Power is now being undertaken, the expenses being defrayed by Thelwall Thomas's bequest.

We have also to deplore the loss of the last known descendant of the Hunter family in the person of Miss Helen Hunter-Baillie, the great-grand-niece of John Hunter, who died in February, 1929, at the age of 86. She had been a regular attendant at these orations, and had presented a valuable collection of letters and family documents to the Library.

Having given this brief tribute to the memory of men by whose labours surgery has been advanced, I would follow the example laid down by most of my predecessors in mentioning outstanding events in the history and progress of the College.

The Royal College of Surgeons: Outstanding Events in its History and Progress.

The agitation by some of the Members of the College for a direct share in its government, the idea of which was first referred to by Sir William Lawrence in 1846 in his heated denunciation of an attempt to make the Royal College of Surgeons into a Royal College of General Practitioners, and which was first actually mentioned by Christopher Heath in 1897, has continued year by year. It may be said now to have entered upon a new phase, insomuch that the annual meeting at which this topic is discussed, which at one time was the scene of angry strife, is now one of amity and good will. This amity has been further increased by Mr. Buckston Browne's generous endowment for the provision of an annual dinner, at which Fellows and Members meet for convivial intercourse. It is not for me to say if and when the Council of this College will directly represent the 18,000 Members as well as the 2,000 Fellows, but I may express a sincere wish that the change, which is in harmony with the modern democratic spirit, may take place soon. The chief thing which is needed to bring it about quickly is convincing evidence that the change is desired by the great body of the Members.

The attainment of the Fellowship has been greatly facilitated for those in the overseas dominions by arranging for the primary examination to be held each year abroad. The first examination held last year in Canada was so successful that it will probably be repeated each year, and a similar arrangement is now being made for Australia and New Zealand.

Mrs. Macloghlin has left £10,000 and the residue of her estate for the purpose of founding and endowing scholarships for medical students in memory of her husband, the late Mr. Edward Macloghlin, M.R.C.S., formerly in practice in Wigan. A sum of approximately £30,000 has been left by the late Sir George Mackenzie in memory of his friend Sir William Mackinnon, Bt., jointly to the two Colleges for the endowment of medical research.

The Honorary Medal, the award of which was instituted in 1802 for liberal acts or distinguished labours conducive to the improvement of the healing art, and which has only twelve times been given, was this year bestowed upon Sir George Makins, in appreciation of his valuable services to the College, more especially in arranging and describing the series of drawings in the Army Medical War Collection.

Scholarships for research have been founded in this College. Lord Beaverbrook's gift of £1,000 was quickly allocated for tissue culture work, and the need for more permanent endowment was evident. The Council has therefore set aside £500 a year for research work, and generous benefactions from Lord Melchett and Sir Louis Baron have placed at our disposal two more similar sums for a like object, so that there will now be expended on vital research a larger sum of money each year than was received by the College as its total income in the days when Hunter received his diploma. One can hardly question that this movement of greater activity for research would have had Hunter's whole-hearted approval. He spent all his income on his museum and his experiments. The museum was bought by the nation and placed in our trusteeship.

We are proud to think that what originally was a unique collection of 13,600 specimens had increased to over 64,000 when Sir Rickman Godlee delivered his Oration in 1913, and now numbers 72,675, due largely to the addition of the military section acquired during the war, the Onodi and the Strangeways collections, illustrating respectively anatomy of the nose and disease of the joints.

But Hunter's spirit of never-tiring adventure in the search for knowledge, although belauded, has not hitherto been adequately followed. We are too apt, perhaps, to be satisfied with what, after all, is only a collection of dead things, and to forget that Hunter's absorbing thought was that of probing the secret and mystery of life. How he would have been thrilled if he could have used a modern microscope, and yet more if under that instrument of precision he could have seen the living cells growing and dividing! It is therefore a happy thought that among the recent objects of research in this College is that of the culture of living tissues.

One of my predecessors, Sir Rickman Godlee, having spent many hours in the Council room of this College, gazing at the famous portrait of Hunter, became convinced that the look of rapt attention and reverie on his face was an indication that he was absorbed in the contemplation of this great question, "What is life?" The story of the portrait, well known to many here, is nevertheless worth repeating. Hunter had promised to sit for his portrait to Sir Joshua Reynolds, but he proved so restless a sitter that that great painter was in despair of ever getting a soul-revealing picture of Hunter's face. He had made an unsatisfactory beginning as his sitter fidgeted and grumbled, but then, owing to some unknown cause, Hunter became absorbed in contemplation as we now see him. The painter, without a moment's hesitation, turned the canvas round, and hastily but faithfully depicted the face at rest, painting it in the space between the legs of the original portrait. I believe that one of the reasons which have led experts to advise against this picture being restored is the fear that restoration might reveal a pair of inverted legs surrounding the leonine face.

We hope that the recent endowment of research and the building of the new laboratories may go a long way towards removing from us the reproach that, whilst we have treasured and added to the *things* which Hunter left us, we have lost sight of the *ideals* for which he was for ever striving.

Another auspicious event has taken place since the last Oration was given. The President of the Royal College of Surgeons has been elevated to a peerage. Only twice have surgeons been made lords. The first instance was that of Lister, who received his peerage when his days of active surgery were over, but when he was President of the Royal Society. In the second instance we are happy in the knowledge that not only is Lord Moynihan President of this College, but also that he is in the heyday of his surgical virility. Never has his brain been more active, his tongue more eloquent, his hand more firm, or his eye more keen. Because that eye is now upon me I must desist from any further words of eulogy, and I excuse those I have already uttered because it is of this College and the honour which he has brought to it that it is my duty to speak. In Hunter's day surgery was only just emerging from the lowly position of serfdom to medicine. The very name of barber-surgeon indicated this status, half tradesman and half apothecary, and now, two centuries later, the Royal College of Surgeons is presided over by a peer.

Thus far my path has lain on conventional lines laid down by my honoured predecessors, and I felt that I could not venture further without seeking for advice and guidance. For these I have sought for inspiration to speak my best about the great Scotsman, John Hunter, from two other Scotsmen, both of whom, like Hunter himself, came to this city to enlighten our darkness. I asked Sir Arthur Keith, and his answer was "Bones," and I asked Carlyle, and he said "Heroes." In all diffidence, therefore, I will try to follow both their counsels, only asking you to aid my poor words with your imagination in thinking of Keith speaking to you about bones, or of Carlyle thrilling you with his rugged eloquence as he discoursed to you about "the hero as a surgeon."

Hunter's Experiments with Bones.

A great part of Hunter's life was spent in handling bones. Anything big and strong and lasting had as much fascination for him as anything that was curious or

inexplicable. His greedy longing for the skeleton of the Irish giant, satisfied at last by its nefarious purchase, is the best-known instance of this. Hundreds of skeletons of reptiles, fishes, birds, and mammals were prepared, articulated, and preserved by him, and hundreds more were collected as fossils. Indeed, I suppose it would not be far from the truth to say that never before or since has any one man handled so many bones as Hunter. But while his hands were busy with the bones his mind was busy with the questions of their formation and their growth. It is with his specimens dealing with these questions that we must occupy ourselves chiefly to-day. They fall into three categories—the first dealing with growth, the second with inflammation, and the third with transplantation.

In Hunter's day bone was supposed to grow by a process of interstitial accretion. This was the doctrine of Duhamel. True to his principle of "Don't think, but try," Hunter determined to put this idea of bone-growth to the test. He buried two shot, two inches apart, in the tibia of young animals (both the pig and the fowl were used). After a certain period, when the animals had grown considerably, they were killed, and the shot were found to be the same distance from one another but much further from the two ends of the bone, thus proving that the growth in length of a bone was due to additions to its extremities.

Again, knowing of Belchier's discovery, that madder taken in the food is deposited in the bones, he fed young pigs upon food to which madder had been added. By giving and withholding the dye for varying periods and then killing the animals it was proved that madder-stained layers of bone were superimposed on unstained layers, and that as new layers of bone were added to its surface the inner layer next to the marrow cavity was absorbed. He thus proved that the growth of a bone in thickness was due to the addition of new layers of bone to its outer surface, and he recognized the occurrence of the physiological absorption of bone. He went further in this last observation, because he studied it in detail as it occurs in the shedding of a stag's antlers. He even anticipated some of the modern doctrines of internal secretions by noting the effect of castration in stunting the growths of the antlers. In regard to one of Hunter's specimens, the head of a deer, in which the left antler is dwarfed, he tells us that from this animal the left testis had been removed.

In the second group of experiments Hunter demonstrated the process of inflammation, necrosis, sequestration, and the formation of an involucrum in a manner so perfect that his series of specimens stands to-day unique among our pathological collection. No better instance, I think, exists of how badly his tongue and his pen served his hand and his brain than is afforded by the laboured and involved description of the inflammation and necrosis of bones contained in Volume I, Chapter 18, of his collected works edited by Palmer, as compared with the simple eloquence afforded by the specimens from which his learning was drawn. Most of these specimens were obtained by applying the actual cautery to one or other bones of an ass. Possibly this was the same animal the tendo Achillis of which was divided and its union studied, and on which other more elaborate experiments were performed. If this was the case then Hunter's ass certainly deserves a place in history even more honourable than that of Balaam.

In the third group of experiments Hunter showed how animal tissues could be removed from their natural situation and grafted elsewhere. In the most striking of these he cut off the spur of a cock and implanted it into the vascular comb. The transplanted spur not only lived in its new environment, but grew prodigiously. An even more startling experiment was that of implanting a human tooth into a cock's comb, and noting that, having taken to its new bed, it became vascularized, so that an injection into the vessels of the cock passed into the tissues of the transplanted tooth. He transplanted the spur of a hen into the leg of a cock, and obtained perfect healing with good growth of the transplanted bone. This, I believe, is the first instance of successful bone-grafting of which we have any record.

In Hunter's day it was not possible to carry out any but the most simple experiments with bones, because any deliberate exposure and cutting of bone was followed by septic inflammation. Since the advent of aseptic surgery, however, the bones have proved amenable to experimental work as well as to surgical operations.

Macewen's Work.

There have been added to the Museum two notable series of experimental specimens, the one by Sir William Macewen and the other by the Jacksonian Essayist of 1913. The one series is of great scientific and historical interest, because it really settled what may be called the battle of the periosteum once and for all. Until Macewen's work the periosteum was regarded as the veritable matrix of the bone, chiefly because of the work of Ollier of Lyons. But Macewen showed that bone could grow and live without periosteum, and that the so-called periosteal new bone was merely bone which had grown into the periosteum from its basal attachment, and that the periosteum was merely an inert limiting membrane. These ideas were at first scouted by American and Continental workers, but that they have now been converted is proved by the words of Leriche, Ollier's most brilliant pupil: "An area of ready ossification, the periosteum is not a specific organ of osteogenesis"; and "the functional characteristic of periosteum appears to reside in the limitation of ossification."

Quite recently Cowan, an American worker, has shown that not only does the periosteum not produce new bone, but that it is one of the chief agents in preventing the union of fractures, by its capacity of forming dense fibrous tissue, which is apt to grow between the fragments and so hinder the union of the callus which these produce. But the ultimate mystic problem of how bone is laid down and again taken up is not only still far from solution but seems now to us much more complex than it was in Hunter's day. We know a little of some of the distant forces which determine how much bone shall be laid down or to what size or to what density it shall grow.

We know that the ductless glands—the pituitary, the thyroid, the parathyroid, the ovaries—have some influence on the growth of the skeleton; that food elements which can neither be isolated nor analysed—the vitamins—may determine its density; and, most mysterious of all, that not only can sunlight cause bone to grow, but that this sun power can be first given to the food and by this transferred to the bones. In fact, the whole bewildering chapter in physiology called calcium metabolism appears to concern itself with all aspects of life and growth. But even the simple facts of the relationship between bone salts and bone cells are still matters of doubt and dispute. That animal tissues can be grafted was proved by Hunter, but the exact changes which take place in this process are most difficult to understand or explain. Hunter took it for granted when he transplanted a human tooth into a cock's comb and it remained in organic connexion, allowing injection from the bird's vessels to permeate its tissues, that the tooth had become a living part of the cock's tissues. The modern view, however, would be that the vascularization was only that of granulation tissue, by which the foreign tooth would have been eaten away and destroyed.

As I have said before, no practical advantages could have followed in Hunter's time from his grafting experiments. But in the modern era of aseptic surgery bone-grafting has become an everyday method of repairing fractures and of making good defects in the bones. For a time, it is true, the possibility of suture and fixation of bones by metallic substances—wire, plates, screws, and the like—absorbed the attention of surgeons. But both clinical experience and experimental work soon showed the drawbacks and limitations of the use of metal substances and proved the great possibilities of grafting with bone tissue.

The Jacksonian specimens illustrate many of these points, of which the following may be mentioned as the most important. Any metal substance, whether wire or screw, exerting firm pressure upon living bone, causes either necrosis or else absorption of the bone, and therefore is to be regarded as essentially a hindrance to bone growth or repair. This bone destruction, whether by necrosis or absorption, is a vital and not a septic process, but it leads to conditions very favourable to the latter. When, however, metallic fixation is efficient and bone

union occurs, there is produced in the end a reactive inflammation by which the foreign body becomes encased in a layer of dense new bone. Thus the method used clinically may, and often does, lead to painful osteitis, which finally requires the removal of the offending metal.

Living and Dead Bone Grafts.

In regard to bone-grafting, the specimens under consideration give by no means a complete picture of the process. But they do illustrate two points of cardinal importance. The survival and functional union of the graft to the host bone depends essentially upon perfect contact and adequate fixation between the graft and the host. No living graft, however carefully cut even from the same animal, will survive or function if it is laid loosely into the tissues of the host. In other words, the graft manifests no innate vitality of its own. Further, if two small grafts, one of living autogenous bone, the other of dead boiled bone, be fixed firmly in the shape of pegs into holes bored in the living host bone, then at the end of six weeks both will have grown in place and neither naked-eye nor microscopical examination can detect any difference. Dense bone, when transplanted, always dies, in the sense that its cell spaces and vascular channels become empty. It is then invaded by new vessels and inhabited by new bone cells provided by the tissues of the host. From this it follows that in many cases it is just as good to use dead bone in the first place and to trust to the activity of the host's tissues to vascularize and vivify it. Of this I shall show you a convincing proof presently. But it would be going too far to assert that the living autogenous graft has no advantage over the dead one. Certainly when a gap in a bone has to be bridged, the living graft becomes a vital and growing part of the skeleton much more surely and more quickly than does a dead graft. Therefore in such cases as making good the gap left by the destruction of the whole diaphysis by osteomyelitis, or the fixation of a tuberculous spine by the insertion of a tibial graft—a suggestion which we owe to the genius of an American colleague, Dr. Albee—it is better to use the living bone taken from the patient himself. Whether this superiority of the live graft is due to the survival of superficial cells or to its more ready permeability by the host blood vessels we do not know, but it is certainly not due to the survival of the graft as a living entity.

In the beautiful specimen lately presented to the Museum of a double bone-graft of the spine, obtained three months after the grafting operation, the grafts are seen to be in close vital union with the vertebrae. But it is evident that the great vascularity of the grafts represents a new process of permeation and invasion by new blood vessels, as the tibial crests from which they were taken contain no such blood channels.

Probably I have raised in the minds of many of my hearers a feeling of scepticism about the possibilities of dead bones being capable of functioning as real vital grafts—vital, that is to say, in the sense that they become an integral part of the living skeleton. Therefore I will venture to give you three illustrations, which I am happy to say are not dead specimens in bottles, but living, healthy people.

The first is from a lady of 39, who had an ununited fracture of the neck of the femur of two years' duration. The bone was mended by exposing the hip-joint and nailing the head of the bone to the neck after the former had been dislocated. For this purpose a nail, 3 in. long and 3/8 in. thick, made of dead bone cut from a stag's antler, was used. She made a rapid and complete recovery, and to-day, three years after the operation, it is impossible to detect from her active movements which of her hips has been injured. The *x* rays show very well how the bone nail first merely held the broken neck of the femur together, then slowly but surely became incorporated into the living skeleton.

The second instance is in a man of 25, who at the time of the operation was 18. He had developed fibrocystic disease in the upper part of the left femur, which had become reduced to a mere shell of bone, causing a definite aching pain, premonitory of a spontaneous fracture. The exact nature of the condition was revealed by a preliminary operation in which a mass of firm fibrous tissue was found occupying the whole cavity, shown by the *x* rays. An exact model of this cavity was prepared from a tooth of a walrus, which by its curve and size seemed just made for the purpose. The whole cavity in the bone was exposed by cutting a trapdoor from the back of the femur, the fibrous mass was removed in one piece, and the ivory graft inserted. There it remains to this day, surrounded but not replaced by the human bone, the dense ivory having proved resistant to penetration by new blood vessels. The patient, a quarryman, has been in good health and active work ever since. It is to me a happy thought that whilst Hunter was able to graft a tooth into a cock's comb 150 years ago, we have succeeded in implanting a walrus tooth into a man's leg in such a way as to form an integral part of his skeleton.

The third instance is perhaps the most instructive of all, because the dead graft was made to bridge a gap, and has been associated with very active growth of a long bone. The boy, as he then was, ten years ago, between the ages of 7 and 10 had broken the right humerus four times, usually by trivial causes. The *x* rays showed a cyst in the middle of the shaft of the bone. The whole thickness of the affected portion of the bone was cut out for a length of three inches by a subperiosteal resection. The gap was made good by thrusting a long piece of beef bone into each fragment and then bolting together the projecting ends of the grafts. Each graft had had many small drill holes made into it in order to facilitate its penetration by living tissues. He made a smooth recovery without the use of any splint, and was able to return to the dangerous environment of public school life six weeks later. The *x*-ray pictures show how the beef bone has remained in place for ten years, becoming gradually merged, especially at the ends, in the structure of the human bone. That this bone has suffered no diminution of growth from its invasion by an ox bone is evident from the pictures, but that you may be finally convinced of this I have brought the gentleman himself to show you, and you will admit that the addition of a piece of beef bone to his anatomy has not interfered with his growth. (He is now 6 ft. 2 in., and an undergraduate.)

I have selected the study which Hunter made of bones and some of the things which have arisen from it as an example of his work, chiefly because it has not been touched upon by any of my predecessors, and also because it is most familiar to myself, and this leads me to my first observation about Hunter as a great man. Think of it! Seventy-five orations about one man and his work, and still there is left a great subject almost untouched.

Hunter as a Worker.

The first, but I will not say the greatest, claim which Hunter makes to be regarded as a veritable giant among men is his capacity and enthusiasm for work. He came as a young man from Scotland and began his life in London, making anatomical preparations in the school of his elder brother, William; he then taught anatomy and got himself qualified after working at Chelsea, St. Bartholomew's, and St. George's Hospitals. He was already deeply engaged in scientific research work, chiefly in dissecting all the animals he could get. His health threatening to break down, he applied for and obtained a military surgeon's post and served for three years in Belle Isle and on the Peninsula.

On his return to London, his practice having vanished, he began strenuous work in dissecting, describing, and collecting specimens, which was the beginning of the present Museum. He became a surgeon to St. George's Hospital, and he lectured on anatomy and surgery. He acquired a great and prosperous practice, and with its proceeds bought a country place at Earl's Court, in which he collected a veritable menagerie of wild animals and continued with his experiments. He became the Deputy Surgeon-General of the Army Medical Service. He had been for a long time a Fellow of the Royal Society and was already engaged in writing and contributing scientific papers for that learned body. Before he reached the zenith of his fame he had begun to suffer from attacks of angina pectoris, all the symptoms of which he relates with vivid exactitude.

His whole day being taken up with his practice and his teaching and his body racked with an ever-progressive disease, his last thought was of seeking rest or repose. On the contrary, his passion for work kept him up until midnight writing, and awakened him again at four in the morning, when he settled down to his dissecting. If a

stranger wrote to him, wishing to see his work and proffering an introduction from another distinguished surgeon or scientist, Hunter would name 5 a.m. as a suitable hour for an appointment. This all sounds incredible, but its truth is vouched for by many witnesses, including Hunter's arch-enemy, the notorious Jesse Foot.

But in addition to witnesses from the past we have the convincing evidence afforded by 13,600 specimens in the Museum. It is not easy to grasp in a moment the significance of these figures. Hunter began his work at the age of 20 and died at 65. Allowing, then, full forty-five years, and 300 working days in each, we have the total of 13,500 days with 13,600 specimens collected, or an average of one specimen for every day of his life. Many of these necessitated experiment or elaborate dissection, and he also left many folios of drawings, notes, and descriptions, besides those destroyed by Home and the fifty-five papers or treatises written by Hunter or prepared from his notes after his death.

A few people there may be, but very few, who in intellectual pursuits really do work hard, but how many of these continue their self-imposed slavery right up to the end of their lives, even when fame and fortune have smiled upon them? Hunter knew full well that he was suffering from a mortal disease, for he told a friend that his life was at the mercy of any rascal who chose to anger him, and yet he went on at full pressure to the day of his death, when his own prediction came true, and some colleague giving him the lie in the board room of St. George's Hospital he felt that the fatal blow had been struck, and expired in the arms of Dr. Robertson.

Hunter as a Seeker.

This brings me to the next point, which unhesitatingly may be said to be his chief claim to greatness—and this is the driving force which lay behind his work. Hunter was desperately in earnest. He was inspired by a vision of the mystery of life, which called him on and ever onwards, trying, experimenting, asking and seeking to know something of the truth of life and nature. "No man adequate to do anything, but is first of all in right earnest about it; what I call a sincere man. I should say sincerity, a deep, great, genuine sincerity, is the first characteristic of all men in any way heroic." That sentence of Carlyle's I take as literally applicable to our hero.

Nothing serves better to illustrate Hunter's desperate enthusiasm for research than his own deliberate inoculation of himself with disease. Unhappily this experiment was only too successful, though he himself failed to understand, what has been so amply demonstrated by others, that this disease, when it had apparently disappeared, laid relentless hold upon his blood vessels and led to angina and to his tragic death.

It has been many times claimed that Hunter's secret lay in his having adopted the Baconian or inductive philosophy. But others have justly remarked that he often allowed himself to lapse back into the deductive method, and that whenever he did this he wandered from the path of truth. It is highly improbable that he ever consciously adopted any philosophic system. He just went straight to Nature, and, demanding to know the answer to her riddles, he thought nothing of giving his fortune and his life as a price for his knowledge.

In biological science Hunter was the greatest seeker the world has ever known, though by no means the greatest finder. It was his desperate earnestness in seeking, and not merely the products of his research, which then and now rivets men's attention. It was an arresting spectacle to see a Scotsman spending £70,000 in collecting specimens which had no intrinsic value. It was his supernatural faith that there was in Nature something worth seeking which made other men follow his lead. The mere sight of a man earnestly gazing at some object in the street is enough to draw a crowd, who will endeavour to find out what all are looking for. The pioneer who refuses to be satisfied with the bare tillage of the surface soil, worn poor by many generations of cultivators, and, convinced that a rich vein of gold is to be had for the digging, spends all his energies, his fortune, and his life in delving into the earth for buried treasure—who brings up many strange things, which at first only a few know to be auriferous ore—this is the man whose faith and enthusiasm compel others to follow. The pioneer does not himself, maybe, find the largest nugget or the purest gold, but he shows where gold may be found and how to find it.

Such a pioneer was Hunter, and to Lister coming after him was accorded the good fortune to bring to light the most precious treasure that the surgeon-digger has ever given to his fellow men. It was John Hunter's faith and vision which raised surgery from the level of a craft and art to that of a science, and which has proved an inspiration to his followers. "For consider," as Carlyle says, "what mere time will do in such cases; how if a man was great when living, he becomes tenfold greater when dead."

His Human Frailties.

The wonderful influence which Hunter exerted upon contemporary thought is made much more remarkable when we consider his many shortcomings and frailties. He was gifted with neither learning nor eloquence. Of his writings I am almost tempted to quote what Carlyle says of Mahomet's Koran: "I must say it is as toilsome reading as I ever undertook. A wearisome, confused jumble, crude, incondite; endless iteration, long-windedness, entanglement." I sometimes wonder whether his brother-in-law, who afterwards became Sir Everard Home, the first President of the Royal College of Surgeons, deserves all the obloquy which has been heaped upon him for taking a cartload of Hunter's unpublished writings away with him and quietly destroying them, after he had extracted so much learning from them as, by papers contributed by himself to the Royal Society, earned him a Fellowship in that body.

Although Hunter lectured for many years he found it a painful task, and often took laudanum beforehand to quiet his discomfiture. He had none of the classic learning considered essential for a scholar in his day, and even when he had a chance of acquiring it at Oxford he impatiently threw it aside, saying that he would rather learn from living Nature than from dead languages. Even in these uncouth days Hunter was a rough customer. He was always quarrelling—whether with fellow officers in his military service or with his own brother, or other workers at home. He bursts into his wife's drawing room and addresses her visitors: "I knew nothing of this kick-up: I ought to have been informed of it beforehand, but as I am now returned h me to study I hope the present company will retire." It seemed that he must quarrel even to the end, even though it cost him his life.

If it should seem strange to mention these human frailties when speaking of one who was truly a hero, if ever there was one, I do it deliberately in order to emphasize that Hunter owed his influence to the greatness of his work, the almost blinding sincerity of his vision, and to his unquenchable enthusiasm, rather than to any charm of manner or polish of language. I must quote Carlyle again when he says: "On the whole we make too much of faults; the details of the business hide the centre of it. Faults? The greatest of faults, I should say, is to be conscious of none."

His Heritage and Inspiration.

To the whole surgical world who have come after him Hunter's most priceless bequests have been his inspiration and his heritage. The heritage is here as the most wonderful museum of its kind in the world; the inspiration is impossible to limit or define.

We know that Hunter's experimental methods laid the foundations of modern physiology and pathology. He taught us to seek out the relations between structure and function in the normal tissues and between disorder and disease in the morbid. In his collection of animals and of fossils and his observations on development, with its parallelism between the growth of the individual and the elaboration of the race, he came very near to the Darwinian theory of evolution. His methods, closely followed by Lister, were the basis of the discovery of the antiseptic treatment of wounds. "Worship of a hero is transcendent admiration of a great man." The great turbulent heroic soul of Hunter has never lacked this worship, or else these seventy-six orations have been poor sham mockeries.

But even if we admit that orations are but empty words, there exists a far more vital evidence that the torch of inspired enthusiasm has been faithfully handed down from his day until now.

First, there was that dear old man Clift, who like a watch-dog guarded his master's treasures after his death, when it seemed that nobody wanted them. For seven years he lived on seven shillings a week, whilst he kept his trust, and then later became the first formal custodian of the Museum. The watch-dog growled and showed his teeth, but, alas! could do no more when his master's precious papers, many of which Clift had himself helped to write, were carted away and secretly destroyed by Home. Clift's daughter married Richard Owen, who succeeded him in the guardianship of the Hunter Museum and became the greatest palaeontologist and comparative anatomist of his day. He was later transferred to the Natural History Museum at South Kensington. Owen was followed by Paget, a most notable torchbearer, whose ceaseless labours added so much to surgical pathology, and whose silver-tongued eloquence is remembered by many now living. Then came the greatest of Hunter's followers, Lister, whose name is held in honour all the world over as the one whose work has saved more lives and suffering than have been sacrificed by war. Lister, it is true, never held high office in this College, though he was a member of Council for eight years. His gentle soul did not love fighting with his detractors, and he preferred to pursue his quiet research in the laboratory and at the bedside. And lastly, we are fortunate in having to-day, in the person of our beloved Curator, Sir Arthur Keith, one on whom the mantle of John Hunter seems perfectly to rest, the depth of whose learning and the eloquence of whose tongue fit him so well to be the guardian of Hunter's heritage and the exponent of Hunter's inspiration.

Hunter may truly be said to have raised the idea of the scientific pursuit of truth to the level of that compelling influence in men's lives which is called religion. For he had a vivid faith in his quest, an unquenchable enthusiasm for his ideal; he left an inspiration for all who come after him, and a real hero for us to worship.

ADVANTAGES TO THE DIABETIC OF A DIET RICH IN CARBOHYDRATES.*

BY

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WHEN Banting revolutionized the treatment of diabetes by the introduction of insulin he provided a means whereby the diabetic can metabolize carbohydrate. It was unfortunate that this discovery should have come at a time when Allen had revived Guelpa's method of treating diabetes by starvation. Because the "starvation" method unquestionably became grafted on to the insulin method of treatment, with the result that, in addition to the necessary evil of having to endure daily hypodermic injections, the diabetic is often subject to deliberate and, in my opinion, unnecessary degrees of undernutrition. The high fat dietary is another survival from pre-insulin days.

The practice of feeding diabetics with an excess of protein was more readily dropped when insulin was introduced, although many advertised diabetic foods still claim as a merit their high protein content. I cannot conceive that in these days there is any advantage to the patient in offering as a substitute for carbohydrate an excess of fat or of protein. For, to speak plainly, if a diabetic deprived of carbohydrate does not convert the fat or protein of his food into glucose or glycogen he dies. There are a few people so constituted that they can derive from fats and protein an adequate glycogen supply—the Eskimos as a race seem capable of this physiological *tour de force*. In our race or our climate the healthiest of us mostly fail miserably if we try to accomplish it. The diabetic, with or without insulin, is equally liable to fail; it is almost a miracle when he succeeds.

The question I propose to consider is whether a diabetic need nowadays ever be asked to attempt either the task of deriving his glucose exclusively from fats and proteins or the alternative task of living cheerfully and working usefully whilst balancing on a sort of knife-edge of starvation.

The importance of keeping the blood sugar low if a diseased pancreas is to have a chance of recovery is universally admitted, but the prospects of recovery are decreased if the low blood sugar is accompanied by a general starration. A starved pancreas will not regenerate, even though the blood sugar is low; new tissues are not built up by such means.

Before, however, the regeneration of the pancreas is considered, there may come the far more pressing question of keeping the diabetic patient alive. The first fear is that diabetic coma may supervene. Insulin treatment has reduced the mortality from coma to such an extent that one can say "a death from diabetic coma is not an unnecessary death." Nevertheless diabetic coma is not an unreal danger even to-day, and it is only by constant supervision on the part of the doctor and intelligent co-operation on the patient's part that this danger is averted.

We know that the chief factor in the production of diabetic coma is incomplete oxidation of fats. These fats may be either exogenous, the fats of food, or endogenous, the fats of the body. If insufficient carbohydrate is ingested, the body endeavours to derive its calorie wants from the fats; in any case a certain amount of carbohydrate is required to secure complete oxidation of the fats. If the oxidation is incomplete ketosis ensues, and finally such a degree of ketosis is reached as produces coma and death. Thus if a patient with diabetes, in whose urine acetone bodies are present, comes under observation the immediate aim of treatment is not to regenerate the pancreas, it is to prevent coma. The treatment of coma when established is admitted to be the administration of glucose rendered usable by insulin. No one urges that the least particle of fat is needed when the patient is comatose.

When treating a diabetic I am never satisfied so long as any trace of ketone bodies can be detected in the urine. I know that Rothera's sodium nitro-prusside test is unduly delicate, but it seems to me that any patient who has had sufficient ketosis to give a positive ferric chloride (Gerhardt's) response, may as well be cleared completely, even to the point where Rothera's test becomes negative. In like manner, when Rothera's test becomes positive in a diabetic where previously it was negative, it is better to push the patient back on the safe side and render the urine completely negative, rather than let him continue on a path, whose width we cannot presume upon, which divides a positive Rothera's reaction from a negative Gerhardt's.

In a patient showing even slight ketosis there seems no sound reason for administering fats at all. The first object is to eliminate the ketones, and we only know one practical way of doing this—namely, the administration of carbohydrate. When the subject of ketosis is not a diabetic we give glucose, either by the mouth or intravenously, but if diabetes is present then insulin must be added to enable the ketones to be oxidized with the carbohydrate. If the diabetic patient should chance to have a high blood sugar it may be that insulin alone will enable the blood sugar to be utilized, but there is no way of determining whether the blood sugar all by itself is sufficient to counteract the ketosis when insulin has been given.

One may meet with a patient in diabetic coma with hypoglycaemia, because the insulin has enabled the blood sugar to be exhausted and yet was insufficient in amount to burn up all the ketones. Obviously this can only be avoided by giving carbohydrates freely with the insulin and ignoring glycosuria. As the majority of patients threatened with coma are under-nourished, we need not fear that their weight will increase immediately. Make them safe first, then consider their nutrition.

The patient with ketosis, however slight, does not stand in immediate need of fat. On the contrary, a diet rich in fat but poor in carbohydrates produces fat deposit rather than glycogen in the liver, and where fat has got in there

* Presidential address to the Bath and Bristol Branch of the British Medical Association, 1929

is apparently no room for glycogen. Now a respectable glycogen deposit in the liver provides to the diabetic who is having insulin a definite safeguard against hypoglycaemia.

A diet poor in fat and rich in carbohydrates is the only way to ensure glycogen storage. So I advocate the withholding of fats for a time in patients with any degree of ketosis, and being generous with the carbohydrate. I give the patient an adequate maintenance diet, replacing the fats as far as possible with their equivalent of carbohydrate—that is, 1 ounce of fat replaced by 2¼ of carbohydrate. I recently had a small boy sent into Bristol Royal Infirmary verging on coma. I ordered my house-physician to give him all the sugar he could eat, and sufficient insulin to restore him to consciousness without bothering about the glycosuria. Also a baby of 18 months was treated with insulin whilst kept on a milk diet, with no added fat.

Diabetic children can rarely do without a generous ration of carbohydrate. Even the normal child is easily upset by a surplus of fat over carbohydrate, which accounts for a certain number of cases of cyclical vomiting, acetonaemia, or acidosis in children. No child should be compelled to eat more fat than he has the taste for. Avitaminosis is not a real danger. Vienna experience showed how little fat added to the diet would avert xerosis of cornea, rickets, etc.

There is another class of diabetic in whom a fat-free or fat-poor diet is an advantage—that is, the patient who requires a surgical operation or an anaesthetic. No surgeon or anaesthetist likes to embark on an operation upon a patient who has not a reasonable store of glycogen. Funk said: "Let us not forget that sugar (glycogen) is the food, and the only food, upon which muscle can live. Especially to be remembered as regards the heart." Fats are no help in the preparation of any patient for operation, less still do they help the diabetic.

Diabetic atheroma is another condition in which a good carbohydrate supply is definitely beneficial and a fat-rich diet is harmful. Joslin remarks that every dose of insulin defers arterio-sclerosis and postpones old age; for it has been observed that the diabetic who develops arterio-sclerosis at an abnormally early age is the severe diabetic kept alive upon a low carbohydrate, high fat diet.

There is another point to be considered in reference to arterio-sclerosis: insulin has been administered in order to relieve arterial spasm, and has proved beneficial in some cases of Raynaud's disease and gangrene; but it has been observed that insulin-hypoglycaemia may actually precipitate an attack of angina pectoris in a patient with a diseased heart. The sclerotic heart, as van den Bergh remarked, may even demand a high blood sugar level.

Pregnancy in the diabetic woman is another state which surely calls for great caution in the administration of protein and fat; I know no solid objection to allowing her all the carbohydrate she asks for. There is a grave doubt whether a high cholesterol content in the blood, such as excessive fats produce, may not damage the kidneys as well as prevent glycogen storage in the liver—a combination of evils which is especially dangerous in pregnancy.

Sansum has been advocating for some time a more generous use of carbohydrate, and Joslin's only criticism is that it may lead to undue gain of weight. Nearly every writer on diabetes advises that the diabetic shall be kept at a weight 10 per cent. below the average for his age and build. I believe the best weight is that at which a person feels fittest and is most active in mind and body.

I always feel sorry for the diabetic who has to take his necessary calories in the more condensed form, say, of butter and cream, and stay the pangs of hunger with cellulose and similar indigestible roughage. Which of us, if given our choice, would not prefer 1 oz. of bread to ½ lb. of cabbage *plus* 5 oz. of brussels sprouts and 5 oz. of lettuce? Our patients are advised to eat Ryvita; four pieces of Ryvita contain more carbohydrates than 1 oz. of white bread. Porridge is not everybody's meat, yet a plate of porridge made with 3/4 oz. raw oatmeal contains the same carbohydrates (15) and protein (3) as 1 oz. of white bread, and 3 grams of fat in addition.

Most children like milk, and it is not so fearfully dangerous; 1 pint contains 30 grams of carbohydrate, 20 of protein, 20 of fat, and in a palatable digestible form. Three ounces of potatoes contain only 20 grams of carbohydrate.

Bear in mind that for every ounce of fat that is omitted 2¼ oz. of carbohydrate may be substituted. So that if we are content with 1/4 oz. of butter instead of the 1 oz. allowed in the Bristol Royal Infirmary basal metabolic diet of 1,679 calories, our meal may contain at least 1/2 oz. more white bread. My experience is that if fats are limited and sugar is omitted few patients will voluntarily exceed a 3,000 calorie diet which contains ordinary carbohydrate and meat. They must, of course, be careful not to take sugar or jam in any form, raw or cooked. That means giving up marmalade for breakfast, sweets for dinner, and jam for tea.

The advantages that may be claimed for allowing diabetic patients a diet rich in carbohydrates appear to be:

Contentment and satisfaction are secured.
The regimen is more readily observed.
The danger of ketosis is removed.
Arterio-sclerosis is delayed.
Most important of all, a fat-poor diet increases carbohydrate tolerance and the prospects of pancreatic regeneration.

MISSED DIAGNOSES.*

BY

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KNOWLEDGE of pathological processes and their manifestations grows steadily, and with it has developed a finer discrimination of disease; but we must confess that at times diagnosis eludes us, not always because we are lacking in skill or in experience, but because our knowledge is still insufficient. Missed diagnoses are not to be regarded as errors. The medical museum and the post-mortem room offer proof that in many cases a missed diagnosis, often unavoidable, has occurred.

Our nomenclature is sometimes at fault, suggesting an artificial classification of disease into separate entities; thus, when an anatomical diagnostic term is used it tends to narrow our field of view, and we may fail to realize that disease may be a widespread process affecting the whole organism. Occasionally a diagnostic term may serve as an expedient for concealing ignorance. When we speak of a deficiency of hormones are we in fact more lucid than were our predecessors when they said a patient was suffering from the spleen?

Disease Without Symptoms.

Variations from the normal structure may occur without associated disturbances of function. The presence of unilateral kidney may remain unsuspected during the lifetime of the patient and be revealed for the first time in the post-mortem room: before the introduction of modern methods of genito-urinary investigation cases occurred in which the unilateral kidney was excised in the operating theatre with fatal results. The patient with a polycystic kidney may not present symptoms till he has reached middle age, and the analogous condition of congenital cystic liver may remain unsuspected till its increasing size creates a diagnostic problem.

A woman, aged 43, had an enormous liver, with cystic swellings that had been slowly developing for many years; tests for suspected echinococcus disease gave negative results; laparotomy revealed simple cystic disease of the liver.

Congenital morbus cordis may remain unsuspected, and I have known an absent interventricular septum to be found accidentally at a necropsy on an adult woman. Advanced cancer of the stomach may occur without the association of dyspeptic symptoms, and surgeons have demonstrated that patients whose stomachs have been removed may afterwards suffer little or no inconvenience.

In acquired disease compensatory changes, or encroachment on the physiological reserve, may mask the condition

*A paper read to the Bristol Division of the British Medical Association, on December 6th, 1929, and in part to the West Jewish Hospital Medical Society.

till routine examination brings it to light. School inspection reveals unsuspected mitral stenosis; medical officers examining recruits for the services find cases of aortic regurgitation compatible with apparent health and full activity. Coronary thrombosis presents a characteristic train of symptoms—pain, pyrexia, leucocytosis, and fall in blood pressure—but advanced coronary disease may be symptomless till sudden death occurs. Sometimes post-mortem examination in a case of sudden death reveals an unsuspected extensive pneumonic consolidation. A most surprising example of silent disease was in a woman six months pregnant, who died suddenly while mounting an omnibus. In her heart were found numerous large gummata replacing a great part of the myocardium.

The chief factor concerned in adaptation to structural change is time; abnormal changes coming on suddenly are more likely to produce symptoms than similar, or even more advanced, structural changes having a gradual onset. Thus a spontaneous pneumothorax generally presents dramatic signs, but I have seen three insidious cases complicating chronic phthisis in which the condition was discovered during routine examination in an out-patient clinic. Similarly, haemorrhage into the lung, or even a pneumonic exudate, may cause severe distress, but a slowly growing neoplasm may attain a large size without producing symptoms. Renal calculi can produce extreme destruction of one or both kidneys and their presence remain unsuspected until the onset of a terminal uraemia.

The Onset of Symptoms.

The period that may elapse before a structural change produces symptoms is inconstant, depending not only on the time factor just mentioned, but on the individual. A patient may have a large pleural effusion and still feel well; tumours may grow for varying periods in the silent areas of the brain, or in the thorax, before they produce irritative or pressure symptoms in adjacent tissues; gall-stones filling the gall-bladder may produce no symptoms, and sometimes, in cases of tumour of the bowel, symptoms may be long delayed. It is difficult to tell at what stage a large white kidney, or a small white contracting kidney, begins to produce symptoms. These, and like conditions, are occasionally found during routine examinations or accidentally in persons undergoing examination for the presence of other diseases.

A youth, aged 18, admitted to hospital with acute myelitis of the dorsal cord, died in a few days. At the necropsy an unsuspected empyema was found to have tracked behind the pleura into the extradural space, causing a pressure paraplegia. The initial lesion was probably caries of a dorsal vertebra.

A medical student examining his own blood in the course of his studies found a condition of myelaemia with 120,000 leucocytes per c.mm. Investigation showed that he had a large spleen.

Various Aids to Diagnosis.

While it is true that clinical pathology has extended our knowledge of the early stages of disease, its findings are not infallible, and if we rely on them too rigidly we may miss a diagnosis. A spirochaete, Klebs-Loeffler bacillus, a positive serological reaction, leucocytosis, leukaemia, etc., are diagnostic, but at times may occur apart from the disease of which they are characteristic. Diphtheria bacilli may be present without producing diphtheria; a Widal reaction is obtained long after the patient has had prophylactic inoculation; a positive Wassermann reaction may be found in quiescent syphilis.

Negative findings may have little diagnostic significance and lead to error; thus peritonitis and other suppurative conditions may occur without leucocytosis; blood cultures may be negative in infective endocarditis; agglutination reactions may be delayed or even absent in typhoid fever. Failure to find, for example, a malaria parasite or the entamoeba, or a positive Wassermann reaction, should not rule out a diagnosis of the conditions with which these are associated.

In many cases disturbances of function can be detected by biochemistry only when advanced structural lesions are present, but such investigation has helped the clinician to avoid error. It has enabled him to discriminate renal glycosuria, which formerly was treated as diabetes mellitus, often—because the patient was deprived of carbohydrates—with serious results. In patients suffering from vomiting, constipation, and abdominal distension, it has helped him to differentiate uraemic conditions from intestinal obstruction. Similarly radiography helps in the diagnosis of renal calculi and gall-stones, though negative findings are of less value. After all, radiography cannot replace the clinical examination, which supplies data necessary for a proper interpretation of shadows. Even instruments used in clinical medicine may serve to mislead the practitioner. How much less important than the experienced eye is the stethoscope in the examination of the chest in a toxaemic and partially asphyxiated bronchopneumonic child, or the thermometer in a severe apyrexial pneumonia? How misleading may be the information yielded by the sphygmomanometer in a case of arterial degeneration with low blood pressure!

Compensatory Adaptability; Cryptic Disease.

Chronic inflammatory changes in the kidneys or liver leading to fibrosis and shrinking are often unsuspected till the occurrence of a terminal uraemia, cerebral haemorrhage, or a fatal toxaemic coma.

A schoolgirl, aged 12, active and well, had a fit, and died in hospital a few days later. Necropsy revealed distorted, shrunken, white granular fibrotic kidneys and cardio-vascular hypertrophy.

A servant girl, aged 20, became unconscious and died from a large cerebral haemorrhage. She had contracted scarlet fever when she was 9, and suffered from chronic interstitial nephritis and cardio-vascular disease.

Is the diagnosis of such cases always overlooked? If the individual came for examination in the stage of apparent health could the condition be recognized? Occasionally, yes; but the possibility of effecting a diagnosis increases as the disease progresses. The urine does not always contain albumin, but the specific gravity decreases, cardio-vascular changes develop, and blood pressure rises; later, retinal changes appear. Biochemical tests for renal inefficiency are less helpful: wide variations from normal occur only in advanced stages. Moreover, the significance of such variations may be misinterpreted, as cardiac failure may produce a similar but temporary impairment of renal function.

The pre-ascitic stage of cirrhosis of the liver is, I think, most often diagnosed retrospectively; even the ascitic stage may be absent if the peritoneum is not extensively implicated in the fibrotic process, and the diagnosis may be missed till a fatal toxaemia or haemorrhage ensues.

A medical man, aged 50, suffered for over six years from intractable pruritus ani. Only after his death from cardiac failure was cirrhosis of the liver revealed.

A woman, aged 25, whilst at work became comatose and died in two days from extreme atrophic cirrhosis of the liver with splenomegaly but no ascites.

Cancer of the oesophagus may occur without producing dysphagia, and sometimes after it has perforated into a bronchus it is diagnosed as septic pneumonia. Similarly thoracic aneurysm may remain unsuspected for years.

Anomalous Symptoms.

In tracheal diphtheria without involvement of the fauces, a throat swab may give a negative finding. I have known cases in which the bacilli were found only in the sputum or in the vomitus. Nasal diphtheria may remain unrecognized and run a chronic course till an epidemic draws attention to the presence of a carrier.

A nurse complained of attacks of impending suffocation. She had low fever and a quick pulse, but the fauces were clear and throat swabs were negative. A tracheotomy became necessary, and in the discharge Klebs-Loeffler bacilli were found in abundance.

A fulminating type of infectious disease is often missed except in epidemics, and mild cases or ambulatory types may also escape notice. Whooping-cough in adults, owing to the absence of whooping, is often unsuspected.

A man, aged 54, suffered from intractable cough with no physical signs to account for it. After some weeks of unsuccessful treatment his grandchildren developed whooping-cough; it was then found that his blood picture showed a lymphocytosis.

Accompanying hypothyroidism is an important condition which I have not seen described since the late Dr. R. G. Hebb first directed my attention to it—namely, intestinal

atony. One case was subjected to operation, on the assumption that intestinal obstruction was present. Since then I have seen two similar cases, which were relieved by thyroid medication; in both of these radiograms showed enormous distension of the colon. I believe that milder grades of this condition are overlooked, and that many cases of abdominal distension and "pot-belly" in middle age are definitely improved by thyroid extract.

A woman, aged 56, was admitted to hospital with abdominal distension. She had a dry skin and coarse hair. The condition was attributed to a surgical lesion, and operation was advised. Laparotomy revealed a greatly extended large bowel, showing peristalsis, but no obstruction; the patient died six months later, and at the post-mortem examination I could find no abnormality except a completely atrophied thyroid gland.

Another condition sometimes associated with abnormal thyroid activity is intractable vomiting; in one such case thyroid medication put an end to vomiting, which for several months had been occurring frequently.

A woman, aged 46, had pyrexia, a rapid pulse, and frequent vomiting, unrelated to meals; the thyroid became prominent, and acetonuria developed. Rapid improvement followed the administration of iodine. Later the patient relapsed, but on being given iodine was improved once more.

This history raises the question whether the cases of severe vomiting which respond to tincture of iodine are of similar origin, and perhaps explains the failure of iodine in other cases.

The abdominal symptoms in hyperthyroidism may simulate cholelithiasis or appendicitis, and patients in whom this has happened have occasionally been subjected to operation.

Diagnosis Missed till Sequelae Appear.

I need hardly remind you of the dramatic revelation, by perforation or haemorrhage, of previously unsuspected peptic ulcer, or of the similar, though rarer, sequence in ambulatory typhoid fever. Equally familiar is the desquamation following scarlet fever which a few weeks previously had been diagnosed as tonsillitis; or the paralysis which recalls the history of sore throat, the diphtheritic nature of which was not suspected. A more recently discriminated condition is the Parkinsonian syndrome appearing in a patient not known to have suffered from encephalitis lethargica. Some such patients give a history of "influenza," and in general it would seem that, as with diphtheria, the mildness of the disease bears no relation to the incidence of sequels.

Delayed Physical Signs.

Central pneumonia, especially in children, is often puzzling till, as sometimes happens, the consolidation reaches the surface; in some such cases the symptoms suggest meningeal involvement, but lumbar puncture gives negative results. In one case a radiogram revealed a shadow centrally situated in the lung.

A girl, aged 8, was admitted to hospital with remittent pyrexia of from 100° to 103°, a quick pulse, and no characteristic physical signs. Paratyphoid fever, diphtheria, and miliary tuberculosis were all suspected in turn, but eventually all of them were ruled out. Following crepitations, which appeared about the third week, there developed definite signs of consolidation in the right axilla; a diagnosis of central pneumonia was established, and the patient was discharged two months after admission, though resolution was still incomplete.

Hodgkin's disease and chronic tuberculosis are examples of diseases which may remain undiagnosed, owing to the delayed development of their characteristic physical signs. When the lesions are confined to the thoracic or abdominal glands Hodgkin's disease may progress for months unrecognized unless a Pel-Ebstein temperature curve is present, while chronic abdominal tuberculosis may be present for a long time before it is detected. At the moment I have under observation a child who for seven months has had fever and debility; recently a few tubercle bacilli have been found in the stools, all previous attempts to find them having failed.

Incomplete History.

At times patients deliberately suppress facts; they may deny a history of gonorrhoea, and diagnosis is difficult, owing to the fact that the gonococcus may for long periods remain latent in the body. In two of my cases of chronic arthritis the gonococcus was cultivated from the prostatic secretion over twenty-three years after the original lesion.

A man, aged 62, had been treated over twenty years for "rheumatic gout," which had led to severe crippling. Notwithstanding his denial of venereal infection I examined the prostatic secretion and obtained a culture of gonococcus; he then remembered having been infected thirty years previously.

When a patient gives a history of having lived abroad the fact should receive due attention. The malaria parasite dies out after a time, but *Entamoeba histolytica* may remain potentially active for indefinite periods. In cases of liver abscess, therefore, even if no amoebae or cysts are found in the stools, it is advisable, by giving a course of emetine, to test a diagnosis suggested by the history. Again, an unexplained pyrexia with a suggestive history may respond to treatment with quinine.

A man, aged 59, had to retire from an important post on account of an illness diagnosed as "pernicious anaemia." He mentioned casually that he had had dysentery many years previously; examination of his stools revealed active entamoebae, and treatment led to complete recovery.

Due attention must be paid to a history of cancer or other growth excised, no matter how long ago. In cases of pain arising from metastasis in the spine I have known diagnosis to be delayed because of failure to appreciate the significance of a history of breast amputation carried out many years previously. In two cases of melanotic cancer metastasis occurred fifteen years after excision of the eyeball—an exceptionally long interval considering the type of growth.

One Disease Simulating Another; Masked Disease.

Albuminuria, with or without haematuria, due to calculus is sometimes diagnosed as nephritis, especially when the calculus is of uric acid, which does not show on radiograms.

A girl, aged 6, with occasional slight albuminuria, had been kept in bed for two years, her illness being diagnosed as nephritis. She was admitted to hospital, and the calculus, revealed by *x* rays, was removed; there had been no pain.

Bacilluria which does not respond to treatment often disguises the presence of stone or tuberculosis, or even cancer. A simple pleural effusion may result from a more serious subdiaphragmatic lesion.

A man was admitted to hospital with pain and tenderness in the loin, and fever; he had a leucocytosis. A serous pleural effusion found on the same side as the pain, seemed insufficient to account for the symptoms, and further exploratory puncture in the loin revealed a perinephric abscess, which was evacuated.

Difficulty is apt to arise in acute leukaemia—by no means a rare disease; the haemorrhages from the gums and elsewhere have been mistaken for scurvy, gastric ulcer, and in one case, at first, for placenta praevia. In cases of acute leukaemia, which end fatally in a few days or weeks, there are no obvious glandular enlargements.

Cases which Remain Undiagnosed.

I have records of several cases of severe illness, generally with pyrexia, which have resisted all attempts at diagnosis, but the patients have completely recovered. Sometimes all the practitioner can do is to record his observations of a case, hoping that in the light of later experience he may be able to interpret these observations. The following is an example of a case of severe illness the nature of which has always remained in doubt.

A woman, aged 33, suffered with rigors, pyrexia, and a quick pulse, following "stomach-ache" and nausea. Appendicectomy was performed, but the symptoms persisted; at times the temperature was 103°. The urine was normal and blood cultures were sterile; but there was a leucocytosis (20,000). Paratyphoid fever, bacilluria, and septicaemia were eliminated, and tentatively a diagnosis of pylephlebitis was made, as there was slight icterus and a tender liver. In six weeks the temperature subsided, and after several exacerbations the patient recovered and remained in good health.

Diagnosis not Revealed by Necropsy.

Occasionally, particularly in children, even necropsy fails to advance the diagnosis. I have seen several cases of children admitted to hospital with symptoms suggesting encephalitis, but post-mortem examination has revealed no evidence of this disease, or of any other. Man, after

all, presents physiological as well as anatomical problems, and it is only the latter that are dealt with in the post-mortem room. The following case raises the question whether a man can die of fright.

A Sikh visiting England was treated in the casualty room for a Colles's fracture. He was leaving the hospital when he dropped dead at the exit. The most careful examination revealed no cause of death. He was a well-developed man in the prime of life.

Conclusions.

In my survey I have said nothing about middle-ear disease in children, or of gastric crises; nor have I attempted to deal with syphilis, which I sometimes think can simulate nearly every disease.

It has been said that medicine is made up of common sense and experience. The former is essential if one is to benefit from the latter. The practitioner is most likely to arrive at a correct diagnosis by means of an orderly method of examination, intelligent use of ancillary means of investigation, avoidance of bias, and the application of general principles derived from his own experience. If for a moment I may be didactic, I would say, Do not be satisfied with a diagnosis unless it explains all the symptoms, and if you have any doubt do not hesitate to say so. Even in the presence of the most difficult case we are not helpless; the whole of our art is not in diagnosis—certainly not from the patient's point of view. The patient seeks relief from his symptoms, and I recall the remarks made by the late Professor Leech in introducing a course of therapeutics: "Relieve the symptoms, make a diagnosis, treat the disease."

RADIOLOGICAL DIAGNOSIS OF THE DISEASED APPENDIX.

BY

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THE filling of the appendix with barium was considered by some workers as an exceptional, or even an abnormal, phenomenon only a few years ago. Thus F. M. Groedel, in 1921, wrote: "The appendix does not fill easily with barium meal, and, with the majority of radiologists, I consider at the present moment the radiological visualization of the appendix as an abnormality, or at least as an exception." A few years later the opinion became current that with skill and care the appendix could be visualized in 90 per cent. of cases during the usual routine examination.

The visualization of the appendix probably depends largely on the preparation of the patient; no amount of training and technical skill can enable the examiner to visualize an appendix if the lumen is filled with faecal matter. It is therefore of the utmost importance, in all



FIG. 1.—Case 1. Seventy-two hours after ingestion.

cases where a diseased appendix is suspected, to have the bowels thoroughly evacuated by a suitable purgative before the *x*-ray examination. Eau de Châtel Guyon or eau de Gubler are supposed to be particularly effective in this respect, but castor oil or Epsom salts are probably equally good. Alois Czepa advises the administration of the barium meal mixed with two teaspoonfuls of Epsom salts. With this technique the appendix is visualized after six to twenty-four hours, but the best time is between ten and twelve hours, since the ileum is as a rule empty by then and does not overlap the caecal region, while the caecum is well filled.

Mobility of the Appendix.—The normal appendix is freely movable, either spontaneously or on manipulation; of course, the diseased appendix is not necessarily fixed. Among the different kinds of fixed appendices there are two types giving rise to definite clinical pictures. (*a*) There is the appendix fixed all along the caecal wall, forming, so to speak, an integral part of the caecum. It is obvious that this appendix is stretched when the caecum fills, and may give rise to severe pain at the moment when this happens; the pain subsides with the emptying of the caecum. Such an appendix, overlapped by the shadow of the caecum, may occasionally become visible after the caecum has emptied itself. (*b*) Then there is the appendix only the tip of which is fixed to the pelvic wall. In such cases there is no pain so long as the caecum is full, heavy, and consequently situated low in the pelvis. But as soon as such a caecum empties itself it ascends and drags the appendix with it, thus causing pain.

CASE I.

A boy, aged 8, had about six attacks of abdominal pain during the eighteen months preceding November, 1928. The attacks lasted from half an hour to several days; during them the temperature rose, the breath was foul, and the child became of a pale greenish colour. The pain disappeared after defaecation. The clinical diagnosis made was chronic appendicitis.

The *x*-ray examination (illustrated in Figs. 1 and 2) gave evidence of hypersecretion of the stomach, with poor filling of the duodenal cap. The appendix became visible at four hours; throughout the whole examination (ninety-six hours) it remained



FIG. 2.—Case 1. Ninety-six hours after ingestion and twenty-four hours after a dose of $MgSO_4$.

in exactly the same position and could not be displaced by manipulation, giving the impression of being fixed to the wall of the caecum. It was slightly tender to pressure. Its canal is seen to be dilated, and it remained filled after a dose of Epsom salts. The radiological diagnosis was a chronically inflamed and dilated appendix fixed to the caecum. An operation and histological examination of the removed appendix confirmed the radiological diagnosis.

Appendicular adhesions may alter the shape and position of the caecum, which may appear to be deformed, displaced upwards, etc. Displacement and alteration of the shape of the caecum, descending colon, and lower ileum may be caused by large and encapsulated appendicular abscesses, but, of course, an abscess of any other origin in the region of the caecum would give rise to similar appearances. In one case, in which an acute attack of

appendicitis (in the course of a subchronic appendicitis) began during the *x*-ray examination (diagnosis confirmed by operation), the caecum showed considerable spasticity and was much deformed; such spasticity may occasionally also be observed in chronic appendicitis.

Dilatation of the appendicular canal is a very important sign, and was present in the case just mentioned. The club-like dilatation of the distal end of the appendicular canal is an almost certain sign of chronic appendicitis.

CASE II.

A married woman, aged 41, had been suffering from attacks of pain in the lower abdomen during the five months ending

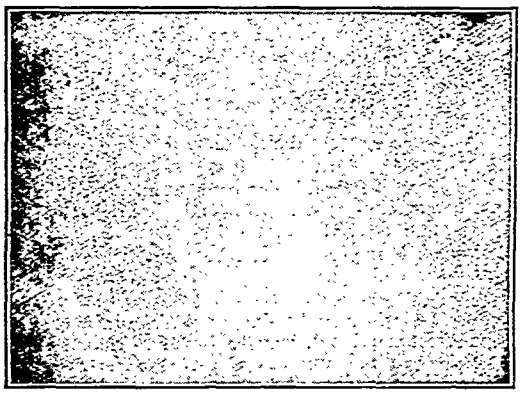


FIG. 3.—Case II. Twenty-four hours after ingestion.

April, 1929. The *x*-ray examination (Fig. 3) showed a long, *dilated appendix with club-like end*. The appendix seemed to be fixed to the caecum, and was tender to pressure. The radiological diagnosis was chronic appendicitis.

Three weeks later the patient was suddenly taken ill with symptoms of acute appendicitis, and was operated on by Mr. Cairns Forsyth on May 10th. The appendix was found much dilated and adherent to the caecum; it contained a great number of grape and fruit seeds, and its walls were much thinned.

The region of the diseased appendix is as a rule more or less tender to pressure. Quite frequently the patient himself, when asked to show the most tender spot, places his finger over the appendicular region. The tender spot changes its position when the appendix is displaced through manipulation, but, in the absence of other confirmatory signs, not much importance can be attached to tenderness of the appendicular region.

Caecal stasis, in the form of a mass of barium remaining in the caecum for several days after the rest of the colon has emptied itself, is supposed to be one of the signs of chronic appendicitis; but, as a matter of fact, caecal stasis is frequently found in patients with quite normal appendices.

CASE III.

An unmarried woman, aged 21, had suffered for a few years with pain in the right hypochrondium and hypogastrium. At the *x*-ray examination the appendix was not seen and the appendicular region was not tender; but seventy-two hours after the ingestion there was a noticeable mass of barium in the caecum, and at ninety-six hours barium was still present there and at the hepatic flexure. An operation revealed Jackson's membrane, Lane's first kink, and two strong fibrous bands attached to the outer side of the caecum. The appendix was normal. Adhesions between the ascending and the transverse colon at the hepatic flexure were freed, the bands were severed, appendicectomy was performed, and a good recovery ensued.

In this case the caecal stasis was undoubtedly caused by adhesions and bands, but the appendix was normal. When we find caecal stasis combined with a diseased appendix it is difficult to say which is the primary and which the secondary condition. *A diseased appendix may* affect the adjoining caecum, but caecal stasis may in turn interfere with the emptying of the appendix, and result in appendicular stasis, leading eventually to chronic appendicitis.

CASE IV.

An unmarried woman, aged 22, had an operation eight years ago for retroversion of the uterus, and since then has suffered from sudden attacks of diarrhoea, which come on irregularly and are caused by certain foods (eggs, fish), by cold, emotional disturbances, etc. In the intervals between attacks the bowels were rather loose. The *x*-ray examination (Figs. 4 and 5) showed a well-filled appendix, which was tender to pressure and not fixed. The caecum and appendix remained filled 120 hours after ingestion, the remainder of the colon having already emptied itself three days before. The appendix was still filled 144 hours after an effective dose of castor oil. The radiological diagnosis was caeco-appendicular stasis and probably diseased appendix. An operation is still under consideration; in the meantime the patient is keeping fairly well under medical treatment.



FIG. 4.—Case IV. One hundred and twenty hours after ingestion.

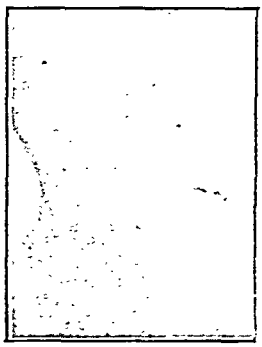


FIG. 5.—Case IV. One hundred and forty-four hours after ingestion and twenty-four hours after a dose of castor oil.

In this case the attacks of diarrhoea and the loose stools are undoubtedly caused by the caecal stasis, which keeps up an irritation of the colon; but it is impossible to say which of the two, the appendicular stasis or the caecal stasis, is the primary and which the secondary condition. This is a very important question, since if the appendicular stasis is secondary to the caecal stasis appendicectomy will not bring about a definite cure.

This case brings us to another important sign of [illegible] appendicitis—namely, appendicular stasis, indicated by the presence of barium in the appendix after the caecum has emptied itself. We must admit, however, that even a severe appendicular stasis, resisting repeated administrations of purgatives, does not necessarily indicate a chronic appendicitis in the absence of other confirmatory clinical signs and data. I have seen an appendix still containing barium six days after administration of the barium meal, and this in spite of two doses of castor oil and repeated enemata. In this case there was not the slightest likelihood of a chronic appendicitis. It is probable that barium is partly liable to be retained in the narrow appendicular lumen. If the loops are [illegible] so that a sluggish but not necessarily diseased appendix would retain it for a considerable time.

The retention of the barium residue in the appendix may be favoured by a partial stenosis of the proximal part of the lumen of the appendix. *The liquid barium penetrates* through the narrowed part of the appendix into the distal end, but there it thickens and hardens, so that the appendix becomes unable to expel it. This probably happened in the following case.

CASE V.

An unmarried woman, aged 25, had been suffering from abdominal pain for about six months, the last period of constipation followed by diarrhoeic attacks. An *x*-ray examination was made after purgation by a dose of Epsom salts, followed twenty-four hours later by the administration of a barium meal mixed with another dose of Epsom salts. The appendix was movable and slightly tender to pressure. It remained filled for ninety-six hours after the administration of the meal, and in spite of a dose of castor oil. The radiological diagnosis was chronic appendicitis.

At the operation there was revealed a long appendix curved on itself with no adhesions. On *x*-ray examination of the removed appendix the distal three-quarters of the appendix showed broad, dense barium shadows and the regular outline of the appendicular canal; at the junction of the proximal quarter and the distal three-quarters of the appendix there was a narrowing of the



FIG. 6.—Case V. Radiography of the removed appendix.

appendicular lumen. (See Fig. 6.) The abdominal symptoms disappeared after the operation, and there has been no recurrence during fourteen months.

Appendicular stasis is sometimes observed in chronic inflammatory conditions of the right tube or ovary, with or without involvement of the appendix.

CASE VI.

A married woman, aged 38, suffered from sterility and frequent abdominal pain, mostly on the right side. At the *x*-ray examination the appendicular region, particularly the appendix itself, was found to be tender to pressure, and there was appendicular stasis up to seventy-two hours after ingestion of the meal. A diagnosis was made of chronic appendicitis with involvement of the right tube and ovary.

An operation was performed, and the appendix was found lying in a kind of pocket formed by fibrous adhesions around the right tube; the appendix itself was free. Histological examination of the removed appendix showed increase of the fibrous tissue with signs of chronic inflammatory reaction. The operative findings are rather in favour of a chronic tubo-ovarian inflammatory condition with secondary involvement of the appendix.

In the next case, in spite of the inflammation of the right ovary, the appendix was not involved, but it showed stasis through sluggishness, probably caused by its proximity to the diseased ovary.

CASE VII.

A married woman, aged 30, had been suffering for some time from constipation and headaches. Five weeks before examination she had nausea and an attack of pain on the right side of the abdomen. Constipation was present, but the clinical and vaginal examinations were negative.

The *x*-ray examination revealed that the appendix remained filled ninety-six hours after ingestion, though the colon and caecum had expelled the barium forty-eight hours after ingestion. The appendix was not tender, but there was a definite tender point below it, and the conclusion was reached that there was a chronic tubo-ovarian inflammatory condition of the right side, but the appendix was probably not diseased.

At the operation both ovaries were found to be adherent to the abdominal wall. The appendix was normal. Adhesions were freed, and appendicectomy was performed. Recovery was uneventful, and there was no recurrence of symptoms during nine months.

The length of the appendix may range from two to twelve inches; occasionally it looks very short, and this may be due to pathological changes within the appendix or to a kink preventing further penetration of the barium. In one case a very short appendix was found in a man who had been operated on for appendicitis twenty-eight years previously. The appendix was removed, but obviously a part of it was left, and this fragment, about three-quarters of an inch long, was very tender to pressure. There were also clinical symptoms of chronic appendicitis. Incidentally the radiological examination revealed the presence of a duodenal ulcer, and of pericholecystitis. It is quite possible that the affection of the duodenum and gall-bladder were secondary to the chronic appendicitis.

The non-filling of the appendix can be interpreted as a sign of disease only when it is impossible to visualize the organ after repeated purgation, followed each time by the administration of barium. In such cases the non-filling of the appendix suggests an obliteration of its lumen, or kinks, or dragging. It may be due also to a retrocaecal position of the appendix, whereby the shadow of the appendix is overlapped by the filled caecum, the caecum and appendix emptying simultaneously.

These are the most frequent radiological signs of the diseased appendix. Further research and experience will probably reveal other signs and at the same time enable us to interpret more accurately the signs described.

SUMMARY.

1. The appendix can be visualized radiologically in about 90 per cent. of cases. Frequently the appendix is visualized only after thorough purgation of the bowels.

2. Two different types of fixed appendix are described: (*a*) The appendix fixed to the caecal wall; stretching of the fixed appendix through filling of the caecum causes pain; the pain subsides when the caecum empties. (*b*) The appendix with the tip only fixed to the pelvic wall; emptying, with consequent rise of the caecum, causes pain through dragging on the fixed appendix.

3. Spasticity of the caecum may be observed during an attack of acute appendicitis, but occasionally also in chronic disease.

4. The dilated appendicular canal, and particularly the club-like dilatation of the distal end of the appendix, are almost certain signs of a diseased appendix.

5. Not much importance can be attached to tenderness of the visualized appendix in the absence of other confirmatory signs and symptoms of appendicular disease.

6. Caecal stasis may be due to a chronic appendicitis, but, on the other hand, may be found in cases of normal appendices. In the presence of caecal stasis and chronic appendicitis, it is difficult to say which of the two is the primary and which the secondary condition. In cases of primary caecal stasis appendicectomy would not cure the caecal stasis.

7. Appendicular stasis is suggestive of chronic appendicitis only in the presence of other confirmatory radiological signs and clinical symptoms of appendicitis. Stasis persisting after the administration of a purgative is sometimes caused by a partial, localized stenosis of the appendicular canal; the fluid barium penetrates through the narrowed lumen, but cannot be expelled after it has thickened and hardened through absorption of fluid.

8. Appendicular stasis is sometimes seen in chronic tubo-ovarian inflammatory conditions, with or without inflammatory involvement of the appendix.

9. The short appendix may be due either to pathological changes within the appendicular canal or to kinks or adhesions of the appendix.

10. The non-filling of the appendix can be interpreted as a pathological sign only in cases where the appendix cannot be visualized after repeated purgation, each purgation being followed by a barium meal.

I wish to express my thanks to the honorary radiologist of the French Hospital, Dr. Hernaman-Johnson, to the surgeon Mr. J. Cairns Forsyth, Mr. R. Rowe, and Mr. C. Burnham, and to Dr. J. Moore, for permission to publish some of the cases mentioned in this paper.

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AN OUTBREAK OF PSITTACOSIS.

BY

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OXFORD.

ON December 21st, 1929, a green parrot was given to the two sons (aged 13) of Dr. and Mrs. M. It arrived ill, which was attributed to its having been sent by train on a very cold day. It died on December 30th.

Eight people were more or less in contact with the bird —Dr. and Mrs. M., their two boys, the cook, the gardener, a nephew of Dr. M.'s, and a friend who spent Christmas with them. Of these, the first four and the friend handled the bird; the cook went into its room, and the gardener cleaned the cage and took the dead bird away after Mrs. M. had put it in a tin box. He was told to dispose of it, but instead he put it in the shed where he worked and left it there. It was afterwards found and buried by Dr. M. On December 30th the nephew arrived to convalesce after an operation, and he spent some hours in the room in which the parrot had died. Of these people, Mrs. M., the cook, the nephew, the gardener, and the friend all became dangerously ill; the other three escaped. Only two of these five persons became ill before the party broke up, and so it happened that all the patients came under different doctors and the epidemic character of the outbreak was not at first realized.

CASE I.

In this case there was at first an apparently obvious diagnosis of the recurrence of a long-standing pyelitis. The patient, Mrs. M., felt unwell on January 5th, and on January 7th she had a rigor and went to bed with a temperature of 104° F. She had some backache and felt "very cold across her back," and had extremely severe headache. There was no sore throat, nor were there any pulmonary or abdominal symptoms. On January 9th she was seen by Dr. Smith of Henley, who has kindly assisted me in drawing up the account of the first part of the illness.

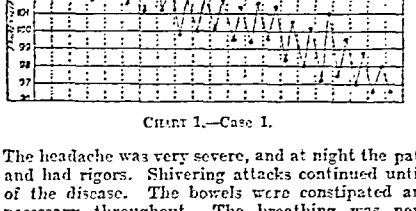


CHART 1.—Case 1.

The fever continued at about 104° in the evening, falling to about 102° in the morning after profuse sweating. The headache was very severe, and at night the patient was delirious and had rigors. Shivering attacks continued until the seventh day of the disease. The bowels were constipated and aperients were necessary throughout. The breathing was never suggestive of pulmonary complications. The pulse was always slow in proportion to the temperature. The urine was turbid and contained mucus and pus with a small quantity of albumin (accounted for by the pus). The right kidney was never really tender when palpated, but there was possibly a little tenderness over the right ureter.

I saw the patient on January 15th, when the fever was beginning to abate. There were no signs in the lungs, nor was there tenderness over the region of the kidney. The pulse was poor in quality and the heart sounds were rather feeble. The pus in the urine was about the same in quantity as on other occasions when I had seen Mrs. M. with an attack of fever and rigors due to an exacerbation of her kidney condition. She was obviously beginning to improve. It was not until the continuation of the fever in spite of the absence of tenderness over the kidney cast doubts on the diagnosis of pyelitis, and the news came of the illness of the other contacts, that we diagnosed the case as one of psittacosis, and blood was sent to the London Hospital for examination. The clinical diagnosis was confirmed by Dr. Robert Hutchison, who saw Case v in London.

The patient made a slow but uninterrupted recovery, the temperature becoming normal by January 25th (the nineteenth day of the disease). A few crepitations appeared at the bases of both lungs on January 21st, but these were probably due to decubitus. There was marked weakness and prostration throughout the illness. On January 22nd I did a leucocyte count, which was 26,500 per c.mm.; by January 23th it had fallen to 13,000. The spleen was never palpable. The course of the fever is shown on the chart.

CASE II.

This patient, the cook, aged 65, felt ill on January 7th, and went to bed with a temperature of 104° F. on January 13th. She continued to feel very ill with fever up to 105°, delirium, great weakness, and twitchings. She was removed to Henley Infirmary on January 12th under the care of Dr. Smith, who sends the following notes.

"She was flushed, had an evening temperature of 102°, with bronchial catarrh, and some crepitations at both bases. She was sometimes incontinent (urine) and somewhat delirious. There was some albumin in the urine. She had a very furred tongue, and gave one the impression that she was suffering from paratyphoid, but a specimen of blood gave negative results. Her temperature generally fell in the morning to 100°, and after three days it became normal, and remained so. Her tongue cleared very gradually, but she continued to be occasionally incontinent (sometimes both faeces and urine) up till January 25th. Since then she has made a good recovery."

CASE III.

The patient, aged 43, was the nephew, who had visited Dr. and Mrs. M. on December 30th, to convalesce after an operation for chronic appendicitis. He returned to Oxford on January 7th, and saw Dr. Frankland West on January 10th. Dr. Frankland West reports as follows.

Mr. M. complained of malaise and a raised temperature; during the first three days of his illness there were no special symptoms beyond the raised temperature, which, by the third day, was maintained at between 102° and 103° F. Respirations were normal and the pulse rate was between 84 and 90. The patient made no complaint of abdominal discomfort, and I could feel nothing abnormal in the abdomen. The chest was clear. High fever of a remittent type continued, the tongue became coated, the patient vomited on one or two occasions, completely lost his appetite, and was constipated. But beyond the high fever and the obvious toxaemia there were no signs or symptoms.

On the fourth day of the illness there were several loose actions of the bowels, the motions being of the pea-soup type. The patient began to be drowsy. At this stage he was sent into a nursing home. The high remittent fever, the comparatively slow pulse, the drowsiness, and the appearance of the stools strongly suggested that the disease was of the enteric group. The stools continued to be loose and offensive; the fever remained at a high level, and on the sixth day of the illness there were fine moist sounds to be heard over a considerable area of the left chest in front and at the back; the bases of the lungs were clear. The respiratory rate was not, however, raised at this stage.

On the following day (the eighth day) the respiratory rate rose rapidly from about 24 to 40 per minute. There were now moist sounds to be heard on both sides of the chest; these were best heard in front. The patient had some cough, with but little expectoration, and that was of the simple catarrhal type. During the next three days the respirations rose to 36 to 48 per minute; the pulse rate was 90 to 130 per minute; the patient was very drowsy and in a state of more or less persistent low muttering delirium; he had fine muscular twitchings.

On the eleventh day a general improvement set in. The temperature fell to 102° maximum, and the pulse and respirations fell to 100 and 32 respectively. From this time onwards there was no marked feature of the case beyond the general resolution of the fever, and, correspondingly, of the pulse rate, and the chest signs rapidly cleared up. By the sixteenth day of the illness the patient was convalescent.

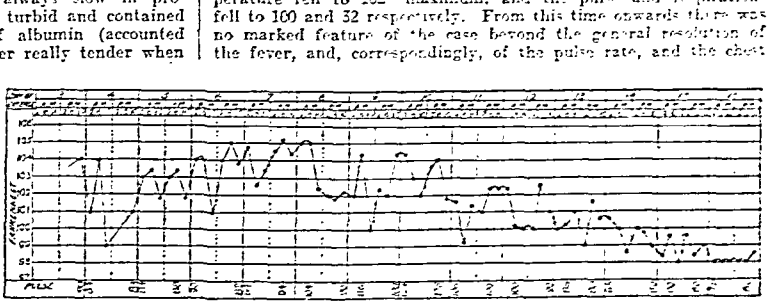


CHART 2.—Case 3.

The main features of the case were as follows: (1) the comparatively rapid onset of the fever and toxaemia; (2) the marked toxaemia, though the patient did not complain of headache; (3) the development of pneumonic involvement late in the disease —that is, about the seventh or eighth day; (4) the short duration of the critical stage—that is, from the seventh to the eleventh day; (5) the comparatively rapid resolution of the fever after the eleventh day of the disease; (6) the absence of abdominal pain or discomfort, and of physical signs in the abdomen; (7) the absence of albumin from the urine, except a slight amount in a

highly concentrated urine during the height of the fever; (8) the inconclusive Widal reactions of the serum; (9) the negative blood culture; (10) the failure to isolate organisms of the enteric or dysentery group from the stools; (11) the negative report upon the sputum.

CASE IV.

(Report by Dr. E. L. Elliott.)

On January 17th the patient, a gardener, aged 56, sought my advice for general malaise. He had been out of sorts for three or four days, but had been able to carry on his work. I found him with a temperature of 101° F., and ordered him to bed. For the first four days the temperature was raised, varying from 99° to 101°, and the pulse was slightly intermittent. During this time there was sleeplessness and low delirium, and the patient had some rigors followed by profuse sweating. He was seriously ill, and I considered a fatal termination a possibility. He developed a left-sided pneumonia of the lobar type, but without the violent respiratory symptoms of the pneumococcal form of that disease; the cough was never severe, and there was no sputum till January 27th, when yellow frothy muco-purulent sputum was brought up. The respiration rate was not markedly raised, nor was breathing difficult. The pulse rate was on the low side, usually below 100, and during the first week the cardiac action gave some cause for anxiety. The pulse was weak and the heart sounds were feeble. For the heart condition he was given digitalis.

On January 26th he was not markedly ill, the temperature was normal, and the pulse 96. He looked as if he had passed through an illness; the tongue was furred but beginning to clean at the edges; there was no sore throat and no rash. The heart was not enlarged, and its action was not abnormal. The left lower lobe gave a dull note, and coarse crepitations were to be heard over its whole extent. There was no evidence of pleurisy or of effusion, and there was no distress on taking a deep breath. The abdominal organs were normal; neither spleen nor liver could be felt, and though the bowels had been freely open they had not been abnormal. The blood gave no reaction to any of the typhoid or dysentery group, including *B. acertrycke* (Hutton) and *B. abortus* (Bang).

On January 30th the condition was much improved; there was still an impaired note at the left base, and fairly copious sputum. The improvement was very marked.

CASE V.

Miss F. was likewise very ill, but as she was seen in consultation by Dr. Robert Hutchison he will no doubt publish a report of the case later in his own series.

The outstanding features of the attack seem to be (*a*) the high infectivity of the disease from the bird, five out of eight contacts developing it; (*b*) the absence of a single case of infection from a human being; and (*c*) the extreme severity of the illness.

Two of the patients had symptoms suggestive of typhoid fever; three had lung symptoms, but none showed the solid condition of the lung described by Dr. Thomson at Birmingham.

I am most grateful to all the other doctors concerned for their kindness in providing me with details of the cases reported in this paper.

TREATMENT OF PERNICIOUS ANAEMIA WITH DESICCATED HOG'S STOMACH.

BY

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IT is believed that the following record will be of interest in view of the severe relapse which occurred while the patient was on liver treatment and the subsequent recovery resulting from the administration of desiccated hog's stomach.

The patient, a man aged 52, was first seen by me on June 30th, 1924, for the examination of his blood condition, a diagnosis of pernicious anaemia having been made some time previously. On this occasion the blood count was as follows:

Red blood cells (per c.mm.)	1,700,000
White blood cells (per c.mm.)	6,200
Haemoglobin	40 per cent.
Colour index	1.17
Differential count:	
Polymorphonuclears	68 per cent.
Small mononuclears	21 "
Large mononuclears	3 "
Transitional mononuclears	4 "
Eosinophils	1 "

The film showed marked poikilocytosis and anisocytosis, also granular basophilic degeneration; one nucleated red cell was seen; no parasites.

I saw him on several subsequent occasions during the following years, and he was also treated medically in Germany. The diagnosis was frequently confirmed by ample blood counts and by clinical examination. His red blood cells were rarely more than 3,500,000, and his colour index was usually above 1.

In June, 1927, he became seriously ill and received medical treatment in Germany. This treatment took the form of several blood transfusions and the application of a diet chiefly composed of the yolk of eggs and orange juice, and was successful for a time. His blood count before treatment was: red blood cells 1,000,000 per c.mm., white blood cells 1,300, haemoglobin 30 per cent. Six months later, in December, 1927, he came to see me, and the count was: red blood cells 3,330,000, white blood cells 6,500, haemoglobin 84 per cent., and colour index 1.23.

Treatment by means of liver and liver extracts was duly tried in this case, but did not appear to bring the improvement met with so frequently in other cases of pernicious anaemia. At the commencement of his last relapse he had tried liver extract as made by several different reputable firms, but he was steadily getting worse. During this period he was out of my immediate observation, but he again came to see me on October 3rd, 1929. He was then in an extremely exhausted condition, and his blood count was:

Red blood cells (per c.mm.)	1,210,000
White blood cells (per c.mm.)	3,000
Haemoglobin	30 per cent.
Colour index	1.25
Differential count:	
Polymorphonuclears	46 per cent.
Small mononuclears	33 "
Large mononuclears	8 "
Transitional mononuclears	4 "
Mast cells	4 "

A few macrocytes, microcytes, and poikilocytes were present.

I wrote to his medical attendant that I regarded him as extremely ill, and that unless some drastic change could be effected he would die. I suggested that a transfusion be done, and also pointed out the recent work of Dr. Sharp, director of the Department of Experimental Medicine of Parke, Davis and Co., in regard to the administration of desiccated hog's stomach.

His medical attendant agreed with me as to the desperate nature of the patient's condition. The patient was very loath to have any further blood transfusions in view of the number he had had in Germany, and a very unpleasant experience he had had from receiving a few cubic centimetres of blood not of his own group. Consequently the blood transfusion was postponed temporarily. Treatment with another liver extract was continued, and the administration of glycerinated raw pig's stomach was tried. The condition, however, became worse, and a blood transfusion (140 c.cm.) was given on November 9th. This helped the patient a little, but the pulse was still rapid (120) and oedema in the legs was present forty-eight hours afterwards.

On November 16th the blood count was:

Red blood cells (per c.mm.)	985,000
White blood cells (per c.mm.)	3,600
Haemoglobin	22 per cent.
Colour index	1.22
Differential count:	
Polymorphonuclears	42.0 per cent.
Small mononuclears	41.5 "
Large mononuclears	13.0 "
Transitional mononuclears	0.5 "
Mast cells	1.0 "
Eosinophils	2.0 "

The red blood cells showed variation in size and shape; there were no nucleated cells.

I got into touch with Parke, Davis and Co., who promptly sent me experimental supplies of desiccated hog's stomach (ventriculin), so that this method of treatment might be tried.

At the commencement of treatment with hog's stomach the patient was in an exhausted condition; he was extremely anaemic, the lips were blanched, and the conjunctivae very pale. The spleen was enlarged two fingerbreadths below the costal margin, and the liver was also firm and enlarged. The pulse was 120 per minute with the patient in bed, and there was a fair amount of oedema in the feet. The tongue was very furred. Albuminuria also was present.

The first administration of hog's stomach consisted of 7.5 grams daily, and after a day or two the dose was increased to 15 grams. On January 13th, 1930, the dose was further increased to 20 grams. This treatment has been continued with only an intermission of a day or so up to the present time. After a few days the patient's condition improved considerably, but the blood count did not show the same improvement. Since then the improvement has been rapid and the patient is up and able to go out of doors. The spleen is not palpable and the liver is much improved. Albuminuria is still present, but there is no oedema. The pulse is now normal (72) except after exertion such as going upstairs,

when it rises to 84. The tongue is clean and the appetite good. The patient is putting on weight and mentally he is bright and alert. He has been able to attend at my consulting rooms for blood counts. The following counts will demonstrate the progress made. On November 30th, 1929, a few days after commencement of treatment with ventriculin, the blood count was as follows:

Red blood cells (per c.mm.)	830,000
White blood cells (per c.mm.)	2,000
Haemoglobin	20 per cent.
Colour index	1.2
Differential count:	
Polymorphonuclears	53 per cent.
Small mononuclears	42 ,,
Large mononuclears	3 ,,
Eosinophils	1 ,,
Megaloblasts	1 ,,

Poikilocytes and anisocytes were present. Eve's halometer reading = 3.7.

On January 6th, 1930, the patient's condition showed great improvement. A blood count was as follows:

Red blood cells (per c.mm.)	2,100,000
White blood cells (per c.mm.)	5,500
Haemoglobin (Haldane)	38 per cent.
Haemoglobin (Dare)	35 ,,
Colour index	0.83
Differential count:	
Polymorphonuclears	61.5 per cent.
Small mononuclears	32.5 ,,
Large mononuclears	3.5 ,,
Mast cells	0.5 ,,
Eosinophils	2.0 ,,

The red blood cells show variation in size and shape. No nucleated red cells were seen, and no reticulocytes. Halometer reading = 3.8. The blood count on January 20th was as follows:

Red blood cells (per c.mm.)	2,670,000
White blood cells (per c.mm.)	6,200
Haemoglobin (Haldane)	64 per cent.
Haemoglobin (Dare)	60 ,,
Colour index	1.19
Differential count:	
Polymorphonuclears	71.6 per cent.
Small mononuclears	24.4 ,,
Large mononuclears	2.4 ,,
Transitional mononuclears	0.4 ,,
Eosinophils	0.4 ,,
Mast cells	0.8 ,,

The red blood cells show variation in size and shape. No nucleated red cells were seen, and no reticulocytes. The following was the result of a count taken on January 27th:

Red blood cells (per c.mm.)	3,600,000
White blood cells (per c.mm.)	5,500
Haemoglobin (Haldane)	74 per cent.
Haemoglobin (Dare)	71 ,,
Colour index	1.03
Differential count:	
Polymorphonuclears	65.5 per cent.
Small mononuclears	28.0 ,,
Large mononuclears	0.5 ,,
Transitional mononuclears	5.5 ,,
Eosinophils	0.5 ,,

REFERENCE.

1 Sharp, A. Elwood: An Anti-anemic Factor in Desiccated Stomach, *Journ. Amer. Med. Assoc.*, 1929, 93, 749.

PROBABLE SEPTICAEMIA TREATED WITH SCARLET FEVER SERUM.

BY

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THE following case, clinically of septicaemia, is interesting in view of the fact that injection of antiscarlatinal serum seems to have been the deciding factor in bringing about a recovery.

The patient, a boy aged 14¾, was seen on the morning of May 5th, 1929, complaining of pain in the region of his heart, much worse on even slight exertion, such as turning over in bed. The cardiac dullness was increased to 1 inch to the left of the nipple line, and the heart rate was 108, the first sound being impure at the apex. The temperature was normal. The throat was slightly reddened; the tonsils had been efficiently removed some years before. There had been a shiver on the previous night.

There was a history of a feverish attack during the holidays, with sore throat, rapid heart, and a temperature of 101°, for which he had been kept in bed for several days, until he appeared quite well. During this attack there was no suspicion of carditis, though it was looked for repeatedly.

By the next day the patient had a slight rise of temperature, more precordial pain, a blowing systolic murmur limited to the apex, and some pain in his thighs and calves. There was tender swelling of the glands at the angles of his jaws. No rheumatic nodules were felt. Sodium salicylate was given in increasing doses up to 90 grains in twenty-four hours, with sodium bicarbonate.

Between then and May 18th he gradually became worse. His temperature varied between 99° and 101°. He became toxic in appearance; his heart became more dilated and a pericardial rub appeared, as well as broncho-pneumonia in his right lung. No enlargement of liver or spleen and no petechiae or rheumatic nodules were found.

On that day he was seen by Dr. Holmes, and later by Dr. Grace of Chester, who took blood specimens. As the case appeared to be one of septicaemia, probably streptococcal in nature, 10 c.cm. of antiscarlatinal serum were injected intramuscularly.

The pathological report on the blood by Dr. Grace was, briefly, as follows: Widal reactions completely negative to typhoid and to paratyphoid A and B; white cells 12,000 per c.mm. (polymorphs 73 per cent., lymphocytes 18 per cent., mononuclears 5 per cent., mast cells 2 per cent., myelocytes 1 per cent., eosinophils 1 per cent.). After sixty hours' incubation at 37° C. the blood cultures remained sterile.

On May 19th the patient was seen by Dr. Capon of Liverpool in conjunction with Dr. Littler of Southport, who also agreed in the diagnosis of streptococcal septicaemia, and advised a continuance of the serum. The doses of serum from May 18th to May 25th are given below.

Date.	Morning.	Evening.	Remarks.
May 18	—	10 c.cm.	—
,, 19	—	5 c.cm.	—
,, 20	—	20 c.cm.	Temp. 105°; respirations 50.
,, 21	No serum given	—	Some improvement.
,, 22	20 c.cm. + 1 c.cm. sod. nucleinate	10 c.cm.	Suddenly became very ill in early morning; almost moribund
,, 23	20 c.cm. + 1 c.cm. sol. nucleinate	10 c.cm.	Much better in morning and improvement continued.
,, 24	10 c.cm.	10 c.cm.	—
,, 25	10 c.cm. + 1 c.cm. sod. nucleinate	10 c.cm.	—

By this time the boy was definitely much better, his temperature and also his pulse and respiration rates falling, and the physical signs of broncho-pneumonia and pericarditis gradually clearing up. Between May 18th and May 31st he received 175 c.cm. of antiscarlatinal serum, and 25 c.cm. between then and June 10th; his temperature finally settled by June 12th. The only treatment given beyond injection of serum and sodium nucleinate was symptomatic.

The patient was taken home by car, lying down, on July 7th: he then had an appearance of good health, and had surprisingly few physical signs left of the ordeal he had been through. From July 10th to the 13th, however, he had a relapse of a serious nature; he was not as desperately ill as before, and no serum was given.

A blood culture again gave negative results, and a count was as follows: red cells 4,125,000 per c.mm., white cells 9,200 (polymorphs 65.5 per cent., eosinophils 1 per cent., small lymphocytes 22.5 per cent., large lymphocytes 9.5 per cent., large mononuclears 1.5 per cent., basophils 2 per cent.). The temperature returned to normal on July 18th and has remained so, except for a rise to 99°–100° on August 3rd, 4th, and 5th.

On September 11th the physical signs were as follows: temperature 98°, pulse rate 100, respiration rate 18. The boy had a good colour; he had no cyanosis, orthopnoea, clubbing of fingers, or rheumatic nodules. There was visible pulsation in the third and fourth interspaces in the nipple line. The apex beat in the fourth space was half an inch outside the nipple line, and there was no thrill or precordial tenderness. Cardiac dullness extended above to the third rib, on the right to the border of the sternum, and on the left to half an inch to the left of the nipple line at the level of the fourth space. There was a systolic murmur at the apex conducted to the axilla; the pulmonary second sound was accentuated, and a diastolic murmur was heard to the left of the sternum in the third and fourth spaces. The blood pressure on July 9th was 110/60, and on September 11th 138/90. The apex beat moved 1 inch to the left and right when the boy was lying on the corresponding side.

The negative cultures of the blood taken on May 18th, and on a later occasion after his return home, may seem to negative a definite diagnosis of septicæmia, though clinically that diagnosis seemed obvious; and this is made still more likely by the very dramatic improvement on May 23rd, following the injection of 30 c.cm. of serum during the preceding twenty-four hours, which improvement was maintained later until July 10th.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CASE OF CEREBRAL MALARIA.

CEREBRAL malaria is so rarely seen in England that the following case seems worth reporting.

A gentleman, aged 35, who had recently returned from West Africa, had a rigor, for which he took 10 grains of quinine. Instead of being better the next day he had a very severe headache, and his temperature was still up. He called in a doctor, who prescribed more quinine, without effect. The headache became worse and worse, and vomiting set in. That night he was very delirious, with intense headache and frequent vomiting; morphine gave him no relief. In the morning I was asked to see him as a case of meningitis.

He was then semiconscious, with a temperature of 103.6° F., pulse 112. His head was retracted and could not be moved forward. There was double Kernig's sign, and the toe reflexes were extensor. The abdomen was retracted, the spleen could just be felt below the ribs, and the liver was slightly enlarged. Some of the vomit during the night had been of coffee-ground character.

I came to the conclusion that the case was probably one of cerebral malaria, and asked the doctor to inject 10 grains of quinine hydrobromate into the buttock as soon as possible, and another 10 grains into the other buttock in two hours. In six hours the patient was perfectly conscious and free from headache and vomiting. He was given an intramuscular injection of 10 grains twice a day for the next three days, and had then quite recovered.

This case illustrates the fact that quinine by the mouth is no good in cerebral malaria.

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TOXIC EFFECTS OF METHYL CHLORIDE GAS.

IN view of the fact that methyl chloride gas is now used to a large extent in the smaller refrigerating plants, and that medical literature contains no reference to its effects on man, publication of the following two cases would appear to be justified. It must be common for refrigeration engineers to inhale small doses of the gas in the course of their work, and the incapacity that may possibly ensue will give rise to a claim under the Workmen's Compensation Act.

Some experimental work has been carried out in Germany by G. A. Maloff[1] upon the toxicity of some of the chlorine derivatives of methane, as judged by the increase of the fat content of the livers of dogs after exposure to them. Their results show that, while tetrachlor-methane and trichloro-methane (chloroform) show a toxic effect, dichlor-methane, which has fewer chlorine atoms, has no such effect. Unfortunately methyl chloride (monochlor-methane) was not investigated; but it is reasonable to suppose that there is no toxic effect on the liver by this gas, in view of the still fewer chlorine atoms combined with the methyl group.

CASE I.

A man, aged 33, while at work stopping a leak of methyl chloride gas, inhaled a large quantity of it, or assumed that he did, the gas being odourless. He felt faint at the time and vomited, and subsequently suffered from nausea and vomiting of all solid food, and had diarrhœa. Some of the material vomited was dark in colour, but there is no record as to whether this was altered blood or not. His symptoms abated after twelve days, and he returned to light work. His nausea and vomiting were aggravated by a rough crossing to Ireland three weeks after his exposure to the gas, and again on his return to England six weeks after the exposure.

On examination soon after his return he did not look ill. He was somewhat tremulous, and his pulse rate was 112. The thoracic viscera were normal. There was rigidity and tenderness over the epigastrium, and to a less extent over the right iliac fossa. The stomach itself seemed to be tonically contracted, and pressure over the epigastrium made him feel sick. At the time I was not satisfied that his symptoms were due to exposure to methyl chloride, and thought that in any event there was a functional element in the case.

On re-examination six weeks later he felt quite well and had done so for the previous four weeks—that is to say, his symptoms had disappeared two weeks after my first examination, and two months after the exposure. The abdomen was quite normal, and free from tenderness or rigidity. However, he still had a frequent pulse (104), and a slight fine tremor of the fingers and tongue, with brisk knee-jerks, which favoured my previous opinion that he was of a nervous temperament. I was still not satisfied that his incapacity had been due to methyl chloride, but the occurrence of another similar case was regarded as conclusive.

CASE II.

A man, aged 36, on January 18th, 1930, had to disconnect a pipe which he knew to contain methyl chloride, and was exposed to this gas for five hours. At the end of that time he began to feel giddy, vomited, and had diarrhœa. The diarrhœa lasted for one day, but the giddiness and vomiting persisted. His symptoms finally left him after nine days, and at my examination, eleven days after the exposure to the gas, he felt quite well. Neither did my examination reveal any abnormality, either functional or organic. According to his history, this man had had a similar, but slighter, attack resulting from exposure to methyl chloride six months before.

Conclusion.

Methyl chloride gas, after a certain, but unknown, amount has been inhaled, causes giddiness, nausea, vomiting, and diarrhœa of abrupt onset. Recovery takes place after a lapse of time, which varied in the above cases from ten days to two months, and no permanent ill effects have so far been encountered. I am of opinion that the period required for recovery in Case I was prolonged by other factors—namely, sea-sickness and a nervous disposition on the part of the patient. Probably the gastro-intestinal disturbance is of central origin.

London, W.1. B. BUCKLEY SHARP, M.D., M.R.C.P.

[1] *Arch. f. Exp. Path. u. Pharmakol.*, No. 134, 1928, pp. 168-172.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

NORTHAMPTONSHIRE DIVISION.

Acute Intestinal Obstruction.

AT a meeting of the Northamptonshire Division, held at the General Hospital, Northampton, on February 12th, Professor D. P. D. WILKIE of Edinburgh gave an address on acute intestinal obstruction.

In the course of his remarks Professor Wilkie said that acute intestinal obstruction was one of the few conditions regarding which there could be no room for differences of opinion as to treatment. Immediate surgical intervention was the only hope, and the high death rate, still of over 30 per cent., was due almost entirely to operation being carried out too late. After referring to the difficulties of the experimental investigation of this subject, owing to the varied and complicated factors involved, he emphasized the important results obtained by experiment in identifying the types of obstruction and the changes in blood chemistry associated with them. It was necessary to distinguish four fundamental types: (1) simple obstruction of the intestinal lumen; (2) closed loop obstruction; (3) interference with the blood supply of the intestine; (4) strangulation. A fifth type—namely, paralytic or adynamic ileus—must also be considered.

In regard to *simple obstruction* the well-known observation that high obstruction was much more rapidly fatal than low was explained by the fact that if a block was established between the upper secretory and the lower absorptive reaches of the intestine a profound disturbance of physiology and blood chemistry occurred, and this was absent in low obstruction until its final stages. The importance of dehydration and loss of chlorides was referred to, and the necessity for generous subcutaneous infusions of normal saline and the intravenous injection of 20 c.cm. of 15 per cent. saline as an integral part of the surgical treatment, was insisted on. Hypertonic saline given intravenously promoted active peristalsis in, and diminished

absorption from, the intestine. Pre-operative and post-operative gastric lavage should be the rule in cases of obstruction, and spinal anaesthesia was the method of choice for operation. Evisceration was to be avoided, and was seldom necessary if collapsed bowel was at once sought for and traced upwards. Opening and draining the intestine was necessary only in cases with marked distension, and then it was usually advisable to leave a valvular tube jejunostomy for some days.

Closed loop obstruction was seen in its purest form in the human subject in the obstructed appendix. It was not yet sufficiently appreciated that the locking up of faecal matter in the *vermiform appendix* by the *impaction* of a concretion in a stenosed area or at a kink led inevitably to gangrene. Experiment had shown conclusively that this was an *inevitable* sequel. It was only by regarding such cases as examples of intestinal obstruction demanding the immediate surgical help which was the accepted treatment for this emergency that we could lower the death rate from the perforated gangrenous appendix—the end-result of such obstruction. Of the 3,000 deaths occurring in this country every year from so-called appendicitis, Professor Wilkie believed that over two-thirds were examples of primary obstruction of the appendix which had been allowed to go on to perforation.

Occlusion of the blood supply to a segment of intestine led to a potential obstruction, but death in such cases resulted from a combination of peritonitis and poisoning from the absorption of autolytic products.

In *strangulation*, the most urgent because the most fatal form of obstruction, there were many factors—obstruction of lumen, closed loop, interference with blood supply, and, lastly, compression or twisting of the mesentery with associated shock. Early operation under spinal anaesthesia offered the best hope of success in these desperate cases. Adynamic ileus was a term which must be used with caution, because it was liable to be confused with true obstruction. Abdominal distension occurring in cases of peritonitis, particularly if associated with colicky pains, was frequently due to a definite organic obstruction of the ileum from plastic adhesions in the pelvis, and for this a jejunostomy was a life-saving operation. For true adynamic ileus, usually found in generalized peritonitis, active surgical intervention could do little, and probably *fomentations, subcutaneous saline, morphine, and possibly* hypertonic intravenous saline and enemata of bile offered most hope of relief.

Reports of Societies.

THE TREATMENT OF URAEMIA.

A MEETING of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine, on February 11th, was devoted to an informal discussion of the treatment of uraemia, Dr. GEORGE GRAHAM occupying the chair.

Professor F. LANGMEAD, introducing the subject, said that, so far as the physician was concerned, uraemia as met with in Bright's disease was a late symptom of an incurable disease. There were different views as to what ought to be included in the term "uraemia," since one school would include all uraemia which could be put down to toxaemia, even renal retinitis, while the other would restrict it to cases with cerebral and gastro-intestinal symptoms, including vomiting and diarrhoea. At present the etiology was shrouded in hypothesis, and it was necessary to unravel the part played by toxins and the part played by supernormal blood pressure and acidaemia. His chief lines of treatment of uraemia consisted of purgation, diaphoresis, and venesection, the last-named being the most important. Care was necessary in prescribing purges for the uraemic patient; the speaker often preferred jalap, since it acted quickly as a cathartic. The evil effect on the kidneys of saline solutions had to be remembered. With diaphoresis he did not hesitate to combine hot packs or radiant heat baths with pilocarpine, if there was no respiratory trouble or heart failure. When twitching and convulsions were present he used morphine. He had seen patients benefit from lumbar puncture, though some physicians objected to it. Diuretics containing mercury were dangerous. In a case of large white kidney, with considerable oedema, 5 per cent. glucose solution resulted in making the patient much brighter, and largely reducing the oedema. Professor Langmead asked whether members had found that giving parathyroid extract and calcium lactate had any effect other than increasing the blood-calcium content. Also, had members employed the system of blood-washing which had been recommended by some Continental authorities—namely, removing 500 c.cm. of blood at a time, and after dialysing it through a collodion membrane (taking care to prevent coagulation) returning it to the circulation? Thyroid extract had been used for diuresis, but since it enhanced the metabolism it did not seem desirable to use it in uraemia.

Dr. E. P. POULTON described a case in which the administration of 15 grams of urea three times a day caused the blood urea to rise to 40 or 50 mg., and the daily urine output to be increased from 500 or 600 c.cm. to 1,500 c.cm. during all the time the urea was continued. It was important to ensure that the amount of albumin lost was made up in the diet taken. He reported various instructive cases.

Dr. W. LANGDON BROWN said the vomit in cases of uraemia contained a large quantity of ammonium salts; he regarded such symptoms as an alternative method of excretion. Skin rashes also indicated such an alternative method, and he had seen them occur in patients with a high blood urea figure. He would include under uraemia three groups: cases with convulsions and amaurosis, those with uraemic asthma, and those with other cerebral manifestations. The first group he attributed to some general toxic condition, in which the kidney might not share, because such symptoms were met with in eclampsia and in the case of the degenerative toxaemic kidney; though dramatic, convulsions were most amenable symptoms. Cases in the third group were associated with a rise of the blood urea content. Uraemia was not due to the urea in the blood: it might be caused by some toxic amino-acid. The speaker did not like using pilocarpine, which, he thought, hastened oedema of the lungs, nor were the newer diuretics containing arsenic and mercury safe in uraemia. In these cases the protein should be cut down at an early stage: fruit juice and sugar were good substitutes for meat. A septic focus often played a very important part in precipitating disaster in uraemic patients. He did not think diarrhoea was wise unless definite oedema was present, since it was a trying process for the heart.

Dr. IZOD BENNETT did not regard the vomiting which was prominent in cases of uraemia as a compensatory or physiological mechanism. He considered that in deaths from uraemia the factor directly responsible for the death was dehydration following excessive vomiting. He had checked vomiting by using barbituric acid preparations, and he had even used morphine for the purpose, since sometimes it seemed to save the life of a patient apparently dying from uraemia. He endorsed the value of venesection in acute cases. Dr. O. LEYTON agreed that the amount of urea in the blood was not necessarily a measure of so-called uraemia. He had seen patients with a high blood urea figure who had no symptoms at the time; there needed to be a very high figure of concentration before urea caused symptoms. Administration of the lactic-acid-forming bacillus was beneficial as regards control of the intestinal flora, but a reliable preparation must be employed. Dr. A. A. OSWEI said that in cases of chronic parenchymatous nephritis with considerable oedema but without much evidence of nitrogen retention, treatment with large doses of alkalis resulted in a satisfactory clearing up of the oedema. All these patients had had symptoms more than a year before the commencement of the treatment. In patients suffering from definite uraemic attacks he had found lumbar puncture extremely useful, and he had never seen harmful effects follow the procedure. Sometimes a patient appeared to have come out of coma because of hypertonic saline injections which had been given; at any rate such patients had been able to live at home for six to nine months before having another attack.

The CHAIRMAN expressed his belief that venesection was very good, but it should, he considered, be restricted to early cases; he had seen patients in late stages who had only 30 to 40 per cent. of haemoglobin, and in them it would be a risky procedure. They stood in more need of blood transfusion, if it was judged wise to give it. When a patient had uraemia it was important to determine the hydrogen-ion concentration of the blood and the patient's reserve of blood. Such tests as he had mentioned occupied considerable time, and so were less often employed than was desirable, but he considered them necessary. Vomiting was apt to increase the alkali reserve. Dr. A. G. PHEAR agreed with Dr. Langdon Brown that pilocarpine was a dangerous drug in these cases, but it was useful when patients were oedematous and needed to have sweating induced. In some instances a hot bath caused the temperature to rise, but there was no sweating, the skin remaining dry and stubborn. The giving of 1/10 or 1/20 grain of pilocarpine to such patients often acted on the heat centre, causing the desired sweating. Lumbar puncture was a valuable proceeding in a limited number of cases, including acute cases with cerebral symptoms, considerable oedema, and convulsions; its effect in reducing the intracranial pressure was chiefly mechanical. Sir WILLIAM WILLCOX emphasized the importance of the physician making sure that he was actually dealing with a case of uraemia, for very similar symptoms were present in cases of advanced morbus cordis, impairment of liver function, and arterio-sclerotic changes in the vessels of the brain. Vapour baths to promote the action of the skin were dangerous in these cases unless the heart was in good condition; he had seen patients die from the effect of them. Elimination by the bowel could be greatly helped by colonic irrigation. Minute doses of morphine could be risked in a case of uraemia if a fair quantity of urine was being passed. For the headache of uraemia large doses of bromides were valuable.

THE RELATION OF NERVOUS SYMPTOMS TO NERVOUS LESIONS.

AT a meeting of the Section of Neurology of the Royal Society of Medicine on February 13th, with Dr. GORDON HOLMES in the chair, a short paper was read by Dr. S. A. KINNIER WILSON on the relation of nervous symptoms to nervous lesions.

Dr. Kinnier Wilson said that at one time he had imagined that clinical conceptions based on clinical differentiations were sufficient for all neurological purposes, but it did not take him long to discover that a purely clinical arrangement was obviously unsatisfactory because a whole group of symptoms of the same kind could arise at different levels in the central nervous system, and as a result of entirely different pathogenic action. It might be thought that epidemic encephalitis was one and indivisible, but its clinical manifestations were innumerable. The clinical-anatomical method had given rise to discoveries and advances of the first importance, but it was rather out of date; it was called, rather contemptuously, the necrological or "mortuary school" of medical thought. He dated his own awakening in the matter largely to the late Sir James Goodhart's paper entitled "The passing of morbid anatomy." Neither clinical nor pathological classification offered any advantage from the standpoint of nosology; the only scientific one would be based on etiology, and further research was necessary. The time had passed when clinical syndromes and pathological complexes could be collated and termed a disease. Some might go as far as Sir Humphry Rolleston and say that there was no such thing as disease, or, rather, that a disease was nothing else than a mental picture, a conception in the mind. At any rate, insuperable difficulties would be found in establishing morbid entities unless it could be proved that a given causative agent produced the same reaction, the same clinical course ensuing, with amenability to the same form of treatment. Physiology knew only three classes of stimuli: those which excited, those which depressed, and those which first excited and then depressed; clinical symptoms should be considered, therefore, as either excitation or depression of function, or as a series in which depression followed excitation. Without exception all were functional. A symptom was the expression of physiological reaction, and thus it could not be specific unless reactions themselves were imagined to be specific, an impossibility when the diversity of agencies and systems was considered. In itself a symptom had no constant relationship to underlying structural relations; a patient with disseminated sclerosis might have ankle clonus one week and not the next. Symptoms *per se* represented dynamic alterations in function, which might or might not coincide with structural change. Further, symptoms themselves, whether due to dynamic or static (structural) change, could not be differentiated. What exactly was expected to be found in a case of neuralgia? It was universally accepted that neuralgia was an extremely prominent neurological symptom, but what alteration was to be found to correlate with neuralgia? The pain must be produced by the stimulation of a normal sensory mechanism, which must be in a state of health, and not of depression. What was expected to be found in a case of tetanus? Recent post-mortem examinations of cases had shown that there was no change at all in the spinal cord cells; that was only to be expected, because in tetanus there was overfunction or release of function of these cells. No constant relationship could hold between the size of a lesion and the amount or mass of functional disturbance. In epilepsy, for example, there was an extreme disorder of function, but with what lesion could it be correlated? Twenty minutes after an epileptic attack the patient was normal. If the cells were then examined nothing abnormal would be found. He did not deny that lesions could be found in epilepsy; he only maintained that there was no correlation between a specific lesion and a specific discharge of function.

The most serious error in the clinical-anatomical method was the omission of the time factor. A few years ago there were many cases of post-encephalitis with inversion of sleep rhythm; but where was this inversion localized? It was not localized anywhere in space, but in time. Since no specificity attached in a general way to nervous symptoms, there arose the homologous question whether pathological changes could be considered specific. His own view was that such changes were reactions to noxious agents. There was a pathological reaction which was common to a number of different conditions, and therefore could not constitute a disease in the scientific sense. The bearing of these problems would not escape the student. They would impress him again with the desirability of regarding disease processes, whether of activity or depression, as indications of vital effort to cope with noxae. Many symptoms were signs of health, and many lesions were attempts at repair.

After a brief discussion Dr. GORDON HOLMES, the president, said that what Dr. Wilson had brought forward was a very close repetition of the teaching of Hughlings Jackson brought up to date. When Hughlings Jackson published most of his work, little was known of modern neuro-pathology, and many of the finer lesions associated with symptoms were not recognized, but his teaching still held good.

Radium and Nervous Tissue.

Dr. E. A. CARMICHAEL brought forward, on behalf of Mr. J. Paterson Ross and himself, an experimental study conducted at St. Bartholomew's Hospital, with a view to ascertaining the effect of radium on cerebral tissue. Radon seeds, with a 5 mm. platinum filter, were placed on the dura mater of rabbits, and the animals were killed at intervals of from three to twenty-four hours. The first thing to occur was a definite change in the staining properties of the cells, followed by congestion of the vessels, fatty degeneration of their endothelium, and finally haemorrhages. In another series of experiments radon seeds, with a 3 mm. platinum filter, were employed, and the animals were killed after periods extending from 62 hours to 60 days. Up to 212 hours, which corresponded to the time of activity of the seed, the size of the lesion was definitely progressive. At the end of 40 days the lesion changed in character, the haemorrhage disappearing and

being replaced by a necrotic area. A further series of experiments, not yet completed, was undertaken with radium needles, which were left in position in the cerebral cortex for long periods. At the end of seven days no effect whatever could be discovered macroscopically or microscopically. Later a lesion appeared, which slightly increased. A point to be noted was that glial tissue actually proliferated under the influence of radium; this raised the question whether it was advisable to use radium in gliomata.

CORONARY THROMBOSIS WITH CARDIAC INFARCTION.

AT a meeting of the Aberdeen Medico-Chirurgical Society on February 6th, with the president, Dr. CHARLES FORBES, in the chair, a demonstration of clinical cases was given. Dr. W. F. CROLL showed a case of coronary thrombosis and cardiac infarction in a man aged 55; the symptoms were as follows.

In September, 1925, the patient began to have what he described as a gasping feeling on negotiating a fairly steep incline, and later pain, definite across the chest, developed, which ceased if he stood still. Under medical advice the patient took things easily, and he was without pain for several months. In December, 1926, while walking more quickly than usual, he was seized with very severe pain in the lower part of the chest and along both arms. The pain over the sternum persisted for a week, in spite of complete rest in bed. On examination the pulse rate was found to be about 120 and regular, the blood pressure 105/60, and the vessel walls normal. The apex beat could not be palpated, the heart sounds were almost inaudible, there were no cardiac murmurs, and no pericardial rub was heard. There were crepitations at the bases of both lungs; the liver and splenic dullnesses were normal, and the Wassermann reaction was negative. The urine contained no albumin. At a later examination in March, 1927, the pulse rate was still fast (101), and the blood pressure 110/20; no apex impulse could be felt. In all areas the first cardiac sound was very faint and the second fairly good. There were no murmurs and the cardiac rhythm was normal. An electro-cardiogram showed inversion of T in leads I and II, a QRS of low voltage, and a left-sided preponderance. At a recent examination, the electro-cardiogram showed increased inversion of the T wave in lead I, an indefinite T in lead II, and an increased voltage of the QRS in all leads. The diagnosis of coronary thrombosis with cardiac infarction was made from the following symptoms and signs: the character of the pain, which was over the lower part of the sternum and adjoining parts of the chest, and radiated to both arms; the long duration of the pain; the persisting rapid pulse; the low blood pressure; the distant cardiac sounds; and the characteristic electro-cardiogram.

Dr. Croll said that the prodromal pain which the patient experienced in 1925 indicated the beginning of the thrombosis, while the attack of severe pain in December, 1926, pointed to complete occlusion of the artery. He showed electro-cardiograms illustrating the characteristic changes which were diagnostic of cardiac infarction, and referred briefly to the prognosis and treatment of this condition.

Treatment of Bronchiectasis.

Dr. R. J. DUTHIE showed a man, aged 31, who was suffering from bronchiectasis. He described the history and treatment, and gave the following clinical details.

The patient said that a tooth had passed down the windpipe in January, 1928; cough and sputum had commenced gradually and had persisted. In November, 1923, he had a moderate haemoptysis followed by severe haemorrhage on three occasions in June, 1929. On admission to hospital in August, 1929, he was coughing up about a cupful of purulent blood-stained sputum every morning. No tubercle bacilli were found after repeated examination, and there was clubbing of the fingers. An x-ray examination showed what appeared to be a foreign body in the left lung; no foreign body could be recognized, however, by bronchoscopic examination on account of bleeding from the left bronchus. A few days later he had repeated copious haemoptyses, and the physical and radiological signs pointed to the bleeding coming from the right lung. This lung was partially collapsed by artificial pneumothorax; since the collapse there had been no further haemoptysis, the sputum was greatly reduced, and the general condition much improved.

Dr. Duthie suggested that the lung collapse should be pushed further by increasing the intrapleural pressure. If pneumothorax successfully stopped cough and expectoration, and if an injection of lipiodol revealed no severe pathological changes in the left lung, permanent collapse of the right lung, either by phrenic erulsion or paravertebral thoracoplasty, might be indicated at some future date.

Other Clinical Cases.

Dr. JOHN CRAIG showed a case of spinal tumour in a girl, aged 10, who had been seen at a previous meeting of the society. In the interval the tumour had been exposed by Mr. A. Mitchell, and diagnosed as an intramedullary glioma, a finding which was confirmed microscopically. It had been impossible to remove the tumour, but the spinal decompression had greatly relieved the symptoms, so that the child could now walk about without support. Deep x-ray therapy was being applied to the growth.

He also showed a long-standing case of melaena neonatorum in a girl, aged 3, who was now in perfect health. When 3 days old she had lost much blood by the bowel and by the mouth. An intramuscular injection of 25 c.cm. of maternal blood into each thigh had an immediate and good effect, the infant remaining well until the age of 2 months, when jaundice appeared. This symptom persisted for two months. Towards the end of the first year the child became very anaemic, although no blood was being lost by the bowel. A blood examination showed 20 per cent. haemoglobin, red cells 2,000,000 per c.mm., and white cells 17,000, of which 10 per cent. were myelocytes. Transfusion of maternal blood by the longitudinal sinus was performed on two occasions, with an interval of three weeks; the child made an uninterrupted recovery and was now a normal healthy girl.

A third case shown by Dr. Craig was of chronic duodenal ulcer in a boy aged 5.

PROGNOSIS AND TREATMENT IN NEPHRITIS.

AT a meeting of the Manchester Medical Society on February 5th, with the president, Professor A. RAMSBOTTOM, in the chair, Dr. H. MORLEY FLETCHER of London gave an address on nephritis, in which he dealt chiefly with prognosis and treatment.

Dr. Morley Fletcher reviewed briefly certain points connected with the structure and functions of the kidney, indicating the channels by which toxins and organisms might reach the kidney—namely, the blood vessels, lymphatics, and ureters. The importance of lymphatic conveyance seemed to have been underestimated until comparatively recently. He called attention to that form of acute nephritis which was associated with severe haematuria, and occurred in children and young adults, being known as acute haemorrhagic nephritis. In this type oedema, if present, was slight, and the urine contained fewer leucocytes than in the ordinary forms of acute nephritis. It usually accompanied acute tonsillitis, also pneumonia and glandular fever, and the prognosis was generally favourable. This condition must be distinguished from simple haemorrhage from the kidney, sometimes called "essential haematuria," and from the form of nephritis which was associated with purpura. The speaker also referred to the rare form of haemorrhagic nephritis of hereditary, familial, and congenital origin which was nearly always associated with deafness, and was probably due to some form of streptococcal infection. As regards the treatment of acute nephritis, stress was laid on the importance of giving, during the first few days, a moderate amount of fluid in the form of water, lemonade, and fruit juice, but no milk, in order to rest the inflamed organ as much as possible. In a few days the diet might be increased by the addition of more fluid and carbohydrates, with fruit and vegetables, but the amount of milk must not exceed half a pint. Further increase of the diet would depend upon the condition of the urine, the amount of oedema, and the results of renal function tests. In discussing chronic nephritis Dr. Morley Fletcher referred to the comparative rarity at present in the large London hospitals of chronic parenchymatous nephritis, or the hydraemic type of renal disease associated with anasarca, as compared with its frequency twenty years ago, and asked whether similar observations had been made in Manchester. The prognosis and treatment of chronic nephritis was dealt with in a consideration of the hydraemic and azotaemic forms. The condition known as nephrosis was described, and recent views with regard to its pathology were discussed. The paper concluded with remarks bearing on the treatment of uraemia.

Reviews.

QUEEN CHARLOTTE'S PRACTICE OF OBSTETRICS.

WE welcome a new edition of the *Queen Charlotte's Practice of Obstetrics*,[1] both because it shows that other hospitals besides the Rotunda in Dublin can write up their practice and make it go, and even more because there is something attractive in the book itself. The very charming frontispiece of its first benefactress, Queen Charlotte, is a cheerful opening, and the homely illustrations of the old Manor House, Lisson Grove, and the original hospital buildings, not only prove that the practice herein set out springs from the pure fountain head, but seems also to give an air of simple domesticity to the book that is disarming to criticism. These old institutions have their traditions, and the family touch has been well maintained, though the band of brothers in authorship have not confined themselves too strictly to Queen Charlotte's practice. They decided to make a textbook, and to make it complete by including the scientific foundations of obstetrics as well as its practice, and, from their own wider experience, have filled in the blanks in the hospital's experience by considering fully abortion, ectopic pregnancy, and other conditions that do not usually fall within the sphere of a lying-in hospital.

The features of the book can be best illustrated by picking out a few samples here and there, and a start may be made with occipito-posterior positions—one of the bugbears of midwifery practice. These positions are said to form 45 per cent. of the vertex cases examined in the ante-natal clinic, but in all except 2 per cent. delivery took place with the occiput anterior, and even among this 2 per cent. only a small proportion gave rise to difficulty. These figures are somewhat surprising, and raise a doubt as to the reliance to be placed on abdominal diagnosis at the thirty-sixth week of pregnancy. Otherwise they are a remarkable tribute to the powers of nature—if given a proper chance. The signs differentiating favourable from unfavourable cases and the management of difficult ones are clearly set out—the hospital practice at Queen Charlotte's following generally accepted lines. The authors have not a good word to say for abdominal prophylactic manœuvres by pad and binder.

The chapter on contracted pelvis is excellent, particularly the discussion of the place of induction of labour, trial labour, and Caesarean section. The time of election for induction is not the time when the head will just enter the brim, but the later date when it just will not. In a trial labour rupture of the membranes is the event which determines the need for full investigation of the conditions present. If prolapse of the cord is discovered Caesarean section is performed at once, otherwise a decision is reached on the strength of the contractions and the progress made in six hours or so. Further waiting is justified by fixation of the head and descent, even if slow. If forceps delivery fails perforation is preferred because of the lesser risk to the mother and possible cranial trauma of the foetus.

No complaint can be made of lack of emphasis regarding the treatment of placenta praevia: "Too much stress cannot be laid on the dangers of rapid delivery." There is a very instructive analysis of Caesarean section, the classical operation being considered almost exclusively. The final conclusion is that in clean operations alone the risk is at least three times that of a normal labour. The final chapters include a strictly domestic account of the vaccination of young infants as practised at the hospital, and a general review of maternal and foetal mortality in the country, their causes and prevention.

The book is one of which Queen Charlotte's Hospital may well be proud: it is full of sound practical common sense, and has an individuality, rarely found in composite works, that succeeds in conveying something of the hospital atmosphere and tradition. We wish it the long and continued success it merits.

[1] *The Queen Charlotte's Practice of Obstetrics.* Second edition. London: J. and A. Churchill. 1929. (6 × 9¼, pp. viii + 635; 274 figures. 16s.)

BONE AND JOINT SURGERY.

IN a preface to his book on the active surgery of the limbs[2] Professor LECÈNE, whose recent death will be generally deplored, disclaimed any attempt to deal with operative surgery on the dead body, valuable as he holds such practice to be for the student. As his publishers say, his work, while not a treatise on the pathology of the limbs, is something more than a manual of operative surgery, for in it the indications for the different procedures and their results are discussed with some fullness. The author himself insists on the great importance of a practical knowledge of applied anatomy, without which the operator may easily find himself in difficulties. Questions of etiology, pathology, prognosis, and the relative value of different procedures occupy a secondary place; the author's main object seems to be to describe the operative measures that he himself has found most useful, and in this he has succeeded. The first part deals with open methods of treating fractures and pseudarthroses, the second with osteomyelitis, the third with tumours and dystrophy of bones, and the fourth with wounds of joints, dislocations, and ankylosis. Several chapters are devoted to surgical tuberculosis and the technique of amputations and resections, and finally the surgical treatment of skeletal deformities is dealt with.

The title of the book might lead the reader to suppose that it includes the greater part of orthopaedic surgery of the limbs, but a further acquaintance with its contents, despite its bulk and wealth of illustrations, will show that it is as an operator that Professor Lecène envisages his subject, and not as an orthopaedist to whom an operation is merely an incident in the course of restoration of function. An example of this is found in the article on congenital luxation of the hip, in which the author dismisses the subject of bloodless treatment in half a dozen lines, but goes on to describe and illustrate an operation of osteotomy and factitious pseudarthrosis in cases too old for reduction. The use of splints is ignored throughout, and nearly all of the 337 figures represent procedures on the operation table with chisel or knife or metallic plates. Professor Lecène has very little to say about arthroplasty, and ignores the work of American surgeons on this subject. The illustrations are excellent, and within its limits the book should be useful as a guide to operations on the skeleton.

PSYCHOPATHOLOGY.

A BOOKLET by Dr. R. D. GILLESPIE on *Hypochondria*[3] will be read with interest and advantage by both the general medical practitioner and the psychiatrist. The malady with which this compact and engagingly written essay is concerned is discussed from its historical, clinical, and psychopathological aspects. The author considers that the hypochondriacal reaction type can, and should, be clinically differentiated from hysterical and anxiety cases with hypochondriacal symptoms. The clinical criteria for regarding a condition as essentially hypochondriacal are stated to be as follows: a mental preoccupation with a real or suppositious physical or mental disorder; a discrepancy between the degree of preoccupation and the grounds for it, so that the former is far in excess of what is justified; and an affective condition best characterized as interest with conviction and consequent concern, and with indifference to the opinion of those around, including irresponsiveness to persuasion. It is clearly desirable on practical grounds that this reaction type should be distinguished from others which it may in some ways resemble, for, unlike these, it is singularly refractory to psychotherapy, and the prognosis is unfavourable. In the concluding chapter Dr. Gillespie discusses what he calls *hypochondria epidemica*—a tendency to morbid preoccupation on the part of the press and populace in regard to health matters, cures, and diets. It may well be, as the author suggests, that an

[2] *Chirurgie des Os et des Articulations des Membres.* Par P. Lecène, avec la collaboration de P. Hust. Paris: Masson et Cie. 1929. (6½ × 10, pp. 591; 337 figures. Paper cover, 125 fr.; bound, 140 fr.)

[3] *Hypochondria.* By R. D. Gillespie, M.D., M.R.C.P. Psyche Miniatures, Medical Series. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1929. (Pott 8vo, pp. 107. 2s. 6d. net.)

increasing doubt of the perpetuation of individual existence after bodily death unconsciously or consciously influences people to cling more closely to the present life.

A volume entitled *The Case of Miss R.*[4] is the translation into English of an interesting study by Dr. ALFRED ADLER. The author has taken the life story of a girl of ordinary station and no particular accomplishments, and submitted it to a psychological analysis. This self-revealing story, written by the girl herself, was dealt with by Dr. Adler in a manner similar to that which he would have adopted in listening to the psychological history of a patient in his consulting room. Each sentence or paragraph was examined from the beginning, without any knowledge of the story as a whole, and running comments made upon its psychological significance. By proceeding in this manner the author was able to give a picture of the procedure followed in an analytical investigation, and to show how a psychopathologist armed with a store of experience listens to, apprehends, works over, and understands an ordinary and otherwise insignificant life story. Briefly, this book is intended to show, by reference to a concrete case, how an analysis carried out on Adlerian lines is conducted, and the kind of deductions to be made from the study of apparently insignificant self-revelations. Dr. Adler states that he has never seen the girl whose story he has studied, but has heard that, in so far as she has been able to help herself without the aid of a psychologist, she has freed herself from the compulsion neurosis from which she suffered, and is taking courageous steps to solve her difficult life problems. It is left to the imagination of the readers of this volume, to their psychological understanding and intuition, to divine how this happy outcome was achieved. Dr. FRIEDRICH JENSEN, the editor of this translation, writes a preface in which the Adlerian conception of the nature of a neurosis is concisely outlined.

Those who wish to acquaint themselves with the principles and practice of Adlerian teaching can scarcely do better than consult a volume on *Individual Psychology*[5] by Dr. ERWIN WEXBERG. The translation into English of a smaller work by this writer on the same subject was recently reviewed in these columns. Dr. Wexberg is peculiarly fitted to undertake the task of writing this systematic work, for he has been associated with Dr. Adler as a co-worker in Vienna for some years. The general practitioner will no doubt find the psychotherapeutic method here described to be one of practical value in dealing with psychoneurotic cases and problem children. The technique of this method differs considerably from that of psycho-analysis. Apart from the therapeutic aspect of individual psychology, reference is made to the pedagogic and cultural aspects of Adlerian teaching. How far a more general understanding of the principles expounded in this work is calculated to exert a beneficial effect upon society generally we cannot pretend to estimate, but it may certainly be said that there is much in Adlerian teaching which those who are concerned in the upbringing and education of the young will find definitely helpful.

PATHOGENIC STREPTOCOCCI.

THE fifth volume of the *Annals of the Pickett-Thomson Research Laboratory*[6] is devoted to three monographs, forming part of what the authors—Drs. D. and R. THOMSON—justly describe as a gigantic work on the streptococci. They have already published two ponderous volumes, one of which we reviewed on August 3rd, 1929 (p. 206), a fourth is in course of preparation, and a fifth, consisting of an atlas of photographs, will bring this encyclopaedic work to a conclusion.

The research is to a large extent morphological, and depends on the employment of the special culture medium prepared by Warren Crowe, although the varying action of the cocci on the blood colouring-matter of the medium is also made use of as heretofore. The medium, the preparation of which has been described by Warren Crowe in the *Journal of Pathology and Bacteriology* (1921, vol. xxiv), appears to owe its properties partly to its smooth and equable surface, which permits of the natural growth of the colonies, free from accidental irregularities. Enlarged photographs of the colonies bring out essential details of form and enable constant variations to be distinctly recognized; and the study of these has led the authors to conclude that a great number of distinct subspecies of streptococci exist, which have hitherto escaped detection. There appears to be no *a priori* reason why microbial flora should exhibit less diversity of form than ordinary flora, but it has been objected that the differences stressed by the authors may be merely such as, in the case of elm trees for example, distinguish individuals. The colonies figured in the authors' plates exhibit abundant individual differences of this kind; on the other hand, they bring out resemblances which are clearly indicative of natural groups. For example, points of resemblance in certain of the colonies in a mixed culture enable the presence of the well-defined form of *Streptococcus mutans* to be recognized without difficulty. Whether all the groups distinguished by the authors are natural groups experience alone can show; meanwhile, the authors must be credited with affording a much more intimate acquaintance with the streptococci than has been possible hitherto, and one that is likely to be of practical consequence.

The general plan of the authors has been to study the several regions of the body in succession, in the first place as regards the normal bacterial flora, and secondly in various diseased conditions. Thus in the case of the mouth the normal incidence of streptococci is first described, and then the bacteriology of streptococcal glossitis and stomatitis, dental caries, and pyorrhoea alveolaris, an attempt being made to identify, among the numerous forms, the individual organism causing the disease in each case. The account is accompanied by an analysis of the very extensive literature of the subject and a discussion of the views of the numerous authors cited. The present volume deals with the role of streptococci in oral and dental sepsis, tonsillitis and pharyngitis, and in puerperal sepsis and septic abortion. The plates are excellent and enable the reader to form his own opinion as to the validity of the authors' conclusions.

NURSERY CRAFT.

DR. LESLIE HOUSDEN has added another to the many books on this particular subject, but for once the publisher's claim that his *Mothercraft*[7] is different is justifiable. Wittily written in clear simple language, this small volume contains a great deal of sound common sense for the expectant and nursing mother. Chapters on preparation for the baby, breast-feeding, weaning, baby's health, the training of children, and clothing comprise the whole contents, from which it will be seen that all account of artificial feeding is deliberately excluded. The author is never dogmatic without giving his reasons, his illustrations are always apt, and he ruthlessly deals with all fads and cranks. This is certainly a book for well-meaning friends and "expectant grandmothers" to read, for the modern mother suffers less from ignorance than from the prejudices of those around her.

During the twenty-two years which have elapsed since Dr. ROBERT S. MCCOMBS first published his *Diseases of Children for Nurses*[8] much advance has been made in the subject of paediatrics, and constant revision of the book has been necessary. The sixth edition, just issued, contains new articles on pre-natal care, blood chemistry, and vitamins, while the articles on nursing have been enlarged and revised so that the volume now contains an account of the nursing

[4] *The Case of Miss R.* By Alfred Adler. Translated by Eleanore and Friedrich Jensen, M.D. London: G. Allen and Unwin, Ltd. 1929. (Demy 8vo, pp. xxii + 309. 12s. 6d. net.)

[5] *Individual Psychology.* By Erwin Wexberg, M.D. Translated by W. Béran Wolfe, M.D. London: G. Allen and Unwin, Ltd. 1929. (5½ × 8½, pp. viii + 442. 15s. net.)

[6] *Annals of the Pickett-Thomson Research Laboratory.* Vol. V: The Pathogenic Streptococci; their Rôle in Human and Animal Disease (continued). London: Baillière, Tindall and Cox; Baltimore, U.S.A.: The Williams and Wilkins Company. 1929. (8½ × 11, pp. xi + 375; 85 plates. 42s. net per volume.)

[7] *Mothercraft.* By Leslie George Housden, M.B., B.S.Lond. London: H. Jenkins. 1929. (Cr. 8vo, pp. 122. 2s. 6d. net.)

[8] *Diseases of Children for Nurses.* By Robert S. McCombs, M.D. Sixth edition, thoroughly revised. Philadelphia and London: W. B. Saunders Company. 1929. (5½ × 8, pp. 583; 137 figures. 12s. 6d. net.)

as well as of the diseases of sick children. The surgical side is for the most part neglected, and this seems an important omission in a book for nurses, who should have no rigid division in their minds between medical and surgical cases. Details about the nursing and after-care of children who have had tonsillectomy, the commonest surgical operation, are not given; nor is sufficient mention made of acute abdominal conditions and their nursing. What Dr. McCombs has included, however, is presented clearly and in a manner well adapted to those for whom the work is intended.

"BURDETT."

Burdett's Hospitals and Charities[9] is a publication which is now in its fortieth year of existence. It remains a very useful and complete compendium of charitable work in this country. In the preface attention is directed to new forms or schemes for co-ordination that have been devised, with a reference to the "incalculable reactions" which the staffing problem of municipal hospitals under the new Local Government Act may lead to. Among new institutions which have come into being, mention is made of the Marie Curie Hospital at Hampstead, for the radium treatment of cancer in women; of the Lord Pontypridd Hospital in Wales, for early rheumatic heart cases in children; of the opening by the managers of the Royal Edinburgh Hospital of the Jordanburn Nerve Hospital, for the voluntary treatment of mental disease; and of the establishment of a "foot hospital" in Liverpool. The astonishing vitality of the Hospital Saving Association in London is noted. In a brief survey of the voluntary hospitals and their problems, Captain J. G. Stone comments on the scheme for medical centres now being developed in Birmingham, to which reference was made in the *Journal* of February 8th (p. 255). He touches upon the hardships inflicted upon some hospitals under the Rating and Valuation Act, 1925; and on the expense involved in the treatment of motor accident cases. He sets forth the figures which show that the total income of voluntary hospitals now amounts to £14,000,000, of which over £12,000,000 is derived from various voluntary sources; and that a net aggregate deficit of more than £600,000 in 1920 has now been turned into a net aggregate surplus of nearly £1,000,000. The information given in the volume seems to be reasonably correct in view of the enormous labour that must have been involved in its compilation. It is perhaps a pity that a public school such as Epsom College should be compelled by its close charitable connexions to appear in the book, while other public schools, some of them with similar, though less closely connected, charitable objects, are unnoticed.

NOTES ON BOOKS.

DR. J. R. REES, in *The Health of the Mind*,[10] propounds the need for sound principles of mental hygiene in the early life of the child. "The mental hygiene movement," he says, "is going far towards ensuring a better balance and poise in the next generation." "Individually and collectively we suffer to an extent which few appreciate, because of ignorance of the ordinary principles of mental hygiene." Dr. Rees is deputy director of the Tavistock Square Clinic, London, and the scope of his little book, which does not set up to be in any sense a technical work, may be sufficiently indicated by giving a list of the chapter headings. These are, in order: mental health; bodily mechanisms; instincts and the personality; mind and body; psychological mechanisms; mental breakdown, its cause and its cure; the problems of early life; the problems of childhood and adolescence; adult problems; sex education; the art of adjustment.

The second edition of CAMERON'S *Textbook of Biochemistry*[11] has fully maintained the high standard set by its predecessor, which appeared as recently as 1928. There is no need to repeat what we had to say in its praise at that time, though we believe it was fully justified. To criticize a book of this type is so much easier than to write one that we feel some hesitation in pointing out what appear to us to be omissions: but we cannot help thinking that the work of Mann and his collaborators, which has done so much to clarify our views on liver function, might well have been dealt with rather fully. The chapter on pharmacology, too, is not quite up to the standard of the rest of the book; we think that the author would have done better to treat the matter more adequately, or else leave it out altogether.

Under an arresting title, *Those Teeth of Yours*,[12] and with the subtitle "A popular guide to better teeth," Mr. MENZIES CAMPBELL makes a serious endeavour to awaken the public's interest in the preservation of their teeth. The first chapter, with its brief history of dentistry from remote times to the present day, provides a fitting prelude; and the last chapter—on the claims of dentistry as a career, reminding both the general public and the dentist that social service is the goal of the dentist as of the doctor—is an epilogue of equal fitness. The anatomy of the teeth, the causes of decay, pyorrhoea alveolaris, extraction and replacement of teeth, children's teeth, teeth in relation to health, are dealt with in the intervening chapters. As a general criticism we may say that the author presents as settled fact debatable points on which professional opinion is by no means unanimous. Not everyone will agree that the withdrawal by the body of lime salts from the teeth to fulfil its other needs is the explanation of the first stage of enamel caries (p. 42), or that iron injures the teeth (p. 47). Nor would everyone agree that extraction of the first permanent molar teeth produces such terrible results as are depicted in Fig. 13 (to us it seems that the two jaws there depicted belong to two separate persons, and so are not comparable). But, withal, there is much that will interest the general reader and much that will stimulate inquiry, and the author's style makes pleasant reading. We hope that the book will arouse the interest in a difficult subject which the author desires.

[9] *Burdett's Hospitals and Charities, 1930.* Founded by Sir Henry Burdett. Fortieth year. London: Nursing Mirror, Ltd. 1930. (Demy 8vo, pp. xxx + viii + 857. 21s.)

[10] *The Health of the Mind.* By J. R. Rees, M.D. London: Faber and Faber, Ltd. 1929. (Cr. 8vo, pp. xiv + 266. 6s. net.)

[11] *Textbook of Biochemistry.* By A. T. Cameron, D.Sc.Ed., F.I.C., F.R.C.S. With a foreword by Professor Swale Vincent, LL.D., M.D., D.Sc., F.R.S.E., F.R.C.S. Second edition. Churchill's Empire Series. London: J. and A. Churchill. 1929. (5½ × 8½, pp. xi + 662; 12 figures, 2 plates. 15s.)

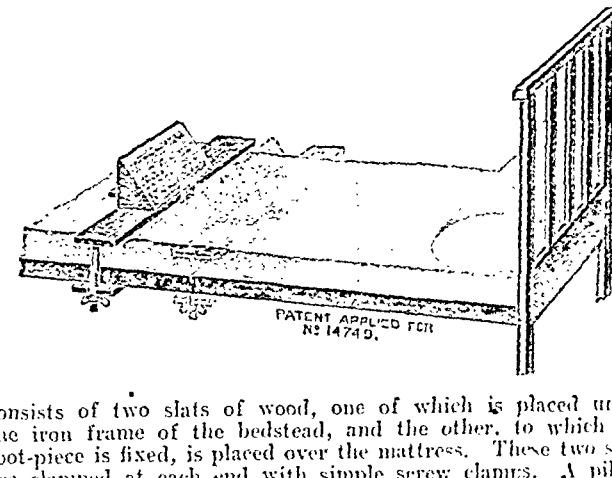
[12] *Those Teeth of Yours.* By J. Menzies Campbell, L.D.S., D.D.S., F.R.S.E. London: W. Heinemann (Medical Books), Ltd. 1929. (Cr. 8vo, pp. xiii + 141; 17 figures. 3s. 6d. net.)

PREPARATIONS AND APPLIANCES.

A BED FOOT-REST.

DR. H. F. EALAND (Farnham) writes: A simple apparatus which will enable the patient to be kept in the sitting position while in bed has long been wanted. Up to the present the only means of doing this has been by using the ordinary "donkey," but this has disadvantages which are apparent to everyone.

The apparatus here illustrated has many advantages; it is simple, easily adjustable, comfortable, and inexpensive. It



consists of two slats of wood, one of which is placed under the iron frame of the bedstead, and the other, to which the foot-piece is fixed, is placed over the mattress. These two slats are clamped at each end with simple screw clamps. A pillow is then folded over the foot-piece.

This bed foot-rest is supplied by Messrs. Allen and Hanburys Ltd., Wigmore Street, W.1.

INVERT SUGAR.

Sunnycomb is a pure invert sugar prepared from cane sugar by Macfie and Sons, Ltd. (34, Moorfields, Liverpool). It resembles honey in appearance and sweetness, and is a very palatable preparation. It is therefore a convenient substitute for sucrose in cases where such a substitute is required.

CHOCOLATE MILK FOOD.

Cow and Gate chocolate milk food is a blend of cocoa, full-cream milk, and cane sugar. It is sold in powder form, and from this a palatable drink can be prepared simply by the addition of hot water. It is specially recommended for convalescents, etc., who dislike the taste of ordinary milk.

British Medical Journal.

SATURDAY, FEBRUARY 22ND, 1930.

THE PATHOLOGY OF BONE.

IT might be supposed that the seventy-five Hunterian orators who have preceded Mr. Hey Groves in that capacity can have left very little of interest unsaid in connexion with the life and work of John Hunter. Yet Mr. Hey Groves (whose oration is printed at page 321) has succeeded in breaking new ground. He has approached the subject from a Carlylean standpoint, and in his study of the hero as surgeon or surgeon-biologist, with John Hunter as type and representative, has found material for a discourse which, in point of freshness of interest and eloquence, will surely rank high in the series of Hunterian orations. The adoption of this standpoint will be felt to be singularly appropriate; for it implies the recognition of a certain degree of idealism, and there can be no doubt that a halo surrounds the memory of John Hunter such as may be found about that of few other scientific men. We know, indeed, how to appreciate Hunter's work, but with the mention of his work we never fail also to recall his personality and himself. This hold on our sentiment is no less evident in the manner in which the great collection which he has bequeathed to us is regarded; every specimen of that collection, be it of great or of little intrinsic worth, is looked upon with an almost mediaeval reverence because it belonged to him. It is possible that the frank sincerity of the man, which Mr. Hey Groves mentions as being one of his main characteristics, may in some measure account for the affection in which his memory is held.

Hunter was especially interested in the pathology of the skeleton, and this year's oration is chiefly devoted to the consideration of this aspect of his work, and more particularly to bone-grafting, in which Hunter may be said to have been a pioneer. Hunter's experimental graft of a hen's spur into the leg of a cock is considered to be the first successful example of bone-grafting on record, and by it the fundamental fact was established that the organic union of an implanted bone with the tissues of the host is a possibility. The subsequent history of this branch of surgery forms an interesting chapter, to which Mr. Hey Groves himself, in his Jacksonian prize essay of 1916, has been a notable contributor. Following Hunter, no considerable progress was made until the middle of the last century, when Ollier of Lyons, who may be regarded as the second founder of the method, took up the study of the subject from a biological standpoint. Ollier believed—and it was the general belief at the time—that the periosteum took no part in the production of bone; but he was forced from that position by the results of his own experiments. For he found that when the periosteum was reflected away from the shaft of a bone a new production of bone did occur on its deep surface. He was thus led to believe that the periosteum not only possessed an osteogenetic function, but that it was of primary importance in ensuring the viability of a transplant and in producing the bulk of the ultimate graft. This preponderating influence of the periosteum was questioned by Barth in 1893. His observations pointed to the complete death of the transplanted bone; and he conceived that the definitive graft arose by a production of new bone from the cut extremities of the diaphysis of the host. Hence arose the idea of the original transplant acting merely as a scaffold of dead bone, to be gradually replaced by osteogenetic tissue permeating it from the surrounding parts, macroscopical evidence of which is seen in the gradual rarefaction of the osseous tissue of the original transplant.

Barth's views received some modification through Axhausen's work in 1908, by which it was shown that, although the main part of the transplant dies, some degree of endosteal and subperiosteal bone formation may be retained. The fact of the permeation of the transplant appears, however, to have been now established without doubt by Leriche and other observers. At this stage, then, ideas on bone-grafting had taken definite form; the fate of the original transplant was understood, and the relative parts played by the periosteum of the transplant and the osteogenetic tissue of the host were satisfactorily apportioned. In 1912, however, Macewen published his work on the growth of bone, and the whole theory of bone-grafting seemed to be returned to the melting-pot. Macewen repeated Ollier's experiments, employing a more exact technique, by which, in raising the periosteal flaps, he avoided the inclusion of any of the subjacent bone, as it became evident had happened in Ollier's experiments. These experiments appear to prove that the periosteum has no osteogenetic function whatever, and on Macewen's authority that view has been generally accepted, the periosteum being regarded merely as a vascular limiting membrane, but useful as such in assisting in the organic union of the transplant. Without mentioning Barth by name, Macewen appears also, in the following passage, to dissent from his conclusions. "It has," he writes, "been alleged that transplants do not live and grow, that they merely play a passive role, and that a new growth does take place into them from either side of the diaphysis." He then describes experiments with minute fragments and shavings of bone which, when transplanted, he considered to survive and act as centres of ossification. These experiments can hardly be regarded as touching Barth's position, which was concerned with transplants of no little bulk; and, as a practical proposition, it is still held that the main part of the transplant dies.

With the acceptance of this view it seemed but a natural corollary to assume that dead bone would be as efficient as a living transplant—an assumption which receives its justification in an interesting experiment described in the Jacksonian essay above referred to, in which two grafts, one of living and the other of dead bone, in the shape of pegs, were fixed in the living bone of the host, and were found at the end of a few weeks to exhibit no recognizable differences, macroscopically or microscopically. An essential condition for success in these operations, in order to ensure satisfactory permeation of the transplant, is that the latter should be firmly fixed in close contact with the living bone of the host, ample demonstration of which has been furnished by Mr. Hey Groves himself. Permeation, however, is not a necessary consequence in every case, and bone, if of very dense texture, may become encapsuled after the manner of an aseptic foreign body, and its presence be tolerated. A remarkable example of this is alluded to by Mr. Hey Groves in a case in which he inserted the tooth

of a walrus into the centre of a boy's femur, the tooth becoming firmly and permanently encapsuled in osseous tissue, without permeation.

Mention has been made of Macewen's experiments with small transplants of bone. He supposed that these increased in size through an abundant proliferation and outpouring of osteoblasts. Recently our ideas of osteogenesis have been again disturbed by the emphatic assertion of Leriche and Policard that osteoblasts have nothing whatever to do with bone formation—that they are rather a hindrance than a help to that process. We thus appear to be at the opening of a new chapter in the pathology of bone; and we may anticipate that new facts and new theories will be forthcoming, which will doubtless furnish new material for the successors of Mr. Hey Groves on the Hunterian rostrum.

HEALTH SERVICES AND THE QUALIFICATIONS OF MEDICAL OFFICERS.

ONE of the objects of the late Government and of Parliament in passing the Local Government Act of last year was to effect a greater freedom for local authorities from central departmental control over the detailed expenditure of public money. Under the system of "grants in aid" covering a high proportion of the total expenditure involved, there was a logical case for meticulous interference on the part of the Ministry making the grant; on the "block grant" system Ministerial control may become of a much looser and more general character. Indeed, the danger is that in the case of backward and unwilling authorities this control may be too remote to be really effective. These observations apply, of course, to the public health services—perhaps predominantly to them. In pursuance of the policy of allowing as much freedom as possible to local authorities in administering those services, the Ministry of Health has just issued a circular (No. 1072) and accompanying regulations laying down some general requirements as to the qualifications which must be possessed by those who are hereafter appointed as medical officers or health visitors in connexion with tuberculosis, venereal disease, and maternity and child welfare services, and stating the general conditions under which laboratories and institutions connected with these services will be approved. These documents are of great importance, since their effect is that after March 31st next it will no longer be necessary for local authorities to obtain the approval of the Minister of Health to individual appointments of any of the officers concerned provided the regulations are complied with, and that, subject to the conditions stated, sanction is given in advance to any developments of these health services (in cases where approved schemes are already in operation) to any extent and in any manner that the local authority thinks desirable—so long as such developments do not involve the raising of a loan to defray any necessary capital expenditure. The sanction of the Minister will still be required, of course, for the initiation of arrangements in local government areas where no scheme has hitherto been sanctioned.

The medical officers concerned with these regulations are (1) a "tuberculosis officer" in clinical charge of a tuberculosis dispensary provided by a local authority; (2) a "medical superintendent" in clinical charge of a residential institution for the treatment of tuberculosis in its early or curative stages which contains not fewer than seventy-five beds; (3) a "venereal diseases pathologist" in charge of a laboratory, and (4) a "venereal diseases officer" in charge of a treatment centre provided by a local authority; (5) a "senior maternity and child welfare officer," other than a medical officer of health, in charge of the maternity and child welfare work of a local authority, who has responsibility for the work of other medical officers similarly employed; and (6) a "medical officer of an ante-natal clinic" in charge of a clinic provided by a local authority for giving advice to pregnant women. The first requirement in respect of all these officers is that they shall have had at least three years' experience in the practice of their profession subsequent to qualification. It will be remembered that such a requirement was originally suggested by the British Medical Association in connexion with the establishment of a scale of salaries for the public health medical service. This requirement is now officially adopted. In the case of the first two of the above classes of medical officer there are further requirements: that they shall have spent not less than eighteen months in general clinical work, including six months as resident officer in charge of beds in a general hospital, and that they shall have received not less than six months' special training in the diagnosis and treatment of tuberculosis. This will do something, though perhaps not enough, to improve the status and usefulness of tuberculosis officers. In the case of the venereal diseases officers, the pathologist is required to be properly certified as having done a specified amount of laboratory work of a special kind, and the clinical officer must be "in possession of a certificate given by the venereal diseases officer of a treatment centre at which not less than five hundred patients attended for the first time during the twelve months preceding the issue of the certificate, testifying that he has attended at the treatment centre for not less than three months, and has received during that period not less than one hundred and thirty hours' instruction in the modern methods of diagnosis and treatment of venereal diseases." A committee of the British Medical Association suggested to the Minister of Health that the requirement as to 500 new patients having attended the centre in a year was too stringent, but was assured by him that there would in fact be no difficulty in finding a number of such centres sufficient for the purpose required. The senior maternity and child welfare medical officer is required to have been employed as a junior officer in this department of work, and both he and the ante-natal clinic officer must have had special experience, with this curious difference, that such experience must have been in the case of the former officer "in midwifery," and in the case of the latter officer "of practical midwifery." The necessary qualifications of health visitors and of tuberculosis visitors are similarly set out.

With regard to the approval of institutions, the only conditions required to be observed are (1) that the institution and the records kept thereat will be open to inspection at any time to officers of the Ministry of Health; and (2) that such records be kept and returns made as the Minister may from time to time require. Further, institutions for children must make such arrangements for their education as the Board of Education may require; and in laboratories the Wassermann tests must be performed under the personal supervision of the medical officer in charge of the laboratory, and must conform to a standard technique. Lastly, authorities are reminded that inspections will be carried out in connexion with all these services to see that a reasonable standard of efficiency and progress is maintained.

THE HUNTERIAN FESTIVAL.

THE Hunterian Festival of the Royal College of Surgeons of England was held last week on the two hundred and second anniversary of John Hunter's birth, when Mr. Ernest W. Hey Groves, professor of surgery in the University of Bristol, delivered the Hunterian Oration, which is published in the opening pages of this issue. In the evening a dinner was given in the College Library, where a large company was entertained by the President and Council. After the usual loyal toasts had been honoured, and "The Memory of John Hunter" had been drunk in silence, the health of "The Guests" was proposed by the President. In the course of his eloquent and witty speech, Lord Moynihan paid compliments to a number of the distinguished visitors, including the Dean of Westminster, as representative of the Church; Lord Atkin, Mr. Justice Hawke, and the Treasurer of Lincoln's Inn; the King's physicians, Lord Dawson, Sir Humphry Rolleston, and Sir Farquhar Buzzard; and Mr. Arthur Greenwood, Minister of Health, whom he delighted to welcome as a fellow-citizen of Leeds. Lord Moynihan said that Mr. Greenwood was holding office at an extremely interesting period in the history of medicine, because he had the opportunity to create the long-hoped-for post-graduate medical centre in London beside which Vienna and Berlin would pale into insignificance. The Minister of Health, in an appreciative reply, said that he had been much impressed by the President's inspiring appeal on behalf of post-graduate medical education and research in the capital of the British Empire; it was an ideal to quicken even an untutored layman's mind. Lord Atkin, who also responded, discussed some of the resemblances and contrasts between law and medicine upon which the President had lightly touched, and urged the Minister of Health, when considering plans for a great post-graduate centre, to bear in mind the need of a medico-legal institute in London where magistrates, coroners, counsel, police surgeons, and others could be trained in the principles and methods of medical jurisprudence. The concluding toast, that of "The Hunterian Orator," was given by Dr. Thomas Loveday, Vice-Chancellor of the University of Bristol, who spoke with enthusiasm of the pride felt by his city in the honour that had been paid that day to Professor Hey Groves.

TULARAEMIA.

PLAGUE, one of the most important and widespread of the great epidemic diseases, owes much of its importance to the fact that it is primarily a disease of rodents. But it is not the only disease of rodents which is transmissible to man. Another plague-like condition—tularaemia—first observed in 1907, though not then identified, is conveyed from rodents to human beings with the greatest facility. Named after the county of Tulare in the United States, where the causal organism was first isolated, it infects a large variety of rodents (as well as many different species of wild and domestic mammals and even birds), producing plague-like symptoms, such as buboes and so forth. Unlike plague, however, the disease is relatively benign in human beings, though it has a high mortality among animals. Tularaemia was first officially recognized in the United States in 1912, but was comparatively unknown even as recently as 1928. Apart from a few cases recorded from Japan, it appeared to be limited to America: since 1926, however, a number of epidemics in the Union of Soviet Socialist Republics—occurring on both sides of the Ural Mountains, and extending from the Arctic Circle to the Caspian Sea—have shown that the disease is much more widespread than had been thought.[1] There is a good deal of evidence, too, to suggest that it is not a new disease and that many of the benign epidemics of "plague" were really tularaemia. Derbek recorded, for example, an epidemic in 1877, in Astrakan, which was almost certainly of this condition. Clinicians in the United States have so far recognized four more or less distinct forms of tularaemia: ulcero-glandular, oculo-glandular, pure glandular, and—found mainly among workers who have contracted the disease in the laboratory—typhoid; but the Russian investigations have shown that this classification is inadequate and requires revision. The causal micro-organism, *B. tularense*, shows certain serological relationships with the micro-organisms of undulant fever and contagious bovine abortion, but these are not sufficiently distinct to warrant its inclusion in the same group. Indeed, it appears to be much more closely related to Yersin's bacillus than to any other: but serologically much still remains unknown, and there appears to be no cross-immunity between the two micro-organisms. Tularaemia, though bacteriaemic, is not transmitted directly from animal to animal or from man to man, but through the bite of an insect or a tick, or through actual contamination of broken skin or conjunctiva. This peculiarity makes it almost an occupational disease, fur hunters, and to a less extent laboratory workers, being the chief victims. The recent widespread epidemics in Russia arose mainly through the demand for the skins of water-rats—animals which are not normally hunted to any great degree, but whose skins have suddenly become valuable because of the world demand for furs of any and every description—and in this way hundreds of hunters and fur skinners have become infected. Plague, too, may arise very occasionally as an occupational disease among fur hunters: as, for example, it did in Mongolia, where the hunting of tarabagan originated outbreaks. Research has shown that in many places in the U.S.S.R., even where human epidemics have not been reported, the disease is endemic in rodents, and tularaemia therefore assumes a real public health significance. Russian workers are displaying great activity in many branches of biological research—very much greater than is generally realized; indeed, in some of its branches they are far more active than workers in our own country. In this particular instance extensive epidemiological studies on tularaemia are in progress, and their results cannot fail to be of the greatest interest to public health authorities throughout Europe.

[1] Monthly Epidemiological Report of the Health Section of the Secretariat of the League of Nations. Ninth year, No. 1. Pp. 2-21.

THE INVESTIGATION OF NEW DRUGS.

THE introduction of new synthetic drugs has been an outstanding feature in the progress of therapeutics during the present century. Discoveries of the highest value have been made in this field, but still it must be admitted that the rate of advance in drug therapy lags behind that made in other comparable fields. The rapid development of gas warfare during the war is an indication of what can be done by systematic team work on a large scale. There is certainly a striking contrast between the speed with which noxious gases of ever-increasing potency were discovered and the slow advance in our knowledge about healing drugs; the contrast does not reflect credit on humanity. An interesting discussion at the Annual Meeting last July of the American Medical Association[1] brought out some of the causes for the unsatisfactory rate of progress in the discovery of new drugs. The problem is threefold—chemical, pharmacological, and clinical. When a new drug is produced in the chemical laboratory its properties ought first to be subjected to pharmacological analysis, and it should then be tested clinically. The difficult problem is how to organize disinterested tests. The pharmacological assay is important because, as Dr. C. D. Leake observed in his opening paper, "there is no short cut from chemical

[1] The Pharmacologic Evaluation of New Drugs. *Journ. Amer. Med. Assoc.*, 1929, 93, 1521.

laboratory to clinic, except one that passes too close to the morgue." In the United States the position is better than with us, for there the Council of Pharmacy and Chemistry of the American Medical Association provides an organization for the critical and impartial testing of the therapeutic claims made for new preparations. We have no organization of this kind; the only factor limiting such claims is the sense of responsibility of the firms concerned, and this varies much. Unfortunately a vicious circle has been established. The claims made for many of the new compounds represent the optimism of the vendor rather than a disinterested and balanced judgement based on controlled observations. The direct harm done is perhaps not very great, because most medical practitioners have learnt to allow a heavy discount off such claims. But the indirect damage is considerable, because the introduction of new compounds has come to be regarded as a field of medical research in which those careful of their reputation must step warily. Consequently it is difficult for firms to get disinterested opinions about the pharmacological and clinical value of new drugs. Dr. Leake suggests that in the United States there should be closer co-operation between commercial concerns and university laboratories of pharmacology. "Such an arrangement," he remarks, "might be profitable in many ways. The company would be assured of careful and unbiased judgement on the pharmacology, toxicology, and worthiness of clinical trial of their new preparations, while the pharmacological laboratory might secure much-needed help in the prosecution of more strictly scientific problems." There are, however, obvious dangers in such an arrangement, for a laboratory which becomes dependent on commercial firms for its support ceases to be an independent and impartial authority. It would be preferable to have some central authority to arrange for the necessary pharmacological and clinical investigations of substances which appear worthy of a careful trial.

WAYS THEY HAD IN THE ARMY.

"SOME aspects of administration"[1] was originally a lecture delivered at the Royal Army Medical College in September of last year. Lieut.-Colonel M. B. H. Ritchie is no worshipper of big words and obscure ideas. Couched in simple colloquial language and innocent of any flowers of speech, his contribution is a breezy discourse which will strike a chord of sympathy in many hearts. Colonel Ritchie remarks that war administration hinges on personality. His own personality is stamped across the pages of his lecture: obviously one who has the happy faculty of getting things done, who suffers fools sadly, and is somewhat impatient of delay. Among the many eccentric types that emerged from the stress of war was the gentleman, vested with a slight brief authority, who took a peculiar delight in obstructing matters. It was a strange aspect of human development, hard to understand, and the cause of much bitterness. How many medical officers, anxious to get on with the job, eager for the war to be done and won, suffered at seeing good recommendations and sensible suggestions condemned to the obscurity and oblivion of a pigeon-hole! Colonel Ritchie deals faithfully with such hinderers in the wheels of progress. "But Heaven preserve me from the professional obstructionist in war. The history of military disasters is a continuous record of obstructionism. Your obstructionist is able, capable, argumentative, full of plausible reasons. You can do nothing with him. If one is in the way, however far down the military scale, he will put a road-block across your route to success. He is incurable. There is only one thing to be done with him. Send him home." Again, the stout middle-aged gentlemen of senior rank, who spent their days in high places, devouring regulations, trying to do everything themselves, and writing precise and detailed memoranda, instead of going outside and seeing that the work was done, might have learnt a lesson from the following: "You will be led to delegate as much as you can, and it is sound. Do not get your mind filled up with details. There is no room for the big things if you do. You must trust your subordinates; give them as much autonomy as you can, but know what they are doing. You yourself must never get clogged up with correspondence, so that you have to stay in when you ought to be going around. There is no special advantage in having a meticulous mind in a high appointment." There is much else that is of interest in this attractive article. It is so good that we venture to commend it to the Medical Director-Generals of the three Services for circulation to all medical officers of the regular and auxiliary forces, in order that they may read, mark, learn, and inwardly digest.

[1] Reprinted from the *Journal of the Royal Army Medical Corps*, January, 1930. London: J. Bale, Sons and Danielsson, Ltd.

MATERNAL AND CHILD WELFARE IN AUSTRALIA.

ON the invitation of the Prime Minister of the Commonwealth of Australia, Dame Janet M. Campbell, M.D., senior medical officer for maternal and child welfare to the Ministry of Health, recently paid a visit to each of the States of the Commonwealth for the purpose of studying the organizations for maternal and child welfare, and advising the Government on the development of these services. In her report, just issued by the Department of Health of the Commonwealth,[1] Dame Janet Campbell presents a statement of the present position in Australia in regard to maternal and infant mortality and morbidity, and of the existing facilities for maternal and child welfare, and indicates the directions in which she believes improvement could usefully be made. Expressed briefly, her proposals are that the Governments must be prepared to spend more money, though not more than would be enough to secure those essential facilities which the personal resources of the people themselves are unable to supply; that departments must assume more actively their responsibility for those important branches of public health administration that concern maternal and infant welfare; and that "voluntary agencies must prepare themselves to surrender for the greater good some portion of their, perhaps, over-cherished independence." We hope on a later occasion to consider this report in more detail.

GAS FIRES.

THE convenience of gas fires is beyond question. The readiness with which they can be brought into action makes them invaluable for rooms in occasional use, and the saving of domestic labour is a boon in the office and household. Until recent years, however, they have suffered from at least two serious disadvantages—their ugliness, and the constant hiss of their burners, so different from the comfortable sound of the coal fire. But the modern gas burner is almost silent, and well-known architects have now turned their attention to designing grates which are agreeable in form and setting and yet not mere copies or adaptations of the coal-burning fireplace. In *Gas Fires and Their Settings*[2] the late Sir Lawrence Weaver shows how successful are many of these designs, and how fitly they are planned in relation to the rooms where they are installed. The volume contains admirable illustrations of gas fires designed by Morley Horder, Walter Tapper, Guy Dawber, Giles Scott, Hubert Lidbetter, to name but a few of the famous architects whose work is represented in its pages. From a study of these pictures it may be gathered that the greatest measure of success is attained when the

[1] H. J. Green, Government Printer, Canberra, Australia.
[2] *Gas Fires and Their Settings*. By Sir Lawrence Weaver, K.B.E., F.S.A., Hon.A.R.I.B.A. London: The Fanfare Press. 1929. (7s. 6d.)

designer makes it clear that the fire is a gas fire with a character of its own, and that the result is least happy when he contrives an adaptation of some well-known type of fireplace. A combination of gas fittings with a pedestal basket grate of Queen Anne period seems ridiculous; the delightful openness of the dog-basket grate looks desolate when filled with hard immobile incandescent "fuel"; nor does a sprinkling of "artificial coal" help the eye—it seems rather to aggravate the offence. But there is ample evidence—as, for example, in the illustration showing a corner of a doctor's waiting-room—that the effort to secure appropriate designs for gas fires is meeting with success. Perhaps the complete breakaway from the hearth tradition shown in Morley Horder's design is an indication of the wisest line of advance. Here there is no hearth or curb; the wall skirting is carried round beneath the fire, and the fire itself is set within a metal frame, which has doors to be opened when the gas is alight and closed when it is turned off; the surround is slightly in advance of the wall level, and not recessed. However strong a preference anyone may feel for the coal fire, he has to acknowledge that with such a design the gas fire is not for ever proclaiming its inferiority complex, but asserting its own dignity as something useful and seemly.

THE MENTAL TREATMENT BILL.

THE second reading debate in the House of Commons on the Government's Mental Treatment Bill, of which our Parliamentary Correspondent gives a full account at page 365, was noteworthy for a clear and straightforward speech by the Minister of Health, and for the sympathy displayed towards the objects of the bill by members of all parties. As in the Lords, so in the Commons, a desire was expressed by several speakers that better protection should be given to the certifying medical practitioner than that provided in Clause 16. It is to be hoped that this point—of great immediate concern to the medical profession, and indirectly of no less importance to the public—will be kept in the forefront during the committee stage in the Commons. The reference to "non-volitional cases" by Sir Boyd Merriman (Solicitor-General in the late Government) contrasted agreeably with Lord Brentford's preoccupation in the House of Lords with "the liberty of the subject," and emphasized the Opposition's acceptance of this bill as non-contentious, or at least non-party.

SIR CHARLES HASTINGS LECTURE.

THE third of the series of Sir Charles Hastings Lectures, inaugurated by the British Medical Association for the purpose of offering to the public information by the highest authorities on matters of general public health interest, will be delivered in the Great Hall of the British Medical Association's House in London on Wednesday, March 12th, at 8 p.m. This year's lecturer is Sir Andrew Balfour, K.C.M.G., M.D., director of the London School of Hygiene and Tropical Medicine, and his subject will be "Health and Empire." The chair will be taken by Lord Riddell, president of the Royal Free Hospital, and after the lecture relevant questions in writing will be invited. Admission is free, by tickets obtainable on application to the Financial Secretary, B.M.A. House, Tavistock Square, W.C.1. Seats not occupied by ticket holders by 7.50 p.m. will be available for other members of the public.

THE Medical Research Council has appointed Air Vice-Marshal David Munro, C.B., C.I.E., M.B., on his retirement as Director of Medical Services, Royal Air Force, to be secretary of the Industrial Health Research Board, in succession to Mr. D. R. Wilson, C.B.E., lately appointed Deputy Chief Inspector of Factories at the Home Office. The appointment will take effect on March 1st, 1930.

THE eighth biennial Sydney Ringer Memorial Lecture will be delivered at University College Hospital Medical School on Monday, March 17th, at 5 p.m., by Professor E. B. Verney, M.B., F.R.C.P., whose subject is "The reserve forces of the kidney." Sir John Rose Bradford, President of the Royal College of Physicians, will take the chair. The lecture is open to all qualified practitioners and medical students.

DR. J. A. GLOVER'S three Milroy Lectures on the incidence of rheumatic diseases will be given before the Royal College of Physicians of London, Pall Mall East, S.W., on February 27th and March 4th and 6th at 5 p.m. Members of the medical profession will be admitted on presentation of visiting card.

MEDICAL CONGRESSES, 1930.

THE following congresses and conferences on medical and allied subjects have been announced for 1930. Particulars are given below in the following order: Date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information as to these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

April 7–10.—German Society for Internal Medicine. Wiesbaden. Professor Volhard, Süd 10, Medizinische Klinik, Frankfort.

April 9–13.—Berlin Balneological Society. Bad Elster. Dr. Max Hirsch, Steglitzstrasse 66, Berlin, W.35.

April 24–25.—German Society for Psychiatry. Stuttgart.

May 6–10.—International Congress for Mental Hygiene. Washington. Mr. Clifford Beers, 370, Seventh Avenue, New York City.

May 17.—International Exhibition of Hygiene. Dresden.

May 19–21.—International Congress on Malaria. Algiers. General Secretary, Institut Pasteur, Algiers.

May.—Italian Congress for Medical Radiology. Turin.

June 4–9.—Royal Institute of Public Health. Portsmouth. Secretary of Institute, 37, Russell Square, W.C.1.

June 5.—International Congress of Orthopaedics. Paris.

June 12–13.—German Society for Tuberculosis. Norderney.

June 21–28.—Royal Sanitary Institute. Margate. Secretary of Institute, 90, Buckingham Palace Road, S.W.1.

June 25.—International Society of Microbiology. Paris.

June 28 to July 2.—Journées Médicales de Bruxelles. Brussels.

July 10–12.—Oxford Ophthalmological Congress. Oxford. Mr. C. G. Russ Wood, 12, St. John's Hill, Shrewsbury.

July 26–27.—Belgian Congress of Neurology and Psychiatry. Liège. Dr. Leroy, 30, Rue Hemricourt, Liège.

August 3–10.—International Society of Sexology. London. Professor F. A. E. Crew, The University, Edinburgh.

August 4–9.—International Veterinary Congress. London. Dr. F. Bullock, 10, Red Lion Square, W.C.1.

August 5–9.—International Congress of Dermatology and Syphilology. Copenhagen. Dr. S. Lumholt, 45, Raadhusplads, Copenhagen.

August 12–15.—International Union against Tuberculosis. Oslo. Secretary of Union, 2, Avenue Velasquez, Paris, VIII.

August 17–20.—International Congress of Paediatrics. Stockholm.

August 26–29.—British Medical Association Annual Meeting. Winnipeg. Financial Secretary of British Medical Association, Tavistock Square, London, W.C.1.

August to September.—International Congress of Neurologists. Bern.

August.—International Congress on Miners' Phthisis. Johannesburg. International Labour Office, Geneva.

August.—Congress of Northern Neurologists. Stockholm.

September 4–8.—International Congress of Physiotherapy. Liège. Dr. Dubois-Trépagne, 25, Rue Louvreux, Liège.

September 22–27.—International Congress of the History of Medicine. Rome.

October 9.—Association Professionnelle Internationale des Médecins. Geneva. Dr. F. Decourt, Mitry-Mory (Seine-et-Marne), France.

1930.—International Cancer Conference. Madrid.

1930.—German Congress of Natural Science and Medicine. Königsberg.

1930.—Congress of Equatorial Medicine. Guayaquil, Ecuador.

Collective Investigation

INTO

THE AFTER-HISTORY OF GASTRO-ENTEROSTOMY.

Report by

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CONSULTING PHYSICIAN TO ST. MARY'S HOSPITAL; HONORARY DIRECTOR OF THE RESEARCH.

THE results of the operation for duodenal ulcers have been published in Part I (*British Medical Journal*, December 7th, 1929); the results for pyloric ulcers have been published in Part II, and for perforated duodenal and pyloric ulcers in Part III (*British Medical Journal*, December 14th, 1929). The present report deals similarly with the gastric ulcers. There were 645 reports of the results of operations for gastric ulcer. They consisted of 538 cases of ordinary gastric ulceration, 65 cases of hour-glass constriction, and 42 cases of perforated gastric ulcers. As it is somewhat unusual to have the records of 65 cases of hour-glass constriction it was considered advisable to prepare a separate report on those cases, and also on the cases of perforation.

PART IV.—GASTRIC ULCERS.

The answers to the various questions in connexion with the 538 cases of ordinary gastric ulceration have been carefully collated, and the results are embodied in the following tables.

TABLE I.—*Sex Incidence.*

Number of cases	538
Males (percentage)	66.2
Females (percentage)	33.8

This table shows that twice as many cases occur among males as among females.

TABLE II.—*Age Incidence (at Time of Operation).*

Age.	Percentage.
19-30 years	9.0
30-40 ,,	27.3
40-50 ,,	38.0
50-60 ,,	20.3
60-70 ,,	5.4

This table shows that the majority of patients with gastric ulceration were operated on between 30 and 50 years of age. Of the patients operated on between 19 and 30 years, two only were 19 years of age.

TABLE III.—*Position or Site of Ulcer.*
(Information on this point was given in 523 cases, including the hour-glass cases.)

Position or Site.	No. of Cases.	Percentage.
Lesser curvature	377	72.2
Near pylorus	56	10.7
Posterior wall	55	10.5
Anterior wall	16	3.0
Cardiac end	14	2.6
Greater curvature	5	1.0

TABLE IV.—*Ulcer Adherent or Non-adherent.*
(Information on these points was given in 167 cases, including the hour-glass cases.)

	No. of Cases.	Percentage.
Adherent	159	95.2
Non-adherent	8	4.8

TABLE V.—*Type of Operation.*

Type of Operation.	No. of Cases.	Percentage.
Posterior gastro-enterostomy	263	48.9
Posterior gastro-enterostomy and excision of ulcer	111	20.6
Partial gastrectomy with anastomosis to jejunum	101	18.8
Anterior gastro-enterostomy	23	4.1
Posterior gastro-enterostomy and cauterization of ulcer	13	2.4
Anterior gastro-enterostomy and jejunojejunostomy	11	2.0
Anterior gastro-enterostomy and excision of ulcer	5	
Posterior gastro-enterostomy and embedding of ulcer	5	
Sleeve resection and posterior gastro-enterostomy	4	17 — 3.2
Sleeve resection	2	
Anterior gastro-enterostomy and cauterization of ulcer	1	

In addition, appendicectomy was performed in 9.8 per cent., and cholecystotomy in 0.7 per cent. of the cases. In some of the cases the reasons given for performing anterior gastro-enterostomy were that the stomach was either too fixed or that there was insufficient room for performing the posterior operation.

The reasons for operating were given in 417 cases. They are recorded in the following table.

TABLE VI.—*Reasons for Operating.*

Symptoms.	No. of Cases.	Percentage.
Pain	411	98.6
Vomiting	285	68.3
Haematemesis	94	22.5
Haematemesis and melaena	9	2.0
Melaena	7	1.7
Loss of weight	35	8.4

Vomiting and haematemesis were both much more frequent in the gastric ulcer cases than in the duodenal and pyloric, but melaena was much more frequent in the duodenal cases than in the gastric and pyloric.

The direct results of operation in the 538 cases were as follows.

TABLE VII.—*Results of Operation.*

Result.	No. of Cases.	Percentage.
Good recovery	487	90.5
Delayed recovery	3	0.6
Death	48	8.9

The post-operative mortality is considerably higher than the 5.0 per cent. mortality among duodenal ulcers and the 2.6 per cent. mortality among pyloric ulcers.

The results in 299 cases submitted to *x*-ray examination prior to operation are shown in the following table.

TABLE VIII.—*Results of X-Ray Examination.*

Result.	Percentage.
Positive	54.9
Negative	18.0
Delay in emptying	27.1

In 105 cases test meals were employed prior to operation. The results are shown in the following table.

TABLE IX.—*Results of Test Meals.*

Result.	Percentage.
Hyperchlorhydria	40.0
Low acidity	52.4
No free hydrochloric acid	7.6

AFTER-HISTORIES OF THE OPERATION CASES.

The 538 cases dealt with in Tables I, II, V, and VII include 392 cases in which the after-histories were given, 26 cases in which the after-histories consisted only of statements that the patients were in good health at some specified time after operation, and 120 cases in which no after-history was given. For the preparation of the after-history statistics the 392 cases only are employed. In the majority of these cases the questions relating to the after-history were all answered, but as in a certain number of cases some of the questions were left unanswered, the statistics in the following tables have been worked out as percentages of the numbers of the answers to the respective questions.

The after-history inquiries were directed to the elucidation of the same points as in connexion with the duodenal ulcers (see Part I, *British Medical Journal*, December 7th, 1929, p. 1075).

TABLE X.—*Pain or Other Discomfort After Food.*
(Information on these points was given in 325 cases.)

	No. of Cases.	Percentage.
No pain or discomfort	250	74.5
Occasional slight pain or discomfort	50	15.0
Temporary pain or discomfort (in most cases soon after operation)	23	7.0
Severe pain or discomfort	12	3.5

TABLE XI.—*Diarrhœa.*
(Diarrhœa occurred in 18 cases out of the 392.)

Diarrhœa.	No. of Cases.	Percentage.
Slight	16	4.1
Severe	2	0.5

TABLE XII.—*Constipation.*
(Constipation occurred in 54 cases out of the 392.)

Constipation.	No. of Cases.	Percentage.
Slight	46	11.7
Severe	8	2.0

TABLE XIII.—*Food Able to be Taken.*
(Information as to diet was given in 320 cases.)

	No. of Cases.	Percentage.
Full diet	242	73.3
Certain articles of diet avoided	88	26.7

Among the 88 cases in which some modification of the diet was necessary, 45 avoided some form or forms of protein food (beef, mutton, veal, pork, bacon, cheese, eggs), 31 avoided some form or forms of carbohydrate food (vegetables, pastry, fats, fruits), and 12 avoided some form or forms of both protein and carbohydrate foods. Therefore, of those on a modified diet, 51 per cent. were obliged to avoid some form of protein, 35 per cent. some form of carbohydrate, and 14 per cent. some form of both protein and carbohydrate.

Information as to the time of return to work after operation was given in 280 cases. In a certain number of other cases it was stated that the individuals were either of the leisured classes doing no work, or were past the age for work. The particulars are given in the following table.

TABLE XIV.—*Time of Return to Work After Operation.*

Time of Return to Work.	No. of Cases.	Percentage.
1 to 2 months	59	21.1
2 to 3 „	152	54.3
3 to 4 „	34	12.1
4 to 6 „	23	8.2
Over 6 „	12	4.3

This table shows that 75.4 per cent. returned to work within three months from the date of the operation. With regard to those that did not return to work till after three months, the reasons given in many of the cases were that there was no immediate necessity for return, or that work was not available at the time.

TABLE XV.—*Work Capacity.*
(Information on this point was given in 316 cases.)

Work Capacity.	No. of Cases.	Percentage.
Full work	285	92.0
Light work	21	6.7
Unable to work	4	1.3

TABLE XVI.—*Weight After Operation.*
(Information on this point was given in 327 cases.)

Weight.	No. of Cases.	Percentage.
Gained	245	74.9
Constant	61	18.7
Lost	21	6.4

TABLE XVII.—*Condition of Health and Well-being After Operation.*
(Information on this point was given in 332 cases.)

Health.	No. of Cases.	Percentage.
General improvement of health	293	89.8
Fair improvement of health	11	3.3
Slight improvement of health	13	3.9
No improvement of health	10	3.0

Subsequent Medical Treatment Required.

A few cases required laxatives, astringents, and occasional bismuth and sodium bicarbonate. Several cases had subsequent medical treatment, but the nature of it was not specified.

TABLE XVIII.—*Number of Years After Operation during which Patients were under Observation, or during which Reliable Information was Obtained.*
(Definite information on this point was given in 331 cases.)

Years under Observation.	No. of Cases.	Percentage.
2-3 years	9	2.7
3-4 „	41	12.4
4-5 „	87	26.2
5-6 „	76	23.0
6-7 „	56	16.9
7-8 „	41	12.4
8-9 „	21	6.4

This table shows that 85 per cent. of the patients were under reliable observation for periods ranging from four to nine years.

Classification of Results.

The classification adopted is the same as that used in connexion with duodenal ulcers (see Part I, *British Medical Journal*, December 7th, 1929, p. 1076).

TABLE XIX.—*Classification of Results.*
(The results returned enabled this classification to be made in 334 cases.)

Classification.	No. of Cases.	Percentage.
Very good	243	73.3
Good	54	16.1
Fair	18	5.4
Poor	14	4.2

These are the late results of the various operations enumerated in Table V, and were obtained from the cases in which after-histories were given. As the main merits

of the various operations are represented by the percentage of "very good" results, in that they show the number of patients restored to full health, able to eat anything over periods of some years, and able to resume full work, it was considered advisable to compare the "very good" results in the three principal operations performed, together with the respective post-operative mortality. The three operations which constitute 92 per cent. of all the operations that were performed are: (1) posterior gastro-enterostomy combined with excision, cauterization, or infolding of the ulcer; (2) partial gastrectomy with anastomosis to jejunum; and (3) posterior gastro-enterostomy without interference with the ulcer. These statistics have been worked out, and are embodied in the following table.

TABLE XX.

Operation.	Very good results (percentage of the cases, with after-histories).	Post-operative Mortality (percentage of all cases).
Posterior gastro-enterostomy combined with excision, cauterization or infolding of ulcer	91.7	4.6
Partial gastrectomy with anastomosis to jejunum	63.6	6.0
Posterior gastro-enterostomy without interference with the ulcer	50.9	11.4

This table shows that the operation of posterior gastro-enterostomy, combined with removal or infolding of the ulcer, gives the best results and the lowest mortality in the operative treatment of gastric ulceration, whereas the operation of posterior gastro-enterostomy without interference with the ulcer gives poor results and a very high mortality. As to the position of the operation of partial gastrectomy in this table it is only right to mention that the results in connexion with that operation are based on 101 cases only. For explanation of the post-operative mortality column in this table reference should be made to Table XXVI in this report.

Occupation.

The occupations were given in 525 cases of gastric ulceration, including the cases of hour-glass constriction and perforation, and have been classified as follows.

TABLE XXI.—*Occupational Incidence.*

Occupation.	No. of Cases.	Percentage.
Domestic workers	163	31.0
Mechanics and skilled artisans	81	15.4
Labourers	80	15.3
Shop workers	42	8.0
Factory workers	40	7.6
Clerks	21	4.0
Farmers and land workers	20	3.8
Professional and leisured classes	9	1.7
Miners	3	0.6
Various occupations	66	12.6

Domestic workers (female) were responsible for 15 per cent. of the duodenal and pyloric ulcers, whereas it will be seen from the above table that the same class is responsible for 31 per cent. of the gastric ulcers. The total number of females in the gastric ulcer group is 192, of which 163—that is, 85 per cent.—were domestic workers. The great majority of the returns received in this investigation are of hospital patients, so that the above figures give no indication as to the occurrence of the disease among the bulk of the middle and upper classes.

Secondary Gastro-jejunal Ulcers.

Number.—Three ulcers of this type—that is, 0.8 per cent.—occurred among the 392 cases in which after-histories were given.

Sex.—Two males and one female.

Age.—Two between 40 and 50 years of age, and one between 50 and 60.

Symptoms.—Pain in all three cases, vomiting in one case, and haematemesis in one case.

Periods after Original Operation at which Symptoms occurred necessitating Operation for Gastro-jejunal Ulceration.—The periods in the three cases were respectively one year, one year and nine months, and one year and ten months.

Operation.—Partial gastrectomy with good recovery in the three cases.

Second Operations required for Intercurrent Lesions after the Original Operation for Gastric Ulceration.

Seven of these operations—that is, 1.8 per cent.—were required among the 392 cases in which after-histories were given. One was between 20 and 30 years of age, one between 30 and 40, four between 40 and 50, and one between 50 and 60. Particulars of the individual cases are given.

1. Persistent vomiting for eight weeks after first operation. Stoma resected; death five days later from peritonitis due to a leak.

2. Pain, vomiting, and haematemesis three months after first operation from formation of a second gastric ulcer. Partial gastrectomy done; fair recovery.

3. Pain and vomiting one year after first operation from persistent lesser curve ulcer. Partial gastrectomy done; good recovery.

4. Pain and vomiting two years after first operation from persistent lesser curve ulcer. Partial gastrectomy done; good recovery.

5. Pain two and a half years after first operation from duodenal dilatation. Duodeno-jejunostomy done; good recovery.

6. Recurrence of symptoms four and a half years after first operation from a fresh ulcer. Excision done; good recovery.

7. Pain five years after first operation from adhesions involving transverse colon. Adhesions divided; good recovery.

Secondary Haemorrhage.

Number.—Four cases of secondary haemorrhage—that is, 1.0 per cent.—occurred among the 392 cases in which after-histories were given.

Sex.—Three males and one female.

Age.—One between 20 and 30 years of age, and three between 30 and 40.

Nature of Haemorrhage.—Haematemesis in three cases, and melaena in one.

Periods at which Haemorrhage started after Operation.—One at ten days; one at nine months; one at four years; one had three attacks at one and a half years, five years, and six years.

Treatment.—Three had medical treatment, and one had rest only; good recovery in all cases.

Analysis of the Post-operative Mortality.

Among the 538 cases of gastric ulceration 7 deaths occurred from another lesion some years after the operation and quite unconnected with it. As these 7 cases up to the time of death were free from all symptoms connected with the ulceration, these deaths are not included among the post-operative deaths.

The number of post-operative deaths out of the 538 cases was 48—that is, 8.9 per cent. These are the deaths that occurred as a direct result of the operations for gastric ulcers, and do not include the one death from an intercurrent lesion previously referred to.

Sex.—Of the 48 deaths, 66.7 per cent. occurred amongst males, and 33.3 per cent. amongst females—a ratio which is the same as that of the sex incidence of the disease.

TABLE XXII.—*Age Incidence of Deaths.*

Age.	Percentage of Deaths.
30-40 years	16.7
40-50 ,,	37.5
50-60 ,,	37.5
60-70 ,,	8.3

TABLE XXIII.—*Time of Occurrence of Death After Operation.*

Time.	Percentage of Deaths.
1-6 days	57
7-14 ,,	21
2-3 weeks	10
3-4 ,,	10
4-5 ,,	2

Among the 48 cases haemorrhage occurred as a symptom prior to operation in 23 per cent. of the cases. It therefore appears, as in the cases of the duodenal and pyloric ulcers, that the risk of a fatal post-operative result is not increased by the occurrence of haemorrhage prior to the operation.

TABLE XXIV.—*Cause of Death.*

Cause of Death.	No. of Cases.
Shock	19
Pneumonia	6
Haematemesis	5
Cardiac failure (fatty heart)	3
Bronchitis	1
Empyema	1
Tetany	1
Septic infection	1
Embolism of pulmonary artery	1
Hemiplegia	1
Cause not stated	9

Comparison of the Post-operative Mortality in Relation to the Site of the Gastric Ulcer.

If a comparison is made of the post-operative mortality occurring amongst ulcers according to their special positions or sites in the stomach, it appears that the mortality is much lower for lesser curvature ulcers and is much higher for ulcers on the posterior wall than the average post-operative mortality. This is shown in the following table.

TABLE XXV.

Position or Site of Ulcer.	No. of Cases.	No. of Deaths.	Percentage of Deaths.
Lesser curvature	377	19	5.0
Anterior wall	16	1	6.2
Near pylorus	56	6	10.7
Cardiac end	14	2	14.3
Posterior wall	55	13	23.6

Comparison of the Post-operative Mortality of the Three Principal Operations.

The 8.9 per cent. mortality represents the death rate after the performance of the 538 operations detailed in Table V. Of these operations, 129 were posterior gastro-enterostomy, combined with excision, cauterization, or infolding of the ulcer; 101 were partial gastrectomy with anastomosis to jejunum; 263 were posterior gastro-enterostomy without any interference with the ulcer; and 45 were other operations (mainly anterior gastro-enterostomy). The comparison of the post-operative mortality of the three principal operations, as shown in the following table, has already been referred to in Table XX.

TABLE XXVI.

Type of Operation.	No. of Cases.	No. of Deaths.	Percentage of Deaths.
Posterior gastro-enterostomy combined with excision, cauterization, or infolding of ulcer	129	6	4.6
Partial gastrectomy with anastomosis to jejunum	101	6	6.0
Posterior gastro-enterostomy without interference with the ulcer	263	30	11.4
Other operations (mainly anterior gastro-enterostomy)	45	6	13.3

If these death percentages are proportionately averaged the 8.9 per cent. post-operative mortality for the whole of the cases is obtained. These figures show, so far as any useful deductions can be drawn from groups of 129 and 101 cases, that the operation of posterior gastro-enterostomy, combined with removal or infolding of the ulcer, has the lowest mortality, while that of posterior gastro-enterostomy alone has a very high mortality.

Carcinoma Developing at the Site of Ulcers.

No authenticated case was reported in the whole series. In one case the patient, aged 69 at the time of death, developed gastric pain nearly four years after the operation for gastric ulcer. A laparotomy was done and a hard non-removable mass was felt at the site of the old ulcer. Death occurred on the following day from shock. In answer to a special letter sent to the surgeon who had charge of the case, he replied that he could give no opinion as to the nature of the mass.

In a second case the patient, aged 36 years at the time of operation, developed symptoms five years after operation, and a *diagnosis was made by x-ray examination* of inoperable carcinoma of the stomach. The patient continued to lose weight, and the mass was easily palpable. Death occurred one year after the commencement of the fresh symptoms, but no post-mortem examination was held.

BRIEF SUMMARY OF RESULTS.

Gastric ulceration is twice as common in males as in females.

The liability to gastric ulceration rapidly diminishes after 50 years of age, as is also the case with both duodenal and pyloric ulceration.

Posterior gastro-enterostomy, with or without removal or infolding of the ulcer, was performed in 73 per cent. of the cases, and partial gastrectomy with anastomosis to jejunum in 19 per cent.

Vomiting (with or without haemorrhage) was a symptom in 93 per cent. of the cases, as compared with 53 per cent. amongst the duodenal ulcers, and 64 per cent. amongst the pyloric ulcers.

A low acidity of the gastric juice was present in 60 per cent. of the cases submitted to test meals.

Neither diarrhoea nor constipation is a marked result of operation, but, as in the cases of duodenal and pyloric ulcers, constipation of a mild character is more frequent than diarrhoea.

About one-quarter of the patients operated on made some modification in diet. Of these, 51 per cent. avoided some form of protein, 35 per cent. some form of carbohydrate, and 14 per cent. some form of both protein and carbohydrate.

Three-fourths of the patients returned to full work within three months of the date of the operation.

General improvement of health and well-being occurred in 90 per cent. of the cases with after-histories.

The operation of posterior gastro-enterostomy, combined with removal or infolding of the ulcer, gives the best results and the lowest mortality.

Secondary gastro-jejunal ulcers occurred in 0.8 per cent. of the cases, as compared with 2.8 per cent. for duodenal ulcers and 0.9 per cent. for pyloric ulcers.

Secondary haemorrhage occurred in 1.0 per cent. of the cases, as compared with 2.4 per cent. for duodenal ulcers and 1.2 per cent. for pyloric ulcers.

The post-operative mortality for all operations was 8.9 per cent., the mortality being highest in patients from 40 to 60 years of age. The operation of posterior gastro-enterostomy, combined with removal or infolding of the ulcer, had a post-operative mortality of 4.6 per cent.; partial gastrectomy with anastomosis to jejunum had a post-operative mortality of 6.0 per cent.; posterior gastro-enterostomy alone had a post-operative mortality of 11.4 per cent.

No authenticated case of carcinoma developing at the site of an ulcer was reported in the whole series.

PART V.—HOUR-GLASS CONSTRICTION.

As previously mentioned, it was considered advisable to prepare a separate report on these cases. The results may be of use for future reference, but as the number of the cases is comparatively small very few comments on the results are made.

TABLE I.—*Sex Incidence.*

Number of cases	65
Males (percentage)	15.4
Females (percentage)	84.6

TABLE II.—*Age Incidence (at Time of Operation).*

Age.	Percentage.
20-30 years	4.8
30-40 ,,	28.6
40-50 ,,	25.4
50-60 ,,	33.3
60-70 ,,	7.9

TABLE III.—*Type of Operation.*

Type of Operation.	No. of Cases.	Percentage.
Partial gastrectomy with anastomosis to jejunum	33	50.7
Posterior gastro-enterostomy	13	20.0
Anterior gastro-enterostomy	9	13.8
Posterior gastro-enterostomy and excision of ulcer	8	12.3
Hour-glass incised longitudinally and sewn transversely	1	1.6
Double gastro-jejunostomy	1	1.6

In addition, appendicectomy was performed in 3.1 per cent. of the cases, and cholecystotomy in 3.1 per cent.

The reasons for operating were given in 55 cases. They are recorded in the following table.

TABLE IV.—*Reasons for Operating.*

Symptoms.	No. of Cases.	Percentage.
Pain	53	96.3
Vomiting	46	83.6
Haematemesis	13	23.6
Haematemesis and melaena	2	3.6
Loss of weight	5	9.1

The direct results of operation in the 65 cases were as follows.

TABLE V.—*Results of Operation.*

Results.	No. of Cases.	Percentage.
Good recovery	55	84.6
Delayed recovery	2	3.1
Death	8	12.3

The results in 43 cases submitted to *x*-ray examination prior to operation are shown in the following table.

TABLE VI.—*Results of X-Ray Examinations.*

Result.	Percentage.
Positive	93.0
Negative	2.3
Delay in emptying	4.7

In 18 cases test meals were employed prior to operation. The results are shown in the following table.

TABLE VII.—*Results of Test Meals.*

Result.	Percentage.
Hyperchlorhydria	16.7
Low acidity	77.8
No free hydrochloric acid	5.5

AFTER-HISTORIES OF THE OPERATION CASES.

The 65 cases include 52 cases in which the after-histories were given, 4 cases in which the after-histories consisted only of statements that the patients were in good health at some specified times after operation, and 9 cases in which no after-history was given. For the preparation of the after-history statistics the 52 cases only are employed, and, as in the previous reports, the statistics have been worked out as percentages of the numbers of the answers to the respective questions.

TABLE VIII.—*Pain or Other Discomfort After Food.*
(Information on these points was given in 44 cases.)

	No. of Cases.	Percentage.
No pain or discomfort	38	86.3
Occasional slight pain or discomfort	4	9.1
Temporary pain or discomfort	1	2.3
Severe pain or discomfort	1	2.3

Diarrhoea.—Slight diarrhoea occurred in 2 cases out of the 52.

Constipation.—Slight constipation occurred in 7 cases out of the 52.

TABLE IX.—*Food Able to be Taken.*
(Information as to diet was given in 44 cases.)

	No. of Cases.	Percentage.
Full diet	37	84.1
Certain articles of diet avoided	7	15.9

TABLE X.—*Time of Return to Work After Operation.*
(Information was given in 42 cases.)

Time of Return to Work.	No. of Cases.	Percentage.
1 to 2 months	5	11.9
2 to 3 ,,	27	64.3
3 to 4 ,,	4	9.5
4 to 6 ,,	4	9.5
Over 6 ,,	2	4.8

This table shows that 76.2 per cent. returned to work within three months from the date of the operation.

TABLE XI.—*Work Capacity.*
(Information on this point was given in 43 cases.)

Work Capacity.	No. of Cases.	Percentage.
Full work	40	93.0
Light work	3	7.0

TABLE XII.—*Weight After Operation.*
(Information on this point was given in 43 cases.)

Weight.	No. of Cases.	Percentage.
Gained	37	86.0
Constant	4	9.3
Lost	2	4.7

TABLE XIII.—*Condition of Health and Well-being After Operation.*
(Information on this point was given in 43 cases.)

Health.	No. of Cases.	Percentage.
General improvement of health	39	90.7
Fair improvement of health	2	4.7
Slight improvement of health	1	2.3
No improvement of health	1	2.3

TABLE XIV.—*Number of Years After Operation during which Patients were under Observation, or during which Reliable Information was Obtained.*
(Definite information was given in 41 cases.)

Years under Observation.	No. of Cases.	Percentage.
1-2 years	1	2.4
2-3 ,, ...	1	2.4
3-4 ,, ...	2	4.9
4-5 ,, ...	14	34.1
5-6 ,, ...	9	22.0
6-7 ,, ...	5	12.2
7-8 ,, ...	3	7.3
8-9 ,, ...	6	14.7

TABLE XV.—*Classification of Results.*
(The results returned enabled this classification to be made in 43 cases.)

Classification.	No. of Cases.	Percentage
Very good	36	83.7
Good	3	7.0
Fair	3	7.0
Poor	1	2.3

The same comparison follows as was made in Part IV of the "very good" results and the respective post-operative mortality of the various operations performed.

TABLE XVI.

Operation.	Very good results (percentage of the cases with after-histories).	Post-operative mortality (percentage of all cases).
Posterior gastro enterostomy combined with excision of ulcer	87.5	12.5
Partial gastrectomy with anastomosis to jejunum	57.6	15.1
Posterior gastro-enterostomy ...	46.1	7.7
Anterior gastro-enterostomy ...	44.4	11.1

Analysis of the Post-operative Mortality.

The number of post-operative deaths out of the 65 cases was 8—that is, 12.3 per cent.

Sex.—Of the 8 deaths, 3 occurred amongst males and 5 amongst females.

Age Incidence of Deaths.—Half occurred between 40 and 50 years of age, and half between 50 and 61 years of age.

Time of Occurrence of Death after Operation.—Seven deaths occurred between one and seven days, and one death occurred from broncho-pneumonia twenty-five days after operation.

Comparison of the Post-operative Mortality of the Various Operations Performed.

Type of Operation.	No. of Cases.	No. of Deaths.	Percentage of Deaths.
Posterior gastro-enterostomy	13	1	7.7
Anterior gastro-enterostomy	9	1	11.1
Posterior gastro-enterostomy combined with excision of ulcer	8	1	12.5
Partial gastrectomy with anastomosis to jejunum	33	5	15.1
Other operations	2	Nil	—

If these death percentages are proportionately averaged the 12.3 per cent. post-operative mortality for the whole of the cases is obtained.

Carcinoma Developing at the Site of Ulcer.—No case was reported in the whole series.

Brief Summary of Results.

Hour-glass constriction is much more common in females.

The liability to hour-glass constriction is fairly constant from 30 to 60 years of age.

A low acidity of the gastric juice was present in a large majority of the cases tested.

76.2 per cent. of the cases returned to full work within three months of the date of the operation.

General improvement of health and well-being occurred in 90 per cent. of the cases with after-histories.

The post-operative mortality was 12.3 per cent.

No case of carcinoma developing at the site of an ulcer was reported in the whole series.

PART VI.—PERFORATED GASTRIC ULCERS.

There were 42 reports of the results of operations for perforated gastric ulcers. These results may be of use for future reference, but as the number of the cases is small the only comments on the results are given in the summary at the end.

TABLE I.—*Sex Incidence.*

Number of cases	42
Males (percentage)	73.8
Females (percentage)	26.2

TABLE II.—*Age Incidence (at Time of Operation).*

Age.	Percentage
20-30 years	10.0
30-40 ,, ...	35.0
40-50 ,, ...	32.5
50-60 ,, ...	20.0
60-70 ,, ...	2.5

TABLE III.—*Position on Site of Ulcer.*
(Information on this point was given in 26 cases.)

Position on Site.	Percentage
Lesser curvature	46.2
Anterior wall	34.6
Near pylorus	15.4
Posterior wall	3.8

TABLE IV.—*Type of Operation.*

Type of Operation	Percentage
Closure of perforation and posterior gastro-enterostomy	90.5
Closure of perforation and anterior gastro-enterostomy	7.1
Partial gastrectomy and posterior gastro-enterostomy	2.4

TABLE V.—*Reasons for Operation.*

Symptoms.	Percentage
Pain	100.0
Vomiting	45.2
Haematemesis	4.7
Melaena	2.4

TABLE VI.—*Results of Operation.*

Result.	Percentage
Good recovery	71.4
Death	28.6

AFTER-HISTORIES OF THE OPERATION CASES.

The 42 cases dealt with in the above tables include 34 cases in which the after-histories were given, and 8 cases in which no after-history was given. For the preparation of the after-history statistics the 34 cases only are employed.

TABLE VII.—*Pain or Other Discomfort After Food.*
(Information on these points was given in 22 cases.)

	Percentage.
No pain or discomfort	54 6
Occasional or slight pain or discomfort	31.8
Temporary pain or discomfort (in most cases soon after operation)	13.6

Diarrhoea.—Slight diarrhoea occurred in 3.0 per cent. of the cases.

Constipation.—Slight constipation occurred in 11.8 per cent. of the cases.

TABLE VIII.—*Food Able to be Taken.*
(Information as to diet was given in 21 cases.)

	Percentage.
Full diet	71.4
Certain articles of diet avoided	28.6

TABLE IX.—*Time of Return to Work After Operation.*
(Information on this point was given in 21 cases.)

Time of Return to Work.	Percentage.
1-2 months	4.7
2-3 ,,	19.1
3-4 ,,	33.3
4-6 ,,	19 1
Over 6 ,,	23.8

TABLE X.—*Work Capacity.*
(Information on this point was given in 22 cases.)

Work Capacity.	Percentage.
Full work	86.4
Light work	13.6

TABLE XI.—*Weight After Operation.*
(Information on this point was given in 20 cases.)

Weight.	Percentage.
Gained	55 0
Constant	40.0
Lost	5.0

TABLE XII.—*Condition of Health and Well-being After Operation.*
(Information on this point was given in 22 cases.)

Health.	Percentage.
General improvement of health	77 3
Fair improvement of health	18.2
Slight improvement of health	4.5

TABLE XIII.—*Number of Years After Operation during which Patients were under Observation, or during which Reliable Information was Obtained.*
(Definite information on this point was given in 22 cases.)

Years under Observation.	Percentage.
3-4 years	31.8
4-5 ,,	18.2
5-6 ,,	13.6
6-7 ,,	18.2
7-8 ,,	13.6
8-9 ,,	4.6

TABLE XIV.—*Classification of Results.*
(The results returned enabled this classification to be made in 22 cases.)

Classification.	Percentage.
Very good	63 7
Good	13.6
Fair	18.2
Poor	4.5

No secondary gastro-jejunal ulcer occurred in the whole series.

No secondary haemorrhage occurred in the whole series.

Analysis of the Post-operative Mortality.

The number of post-operative deaths out of the 42 cases was 12—that is, 28.6 per cent.

Sex.—Nine of the deaths occurred among males, and 3 among females.

TABLE XV.—*Age Incidence of Deaths.*

Age.	Percentage of Deaths.
20-30 years	18.2
30-40 ,,	27.3
40-50 ,,	27.3
50-60 ,,	18.2
60-70 ,,	9.0

TABLE XVI.—*Time of Occurrence of Death After Operation.*

Time.	No. of Cases
1-6 days	5
7-14 ,,	4
6-7 weeks	1
Not stated	2

TABLE XVII.—*Cause of Death.*

Cause of Death.	No. of Cases.
Shock	2
Pneumonia	1
Subphrenic abscess	1
Erosion into transverse meso-colon	1
Cause not stated	7

Carcinoma developing at the Site of Ulcer.—No case was reported in the whole series.

Brief Summary of Results.

Perforated gastric ulcer was three times as common in males as in females.

Rather more than two-thirds of the perforations occurred between 30 and 50 years of age.

About 24 per cent. of the cases returned to full work within three months of the date of the operation. About 65 per cent. of the cases of perforated duodenal and pyloric ulcers returned to full work in the same period of time.

The results of the operations were satisfactory in about 77 per cent. of the cases that survived, as compared with the corresponding figure of about 89 per cent. for the perforated duodenal and pyloric ulcers.

The post-operative mortality was 28.6 per cent., as compared with the post-operative mortality of 13.6 per cent. among the perforated duodenal and pyloric ulcers.

No case of carcinoma developing at the site of an ulcer was reported in the whole series.

DEATHS FROM COAL GAS POISONING.

DEPARTMENTAL COMMITTEE'S REPORT.

THE report of the Departmental Committee appointed by the President of the Board of Trade "to consider the increase during recent years in the number of deaths ascribed to poisoning by coal gas supplied for domestic purposes, and to make recommendations as to any measures relating to the production and use of gas for domestic purposes which might be taken with a view to diminishing the number of such deaths," has now been issued.[1] This is the third Departmental Committee to inquire into gas poisoning, the first having sat in 1898, Lord Belper presiding, the second in 1921, with Sir William Pearce as chairman. The Rt. Hon. Sir Evelyn Cecil has been chairman of this last committee.

Deaths Ascribed to Coal Gas Poisoning.

Statistics revealing an increase in the number of gas suicides from 193 in 1918 to 1,191 in 1928, while accidental deaths merely rose from 102 to 163, have at first sight a sensational effect. The comments of the report, however, are reflective, non-alarmist, and intelligently aware that any statement concerning suicidal gas poisoning can be but a contribution towards some larger inquiry concerning the general problem of the growing tendency towards self-destruction, and its relations, not to coal gas in particular, but to the peculiar psychological and social conditions of the transitional post-war era. The great war, we are told incidentally, checked all forms of suicide, a fact that opens up an interesting field of psychiatric study. But during the post-war years of disillusionment and economic distress the rate of self-inflicted death has returned to its pre-war level, and that chiefly by way of coal gas poisoning. The slight increase in deaths by accident is easily accounted for by the growing numbers of gas consumers. The deaths by gas suicide, however, are probably underestimated, verdicts of "accident" in many cases masking suicide, because of the dubiety or sympathy of juries. We are warned that the statistics for 1929 will probably show an increase in accidental deaths from gas because of the excessively cold weather in the beginning of the year. One would naturally expect a similar increase in suicides, for the continuously bitter cold must have lowered the last vitality of many persons suffering from acute depression or financial distress.

The fact that gas poisoning has superseded drowning as the prevailing fashion in suicide has caused the committee to observe that many of its witnesses believe that the publicity given to accounts of gas suicides has an imitative or suggestive effect on people already disposed to self-destruction. Probably certain victims of a merely passive kind of depression might accept some such slight push over the verge when they might otherwise stay alive from sheer inactivity. And such, it had been supposed, might also yield to the accessibility of coal gas when they would hardly seek a more difficult death. The committee evidently agrees with Sir Maurice Craig, who justly considers that "the will to die is the primary matter," and that if it accomplishes its end by adopting an outside suggestion, the suggestion is accidental to its inflexible purpose. That it cannot be deflected is also the opinion of Mr. Ingleby Oddie, who points out that a determined suicide can easily find some way of exit. Still, on the whole, the suicide who does not suffer from a fixed idea will take the easier and more comfortable way. It appears from the report that the rate of suicide among women is now higher than before the war, and that they show distinct preference for coal gas deaths. Certainly women often feel a nervous horror of some method of death like hanging, while of death itself they may have little dread; and gas offers a quiet and unrepelling process of escape. Probably the difficulty of obtaining lethal drugs has increased the number of coal gas suicides. The report cautiously admits, however, that "there may be other factors contributing to an increased suicide rate among females."

[1] H.M. Stationery Office. 1930. 5s.1d. 6d. net.

Production of Gas.

The toxic constituent of coal gas being carbon monoxide, the committee has tried to discover whether it is commercially possible to remove this poison from ordinary coal gas, which contains from 5 to 12 per cent. of it; but finds this improvement cannot be effected without a great increase in the price. Indeed, reduction in price can be obtained only by the admission of more carbon monoxide. Most gas undertakings now mix water gas with coal gas, thereby increasing the proportion of carbon monoxide: and the cheapest gas made for domestic purposes, at present, naturally contains most of this deadly agent. But the gas industry insists that economic and social benefits flow from the employment of water gas: and that its prohibition would lead to complications caused by the enlarged sale of coke. Despite the protests of the gas industry that it has no intention of regularly supplying gas excessively rich in carbon monoxide, the report shows a certain disquiet, which many of its readers (and medical readers in particular) will feel more acutely. In this matter the statements of the gas industry must be considered in the light of the opinion of *disinterested* experts. The committee has found that statistics do show that the danger of accidental death from gas poisoning is greater in districts where the proportion of carbon monoxide is high. Yet it follows the Pearce Committee in refraining from advising limitation, while assenting, in its conclusions, to Professor J. S. Haldane's recommendation that more experiments concerning percentages of carbon monoxide ought to be made. On the subject of limitation the committee admittedly did not obtain all the evidence it invited, so that this appears to be the least satisfactory part of the report.

The question of introducing odours and irritants which would make gas escapes more obvious and suicides more disagreeable was not met by any profitable suggestions. It is plainly very difficult to adopt any method which would not be more intolerable to the ordinary consumers than to those bent upon death. With regard to the Gas (Carbon Monoxide) Order, 1922, the report gravely observes that "witnesses who have appeared before us agree that gas as at present supplied possesses a sufficiently characteristic and penetrating odour."

Distribution of Gas.

The committee heard a certain amount of evidence on the fatalities caused by escapes of gas. These were reassuringly few in number, though they naturally attracted public attention; they were due chiefly to the fracture of mains because of alterations in their beds. The gas industry claims improved methods in construction, and finds that street boxes and ventilators are valuable for detection as well as for ventilation.

Use of Gas by Consumers.

Unthinking consumers make mistakes, due to fatigue or forgetfulness of the risks incidental to the use of gas. Most of those who come to grief absent-mindedly confuse the handling of their taps. Absence of stop-pins, and boiling over of kettles extinguishing the gas, do much harm, and it is better for the gas consumer to possess the sense of smell. Tubes, pipes, and meters are sometimes defective. It is astonishing to find that the hideous and dangerous "sliding chandeliers" are still so dear to some old-fashioned people that they refuse to surrender them. It is shocking to learn from the note "on deaths due to products of combustion" that flueless geysers are still so prevalent in small bathrooms. Incidentally, the committee states that it has examined a number of safety devices, and feels that these might be better known. Many gas undertakings do maintain a voluntary system of inspection, which should be adopted by all.

Conclusions.

The committee's conclusions, briefly expressed, are as follows:

1. The number of deaths by suicide from coal gas has increased alarmingly; but the number of accidental deaths gives no cause for disquiet.

2. The frequency of gas suicide merely indicates a change of means; it is not caused by heightened proportion of carbon

monoxide in household gas, many of the suicides being accomplished by "ordinary" coal gas; no effective check on suicide by gas has yet been discovered which is not too expensive and too inconvenient for the community in general; and, finally, such suicide is really part of the wide problem of suicide as a whole.

3. Because of the economic and social benefits involved there should at present be no limitation of the supply of carbon monoxide in gas.

4. The addition to gas of odours and irritants for warning or deterrent purposes is impracticable and valueless.

5. The question of ventilating the subsoil of streets where gas mains are laid should receive more attention from the gas industry, which should not depend on chance detection of leakages. No definite recommendation is made, however, as the cost might prove prohibitive.

6. Gas should not be allowed to enter houses through holes below the ground surface, if this can be prevented without undue cost.

7. The views of the gas industry as to the depth of cover over gas mains are accepted.

8. The gas undertakings should consider the use of steel mains in spite of their apparently vital objections.

9. *All* gas undertakings should adopt the policy of voluntary inspection and careful examination followed at present by *some*.

10. More skill in preventing mistakes might be exhibited by the designers of gas apparatus.

Recommendations.

The "conclusions" seem timid, and even unexpected, after the first part of the report. The gas industry seems to be very tenderly handled, and the question of cost somewhat overrides the respect for human health and life. That the committee is not entirely satisfied appears in its recommendations, which advise a steady vigilance on the part of the Board of Trade regarding the percentages of carbon monoxide with a view to acquiring powers of limitation; a series of experiments on Professor Haldane's lines; the formation of a central body of representatives of the gas industry and manufacturers of gas apparatus to encourage research towards a non-toxic gas and the perfecting of fittings; conferences between the Board of Trade and this central body; urging of voluntary inspections on all gas undertakings; provision by by-laws against certain dangers, especially flueless geysers; and co-operation of the industry with the police, who should report immediately any sign of gas escape in the streets.

The report should be attentively read by all gas consumers, who will probably come to the conclusion that it may not be so very cheap, after all, to have so much carbon monoxide about their homes. As to the figures concerning gas suicide, these point not merely to early treatment for insanity, as Sir Maurice Craig suggests; they appeal ultimately to the social student, whose business it is to discover why life has become so definitely less desirable to so many.

TESTIMONIAL TO SIR RONALD ROSS.

EIGHTH LIST OF CONTRIBUTORS.

WE now print a further list of those whose donations were received during November, December, and January last in response to the appeal on behalf of the Ross Award Fund printed in the *British Medical Journal* of May 11th, 1929. The total amount in hand at the end of January was £12,967 13*s*. 4*d*. A donation of £2,000 by the Government of India was announced by Sir James Barr, chairman of the Ross Award Fund Committee, in our issue of December 7th, 1929. The list published below does not include anonymous contributors or those whose initials only have been supplied. Donations should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15.

November, 1929.—The Government of India, the Government of Rhodesia, Dr. W. O. Bedderd, Mrs. Houlding, Executors of the late William Johnston of Liverpool, Miss Jameson, George Kellatt (Brazil), Miss M. G. Tatham, John M. Lewars (Nigeria), J. T. Millward, *Straits Times* (fifth donation), Ophir Valley Estate, W. Pook, Dr. Laura Rees, Mrs. Thomas, Messrs. Thomas Cumbridge and Moss.

December, 1929, and January, 1930.—Sir Malcolm Watson, M.D., Mrs. Burrows, Blantyre Printing and Publishing Co., Ltd., Nyasaland, Gibraltar Exchange and Commercial Library, Mrs. Gluckstein, Mrs. Waldheim, Mr. and Mrs. Morton May, A. F. G. Kerr, Mrs. W. Pitt-Schenkel, Selangor Coast Club, F. A. Southall, Mr. and Mrs. F. H. Skrine, Misses Sanderson, Mr. Isaac Tooke, Tebrau Rubber Estates, Ltd.

Ireland.

Royal College of Surgeons: Charter Day Dinner.

THE Charter Day dinner of the Royal College of Surgeons in Ireland was attended by the Governor-General of the Free State, Mr. James McNeill. In proposing the toast of "The Governor-General and Prosperity to Ireland," the President, Mr. Andrew Fullerton, C.B., C.M.G., who occupied the chair, referred to the death of his predecessor, Mr. T. E. Gordon, as a surgeon of great learning and skill, who worthily upheld the high traditions of the Dublin Medical School. Although of a modest and retiring disposition, Mr. Gordon, he said, had occupied with distinction positions of great eminence in the profession. While he was professor of surgery at Trinity College he had gained the respect of many generations of students. He was also a man of great culture, devoting much of his spare time to literature, art, music, and the drama. All present at that gathering, whether they came from the North or the South, were genuinely interested in promoting the advancement of their beloved country. The delightful air of friendship which pervaded their assembly was ample proof that they had much in common, and that they were only too glad, perhaps, to forget their differences of creed and politics. Replying to the toast, the Governor-General expressed his satisfaction with the extension and improvement of the hospitals he had seen. He thanked the President and the College for honouring him with an invitation which implied that in their opinion he had sympathy with, and respect for, the services they rendered to the people of Ireland.

Vital Statistics for Northern Ireland.

During the quarter ending December 31st, 1929, 5,858 births were registered in the twenty-seven superintendent registrars' districts in Northern Ireland, this number representing an annual birth rate of 18.7 per 1,000 of the estimated population. The equivalent figure for England and Wales is 15.1, and for Scotland 17.8. The rate in Northern Ireland is 0.4 below the rate for the corresponding quarter of 1928, and 2.6 below the average rate for the fourth quarters of the ten years 1919 to 1928. Deaths registered during the quarter numbered 4,051, or an annual rate of 13 per 1,000. This rate is 1.4 below the rate for the corresponding quarter of 1928, and 1.5 below the average rate for the fourth quarters of the ten years 1919 to 1928. The urban mortality from the principal epidemic diseases recorded during the quarter was equivalent to an annual rate of 0.6 per 1,000 of the population, the death rate from these diseases being 0.4 for the remainder of Northern Ireland.

Proposed Village Settlement for Dublin.

The first steps have been taken at the Peamount Sanatorium, co. Dublin, to establish a settlement on the same lines as those that exist at Papworth, Cambridge; a preliminary announcement of this undertaking appeared in our issue of September 7th, 1929 (p. 474). In the Papworth settlement patients, when cured, are offered work in certain industries. They are paid trade union rates of wages if they happen to be qualified tradesmen; if they are without experience they are trained in some industry, and during training they receive wages. They are housed in bungalows, and when sufficiently cured can bring their families to reside with them. The work is graded, and the men and women who are under medical inspection can work in the conditions that are most favourable to complete recovery. At Papworth, now a village, the workers live under ideal conditions; last year they produced goods to the value of £65,000, which were disposed of in the competitive market. It is hoped to have a similar settlement at Peamount in a short time. The first workshop, the building of which has begun, will be a memorial to the late Sir William Thompson, M.D., to whom not only the Peamount Sanatorium, but also the anti-tuberculosis movement in Ireland, owes so much. Patients who are capable of labour are doing most of the work, and they have benefited much in health. They have completed a garage to house the omnibus which will convey patients to the institution instead of the pony and trap hitherto used for this purpose.

Scotland.

Glasgow Royal Infirmary.

AT the annual meeting of the Glasgow Royal Infirmary on February 10th, with Lord Provost Kelly in the chair, Sir David Wallace (Edinburgh) stated that during the last five years the number of patients attending the Infirmary had increased from 66,000 in 1924 to 120,000 in 1929. The total subscriptions for the past year were exceeded only in 1920. Despite the changes that would be made by the Local Government Act, subscriptions to voluntary hospitals were expected to be maintained or increased. Co-operation and co-ordination between the public health authorities and the voluntary hospitals was necessary; and it was satisfactory that the Act had tried to secure the position of the voluntary hospital. For this purpose Scotland would be divided into five areas, in four of which the teaching schools with their hospitals were of the first importance; the fifth was the North-West of Scotland, with Inverness as its centre. In each of these areas a regional committee had been formed, and a request had been made for the appointment of a small committee in each area to maintain intimate relations with a similar committee formed by the public health authorities within it. This probably meant that the public health authorities, after careful consultation with the voluntary authorities, would determine what was needed for the treatment of the sick in each area. Lord Mackenzie's Departmental Committee had estimated that 3,600 additional beds were required in Scotland, and extended accommodation could be found by using auxiliary hospitals for convalescent patients in close connexion with the general hospitals. Edinburgh, for instance, had three auxiliary hospitals with 230 beds for the convalescent patients who passed through the Royal Infirmary. These auxiliary hospitals cost less to build, and their patients could be treated more cheaply than in the general hospitals. There was the same benefit in the scheme proposed by the Glasgow Royal Infirmary for an annexe at Canniesburn. Dr. James M'Farlane, chairman of the Board of Governors, said that during the period from 1899 to 1929 the number of in-patients had increased from 6,472 to 17,776, and the ordinary expenditure from £34,429 to £113,540. Ordinary contributions had risen from £20,043 to £65,202. The position of voluntary hospitals as healing and training schools was not likely to be affected by the new Act. According to the report for 1929, 17,776 in-patients and 102,188 out-patients, a total of 119,964, were treated—6,218 more than in the previous year. The total ordinary revenue of the Infirmary was £87,640, and the total ordinary expenditure £113,540, which was a deficit of £25,900, compared with £34,363 in 1928. Taking into account legacies, donations, etc., total receipts exceeded expenditure by £579; the three preceding years had showed deficits; £15,565 had been received for endowment purposes; 134 beds and 11 cots were endowed. For the Canniesburn Auxiliary Hospital £42,082 was in hand, and intimation had been received of a residuary legacy which might amount to £10,000. The site for this auxiliary hospital, extending to thirty-one acres, was presented as a gift in 1926.

Physical Education.

A demonstration was given in the Music Hall, Edinburgh, on February 10th, in aid of the Chartered Society of Massage and Medical Gymnastics, under the presidency of Councillor Given, convener of the Edinburgh Public Health Department. In a lecture on the importance of physique and correct posture in relation to physical education, Mr. W. A. Cochrane, F.R.C.S., said that games did not necessarily produce a fully erect attitude, and that a slender build often caused a tendency to droop and relax, so that a person with such a physique had much greater difficulty in maintaining a healthy position than had the broad-backed sthenic type. Care should be taken that the slender type of child developed properly. Very high heels flexed the knees and developed a drooping carriage, which resulted in weakness of the abdominal muscles, flat chest, and round shoulders. Physical education was a mental as well as a physical process; an infant took a long time to learn to stand erect. People of slender build had also to cultivate postural tone in the muscles. Correct posture, he thought, should be taught in schools. A demonstration of Greek dancing, including funeral dances, pyrrhic dances, Bacchanalian dances, and dances expressing the sea, fire, smoke, etc., was given later by Miss Ruby Ginner, principal of the Ginner-Mawer School of Dancing, London. In introducing the dances, Miss Ginner said that revivalists of Greek dancing wished to reinstate dancing among the great dramatic arts, and that it was founded on natural elements, such as walking, running, and leaping.

Milk Feeding Test.

A milk testing experiment, larger than any similar test previously conducted in Scotland, was inaugurated in Hamilton on February 15th, by Mr. Tom Johnston, Parliamentary Under-Secretary of State for Scotland, with the double purpose of testing the value of milk as a *food* for growing children, and of helping to relieve distress in Lanarkshire. From February 17th until the closing of the schools in July, 10,000 children will receive a ration of three-quarters of a pint of Grade A tuberculin-tested milk; 5,000 will receive the milk raw, and the other 5,000 will receive it after pasteurization. Another 10,000 will be used as controls. All the children will be weighed and measured for purposes of comparison. The experiment will probably cost about £9,000, to which the Empire Marketing Board is contributing £5,000 and the Central Advisory Committee of the Miners' Distress Fund £2,000. An increased consumption of milk would benefit agriculture, and surgical tuberculosis might ultimately be eradicated by popularizing tubercle-free milk. The investigation is under the control of the Department of Health for Scotland and the Lanarkshire Education Authority.

Medical Progress and Infectious Diseases.

Under the auspices of the Glasgow Corporation Professor John R. Currie of Glasgow University gave a lecture, on February 11th, entitled "Infection and progress." He said that certain diseases had been extinguished in this country long before medicine had discovered their causes or found specific methods of control. Plague, for example, had disappeared with improvement in living conditions and with the systematic extermination of rats. Malaria in Britain had diminished with agricultural drainage, and leprosy had also practically vanished in this country, probably as a result of better housing conditions. Personal cleanliness had prevented the re-invasion of typhus, and the garage, by displacing the stable, had contributed to reduce typhoid fever. Plenty of fresh air would help to prevent diseases spread by the mouth, and much could be done by medical, combined with social, action.

England and Wales.

Moorfields.

THE annual dinner of past and present students of the Royal London Ophthalmic (Moorfields) Hospital was held at the Langham Hotel on February 13th, with Mr. J. Herbert Fisher in the chair. The dean, Mr. Charles Goulden, presenting his report for 1928–29, said that until the year 1927 the record entry of new students had been reached in 1925, when 121 were admitted. In 1927 134 new students joined the school; these numbers coincided with an increase in the entry for the D.O.M.S. examination, and so were an index of greater interest in the post-graduate study of ophthalmology. The past year marked a return to more normal numbers, and 114 students were admitted, although there were no fewer than 204 students attending the practice of the hospital. During the twelve months ending October, 1929, members of the staff, assisted by Mr. Hume and Mr. Brinkworth, had delivered 428 lectures. Professor Elliot Smith gave a series of lectures on the optic connexions in the brain, and Mr. Traquair on perimetry; these had been well attended, not only by members of the school, but also by others interested in these subjects. One old student had been the first to obtain the M.S. degree in ophthalmology of the University

of London. In the first part of the D.O.M.S. examination of the Conjoint Board 42 of the 107 candidates were students of the school, and of the 60 who were successful 33 had attended the course at the hospital. In the second part 55 of the 76 candidates came from Moorfields, as did 39 of the 51 who were successful. During the past year the school had lost by retirement the services of Sir William Lister. Apart from the help he had given in the way of clinical teaching, he was a generous benefactor. He had equipped the department with apparatus for teaching optics, and presented three Zeiss slit-lamps, so that Moorfields now possessed four Zeiss apparatus, as well as other models, enabling three courses of instruction to be given annually. The out-patients' department was about to be enlarged and reorganized. The lay board had already purchased additional buildings for this purpose, and when alterations had been made there would be much better teaching arrangements, space being gained for laboratories, a library, and study rooms. The dean concluded his report by remarking that Moorfields was about to enter upon a new era with the improved out-patients' department. In the old one the school had earned its great reputation, enabling students to work among clinical material that was probably unrivalled in the world. In practical clinical work and teaching was to be found the genius of British medicine. Among the guests at the dinner were the presidents of the two Royal Colleges and the chairman of the hospital.

Central Midwives Board.

At a meeting of the Central Midwives Board for England and Wales, on February 6th, it was announced that Mrs. Bruce Richmond and Dr. J. S. Fairbairn, representing respectively the Queen's Institute of District Nursing and the Incorporated Midwives' Institute, had been re-elected. Intimation had been received from the Ministry of Health that the Poor Law institutions, which would be transferred to local authorities on April 1st next, in pursuance of Part I of the Local Government Act, 1929, would remain Poor Law institutions, except in so far as they might be appropriated by the local authorities for other purposes. It was decided to suggest, in reply, that many difficulties would be removed if the training of all midwives was made uniform from April 1st next, and that Rule E 27, which excused midwives practising in Poor Law institutions, under certain conditions, from the observance of the Board's rules, should be deleted. The Board further decided to send a copy of a letter, in terms suggested by the London County Council, to training institutions, teachers, and local supervising authorities, with an intimation of the Board's opinion that the use of lysol as an antiseptic should be discontinued by midwives, and that it should be deleted from the list of antiseptics recommended by the Board. The following suggestion of the Standing Committee was adopted:

> That, in view of the recommendation of the Departmental Committee on the Training and Employment of Midwives, in favour of maternity institutions where practical training of pupil midwives is approved, having at least twenty maternity beds, no application for approval of training at an institution at which training has not hitherto been conducted be considered by the Board, unless such institution has at least twenty maternity beds; provided, however, that the Board may consider such an application in respect of an institution with less than twenty maternity beds if there be special circumstances which would render such consideration desirable. Further, that no application from a midwife for approval for the purpose of conducting district training should be considered unless such midwife has at least one hundred cases per annum in her practice.

Dinner of the Hunterian Society.

A festival dinner to commemorate the 202nd anniversary of the birth of John Hunter was held by the Hunterian Society of London, at the May Fair Hotel, on February 13th, with the President, Dr. Ernest Young, in the chair. There was a very large attendance of members and ladies, the guests of honour including the Lord Mayor of London and the Lady Mayoress, Mr. Justice McCardie, the Masters of the Apothecaries' Society and the Cutlers' Company, Sir St Clair Thomson, Past-President of the Royal Society of Medicine, the Medical Director-General of the Navy, Sir Rennell Rodd, M.P. for Marylebone, the Mayor of Paddington, and the Presidents of the Medical Society of London, the Harveian Society, the Medico-Legal Society, the West London Medico-Chirurgical Society, and the Chelsea Clinical Society. After the loyal toasts and the memory of John Hunter had been honoured, the toast of "Prosperity to the Hunterian Society" was proposed by *Lord Riddell*, who was in his best vein, and proved himself once more a diligent reader of the weekly medical journals and a close student of medical affairs. In his reply, the *President recalled* that the Hunterian Society, founded as long ago as 1819, had continued to grow in influence and usefulness since its revival after the war. It now numbered 350 Fellows, whose tastes and interests were well provided for by Dr. Irwin Moore and Mr. W. E. Tanner. Perhaps because the stomach was very near the heart, the dinner meetings had done much to promote the success of the society in recent years. The health of the Lord Mayor and the Corporation of the City of London was proposed by Dr. E. Hopewell-Ash, who expressed gratitude for the frequent use of the Mansion House for the society's meetings. The Lord Mayor, Sir William Waterlow, in his friendly reply, paid a tribute to the wholesome and nourishing qualities of turtle soup, and expressed sympathy with John Hunter's objection to public speaking. The health of the guests and kindred societies was proposed by Mr. Ivor Back and responded to by Sir St Clair Thomson, Sir Henry McCardie, and Surgeon Vice-Admiral Gaskell.

Correspondence.

TRAINING IN MIDWIFERY.

SIR,—I am glad to see that the Master of the Rotunda supports the recommendation of Mr. Donald Roy in your issue of February 1st—namely, that medical students and pupil midwives should receive part of their training together. He tells us that this has always been the custom at the Rotunda. During my active service at Queen Charlotte's Hospital for many years I did the same, and I believe it to be of great value to both students and midwives.

With this object we need consider the clinical teaching only, in the labour rooms and at the bedside as the most important, for the following reasons. In practice the doctor and midwife or nurse have to share responsibility and assist each other; it is therefore essential that the doctor should not only know his own work but everything that the nurse knows; and it is common knowledge that many medical men do not know everything that the nurse knows, especially in the management of babies and some details of nursing the mothers which nurses learn in their daily attendance. The natural result is that the nurse is often consulted on these matters rather than the doctor, and she is led to believe that, as she knows some things better than the doctor, she may assume a position of independence, or even of superiority, in other matters, and may fail to inform him of important matters immediately.

For these reasons the student should be present at the clinical teaching of the nurse, and if the physician questions the nurse as well as the student he and the student will frequently find that the nurse will, from her observation and nursing experience, be able to give correct answers in matters of which the student, with perhaps a far greater book knowledge, knows little or nothing. On the other hand, the nurse, being present during the clinical teaching of the student, will learn that in many matters he has knowledge far beyond hers, and she will be less liable to assume a superiority to which she is not entitled, and the joint training should lead to a better appreciation of each other's work.

There appears to be a tendency at the present time to place the responsibility for infant feeding on specialists appointed for the purpose to the staffs of maternity hospitals. This would imply that the obstetrician is unable to undertake what is, for the most part, a simple and usual duty, though cases arise, as in private practice, for which we are glad to have the best advice obtainable.

The result of handing over the entire infant feeding in this manner will certainly accentuate the widely held opinion that doctors know little about babies, and it would appear to be a wise course if the specialists began their instruction with the seniors, so that they should not know less than their subordinates and pupils.—I am, etc.,

London, S.W., Feb. 16th. WALTER S. A. GRIFFITH.

AN IDEAL OBSTETRICAL SERVICE.

SIR,—In the *Journal* of February 1st (p. 212) Mr. D. W. Roy makes a valuable and useful contribution to the discussion of an ideal obstetrical service in a paper on the training in midwifery of medical students and nurses. It should receive very careful consideration, both because of the breadth of experience behind it and of the sound common sense which informs it. To adapt and modernize existing services is easier, more economical, and, I believe, more efficient than it is to scrap the old and build anew.

The training of practitioners and midwives is, as he says, the root of the problem; improvements here should take precedence of all other changes. The obstetrical training which I and my contemporaries received (and that is not so long ago) was deplorably inadequate, even when it exceeded the requirements laid down by the regulations, as mine did. An inadequate training caused me many unnecessary worries and anxieties, and I have reason to believe that some of my juniors still suffer from a like disability. The joint teaching of students and midwives is sound in theory and works well in practice, to the benefit of both. Teachers ought always to be people who are in close touch with the conditions in which their students will later have to work.

While the provision of adequate training is a first essential, it is not all that readily can be done to improve the obstetric service. I think that we ought to recognize that a good service in one set of conditions may not be a sound one under others. For a rural-urban area the following are the main essentials. They could be modified to suit almost any area.

1. Good houses: to make maternity work less dangerous, and to improve the mothers of the next generation.

2. The elimination of handy-women by the provision of trained home helps. The handy-woman will never be driven from the field (unless by drastic action), for the trained midwife cannot compete with her in her dual capacity of nurse-housekeeper, unless the midwife is willing to do the same work for the same remuneration. The handy-woman gives too good value for her money.

3. Before, during, and after labour we need the combination of home help and midwife, with the doctor (who has seen *all* cases ante-natally) in reserve if required or if "booked" by the patient.

4. A few beds in the local cottage hospital for cases likely to be tedious or of moderate difficulty; cases from bad or overcrowded houses; and cases from houses in outlying inaccessible places. The staff required for these beds would be a whole-time midwife, the patient's own doctor, and a consulting obstetrician who could be called on if required.

5. All cases which on ante-natal examination appear definitely abnormal, *all morbid cases, and all sepsis ought to be sent to* a central obstetric hospital.

6. Provision ought to be made for ante-natal and natal, as well as post-natal, specialist advice and help.

Such a service should be adequate, efficient, and economical. I may add that I write as a general practitioner.—I am, etc.,

Redditch, Feb. 11th. HOWARD E. COLLIER, M.B.

DISINFECTANTS IN MIDWIFERY.

SIR,—Probably every other teacher of midwifery has received the accompanying letter from the Central Midwives Board objecting to the use of lysol by midwives. The reasons are excellent—there are many brands of lysol of varying strength, and some not reliable as a germicide if used in ordinary strength (3j to Oj) in any reasonable time, and others, when used in greater strength, harmful to the doctor's hands and the patient's skin and mucous membrane. What is to be done? Lysol is forbidden, but the Board gives no advice as to what should take its place. It is clear that some authoritative body must give advice, for every midwife or maternity home supplying prospective patients with a list of requisites will have to substitute something for lysol. It must be something reliable, reasonably cheap, harmless to skin and instruments alike, and non-staining, an objection to picric acid, flavine, or iodine. May one hope that the double iodide of mercury and potassium may come into its own again for midwifery?—it was used largely until displaced by lysol. It is an *excellent germicide, can be purchased in tablet form in* small quantities (bottles of 25) reasonably cheap, and it is harmless to instruments unless they are immersed in it for lengthy periods.—I am, etc.,

Ipswich, Feb. 6th. JOHN GUTCH, M.D.

*** Dr. Gutch forwards two documents; one is a communication from the secretary of the Central Midwives Board, headed "Use of lysol as a disinfectant by midwives":

I am directed by the Board to send for your information the enclosed copy of a letter which it has received from the London County Council on the above matter and to say that the Board is of opinion that, owing to the variation in bactericidal power of lysol preparations, the use of lysol as an antiseptic should be discontinued by midwives.

The letter from the clerk of the London County Council runs as follows:

The Council has had under consideration the use of lysol as a disinfectant by midwives. As the Central Midwives Board is probably aware, lysol was produced, prior to the war, by a German firm, but during and since the war a number of firms have put on to the market preparations which are known by the name of lysol.

Midwives are taught in their training schools that lysol should be used for disinfecting the hands in the strength of one teaspoonful to a pint of water, and this instruction appears to be generally followed whatever brand of lysol is used. In view of the varying nature of different lysol preparations, it is evident that this is a most dangerous practice. There is a wide variety in the instructions given with different brands of lysol, the strengths of solution advised varying from one to three teaspoonfuls to the pint of water. It has been brought to the Council's notice that, used in the higher strength, it renders the hands rough and causes smarting to the patient.

In order to determine the bactericidal value of the lysol being sold experiments were made with one of the best-known brands which the midwife is instructed to use in the strength of three teaspoonfuls to the pint, and it was found that it required at least three teaspoonfuls to the pint to kill pathogenic organisms in three minutes, while if absolute efficiency was required (that is, the organisms to be killed in one minute) four teaspoonfuls to the pint should be used. It will be clear, therefore, that if this brand of lysol were to be employed at a strength of one teaspoonful to the pint, as commonly used by midwives, it would be quite inefficient as a disinfectant, and a real danger by giving a sense of false security. It may be mentioned that the instructions in this case were not on the bottle, but on a wrapper enclosed therewith, which most midwives would throw away unread. Further experiments were carried out with one of the cheaper brands of lysol. In this instance the bacteriological results showed that, even if the solution were used at twice the strength recommended by the manufacturers, organisms would live for as long as ten minutes.

The Council is of opinion that these results show a very dangerous position so far as the use of this antiseptic by midwives is concerned. A further dangerous practice arises in that it is possible, according to information given by some midwives, to obtain lysol from bulk in unmarked bottles at some chemists. The Council is also communicating with the Ministry of Health in this regard. I am directed to draw the attention of the Board to these facts, and particularly to (1) the variation in bactericidal power of lysol preparations, and (2) the variety of instructions given for its use.

LEAD POISONING FROM TAP WATER.

SIR,—As the result of the letter on the above subject in the *Journal* of February 1st (p. 216) I have been inundated with letters bearing on different aspects of plumbism. It is impossible to reply to all the communications separately, but perhaps you will be good enough to insert this comment as a general answer to the various points raised.

1. *Is lead poisoning prevalent?* I think it is very much more common, in mild degrees, than people think. Cabot's

remark on pernicious anaemia applies: "The incidence in any community is a good deal a matter of keenness on the part of the practitioners." To what extent total incapacity is attributable to lead can only be hazarded, but certain it is that lead absorption plays an important contributory part in many diseases.

2. *How is the condition contracted from tap water?* With plumbo-solvent waters, especially when the supply is intermittent, lead is dissolved from the cold-water pipes. Where lead pipes are used in hot-water systems of houses the risk of lead poisoning from drinking water from that source is enormously increased. A glass of hot water at night or in the morning, water from the hot-water tap to save time in making tea, or to accelerate the action of an effervescing saline, are not uncommon histories. Soldered kettles are another cause.

3. *Is the incidence of lead poisoning likely to become greater?* My answer to that is very definitely "Yes," unless local authorities prohibit the use of lead pipes in hot-water systems of new houses. The absurd practice (I almost wrote "criminal," but you cannot hang a whole council) of allowing houses to be built with lead pipes leading from the hot-water cylinders in districts in which the water is known to be plumbo-solvent would be extremely humorous if the results were not tragic.

The local authorities, having committed the offence, must minimize their guilt by a definite and permanent warning notice to their victims, and not play the ostrich behind the pious opinions of people who cannot have knowledge of the facts. They can be assisted by medical practitioners if, when prescribing hot water, definite instructions are given that it must not be taken from the hot-water tap.—I am, etc.,

Wigan, Feb. 14th. W. E. COOKE.

CHILD GUIDANCE CLINICS.

SIR,—I have followed with considerable interest the correspondence between Dr. Gillespie and Drs. Noel Burke and Emanuel Miller in the issues of the *Journal* of December 28th, 1929, January 4th and 11th, and am glad that the importance of the work which the child guidance clinics undertake is being recognized by the medical profession in England. I feel that it is a pity at this stage of development that any disagreement should arise. On the other hand, I tremble for the whole future of the movement lest it should be wrecked in its infancy through being misdirected by men untrained for this very special work.

I am in entire agreement with Drs. Burke and Miller in considering the child guidance clinic not primarily as a training centre for the student of general medicine, for to be able to appreciate the work it is necessary to have a wide knowledge of psychiatry and psychology; without that foundation the worker will founder in a morass of incomprehension.

Other objections to incorporating the clinic with the hospital present themselves. Satisfactory contact with any psychopathic patient is difficult enough in any circumstances, and these difficulties are increased when patients are introduced into a class; with the average child satisfactory contact is still more difficult, and, I should say, would be impossible in class work. Attendance at hospital is apt to involve the patient in long waiting periods, surrounded by other patients; this would be extremely undesirable for children.

Another most important point is that the staff of a child guidance clinic is a specialized and extensive one, and its work could not be undertaken by the almonry staff of any hospital without considerable augmentation. A clinic has specially trained social workers, who thoroughly investigate the home conditions—so important in the child's situation; then there is the psychologist, not represented in any hospital, and lastly the psychiatrist. A liaison between hospital and clinic is most necessary, and in my experience here in America this is happily accomplished.

Let us by all means keep a rapport between our hospitals and our child guidance clinics—the student can always attend the conferences at the clinic, for conferences are an essential part of its functioning, and at these he can learn much of the technique of treatment—but do let us leave our child guidance clinics to function as independent units untouched by those problems which make psychiatric work in the very best out-patient departments something of a difficulty.—I am, etc.,

Philadelphia Child Guidance Clinic, Jan. 30th. D. N. HARDCASTLE.

"PHYSIOLOGICAL DILATATION OF THE HEART."

SIR,—Dr. Claude Wilson's article on physiological dilatation of the heart, which was published in the *Journal* of February 1st (p. 189), seems to demand some reply from myself, since I receive mention as an uncompromising opponent of the views which he so ably expounds. I am sorry that this should be said, because I had imagined that my letters to Dr. Wilson had expressed my position sufficiently clearly.

With the majority of his views I am in agreement, though I confess to difficulty in believing that the left ventricle can put out 30 to 40 litres a minute, as Professor A. V. Hill estimates. That the ventricle distends during diastole in order to increase its output during exercise I have never doubted. How much a ventricle can eject each beat I do not pretend to know.

With considerable skill Dr. Wilson has steered round the difficulties which lie about the clinician. He has discussed ventricular output and "physiological dilatation," but he has not ventured to discuss the clinical picture of such events, or even the physics of such changes as must occur.

The content of a sphere varies with the cube of its radius, since any sphere may be described by the formula $\frac{4}{3}\pi R^3$, R being the radius and π $\frac{22}{7}$. The left ventricle contents are not quite a sphere, since its internal shape is more like a blunt-pointed egg, but calculations for the variations of such a figure are complicated, and since we are going to deal with the changes of at least 50 per cent. in volume the divergence from the sphere—the true sphere—may be disregarded, the error involved in calculation being less than 5 per cent. Let us then consider the contents of the ventricle as spherical. As Dr. Wilson says, the "normal" ventricular output per beat is 2½ ounces (67 c.cm.), this is a diastolic content; and so the normal ventricular diastolic diameter is 5 cm. (R = 2.5 cm.) to which we may add 2 cm. for the thickness of the ventricular wall, so that the diameter of the left ventricle, externally, is 2¾ inches (7 cm.). In moderate exercise the ventricular output rises to 5 ounces (150 c.cm.), and the diastolic diameter rises to 3½ inches (8.6 cm. with R = 3.3 cm.). In full exercise (accepting A. V. Hill's figures) the output of the ventricle may reach 200 c.cm. per beat, which gives a diastolic diameter of 3¾ inches (9.3 cm., R = 3.62 cm.).

Here is a very startling fact—a physical fact—that, even when we take extreme figures, the diameter of the left ventricle only enlarges by 1 inch when its diastolic content changes from 2½ ounces to 7 ounces. Even if we suppose that the whole effect of increase in size of the heart is manifested by a movement of the apex towards the left, and if we suppose that each ventricular diameter is increased by 1 inch, making no allowance for the greater thinness of the wall of the more distended ventricle, then we find that the utmost shift of the apex to the left is 2 inches.

Dr. Wilson tells us of a lad whose apex under his hand changed from the mid-axilla to the normal position—on my own chest this is a change of over 5 inches, but let us imagine that it meant 4 inches in Dr. Wilson's patient. This means that at its lowest the diastolic diameter of the ventricle suddenly changed from 4½ inches to 2½ inches; then under exercise that lad's heart must have had a diastolic content of 505 c.cm. [(R = 4.94 cm.)$^3 \times \frac{4}{3} \times \frac{22}{7}$, 16.8 ounces. I regard this as an impossible figure, and this is why I say that I refuse to believe that the heart ever behaves like a concertina.

It seems to me that there must be a much simpler explanation of what Dr. Wilson felt, an explanation which is not only simpler but more reasonable. The boy's heart was beating "too fast for easy counting"; it was forcible, so that the impulse of its beat was conveyed to the whole chest; it could be felt over a very wide area even into the

axilla; and, as Dr. Wilson felt for the apex beat (the furthest left and furthest down of defined pulsation), which was not easy to define, the circulation slowed, the heart force diminished, and a defined localized apex beat became palpable in the normal situation. What was noted was not a change in dilatation, but a change in the force of the heart. After all, even though the heart is "physiologically dilated" in diastole, if it empties itself completely at each systole, its systolic volume is the same at rest as it is at exercise. Professor Hill's figures, incredible as they are, would be even more amazing if we suppose that under the conditions of full exercise the ventricle put out 7 ounces per beat, and even then is not completely emptied. This argument may be carried a little further, for some have suggested that, under resting conditions, the ventricle may not completely empty itself, in which case the fully exercised ventricle should be smaller during systole than the same ventricle under rest conditions.

Cardiac dilatation is often diagnosed as the sequel of a strain or the result of some infection; various physical signs are attributed to the condition, and various symptoms. It is mentioned in all textbooks, and is supposed to be some sort of disability which results from a weakness of the heart. This dilatation presupposes not only the diastolic distension, but a failure to empty completely during systole. I am not referring to the dilatation which occurs as an adaptation of the heart to a valvular defect, nor to a dilatation of the auricles.

If it were true that cardiac failure was accompanied by dilatation, or that dilatation was necessarily a result of cardiac weakness, then progressive cardiac failure and progressive dilatation of the heart would appear together. Dilatation demands greater work for the same output of blood per beat, and cardiac weakness implies a lessened ventricular capacity for work. It is true that a stretched muscle beats more forcibly, but it does more work in so acting, and this greater work is exactly what a failing heart cannot perform. Physiological dilatation would therefore be a physiological disadvantage to a failing heart, and the ventricle which ejects 2 ounces per beat, completely emptying itself, is acting more economically than the ventricle which contains 3 ounces in diastole and only ejects 2 ounces at each systole.

Among the various physical signs ascribed to the dilated heart is a rapid small volume pulse, which seems to suggest that the ventricle cannot be completely emptying itself. I have never seen this condition clinically; I have never seen a strained heart; and therefore (as I think rationally) I say that I do not believe that either dilatation of the heart or the strained heart exists. This is where I join issue with Dr. Claude Wilson.—I am, etc.,

Edgbaston, Feb. 11th. K. DOUGLAS WILKINSON.

HEART SOUNDS: NORMAL AND ABNORMAL.

SIR,—In Dr. Carey Coombs's address (February 8th, p. 229) he tells us that "it is a little disturbing to find how much uncertainty still surrounds the explanation of so simple [*sic*] a physical sign as the systolic murmur," but if he cannot tell us what is the cause of the normal sounds it is hardly advisable to try and dogmatize regarding those that are abnormal. As long as Dr. Coombs is content to accept the prevailing doctrine that the contraction of the heart muscle together with the banging of the extremely delicate valves is responsible for the production of the "heart sounds" so long will he be unable to reduce the uncertainty to which he refers regarding the systolic murmur.

Personally I cannot believe that Dr. Coombs is prepared to subscribe to the belief that a muscle, when it contracts, is capable of producing a noise, notwithstanding the pretty and elaborate though misleading diagram published by Sir Thomas Lewis showing the simultaneous electrocardiogram and heart sound curve from a normal heart. In this diagram the contraction of the heart muscle is represented by the curve PRST, while the heart sound transmitted by means of the microphone is shown in the form of oscillations. By no stretch of the imagination is it possible for the *shortening* muscle to give rise to *equal* oscillations, and the cause must be found elsewhere.

During life the blood fills the entire cavity of the heart, and consequently has no free surface on which to set up surface waves which might possibly give rise to oscillations. It is true that the blood, when passing through the valve orifices, may give rise to eddies, but eddies are hardly the things of which oscillations are made.

As neither the heart muscle nor the blood is able to set up oscillations the only other possible cause of oscillation is the pericardial fluid. This fluid in health is kept at an equal thickness all over the surface of the heart for purposes of lubrication, and with every beat of the heart is tossed to and fro in an even manner, though in disease, when the negative pressure in the pericardium and its dependent suction action tend to disappear, the movements of the fluid are much more irregular.

When there is a pericardial effusion the fluid has no room in which to be tossed about, and consequently there are no waves and no oscillations which can be recorded, although the electro-cardiogram still records the curve due to the muscular contraction. In pericardial effusion no "heart sounds" are heard, although liquids are good conductors of sounds, and an effusion of this sort should be all the more able to transmit sounds, were any produced in and by the contraction of the heart muscle.

As Sir Thomas Lewis agrees that the oscillations recorded are sound waves, and as the pericardial fluid alone is responsible for those oscillations, it follows that the "heart sounds" are really produced by the pericardial fluid. The recognition of this fact is important in connexion with the advice emphasized by Dr. Coombs as to the advisability of examining patients both lying and standing. This advice would be considerably increased in value were he to state what are the concomitants of that change of position. As I pointed out in the *Practitioner* for May, 1929, wherever there is a change of sound accompanying the change of the patient's position, there is also a change in the shape of the cardiogram and of the radiogram. These changes, in my opinion, are due to the diminished control over the movements of the pericardial fluid caused by the disappearance of the negative pressure in cases of heart disease.

I have to apologize for the length of this letter, but in view of the uncertainty emphasized by Dr. Coombs it is most desirable for us to face facts fairly and squarely.—I am, etc.,

Swansea, Feb. 8th. G. ARBOUR STEPHENS.

GASTROSTAXIS FOLLOWING BURNS.

SIR,—Dr. J. D'Ewart of Manchester reported in the *Journal* of February 8th (p. 242) a case of sudden death in a young child following burns; the points he emphasized being: (1) the satisfactory condition of the local lesions; (2) the changes in the gastric mucosa; and the occurrence of (3) persistent twitchings without unconsciousness, followed by sudden death. I would suggest that death was caused by changes occurring in the gastric mucosa bringing about a state of alkalosis or acute tetany, and that the condition might possibly have been averted by the administration of ammonium chloride internally. The following two cases appear to support this view.

Case 1.—On February 27th, 1928, a boy, aged 2½ years, was admitted to hospital with scalds on his feet from hot water. The dorsum of both feet, the front of the ankles, and 2 inches of the right leg were blistered. The loose skin was removed under general anaesthesia and a 1 per cent. picric acid dressing was applied. A good prognosis was given. The local lesions remained healthy, but on February 29th the temperature was 101° F., and the child looked ill. The next day the temperature rose to 104°; convulsions began at 11.30 a.m., from which there was only partial recovery, and death ensued at 3.15 p.m. Before death tetany was diagnosed from very obvious carpal spasms; the stomach contents were washed out, and were very strongly alkaline to litmus. No vomiting had occurred.

Case 2.—On May 29th, 1928, a girl, aged 17 months, was admitted with scalds from hot tea. There were large blebs on both feet and ankles, the whole of the anterior and medial surfaces of the right thigh and the medial surface of the left thigh were blistered, as were both lips of the vulva. Picric acid dressings were applied, as in the first case, a general anaesthetic being

needed on the first and second days. The baby was also given 3-grain doses of ammonium chloride every four hours in dilute solution from the time of admission. Despite a bad prognosis being made, there was an uneventful recovery, the highest temperature being 99.8° on the third day.

Perhaps Dr. D'Ewart may have opportunities of furthering this investigation.—I am, etc.,

J. G. KINGSBURY, M.B., B.S.Lond.

The Downs Hospital for Children, Feb. 10th.

TONSILLECTOMY OR RADIOTHERAPY.

SIR,—I wish to endorse the statements in the *Journal* of Dr. Douglas Webster on February 1st (p. 216), and of Dr. Christopher Kempster on February 8th (p. 262), on the beneficial influence of *x* rays in chronically inflamed and septic tonsils. I have been employing this method of treatment for some years and my results have been very gratifying in adults with chronic septic tonsils, not necessarily enlarged, in whom tonsillectomy is a serious matter.

The crypts open up, discharge their contents, and become dry and flattened; the patient enjoys a freedom from "throats," and a general improvement in health not experienced for years. The treatment is free from risk, as the dosage need only be half or less than half the erythema dose. There is no pain or discomfort in the method, no interruption of work, and no period of convalescence or semi-invalidism necessitating a change of air to recuperate—all most important economic factors. For these reasons I think that the treatment should be more widely known, and at least as much used as it is on the Continent and in America; I think Dr. Webster has done a good service in drawing attention to it.

In my view the satisfactory results in the chronic septic tonsil are due not so much to the selective action of *x* rays on lymphoid tissue as to their beneficial action on inflammatory conditions, both acute and chronic, caused by the various cocci. It used to be held that *x* rays were contraindicated in acute inflammatory conditions, but Holzknecht has shown that this is not so, and that the key to success is very small dosage suitably filtered according to the depth of the lesion. The beneficial effect manifests itself by either rapid spontaneous resorption and retrogression of the local symptoms, or rapid softening and discharge of the inflammatory products. At his clinic in Vienna, besides septic tonsils and such skin inflammations as erysipelas, phlegmon, abscess of the sweat glands, paronychia, furunculosis, etc., he has applied the *x*-ray method successfully to the acute and subacute inflammations of the female generative organs, such as parametritis, salpingitis, and oöphoritis.

As regards simple hypertrophied tonsils in children I have rather discouraged this method of treatment, unless some contraindication to operative treatment existed, because I was of opinion that much larger doses were necessary to obtain the shrinkage of the excessive lymphoid tissue than to clear the septic crypts, and I did not care to submit the skin of a child to such doses. I am interested to note that Dr. Webster finds small doses effective in such types of cases also.—I am, etc.,

T. I. CANDY.

Newport, Monmouthshire, Feb. 8th.

ANAESTHETICS FOR SHORT OPERATIONS.

SIR,—Mr. Marcus Bird and others extol the value of *ethyl chloride, either with or without oxygen*, as an anaesthetic for short operations, teeth extraction, etc. No one apparently uses chloroform for this purpose, and yet, properly used, I believe it to be one of the safest, simplest, and most convenient of anaesthetic agents. There is a strong prejudice against the use of chloroform, resting, I think, upon old tradition, and, except in midwifery, its analgesic properties have been generally ignored. By continuous inhalation of chloroform vapour for from forty to sixty seconds analgesia without loss of consciousness can be produced, and it is possible to remove several teeth without any sensation of pain, although the patient is perfectly conscious of what is being done.

The chloroform may be administered, as I have described *in a previous communication,*[1] *in an ordinary dental chair;* a Skinner mask is placed over the mouth and nose and chloroform dripped *continuously* from a drop-bottle; after from forty to sixty seconds, or possibly a few seconds longer, the mask is removed and the analgesic stage lasts for half a minute or more. There are no unpleasant after-effects, and no post-anaesthetic vomiting. The patient is able to get up at once and walk.

In such operations as incising carbuncles, whitlows, etc., for which nitrous oxide or ethyl chloride is generally used, chloroform may be given as satisfactorily, but the time of induction should be a little longer—up to ninety seconds. It should not be pushed as far as the excitement stage, and consciousness, though perhaps impaired, should not be lost. I believe *chloroform given by this method* to be at least as safe as any other anaesthetic, and certainly more convenient.—I am, etc.,

Ipswich, Feb. 8th. HERBERT H. BROWN.

[1] *Clinical Journal*, December 11th, 1929.

TENNIS AND GOLF ELBOW.

SIR,—As the pathology of these conditions is still a subject of dispute, the report of individual cases which are clear-cut and free from doubt should prove of value.

A few weeks ago, when making an iron shot off a patch of hard, uneven gravel, I experienced a sudden severe pain about the inner condyle of the left humerus. The grip and the timing must have been fairly good, for the ball carried 160 yards; but the shot was pushed out to the offside owing, no doubt, to the toe of the club meeting the hard ground before impact with the ball—a fault which, by giving a twist to the shaft, tends to open out the flexed fingers gripping the club. Throughout the round the same sharp burning pain recurred with about one out of three full shots.

Examination showed no deformity or discoloration, no pain or interference with movements of the joints, but acute tenderness on pressure over the distal aspect of the condyle. Now, after the lapse of five weeks, the pain (subdued in degree) can be elicited deliberately in two ways only: (1) by direct pressure in the region of the condyle; (2) by active flexion of the fingers with the addition of passive pressure applied to the palmar aspect of the second phalanx of the ring finger.

The application of pressure upon the third phalanx of the ring finger, or upon any part of the other flexed fingers, fails to elicit the pain. It is therefore clear that the injury concerns the ring-finger fibres of the flexor sublimis digitorum muscle. That much is certain; the continued tenderness of the tip of the condyle gives me the impression that the periosteum rather than the tendon is damaged.

Any enthusiast on this subject is welcome to examine the culprit, but I will ask him to leave his scalpels behind, as my kind friend Dr. Rolf Creasy has just undertaken some milder measures of treatment.—I am, etc.,

London, Feb. 12th. E. B. WAGGETT.

SIR,—Apropos recent correspondence in your columns the following notes of a case may be of interest in connexion with possible underlying causes of this condition.

For many years painful fibrositic nodules in various parts—shoulders, neck, back, and tendo Achillis—disappearing with massage but reappearing in other parts. Then, when playing golf, sudden onset of tennis elbow symptoms, becoming very acute in two or three days and making golf impossible. Has never played tennis. The most striking physical sign—acute tenderness on percussion on the external condyle of the humerus, just above the radio-humeral joint. Complete recovery in some months with massage, and in the later stages graduated active exercises. When the arm became well enough to warrant golf-playing again the other arm became affected in the same way, and took months to get well.

Given a fibrositic condition of the common tendon of origin of the extensor muscles it is easy to see how damage may be done by swinging a driver or brassie. In the early part of the upstroke the right arm supinates, then the extensor muscles of the right wrist contract to bend the right wrist; after the ball is struck the left arm supinates, then the extensor muscles of the left wrist contract to bend the left wrist. It is not very unlikely that a fibrositic condition of the common tendon is a

predisposing cause of many of these cases of so-called tennis elbow.

In all the cases I have seen acute tenderness on percussion, as distinguished from mere pressure, on the spot mentioned above, has been the most striking as well as the most persistent physical sign. I have never found anything like the same amount of tenderness of the head of the radius or of the radio-humeral joint.—I am, etc.,

Matlock, Feb. 14th. R. MACLELLAND.

PAPILLARY GRANULOMA OF LARYNX AFTER EXPOSURE TO IRRITANT GAS.

SIR,—I have been invited to collate cases of papillary granuloma of the larynx, or of a similar nature, with special reference to occurrence after exposure to mustard or other irritant gas, for presentation at the Summer Meeting of the Laryngological Section of the Royal Society of Medicine. The points of note appear to be:

1. Signs and symptoms, clinical appearances.
2. Date of exposure to gas, nature of latter.
3. Latent period, if any.
4. Operative measures, exact site of granuloma, pathological report.
5. Exclusion of syphilis, tubercle; ? blood or sputum examination.
6. Subsequent history.

I should be very grateful if any of your readers will supply me with notes of cases of this seemingly somewhat rare condition that they have seen: illustrations, microscopic slides, etc., and, of course, personal presentation of notes at the meeting, will be especially welcome. References to published cases, or to occurrence apart from war service, will be valued. Any communication should be addressed to me at the Royal Infirmary, Bristol.—I am, etc.,

Clifton, Feb. 13th. E. WATSON-WILLIAMS.

PSITTACOSIS.

SIR,—In your article on psittacosis in the *Journal of* February 8th you say "One would have thought that coroners investigating recent cases would have pointed the moral of close personal contact between man and his pets, but they do not appear to have seized the opportunity."

From information which I possess, only two inquests on presumed cases of psittacosis have been opened recently, and both have been reported fully in the *Times*, giving the coroner's name in each. One was opened by me on January 23rd last, and adjourned until February 20th. The other by a London coroner, quoted in the *Times* of February 6th, and adjourned until March 4th. From both these reports it is clear that the inquiries were only opened formally to permit issue of the necessary burial order, and adjourned for the attendance of material witnesses, who were themselves suffering from the condition, to recover sufficiently to give evidence, and to give time for the necessary preliminary investigations and the collection of evidence.

It would be manifestly unwise for any coroner in these circumstances to issue advice to the public at such a formal opening and without the proved facts before him, and for this reason I suggest that your remarks quoted above are not fair comment. If such advice is shown to be desirable it can properly be given by the coroner when the inquiry is complete. In the meantime, if circumstances demonstrate a necessity for public enlightenment, that is a matter which rests with the local sanitary authority or the Ministry of Health.—I am, etc.,

W. H. DAVISON,

February 11th. H.M. Coroner, Birmingham.

A FACTORY CLINIC FOR TUBERCULOSIS.

SIR,—The opening early this spring of a factory clinic in the Swiss mountains for certain victims of tuberculosis coincides so nearly with the publication of last year's preliminary vital statistics that one may be forgiven for suggesting that the Ministry of Health might do worse than explore the possibilities of the Swiss idea for adaptation amongst ourselves.

At Leysin, 4,500 feet above sea-level, there is now being completed, under the direction of Europe's most eminent practitioner of sun healing, Dr. Auguste Rollier, a series of open verandah workships several stories high. All the beds are provided with work-tables and special apparatus to allow the patients, who are surgical cases, to work in any position required for their cure. Here in the open sunlight, or, when the cold winds come, behind vita glass windows letting in the natural ultra-violet rays, they will turn out watches, stockings, pottery, speedometers for aeroplanes and motors, and other products, all at the usual industrial rates. I am told that the work for some time to come has already been contracted for.

If we mean to mend the grave situation disclosed by last year's figures for births and deaths, in which the part of the white scourge must have been dire, here surely is an agency full of hope not less from the point of view of prevention than from that of actual cure.—I am, etc.,

House of Commons, Feb. 19th. H. H. LAWRIE.

*** We may recall that Dr. Rollier contributed to our issue of December 28th last (p. 1206) an article on "The sun cure and the work cure in surgical tuberculosis," in which he described his factory clinic at Leysin.—ED., *B.M.J.*

MEMORIAL TO HENRY HILL HICKMAN.

SIR,—An appeal was launched about a year ago to recognize and perpetuate the memory of Henry Hill Hickman, a pioneer in general anaesthesia by inhalation. Thanks to a generous response from individuals and societies, our committee has been able to make the following arrangements. (1) A memorial tablet, designed and executed by Mr. Eric Gill, will be unveiled in Bromfield Parish Church, near Ludlow, on April 5th next, being the centenary anniversary of Hickman's burial. (2) His grave in the churchyard will be restored and the tombstone relettered. (3) A Hickman Memorial Medal with an endowment fund to be awarded for original work in connexion with anaesthesia. In addition, we hope to arrange for a portrait of Hickman to be presented to the Royal Society of Medicine. Finally, Mr. Henry Wellcome has very generously made a collection of memorabilia connected with Hickman. These will be demonstrated at a meeting to be held, probably, on Wednesday, April 2nd, the centenary of Hickman's death.

The names of subscribers and the total amount obtained will shortly be published and the appeal closed. Before doing so the committee invites all those who may have overlooked the matter and who appreciate all that is due to the discovery of general anaesthesia and wish to encourage its development, to send a donation to the honorary treasurer, Mr. V. Warren Low, 76, Harley Street, W.1, before March 1st. The list will be published soon afterwards.—I am, etc.,

CECIL HUGHES,

London, W.1, Feb. 15th. Honorary Secretary.

Obituary.

JOHN WRIGHT MASON, M.B., C.M., D.P.H.,

Late Medical Officer of Health for Kingston-upon-Hull.

WE regret to record the death on February 7th, at Hull, of Dr. J. W. Mason, in his seventy-eighth year. Some months ago he underwent an operation, but did not regain his usual health.

John Wright Mason was born near Grantham, and received his medical education at the University of Aberdeen and Guy's Hospital. In 1875 he graduated M.B., C.M.Aberd., and obtained the diploma M.R.C.S.; he became D.P.H. in 1889. After spending some years in general practice he was appointed medical officer of health for Hull, devoting himself thenceforth to the steadily increasing work connected with the prevention of disease and the promotion of sanitation in an expanding city. He was the author of an account of the sanitary history of Hull, and wrote various articles in public health journals.

We are indebted to Dr. W. ALLEN DALEY, who succeeded Dr. Mason in Hull, for the following tribute.

The passing of Dr. Wright Mason leaves an important blank in the ranks of the pioneers of sanitation in this

country. It is nearly fifty years since he was appointed medical officer of health of Hull—now the city of Kingston-upon-Hull. Under his guidance the department which he controlled grew from almost a single-handed affair to one containing some 600 persons. He took a keen interest in all developments of public health work, though he had misgivings as to the wisdom of some of its more recent advances; his knowledge of infectious diseases and what is now called environmental hygiene was unsurpassed. He had dealt with cholera, plague, and serious small-pox epidemics, and he was responsible for the erection of one of the finest disinfecting and contact stations in the country. His chief loves were, however, medico-legal work and port sanitation. Until a few months of his retirement in 1925 he acted, single-handed, as police surgeon to a force of some 450 men; he took a daily sick parade, and spent much time in visiting sick policemen in their homes. He had a wonderful collection of specimens from cases of medico-legal importance, and an honour which he esteemed highly was that of examiner in forensic medicine in the University of Edinburgh. He was a great authority on port sanitation; he was one of the founders, and for some thirty years the honorary secretary and treasurer, of the Association of Port Sanitary Authorities of the British Isles. He was always too busy to have many hobbies, but he took a great interest in the Volunteer movement, Freemasonry, and the collection of old armour. He resigned his public offices in March, 1925, and was the recipient of many valuable gifts. His wife predeceased him by two years. He lost one son in the war, and is survived by four sons and a married daughter.

The Services.

THE Chadwick gold medal and naval prize of £100 was presented to Surgeon Captain Sheldon Francis Dudley, R.N., on February 13th, prior to the delivery of a Chadwick Trust Lecture by Professor B. Blacklock, on health in West Africa. The award is made under the Chadwick Trust scheme, once in every five years to the medical officer of the Navy, Army, or Air Force who, in the opinion of the Medical Director-General of the particular arm of the service, shall have, in the preceding five years, specially assisted in promoting the health of the arm of the service to which he is attached. Among previous recipients of the distinction have been Sir William Horrocks and Sir Wilfred Beveridge on the Army side, and the late Surgeon Commander Atkinson, who carried out interesting researches and performed a memorable feat of life-saving at the time of an explosion on board H.M.S. *Glatton*.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on February 15th the following medical degrees were conferred:

B.M.—R. S. B. Pearson, J. K. Marshall.

UNIVERSITY OF LONDON.

THE ceremony of presentation for degrees will take place at the Albert Hall on the afternoon of Wednesday, May 14th. On the evening of the same day the graduation dinner will be held at the Fishmongers' Hall. The Chancellor of the University (Earl Beauchamp) will preside, and the Prime Minister has accepted an invitation to be the principal guest.

A course of four lectures on chemistry of muscle in relation to problems of cellular physiology will be given at University College, Gower Street, W.C.1, by Professor Otto Meyerhof of the Institute of Physiology, Heidelberg, on March 6th, 7th, 10th, and 12th, at 5.15 p.m. At the first lecture Professor A. V. Hill will preside. The lectures, which will be delivered in English and illustrated by lantern slides, are addressed to students of the University and to others interested in the subject; admission is free, without ticket.

Dr. Samson Wright has been recognized as a teacher of the University in physiology at King's College (Faculty of Medicine), and Mr. Reginald Lovell as a teacher of bacteriology and immunology at the London School of Hygiene and Tropical Medicine (Faculty of Medicine).

The subject selected for the Rogers prize essay or dissertation for 1931 will be "Enterable viruses as a cause of disease in man."

Dr. Herbert G. G. Cook has been reappointed the representative on the Court of Governors of the University College of South Wales and Monmouthshire for a further period of five years.

The University medal at the M.D. examination (Branch I, Medicine) for internal and external students, December, 1929, has been awarded to Cyril F. Fernando of University College Hospital.

Applications for grants from the Thomas Smythe Hughes and Beaverbrook Medical Research Funds must be sent in not earlier than May 1st and not later than June 15th, 1930, and must be accompanied by the names and addresses of not more than two persons to whom reference may be made. The grants are allocated annually for the purpose of assisting original medical research. Further particulars can be obtained on application to the Academic Registrar.

UNIVERSITY COLLEGE.

The eighth biennial Sydney Ringer Memorial Lecture will be delivered at University College Hospital Medical School on Monday, March 17th, at 5 p.m., by Professor E. B. Verney, M.B., F.R.C.P., whose subject is "The reserve forces of the kidney." Sir John Rose Bradford, President of the Royal College of Physicians, will take the chair. The lecture is open to all qualified practitioners and medical students.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

In connexion with the course of study for the diploma in public health Dr. W. G. Savage, M.O.H. for the county of Somerset, will give a lecture on food poisoning, at the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, on Thursday, February 27th, at 5 p.m. The lecture is open to the public.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting of the Royal College of Surgeons was held on February 13th, when the President, Lord Moynihan, was in the chair.

Diplomas.

The diploma of Fellowship was granted to Mr. G. C. Dorling of the London Hospital, who has now complied with the regulations.

Diplomas of Membership were granted to 136 candidates.*

Diplomas in Public Health were granted jointly with the Royal College of Physicians to 40 candidates.*

Honorary Medal.

The Honorary Medal of the College was awarded to Professor Grafton Elliot Smith for services to the Museum.

Appointments.

Mr. Victor Bonney was re-elected a representative of the College on the Central Midwives Board for one year from March 31st, 1930.

Mr. R. E. Kelly was re-elected a member of the court of the University of Liverpool for three years from January 1st, 1930.

Lectures.

The President reported that he had appointed Sir J. Herbert Fisher as Bradshaw Lecturer for the ensuing year.

The President reported that Sir Arthur Keith's Hunterian Lectures had been postponed to May 5th, 7th, 9th, 12th, 14th, and 16th.

Mackenzie Mackinnon Research Fellowships.

The President reported that at a meeting of the Mackenzie Mackinnon Research Fund Committee on January 23rd last the following Research Fellows were appointed for one year each: T. C. Hunt, B.M., B.Ch.Oxon. (subject of research—duodenal catheterization); G. S. Williamson, M.D.Ed. (subject of research—study of diseases of thyroid, thymus, and lymphatic tissues).

Jubilee of the Ophthalmological Society.

The evening reception at the College in connexion with the jubilee celebrations of the Ophthalmological Society of the United Kingdom will be held on Thursday, April 3rd.

Elections to the Council.

An election of three Fellows into the Council will take place on July 3rd at 11 a.m. in the vacancies occasioned by the retirement in rotation of Mr. R. P. Rowlands, Sir Percy Sargent, and Mr. Victor Bonney. Notice of the election will be given to the Fellows by advertisement and circular on March 7th. The last day for the nomination of candidates will be March 17th, and a voting paper will be sent on April 1st to every Fellow of the College whose name is registered at the College.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

THE monthly meeting of the President and Fellows was held on February 7th. The following candidates, having passed the necessary examination, were duly admitted Members of the College: R. H. J. M. Corbet, S. H. Faulkner.

It was resolved that in the by-laws for the Licences in Medicine and Midwifery and in the by-laws for Membership, the term "registered medical practitioner" shall be interpreted to mean:

A practitioner of the Irish Free State, or of the United Kingdom, or a colonial or a foreign practitioner, who has been registered or enrolled by the Registration Council of the Irish Free State, or by the General Council of Medical Education and Registration of the United Kingdom under the Medical Acts of the Irish Free State and of the United Kingdom respectively.

Miss Alice M. Barry, M.R.C.P.I., took the declaration and signed the Roll of Fellows of the College.

* The names were printed in the report of the comitia of the Royal College of Physicians published in the *Journal* of February 8th, p. 244.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE Mental Treatment Bill was read a second time by the House of Commons, on February 17th, after a full and sympathetic debate, marked by speeches from six medical members of Parliament—the most ample medical contribution ever made to a Parliamentary discussion. The bill has been sent to Standing Committee A, which, having little other work on hand, will soon begin to examine it.

On February 18th the Road Traffic Bill was debated on second reading. During his expository remarks Mr. H. Morrison, the Minister of Transport, referred to voluntary hospitals. He said that, while the bill was in the House of Lords, an amendment was carried with regard to the admitted problem of the voluntary hospitals and patients injured in street accidents. He was sorry that he had not been able to authorize Lord Russell to accept that amendment on behalf of the Government. He was sympathetic with the position of the hospitals, but he was satisfied that this was not the way to solve their financial difficulties. Mr. Morrison predicted that when the House of Commons examined the clause in committee they would find inconsistencies and absurdities in it. The hospitals already had a right to charge for their services and say that they would not treat anyone except for payment unless they were convinced that the patient could not afford to pay. But with all the good will in the world towards the hospitals he felt that there would be technical and legal difficulties if the House tried to graft on to a bill of this kind a matter which ought to be dealt with in a bill about the general problem of the voluntary hospitals as such.

The Charing Cross Bridge Bill was down for discussion on February 19th, and the Rural Amenities Bill on February 21st. Dr. Fremantle and other members concerned at the London refuse "dumps" in rural constituencies met on February 18th, and decided to call for appropriate safeguards in the Rural Amenities Bill.

Mental Treatment Bill.

SECOND READING IN THE COMMONS.

In the House of Commons, on February 17th, Mr. GREENWOOD moved the second reading of the Mental Treatment Bill, which has already passed through the House of Lords. He said that he invited the co-operation of all sides of the House in a measure which did not involve narrow party political considerations. The bill sought to carry into law the less controversial proposals of the report of the Royal Commission on Lunacy appointed five years ago, and to deal particularly with urgently needed reforms. The discussions which took place in the House of Lords led him to believe that essentially the bill could be treated on a non-party basis. In the House of Lords certain amendments were made, and in the House of Commons the Government would be willing to consider sympathetically amendments which would improve the measure and were not inconsistent with its main principles. The main emphasis of the report of the Royal Commission was upon the need of a new conception of mental disorder and its treatment. Emphasis was laid on the view that there should be early treatment, and that mental disease should be viewed much in the same way as physical disease was now viewed. The bill made provision for two categories of people—those who recognized the instability of their condition and realized the desirability of taking early preventive measures, and those who were no longer able to realize their condition and who, nevertheless, might be curable, but who ought to receive treatment different from that of the certified lunatic. At present in England and Wales voluntary boarders could only be received in certain institutions, in licensed houses, and registered hospitals under the Lunacy Act, and only in two public institutions where, as a result of special legislation, it was possible for voluntary boarders to be accommodated—the Maudsley Hospital and the London County Council and City of London Mental Hospital at Dartford. It followed from that that with very few exceptions treatment of the voluntary boarder was available only for people who were fortunate enough to be able to pay the fees for entering into those places. That, obviously, in these days, could not be defended. There were no free beds in the licensed houses; and there were only fourteen of them, with 4,700 beds. The great bulk of the public hospitals were not entitled to take in voluntary boarders, and the result was that a vast number of people for whom treatment as voluntary patients would be desirable were debarred from receiving that treatment. Of the 115,000 places in our mental institutions, none were available for persons who wanted to go in in the first stage. There were places which were only for those people who went in with the badge of the certified lunatic in their possession. The object of the first four clauses of the bill was to make more extended provision for the voluntary boarder, and to provide that such boarders might be received into the other types of public institution whose doors to-day were closed against them.

To get a coherent and logical code with regard to voluntary patients opportunity had been taken to repeal certain of the existing provisions and re-enact and bring them together in the first four clauses. In cases of this kind, although in most instances the individual went in of his own free will, there must be some measure of protection. The real distinction between physical and mental disease—even that distinction might at times be blurred—was that in the case of mental disease the will of the individual did not consciously operate. It was necessary, therefore, to have some measure of protection in the interests of the people who entered these institutions. While provision was made to permit a person of less than adult years to become a voluntary boarder on the application of a parent or guardian, safeguards had been introduced requiring the support of definite medical evidence as to the desirability of the young person undergoing treatment, and provision had been made for the intervention of the central authority if the parent or guardian did not appear to be carrying out his duty after the minor had been placed in the care of the institution. The next problem of the voluntary boarder was as to his release. It was quite clear that if a person voluntarily entered an institution for treatment he could not be permitted to leave exactly when he liked. As the law stood now, a notice of twenty-four hours was required; in the bill it was proposed that seventy-two hours' notice should be given. That was not because anybody desired to retain people against their will, but in order that there should be sufficient time to communicate with the friends or relatives of the patients and make effective arrangements for their care when released. It would be generally agreed, so far, that the Government were going on the right lines in opening more doors for voluntary treatment.

Temporary Treatment Without Certification.

In Clause 5, on which a certain amount of doubt had been expressed, they were dealing with the person who had gone a little too far to appreciate that he was a victim of incipient mental disorder, and who, while not being a resistant type of case which called for certification, ought to receive some method of treatment. The cases he had in mind under Clause 5 were those of the man whose mind had been temporarily broken by overwork, of the woman in childbed who suffered from puerperal mania—cases where, with proper treatment, fairly early recovery might reasonably be expected. To-day, the moment that a person's mind became temporarily unhinged he was not only branded with the stigma of the Poor Law, but with that of certification. The stigma of certification was a real thing, which had kept from proper institutional treatment many people who might well have benefited from it. He was not sure that in many working-class homes to-day the stigma of judicial certification did not stab deeper than that of the Poor Law. It was essential, if they were to do any justice to people who, in the months to come, would be as normal as the rest of their fellows, that something should be done to get for them proper adequate treatment without putting on them the brand of certification. It raised a very large and difficult question. They knew that a substantial proportion of people who entered institutions, duly certified, were people who did recover. In the report of the Royal Commission a number of statistics were quoted in regard to various mental hospitals, which showed that quite a substantial proportion of people who entered the Poor Law mental institutions were released in a relatively short space of time. One of the best instances, because the figures covered four years, was that of the Claybury Mental Hospital, where, out of 792 recoveries of sanity, 11 patients recovered within the first and second months; 49 between the second and third; 71 between the third and the fourth; 76 between the fourth and fifth; and 83 between the fifth and sixth months. In other words, over a fourth of those recoveries took place within six months. It was proposed that, subject to safeguards, these people should be subjected to a period of treatment not exceeding six months. In the case he had quoted, over one-fourth of the people who recovered in that asylum would, under Clause 5, never have had to undergo judicial certification. It was clear that if they had more early treatment of this kind, more cases would recover. Even at the end of six months they were not justified in condemning the patients who still remained to certification. It was therefore provided that there should be a continuance of the treatment for a further period not exceeding six months. Here the Government had departed from the recommendations of the Royal Commission. This was done after very mature consideration. The Royal Commission, being anxious to differentiate cases which should be certified from those which need not be certified in the first instance, cast about for a procedure which would be different from certification. They devised the plan of a provisional treatment order, and they proposed, "with reluctance," that the order should be signed by a magistrate, though it was clear from the general tenor of their report that they would be glad to get away from judicial interference. When the Government came to work out what the provisional treatment order would be, it was clear that, to the ordinary mind, it could not have

been distinguished from ordinary certification. He felt this so strongly that if the principle in Clause 5, as it now stood, was destroyed, the heart would have gone out of the bill. They ought to devise machinery which was distinguishable from certification, and that was the whole point of the clause—to get treatment for the non-volitional case without having to resort to the intervention of the magistrate, with all that that meant. There must, however, be safeguards, and a number had been inserted which would be an adequate protection. First, there must be two medical recommendations to support the application made on behalf of the non-volitional patient, one signed by a medical practitioner specially approved by the State, and the other, if practicable, by the usual medical attendant of the patient. This was a further safeguard, because it meant that these cases could only go to institutions that were in the public eye and under a measure of public control. Arrangements were made in Clause 5 for fairly frequent visitations, and there would be periodical visitation by the authority itself. They had tried sincerely to protect the individual and not to introduce the process commonly associated with entrance to a mental institution. He believed the clause would mark a great advance in the treatment of mental disorder, but he was equally sure that the intervention of the magistrate in these cases would destroy the whole value of the clause. If they condemned these people to certification they would not get the early treatment that was desired, and one of the main purposes of the bill would have been defeated. A large body of public opinion was prepared to support the bill and get rid of what had been called the stigma of judicial interference. In this matter they had the vast majority of the medical profession behind them. Lord Dawson had spoken warmly in support of the bill.

Administrative Provisions.

Other clauses dealt with provisions regarding local authorities. Their powers and duties were enlarged, and they were enabled to do more in the way of facilities for treatment. They were also given power to provide out-patient clinics, to undertake after-care and research. Those powers were subject to the approval of the Board of Control, and were so drawn on the specific recommendation of the Royal Commission. Objection had been taken to making this a new duty, but it was not so much a new duty as the application of an old duty in a different way. Now that they had transferred the boards of guardians and there was to be a new development of health services, if they modified the law as regarded local authorities it was clear that they ought to modify it with regard to the central authority. The Board of Control had a long history, which went back to the forties of the last century. It was now being subjected to criticism. The whole intention of the reorganization, set forth in Clauses 11 to 15, was to re-establish the Board of Control on a new basis with a closer contact with the local authorities and with a procedure and a method of administration assimilated to that now followed in the Ministry of Health. It was proposed to reduce the size of the Board and the number of commissioners, and to give power for the appointment of assistant commissioners and inspectors in order to get some effective central provision and administration and a more effective contact with the local authorities. They also gave to the chairman of the Commission new authority, subject, as was laid down in Clause 12, to the Minister of Health. The whole desire behind this proposed alteration in the Board of Control was to adapt that central machinery to the rapidly developing work within the sphere of the Board of Control—lunacy, mental deficiency, and now the powers and activities under the bill. It was assumed, indeed it had been stated, that the Board of Control was a Star Chamber which was not within the jurisdiction of the House. Nothing could be more untrue. It was important to realize that, while for administrative reasons it was desirable that there should be a board of some kind, that Board was as much within the control of Parliament as any State department. When questions were asked about the Board, they were answered by the Minister of Health. There could not be any more complete control.

Protection of Certifying Practitioner.

Clause 16 referred to the protection of medical practitioners who gave certificates under the Lunacy Acts. The position of the medical practitioner to-day was one of considerable uncertainty; indeed, many of them thought that it was one of very real peril. The Royal Commission recognized that. To-day, if the medical practitioner was made the defendant in a case for wrongful certification, the onus of proof rested upon him to show that he had acted in good faith and with reasonable care. It was clear that they could not completely remove responsibility from the medical man. After all, he had made a decision, and therefore, while they must keep upon him a certain measure of responsibility, it was important that he should have reasonable protection against cases which might be brought, and which might mean his financial or professional ruin, even if the cases did not go against him. The clause followed very closely the proposal made in the Royal Commission's report, which was drafted in detail by the very eminent legal members of the Commission.

A further important point in the later clauses of the bill was the Poor Law aspect of the problem. The Royal Commission desired a complete overhaul of the whole system of lunacy administration. That had not been possible, but it had been decided to dissociate people suffering from mental disorder from the Poor Law. They had in the bill removed the pauper's stigma, and that provision, coupled with the abolition of the boards of guardians, would mark a very great step forward in lunacy administration. Clause 17 provided the same kind of procedure for the poor person in case of sudden insanity or sudden mental disorder as applied to the well-to-do. The proposals of the Royal Commission for the assimilation of procedure would have been admirable if they could have been done. But he was not sure that they could have been done very simply. On the other hand, it would make the bill highly controversial, and his aim was to get a minimum of controvery in regard to the measure. It would also, perhaps, have been advisable to follow the report of the Royal Commission in regard to the licensed houses, but that, too, was a burning question full of deep-seated differences of opinion. These matters, therefore, had been deliberately excluded from a bill designed to meet an urgent need and to revolutionize the public mind in its attitude towards mental disease, and to provide early treatment for that disease. It was also designed to reorganize the administrative machinery so as to make the constructive proposals more readily operative and more successful. In committee every effort would be made to accept amendments which would really improve the measure, provided that they did not interfere with the principles on which it was based.

Opposition Support for the Bill.

Sir KINGSLEY WOOD said that he welcomed the main provisions of the measure, because he thought it represented a saner view of insanity. Provided that opportunities were given for the discussion of certain points, the Opposition hoped to be able to co-operate with the Government in the passage of the bill. Speaking subject to what might be said by the medical members of the House, he thought it might be said that mental illness was not being reduced in this country. The recovery rate was not a particularly good one. There was an increasing number of persons suffering from temporary mental troubles due to the increasing speed and strain of life. He was glad to think that in many respects the old conceptions and unhappy methods concerning mental illness were disappearing, but they died hard. There was still the stigma of lunacy, harking back no doubt to the time when madmen were kept in chains and underground cellars. There were two grave defects in the present system. The first was that the present law undoubtedly placed many obstacles in the way of early diagnosis and early treatment; and the second was that, under present circumstances and the present law, there was very little hope of recovery for many poor people in this country. The poorer patient must have reached the final stage before a mental hospital could receive him. He welcomed the proposals in the bill with regard to the voluntary boarder. It might be possible to remove this class of patient altogether from the jurisdiction of the Board of Control, and by that means dissociate this kind of illness from lunacy. That might very well be discussed in committee. A good deal of importance was attached by eminent lawyers in the House of Lords to the fact that, inasmuch as minors could be detained in homes of that character for a certain period at the request of parents, the Board of Control would cause the homes to be visited by Commissioners, and this afforded some measure of protection. How far that protection was substantial could be considered when the bill was in committee. In Clause 5 provision was made for treatment without certification of persons "temporarily incapable of volition." That was a matter which ought to be carefully considered to see whether every protection was afforded. For the first time an order was to be made without what was called judicial authority. If it were possible, subject to proper safeguards, to avoid certification, it ought to be done. Certification as a lunatic raised real apprehension and dread in the minds of large numbers; and persons who had been so certified, even if they recovered, it followed them for the rest of their lives. He doubted, however, whether, from the point of view of the liberty of the subject, the intervention of a justice of the peace was any protection. The justice of the peace who did his duty seriously in that connexion would be in a most difficult position if he were confronted with certificates signed by competent medical representatives. If regard were had to the reports of the last two tribunals which had been set up by that House to consider the treatment of lunacy, cases of wrongful detention must be of the rarest occurrence, and no wrongful detention was deliberately or systematically practised in institutions. He placed a great deal of confidence in the Board of Control and its operations, and the fact that members of the Board could visit those institutions at any time was a considerable safeguard. He hoped that one result of the measure would be that the superintendents of those institutions would have more time to attend to their proper duties. The provisions of the bill which called for further consideration were those relating

to the medical profession and the local authorities. He had a good deal of sympathy with the plea of many medical men that some further protection should be afforded them in the discharge of their duties under the bill than its provisions provided. Additional responsibilities were placed on local authorities, and he had been asked by the London County Council to put forward on their behalf, and on behalf of other local authorities, a claim for further financial assistance. The bill was on the right lines and the Opposition would be happy to assist in its passage.

Medical Support.

Dr. MORRIS-JONES welcomed the bill. He said that at present the State put insane persons into two classes—the private and the pauper—and from the legislative point of view recognized the great majority of these unfortunate people as paupers. If the bill did nothing but remove that classification it would be justified. He heartily welcomed the clauses dealing with the voluntary boarder, although he said that he would prefer the word "patient," and he hoped that the Minister of Health would see his way to make that change, which, although small, would be a great improvement. Clause 5, which provided for the treatment without certification of persons incapable of volition, was causing more controversy than any other clause in the bill. It was the very crux of the measure, and he welcomed the clause very heartily. In the debates in the House of Lords its main provisions had escaped unharmed, and the few amendments which had been made had very considerably improved the clause. The bill for the first time abolished the judiciary, as it were, in dealing with mental patients. His own view was that the intervention of the magistrate in this case was unnecessary and indeed harmful. In regard to Clause 15, dealing with the power to make rules, he was very glad to hear the assurance of the Minister that he would be responsible to the House of Commons for the Board of Control. Clause 16 dealt with the protection of medical men. He was very reluctant to talk about that clause, but he felt that he ought to say one or two words about it. Medical men at the present time were very seriously perturbed and alarmed; in fact, a large number of them positively refused to certify at present. He assured the House that there was no piece of work or individual work done by a medical man in the whole of his life which he undertook with more responsibility than that of certifying one of his fellow creatures to go to a mental hospital. He would like to see a little more protection than the clause gave, and the Minister should adopt the amendment which had been moved in the House of Lords. They did not ask for protection for the rascal nor for the unscrupulous; they just asked that the medical man who had conscientiously, and to the best of his knowledge and belief, done his duty, should be protected, and that he should not then be liable possibly to be mulcted in heavy damages and be put to very great expense and very considerable anxiety, with possibly the ruin of his reputation at the same time. He welcomed the bill, although it did not deal as fully with the lunacy code as he would have liked, and it left out the very vexed question of licensed houses. As the House knew, there were the same number of licensed houses now as in 1930, and he understood that the Royal Commission was a little bit undecided in regard to that. The question would have to be faced. Either licensed houses were performing a useful function in the community, in which case they ought to have facilities for increasing, or they were detrimental, in which case they ought to be restrained or abolished. He regretted that the Government had not been able to deal with that aspect of the question, as this was the time to carry out the unanimous recommendations of the Royal Commission. The bill changed the whole attitude of the Legislature from that horrible word "detention," associated as it was with all the stigma of lunacy and the echo and clanking of chains, to the words "prevention and treatment," which made certification of an insane person not the first preliminary but the very last resort. The bill gave the poor something of the chances of the wealthy for the first time. It changed the word "pauper" into "rate-aided patient." That was something, and it substituted for the words "lunatic asylum" the words "rate-aided mental hospital." He congratulated Mr. Greenwood on his initiative in bringing the bill forward, and assured him, from his own experience, that he would be inaugurating a new era of hope for those of his fellow creatures who were, or might be, afflicted with mental disorder. It was because he believed that the whole conception and aim of the bill, subject to the necessary safeguards for the protection of the individual, was to ameliorate, prevent, and cure mental ailments, that he very heartily welcomed it.

Dr. Ethel Bentham's Views.

Dr. ETHEL BENTHAM said that the bill was long overdue. One of the difficulties in regard to it was to get the confidence of the public in whatever kind of machinery was adopted. Seven-eighths of the people who had to be certified were treated through the Poor Law, and there was absolute horror of the way in which they were treated. She did not believe them to be badly treated intentionally, but the amount of money spent on them and the circumstances surrounding their reception were such that it was no wonder that people would do almost anything to avoid it. She had seen in a reception ward, into which people were coming, a case of puerperal mania in one corner, a raging drunkard brought in in the middle of the night, two or three people whining in one corner, not meaning anything, but never ceasing their noise, and another person throwing things at the nurse in charge. She did not say that all the reception wards were like that, but the reception was, and had been, a scandal for a long time. The third thing which made people so nervous was the mysterious and awful Board of Control. She had been in general practice for thirty years, and had acted as a magistrate in these cases ever since women magistrates were appointed. Therefore she had considerable knowledge of the subject. When she had been able to get to the Board of Control in the interests of the patient it had been helpful; but it was not very accessible. There was thus every reason why the public were mistrustful. If they could get into their minds the fact that insanity or aberration of intellect was not, in the majority of cases, a thing which should be hidden up like leprosy, and if it was once understood that all those who were dealing with these people—whether doctors, magistrates, or the Board of Control—were trying to do their best but that the circumstances in which they were acting were such that it was very difficult for that best to be done; and if there could be a little more trust in one another, many of the difficulties would be solved without very much trouble. But this must be brought into the open, and it must not be overlooked that while they were trying to secure the liberty of the subject and were seriously concerned that no person should be kept for a moment in an asylum who was not insane, they had also to realize that a patient was in an extremely helpless condition. He needed to be protected, first, against himself or herself, and, in many instances, against his relatives. The relatives were the people from whom the patient most often needed protection. It was very difficult to make sure whether a person was cured or not. The general public could not be sure because, when they visited a patient in an asylum, they found him apparently in the enjoyment of every faculty, and it seemed safe to have him out. In a good many instances the people who looked the most well were possibly the least able to be trusted by themselves. As to the single justice, his only use was that he formed a second opinion. If it was provided that in every case—pauper or otherwise—there should be two medical opinions, the justice was not very much wanted. If certification or treatment depended on the single doctor, the magistrate did fulfil a useful role. Mistakes could be made, and where there was only one medical attendant there ought to be something else, although a non-medical magistrate was at such a disadvantage in the face of medical opinion that two medical certificates would probably be much more valuable. It was necessary that there should be some superintending and controlling body—they could call it the Board of Control, or what they liked—but there must be someone to protect the patients. The Board of Control—a rechristening would probably be useful—must come more into the open, the names of its members must be known, and also its place of abode. It must also be possible for the relatives of the patient to get into direct contact with the Board. That would do a good deal to lessen the public distrust and make it feel that mental disease was no more a thing to be hidden, or ashamed of, than scarlet fever, diphtheria, or anything else. If it was brought out into a common-sense, open discussion, most of its terrors would be taken from it. Three members of the Board of Control were rather too few. It was necessary that there should be at least two doctors—one a man and one a woman—on the Board of Control. She would like to see the Board enlarged to five persons. If that were done, and it was brought into the open, a great many of the difficulties would be lessened.

Sir D. NEWTON said that local authorities welcomed the bill. They did not, however, welcome all its provisions. It was rather too strong a line to take to make it mandatory on local authorities to provide suitable accommodation for temporary patients and not to contribute anything from the national purse towards the cost. He challenged the wisdom of transferring the powers of the Ministry wholly to the Board of Control. The local authorities should have been consulted and given, perhaps, wider powers.

Mr. SOMERVILLE HASTINGS said that all who were interested in the early treatment of mental disease would welcome the bill. There might be two opinions as to the exact status of the Board of Control, but such matters might very well be dealt with during the committee stage. It might be necessary to alter the exact status of the Board of Control, but he felt very strongly that some supervisory authority would always be necessary in dealing with mental disease. There were two considerations in connexion with mental disease which required attention. The first was the question of what was best for the patient; what treatment ought to be given, and what could be done to increase the patient's comfort. Another important point was in regard

to protection of the public, the protection of the patient from himself, and the protection of the good name of the patient's family. To achieve the latter object some form of detention was necessary. He was associated with a hospital which treated early cases of mental disease, and their difficulty was that they had no power of detention at all. Therefore their selection of cases was strictly limited, and they could not forcibly detain patients even when it was in their own interest and when they felt that they ought to be detained. Again, many of those patients suffered from some other medical or surgical ailments that could be recognized after close examination by physicians and surgeons accustomed to deal with those other affections, and when those other conditions were treated the patients very often rapidly recovered. One great point in favour of this bill was that it would allow public money to be spent on the treatment of early cases of mental disease, which was now impossible. He was much interested to hear the Minister of Health say that the stigma of certification was a real thing. There was no question that that was the case, and the stigma of association with the certified was also a real thing. He would like to see further provisions in the bill for the withdrawal of the voluntary boarders and those not capable of volition as far as possible from association with the certified, and for bringing them into closer association with the treatment of ordinary medical and surgical diseases. Although there might be ways in which the bill could be improved in committee, it made a very great advance in providing for the treatment of early mental disease.

Captain GUNSTON congratulated the Minister of Health on introducing the bill, though he wished it had been more far-reaching. The Parliamentary Secretary to the Ministry of Health could congratulate herself on her success in overcoming the age-long difficulty of finding the right treatment of the early mental cases without violating the ancient law of the liberty of the subject. The fact that very few lawyers were present that afternoon to talk about the liberty of the subject showed that they must be satisfied. The problem of compulsion had to be faced, and they were bound, especially in non-volitional cases, to restrict to a certain extent the liberty of the subject. Everyone to-day had to sacrifice some of his liberty. They wanted to see every safeguard necessary put into the bill, but they should not overload the bill with so many safeguards that they could not get the cure that they all wanted for these poor people. References had been made to the stigma of certification, but it had not been pointed out that the stigma not only attached to the person certified, but to his children as well. Dr. Devine, in his evidence before the Royal Commission, said that this was a very serious slur; it was irrational that it should be so, but it was. He also added that he had no hesitation in saying that many people became confirmed neurotics from the fact that their relations had been certified. He (Captain Gunston) congratulated the Government on having taken a step towards removing the stigma from people so afflicted, and from their children.

Mr. LOGAN, speaking as one who had had some experience of Poor Law administration, supported the bill. The passing of the old boards of guardians and the coming in of the public assistance committees was bringing in a new trend of thought and a new system into the management of the affairs of the nation. The Minister of Health should take into consideration the question of segregation. It was impossible to deal with mental cases, whether certifiable or for temporary treatment, unless they were segregated. Without segregation classification would be useless. Provision should be made for classification of cases of senile decay in addition to classification of temporary cases which were not chronic.

Mr. R. RUSSELL, in supporting the bill, said that in committee the whole question of the relationship between the local authorities and the Board of Control would come under serious consideration, and would need some remodelling.

Sir JOHN WITHERS said that on the whole the bill was extremely good. Clauses 1 to 4 were excellent, but he must refer to Clause 5. The certificate of the magistrate had been, on the whole, a great safeguard. Under this bill people could be put away in an asylum or home for a whole year without any legal certificate, and his feeling was that that was a mistake. The fact that the magistrate had signed something that the public did not know anything about could not hurt anyone. It was the fact that they were put into an asylum which attracted public attention and caused scandal and worry and trouble. From the point of view of the persons themselves certification was a protection.

A Medical Criticism.

Dr. FORGAN gladly joined in the chorus of praise of the bill, though he would have to qualify it to some extent by calling attention to one or two defects. He would like to say what great benefit institutional treatment for voluntary boarders and the possibility of after-care treatment could be. The bill did not apply to Scotland, for the very good reason that Scotland had its separate Board of Control, and a member of the Royal Commission had stated that the practice in Scotland showed an enormous advance upon that in England. In Scotland those suffering from mental disorder were treated in a very flexible way, with enormously good results from the point of view of the health of the patient. The percentage of the population certified as insane was almost 20 lower than in England, and the different method of treatment might to some extent be responsible for that. As regarded the defects in the bill, temporary patients were, in the opinion of those who had framed the measure, likely to be treated in the existing Poor Law institutions, and many members of the public would think that there was very little difference between a declaration signed by two doctors and certification if the patient was then removed to an asylum. That emphasized the paramount importance of setting up other institutions for the treatment of early cases. But the most important defect was the very serious additional financial burden which would be placed on local authorities. Temporary patients were an entirely new class of patient. Fresh accommodation would be required for them, and fresh expense would be incurred by the authorities, and, if our method of allowing non-volitional cases to remain for six months without certification was going to be effective at all, it would mean for some years an increase in the number of persons who would receive treatment. New accommodation would be required if the authorities were to put into effect the permissive powers which the bill gave them. He was afraid, if this subsection were to remain permissive, that the great majority of the local authorities would be unable financially to undertake any work at all. The bill, as it stood now, was not going to provide early treatment except for those who were able to pay for it. The history of lunacy reform had been a history of good intentions. In 1881 the Commissioners reported that for forty years their efforts had been directed towards obtaining early treatment. Thus, for almost eighty years, the Commissioners had been attempting to obtain early treatment. The keynote of this bill was early treatment. He hoped it would have a unanimous second reading, and that at a later stage it would be so amended as to make it really capable of bringing about a praiseworthy reform.

Dr. Fremantle's Review.

Dr. FREMANTLE said that they were dealing with those distressing cases which numbered already some 135,000 persons in mental institutions. Of these, it was estimated that about one-third were what were called in the bill non-volitional cases—that was to say, from 40,000 to 50,000 were non-volitional cases. As had been said, the expense and necessity of providing for these people were already met. Therefore the need for new accommodation did not arise in their case, although one naturally hoped that in time better accommodation might be provided for them, as for others. With regard to the non-volitional cases, one of the objects of the bill was to lead those who at present were frightened off from certification to submit themselves to treatment, or to be submitted by those responsible for them. Therefore there would be need for further accommodation. It was well to recognize that there had been some exaggerated enthusiasm about the bill as opening a new era. The treatment of the insane had varied with the conception and knowledge of their condition. The first organic stage in our system for dealing with lunacy might be said to have started with the Elizabethan Poor Law and the institutional arrangements which arose at that time. The process of dealing with the insane then was one of mechanical restraint, and that idea continued until King George III, who was himself a sufferer, was treated under humane conditions by Dr. Addington. He introduced the idea of humane treatment, which, applied in such an exalted sphere, naturally attracted attention. Still, the idea of mechanical restraint held sway in the beginning of the last century, until Charles Reade wrote *Hard Cash* and Cockton wrote *Valentine Vox*. The indignation aroused was such that, finally, the lunacy laws were amended. The great Lord Shaftesbury was responsible, more than anyone else, for the passing of the 1845 Act, known as the Magna Carta of the Insane, and he became one of the first Commissioners in Lunacy. He was so much averse from the introduction of the justice into the business of certification of the insane that when, eventually, the Act was passed, he resigned his Commissionership in protest, and stood for the principle which was being introduced in the bill that day. From that time onwards they had had a conflict between what had been called the static mind of the lawyer on the one hand and the dynamic force of the biologist on the other. It was by disparagement to the legal profession to refer to the static mind of the lawyer, because the law must necessarily deal with concrete and defined facts, and that really created the difficulty in this case. The medical profession had necessarily to look at it from the other side. He (Dr. Fremantle) spoke, not as one who had practised the profession of curative medicine, but from the administrative point of view, the view of the lay authority, and especially of the interests of the community as a whole, and especially from the point of view of prevention as well as of cure. Therefore he again called attention to the position of the medical man in the case, which had been referred to already, so pathetically and intimately, by his professional colleagues. The House should consider the position medical men were in when called on to deal with a case that was, first of all, recognized in a family as one

of difficulty, of violent temper, of a rather changeable and fickle state of mind, and of a person difficult to deal with. Commonly, that person was regarded as not only a nuisance, but as being wilfully responsible for the trouble in the family and the household. The medical man came in, and realized that it was a case where the strain, in one form or another, had been so great as temporarily to derange the mind of the individual. It was a temporary early case, and it would be ridiculous to sign that as a case of certified insanity. It was obvious, from the mere facts of the case, that it arose from the normal incidents of health and ill health in a life—such cases as arose after childbirth, after fevers, confusional cases, and temporary alcoholic or toxic cases. These were different cases that arose and which had to be treated by the medical man, who said, "It is absurd that this person should be signed up as insane." These were the cases which up and down the land at present were not being certified, and never would be certified. Therefore here was a way in which these people could get the expert care, comfort, and treatment that would enable them to tide over the time until they could again resume their normal place in family and public life.

Speaking as a justice of the peace as well as a medical man, he (Dr. Fremantle) knew how difficult it was for individuals to find a justice of the peace when he was required in such a case, or to find one who was able to go into the case. As has been well said already, as a rule the magistrate deferred to the medical man's opinion, and said, "The medical man says so, and obviously I must sign it up." It was true, as the Royal Commission found, that the safeguard of a justice having to certify a case was a very small one compared with the safeguards provided in this bill. They had a man who, it seemed to him, was more qualified to look after the safety of those concerned than a justice of the peace, because it was to be a medical man approved by the Board of Control. In fact, the criticism of this proposal made from the medical profession was that it might start a new specialty—a separate and distinct class of practitioners. Be that as it might, he thought that the Board of Control would obviously approve only men who would take the public point of view, and who would realize their responsibilities in the matter. He wanted the House to sympathize with the ordinary family doctor and help him to get through these delays and difficulties that were so troublesome and tiresome to the patients and their families. The medical man realized equally well the necessity for protecting the personal liberty of the subject. He did not believe that anybody so much as the medical man would be so acute and keen to discover any kind of ill-treatment and mischief that was going on in a case. Till the end of time there would always be cases where the law would be defeated; no law would be perfect, and those who supported this measure so keenly only asked people to recognize that they had put in a safeguard of a medical man approved by the Board of Control in addition to the family doctor as a more efficient person than the judicial authority. In regard to the Board of Control, he agreed with many of the criticisms. It had been suggested that there was a stigma attached to the Board of Control, and that a new body should be formed to deal with these persons. There was no need to have a fresh Board for every class of insane or mentally afflicted persons who were to be treated. It was in order to get rid of the stigma that the Mental Deficiency Bill of 1913 was passed, and that the Lunacy Commission was absorbed in the Board of Control. Some stigma must attach to any body which undertook these functions, because they were concerned with people who might eventually be certified as insane. They must trust the Board of Control, and in committee they could consider the clauses dealing with the Board in order to secure that the Board would have the confidence of the public as being efficient and expert, and at the same time a sensible body to deal with this subject. But unless they gave a salary and position to the Commissioners greater than that already enjoyed by the class of experts from whom the Commissioners were drawn they would not continue to get the right class of experts to give their services who would command the respect of the superintendents of the institutions engaged in the treatment of mental disease. Sir Maurice Craig, in his evidence to the Royal Commission, said that he had seen on the Board of Control a considerable change and progress in methods; his former criticism had passed away, and he believed that there was evidence that they were doing their work well and in a progressive manner. The House must not forget the matters which were naturally left out of the bill and which appeared in the Royal Commission's report. There were two germane matters which did appear in the bill, which were of immense importance to the treatment of the individual before and after treatment in institutions. These were the system of after-care and medical hygiene generally. There were many associations which undertook this voluntary work, which was invaluable. Some power was given for after-care, and in committee they would want to extend the powers given to after-care associations in various ways, because everybody would realize that the real trouble of the temporarily insane began when they got back to their own homes, especially in the poorer homes. Above all, they must remember that they wanted to be able to treat cases as early as possible, with a view to preventing many of the 50,000 people now in mental institutions from having to undergo institutional treatment.

Legal Definitions.

Sir BOYD MERRIMAN said he could not agree with Dr. Morris-Jones that the words "incapable of volition" were the best that could be chosen to define the cases in Clause 5. This clause was the heart of the bill, and he did not in the least want to destroy it. He wanted the clause to be read and worked so as to conform with what he understood was the real object of the bill. The Royal Commission made it a definite recommendation that, on the one hand, it was desirable, in talking about lunacy, without giving any rigid definition of lunacy, to adopt a nomenclature acceptable to modern medical thought; and, on the other hand, it said it thought that a greater uniformity of language ought to be devised than was found in the present Lunacy Act. It also pointed out that there was already in the code a large variety of tests or definitions of people's state of mind. For instance, there was the main definition of a lunatic as a person of unsound mind. There were in various sections differences as wide as this: a person of unsound mind who was incapable of managing himself and his affairs. Another case was that of a person of unsound mind who was incapable of managing his affairs, but capable of managing himself, and was not dangerous to himself or others. In another category was a man of unsound mind, admittedly a lunatic, whose lunacy was in its nature temporary, and would probably soon be removed. That looked like the class of case they were trying to deal with in Clause 5. Again, there was another type of person who, though not found to be a lunatic and not detained as a lunatic, was described as being a person who, through mental infirmity arising from disease or age, was incapable of managing his affairs. With all these definitions no attempt had been made in the bill to introduce more uniformity into the description of people suffering from unsoundness of mind. They had, instead, added the entirely new conception of what were called non-volitional cases—a particular definition of a class which had never been used before in connexion with lunacy. The phrase really defeated the object of the bill, because it was impossible to describe people who were said to be incapable of volition as an intermediate class between voluntary boarders and certifiable lunatics. To him, as a lawyer, incapacity for volition without any limitation at all was indicative of the most complete unsoundness of mind that could be indicated. Absence of volition was the criterion in law for incapacity to contract, to make a will, even, if they liked, to be guilty of a crime. They could not describe anybody as being more unsound in mind than to say that he or she was, in every respect, and without any limitation whatever, incapable of volition. Even people who were admittedly lunatics were not necessarily incapable of volition in all respects; but here they were describing this intermediate class, which was supposed to be short of lunacy, as people who were, without any qualification except in point of time, incapable of volition. There was no limit to it on the face of the words. To talk about removing the stigma of lunacy from people with whom they wanted to deal in this intermediate way and then to describe them as incapable of volition, and to leave it at that, was really a contradiction in terms. Mental incapacity to co-operate in a cure did not necessarily involve mental incapacity with regard to other affairs. This matter could be dealt with perfectly simply, for the purpose of Clause 5, without stigmatizing people as being incapable of volition in all cases, whether for the time being or not, by reversing the wording which was applied to temporary boarders in Clause 1. They might simply describe them as being people who were "incapable of voluntarily submitting themselves to treatment for mental disorder." This would avoid any phrase which made them appear to be more mad than the lunatic himself, and which threw a reflection on the patient and on his capacities in any other respect.

With regard to the protection of medical men, everybody was agreed that it was essential to make it as difficult as possible to attack them in connexion with this procedure. The known reluctance of medical men to certify because of the risks which attached to it was a very serious matter in connexion with lunacy proceedings. There was no half-way house between complete immunity for the medical profession on the one side, which had not been seriously put forward, and their liability to be attacked in cases where there was bad faith or negligence. It was in connexion with the provision of safeguards in the latter class of case that the difficulty arose. There was always the risk that a person might be able to get a case on its legs against the doctor. In addition to the real and substantial safeguard provided of going before the judge, who had to be satisfied not merely that there was an allegation of bad faith or of negligence, but that there was sufficient ground for that allegation, he suggested that there should be a safeguard on the analogy of the safeguards which were provided with reference to poor persons' litigation. Before a poor person was permitted to sue there was an independent committee of investigation. It

should be quite possible, in the present case, and it would be in the interests both of the public and the medical profession, to have a voluntary panel of investigation set up, appointed, if they liked, by the Lord Chancellor and the President of the British Medical Association. There should be some independent body like that to investigate any claim which a person who had been certified desired to bring against a doctor, and to make a report to the judge for the assistance of the judge before he was called on to make up his mind whether the proceedings should go on. That was in one sense a matter of detail, but it was of very vital importance. In the interests of the efficient working of the Lunacy Acts, if the doctors could not be given complete immunity they should, nevertheless, be safeguarded as much as possible.

Reply on behalf of the Government.

Miss SUSAN LAWRENCE said that all the points and objections raised were in essence committee points. If there were any other words which would better express the intentions of Clause 5 the Government would be glad to consider them. With regard to the protection of the medical profession, which was dealt with in Clause 16, if they could deal with that matter more satisfactorily in committee, well and good. She very much doubted, however, whether the intelligence of the committee would be able to deal with it any better than had already been done. As to the money which it was stated the local authorities ought to have in order to discharge their duty, she pointed out that that duty was already upon them. The duties imposed on local authorities were permissive. The bill placed other local authorities in exactly the same position as London. It was true that special Acts of Parliament. The bill gave the Government had many imperfections. the Royal Commission said—and the Board of Control very good, but a highly mysterious body. She (Miss Lawrence) did Dr. Bentham had said that she found the Board was under- not wonder, if they looked at the defects which the Royal Commission found. First, it found that the Board was under- staffed, and that its duties entailed much travelling over the country. The Government proposed to remedy that, and to bring the Board of Control into much closer relations with the Ministry of Health than it had been before. It would be more in the position of a department of the Ministry. The chairman, to be appointed by the Minister of Health, was to be an executive officer—in the position of head of a department—and the House need not be afraid that there was no parliamentary control.

At the conclusion of Miss Lawrence's speech there was some further debate.

Dr. VERNON DAVIES said the case of the voluntary boarder or voluntary patient had not been sufficiently stressed. If in any family a patient was certified, horror, shame, and stigma descended on the whole family, and adolescents might be unable to get married. Families in all classes of life did all they could to hide these cases. A change was needed in the public attitude towards mental illness, which should be regarded just as physical illness was regarded. The House of Commons now had a great opportunity. The Royal Commission had made an advance and the Minister of Health had had the courage to go further. Let the House advance a little more and say it was determined to recognize mental illness in the same way as physical illness. The bill fell short of that idea. Notification of voluntary boarders to the Board of Control spoilt the whole scheme. In the eyes of the public that meant that the case was one of lunacy. Liability to inspection at any time by the Board of Control would arouse the suspicion of insanity and there would be no voluntary patients at all. In no circumstances should these be notified to the Board, with the possible exception of infants. The consequence of the "non-volitional" provision would be that in future every case which was not a voluntary boarder would be called a temporary case. No doctor would commit himself to saying that a patient could not get better in six or twelve months. In his opinion the Board of Control was necessary. Its powers should be increased and it should be made responsible to the House of Commons; but it should not be allowed to have anything to do with voluntary boarders, nor should these be sent to mental hospitals. At present they were received in other hospitals at Cardiff, at Oxford, and at the Middlesex Hospital. The bill gave power to extend that. The safeguards proposed in the bill were worthless, and the remedy advocated by Sir Boyd Merriman was little better. He asked the House to remember that doctors had no desire to see people locked up or certified when not insane.

The bill was read a second time.

A motion by Dr. FREMANTLE to refer the bill to a committee of the whole House was rejected by 172 to 60.

The financial resolution in connexion with the bill passed through committee.

[Owing to the pressure on our columns and the length of the important debate on the second reading of the Mental Treatment Bill, we are compelled to hold over several items of medical interest discussed in Parliament.]

Medical News.

A JOINT meeting of the Medico-Legal Society with the West London Medico-Chirurgical Society will take place at 11, Chandos Street, W.1, on Friday, March 7th, at 8.30 p.m., when Lord Riddell will open a discussion on "The Doctor in the Law Courts"; he will be followed by Sir William Willcox and Dr. F. Temple Grey.

A CHADWICK Public Lecture on infant welfare schemes will be delivered by Dr. Stella Churchill, on March 3rd, at 5.15 p.m., in the lecture hall of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1. Sir William J. Collins, chairman of the Chadwick Trustees, will preside.

AT a sessional meeting of the Royal Sanitary Institute, to be held on February 28th and March 1st in the Council House, Bristol, there will be discussions on the Local Government Act, 1929 (to be opened by Dr. R. A. Askius, medical officer of health), on slum clearance, and on the inspection of food supplies in Bristol.

THE Fellowship of Medicine announces that Dame Louise McIlroy will give a lantern demonstration, on the management of abnormal labour, in the lecture room of the Medical Society, 11, Chandos Street, Cavendish Square, on February 25th, at 4 p.m. There will be a clinical demonstration at the All Saints' Hospital, Vauxhall Bridge Road, and a demonstration on difficult cases of feeding, by Dr. Eric Pritchard, on February 28th, at 4 p.m., at the Infants Hospital, Vincent Square. These demonstrations are free to medical practitioners. A course in diseases of children will be given at the Childrens' Clinic and other hospitals from February 24th to March 8th, occupying afternoons and some mornings; all branches of the subject will be comprised in demonstrations and lectures, and there will be two special visits to College Farm, Finchley, and Thavies Inn, Holborn. A series of demonstrations on the diagnosis and treatment of diseases of the eye will be given at the Royal Eye Hospital each afternoon, excepting Saturdays and Sundays, from February 24th to March 8th. Special courses will be held in March on diseases of the chest (Brompton Hospital); orthopaedics (Royal National Orthopaedic Hospital); neurology (West End Hospital for Nervous Diseases); venereal diseases (Lock Hospital); medicine, surgery, and gynaecology (Prince of Wales's Waterloo Hospital); and gastro-enterology (Prince of Wales's Hospital). Copies of all syllabuses may be obtained on application to the secretary of the Fellowship, 1, Wimpole Street, W.1.

IN connexion with the eighteenth centenary of Galen's birth (A.D. 130) a small exhibition has been prepared at the Wellcome Historical Medical Museum, 54, Wigmore Street, W.1.

A SUMMER course will be held at Varese from July 10th to the 31st dealing with the pathological physiology and the clinical aspects of circulatory and renal disturbances. In addition to lectures there will be practical demonstrations and facilities for clinical and laboratory work. The fee for medical graduates is 200 lire, and medical students are admitted for half this sum. Information about the course, excursions in connexion with it, and facilities for travel and accommodation in Varese, may be obtained from the Institute di cultura medica, Corso Roma 4, Varese, Italy.

A SPECIAL post-graduate course in neurology and psychiatry will be held in English at Professor Wagner von Jauregg's neuro-psychiatric clinic, Vienna, from June 23rd to July 31st, covering the whole of neurology, psychiatry, and related subjects, such as radiology, ophthalmology, and otology, and allowing time for classes in special subjects. Further details may be obtained from Dr. E. Spiegel, Fallstrasse 3, Vienna I. The class is limited to fifteen, and will only be held if there is a minimum attendance of eight.

THE International Labour Office has issued from 12, Victoria Street, S.W.1, two further brochures in its series "Occupation and Health." The first comprises leaflets Nos. 163 to 168, which deal with chemical trades, food of the industrial worker, sulphuric acid, compressed air work, the fur trade, and the manufacture of horn articles. The second contains leaflets Nos. 169 to 176 upon copper and ecral, fatigue in industry, tumours of occupational origin and occupational cancer, employment of children and young persons, confectioners and pastry-cooks, hair, slate, and silver.

IN 1929, up to the end of October, one-third of all the accidental deaths among the 19 million Metropolitan industrial policy holders in the United States were due to motor accidents. This is the only type of accidental death which is now increasing in the United States.

THE fourth Easter medical tour organized by the Société Médicale du Littoral Méditerranéen will take place on April 12th to 20th. It will include a visit to Nice, Juan-les-Pins, Cannes, Grasse, Vence, Mentone, Bordighera, San-Remo, and Monte-Carlo. A five days' tour from Nice to Corsica will follow immediately. Bastia, the Cap Corse, Corte, Vizzavona, the Calanques de Piana, Ajaccio will be visited. The tours are open to doctors, their families, and medical students. Further particulars may be had from Madame Juppé-Blaise, Federation of the Health Resorts of France, Tavistock House (North), Tavistock Square, W.C.1.

THE Minister of Health received a deputation on February 18th from the British Legion on the subject of village settlements for tuberculous men. The deputation gave an account of the success of the work carried on at the British Legion settlement at Preston Hall, and cited statistics to show that the economic results of the work had been highly encouraging. The deputation urged that further Government assistance should be given for the extension of existing settlements, and also that steps should be taken by the Government in conjunction with local authorities to extend the movement in suitable areas. The Minister said he had taken a keen interest in the village settlement movement, and recognized that Papworth and Preston Hall had blazed the trail. He had already visited Papworth, and hoped to take an early opportunity of seeing Preston Hall. He hoped that local authorities with the greater freedom which they would enjoy under the Local Government Act would devote attention to the subject, and he was making inquiries as to areas in which the development of the settlement scheme might be possible. On the question of Government assistance he reminded the deputation of the existing housing and other grants that were now available.

THE congress of French-speaking physicians of North America will be held at Montreal in the middle of next September, when the subjects for discussion will be physiotherapy in all its aspects and cholecystitis.

A CATALOGUE of drugs used in Chinese pharmacies in Malaya has been published by Mr. David Hooper, LL.D., F.C.S., in the December issue of *The Gardens Bulletin* of the Straits Settlements. The crude medicinal substances described were collected by Mr. I. H. Burkill, late director of gardens in the Straits Settlements. The identification of most of the samples was made at the Royal Botanic Gardens, Kew, and in this way it has been possible to produce for the first time a collection of drugs used by the Chinese in the Malay Peninsula. It is stated by Mr. Hooper that while the Chinese on the whole adhere to the use of drugs of their own country—probably by reason of its proximity—their materia medica has been decidedly influenced by the introduction of local and Indian products. The *Bulletin* may be obtained from the director of the Botanic Gardens, Singapore, price 2 dollars 50 cents.

IN its report for 1928–29 the committee of the Society for the Provision of Birth Control Clinics records a year of satisfactory progress. The number of affiliated centres has been increased to twelve by the opening of a new one at Newcastle-on-Tyne, and the eleven other centres, in London, the provinces, and Scotland, have between them given instruction in contraception to 3,799 women. A number of medical officers of mental hospitals and tuberculosis sanatoriums have referred discharged patients and patients' wives to the centres for advice, and the committee expresses the hope that this practice may in future become more general. The society is represented on the Birth Control Investigation Committee, which is pursuing research on the efficacy of the present contraceptive methods and is seeking a more satisfactory method than any now available. The committee affirms its belief that public opinion is now ripe for a great extension of the society's activities, and states that, given the necessary financial support, it would open a centre in every large town in Great Britain. The thousands of women who have been helped during the past few years represent an infinitesimal portion of those who need help, and the society makes an urgent call, therefore, on the generosity of those who believe that its work should be continued and extended. The treasurer is Mr. Harold Cox, 6, Raymond Buildings, Gray's Inn, W.C.1.

THE following appointments have recently been made in foreign faculties of medicine: Dr. H. Burckhardt of Marburg, professor of surgery at Kiew; Dr. Aubry, professor of clinical medicine at Algiers in succession to the late Professor Ardin-Delthell; Dr. Wätgen, professor of pathology at Halle; Dr. Rudolf Schmidt, occupant of the chair of medicine at Prague, professor of medicine at Vienna in succession to Professor Wenckebach; Dr. Leon Gaston Bela Fornet, professor of internal diseases at Debreczen; and Dr. Victor Müller-Hess, professor of medical jurisprudence in Berlin in succession to Professor Fritz Strassmann.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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QUERIES AND ANSWERS.

BROKEN SLEEP.

"D. S." asks for suggestions for the treatment of sleeplessness in the early morning. He writes: I can sleep till about 3 or 4 o'clock in the morning, but not after that. I have turned 70, and have carried on a fairly large practice for over twenty years in an industrial town, without the aid of car or cycle. Apart from the insomnia, I am quite healthy. I usually go to bed at 10.30 p.m. I have tried bromides and aspirin, without any benefit.

URTICARIA FOLLOWING SERUM ADMINISTRATION.

"C. E." asks whether three or four drops of horse serum inserted into a mastoid sinus, with a view to healing it, could give rise to an attack of urticaria all over the body a few hours later. An alternative suggestion is that the taking of small doses of adrenaline twice a day by the mouth for the past four months was concerned. He would be glad to have advice as regards treatment. He further asks with reference to the same patient: Should an asthmatic subject have an antidiphtheric serum injected in the event of an attack of diphtheria? At what rate should it be injected, and should pituitrin be simultaneously injected to prevent anaphylaxis?

DANISH TREATMENT OF ITCH.

DR. E. BAYLIS ASH (Birmingham), replying to the question of Dr. Douglas Ross in the *Journal* of February 15th (p. 323), writes: In order to ensure the solution of the sublimated sulphur in the KOH, 1 kg. of sublimated sulphur should be dissolved by heating in 2 kg. of 50 per cent. solution of KOH. The full procedure will be found on page 739 of the nineteenth edition of the *Extra Pharmacopoeia* (vol. i).

DR. WILLIAM C. HOFFMAN (Bridge of Allan) writes: I find that it takes at least 3 kg. of 50 per cent. KOH to dissolve 1 kg. of sublimated sulphur in order to obtain a clear solution. This solution, when fresh, is of a brick-red colour, and the process of preparation is a slow one: 1 kg. of sulphur added to 1 kg. of 50 per cent. KOH merely yields a fine orange-yellow suspension.

PRECIPITATE EJACULATION.

"A. D. B." (Wimbledon) writes: I had a similar case to the one described by "N. D." in the *Journal* of February 15th (p. 320), the patient being a man aged 25. Belladonna and bromide therapy, cold douching, sexual abstinence, and testicular hormone injections proved useless. I referred him to a mental analyst, and after a few weeks he began to improve; a complete cure resulted, the general health being also much improved.

"E. A. B." (London, W.) writes: In reply to the query of "N. D." I would suggest that the symptom may be psychogenetic. The condition is often successfully treated by psychotherapeutic methods.

PRURITUS.

DR. D. YELLOWLEES (Glasgow) writes: Dr. W. H. Davies's inquiry under the above heading (February 15th, p. 322) reminds me of a case of intractable generalized pruritus in a married lady, who was referred to me a few years ago. The condition cleared up completely after a short and comparatively superficial psychological analysis, with no other treatment. To put it in a nutshell, the lady was "itching" to have a baby. She was one of those people, more numerous—and more "normal"—than is

generally recognized, who unconsciously translate into bodily symptoms the emotional states represented by such phrases as "*aching* for an opportunity," "*gasping* for a chance," "*sick* of this job," and so on. The fact that in Dr. Davies's case the pruritus is associated with impotence strengthens the probability that psychological factors are active, as impotence is, in the great majority of cases, a purely psycho-neurotic symptom. (So also is premature ejaculation, referred to by "N. D." in his query in the same issue of the *Journal*.)

GLASS PERMEABLE TO ULTRA-VIOLET RAYS.

DR. JOHN N. DYSON (Southport), in reply to the inquiry (February 15th, p. 320) by "Forty Years a Subscriber," writes: Vita glass and similar substances allow about 76 per cent. of ultra-violet rays to pass through them. In a town the smoky atmosphere effectually cuts off all ultra-violet rays. In the winter, even when the sun is shining, the minute particles of water in the damp atmosphere of our island have the same effect. It is therefore obvious that in towns and in the winter—the very places and the time when the rays are most needed—there are few, if any, to pass through even a permeable glass. A further consideration, which is generally ignored, is the following: ultra-violet rays cannot pass through even the very thinniest piece of clothing. (A lamp giving out rays twelve and a half times as powerful as those from the sun itself will not affect the skin of the body if a piece of tissue paper is placed on the skin.) A person dressed, or covered in any way, could not possibly receive ultra-violet rays through vita glass (even if these rays were present). The skin of the face and hands, through continuous exposure, is practically immune. A consideration of these simple facts should enable anyone to judge the amount of benefit likely to be obtained by the use of glass of this type.

MR. G. L. PILKINGTON (St. Helens) writes on behalf of the Vita Glass Marketing Board: We were interested to read your reply to "Forty Years a Subscriber" in the *Journal* of February 15th (p. 320). In the main we are in agreement with the substance of the reply, but there are one or two points which are not in agreement with data in our possession. In regard to the frequency with which the windows are cleaned, our researches here have shown that the effect of a film of dust on the transmission of ultra-violet radiation has, in the past, been greatly exaggerated. Our conclusion, briefly, is that dust does not exert a selective absorptive effect on the shorter ultra-violet rays, but that the absorption is roughly the same for any part of the visible and ultra-violet portion of the solar spectrum. It therefore follows that the amount of visible light entering through a window is a fair index of the amount of the ultra-violet radiation entering also.

INCOME TAX.

Appointment: Motor Expenses.

"J. K." holds a county council appointment and receives in respect of the travelling expenses of himself and a nurse an allowance at "5½d. per mile, which roughly covers running expenses." Can he claim anything in respect of depreciation of the car, which works out at about £25 per annum?

*** He can claim only in respect of expenses incurred wholly, exclusively, and necessarily in the performance of the duties of his office, and only to the extent to which they cannot be met out of (unassessed) grants made by his council to meet them. It is not possible to press successfully the view that the council's mileage allowance is for running expenses only, unless he can produce evidence from the council that they excluded depreciation when calculating the mileage rate. We assume that such evidence is unobtainable. Consequently it reduces itself to whether "J. K." can prove that he has spent, within the restrictions stated above, sums in excess of the council's grant. If he can do so he should succeed, but as this in effect would seem to be an attack on the adequacy of the grant, he has obvious difficulties to overcome.

Cash Basis.

"J." purchased a quarter share in a practice as from January, 1928; in the following October his partner died and he bought the remaining three-quarters of the practice. For 1929-30 he was assessed on the basis of the whole of the cash receipts for 1928. In 1929 accounts were issued half-yearly, instead of yearly, as in previous years, and the result was to inflate the cash receipts of 1929, of which a substantial portion went to the executors of his previous partner. What should he do in connexion with the rendering of the accounts for 1929?

*** The only suggestion we can make is that for the purpose of the 1930-31 return the account for 1929 should be rendered on the basis of the value of the bookings, instead of on the cash receipts. If that is done, however, the same course will have to be adopted in future years. The assessment for 1929-30 was correctly made on the whole of the cash receipts for 1928 (though again the "value of bookings" basis might have suited "J." better), and we see no escape from an inflation of the 1930-31 assessment, unless the cash basis be discarded altogether.

"Child Allowance."

"SANTOR" has a son who is an articled clerk to a firm of solicitors; he receives no salary, and is attending lectures, etc., at a law school. Is he entitled to the "child allowance"?

*** We fear the facts do not justify the claim, which in effect must be that the son is receiving full-time instruction at an educational establishment. There is no judicial decision on the facts stated, but a case which was heard within recent years on somewhat different facts does not lend support to the claim.

LETTERS, NOTES, ETC.

EPIDEMIC ENCEPHALITIS AND ITS LITERATURE.

IT should have been mentioned in the footnote to our leading article on epidemic encephalitis and its literature in last week's issue (p. 295) that the report of the Matheson Commission can be obtained in England from Messrs. H. Milford, Oxford University Press, at the price of 15s. net.

ANTIMALARIAL MEASURES IN EAST AFRICA.

THE EDITOR of *East Africa*, in the course of a letter on this subject, writes: May I crave the courtesy of your columns to reply to your criticism of my comments on Lieut.-Colonel S. P. James's report on antimalarial measures in Kenya and Uganda? I did not, and do not, desire to underestimate the value of "real screening," as you call it, but, writing from personal experience of not a few screened bungalows in East Africa, I pointed out that screening is no safeguard against the presence of mosquitos, citing Colonel James himself as showing that screening is in practice often merely a trap for the insects. My opinion, though that of a mere layman, is, I find, exactly that of Professor W. S. Paton and Dr. A. M. Evans of the Liverpool School of Tropical Medicine. In commenting on the screening of only a portion of a verandah you write: "In practice this generally means regular exposure to the dangerous anopheles and protection against the merely annoying culicine." It is obviously easier and cheaper to screen effectively a small portion of a verandah than a whole house, and this is commonly done in East Africa. To such a screened verandah many a dweller in the tropics retires on returning from the afternoon exercise to protect himself from the "dangerous anopheles," which gets busy about sunset, and in practice, as I can confirm from my own experience, he finds the protection effective. I cannot agree that culicines are "merely annoying." Paton and Evans say that "in many tropical countries the most troublesome culicines are those concerned in the transmission of the parasites of yellow fever, dengue, and the filariidae." Finally, in attributing to me the "spurious wisdom" of advocating the "positive advantage" of inflicting on new settlers old-time and now avoidable hardships, and of arguing that antimosquito measures are futile, you entirely omit my emphasis that the settler should pay attention to drainage, water supply, quinine prophylaxis, mosquito curtains, and mosquito boots.

MENTAL DISORDER AND INTESTINAL SEPSIS.

DR. W. J. YOUNG (Harston, Cambridge) writes: In this, as in so many things, Voltaire has shown himself that worst of plagiarists, the man who steals our ideas beforehand. The passage is too long to quote, and Voltaire cannot very successfully be condensed, but in his novel, *Lord Chesterfield's Ears*, the great anatomist Sidrac introduces the argument, backed up by evidence from physiology and from history, that the most powerful spring of human action is "la chaise percée." He tells, with peculiar glee, how the emanations from the dried-up contents of an overloaded bowel pass into and poison the whole system, so as to make the merely melancholic man ferocious. He illustrates his thesis with the tale that Cromwell had not visited his "wardrobe" for a week before he cut off the king's head; that the Duc de Guise and his brother were assassinated because they had vexed Henri III when he was extremely constipated; that the massacre of St. Bartholomew was due to the desiccated temperament of Charles IX, "the most constipated man in his kingdom." The anatomist goes on to state that, on the other hand, too great looseness of the bowels sapt the vitality, and that consequently he finds himself unable to credit the legend that the English won the battle of Agincourt when they were suffering so much from dysentery that they fought "with their breeches down," and so had to face the enemy rather than offend the French dandies by turning to them the "*cu-nu*."

CORRIGENDUM.

IN the report of the discussion on intrathoracic tumours in the *Journal* of February 15th (p. 285), the name of Mr. A. Dickson Wright was inaccurately given as Mr. W. H. White.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 46, 47, 48, 49, 52, 53, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 54.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 63.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

179. Relapsing Fever.

G. DELAMARE (*Rev. de Med.*, No. 7, 1929, p. 693) records his observations on 50 cases of relapsing fever seen at Constantinople in 1920-21. Most of the patients were Russian refugees; 47 were males and 3 were females. The ages ranged from 10 to 42, the majority of the patients being between 20 and 32 years. The total number of febrile paroxysms was 68, of which 36 were first attacks, 20 second, 11 third, and 1 a fourth attack. The duration of 16 attacks left untreated ranged from three to eight days, and of 52 attacks treated by salvarsan from one to eight days, being usually five days for the first attack, three or four days for the second, two or three days for the third, and not more than forty-eight hours for the fourth. The first relapse occurred between the tenth and nineteenth days, and most frequently between the eleventh and thirteenth; the second between the twentieth and thirty-sixth, and by preference from the twenty-fifth to the twenty-seventh; and the third was on the forty-second day. On examination of the abdomen thirty patients showed a deeply seated and definitely circumscribed tender area, which in 21 was situated in the centre of the epigastrium, in 7 over the gall-bladder, and in 2 over the appendix. In 3 cases epigastric tenderness was associated with tenderness over the gall-bladder, and in 2 there was a coexistence of gall-bladder and appendix tenderness. The complications were as follows. During the attacks: parotitis followed by orchitis, 1 case; albuminuria, 10 cases; haemoglobinuria, 1 case; respiratory complications, 7 cases; meningitis, 2 cases; acute delirium, 2 cases; periostitis, 1 case. During apyrexia: epistaxis, 1 case; visual disturbance, 2 cases; joint symptoms (arthritis or merely arthralgia), 17 cases. One of the most remarkable features of relapsing fever, as observed at Constantinople, was that several cases proved refractory to treatment by salvarsan.

180. The Sympathetic Nervous System and Cardiac Murmurs.

A. VAN BOGAERT and J. MAGE (*Ann. de Méd.*, December, 1929, p. 454) have noted in certain cases, without myocardial insufficiency and previous or present endocardial infection, cardio-vascular signs which might have been mistaken for valvular affections of the heart. They consisted of murmurs at the base of the heart, which persisted most frequently throughout the systole, though sometimes they were diastolic. The authors state that such a murmur is heard with maximum intensity in the second left intercostal space behind the left hemisternum; it is conducted laterally, reaching the clavicles and being audible in the carotids. Occasionally it can be heard, but only faintly, at the base, and it is not conducted to the axilla. With the murmur occurs a bruit, which seems to arise under the auricle, and resembles the dry crepitation produced by the opening of the pulmonary alveoli; the authors term this a crepitant alveolar bruit. These cardiac murmurs originate, they assert, in the aorta, and are conducted as are organic murmurs arising in this vessel, but the clinical picture is that of a sympathetic disorder rather than of a cardiopathy. Their presence is due to an increase of the differential tension (the difference between the systolic and diastolic pressures), and especially to a lowering of the diastolic pressure, the systolic remaining normal or being increased. All causes which produce a return to normal of the lowered diastolic pressure check or attenuate these murmurs. Vascular hypotony and, consequently, ortho-sympathetic hypotony and hypo-excitability (favoured by the relative predominance of the parasympathetic system) cause this condition. Three cases, in which these murmurs were marked, are reported. In two the sympathetic disturbance of the equilibrium could be attributed to endocrine disorders, and in the third to a functional mesocephalic affection.

181. Antityphoid Inoculation in Children.

ACCORDING to J. HESSE (*Arch. de Med. des Enf.*, December, 1929, p. 769), in view of the greater frequency of enteric fever in children as well as in women, as compared with men since the war, and their much milder reaction to inoculation, subcutaneous T.A.B. inoculation should be administered to all children after their third or fourth year. This prophylactic method may be performed simultaneously with the injection of Ramon's anatoxin against diphtheria. It is still more important to inoculate children in the environment of an enteric patient and those living in an infected area, or during an epidemic of the disease. Inoculation should not be performed, at least by the subcutaneous route, in the case of children whose general condition is unsatisfactory, or who are suffering from an acute infection, or cardiac, renal, or hepatic insufficiency. In borderline cases it is best to give the vaccine by the mouth, since this method does not provoke severe reactions. Although the immunity conferred often exceeds two years, it is prudent to carry out re-inoculation by the mouth or subcutaneously every two years, especially as vaccination by the mouth does not render the subject hypersensitive.

182. Post-vaccinal Eruptions.

J. NIEUWENHUYSE (*Nederl. Tijdschr. v. Geneesk.*, December 21st, 1929, p. 5393), who records an illustrative case, states that post-vaccinal eruptions usually appear from eight to twelve days after vaccination or revaccination, and sometimes sooner. A great variety of eruptive forms may occur, such as the amaculo-papulo-erythemato-exudative form, a vesicular form, and very rarely a pemphigoid or haemorrhagic form. The eruption sometimes starts in the neighbourhood of the vaccination and extends therefrom over the arms and trunk, while in other cases it begins on the face. On the face and back it shows a tendency to become confluent. Children with a sensitive skin are predisposed to post-vaccinal eruptions. The season is also important, as most cases were found in the hot summer months. Nieuwenhuyse's patient was a man, aged 52, who had been previously vaccinated at the age of 5; three weeks after revaccination he developed a polymorphous pruriginous eruption on the face, including the ears, lips, eyelids, neck, backs of the hands, and wrists. There was no rise of temperature, headache, or backache. The eruption lasted about a fortnight and then disappeared, leaving some staining.

183. Remission of Encephalomyelitis following Measles.

R. HÜRTHLE (*Deut. med. Woch.*, November 15th, 1929, p. 1922) records the case of a man, aged 49, suffering from disseminated encephalomyelitis, who, after an attack of measles complicated by pneumonia, showed a remarkable remission of all his symptoms, though recovery was not complete. Hürthle regards the improvement as a consequence of the attack of measles, and not merely as a coincidence, or analogous with the improvement in general paralysis as the result of malarial therapy.

Surgery.

184. Supernumerary Kidney.

H. L. KRETSCHMER (*Surg., Gynecol. and Obstet.*, December, 1929, p. 818), who records a personal case and has collected 29 others from the literature, states that true supernumerary kidney is generally regarded as the rarest of congenital renal anomalies. The first case on record was described by Martins in 1656. Of the 30 cases, 21 were clinical, 8 were discovered at necropsy, and in one the type was not mentioned. Of the clinical cases, two patients died after operation, one in eight days and the other in two months. The youngest patient was aged 9 months and the oldest 67 years. The largest number of cases occurred in the second decade of life; 15 were in females, 14 in males, and in one the sex was not stated. In 17 the left side was affected, in 12 the right side, and in one the side was not stated. In most of the cases the supernumerary organ was found below the normal kidney. In 11 cases the supernumerary ureter fused with the normal ureter, in 8 the ureters remained separate, in 7 the course of the ureters was not determined, and in the rest the ureter of the supernumerary kidney was lacking or ended in a blind sac. In 19 cases the supernumerary kidney, and in 10 the other kidney of the affected side, showed various lesions such as stone, pyonephrosis, or hydronephrosis, or was rudimentary. The symptoms were not characteristic; in 16 cases pain was present, other symptoms being nausea, vomiting, frequency of micturition, strangury, and pain in the bladder. A palpable tumour was found in 14 cases, no tumour was present in 6, and this point was not mentioned in 9 cases. Diagnosis before operation was made in only 4 cases. Nephrectomy of the supernumerary kidney was performed in 10 cases, nephrotomy of the supernumerary kidney and the kidney on the corresponding side in 2, nephrectomy in 1, pyelotomy in 1, nephropexy of both left kidneys in 1, nephropexy and

nephrectomy in 1, exploration only in 1, removal of tumour in 1, and no operation in 11. In one case the condition was found accidentally during an operation for ptosed colon. Kretschmer's patient was a woman, aged 22, whose symptoms started one week before operation with severe pain in the right renal region, nausea, vomiting, chills, and fever. A palpable tumour was present. At operation the supernumerary kidney, which showed infected hydronephrosis with dilatation of the ureter, was found behind the right kidney. The supernumerary ureter was fused with the other ureter outside the bladder. Nephrectomy of both right kidneys was performed and recovery took place.

185. Classification of Tumours.

D. A. WELSH (*Journ. Cancer Research Committee, University of Sydney*, November 1st, 1929, p. 167) discusses the principles of classifying new growths, and distinguishes four essential bases—namely, biological, histological, developmental, and regional. The biological basis separates the relatively innocent from the relatively malignant types, and for practical purposes this basis may be associated with a morphological one, which differentiates the epithelial, endothelial, and connective tissue types. The relation of epithelial and connective tissue new growths to the primitive layers of the embryo affords further assistance in classification, and from this and other considerations the author concludes by recognizing five main groups of tumour growths—namely, the connective tissue, epithelial, endothelial, haemopoietic tissue, and embryonic tumours. The last group includes such diverse types as papilloma and carcinoma of the trophoblast; blastocytoma and neuroblastoma; mixed tumours of the parotid and testis; teratomas of the genital glands; and tumours derived from developmental inclusions and abnormalities. Malignancy may develop in any one of these groups.

186. Torsion of the Great Omentum.

K. SCHWANK (*Münch. med. Woch.*, December 13th, 1929, p. 2095), who records an illustrative case of torsion of the great omentum, states that in most cases inguinal hernia is the cause of the condition. According to Lejars three varieties of omental torsion may be distinguished: (1) torsion in irreducible hernia; (2) torsion with an empty hernial sac after the hernia has been reduced; and (3) pure abdominal torsion without hernia. Most collected 146 cases of omental torsion associated with hernia and 19 cases of abdominal torsion only. To the latter must be added cases reported by Trojan and Schröder, as well as Schwank's case, so that there are now 22 examples of pure abdominal omental torsion on record. Their occurrence is very difficult to explain, but probably in the present case pregnancy was a factor. The diagnosis of torsion of the omentum is very difficult, the condition being usually first mistaken for acute appendicitis or cholecystitis, and the true state of affairs is not revealed until operation, which is the only possible treatment. Schwank's patient was a woman, aged 25, who developed severe pain in the right iliac region in the sixth month of pregnancy. A diagnosis of acute appendicitis or torsion of the right ovary was made and laparotomy was performed. An infarct of the omentum was found and part of the omentum measuring 15 cm. long by 5 cm. broad was resected. The patient made a rapid recovery and went to full term.

187. Congenital Malformation of Ileo-caecal Valve.

P. BOHÈME and M. RIVALLAND (*Rev. de Chir.*, No. 7, 1929, p. 455), who record six illustrative cases, including one which came under their own observation, state that congenital malformations of the ileo-caecal valve are extremely rare, and consist in atresia, a more or less tight stricture, or an absence of one of the segments. The functional consequence of these malformations is the production of a more or less complete intestinal occlusion, giving rise to a severe syndrome, from which the newborn infant rarely survives. When the stenosis is complete the child appears to be healthy at birth, but passes little or no meconium, and usually it is not till the second day that the symptoms of crying, restlessness, and vomiting develop. The abdomen becomes more or less distended, the pulse weak and rapid, the temperature subnormal, and in 95 per cent. of the cases death occurs on the fifth day, though some children may survive for a fortnight or three weeks. When the stenosis is not complete the symptoms are much less pronounced, and consist merely in indigestion and chronic constipation. The condition must be diagnosed from diaphragmatic hernia, intussusception, Hirschsprung's disease, and volvulus. The prognosis is very bad. Of 71 cases in which an operation was performed only one patient (reported by Fockens) survived; in this patient a side-to-side anastomosis was performed. The present authors' patient was a boy, aged 2½ years, who had suffered from constipation and indigestion ever since he was 3 weeks old. The child was admitted to hospital with symptoms suggesting volvulus or obstruction by a band, and the abdomen was opened. Enterostomy was performed, but death ensued on the following day. The condition proved to be one of congenital stenosis of the ileo-caecal valve, accompanied by colitis and pericolitis, which had given rise to symptoms of partial intestinal obstruction for two years until complete occlusion occurred.

188. Paratyphoid B Phlebitis.

B. GUNNLAUGSSON (*Med. Klinik*, December 13th, 1929, p. 1952) records the case of a woman, aged 69, the subject of varicose veins for years, who was admitted to hospital with a painful swelling on the left thigh, over which the skin was intensely reddened. The dilated saphenous vein was ligatured and a thrombus excised; recovery followed. Culture of the thrombus, as well as of the urine and stools, showed paratyphoid B bacilli. The patient had no signs of enteric fever, so that the discovery of the bacilli was a surprise.

Therapeutics.

189. Treatment of Ringworm of the Scalp.

AFTER commenting on the disadvantages and dangers attending the use of *x* rays and thallium acetate in the treatment of ringworm of the scalp, L. B. KINGERY (*Arch. Derm. and Syph.*, December, 1929, p. 737) records the results of a clinical trial of drugs the fungicidal and fungistatic activities of which have been previously demonstrated *in vitro*. Twelve cases of tinea capitis, eleven of which presented clinically a microsporon infection, and in ten of which the clinical diagnosis was confirmed microscopically, were treated in the following manner. The hair was clipped round the lesions if only one or two were present, and over the entire scalp if the disease was generalized. A washable cap was constantly worn and frequently changed. Soapsud shampoos were given twice a week, and three times daily a solution of gutta-percha in chloroform, containing 0.5 per cent. thymol and 1 per cent. oil of cinnamon, was applied. If this resulted in irritation, the frequency of the applications was decreased. Eight of these cases were cured, both clinically and microscopically, in periods varying from four months to one year; three other patients, according to letters from the parents, have enjoyed complete restoration of hair and no recurrence of symptoms over approximately equivalent periods. In the remaining case the mother reported the necessity of using other remedies, in spite of an apparently favourable response while under observation. Kingery considers that, while the evidence is far too limited to be conclusive, this simple method of treatment might well stand favourable comparison with the older and more complicated ones now in vogue.

190. Treatment of Exophthalmic Goitre.

G. HERRNHEISER and W. REDISCH (*Med. Klinik*, November 22nd, 1929, p. 1814) discuss treatment of exophthalmic goitre by iodine and exposure to *x* rays, and call attention to the mutual interference of these methods. They restrict operative treatment to the acute threatening form of Graves's disease, large multiple adenomata, and cases with tracheal compression. For all other types they recommend trial with *x* rays. They remark that formerly radiation tended to produce capsular thickening, so that if an operation had eventually to be performed the surgical difficulties were increased; modern *x*-ray technique has eliminated this objection. Many authors agree that iodine treatment alone is worth a trial in mild early cases, although others pronounce it dangerous unless used solely prior to operation. Patients who react well to iodine fall into three groups: the first group consists of the very small percentage who are completely cured by iodine treatment continued for six months to a year; patients in the second group are considerably improved by iodine, but must continue the treatment indefinitely; in the third group remission occurs merely in some of the symptoms, or if all are benefited the improvement is only fleeting, in spite of continued iodine medication. Stress is laid on the importance of a preliminary test to determine the patient's suitability for iodine treatment. Schwarz particularly emphasized the mutual incompatibility of iodine and *x*-ray treatment, but the present authors describe cases which contradict this view. Eleven patients in the third group were treated with iodine, and only their nervous and gastro-intestinal symptoms were benefited; after a course of *x* rays the cardiac signs, exophthalmos, subjective symptoms, and the basal metabolic rate were much improved. Fourteen patients were also successfully treated with *x* rays although a preliminary test had revealed unsuitability for iodine administration. Survey of all the results indicated that the course of *x*-ray treatment was quite uninfluenced by previous iodine therapy, and the authors think that occasionally both treatments may be simultaneously employed with good results.

191. Belladonna in Sea-sickness.

J. BOHEC (*Presse Med.*, January 4th, 1930, p. 21) maintains that there are many types of sea-sickness—for example, those of vagotonic, sympathicotonic, amphoneurotonic causation—and that successful treatment, both preventive and curative, depends on a correct diagnosis of the type. Dealing only with the first-named form, he remarks that sea-sickness is usually accompanied by a typical vagotonic crisis, and those individuals predisposed to the malady are usually vagotonics; therefore, as a preventive, a vagus depressant should be given. The well-known beneficial effects of atropine are due to its inhibitory action on the sensory filaments of the pneumogastric and on the motor nerves. Since it also excites the bulbar centre, provoking the nausea reflex and vomiting, it should be combined with a central depressant, such as morphine. Stoll has shown that the active principle of belladonna is not atropine, but the levo-rotatory hyoscyamine. Bohec has for the past year obtained satisfactory results in sea-sickness by the administration of an analogous product, bellafoline, which is composed of the total alkaloids of belladonna in a pure state. Bellafoline is as toxic as atropine, but it is twice as active and its effects last twice as long. The use of morphine has also been abandoned for belladenal, a combination of bellafoline and gardenal. As a preventive, before embarking and during the first days at sea, four tablets of bellafoline (one every two hours) should be given during the day, and, as a necessary complement, two tablets of belladenal on retiring; the latter will ensure a good night's sleep, which in itself is of great curative value. In cases of actual sea-sickness hypodermic injections of bellafoline should be given. It is rarely necessary, the author adds, to give more than 1.5 mg. during twenty-four to thirty-six hours; this should be administered in 0.5 mg. doses at six-hour intervals.

192. The Action of Carbon Dioxide Baths.

F. KOZA (*Bratislavské Lekárske Listy*, November, 1929, p. 1163) describes the action of carbon dioxide baths in eighty cases of arterial hypertension. The temperature of the baths ranged from 27° to 22° C.; the duration of them was twenty minutes. The patients experienced no unusual sensations while in the bath, and the skin did not change colour. Measurement of the carbon dioxide in the expired air proved that much less carbonic acid was absorbed by the skin in a dry carbon dioxide bath than in a wet one; in all cases there was a fall of the blood pressure while the patient was in the bath. The baths had a marked sedative effect on the climacteric disturbances in women, even in the absence of increased blood pressure; they also proved beneficial in cases of angina pectoris with high blood pressure. The author has tested the influence of carbon dioxide on the blood pressure in rabbits with permanent artificially-induced arterial hypertension. In these experiments the carbon dioxide was applied in three different ways: (1) in a gas bath; (2) by means of intraperitoneal insufflation of carbon dioxide; and (3) by means of an infusion of water saturated with carbon dioxide. In each case there followed a fall of the blood pressure amounting to two-thirds of the artificially induced rise. The most rapid and prolonged fall of the blood pressure occurred after the intraperitoneal insufflation of carbon dioxide. Koza believes that carbon dioxide baths act probably through the peripheral vascular system; the stimulation of the respiratory centre by this gas prevents its accumulation in the organism.

193. Harmine (or Banisterin) in Post-encephalitis.

K. BERINGER and K. WILMANNS (*Deut. med. Woch.*, December 13th, 1929, p. 2031) have studied the little-known alkaloids harmine and banisterin, and have confirmed the observations of other workers that these substances are chemically and therapeutically identical, and also with the drug "Yagéin," which was originally obtained from a South American climbing plant known to the natives as "el Yaqué," and was used by them as an intoxicant. The authors have also confirmed by numerous therapeutic investigations on Parkinsonian disease the previously established experience of the action of the drug on the extrapyramidal motor system. The alkaloid causes no injurious effects, and there is no evidence of "habit" resulting from its use. The best results were obtained by subcutaneous injections in doses of 0.02 to 0.04 gram; good results were also obtained by the use of suppositories, and in tablet form by the mouth, though the action is delayed. Harmine is said to be especially indicated in cases of post-encephalitic extrapyramidal disturbances. Sometimes the administration of harmine alone is without effect, but if combined with other alkaloid derivatives of the Solanaceae group good results can be obtained.

Laryngology and Otology.

194. Oesophageal Stricture due to Corrosion.

REBATTU and PARTHIOT (*Rev. de Laryngol., d'Otol. et de Rhinol.*, November 15th, 1929, p. 613) describe the management of cases of injury to the oesophagus following the ingestion of corrosive acids and alkalis. They avoid gastrostomy, if at all possible, giving large quantities of saline solution and glucose by the rectum and copious fluids by the mouth. If, however, there is absolute dysphagia and increasing tachycardia, together with general deterioration of the patient, then only do they perform gastrostomy. They comment on the rapid improvement of the patients following the operation. They state that all these cases result in stricture, which can almost always be treated by dilatation with the aid of the oesophagoscope, there being very few cases where there are indications for the more drastic method of diathermy. The authors advise that at least four weeks should be allowed to elapse before the beginning of treatment by dilatation. Although earlier dilatation is easier and more rapid, the risks to the oesophagus are too great. Dilatation must always be conducted under control of the vision. In very difficult cases the dilatation is started by means of a filiform bougie and then olive-headed gum-elastic bougies are carefully passed. The largest bougie which can be introduced at each sitting is left in the oesophagus till the next day. This is usually well tolerated, but the authors recommend in addition a hypodermic injection of morphine and atropine. Dilatation must be performed at least twice a week until swallowing is normal; since these strictures tend to recur, the passing of a large-sized bougie every three months is advised.

195. Ethmoiditis in Children.

ROUGET and FERRAND (*Arch. Int. de Laryngol.*, September-October, 1929, p. 909) describe cases of ethmoiditis in children which they have had the opportunity of observing in the Hôpital Trousseau. In children ethmoiditis usually occurs without involvement of the other nasal sinuses, in marked contradistinction to the condition in adults. Adenoids constitute an important predisposing cause, and the most severe cases are observed in the acute specific fevers, especially scarlet fever, where there is usually a suppurative condition from the outset of the ethmoidal disease. In studying the bacteriology of these cases it was found that a staphylococcus was present four times as frequently as a streptococcus. Clinically the condition is usually one of an orbital cellulitis with very few signs in the nose. Following a coryza, or in the course of a specific fever, a swelling is noticed at the inner canthus of one eye. There is oedema of both lids, and if the swelling is very marked there may be diplopia, caused by the displacement of the globe outwards and downwards. The maximum pain is felt at the inner aspect of the orbit. The conjunctiva is normal, but there is slight limitation of movement of the globe in a vertical direction in cases associated with much oedema. The fundus is always normal, and signs in the nose are always very slight, but *x*-ray examination shows opacity of the ethmoid on the affected side. In studying the course of these cases two definite types are found—a congestive type, which rapidly subsides, and a suppurative type, where the swelling increases and the temperature remains high. These severe cases usually follow scarlet fever. Prognosis is good in the congestive type, and in the suppurative cases if the ethmoid alone is involved. In streptococcal cases, however, the prognosis must always be guarded, the complications to be feared being orbital phlegmon and meningitis. Treatment of the congestive type is nasal antisepsis, with vaccines in selected cases. Suppurative ethmoiditis must be treated surgically, and the authors regard insomnia as an absolute indication for operation. The orbital route is the approach recommended.

196. Treatment of Mastoiditis in Infants.

F. FIORETTI (*Arch. Ital. di Otol., Rinol. e Laringol.*, November, 1929, p. 703), who records four illustrative cases in children aged from 4 to 12 months, states that, with the exception of a case of fibro-angioma of the parotid, he has never encountered an example of rapid death among all the infants operated on either in the ear, nose, and throat clinic of Rome or in his private practice, whether the operation was performed under a general anaesthetic with ether and chloroform or a local anaesthetic. He is of opinion, however, that in cases of acute mastoiditis in infants it is better to use local in preference to general anaesthesia, and to limit the operation if possible to Wilde's incision and drainage as in the case of an ordinary abscess. He holds that the rapid death described by some authors after otological operations in infants is attributable to the status thymolymphaticus, and particularly to an insufficiency of the chromaffin system.

Obstetrics and Gynaecology.

197. Etiology and Treatment of Membranous Dysmenorrhoea.

G. COTTE (*Presse Méd.*, November 27th, 1929, p. 1542) gives his reasons for disagreement with the generally accepted idea that membranous dysmenorrhoea is the result of an endometritis. In his opinion the pathological findings are not conclusive, and there is not necessarily evidence of inflammation. There are nearly always pains of ovulation at the same time as the menstrual pains. Generally the periods are menorrhagic in type, and, the uterus being found to be voluminous, metritis is at once suspected. Cotte believes that this type of dysmenorrhoea results from some disturbance of the ovarian function which provokes the uterine hyperplasia, the production of membranes and their expulsion being due to functional trouble associated with the uterine mucosa. That the expulsion of membranes is not the sole cause of pain is proved, he thinks, by the results of dilatation and curetting. Further, in these cases, where pregnancy occurs the trouble nearly always returns. Welles records a case of 15-year-old twins who both suffered from this complaint, one so severely that she was compelled to stay in bed for forty-eight hours during each period, which lasted for eight to ten days and was accompanied by much loss of blood, great pain, insomnia, nausea, and vomiting. No therapeutic measures had any success, and ultimately some surgical intervention was considered to be necessary. An abdominal operation was undertaken, and examination revealed the presence of a very large uterus showing no pathological abnormality except hypertrophy. The ovaries and tubes were healthy, and nowhere was there any sign of inflammation, recent or old. The presacral nerve (pelvic sympathetic) was resected for about half an inch and the wound closed. The patient made a normal recovery and returned home. About a year later she reported that she was now quite normal, with regular five to six day periods every twenty-eight days; occasionally small shreds of membrane were passed, but without pain. Vomiting and insomnia had disappeared, and the mental condition had greatly improved. The uterus was found to be less voluminous and to have lost its fibromatous character; micturition had become easy. The membranous dysmenorrhoea of the twin sisters persists and appears to be growing worse, but so far there has been no actual incapacity for work.

198. Puerperal Inversion of the Uterus.

F. S. KELLOGG (*Amer. Journ. Obstet. and Gynecol.*, December, 1929, p. 815) suggests a reclassification of inversion of the uterus subsequent to the birth of the child, and indicates the appropriate treatment for each variety. The first of his three groups comprises cases of acute inversion detected before the formation of the cervical ring; immediate manual replacement from below is the appropriate treatment. The second class includes the more common variety encountered, the inversion being discovered after the formation of the cervical ring. He terms these cases "subacute," and recommends the adoption of Huntington's procedure—namely, abdominal replacement of the inverted uterus. He believes that an attempt to secure replacement by manual pressure from below, or performance of the Spinelli operation, is quite unjustifiable in view of the condition of the tissues. In the third class—that of chronic inversion—the Spinelli type of cervix splitting from below is advised. He adds that, unless inversion occurs in a patient whom he has previously delivered, he prefers to assume that the cervical ring has already formed, and to make use of abdominal replacement, since the ring appears to develop in a very short time.

199. Haematuria in Pregnancy Hydronephrosis.

THOUGH haematuria is well recognized as a symptom of hydronephrosis, and also as occurring during pregnancy, little reference is made in the literature to the fact that in pregnancy the haematuria may be due to a simple hydronephrosis. C. N. SWANSON (*Journ. Amer. Med. Assoc.*, November 16th, 1929, p. 1551) reports the case of a woman, aged 33, who was admitted to hospital with marked haematuria, which persisted during the last four months of pregnancy and the first two weeks of the puerperium; no pathological abnormality other than hydronephrosis could be detected, though several careful urological examinations were made. Labour was uneventful, and there has been no return of the haematuria since the patient's discharge from hospital. The patient's mother suffered similarly in the last of five full-term pregnancies. Swanson remarks that it would seem that serious disease of the genito-urinary tract could be eliminated as a possible explanation of the haematuria, and a blood dyscrasia was equally ruled out by blood tests in this particular patient. He suggests that the blood vessels (capillaries) must have undergone some temporary alteration in consequence of passive congestion, which made them permeable to blood cells over a considerable period of time, while the definite time relationship to gestation indicates that the pregnancy was an actual causal factor. The occurrence of haematuria with hydronephrosis, especially during pregnancy, in both mother and daughter seems to imply that this peculiarity may have been directly transmitted.

Pathology.

200. The Blood Diastase after Operations on the Stomach.

SINCE various workers have shown that traumatic injury of the pancreas, or its experimental production in dogs, leads to an increase in the diastase in the blood, and some injury to the pancreas is inevitable in the surgical treatment of a proportion of gastric and duodenal ulcers, particularly when they are of the penetrating type, H. L. POPPER (*Deut. Zeit. f. Chir.*, November, 1929, p. 273) has estimated the diastase content of the blood in 50 cases of gastrectomy (17 gastric ulcers, 25 duodenal ulcers, 6 carcinomas, and 2 extensive adhesions). The tests were carried out on citrated blood before the operation, six to eight hours after it, and again twenty-four hours after it; they were repeated subsequently if there was any rise. In 41 cases no change was revealed or only a minimal post-operative rise; in 4 there was a slight rise of short duration, and in 5 a definite rise. Of the last five patients two died, and the post-mortem examination revealed peritonitis and fat-necrosis. Popper advocates that the diastase content of the blood should be watched in those patients in whom the pancreas may have been injured at the gastric operation, as well as in those in whom post-operative tachycardia, meteorism, or other peritoneal symptoms suggest incipient pancreatitis. If the diastase value, estimated daily or twice a day, shows a persistently high value, or continues to rise, it may be taken in conjunction with other clinical signs as evidence of involvement of the pancreas, and as an indication for early laparotomy before a failing heart and general toxaemia make the prognosis practically hopeless.

201. Sterilization of Insulin.

U. CAZZANI (*Biochem. e Terap. Sperim.*, November 30th, 1929, p. 563) has noted the changes in the hypoglycaemic effect of insulin after sterilization by heat for varying periods, by filtration, and by exposure to ultra-violet radiation. Rabbits kept without food for twenty-four hours were injected subcutaneously with 0.3 c.cm. of insulin solution, containing 10 clinical units per cubic centimetre, the *p*H being 4; the blood sugar was estimated by Bertrand's method, using 4 c.cm. of blood obtained either at the hypoglycaemic crisis or three hours after the injection of the insulin. Cazzani finds that a solution of insulin, of reaction about *p*H 4, can be heated to boiling point for five minutes with only slight loss of hypoglycaemic action, that this loss is increased by prolonged heating, and that after heating for thirty minutes, with complete sterilization, the hypoglycaemic crisis is reduced from 100 per cent. to 33 per cent.; the same insulin solution filtered through Berkefeld candle V, or exposed to ultra-violet radiation for half an hour before being injected into rabbits, failed in every instance to produce the typical convulsions of hypoglycaemia. The author explains the varying effects of heat, filtration, and radiation of insulin solutions reported in the literature as due to the varying methods of preparing the solution.

202. Experimental Tuberculosis Infection by the Nose.

P. REMLINGER and J. BAILLY (*C. R. Soc. de Biologie*, December 13th, 1929, p. 821) have compared the conjunctival and the nasal routes of inoculation of tubercle bacilli into guinea-pigs. In the first experiment two suspensions, one of human and one of bovine bacilli, each containing 10 mg. of bacilli per cubic centimetre, were prepared; one drop, containing 0.5 mg. of bacilli, was allowed to fall into the eye or the nose of a small series of guinea-pigs. Two animals inoculated intranasally with the human strain died after an average time of 91.5 days, whereas the two inoculated through the eye died after 103 days. The two animals inoculated intranasally with the bovine strain died in 109 days, and the two by the eye in 88.5 days. The experiment was repeated on the same number of animals, and the figures obtained were 152.5, 157.5, 71.5, and 118 days respectively. These experiments suggest that death after intranasal inoculation occurs perhaps even more rapidly than after conjunctival inoculation. The general course of the illness and the post-mortem lesions were approximately the same whatever the route used for inoculation. The authors explain their results by supposing that the foreign material introduced into the nose remains longer in contact with the mucosa than when introduced into the conjunctival sac.

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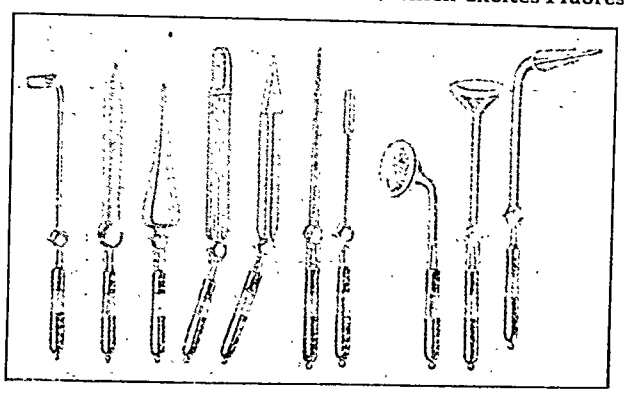
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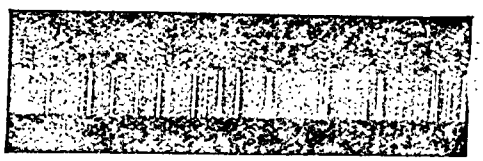
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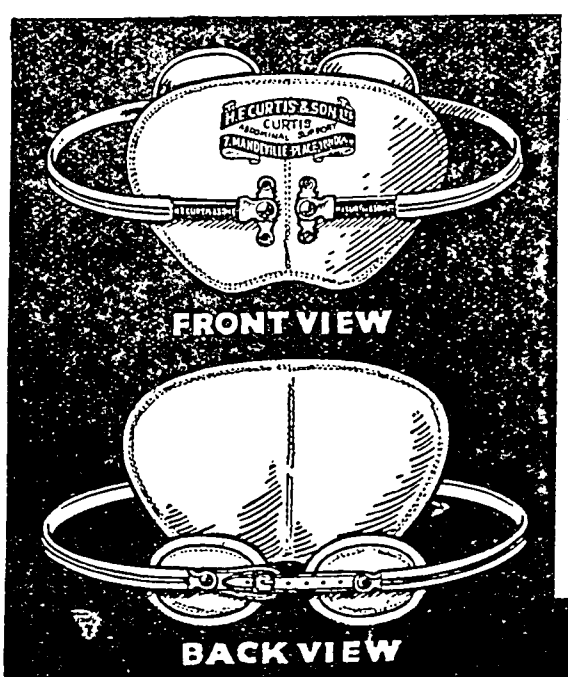


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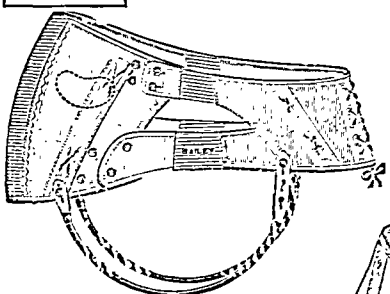
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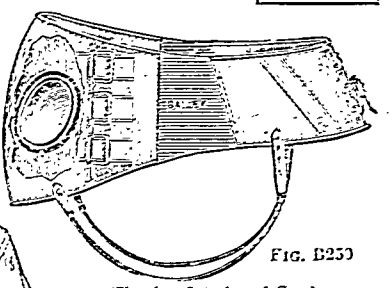
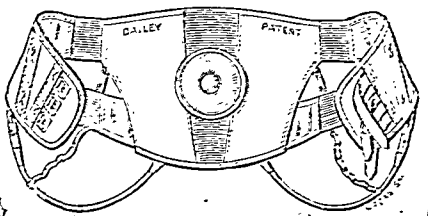


FIG. B250
(Showing Interior of Cup)
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No. 5a BELT (Bailey's Patent)
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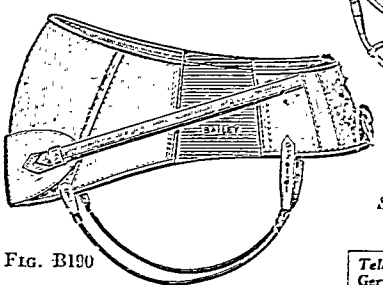
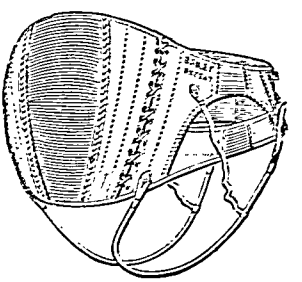


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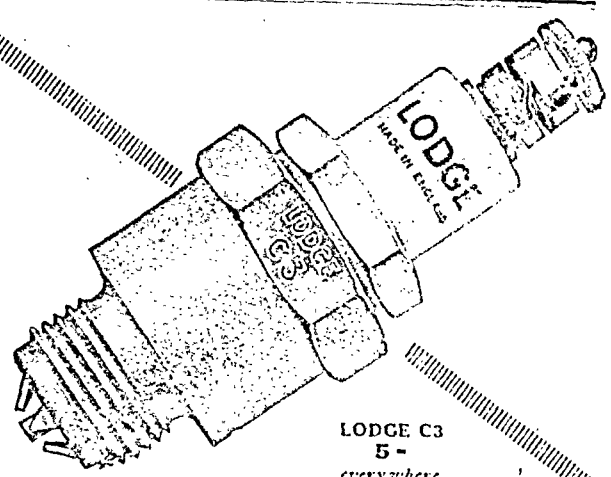
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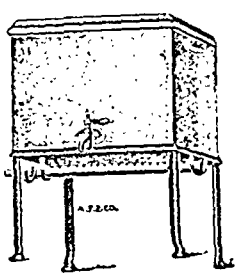
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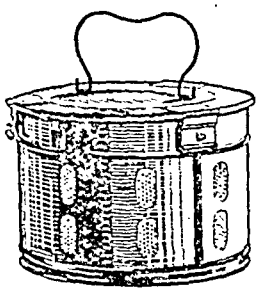
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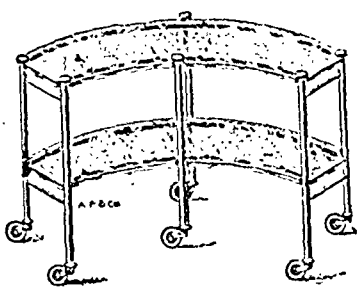


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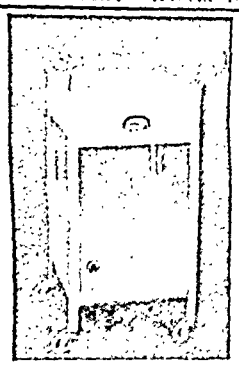


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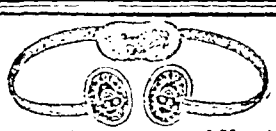


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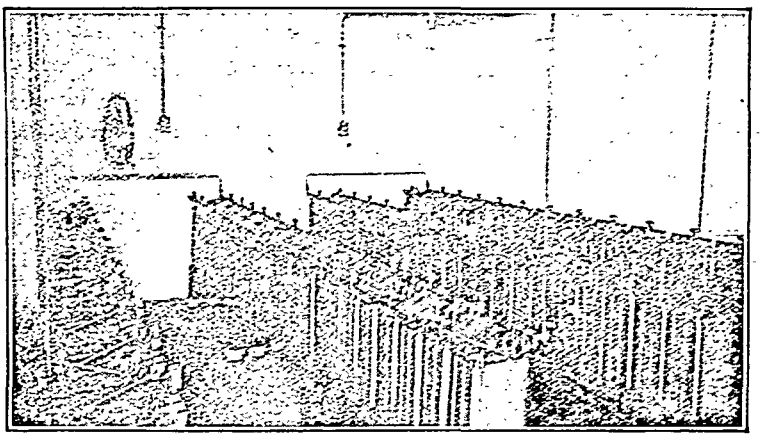
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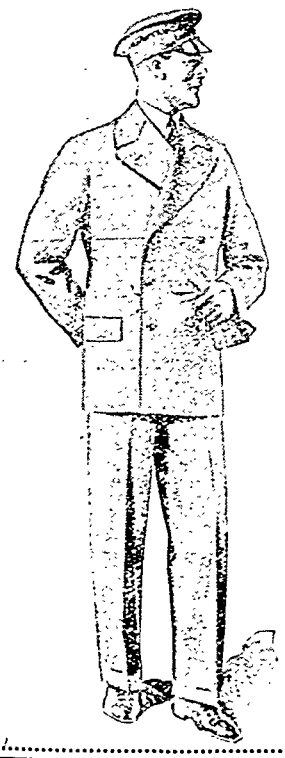


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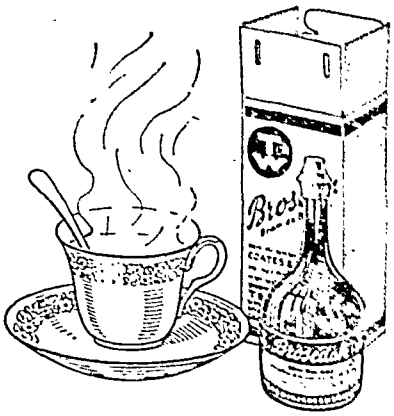
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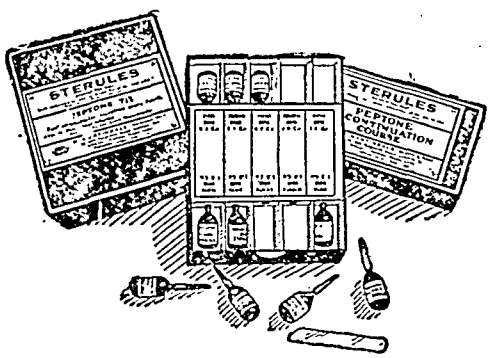
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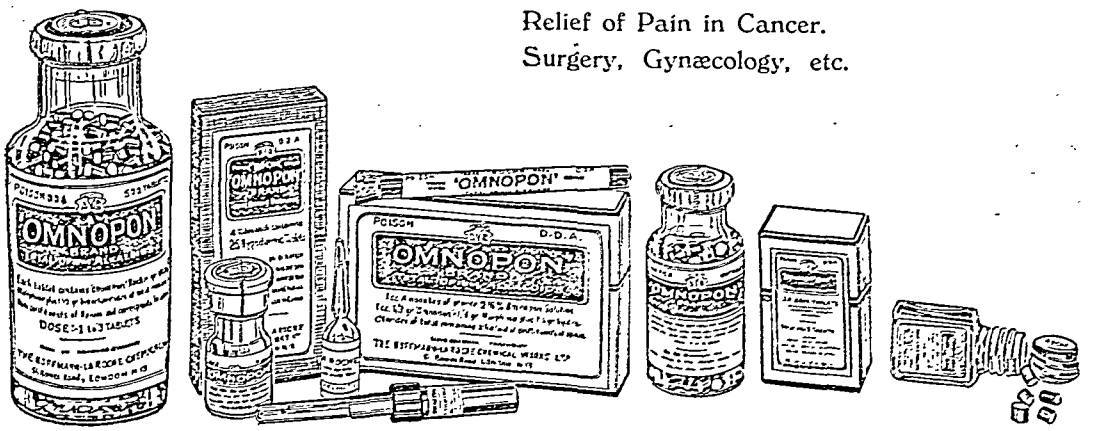
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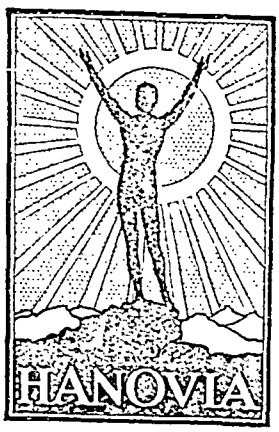
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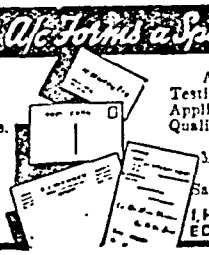
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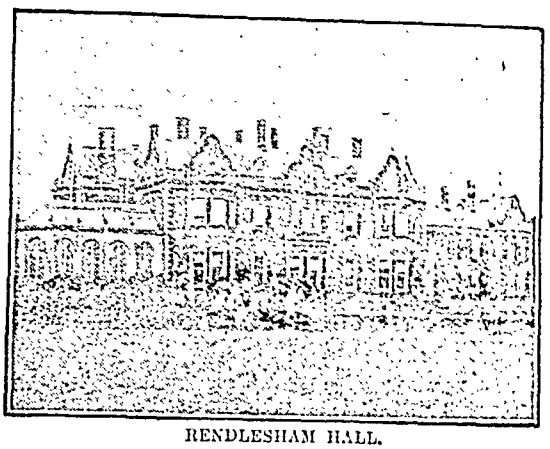
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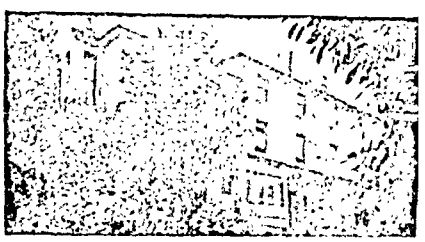
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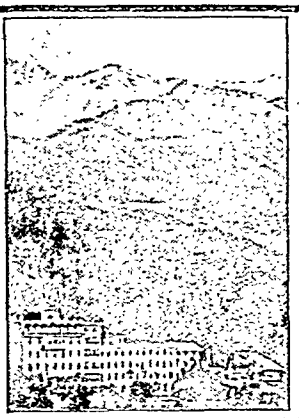
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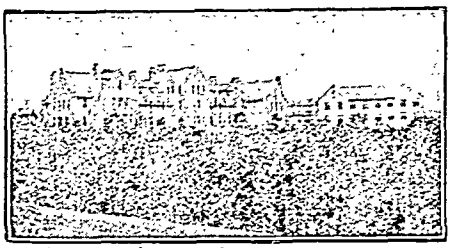
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List and Prospectus from Principal.

Special Terms to Medical Men.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS commence 8 weeks prior to each EXAM. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

Royal College of Physicians of LONDON.

Dr. J. A. GLOVER, O.B.E., will deliver the MILROY LECTURES on February 27th and March 4th and 6th, at 5 o'clock, at the College, Pall Mall East, S.W.1.

Subject: *"The Incidence of Rheumatic Diseases."*

Any member of the Medical Profession admitted on presentation of card.

By Order of the President,

H. M. BARLOW, Bedell & Secretary.

Royal College of Physicians of LONDON.

The next ordinary PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Wednesday, April 9th, 1930.

Candidates are required to give twenty-one days' notice, in writing, to the Registrar of the College, to whom all certificates and testimonials required by the By-laws must be sent at the same time.

Candidates who propose to submit published work under the Regulations now in force should apply, in writing, to the Registrar, without delay, for detailed instructions as to the procedure they should follow.

RAYMOND CRAWFURD, M.D.,
Registrar.

University of Birmingham.

FACULTY OF MEDICINE.

ASSISTANT LECTURER AND DEMONSTRATOR IN ANATOMY.

Applications are invited for the post of Whole-time Assistant Lecturer and Demonstrator in Anatomy. Stipend £300 per annum. Four copies of application, with testimonials, should be sent, not later than Monday, March 10th, to the undersigned, from whom further particulars can be obtained.

The University, C. G. BURTON,
Edmund Street, Secretary.
Birmingham. February, 1930.

Leamington Provident DISPENSARY.

In consequence of the resignation of F. R. SUTTON, Esq., M.D., there will be a vacancy at the end of this Quarter on the Medical Staff of the Leamington Provident Dispensary, and the Committee will appoint a MEDICAL OFFICER in ORDINARY to fill it.

Applications, in writing, for this appointment, accompanied by testimonials, should be addressed to the Chairman, Provident Dispensary, Holly Walk, Leamington Spa, and must be received at the Dispensary on or before Tuesday, March 11th.

Copies of the Rules and particulars can be obtained on application to—

F. H. WACKRILL, Secretary.

Grosvenor Sanatorium, Ashford, KENT.

SECOND ASSISTANT MEDICAL OFFICER (male, single, under 40 years of age) required for three months. Salary £250 with board, lodging, and laundry. Applications, together with copies of recent testimonials, to Dr. J. ABERDEIN MILNE, Medical Superintendent.

City and County of Kingston-upon-Hull.

APPOINTMENT OF MEDICAL SUPERINTENDENT.

The Corporation invite applications for the appointment of a Medical Superintendent of the CITY FEVER HOSPITAL and the SANATORIUM at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum, together with housing accommodation, rates, and lighting. The age of candidates is not to exceed 40 years.

At present the Fever Hospital contains 112 beds and the Sanatorium 152 beds, but extensions are contemplated, and it is proposed later to build an Orthopædic Hospital on the site, of which the Medical Superintendent will have administrative charge.

Candidates should either have held an appointment of Medical Superintendent of a Sanatorium with the approval of the Ministry of Health, or should, subsequent to qualification,

(1) Have had at least three years' experience in the practice of their profession,
(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases, and
(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

They should further possess a wide clinical knowledge of infectious diseases.

The gentleman appointed, who should be married, will be under the administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than March 8th.

Health Department, W. M. FRAZER,
Guildhall, Medical Officer of
Hull. Health.
February 18th, 1930.

City and County of Kingston-upon-Hull.

APPOINTMENT OF TUBERCULOSIS OFFICER.

The Corporation invite applications for the post of Clinical Tuberculosis Officer at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum. The age of candidates is not to exceed 40 years.

Candidates should either have held a previous appointment as Tuberculosis Officer with the approval of the Ministry of Health, or should, subsequent to qualification,

(1) Have had at least three years' experience in the practice of their profession,
(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases, and
(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

The gentleman appointed will rank as a Senior Assistant Medical Officer of Health, and will work under the general administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than March 8th.

Health Department, W. M. FRAZER,
Guildhall, Medical Officer of
Hull. Health.
February 18th, 1930.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence, and laundry.

Candidates should hold the Fellowship of the Royal College of Surgeons.

The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than Tuesday, Feb. 25th.

PERCY G. BROOKS, Secretary.

County Borough of Dudley.

MEDICAL OFFICER FOR THE TREATMENT OF VENEREAL DISEASES AND FOR MATERNITY AND CHILD WELFARE WORK.

The Dudley Corporation invite applications for the above post at a salary of £750 per annum. Applicants must be under 40 years of age and must be fully registered Medical practitioners. Experience in modern methods of diagnosis and treatment of Venereal Diseases essential, and a D.P.H. will be considered an additional advantage. When not engaged in the treatment of Venereal Diseases the Medical Officer will be expected to conduct a Maternity and Child Welfare Centre and otherwise assist in the Health Department.

The officer appointed will be for administrative purposes under the Medical Officer of Health.

Applications, stating age, experience, and qualifications, endorsed "Medical Officer," and accompanied by copies of three recent testimonials, must be received by the undersigned not later than February 25th.

Municipal Buildings, GEO. C. V. CANT,
Priory Street, Town Clerk.
Dudley. February 11th, 1930.

Metropolitan Asylums Board.

DARENTH TRAINING COLONY FOR THE MENTALLY DEFECTIVE.

A MEDICAL SUPERINTENDENT is required for duty at the DARENTH TRAINING COLONY, DARTFORD, KENT, in the service of the Metropolitan Asylums Board.

Candidates must be under 40 years of age, unless already in the service of the Board or of the London County Council, and must be registered to practise both in Medicine and Surgery in England. The position is pensionable. Salary £1,000 a year, plus fluctuating temporary additions, making the total commencing remuneration at present about £1,265 a year, with unfurnished house (rates, taxes, and water supply free). Full particulars and conditions of appointment on form of application (on which alone application can be made) obtainable by sending stamped addressed foolscap envelope to the Clerk to the Metropolitan Asylums Board, Victoria Embankment, E.C.4.

Applications must be received by Feb. 28th.

ALLAN POWELL,
Clerk to the Board.

Parish of Stepney.

RESIDENT ASSISTANT MEDICAL OFFICERS.

The Guardians invite applications from duly qualified registered Medical Practitioners for the vacant posts of Resident Assistant Medical Officer at their MILE END HOSPITAL, Bancroft Road, Mile End, London, E.1.

Salary £450 per annum, in addition to the customary residential emoluments of rations, lodging, and washing, valued for the purposes of superannuation at £120 per annum.

Candidates must have previously held a Resident Hospital appointment.

Forms of application and particulars as to duties may be obtained from the Medical Superintendent of the Hospital, or will be forwarded from the undermentioned address upon receipt of a stamped addressed foolscap envelope, and must be returned to me by not later than Saturday, March 1st.

By Order,

Administrative Offices, S. McCLELLAND,
Bancroft Road, Clerk to the
Mile End, E.1. Guardians.
February 11th, 1930.

City of Bradford.

MUNICIPAL GENERAL HOSPITAL, ST. LUKE'S.

HOUSE PHYSICIANS and HOUSE SURGEONS required. Salary in each case £200 per annum, with board and lodgings.

These appointments are for six months, renewable for a further period of six months.

Application forms may be obtained from the Medical Officer of Health, Town Hall, Bradford, and should be returned to him not later than February 28th.

Town Hall, N. L. FLEMING,
Bradford. Town Clerk.
February 5th, 1930.

Edinburgh Hospital for Women AND CHILDREN,

Whitehouse Loan, EDINBURGH.

Applications are invited from qualified Medical Women for the post of JUNIOR RESIDENT SURGEON at the above Hospital. The appointment is for six months from April 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before March 12th.

Kent County Council.

ASSISTANT MEDICAL OFFICER (MATERNITY AND CHILD WELFARE).

The Kent County Council invite applications for the post of an Assistant Medical Officer (female). Salary £600 per annum, increasing by £12 10s. increments to £650. Candidates should be not more than 40 years of age.

The person appointed will be required to devote her whole time to the duties of the office, and will be under the administrative control and supervision of the County Medical Officer.

The duties will mainly consist of work in connection with the maternity and child welfare scheme, but will include any other duties allotted to the officer as coming within the purview of the County Health Department.

Preference will be given to candidates who have had special experience in connection with maternity work, and the Diploma of Public Health is desirable.

The appointment is subject to the approval of the Ministry of Health and also to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and will be terminable by three months' notice on either side. The person appointed will be required to pass a medical examination as to physical fitness.

Applications, stating age, qualifications, training, and full particulars of past experience, and accompanied by copies of three testimonials, should be submitted to Dr. A. GREENWOOD, County Medical Officer, Sessions House, Maidstone, not later than February 22th.

No official form of application will be issued, and canvassing will be considered a disqualification.

ALFRED GREENWOOD, M.D.,
Sessions House, County Medical Officer.
Maidstone. February 10th, 1930.

City of Plymouth.

MEDICAL SUPERINTENDENT.

MENTAL HOSPITAL.

The Visiting Committee invite applications for the post of Medical Superintendent of the Plymouth City Mental Hospital, Blackadon, Ivybridge, near Plymouth.

Candidates must be duly registered Medical Practitioners who have had experience in the management of a Mental Hospital.

The salary will be £750 per annum, rising by £50 per annum to £1,000 per annum, and the Committee will provide, in addition, a furnished house at Blackadon (where the Medical Superintendent will be required to reside), and coal, light, laundry, vegetables, and dairy produce free. The total value of these emoluments is estimated, and will be taken for the purpose of the Asylum Officers Superannuation Act, 1909, as being worth £200 per annum.

The person appointed must devote his whole time to the duties of the office, and such duties will include those of Certifying Officer under the Mental Deficiency Acts and also (if required) of Medical Officer in Charge of the Mental Clinic.

Canvassing, directly or indirectly, will be a disqualification.

Forms of application and further particulars may be obtained on application to the undersigned.

Applications to be sent to the undersigned, endorsed "Medical Superintendent, Mental Hospital," on or before March 1st.

Dated this 6th day of February, 1930.

Municipal Offices, R. J. FITTALL,
Plymouth. Town Clerk.

County Borough of Dewsbury.

DEPUTY SCHOOL MEDICAL OFFICER AND DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Practitioners (men or women) for the post of Deputy School Medical Officer and Deputy Medical Officer of Health (Tuberculosis and Child Welfare).

Applicants should have had at least three years' experience since qualification. Experience in Eye work and Refractions is essential. The possession of the D.P.H., and previous experience in School Medical Inspections and the work of a School Clinic, and in Tuberculosis and Child Welfare, will be considered important additional qualifications.

The inclusive salary will be at the rate of £550 per annum. Particulars of the duties and conditions of appointment, together with the application forms, may be obtained from Dr. R. M. GALLOWAY, Medical Officer of Health, Market Place, Dewsbury, to whom all applications, accompanied by copies of not more than three recent testimonials, should be returned, endorsed "Deputy Medical Officer of Health," not later than Friday, February 28th.

Town Hall, HOLLAND BOOTH,
Dewsbury. Town Clerk.
February, 1930.

Willesden Urban District COUNCIL.

HEALTH DEPARTMENT.

APPOINTMENT OF DENTISTS.

The Willesden Urban District Council require the services of Two Dentists.

The duties attached to this post include the Dental Inspection and Treatment of School Children and the Dental Inspection and Treatment of Expectant and Nursing Mothers, and Children under five years of age, and such other duties as the Council or Medical Officer of Health may require to be undertaken.

The Dentists work under the administrative control of the Medical Officer of Health.

The appointments are terminable by a month's notice on either side, is subject to the Council's regulations concerning Officers of the Council, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922. The age of candidates should not exceed 40 years, unless they are at present occupying an established post under the Act.

The successful applicants will be required to pass a medical examination.

Candidates must possess a registrable qualification in Dentistry, and devote their whole time to the duties of the office.

Commencing salary £420, rising by four annual increments to £517 10s., with Civil Service bonus in addition, which bonus fluctuates according to the rise or fall in the cost of living, revision being made every six months—namely, March 1st and September 1st. At the present time the commencing salary and bonus is at the rate of £572 6s. 4d. per annum.

Travelling expenses within the district paid by the Council.

Application forms may be obtained on application by letter (enclosing stamped addressed envelope) to the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6, and should be returned to him duly filled in by applicant, together with copies of three testimonials, not later than Friday, March 7th.

Town Hall, E. A. PRATT,
Dyne Road, Clerk of the
N.W.6. Council.

City of Manchester.

The Public Health Committee of the Corporation require the services of a fully qualified Whole-time Woman MEDICAL OFFICER, experienced in midwifery and children's diseases, to hold (under the direction of the Medical Officer of Health) consultations and infant clinics at the Maternity and Child Welfare Centres of the Manchester Corporation, and (under the like direction) to perform such other duties as appertain to the office.

The salary will be £500 per annum.

A statement of the duties and conditions of office may be had on application, in writing, to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester.

Applications, stating age and experience, and endorsed on the envelope "Medical Officer, Child Welfare," must be sent in addressed to the Town Clerk only, and not to members of the Committee or Council, not later than Saturday, March 1st, and be accompanied by not more than three recent testimonials.

The successful candidate will be required to contribute to the Corporation Superannuation Fund, and to execute their deed of service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, F. E. W. HOWELL,
Manchester. Town Clerk.
February 11th, 1930.

Birmingham Union.

WESTERN HOUSE.

ASSISTANT MEDICAL OFFICER (Female).

Applications are invited from fully qualified Medical Practitioners for the above appointment. The Institution accommodates 1,800 inmates, embracing all classes except mental defectives.

The person appointed will be required to assist in the general medical work of the Institution and to undertake such other duties as may be assigned to her. The appointment is a whole-time one.

The salary attached to the post, which is non-resident, is at the rate of £500 per annum, without other emoluments. A percentage deduction will be made from the salary for superannuation purposes.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach me not later than Monday, March 3rd.

Canvassing, directly or indirectly, will disqualify.

Union Offices, C. P. BEECH,
Edmund Street, Clerk to the
Birmingham. Guardians.
February 14th, 1930.

Willesden Urban District COUNCIL.

APPOINTMENT OF MEDICAL OFFICER (ASSISTANT, MALE).

A Whole-time Medical Officer (Assistant, male), holding a registrable qualification in Public Health, is required in the Health Department of the Willesden Urban District Council.

The salary will be £600 per annum, rising after three years' satisfactory service by increments of £30 per annum to £750 per annum. No bonus will be paid.

The appointment is subject to the Local Government and Other Officers Superannuation Act, 1922, and no candidate over 40 years of age will be appointed.

Applicants should have had experience in Ante-natal and Maternity work, Diseases of Children, and Infectious Diseases.

Application forms, with full particulars of the appointment, may be obtained from the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6, and must be returned to him not later than 9 a.m. on Saturday, March 7th.

Envelopes containing communications relative to this appointment must have "Medical Officer" written on them on the top left-hand corner.

Town Hall, E. A. PRATT,
Dyne Road, Clerk of the Council.
Kilburn, N.W.6. February, 1930.

County Borough of West HARTLEPOOL.

MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

The Council of the County Borough of West Hartlepool invite applications from duly qualified and registered Medical Practitioners holding the Diploma in Public Health for the appointment of Medical Officer of Health and School Medical Officer.

The salary will be £900 per annum, rising by two annual increments of £50 to £1,000 per annum.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, and will not be allowed to engage in private practice. He will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be, in future, assigned to him.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than Saturday, March 1st.

Town Clerk's HAROLD W. STANTON,
Office, West Hartlepool. Town Clerk.
February 10th, 1930.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications for a position of DIVISIONAL MEDICAL OFFICER in the Public Health Department. The duties attaching to the position will be chiefly in connection with the Council's Tuberculosis Scheme. Candidates should have special knowledge of all branches of Tuberculosis work. The scale of salary (based on pre-war conditions) is £550 a year, rising annually by £50 to £750 a year. In addition, there is a cost of living bonus, making the total commencing remuneration £715 8s. 9d. a year, with a maximum of £947 8s. 9d. Candidates must not be more than 45 years of age on April 1st, 1930.

Forms of application, containing full details, may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed envelope should be enclosed, and forms must be returned by February 25th.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

County Borough of Halifax.

RESIDENT MEDICAL OFFICER.

HOSPITAL FOR INFECTIOUS DISEASES.

Applications are invited for the appointment of Resident Medical Officer at the Corporation's Isolation Hospital. Salary £350 per annum, together with board, residence, and laundry.

Applications must be made on a prescribed form which may be obtained from the undersigned, and should be sent, together with copies of not more than three recent testimonials, endorsed "Resident Medical Officer," to the undersigned not later than March 5th.

Canvassing, either directly or indirectly, will be a disqualification.

Town Hall, PERCY SAUNDERS,
Halifax. Town Clerk.
February 7th, 1930.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY MEDICAL REGISTRAR for a period of one year, eligible for re-election annually for a total period of not more than three years. An honorarium at the rate of £100 per annum is attached to the post. The successful candidate must hold no appointments at a General Teaching Hospital during his term of office. The duties include the preparation of the Medical Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as substitute for the Physicians and Assistant Physicians when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. *Candidates must* attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application *and testimonials* to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women and for *emergency operations when required, and be prepared to undertake such teaching for the* Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. *Applications, with* copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver Surgical Courses of Lectures to the Nurses and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, *March 21st*, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, Two HOUSE SURGEONS, and One RESIDENT ANAESTHETIST for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, March 7th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, March 21st, at 3 p.m., and the House Committee Meeting at 3.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, *Secretary.*

East Suffolk and Ipswich
HOSPITAL.

ELECTION OF VISITING STAFF FOR FIVE YEARS, UNDER THE RULES AND REGULATIONS OF THE INSTITUTION.

The Board of Management invites applications for the following officers:

One PHYSICIAN.
Two ASSISTANT PHYSICIANS, with Out-patient days and charge of four beds each.
Two GENERAL SURGEONS.
Three ASSISTANT SURGEONS, with Out-patient days and charge of four beds each.
One GYNÆCOLOGIST.
One ASSISTANT SURGEON to the Ear, Throat, and Nose Department, with Out-patient days and charge of beds.
One SURGEON to the Genito-Urinary Dept.
One SURGEON to the Ophthalmic Dept.
One ASSISTANT SURGEON to the Ophthalmic *Department, with Out-patient* days and charge of beds.
Two MEDICAL OFFICERS in charge of X-ray and Electro-therapeutic Department.
Six ANÆSTHETISTS.
Five VISITING DENTAL SURGEONS.

Applications must be made in the prescribed form. A copy of such form, together with a *print of the rules and regulations for Visiting* Staff governing these appointments, will be supplied on application to my office.

Candidates may apply for the post of Physician or Assistant Physician, or Surgeon or Assistant Surgeon respectively, on the understanding that if they are not appointed to the former their application will stand good for the latter.

Attention is drawn to the regulation that members of the Visiting Staff shall not reside beyond a radius of three miles from the Hospital.

Each candidate must send to my office, or on before March 4th, his application, accompanied by a copy of each of three recent testimonials. Testimonials are not required from candidates who have already acted as members of the Visiting Staff of the Hospital.

Canvassing will be a disqualification.

The election will be made by the Board at its meeting on Wednesday, March 19th. The result of the election will be immediately *communicated to the candidates.*

Any officer appointed will be expected to take up his duties as from April 1st.

The Board does not bind itself to fill all or any of the vacant posts, but *reserves the right* to postpone and re-advertise any appointment.

By Order of the Board,
East Suffolk and Ipswich Hospital, ARTHUR GRIFFITHS, *Secretary.*
Ipswich. February 15th, 1930.

East Suffolk and Ipswich
HOSPITAL.
(265 Beds—7 Residents.)

Applications are invited for the posts of Two HOUSE SURGEONS (male, British). Salary for each appointment at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. *Secretary.*

The Willesden General Hospital,
LONDON, N.W.10. (106 Beds.)

Applications are invited for the appointment of RESIDENT HOUSE SURGEON. Candidates must be duly registered under the *Medical Acts*, and unmarried.

Salary at the rate of £100 per annum.

Detailed applications, with copies of testimonials, to be sent as soon as possible to the undersigned.

R. J. HEARNE,
February 17th, 1930. *Secretary.*

St. Mark's Hospital for Cancer,
FISTULA, AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months.

Applications, with copies of testimonials, to be sent to the Secretary (from whom further particulars may be obtained) immediately.

General Hospital, Gt. Yarmouth.
(72 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male, unmarried). Salary £150 per annum, with board, residence, *and laundry.* Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, *Secretary.*

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on April 4th and 14th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. *Salaries at the rate of £100 per annum,* laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 5th, *at 4.45 p.m. precisely.*

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
February, 1930. *Secretary.*

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

(1) SENIOR RESIDENT MEDICAL OFFICER (male). Salary £150 per annum.
(2) RESIDENT HOUSE SURGEON (male). Salary £100 per annum.
(3) RESIDENT HOUSE PHYSICIAN (male). Salary £100 per annum.

Appointment No. 3 to date from April 1st, and appointments Nos. 1 and 2 to date from May 1st. All appointments to be for a period of six months, with board, *residence, and* laundry provided.

Applications, with three testimonials (or copies), should be sent to the *Secretary*, to reach him as follows: No. 3 not later than March 14th; Nos. 1 and 2 not later than April 16th.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on April 1st next for a period of six *months. Salary at the rate of £100 per annum,* with board, apartments, etc.

Applications, stating age, qualifications, experience, if any, to be forwarded to the undersigned on or before Wednesday, March 5th.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

FORTHCOMING VACANCIES.

The R.S.O. Appointment.—Holders of F.R.C.S. degree preferred. Twelve months' appointment from May 1st. Advertisement will *appear at* the end of March.

Royal Devon and Exeter
HOSPITAL, EXETER. (225 *Beds.*)

HOUSE PHYSICIAN (Male).

Applications are invited for the post of House Physician at this Hospital, vacant on 28th inst. The appointment is for six months, but candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with certificate of registration and copies of three recent testimonials, should be sent to the undersigned as soon as possible.

By Order of the Committee,
S. S. COLE,
Feb. 17th, 1930. Secretary & Manager.

District Infirmary,
ASHTON-UNDER-LYNE.
(General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident Staff comprises a Resident Surgical Officer and Three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Feb. 17th, 1930. *Gen. Supt. & Sec.*

House Surgeon required, British
nationality, *for ASHFORD HOSPITAL*, KENT. Salary £160 per annum. Please state experience and qualifications. Candidates must be unmarried, and under 35 years of age. Duties to commence March 23rd. Applications, with three recent testimonials, to be sent to the Hon. Secretary on or before noon, February 27th.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
February 19th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

West Bromwich and District
GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the posts of:
(1) HOUSE SURGEON;
(2) HOUSE PHYSICIAN;
(3) CASUALTY HOUSE SURGEON.

Candidates (male) must be doubly qualified and unmarried. Salary, in each case, at the rate of £200 per annum, with board, residence, and laundry.

The appointments are for six months, and the candidates appointed will be required to take up their duties on April 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned on or before March 8th.

The present House Surgeon and House Physician are applicants for two of the posts.

By Order,
Edward Street, West Bromwich. FRANK I. HANCOCK, Secretary & Supt.

Johnson Hospital, Spalding.
(35 Beds.)

Wanted, at once, HOUSE MEDICAL OFFICER. Salary £100, with board and laundry.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned.

W. F. HOWARD, Hon. Clerk.
Spalding.

Liverpool & Samaritan Hospital
FOR WOMEN.

HOUSE SURGEON wanted for period of six months commencing April 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be sent to the undersigned before March 3rd.

15, Rodney St., Liverpool. J. ST. GEORGE WILSON.

Evelina Hospital for Children,
Southwark, S.E.

The Committee of Management invites applications for the post of SURGEON TO OUT-PATIENTS (Hony.) (attendance Friday mornings at 10). Candidates (male) must be Graduates in Surgery in a recognized University, or F.R.C.S., they must not be engaged in general practice.

Applications, with copies of not more than four testimonials, to be addressed to the Secretary, at the Hospital, before February 25th.

Candidates must call on the members of the Hony. Medical Staff, whose names, also Standing Orders relating to the post, will be furnished by the undersigned.

By Order of the Committee of Management,
H. C. S. SMITH,
Feb. 11th, 1930. Secretary-Supt.

North Ormesby Hospital,
MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

The Royal Eye and Ear Hospital,
BRADFORD.

Wanted JUNIOR HOUSE SURGEON, male. Salary £150, with board, residence, and laundry.

Applications, stating qualifications, age, etc., with copies of recent testimonials, to be forwarded to the undersigned.

F. BRIGGS, Secretary-Supt.

St. Thomas's Hospital.

VACANCY.

A RADIUM REGISTRAR AND ASSISTANT to the RADIOLOGICAL DEPARTMENT, to be appointed for one year, and be eligible for reappointment annually for a maximum period of three years at a salary of £250 per annum, rising by £25 per annum to £300 per annum, plus travelling allowances.

Duties to begin on April 1st.

Applications, accompanied by testimonials and full Academic record, should be sent to the Dean's Office at the Hospital not later than Wednesday, March 5th.

The Jessop Hospital for Women,
SHEFFIELD.

The Board of Management invite applications for an unexpected vacancy in the office of ASSISTANT HOUSE SURGEON (male) from February 22th, to terminate on July 15th.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, with copies of recent testimonials, should be addressed at once to the undersigned.

H. B. SHELSWELL, Secretary.

Western Ophthalmic Hospital,
Marylebone Road, N.W.1.

OPENING OF NEW BUILDING.

Applications are invited for four new appointments of CHIEF CLINICAL ASSISTANT, two to attend on Mondays and Thursdays at 2 p.m., and two on Tuesdays and Fridays at 2 p.m. There will be an honorarium of 1 guinea per session. Seven copies of applications, with not less than three testimonials, should be sent to the undersigned by March 1st.

H. W. BURLEIGH, Hon. Sec.

Would the R.A.M.C. Officer (Regular or Temporary) who privately examined the R.C. Padre at the Citadel, Cairo, in Feb., 1922, and found him suffering from pulmonary tuberculosis, or any R.A.M.C. Officer who knew and urged him to report sick, very kindly communicate with him.—Address, Rev. HUGH RICHARDS, c/o Dr. THURNAM, Blagdon, Bristol.

ASSISTANCIES.

Wanted. — Male Assistant, British, for semi-rural private and panel Practice in West Riding, Yorks, with view to Partnership. University Graduate preferred. Must be good Anæsthetist, keen and energetic, Protestant and abstainer, and able to drive car. Dispenser kept, little night work. Pleasant surroundings. Salary £300 per annum, indoor, with half midwifery and anæsthetics fees. References required. Usual bond. — Address, No. 1070, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Junior Assistant, single, abstainer. Salary £300 per annum, with rooms, coal, light, and attendance, and 10/- extra for each confinement. Usual bond.—Apply, A. H. JAMES, M.D., The Park, Blaenavon.

Wanted. — Assistant, single, male, indoor, about three months or longer. Under 30. Eng. or Scot. Private and panel. No mid. Southern Town. State experience. Refs. essential. Salary £250 p.a.—No. 1309, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, with view, male, Scotch or English. Good working-class private and panel Practice, 50 miles London. Salary £300.—Address, No. 1315, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Outdoor Assistant, male, single, keen and energetic, in private non-dispensing and panel Practice. Excellent prospects for good man.—Address, No. 1314, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant for quiet Country Practice in North of England. Work light. One with some experience preferred. Car provided. Salary £400.—Address, No. 1324, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, outdoor, industrial area near Manchester. Protestant, abstainer, English or Scotch. £400, rising to £500 per annum. Under 30. Some experience an asset. Usual bond.—Address, No. 1317, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Lady Assistant, Scottish preferred, for large London general Practice. State all particulars. — Address, No. 1406, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, in good mixed Practice, adjacent to large Midland Town. Protestant. £300—£350, according to experience.—Address, No. 1330, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, for mixed Practice. Salary £250 to £300, if experienced. Usual bond. State age, testimonials. British.—Address, No. 1075, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, part or or full-time, for a New Branch Surgery in a large University Town. Healthy district. State particulars.—Address, No. 1405, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or LOCUMS by exper. energetic, temperate male, 35, single. Used sole charge. Drive car. Permanency, easy terms considered.—Address, No. 1350, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with or without view, by M.B., Ch.B., Egyptian, experienced in panel and private practice. — Address, No. 1320, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Welsh-speaking ASSISTANT. Abstainer, and late H.S. preferred. Salary £500 per annum. Usual bond. Outdoor. Address, No. 1165, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, married man, Protestant, abstainer. House provided. Own car preferable. Prospects if suitable. Middle-class Practice, North-West Coast. Photo. and full particulars. — Address, No. 1083, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by M.B., B.Ch., B.A.O., Woman, 5½ years' experience of private and panel practice. Cyclist. Good refs. At present resident in Mid-Wales. — Address, No. 1339, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.R.C.S., L.R.C.P., 28 yrs., single, keen, energetic, reliable, well received. Two yrs.' exp. G.P., panel and private. London or Manchester pref., not essential. Free now.—Address, No. 1401, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—A University Graduate, ex-H.S. and H.P., aged about 30. Must have had experience in both private and panel practice, and capable of taking SOLE CHARGE. Rooms and attendance. Liberal salary to a good man, Protestant, and one prepared to take over the Practice at an early date.—Address, No. 1072, B.M.A. House, Tavistock Square, W.C.1.

Ex H.S., married, aged 28, G.P., refractions, V.D., desires Outdoor ASSISTANTSHIP in London and opportunity to do D.P.H. View optional. Free if necessary in one month.—Address, No. 1329, B.M.A. House, Tavistock Square, W.C.1.

Edin. Graduate, ex H.P., aged 38, six years' experience G.P., desires short ASSISTANTSHIP preliminary to partnership, or would accept outdoor appointment or manage branch. — Address, No. 1335, B.M.A. House, Tavistock Square, W.C.1.

Woman, M.B., B.Ch. seeks ASSISTANTSHIP towards the middle of March. Cyclist or drive car. 2 years' experience of G.P. — Address, No. 1327, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor, experienced, wishes PART-TIME ASSISTANTSHIP, London. Good Anæsthetist. Free 12–6 daily, Sundays, and one evening weekly. Own car. £2 2s. per week.—Address, No. 1410, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted.—Fully qualified Doctor for service in the Tropics. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passages provided. Candidates must be unmarried. Ladies not eligible.—Address, with copies of testimonials (not returnable), No. 522, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—M.B., Ch.B., D.P.H., L.M. (woman, young), residing London, S.E.5, doing Post-Grad. work in afternoons, offers SERVICES to Doctor. Free mornings, evenings, week-ends. Thor'. exp. G.P., Hosp., Mid., Fevers. —No. 1304, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, a Resident Medical OFFICER (lady) for PENRHOS COLLEGE, COLWYN BAY. Salary £300 per annum, plus board and residence.

Apply, by letter, enclosing testimonials, to C. H. MITCHELL, 22, Lord Street, Liverpool.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Dispenser (lady) desires RE-ENGAGEMENT with Doctor or at Institution. Apothecaries' Hall certificate. 20 years' experience. Free now.—Miss M. HOLMES, "Moyleen," Marlow-on-Thames, Lucks.

Dispenser-Secretary (Hall), experienced in private and N.H.I. practice, also Hospital work. Excellent references. Free now. — CHANNON, 10, Brambledown Road, Wallington. Wall 1758.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Evening Surgeries. — An exper.enced (middle-aged) Doctor who has had own Practice and now does some 9 locums annually, desires to take 3 EVENING SURGERIES weekly at £2 for 2 or 3 months. Well recom.—Add., "MEDICUS," 24, Colville Road, Bayswater, W.11.

Junior Medical Officer of outstanding personality required in NORTHERN RHODESIA by ROAN ANTELOPE COPPER MINES LTD., for general work, including treatment of Natives. Must hold X-ray Diploma and have knowledge of Tropical Medicine. Three years' agreement. Salary £900 to £1,000 per annum, with prospects.—Apply, by letter, to the Secretary, Selection Trust Building, Masons Avenue, London, E.C.2, giving particulars, training and experience, and enclosing copies of testimonials and refs.

London Graduate studying for higher degree is free to ASSIST Practitioner with 3 surgeries per week. London suburb or within short distance of town. 5 years' experience.—Address, No. 1326, B.M.A. House, Tavistock Square, W.C.1.

Lady Housekeeper desires charge of widower's household (maids) and children (similar post for last 7 years). V.A.D. 4 years. Excellent references. Salary not essential. Could bring good maid if required.—Address, No. 1321, B.M.A. House, Tavistock Square, W.C.1.

Medical Officer required for new INFANT WELFARE CENTRE in Golders Green district. One session weekly. Experience in similar work essential. Applications, with copies of three recent testimonials, should be forwarded by March 3rd. Remuneration £1 11s. 6d. per session. — Address, Secretary, H.H.B.C., 15, Park Avenue, N.W.11.

Masseur, with Electro-therapeutic experience, seeks POSITION with London Doctor, preferably whole-time. Abstainer, cultured, good personality, and professional manner. — Capt. B. GARRITT, 9, Cambridge Terrace, W.2.

Radiographer.—Candidates, preferably male, for the post of whole-time Radiographer at King's College Hospital, must hold the certificate of the Society of Radiographers. Applications, stating experience and qualifications, with the names of three references, must be made to the House Governor, King's College Hospital, S.E.5, from whom further particulars may be obtained, on or before February 22nd.

Reception-Secretary.—Lady, 32, refined, of good appearance, desires POST with Doctor or Dentist. Shorthand, typing. Used to telephone and interviewing. Knowledge of nursing. Moderate salary.—Write, "D. M.," 3, Ashford House, Wimbledon, S.W.19.

SMALL-POX ASSISTANT.

Temporary Medical Officer required at once to assist Medical Officer of Health with small-pox work.

Previous experience in small-pox diagnosis desirable. Salary ten guineas a week.

Apply, stating age and experience, and giving references, to Dr. C. KILLICK MILLARD, Health Offices, Grey Friars, Leicester.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking general clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

The Charterhouse Typewriting Bureau, 18–21, Coleman Street Square, E.C.1.—Typewriting, duplicating, and translations of all descriptions. Medical work a speciality. Testimonials typed and returned same day. Moderate charge. Clerkenwell 6672

The Services of a Medical Man, EXPERIENCED IN THE MANUFACTURE OF THERAPEUTIC SERA AND ALLIED PRODUCTS, are required to control the production of, and undertake research into, these products, at EVANS' BIOLOGICAL INSTITUTE, RUNCORN, CHESHIRE. Every facility is available for the carrying out of such work in congenial surroundings, with new and up-to-date buildings and equipment. The post is a permanent one at a commencing salary of £750 per annum.

Applications, giving full particulars, accompanied by copies of three testimonials, should be addressed to the Chairman of Directors, EVANS SONS LESCHER & WEBB LTD., 55, Hanover Street, Liverpool.

LOCUMS.

LOCUM TENENS
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel* { TEMPLE BAR 1054. RIVERSIDE 1254. (*Night Calls*).
Telegrams: "REASIDE, TUBERCLE, WESTRAND, LONDON"

Wanted.—Young M.B., D.P.H. T.C.D., with 7½ years' experience in own Practice, requires LOCUM. Free for next 4 to 5 months. Keen on midwifery.—Address, No. 1306, B.M.A. House, Tavistock Square, W.C.1.

Locum desires Engagement; free February 24th. An experienced, reliable G.P.: private, panel, dispensing. Abstainer. Refs. Fees £7 7s. per week and expenses return Bristol.—Write, DOCTOR, 12, Caledonia Place, Clifton, Bristol.

Medical Gentleman, free now, desires LOCUM; town or country. Own car. Write or wire.—Address, No. 1412, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9011.
After Office Hours: Epsom 9142.

PARTNERSHIPS.

Wanted. — Woman Doctor as PARTNER or PART-TIME ASSISTANT to Two Women Practitioners. Applicant preferred resident in London, and with progressive tendencies. Marriage no objection.—Address, No. 1312, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Partnership or PRACTICE, pay ex receipts, by L.R.C.P. and S.I., L.M., aged 30 married; 7 years' experience panel and private; own car. London or Home Counties preferred. — Address, No. 1325, B.M.A. House, Tavistock Square, W.C.1.

Berks. Half Share with view to succession later of old-established PRACTICE. Receipts £1,250 p.a., including panel. Excellent chance for energetic Practitioner. Any reasonable premium or terms considered.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs Town.—Near Manchester. —PARTNERSHIP in panel and private Practice. Average cash receipts £3,000 p.a. Panel 3,000. Scope for surgery. Good freehold house, 2 reception, 4 bedrooms. Premium—2/5ths share—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North Staffs. — Partnership in excellent panel and private Practice. Average cash receipts £3,715 p.a. Panel nearly 5,000. New small Hospital. Good house available, 2 reception rooms, 5 bedrooms. Garage. Electric light. Rent £52 p.a. Premium—1/3rd share—1½ years' purchase, part by arrangement. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nr. Manchester.—Partnership in old-established Practice. Gross cash receipts last year £4,280. Panel 3,732. Good detached house available, 2 reception, 5 bedrooms. Garage and garden. Rent £60 p.a. Premium for 8/25ths share (about £1,350 . £1,620 —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership or Practice.—£1,500 gross p.a., minimum. Good panel. South England preferred. House to rent if possible. Capital. — Address, No. 1313, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted in Panel and Private Practice, Devon, with view to success on. Two-fifth share (£500) at two years' purchase. Panel about 1,600. — Address, No. 13.8, B.M.A. House, Tavistock Square, W.C.1.

Radiologist with established Practice about £1,500 requires PARTNER. Scope for increase. Share of income and apparatus on usual terms, but assistance rather than capital is required. Radiology would be taught if necessary. Hospital appointment.—Address, No. 13.9, B.M.A. House, Tavistock Square, W.C.1.

T.C.D., F.R.C.S. — Surgical PARTNERSHIP wanted in Southern England, with prospect of Hospital appointment. —Address, No. 1338, B.M.A. House, Tavistock Square, W.C.1

West Midlands. — Partnership. Half share in private and panel Practice. Average receipts £2,850. Panel about 1,700. Very exceptional old house for sale, in excellent repair and well equipped with modern conveniences. Good garden, tennis court, garage, and stabling. Premium for Practice 2 years' purchase. House £3,500.—Address, No. 935, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted. — Practice or Partnership offering scope for surgery in town of not less than 25,000 inhabitants. Income £1,250 p.a. Preferably non-panel and non-dispensing. Advertiser holds Fellowship, is aged 30, has held House appointments for over two years, and has had experience of own general practice. — Address, No. 1051, B.M.A. House, Tavistock Square, W.C.1.

Wanted, early summer, Country PRACTICE, with panel, suitable two partners. West of England, within easy reach Bristol. Adjacent single Practices considered. Two good houses and gardens essential. Income about £4,000. Capital available.—Address, No. 922, B.M.A. House, Tavistock Square, W.C.1.

Wanted, in a few months, by M.B., aged 43, a Country Town or Country PRACTICE in Yorks, within easy reach of large town. Income £1,000. Ample capital. — Address, in confidence, No. 1307, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B.—Panel and Private PRACTICE in London. Income about £1,000 p.a. Ample cash available. —Address, No. 1407. B.M.A. House, Tavistock Square, W.C.1.

Wanted, by exper. Practitioner (Cambridge Graduate), a better-class PRACTICE or PARTNERSHIP, £1,800 to £2,000 p.a., with scope for line. Good house and gard. req. Home Counties preferred, but not essen. Cap. avail.—No. 1402 B.M.A. House Tavistock Square, W.C.1.

Wanted.—Worthing or other South Coast Town, by experienced Graduate with ample capital, PRACTICE producing £1,300 upwards. Pleasant house essential. Would consider part nersh p.—Address, No. 1334, B.M.A. House, Tavistock Square, W.C.1.

Birkenhead District.—Well-established PRACTICE for sale, in growing neighbourhood. Panel 860. Private bookings £320. Visits £56. Cash taken in surgery £150. House attached. Owner wishes to sell property.—Add., No. 1316, B.M.A. House, Tavistock Sq., W.C.1.

Cheshire Town, nr. Manchester.—PRACTICE averaging £700 p.a. Panel 500. Scope. Excellent modern house (freehold), 2 reception, 4 bedrooms, surgery, etc. adjoining. Premium, Practice and House, £2 000. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy. — Lancs Town. Old-estab. PRACTICE. Cash receipts 1929, £1,693. Panel nearly 1,000. Good house, 2 reception, 4 bedrooms. Garage. Premium 1 year's purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy.—Lancs Town.— Receipts over £1,000. Panel 1,367, much scope. Appts. £70. Nice house, good garden, garage, rent £65. Good room in charge. Price £1,000 or offer. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Death Vacancy.—Near Blackburn; better-class suburb. Scope for surgery. Certified (income tax) receipts £1,650 (panel £400 approx.). Good house and surgery on rent or purchase. Panel under loyd. Good prospects for F.R.C.S. Price one and a quarter years' purchase. Principals with capital only, write: DRUG REPRESENTATIVE, 3, Ashburton Road, Wallasey, Cheshire.

Devon. — Owing to death, an opportunity occurs to acquire a small but growing Town PRACTICE in an important centre. Gross receipts £875. Panel 856. House, with 4 bedrooms, 2 attics, 2 reception rooms. Well-built separate surgery and dispensary. Unlimited scope for energetic man.—Mr. C. S. MOORES, Incorporated Accountant, 15, Bedford Circus, Exeter.

Essex Coast Town.—Well-established PRACTICE, lately neglected through ill-health. Receipts have been £900, but now average £400 a year. Urgent sale through illness. Premium £300. Good house on rental. —Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

East of Scotland University Town. — Middle-class PRACTICE about £1,200, steadily increasing. Panel 650. Very attractive detached modern corner house to be sold with the Practice. It contains three public rooms, 5 bedrooms, good garden, and garage for two cars. It is situated in pleasant open suburb. — Address, No. 1303, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For sale, in a large Lancashire Town an old-established PRACTICE, with a panel of about 2,300. Average receipts for the last three years about £2,500. This Practice is capable of further development. Vendor desirous of retiring. Introduction given. Price one and a half years' purchase.—Address, No. 1071, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Rapidly increasing Town PRACTICE in South Midlands. Income £750. Panel 500. Small detached house, with garage and garden. House—Practice, £2,100 or offer. Ample scope.—Address, No. 1231, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Woman Doctor's small Lock-up SURGERY PRACTICE. Good premises. Very central. £100 for quick sale, including furniture and drugs.—Address, No. 1323 B.M.A. House Tavistock Square, W.C.1.

For Sale. — Very old-established HOMŒOPATHIC PRACTICE, Chester, owing to sudden death. Good freehold house.—Full particulars, POTTS, MARTIN & Co., Solicitors, 21, King Street, Chester.

London, S.E. — Well-established Cash and Panel PRACTICE. Receipts £1,000 a year. Rent of house £104, part let off. Vendor having obtained appointment will accept £1,200 or near offer.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lady Doctor's Practice in Lancs Town, near Manchester. — Cash receipts £2,275. Panel 1,450. Good house, 4 bedrooms. Rent £60 p.a. Partnership, view to succession considered. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, S.W.—Old-established General and Panel PRACTICE for Sale. Over £1,000 per annum. Good opportunity for an energetic man. — Address, No. 1305, B.M.A. House, Tavistock Square, W.C.1.

London, S.W. — Well-established Cash and Panel PRACTICE. Receipts average £500 p.a., including 550 of panel. Nice house to rent apart from surgery. Premium £750 or near offer.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs Town, near Coast. — Old-estab. PRACTICE. Average cash receipts £2,000. Panel 2,150. Good house, 2 reception, 5 bedrooms. Rent £80 p.a. on lease.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, N.W.—Practice yielding £905 p.a., including panel 480. Price £1,350 (cash). Flat £150 (rates free). —Address, No. 1310, B.M.A. House, Tavistock Square, W.C.1.

Manchester. — Middle-class PRACTICE in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Old-established PRACTICE for sale. Receipts £1,000 per annum. Panel about 1,500; excellent scope; very compact and easy worked. Price 1½ years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Near Chester. — Pretty Country District.—Small PRACTICE. Cash receipts 1929, £475. Panel 220. Nice compact house, 2 reception, 4 bedrooms. Garage. Small orchard and 1/4 acre garden. Rent £60 p.a. Premium £450. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nursing Home for Disposal in Bedfordshire. Freehold house, furniture and all fittings, together with goodwill, £2,500. Excellent scope for Maternity work and co-op. for Private Nurses. Ill health reason for selling. —No. 1411, B.M.A. House, Tavistock Sq., W.C.1.

N. W. England.—Practice of over £1,000 for sale, and Freehold House. Mixed clientèle; mostly good-class industrial. Panel 580, easily transferred. Very easily and pleasantly worked. Capable of great increase. Vendor retiring. Car kept but not strictly necessary. House, in good position, contains 5 bed. and 3 recep. rooms. Small garden and garage for two cars. Separate surgery. Golf, shooting, and fishing available. Exquisite country quite close. Price, Practice 1½ years; house £1,500.—Address, No. 1404, B.M.A. House, Tavistock Square, W.C.1.

Old-established (100 years) unopposed Country PRACTICE near University town. Average over £800. Panel 470. Union and Vaccination appointments. Convenient house, surgery etc., constant hot water, walled garden, tennis lawn, rent £36. Golf, shooting, etc. Premium £1 200. — Address, No. 910, B.M.A. House Tavistock Square, W.C.1.

Practice for Sale. — Main Road, E. London. Panel 600. Receipts £900. Fees 1/6 to 5/-. Visits 2/6 to one guinea. Midwifery, 20 cases, 3 to 5 gns. Surgery, etc., £1 week. Price £1,000.—Address, No. 1409, B.M.A. House, Tavistock Square, W.C.1.

Practices and Partnerships. —Messrs. R. SUMNER & Co., Ltd., Wholesale Chemists, 40, Hanover Gate, Liverpool, have a number of good offers, of which they will be pleased to give particulars on application.

Southern County.—Country Town and Rural PRACTICE, £1 150 p.a., in very beautiful district. Panel 250 Excellent opportunity for surgery. Extremely nice and pleasantly situated house; ample accommodation, garage, electric light, gas. Good garden with tennis lawn. Freehold £2,100. Premium 1½ years' purchase. Sport of all kinds.—Address, No. 1337, B.M.A. House, Tavistock Square, W.C.1.

South-West England.— Country PRACTICE 10 miles from sea. Panel 780. Average receipts £1 400. Price 1½ years' purchase.—Address, No. 1328, B.M.A. House, Tavistock Square, W.C.1.

Seaside Resort, Lancs. — Ladies' PRACTICE in very pleasant district. Roomy flat, with lawn in front, rent £104. Receipts about £1,000, with much scope. Panel £260 Price £1 050.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Sound Practice for Disposal, Manchester district. Six months' introduction offered.—For terms and particulars apply KNOTT & CASTLE, Solicitors, 3, Norfolk St., Manchester.

Scotland (near University City). —Old-established PRACTICE, non-dispensing. Suitable house, garage, and garden. Receipts about £1,800. Ample introduction. Part payment by instalments. — Address, No. 1311, B.M.A. House, Tavistock Square, W.C.1.

Two years' purchase offered for good panel and private PRACTICE in or near London. Income from £1,800 upwards. Advertiser has ample capital.—Address, No. 1322, B.M.A. House, Tavistock Square, W.C.1

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Well-established Panel and Private PRACTICE for sale in suburb 7 miles N.W. London. Unlimited scope. Corner house, garden, with garage, on very favourable lease. — Address, No. 1065, B.M.A. House, Tavistock Square, W.C.1.

Woman Doctor's small good-class PRACTICE, with panel, old-established, in Northern Industrial Town, to be sold for family reasons. Good scope. Small premium. — Address, No. 1302, B.M.A. House, Tavistock Square, W.C.1.

£200.—London Branch Nucleus. Average takings over £6 weekly, excluding panel about 90. Lock-up surgery, waiting room, and dispensary. Possible living accommodation for single person.—Address, No. 1408, B.M.A. House, Tavistock Square, W.C.1.

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Consulting Rooms to be Let. Harley Street and District. Whole or part time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Mayfair 5659.

German Student (lady) desires to pass VACATION (March-April) in English family. In her father's (Doctor, head of hospital) house, son or daughter, whether medical or otherwise, would be received for similar time. —Please address, Hofrat Dr. DEETZ, Arolsen, Germany.

House to Let, corner, 8 rooms, North Kensington. Room garage. Suitable surgery. Estates being built immediate vicinity. £200 p.a. exclusive.—Write, Box 5115, SAMSON CLARK & Co., Ltd., 57, Mortimer Street, W.1.

Liverpool. — Commodious De- tached RESIDENCE, containing morning room, two entertaining rooms, six bedrooms, two bathrooms, etc. Electric light. Garage, and fine old garden. Neighbourhood of St. Michael's, Liverpool, close to golf links and train. Suitable for Doctor's residence, or could be easily converted into a Nursing Home. No reasonable offer refused for quick sale.—Write Box 0.250, LEE & NIGHTINGALE, Liverpool.

S. Devon.-For Sale (freehold). ATTRACTIVE HOUSE in beautiful grounds of 2 acres (more land available). 3 recep., 7 bed. (more could be built on); garage 2 cars; outbuildings, glass, etc. In lovely country within short drive of sea (Torquay, etc.). High situation, lovely air, Co.'s water, electric light and gas. Main drainage. Immediate possession. Suit retired Doctor with two or three private patients.—Address, No. 1332, B.M.A. House, Tavistock Square W.C.1.

To Let, in modern House in Devonshire Street.—CONSULTING ROOM, full or part-time. Plate, attendance, waiting room. Immediate possession. — Address, No. 1333, B.M.A. House, Tavistock Square, W.C.1.

MISCELLANEOUS SALES, etc.

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Medical Surgical Sundries Ltd. Supply Instruments, etc. "Essell" Inhaling Apparatus, price £12 10s. (particulars on application). Sample bottle (500) of Cough or Expect. Mist. Tablets, 1/- post free. *Showroom:* 97, Swinderby Road, Wembley.

The Medical Practitioners' Cash BOOK, 12/6 post free. Specially designed by a qualified Accountant for the profession. Easy to use. Saves time, worry, and Income Tax. Money refunded if dissatisfied. — CHARNWOOD PUBLISHING Co., Atlas House, Coalville, Leics.

APPOINTMENTS.—Contd.

Victoria Hospital, Burnley. (120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £125 per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING,
Feb. 3rd, 1930. Secretary-Supt.

Queen's Hospital, Birmingham.

The following Resident posts will become vacant on April 1st—Three HOUSE PHYSICIANS, One HOUSE SURGEON, One ANÆSTHETIST, One DENTAL HOUSE SURGEON. *Salary* £70 per annum in each case, with full board. Full particulars from—

G. HURFORD,
House Governor & Secretary.

Huddersfield Royal Infirmary. (200 Beds.)

Lady HOUSE SURGEON. To commence duty middle March. Salary £150 per annum, with board, residence, and laundry. Applications, with copy testimonial, to Secretary, Infirmary, not later than March 1st.

Willesden Urban District COUNCIL.

APPOINTMENTS OF
ONE PART-TIME ANÆSTHETIST.
ONE PART-TIME OCULIST.

Applications are invited for the above appointments.

Part-time Anæsthetist.—The salary attached to the post of Part-time Anæsthetist is at the rate of £300 per annum, and the Anæsthetist will be required to attend four times per week at the Willesden Health Centres for the purpose of administering anæsthetics in connection with dental cases.

Part-time Oculist.—The salary attached to the post of Part-time Oculist is at the rate of £225 per annum, and the Oculist will be required to attend three times per week at the Willesden Health Centres to carry out refraction work mainly in connection with school children.

Further particulars of the above appointments can be obtained from the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6.

Applicants should state their qualifications, age, and experience.

All applications should reach the Medical Officer of Health not later than 9 a.m. on Friday, March 7th.

Town Hall, Dyne Road, Kilburn, N.W.6. February 15th, 1930.

E. A. PRATT,
Clerk to the Council.

West Derby Union.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Guardians invite applications for the above position at the WALTON INSTITUTION, RICE LANE, LIVERPOOL, to take duty from April 1st, at a salary after the rate of £200 per annum, together with rations, apartments, etc.

Candidates must be single, fully qualified, and registered.

Appointment will be for a period of one year in the first instance, subject to one month's notice to terminate on either side at any time, and to extension for a further period of twelve months at the option of the Guardians.

Applications to be sent, stating age, qualifications, etc., with copies of three recent testimonials, to the undersigned not later than first post on Wednesday, March 5th.

Union Offices, Brougham Terrace, Liverpool. February 17th, 1930.

JOSEPH H. TAYLOR,
Deputy Clerk.

Cardiff Royal Infirmary.

(Associated with the Welsh National School of Medicine.)

Applications are invited for the post of RADIUM REGISTRAR to the Cardiff Royal Infirmary.

Applicants must be duly qualified Medical Practitioners. The remuneration will be at the rate of £200 per annum, with board and residence. The successful applicant will in the first place be appointed for a period of three months, which will normally be extended to twelve months, and which may further be extended for a second year.

Previous clinical experience in Radium work is desirable.

Intending applicants should apply to the undersigned, who will furnish an application form, together with full details of the duties of the office.

Applications should be received not later than Saturday, March 1st.

R. ARMSTRONG,
February 18th, 1930. Medical Supt.

The Loughborough and District GENERAL HOSPITAL AND DISPENSARY.

Wanted, to commence duties at the end of March, RESIDENT HOUSE SURGEON (female and unmarried), possessing a Medical and Surgical registered qualification. Practical experience in the administration of Anæsthetics is required. Salary £125, with apartments, board, and laundry. All applications, stating age, etc., with copies of testimonials, to be sent to me at once.

9, Leicester Road, Loughborough. February 17th, 1930.

FRANK H. TOONE,
Secretary.

Sussex Throat and Ear Hospital, BRIGHTON.

The Committee of Management propose to appoint an HONORARY OPHTHALMIC SURGEON to the Hospital.

Applicants are requested to communicate with the undersigned not later than Saturday, March 8th.

W. A. HABENS, Secretary.

Central London Throat, Nose, AND EAR HOSPITAL, Gray's Inn Road, W.C.1.

ASSISTANTS IN THE OUT-PATIENT DEPARTMENT.

There are vacancies for Two Assistants in the Out-patient Department.

Assistants are graded first, second, and third, according to experience in the specialty and length of service at the Hospital.

The posts are honorary, tenable for one year, subject to re-election. Attendance is required at two clinics each week to assist the Surgeons in seeing the patients.

Applications should be sent to the undersigned on or before March 8th.

JOHN YOUNG, Secretary-Supt.

Northampton General Hospital.

There will be vacancies on April 1st next, for Two HOUSE SURGEONS and Two ASSISTANT HOUSE SURGEONS. British nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidates will be appointed for a period of six months, and will be eligible for re-election for a further period.

Candidates must be duly qualified and registered.

Applications, stating age, sex, qualifications, etc., with copies of testimonials, to reach the undersigned not later than first post on March 5th.

H. ST. JOHN WOOD,
February 17th, 1930. Secretary-Supt.

The Royal Infirmary, Doncaster. (121 Beds.)

THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work. Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.

Salary £150 per annum, with board, residence, and laundry. Applications, with full particulars, should be addressed to the undersigned by Tuesday, February 25th.

J. LAWRENCE MEARS,
February 5th, 1930. Secretary-Supt.

Bootle Borough Hospital. (General—100 Beds), Derby Road, BOOTLE.

Applications are invited from Medical Men for the two posts of JUNIOR HOUSE SURGEON for the six months ending September 30th. Salaries at the rate of £150 per annum, with board, residence, and laundry.

Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned on or before March 7th.

J. A. BEARDSALL,
Secretary-Superintendent.

Westminster Hospital, Broad Sanctuary, S.W.1.

DENTAL DEPARTMENT.

There is a vacancy for a CLINICAL ASSISTANT to the Dental Department. A candidate must be a Licentiate in Dental Surgery and a registered Dental Practitioner. Applications, together with copies of three testimonials, should be addressed to the undersigned on or before Friday, March 7th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Queen Charlotte's Maternity HOSPITAL, Marylebone Road, N.W.1.

RESIDENT ANÆSTHETIST required to commence duty on April 1st. Applicants must be registered. Appointment for six months. Salary at the rate of £80 per annum, with board residence, and washing allowance (4/- weekly).

Copies (not originals) of not more than three testimonials will be received by the Secretary up to February 27th.

ARTHUR WATTS, Secretary.

Preston and County of Lancaster ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen, doubly qualified and registered, for the post of HOUSE SURGEON under Honorary Surgeon (Consultant).

Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with testimonials, to be addressed to the undersigned as soon as possible.

Royal Infirmary, Preston. February, 1930.

JOHN GIBSON,
Supt. & Secretary.

County Mental Hospital, PRESTWICH, near MANCHESTER.

ASSISTANT MEDICAL OFFICER required. Commencing salary £500 per annum, rising to £600 by yearly increments of £25, plus £50 per annum on obtaining the D.P.H., less charges for board, furnished apartments, attendance, and laundry, valued at £150 per annum if received in full. Further increases according to promotion.

Candidates must be unmarried and registered under the Medical Act. The appointment is subject to 3 per cent. deduction from salary under the Asylums Officers Superannuation Act, 1909. Apply, stating age and full particulars, to the Medical Superintendent.

Cumberland Infirmary, Carlisle.

Applications are invited for the following posts (male). Six months' appointments. Previous experience in each case desirable.

(1) HOUSE PHYSICIAN, vacant March 8th.
(2) HOUSE SURGEON to Special Departments (Eye, Ear, Nose, and Throat), vacant April 1st.

Salary in each case at the rate of £155 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Saturday, March 1st, by the undersigned, who will supply further particulars if desired.

Separate applications required for each post.

J. G. HOWITT,
February 3rd, 1930. Secretary.

Leicester Royal Infirmary. (420 Beds.)

HOUSE SURGEONS.

Vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 18th, 1930.

Leicester Royal Infirmary. (420 Beds.)

HOUSE PHYSICIANS (Two).

Vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 18th, 1930.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT HOUSE PHYSICIAN (male or female) for a period of seven months as from April 1st. Salary at the rate of £95 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 14th.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT SENIOR HOUSE SURGEON (male or female) for a period of seven months as from April 1st. Salary at the rate of £95 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 14th.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female), non-resident, for a period of seven months as from April 1st. Salary at the rate of £100 per annum. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 14th.

Free Eye Hospital, Southampton.

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry.

Applicants must have had Post-Graduate experience in Ophthalmology. Applications, with three recent testimonials, to reach the Secretary by Saturday, March 1st.

Greenwich Union.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER.

The Guardians invite applications from fully qualified Medical Practitioners for the above appointment.

Salary £300 per annum, with furnished apartments, rations, and washing.

The officer appointed will be expected to act generally under the direction of the Medical Superintendent, and to take duty in the Hospital or other Institutions as required.

Applications to be made on forms obtainable from the Guardians' Offices, Board Room, East Greenwich, S.E.10, and should be returned duly completed by March 3rd.

Particulars of duties can be obtained from the Medical Superintendent at the Hospital by appointment.

Canvassing the Guardians, either directly or indirectly, is prohibited, and will disqualify.

By Order,
W. C. CORNISH,
Clerk to the Guardians.

Guardians' Offices,
Feb., 1930.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (men) in its Mental Hospital Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £445 a year, rising by annual increments of £25 to £570 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. a week) if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Applications must be received by Thursday, March 6th.

Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

St. Paul's Hospital for Diseases

(INCLUDING CANCER) OF THE GENITO-URINARY ORGANS AND SKIN, Endell Street, London, W.C.2.

HOUSE SURGEON required April 1st. Candidates must be doubly qualified and registered. Salary at the rate of £150 per annum, with board and residence. The appointment is for a period of six months, on the termination of which the holder is eligible for the position of Resident Medical Officer. Preference will be given to those candidates who have previous experience in Surgical work and Venereal Diseases. Applications, with copies of recent testimonials, to be sent to the Chairman of the Medical Committee not later than Monday, March 10th.

Hull Royal Infirmary.

(272 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON (male) vacant February 28th.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned on or before Tuesday, February 25th.

R. J. CARLESS,
House Governor.

February 11th, 1930.

London Hospital, E.1.

Applications are invited for the post of MEDICAL FIRST ASSISTANT AND REGISTRAR. There are two vacancies. The appointment is for one year from the date of election, but is renewable annually, on application, for two further periods of one year. Salary £300 per annum, payable by Hospital and Medical College jointly.

Candidates must be fully qualified medically.

Applications and testimonials must arrive at the Hospital not later than by the first post on Saturday, March 15th.

E. W. MORRIS,
House Governor.

February 14th, 1930.

Royal United Hospital, Bath.

Wanted, March 5th, a HOUSE SURGEON. Salary £150 per annum.

The appointment will be for not less than six months and candidates must be male, unmarried, and of British nationality.

Applications with three recent testimonials, must be addressed to the Secretary not later than the 25th inst.

J. M. SHEPPARD, F.C.I.S., Secretary.

Salford Royal Hospital.

(265 Beds.)

Applications are invited for the following vacancies, which will occur in the Resident Medical Staff (male) on March 31st next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Orthopædic Department). Salary at the rate of £125 per annum.

HOUSE SURGEON. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before March 10th.

By Order of the Board,
GEORGE RUDDLE,
Gen. Supt. & Secretary.

Salford Royal Hospital.
February 17th, 1930.

Royal Manchester Children's Hospital.

Out-patients' Department: Gartside Street, MANCHESTER.

Wanted, for the Out-patients' Department, Two ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be doubly qualified and on the *Medical Register*. Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number 87,000 per annum. Duties to commence April 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
Secretary.

February 17th, 1930.

Royal Manchester Children's Hospital,

PENDLEBURY, near MANCHESTER.

(190 Beds.)

Wanted, a RESIDENT MEDICAL OFFICER and a RESIDENT SURGICAL OFFICER, salary £125 per annum, who will be appointed for six months.

Candidates must be unmarried, doubly qualified, and duly registered. Previous Hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th. Duties to commence April 1st.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
Secretary.

February 17th, 1930.

Winsley Sanatorium,

near BATH.

The Governors invite applications for the appointment of a whole-time ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250, with apartments, board, laundry, etc.

The appointment will be made for a period of twelve months (subject, however, to termination during such period by one calendar month's notice on either side).

Forms of application and particulars of duties can be obtained from the undersigned, to whom all applications should be addressed, accompanied by not more than three recent testimonials, not later than first post March 3rd.

T. A. W. CARLISLE,
Secretary.

Winsley Sanatorium,
Near Bath. February 15th, 1930.

City of London Maternity

HOSPITAL, City Road, E.C.1.

Applications are invited from fully qualified male candidates for the posts of (*a*) RESIDENT MEDICAL OFFICER and (*b*) ASSISTANT RESIDENT MEDICAL OFFICER, vacant April 1st. Three months' appointment at £100 per annum and £80 per annum respectively, and board, lodging, and laundry. If satisfactory, the Assistant becomes Senior after three months.

Twenty-five copies of application and testimonials should be received by the undersigned by March 10th.

RALPH B. CANNINGS, Secretary.

Queen Mary's Hospital for the East End, E.15.

Telephone: Maryland 2916.

Applications are invited from fully qualified and registered Medical Men for the combined post of HOUSE ANÆSTHETIST and HOUSE PHYSICIAN. Salary at the rate of £120 per annum.

The Hospital contains 216 beds, including 49 maternity beds and other special departments.

Candidates, who must have held previous Resident appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Tuesday, March 4th.

RAPHAEL JACKSON (Major),
Secretary.

The University of Sheffield.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY.

The Council are about to appoint an ASSISTANT BACTERIOLOGIST.

Salary £300 per annum, rising to £350 after one year.

Intending candidates are requested to communicate with the Professor of Pathology, from whom particulars can be obtained. Applications must be received by the undersigned not later than March 3rd.

W. M. GIBBONS, Registrar.

St. John's Hospital for Diseases of the Skin,

49, Leicester Square, W.C.2.

Applications for the post of SENIOR and JUNIOR HONORARY MEDICAL REGISTRAR (male) are invited to be sent to the undersigned on or before Saturday, March 1st.

Applicants must be duly qualified and registered Medical Practitioners. Particulars of the duties can be obtained on application.

There are also vacancies for CLINICAL ASSISTANTS.

W. TODD, Acting Secretary.

The Staffordshire General Infirmary, Stafford.

Applications are invited at once for the posts of HOUSE SURGEON and HOUSE PHYSICIAN (either sex). Candidates must be duly qualified and registered under the Medical Acts. Salary at the rate of £200 and £150 respectively, with board, lodgings, etc. The appointment to be held for at least six months.

Applications, stating age, accompanied by copies of three recent testimonials, should be sent forthwith to the undersigned.

A. E. COLLINS,
Secretary.

Stafford.
February 7th, 1930.

North Lonsdale Hospital,

BARROW-IN-FURNESS.

Applications for HOUSE SURGEONS are invited from fully qualified male Practitioners experienced in the administration of Anæsthetics. Salary £150 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary so as to reach him not later than March 3rd.

Kent and Canterbury Hospital,

CANTERBURY.

HOUSE SURGEON (male) required. Six months' appointment.

Salary £125 per annum, plus board, residence, and washing.

Applications, accompanied by testimonials, and stating age, qualifications, etc., should be forwarded to the undersigned as soon as possible.

W. T. SOUTHWOOD, Secretary.

Worthing Hospital.

Applications are invited for the post of Male HOUSE SURGEON, vacant now. The appointment is for six months, renewable. Salary at the rate of £150 per annum, with board, lodging, and washing.

Applications, stating age, qualifications, and experience, with copies of testimonials, should be sent to the Secretary at once.

Central London Ophthalmic Hospital, Judd Street, W.C.1.

There is a vacancy for the post of HOUSE DENTAL SURGEON to the above Hospital. Candidates must have a Medical as well as a Dental qualification.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than Saturday, March 8th.

H. R. S. DRIVE, Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

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Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Birkenhead General Hospital.
(156 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (gentleman), salary £150, with board and residence, to take up duties March 17th; also HOUSE PHYSICIAN (gentleman), salary £100, with board and residence, required about March 12th.

Both appointments are for a period of six months, but may be extended with the Committee's approval.

Also CASUALTY OFFICER (gentleman). Salary £100, with board and residence, to commence duties March 15th. Six months' appointment.

Applications, stating qualifications, experience, and nationality, to be sent to the undersigned as early as possible.

W. H. DANIELS, A.C.I.S.,
Secretary-Superintendent.

Kent County Ophthalmic and
AURAL HOSPITAL, MAIDSTONE.
(72 Beds.)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON (male), which becomes vacant on March 13th next. The Hospital is recognised by the Examining Board for the D.O.M.S. and D.L.O. Diplomas. Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The appointment will be for six months, with an option of a further six months. Salary at the rate of £200 per annum, with board, residence, and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

St. Bartholomew's Hospital,
ROCHESTER.
(Rochester, Chatham, Gillingham, and District.)
(126 Beds.)

RESIDENT RADIOLOGIST.

Applications are invited from unmarried qualified and registered Medical Men who intend specializing in X-ray work, for the post of Resident Radiologist at this Hospital. Those who have already had some experience in Radiology preferred. Salary £150 per annum, with board and residence.

Applications, stating age, qualifications, experience, if any, and the usual particulars, together with copies of three recent testimonials, to be addressed to the Secretary and to be received not later than March 11th.

Royal National Orthopædic
HOSPITAL,
234, Great Portland Street, W.1.

Applications are invited for the post of HOUSE SURGEON (Two). Salary £150 per annum, with board, quarters, and laundry. The appointment is for six months from April 1st, renewable for a further period of six months on the recommendation of the Medical Board. Applications, with copies of testimonials, should reach the Secretary not later than March 7th.

Royal South Hants and
SOUTHAMPTON HOSPITAL,
SOUTHAMPTON.

HOUSE PHYSICIAN (male and unmarried) required, to commence duties on March 1st. Six months' engagement.

Salary £130 per annum, with rooms, board, and laundry. Applications, stating age, to be sent to the undersigned, together with copies of testimonials (limited to five), as soon as possible.

HY. TRYSSON, Secretary.

Elsie Inglis Memorial Maternity
HOSPITAL,
Spring Gardens, EDINBURGH.

Applications are invited from qualified Medical Women for the post of HOUSE SURGEON for above Hospital. The appointment is for six months from April 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before March 12th.

Miller General Hospital,
Greenwich Road, S.E.10. (151 Beds.)

Applications are invited for the three following posts:

RESIDENT MEDICAL OFFICER (the Senior of five resident posts). Salary £250 p.a.
CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from April 1st next.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary by Tuesday, March 4th next.

January 27th, 1930.

The Guest Hospital and Eye
INFIRMARY, DUDLEY.
(General Hospital—104 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Duties (to commence March 1st) include Medical, Surgical, Eye, Ear, Nose, and Throat, Orthopædic, Radium, and Venereal Diseases work. Salary £150 per annum, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
The Guest Hospital, Secretary.
Dudley. February 15th, 1930.

North Riding Infirmary,
MIDDLESBROUGH.
(General Hospital—150 Beds.)

Applications are invited for the posts of SENIOR HOUSE SURGEON and SECOND HOUSE SURGEON (males), which will fall vacant middle of March. The salary of the Senior post will be at the rate of £200 p.a., and of Second post £150 p.a., with board, residence, and laundry. Appointments for minimum of six months.

Applications, stating age, nationality, and previous experience, with three recent testimonials (copies), must reach the undersigned not later than February 28th.

Applicants should state which post they wish to apply for and if willing to accept either.

CHARLES POSTGATE,
Secretary-Superintendent.

Charing Cross Hospital.
REGISTRAR TO EAR, NOSE, AND THROAT DEPARTMENT.

The Council invite applications for the post of Registrar to Ear, Nose, and Throat Department. Honorarium £100 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

Charing Cross Hospital.
MEDICAL REGISTRAR.

The Council invite applications for the post of Medical Registrar. Honorarium £150 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

Charing Cross Hospital.
OBSTETRIC REGISTRAR.

The Council invite applications for the post of Obstetric Registrar. Honorarium £100 per annum.

Applications, together with copies of three testimonials, must be submitted to the undersigned not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

Liverpool Maternity Hospital.
APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management of the above Hospital intimate that a vacancy has occurred for an Honorary Assistant Surgeon.

Candidates for the vacancy are requested to send in their applications to the Secretary of the Hospital, Oxford Street, on or before March 10th next, accompanied by testimonials. Canvassing disqualifies.

A copy of the last annual report and rules of the Hospital may be had from the Secretary on application.

Hospital of St. John and
ST. ELIZABETH,
60, Grove End Road, N.W.8.

Applications are invited for the post of ASSISTANT PHYSICIAN at the above Hospital. Candidates must be Members of the Royal College of Physicians of London. The duties include the charge of beds. There is no Out-patient Department.

Applications, with copies of three testimonials, should be submitted on or before March 15th to the undersigned, from whom further particulars may be obtained.

F. DUDLEY HOBBS, B.A.,
Secretary.

East Ham Memorial Hospital,
Shrewsbury Road, E.7. (100 Beds.)

Applications are invited for the appointment of RESIDENT MEDICAL OFFICER for six months commencing April 1st. Salary at the rate of £200 per annum, with board, residence, and laundry.

Applications, stating age, experience, and full particulars, should be sent, with copies of three recent testimonials, not later than February 27th to the undersigned, from whom any further information may be obtained.

J. F. MORTON, Secretary.

East Ham Memorial Hospital,
Shrewsbury Road, E.7.

The Management Committee invite applications for the post of HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applicants must be either a Master of Surgery of a University of Great Britain or Ireland, or hold the Diploma of F.R.C.S., and must not be engaged in General Practice.

Applications, together with copies of three recent testimonials, must be sent to the Secretary (from whom all particulars can be obtained) not later than first post on Saturday, March 1st.

Cumberland Infirmary, Carlisle.

HOUSE SURGEON required April 1st (male). Six months' appointment. Previous Hospital experience desirable. Salary at the rate of £175 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, must be received by first post on Wednesday, February 26th, by the undersigned, who will supply further particulars if desired.

J. G. HOWITT, Secretary.

February 10th, 1930.

Willesden Municipal Hospital.
(150 Beds.)

Wanted, a RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, lodging, and laundry. The appointment is for 12 months, and facilities are given for Post-Graduate study. The Hospital admits all the notifiable diseases.

Applications, stating age, experience, etc., with copies of three recent testimonials, to be sent to the undersigned.

A. G. TROUP, Medical Supt.

Eccles and Patricroft Hospital,
near MANCHESTER.

SENIOR HOUSE SURGEON required March 1st. Hospital experience essential. Commencing salary £150, board, etc. Apply, with testimonials, to Secretary, Medical Board.

National Hospital for Diseases of THE HEART.

Westmoreland Street, W.1.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of Resident Medical Officer (male).

The appointment is for a period of six months from April 1st, but may be renewed for a further period not exceeding six months. Salary at the rate of £150 per annum, with board, residence, and washing.

Candidates, who must be duly registered Medical Practitioners, will not be expected to call on the Hon. Medical Staff, but should send their applications, with copies of three recent testimonials, to me at the Hospital not later than Monday, March 3rd.

ROBERT G. E. WHITNEY, Secretary.

Radcliffe Infirmary and County HOSPITAL, OXFORD.

RESIDENT MEDICAL POSTS.

Applications are invited for the following posts, which will become vacant on April 1st:

Three HOUSE SURGEONS;
HOUSE PHYSICIAN;
OBSTETRIC HOUSE PHYSICIAN.

Appointments for six months, with salaries at the rate of £120 per annum, with board, etc.

Candidates must be male and qualified.

Applications, with four copies of three testimonials, to be sent to the undersigned on or before March 6th.

A. G. E. SANCTUARY, Administrator.

St. Peter's Hospital for Stone, ETC.,

Henrietta Street, Covent Garden, W.C.2.

Applications for appointment as HOUSE SURGEON are invited from male candidates with previous experience in a similar office at a General Hospital. The salary offered is at the rate of £75 per annum, with board, lodging, and laundry.

At the expiration of his term of office, which is for six months from April 1st, the House Surgeon, subject to the recommendation of the Medical Staff, is appointed Resident Surgical Officer for a further period of six months.

Applications, accompanied by copies of testimonials, will be received by the undersigned not later than first post on Monday, March 3rd.

BEECHEY ROGERS, Secretary.

The Cancer Hospital (Free)

(Incorporated under the Royal Charter), Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum. The appointment is for six months and subject to rules. Candidates must call upon each Member of the Medical Committee not later than March 10th. A copy of the rules and the names and addresses of the Medical Committee may be obtained from the Secretary. Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Monday, March 3rd.

J. COURTNEY BUCHANAN, Secretary.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of PHYSICIAN, with charge of Out-patients, at the DREADNOUGHT HOSPITAL, Greenwich.

The elected candidate will have beds allotted to him and will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before March 8th, to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX,
February 7th, 1930. Secretary.

King Edward VII Hospital, WINDSOR. (181 Beds.)

RESIDENT MEDICAL OFFICER, male or female, also SENIOR HOUSE SURGEON required, to begin duty on March 31st. Applicants must be fully qualified, registered, and have held resident appointment previously. Salary attached to the first mentioned appointment is at the rate of £200 per annum, and to the second £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than March 10th.

A. E. CHURCHER, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
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W. J. HICKS, *Secretary.*

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FOR MENTAL DISORDERS.

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Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Whitehaven and West Cumberland HOSPITAL, WHITEHAVEN.

(90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior an opportunity is given of becoming Senior for the second six months at the rate of £150 per annum

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," not later than Wednesday, Feb. 26th.

R. HIGGINS, Secretary.

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N. W. County.—Death Vacancy.—Old-estab. About £3,000 p.a. Panel about 2,500. Easy payments arranged.—No. 8615.

Eastern Counties. — Country.—About £1,800 p.a. Panel and appts. over £900 p.a., fees 2/6—10/6. Mids. 2—5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Worcs. — Country Practice.—Unopposed, 4½ miles. £1,100 p.a. Fees 5/ to 10/-. Panel and appts. £410. House, 6 bed., etc. Rent or buy. Easy terms. —No. 8612.

Cheshire Town. — About £900 p.a., increasing. Visits 3/6—5/-. Mids. 3 gns. Panel about £400. Small house for sale. Urgent sale.—No. 8597.

S. Wales. — Town Nucleus. About £600 p.a., increasing. Mids. from 2 gns. Visits 2/—3/6. Panel about 400. House, 4 bed., etc. Sep. surg. and dispensary. House-Practice £2,100 or offer, part down.—No. 8609.

Home Counties.—Country Practice. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 230. Mids. 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £280 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250. —No. 8608.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Small panel about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage. —No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8603.

Australia. — Over £1,000 and great scope. Hosp. appt. worth £400. Fees 10/6 up. Prem. £700. New bungalow, 2 bed., 1 large sitting room, surgery, etc.—No. 8604.

Lincs.—Unopp. Country Practice. About £850 p.a. Clubs and appts. about £70 p.a. Panel £232 p.a. Mids. 2—4 gns. Visits 3/- to 10/-. House, 5 bed., etc., to rent; large garden.—No. 8592.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.— £1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8595.

N. W. Scotland. — About £860 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premium, including furniture, only £1,200.—No. 8577.

Glos.—Over £800 p.a., increasing annually. Clubs £40 p.a. Panel 650. Mids. 2—10 gns. Visits 3/6—10/6. Good house, 5 bed., etc.—No. 8578.

Eastern Counties. — Assistancy, with view to Partnership. 1/3rd of £3,300 p.a. Panel over 1,300. Appts. £240 p.a. Mids. 2 to 10 gns. Visits 5/- to 21/6, etc. Suitable accommodation.—No. 8575.

Home Counties.—Country Town. Share worth £1,000 or more p.a., in old-established Practice. Appts. £250 p.a. Panel over 2,700. Personally visited.—No. 8563.

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LANCS.—Middle and working-class G.P. Receipts £5,000. Panel 1,200. Medium-sized house to rent or for sale. Premium £5,000, part down, balance by arrangement.

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LANCS.—Good-class non-panel G.P., situated in residential district. Receipts over £1,500 (average £1,179). Suitable house available to rent or for sale. Scope for surgery, especially Eyes and E.N. and T. work. Suitable for a F.R.C.S. Premium £1,200 cash.

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LONDON, NORTH.—Lock-up Surgery, with living accommodation if desired, situated in working-class district. Receipts £260 p.a. Panel 170. Premium £300, or near reasonable offer.

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6. WEST MIDLANDS.—Well-estab. PRACTICE in Market Town and Agricultural District. Receipts £1,572. Panel 500. Appointments worth £118. Good house, garage, garden, and all conveniences.
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The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

2 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

3 SOUTH-EAST COAST. — Partnership in non-dispensing Practice over £4,000 p.a. in favourite residential town and seaside resort. Panel 950. Choice of houses. One-fifth or one-fourth share at 2 years' purchase.

4 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

5 SOUTH OF ENGLAND.—Partnership in Practice about £3,500 in small town close to favourite health resort. Small panel. House (7 bedrooms) for sale or rent. Premium one-third share 2 years' purchase. Incoming Partner should hold a University degree and be not over 35 years of age.

6 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

7 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering-place. Receipts last year £930 (including panel £230). Ground floor flat to let. Premium £1,050.

8 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. Educational facilities. Premium £1,000.

9 LONDON, S.W.—Cash and Panel Practice in populous district. Receipts 1929, £460. Panel 550. Rent of Surgery 15/- weekly. Premium £650.

10 NEW ZEALAND. — Medical Officer (young) required for Colliery Company. Salary £900 p.a., with house free of rent, light, and coal. Furniture to be purchased.

11 LONDON, S.W. — Partnership in mixed Practice of over £6,200 p.a. in one of the best outlying residential suburban districts. Panel over 5,000. House (5/6 bedrooms) for sale or rent. Premium one-sixth share 2 years' purchase. Partner should be young and married or about to be.

12 NEAR BIRMINGHAM.—Partner required in middle-class Practice over £2,000 p.a., in good residential town. Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

13 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one-third share 2 years' purchase.

14 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

15 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

16 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

17 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

18 LONDON, S.W. — Good middle-class non-dispensing PRACTICE in pleasant residential suburb. Receipts year ended September 30th, 1929, £2,428. No panel. Excellent detached corner residence (7 bedrooms). Premium—house and Practice—£4,000.

19 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

20 LANCASHIRE. — Practice of £1,500 in rapidly growing district within a few miles of a popular resort. Panel over 200. Very nice compact house (4 bedrooms), with beautiful garden and orchard, for sale. Prem.—Practice—£1,500.

21 LIVERPOOL. — Practice of over £1,200 p.a. Panel 600. House (4 bedrooms), garage and garden, for sale. Golf near by. Scope. Premium £1,550.

22 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 320. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

23 SOUTH AFRICA.—Practice nearly £3,000 p.a. in one of the pleasantest Towns in the Cape Province. House (4 bedrooms) to rent. Excellent surgical centre. Purchaser should be able to undertake major surgery. Premium £2,200, part by instalments.

24 WEST OF ENGLAND.—Practice averaging £1,350 on outskirts of important City. Panel 1,767. Pleasantly situated house (4 bedrooms), garage and large garden, for sale. Premium £2,100. Considerable scope.

25 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £730. Panel 420. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

26 EASTERN COUNTIES. — Partnership in Country Practice over £2,000 p.a. in prosperous agricultural district. Panel 1,070. Nice detached house (6 bedrooms), electric light, etc., for sale or rent. Premium two-fifths share £1,400.

27 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

28 LONDON, N.—Practice of £1,100 p.a. in populous district. Panel 1,150. House to rent. Premium £1,500.

29 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

30 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

31 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

32 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

33 MADEIRA.—Season Practice. — Receipts last season over £900. Easily worked. Practically no night work or midwifery. Excellent climate. Premium £1,000.

34 LONDON, S.E.—Cash and Panel Practice in thickly populated area. Receipts 1929, £260. Panel 250. Rent of premises £9 per month. Premium £750, part by instals.

35 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

36 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

37 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

38 WEST OF ENGLAND.—Country Practice about £500 p.a. in mining and agricultural district. Panel £550. House (6 bedrooms), with fine garden and paddock, to rent. Premium £400.

39 NURSING HOME in favourite Town on Kent Coast. Clear net profit £750 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

40 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

41 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,500. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

42 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (5 bedrooms) to be sold or let. Premium 1½ years' purchase.

43 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (5 bedrooms) to rent. Premium one-half share 1½ years' purchase.

44 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

45 EASTERN COUNTIES. — Partnership in Country Practice of £2,320 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

46 W. OF ENGLAND. — Ophthalmic PRACTICE about £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium 1½ years' purchase.

47 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering-place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,100.

48 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 2 bedrooms, to rent. Premium £1,300.

49 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

50 MIDLANDS. — Country Practice about £1,450 p.a. within 10 miles of first-rate town. Panel 1,250. large newly decorated house (7 bedrooms), in grounds of 3½ acres, for sale. Sport. Premium 1½ years' purchase.

51 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

52 BRITISH EAST AFRICA. — Assistant required in General and X-ray and Electro-therapeutic Practice.

53 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 800. Suitable and convenient house.

54 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained.

55 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium 1½ years' purchase.

56 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing. Semi-detached 10-roomed house, with nice garden and garage, to rent. Premium 1½ years' purchase.

57 SOUTH COAST. — Increasing Practice £1,515 p.a. in favourite Seaside Resort. Panel 400/500. Large house for sale. Scope for increase. Premium 1½ years' purchase.

58 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (6 bedrooms) for sale. Sport. Premium 1½ years' purchase.

59 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

60 WEST OF ENGLAND.—Steadily growing Country PRACTICE of about £650 in delightful part of the Cotswolds—easy reach of two good Towns. Panel 497. House (6 bedrooms), with garage, ½ acre garden, and paddock, for sale. Good scope. Premium £800.

61 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms) and garden for sale. Premium £750.

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1. CAMBS.—Old-established Country PRACTICE, averaging for the past three years over £1,200 p.a. Panel of 870. Visits 5/- upwards, medicine extra. About 30 cases of midwifery from 2 to 3 gns. Nice house, with 2 reception, 6 bedrooms, etc., and garden. Rent on lease £80 p.a. Premium £1,800.
2. PARTNERSHIP.—In a most desirable outlying residential suburb a suitable Partner (University Graduate, experienced, 30 to 35 years of age and married preferred) can acquire a share (producing at first about £1,200 p.a., but larger might be considered, with further shares up to a third at arranged intervals) in an old-established good mixed-class Practice, averaging over £10,000 p.a. Very good house, with ample accommodation, garden, etc., on rental. Premium 2 years' purchase. Short preliminary assistantship essential.
3. PARTNERSHIP.—LONDON, S.W.—PLEASANT RIVERSIDE SUBURB.—A one-sixth share is offered in an old-established mainly better-class Practice, rapidly increasing, and with scope for still further development. Average gross cash receipts for past two years £6,213 (last year £6,662). Panel of over 5,000. Fees 3/6 to 21/-. Mid. 3 to 20 gns. Very good house, with 5 to 6 bedrooms, etc. For sale or might be rented. Premium 2 years' purchase.
4. PARTNERSHIP.—WITHIN 100 MILES OF LONDON.—A one-fourth share can be acquired in a very good non-dispensing mainly better-class Practice, in a large town, at present worked by three partners, who now require further assistance. Gross cash receipts average over £8,500 p.a. Panel of 700. Fees 5/- to 21/-. Suitable house obtainable. Graduate preferred, aged 30 to 35, and experienced in anæsthetics. Premium £4,000.
5. MIDLANDS.—Old-established good mixed-class PRACTICE in beautiful country district near large town. Receipts for last twelve months estimated to be £900, and increasing. Fees 3/6 to 20/-. Excellent house with all conveniences, containing 2 reception, 6 bedrooms, etc. Rent on lease £65 p.a. Premium £1,800.
6. SOUTH-EAST COAST.—PARTNERSHIP.—A one-third share (with increase later) in an old-established non-dispensing non-panel Practice, in favourite residential resort. Gross cash receipts average over £3,000, with good scope. Fees 5/- to 21/-. Good corner house, with 6 bedrooms, etc. Can be purchased or rented. Premium 2 years' purchase. Scope for surgery if desired.
7. LONDON, S.W.—Very old-established chiefly middle-class PRACTICE, rapidly increasing and offering still further scope. Gross cash receipts for the immediate past twelve months approximately £5,000. Panel of about 1,500; could be much increased. Fees from 2/6 to 21/-. Two houses available, on rental. Very suitable for two friends in partnership. Premium 1½ years' purchase.
8. NORTH LONDON.—Old-established middle and working-class PRACTICE, averaging nearly £2,200 p.a. Panel of 1,356 and appointments worth about £500 p.a. Visits 3/6 up. Very little midwifery 2½ to 5 gns. Nice house, in excellent repair, 3 reception, 4 bedrooms, etc., and professional rooms. Rent on lease £65 p.a. Premium £3,500.
9. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—Third share of old-established mixed-class and increasing Practice in small pleasant market town in an agricultural district. Cash receipts last year over £3,100, including appts. worth £300 and panel with mileage producing £500. Visits 3/6 to 15/-. Opposition slight. Railway station. Compact house (consulting and waiting rooms, 2 sitting, 5 bedrooms, dressing and bathroom, etc.). Garden. Garage. Price, freehold, £900. Premium 2 years' purchase.
10. SUSSEX.—Unopposed old established Village PRACTICE in delightful surroundings, producing about £1,100 p.a., including panel of 545, and capable of considerable increase. Exceptionally charming residence standing in 1¼ acres of well-laid-out garden, tennis court, etc., and containing lounge hall, 2 reception, 7 bedrooms (3 fitted h. & c. water basins, dressing and 2 bathrooms, etc. Central heating. Electric light. Garage. Price, freehold, £3950. Premium £1,650.
11. HOME COUNTY.—Near Sea.—Old-established unopposed Country PRACTICE in pretty district. Receipts last financial year £1,113, including union, etc., £55, and panel 400. Railway station near. Good house in own grounds (about one acre, but more can be had if wished), containing 2 reception, 6 bedrooms, etc. Water laid on and electric light available. Price, freehold, £1,650. Premium £1,625. Educational facilities and sport.
12. PARTNERSHIP.—OXON.—Delightful residential district near good town.—A one-third share (to commence with) in an old-established good mixed-class Practice, averaging for the past three years £1,540, and offering good scope. Panel of nearly 1,000. Fees 3/6 to 21/-. Choice of two houses at rentals of £100 and £50 p.a. Sport of all kinds. Premium 2 years' purchase.
13. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Premium £2,300. Cottage Hospital, and good scope for major surgery.
14. BORDERS OF NORTHANTS AND LINCS.—Unopposed old-established Country PRACTICE, within easy reach of large town, and worth over £1,500 p.a., including panel (with mileage) £675, and appts. about £80. Visits 5/- to 20/-. Suitable house available. Rent £70 p.a., or can be bought. Premium 1½ years' purchase. Held by Vendor, who is retiring, over 30 years. Sport of all kinds.
15. NEAR LIVERPOOL.—Mainly better working-class PRACTICE, producing about £700 p.a., including panel of 854. Fees 2/6 to 5/-. Mid. 3 to 5 gns.; about 20 cases yearly. Suitable house available on rental. Premium £1,000.
16. LIVERPOOL.—Middle and working-class PRACTICE. Receipts for immediate past twelve months £1,247, including panel of 602. Fees from 2/6. Suitable house, with 2 reception, 4 bedrooms, etc. Large garden. Price for leasehold £1,550, of which £1,300 could remain on mortgage. Premium £1,550.
17. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
18. SOUTH COAST.—FAVOURITE HEALTH RESORT.—Old-established mixed-class PRACTICE, producing about £1,000 p.a. Small panel of 283. Fees from 2/6. Suitable house, with 3 reception, 5 bedrooms, etc. Large garden. Price for leasehold £1,400, £1,250 on mortgage. Premium £1,200.
19. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 330. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
20. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
21. CHANNEL ISLANDS.—Old-established better and middle-class PRACTICE, averaging about £1,000 p.a., but capable of increase. Fees 5/- to 21/-. Little midwifery. No panel. Large well-situated house with garden. Garage for 3 cars. Very pleasant social conditions. Premium for Practice and house £4,000, of which £1,500 to £2,000 could remain on mortgage.
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23. WITHIN TWENTY MILES OF LONDON.—Old-established good mixed-class PRACTICE, in attractive residential district. Receipts average £1,000 p.a. Panel of nearly 500 and appts. worth £60. Visits 3/6 to 21/-. Very nice house, with all modern conveniences and half acre of garden. Price for freehold £1,800. Premium £1,400.
24. YORKS.—PROSPEROUS LARGE TOWN.—Well-established compact PRACTICE, averaging nearly £1,600 p.a., including panel of 1,400. Fees 3/- upwards. Not much midwifery. Low expenses. Very well situated double-fronted house, 2 reception, 4 bedrooms, etc., and good professional accommodation. Garden. Price for freehold £1,500 (£1,000 on mortgage). Premium 1½ years' purchase.
25. YORKS.—LARGE TOWN.—Old-established mainly working-class PRACTICE, producing over £1,200 p.a., including panel of over 1,400. Fees 2/6 to 5/-. Well-situated house, with good garden. Price £1,500. Premium £1,800.
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British Medical Journal.

MARCH 1st, 1930.

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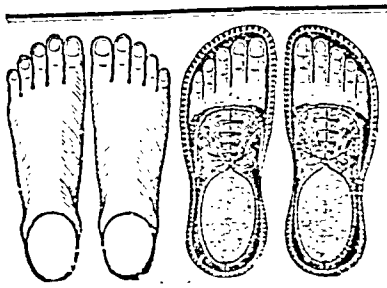
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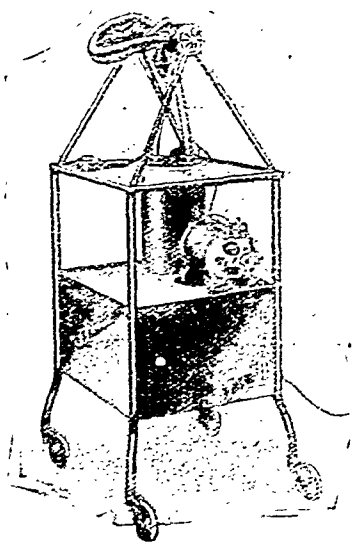
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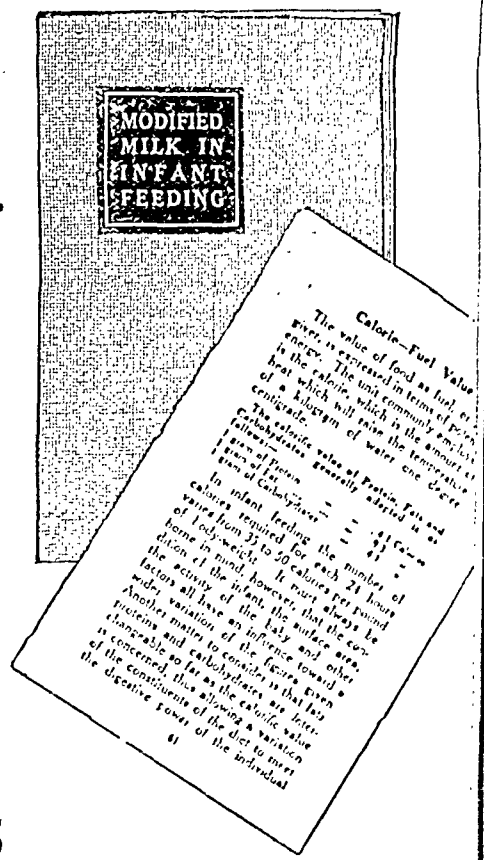
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The pamphlet "Modified Milk in Infant Feeding" will be forwarded with samples post free upon application to:—



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"B. D." Brand



The Original British Brand of Acriflavine

The Flavines are diamino-acridine compounds which possess powerful antiseptic properties; the best known of these antiseptics is probably Acriflavine "B.D." Brand—the original British product.

Acriflavine "B.D." Brand was first employed as a wound dressing, but is now used in the treatment of a number of septic conditions such as gonorrhœa, eczema, pyorrhœa, etc. It possesses one distinct advantage over other antiseptics in that its action is actually enhanced in the presence of serum.

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Other preparations:

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Invaluable as a Galactagogue

This nourishing and sustaining food drink is helpful to nursing or expectant mothers

NOT only hundreds, but literally thousands of cases are recorded in which this well-known preparation — Horlick's Malted Milk — has proved its efficiency as a body-building food.

It is particularly valuable as an addition to the diet of the expectant and nursing mother. For Horlick's is a perfectly balanced food containing fat, proteins and soluble carbohydrates combined together in correct nutritive ratio. It is prepared from fresh, full-cream cows' milk, selected wheat and malted barley — and, during manufacture, is partially predigested to ensure easy assimilation.

Horlick's is rich in valuable malt-sugars, but contains neither cane sugar nor free starch. It is therefore extremely easily digested, and highly productive of energy.

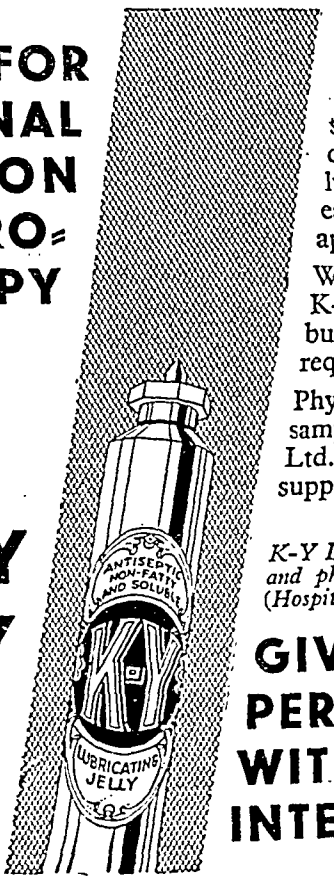
These characteristics make it valuable as a galactagogue. Its abundant nutriment supplements any deficiencies in the mother's regular diet, and promotes a regular and nourishing supply of milk, and its easy digestibility makes it acceptable when other forms of nourishment are unwelcome.

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Horlick's is now obtainable in two forms — the original, natural-flavoured Malted Milk, and the new Chocolate Flavoured form — identical in its constituents with the original Horlick's, but flavoured with fine chocolate. Horlick's is sold in sealed glass bottles, price 2/-, 3/6, 8/6, 15/-. Also in tablet form.

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K-Y Jelly lubricates cystoscope, proctoscope, sound, bougie, catheter, rectal tube, speculum, douche tip, etc., more efficiently than any similar lubricant. It is more "slippery," flows more easily and does not bind or interfere with the application of local remedies.

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* * *

K-Y Lubricating Jelly is obtainable from medical supply houses and pharmacists throughout the world. Tubes in cartons, 1/3 (Hospital size, 2/6).

GIVES PERFECT LUBRICATION WITHOUT INTERFERENCE

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"Alocol" has been subject to extensive clinical trial, and literature giving full particulars of the results will be gladly sent to medical men on request.

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For Gastric Duodenal or Pyloric Ulcers

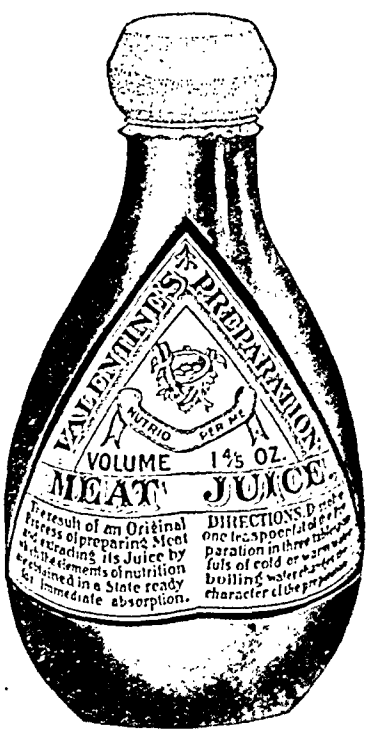
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Richmond, Virginia, U. S. A.

JB 92

A safe and simple antacid which is also a gentle laxative must necessarily be of great value to medical practitioners when administering to ladies and children and all who are constitutionally delicate.
May we, therefore, venture to remind you of

DINNEFORD'S PURE FLUID MAGNESIA



which has been extensively prescribed and used by the Medical Profession for a Century, and is still the best and safest means of administering Magnesia.

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FOR GENERAL and LOCAL ANÆSTHESIA
IT IS INDISPENSABLE IN THE SURGERY

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Supplied in 60 c.c. graduated flasks or in 5 c.c. *hermetically sealed ampoules.*

May be had perfumed with Eau de Cologne if desired.

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DIGESTIBILITY

is an outstanding advantage secured by specifying

'WHITE BEAR' BRAND Cod Liver Oil



TRADE MARK.

A first-grade Norwegian oil of unquestionable purity. Prepared by the latest scientific process designed to exclude the impurities of decomposition and oxidation. It is exceptionally free from taste and odour, whilst the Vitamin content and the physiological activity of the oil are fully preserved. Patients take White Bear Brand Cod Liver Oil readily and digest it with the minimum of effort. The price, too, is advantageous.

Supplied in 4 oz., 8 oz., 12 oz., 16 oz., and 20 oz. bottles by all Chemists

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London Distributors: JOHN BELL & CROYDEN, 50-52, Wigmore Street, W.1.

The Medical Profession when prescribing "Liquor Carbonis Detergens" SHOULD ADD THE WORD

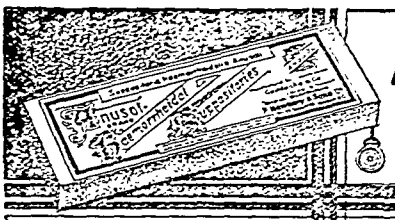
Wright's

On receipt of your professional card, a package will be sent containing a sample of each of the following—

Wright's Coal Tar Soap.
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Wright's Liquor Carbonis Detergens.

Although there is no secrecy as to the composition of Liquor Carbonis Detergens (it is described as "an alcoholic solution of coal tar"), the method of manufacture is unique. Imitations will be found to be produced by simple digestion, usually accompanied by some primitive, perfunctory, and inadequate stirring; whereas, in the case of the genuine product, the intimate contact required, for the complete extraction of all the soluble antiseptic constitutents, is attained by a series of complicated processes, involving the use of highly specialized machinery.

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Removing one burden of pregnancy

Haemorrhoids not infrequently add to the discomforts of pregnancy. Whether caused by pressure from the gravid uterus, or previously existent, they are aggravated by this condition.

Anusol BRAND Haemorrhoidal Suppositories

afford prompt relief from the pain, they allay the inflammation and control haemorrhage.

In pregnancy, indeed, Anusol Brand Suppositories find their most important field of usefulness.

A trial of Anusol Brand Suppositories will prove a satisfying experience. May we send you a liberal trial package?

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31-33, Banner Street, London, E.C.1.
Manufactured by GOEDECKE & CO., LEIPZIG (Germany)

COMPOUND SYRUP OF HYPOPHOSPHITES

"FELLOWS"

Trade Mark



ATONY
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ITS FORMULA

Combines Mineral Foods and Synergistic Agents.

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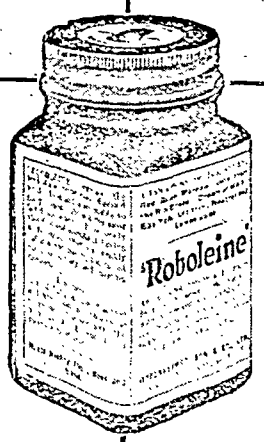
One to two teaspoonfuls after meals.

ITS EFFICACY

Is such that under its influence one observes a rapid increase of appetite and a marked elevation of tone.

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Roboleine

The Food that Builds the Body.

Recommended for nearly a generation by the Medical Profession in cases of Malnutrition, Debility, Sleeplessness, Loss of Weight. All Tuberculous conditions. For Nursing and Expectant Mothers as a galactagogue. An adjunct in the dieting of infants, etc.

A product of

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a new antiseptic

QUINANIL

ANIL - QUINOLINE 48 S

THIS important new antiseptic is the result of Research carried out by a group of workers at the University of Leeds under the auspices of the Medical Research Council. It has been subjected to thorough clinical trials in the General Infirmary, Leeds.

Boots Pure Drug Co. Ltd. have been supplying QUINANIL for these clinical trials, and the results were reported in the LANCET of November 9th, 1929.

Every batch of QUINANIL-BOOTS is submitted to the University of Leeds for approval before issue, and ample supplies are now available for the use of the Medical Profession.

QUINANIL is usually employed in solution in normal saline. The strengths used have varied from 0.005% (1 : 20,000) to 0.1% (1 : 1,000). See LANCET of November 9th, 1929, p. 969.

Supplied in :

BOXES OF 6 TUBES
EACH CONTAINING 0.5 gm. - - PRICE 7/6

VIALS
EACH CONTAINING 2.5 gm. - - PRICE 5/-

BOOTS PRODUCTS

Boots Pure Drug Co. Ltd., Nottingham

ASPIRIN DERIVATIVES

IN

RHEUMATISM, NEURALGIA, INFLUENZA, ETC.

We introduced and manufacture the following:

"MAGISAL"

PROMPT IN ACTION, AS BEING A SOLUBLE SALT (1 in 12, AGAINST ASPIRIN 1 in 460).

"TYLCALSIN"

A further Soluble Salt

FOR USE ORALLY IN RHEUMATIC AFFECTIONS AND OF VALUE IN CATARRH, NEURALGIA, AND FOR GENERAL RELIEF OF PAIN.

Bots. of 20 Tablets 2/6; 100 11/6.

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A compound of Aspirin and Bromine

CONTAINING 30.86% BROMINE IN 5-GRAIN TABLETS. SUGGESTED IN ALL FORMS OF NERVE TROUBLE, AND WHEREVER THE COMBINED QUALITIES OF ASPIRIN AND BROMIDE ARE INDICATED.

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A NEW COMPOUND OF THE SALOL TYPE EMBODYING THE THERAPEUTIC EFFECTS OF BROMINE, ASPIRIN, AND PHENOL.

Bots. of 25 Tablets 3/-.

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A very Soluble Salt of Aspirin

FOR USE PER OS AS AN ANTI-RHEUMATIC AND IN INFLUENZA, ALSO IN NEURALGIA, GOUT, AND AS A GENERAL ANALGESIC.

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A compound of Aspirin and Iodine

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THE NEW ANTI-RHEUMATIC FOR INUNCTION

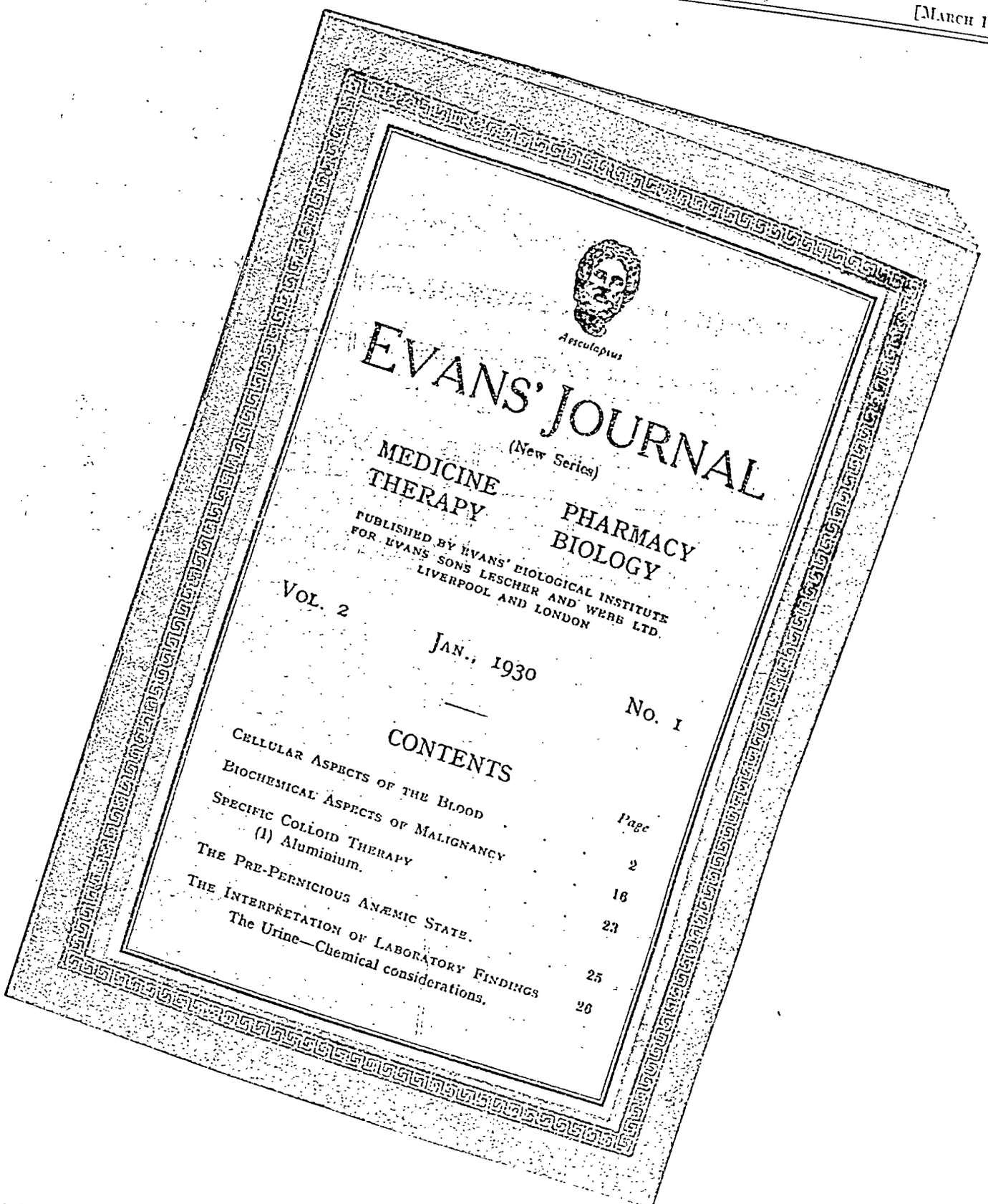
BALM 2/6. LINIMENT 2/6.

Samples of any of the above supplied on request
Write also for particulars of Peptone, Mercurome, and other Martindale preparations

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Aesculapius

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(New Series)

MEDICINE PHARMACY
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FOR EVANS SONS LESCHER AND WEBB LTD.
LIVERPOOL AND LONDON

VOL. 2

JAN., 1930

No. 1

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Delicious— *—Nutritious*

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"The Ideal Medium for Prescribing Milk"

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COW & GATE CHOCOLATE MILK is a blend of specially chosen chocolate, full cream milk and sugar. The milk is obtained from the rich West of England pastures. It is dried and blended with the other ingredients by a special Cow & Gate process, which preserves the vitamins and at the same time yields bacteriological sterility. IT IS THE ONLY FOOD OF ITS KIND WHICH DOES NOT REQUIRE THE ADDITION OF MILK.

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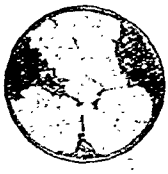
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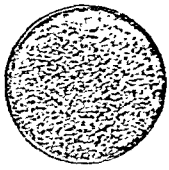
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COW & GATE CHOCOLATE MILK is specially valuable to the growing child, who can thus be coaxed without difficulty to take extra milk in a palatable way. To the worker; to the expectant and nursing mother; to the aged and infirm, it presents a delicious and nutritious tonic beverage.

COCOA MADE WITH COWS' MILK





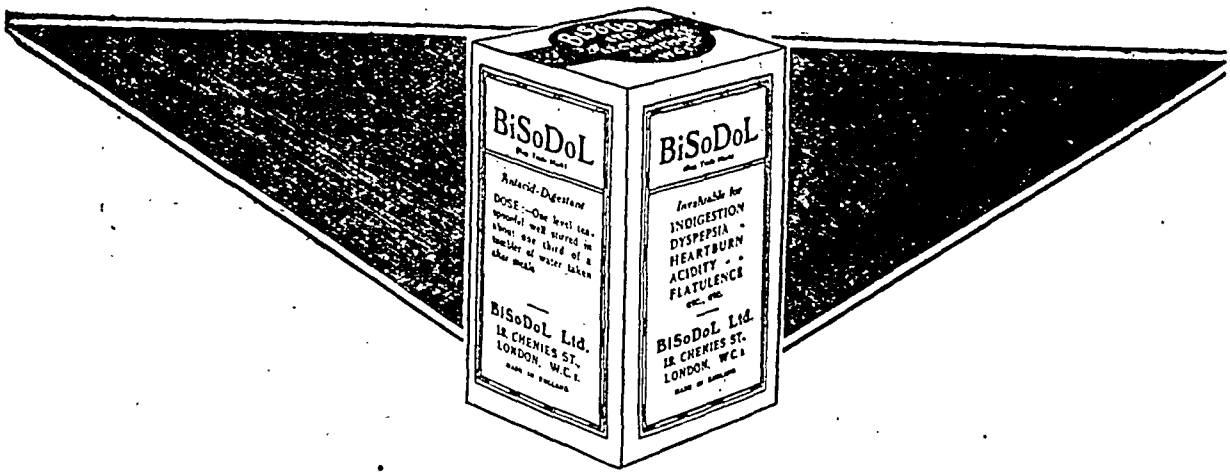
COW & GATE CHOCOLATE MILK

The makers will gladly supply samples for clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

Cow & Gate Milk Food

COW & GATE LTD. GUILDFORD, SURREY

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The Alkalies in Respiratory Diseases

Recent work on influenza, the common cold, pneumonia, and catarrhal fevers in general, has served to focus attention on the value of the alkalies in the treatment of these infections. It has been found that a system saturated with alkalies increases the resistance to bacteria. During the influenza epidemic of 1918, patients so alkalinised showed a low mortality rate and, in the main, a quick convalescence.

BiSoDoL, a balanced alkalinising agent, may be effectively employed to combat acidosis and build up the alkali reserve without upsetting the stomach or causing alkalosis.

The utility of BiSoDol as an antacid in hyperchlorhydria, gastritis, gastric and duodenal ulcer, has been abundantly demonstrated. It has also been given with marked success for the control of cyclic vomiting and the morning sickness of pregnancy.

BiSoDoL

Samples will be gladly sent to Physicians on request.

BiSoDoL Limited,
12, Chenies Street, London, W.C.1.

What BEMAX does for Children

RECORD OF WEIGHTS.

Name.	Age, years.	Weight Gained.	Period of Time.
		st. lbs.	
Dorothy W.	10	10½	6 weeks
Gladys E.	13	1 4	3 months
Edna O.	13	6	2 weeks
Winifred S.	13	1 4	7 weeks
Joan M.	10	9	6 weeks
Kenneth G.	7	8½	6 weeks
Virla W.	14	1 10	4 months
Lily T.	13	13¼	6 weeks
Hilda A.	8	13½	7 months
Lydia L.	12	1 ¼	7 months
Joan M.	12	1 1	10 months
Beryl J.	13	1 11½	10 months
Winnie B.	12	1 2	4 months
Dorothy C.	12	7½	4 months
Edna J.	11	7½	6 months
Phyllis T.	8	6	6 weeks
Dorothy W.	8	6	2 months
Gladys H.	9	1 3	7 months
Margaret H.	13	6	and 8 days
		7½	6 weeks
Jean W.	11	11¼	6 weeks
Winnie O.	12	8¼	3 months
Dorothy S.	12	8½	6 weeks
Rose B.	11	11½	6 weeks
Daisy W.	12	5¼	3 months
Ethel W.	13	6	5 weeks
Mary A.	12	7½	11 weeks
Violet T.	10	10¼	and 2 days
Doris G.	10	8½	3 months
		6	6 weeks
Peggy S.	13	5½	6 weeks
Edith B.	13	6	6 weeks
Olive K.	10	7	6 weeks
Dorothy R.	9	6	6 weeks
Thomas C.	8	10½	5 months
Elsie R.	7		and 4 days
Rose T.	7		
Euna P.	8		

A well-known Children's Convalescent Home recently conducted a series of tests to determine the effect of Bemax on debilitated children.

The appended chart shows the increases of weight recorded during the test period, when suitable quantities of Bemax were added to the ordinary dietary. The Medical Officer of the Home records that the general improvement in health and stamina was in many cases remarkable, absence of the usual colds and other winter ailments being an especially notable result of the treatment.

Bemax is a tonic cereal food containing a higher percentage of natural Vitamin B than any known substance, as well as Vitamins A and E, and valuable mineral salts.

Bemax restores to the diet those essential vitamins that modern food lacks, and so re-establishes healthy digestion, correct elimination, and complete bodily well-being in all cases of ill health resulting from vitamin deficiency.

Bemax should be considered an indispensable part of the regular dietary of every growing child and adult.

BEMAX

The Most Concentrated Extract of Natural Vitamin B

THE BEMAX LABORATORIES, 38, DANEMERE STREET, LONDON, S.W. 15

PHYSIOLOGICAL TREATMENT OF CONSTIPATION



COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS

which strengthens the glandular secretions of the organ

BILIARY EXTRACT

which regulates the secretion of the bile.

AGAR-AGAR

which rehydrates the contents of the intestines.

LACTIC FERMENTS

anti-microbian and anti-poisonous action.

IN TABLET FORM.

ITS USE DOES NOT LEAD TO HABIT

LABORATORIES

LOBICA

46, Avenue des Ternes, PARIS (17e)

WHOOPING COUGH

Whooping Cough is a condition in which treatment with a suitable vaccine has proved remarkably successful. Some Practitioners, however, are deterred from using Vaccines, owing to fear of reactions, but this objection may be overcome by employing Detoxicated Whooping Cough Vaccine (Genatosan). In the preparation of this vaccine all the toxic elements of the germ are removed; as a result it is given to young children and infants without any harmful reaction and produces a high degree of immunity.

The following extract from a Practitioner's letter may prove of interest:—

"..... Some time ago, I resolved to try for the first time a vaccine in whooping cough and the results were so excellent, that I thought you would be interested to hear from me.

(*a*) Three children aged 3 years, 2 years and 8 months, were treated when the disease was about 10 days established; all were completely cured after the third injection—the mother described the effect to me as simply miraculous.

(*b*) Two aged 6 years and 3¼ years, who had relapses, were well after they had got the 2nd injection.

(*c*) An infant aged 8 months—the whoop disappeared after 1st injection. The cough was gone after 2nd injection, and the mother, who had tried everything and despaired of the child's life, was exceedingly grateful and assured me it was simply wonderful to see how the child had slept for the first time for days and was able to retain its food and rapidly put on weight. The Vaccine used was your Detoxicated Whooping Cough Vaccine. Speaking for myself, I can only describe the effects as magical, as the children were worn out and emaciated from coughing, vomiting, and loss of sleep."

Additional information regarding the above Vaccine will gladly be supplied to any Practitioner who writes to The Vaccine Department, Genatosan Ltd., Loughborough, Leicestershire.

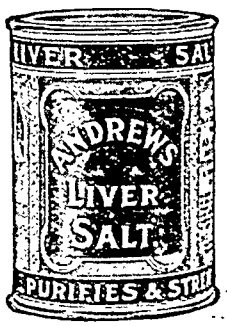
Constipation

In spite of dietetic measures and exercise many patients still suffer from the devitalising effects consequent upon intestinal stasis. To such, the attainment of perfect health is debarred. Whether in disease or convalescence faecal stagnation retards recovery.

In health and in the majority of pathological conditions, an efficient and safe aperient will be found in Andrews Liver Salt. It is a briskly effervescent Saline with a pleasant taste.

Antacid in action, it stimulates the secretion of bile and of the mucus glands of the intestines, and causes a semi-fluid stool and a painless, easy evacuation.

Especially indicated in the constipation of childhood and old age; of inestimable value to those who travel; and a valuable adjunct in the treatment of those conditions incident to hepatic congestion and torpidity.



Dose ½ - 3 teaspoonfuls (according to requirements) in a glass of water.

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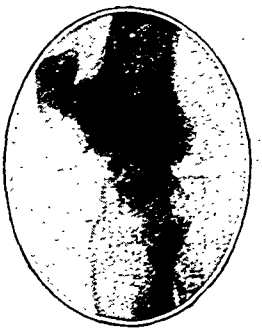
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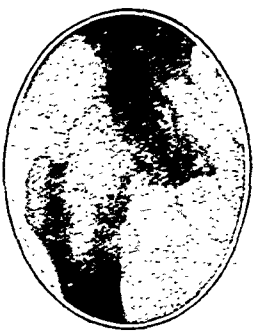
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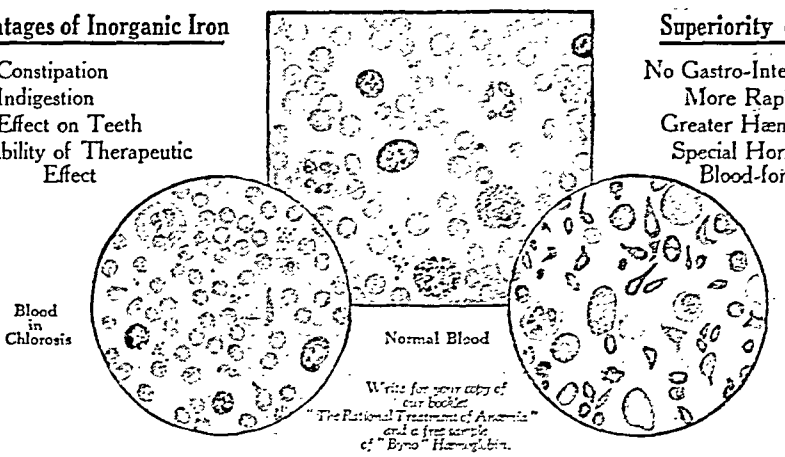
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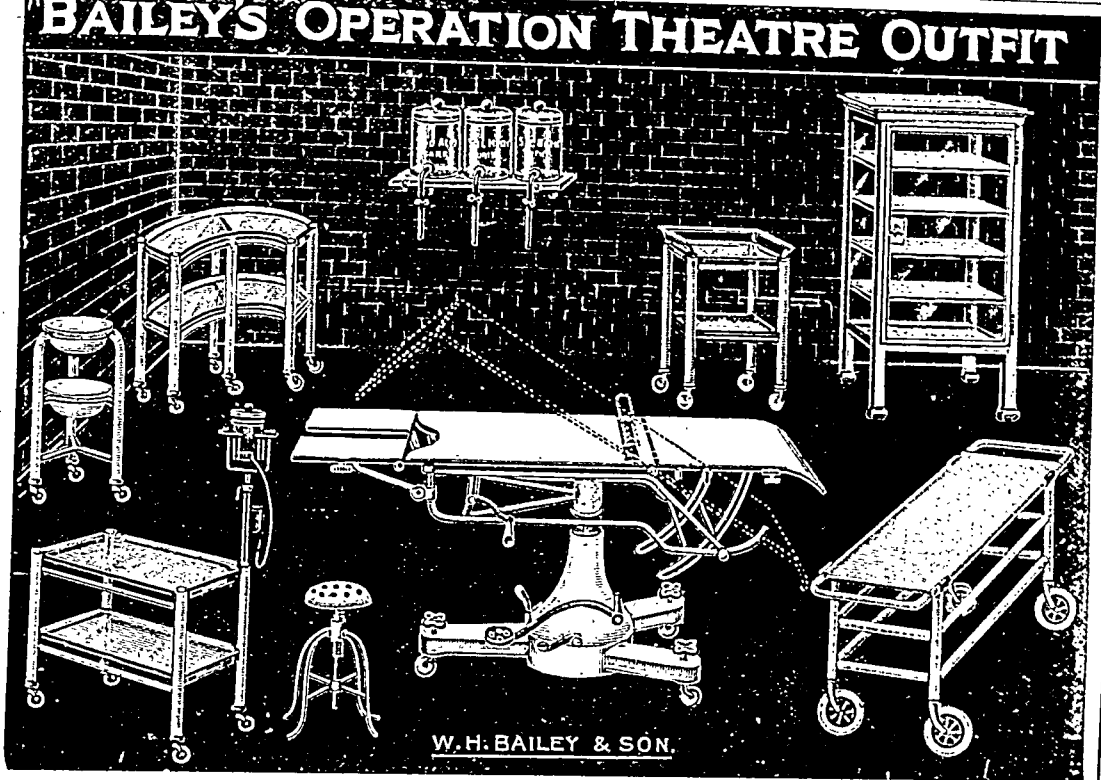
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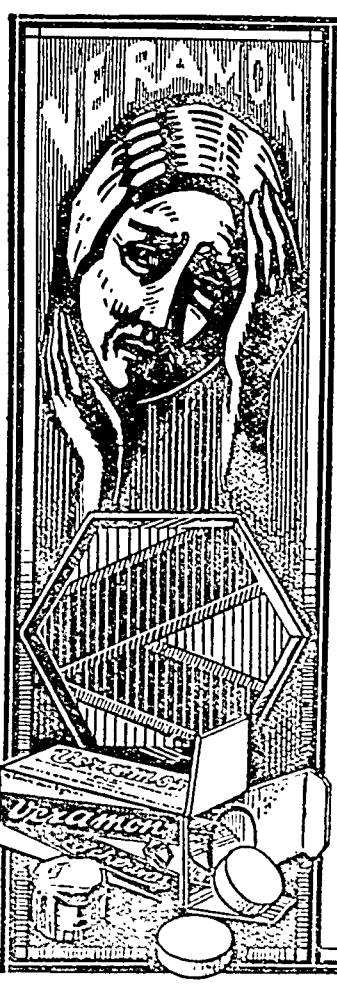
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Arris and Gale Lecture

ON

ANATOMY, ORTHODOX AND HETERODOX, IN RELATION TO SURGERY.

DELIVERED BEFORE THE ROYAL COLLEGE OF SURGEONS OF ENGLAND ON FEBRUARY 19TH

BY

W. McADAM ECCLES, M.S., F.R.C.S.,
CONSULTING SURGEON, ST. BARTHOLOMEW'S HOSPITAL.

WHAT was orthodox in 1646 when Edward Arris founded the lectureship was that the holder of the office, which I have the *honour to-day to possess*, should be a "Reader of the Muscular Lecture." I leave it to you to judge exactly what was meant by this title, for by it I shall undoubtedly be heterodox now. My later predecessors in office were styled "Masters in Anatomy," and included Percivall Pott and John Hunter.

John Gale founded the Gale Lectures in 1655, nine years after the foundation of Arris, but the earliest recorded lecture under this trust was in 1698, when Dr. Havers, of Haversian canal fame, was appointed to deliver "an Anatomy Lecture called Gale's Anatomy." Subsequently it was styled "The Osteology Lecture." Thus we have these two ancient foundations concerned with muscles and bones, and I am not so very sure that we have got away *from the trammels of osteology and musculature even* in the present, when the student starts learning facts concerning these, and spends perhaps far too much time thereon. In 1810 the foundations were united, and in 1857 the title of the lecturer was changed to that of Professor of Human Anatomy and Surgery. In 1864 it was enjoined that there be three lectures each year, and upon human anatomy and physiology, but it was with the desire to revert to the older title that I have chosen the subject of my lecture to-day. Our President, Lord Moynihan, held the lectureship in 1899 and 1900, and possibly he may remember how he thrilled his audience by his dissertation on retroperitoneal hernia, and the rarer forms of hernia, a subject which I had, and still have, very much at heart.

Now what is orthodox and what is heterodox in anatomy? Orthodoxy we must take to mean merely the holding of right or correct opinions—that is, such opinions as are currently accepted as correct. We have to remember that the stake has claimed some who held similar opinions. Heterodoxy is presumably the opposite—that is, holding opinions not in accord with established doctrine or practice.

Orthodoxy in anatomy may be described as the orthodoxy of the textbook, the teacher, the teaching, and the examination, both anatomical and surgical. Many a student has said to me that if a statement is found in a textbook it must be correct. But it is the wise man who doubts even infallibility, though he must be prepared possibly even to suffer for his rashness.

A statement, further, may be right, but it may be so interpreted by the reader as to be wholly wrong. You know the tale of the candidate in an examination in chemistry who astonished his examiner by asserting in his written reply to a question concerning hydrogen that this gas "was not found in Ireland." In the viva voce he was taken to task concerning his statement, but persisted that he was right, and that it would be found in his examiner's book on chemistry. The volume was procured, and on the appropriate page there appeared these words: "Hydrogen is seldom if ever found in the free state." To such—may I call them parasitic students?—I have generally ventured to say that with greater experience they would find that modification of exact statements *even in textbooks is good for the soul, although it* might lead to a shaking of faith in so-called "orthodoxy." Many a younger teacher has confessed to me that he was in the trammels of the textbook orthodoxy, and dare not attempt to escape therefrom when instructing those under his tuition. This is deplorable. Better be bold than cowardly, better break the bands of tradition than continue to stereotype what is not true to fact.

The teaching of anatomy, it is often said, must be along orthodox lines because the syllabus and the examiners force it to be so. It is true that the overpressure of examinations is too great, but it is almost inevitable. Sir Michael Sadler, when commenting recently upon this subject, said that examinations acted as a "cold shadow on education," and that students thereby "learn things on paper instead of going direct to the facts themselves." What a sidelight this is on the student reading anatomy in the library rather than dissecting in the rooms or feasting his eyes *upon the beautiful anatomical preparations of our College* museum!

Heterodoxy in anatomy implies, it would seem, a disbelief in much of the old tradition and teaching, in conforming less and less to the preconceived ideas of our forefathers when facts force us so to do. Careful observation is the father of correctness in description, and familiarity with form tends to improve comparison.

ERRORS OF OBSERVATION AND DESCRIPTION.

Anatomy has been built solely on the results of observation; imagination works havoc if it is allowed to enter this domain. But some very obvious errors—obvious to us—have been perpetuated as the result of observation on the cadaver. An extraordinary example of this is the term "artery," an air-conveying tube. Nothing is farther from the truth, but it would perhaps be sheer pedantry to attempt to change the name of this type of vessel after so long a usage. It is probably on account of this error that even the modern novelist attributes much more importance to the "veins" than to the "arteries" of the "subject" with which he is dealing.

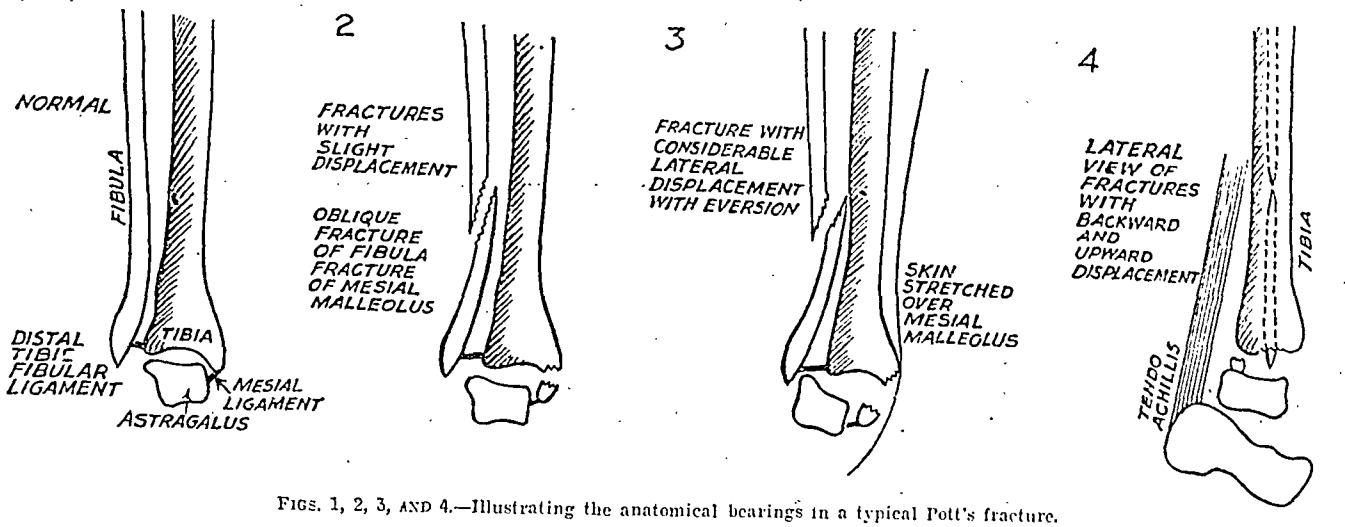
There are, however, many other glaring instances of looseness in nomenclature and of description, which should have been based on careful observation, and should be changed even to-day. I will mention but a few of these to show what I mean thereby.

Submaxillary lymphatic glands. This is wrong. There are two maxillae and there are lymphatic nodes—not glands—and these are not directly below either of them, but they are beneath the mandible. Therefore, these lymphatic nodes should be styled submandibular lymph nodes.

Deep cervical fascia. I venture to assert that no surgeon, however many times he may have undertaken dissection in the neck of a living person, has ever seen this structure. The elaborate description given in most textbooks on anatomy serves only to bewilder the student and is of no use to the surgeon.

Pott's fracture, which should be termed the lateral fracture dislocation at the ankle-joint, is usually stated in the surgical textbooks to be a fracture of the fibula with tearing of the internal lateral ligament of the ankle or separation of the internal malleolus, and displacement of the foot outwards, and this, regardless of how the anatomical factors insistently influence the production of the lesion and the displacement of the foot. Reviewed from an anatomical point of view, this fracture-dislocation should be described thus: The strain of the body weight being suddenly brought to bear upon the mesial ligament of the ankle-joint, the mesial malleolus is dragged off at its base, the bone being more brittle than the elastic ligamentous tissue. The force now acts through the astragalus on to the lateral malleolus, but the fibula is held firmly to the tibia by the distal tibio-fibular ligament. Hence the strain is in reality on the fibula at a spot which is proximal to the ligament, and the fibula gives way, with the line of the fracture from above downwards and laterally. Then displacement of the foot occurs immediately, and in a direction which is lateral, with eversion, and backwards and upwards by the pull of the strong

gastrocnemius and soleus muscles through their calcaneum tendon. (See Figs. 1, 2, 3, and 4.) The description, I grant, is "heterodox" when viewed from the traditional textbook read by the student, but it is really "orthodox" when viewed in the light of anatomy. I leave you to judge which is the better.



FIGS. 1, 2, 3, AND 4.—Illustrating the anatomical bearings in a typical Pott's fracture.

The Anatomy of Inguinal Hernia.

I have paid particular attention to this subject, and especially in the living person, and I am convinced that a large portion of the orthodox description of the parts as given in many of the leading textbooks of to-day, both of anatomy and surgery, is grossly misleading. Time will not permit me to give more than a few instances to prove my contention.

The latest edition of one of the most popular textbooks on anatomy makes the following preposterous statements: "A triangular opening, the subcutaneous inguinal ring." But how can a triangle be a circle? (See Fig. 5.)

Again, "The inguinal canal extends from the abdominal inguinal ring to the subcutaneous ring." I venture to ask each one of my listeners this afternoon, has any one of you actually seen an abdominal inguinal ring? Frankly, no such opening exists in the living subject. I am quite willing to admit that when an oblique inguinal hernia is present, the sac at its connexion with the parietal peritoneum may have a thickening upon it, which may be styled a "ring," but this is a pathological condition, and not one to be found in the normal body. There is no such opening as that which used to be called the "internal abdominal ring." Then why perpetuate its existence or quasi-existence?

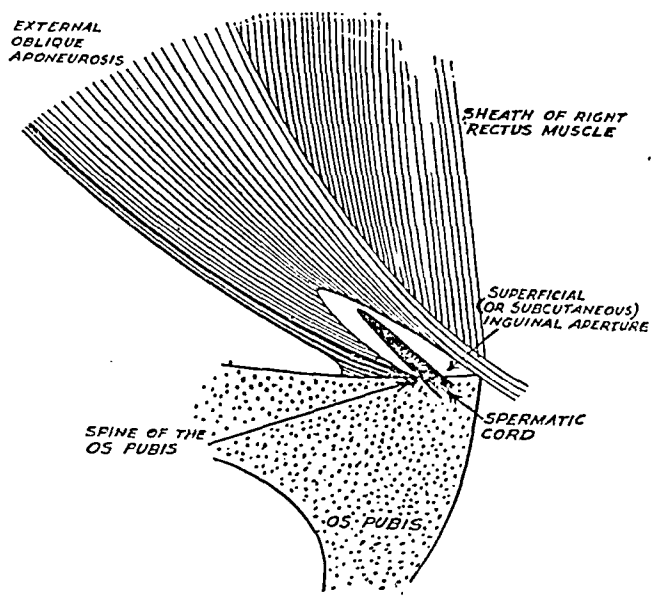


FIG. 5.—Diagram of the superficial anatomy of the inguinal region.

To crown all, we are told "the seat of stricture is either the abdominal or the subcutaneous ring; most frequently at the former situation." Extraordinary! How can strangulation be caused by the edges of a non-existent opening? But another textbook on anatomy makes a still more astounding statement: "The place of exit of an inguinal hernia is a split in the aponeurosis of the obliquus externus." And yet a patient may die of the results of strangulation of an inguinal hernia which lies completely within the inguinal canal!

Lastly, here is a quotation from a Continental anatomical work. "The annulus inguinalis subcutaneus . . . is formed by the separation of the lowest fibres of the tendon of the m. obliquus externus . . . giving rise to an acute angled space." Obviously, this is intended to convey the idea that the superficial inguinal aperture is a triangle, and not an annulus.

Turning to the most recent textbook on surgery, still worse nomenclature is perpetuated. The expression "internal abdominal ring" cannot be maintained on any grounds, even if such an aperture existed, for it is not "internal" but "deep," it is not "abdominal" but "inguinal," and it is not a "ring" but an "aperture"; but above all it does not actually exist, except perhaps as an abnormality. Now this from the same book: "It is always possible to invaginate the skin of the scrotum and insert the finger into the hernial aperture, to explore its extent and relations, and to detect any impulse." No wonder an action was brought once against a medical practitioner who performed this manœuvre, his patient alleging that his doctor had actually caused his "rupture"!

I have recently seen instructions issued eighty-five years ago for determining the physical fitness of candidates for the City of London police force. Among the more common causes of rejection is mentioned "Hernia, or a tendency to that disability from preternatural enlargement of the abdominal ring." This "ring" I take to be what the examiner in those days would have called the "external abdominal ring." This aperture, of course has nothing whatever to do with the incidence of an oblique inguinal hernia, and not often greatly to do with its progress. I much fear that examination has not advanced greatly since that day in 1844, for I recently heard several well-known surgeons still teaching this nomenclature, when, of course, the right term is "superficial inguinal aperture."

THE TEACHING OF ANATOMY.

I have been, perhaps, too insistent on this one area of the inguinal region, but it is only one example of many which I could quote to prove my contention of the need of more "heterodox" anatomy. I now turn to what I may call "heterodoxy in the teaching of anatomy."

I was impressed as a teacher myself, and perhaps still more as an examiner in this subject, with the cramping character of the "isolated" anatomy taught and its effect upon the examinee. By "isolated" I mean anatomy unconnected with the future professional work of the student when he becomes a general medical practitioner, and not

only in the "surgery" of the same, but almost equally in the "medicine" of this class of practice.

I am still of much the same opinion, although a quarter of a century has passed since those days. But in order that I might be really up to date in information on this matter, I wrote to a large number of the present-day professors of and lecturers on anatomy, putting before them two questions:

1. Are you satisfied that the present system of teaching anatomy to the average student conduces to a knowledge really helpful to general practice?

2. If not, what changes would you suggest?

I have been honoured by replies from twelve, and their answers have been so helpful to my subject that I shall venture to make general use of much given, and to refer in detail to some of them. Seven—more than half—are not satisfied that a really useful knowledge of anatomy is obtained by the average student. This opinion is not due to modesty in teachers who desire improvement and are uncertain that their method of teaching is the best. Their teaching has to be "orthodox," partly because the student is examined in the "orthodox" manner, and partly because the textbooks are still too "orthodox." Some give examples of this contention, and I will inflict one upon you.

Here is an "orthodox" anatomical question, which on the surface looks quite sound: "Describe the ankle-joint." While to the "book student" it should have no terrors, and the reply to the question may be all that is required by the examiner, there is but little in it to draw forth that deeper knowledge which is going to be the practitioner's standby in practice. The same question couched in heterodox terms might be: "What movements can take place at the ankle-joint? Describe how they are controlled and limited." There is "spirit" in a question put in this way, while the former is "dry" bones or little more.

The teaching, therefore, for the "orthodox" question need be no more than the stereotyped textbook description, but for a good reply to the "heterodox" question it would be necessary that the teaching should be admittedly "heterodox." To carry out such methods of teaching would necessitate the use of an *x*-ray plant for screening the joint and its movements, the employment of a living subject for the same, and the inspection of a badly set fracture-dislocation at the ankle-joint. In this manner can be demonstrated the reason why the anterior dorsal surface of the astragalus is broader than the posterior, and that lateral movement can only be obtained in plantar flexion because of the locking which occurs in full dorsiflexion. Structure and function are here depicted and closely co-ordinated, instead of the divorce so frequently found in the orthodox teaching.

In a recent examination paper in surgery every one of the questions, and perhaps rightly, had a distinct anatomical bearing. The two questions above the line, one of which had to be answered, were purely anatomical, as intended they should be, and were very orthodox at that. One referred to the prostate and the other to the pronator radii teres. The other four "surgical" questions were concerned with "cut-throat," obstructive jaundice, acute otitis media, and caries of the lower thoracic region, and not one of them could be answered well and sufficiently without a good practical understanding of the anatomy of the several regions involved. Now, did the students who sat for this examination have their anatomy brought before them in the orthodox manner, and with little reference to abnormal conditions such as those upon which they were being examined, or was their anatomy presented to them as a "living" subject fraught with all the probabilities of their actual work in practice?

If, then, anatomy looms so largely in many examination papers, for this reason alone it is desirable that the student in his later years of the curriculum be taught more anatomy from the clinical point of view than perhaps he has ever been so taught before. I was so struck with this necessity that in 1906 Dr. C. R. Box and I collaborated in writing a book on "Clinical Applied Anatomy," to which we gave a sub-title, that of "The Anatomy of Medicine and Surgery." Nearly half a century previous to this John Hilton had produced his classical work on "Rest and Pain," and we were imbued with the idea that the right way in which to approach clinically applied anatomy was just the opposite to that in which it was usually approached.

The "orthodox" manner was to deal with the different parts of the body and to link on to the description of them some remarks as to the abnormal conditions that might appear therein. The "heterodox" view that we took was that the subject would be better reviewed by taking the various diseases, disorders, and injuries to which the human frame was liable, and show how anatomy influences their incidence and progress. In this endeavour we purposely omitted all non-essential anatomical points, and made the work a practitioner's rather than an anatomist's view of anatomy. Some may possibly regret that this work is now out of print.

It is essential that the student during his fourth and fifth years should maintain that knowledge of anatomy with which he was endowed when he entered upon his clinical studies, and it would probably be to his advantage if he even added to it. But I am convinced, and I think the opinion of most of the teachers of anatomy is the same, that much more of the "heterodox" anatomy should be available for the student prior to his entrance to the wards, if he is going to have the anatomical knowledge so needed in elucidating his cases therein. To this end I would further urge that it should be made possible for the student during the time of his dissecting the body to see typical clinical instances which illustrate common points in anatomy.

There are numerous "chronic"—that is, permanent—cases, which should be available at the time they are needed. I am thinking of such as a typical uncured ulnar nerve paralysis, which should show more forcibly than all the textbook description, and even the dissection of the nerve, its peripheral distribution, the characteristic position of the digits, and particularly that of the ring and little fingers. Then the anatomical reasons for the results can be demonstrated, and the student impressed with the fact that, after all, anatomy is of some real use.

I know that most of the teachers of anatomy would welcome a much closer connexion between their department and the clinical side. When the medical school and the hospital are adjacent, there should be no real difficulty in bringing about this co-operation, if both parties were really keen on the matter.

Why should not the anatomist be invited to the ward, there to give a short dissertation on the anatomical bearings of the case at hand? Or why should not the surgeon visit the anatomical department, and there instil into the anatomy student a desire to know anatomy because it is going to be a matter of real importance to him in the future?

CONCLUSIONS.

I would sum up what I have endeavoured to put forward in this lecture.

1. Anatomy must be freed from the trammels of "orthodoxy" if it is to be of real use in surgery, and particularly the surgery of general practice.

2. The teaching of anatomy is still far behind what it should be in reference to surgery, and the anatomical knowledge of the average general practitioner is not practical enough.

3. The teaching of so-called "clinical applied anatomy" requires to be organized in a much more definite manner, and should occupy even more time than it does when it is taught best.

4. The recriminations, still extant, of anatomist on clinician and of clinician on anatomist might all disappear, and watertight compartments obtain access to one another.

What of the future of anatomy? We need have no anxiety. Anatomy will ever be with us, and that is good. Anatomy will never change—it is the most concrete of sciences, except perhaps that of mathematics. But the facts of anatomy are not likely to diminish in number; they will grow, and probably grow enormously, as knowledge of the human body increases. Then it will be still

more impossible, if this can be, for one human brain to assimilate the whole of these facts and put them to practical use. The burning question even now is, How many of these facts is it desirable—should we say necessary—for a general practitioner to know?

What I wish to further is the teaching of anatomy in such a manner that the finite mind may obtain and retain those which are essential. I consider that this requires a good deal of "heterodoxy" in the relating of anatomy to surgery.

A British Medical Association Lecture

ON

THE DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.*

DELIVERED BEFORE THE FIFE BRANCH, OCTOBER 31ST, 1929,

BY

W. ARNOTT DICKSON, M.D., M.R.C.P.ED., F.R.C.S.ED., D.P.H.,

TUBERCULOSIS OFFICER, GLOUCESTERSHIRE; MEDICAL SUPERINTENDENT, STANDISH HOUSE SANATORIUM; CLINICAL MEDICAL OFFICER, GLOUCESTERSHIRE COUNTY COUNCIL.

(With Special Plate.)

To attempt, in however sketchy a fashion, to cover the ground indicated by the title of this address, appears little short of ridiculous. But a bird's-eye survey, if it can be compassed, admits of some sort of perspective, and thus helps to compensate for its superficiality. It is in this hope that I shall put before you, not a synopsis of the monstrous literature which has grown up on the subject, but a brief and I hope practical summary of the procedures on which I mainly rely for diagnosis and treatment in the tuberculosis department of Gloucestershire, the county to which I am attached.

That county, it may be mentioned, shows significant variations from other counties in its arrangements for carrying out the medical services statutorily imposed on it. As regards tuberculosis, there is a fusion of the offices of tuberculosis officer and sanatorium superintendent, which is, or ought to be, very valuable; and the county also possesses a treatment scheme, peculiar to itself, initiated over eight years ago through the pioneer work of the county medical officer of health (Dr. J. Middleton Martin). Under this scheme fifteen centres have been opened throughout the county staffed by the local practitioners and designed to treat the various types of cases for which a local authority has responsibility. The doctors have at call the services of the recognized consultants in the area. This scheme has recently been commended to the Council of the Association by the Gloucestershire Branch as the ideal method in a county area of securing the co-operation of private practitioners in public health services. An integral part of the scheme is that cases raising the suspicion of tuberculosis are grouped for examination at my periodical visits. As these out-stations are additional to the usual dispensary organization it will be seen that the opportunities provided for a second opinion are particularly good. My experience in the county comprises over 14,000 patients, and the sanatorium under my charge has 250 beds. For the sake of simplicity I shall, in what follows, exclude children from consideration.

DIAGNOSIS.

It is a curious fact that doctors, in the matter of diagnosing tubercle of the lung, tend to fall into two groups: those who on the strength of a suspicious symptom or so, with occasional indeterminate signs, such as a few scattered rales, are prepared almost light-heartedly to label a case tuberculous; and, on the other hand, those who wait till physical signs cry aloud for judgement. For a department like mine, needless to say, the line of least resistance is: when in doubt, diagnose tubercle. There is an ever-present danger that this diagnosis becomes simply a dumping ground. Yet a lifelong handicap may be imposed on a patient because of an ill-founded diagnosis of pulmonary tuberculosis, and however successful a sanatorium may be as a general convalescent home, that is not its function.

Of the cases sent to us year by year we give an opinion that tuberculosis is not present in between 30 and 40 per cent. It may be objected that early cases are being missed, that the golden opportunity is being allowed to escape. This, of course, is the bugbear of a tuberculosis officer's life. To that objection I reply, first, that in a large number of cases an alternative diagnosis is established. The symptoms are found to be due to diabetes, or cancer, or heart disease, or syphilis, or pernicious anaemia, or some other debilitating or wasting disease. I have also seen quite a number of young girls whose symptoms were dependent on an unsuspected pregnancy. These conditions, and many others, which like them have nothing to do with the lungs, have been found during the ordinary dispensary examinations.

In the second place, I reply that, with regard to lung cases, we have to face a formidable test of the accuracy of our negative diagnoses. Unless the patients remove from the county altogether, the fact of a subsequent notification of tuberculosis, by whomsoever made, is known to us. And should any of these patients die, and the word "tuberculosis" appear at all on the death certificate, that fact also infallibly reaches us. This furnishes a severe and continuously operating check on our accuracy or otherwise. There is, fortunately or unfortunately, nothing resembling it in ordinary general or hospital practice. From these ultimate tests we have so far emerged without finding cause to modify our standards.

But assuming that a patient is suffering from tuberculosis, we are doubtless all at one in wishing to have the diagnosis established, if possible, at an earlier stage than it commonly is at present. The need for this is admitted on every hand, though the frequent assumption that early diagnosis necessarily implies a good prognosis is not always well founded. Delayed diagnosis is not necessarily the fault of the doctor. Two weeks ago I saw at a dispensary a man who had seen his doctor for the first time only the day before. He had not lost a day's work; he said he felt well and took his food well. His only complaint was undue tiredness. Yet his temperature was 102° F., and he had active tuberculosis of most of one lung, with a large cavity. There must be few diseases which can advance to such a stage without arousing the urgent interest of the patient in his own condition. But this is rather an exceptional case. I think it must be admitted that there are other cases, even in considerable numbers, where the opportunities for examination have occurred and in which any doubt as to the diagnosis might have been resolved earlier by everyday clinical methods.

I hear very often the statement that chest cases are extremely difficult. Admittedly an obscure chest case may present as difficult a problem possibly as any met with in practice; but my point is that such cases are not nearly so common as some medical men suggest. Certainly I see many cases in which the diagnosis is *too* easy—cases which should cast no strain whatever on the clinical acumen of the examiner, but which have managed to get through the meshes of the diagnostic net.

SCHEME OF EXAMINATION.

Let me put before you, shortly, elementary though it may be, the scheme which I adopt for the investigation of a case of suspected pulmonary tuberculosis.

First the medical history is taken, and the symptoms elicited. There are some writers on tuberculosis who do not hesitate to diagnose on symptoms alone. I do not agree with them. Even haemoptysis, that most dramatic and significant of symptoms, may lead one astray. Having obtained the patient's story (and this well repays the time spent on it) he is then examined, stripped to the waist. It is surprising how often this first principle of chest examination is violated. If at all possible, the patient should

* The lecture was illustrated by numerous lantern slides.

stand facing a window. I know from experience the impossibility of making a reasonable examination of a patient in bed in a miner's cottage.

The usual routine of inspection, palpation, percussion, and auscultation is then proceeded with. It is not safe to omit any of these methods. Inspection should be conducted at some distance from the patient—six to eight feet. It is a method frequently neglected, yet in cases of extensive thickening of the pleura the limitation of movement on the affected side may be the only physical sign easily ascertained.

Palpation, apart from its customary uses, may give to the trained fingers a sensation of muscular rigidity over a lesion which is readily discernible.

Percussion, I have come to the conclusion, is a more difficult art to master than our teachers warned us. It should, in my opinion, invariably be light, very light. Apparently it requires more practice than it generally receives. In any case, the failure to detect differences in percussion note is frequent, which is unfortunate, as percussion is a more valuable guide in diagnosing early tuberculosis than is auscultation, since infiltration precedes catarrh. It is a useful rule to compare not only the apices, which may both be affected, but also the apices with the axillary region. Perhaps, in view of recent writing on the subject, it is well to make clear that the term "apex" is here used in the loose fashion usual in this country, and is not restricted to the anatomical apex above the clavicle.

The demarcation of Krönig's areas is valuable in early cases, and the use of a skin pencil has other advantages. It is an aid to concentration, it makes the examiner commit himself, and is ocular proof of a complete examination!

Auscultation is more commonly relied on than percussion, and for most examiners appears to be easier. In cases of difficulty, interrupted auscultation—that is, the comparing of each phase of respiration separately—should always be practised; and it is inspiration which demands the closest attention. The difference in breath sounds at the apices is universally recognized. It is sometimes forgotten that there is a corresponding difference at the bases, the respiratory murmur on the right side being decidedly weaker.

Some of the pitfalls in auscultation may be mentioned. An effusion may give rise to auscultatory signs almost indistinguishable from a cavity—tubular breathing in its purest form, and whispering pectoriloquy. On the other hand, a cavity may indubitably be present and give none of the classical physical signs we were taught to associate with it. There may also be great difficulty in distinguishing between pleural rales, the rales of active disease, and the rales more or less permanently present in fibrotic cases, though the distinction is important. It is not possible to lay down an easy guide to differentiation. This must be largely a matter of experience.

The examination, even up to this stage, takes one a long way. In the majority of cases of tuberculosis sent to me it settles the diagnosis. For although sputum examination may clinch the matter before physical signs are discoverable, I hardly ever see patients at that stage. And if a patient with symptoms indicative of pulmonary tuberculosis has evidence of consolidation at the upper part of a lung, the diagnosis may be made practically with certainty. Tuberculosis may have signs confined to a base, but this is so uncommon that it is a safe enough rule never to diagnose it in the absence of tubercle bacilli in the sputum.

Sputum Examination.

It is literally essential that the sputum be examined in every case; repeatedly if necessary. This is fundamental. It is a mystery why this simple test is not universally applied. Only a small proportion of the total number of patients sent to me have had their sputum examined before I see them, though many of them have had both symptoms and sputum for months. Not once, but hundreds of times, have I seen delay in diagnosis that could have been avoided by the exercise of this elementary precaution. A positive sputum, barring the extraordinarily infrequent accident, settles the diagnosis. The possibility of "carriers" is of the merest academic interest when we are discussing patients with symptoms. One negative sputum result is of little value. But three negative reports, provided the specimen is purulent, should receive great weight. It is not suggested that a progressive tuberculosis cannot be present in the absence of tubercle bacilli in the sputum. In miliary tuberculosis, as is well known, the organisms may never be found by that examination. But, personally, I make a point of overhauling the diagnosis with an open mind after three negative sputum results. In such cases a Wassermann reaction is obtained, *x*-ray examinations are repeated, special sputum tests are undertaken, and an injection of lipiodol may be given. The evidence should be strong before a chest case with definite physical signs and sputum is accepted as tuberculous in the consistent absence of the tubercle bacillus.

Pleurisy with effusion, if present, can hardly escape the examination I have described. It should always be regarded as tuberculous, and treated as such unless there is an obvious alternative explanation. I invariably put in a needle in such cases. If serous fluid is found two important points have been settled: (*a*) empyema has been excluded, and (*b*) the diagnosis has been established beyond all doubt. This is a point of some moment, for should the fluid happen to be absorbed quickly and completely, and later the need for serious treatment is questioned, it is an advantage to have one's diagnosis of effusion based on evidence which is incontrovertible. Incidentally, it is curious to note how the position of the apex beat does not always get the place of cardinal importance it deserves in suspected effusion.

To come to more general considerations in examination, it is unusual to have active tuberculosis proceeding with a normal temperature. In any case of doubt a record of the morning and evening temperature should be kept for a fortnight. The usual precautions should be observed as to the patient having been at rest for at least half an hour before the temperature is taken, and no food or drink taken for a similar period. I am assuming that the temperature is to be recorded in the mouth. In spite of all that has been written on the superiority of the rectal temperature, you may rest content with the oral method, which is very much simpler and sufficiently reliable.

The pulse frequency is often a difficulty, as many nervous patients show an abnormally high rate owing to excitement. A low pulse rate is a good sign, and it is often useful to try the effect of exercise. The old form of exercise known as "20 chair" is as good as any. The pulse frequency should return to its starting point in two minutes. A consistently high pulse rate is an unfavourable feature in prognosis.

X Rays.

No physical examination of the chest can be considered complete nowadays without an *x*-ray examination, though it is not always essential. But if nothing has been found clinically, a negative diagnosis is greatly strengthened if nothing is found by this method also, and the extent of involvement of the lungs, in a positive case, can be ascertained with enhanced accuracy from an *x*-ray film.

The reading of the film is often a difficult matter. For the majority of medical men the report of the radiologist must be taken, and this is a variable quantity. It may be said of *x*-ray examination, as of so many other things, that it is a good servant but a bad master. I have on many occasions seen films and reports on the same patient by different radiologists, and the comparisons are instructive. During the past few years I have compared many hundreds of *x*-ray films with the clinical findings. As a rule they correspond reasonably closely, but a film may be invaluable in revealing a condition inaccessible to clinical examination, and, as suggested above, this may include early cavitation. At other times a film may show nothing when signs, to auscultation at least, are obvious. This is particularly noticeable in cases of unresolved pneumonia in its later stages. As *x* rays do not reveal catarrh, you may get a film showing an apparently normal chest when one side is bubbling with rales. In primary tumour of the lung, which is said at some of the chest hospitals to be getting much commoner, the diagnosis can frequently be settled at once by *x* rays, particularly after the shadow has been

sharply delineated by the introduction of air into the pleural cavity. The condition, fortunately, does not appear to be on the increase in my county.

TESTS FOR TUBERCULOSIS.

A word must be said on the various tests for tuberculosis, of which much has been heard from time to time. Tuberculin has been used as a specific test in hundreds of thousands of cases. The von Pirquet skin test has been performed, I suppose, in every country of the world, and a voluminous literature has grown up on it. We made a thorough trial of this test at the sanatorium which I control, doing over four hundred inoculations, almost equally divided between children and adults. At first commercial tuberculin was used, and then a special brand kindly supplied for the purpose by the Wellcome Laboratories. My experience is that, using ordinary methods with presumably ordinary skill, this test is, for diagnostic purposes, of no value whatever. I go further—it is so fallacious that it may easily be worse than useless. In patients known to have tuberculosis, with tubercle bacilli in the sputum, some doing well and some doing badly, it was impossible to forecast the result, which appeared to have no relation either to the presence of active disease or to the prognosis. In known cases of tuberculosis the test was negative in almost as many cases as it was positive. This is an exceptionally bad result, but Dr. Charles McNeil, in the *British Medical Journal* of October 12th, 1929, has to admit, after a panegyric of the test, that it "may . . . fail to appear in an actually tuberculous condition." This has been shown to be the case also in guinea-pigs.

The ophthalmic tuberculin reaction is little short of barbarous, and ought never to be employed.

The intradermal reaction has been very widely used within the past few years. A study of Professor Lyle Cummins's article in the *British Medical Journal* of February 23rd, 1929, will show that this also is of no practical value in this country, however useful it may be in deciding the progress of infection in non-immunized communities.

The complement fixation test, corresponding to the Wassermann reaction in syphilis, has been very disappointing, and is a broken reed when its assistance is most required.

During the past ten months, through the good offices of Dr. E. N. Davey, pathologist to the Gloucestershire Royal Infirmary, it has been possible to make arrangements for blood from patients at our county sanatorium to be submitted to the Verne test. I believe this test is being carried out at only one or two laboratories in this country, and, briefly, it consists in mixing the patient's serum with a preparation of resorcin and assessing numerically the resulting cloudiness in an elaborate and sensitive colorimeter. Up to the present over 200 tests have been made from my patients, and the least that can be said is that the results are extremely interesting and the method appears to be very promising. It is, of course, too early to pass judgement, but it certainly seems to be the best laboratory aid to diagnosis yet devised.

In the differentiation of diseased lung conditions there is a procedure which is possible only in an institution, but which is so valuable within its limited sphere that it is worthy of mention. It consists in taking an *x*-ray picture of the chest after the introduction into the bronchi of lipiodol. This is a poppy-seed oil heavily impregnated with iodine, thus rendering it opaque to *x* rays. The lipiodol may be introduced into the bronchi in various ways. The laryngologists do it through a bronchoscope. No one but a laryngologist would think of that. The usual method is by a tube inserted into the trachea through the crico-thyroid membrane. This is the method I have almost invariably employed, using the trocar and cannula devised by Dr. Chandler. It seems perfectly safe, and, provided the patient's confidence is obtained, is not unduly difficult. It is possible also, in some cases, to drop lipiodol over the base of the tongue and persuade the patient to inhale it. This may be very successful or a complete fiasco. Lipiodol is simply invaluable in the diagnosis of bronchiectasis; without it this diagnosis is very largely guesswork.

TREATMENT.

The history of the treatment of pulmonary tuberculosis is littered with the wreckage of discarded "specifics." These "specifics" obtained their temporary vogue largely because of two factors, which are not peculiar to the treatment of tuberculosis, and for which allowance must always be made in trying a new remedy. The first is the fight normally put up by the human body against any infection—a fight which in a proportion of cases is to be successful whatever remedy be used, or even no remedy at all. The second is the enormously important psychical factor. The hope which we are told "springs eternal" finds in any new treatment a stimulus and a justification. That explains why patients frequently say they are greatly improved when in fact they are not. It must also be—and this is a more difficult point—the explanation of an actual improvement, which later falsifies our hopes. But the influence of the mind on the body is a very large problem indeed, of which at present most of us see only the fringe.

At our county sanatorium we consider it a duty to examine as many as possible of the quasi-scientific measures which are confidently put forward from time to time. Calcium, for example, has been much lauded in treatment. We tried it in about fifty cases, giving a three months' course of subcutaneous injections of collosol calcium, reinforced by parathyroid extract by the mouth, and found its benefits not appreciable. Similarly antimony, garlic, pig's spleen, and numerous other drugs and extracts have had their enthusiastic advocates. Some of them are worth trying, but not one is specific or of general application. Sanocrysin, a double thiosulphate of gold and sodium, used intravenously, is still on its trial, and reports vary as to its virtue. It has the advantage of providing a line of attack, speculative though it may be, in cases where the doctor is at his wits' end to try to stay an advancing bilateral disease. It may produce definite symptoms of metallic poisoning, and, unfortunately, patients tend to lose weight while the treatment is in progress. We have had several cases where it was very successful, both in arresting active disease and in getting rid of tubercle bacilli from the sputum in chronic cases.

For the ordinary case of pulmonary tuberculosis employment of the general measures summed up in the term "sanatorium treatment" gives the best chance of recovery.

It is at times salutary for a doctor, who is freely prescribing treatment of all degrees of severity for his patients, to consider what line he would adopt if he were himself the patient. Putting that question to myself, I answer it without hesitation. Should it be my evil fortune to contract pulmonary tuberculosis I would start by going to bed under the best conditions possible, and staying there for six months. I would rely on no drug treatment whatever, unless possibly to meet some troublesome symptom, and I should expect to be well on the way to recovery at the end of that time. This factor of rest is of enormous importance. It is very striking, in patients with lung disease, and also a surgical condition necessitating prolonged immobilization—for example, spinal disease—to see how completely quiescent the lung condition becomes apparently as the direct result of this immobility. And rest is the factor which in ordinary practice is sadly neglected. The patients with raised temperatures who go out long walks in search of fresh air—their name is legion, and the results are disastrous. A patient with an oral temperature of 99.2° or over should spend the next day in bed. Among the insured population, and indeed all classes of the population, it is extraordinarily difficult to secure a sufficiency of rest, and the discipline of institutional life is almost always necessary even to approximate to what is needed.

Suitable food in reasonable quantity is another essential. It is an old saying that a hearty eater never takes tuberculosis. While this may be open to some doubt, there is no doubt whatever about the fact that a capricious and failing appetite is a serious bar to recovery. A well-balanced diet is best. It is not necessary to insist on an abnormal consumption of fats.

Fresh air day and night is now a well-recognized necessity; this need not be elaborated.

Regulated exercise and work have their undoubted place.

These are the essentials of sanatorium treatment, and they should be applied in every case, whether in or out of an institution.

Drugs are of value when indicated by symptoms. An irritating useless cough should be allayed, a productive cough may be aided by expectorants; suitable medicinal treatment aids a failing appetite. Drugs should not be used for night sweating. The proper cure for that is hyperoxygenation. Haemoptysis is an urgent symptom for which it is necessary to do something at once. Many drugs have been recommended, too many—a suspicious sign. Evidently no one of them can always be trusted. But whatever drug is used the essential thing is to follow a definite line with assurance. Put the patient to bed, propped up somewhat, and if he seems to require it, do not be afraid to give one dose of morphine, 1/4 grain, hypodermically. Its drawbacks have been greatly exaggerated. Allow only one reliable person at the bedside. An ice-bag is of no real value but may comfort the patient. I give either calcium chloride intravenously or haemoplastin intramuscularly if the haemorrhage is of any size. Both appear to give good results. Calcium lactate, 15 grains thrice daily, is subsequently given by the mouth for a fortnight in the hope of preventing a recurrence. But the only certain method of stopping haemoptysis is collapse of the affected lung by the induction of artificial pneumothorax. This is an indispensable weapon in the therapeutic armoury.

I am frequently asked what should be done for a pleural effusion. The proper course, if the fluid is in quantity, is to withdraw it and replace by air by means of a pneumothorax apparatus, and so continue the advantage gained from collapse of the lung. If no air replacement is proposed, and the amount is not causing distress, there is no reason why it should not be left for weeks. But if the effusion is sufficiently large to produce troublesome displacement of the mediastinal contents it should be partially withdrawn—only partially, however, as rapid expansion of the collapsed portion of lung must be avoided. And do not forget that the patient must be treated for the tuberculosis, of which the effusion is a symptom.

If the effusion is purulent in a tuberculous patient he would be a bold man who treated it as an ordinary empyema and excised a rib. The chances of a healthy scar are remote. A good treatment is to withdraw the purulent effusion and wash out the pleural cavity with weak iodine solution or other mild disinfectant. The wash-out is done from above, while the diluted pus is withdrawn from the base. It may take a gallon or two before the fluid runs through clear, and the lung is then kept collapsed by air. The process will probably have to be repeated more than once, but it gives good results, which cannot be said for ordinary surgical intervention.

I shall say nothing about tuberculin treatment, which is not being used to any extent in pulmonary tuberculosis, though its value is undoubted in genito-urinary cases. Ultra-violet light, the panacea of the moment, is of very problematical value in lung tubercle.

Surgical Treatment.

Mechanical and surgical methods of treatment are becoming commoner and more successful. The most important example is the collapsing of a diseased lung by the induction of artificial pneumothorax, a procedure which has already been mentioned.

The theory of this treatment is simple enough. It must be remembered that normally the lungs are kept expanded *beyond* their elastic tension by the virtual negative pressure in the pleural cavity. If air is introduced in sufficient quantity between the layers of pleura then the lung collapses completely. The virtue of collapsing and so resting a tuberculous lung is, I think, obvious. The lungs are constantly in a state of distension, and expand and contract twenty to thirty thousand times in the twenty-four hours. They have no chance of rest. And here is a method which as effectively rests a diseased lung as a splint rests a joint. The induction presents no special difficulties, but is not devoid of danger, and fatal accidents have been known to occur. The cases must be chosen with care, and *x*-ray films are essential. Unilateral cases are, of course, the ideal ones, but this limitation need not be strictly enforced. There is always a possibility that, in an otherwise suitable case, we may be defeated by adhesions.

The collapse should be kept up for at least two years, but patients may be capable of quite strenuous work with a completely collapsed lung. I am satisfied that in many cases collapsing a lung is veritably a life-saving procedure.

Phrenic evulsion, producing paralysis of the diaphragm on that side and the consequent obliteration of a large part of a diseased base, has a limited field of usefulness, but within that field is reliable, and its use might well be extended.

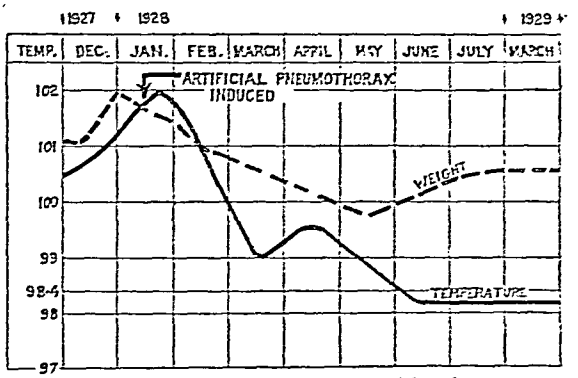


Chart showing effect of artificial pneumothorax on weight and temperature.

The only other method I shall mention is thoracoplasty. This is the most severe surgical proceeding for the treatment of pulmonary tuberculosis which is being used at the present time with any success. It is the logical sequel to an unsuccessful artificial pneumothorax. By a very extensive removal of rib the diseased lung is permanently collapsed and the disease arrested. In expert hand—and it requires very expert hands—the results are wonderfully good, considering that it is a somewhat desperate remedy for a desperate condition. Gravesen, whom I had the pleasure of seeing do the operation at the Vjelefjord Sanatorium, Denmark, is probably the greatest exponent of the method. When I saw him his figures were: 155 patients operated on; 42.5 per cent. fit for work two years and more after operation. Tudor Edwards, at the Cardiff Annual Meeting in 1928, gave the results of 59 cases; of these, 54 per cent. were either well or much improved. In a very recent private communication he tells me he has now done over 100 cases, with no deaths in the last series, and that the "apparent cures" show a higher percentage than the Cardiff figures. It must be admitted that these results are very remarkable.

To sum up treatment: reliance has to be placed chiefly on rest, food, and an abundance of oxygenation of the tissues; symptoms must be treated as they arise. I have purposely omitted any reference to such difficult and dangerous complications of pulmonary tuberculosis as laryngitis and enteritis. A course of sanatorium treatment is, as a rule, of real value: and the possibility should never be lost sight of that some of the modern methods of lung collapse may transform the whole aspect of a case.

Cases Illustrating the Importance and the Limitations of X-ray Examination.

Both patients were young men. No physical signs could be found in the chest in either. Neither case had sputum.

Case A (Fig. 1).—Diagnosed tuberculous peritonitis and admitted to a surgical ward at Standish House. The *x*-ray photograph of the lungs was taken as part of the routine examination, and shows typical miliary tuberculosis. The patient was consequently transferred to another institution. Two days later he showed signs of meningitis, and within a week he was dead.

Case B (Fig. 2).—There was haemoptysis of half a pint coming on a few hours after a blow from the starting handle of a back-firing bus. The condition was diagnosed by an expert radiologist after two examinations as extensive advancing tuberculosis. A month after this film was taken the man was allowed to return to work as a driver, and he has kept absolutely well since (two and a half years), putting on over 2 st. in weight.

In the one case *x*-ray examination settled a highly important diagnosis at once; in the other it was gravely misleading.

RETROGRADE NEEDLING.

A NEW TECHNIQUE FOR INSERTING RADIUM NEEDLES IN CARCINOMA OF THE TONGUE.

BY

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(*With Special Plate.*)

A NEW technique for inserting radium needles in carcinoma of the tongue has been devised to overcome the difficulties which are met with when needles are inserted by the usual technique.

Owing to the mobility of the tongue the movements of deglutition may displace needles inserted in the edges of a growth. In some cases the needles have been dislodged and swallowed, and in others they have been displaced, necessitating removal before the full dosage has been given. The back of the tongue, too, especially the epiglottic region, is very inaccessible, and great difficulty may be experienced in placing the needles in the growth and keeping them there. In addition, the deeper parts of the growth are too far from the needles to be affected by the radium.

The following case of carcinoma in the dorsum of the tongue illustrates the new technique. The growth was in the epiglottic region and the base of the tongue was infiltrated. The ulcerated area could not be seen from the mouth without the aid of a mirror. The radium needles used were shaped as shown in Fig. 1. They were threaded with Pagenstacher No. 2, knotted once.

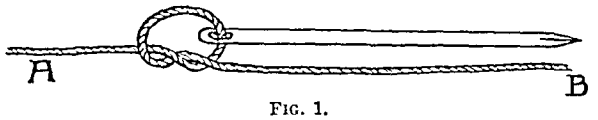


FIG. 1.

The tongue was drawn forward and a Greig-Smith abdominal needle was introduced into the space between the hyoid bone and the mandible, a finger introduced into the mouth guiding the needle so that it came out through the margin of the growth into the mouth. The end A of the thread attached to the radium needle was then threaded through the Greig-Smith needle, which was withdrawn through the skin of the neck and detached. By pulling on the thread the radium needle was drawn backwards into the growth till the point just disappeared. A small piece of rubber tube was threaded on the end A where it came out of the skin to indicate the depth of the needle in the growth. A piece of rubber tubing was threaded on to end B to protect the lip, and the ends A and B were knotted together loosely, forming a complete loop (Fig. 2). In a similar manner other needles were placed all round the growth.

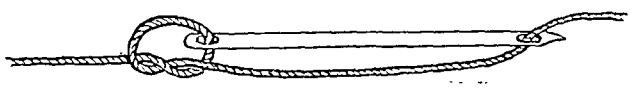


FIG. 2.

By pulling the ends A or B the needles can be made to travel either down into the deeper parts of the tongue and glands and finally out through the skin in the submaxillary triangle, or up in the mouth.

By transfixing the growth the deeper parts of it and the glands themselves may be treated after the needles have been for some time in the margin of the growth, and when supplies of radium are small a large area comes within reach of the needles when they are gradually pulled through the growth—for instance, one inch every three or five days.

A needle with two eyes (Fig. 3) is suggested for this technique, which has also been used with success in the treatment of new growths in parts of the body other than the tongue. For instance, when only four or five needles were available, a large sarcomatous mass on the parietal peritoneum was treated by this method, the needles being made to travel in four stages of one inch every three days.

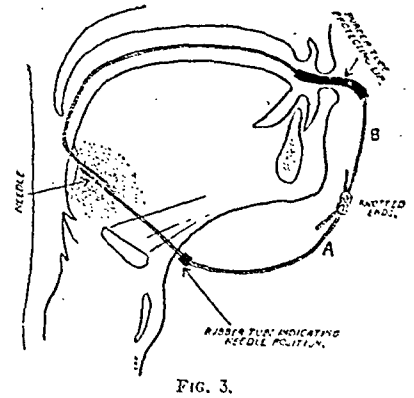


FIG. 3.

The advantages of this technique are:

1. The ease with which radium needles can be inserted in inaccessible regions.
2. A small quantity of radium can be made to act on a large area.
3. The position of the needles is always known and they can be moved with great ease and anchored where desired.

The disadvantages of the technique are:

1. Sepsis; there is always some pus and inflammation round the thread track.
2. Haemorrhage; the needle might puncture some vessel of large size, though this would be rendered unlikely by the use of two-eyed needles as suggested. In the cases treated hitherto there has been no trouble from haemorrhage.

The skiagrams reproduced in the Special Plate show radium needles *in situ* introduced by this technique.

THE PATHOGENESIS OF PULMONARY CAVITIES.

BY

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(*With Special Plate.*)

THERE is a possible factor in the production of excavation in the lung to which hitherto little or no attention has been drawn. For some time I have felt that there is a certain amount of evidence indicating that a positive pressure of gas within an area of softening, or within a definite cavity already formed, helps to produce excavation. I have now been able to prove that this positive pressure occurs, because recently I was able to introduce a hollow needle safely straight into a large apical cavity, which needle was attached to the ordinary manometer of a pneumothorax apparatus, and I found a positive pressure of 16 cm. of water. From this cavity I extracted gas, and while able to reduce the pressure several centimetres I could not reduce it further, owing, apparently, to the fact that there was only an obstructed opening into the bronchus. Some two months later, on repeating the puncture of the cavity, I found that it was patent both on inspiration and during expiration. I append more precise details about this particular patient and send two photographs of his *x*-ray appearances, one taken in June, 1927, and the other in November, 1929.

There are several *a priori* reasons which support the likelihood of internal pressure as a factor in the pathogenesis of pulmonary cavities. Considering that cavities frequently have secretion in them, it seems reasonable to suppose that some of this may at times block the opening into the bronchial system. It is often taken for granted that a valvular opening through a hole in the lung surface into the pleural space, as occurs sometimes in spontaneous



FIG. 1.



FIG. 2.



FIG. 1.—Antero-posterior view of needles after insertion.



FIG. 2.—Lateral view of needles after insertion.



FIG. 1.



FIG. 2.

W. H. ROWDEN: DIVERTICULITIS—ITS DIAGNOSIS BY RADIOLOGY.

(*For description of the figures see p. 383.*)



FIG. 1.



FIG. 2.

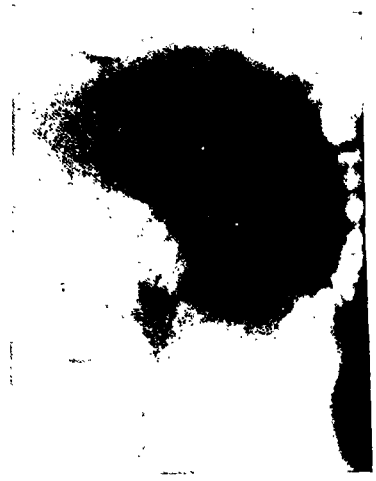


FIG. 3.

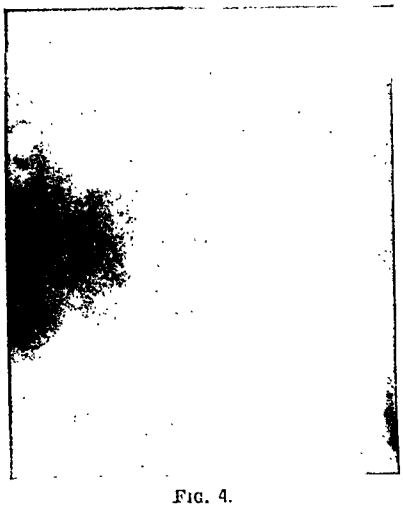


FIG. 4.

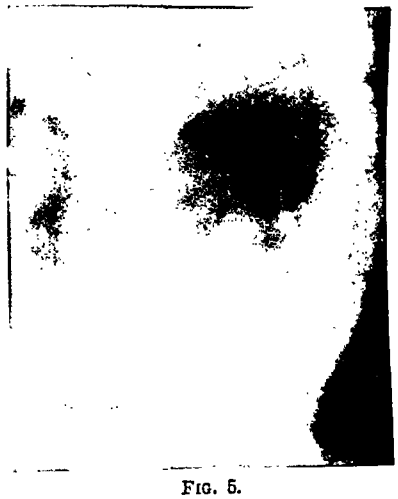


FIG. 5.



FIG. 6.



FIG. 7.



FIG. 8.



FIG. 9.

pneumothorax, frequently gives rise to a positive pressure. A similar thing may be supposed to happen when there is a valvular opening into a cavity within the lung. But it is rather doubtful whether an appreciable positive pressure can arise in either case with an open epiglottis, since respiratory movements then simply oscillate around the atmospheric pressure—zero. It is when straining and coughing occur and the glottis is closed, with the production of a higher intrabronchial pressure, sometimes reaching many (for example, 20 or 30) centimetres of pressure, that a distinct, and occasionally dangerously high, positive pressure is produced. Manometric readings I have taken in the chest of an open spontaneous pneumothorax support this view.

In connexion with these points it must be remembered that the potential pressure in the uninjured pleural cavity itself is a negative one, and in some cases highly negative. I have found as low a pressure as −32 (inspiratory) and −14 cm. (expiratory) of water at the induction of an artificial pneumothorax. It is obvious, too, that the pulmonary tissue is of a soft and giving nature. This is increased sometimes in pulmonary tuberculosis, especially in those cases which show little tendency to fibrosis. Radiology demonstrates that cavities appear sometimes very quickly, and by the same means evidence can on rare occasions be brought forward to show that now and then they clear up surprisingly quickly. The fact that such a large proportion of cavities, especially of those which reach any appreciable size, are spherical is highly suggestive that internal pressure is a factor in producing excavation. I do not consider there is any evidence to lead one to suppose that gas-forming organisms produce gas in a cavity and hence set up positive pressures therein, though this is just a possibility in rare circumstances.

Mr. X., aged 33, was first admitted to the Mundesley Sanatorium in June, 1927. The first photograph shows considerable disease in the right lung, with several cavities of no mean size at the apex. There is also disease in the left lung, with small cavities at its extreme apex. The second photograph, taken on October 14th, 1929, shows an improved left side with an enormous apical cavity containing a minute quantity of secretion at the bottom, and below this partially compressed lower and middle lobes. This compression was artificially produced, its inauguration dating from October 4th, 1929. We watched the cavity grow during years, and have a series of photographs, some stereoscopic. Its extension shortly before October, 1929, was rapid.

When the patient was readmitted to the Mundesley Sanatorium on August 23th, 1929, and for many weeks afterwards, his condition was serious. He had considerable fever, but not much expectoration, only a few drachms. The outlook seemed bad. After consideration it was decided to see whether a right-sided artificial pneumothorax would compress the cavity. This decision was come to in spite of the fact that the left lung was affected, though now much better, and in spite of the fact that the two lower lobes on the right side were by this time functioning much better and the disease in them appeared healed to a large extent. Unfortunately the pneumothorax compressed only the healthier parts, the two lower lobes, and was followed rather quickly by a large outpouring of pleural fluid. Before the fluid arose, and feeling certain that the cavity was universally adherent to the chest wall, I punctured it in the second intercostal space anteriorly with a needle attached to a manometer, and found the pressures inside it +4 and +16. After withdrawing 250 c.cm. of gas these were reduced to close on zero and +11. After another 250 c.cm. was withdrawn the pressures were at 0 and +9. Then a further 250 c.cm., making 750 altogether, was withdrawn, but the pressures remained the same, 0 and +9. Now the ordinary intrapleural pressures taken before and at the end of several refills during the preceding weeks varied between −12 and +3. They were never positive at the beginning of a refill. Those at the initial induction were −12 and −3. On November 20th 550 c.cm. of fluid was withdrawn from the pneumothorax cavity; and again on November 30th and on December 11th between a pint and two pints of fluid were withdrawn. By the end of the year the patient's condition was greatly improved, the temperature had come down near to normal limits, and in the early part of 1930 the progress was continuing fairly satisfactorily.

On January 9th a second puncture was made into the cavity. On this occasion the pressures were found to be round about zero—namely, −5 and +5. The patient was rolled on to his left side to see whether any fluid in the cavity might reproduce a valvular opening. But no such effect resulted from the manœuvre, which only depressed the oscillations to −2 and +2. This, doubtless, was because the chief working lung, the left one, was compressed by the position of the patient, though the weight of the mediastinum falling away from the side in which the needle was situated would tend to make the oscilations bigger in a more ordinary case.

Dr. James Lawson first pointed out[1] that when the patient receiving an ordinary refill during the course of maintenance of an artificial pneumothorax turns from his side on to his back with the needle *in situ* the oscillations are rather less and the pressures rather higher. It was obvious that at this second puncture of Mr. X. there was no valvular opening.

At the time of writing apicolysis or thoracoplasty is under consideration. But with a poor resisting power and an unsound left lung, combined with the condition of the patient, which, though improved, is still far from satisfactory, these proceedings are not considered applicable, at all events during the next month or two.

REFERENCE.

[1] *British Medical Journal*, 1922, i, 369, "Note on Intrapleural Pressures in Artificial Pneumothorax."

DIVERTICULITIS, WITH PARTICULAR REFERENCE TO ITS DIAGNOSIS BY RADIOLOGY.*

BY

W. H. ROWDEN, M.B., CH.B.LEEDS, D.M.R.E.CAMB.

(*With Special Plate.*)

DIVERTICULA may occur or develop in any part of the alimentary canal. They may occur in the pharynx; in the upper, middle, and lower thirds of the œsophagus; in the cardiac or pyloric regions of the stomach, where, on radiological examination, an individual diverticulum may be mistaken for the crater of a gastric ulcer; in the first, second, and third parts of the duodenum; and in the region of the duodeno-jejunal flexure. Meckel's diverticulum of the ileum is well known. Gray, in his *Textbook of Anatomy*, states that Meckel's diverticulum is present in 3 per cent. of cases. Multiple diverticula scattered along the course of the jejunum and ileum have also been described.

An inflammation of any of these diverticula may be called a diverticulitis. But the diverticula, if small, do not, as a rule, give rise to symptoms, and most frequently they are found during the course of an *x*-ray examination of the alimentary tract made for some other reason. An inflamed diverticulum of the first part of the duodenum may, however, give rise to symptoms indistinguishable from those produced by a duodenal ulcer; and an inflammation of a diverticulum of the second part of the duodenum may be the cause, by direct extension, of those cases of pancreatitis the onset of which is difficult to explain.

The diverticulitis to which I wish in particular to refer is that which affects the colon, and more especially the sigmoid colon—colonic diverticulitis. Cruveilhier was the first to recognize the disease in 1849, and the condition was recognized and described also by Virchow in 1853. The first full description was that of Telling in 1908. According to James T. Case, the first case operated upon after previous radiological demonstration was published by Abbé, the radiological examination being carried out by Lewald. More recently, in this country, Spriggs and Marxer have published a paper in the *Lancet* (in May, 1927), and in America a recent communication is that of James T. Case, professor of roentgenology in the North-western University Medical School, Chicago.

Until the past few years the disease has been considered to be rare. The more frequent adoption of *x*-ray examination as an aid in the diagnosis of diseases of the colon has shown that the reverse is the truth: the disease is, in fact, more common than is perhaps generally realized.

The first step towards diverticulitis is the development of a condition of diverticulosis. That diverticulosis is not a congenital abnormality is, I think, proved by the rarity with which the condition is found in young people: it is essentially in adults over the age of 40 in whom we find evidence of diverticulosis. How are the diverticula

* A paper read before the Leeds and West Riding Medico-Chirurgical Society on November 22nd, 1929.

formed? I think a consideration of the physiology and of the muscular structure of the colon throws some light upon this question. The functions of the colon are four in number:

1. The conduction from the caecum to the rectum of the residue of food left after digestion has taken place in the small intestine, together with any material added in the colon.
2. The gradual absorption of water from this residue as it passes along the colon.
3. The secretion of mucin, necessary for purposes of lubrication and destruction of bacteria.
4. The excretion of certain heavy elements, such as lime, magnesium, iron, and mercury.

Observations of the colon on the *x*-ray screen show that the forward movement of the colonic contents as far as the splenic flexure is due almost entirely to the increasing pressure of the ileal fluids as they pass through the ileo-caecal valve. When the first part of an opaque meal arrives at the splenic flexure no further forward movement takes place for some hours; it is apparently in the ascending and transverse parts of the colon that the chief absorption of water takes place. This arrest of movement at the splenic flexure is especially noticeable on radiological examination of cases of duodenal ulceration without pyloric obstruction. On account of the rapid emptying of the stomach with which the presence of an active duodenal ulcer is associated, the first part of the opaque meal frequently arrives at the splenic flexure in less than three hours. On screen examination made three hours later it is usual to find that no further forward movement has occurred. In cases of duodenal ulcer, food, owing to its early arrival, is retained in the caecum and the ascending and transverse parts of the colon for a period greater than normal, and there is therefore a longer time allowed during which water can be absorbed. This may account for the constipation which is frequently associated with duodenal ulceration. Beyond the splenic flexure further movement of the opaque meal is produced by the passage along the transverse and descending parts of the colon of a peristaltic wave, which transfers the contents *en masse* to the sigmoid colon.

The role of the colon in the forward movement of its contents would appear in the main to be a passive rather than an active one. This conclusion is borne out by a comparison of the musculature of the colon with that of other parts of the alimentary canal in which active peristaltic movements are known to occur during the process of digestion. The stomach has strong internal and external coats, and a third, weaker, oblique coat; the small intestine has a strong internal circular and a strong external longitudinal coat. In the colon, on the other hand, there is only a weak internal circular coat, and the longitudinal layer is collected into three weak bands, the taeniae coli, with the exception of the sigmoid colon, where the longitudinal fibres are more scattered. Owing to its weak muscular development the colon, in man, is not able to exert or withstand any considerable pressure. For the efficient functioning of the colon it is intended by Nature that the colonic contents should be maintained in a soft condition. If more than 80 per cent. of water is absorbed the colon is unable unaided to expel its contents, and the voluntary abdominal muscles are called in to assist. The weak musculature of the colon is unable eventually to withstand the continual bringing into play of this additional force, with the result that the mucous membrane is gradually forced through the weakest points. That this is the probable method of formation of the diverticula is confirmed, first, by the fact that they occur most frequently in the sigmoid colon, where the greatest force is exerted by the contraction pressure of the abdominal muscles, and, secondly, by the fact that the majority of the diverticula are false diverticula—that is to say, they consist only of the mucous membrane and the submucous and peritoneal coverings of the bowel in contradistinction to the true diverticula which are formed from all coats. The false diverticula may be described as herniae of the colonic mucous membrane.

The condition of diverticulosis itself is not a disease. It is only when inflammatory changes occur in or around the diverticula that symptoms and signs of disease are manifested. The earliest stage in the formation of the diverticula has been named by Spriggs the prediverticular state. The prediverticular state is radiologically a clearly recognizable condition; it is found frequently in parts of the bowel distant from the original seat of diverticulitis.

Diverticulitis occurs chiefly in men over the age of 40. Of many cases, 75 per cent. have been men and 25 per cent. women. The age of the youngest patient was 43, and of the eldest 72; the average age was 61 years. All the patients had strong abdominal muscles, which, with one exception, were well covered with adipose tissue. I have not found the disease in an asthenic subject or in a patient with weak or poorly developed abdominal muscles.

The symptoms of *diverticulitis* may vary from a feeling of slight abdominal discomfort in an early stage of the disease to those of acute intestinal obstruction or acute peritonitis from perforation of a diverticulum. The discomfort in an early or moderately advanced stage of the disease may be limited to the left iliac fossa and the hypogastrium, or be referred to the upper part of the abdomen, and occasionally, in particular, to the right hypochondrium. The discomfort in the hypochondrium may give rise to a diagnosis of cholecystitis or duodenal irritation, and the true condition be overlooked. This is illustrated by the following case.

The patient, a well-built man of 43, complained of epigastric discomfort of three weeks' duration. He had lost a stone and a half in weight in two months. A radiological examination of the stomach and duodenum by means of an opaque meal was negative. In six hours a large portion of the opaque meal had reached the sigmoid colon. Six months later the patient was taken ill very suddenly with acute abdominal symptoms, which at operation were found to be due to a left pericolic abscess secondary to diverticulitis of the sigmoid colon. There is no doubt that if an opaque enema examination had been made the diverticulitis would have been discovered at the time of the *x*-ray examination. There was nothing, however, in the symptoms or signs to suggest disease of the sigmoid colon, except the rapid passage of the opaque meal along the bowel, evidence, in the light of future events, of an irritable condition of the colon.

Among other symptoms of *diverticulitis* are: increasing constipation and pain referred to the left iliac fossa during or following evacuation, intermittent or persistent pyrexia, and loss of weight. In the later stages there may be diarrhoea and the discharge of mucus per rectum; rectal haemorrhage is rare. Frequent and painful micturition occurs when the inflamed bowel becomes adherent to the bladder, and a vesico-intestinal fistula may result from perforation of the bowel. On abdominal palpation, tenderness is frequently present along the course of the descending colon. Some thickening of the bowel or an actual tumour may be palpated; a tumour situated above the crest of the left ilium is probably not due to diverticulitis. The symptoms and signs of perforation of a diverticulum are those of a perforated appendix referred to the left instead of the right iliac fossa.

A complete and definite diagnosis of diverticulitis can be made only by means of exploratory laparotomy and microscopical examination of an excised portion of the affected bowel or by means of *x*-ray examination. As the treatment is chiefly medical, *x*-ray examination is the method of choice. In cases of acute obstruction which necessitate operation it may only be possible to make a colostomy opening, the exact site and nature of the obstruction being ascertained by means of *x*-ray examination when the patient is sufficiently recovered from the effects of the obstruction to bear further manipulation.

There are two methods of *x*-ray examination—the opaque meal and the opaque enema. An examination by means of the opaque meal will give information as to the presence of diverticulosis, but it will not, as a general rule, provide evidence as to whether or not there is an accompanying diverticulitis. For the demonstration of diverticulitis an opaque enema is preferable. The two method may satisfactorily be combined.

I will not enter into a description of the method of procedure during the examination except to say that it is of the utmost importance that radiograms should be taken with the patient in the right and left oblique positions in

addition to the usual radiogram taken in the postero-anterior position. A single radiogram or a series of radiograms taken in the postero-anterior position will show advanced changes; but it is certain that with this position alone many cases of early disease of the colon, and especially early malignant disease, will be overlooked. Time and care in making the examination should not be spared.

Fig. 1 of the illustrations shows, in a patient of the *sthenic type, the appearance of a normal colon after the* injection of an opaque enema The chief points to be noted are: (1) the regular outlines of the haustral segmentation; (2) the haustral indentations on the superior and inferior aspects of the bowel, or on the internal and external aspects in the cases of the ascending and descending colon, are placed opposite to one another; (3) the overlapping of the coils of the sigmoid colon.

The earliest change in the appearance of the bowel in diverticulitis is an alteration in the haustration. The haustral indentations, instead of being placed opposite one another, alternate on each aspect of the bowel; secondary smaller indentations also make their appearance; the *indentations are regular in outline. This is the stage of* irritation. Fig. 2 shows this stage affecting a loop of the sigmoid colon.

In the next stage the haustral indentations, in addition to being spaced irregularly, become irregular in outline, producing an irregular V-shaped or W-shaped appearance of the bowel. This is the stage of thickening of the bowel wall. The third stage is the stage of the filling defect. The filling defect is produced by encroachment upon the lumen of the bowel by the thickened wall, resulting in a narrowing which, if the condition is untreated, will eventually lead to complete obstruction.

Frequently the three stages can be seen involving *different parts of the bowel in the same patient. This* is illustrated in Fig. 3, which shows a characteristic filling defect in the outline of the sigmoid colon; to the left of the filling defect is a portion of the bowel *in which* the haustral indentations are very irregular (stage 2), and to the right are very early changes of stage 1.

Fig. 4 shows a diverticulosis of the descending and sigmoid regions of the colon demonstrated by means of an opaque meal. It is not possible to say from this radiogram whether there is an associated diverticulitis. Fig. 5 shows the colon in the same case after an opaque enema: the enema shows definite evidence of the presence of diverticulitis in the first and second stages.

With regard to the *differential diagnosis, malignant* disease comes first and foremost. An early growth of the sigmoid colon may give rise to symptoms similar to those of diverticulitis in a patient who has lost very *little weight.* It should be an aim, in fact, to detect malignant disease before it has produced loss of weight. A growth does not produce loss of weight until it has reached a large size, and by then there are probably secondary deposits in other parts of the body.

The distinguishing points between the *radiological appearances of diverticulitis and of malignant disease of* the colon are:

1. Diverticulitis is associated with the presence of *diverticula in the neighbourhood of the deformity in the outline* of the bowel; in carcinoma, diverticula, as a rule, are not present.

2. Diverticulitis produces a *deformity which is* characteristic of the disease; the deformity produced by a growth varies according to whether the growth is of the ulcerating, papillomatous, or encircling *ring type.*

3. Diverticulitis usually involves a considerable length of the bowel, whereas the length of bowel involved by carcinoma is short.

Fig. 6 shows (after an opaque enema) the appearance produced by an advanced growth of the sigmoid colon.

Fig. 7, by way of contrast, shows a *spasmodic* deformity *in the outline of the sigmoid colon due to the presence* of an early malignant ulcer. Fig. 8 shows a filling defect in the outline of the descending colon produced by a ring carcinoma. This patient was *examined on account* of the presence of a tumour at the level of the crest of the left ilium, with a view to determining if the tumour was due to diverticulitis or a growth. The appearance of the filling defect is characteristic of a ring carcinoma; on microscopical examination after removal the tumour was found to be an adenocarcinoma. *In Fig. 9 is shown the appear*ance of the colon after an opaque enema in a case of *ulcerative colitis. There is complete loss of haustration.*

In conclusion, the possibility of a double pathology must not be lost sight of. It is not uncommon to find disease of *the gall-bladder in cases of diverticulitis, and it is pos*sible for a growth of the caecum or the ascending colon, or the transverse colon, to be associated with the presence of diverticulitis of the sigmoid colon. *A double pathology should* always be looked for. The advanced age of the patient in most of my cases of diverticulitis would appear to show that the presence of this disease does not predispose towards the supervention of malignant disease of the affected part of the bowel

THE SIGNIFICANCE OF SUBCLAVICULAR PAIN IN LESIONS NEAR THE DIAPHRAGM.

BY

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ONE of the commonest and most perplexing problems of diagnosis is that of distinguishing between a supra- and an infra-diaphragmatic lesion. The purpose of this note is to point out the helpful significance of one symptom—that is, pain in the subclavicular fossa. The occurrence of this symptom in cases which are otherwise doubtful generally signifies that the disease is above the diaphragm. So far as I am aware no medical textbook has yet called attention to this point, which has been of great value to me in the diagnosis of difficult cases during the last ten years.

It is well known that the *common source of origin of* the phrenic and the descending cutaneous cervical nerves is responsible for pain being referred to the top of the corresponding shoulder from the diaphragm. It is less well recognized that the anterior or posterior part of the shoulder is affected according to whether the irritation of the diaphragm affects the anterior or the posterior part of the muscle. Subclavicular pain would therefore be caused by irritation of the extreme anterior part of the diaphragm. With a diaphragmatic pleurisy any effused fluid tends to collect posteriorly in the recumbent patient, and any friction and consequent pain would occur anteriorly. In pericarditis also any spread of the inflammation to the *diaphragm would usually irritate the anterior portion.* Whether or no this is the correct explanation of the cause of subclavicular pain the clinical fact is witnessed by the following illustrative cases.

CASE I.

A young man awoke on the morning of August 22nd, 1920, with acute pain in the right subclavicular fossa. He had a shivering fit, vomited a few hours later, and when seen by his doctor (Dr. Weir of Brondesbury) a few hours later there was fever of 104° F. and pain in the right hypochondrium. His condition did not improve under treatment, and I was asked to see him on August 25th. When I saw him his temperature was 104°, and he was sweating. There was some deep tenderness in the right hypochondrium and right iliac region, and the patient still complained of pain in front of and below the right clavicle. There was no dullness in the chest, but some fine inspiratory crepitations were heard on the anterior and lateral aspect of the right lung base. In this case there was for a time some doubt as to whether the abdominal pain was due to appendicitis. The crepitations and the subclavicular pain made it clear that the condition was due to diaphragmatic pleurisy, and subsequent events proved this to be correct.

CASE II.

A middle-aged woman was taken ill the last week in December, 1922, with a cold in the head and pain in the limbs. On December 30th she developed a sudden pain in the right side of the abdomen and the right side of the chest. There was also pain felt in front of and below the right clavicle. She vomited several times. Dr. Dunstan (under whose care she was) thought he heard some fine crepitations at the right lung base. When I saw her, on December 31st, the alae nasi were working and there was

tenderness over the right lower ribs in front and over the right hypochondrium. There was no dullness, and no adventitious sounds could be heard at the right lung base. There was no abdominal hyperaesthesia. The diagnosis of diaphragmatic pleurisy was made and confirmed later by the development of dullness at the base of the right lung.

CASE III.

W. M., aged 20, on March 8th, 1921, suddenly felt a stabbing pain under the left collar-bone. The pain only lasted for half an hour, but came on again that night, and seemed to be worse on taking a deep breath. It gradually got worse, and by March 19th was fairly continuous. There was giddiness, vomiting, and also epigastric pain. When admitted to St. Mary's Hospital on March 19th the pain had become more precordial, and there was cyanosis. On March 21st a faint pericardial rub was heard just outside the sternum in the third left intercostal space. A few days after admission the patient still had a little left subclavicular pain.

CASE IV.

A man, aged 53, consulted me at the Bolingbroke Hospital (at Dr. Bradlaw's request) on account of severe gastric symptoms which proved to be due to a penetrating ulcer of the lesser curve of the stomach. I performed partial gastrectomy, and for a fortnight recovery was uneventful. The patient then complained of pain under the right clavicle, and a day or two later he had an attack of extreme pain in the right side of the abdomen, accompanied by sweating and vomiting. The pain under the right clavicle continued and was worse when he took a deep breath. When I examined him a little later there was extreme tenderness and muscular rigidity in the right hypochondium, to such a degree that the resident officer at first thought there might have been a leakage from the stomach. But the tenderness was strictly limited to the right of the middle line, and there was not the slightest pain elicited on pressure to the left of the midline. This strict limitation of tenderness and rigidity, together with the presence of tenderness over the right lower chest and the complaint of subclavicular pain, made me think that the pain was one referred from the upper surface of the diaphragm. I concluded that there had been a small pulmonary infarct which had caused diaphragmatic pleurisy, and this view was borne out by the gradual clearing up of the symptoms. All during the time of the pain, except at the very onset, the patient had been able to take fluid and semi-fluid food well. I saw him a month later and he was perfectly well.

CASE V.

A man of 67 was admitted to St. Mary's Hospital in November, 1929, with symptoms of perforated gastric ulcer. At the operation I found general peritonitis due to leakage from an ulcer on the lesser curve of the stomach. The perforation had been sealed up and all that remained to be done was to oversew the ulcer. Convalescence was uneventful for two weeks, when the patient complained of pain in the left subclavicular region. I at once told the house-surgeon to be on the look out for left basal pleurisy. The pain continued and fever developed, and when I examined the chest a few days later there was decided dullness at the left base. An *x*-ray photograph of the chest did not show any evidence of subphrenic abscess. The dullness at the left base increased, and I explored the left chest and removed several ounces of clear fluid. Though he was better after this there was still subclavicular pain, and I was not perfectly satisfied that there was no collection of pus under the diaphragm. Therefore, under local anaesthesia, I made a small incision into the upper abdomen and explored the left subphrenic space. It was perfectly normal. I later removed more fluid from the left chest and the condition gradually improved.

These cases, and others like them, have guided me to the conclusion that in cases of doubtful diagnosis subclavicular pain almost always indicates a lesion on the upper surface of the diaphragm. In those rarer cases in which an abdominal lesion causes subclavicular pain there is always some clear lead to the diagnosis from definite signs in the lower abdomen. Thus I have known slight left subclavicular pain consequent on the perforation of an ulcer on the anterior wall of the stomach; presumably the contents impinged against the anterior part of the diaphragm. In the same manner the blood from a ruptured ectopic gestation may flood up to the diaphragm and cause pain over and below the clavicles, but here other symptoms help to the diagnosis. Once also I have known subclavicular pain caused by appendicular peritonitis in which some lymph was deposited in front of the liver and caused irritation of the lower and anterior part of the diaphragm. But in these cases the other abdominal symptoms and signs were sufficient to prevent confusion in diagnosis.

THE HEREDITARY FACTOR IN ASTHMA AND OTHER ALLERGIES.

BY

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THE material on which this communication is based consisted of 200 consecutive unselected cases of asthma attending the asthma clinic at the Hospital for Sick Children, Great Ormond Street; these have been investigated with regard to sex incidence, age at onset of asthmatic symptoms, and the presence or absence of allergy in other members of their families. The manifestations particularly inquired for were: asthma, hay fever, eczema, urticaria, and migraine. Due care was taken to exclude such "positive" cases as asthma commencing late in life or in the presence of known renal or cardiac disease; sneezing of an occasional, non-seasonal, and non-environmental nature; eczema of but short duration or of presumably occupational etiology; urticaria occurring only occasionally as a child and at extremely isolated instances in later life; or migraine that did not give more than one of the characteristic ocular, cerebral, or abdominal symptoms.

In all, 4,152 relatives were considered—an average of 20 per patient. As no patient attends the hospital after the age of 12 years, the 200 cases comprise children whose asthma had its onset during the first decade of life. The homes are distributed over most of the London districts, but principally to the east and north, and some of the cases came from provincial towns. Only about 5 per cent. of the children were of Jewish parentage, and in this one respect the series differs from that described by Peshkin of 100 consecutive cases of asthma in children on the east side of New York, where 92 per cent. were of Jewish parentage.

SUMMARY OF RESULTS.

	Males.		Females.		Total	
	No.	Per cent.	No.	Per cent.	No	Per cent
Total cases	145	72.5	55	27.5	200	
Family history:						
Unilateral:	78	75.7	25	24.3	103	51.5
(a) Mother's side ...	48	73.0	18	27.0	65	64.0
(b) Father's side ..	30	81.0	7	19.0	37	36.0
Bilateral	22	64.7	12	35.3	34	17.0
Nil	45	71.4	18	28.6	63	31.5
Total related persons:						
Affected	342	57.3	255	42.7	597	14.3
Unaffected	1,712	50.9	1,650	49.1	3,362	81.0
Transmitters	64	33.2	129	66.8	193	4.7
Grand total ..	2,118	51.0	2,034	49.0	4,152	
Individual diseases:						
Asthma	278	63.5	160	36.5	438	73.5
Hay fever	17	46.0	20	54.0	37	6.2
Eczema	92	63.4	53	36.6	145	24.3
Urticaria	51	68.9	23	31.1	74	12.4
Migraine	13	27.0	35	73.0	48	8.0

Inheritance:

Father	A	A	A	T	T	U	U	T	Total
Mother	A	T	U	U	A	A	T	T	
Families ...	7	4	13	21	8	21	45	17	136
Affected ...	43	32	59	54	43	87	133	72	523
Transmitters ..	6	12	5	30	13	9	70	49	194
Unaffected ...	21	36	75	177	62	113	331	159	974

A = Affected. T = Transmitter. U = Unaffected.

* Working with a grant from the Asthma Research Council.

Age Incidence.

The age at onset of first symptoms during the first decade appears greatest during the first year of life, and declines progressively towards the tenth year (Chart 1). Analyses of the cases with regard to the presence or absence of allergic manifestations in other members of the family bear out the same fact. The small peak during the second year in cases with bilateral inheritance is negligible considering the small number of cases showing such heredity.

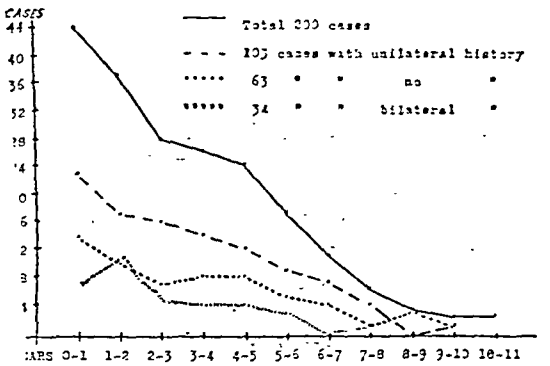


CHART 1.

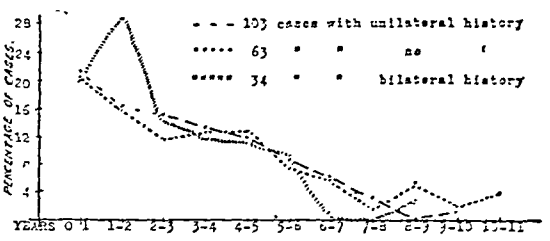


CHART 2.

In Table I the relationship between age, sex, and family history is depicted. In Table II the age at onset in this series is compared with a series of 197 children described by Bullen, 100 by Peshkin, and 135 by Coke, the onset of whose symptoms was during the first decade. If we consider the percentage of total cases in each history group per year (as in Chart 2) we notice that the age of onset of symptoms runs practically identically in the three history groups. Most observers have shown, in dealing with cases at all ages, that the greater or more complete the inheritance, the earlier the age at which symptoms will have their onset. In this series of cases with onset during the first decade about 21 per cent. develop symptoms irrespective of any hereditary influences, and during the remainder of the decade the groups continue to run fairly parallel. In other words, heredity plays no part in determining the age at onset of symptoms during the first decade.

TABLE I.—*Relationship between Age, Sex, and Family History.*

Age at Onset.	Unilateral.			Bilateral.			Nil.			Grand Total.		
	M.	F.	Total.	M.	F.	Total.	M.	F.	Total.	M.	F.	
0-1	20	3	23	4	3	7	11	3	14	35	9	44
1-2	12	5	17	8	2	10	5	5	10	25	12	37
2-3	10	6	16	3	2	5	6	1	7	19	9	28
3-4	11	3	14	2	2	4	7	1	8	20	6	26
4-5	10	2	12	3	1	4	4	4	8	17	7	24
5-6	5	4	9	2	1	3	5	—	5	12	5	17
6-7	6	1	7	—	—	—	3	1	4	9	2	11
7-8	3	1	4	—	1	1	1	—	1	4	2	6
8-9	—	—	—	—	—	—	1	2	3	1	2	3
9-10	1	—	1	—	—	—	1	—	1	2	—	2
10-11	—	—	—	—	—	—	1	1	2	1	1	2
Totals ...	78	25	103	22	12	34	45	18	63	145	55	200

TABLE II.—*Age Incidence of Asthma during First Decade (Percentage).*

	Cases.	0-1	1-2	2-3	3-4	4-5	5-6	6-7	7-8	8-9	9-10
Bullen... ...	197	13½	10	17½	13	9½	11	5½	9½	6	3
Peshkin ...	100	10	21	18	18	9	9	4	3	7	1
Coke	135	29	14	7	9	17	8	7	3	2	3
Average...		17½	15	14	13½	11½	9½	5½	5½	5	2½
Author ...	200	22	12½	14	13	12	8½	5½	3	11	1

Sex Incidence.

The sex incidence in this series was: males 72.5 per cent., females 27.5 per cent. Rackemann, in 90 children, found 73 per cent. males and 27 per cent. females. Comby, in 75 children, noted 57 per cent. males and 43 per cent. females. Coke's 135 children comprised 60 per cent. males and 40 per cent. females. Among 4,152 relatives the sexes were fairly evenly distributed—males 51 per cent., females 49 per cent.

The total affected persons in the whole group were: males 342, females 255. If we subtract the total number of patients from these figures we find that the sex incidence among the remaining affected relatives is practically identical—males 197, females 200. These figures closely approximate the 400 cases in adults described by Walker, where 198 were males and 202 were females. In adults similar figures are given by other observers: Bullen in 265 cases found 49.4 per cent. males and 50.6 per cent. females; Coke in 350 cases found 178 males and 172 females at all ages, but 71 males and 101 females from puberty to the menopause.

It is thus apparent that from birth to puberty the sex incidence of males to females is nearly 3:1, whilst from puberty onwards the incidence is less than 1:1. Puberty, therefore, is a definite decisive milestone toward which a great number of males must improve and beyond which a greater number of females develop symptoms. There is another possibility that at this point the allergic tendency manifests itself in another form. Obviously puberty must exert some beneficial effect upon the symptoms in the male and some deleterious effect upon the female. Such a fact is in full accord with the life-histories one often hears in these asthmatics. How often does the father say he suffered from asthma till he left school or commenced to work, or the mother assign the onset of her asthma to post-school years or marriage! When we consider the transmitters—sons or daughters of allergic parents who, whilst not showing any symptoms of allergy in themselves, have a child or children who manifest the allergic state—we note that the proportion of females to males is as 2:1. Also in cases with a unilateral family history we notice that transmission is twice as often through the mother's side as through the father's. Adkinson, even though she did not find asthma inherited more frequently from either parental side, did note that twice as many women as men inherit asthma from the maternal side, and that 25 per cent. more women inherit asthma directly from the parents. In addition, in tabulating the inheritance particulars, we note that there are twice as many affected with allergy where the male is unaffected and the female has or may transmit the tendency as when the male is affected or a transmitter and the female quite free.

Such figures suggest that inheritance of allergic manifestations is twice as frequent through the female as through the male, and that twice as many offspring are likely to be affected when the female transmits. Of the offspring, over twice as many males as females are likely

to be affected before puberty; the probability of a speedy recovery about puberty is much greater in the boy than in the girl; and the chance of developing allergic manifestations after the age of puberty is more probable in the female than in the male. Migraine appears to be far more common among female relatives, especially in the same family, whilst asthma, eczema, and urticaria appear to be more common in males. Four cases of ichthyosis occurred in males, whilst of a total of five cases of angio-neurotic oedema four were males. Hay fever appears with about equal frequency in males and females among the relatives, but more in adults than in children.

Family History.

A positive family history of allergy was determined in 68.5 per cent. of cases. In 51.5 per cent. the history was unilateral, whilst in 17 per cent. it was bilateral. Comparable figures have been given by Rowe, who in 110 cases of asthma in patients under the age of 20 found that 51.8 per cent. gave a unilateral family history and 19.1 per cent. a bilateral one. At the same time it must be appreciated that some of the cases in which a negative family history is recorded may in reality be positive, or would have been positive had the members lived longer, or come in contact with the allergen to which they may be sensitive, or might develop a sensitivity—as, for example, a person showing no evidence of allergy in England, but who would manifest sensitivity in America in a ragweed environment.

In numerous cases members of families have gone abroad, and all trace of them has been lost, a fact that may reduce the percentage incidence. In addition, the figures given include all persons of any age, whether dead or alive; this necessitated the inclusion of a lot of infants who were under 1 year of age at the time of death, four out of five of which, even in the presence of a strong hereditary tendency, would not have developed any symptoms before the age at death.

Among presumably normal persons Balyeat determined the presence of a positive family history in 8.3 per cent. of the relatives of 1,117 students; Spain and Cooke in 7 per cent. of 115; and Cooke and Van der Veer in 14.5 per cent. of 68 families.

Hereditary Transmission.

From a consideration of the figures given it is obvious that one cannot consider the transmission of specific diseases from parent to child, as one can such an anatomical peculiarity as lobster hand, since it is only a tendency or diathesis that is transmitted. Adam aptly states: "Asthma is no more hereditary than phthisis or gout; the tendency—the soil—is inherited; whether the disease will develop depends on nurture." Nevertheless most observers are agreed that this tendency is transmitted as a Mendelian dominant factor. The main dissenters from this view are Buchanan, who says that "essential asthma in its familial appearance follows none of the known laws of heredity," and Adkinson, who, in a paper restricted to the discussion of asthma as an inherited character, states that transmission is as a Mendelian recessive, and does not attempt to probe the larger problem of inheritance of sensitization to protein in general.

The tendency to manifest allergic symptoms is definitely transmitted. Whether the person will develop any manifestations or not depends on numerous external factors other than heredity—as, for example: (1) Extent of exposure to various proteins. Peshkin's children slept on rabbit hair, to which 49 per cent. were found sensitive. Balyeat, in a similar series, found 43 per cent. sensitive to feathers and only 2 per cent. to rabbit hair. (2) Extent of previous lung damage. Children with badly damaged lungs frequently develop asthmatic symptoms independent of heredity, but in the presence of heredity such symptoms appear to develop earlier than would otherwise be the case. Many parents assign the onset of a child's asthma to a previous pneumonia, whether of a simple nature or following measles and whooping-cough. (3) The presence of focal infections—in children, especially enlarged tonsils and adenoids, and dental caries.

Among other points may be mentioned constipation, nervous or endocrine disturbance, achlorhydria or hypochlorhydria, colouring (pale skin, blonde hair, blue-eyed type).

Historical.

The hereditary factor in asthma has been recognized for many years. Sir John Floyer (1698) states: "As my asthma was not hereditary from my ancestors, so, I thank God, neither of my two sons are inclined to it, who are now past the age in which it seized me." Cullen, in his *Practice of Physic* (1784), and Ryan (1793) both suggest the possibility of hereditary transmission. American authors, as Eberle (1831) and Goode (1836), maintained that hereditary transmission was the generally accepted opinion. Andral (1839) mentions heredity as one of the prime factors predisposing to asthma. Ramadge (1847) gives an instance in which the disease appeared in four generations. Salter (1860), in a study of 35 cases, determined a positive family history in 38 per cent. Stevenson (1879) described how he inherited his asthma from his paternal grandmother. Geddings (1883) states "that this tendency is hereditary in nature is conceded by every prominent writer on asthma." Osler (1884) speaks of the hereditary tendency manifested by allergic dermatoses.

The first important contribution to this study in the present century is that of Czerny (1905), in discussing asthma and other allergies in his exudative diathesis. Drinkwater (1909) records a very impressive family history. The more recent investigators and their conclusions are tabulated in the following summary.

OBSERVATIONS ON PERCENTAGE INCIDENCE OF POSITIVE ALLERGIC FAMILY HISTORY IN VARIOUS MANIFESTATIONS OF ALLERGY.

Normals.

Balyeat: 1,117 cases; 8.3 per cent.
Spain and Cooke: 115 cases; 7 per cent.
Cooke and Van der Veer: 68 cases; 14.5 per cent.

Allergy.

Balyeat: 1,217 cases. Believes Mendel's law followed as single dominant. With bilateral history symptoms manifested in first decade in 58.6 per cent., in second 10 per cent., after 30, 0.3 per cent. With unilateral history 32.3 per cent. in first decade, 30.8 per cent. in second.
Smith: 94 relatives in five generations; 56.2 per cent. suffered from some form.
Unger: 189 cases; 19 per cent.

Food Allergy.

Rowe: 175 cases; 68 per cent.

Asthma.

Adam: 20 per cent. Only tendency or soil that is inherited.
Adkinson: 400 cases; 48 per cent. Nature of inheritance is as recessive. 191 protein sensitive, 52 per cent.; 209 negative, 41 per cent.
Berkhart: 16 per cent.
Buchanan: Follows none of known laws of heredity in appearance.
Bullen: 500 cases; 39.4 per cent.
Coke: 350 cases; 46 per cent.
Drinkwater: 20 relatives in four generations; 10 affected, 10 unaffected.
Goodhart and Spriggs: 21 per cent.
Rackemann: 150 cases; 58.7 per cent. in sensitive cases, 10.5 per cent. in non-sensitive.
Rowe: 234 cases; 58.4 per cent. 45 cases; 62.2 per cent.
Salter: 35; 38 per cent.
Van Leeuwen: 49 cases; 63.6 per cent.

In Children Only.

Bullen: 235 cases; 50.7 per cent.
Comby: 75 cases; 58 per cent. hereditary and similar; 46 per cent. and dissimilar.
Peshkin: 278 cases; 42.5 per cent. 40 per cent. in sensitive group, 45 per cent. in non-sensitive.
Rowe: 110 cases under 20; 70.9 per cent. 19.1 per cent. with bilateral history, 51.8 per cent. with unilateral history.
Schloss: 80 cases; 47 per cent.

Asthma and Hay Fever.

Spain and Cooke: 462 cases; 58.4 per cent. 7.3 per cent. with bilateral history, 51.1 per cent. with unilateral history. In 549 families with 1,889 children, where there was a bilateral family history 71.6 per cent. eventually develop symptoms, with unilateral history 51.1 per cent.
Cooke and Van der Veer: 504 cases; 48.4 per cent. Believe Mendel's law followed as single dominant, but may be multiple.
Kahn: 100 cases; 80 per cent.
Rackemann and Colmes: 25 per cent.

Allergic Dermatoses.

Piness and Miller; 345 cases; 41 per cent.

Urticaria.

Menagh: 260 cases; 32.6 per cent.
Rackemann and Colmes: 25 per cent.
Rowe: 20 cases; 55 per cent.

Angioneurotic Oedema.

Ensor: 33 of 80 persons in five generations; 41 per cent.
Osler: 22 of 36 persons in five generations; 61 per cent.
Rowe: 14 cases; 43 per cent. gave history of similar complaint.
Whiting: 265 cases; 53 per cent. 110 in family groups comprising *total of 207 individuals.*

Eczema.

O'Keefe and Rackemann: 239 cases; 28 per cent.
Rackemann: 36 per cent. children, 59 per cent. adults.
Rowe: 16 cases; 69 per cent.

Migraine.

Bramwell: 50 per cent. cases show direct transmission, mostly through mother.

Buchanan: Transmission is expression of *Mendelian phenomenon.* Unilateral history in 100 families with 631 children, 22.6 per cent. had migraine. No history in seventeen families with 115 children, 26 per cent. had migraine. Bilateral history in three families with 15 children, all had migraine.

Diamond: 35 cases. Nearly all gave positive family history with transmission in main through mother.

Rowe: 30 cases; 86.6 per cent.

Tileston: 50 per cent. cases show direct heredity, even for three *to four generations.*

Ball: From 1,000 unselected family histories—261 cases migraine; associated with migraine in other members in 45.9 per cent. 162 cases asthma; associated with migraine in 37 per cent. 91 cases hay fever; associated with asthma in 49.4 per cent., and with migraine in 38.4 per cent. Eczema; associated with eczema in 21.3 per cent. and with migraine in 40.9 per cent.

Established Facts.

The main facts which have accrued from the vast amount of consideration that has been given to the subject of the transmission of the tendency to exhibit allergic manifestations may be summarized as follows:

1. The allergic diathesis is transmitted as a Mendelian dominant.

2. *The greater the heredity the earlier are symptoms mani*fested.

3. The earlier in life the individual becomes sensitive the greater the tendency to multiple sensitization.

4. Asthma, hay fever, eczema, urticaria, angioneurotic oedema, and migraine appear to be *intimately correlated,* and to be interchangeable.

5. *A child born in a family with a pure hay fever lineage* is much more likely to be affected with hay fever than with asthma, and vice versa.

6. Where several members of *one family are affected,* sensitization is not identical as regards the specific proteins, nor are the clinical types of allergy or the symptoms displayed in each type themselves *identical in different members of the* same family.

The main additions deduced from this study are:

1. Puberty must *exert some beneficial effect* upon the symptoms in the male and/or some deleterious effect upon the female, for before puberty the incidence of males to females is over 2:1, whilst from puberty onwards it is less than 1:1.

2. Heredity plays very little part in *determining the age* at onset of symptoms during the first decade.

3. Transmission appears to be twice as frequent *through the female as through the male,* for (*a*) when there is a unilateral family history it is twice as frequently on the mother's side as the father's; (*b*) when the parents are unaffected the transmitter is twice as often the female; (*c*) when the male is unaffected and the female has or may transmit the tendency, twice as many are affected with allergy as when the male is *affected or is a transmitter* and the female is quite free.

4. A positive family history of allergy is present in about 70 per cent. of cases of asthma in children—in over 50 per cent. unilateral, *in nearly 20 per cent. bilateral;* 10 per cent. appears to be the maximum incidence in the families of presumably normal persons.

In conclusion, I would like to convey my thanks to the physicians at the Hospital for Sick Children for kind permission to make use of cases under their charge, as well as to the Asthma Research Council, under whose grant these investigations have been rendered possible.

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NOTES ON ADDER BITE.

BY

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SOME years ago Sir Thomas Oliver published an article on adder bite in the *British Medical Journal* (December 9th, 1922, p. 1115), and at his request I sent some notes, published on March 13th, 1923 (p. 375), on a case I had seen and on others of which I had knowledge. Since then I have seen the two cases now to be described.

CASE I.

About four years ago I examined, with Dr. Ryder Richardson of Saxmundham, Suffolk, a child, aged about 3 years, who had been bitten about two hours previously. The bite was on the dorsum of a terminal phalanx of a finger. Before our arrival the district nurse had applied silver nitrate so effectively that the punctures were invisible. The child was comatose, pallid, sweating, and almost pulseless. Dr. Richardson injected strychnine, incised the area of the punctures, and rubbed in permanganate. By that time the hand and arm were much swollen and discoloured. Later he informed me that the child had recovered, after suffering several days' severe illness, during which the arm and side of the chest became very swollen and turned all the colours of the rainbow.

CASE II.

In March, 1927, a strong and healthy man of 57 (a patient of Dr. Barber of Sandown, Isle of Wight) was out adder hunting, and while catching an adder in some rough grass he thought his finger had been pricked with a bramble. About twenty minutes later he felt pain in the hand and noticed that it was swelling. The swelling spread up the arm and over the chest, and he began to feel nausea and giddiness; he became so sleepy that he had difficulty in getting back to his farm. Forty-five minutes after he was bitten he was put in a car and taken to the doctor, who injected a stimulant. Violent diarrhoea set in, but the patient was able to walk to the car, in which he was driven home. During the journey he had hallucinations, seeing "large girders being erected for the construction of a skyscraper." When he arrived home he was unable to walk upstairs, and on getting into bed he had a rigor and his breathing was stertorous. Vomiting and diarrhoea continued for some hours; his face was swollen and purplish; the arm continued to swell for three days, and was quite lifeless. He suffered intensely from thirst and drank large quantities of barley water and lemonade, but passed no urine for seventy-five hours after he had been bitten. When, at the end of a fortnight, he was able to get up, he felt very weak and found that his right leg was slightly swollen. The swelling of the right arm persisted for some nine months; he could use it only with difficulty, and the movements were limited apparently by the oedema.

I saw the patient in August, 1928, some seventeen months after the accident. He was getting electrical treatment and massage.

The arm was not swollen, but movements of the shoulder were stiff and painful, and he could not close his fist. Deep pressure behind the middle third of the clavicle produced pain.

I saw him again in December, 1928, when he had returned to work. He complained of some loss of grip in handling his tools. He could just make his fingertips touch his palm, and complained of pain on forcible flexion of the fingers. During the first year most of his inability to move the arm was due to the oedema. When I saw him there seems to have been some paralysis as well.

The following cases have been brought to my notice:

CASE III.

A child was admitted to the Royal Victoria and West Hants Hospital, under Mr. Kinsey-Morgan, having been bitten the previous day; his arm was greatly swollen and hard, and Mr. Kinsey-Morgan made multiple incisions and drained the brawny area. This treatment, he says, gave dramatic relief, and the child was much better in two days, by which time antivenin had been obtained and 15 c.cm. administered. The child was in hospital eleven days.

CASE IV.

Dr. B. of Bournemouth, lying in some long grass, was bitten on the thumb; he thrust out instinctively, and was struck again on the other thumb. A few hours later intense vomiting and diarrhoea, with collapse, set in. He incised the puncture at once and later saw a doctor, who applied strong ammonia. The arms were much swollen and purplish, and the pain was very severe; owing possibly to cauterization by the ammonia the skin of both thumbs ulcerated and took several months to heal. One thumbnail was lost.

Recently, in the *Daily Telegraph*, a correspondent extolled a wonderful cure for adder bite discovered by "Brusher Mills" of Lyndhurst. "Brusher Mills" was a well-known character in the New Forest; he died in 1905. One of his chief activities was collecting adders for zoos and laboratories; he prepared his "cure" by extracting the fat from adders, boiling it and straining it through a scorched cloth, letting it set like a jelly. It is said that he used to charge a guinea an ounce for this product. He professed to have no fear of adder bite as long as he had some of the fat with him. "Brusher's" remedy was a form of sympathetic magic, which appears to be world-wide, and is practised by Australian aborigines, Hottentots, and many other primitive people.

References to adder bite in medical literature seem to be very few, and Professor Francis Fraser very kindly supplied me with particulars of his father's (Sir T. R. Fraser) writings on snake venom. Madame Physalix, in her book *on Venomous Snakes*, gives very little information about English adders. Dr. Leighton (*Life History of British Serpents*, p. 130) refers to a fatal case of adder bite recorded in the *British Medical Journal* of July 15th, 1893 (p. 114); in this case a boy of 11 was bitten on the finger, had *severe symptoms—oedema, discoloration*, and general collapse—and died about thirty-six hours later. Dr. Stradling (Watford), in a letter to the *British Medical Journal*, July 29th, 1893, stated that he believed this to be the fourth fatal case vouched for by a competent authority. Dr. Leighton cites another fatal case which occurred in 1901, in a boy aged 4½. It is commonly said that the sting of adders is worse in the spring; it may be that during their winter sleep they store up poison, and thus have an increased or even a more concentrated supply for their first bite. It seems unlikely, however, that a supply of poison would be formed during the viper's hibernating period.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

INFECTION WITH THE BACILLUS ENTERITIDIS RESEMBLING PSITTACOSIS.

OWING to the number of cases of psittacosis reported in medical and lay papers, and the fact that it is not generally known that members of the *Salmonella group* may give rise to an illness resembling typhoid and paratyphoid fever, the following case is worthy of record.

A previously healthy business man, aged 52, noticed an "uncomfortable feeling," which he referred to the upper part of the abdomen. When first seen his temperature was 97.8°, but the next day it rose to 102°, and for sixteen days his temperature ranged between 102° in the morning and 104° in the evening. The respiration was not hurried, and the pulse varied between 98 and 104. There was severe sweating at times. On the sixth day of the illness a patch of dullness and tubular breathing was found over the right apex posteriorly. On the eleventh day there was cough and purulent *expectoration*, and three days later medium crepitations were heard over the lower lobes of the lungs. On the twenty-fourth day of illness, when his temperature was 98.6°, he developed a *left-sided* pleurisy; two days later this was followed by pericarditis, and within twenty-four hours there was an extension of the cardiac dullness upwards and to the left. The respirations were now 40, and the pulse 120; the heart sounds were very feeble, and triple rhythm was heard. The systolic blood pressure figure was 65. The face was dusky, and the lips and ears were cyanosed. The patient lay in a state of semi-coma. His condition was grave, and for six days he was between life and death; then his blood pressure rose to 100, his pulse and respirations became less rapid, and he made a slow recovery. During his illness there were no rose spots and no enlargement of spleen. Constipation was present throughout the illness, and required aperients and enemas.

The blood serum showed positive agglutination with *B. enteritidis* in dilutions of 1 in 50; ten days later it gave a positive reaction to the same bacillus in dilutions of 1 in 25. No Salmonella or *B. typhosus* were recovered from the faeces. There was complete absence of *agglutinins to B. aertrycke* (two types), *B. paratyphosus* A and B, *B. typhosus*, and *B. abortus*. The serological investigations were conducted at the Royal Infirmary, Sunderland, on the tenth and twentieth days of illness.

Summary.

The pyrexia resembled that of typhoid fever, and on one occasion the temperature was higher in the morning than in the evening; the pulse was relatively slow, compared with the temperature. The fall in temperature and blood pressure was followed by pleurisy and pericarditis, and the general condition became worse. The brunt of the attack was borne by the heart and lungs, resembling in this some of the published *cases of psittacosis*. There is a strong suspicion that the illness may have been conveyed by a human carrier. I have reason to believe that if the agglutination tests were more generally adopted there would be fewer cases recorded as *psittacosis*.

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Sunderland.

PROTECTION AFFORDED BY SHORT INFRA-RED AND RED RAYS TO A LETHAL DOSE OF STAPHYLOCOCCUS.

ONE of us (A. E.) carried out a series of experiments, reported in the *British Medical Journal* (August 17th, 1929, p. 293), which showed that a preliminary *irradiation* of shaved rabbits with *artificial sunlight* increased their resistance to an intravenous injection of staphylococcus. A lamp was used which gave infra-red, luminous, and ultra-violet rays up to 2,850 A.U in amounts closely matching those of sunlight, and an intensity was used which did not produce severe erythema. A dose of staphylococcus was injected which proved constantly lethal to normal rabbits weighing about 2 kilograms. A fan was kept running so as to prevent any overheating of the irradiated animals during their preliminary exposure to light, which lasted forty-eight hours. The control animals all died within twenty-four hours. The irradiated animals survived for an average time of 7.43 days. One or two of these did not die.

We have carried out another series of experiments, exposing the animals to the light and heat of a gas fire. "Beam" radiant fuel was used in the fires, because this gives a greater amount of short infra-red rays, which penetrate the epidermis and cause an increased transudation of water in the skin. The heat from this type of fuel is more comfortable than the duller red heat, containing a larger proportion of longer and non-penetrating *infra-red* rays given off from the *ordinary* gas fire. These rays cause a dry, unpleasant feeling of heat in the skin exposed to them. The rabbits chosen were of about 2 kilograms in weight, shaved on both sides, and exposed in a wire cage to the cross-fire of two gas fires, one being placed

on each side of the cage. A fan was kept running so as to keep the rabbits cool. Their body temperature was not allowed to rise more than two or three degrees Fahrenheit. One or two animals did not change their position, and in these there were signs of a local severe erythema; but in most of the animals the erythema production was not significant. The dose of staphylococcus culture injected in each rabbit was 0.6 c.cm.; this dose proved lethal to all the non-irradiated control animals in the average time of 1.2 days. Protection was afforded by "beam" gas-fire radiation, but dark heat radiation of unshaved rabbits did not appear to have any protective power.

Total number of rabbits exposed to "beam" radiant gas fires...	10
Average weight in grams	1,924
Number of animals still alive	2
Number of animals which died	8
Average number of days alive after infection ...	5
Total number of control rabbits	9
Average weight in grams	2 276
Average number of days alive after infection ..	1.2
Total number of rabbits exposed to dark heat ..	4
Average weight in grams	2,340
Average number of days alive after infection ...	1.2

We conclude, then, that the short infra-red rays and red rays have the power—by acting on the skin—of increasing resistance to a general staphylococcal infection.

LEONARD HILL.
ALBERT EIDINOW.

London, N.W.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

CALCUTTA BRANCH.

Keratomalacia in Adults.

A CLINICAL meeting of the Calcutta Branch was held on December 13th, 1929, in the Calcutta School of Tropical Medicine and Hygiene, when the president, Major-General G. TATE, I.M.S., was in the chair, and twenty members were present. Lieut.-Colonel E. W. O'G. KIRWAN, I.M.S., read a paper on adult keratomalacia in Bengal.

Lieut.-Colonel Kirwan pointed out that keratomalacia or xerophthalmia was seen daily in the out-patient department of the Calcutta Eye Infirmary; it constituted the commonest cause of blindness among children in Bengal. The disorder was a complex and systemic one, associated with marasmus, affections of the alimentary tract, and dietary deficiences, while corneal degeneration was its most characteristic feature. According to the textbooks keratomalacia did not occur in adults, only very isolated cases having been reported in Europe and America; this was due to the high standard of living in those continents, but in the East matters were very different. Pillet had recently reported undoubted cases among adults in China. In Bengal the disease certainly occurred among adults, and all stages could be seen from simple xerosis corneae with hemeralopia to necrosis corneae, which constituted keratomalacia.

In adults the disease was a non-inflammatory malady of the eyeball, the margins of the lids being generally pale and dry. There was practically always present a mild conjunctival discharge due to secondary organisms. The lid conjunctiva, as a rule, took no part in the process, unless the disease was of long duration, when it might assume a trachoma-like condition. In the conjunctiva of the fornices, especially that of the lower fornix, there were present characteristic changes—follicles and pigmentation—often resembling the condition of argyrosis conjunctivae. The discoloration was similar to that of the skin and mucosae seen in scurvy and Addison's disease. The conjunctiva of the eyeball showed xerosis in the form of islands or one continuous layer. In the cornea the disease took the form of xerotic plaques or of ulceration. Exfoliation of the epithelium allowed the entrance of staphylococci or pneumococci, which broke down the tissues. The lens of the eye might also become involved in long-standing cases. Hemeralopia was often a very marked symptom, but it was sometimes difficult to elucidate, since it was necessary to depend on patients' statements.

Certain general symptoms indicated that the disease was a generalized and systemic one, the eye symptoms being only a part. Fever was practically always present. The blood showed reduction in the haemoglobin and a normal red cell count; there was usually leucocytosis. Skin pigmentation was often marked, sometimes so much so that the skin appeared as if there was a deposit of bile in it. The surface of the skin was rough and dry, and often covered with large numbers of comedones. Hyperkeratosis and parakeratosis were usually present, and multiple small follicular abscesses might be seen. The hair was dry and easily fell out; the nails might be affected. Other mucous membranes might be involved, showing the same changes as occurred in the eye—namely, replacement of cylindrical by squamous epithelium; the mucosae of the mouth, nose, throat, and intestine were frequently implicated, and severe diarrhoea might occur. A non-gonorrhoeal urethral discharge was often present. Wright believed that the thyroid gland might be affected, and McCarrison that all the glands of internal secretion, with the exception of the suprarenals and pituitary, might be involved. The condition amounted to an extensive disease of the ectodermal coat of the body, caused by general under-nourishment and absence of certain vitamins, especially vitamin A. In mild form xerosis of the bulbar conjunctiva occurred and culminated in keratomalacia with total blindness.

In treatment, cleanliness and protection were the local essentials. Cod-liver oil was the best remedy, but should be administered cautiously in patients with diarrhoea; it might also be rubbed into the skin. Fresh milk and vegetables should be given freely. A mixture of the chlorides of calcium, sodium, and ammonium was useful, as also was fresh liver. The disease responded slowly to treatment, the prognosis being bad if both corneae were attacked before treatment had begun. The condition was preventable, but, like most of the health problems of Bengal, resolved itself into an economic and financial matter, rather than one for the medical practitioner.

At the conclusion of his paper, Colonel Kirwan showed six illustrative cases.

The first patient was an adult male coolie, on a good general diet, but involved in very severe physical work.

The second patient was a boy, aged 12, with diarrhoea and fever, the conjunctival epithelium having become converted into squamous epithelium.

The third patient was a man, aged 45, with hazy vision of only fifteen days' duration. He had had two months of night-blindness, however; the haemoglobin percentage was only 50, and the red cell count had fallen to 3,000,000 per c.mm. Here the diet had been very insufficient, and a strongly positive Wassermann reaction was present.

The fourth patient, a man aged 31, had, in the right eye, only perception of finger movements, and 50 per cent. diminution of vision in the left. The whole cornea in one eye was necrosed.

The fifth patient, a man aged 40, had had night-blindness for a year, and only retained perception of light in both eyes. The conjunctivae were of a mahogany colour, and there was sloughing right down to Descemet's membrane. The skin was dry, scaly, deeply pigmented, and covered with comedones.

The sixth patient was a woman with advanced disease, but her 6 months old baby was perfectly healthy. Her diet had been only rice and dal, with no fish or milk.

In the subsequent discussion General TATE inquired whether the disease attacked any particular type of patient, and whether it occurred in provinces other than Bengal. Major G. SHANKS, I.M.S., commented on the general systemic conditions which predisposed to secondary bacterial invasion of tissues. Wolbach's experiments had shown that in conditions of vitamin deficiency keratinized epithelium might replace the normal mucosa of the respiratory, alimentary, and urethral tracts, and the ocular conjunctiva. Lieut.-Colonel T. C. BOYD, I.M.S., asked whether Colonel Kirwan had tried treatment with endocrine products, and suggested the administration of thyroid gland. Dr. COLTMAN said that keratomalacia in children was especially associated with fat dyspepsia and coeliac disease. In such cases peptonized milk given for three weeks cured the condition. Dr. S. C. DUTT thought that hemeralopia and the skin changes were characteristic of the disease; in Calcutta it was confined to up-country patients, who lived chiefly on a diet of kesari and other

dals, and it did not attack the Bengali who took fish in his diet. It might end in optic atrophy. Dr. S. K. DAS, on the other hand, stated that he had seen instances of the disease in the children of well-to-do Bengali families; cases were often associated with diarrhoea.

In reply to questions, Colonel KIRWAN commented on cases with a urethral discharge which had been mistaken for gonorrhoea; Colonel R. E. Wright had found the administration of thyroid gland very useful in treatment, while liver feeding tended to cure the anaemia. The progress of hospital cases was usually very slow. True trachoma was very rare in Bengal, and seldom complicated the disease. He had not, so far, studied the blood calcium content in connexion with keratomalacia.

Reports of Societies.

RADIUM IN GYNAECOLOGY.

THE Sections of Obstetrics and Gynaecology and of Electro-Therapeutics of the Royal Society of Medicine combined on February 21st for a discussion on the position of radium in the treatment of gynaecological conditions. Mr. ARTHUR E. GILES, president of the first-named Section, was in the chair.

Mr. MALCOLM DONALDSON said that knowledge of the action of radium was still imperfect, but one outstanding fact was that quickly growing cells in an active state of metabolism were far more affected by radiation than more stable cells. This direct action of the rays on the cells was the basis of all radiotherapy. The question of radiosensitivity was abstruse; certain tumours disappeared very rapidly, others with difficulty. Upon what the difference in radiosensitivity depended, whether on the blood supply or the histological structure, was not yet determined, nor was it known whether the action of radium was purely direct or was combined with an indirect action brought about by the surrounding tissues. In view of the imperfect knowledge of the fundamental facts involved it was not surprising that most techniques were empirical. Although it was possible to define dosage as the weight of radium element multiplied by the duration of exposure, yet in practice this gave very little information because the intensity of the radiation fell off very rapidly the further the radium was from the individual cell. It was obvious that the same amount of energy would be received by a cell if 100 mg. were used for one hour or 1 mg. for 100 hours; therefore merely to state that the patient was treated with so many milligram-hours did not convey exactly what treatment had been given. Even when the several factors in the dosage had been stated, the problem of how the dosage should be made up was not solved. From clinical observation it appeared that for certain types of growth, particularly slow-growing tumours, it was better to apply a small intensity for a long time than a large intensity for a short time. The radiological treatment of carcinoma of the cervix had been chiefly conducted by radium applied per vaginam. The problem for gynaecologists was how to destroy the growing edge of the tumour in the deeper parts of the pelvis, and the metastases in the glands. When a growth had spread beyond a very limited area no application of radium by the vagina alone could possibly cure the patient. For this reason x rays were now employed in many centres in the hope of increasing the effective range of the radium. Carcinoma of the vulva required a little more specialized technique. For the primary focus needles of an intensity not exceeding 0.6 mg. per cm. length should be used, placed at least 15 mm. apart, and the radium left *in situ* from ten to twenty days, but there was not yet sufficient evidence to make the procedure more exact as to length of time. The glands were a much more difficult problem, but the columbia wax method of placing the radium over the whole inguinal area at a distance from the skin of 1 cm. was probably the most efficient at present available. There was very little to be said concerning the radiological treatment of the body of the uterus, since most of such cases could be efficiently treated by means of hysterectomy. When hysterectomy was contraindicated, it would appear that a combination of x rays followed by 50 mg. of radium left in the cavity of the body from ten to fourteen days was of very great value. Rapidly growing tumours such as chorion epithelioma should be treated first by x rays, and then, if the primary focus was not very extensive, radium should be used in addition.

Dr. J. E. A. LYNHAM, speaking from the electro-therapeutical side, said that while the gynaecologist had become established and his position well defined, the radiologist had not yet fully evolved. Coming generations of medical men would be amazed to find that anyone should have been permitted to cover the enormous range expected from the present-day radiologist. In the course of time, as radiology came into its own, the subject would be subdivided, and there would be specialization in particular branches. It did not seem probable that the radiologist would proceed to perform operations for the surgical use of radium; it was more likely that the surgeon of the future would devote part of his training to a serious study of the tissue changes brought about by radiation. Particularly in regard to malignant disease, the consideration and treatment of a patient was really at its best when entirely in the hands of one man. At present there was a tendency to dissociation, and in some institutions the radium department was being separated from the radiotherapeutic department. The surgeon and gynaecologist had their parts to play in the application of radium, and they would of necessity work in co-operation with those directing radiotherapeutics. Proceeding to speak of experiences with radium in gynaecology, Dr. Lynham said that in the treatment of cancer two separate things had always to be borne in mind—namely, the effect of the radiations on the malignant cells, and the effect on the stroma and adjoining tissues. In sarcoma, he believed, the more important action was on the cells of the tumour; in cancer, on the other hand, the ideal radiation was one which would inhibit or destroy the malignant cells, not only without injury to the adjoining tissues, but in such a way as actually to assist them in their efforts to overcome the invading cells of the growth. Many failures in early days could be attributed to a dosage of too great intensity. It was generally accepted that the shorter wave-lengths of the gamma rays had a more inhibiting action on the cancer cells than the x rays, while there was more effect on the stroma as the result of x rays than as the result of radium. In the treatment of cancer, therefore, greater success could be expected from the judicious combination of x rays and radium than from either agent alone. He had been more successful where radium was first used for its local effect and x-ray treatment begun before the influence of the radium had subsided. Dr. Lynham sketched the early work at the Radium Institute in London, with which he himself had been associated, and also the development of the Stockholm, Paris, and Baltimore techniques. In the history of the treatment of malignant disease of the cervix and vagina, the enthusiasm generated by early improvement had been followed by disappointment as the disease reappeared and extended. In cases where the glands were not palpably enlarged it ought to be possible to do a great deal by means of heavily screened high-voltage x rays, and this should be taken up as a serious adjunct to treatment by radium. The fact must not be overlooked that radium was so far a local treatment for local manifestations of cancer, and cancer was a progressive disease, tending to invade new structures. Whether using radium or x rays some method of prophylactic irradiation should be employed, the doses for which need not be heavy or cause any serious tissue damage. Even when the tumour could not be made to disappear, its rate of growth might be slowed and the life of the patient prolonged. One aspect of treatment did not always receive the attention it deserved—namely, the preparation of the patient before radiation methods were applied. The removal of septic foci, and the use of vaccines, tonics, ultra-violet radiation, and hypodermic or intramuscular medication might be of assistance. It was to be hoped that enthusiasm for one particular method would not prevent systematic exhaustive trials of other methods. The whole subject was merely at its beginnings; the possibilities were immense, the potentialities as yet

largely unexplored. When the efforts for the cure of cancer had reached a greater measure of success, it would be realized that much of the credit must go to the gynaecologist; if only the spirit of consultation and mutual correction which prevailed in such a discussion as the present could be carried over into the hospitals success would be expedited.

Mr. STANLEY DODD dealt with radium in the treatment of non-malignant disorders of the uterus. The indications for treatment were cases in which menstruation was regular but profuse, with no abnormal physical signs, and no suspicion of malignant disease, also menorrhagia associated with metritis and climacteric bleeding, and menorrhagia associated with general diseases, such as tuberculosis, where the monthly loss was greater than the patient could afford. It was also indicated in intractable dysmenorrhoea, not alleviated by drugs or modern endocrine or other treatment; in fibroids of the uterus (he had only had occasion to use radium in two cases of fibroids in young patients who were unsuitable for operation, and both were relieved); and in chronic cervicitis, though in this last condition, in which radium had been tried by needling, the results had been disappointing. It was the speaker's clinical experience that with proper screening—he mentioned a screen of 1 mm. platinum—radium could be kept inside the uterus for twenty-four hours without leading to any unfortunate sequels. He gave records of 61 cases in which radium had been used in non-malignant disorders, and added some remarks about carcinoma. It was fair to say that radium would eradicate primary growth in nearly all cases. The problem was to clear up metastases, and secondary deposits in the glands were more difficult to deal with than was the primary growth. The rational course seemed to be to extirpate the glands. To use the vaginal application of radium only was to condemn 40 per cent. of cases to recurrence. It was necessary to decide both how and when to deal with the lymphatic system, because it had to be remembered that the lymphatic system was the last line of defence against carcinomatous invasion. Mr. Dodd described in detail his own special technique for radium application.

Dr. RUSSELL REYNOLDS remarked that radium treatment could not be dissociated from deep *x*-ray therapy. He had been struck with the importance of using a split-dose technique. This seemed a common-sense point of view to take, because if one was using a very large dose of deep *x* rays or radium it involved a lowering of the resistance of the patient as well as of the tumour. If the dose was split the patient's resistance was better maintained. He thought, therefore, that the use of *x* rays in conjunction with radium was very important. He agreed with the use of radium first of all for local action, the treatment being completed by *x*-ray therapy.

Dr. W. M. LEVITT thought there was general agreement about the value of combined treatment, but a point not usually sufficiently appreciated was that the technique of *x* rays might be considered as complementary to the technique of the application of radium. *X* rays were applied externally, and the zone of maximum intensity tended to be at the periphery of the growth. Radium was applied locally, and therefore its zone of maximum intensity was at the centre. The two methods from the point of view of technique, therefore, could be regarded as complementary. With *x* rays recurrences were almost invariably local; with radium rarely. There was still another and more fundamental point to which no reference had been made—namely, that the character of the stimulus of radium was essentially different from that of *x* rays. Radium was applied continuously perhaps for several days; *x* rays were applied in split doses. Even though the action might be identical, the results of a continuous and of an intermittent physical stimulus were entirely different. Intermittent pressure on the toe, for example, would give rise to a corn, but continuous pressure would give rise to necrosis. The fact that the type of injury to the tissues might be different was supported by the evidence that it was possible to combine a full dose of radium with a full dose of *x* rays without producing a burn. On that ground he suggested a combination of the two agents. It might also be found that the application of *x* rays followed by radium gave very different results from the application of radium followed by *x* rays. His own view was that it was preferable to precede radium with *x* rays.

Dr. S. GILBERT SCOTT said that one was apt to think that the cure of malignant disease was bound up with the disappearance of the tumour. The primary growth in quite a number of cases could be made to disappear by the surgeon, the diathermist, or the radiologist, but unless the problem of the secondaries was also tackled there was no justification for talking of cure for cancer. In very few cases did the primary disease kill the patient, nor was the patient killed by secondary growths in the groin or axilla. Patients most commonly died with secondary growths in the liver, spleen, and thorax, and until some satisfactory method could be devised of preventing metastases from developing in these regions the mere disappearance of the primary growth did not justify any claims to cure.

Dr. J. M. WYATT referred to the treatment of pruritus of the vulva. In many cases where *x* rays seemed to have no effect small doses of radium had brought extraordinarily marked relief, sometimes lasting for two years. Mr. M. H. OLDERSHAW thought one of the reasons for partial failure after the introduction of radium into the uterus in non-malignant conditions was that the radium was not arranged advantageously so as to affect all parts of the endometrium. He had taken care in the case of a large uterus to split the dose of radium up so as to obtain as uniform an effect as possible. Mr. DUNCAN FITZWILLIAMS was interested in the statement that the primary tumour could be made to disappear, but that when it came to the glands the problem was wholly different. In another branch of surgery a carcinoma of the tongue could readily be made to disappear, but when it came to dealing with glands in the neck, in spite of radium application—surface, interstitial, or other—block dissection was the sheet anchor. Mr. Dodd screened his radium with 1 mm. of platinum. That was the largest screening he knew, and he felt that there was a field for experiment with different screenages. A screen of 0.5 mm. platinum had been accepted, but he was quite sure it was wrong.

Dr. PATTERSON gave particulars of an investigation which had been proceeding at St. Bartholomew's Hospital to endeavour to ascertain the prognosis as regards radium treatment according to the type of growth revealed by the microscope. The figures so far ascertained, however, were not suitable as a basis for discussion, because the earlier cases had been treated by different procedures in respect of dosage and length of time. It was proposed to await five-year results of cases which had all been treated on the same basis. As far as the work had gone, however, it showed that the more immature the cell growth the better was the prognosis from the point of view of radium treatment. Dr. GILBERT I. STRACHAN said that from the point of view of saving the life of the patient, cure of cancer was scarcely yet in sight, but from the point of view of relief of symptoms in almost 100 per cent. of cases the primary lesion would clear up, with relief of bleeding. In a certain small proportion of cases, however, there was no relief, and no actual amelioration of pelvic pain, and research on these resistant cases was desirable. The matter of fistula formation was another important point. Fistula occurred in a certain proportion of cases after radium just as after any other kind of treatment, or after no treatment. Dame LOUISE MCILROY commented on the value of co-operation between the radiologist and the gynaecologist, and eulogized the organization of Regaud's clinic in Paris. She agreed that the main question was one of hours rather than of the amount of radium. The present discussion had largely turned on radium *versus x* rays; she agreed that *x* rays affected the ovary, and radium the endometrium.

The CHAIRMAN (Mr. Arthur Giles) said that one lesson which had emerged from the discussion was that workers must not pin their faith exclusively to one method of treatment. Radiation must not be regarded as taking the place of surgery, but as supplementing it. With regard to induction of the menopause there was a class of case in which the object was primarily to arrest haemorrhage, not to bring about the menopause or produce atrophy of the ovaries; in such a case he believed radium more

valuable than *x* rays, because of its more limited scale of action.

The openers briefly replied, Dr. LYNHAM taking up the chairman's last point by saying that a number of young women had been treated at the Radium Institute for uterine bleeding. In no case had he known the artificial menopause which ensued to last longer than nine months. This corresponded to the gestation period, and supported the view that the superficial follicles were more susceptible, and the deeper ones less susceptible, to treatment.

APHONIA.

AT a meeting of the Section of Laryngology of the Royal Society of Medicine, on February 7th, under the presidency of Dr. DAN MCKENZIE, Miss E. C. MACLEOD gave a demonstration of an apparatus for the treatment of functional aphonia and similar disorders, basing her remarks on the treatment of seventy-five cases. In true aphonia, she said, there was little or no approximation of the vocal cords when phonation was attempted; in hyperphonia not only were the cords forcibly brought together, but the ventricular bands were also approximated, so that phonation was almost impossible; if audible at all, the voice was high-pitched, hard, or very hoarse. The most satisfactory treatment for the first group was the application of the faradic current by means of the synchronized stimulator, accompanied by strong suggestion or persuasion. For the second gentle phonation could be induced by vocal and muscular exercises, which relaxed the existing tension. The synchronized stimulator was contraindicated in these cases. A second treatment was usually unnecessary.

Mr. V. E. NEGUS thought that treatment of speech defect ought to be the work of a specialist. At King's College Hospital the orthophonic department worked in close collaboration with the laryngological department. During a discussion of the method Miss MACLEOD said she preferred gentle phonation to that which resulted from muscular pressure applied to close the cords.

Mr. H. BELL TAWSE showed a patient with a growth on the right side of the larynx in whom aphonia had been followed by hoarseness. The Wassermann test was negative. In discussing the patient's claim to a pension on account of having been gassed in France, several speakers thought it unlikely that the claim would be allowed, as the symptoms had matured about thirteen years later. Others thought that this delay should not invalidate the claim. Mr. POPPER advised a provocative injection of novarsenobillon before absence of syphilis was accepted.

The PRESIDENT showed a case of unilateral fixation of the larynx, apparently congenital. Breast-feeding had been impossible on account of dyspnoea. The patient was now 21 years of age. Mr. O'MALLEY thought there must have been some trauma at birth. In this case there was a thickening similar to that in healed laryngo-fissure.

Mr. O. POPPER showed a case of what he regarded to be a clinically primary tuberculosis of the larynx, in which the diagnosis lay between epithelioma and tubercle. Dr. JOBSON HORNE thought the word "primary" ought to be omitted for lack of other authentic evidence.

Mr. NORMAN PATTERSON showed a patient, aged 66, with nasal sinus disease involving the orbit. Three years ago the right eye swelled and pain was felt above it; but there was no headache or nasal catarrh. Polypi were removed from the right side of the nose, which discharged on being probed later, and the eye swelling subsided. Two weeks later a sinus developed on the inner side of the eye, accompanied by a profuse blood-stained discharge. There was also a discharge from the right side of the nose, which passed down the throat. When three stitches had been inserted, following an external operation, the discharge ceased for a week; subsequently, however, the swelling increased, and the eye was displaced forwards, outwards, and downwards. Double vision ensued, with persistence of pain in the supra-orbital region. A fluctuating swelling was found extending from the nose to the outer limit of the orbit. The skin could be easily moved over the swelling, but it was inflamed in the region of the sinus. A hard, rounded, smooth swelling projected from the lateral wall, and there was some polypoid tissue on the left side. It was remarkable that the displaced eye had vision 6/24.

Mr. MUSGRAVE WOODMAN spoke of a patient whose right eye extruded; sight and temperature were normal, and he was free from pain and symptoms. The *x* rays revealed nothing; no operation was performed, and the patient returned home apparently well. A month later he came with exactly the same condition, and on this occasion *x* rays showed suggestion of a swelling in the ethmoidal region. The ethmoidal cells at the back of the eye were found to be full of thin, clear mucus. When this had been drained into the nose and the outer wound closed up, the eye returned to its normal position; its movements were re-established, and sight was unimpaired.

Mr. RITCHIE RODGER also described a case where the patient had diplopia and slight swelling in the ethmoidal region. An external operation revealed a greatly enlarged frontal sinus, the healed cavity being filled with a material of a glue-like consistency.

Mr. NEGUS illustrated by lantern slide a case in which a non-opaque foreign body had lodged in the left lower lobe bronchus. While playing with a carrot, an infant of 1 year and 10 months inhaled a portion. A slight cough ensued, but definite signs in the chest could not be detected until the following day, when there was almost complete loss of air entry in the left lower lobe and impaired air entry in the left upper lobe. Bronchoscopy revealed a piece of carrot, which was removed from the trachea; another was removed from the left lower lobe bronchus. The child was well the next day.

Mr. M. VLASTO showed a case with associated paresis of the internal tensors and abductors of the vocal cords, where there was combined bulbar paralysis and progressive muscular atrophy. The patient had dysphagia when taking solid food. The paresis developed very slowly. In addition to the bilateral abductor weakness in the larynx there was typical bowing of the vocal cord on the right side, due to paresis of the thyro-arytenoideus muscles. Dr. FEILING considered that the bulbar symptoms were due to degeneration of the hypoglossal nucleus and the nucleus ambiguus in the medulla.

Mr. O. POPPER exhibited a silvered operating reflector, which he said had a reflecting capacity superior to that of the all-metal sterilizable type. It was compact and cheap.

CYCLICAL CHANGES IN THE ENDOMETRIUM.

AT a meeting of the Manchester Pathological Society on February 12th, Professor JOHN H. TEACHER gave an address entitled "The endometrium and decidua." Photographs of low magnifications were shown to demonstrate the structure of the normal membrane and the great increase in its thickness during the menstrual cycle, in the formation of the decidua, and under certain pathological conditions. Attention was particularly directed to the decidual group of slides; the relations of the structural changes to menstruation, ovulation, and fertilization were discussed. Professor Teacher disagreed with the current views on the association of these functions, and suggested that ovulation was not a regular but an occasional phenomenon, that menstruation did occur in the absence of ovulation, and that the pre-menstrual proliferation of the endometrium might possibly in these circumstances be omitted. These views were founded partly on the lecturer's study many years ago of the histories of young human ova, and on the recent observations of Professor G. W. Corner on monkeys. According to this theory the cyclical changes in the endometrium would develop only when ovulation and the formation of a corpus luteum also occurred. The still greater proliferation of glands and the cellular changes in the direction of decidua, which were at one time described as endometritis glandularis hyperplastica, would be associated with fertilization of an ovum which might or might not become implanted. Lantern slides at higher magnification were then shown and their interpretation was discussed in the light of this theory.

LIVERPOOL MEDICAL INSTITUTION.

AT a meeting of the Liverpool Medical Institution on Thursday, February 6th, Mr. T. GUTHRIE read a short paper on foreign bodies in the air passages. He said that during a period of twenty-three years he had treated eighteen cases of foreign body in the trachea and bronchi, besides a few others in the larynx. He gave an account of a number of these cases, showing lantern slides to illustrate the various types of foreign bodies and the problems involved in their removal. In reference to the diagnosis of foreign bodies in the bronchi, stress was laid on the importance of such symptoms and signs as the "asthmatoid wheeze," and the position and degree of respiratory movement of the diaphragm, as observed on *x*-ray examination. Particular attention was drawn to the irritating effects of foreign bodies of vegetable origin, especially the "arachidic bronchitis" described by Chevalier Jackson as due to the inhalation of peanuts. The assistance of an expert anaesthetist was most important. Rectal ether anaesthesia, supplemented by the inhalation of a small quantity of chloroform, had proved very satisfactory in one or two of the cases.

Mr. H. F. WOOLFENDEN described the type of case diagnosed as chronic appendicitis, or appendix dyspepsia, for want of a more exact diagnosis, and said that his experience was that there was a high return of this type of case after simple appendicectomy. Moreover, the slight changes found in the appendix were often not sufficient to account for the symptoms. It was noticeable how frequently a very mobile caecum and ascending colon were found in this type of case, and it was determined to try the effects of fixing the caecum and ascending colon as well as removing the appendix. Acknowledgement to Waugh for his pioneer work on this subject was made, and to the paper by Carslaw. During the past four years a small series of cases had been treated, and 49 of them were traced; 29 patients were completely cured, 6 were cured except for persistent constipation, 1 complained only of pain in the scar, 11 were relieved, and there were 2 failures. Of the cases operated on, 5 patients had previously had their appendix removed unsuccessfully, and they were all cured or very much relieved by the colopexy. On analysing the condition of the appendix in the other cases, it was found to be normal in 14, kinked in 5, to contain concretions in 7; 9 showed fibrosis, 3 were bound down, and 2 showed slight congestion. In the 14 cases where the appendix was normal cure or great relief followed the operation. The theories as to the cause of the symptoms were briefly reviewed.

In the discussion which followed, Mr. FRANK JEANS said he did not as a rule advocate fixation of organs originally mobile. But he believed in the genuineness of the cures in Mr. Woolfenden's cases because the psychological element could be disregarded. Neurotic patients were not cured by operation; they merely complained of the operation instead of the original disease.

UTERINE MALIGNANCY.

AT the last meeting of the Section of Obstetrics of the Royal Academy of Medicine in Ireland, the president, Professor A. H. DAVIDSON, showed specimens and lantern slides of two malignant growths in the uterus.

Case 1.—A woman, aged 58, had been married for twenty-seven years, but had had no children. The menopause had occurred nine years ago; there had been slight leucorrhoea during the past twelve months, slight irregular bleeding during the past four months, and a sharp haemorrhage one month ago. She had lost weight. The vaginal cervix appeared normal, but the supravaginal cervix was greatly enlarged; the body of the uterus was difficult to feel, but seemed to be enlarged. Passage of a sound into the cervical canal revealed a breaking-down cavity, and there was a blood-stained fetid discharge issuing from the uterine cavity. The uterus and cervix were mobile, and there was no extension into the parametria, bladder, or rectum. An endocervical cancer was diagnosed, and Wertheim's hysterectomy was performed. There was difficulty in separating the lower part of the rectum from the back of the cervix, but the adhesion did not appear to be malignant. At one place on the anterior uterine wall the growth had almost eaten its way through. A gauze drain was led out through the vagina.

Pathological examination revealed the condition as being an endocervical cancer with extension to the body of the uterus. Sections showed masses of squamous cells growing in a malignant formation, and at other places masses of cancer cells with the formation of an adenocarcinoma; it was probably an example of metaplasia.

Case 2.—A woman, aged 52, had been married for thirty years. She had complained of purulent vaginal discharge for the past six or eight months and frequency of micturition. She had had an abortion, with instrumental intervention, twenty-nine years ago, followed by atresia of the cervical canal and retention of menstrual products. In order to overcome this difficulty double oophorectomy was performed; since then the patient had never menstruated. The vulva and vagina were atrophic, especially in the upper part, and there was a pinhole opening in the vaginal vault, through which purulent material was issuing. The body of the uterus was enlarged to the size of a grape fruit, and was irregular. No cervix could be seen. A diagnosis was made of myomatous uterus with pyometria, and total hysterectomy was performed.

The pathological report stated that sections of the tumour showed that it was a large myoma, with advanced hyaline degeneration; the nuclei of the muscle fibres stained intensely, and revealed a tendency to proliferation, many mitotic figures being seen. This deep staining and proliferation was also seen in the muscle wall of the uterus. The cell proliferation seemed to be continuous with the stroma. There were a few areas of interstitial haemorrhage and the condition suggested a sarcomatous change originating in a myoma which had developed in the absence of the ovaries.

Dr. BETHEL SOLOMONS said that the greatest interest to him lay in the fact that malignant disease followed atresia of the cervix. This bore out the contention which Graves had emphasized and illustrated in his excellent paper at the British Congress of Gynaecology two and a half years ago, that one of the very common causes of malignant disease was insufficient drainage. The specimen showed clearly that myoma uteri could occur when the ovaries were absent.

Dr. GIBBON FITZGIBBON suggested that the tumour in the first case might have been a primary fibro-sarcoma. He mentioned a similar case which he had shown at the Academy some years previously, in which the opinion was that the whole tumour was a fibro-sarcoma, some parts of the tumour being more sarcomatous than others.

The PRESIDENT, replying, said that myomata might have been present at the time of the first operation, but as the patient was then only 22 years old he thought it was unlikely that they were. Sections taken from the centre of the tumour showed definite myomatous tissue. The appearance of the tumour was that of an ordinary interstitial myoma which was becoming submucous; he had not suspected malignancy until he had received the pathological report.

Uterine Haemorrhage of Doubtful Etiology.

Dr. J. F. CUNNINGHAM showed a uterus and ovary, and read notes on a case of long-standing frequent and profuse uterine haemorrhage in a woman aged 30.

The patient had been curetted and treated with drugs and glandular extracts without any beneficial result. When first seen by Dr. Cunningham she complained of haemorrhage, backache, and weakness, looked very anaemic, and her haemoglobin was only 51 per cent. Examination under anaesthesia revealed a slight enlargement of the uterus, and a scraping of the endometrium showed hyperplasia. Treatment for the anaemia was prescribed, and the patient returned four months later looking and feeling better, but the uterine bleeding had in no way altered. She was then given radium treatment, with the object of producing a temporary artificial menopause; this was followed for a month by a continuous slight uterine bleeding. One month later she menstruated heavily for ten days; she then had a period of amenorrhoea, which lasted for two and a half months, followed by a heavy menstruation, which lasted for seven days. After an interval of six weeks there ensued severe haemorrhage, which continued for three weeks. Eleven days later the abdomen was opened, and the uterus and adnexa appeared anaemic and oedematous. The uterus was slightly enlarged. The left ovary was small, convoluted, and neither cysts nor follicles were visible. The right ovary was enlarged, and contained what appeared to be three corpora lutea, one of them being cystic. The uterus and right ovary were removed.

The pathological report by Dr. McGrath stated that the uterus was slightly enlarged, the endometrium being thicker than normal; it was irregular and showed projections. In the middle layer a few acini showed cystic dilatation, but no cells were present in these cystic spaces. There was slight oedema, and some of the acini were situated deep in the muscle. The ovary contained one corpus luteum cyst and two fully developed corpora lutea. There was also a follicle cyst present, but only about half the normal ovarian tissue, and Graafian follicles were extremely scanty. There was no evidence of inflammation.

Dr. Cunningham said that the points of interest in this case were the cause of the bleeding and the classification of the condition. Before the treatment with radium the

symptoms and the microscopic appearance of the endometrium corresponded with what had been described as the epimenorrhoeal type of uterine haemorrhage. After the radium had been applied the periodicity of the menses changed, and resembled more the type found in metropathia haemorrhagica. The pathological report on the specimen showed that the endometrium was of the type described in that condition. The right ovary, however, contained corpora lutea (which were not found in metropathia haemorrhagica) of the type found in metrorrhagia or epimenorrhagia. Hysterectomy was performed in preference to ovarian sterilization by *x* rays.

The PRESIDENT thought Dr. Cunningham might have tried either removal or resection of the ovary which was at fault in this case. He did not think it was such a serious matter to subject a patient to two laparotomies if the object was to save the uterus. Dr. J. LAIT said that the endometrium was hyperplastic, with far too many glands, and the stroma was fibrous. The obvious characteristic in this type of case was the presence of the glands, and he personally always reported the condition as chronic cystic endometritis. He thought the condition was not recognized under a separate heading, and was generally found in elderly women with persistent haemorrhage. Dr. J. S. QUIN mentioned a case, which had been reported by Dr. Pollock, of acute dysmenorrhoea which had not been relieved by curetting, but had been relieved by radium treatment.

Dr. BETHEL SOLOMONS regretted that Dr. Lait had described the case as cystic endometritis. It seemed to him that the uterine condition was secondary, and that the main cause of the haemorrhage was persistence of the corpora lutea; this seemed to be clearly shown in the specimen. Oöphorectomy might have cured, but it could not be risked. Dr. D. J. CANNON considered that the case belonged to the category of functional uterine haemorrhages. The history of the case before radium treatment was one of hyperovarian activity, and he thought that the insertion of radium had converted it into hypo-ovarian activity. Dr. R. M. CORBET drew attention to the fact that the uterus was very large and fibrous; he supposed that its present condition was due to the radium treatment. Dr. T. M. HEALY said that apparently only one ovary was unhealthy; he did not think the case could be considered one of typical ovarian bleeding.

Dr. CUNNINGHAM, replying, said that he did not feel he could take the risk of only removing the ovary, particularly as he was not absolutely certain that it was the ovary which was at fault. He did not regard the case as one of endometritis, because there were no signs of inflammation in the endometrium, no plasma cells, and the myometrium was quite normal. He did not think that the radium treatment had had any influence whatsoever on the uterus itself. There were no symptoms of hyperthyroidism of any kind. The patient had been treated with thyroid extract and with ovarian extract without any result.

Acute Uterine Inversion.

Dr. J. S. QUIN read a paper on acute inversion of the uterus. He reported the case of a woman, aged 30, who had had two children previously. At the birth of the third child there had been precipitate delivery, with delay in the expulsion of the placenta. The after-pains were somewhat severe, and on the fourth day after delivery prolapse suddenly occurred. Reposition was effected under anaesthesia, and was followed by uneventful recovery.

The PRESIDENT said that he had only seen one case of complete inversion of the uterus; this occurred in a patient who was very toxaemic and had had an accidental haemorrhage. The patient died from an attempt to return the uterus to its normal position. In the case reported by Dr. Quin the inversion had not occurred for some days, and the President wondered if it was possible that the inversion had started during the third stage of labour, being originally a partial inversion, which later became complete. Dr. BETHEL SOLOMONS remarked that inversion of the uterus was nearly unknown in Ireland; he regarded this as a tribute to Irish obstetrics. He had not seen a case of acute inversion for twenty-one years; in that instance he replaced the uterus, but inversion occurred, so he replaced it again and plugged the uterus. The plug gave the uterus something to contract on, and complete recovery ensued. Dr. GIBBON FITZGIBBON agreed that acute inversion of the uterus was extremely rare. He mentioned a case in the Rotunda Hospital in which the patient was nearly moribund from ante-partum haemorrhage, but in this instance the uterus went back easily. He also cited another case in which inversion of the uterus could be felt; by lateral massage of the uterus the condition was corrected. He had also seen a case in which the fundus of the uterus appeared above the vulva; the organ was replaced, plugged, and there was no recurrence.

Dr. J. F. CUNNINGHAM referred to a case in which the fundus of the uterus was visible at the vulva and the placenta had been expelled; he thought the most important thing was to give the patient an anaesthetic. In his case, under anaesthesia, the uterus would not at first go back, but later the cervix relaxed and the uterus was replaced. He did not think it was often necessary to plug the uterus, and believed that the less foreign material which was put into the uterus after confinement the better. In most cases he regarded the giving of ergot as sufficient. Dr. HOPE TRANT reported a case of inversion of the uterus which she had seen in South Africa, in which the patient was not suffering much from shock, and there was no haemorrhage. She had replaced the uterus, and the patient remained well. Dr. D. O'SULLIVAN mentioned a case in which inversion occurred in the third stage of labour in an effort to expel the placenta. When he saw the patient she was moribund, and died shortly afterwards. Dr. O'DONEL BROWNE thought that in patients suffering from profound shock no manipulation should be undertaken which would in any way increase the shock. Traction on the fundus might control the bleeding temporarily till aseptic measures could be taken for the reposition of the uterus. Dr. G. TIERNEY said that it had been stated by Braun that complete inversion of the uterus occurred once in 250,000 cases. In Dublin it occurred once in 190,000 consecutive labours. Zangemeister reported that 23 per cent. of these patients died if reposition was performed immediately, but none died if time was taken before this measure was attempted. Dr. R. M. CORBET believed that in some cases in which death was stated as being due to immediate replacement it was really attributable to profuse haemorrhage.

Dr. QUIN, replying, suggested that one reason for the rarity of cases of complete inversion of the uterus was that very many of them were not reported. He believed that the benefits of giving saline injections and treatment by blood transfusion largely outweighed the reaction which they caused. According to the literature, haemorrhage did not seem to occur in the majority of cases. Inversion was much more likely in uteri which were not completely atonic than in those which were. After replacement the best treatment was to pack the uterus with gauze.

MAXILLARY SINUSITIS.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society on February 6th, with the president, Dr. W. BARRINGTON PROWSE, in the chair, Mr. HAROLD DOWNER read a paper entitled "Maxillary sinusitis." He emphasized the necessity of having a thorough understanding of the morphology and function of the nose and antrum in order to conduct treatment rationally, and dealt with the pathology of the disease, with particular reference to the researches of Hajek, Onodi, Studer, and others. Maxillary sinusitis in children was discussed, and mention was made of the establishment by Graham Brown of the connexion between this complaint and bronchiectasis. Mr. Downer advocated conservative treatment in dealing with the acute antrum, and added that antral puncture should only be employed in cases which did not respond to physiological rest, posture, and local treatment. The intranasal route furnished the operation of choice, and gave the best results. Radical methods were practically unnecessary in uncomplicated sinusitis, and should be reserved for cases due to such causes as foreign bodies and impacted dental roots. Radiograms of a few cases were shown, and the results of treatment were described.

Reviews.

ARTHROPLASTY.

IN *The Mobilization of Ankylosed Joints by Arthroplasty*[1] Drs. RUSSELL and ANDREW MACAUSLAND give us the benefit of their very large experience of operations designed to replace a stiff joint by a factitious movable one. Since the days of Ollier of Lyons, whose pioneer work led more to excision than arthroplasty, and who, we may remark in passing, is hardly mentioned in this book, Murphy of Chicago must be looked upon as the real father of arthroplastic measures for the relief of ankylosis, especially of the hip- and knee-joints; but he had few immediate followers, and it was due to the results obtained from the methods of Putti of Bologna after the war that a revival of interest in the subject took place. Besides Putti, Payr, Kirschner, Willis Campbell, Baer, and others worked at improving technique and studied the practical difficulties of various operative procedures, so that these operations, on certain joints and in selected cases, may now be considered as well-established methods of treatment, capable of relieving sufferers from grave disabilities. Nevertheless, let no one suppose that such operations are to be lightly undertaken by the surgeon or submitted to by the patient unless they have both well weighed the pros and cons, and the latter has made up his mind to bear a great deal of inconvenience and some pain with fortitude and a determination to make the result a success. For in the after-treatment of these cases active movements count for very much more than massage or passive movements, and the mental stamina and will to succeed of the patient is at least as important as his blood count.

The first part of the book is devoted to a discussion of the etiology, pathology, and diagnosis of ankylosis and the importance of the functional position in the treatment of joints. By this phrase the authors would express that position in which a joint, though fixed, is most useful—such as the abducted and slightly flexed position of the humerus in shoulder ankylosis, which favours compensatory movements between the scapula and thorax. For each of the joints of the limbs there is such an optimum position of ankylosis, and the authors describe and discuss these positions with authority.

In the early days of attempted arthroplasty various substances were introduced into joints with a view to preventing reunion of the bone-ends, but these substances, if not extruded as foreign bodies, generally led to renewed ankylosis. The list of such substances is a long one, and includes wood, gutta-percha, celluloid, metals, and even gold foil, as tried by Keetley. Animal membranes came next, and of these the chromicized swine's bladder introduced by Baer of Baltimore is still used with success, but of late autogenous free fascia has very generally superseded it. Murphy, who introduced this material, laid stress on the value of a layer of fat on the fascia; moreover, he did not dare to use a free fascial graft, not trusting it to survive without a nutrient pedicle. To Kirschner is due the credit of suggesting, and to Payr of actually using, a free fascial flap in an operation of arthroplasty of a knee. Whatever technique is followed, the most rigid antiseptic and aseptic precautions are necessary, as is the avoidance of needless injury to the soft parts. The health and age of the patient and the nature of his occupation have a great importance in deciding for or against arthroplasty. One of the authors' successful cases was in a man of 50 whose calling made riding on horseback necessary. Again, ankylosis of several joints may make operation advisable, whereas it might not be if only one joint is fixed. For instance, ankylosis of both hips is such a crippling disability that a good deal of risk may justifiably be run in mobilizing one of the joints.

Arthroplasty of a joint such as the knee cannot be expected to be successful unless the muscles round the joint are in good condition or capable of being restored to good condition. To try to reconstruct the ligaments of a joint is generally hopeless, and it is to the muscles that the surgeon and patient must look for the control and stabilization of the newly formed articulation. Nevertheless, as the authors rightly point out, in such a joint as the hip the capsular tube is of great importance, and all remains of it are worth preserving.

The authors consider that although arthroplasty is feasible in many joints, the procedure should, generally speaking, be confined to practically five joints only—namely, the temporo-maxillary, the elbow, the knee, the hip, and the first metatarso-phalangeal joint. (The last-named seems hardly worthy of inclusion, considering how excellent are the results of free excision of the metatarsal head.) Nevertheless, the procedures for operation on the shoulder-, wrist-, and finger-joints are described, though it is stated that the two former seldom call for it. The results in suitable cases are good. Arthroplasty, as the authors say, cannot, of course, restore the joint to normal. Range of movement has often to be sacrificed for stability. "Roughly we may say that the new joint will have smooth motion, usually to within 75 to 90 per cent. of normal" (p. 57). But in the case of the knee the surgeon should, in our opinion, be well satisfied if he recovers 50 per cent. of the normal range of movement combined with stability.

After useful discussion of general principles and their application, the authors go on to describe the performance of arthoplasty on various joints, and the last three-fourths of the book are taken up by such descriptions, together with a short chapter on the prevention or minimization of ankylosis. This, although not quite germane to the subject, contains valuable hints, the fruit of ripe experience.

The book is well illustrated, and forms a very trustworthy guide to the practice of arthroplasty.

[1] *The Mobilization of Ankylosed Joints by Arthroplasty.* By W. Russell MacAusland, M.D., and Andrew R. MacAusland, M.D. Philadelphia: Lea and Febiger. 1929. (6 × 9¼, pp. vii + 252; 154 figures. 4 dollars net.)

MEDICAL ELECTRICITY.

THE sixth edition of Dr. E. P. CUMBERBATCH's *Essentials of Medical Electricity*[2] is not only larger than its predecessors, it is in many ways more attractive. In its present form the work should serve both as a textbook for the student and general practitioner, and as a reference-book for the specialist. The author has furthermore kept in mind the needs of candidates for admission to the biophysical assistants' roll, and has included careful statements about the limitations of electrical treatment and the precautions that must be taken in administering it.

By comparing the present with previous editions it is possible to obtain some idea of the advance that has occurred in recent years in the various aspects of electrotherapy—in theory, in technique, and in the range of its useful application. One paragraph from the introduction deserves to be quoted in full: "For the intelligent practice of medical electricity a sound knowledge of physics and the working of apparatus is necessary, for without it the principles of the subject, and even the meaning of the terms in everyday use, will not be understood, and it will be impossible to discover and put right simple failures of the apparatus when they occur." Not uncommonly a piece of apparatus is allowed to fall into disuse, for no better reason than that at some time or other it has "gone wrong" and the practitioner has not known how to discover the cause of the breakdown. Dr. Cumberbatch does much in the present edition to explain the correct wiring for a number of the currents used, but further guidance on the methods of seeking and correcting faults might with advantage be incorporated in later editions.

The illustrations of apparatus are taken from manufacturers' blocks, but we believe that reproductions of specially made photographs with suitable legends would be more helpful to students, though perhaps this would make the book more expensive. The kind of photograph we have in mind is the so-called "close-up"; such an illustration could show many useful points, and appended to it might be a few words of practical instruction—for example, in a diathermy machine using an open tungsten

[2] *Essentials of Medical Electricity.* By Elkin P. Cumberbatch, B.M.Oxon., D.M.R.E.Camb., M.R.C.P. Sixth edition, revised and enlarged. London: H. Kimpton. 1929. (Demy 8vo, pp. xvi + 445; 116 figures, 11 plates. 15s. 6d. net.)

spark gap, a reminder that the gap would require careful adjustment every now and then, and should not be looked at with the naked eye for more than a few seconds at a time.

The absence of the word "endothermy" from an otherwise copious index will at first sight seem curious in a work brought so thoroughly up to date; but reference to the section dealing with the "use of high frequency currents for cutting tissues" shows that, while the author is familiar with all that is claimed for these currents of sustained oscillation, he has deliberately decided not to add yet another name to those of the currents used in electrical treatment. Dr. Cumberbatch writes in an attractive manner, and his work is a credit not only to himself, but to the English school of electrotherapy.

FOODS AND FOOD VALUES.

THE fact that the third edition of Professor SHERMAN'S *Chemistry of Food and Nutrition*[3] has been reprinted four times since its issue in 1926 gives sufficient evidence of its general usefulness and popularity. Since this subject attracts much interest, outside the medical profession as well as within it, it is of considerable importance that textbooks should be written in a careful and well-balanced style, and that their authors should avoid prejudiced or doctrinaire statements. Professor Sherman's book is certainly well balanced and unprejudiced. He has, moreover, included a large amount of material in a relatively small compass, in spite of the fact that he permits himself, in many places, rather long, and perhaps rather superfluous, verbatim quotations from various authors. On one point, however, we feel that we must criticize him. It is a matter of debate whether, in a work of this kind, it is desirable to cite individual workers by name or to give references to original papers. But if such references are made, then it is the clear duty of the author to take pains to make them accurate. Professor Sherman has signally failed to do this. A few of the more glaring examples will be sufficient. On page 77 the discovery that tryptophane is an essential food constituent is attributed to Osborne and Mendel, while on page 76 Rose and Cox are credited with a similar discovery with regard to histidine. Hopkins had, of course, established the facts several years earlier than any of the workers mentioned. Provided that the facts are established personal priority is perhaps of small moment; still, inaccuracies of this kind should be avoided, for they can only cause embarrassment to those who have thrust upon them claims which they would never dream of making for themselves. The preface to the third edition is dated May, 1926, but the impression before us is dated 1928, and is said to have been rewritten; it is unfortunate, therefore, that the information on such an important subject as thyroxine is obsolete and incorrect.

Food Values in Practice,[4] by Miss E. M. DOBBS, might perhaps be more fully described as a textbook of domestic economy, since the matters discussed range far beyond questions of the caloric or monetary values of foodstuffs. Besides dealing with questions of kitchen arrangements, food storage, and cooking routine, she has something to say on the general arrangement of the family budget, and much about cooking; indeed, nearly a third of the book is devoted to recipes for dishes for everyday life and for invalids. On the whole the work is admirably clear and simple. The author evidently knows what she is talking about, and her advice and suggestions should prove of real help to housewives keen enough to profit by them. The most serious fault which we have to find is the introduction of loose statements about debatable points in physiology and medicine. We find it stated in separate passages that protein, fat, and phosphorus are foods especially related to the production of nervous energy. In point of fact very little information is available as to what foodstuffs are used either by nerve or brain tissue, and such slender evidence as exists points rather to the importance of carbohydrate. Statements on such matters seem, in any case, rather out of place in a work of this kind, and perhaps the author would have done better to keep more closely to the well-established facts of her subject.

[3] *Chemistry of Food and Nutrition*. By Henry C. Sherman, Ph.D., Sc.D. Third edition, rewritten and enlarged. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1929. (Cr. 8vo, pp. xii + 636; 18 figures. 12s. 6d. net.)

[4] *Food Values in Practice*. By Ethel M. Dobbs, M.A.Lond. With a preface by Henry R. Ellwood, C.M.G., M.B., F.R.S.E., D.P.H. London: University of London Press. 1929. (Cr. 8vo, pp. xvi + 230. 4s. net.)

FAMILIAL NERVOUS DISEASES AND DYSTROPHIES.

IT is most appropriate that the preface to Dr. O. CROUZON'S collected studies on the familial diseases of the nervous system and dystrophies[5] should have been written by Professor PIERRE MARIE, a predecessor of the author at the Salpêtrière, and the original describer of a number of the diseases dealt with in this well-illustrated volume. The work is composed of two main parts, the first and larger being devoted to the familial diseases of the nervous system, and the second to familial dystrophies. There is also a short section on diseases exceptionally familial, which includes accounts of familial tabes dorsalis, exophthalmic goitre, and von Recklinghausen's neurofibromatosis; the last subject is dealt with in considerable detail, and its occasional hereditary as well as familial incidence is brought out. All the articles have been previously published during the last twenty years; the longer ones, which deal with familial nervous diseases, and so come early in the volume, are reprinted from *Le Nouveau Traité de Médecine*, edited by Roger, Widal, and Teissier, or from the proceedings of various congresses, while the shorter articles, which are mainly records of rare clinical cases, have appeared in journals and the proceedings of medical societies. Some of the articles were brought out with collaborators, and a valuable account of atypical nervous diseases, published under the direction of Professor Pierre Marie, is reprinted in part and is well illustrated with figures, among them a drawing by P. Richer, who was so closely associated with Charcot. In an account of the familial infantile encephalopathies there is a full description of Wilson's disease, or hepato-lenticular degeneration, the literature being epitomized. A large amount of original observation made at the Salpêtrière has thus been brought together in a convenient form, and in addition the literature of the subject has been analysed. A pleasing feature of this book is the frequent reference to British writers.

PRINCIPLES OF HEREDITY.

MR. JAMES WILSON'S *Manual of Mendelism*[6] is primarily written for the purpose of providing agricultural students with a clear and simple exposition of the principles of heredity. The author has obviously put himself to great trouble to present his subject in plain language and to free it as much as possible from the more hypothetical aspects of the science of genetics. It would seem, however, that he has somewhat overdone the simplifying process. He has left out what he considers to be the difficult links in the chain of explanations which are now available to enlighten us on the transmission of hereditary characters. The result is that inadequate information on many points leads to confusion rather than to simplicity. Genetics is a subject which is very easy to understand and remember when properly reasoned out, but with the omission of an explanation of the mechanism of heredity it is impossible for the student to reason out inheritance for himself with the result that the difficulty of understanding the subject is increased.

In the first chapter appears the statement that "a dominant and its recessive cannot be carried by the same seed." To the trained geneticist it is obvious that the author uses the word "seed" instead of "gamete," but to the uninitiated this looseness must lead to confusion. A chapter on the mechanism of heredity would have enabled the author to explain such points with greater crispness and accuracy. In the same chapter he says that

[5] *Études sur les Maladies Familiales, Nerveuses et Dystrophiques*. By O. Crouzon. Preface de M. le Professeur Pierre Marie. Paris: Masson et Cie. 1929. (6¼ × 9, pp. viii + 325; 90 figures. 55 fr.)

[6] *A Manual of Mendelism*. By James Wilson, B.Sc. Second edition. London: A. and C. Black, Ltd. 1929. (Post 8vo, pp. xi + 152. 5s. 6d. net.)

"dominants cannot be combined with their own recessives." It is obvious that a student must be left in doubt as to the proper significance of this statement, for no clear explanation is given in the book as to the difference between phenotype and genotype. In the chapter headed "Observations and deductions" the author writes: "If hybrids are mated with their pure parental kinds, as many kinds are produced as are produced when the hybrids are mated with each other." This is true only in the phenotype when the back cross is made to the recessive parent, and as regards the genotype the statement is quite wrong. When dealing with what he calls "coupling or linking," Mr. Wilson speaks of factors tied to the female factor or the male factor as the case may be. Sex linkage demonstrated in this way must be uninteresting and incomprehensible to the student, in contrast with the ease with which sex linkage can be explained when use is made of the chromosome basis of inheritance.

Apart from looseness and inadequacy of the scientific information given in this book, there is—particularly in the later chapters—ample evidence of the author's fullness of knowledge concerning the observed facts in breeding practice.

NOTES ON BOOKS.

IN preparing the second edition of his *Surgical Pathology*[1] Dr. WILLIAM BOYD has made considerable changes and additions. The chapters on the thyroid gland and the stomach have been rewritten, as also have those on the etiology of tumours, the melanomata, lymphosarcomata, tumours of the testicle and of the kidney, the so-called carcinoid tumours of the appendix, and on endometrial implants. The chapter on surgical bacteriology has been altered in scope, and is now concerned with suggestions as to how the surgeon may utilize the assistance of the laboratory, rather than with a statement of elementary bacteriological facts. The chapter on the spleen has been recast. New material has been added in connexion with tissue cultures, pre-cancerous lesions, carotid body tumours, tumours of the xanthoma group, the reticulo-endothelial system, pituitary tumours, diverticulitis, cholecystitis, and rickets. The researches of Bailey and Cushing on tumours of the glioma group have been incorporated, without, however, inflicting on the overburdened student the whole of the fourteen names introduced by those observers in their description of the several varieties. It will thus be seen that no trouble has been spared to bring this practical and well-written book up to date.

In his *Urological Nursing*[2] Dr. DAVID M. DAVIS, assistant professor of urological surgery in the University of Rochester, has catered for nurses dealing extensively with urological cases. As he points out in his preface, at one time the rough-and-ready methods and manners of some of the early practitioners of genito-urinary surgery set this specialty somewhat apart from other branches of medicine and surgery. The primitive methods of hospital care, the infected wounds, and the offensive odour of the urological wards led many nurses to avoid, if possible, this type of work. Happily, conditions have now changed, and both the operative treatment and the after-care of urological cases are advancing by leaps and bounds. In no type of case is nursing more important than in the after-treatment of a prostatectomy, and urological nursing in general is becoming an important part of a nurse's training. The first half of the book contains very full descriptions of the instruments and equipment used in urology. The second half is devoted to such procedures as cystoscopy, renal functions tests, and operations in general. If any criticism is to be made it is that, while much attention has been paid to instruments and equipment, little space is given to the details of nursing and after-treatment.

We have received for review the fifth volume, or first supplemental volume, of *Tabulae Biologicae*.[3] The object of this book, which is published by W. Junk of Berlin, is to provide biological workers with tabulated data in the same manner that the work of Landholt and Bornstein provides data for the chemist and physicist. The first four volumes dealt with the physiology and anatomy of animals; they appeared between 1925 and 1927, and were indexed in the last volume. The present volume is devoted to botanical data, and contains an independent index, which indexes the fifth volume and also gives references to botanical data in the previous volumes. The first third of the volume under review is concerned with the biology of algae, of bacteria and fungi, and with the general forms and functions of the higher plants; the middle third is devoted to the biochemistry of plants and to periodicity phenomena; while the last third of the book is occupied by a section of 230 pages on the experimental ecology of plants. It is hoped that the present volume will prove as great a convenience to botanists as its predecessors have been to physiologists.

The dedication volume[4] of the Montgomery Ward Memorial of the Northwestern University Medical School, Chicago, edited by the dean, Dr. Irving S. Cutler, consists of five parts. The first, which is introductory, contains short biographies of Montgomery and Elizabeth Ward, who left the school eight million dollars for the creation of an institution for the advancement of medical science, Mr. Charles Hallett Thorne, who helped Mrs. Ward in planning the memorial, and Alexander McKinloch, the gallant young soldier killed in France, to whom the Chicago Campus of Northwestern University is dedicated. Part 2 deals with the history of the Northwestern Medical School, which was opened in 1857, and the Ward memorial buildings and McKinloch memorial campus. Part 3 contains dedicatory addresses concerning the distinguished alumni of the Northwestern University on the occasion of the unveiling of their portraits, and accounts of the library, museum, and laboratories. Part 4 contains general addresses on problems in medical education and the fostering of clinical investigations, delivered by Charles H. Mayo, Leonard G. Rowntree, and others, while Part 5 consists of papers on various medical and surgical subjects.

A pocket outline of the routine laboratory work performed in the Massachusetts General Hospital was published in 1922, and Drs. R. B. WHEELER and F. T. HUNTER have carefully revised this *Laboratory Manual of the Massachusetts General Hospital*,[11] the original text having been brought up to date. The scope is comprehensive, ranging from the collection and examination of specimens to certain diagnostic procedures and details of therapeutic and prophylactic technique, including small-pox vaccination. The hope is expressed that this little book may assist the medical practitioner in his daily work.

In his small volume of *Poems*,[12] described as "Verses topical and gay to while a sleepless hour away," Dr. J. L. BASKIN provides fifteen short pieces dealing with various subjects, such as an expanded paraphrase of the Lord's Prayer, Captain Matthew Webb's swim across the Channel, the first Atlantic aeroplane flight from east to west, a hurdle race, and the survival of the fittest. In the last of these the reader is presented with an interesting, if somewhat cryptic, reference to Sir Arthur Keith. Another medical writer of verse, Dr. LEONARD LEY of Great Yarmouth, has published privately a collection of nearly fifty short poems in various metres and on very diverse aspects of life.[13] Though love and pathos predominate, war experiences are treated with an attractive swing. The impression left by these verses is very pleasant, and encourages the hope that Dr. Ley will continue in well-doing, and again communicate the poetic fruits of his philosophy to his friends.

The *Minutes of the General Medical Council and of its Various Committees* for the year 1929 have been published, with fifteen appendices, in a volume which includes reports of the two sessions of the General Medical Council, of its Executive and Dental Committees, and of the meetings of the English, Scottish, and Irish Branch Councils. The appendices comprise reports of the Public Health, Pharmacopoeia, Education, Examination, Dental Education and Examination Committees, and a report on the education of medical students in midwifery and gynaecology. The *General Index* to the Minutes of the General Medical Council and of its Executive and Dental Executive Committees, and of its three Branch Councils, from 1905 to 1929, relating to volumes xl to lxvi, follows the plan of the previous issue.

[1] *Surgical Pathology.* By William Boyd, M.D., M.R.C.P.Ed., Dipl. Psych., F.R.S.Can. Second edition, revised and reset. Philadelphia and London: W. B. Saunders Company. 1929. (Roy. 8vo, pp. 933; 474 figures, 15 plates. 63s.)

[2] *Urological Nursing.* By David M. Davis, M.D. Philadelphia and London: W. B. Saunders Company. 1929. (Post 8vo, pp. 172; 61 figures. 10s. 6d. net.)

[3] *Tabulae Biologicae.* Herausgegeben von C. Oppenheimer und L. Pincussen. Supplement I. Band V: Botanik. Berlin W.15: W. Junk. 1929. (Sup. roy. 8vo, pp. vi + 821; illustrated.)

[4] *Dedication of the Montgomery Ward Memorial Building, Northwestern University Medical School, Alexander McKinloch Memorial Campus, Chicago, June 15th, 16th, and 17th, 1927.* Chicago: The Lakeside Press. 1928. (Sup. roy. 8vo, pp. ix – 153; illustrated.)

[11] *Laboratory Manual of the Massachusetts General Hospital.* By Roy R. Wheeler, M.D., and F. T. Hunter, M.D. Second edition, enlarged and thoroughly revised. Philadelphia: Lea and Febiger. 1929. (5¼ × 7¼, pp. 151. 1.75 dollars net.)

[12] *Poems.* By J. L. Baskin. London: A. H. Stockwell, Ltd. 1929. (Cr. 8vo, pp. 15. 1s.)

[13] *A Pot Pourri of Verse.* By Leonard Ley. Privately printed for the Author by W. Heffer and Sons, Cambridge. 1926. (Foap. 8vo, pp. 62.)

THE VACCINATION PROBLEM.

PAPER BY PROFESSOR MAJOR GREENWOOD.

THE vaccination controversy, ideally conducted, would, one might imagine, need nothing for its final settlement except tables of figures and mathematical symbols. For such a controversy the proper arena would be the neutral territory of statistics, within which the problems could be set out in orderly fashion, the data assembled, and a solution found by the application of pure reason. In actual practice this method has not proved very popular; figures have, indeed, been imported into the discussion, but too often for use as missiles. Far more popular have been attempts to settle the dispute by deciding whether Edward Jenner was a genius or a charlatan, a scientific worker or an ignoramus; or rather, by proving that he was the one or the other, according to the view of vaccination held by the person producing the evidence. So large a part has Jenner's character played in the vaccination controversy that even Professor Major Greenwood, F.R.S., whose bias—if a statistician may be said to have a bias—is towards the view that the practically important issues of the controversy are statistical, devoted a large part of his recent paper on the vaccination problem to a discussion of the conflicting estimates of Jenner's personal merits, making in his turn a psychological re-interpretation in the light of facts that have been recently established. The paper was read before the Royal Statistical Society on February 18th, and will appear in full in the *Journal* of that society.

THE WORK OF JENNER.

Why does so much provaccinist literature consist of glorification, and so much antivaccinist literature of vilification, of Jenner? Probably, suggests Professor Greenwood, because the protagonists on both sides realize that if it can be established that Jenner thought, watched, and experimented for many years, laying the foundations of every statement he advanced with patience, caution, and modesty, it would be reasonable to assume, not indeed that vaccination *must* be an effective communal defence against small-pox, but at least that its failures in this respect might be due to extrinsic difficulties which we should seek to remove, and not to intrinsic defects. The provaccinist estimate of Jenner is based largely on data provided in 1838 by his friend and biographer, Dr. John Baron; the antivaccinist is happy to accept the judgement expressed some half a century later by Dr. Charles Creighton in his work *Jenner and Vaccination*. Creighton, to whose scholarship, literary gifts, and disinterested service of truth Professor Greenwood pays generous tribute, had read Jenner's writings and perceived that the work described by the great sanitarian John Simon as "a masterpiece of medical induction" was, in fact, a very amateurish achievement. The induction itself—namely, that those who had had cow-pox were thereby rendered incapable of taking small-pox—seemed insecurely founded, while in the experimental part of the research he failed to find those precise and unambiguous descriptions that characterize really first-rate work. Creighton saw that the Jenner of Simon and Baron was a mythological construction, and began to sketch a far more lifelike character—a pleasant lad with a taste for natural history and an inquiring turn of mind. But even at this stage, says Professor Greenwood, the scholarly biographer, in dealing with Jenner's paper on the habits of the cuckoo, was betrayed by his temperament into what has proved to be a complete error. Jenner, it may be recalled, contributed to the *Philosophical Transactions of the Royal Society* a paper in which he asserted that the fledgeling cuckoo itself, not the foster-mother, ejects the eggs or foster-fledgelings from the nest, and has a back specially designed for this purpose. Jenner's statement, according to Creighton, was false; and the whole research he summed up in these words: "Jenner's cuckoo paper contains a few credible and prosaic facts; but the greater part of it and all that part of it which is best remembered is a tissue of inconsistencies and absurdities." Jenner's dabbling in natural history would not at first sight seem to be of great consequence, but in fact antivaccinists have argued that vaccination cannot possibly protect against small-pox because Jenner told fibs about cuckoos. According to Professor Greenwood, however, who consulted Dr. Manson-Bahr and Mr. R. H. Burne on the subject, modern observations completely bear out what Jenner said about the habit of the young cuckoo, and suggest that his assertion about a transitory peculiarity of structure in its back is probably correct. In this matter, therefore, it appears that it was not the slap-dash country doctor, but the scholarly biographer, who was writing nonsense.

Continuing his analysis of *Jenner and Vaccination*, Professor Greenwood says that it is not until we reach the publication of Jenner's "masterpiece of medical induction" that Creighton really begins to compete with Simon and Baron in the manufacture of myths. The "masterpiece" bore on its title-page the words *Inquiry into the Causes and Effects of the Variolae Vaccinae*, and behind those words "variolae vaccinae"—in which [illegible] blends with a metalepsis—Creighton saw a deep design, an "unblushing invention" to trick the whole medical profession into the belief that cow-pox was, if not small-pox, at least its own cousin. Naturally, says Professor Greenwood, a man who could combine a synecdoche with a metalepsis would be capable of anything! And, with this clue to Jenner's baseness, Creighton created a character which might pass for the quintessence of rogues, whinery. On the other hand, Creighton's first impression of Jenner as a badly educated, inquisitive young country doctor, receptive of ideas but uncritical, may not have been far out.

Let us suppose (Professor Greenwood continues) that such a man, undaunted by the mockery of his profession, did think there might be something in the old wives' tale about cow-pox and small-pox. He collects a few records, makes a few amateurish experiments and observations, and on account thinks the results worth publishing. He publishes them, and [illegible] all probability—he attracts a great deal of attention, is taken up and also criticized by much more experienced than himself. His doctrine is attacked and defended by professional men of much higher standing than himself, and in intellectual methods he has neither the knowledge nor the practical experience to enable him fully to understand. It would be very human if such a man, suddenly become famous for the ideas which had been laughed at by his fellow practitioners in the West taken very seriously indeed in London, should deceive himself as to the extent to which mere conjecture, guesswork, contributed to his "discovery," and should *de facto* seek to improve upon the truth. That seems to be primarily much more probable character of Jenner than either Baron's or Creighton's.

But he is not disposed to stress very heavily Creighton's deficiencies as a psychologist; Creighton, he points out, deserves every credit for his demonstration that neither Jenner nor anybody else, down to the date of Creighton's own book, had shown, experimentally or otherwise, that cow-pox was biologically akin to small-pox; and it must be admitted that to the end of the nineteenth century vaccination as a prophylactic rested wholly upon an empirical basis. Early in the twentieth century, however, a number of investigators demonstrated that, as a matter of biological fact, Jenner's assertion that cow-pox and small-pox were closely akin was, like his statement about the habits of the cuckoo, true. In 1902 Dr. S. Monckton Copeman produced typical vaccinia after passaging variola virus through a monkey, and then vaccinating a calf from the monkey. Since then it has been possible to demonstrate the affinity of variola and vaccinia by methods of quantitative precision, which, Professor Greenwood says, "all of us, whatever our opinions on the vaccination problem may be, regard as outside the field of rational controversy. . . . In other words, that kinship between the cow disease and the disease of man which Jenner did not prove has now been very definitely proved, and the many thousands of pages which have been devoted to the virtues or vices of Jenner or to denouncing the folly of trying to protect against one 'disease' by producing another 'disease' are of purely historical interest."

VACCINATION AS AN INDIVIDUAL PROPHYLACTIC.

Although all large collections of data have appeared to show that vaccinated persons exposed to the same risk of small-pox as unvaccinated persons have been attacked at a lower rate, and that those attacked have died at a lower rate, judicious critics have been by no means willing to assume correlation to imply causation. In dealing with attack rates, for example, the question whether the vaccinated and unvaccinated were indeed equivalent in all relevant respects other than in their vaccinal state is not easy to answer; the difficulties with respect to fatality rates are not quite so great, and those who have been unwilling to accept the figures at their face value have had resort to subtle arguments. Professor Greenwood, to illustrate this subtlety, cites passages from Creighton's *History of Epidemics in Britain*, in which that author deals with Gregory's observation that in the epidemic of 1825 the fatality rate on the vaccinated attacked was 8 per cent., and upon the unvaccinated attacked 41 per cent.

> He (Creighton) remarks that "There are various ways of apportioning a general average. The presence or absence of cow-pox scars is one principle, which could have been used to break up the 25 per cent. of 1777, or the 39 per cent. of 1781, or the 33 per cent. of 1795 into two component parts." He then notes that one thing common to all times is different fatality at different ages, and remarks that "all the deaths in the 8 per cent. division of 1825 were between the ages of 18 and 27; the ages of the 41 per cent. division are written in the books of the hospital." Finally, he remarks that "However manifold the cutting up of a general average, some divisions would be identical, corresponding to natural lines of cleavage" (Creighton, 1891-94, II, 595). . . . Whether Gregory's evidence were or were not vitiated by a high correlation of vaccinal state and age, data since his time undoubtedly show, *prima facie*, a great advantage in respect of fatality within age groups.

Professor Greenwood here inserts a table of fatality rates among the vaccinated and unvaccinated at various age groups from 5 to 40, which brings out clearly that the advantage of the vaccinated cannot be due to a fortuitous concurrence of age and vaccination groupings. To explain away these figures it has been suggested that the responsible variable is social class, the vaccinated belonging to the better housed and better fed stratum of the community, and therefore being more resistant to any acute disease. Professor Greenwood recalls that an investigation of this hypothesis within a limited field was conducted by the late Dr. W. R. Macdonell, and the results published a quarter of a century ago in *Biometrika*:

> Dr. Macdonell used data supplied by the late Dr. John Brownlee which consisted of particulars relating to 242 vaccinated and 29 unvaccinated males admitted to the Belvidere Hospital, Glasgow, in 1900-1 suffering from small-pox. Macdonell grouped the occupations in various ways thought to correspond to social status, and tested association between social status and vaccination and between social status and fatality by means of the tetrachoric *r*. Having regard to the probable errors of the computed coefficients, it appeared that there was no sensible association between social status and fatality. Macdonell concluded that "The Glasgow statistics do not go very far, but as far as they go they do not justify the statement: that the apparent protection of vaccination is due to the unvaccinated belonging to classes of lower status which have a far smaller power of resistance to the disease than the better nourished classes of a higher status in which the members are more generally vaccinated."

The evidence, suggests Professor Greenwood, though not disproving the *a priori* probable belief that the resistance of the well fed and well housed is greater than that of the ill fed and badly housed, is sufficient to throw the onus of proof on those who maintain that there is a practically complete correlation between vaccination and social well-being, or between social well-being and escape from death when attacked by small-pox, an onus which they have not discharged. No serious critic of the orthodox faith could deny that numerical statements of lower attack and lower fatality rates of vaccinated persons have been obtainable whenever the distinction between the vaccinated and the unvaccinated has been recorded; some, indeed, have asserted that the published tables are disingenuously compiled; but for various reasons—for example, that even adding the "doubtfuls" to the vaccinated category does not affect the broad comparison—the scientific opponents of vaccination have attached no importance to such contentions and have confined themselves to providing special explanations. An interesting example cited by Professor Greenwood relates to the many statistical tables that purport to show how the fatality of small-pox in the vaccinated diminishes *pari passu* with the number of vaccination scars, or with the size of the cicatrized area. In criticism of such tables Creighton said that as the nature and intensity of the scarring was a function of the texture of the skin, the deduced coefficients had no bearing on the point in dispute. This argument Professor Greenwood admits he could not meet till it occurred to him that here one had merely another violation of the rule *Entia non sunt multiplicanda praeter necessitatem*, for neither Creighton nor anyone else had provided evidence that the fatality of small-pox in unvaccinated whites really was correlated with the histological character of their skins.

It is certainly not impossible (he continues) that the *prima facie* explanation—namely, that the vaccinated die of small-pox at a lower rate than the unvaccinated because they *are* vaccinated—could be true; we can only avoid the inference by inventing a series of special explanations, sometimes alleging a class difference, sometimes an age difference, etc.; we do not act in that way in other equally important practical matters. We believe, for instance, that the candidate in examinations who obtain more marks than the pass standard are, in the main, better educated than those who are "ploughed"; the facts that there are a host of reasons other than ignorance which may contribute to failure, and that there is certainly not perfect correlation between the grading by an examination and the real ranking of knowledge (not to speak of power to use knowledge) does not shake our general belief that the examination test is of real value. I conclude, therefore, that orthodox opinion upon this particular point is sound: that vaccination has been shown to confer some protection against the risk of dying from small-pox. But *how much* protection? Given two persons, the one efficiently vaccinated the other not, but the two otherwise *in pari materia*, given that both are infected, is the risk run by the vaccinated person a half, a quarter, or what fraction of the risk of the unvaccinated?

This question, he believes, cannot be answered, and he devotes a great part of his paper to a highly technical presentation of the statistical reasons why it cannot be answered. Expressed briefly, his conclusion is that any statistical theory of immunity that can be scientifically reconciled with the biological facts must have as a corollary a very high correlation between the fatality rates of immunized and unimmunized in different epidemics. The published data of small-pox do not adequately fulfil this condition, a fact that may be due to the heterogeneity of the data—differences of sex, age, social class, length of interval since vaccination, etc.—which, acting as observational errors, must water down the correlation. The data are adequate to demonstrate a substantial advantage to the vaccinated, and though in Professor Greenwood's view this advantage is intrinsic, not accidental, he cannot offer more than a crude approximation to its quantitative value. Precision, he holds, can only be attained by an *entente cordiale* between experimental and statistical methods.

VACCINATION AND THE EPIDEMIOLOGY OF SMALL-POX.

Professor Greenwood now turns to examine the contention that the general decrease of small-pox throughout the nineteenth century was in consequence of the introduction and dissemination of vaccination. Two arguments have been developed in support of this contention. The first is based on the fact that while during the seventeenth and eighteenth centuries small-pox in London was perhaps the most formidable of epidemic killing diseases, in the nineteenth century there took place a great improvement, utterly disproportionate to the improvement that had been noted in other epidemic diseases—for example, in measles, scarlet fever, diphtheria, and whooping-cough. From this fact it has been assumed to follow that the remarkable excess of improvement in small-pox must be attributed to some cause or causes other than sanitary reform—which would affect all epidemic maladies equally—the only reasonable cause being vaccination. The second argument has based itself on a comparison between a history of small-pox in well and less well vaccinated States,

commonly between England and Wales and the German Empire. In the period 1900 to 1925 inclusive the latter, with a population half as large again as that of England and Wales, has had little more than half as many deaths from small-pox, an advantage attributed by supporters of vaccination to the fact that in Germany during the last generation primary vaccination has been more nearly universal than in England and Wales, while revaccination has been a legal obligation.

The most obvious weakness of the former argument, Professor Greenwood points out, is that in the rise, decline, and fall of scarlet fever within the nineteenth century has occurred at least as remarkable a secular evolution as in small-pox. This argument, however, does not seem to him to weaken the force of the comparison of English and German experience, and he sees no fallacy in the contention that a really drastic system of vaccination and revaccination is more efficient in preventing small-pox than the Laodicean practice in our own country. Creighton saw in the secular evolution of small-pox merely an example of Sydenham's remark that diseases, like empires, rise, decline, and fall; and he brought together evidence that long before the introduction of vaccination both the fatality and the age incidence of small-pox had varied greatly. On this Professor Greenwood comments:

In the eighteenth century, and early in the nineteenth, small-pox was mainly a disease of children. Even as recently as 1851-60 the rate of mortality in no age group later than 5-10 years amounted to one-fifth of the rate at 0-5. By 1871-72 the relative predominance of the age group 0-5 was considerably reduced; for instance, the mortality rates in the age groups 15-25 and 25-35 were almost a third of the rate at 0-5. Orthodox opinion attributed the change to the fact that the proportion of young children recently vaccinated was certainly much greater than that of adults. Creighton attributed it to two factors; first, to the competition in early life of the other great zymotics, one of which, scarlet fever, was certainly more deadly in the middle years of the nineteenth century than a generation before, and, secondly, to an epidemiological obsolescence of the disease; it would, he said, "be a not incorrect summary of the incidence of small-pox in Britain to say that it first left the richer classes, then it left the villages, then it left the provincial towns to centre itself in the capital; at the same time it was leaving the age of infancy and childhood. Of course, it did none of these things absolutely; but the movement in any of these directions has been as obvious as in any other."

So far as the age distribution is concerned the data of the only large-scale prevalence of classical small pox in England, since Creighton's work, that of 1901-2, followed the rule with a partial exception; the rate of mortality at 6-10 was a smaller fraction of that at 0-5 than in 1871-72—namely, 31 per cent. instead of 50 per cent., but at later ages the rates as percentages of the rate on 0-5 were much higher than in 1871-72; 79 per cent. at 25-30, 80 per cent. at 35-40, 52 per cent. at 45-55, and 24 per cent. at later ages. Since by 1901-2 the competition of scarlet fever for a share of youthful victims had diminished greatly, Creighton's first factor is not likely to have had much effect. There remains his contention that small-pox was becoming obsolete, and that a differentia of obsolete diseases is that they cease to attack the young. In my opinion that statement is true; there is some evidence that the age incidence of plague in England shifted towards the adult region of life as plague left the country districts and concentrated on the towns, and there is, of course, conclusive evidence that this has happened in the last two generations in the fatal incidence of pulmonary tuberculosis—namely, that mortality first began to decline in the earlier age groups and only fell in the later age groups some time afterwards. This has also happened in scarlet fever. Creighton was quite justified in drawing attention to this important point; but why should we not believe that the dissemination of vaccination has been *one* of the factors of this decay?

Some advocates of vaccination have gone further, claiming not only that vaccination had been a modifying factor of the epidemiological character of small-pox, but that the small-pox of the nineteenth century among the unvaccinated was epidemiologically identical with that of the eighteenth century; thus, the late Dr. John McVail said, and illustrated from the statistics of small communities, that normally, in the eighteenth century, epidemics of small-pox occurred at intervals, running through all the children who had been born since the last visitation, and levying the kind of death toll which was exacted from the unvaccinated in the nineteenth century. There is, says Professor Greenwood, reason to think that this hypothesis is substantially true. It can be proved that even in the eighteenth century epidemic small-pox might be extremely mild. Sydenham, as his comparison of the irregular and the regular small-pox illustrates, had observed this in the seventeenth century; Murray of Göttingen, in the middle of the eighteenth century, noted the curious benignity of certain Swedish epidemics. There is sufficient evidence, however, that small-pox in the eighteenth century was, as a rule, a very infectious and deadly disease. But in the nineteenth century the introduction of small-pox into a community, wherein infant vaccination was the exception rather than the rule, has not been regularly followed by a disastrous epidemic. In illustration Professor Greenwood cites data from the history of small-pox in Australia, recently published by Dr. Cumpston:

In New South Wales a large proportion of the population was not vaccinated in infancy. Thus in the decennium 1871-80, 234,115 births were registered and 70,494 vaccinations. Victoria, on the other hand, was well vaccinated; in the ten years which preceded the outbreak of small-pox in Melbourne in 1884 the ratio of vaccinations to births was 217,153 to 267,300. Both the relatively well-protected and the relatively ill-protected States have had outbreaks of small-pox; in neither has there been a serious conflagration. The epidemic of 1881-82 in Sydney is particularly instructive. Between May 23rd, 1881, and February 19th, 1882, 154 cases occurred in Sydney. It seems clear that before September 2nd, 1881, seventeen streets were infected—that is, the disease was wide-scattered through the city. From accurate data respecting the experience later than September 2nd (the statistics of the first part of the epidemic have perished) it seems that the fatality of the disease was of normal severity—namely, a fatality rate of 25.9 per cent.—but the ratio of cases to exposed to risk was low. Unfortunately the vaccinal state of the exposed to risk is not recorded, but the following inference seems justified—namely, that the presence in a populous city of a normally virulent strain of infection did not, in spite of the low level of herd protection, lead to any remarkable results. Two comments are, however, necessary. The first, that the mere ratio of vaccinations to births is not a satisfying measure of the extent of protection; the second, that, during the currency of the epidemic, a great deal of vaccination was done (more than 61,000 vaccinations are recorded in New South Wales in 1881). Victoria only experienced one serious epidemic, if, indeed, the adjective be justified, an outbreak (in Melbourne) with 56 cases and but 4 deaths, which was in 1884-85. The interest of this resides in the fact that, unlike the Sydney experience, there is evidence of a widespread dissemination of mild small-pox; this is interesting because vaccination was, it appears, much more widely used in Victoria than in New South Wales.

The rigidly orthodox, remarks Professor Greenwood, will perhaps hold that the experience of Victoria as compared with that of New South Wales is one more illustration of the value of vaccination, fewer lives having been lost in the former than in the latter. He himself would rather stress the fewness of the deaths in Sydney as a demonstration of the fact that a community wherein infant vaccination has been neglected is not, when brought in contact with an infection, mere dry wood through which the fire runs. If that were indeed the state of affairs in the seventeenth and eighteenth centuries he would conclude that the *genus epidemicus* of nineteenth century small-pox, in spite of the persistent fatality of the disease, differed from that of the eighteenth century. That the epidemic type of small-pox was indeed changing is made easier to believe because Australia is one of the many countries in which, within the past twenty years, small-pox has again changed very much. On this Professor Greenwood says:

In May, 1913, the new epoch was ushered in in New South Wales by the appearance of an unusual rash amongst the staff of a manufactory of underclothing in Sydney; this was diagnosed as small-pox, and extended sooner or later to no fewer than twenty-eight country towns and districts. In the year 1913, 1,073 cases were recognized in the State (1,017 in Sydney); in 1914, 445 cases were found in the metropolis, 183 in other areas. In 1915 there were 41 cases in Sydney, 430 elsewhere; in 1916, 16 in Sydney, 92 elsewhere; in 1917 none in Sydney, but 119 elsewhere. This considerable prevalence differed essentially from any previous experience in its negligible fatality. In another respect, however, it followed the usual rule—namely, that the vaccinated were attacked at a lower rate. Although this statement cannot be directly

proved, the enormous disproportion of unvaccinated to vaccinated amongst the attacked (of 1,037 patients treated at the Sydney quarantine station in the six months ending January 31st, 1914, only 53 had been vaccinated) is cogent indirect evidence of its truth. As is well known, this epidemiological variety of small-pox is now widespread; its modern history can be traced back at least to 1895; its most usual name, alastrim, we owe to a prevalence in Brazil reported upon by Ribas in 1910. That is the type now prevalent in England and Wales.

PROFESSOR GREENWOOD'S CONCLUSIONS.

The cross-immunity experiments of Gordon and others seem to show conclusively that alastrim is biologically more akin to classical small-pox than to varicella, and whether the disease shall be termed alastrim, para-small-pox, variola minor, or just plain small-pox, seems very unimportant. On the other hand, says Professor Greenwood, if we could be sure that the present type of small-pox would become universal, vaccination as a prophylactic would soon be of purely historical interest, because the risk to the individual of vaccination, whether as a specific or merely procatarctic factor, is probably greater than that of the fashionable small-pox. But even if the prevalent type of small-pox can be trusted to breed true, there still exists side by side with it the old dangerous type. If, state supporters of vaccination, we deliberately abandon the nominally compulsory system, the level of herd immunity will fall still lower. The time will come when, this immunity having fallen below some critical value, we shall experience a reversion to the horrors of the eighteenth century. If, moreover, the prevalent variety is not fixed, but capable of breeding classical small-pox, the danger is intensified.

It is implicit in this argument that the exposure of an unprotected population to the risk of infection will probably lead to a serious, life-destroying epidemic. I have already pointed out that such experience as that of Sydney does not support the proposition. In his very important and frequently misrepresented treatise, Dr. Killick Millard has provided much stronger evidence to the same effect. His experience in Leicester has been that the frequent introduction of the infection of small-pox into a community within which infant vaccination had been systematically neglected did not lead to a widespread and murderous epidemic. With respect both to Sydney and to Leicester it can be urged that (1) neither community had a more favourable experience than many towns which, while making use of infant vaccination, had not reached the level of administrative efficiency which has honourably distinguished Dr. Millard's regime at Leicester; (2) that in both an appreciable proportion of the exposed to risk had actually been vaccinated. It remains, however, indisputable that the gloomy prophecies with respect to Leicester's epidemiological future which were made a generation ago have not been fulfilled (McVail, 1919; Millard, 1919). If it be said that the basis of the induction, that to neglect infant vaccination is not to incur an appreciable risk of severely epidemic small-pox, is slender, it may be retorted that the confident assertion that such neglect leads to disaster has an even slighter basis of accurately observed facts.

His personal belief is that unless compulsory vaccination and revaccination are enforced with a rigour hitherto unknown, the effect of compulsory measures upon the spreading and killing powers of the disease will be trivial; on the other hand, the price of compulsory vaccination on a scale likely to save lives must be paid in lives. He is not satisfied that the resultant saving of life must exceed the price paid and, on that account, he is a supporter of the policy advocated by Dr. Millard. "Those, I think a majority of my profession, who believe that the price to be paid would be trivial in comparison with the risk avoided (it would assuredly be much smaller than now exacted for the mere convenience and pleasure of driving fast motor-cars along our highways), would be unfaithful to the truth as they see it if they did not advocate a wholly different policy."

Nova et Vetera.

A DAY IN A DOCTOR'S LIFE.

THE medical man in fiction is not often a very convincing character to his brother practitioners in real life, whether he appears as a benevolent old *deus ex machina*, setting right all the squabbles of the village, as the brilliant and sometimes sinister surgeon who performs impossible operations, or as the joyous young scapegrace of the Bob Sawyer type. The reason for this lack of veri-similitude is perhaps to be found in the professional secrecy with which the doctor has surrounded himself; the atmosphere of mystery in which he used to perform his rites; and the ignorance of authors in the arcana of the medical craft. The doctor himself, as a rule, has neither the time nor the literary skill for weaving his experience into a romance.

Recently, however, a novel has appeared in which the author seems to have taken infinite pains with the portrait she has drawn; Miss Helen Ashton has succeeded in giving a vivid and true idea of the romance of medical practice, and in holding the reader's attention to the end of her description of a single day in the professional life of *Doctor Serocold*.[1] She adopts the modern psychological method of tracing the thoughts that run through the mind of the doctor as various patients or objects in his little provincial town come under his observation. The flow of thought through the mind, as continuous almost as the heart's beat, is not represented as the incoherent, disordered, and often muddy stream depicted by Mr. James Joyce. Dr. Serocold's thoughts run largely in the past, giving us a summary of his life's work, illustrated by vignettes of the lives of his patients and of his own aspirations and disappointments.

We are introduced to Dr. Luke Serocold at the age of 65, as he sits at 2.30 a.m. on October 18th, 1929, at the death-bed of his aged partner. The memories that flash through the less aged practitioner's mind start the story on its way; while further meditations, when he is contemplating in the morning his visits for the day, tell us something of the characters of the patients whom we are to meet. There is the impoverished old general with arterio-sclerosis and a decayed manservant as sole attendant, whose wife died in a lunatic asylum; and the ancient virgin engaged in the study of history, whose name was once connected with the general's by gossiping neighbours. She has called the doctor to see her unintelligent maid, who has got herself into trouble through a soldier in the neighbouring camp. Later in the day Dr. Serocold goes to see Mrs. Unwin, formerly married to a happy-go-lucky hunting farmer, with whom, during the lifetime of her husband, the doctor had been sorely tempted to run away. He discovers at one and the same time that she is suffering from cancer of the breast and that she has always been as much in love with him as he with her. He visits the great lady of the district, Lady Catterick, a coarse fat woman of overbearing temper, the marriage of whose son, blind and neurasthenic from the war, he encourages against the will of the mother, as the only cure. The doctor's day ends at 11.45 p.m. with the administration of an anaesthetic for his lady assistant in a difficult midwifery case. Incidentally, during the day he has attended a meeting of the town council to present his report of the health of the district; he has operated on a mastoid case at the cottage hospital; and he has gone to the house of a newly married couple to take a hand at bridge, with a view to telling the young wife about the cancer from which he has found her mother to be suffering.

Miss Ashton has described these more or less commonplace incidents with a delicate touch, and at the same time with an astonishing knowledge of medical detail and medical psychology. The doctor goes to the hospital wondering whether he is right in his diagnosis of mastoid suppuration, and whether he will acquit himself with credit in the eyes of the upstart young rival in practice who is to give the anaesthetic. The chiselling of the bone, the opening of the mastoid cells, and the feeling of triumph when a bead of pus exudes are vividly described. The reactions of the doctor's mind to the antivaccination protests of the old furniture dealer, the fiery socialism of the ferret-faced fishmonger, and the pompous self-satisfaction of the grocer-mayor, must have occurred in many another medical officer of health. And as an undercurrent

[1] *Dr. Serocold. A Page from His Day-Book*. By Helen Ashton. London: E. Byrn, Ltd. 1930. (Cr. 8vo, pp. 233 + 6d. net.)

throughout the book run self-questionings by the doctor whether the dyspeptic symptoms from which he has been suffering for some time past may not indicate that he is himself a victim of cancer. In the evening a specialist's report dissipates this fear; and the gloomy day which began with a death ends with a birth, and a ray of hope that Dr. Jean Gordon and her future husband may carry on the work of Dr. Serocold.

Where Miss Ashton acquired her intimate knowledge of the medical life we do not know; but she has effected an extremely sympathetic presentation of the daily round of the doctor. No other profession affords such wide opportunities as medicine for the study of human character. And if the romance is on a smaller scale than in some other professions, it is also more vivid and more personal. For the full enjoyment of the medical life many qualifications are necessary. Knowledge and the power of reasoning lead to good diagnosis. Intelligence is a guide to treatment. Skill and dexterity are required for good surgery. Health and energy enable the strain of practice to be borne. Courage and decision add force to action; and truth tempered with mercy is not without its advantage. But all of these gifts are comparatively valueless without sympathy, tact, and a long memory. With these three qualifications the doctor of advancing years is often able to maintain his position against the attractions of youth and modern treatment. Miss Ashton makes one of her characters say of Dr. Serocold: "You know everything about us. We don't have to explain our bodies or our minds to you. We don't need to tell you how old we are, or how poor, or how worried; you've heard it all years before. We just come to you whenever there's anything wrong; we know that you'll help us if you can, and that if there's no help, at any rate you'll understand. You've been through all our troubles with us. How can we feel the same about a stranger?"

It is probable that the best examples of the combination of these virtues are still to be found among the country general practitioners from whom Miss Ashton has drawn her hero. It is true, perhaps, that in such surroundings the liability to professional jealousy is greater; and the antipathy of Dr. Serocold towards the pushful Dr. Jevons is by no means the least interesting part of the book. It is difficult for the Serocolds to remember that some day the Jevons's will have to face the same position. In the meanwhile, the older doctor who possesses a reasonable proportion of the virtues we have enumerated will probably remain a reasonably successful practitioner. The chief fault to which he is likely to be prone is lack of appreciation of the limits of his powers.

The medical profession may well be grateful to Miss Ashton for undertaking the labour that must have been involved in gauging so accurately the thoughts and actions of a doctor, and delineating his character so sympathetically. And if the reader regrets that Dr. Serocold could not rise to heights of stoic fortitude in contemplating the approach of his own death, and that this failure casts somewhat of a gloom over his day's work, he will feel that in this matter also Luke Serocold was at least human.

C. B.

ENLARGED PROSTATE AND PROSTATECTOMY.

LECTURE BY SIR JOHN THOMSON-WALKER.

SIR JOHN THOMSON-WALKER delivered the first of his three Lettsomian Lectures before the Medical Society of London on February 17th, his general topic being "Enlarged prostate and prostatectomy." This lecture was devoted to a historical review of the subject.

Beginnings of Prostatic Surgery.

Surgical opinion with regard to operations on the prostate, said the lecturer, had undergone from time to time dramatic changes; although surgical practice had now become more settled, there were still some fundamental questions which excited differences of opinion, and certain points of surgical procedure which needed full and free discussion. The beginning of prostatic surgery as known to-day was to be found in the work of McGill of Leeds, and also in that of Bellfield of Chicago, who had died only a few months ago. At the time when McGill first attacked the subject and advocated the suprapubic operation, it was generally accepted that in a considerable proportion—estimated at about 30 per cent.—of all men over 55 the prostatic gland was of abnormally large size, but only about 50 per cent. of these had any symptoms which required attention. So long as there was no distressing micturition or partial retention it was felt that operation might be disregarded. Surgical aid was afforded by the occasional or habitual passage of the catheter, and the introduction of the coudé form was hailed by a former Lettsomian lecturer in 1880 as a great step forward in treatment. Catheter treatment was not always successful; in certain cases difficulties arose in passing the catheter, while in others the method failed owing to the frequency with which it had to be employed. Cases of acute retention at that time were dealt with in various ways. A metal catheter might be forced through the obstruction, tearing through the prostate and forming a new channel, but this was not regarded with favour by the more orthodox surgeons. In chronic cases, where intermittent introduction failed, several methods were tried, and the method of retaining a catheter for a week or more in the urethra had been highly commended by Reginald Harrison. Sir Henry Thompson, the most eminent authority at the time on surgery of the urinary organs, used suprapubic puncture as a temporary measure.

McGill's Operation.

Such was the prevailing custom when McGill first approached the subject. There had been removals of the prostate by the suprapubic route before McGill and Bellfield, but these were isolated cases, and at the time in question there was no body of opinion favourable to removal of the enlarged prostate either by the perineal or by the suprapubic route. Sir Henry Thompson, in particular, was opposed to any radical operation on the enlarged prostate. The view he held was that in cases of enlargement where the catheter failed the bladder was atonic from long disuse, and would not regain its expelling power.

On November 11th, 1887, at a meeting of the Clinical Society in London, under the presidency of Dr. Broadbent, the prospect of a discussion on the treatment of enlarged prostate drew an attendance of over eighty. Sir Henry Thompson opened by recommending permanent suprapubic drainage of the bladder as a method of treatment for advanced cases of enlarged prostate. Then Mr. McGill read a paper on suprapubic prostatectomy, and reported three cases where the operation had been successfully performed for chronic prostatic hypertrophy. He performed the operation only in cases of great urgency where catheter passing had had to be abandoned. It was not palliation, but permanent cure, which was the objective. It was interesting to notice that at that meeting Sir Henry Thompson, whose views on the uselessness of removing the obstruction were well known, joined in the discussion, expressing his interest, but reiterating his opinion with regard to the atonic bladder. He added, however, that, possibly in early cases, there was an opening for this procedure, and Mr. McGill, speaking in reply, agreed that Sir Henry Thompson was right in suggesting a period of time after which the operation would be useless.

Bellfield's Operation.

In September, 1886, Dr. W. T. Bellfield of Chicago published a short note of a case in which he performed suprapubic cystotomy for two large calculi in a case of enlarged prostate. He mentioned rather casually that the patient had collapsed so badly that no attempt was made to remove the prostatic outgrowth. The following year he was more successful. At the Chicago Medical Society, in February, 1887, Bellfield showed a man, aged 73, who had been dependent on the catheter for a year, and in whom exploration of the bladder by suprapubic incision revealed

a prostatic outgrowth as large as a hazel nut; the pedicle was twisted off with forceps and the growth removed, greatly to the patient's benefit. McGill was unaware at the time he published his first cases that Bellfield had performed this operation, but in all his subsequent papers he was careful to acknowledge his priority. The operation which Bellfield so courageously undertook, however, was a sporadic effort, which did not appear to have attracted attention, and which by itself had little influence on the general trend of surgical thought on the subject, whereas the work of McGill was an organized campaign against the prevailing views and in favour of a bolder policy.

Views on the Suprapubic Method.

McGill's conception of the anatomy of the condition he proposed to attack was set out clearly. He recognized two parts of the enlarged prostate—a part which lay within the bladder, and a part which lay outside in the normal position of the gland. The former he termed the intravesicular portion, and the latter the rectal portion, and he believed that the retention was caused by the valve-like action of the intravesicular prostate. His first three operations, from his own description, must have been rather rough-and-tumble affairs, without any definite method. He effected removal, partly by tearing with forceps and partly by cutting with scissors or with a strong cutting instrument designed for the purpose—"a tedious and not very elegant proceeding." Later, at the Leeds post-graduate course, he described his operation as consisting of two parts—the opening of the bladder and the removal of the prostatic valve—by which McGill implied the intravesicular enlargement of the prostate. Tearing with forceps and cutting with scissors were now replaced, as far as possible, by enucleation with the finger. There had been a good deal of discussion as to how much of the enlarged prostate McGill removed. It was clear that he intended to remove only the intravesicular portion. McGill did not claim that prostatectomy meant the total removal of the enlarged gland.

At the Annual Meeting of the British Medical Association at Leeds in 1889, Reginald Harrison, always a staunch supporter of McGill, opened a discussion on the subject, stating that the suprapubic operation of partial prostatectomy would occupy a permanent place in the operative surgery of this organ. In nine out of twelve cases on which McGill operated the material removed was very small, variously compared with a walnut, a bean, or a pea; but three cases were of special interest. In one of these he extracted seven pieces of enlarged prostate, the total weight being 2 ounces 30 grains; in another he removed the enlarged lateral lobe, the size of a small walnut; and in the third case the description of the specimen obtained resembled very much the prostates removed by the methods at present in use. The lecturer said that he had examined the historical specimens of enlarged prostate preserved in the museum of Leeds University, and, with that one exception, the specimens of the McGill period represented portions of the enlarged prostate, not the entire organ. Did McGill set out knowingly, in a patient obviously dying if left alone, to undertake a new and more formidable operation than he advocated in his writings? The lecturer thought not. After a careful study he did not see any evidence that McGill had changed his view that the intravesicular portion of the enlarged prostate was the cause of the obstruction he set out to treat. The removal of this obstruction was his aim. McGill had died at an early age, and there was no use in speculating what developments might have taken place had he lived to complete his work, or if his colleagues had had faith to persevere.

The first note of dissatisfaction with the operation described by McGill came from Bellfield in November, 1890. In nearly one-third of the cases of suprapubic prostatectomy which had been performed up to then he found that the radical operation failed to restore voluntary micturition. He pointed to bladder atony as the cause; but he also suggested another explanation, asserting that the discovery and removal of the outgrowths was not necessarily a complete operation. The prostatic urethra should be stretched and explored for hypertrophies with the finger and a perineal operation performed. Gouley of New York was the first surgeon to lay down a formulated plan for perineal prostatectomy.

Castration and its Effects.

In 1893 came one of those dramatic changes in the treatment of enlarged prostate which made the history of the subject so interesting. Dr. William White of Philadelphia read a paper at a meeting of the American Surgical Association on the present position of surgery of hypertrophied prostate, and at the end of an able address he put forward the idea which resulted in the almost complete banishment of prostatectomy from surgical practice for some years. He advanced a parallel between prostatic overgrowth and uterine fibroma, and suggested that castration might have the same effect in the former as ovariotomy in the latter. Castration as a method of treatment for prostatic obstruction was rapidly taken up everywhere, although prostatectomy as practised at that time was a reasonably successful operation, with a relatively low mortality. Probably opinion was influenced by the 20 per cent. of cases where the bladder did not regain power after prostatectomy, and the difficulty of the suprapubic operation probably also had its influence. For a time, therefore, the operations of castration and excision of the vas deferens held the field.

After a time, however, these indirect operations began to lose their attraction, in spite of the advocacy of many surgeons and the publication of tables of successful results. The mortality, which White had expected to be negligible, proved high, and the mutilation was such that only outstanding success would justify the operation. While in some cases improvement took place within a few days, in others months elapsed before any change could be detected. The number of cases of mental disturbance after castration was also very distressing.

Reappearance of Prostatic Surgery.

The renaissance of prostatic surgery occurred about 1900–1. Prostatectomy, by both the perineal and the suprapubic routes, found new advocates, and increased to become the routine method of dealing with prostatic obstruction. In 1901 Freyer published four cases of what he described as a new and, at first sight, formidable operation—namely, total extirpation of the enlarged prostate. The first case he dealt with in this manner was not approached with a view to performing a new operation; it was undertaken as a partial prostatectomy, and it was only after examining the tissue removed that he came to the conclusion that the whole prostate in its capsule had been taken away. Spirited discussion followed the publication of Freyer's cases, in which, out of a mass of verbiage, two mutually destructive arguments emerged—namely, that the operation performed by Freyer was the same as that advocated by McGill, and also that the operation that Freyer claimed to have performed was inevitably fatal to the patient. Mayo Robson considered that Freyer's conception of extirpating the complete prostate in its capsule involved something impracticable from the anatomical point of view, and said that, even if it were possible to take away the entire prostate, it would be inadvisable to do so. The claims of Freyer, however, aroused a new interest in the surgical anatomy of the prostate gland, and the method was taken up by surgeons all over the world.

It was a matter of comment in the early cases of operation on the prostate that bleeding was not more severe, yet in the actual cases operated by McGill, Robson, and others there were difficulties in regard to haemorrhage, and in Freyer's cases there was frequently trouble after the return of the patient to bed. On watching these cases it had become apparent to Sir John Thomson-Walker that haemorrhage, if not the direct cause of death in many cases, was a predisposing factor. Further, he recognized that stricture of the urethra following operation did occasionally occur, and sepsis after operation was rife. With these defects in mind, he introduced the method of open operation early in 1916, and afterwards used it in an increasing proportion of cases until it became his routine practice. Haemorrhage was controlled by free exposure and ligature. He was not aware until some years later that there had appeared in the papers of the Mayo Clinic an illustration showing, to quote the description, "Prostatic capsule partially closed by interrupted suture," and in 1917 there was a note published from the Mayo Clinic showing the dissection of an enlarged capsule with the bladder base exposed.

British Medical Journal.

SATURDAY, MARCH 1ST, 1930.

THE TEACHING OF ANATOMY.

A LECTURE with the challenging title "Anatomy, orthodox and heterodox," might be expected to produce some degree of tremor in an anatomist. Since the Arris and Gale lecturer this year was Mr. McAdam Eccles, most of his audience would have had some foreknowledge of the probable nature of his comments, but all must have awaited with unusual interest the considered verdict of one who has been both a teacher of anatomy and a distinguished exponent of its practical applications. It may be said at once that on the whole his verdict is extraordinarily favourable to the anatomical teaching of our own schools. Grave charges have been levelled at topographical anatomy. It has been accused of being purely descriptive and devoid of all analytical quality; a branch of study that makes no demand upon the intelligence of the learner, and from its very nature must ever remain removed from the main pathway of science; a subject, in short, whose only justification is to be found in its vocational aspect. Against such criticisms Mr. Eccles is not concerned to defend anatomy; it is for him the most concrete of sciences, except perhaps that of mathematics. He has no misgivings about its future.

So many of the medical sciences have budded off from human anatomy in the past that to some this fertility has seemed perilous, because anatomy, by surrendering to other subjects its further advances, must itself become sterile. The lecturer scents no danger here, for he sees an ever-open field for anatomy in determining the how, the why, and the wherefore of the body. It still remains a futile quest to determine whether function originates structure, or structure function; but it does seem clear that the study of structure must remain for a long time to come a fruitful form of biological inquiry. Because anatomy is so basic a subject in all medical science, and in all applications of medical science, Mr. McAdam Eccles asks whether we are getting the best out of it or not. The sister subjects of anatomy in the medical curriculum are not immune from these searchings, but critical reflections are less often heard about whether all is well with them, and whether they are playing their full part in the education of the future practitioner. It is difficult to believe that they have been let off more lightly because they are perfect. Perhaps their gradual drift from the more obvious biological field into the domains of physics and chemistry has led them beside rather than along the main high road of medicine. At any rate, they have left an abundant field of structure and function for the anatomist to explore. The anatomist seems to Mr. Eccles to be hesitant, or even reluctant, to enter on this rich inheritance. Yet in England, as elsewhere, more and more anatomists are doing such work; in more favourable circumstances it would soon be universal.

The lecturer breaks a lance with anatomical terminology and descriptive phrases. He gives examples of their occasional inaptness and, what is more serious, of misleading and erroneous language. It has been said that music and mathematics are the most characteristic creations of the human intellect; a third might be added—namely, the description of the structure of the human body, which comprises many thousands of terms that have had to be invented. A description has to be so framed that it will apply with fair precision to all human bodies, no two of which are exactly alike; it has also to be lucid and easily apprehended. The creation of this new language compares favourably with any similar attempt, and, taking it all in all, it may be confidently asserted that the innumerable labours of so many different investigators stretching over a very long period of time have produced a descriptive system that is at once useful and beautiful. As the lecturer aptly remarked, herein anatomy may claim a worthy kinship with mathematics. His second and more important contribution touched more immediately on the spirit of the teaching of anatomy. Mr. McAdam Eccles knows from his own teaching experience that the beginning of anatomy, or of any other subject, must be fraught with much dry detail and perhaps uninteresting descriptive matter. It is the necessary prelude, the unavoidable foundation that must be laid, before the process of understanding the implications of the facts can begin. When a working knowledge of the materials of the body and the conjunction of its parts has been attained, the more interesting and more fruitful computation of their significance can follow. Unfortunately, the complexity of the body is so great, and the time allotted to this study is so brief, that little more than foundation work can be attempted during preparation for the second M.B. examination. Nevertheless, the skill and insight that accrue from a knowledge of anatomy are not to be looked for as immediate results. They are the slowly ripening harvest which will be surely gathered so long as the practitioner exerts himself to maintain and extend this knowledge. The value of anatomy is best gauged by a consideration of the level at which some of its applications stand. Operative surgery, orthopaedics, and neurology at once suggest themselves, and their status is a measuring rod of the success with which the functional implications of structural anatomy are realized. Having said this much in defence of the current methods of teaching anatomy, we must agree that Mr. McAdam Eccles's observations are thoroughly sound; so cogent are they, and so in keeping with the spirit and temper of all forward-minded anatomists, that they are very welcome. Not every school of anatomy is fortunate enough to possess a complete radiological equipment, but much can be done, and is being done, to collect a variety of films for the elucidation of joint movements, bone growth, and visceral anatomy and movements. It is nearly always possible to obtain the active co-operation of the radiological department of the hospital for this work.

While the antithetical title of this Arris and Gale Lecture may cause the anatomist to approach it with some perturbation, he will find much to console him as he reads, and indeed by the end he will feel that the lecturer is a real lover of anatomy, that he has a thorough appreciation of the difficulties that beset the teacher, and a lively regard for the importance of his work. Every teacher of anatomy will heartily agree that, having laid the foundations of a knowledge of the structure of the body, it is his duty, in the interest both of the student and of his subject, to bring home the implications of that knowledge. This kind of emphasis, which will arouse the interest of the student and add life to the teaching, can be given in many ways, some of which this discourse indicates. With one of these the lecturer deals in detail. He suggests that examination questions in anatomy, and more particularly surgical anatomy, should be set in

such a way that the answers will require a good deal more than the reproduction of standard textbook descriptions; each question being so phrased as to test whether descriptive details have been merely piled up as one brick upon another, or have been envisaged in terms of function. This is certainly as desirable as it is valuable.

"PROPER AND SUFFICIENT MEDICINES."

UNDER the National Health Insurance Acts an insured person, as part of his medical benefit, is entitled to receive "proper and sufficient medicines." This phrase includes such chemical reagents as may be authorized by Regulations. Under his terms of service an insurance practitioner is required himself to supply to an insured patient "drugs" in certain circumstances, and here the term "drugs" is defined so as to include "medicines." In any case, these drugs or medicines must be only those which are "requisite for the treatment of the patient," and the cost must not be in excess of "what is reasonably necessary for adequate treatment." Such articles as foods, toilet preparations, and disinfectants, as such, are clearly outside this category; but questions as to the propriety of supplying or prescribing numerous articles have from time to time been raised, and a year ago the Minister of Health appointed an Advisory Committee on the Definition of Drugs for the Purposes of Medical Benefit. This committee has presented two reports on the matters referred to it, and these have now been circulated by the Ministry to Insurance and Panel and Pharmaceutical Committees.[1] In the first report the committee suggests a new Regulation defining the procedure to be adopted when a medical practitioner has ordered, or is alleged to have ordered, on the official prescription form, any "substance or article" which is not a "drug or medicine." In the second report the committee classifies 165 substances and preparations which have been referred to it into those which are never drugs, those which are always drugs, and those which are sometimes drugs. Articles in the last two classes are subdivided into non-proprietary and proprietary. These last, again, may be of known composition or may be of a composition which is undisclosed. The committee considers that in the former case "an insurance practitioner might reasonably be called upon to justify the prescribing" of them; and in the case of the latter says, "the prescribing of such substances and preparations is most undesirable; only the most exceptional circumstances could justify a practitioner in prescribing them." Of course, the classification of these substances by the Advisory Committee is not final. The decision as to allowance or disallowance rests primarily with Insurance Committees, and the decision in any particular case could be challenged in a court of law. Nevertheless, these reports will be of value to those committees, as well as to insurance practitioners and pharmacists.

In each report there is one important matter which calls for further comment. In explaining the effect of the suggested Regulation the Advisory Committee says: "The insured person would have the right of complaint against the insurance practitioner under Article 32 of the Medical Benefit Regulations, 1928, for refusing to prescribe an alleged drug." This, as phrased, is dangerous doctrine. The statement may perhaps be justified in the narrowest sense by the fact that Article 32 says that "Any question arising between an insurance practitioner and a person . . . entitled to obtain treatment from that practitioner . . . shall be investigated by the Medical Service Sub-committee." But if (as the committee now appears to lay down) "any question" is to be regarded as including the right of a patient to have given to him, or prescribed for him, the drug or preparation which he thinks he ought to have, irrespective of whether the practitioner thinks it appropriate or not, the medical profession could not for a moment countenance the right of an insured person to raise any such question. The word "refusing" seems to imply a "demanding" on the part of the patient. It would be a topsy-turvy kind of medical practice in which the patient named the drug and the doctor obediently prescribed it, or, greatly daring, declined to do so.

The position with regard to the ordering of cod-liver oil, extract of malt, and preparations of these substances is dealt with in the second report of the committee. It is by no means free from difficulty. This has been emphasized by a recent case which has attracted public notice. A partnership of doctors of the highest reputation, practising in one of the poorest parts of London, has had a considerable sum deducted from the amount payable to it by the London Insurance Committee on the ground of "excessive prescribing," particularly with regard to cod-liver oil and malt. The practitioners maintained that this was required owing to the poor state of nutrition of a number of their patients. It is unquestionably desirable on medical grounds that any undernourished person should be supplied with further nourishment. The State has, however, established means by which, in approved cases, alimentary needs can be supplied; and even if communal action does not go far enough in this direction, there are plain reasons why such deficiencies should not in general be made good at the cost of a fund established for therapeutic purposes. Any other course might be held to justify the ordering of loaves of bread or pounds of butter or pints of milk for necessitous patients at the expense of the Drug Fund. Medical considerations alone should decide in each case whether cod-liver oil and malt extract are to be regarded as food or as drugs. The Advisory Committee on the Definition of Drugs, after weighing the arguments, reaches the cautious conclusion that these substances "are occasionally prescribed in circumstances which render it difficult to establish that their use was therapeutic rather than alimentary"; or, in other words, that malt and oil "may be, but are not always, drugs or medicines for the purposes of medical benefit."

[1] H.M. Stationery Office. 1929. 3283 and 3292.

A CUMBERLAND MATERNITY SCHEME.

THE health department of the Cumberland County Council has issued a pamphlet by Dr. F. H. Morison, the county medical officer of health, which is entitled a "Report on a complete scheme of maternity and child welfare." It is an admirable document, which sets forth fully for the benefit of the members of the health committee of the county council and of the council itself what is at present being done in Cumberland, both for mother and for infant, what remains to be done, and the way in which it is suggested that this should be done. Every attention that can lawfully be given during the ante-natal, natal, and post-natal periods, and by way of infant and child welfare work during the last of these periods and thereafter, is duly considered, and the detailed needs of the county in respect of its various areas or parishes are presented for attention. The various agencies—the private doctor, the specialist, the midwife, the home visitor, the nurse, the infant welfare centre—are placed in their proper relationship to one another and to the scheme as a whole. The

scheme emphasizes the use of the private medical practitioner as the main prop of any systematic arrangements, with the midwife as his constant help, and the centre as an invaluable educative agency in respect of both maternity and mothercraft. The maternity hospital provision of the county is reviewed, and while Dr. Morison recognizes that some further provision is required, he states clearly that its proper use is for abnormal cases, and that "for normal cases in which the home accommodation is quite unsuitable the problem is a different one. These are in no sense emergency cases and therefore, except for sentimental reasons, it is not necessary, nor is it possible, except at enormous expense, to have accommodation in all thickly populated areas." In fact, the scheme is based upon the principles which underlie the national scheme of the British Medical Association, and the arrangements, so far as they can be provided and carried out by a local government authority, are similar to, and perhaps also based upon, those suggested in that scheme. It is useful to know that they can be applied, practically *in toto* and without serious modification, even to the peculiarly difficult conditions which exist in a county like Cumberland. It is possible that the medical officers or health departments of some other counties have prepared similar schemes and set them out in documents; in any case this small publication from Cumberland may be worth their attention. The estimates of cost appear on the whole to be rather liberal: if this be so perhaps it is a good fault. There is, however, just one paragraph that cannot be commended: even if true the situation might probably have been dealt with in a better way. Speaking of the use of untrained and uncertified women in connexion with confinements, Dr. Morison says, "I have grounds for believing that certain of these handy women habitually attend confinements, and unfortunately are 'covered' in their illegal activities by some medical practitioners." This is a very serious accusation to make: if proved, it would almost inevitably result in the practitioners' names being removed from the *Medical Register*. It must be remembered that there is nothing ethically wrong in the use of such women as maternity nurses in cases where a doctor is also in attendance. It may be that this is the practice which Dr. Morison views with strong disapproval: if so, he will generally be held to be correct. This, however, is a different matter, and the propriety of the use of a woman in this particular way depends upon the availability or otherwise of certified midwives, the personality and experience of the woman, and the fullness of the responsibility accepted and the actual attention given by the doctor.

THE MONASTIC INFIRMARIES.

THE infirmary of the mediaeval monastery, with special reference to the Abbey of Westminster, was the subject of a lantern lecture delivered by Mr. Percy Flemming, emeritus professor of ophthalmic medicine and surgery, at University College, London, on February 21st. The lecturer stated that there was no infirmary belonging to a monastery in this country standing at the present time; all that remained were some well-preserved ruins. But it was possible to reconstruct in the imagination the character of the monastic infirmary in the Middle Ages, and from the ruins of Furness Abbey in particular a great deal was to be learnt with regard to the domestic offices of the monks. Generally speaking, the west end of a monastery was used for business purposes, and the east cloister was the site of the infirmary. Those who designed the monasteries were not unfamiliar with the principles of sanitation, and much thought was given to the lay-out and slope of the ground with a view to drainage. Attached to the monastery was always a garden devoted to the growing of herbs for medicinal purposes. Coming to Westminster Abbey, Mr. Flemming drew attention to the fourteenth century door in the middle of the east wall in the Little Cloisters; this, he said, was the door of the infirmary chapel, rebuilt after a fire. Incidentally, a very common ailment among the monks was disease of the shin bone, possibly brought about through much kneeling at a time before hassocks were available. It might easily have originated as a small abrasion, and as baths were very infrequent—at Westminster the allowance of baths was only two a year—possibly the neglected abrasion developed into more serious trouble. It was recorded at Westminster that in 1310 one monk had the trouble in both legs, and another entry, under the date 1334, stated that a monk had surgical treatment for it at a total cost of forty-six shillings. Bleeding was a common form of treatment; there was always a group of people in the monastic infirmary who had recently been bled. Even apart from any illness, there was periodic bleeding in those days, and after it a certain amount of relaxation was allowed to the monks. The records seemed to show that they had a good time in the infirmary, and were anxious rather than otherwise to be bled, even more often than was necessary. The Dean of Westminster, who presided at the lecture, spoke in appreciative terms of the perfection of the arrangements of the modern hospital, and the blessings which scientific medicine and surgery had brought. The difference between the treatment now available to the poorest and that which was given in the old times in the monastic infirmary was so immense that the two things could hardly be spoken of in the same breath. He added that at Westminster Abbey the infirmary was used for various purposes, not limited to the care of the sick or the convalescent. It was there that the young monks were regularly whipped, the idea apparently being that the place where health was restored to the body was the best place for correcting the soul. It was in the infirmary also that the "playfellows" were housed. These were monks of over fifty years' standing, who were constituted censors of everything that went on in the monastery. It might be imagined, said Dr. Foxley Norris, how nice a state of things existed when a party of playfellows—a most inappropriate name—lived at their ease in the best quarter of the monastery, their only occupation being to criticize the others. But the debt of medical science to the monasteries must not be forgotten. The monasteries were at the beginning of nearly everything. Whatever poor relief was distributed in those days came through the monastic infirmary. The history of England on the social side might be described as the gradual taking over by the public authority of what in its origin was voluntary and vouchsafed in the name of religion. But he trusted that the day was far distant when the voluntary hospital, which represented the spirit of the old monastic infirmary, but represented also the best that modern science and skill could command, crossed the same Rubicon.

HUGH OWEN THOMAS.

SOME sixteen months ago we welcomed the conversion of *The Cripples' Journal* into *The Cripple*, and commented on the intention of that journal in future to include in its scope crippling in the widest sense of the term, such as the effects of rheumatic heart disease and chronic arthritis. The current number, for February, 1930, is now before us, and we much regret to read in the editorial notes an announcement that this is to be the penultimate issue, for it has been decided, owing to several urgent considerations, to stop publication with the April issue. The editor promises in the concluding number a historical survey of the work for the cripple in its origins and development. Although naturally disappointed by the necessity for cessation of publication, he is prepared to go down with his flag

flying, believing, as he evidently does, that other hands will yet bear it aloft in triumph. "Six years ago," he writes, "the struggle was principally directed towards the discovery and treatment of the crippled child. To-day we are on the eve of a great effort to provide training and employment for the man or woman disabled from their normal occupation, or deprived of proper opportunities in adolescence." It is fortunate that the seventh of the series of articles on pioneers of orthopaedics by Mr. Arthur Rocyn Jones has appeared in this number before *The Cripple* comes to an untimely end, for its subject is "Hugh Owen Thomas"; this excellent and most interesting account by Mr. Rocyn Jones can be recommended to the growing number of readers who are interested in the history of medicine. Thomas was a man of an unconventional turn of mind, of great originality, and dogged industry and perseverance. Had it not been for the obscurity in which he liked to work, and to the imperfect way in which his views were expressed and put before the medical public, he must have enjoyed during his lifetime some at least of the fame which is now attached to his memory. He sought no academic honours or hospital appointments, but was content with a single qualification, which would nowadays not entitle him to practise midwifery or medicine and pharmacy. Probably circumstances compelled him to earn a living in general practice, if he did not deliberately choose that way of life. In his daily work among a large industrial population he learned lessons which he turned to good account, and he introduced into his practice the ideas of his shrewd and active brain as actual procedures. Others before him had preached rest in joint disease; he was the first to show how it could be attained in practice, with simple means and at small expense, by any practitioner sufficiently mechanically minded to learn the lessons given by Thomas. His books were little read, however, for he was not well advised in his methods of bringing them before the medical public, and he had not an attractive literary style. Moreover, it must be confessed that the "dons" of the medical world were little inclined to listen to a provincial practitioner who not only supplied, but actually made and fitted, instruments for his patients with his own hands. Was it not notorious that his father, with whom he had worked in Liverpool, was a bone-setter? It is scarcely to be wondered at that some seventy years ago, when the Medical Act was yet new, and unqualified practice was becoming or had become disreputable, the taint of bone-setting was enough to cause a prejudice which reacted unfavourably on the reputation of Hugh Owen Thomas among the majority of his contemporaries, although there were men of wider views, such as Sir John Erichsen, who recognized the brilliant quality of the diamond in its somewhat uncouth setting. Thomas's splints and Thomas's methods are to-day household words of surgery throughout the British Empire and the United States, but we are bound to add regretfully that there is scant mention of him or his work to be found in orthopaedic or general surgical works published on the continent of Europe.

CONTROL OF MALARIA

THE eight or nine hundred pages of volume ii of the *Transactions* of the 1927 Far Eastern Congress of Tropical Medicine[1] are full of matter, much of it displayed elsewhere before and since, and some of it worthy of this repeated publication. It is obviously fitting that malaria should occupy much of the time of congresses on tropical medicine; here it receives over 250 pages, from which there might be omitted, with advantage, twenty-six which end with the conclusion that "smalarina" is useless for the treatment and prevention of malaria. These congress reports threaten to become impossibly bulky, and we venture to say that long before 1927 no one had any remaining faith in "smalarina" save those whose faith is definable as belief in what is known to be incorrect. The discussion on control of malaria must have been particularly interesting, for it brought together (and at times almost into conflict) those belonging to what Professor Stephens nicknamed the "wet" and "dry" schools of thought, the former placing chief reliance on antilarval measures, and the latter inclining rather (at least in the first place) to other measures as set out in a recent League of Nations report. The former side does, indeed, seem to show some unwillingness to abandon the belief that all sound antimalarial work *must* be founded on antilarval measures. Further, there is some carelessness in attributing sole or major credit to the antilarval measures when other action has played a part. For example, Strickland says (p. 64) that the Panama Canal operations are an example of antimalarial work "based on" ascertainment of the local anopheles and dealing with it "in the breeding places alone." This belief is common, but Chamberlain,[2] the chief health officer of the Canal Zone, has put it on record that the antimalarial measures in Panama were as follows: "First, an attack against the malarial parasite itself in the human body by means of vigorous treatment. . . . Second, an attack against adult mosquitos . . . by cutting away . . . underbrush, screening houses, and systematically killing the insects in dwellings." Only third came antilarval measures. As we go to press the third volume of these immense *Transactions* reaches us. The editor, Lieut.-Colonel J. Cunningham, who also acted as organizing secretary of the congress, must feel thankful that his heavy task has now come to an end. The general production of the work reflects much credit upon him and upon the publishers.

QUAKERS IN SCIENCE AND MEDICINE.

THE results of religious persecution have seldom fulfilled the expectations of its promoters. Quite commonly it has served to secure the material advantage of the persecuted, and when it has secured their spiritual advantage too—perhaps the most usual effect of persecution on the persecuted—it has never done so quite in the way that was intended. The Quakers, for example, were debarred in the past from universities, the fighting services, law, divinity, and other forms of activity, and were thus able to concentrate on business, the study of nature, and charity. A small body—ten years ago the Society of Friends had a membership of only 19,000—they have produced men and women eminent in almost every walk of life. Certainly they have been remarkably successful in banking, brewing, and chocolate making, to go no further down the alphabet; and while their shrewd sense has enabled them to make money, their religious convictions have impelled them to give it away, and they have been responsible for originating many of the great philanthropic movements in the last century. In his volume of essays *Common Sense and its Cultivation*, published three or four years ago, Dr. Hanbury Hankin showed, by taking the figures of membership of the Royal Society between the years 1851 and 1900, and estimating what proportion were of Quaker stock or descent, that a man had about forty-six times as much chance of being elected a Fellow of the Royal Society if he was a Quaker or of Quaker descent as he had if he belonged to the rest of the nation. Going on to what may perhaps seem an optimistic prophecy, he argued that as the rate of election of Quaker Fellows is rapidly increasing, whereas that of non-Quakers is rapidly diminishing, the Royal Society will at no distant date become a branch of

[1] Far Eastern Association of Tropical Medicine: Transactions of the Seventh Congress held in British India, 1927. Volumes II and III. Edited by Lieut.-Colonel J. Cunningham, C.I.E., M.D., I.M.S. Calcutta: Thacker's Press and Directories, Ltd. 1929.

[2] Chamberlain, W. P.: Sanitation of Panama Canal Zone. Permanent Drainage and Mosquitoes. *Military Surgeon*, 1927, vol. 60, 397-422.

the Society of Friends! Sir George Newman (who has written so charmingly in *The Friend* and elsewhere about George Fox and his followers), in the course of the Lister Lecture on the application of Quaker principles to medicine, which he delivered before the Quaker Medical Society on October 17th last, expressed the view that it was the Quakers' scientific study of nature and their innate public spirit that made an unusual number of their community turn to the profession of St. Luke, or to its allied branches of the sciences. George Fox (1624–1691) was tempted to "practise physic for the good of mankind," and desired that part of the Philadelphia property given to him by William Penn should be devoted to a "physic garden." From that time on there has been a constant succession of Quaker medical men of eminence, such as Richard Lower of Oxford (eponymous in the "tubercle of Lower"), who performed blood transfusion on dogs in 1665; the famous John Fothergill and his disciple John Lettsom; Thomas Dimsdale, "the inoculator"; the remarkable trio, Thomas Young, Thomas Hodgkin, and James Cowles Prichard, author of *The Physical History of Man*; and, within the memory of many, Jonathan Hutchinson and Lord Lister. There are many others, not so well known, who have served their day and generation well on account of their Quaker principles and character.

STATE INSURANCE AND TRAUMATIC NEUROSES.

THE great increase in the opportunities for the study of traumatic neuroses which occurred as a result of the war dispelled all doubt as to the purely psychical nature of these conditions. It has, in consequence, become possible to lay down uniform rules of treatment and prophylaxis, and to estimate the capacity for work in soldiers suffering from nervous symptoms. On the other hand, the causal connexion of nervous symptoms with war work has not been very closely studied, and the Ministry of Labour in Germany has, accordingly, invited a number of neurologists to express their opinion on certain points bearing more especially on questions of State insurance. The opinions were given in the form of a series of lectures, which have been collected into a single volume.[1] The contributors were Dr. Leppmann, Minister of Health, Professors Hoche, Stier, and Wilmans, Dr. Kronfeld, Dr. Jossmann, and, as representing the law, Dr. Knoll; a general review of the whole was undertaken by Professors Weiler and Stern. Answers to certain specific questions were asked for, and the general results of the investigation may be gathered from a circular of instructions based on the results, which has been issued to the insurance authorities throughout Germany. In this it is directed that as difficulties in diagnosis at times arise, and special circumstances sometimes influence the decision, it is important that anything in the nature of routine methods of dealing with cases should be avoided. The circumstances of each individual case should be carefully inquired into. With regard to the question how far the existence of a neurosis indicates a psychopathic disposition, it is admitted that it might do so in individual cases; the authorities are, however, relieved from following up that line of inquiry, and the custom of entering cases as of "psychopathic or neuropathic disposition" is directed to be discontinued. Cases in which neurotic symptoms appear for the first time years after an external injury are not to be held entitled to indemnification. Cases in which there is a renewal of neurotic symptoms, of a similar or different character, after a prolonged period of total or almost total freedom from symptoms, are not to be held entitled to indemnification. Cases in which a sudden aggravation of symptoms occurs after a stationary condition lasting for years are not to be held entitled to indemnification. In the application of these rules, however, rule-of-thumb methods are to be avoided, and the possibility of a connexion between the patient's symptoms and his work must be carefully considered. Where the long duration of symptoms suggests, in accordance with scientific experience, that the symptoms are not related to the alleged injury, the indemnification is not to be revised unless it can be proved that the symptoms are definitely referable to some other cause. These rules, it should be noted, apply only to cases in which there is no organic lesion.

[1] *Die "Unfall- (Kriegs-) Neurose."* Arbeit und Gesundheit, Heft 13. Berlin: R. Hobbing. 1929. (R.M.4.20.)

SHIP CAPTAIN'S MEDICAL GUIDE.

A NEW edition of *The Ship Captain's Medical Guide*,[1] edited by Dr. D. D. F. Macintyre, surgeon commander R.N.V.R., medical inspector of the Board of Trade, has recently made its appearance. This is the seventeenth edition of a book the foundations of which were compiled many years ago by the late Dr. Harry Leach, medical officer of health for the Port of London. It represents a considerable advance on its predecessors, and contains much new material. The medical scales for merchant ships which are not required to carry surgeons have been brought up to date with the help of experts nominated by the Ministry of Health and shipowners' associations. Of peculiar interest to us and our readers is chapter 23, which deals with requests by wireless for medical advice. This is based on the work of a special committee set up by the Council of the British Medical Association. That committee drew up a case-taking scheme, which was designed to secure that the master of a ship not carrying a surgeon, who wanted to send a wireless message for medical advice to the shore or to a ship carrying a surgeon, would be able to state quite categorically and in proper sequence all the essential information about the patient that the surgeon would require in order to enable him to send the necessary advice without having to waste time in asking supplementary questions. The system has been adopted in its entirety, and is capable of easy transmission into code. If, as is quite possible, the coded system is adopted by the Washington Conference and incorporated into the International Code of Signals, it will enable the master of a ship of any nationality to get all the advice he requires from any ship carrying a surgeon which may be within wireless range.

[1] *The Ship Captain's Medical Guide.* By D. D. F. Macintyre, M.B., Ch.B., V.D. Seventeenth edition. London: H.M. Stationery Office. 1929. (2s. net.)

INDUSTRIAL PULMONARY DISEASE.

THE Medical Research Council has appointed a committee to advise upon the further investigation of pulmonary silicosis and of other pulmonary conditions associated with the inhalation of dusts arising from industrial processes. The chairman is Professor Arthur J. Hall of Sheffield, and the other members are Dr. A. E. Barclay, lecturer in radiology in the University of Cambridge, Dr. J. C. Bridge, Senior Medical Inspector of Factories, Home Office, Professor S. Lyle Cummins, director of research to the Welsh National Memorial Association, Professor E. H. Kettle, St. Bartholomew's Hospital and College, Professor M. J. Stewart of Leeds, Dr. Cecil Wall, physician to the London Hospital and the Brompton Hospital, and Dr. E. L. Middleton, Medical Inspector of Factories, Home Office (secretary). The committee will survey the present state of knowledge, will advise the Council upon new lines of inquiry that may be profitably pursued, and will assist in the supervision of such investigations as it may be decided to initiate or support. The work will be directed particularly towards obtaining, in co-operation with the Factory Department of the Home Office, more accurate knowledge of the causes and diagnosis of silicosis and of other indus-

trial pulmonary disorders. The need for better knowledge of these subjects has been emphasized by the recent report of the Silicosis (Medical Arrangements) Committee, whose recommendations to the Secretary of State for extended research work have been referred to the Council by the Home Office.

WE have to announce with much regret the death, after a brief illness, of Sir Alfred Fripp, K.C.V.O., Honorary Surgeon to the King and consulting surgeon to Guy's Hospital. An obituary notice, with portrait, will appear in our next issue.

THE annual general meeting of the Royal Medical Benevolent Fund will be held at 11, Chandos Street, W.1, on Monday, March 10th, at 5 p.m. The annual report and financial statement for the year 1929 will be presented, and the officers and committee elected for the current year.

THE Minister of Health has appointed Sir Harry Goschen, Bt., to be a member of the Board of Management of the London School of Hygiene and Tropical Medicine, in the place of Lord Melchett, whose term of office recently expired, and the Board has elected Sir Harry Goschen as its chairman, in succession to Lord Melchett.

AMONG the fifteen candidates recommended by the Council of the Royal Society on February 20th for election into the society are John Stephenson, D.Sc., F.R.C.S., Lieutenant-Colonel I.M.S. (ret.); Charles Todd, M.D., attached to the Department of Experimental Pathology of the National Institute for Medical Research; William Whiteman Carlton Topley, M.D., F.R.C.P., professor of bacteriology and immunology in the University of London; H. W. Dudley, M.Sc., Ph.D., of the biochemical and pharmacological staff of the National Institute for Medical Research; and Robert Robison, D.Sc., of the Department of Biochemistry, Lister Institute.

RED CROSS CLINIC FOR RHEUMATISM.

NEW BUILDING AT REGENT'S PARK OPENED BY THE QUEEN.

By the release of a valve thereby filling a large bathing pool, Her Majesty the Queen on Tuesday last opened the new Red Cross clinic for the treatment of rheumatism. The clinic is situated at the gates of Regent's Park, in Park Square East, in a building adapted from the old Baptist chapel there, which had stood derelict for some seven years. The octagonal shape of the interior is preserved in the new arrangement, and where formerly the baptistry stood there is now another Siloam, a central deep pool for manipulation, exercises, and under-water douches.

As has already been set forth in these columns,[1] the British Red Cross Society was approached on the one hand by representatives of the approved societies, and on the other by members of the medical profession interested in balneology, with a view to launching an appeal for funds to establish and equip a demonstration clinic in London where insured workers and others could obtain physical treatment for the diseases classed as rheumatic. An appeal for £40,000 was made, and when about two-thirds of this sum had been subscribed Sir Otto Beit generously guaranteed the remainder.

A first impression of the clinic is wholly pleasing. On the ground floor in the centre of the building, and open to the high glass roof, is the central deep pool. The colour scheme of the tiling is arranged after the manner at spas; indeed, acknowledgement is made of the help in many directions, by suggestion and advice, which British and Continental spa experience has afforded. Around this pool, under arches, are ample dressing and rest accommodation, and separate apartments providing for shower and foot baths, reclining and aeration baths, a whirlpool bath, and a Scottish douche, appliances for giving douche massage on the Vichy and Aix systems, and hot air and vapour applications. On the first floor, where the rooms are again arranged in gallery fashion around the well of the building, are rooms for treatment by massage and movement, radiant and non-radiant heat, and ultra-violet radiation, also a room for colonic lavage (Plombières treatment), and consulting rooms. The top floor, connected with the others by lifts, is arranged for the treatment of private patients—that is, patients who do not receive the treatment as an additional benefit through their approved societies—by all the methods in use on the lower floors.

The conditions to be treated at the clinic are set out as chronic rheumatic diseases, articular and non-articular; muscular weakness or paralysis, neuritis, and neuralgia; and sequelae of injury to or inflammation of joints, muscles, tendons, bones, and nerves. The fee for the approved society patients will be, as an experiment, 25s. for a course of not less than eight treatments. Fees for private patients will be by arrangement with the lady almoner. Sir Arthur Stanley said that it was hoped to treat a certain number of necessitous cases free. It is considered that the clinic will be available for the treatment of between three hundred and four hundred patients a day, and to accommodate its working-class patients it is intended to keep it open until nine o'clock on three evenings a week. Arrangements have been made with the neighbouring Royal National Orthopaedic Hospital for the treatment of cases which require the help of an orthopaedic surgeon, and the hospital is also undertaking for the present to do all the *x*-ray diagnosis work for the clinic.

In addition to a number of distinguished honorary consulting physicians, the staff consists of five honorary medical visitors (Drs. W. C. S. Copeman, C. B. Heald, F. D. Howitt, B. S. Nisse, and M. B. Ray), the medical superintendent (Dr. A. R. Neligan), and the sister-in-charge (Miss McAllister). Those concerned in the management of the clinic are anxious to make it plain that its services are not limited to insured patients, but that other persons may obtain treatment on the recommendation of their practitioner, also that the clinic is open to both London and provincial patients. It is hoped that it will be the centre of a group of clinics throughout the country, especially in industrial districts. There are between thirty and forty Red Cross clinics in existence, though not specifically devoted to the treatment of rheumatism; two noteworthy ones in London are at Kensington and Hackney, which serve large districts. It is expected that these Red Cross clinics will serve as receiving stations for the central clinic at Regent's Park, and will integrate their work with it. The hope has also been expressed by Sir Arthur Stanley, chairman of the Executive Committee, that this new establishment may be a centre of research on the problem of chronic rheumatism, as well as a place where the industrial invalidity from this cause may be ameliorated.

Opening Ceremony

At the opening ceremony the Queen, who was accompanied by the Duke of York and the Chairman of Council of the British Red Cross Society, received an address in which the origin and purpose of the clinic were described. The address, which was read by Brigadier-General H. B. CHAMPAIN, referred to the substantial assistance which had been received from the friendly and approved societies, and to the fact that the Minister of Health had added the treatment of rheumatism to the insurance benefits for which payment might be made by the societies in respect to their members receiving treatment. The clinic formed part of a national movement to deal with the problem of chronic rheumatism.

Mr. ARTHUR GREENWOOD, Minister of Health, in thanking Her Majesty, said that at least £5,000,000 was paid out each year in health insurance and disablement benefit to people suffering from rheumatism, and adding to that the amount of wages lost each year the cost of the disease annually was at least £17,000,000.

[1] August 24th, 1929, p. 352.

Canada.

The C.M.A. Journal.

THE January issue of the *Canadian Medical Association Journal* opens with a foreword signed by Dr. A. G. Nicholls, who (as already mentioned in these pages) has succeeded Dr. A. D. Blackader in the editorship. This statement of policy declares that the same principles which have moulded the journal in the past and have proved so successful and will continue to shape it in the future. "Stated broadly, it is the desire of the editorial staff to make the journal thoroughly representative of the best in Canadian medicine, and to make that best known beyond our own borders." Two further passages from the same editorial article may well be quoted here.

"The general practitioner of the present day is well trained, alert, and often well read. In these days of rapid transit he can easily and quickly get in touch with medical centres. If he cannot leave his practice for a sufficient length to engage in post-graduate study, the latest in medical thought is brought to his door, or to his next door, by his magazines and post-graduate lecturers. In our opinion the general practitioner can appreciate the best that medical journalism can give him, and is entitled to it. He should hear of any new clinical experience, of any advance in research, of any new discovery in medicine."

"Besides the substance of a journal there are other matters to be considered. For instance, there is its style and language. Without intending to be purists, the editors desire the *Canadian Medical Association Journal* to be couched in pure, simple, and correct English. Some standards must, of course, be followed. Our standards are the *New Oxford Dictionary* and Fowler's *Modern English Usage*. Contributors will understand that when alterations are made in their manuscripts this is not done in any captious spirit, but solely with the desire of bringing their language into conformity with the best accepted English models. Our journal is published in the English language, in a British country; our desire is to make it the exponent of all that is best in Canadian medical thought, to maintain for it a worthy place among the journals of the Empire, and to exemplify in it the best that is in the British tradition."

Liability of Nurses to Tuberculosis.

The incidence of tuberculosis among nurses is the subject of an essay by Dr. E. L. Ross, for which he has been awarded a prize of 250 dollars by the Canadian Tuberculosis Association. This is one of two prizes offered annually by that association for papers recording the results of studies in tuberculosis, either the laboratory or clinical phases. Competition for the prizes, which are open to all sanatorium physicians of less than five years' standing, has not so far been very vigorous, and Dr. D. A. Stewart, president of the association, himself a prolific and stimulating writer, has issued a kind of open letter to all superintendents of sanatoriums in Canada, urging them to induce their staffs to produce more papers on tuberculosis. Advantage, he suggests, should be taken of the long winter months. Dr. Ross states that sixty nurses were admitted to his sanatorium in Manitoba during the past five years; this number is far above the average, and is also more than the proportion of girls of their average age. With very few exceptions these nurses broke down during their training in general hospitals, or during the first year after their graduation, while still on the staffs of general hospitals. This frequency of tuberculous infection can be partly explained, he thinks, by the early age at which nurses begin their training, their previous freedom from contact with the disease, and their being unaccustomed to hard work. He suggests that girls should not be accepted until they are 21, and that there should be better regulation of their hours of work. They should undergo a thorough physical examination at the commencement of their training, and *x*-ray photographs should be taken of their lungs. He also emphasizes the fact that a nurse in a general hospital is too often exposed to chances of infection from patients who may be there for some condition other than tuberculosis, but who at the same time may have open pulmonary disease. In such circumstances the nurse is not advised to take the necessary precautions which are sufficient, apparently, to reduce the incidence of tuberculosis among those in sanatoriums.

The High Cost of Nursing.

The Association of Registered Nurses in the Province of Quebec recently decided to raise the scale of charges for ordinary nursing. The rate, from 1930, is increased from 5 to 6 dollars a day, excluding cost of meals. This step has been taken only after prolonged and careful consideration of the problems associated with modern nursing. Apart from remuneration, committees have also been engaged in studying other economic questions. Is there a growing demand for the partially trained attendant in preference to the fully trained nurse? Does the supply of trained nurses exceed the demand? Should the training of nurses be limited to hospitals containing more than 100 beds, or to those with more than 200 beds? How much didactic and laboratory teaching is required for training a nurse? What requirements should be demanded from candidates? There is little doubt that the expenditure on medical care is becoming so heavy that nursing is being regarded rather critically by the layman, but it can be shown that even with the increased remuneration a nurse's income will still be inadequate, taking into account the unavoidable loss of time in actual nursing, constant overhead expenses, and the risk of frequent breaking down in health. To raise the fee is apparently only a temporary expedient: the real solution of the problem is to provide steady employment, so that fees may be adjusted to a lower level. A day nurse and a night nurse, with their meals, cost 16.50 dollars per full day. It is not surprising, therefore, that there is an increasing demand for partly trained attendants, who, however, are not permitted to nurse in the larger hospitals of the city. In home nursing and during convalescence they often help to solve a difficult problem.

Ontario Medical Association.

The Ontario Medical Association, which was founded in 1880 and now has a membership of 2,000, will hold its jubilee meeting in Toronto on May 27th, 28th, 29th, and 30th of this year, under the presidency of Dr. John Ferguson, associate professor of clinical medicine in the University of Toronto, who is a charter member of the association.

Scotland.

Edinburgh Rheumatic Clinic.

DR. WILLIAM ROBERTSON, medical officer of health for Edinburgh, on the authority of the Public Health Committee, has issued a circular to medical practitioners announcing a system of voluntary notification of rheumatism. The circular also states that it has been agreed to establish a Rheumatic (Supervisory) Clinic, to which those suffering from rheumatism, chorea, growing pains associated with temperature, and acquired cardiac disease may be submitted for examination. The clinic will be held every Wednesday at Spittal Street Dispensary, at 4.30 p.m., and will be supervised in rotation by Dr. Charles McNeil, Dr. Norman Carmichael, and Dr. Lewis Thatcher, visiting physicians to the Royal Hospital for Sick Children. Its objects are: to verify the notified cases referred to the clinic; to grade the patients according to their disability; to keep them under periodic supervision, provided the medical practitioner in charge consents to this; to refer those requiring treatment to their private attendant or to the hospital where they have been previously under treatment; and to estimate the existing facilities for such treatment. The clinic is not expected to undertake treatment. A fee of 2s. 6d. will be paid for each notification, which will include the patient's name, age, address, and the phase of rheumatism.

Edinburgh Royal Medical Society.

The annual dinner of the Royal Medical Society of Edinburgh was held in the Royal College of Surgeons on February 20th, under the presidency of Dr. A. G. G. Melville; the guest of the evening was Dr. J. Haig Ferguson, President of the Royal College of Surgeons. In replying to the toast of "The Imperial Forces," Rear-Admiral Hallett referred to the services which doctors had

rendered to the navy during his lifetime in eliminating Malta fever. No one died from Malta fever to-day. Colonel P. S. Lelean, replying for the army, spoke favourably of the recent appointment of a physical training director in Edinburgh University. In proposing "The Royal Medical Society," Dr. Haig Ferguson said that the Freemasonry of this society had always united its members. Goldsmith, who had joined it in 1752, described a society, which may have been the Royal Medical Society, in the following words: "Happy society, where the members think before they speak, deliver nothing rashly, but convey their thoughts to each other pregnant with meaning and matured by reflection." He advised every medical student to become a member. Dr. A. F. K. Clarkson, in reply, referred to the bicentenary of the society, which would be celebrated in 1937. He thought that everyone who had benefited from the Society should contribute to the bicentenary fund, which would be used for the improvement and preservation of the Society's library. In acknowledging the toast of "The University of Edinburgh," Sir Thomas Holland, the Principal, said that the Royal Medical Society had made great contributions to the success of the Edinburgh Medical Faculty, and the Royal Infirmary had made the science of medicine a living science. Edinburgh had been the foremost school of medicine in the world for two centuries. As Principal he intended to encourage its research work, for which it was already famous.

Cancer Treatment in Glasgow.

A meeting was held in Glasgow on February 19th for the formation of a Ladies' Auxiliary for the Glasgow and West of Scotland Radium Institute. Professor J. H. Teacher, who presided, said that it was generally agreed that radium was a most important treatment for certain types of cancer. The Radium Institute in Glasgow was well equipped and staffed, and was the only institute of the kind which was in full operation. Dr. R. R. Morrison discussed different methods of radium treatment and the difficulties in the manipulation of radium for application to different parts of the body. Dr. F. L. Henderson referred to the use of x rays, and exhibited one of the first x-ray tubes that had been used, having been sent by the discoverer of x rays to the late Dr. John M'Intyre of Glasgow, who was a pioneer in this work. One of the great difficulties of x-ray departments was the expense of keeping x-ray apparatus up to date, for this apparatus probably went out of date every five years. The useful form of radiation treatment that was being done in this country and abroad at the present time was a combination of treatment by x rays and radium. Dr. Edington said that one of the objects in founding the Radium Institute was to form a central depot or department from which radium might be lent to other institutions, and another object was the training of medical men in the handling and use of this very important remedy. A gift of £10,000 from Lady Burrell had enabled them to inaugurate the institute, but it had to be continuously supported; it was for this reason that a Ladies' Auxiliary was being formed.

Glasgow Victoria Infirmary.

The annual meeting of contributors to Glasgow Victoria Infirmary was held on February 19th, with Lord Provost Kelly in the chair. The report showed that the expenditure on the Infirmary, the auxiliary hospital at Philipshill, the Bellahouston Dispensary, and the convalescent home at Largs had amounted last year to £61,559, while the subscribed income had been £27,909. The deficit had had to be met from legacies and special donations. Recent additions to the Infirmary had greatly increased the cost of maintenance, and an appeal was made for larger annual subscriptions and donations. During the year 6,355 patients had been treated in the hospital, of whom 4,569 belonged to Glasgow and 1,783 to other parts of Scotland. Employees' contributions had amounted to £11,533, an increase of £77 on those of the previous year, while contributions received from patients had totalled £1,257, an increase of £37 over the amount from this source in the previous year. Mr. William Gray, chairman of the governors, said that the new auxiliary hospital at Philipshill had been in operation for six months. A block for paying patients had been erected at Langside, and the governors expected this would be ready for occupation in the autumn of the present year. It would be a very important extension of the hospital service, and would be rather an experiment for this country, because other districts had very little experience of paying hospitals. There had been need for paying blocks in London and a few other big towns, but as methods of administration varied considerably the governors had largely to form their own plans. They had decided to make one inclusive fee for all patients, irrespective of the nature of the case, and this fee would include every charge, so that the patient would know exactly to what extent he was financially committed. Should there be a growing demand for this method of treatment, the large general voluntary hospitals would have to consider whether their present activities should be extended, or whether special hospitals should be built to treat only patients of moderate means, who would pay the cost incurred. The most efficient service could undoubtedly be given by a large institution having command of capital to install the most modern equipment. Mr. John Dallas, in referring to the maintenance of voluntary hospitals, said that, if they were insufficiently supported, a rate of about 4d. in the £ would have to be levied.

Glasgow Royal Asylum.

At the annual meeting of contributors to Glasgow Royal Asylum, held on February 20th, Dr. D. K. Henderson, physician-superintendent of the institution, said that during the last few years he had attempted, in his annual reports, to educate the public to recognize the importance of maintaining the mental health of the individual for the welfare of the community. The mental hospital was the last resource when other means of treatment had been exhausted, and the public should think in terms of prevention rather than of cure. This fact had been widely recognized in America by the establishment of psychiatric institutions as centres from which a campaign regarding mental hygiene could be launched. In Scotland, on the other hand, neither public nor private philanthropic enterprises had taken much interest in the problem of mental health, and he pleaded for the establishment of a psychiatric institute in every university town where there was a teaching hospital. Such an establishment, in his opinion, would set a standard for psychiatric work throughout the country, and would act as a training centre for all who were concerned and interested in the problem of mental health. The allied problem of mental deficiency was very large. According to the recent report of the Mental Deficiency Committee, an average of 8.55 per 1,000 of the population in England was definitely mentally defective. This figure was double that reported by the Royal Commission of 1908, and when applied to the whole of England and Wales there appeared to be about 340,000 mentally defective persons. A feasible plan seemed to be to develop the system of colony care; the directors of the asylum had considered many places in this connexion. The days of regarding the mentally ill as "lunatics" had now passed. It was proposed that the institution should be known in future as the Glasgow Royal Mental Hospital.

Central Midwives Board.

The examinations of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, have just concluded with the following results. Out of 97 candidates who appeared for the examination 93 passed. Of the successful candidates 25 were trained at the Royal Maternity Hospital, Glasgow; 25 at the Royal Maternity Hospital, Edinburgh; 2 at the Maternity Hospital, Aberdeen; 4 at the Royal Infirmary, Dundee; 11 at the Elsie Inglis Memorial Hospital, Edinburgh; 4 at Stobhill General Hospital; 3 at Barshaw Hospital, Paisley; 5 at the County Maternity Hospital, Bellshill; and the remainder at various recognized institutions.

A Health Exhibition.

An exhibition of health and hygiene, organized by the medical officer of health, Dr. William Robertson, will be held from March 12th to 29th, in the Waverley Market, Edinburgh. The Public Health Department will exhibit tableaux of its activities, especially with regard to dietetics, and various demonstrations of cookery will be given for the wives of working men. The child welfare

department will show the training of the pre-school child, the use of artificial sunlight, lamps, etc. There will also be exhibits of new houses and gardening, and practically all the departments of the city corporation will be represented.

Sydney Professorship.

Dr. Charles George Lambie, *M.C.*, F.R.C.P.Ed., has been appointed to the Bosch chair of medicine in the University of Sydney. He is 38 years of age, and graduated M.B. at Edinburgh in 1914, and M.D. in 1927, when his thesis was awarded a gold medal. During the war he served in the East as captain in the R.A.M.C. He has been an assistant physician to the Edinburgh Royal Infirmary and lecturer in medicine in the School of Medicine of the Royal Colleges, Edinburgh.

England and Wales.

Cumberland Infirmary.

At the recent meeting of governors of the Cumberland Infirmary the resignation of Dr. H. A. Lediard as surgeon to the Infirmary was accepted with regret. The chairman, Mr. Carr, announced that the governors had elected Dr. Lediard honorary consulting surgeon in recognition of fifty years' distinguished service. Tributes were also paid by the mayor of Carlisle and by Dr. Maclaren, who spoke on behalf of the staff. Mr. Hartley referred to the contributions Dr. Lediard had made to the application and development of modern surgery. When Dr. Lediard began his studies in Edinburgh, he said, epidemics of typhus and typhoid were prevalent, and wards in the old Edinburgh Infirmary had to be set apart for such cases. There was no efficient nursing. The surgical wards were full of sepsis. Dr. Lediard came to Carlisle, having been trained at first hand by the pioneers of antiseptic methods. At the annual meeting of subscribers, on the same date, Dr. Lediard was elected an honorary vice-president.

In moving the adoption of the eighty-ninth annual report and financial statement the chairman alluded to the probable effect of the Local Government Act of 1929. Cumberland Infirmary, he said, desired to retain its independence as a voluntary institution, and its position as such was not likely to be endangered by the new conditions. A rate of a shilling in the pound on poor rate assessment would have to be levied if the expenditure of the Infirmary became a charge upon the rates of the city. He expressed satisfaction with the progress of the building extensions. The new pathological laboratory had been completed, a radium fund instituted, and two new wards would soon be ready to accommodate about forty additional beds. Work in all departments had increased during the year, particularly in out-patients' attendances, which exceeded the figure of 1928 by almost 9,000. Treatment of motor accident patients, however, had incurred a cost of £423, of which only £74 had been recovered. He felt that some system of compulsory insurance should be devised to ensure the recovery at least of costs of maintenance, drugs, dressings, etc., and surgeons and physicians might receive a special fee for their services in this connexion.

Proposed Health Centre at Becontree.

The London County Council, which owns the large housing estate at Becontree, near Ilford, is proposing to erect there a building to accommodate a health centre, together with an out-patient department of the new King George Hospital at Ilford, and provision for certain local health services. When the appeal for the King George Hospital was launched the council agreed to make a contribution of £10,000 towards the capital cost, conditional upon the rights of its tenants at Becontree as regards treatment at the hospital being safeguarded. The hospital will eventually consist of 300 beds; the amount raised up to the present is nearly sufficient for the completion of the first portion, consisting of 150 beds and the administrative offices. It is found, however, that there is need for the provision on the estate itself of a health centre. King George Hospital, though planned at no great distance, will not be actually on the estate. The hospital authorities will be responsible for the running of the building, and will obtain some part of the cost of maintenance from the local authorities (Essex County Council and Dagenham Urban District Council), whose health services will be carried on there. The council proposes to let on long lease to the hospital authorities a suitable site at a nominal rent, and to make a total grant of £6,500 towards the capital cost, which is expected to be, for building, about £7,770, and for equipment, a further £1,080.

The Home Office Industrial Museum.

The Home Office Industrial Museum, which was inaugurated two years ago by the King and Queen, when it was the subject of an article in these columns (December 10th, 1927, p. 1110), has received some interesting additions. A small building has been erected in the yard of the museum to demonstrate the effects of unfavourable atmospheric conditions in workrooms, and the way in which, by inducing air movements and employing different methods of heating, such conditions can be remedied or their effects mitigated. Another section of the museum draws attention to the disastrous effects of certain kinds of stone dusts upon the lungs of workers. Two huts have been installed in which a pneumatically operated stone dressing plant, equipped with a new method of trapping the dust near the cutting tool point, is demonstrated. A method recently installed in some city buildings for deadening the effect of noise by means of a ceiling lined with special padding is shown, and another exhibit illustrates the explosive properties of dusts of common substances, such as flour and starch. A number of the exhibits have a "safety" value. These include various protective devices for use with machinery, such as a new mincing machine so designed that it is impossible for the fingers to be caught in the worm, an interlocking device for lift gates, and an apparatus for holding aerated water siphons when the heads are being polished, so as to prevent the worker from being injured in the event of the bottle bursting. The existence of this museum is perhaps not generally known; it is situated in Horseferry Road, Westminster, is open both morning and afternoon of every weekday, and is well worth a visit by those who are interested in health and safety (and incidentally in labour-saving) in industry.

British Spas Federation.

At the annual meeting of the British Spas Federation, held recently in London, at which representatives of Bath, Buxton, Cheltenham, Droitwich, Harrogate, Leamington Spa, Llandrindod Wells, Trefriw Wells, and Woodhall Spa were present, it was agreed that financial support on a basis of £1 per 1,000 head of population be again given to the Travel Organization of Great Britain and Ireland, a body which undertakes extensive publicity work abroad in order to make the attractions of this country better known to other nations. The hope was expressed that the lead of the Federation would be followed by other resorts. It was reported that an international and national register of spas of the world was in course of preparation under the aegis of the International Society of Medical Hydrology, the intention being to give the medical profession the scientific and relevant data of each spa in such a concise form as would afford an easy method of comparing the values of their waters. Analyses of the mineral waters are to be expressed in standardized terms, and the Federation, in support of this scheme, is instructing its members to arrange that all analyses shall be prepared in the prescribed manner. British spas generally reported an increasing number of visitors for treatment during 1929, and in several instances this increase was about 20 per cent. above the average numbers of the three previous years. English people were beginning to recognize that the spas of this country had generally reduced their charges for treatment, to bring them within the means of the majority of people. British spas had modernized their buildings, and with the use of up-to-date equipment and the giving of treatment by qualified attendants only, they had created a standard of efficiency which was bound to attract visitors. It was announced that a new medical handbook, available only for members of the medical profession, was about to be published, and an invitation to hold the Federation's autumn meeting at Harrogate was accepted.

Correspondence.

MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

SIR,—Since the encouragement which those of us who are responsible for a direct move to obtain representation of Members upon the Council of the Royal College of Surgeons of England have recently met with, we have received promises that should enable us soon to invite from the Members themselves a material expression of their adherence.

On February 14th Professor Hey Groves, in the Hunterian Oration (published in your last issue) referred in generous and valuable terms to our movement. He pointed out that for over thirty years the governing body of the College had been requested to consider the situation, and alluded to the phase of amity and good temper which at last marks the discussion of the question at the annual meeting of Fellows and Members. But he went on to point out that, unless a substantial number of the 18,000 Members record their view that the reform is desired, the Council of the College may well decline to believe that the modern and democratic aspect need be adopted. "The chief thing," said Professor Hey Groves, "which is needed to bring this about quickly is convincing evidence that the change is desired by the great body of the Members."

A circularizing of the Members will shortly take place, and it is earnestly hoped that replies will be received from a substantial number—why should it not be signed by them all? The small sum of £250 is required to defray the cost of the circular. A proportion of this has already been received, but our treasurer, Dr. K. Barrett, 102, Church Street, London, S.W.8, will gladly receive and acknowledge further contributions, which are needed.—I am, etc.,

London, W.1, Feb. 23rd. ERNEST E. WARE.

"PHYSIOLOGICAL DILATATION OF THE HEART."

SIR,—I much regret that my allusion to Dr. K. D. Wilkinson as an uncompromising opponent of the views which I endeavoured to expound should appear to him as incorrect or unfair; but I am glad that it should have provided him with the opportunity for giving wide publicity to the calculations which he thinks must demolish my contentions. The more light we have on the matter the better. But our interesting correspondence left us each unconvinced by the arguments that appealed to the other: and though in his letter in the *Journal* of February 22nd (p. 360) he states that he is in agreement with the majority of my views, he proceeds to demolish the conclusions to which I was led, and ends by "joining issue" with me on the vast and vexed question of "dilatation and the strained heart," which is nowhere alluded to in my paper, on which I have expressed no opinion, and which is quite foreign to the subject of *physiological* dilatation. I confess that I still regard him as an uncompromising though a quite friendly opponent.

To quote my own words, "If I am wrong in these surmises, then there must be some other explanation." But Dr. Wilkinson's explanation fails to satisfy me. He believes in "distension," by which I presume he means something more than "relaxation," but not in "dilatation." The latter is the word which was always used by Starling, and which I adopted; but, in this connexion, the words appear to me to be synonymous. In the case described by me the area of visible and palpable pulsation was stated to be "rather diffuse," yet it was strictly limited to the fourth and fifth interspaces from somewhere near the sternum to "outside the anterior axillary line at the nipple level." Dr. Wilkinson believes that this was caused, not by dilatation, but by a "forcible" impulse which "was conveyed to the whole chest." I do not share this view. How far the area of visible and palpable pulsation may be increased by "conduction" I cannot say, but that it is inherently dependent, in these circumstances, on physiological dilatation I entertain no doubt.

Several other statements in Dr. Wilkinson's letter invite discussion; but space forbids. May I refer to one? The definition of the apex beat—"the furthest left and the furthest down of defined pulsation"—cannot apply where these two points do not coincide, and I do not think that *the point of pulsation felt furthest out is*, in these cases, the true apex, a view which the Harvey film incident referred to in my paper seemed to confirm. At each beat the anatomical apex, which was very obvious, seemed to give a twist, but not to shift much in position, while the enlargement of the heart proceeded progressively above it. I am speaking from memory, but I feel sure this was the case.

I am glad to be able to record that I have received striking encouragement from many distinguished colleagues upholding the views which I endeavoured to expound, and three cases have been reported to me which had puzzled the observers, but which these views would seem to explain. In one of these cases the observer was able to reproduce the phenomenon experimentally. I hope that some occasion may arise when the subject of physiological dilatation and what Sir Thomas Barlow alluded to, in conversation, as "its fringes" may receive adequate discussion. But the time may not yet be ripe.—I am, etc.,

Tunbridge Wells, Feb. 22nd. CLAUDE WILSON.

DISINFECTANTS IN MIDWIFERY.

SIR,—The London County Council has done an important public service in issuing a statement condemning the use of lysol in midwifery. It is a fact known to too few people that the germicidal action of lysol on streptococci is totally inadequate in the dilutions which its caustic properties demand for clinical use.

The statement to which I refer (quoted in the *British Medical Journal* of February 22nd, p. 359) may be misapprehended in that it implies a virtue in certain brands of lysol which is not possessed by others. I had occasion to test the germicidal properties of several brands of lysol about two years ago, and the results were surprisingly uniform. Two English, two American, and one German brand were all incapable of killing *Streptococcus pyogenes* in dilutions commonly employed in midwifery, even under favourable conditions. That there may be brands more unsatisfactory than these is possible, but I say without hesitation that there is no lysol the use of which in midwifery can be anything but a delusion and a danger. Lysol has an adequate germicidal action only on Gram-negative bacteria, and its use should be restricted to such purposes as the disinfection of excreta and utensils.

It is at least arguable that much puerperal sepsis as it occurs to-day could be prevented by the use of an efficient antiseptic. I suggest that careful laboratory tests of the efficiency against *S. pyogenes* of all antiseptics suitable in other respects for obstetric use are an urgent necessity. There are at least two coal-tar antiseptics the action of which on streptococci is far superior to that of lysol; it may be that mercury salts, as suggested by Dr. Gutch in your issue of February 22nd, are better still.

The choice of an antiseptic, whether in surgery or in obstetrics, should surely not be a matter of personal taste, like choosing a wallpaper; it is a matter of facts and figures. The best agent is that which will destroy the particular organism against which it is to be used in the highest dilution relative to the minimum tolerated by the tissues, in the shortest time, under conditions simulating as far as possible those of its practical employment. All other considerations are secondary to this if its use is designed to avert a serious danger.

This is a neglected subject: information on it is scattered and scanty, and some is probably not to be found at all. If full data were available as to the action on different organisms of all the antiseptics in common use, lysol might not be the only idol to come crashing to the ground.—I am, etc.,

Harpenden, Herts, Feb. 24th. LAWRENCE P. GARROD.

RECTAL EXAMINATION DURING LABOUR.

SIR,—Everything written by Dame Louise McIlroy on her own subject deserves attention, but with part of her address reported in the *Journal* of February 15th (p. 269) I *hope many will disagree. She says, quite rightly,* that vaginal examination in normal cases ought to be unnecessary, but in the next paragraph goes on to say that rectal examination is also to be discouraged. Surely, except in hospital perhaps, or where the doctor is prepared to stay in the house the whole time, pelvic examination is a necessity. How else can he judge, with any approach to accuracy, when to go away (and for how long) and when to stay? When to give sedatives and when pituitrin? And so on.

A good rule is—"Never give reasons." But since Dame Louise has given hers I hope she will not mind if I attempt to deal with them in the light of several years' experience.

1. "I think it is an objectionable method of examination" and "the patients dislike it." Ought either of these to carry any weight whatever as compared with the importance of avoiding infection? Moreover, I find that the patients do not mind at all; besides, it is easy to explain.

2. "For a period of eighteen months we tried rectal examinations. The sepsis rate was increased rather than diminished." I should have suggested that her hospital had already attained the irreducible minimum if Dame Louise herself had not questioned whether every student and midwife could be trusted to see that the gloves are *sterilized after rectal examination. (I had always thought* that the ladies were more conscientious than their brothers, rather than less!) If students are allowed to make neither vaginal nor rectal examinations, how can they become efficient? Dr. Claye reported in the *Journal* of July 20th, 1929 (p. 90), that in his hospital pyrexia occurred approximately half as often in those examined per rectum as in those examined per vaginam. My own experience of the last nine years leaves me in no doubt that his figures do not in the least exaggerate.

3. "It causes pain if the head is low or if haemorrhoids or oedema are present. If the rectum has cracks or sores the risk is increased. The finger in the rectum tends to push up the posterior lower vaginal wall and infect the cervix." Surely these objections are *wholly hypothetical* and of no real importance? If the vaginal wall may infect the cervix, how much more the vaginal finger?

4. "It is difficult to diagnose the degree of dilatation of the cervix." With very little practice it is surprisingly easy in the majority of cases. My nurses have learnt it without much difficulty.

5. "It is difficult to diagnose . . . the presenting part if a caput is present, and also to feel a prolapsed cord if pulseless." Normally ante-natal work or abdominal examination has revealed the presentation—and, any way, even per vaginam the sutures are seldom helpful to most of us in really doubtful cases. If the cord is already pulseless, does it matter much whether it is discovered early or late? Besides, does the cord prolapse often enough in vertex presentations to make this a serious consideration?

My practice is to examine per rectum with a finger-stall. Should I be in serious doubt, and if it is important to know at once, I wash up and put on my gloves to examine per vaginam. In my first year I delivered seven out of every ten normal cases—including a large proportion of primiparae—without vaginal examination. Last year, an exceptionally good one, the proportion was nine out of ten of *all* my cases. In my view the rectal method is the one useful and universally applicable advance in the practice of aseptic midwifery which has been made in recent years; and I would beg Professor McIlroy, casting aside her personal predilections, to go to her own labour wards, and, in a truly scientific spirit, personally to try out this method on a considerable sequence of cases.

If the method is the good and sound one which we believe it to be, as soon as its practice becomes general the morbidity rate of normal cases will be reduced to that of "B.B.A.'s" and the investigation of the causes of puerperal infection will be correspondingly simplified.—I am, etc.,

London, S.E., Feb. 17th. W. M. PENNY.

QUININE IN NORMAL LABOUR.

SIR,—Induction of labour is a difficult problem for the general practitioner. He has the choice between medical and surgical induction. Naturally he prefers the medical induction to the surgical, as there is no necessity for an anaesthetic nor is there risk of septic infection.

The *method that I* used to employ was as follows. One ounce of castor oil was given, followed by a hot bath for ten to fifteen minutes; a tight binder was then applied, and a simple enema given three hours after the oil. One hour later 10 grains of quinine was given with a hot drink, and repeated every two hours for three doses. This was *frequently successful,* producing a tempestuous and quick labour, but on several occasions the baby was born dead, the cord was pulseless, and the baby very cyanosed. Consequently I gave up this method of induction and employed the method of inserting two or three No. 12 bougies between the membranes and the uterus.

The babies were well nourished and healthy looking. I performed a necropsy on one of them, but found no pathological explanation. On two occasions the Wassermann test gave negative results. In each case the mothers subsequently gave birth to healthy live babies without quinine induction.

I should like to know whether others have had similar experiences with this quinine induction, or whether these few cases were accidental.—I am, etc.,

Northwood, Feb. 21st. D. D. RITCHIE.

ANAESTHETICS IN MIDWIFERY.

SIR,—Can anything be done to stem the tide of misdirected enthusiasm in matters medical, of which the proposal recently ventilated in the press to found a fund for the provision of anaesthetics for mothers is the latest example? Anyone reading this appeal would be led to think that anaesthetics in childbirth are denied to the poorest, and can only be obtained by those who can afford to pay for them, whereas, under the existing machinery of the Midwives Act, the very poorest mother can have the services, when necessary, of an anaesthetist, in addition to the doctor in attendance, at her own home without any expense, and should she be in any hospital or institution there are always medical men in charge or certainly available. Therefore the implication that a fund is needed for "the provision of anaesthetics for mothers in institutions and hospitals" is false. To suggest that, on the ground of expense, the blessings of an anaesthetic are unavailable for the poor mother is not in accordance with fact or practice. If, in the opinion of the medical man attending any woman in labour, the necessity for an anaesthetic arises, then it is available and given to rich and poor alike, the question of expense in the latter case not having to be taken into consideration, owing to the provisions under the Midwives Act. Anaesthesia properly used at the proper time is indeed a blessing, but unless there are indications for its use in any individual case it may do positive harm, and the discretion for its use must be left to the medical attendant for both rich and poor. Every mother has the right to the services of qualified help, paid for by the State, when her circumstances are needy, and such a fund as that outlined is therefore unnecessary.—I am, etc.,

Lichfield, Feb. 16th. F. M. ROWLAND, M.D.

TOXIC EFFECTS OF METHYL CHLORIDE GAS.

SIR,—Dr. Buckley Sharp's account, in your issue of February 22nd (p. 336), of two attacks of poisoning due to the escape of this gas from leaks in refrigerators interested me, as on the previous night, at the Institute of Chemistry, I referred to twenty-nine cases, with ten deaths, from the same cause in Chicago in 1928. I had it down that similar cases might be reported at any time in this country.

A detailed account of the Chicago cases is given in the *Journal of the American Medical Association* of August 3rd, 1929.[1] The outstanding symptoms found were drowsiness, mental confusion, coma, vomiting, and, in severe cases, convulsions. Temperature, pulse, and respiratory rate

[1] "Methyl Chloride Poisoning from Domestic Refrigerators." By Drs. A. H. Kegel, W. D. McNally, and A. S. Pope.

were all increased, and anuria usually occurred. The sequels noted were suggestive of injury to nerve cells, followed by progressive degeneration. In nearly all of the cases a tentative diagnosis of food poisoning had been given.

Some risk of fire and explosion accompanies the use of methyl chloride, and, as a suggestion was made to use a non-inflammable mixture by employing the known extinctive properties of the corresponding methyl and ethyl bromides, some very useful animal experiments were carried out by the highly skilled staff in the Bureau of Mines of the National Research Council.[1] Briefly, for short exposures of guinea-pigs to high concentrations, ethyl chloride was found to be the least, and methyl bromide the most, toxic of the four compounds. Methyl chloride and ethyl bromide occupy intermediate positions.

The maximum amount for prolonged exposure of animals to methyl chloride they put down as from 5 to 10 parts per 10,000 of air. A distinct delayed effect of exposure was observed with methyl bromide and methyl chloride, this usually occurring after exposure to moderately low concentrations.—I am, etc.,

London, S.W.1, Feb. 25th. T. M. LEGGE.

SIR,—I was interested to read Dr. B. Buckley Sharp's notes of two cases of poisoning by methyl chloride gas in people working with refrigeration plants. In June, 1927, I was called to attend a case which seems to support his conclusions.

A man, aged 35, had had to work in the cellar of an hotel in Carlisle fixing a refrigerating plant. Normally he would not have had much to do with the actual installation, but, some mechanical fault having occurred, it was necessary for him to attend to it himself. The fault caused some escape of gas, and he was working in the confined atmosphere for several hours. On ceasing work he felt giddy and slightly sick, but drove his car back to this city—a distance of sixty miles—having to stop twice owing to attacks of vomiting. I saw him shortly after his arrival, when he complained of vomiting, giddiness, and diarrhœa, although the diarrhœa was not very severe. His pulse was 110, respirations 27 per minute, and he felt faint. He was slightly cyanosed, and the apex beat was just outside the mid-clavicular line. On auscultation there was a soft blowing systolic murmur at the apex, but in other areas the heart sounds were not easily heard. The lungs showed no abnormal signs, nor did any of the abdominal viscera.

The diarrhœa had practically ceased next day, and the cyanosis had gone, but he was still giddy, and vomited for another two days. After the fifth day he seemed to have lost all his symptoms, the apex beat was inside the mid-clavicular line, and the heart sounds were normal, but he stated that he felt weak and shaken, as if he had had an acute illness.

I saw him for the last time on the tenth day after the exposure, when he stated that he felt much better. He returned to work the next day.

Four and a half months later I saw him again, when he was suffering from an acute pleurisy. He then stated that he had kept quite well in the meantime, and had not had any occasion to be in close contact with methyl chloride gas.

At the time I could not find any reference to cases of poisoning by methyl chloride gas, and, on reading of the two cases reported by Dr. Buckley Sharp, I thought that notes of a third case might prove of interest. One point in this case—the cardiac dilatation, with slight cyanosis, which was not present in Dr. Sharp's cases—I took to be due to the strain of travelling sixty miles in a car, the exertion of driving having caused the overstretching of a poisoned myocardium.—I am, etc.,

H. BRENTON PORTEOUS, M.B., Ch.B.

Newcastle-on-Tyne, Feb. 22nd.

VISUALIZATION OF THE INTRAHEPATIC DUCTS.

SIR,—In the *British Medical Journal* of February 15th (p. 279) Dr. C. J. Fuller reports a case of visualization of the intrahepatic ducts after an opaque meal had been given to a patient who was thought to have a cholecystocolic fistula. He states that he has been unable to find records of any similar case.

In the *Guy's Hospital Reports* for January, 1929, I reported with Dr. P. J. Briggs two cases of "visualization of the bile ducts after an opaque meal." In the first case the barium only entered the dilated common duct for a short distance, and was there obstructed by the presence of a large single calculus. In the second case the intrahepatic ducts were clearly seen.

The condition responsible for the picture in the second case differed from that reported by Dr. Fuller. Four years previously the patient had a growth of the splenic flexure excised, together with a portion of the greater curvature of the stomach, to which it was adherent. Four years later epigastric pain associated with copious vomiting commenced. The *x* rays revealed obstruction just distal to the duodeno-jejunal flexure with great dilatation of the duodenum. A small sac situated above and to the outer side of the duodenal bulb was seen to fill. A radiogram taken when the duodenal distension and oscillation were at their height gave a beautiful picture of the branching intrahepatic ducts filled with barium, in addition to the small sac which had been visible on the screen.

At the subsequent operation a growth was found involving the greater curvature of the stomach, the jejunum, the spleen, and the pancreas. The jejunum was infiltrated in its whole circumference; this portion was freed from the main mass and resected, and an end-to-end anastomosis performed. The gall-bladder was extremely small and embedded in fat. The patient survived for a year, and was relieved of the symptoms caused by the small intestine obstruction.

In this case the opaque meal ascended the common bile duct and entered both the gall-bladder and intrahepatic ducts as a result of the enormously increased intraduodenal pressure produced by the obstruction.—I am, etc.,

New Lodge Clinic, Feb. 17th. JOHN F. VENABLES.

THE ETIOLOGY OF DENTAL CARIES.

SIR,—In the article on Mrs. Mellanby's work which appeared in your issue of February 15th (p. 292) you state as her main conclusion that

"the minute structure of the developing tooth and the reaction of the developed tooth to caries are influenced by the chemical nature of dietetic ingredients, which, after being digested and absorbed, are carried in the blood stream to the tissues of the body, and thus to the teeth."

A little analysis of a few well-known facts shows that this theory fails to throw any light on the incidence of caries as revealed by statistical examination of the teeth in civilized communities.

Let me refer to a few of the facts which the reader may easily be able to verify. In looking into the mouth of a civilized being still possessed of a fair number of teeth, it will very generally be found that the lower incisor teeth are all free from caries, while the molars are carious, filled, or lost as the result of the disease. It is well within the mark to say that the molar teeth succumb to caries twenty-five times more frequently than do the lower incisors. How can we account for this? Are we to believe that the "dietetic ingredients" after being digested and absorbed affect the molars, though these same ingredients in the same individual do not similarly affect the incisors? It may be said that the times of calcification are different, but the dietetic ingredients in civilized diets are fairly constant, and with regard to the first molars the time of calcification of the crown is approximately the same as that of the lower incisors. Nevertheless, these molars become carious nearly forty times more frequently than the lower incisors. It may further be pointed out that the lower incisors are formed approximately at the time when rickets is most likely to be present (6th month to 2½ years), whereas the crown of the second molar is calcified after this period (4th to 8th year), and the third molar is calcified after the period of liability to rickets is long past (8th to 12th year). It would thus appear that vitamin D or any other dietetic ingredient, after absorption, does not account for the incidence of caries in the mouth. Of course it is easy to explain the relative frequency of caries in different teeth on what you refer to as the "hitherto generally prevailing view that the production of dental caries depends almost exclusively on conditions external to the teeth," for, otherwise, no doubt, such view would never have prevailed.

[1] "Physiological Response Attending Exposure to Vapours of Methyl Bromide, Methyl Chloride, Ethyl Bromide, and Ethyl Chloride." By R. R. Sayers, W. P. Yant, B. G. N. Thomas, and L. B. Berger. *Public Health Bulletin*, No. 185. 1929.

Let me refer now to the quotation given from the introduction to Mrs. Mellanby's experimental study.

"It is well known that some people with neglected mouths have teeth free from caries, whereas others who take great care in matters of oral hygiene have extensive caries. In fact, the most rigid adherence to the commonly accepted rules of dental hygiene constitutes no safeguard against a dental disease."

I, at least, have long since noted that the "commonly accepted rules of dental hygiene" were of but little value in preventing caries; in fact, I often noted that the greater the care, the worse the teeth. But, unfortunately, it invariably turned out to be misdirected care. To put reliance on a toothbrush and antiseptics after eating viscid, fermentable carbohydrates which clog up the crevices of the teeth and between them is only courting trouble. Neglected mouths and dental mal-hygiene, moreover, do not necessarily predispose to caries. The unhygienic conditions resulting from neglect may indeed be rather antagonistic to the onset of caries, for there are two types of oral mal-hygiene, one of which leads to the formation of acid from carbohydrates, and the other, from proteid matter, to an alkaline reaction often associated with the deposit of tartar, pyorrhoea, and brownish stains on the enamel. This latter type of oral mal-hygiene is aggressively conspicuous, but it is not directly at least, and for obvious reasons, conducive to caries.

If research workers and medical men generally would turn their attention to considerations of the physiology of oral hygiene—to conditions external to the teeth—and accept what is, or ought now to be, definitely known—namely, that the degree of calcification or quality of the tooth has nothing whatever to do with the production of the acid which initiates caries in the enamel—then the evil results of widespread misdirected care would be averted.

May I, in conclusion, say that I am not unmindful of preventing any conditions which might result in the formation of hypoplastic teeth, and thereby possibly predispose them to caries as the result of carbohydrate stasis? Further reference to this is, however, unnecessary here, as hypoplasia practically always seems to result from febrile diseases, syphilis, or derangements in digestion, and rarely, if ever, from lack of a sufficiency of vitamin D, when hygienic conditions are attended to.—I am, etc.,

London, W.1, Feb. 16th. J. SIM WALLACE.

ANAESTHESIA FOR SHORT OPERATIONS ON CHILDREN.

SIR,—In his letter in the *Journal* of February 1st (p. 217), Dr. H. Sington asserted that "guillotines at the Hospital for Sick Children, Great Ormond Street, were relegated to the museum before this method of administering ethyl chloride came into general use." This assertion is doubtless true so far as it concerns that hospital, and was probably due to the fact that one or more surgeons there elected to use another method, but "it would be unwise," to quote the words of Dr. Sington's letter, "to allow to go unchallenged" such a statement, in case it led to some misconception in the minds of others as to the merits of the guillotine operation and those of tonsillar dissection. Had Dr. Sington added that the men who were unable to use a guillotine and who persisted in using it should also be relegated to the museum, one would have agreed with his otherwise ambiguous statement. Very many experienced laryngologists use the guillotine, or some modification of the Beck tonsillectome (snare), which is employed in the same way as the guillotine, and are able to show as good results, such as a smooth clean wound bed without injury to the underlying structures, the after-appearance of the fauces, and, of course, a complete removal of the tonsil with its capsule (tonsillar layer of the pharyngeal fascia, and really an artefact), as those obtained by any other known methods.

The method of removal or enucleation of tonsils by the guillotine was conceived and introduced by Mr. Samuel S. Whillis in the throat and ear department of the Royal Victoria Infirmary, Newcastle-upon-Tyne, in 1910, and its technique was published in the *Journal* (1911, vol. ii, p. 1402). It still stands as the accepted best guillotine operation. Small and large, buried or submerged, and prominent tonsils lend themselves alike to easy and complete extirpation. A certain (small in the year's work) proportion of tonsils, bound down and embedded in dense capsular adhesions, and scarring of the bed due to recurrent attacks of peritonsillitis, etc., must of necessity be dissected out. One has seen the results of "bungling" with the guillotine, such as incomplete removal, or laceration of the anterior pillar and soft palate, and there are yet many operators who attempt to employ the Whillis method with a sharpened blade, which, of course, is asking for trouble. This is simply due to ignorance and failure to take an opportunity of seeing and thoroughly learning the proper use of the instrument.

The same strictures apply exactly to dissection, which in the hands of an incompetent operator will result in bruising and laceration of the layer of tissue containing the vessels and muscle bed, causing much haemorrhage at the time, delayed healing of the wound, and prolonged discomfort to the patient, together with the prospect of a mass of granulations and scar tissue forming in the fossa, followed by actual keloid growth.

Let us therefore boil down the argument to this, that every young surgeon desirous of including the removal of tonsils in his practice should first attend a post-graduate course at a university clinic, where he can see the one or the other method properly carried out and taught. He can afterwards decide which method will suit his own particular *flair*—if he indeed possesses this inestimable and somewhat instinctive quality in a surgeon. One repeatedly hears the remark, "Oh, anyone can take tonsils out," but it is the patient, unfortunately, who awakens to appreciate this delusion.—I am, etc.,

February 21st. W. FRANK WILSON,
Honorary Assistant, Throat and Ear Department, Royal Victoria Infirmary, Newcastle-upon-Tyne.

AN ALTERNATIVE TO THORACOPLASTY.

SIR,—The following is an account of an idea which I have had in mind for some time for an alternative operation to thoracoplasty. As we have no operating theatre here I am unable to perform the operation myself, and I am hoping that you will publish this so that others may try it. It was originally devised for cases of single pathological pneumothorax without effusion, and in which the other lung is free from disease. After the initial shock of the pneumothorax has passed, and preferably when the collapse has become complete, or nearly so, would appear to be the best time for operation.

For a left pneumothorax the precedure is as follows: The surgeon stands on the right side of the patient and makes a left rectus incision of considerable length, starting just below the diaphragm and continuing downwards as far as may be necessary. The rectus muscle is deflected and not cut. The posterior wall of the sheath of the rectus muscle is divided, but the parietal peritoneum must be left intact. The surgeon then introduces the right hand and separates the liver from the undersurface of the diaphragm and makes a horizontal incision in the diaphragm, keeping to the outer half and carefully avoiding injury to the pleura. A retractor is inserted into this incision and is held vertically. The right hand is now passed through the diaphragm and the pleura (diaphragmatic and parietal) is carefully stripped from diaphragm and chest wall respectively. The parietal pleura is now placed in apposition to the visceral pleura. The incision in the diaphragm is next repaired and the abdominal wound is dealt with in the usual way. It is necessary to leave the left side of the thorax open to atmospheric pressure in order to maintain good collapse. I think removal of a piece of intercostal muscle without interference with ribs should suffice if the wound is carefully kept open. Later on, when disease of the lung is considered to be arrested, this wound could be allowed to heal. In right-sided pneumothorax the surgeon would, of course, stand on the left side of the patient and would perform the pleura stripping with the left hand.

Ether is contraindicated, as most of the cases are tuberculous in origin, and I think oxygen should be used as the patient has only one lung. If sufficiently deep and prolonged anaesthesia is possible with gas and oxygen this would seem to be ideal; if not, chloroform and oxygen should be satisfactory.

It is practically certain that the two layers of pleura will become adherent and so seal the pathological perforation and prevent further mischief. If pleural effusion is present it should be removed by an assistant in the usual way before the pleura is stripped. If the lung is really collapsed before the operation is started shock should be a very small factor, and in any case it should be much less than that caused by thoracoplasty.—I am, etc.,

B. LAYTON LLOYD,
Medical Superintendent, The Mount Sanatorium, Bishopstoke, Hants.

February 10th.

"TENNIS ELBOW."

SIR,—The discussion of this subject has led us into many interesting pathological by-ways, and has indeed justified your editorial remarks as to the obscurity of tennis elbow. It might have been hoped that the controversy would centre around the cause and cure of the condition rather than around vague pathological surmises which, even when sponsored by eminent surgeons, are likely to remain merely surmises in the absence of visual proof.

It would seem that there are many varieties of tennis elbow—or is it, as has been suggested, that there are many observers? I fancy the latter must be the case, for all the examples which I have seen have been remarkably similar in symptoms. They have all had pain in the region of the elbow-joint, and this pain is of two kinds; there is a dull ache which is more or less always present, and there is the sharp spasm of agony which only comes on when some movement is performed; the two forms of pain are also met with in other muscular affections, such as lumbago, for instance. The dull ache is localized around the insertion of the extensors and supinators into the external condyle of the humerus and the bony ridge running up from it to merge into the shaft of the bone. The spasmodic pain is not so localized, and may be felt anywhere around the joint or in the forearm.

Among the several comments of your correspondents on my letter on this subject published on December 28th, 1929, it is disappointing that none referred to my theory as to the cause of tennis elbow—namely, that it is due to the prolonged act of grasping an instrument of any sort—for many of my cases were due to the use of such diverse objects as a wood-saw, a weeding tool, a hammer, and an oar.

My only comment on the pathology of tennis elbow is this—that though we all have lumbar muscles we do not all get lumbago.—I am, etc.,

W. H. EDGAR,
Surgeon Commander R.N.

H.M.S. *St. Vincent*, Feb. 16th.

*** This correspondence is now closed.

DISPOSAL OF THE DEAD.

SIR,—We doctors know that there is considerable difficulty in getting sufficient suitable material for our anatomical schools. Is it not time that some of us, at all events when we should not offend the sentimental susceptibilities of those we leave behind, left our own corpora for such purpose? If, after the catastrophic event of death, our egos know what is going on here, is there really anything unpleasant in the thought that light-hearted students will be gathered round? Is it not rather a pleasing thought that some discovery may be made which will benefit mankind or, at least, that we are making medical study easier? The cremated ashes could, of course, be collected and buried later. I am not advocating what I do not suggest for myself, and have left instructions in my will making such an offer to the Oxford Medical School.—I am, etc.,

RICHARD WHITTINGTON.

Hove, Feb. 16th.

Medico-Legal.

ACTION AGAINST A HOSPITAL.

LAVELLE *v.* GLASGOW ROYAL INFIRMARY.

ON November 26th, 1929, in the Second Division of the Court of Session at Edinburgh (Lords Ormidale, Hunter, and Anderson), an action raised by Mrs. Mary Anderson or Lavelle in the Sheriff Court at Glasgow against the Glasgow Royal Infirmary for damages of £500 for personal injury was dismissed.

In this action the pursuer alleged, *inter alia*, that while she was being treated for neuritis at the Infirmary in December, 1928, she was injured by over-exposure to ultra-violet rays through the negligence of a nurse employed by the defenders, and for whose carelessness they were responsible. The defenders maintained that the administration of ray treatment by a nurse, acting under the instructions of an infirmary doctor, was not a "purely ministerial or administrative duty," and that they were not responsible for the exercise of her professional care and skill.

In giving his judgement Lord Ormidale said[1]:

"The infirmary is not a statutory body, but a voluntary hospital open to all and sundry who elect to seek its aid, and the limits of legal responsibility attaching to the governing body of such an institution are confined to the due and careful selection by them of a competent staff and the supply of fit and proper apparatus and appliances, 'and do not'—I here quote from the opinion of Lord Dundas in *Foote* v. *Directors of Greenock Hospital* (1912, S.C., p. 72)—'extend to the supervision by them of the professional actings of members of the staff, or to any sort of guarantee that these will be performed with skill and care in any given case.' . . . It is true that the case of *Foote* had to do with alleged maltreatment at the hands of a surgeon or doctor but the case of *Hillyer* v. *Governors of St. Bartholomew's Hospital* (1909, 2 K.B., 820) was approved and followed . . . and it was held that the nurses and other attendants assisting at an operation cease for the time being to be the servants of the authority inasmuch as they take their orders during that period from the operating surgeon alone and not from the hospital authorities. The law of *Hillyer's* case, in my opinion, applies to the present case. I am unable to hold that any material distinction can be drawn between the position of a nurse in relation to a surgeon performing an operation and that of a nurse in relation to a doctor charged with the curative treatment of a patient by ultra-violet rays. It is to the directions of the latter that the nurse is bound to conform, and it is her professional skill that is called in aid. . . There was no averment that the defenders had failed to exercise due care in the selection of their nurses."

Lords Hunter and Anderson also delivered judgements dismissing the appeal.

RECOVERY OF PROFESSIONAL FEES.

ON February 18th, at the West London County Court, Judge Hargreaves gave judgement, reserved from the last hearing on February 3rd, for Dr. Murray Leslie of Knightsbridge, for £22 11s. 6d. in a claim against Mr Charles Taylor, described as managing director and proprietor of the Basil Street Hotel, Knightsbridge, for £53 as balance due for professional services. Five guineas were deducted in respect of attendances, and the claim for professional visits paid to employees of the defendant was not allowed.

According to the plaintiff, a difficult and dangerous operation had been performed on the defendant, who had left a nursing home after three weeks against his orders. Had the defendant died in such circumstances the plaintiff would have been liable to a charge of manslaughter in addition to losing his professional reputation. The defendant, in evidence, alleged that Dr. Leslie was called in without his knowledge or authority, and that the value of his services was considerably overrated.

Judge Hargreaves said that the difficult point in the case was the question of attendances made by the plaintiff after relations between the parties had ceased to be good. Speaking generally, the qualified evidence was to the effect that the operation had been a serious one, not so much on account of the operation itself, but on account of the general health of the defendant. While expressing the desire that the plaintiff should not call so frequently, the defendant did not terminate the contract, but

[1] *Scots Law Times*, January 11th, 1930.

said he was willing to risk the consequences of reduced attendances.

"It must be for the doctor to decide how often he ought to see a patient. The fact that these two did not personally 'get on,' and the fact that Mr. Taylor did not like Dr. Leslie attending him so often, does not really come into the matter so long as the relationship of the patient and the doctor continues. It was not the doctor who chose the patient, but the patient who chose the doctor. To my mind the expression used by Mr. Taylor on March 7th after the operation goes so far as to make clear that he was willing to take the risk of fewer attendances. The doctor could then, to cover himself, have written a letter to say that the risk of less frequent attendance must be borne by the patient. I have come to the conclusion that after March 7th attendances might have been fewer than they were."

The Services.

DEATHS IN THE SERVICES.

Surgeon Lieut. Commander Francis Woora, R.N. (ret.), died, after a long illness, at Chelstow Cottage, Torquay, on January 29th. He was educated at St. Mary's and at the London Hospital, and took the Edinburgh double qualification in 1882. Entering the navy in the same year, he became staff surgeon on August 28th, 1894, and retired on February 19th, 1895. He had since held the post of Admiralty recruiting officer and surgeon and agent at Torquay, and was on the list of emergency officers, liable to recall to duty, with the rank of surgeon lieutenant commander.

Surg. Lieut. Commander Archibald Primrose Anderson-Stuart, R.N., died at Culross, Deal, on February 16th, aged 34. He was the eldest son of the late Sir Thomas Anderson-Stuart of Sydney, and was educated in the University of that city, where he graduated as M.B. and Ch.B. in 1921. He entered the navy as surgeon lieutenant on June 15th, 1923, and was promoted to surgeon lieutenant commander on June 15th, 1929. He first served in H.M.S. *Southampton*, the flagship of Admiral Sir Herbert Richmond in the East Indies; in December, 1925, he was appointed to the Royal Marine Infirmary, Deal, and in September, 1928, to H.M.S. *Benbow* in the Atlantic Fleet, and subsequently to H.M.S. *Caradoc* on the West Indian Station.

Lieut.-Colonel Ernest Shaw Clark, R.A.M.C. (ret.), of Shalimar, Cuckfield, Sussex, died in Queen Alexandra's Military Hospital, Millbank, on February 15th, aged 64. He was born on September 24th, 1865, and was educated at Edinburgh, where he graduated as M.B. and C.M. in 1889. Entering the R.A.M.C. as surgeon lieutenant on January 29th, 1894, he became lieutenant-colonel in the long war promotion list of March 1st, 1915, and retired on September 21st, 1920. He served on the North-West Frontier of India in the Mohmand campaign of 1898, receiving the frontier medal with a clasp, and also in the great war of 1914-18.

Lieut.-Colonel George Coutts, R.A.M.C. (ret.), died at Golders Green on January 18th, aged 75. He was born on November 8th, 1854, and was educated at Aberdeen, where he graduated, with honours, as M.B. and C.M. in 1879. Entering the army as surgeon on February 5th, 1881, he became lieutenant-colonel after twenty years' service, and retired on February 5th, 1908. After retirement he was employed for some time at Chichester. He served in the Chitral campaign of 1895, with the relief force, when he was mentioned in dispatches in the *London Gazette* of November 15th, 1895, and received the frontier medal with a clasp; also in the South African war, in 1899-1901, when he took part in the advance on Kimberley, including the action at Magersfontein, and in operations in the Transvaal and the Orange River Colony, including the actions at Lindley, Bethlehem, and Wittebergen, and received the Queen's medal with three clasps.

Lieut.-Colonel Percival Davidson, C.M.G., D.S.O., R.A.M.C. (ret.), died suddenly in Switzerland on January 28th, aged 55. He was born on April 16th, 1874, the son of the late Percival Davidson of Newcastle-on-Tyne, and was educated at the medical school of that city, graduating M.B. and B.S. of Durham University in 1895. After filling the posts of house-physician and house-surgeon at the Royal Infirmary, Newcastle, he went to South Africa as a captain in the 5th Battalion of Imperial Yeomanry, and served in operations in the Transvaal, Orange River Colony, and Cape Colony; he was mentioned in dispatches in the *London Gazette* of September 10th, 1901, and received the Queen's medal with four clasps, the D.S.O. in 1900, and the Freedom of the City of Newcastle-on-Tyne in 1901. After serving as a civil surgeon for a year and a half, he took a commission as lieutenant in the R.A.M.C. on September 1st, 1902, attained the rank of major on June 1st, 1914, got a brevet as lieutenant-colonel on June 2nd, 1918, and became substantive lieutenant-colonel on June 21st, 1924, retiring on April 16th, 1929. He served throughout the war of 1914-18, when he was A.D.M.S. in the First Army and at General Headquarters, was thrice mentioned in dispatches, in the *London Gazette* of June 22nd, 1915, January 1st, 1916, and May 25th, 1918, received a brevet as lieutenant-colonel, and the C.M.G. as well as the Portuguese Order of the Aviz.

Lieut.-Colonel James Macartney, R.A.M.C. (ret.), died at Brighton on January 27th, aged 88. He was born in Dublin on January 26th, 1842, and graduated as M.D. in the Queen's University, Ireland, in 1865. Entering the army as assistant surgeon on October 2nd, 1866, he attained the rank of brigade surgeon lieutenant-colonel on December 15th, 1892, went on half pay on September 8th, 1894, was restored to full pay on November 12th, 1895, and retired on January 26th, 1897. After retirement he was employed for some time at Canterbury. He served in the South African war of 1877-78, in the Kaffir campaign, was mentioned in dispatches in the *London Gazette* of February 26th, 1878, and received the medal with a clasp. In the old regimental days he served in the Rifle Brigade.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

PROFESSOR H. R. DEAN, M.D., Master of Trinity Hall, has been appointed to represent the University at the jubilee of the foundation of the Victoria University of Manchester and the eightieth anniversary of Owens College on May 23rd.

Dr. R. Williamson has been appointed University demonstrator in pathology for three years.

At a congregation held on February 21st the following medical degrees were conferred:

M.D.—N. E. Chadwick, J. A. Struthers.
M.B., B.CHIR.—J. F. V. Lart, T. R. Stevens.
M.B.—J. H. L. Easton.
B.CHIR.—B. Wright.

UNIVERSITY OF LONDON.

A COURSE of two lectures on the growth and developmental mechanics of bone will be given at University College, Gower Street, W.C.1, by Dr. J. C. Brash, Professor of Anatomy and Dean of the Faculty of Medicine in the University of Birmingham, on March 11th and 13th at 5 p.m. The chair at the first lecture will be taken by Professor G. Elliot Smith. Admission to the lectures, which will be illustrated by specimens and lantern slides, is free; they are addressed to students of the University and others interested in the subject.

UNIVERSITY OF MANCHESTER.

DR. WILLIAM H. LANG, F.R.S., Barker Professor of Cryptogamic Botany in the University of Manchester, has been appointed a Pro-Vice-Chancellor, in succession to Professor John S. B. Stopford, whose term of office has expired.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

Museum Demonstrations.

THE spring course of demonstrations of specimens in the Museum will commence on Monday, March 3rd, when Mr. C. E. Shattock will discuss affections of lymphatic glands. On March 7th Mr. T. B. Layton will deal with the rhinological anatomy of the naso-frontal duct and the hiatus semilunaris. On March 10th the demonstration will be on affections of joints by Mr. Shattock, and Sir Frank Colyer will demonstrate John Hunter's specimens of the teeth on March 14th. Mr. Shattock will discuss diverticula on March 17th, and Sir Frank Colyer will conclude the course on March 21st by demonstrating specimens illustrating dento-alveolar abscess and dental cyst. The demonstrations will be given in the theatre of the College, Lincoln's Inn Fields, W.C., at 5 p.m., on the dates mentioned, with the exception of that on March 7th, which will be held at 2.45 p.m. They are open to advanced students and medical practitioners.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—T. Chandrasekharan, B. T. W. Harvey, C. B. Jennings, T. Singh, P. Somasunder, A. L. Thomas, H. Whitby.

MEDICINE.—B. T. W. Harvey, W. A. R. Mailer, I. W. H. Mansfield, J. E. Moody, S. Ramadas, D. Ram Annamalai.

FORENSIC MEDICINE.—M. Asaad, L. Banszky, K. W. Bruce, G. P. Charles, L. P. Clarke, V. J. H. Coidan, H. W. E. Dickey, I. F. W. Edwards, A. R. Madden, W. A. R. Mailer, I. W. H. Mansfield, B. G. Nair, C. Skinner, P. Wade.

MIDWIFERY.—R. P. Davies, R. Frankling, B. T. W. Harvey, C. B. Jennings, N. I. Kronengberg, F. G. Leckam, M. Naylor, D. M. Nightingale, L. Sachs, P. Wade.

The diploma of the Society has been granted to Messrs. C. B. Jennings, W. A. R. Mailer, I. W. H. Mansfield, J. E. Moody, M. Naylor, S. Ramadas, D. Ram Annamalai, P. Somasunder, H. Whitby.

Obituary.

ALFRED HERBERT TUBBY, C.B., C.M.G., M.S., F.R.C.S.,

Consulting Surgeon to the Westminster Hospital, the Royal National Orthopaedic Hospital, and the Evelina Hospital for Children.

WE regret to record the death of Mr. A. H. Tubby, the well-known orthopaedic surgeon, which took place on February 23rd at Hastings, in his sixty-eighth year.

Alfred Henry Tubby received his general education at Christ's Hospital, where he was a schoolfellow of one who was in later life to be his colleague on the honorary staff of the Orthopaedic Hospital, Dr. F. J. Smith, known and beloved at the London Hospital as "F. J." From the Blue-coat School Tubby proceeded to Guy's Hospital Medical School. He became M.R.C.S.Eng. in 1884, and L.R.C.P.Lond. in 1886. He won the gold medal in medicine, and took honours in forensic medicine, anatomy, and materia medica in the examination for the degree of M.B. at the University of London, and the gold medal in surgery in the examination for B.S. in 1887. In the same year he became F.R.C.S.Eng. After graduating he studied abroad at Halle and at Leipzig. In 1891 he was elected surgeon to the National Orthopaedic Hospital (since incorporated with the Royal Orthopaedic Hospital). He was elected assistant surgeon to the Westminster Hospital in 1894, and four years later became full surgeon. In later years he was made honorary consulting surgeon to his old school, of which he was also a governor and an almoner.



His interest in orthopaedics dated from the time of his appointment on the staff of the Orthopaedic Hospital, and a wider interest in the diseases of children manifested itself in his connexion with the Evelina Hospital for Sick Children, and in his co-operation with Mr. S. Stephenson in the foundation of the Society for the Study of Disease in Children. He was president for a term of the Section of the Royal Society of Medicine devoted to children's diseases. His orthopaedic work led him to take a great part in founding the British Orthopaedic Society, of which he was for some time secretary, but which was wound up after a few years' existence. When the present flourishing British Orthopaedic Association was founded in 1918 he was one of the original members, but took little part in its proceedings at any time. In general surgery he did not make much mark, although he wrote on appendicitis and was president of the Hunterian Society for a term. He was made a corresponding member of the American Orthopaedic Association and of various other foreign societies. He was a member of the British Medical Association for many years, and at the time of his death was an associate member of the Hastings Division. He was secretary of the Section of Diseases of Children at the meeting at Portsmouth in 1899, and president of the same Section in 1907 at Exeter. He was president of the joint Section of Orthopaedics and Diseases of Children in 1921 at the meeting at Newcastle-on-Tyne.

Before the war Tubby had joined the medical staff of the Territorial Force, and on mobilization he was called up for service as lieutenant-colonel at the Fourth London General Hospital. He was seconded in 1915 for service as consulting surgeon to the British Mediterranean Expeditionary Force, with the rank of temporary colonel on the Army Medical Staff, and later to the Egyptian Expeditionary Force, serving much of his time abroad at Alexandria. His services were thrice commended in dispatches, and he was awarded the C.B. and C.M.G.

Tubby was the author of a number of books and papers not only upon surgical, but upon other subjects of more general interest, such as sport and archaeology. He took a prominent part in the expansion of the scope of orthopaedic surgery which was in full movement about the end of the last century generally, and particularly in making known and elaborating the treatment of the paralyses following anterior poliomyelitis by means of tendon transplantation, which had been begun by Oskar Vulpius of Heidelberg in 1897, and his first book, written in collaboration with Mr. (now Sir) Robert Jones was entitled *Modern Methods in the Surgery of Paralysis*, which appeared in 1903. He was, however, probably best known by his book *Deformities, a Treatise on Orthopaedic Surgery*, which was published in 1906, and which was held by many to be the best work in the language then existing. It had an immediate success, so that a second edition in two volumes was called for in 1912. This book, unlike most works on orthopaedics published in Great Britain before that time, included not only the deformities, but the active diseases of joints, and especially tuberculosis. In the preface he freely acknowledged the valuable services rendered by Mr. Vincent Moxey, M.R.C.S., who did much of the spade work necessary in the preparation of the book. He wrote "Reminiscences of chamois hunting" in the *Alpine Journal*, and the article "Chamois hunting" in *British Sports and Sportsmen*.

Active in mind and body, Tubby worked hard at his profession and his pastimes. He became a member of the Alpine Club, and took great pleasure in the use of the sporting rifle, whether the quarry were chamois, wild boar, or deer. He was also a keen fisherman. Even before the war his interest in hospital work was waning, and his private practice and love of sport engrossed his energies more and more, and during the war, when he was serving at Alexandria, he found time to spare for archaeological exploration, for which work he was made a Fellow of the Society of Antiquaries. He was able to finish up his military service with a trip to Palestine, which furnished him with the material for a book of a popular character, *A Consulting Surgeon in the Near East*. His last published work we believe to be a small book, *The Advance of Orthopaedic Surgery*, made up of six articles which had appeared serially in 1925. For the past four or five years he had retired from practice and took up his abode at Hastings. His death ensued on a month's illness. He leaves a widow and a married daughter.

Only four months ago we had to lament the death of Mr. T. H. Openshaw, and now that of Mr. Tubby reminds us of the parallelism in some respects of the careers of these two men. Both were general hospital surgeons. They were contemporaries on the staff of the Orthopaedic Hospital, they took part together in the formation of the Orthopaedic Section of the Royal Society of Medicine, and in the formation of two orthopaedic societies, and each held at one time the office of president of the Hunterian Society. They held similar offices at different times in the British Medical Association. Each held the rank of colonel on the Army Medical Staff and the office of consulting surgeon. Both, moreover, were fishermen and sportsmen. Each of them held office in a city company for Openshaw was

Master of the Shipwrights, and Tubby Prime-Warden of the Blacksmiths' Company, a craft more appropriate to an orthopaedic surgeon than that of a shipwright. Thus their friendly rivalry persisted for nearly forty years, and their careers ended within a few months of each other.

A former colleague sends the following appreciation:

Colonel Tubby (as since the war he preferred to be called) was widely known as an authority on the treatment of deformities. He was even better known on the Continent and in America than in this country, and his clientele extended to all lands. Although he recognized, and pointed out in his classic work on deformities, the limitations of the specialty that claimed the title "orthopaedics," yet he himself did not a little to begin that spreading of its borders which has driven them in recent years almost to the horizon. Whilst, on the one hand, he was extremely facile in the devising and exploitation of mechanical apparatus, he was, on the other, a ready and safe operator. He was very successful with the bloodless reduction of congenital dislocation of the hip, but by no means behind in the bold use of open operation. His tendon transplantations, nerve grafts, and neoarthroses were among the earliest and certainly not the least successful. Part of his success was due to the persistence and care with which he followed up all his patients, and to the practical interest he took in the direction and supervision of massage, remedial exercises, and occupational training. He inspired all connected with a case—parents, colleagues, assistants, and the patient above all—with a hopeful appreciation of progress towards ultimate recovery of some sort. His book on deformities very soon became a standard work, and in its latest form was a mine of experience, well sorted, which established it in a position from which other books, more recently published, will displace it with difficulty. He took a great deal of trouble over his lectures, and was, when he had time to spare, an illuminating teacher. In private life he had many interests—climbing, shooting, fishing, archaeology, and history generally. He possessed a most retentive memory, and had a happy faculty of anecdotal illustration which made him, as the general host of others with similar interests, a most entertaining conversationalist. His war work was almost entirely in the East. Soon after his return from Egypt he resigned his hospital appointments, but continued a certain amount of private practice until within the last year or two.

[The photograph reproduced is by Elliott and Fry, London.]

JAMIESON B. HURRY, M.D.

WE regret to report the death at Bournemouth, on February 13th, of Dr. Jamieson B. Hurry, at the age of 72. Dr. Hurry was for many years a leading member of the medical profession in Reading, and became widely known for his researches into the history of its ancient abbey.

Jamieson Boyd Hurry received his medical education at Cambridge and St. Bartholomew's Hospital. In 1882 he graduated M.B.Camb., and obtained the diploma M.R.C.S. Three years later he proceeded M.D., having become D.P.H., and in 1890 he graduated B.Ch. He then travelled for a year as ship surgeon, visiting in turn South America, Australia, and India; he was able to gratify his intense love of travel in later years by frequent foreign tours, including North America, Egypt, Morocco, and almost every European country, interesting himself in Continental medical schools, in international social questions, and especially in tropical and economic botany.

In 1885 he joined the late Mr. George May, F.R.C.S., in Reading, and practised for over forty years. At the request of the New Sydenham Society he translated Spiegelberg's textbook of midwifery. During this period he was an active member of the Reading Pathological Society and became deeply impressed with the social and professional value of medical societies. He wrote *A History of the Reading Pathological Society*, and afterwards *The Ideals and Organization of a Medical Society*, which has been in wide request by the officers of medical societies at home and abroad. He published six volumes on the subject of Reading Abbey, one of the great Benedictine monasteries of this country, and of which for many years he was the recognized cicerone. His devotion to the Abbey was further revealed by various substantial gifts to the town—for example, a noble memorial cross in honour of the founder, King Henry Beauclerc, and three memorial tablets which adorn the ancient chapter house. Every Whit Monday he used to conduct a large party of his fellow-townsmen through the ruins of the Abbey, when the world-famous canon "Sumer is icumen in," written down at the Abbey *circa* 1240, was sung. Perhaps his most valuable gift to Reading was a series of ten uniform historical oil paintings illustrating the history of the Abbey, most of which have been exhibited at the Royal Academy, and which now hang in the Reading Municipal Art Gallery. This series of pictures, each accompanied by full historical notes, was designed by the donor to stimulate civic pride and local patriotism in Reading.

Another subject which interested him, from his student days at St. Bartholomew's Hospital down to the last days of life, was the influence of the "vicious circle" process, both in individual and in social pathology. He wrote two monographs, *Vicious Circles in Disease* (third edition, 1919) and *Poverty and its Vicious Circles* (second edition, 1921); the former has been translated into French, Spanish, and Italian, and the latter into Japanese, French, and Italian. More than thirty original articles on this subject have been published, several in this *Journal*. This copious literature has done much to emphasize the prevalence of *circuli virtuosi* and *circuli vitiosi* in pathology and sociology, and has led to the widespread recognition of the importance of this circular process.

During later years Dr. Hurry devoted much time to economic botany, and established the well-known educational garden at his home in Reading. Here were assembled from all parts of the world numerous tropical and economic plants, more especially such as yield food, fibre, dyes, or medicine for the service of man, tender plants being housed in a series of hothouses. Close by, in a museum, were exhibited many of the products derived from the plants growing in the garden and conservatories. By this means the plant and its economic product could be studied side by side, and this practical method of studying economic botany attracted large numbers of visitors from far and near. In 1926, owing to impaired health, Dr. Hurry and his family removed to Bournemouth.

J. M. DUNCAN SCOTT, M.A., M.D., PH.D.,

Professor of Physiology, University of Saskatchewan.

JAMES MATTHEWS DUNCAN SCOTT was born in Melrose, Roxburghshire, Scotland, on February 6th, 1889; his father, a medical practitioner, died when his son was only 5 years old. At the age of 16 he entered the University of St. Andrews with a bursary from Dollar Academy. In 1908 he graduated M.A., and was medallist in the classes of mathematics and botany as well as prizeman in chemistry and anatomy. In the class of physiology Scott attained the first place in the honours list, being far ahead of the man who came next to him.

Leaving St. Andrews in 1908, Scott went to Edinburgh University to complete his medical studies. There he did conspicuously well, for in Sir Edward Schafer's department he won the medal in physiology and in experimental physiology, as well as the McKenzie prize in anatomy. He was also medallist in the class of pathology taught by the extramural lecturer, Dr. (now Professor) James Miller. In the University department of anatomy Scott acted as prosector to the late Professor Cunningham. While still a medical student Duncan Scott was asked to return to St. Andrews for a session to conduct the class in histology during the absence of Professor Herring on sick leave. In 1912 he graduated M.B., Ch.B. with honours at Edinburgh University. Between that time and the outbreak of the great war Scott was successively house-surgeon at the Royal Infirmary, Dundee, at the Edinburgh Royal Infirmary, and assistant medical officer on the Consolidated Gold Fields, where he had charge of two native hospitals of 300 beds. In May, 1914, he found himself district surgeon at Lomagundi, Southern Rhodesia, in charge of a European and of a native hospital. On the outbreak of the war he went out to South-West Africa with the 1st Rhodesian Regiment, and there dealt successfully with

the problem of a poisoned water supply. After the end of the campaign in South Africa he went to the Mediterranean on the South African hospital ship *Ebani*, where he had responsible duties, and where on one occasion, when the ship was stopped by an enemy submarine, it fell to him to take command of the sick and make all preparations to abandon the ship.

In February, 1916, Scott was sent out to Cairo, where he was in turn senior medical officer of the Kasr-el-Nil Barracks, and of the Abbassia Camp, where he had command of 20,000 men. Later he was at Salonica, where he did valuable antimalarial work, but whence, unfortunately, he was invalided home with malaria. He had, in addition, at an earlier date, received a severe wound in the head. After a delay caused by convalescence he went to Cambridge to study for the D.P.H., and, as a member of King's College, he began research work in physiology under Professor Barcroft. As the outcome of this he wrote his M.D.Ed. thesis (1920), "The length of life of the red blood corpuscle," and published five papers, all dealing with the biochemistry and histology of blood. While at Cambridge he demonstrated for the late Professor Langley in histology and experimental physiology, as well as in biochemistry. In April, 1921, he was appointed to the John Lucas Walker studentship, and from October, 1920, to December, 1921, he held a part-time grant from the Medical Research Council.

While at Cambridge Scott made experimental investigations into the physiology of the centres in the medulla oblongata, more particularly the vasomotor centre. His first paper, written in collaboration with Dr. Ff. Roberts, was entitled "Localization of vasomotor centre"; the second, of which he was the sole author, was called "The part played by the ala cinerea in vasomotor reflexes." In 1925 he was appointed to a British Medical Association Research Scholarship, and in the same year published in the *British Medical Journal* a paper on vagal vascular reflexes. Concluding his stay at Cambridge by graduating Ph.D. in 1924, Scott was appointed demonstrator of physiology under Professor Lovatt Evans, then at St. Bartholomew's Hospital. Later he became lecturer and senior demonstrator in physiology.

Duncan Scott was what is sometimes called a "born teacher"; he had the instinct for imparting knowledge clearly, concisely, and picturesquely. He was fully aware of the necessity of arousing the student's interest in the subject if he was to make any real use of the knowledge given him. Like most successful teachers he had been through the drudgery of conducting revision or "coach" classes for the F.R.C.S. and other examinations. In the winter of 1924–25 he was asked to give a short course of advanced lectures at University College on his researches into the bulbar centres. Professor Lovatt Evans has testified with emphasis to his organizing ability, capacity as a teacher, pleasant personality, and independent manner of thinking. In the summer of 1926 Dr. Scott was appointed professor of physiology in the University of Saskatchewan, Saskatoon, Canada. Here he had ample opportunity for exercising his teaching powers and his organizing capacity. A brilliant future seemed to be before him, but it was destined never to be his. On January 26th he seemed quite well, on the 27th he became unconscious, and on the 28th he died from meningitis. He is survived by his widow and two young children.

D. F. F.-H.

S. F. St. D. GREEN, C.B., C.B.E., M.D.,

Major-General, late R.A.M.C. (ret.).

WE regret to announce the death of Major-General Sebert F. St. D. Green, on February 5th, in Queen Alexandra's Military Hospital, Millbank.

Sebert Francis St. Davids Green was born in 1868, and received his medical education at the University of Durham and St. Bartholomew's Hospital. He obtained the diplomas M.R.C.S., L.R.C.P. in 1892, and graduated M.B.Durham in 1910, proceeding M.D. two years later. He entered the army as a surgeon lieutenant in 1894, and attained administrative rank as colonel in 1917. He was promoted to the rank of major-general in 1923, and retired four years later. He was in charge of the Louise Margaret Hospital at Aldershot from 1907 to 1912. In 1914, when the war began, he was serving in India; he went to France with the Indian Expeditionary Force in command of the Rawal Pindi British General Hospital, which he took to Mesopotamia in December, 1915. In July, 1916, he was appointed A.D.M.S. at Amara, and in May, 1917, A.D.M.S. at the base in Mesopotamia. In September, 1918, he was appointed to the command of the Prince of Wales Hospital for Officers at Marylebone. In 1920 he went to the Irish Command as A.D.M.S. of the 5th Division; from 1921 to 1923 he was D.D.M.S. of the Scottish Command; and on promotion to major-general was posted as D.D.M.S. of the Western Command in India. He held that post for four years, except for four months in 1927, when he acted as Director of Medical Services in India. During the war he was thrice mentioned in dispatches—in the *London Gazette* of October 19th, 1916, March 12th, 1918, and August 27th, 1918, and received the C.B.E. In 1924 he was appointed Honorary Physician to the King, and in 1925 he received the C.B. In 1896 he married Evelyn Caroline Marion, daughter of Major Hely, J.P., of Foulk's Court, Kilkenny, who died in 1927; he leaves three sons and two daughters.

We are indebted to Major-General Sir S. G. GUISE-MOORES, K.C.B., for the following appreciation.

Coming from stock which had sent many of its sons into the service of the State—the Church, the Army, and the Navy—and holding as he did an abiding conviction that they had served it well and with distinction, it was only natural that young Green, on choosing the profession of medicine, should, when full qualification came and opportunity offered, decide to follow the drum. A wanderlust that an army life could abundantly satisfy, and the spirit of adventure that it could freely give, appealed to one of his kind. He joined the R.A.M.C., and early went East of Suez. My foremost recollection of him was as staff surgeon at Lucknow in 1897. The Families Hospital there fixed his ambition in one direction, and laid the foundation of what was later to become a unique and extended practical knowledge and experience of disorders incidental to women and children. This preparation and active interest led, on his return home, to the charge of the Louise Margaret Hospital at Aldershot, then in process of reformation. He found there full scope for his particular talents in the work of the wards and in the operating theatre. He left to his successor, when the hour arrived, a fine reputation, and a hospital replete with all the requirements of a well-found and up-to-date institution. His tenure at Aldershot was extended beyond the normal period, for it was soon recognized that his gifts as a teacher brought continued successes at the examinations of the Central Midwives Board—successes which, as time advanced, made it more and more difficult to find accommodation for the many applicants desiring to benefit by his lectures and classes of instruction. As a surgeon and diagnostician in particular he had then made his mark, and his name will ever be gratefully remembered and honoured for his abilities, courtesies, and steadfastness. Sebert Green always gave a foremost place in his thoughts and actions to results that would enhance the professional credit of the corps to which he was proud to belong, and there is no doubt that his life's work constitutes a fine example of purposeful rectitude in this and all respects.

DR. JAMES SUTHERLAND EDWARDS, who died from heart failure on February 8th, at Perth, was born in 1884, and graduated M.B., Ch.B. at Edinburgh with first-class honours in 1906. After holding the posts of house-physician under the late Professor Greenfield in the Edinburgh Royal Infirmary and house-surgeon in the Dumfries Royal Infirmary, he practised for a time at Bridge of Earn. He later moved to Perth, and was appointed visiting physician to the Perth Royal Infirmary. He was also medical officer to the Post Office and to Perth Penitentiary, bacteriologist to the county fever hospital, and parochial medical officer for Rhynd and Forgandenny. His wife died four years ago; he leaves three children. He was a member of the British Medical Association.

DR. FREDERICK RICHARD HALL, who died on January 28th, on his thirty-first birthday, received his medical education at St. Thomas's Hospital, and, being of exceptional intellectual capacity, passed the final examinations before coming of age; he had therefore to wait before obtaining diplomas, and was admitted surgeon probationer in the Royal Navy during the war. He subsequently made two journeys to the Far East, and received the diplomas M.R.C.S., L.R.C.P. in 1920. He was for some time surgeon to the Ministry of Pensions Hospital in Richmond. After a short residence in Harrogate, he joined Dr. W. R. Higgins in practice in Louth, Lincolnshire, and was appointed honorary surgeon to the Louth Hospital. Dr. Hall was a member of the British Medical Association. He leaves a widow and three daughters.

DR. DONALD HENRY HUTCHINSON, who died on February 1st, at the age of 56, received his medical education at the University of Edinburgh, where he graduated M.B., C.M. in 1896, proceeding M.D. two years later. He began to practise in Lowestoft some thirty years ago, and was surgeon to the Lowestoft and North Suffolk Hospital and medical officer of the Lowestoft Convalescent Home. In addition to carrying on a large general practice, he became prominent in the borough for his public-spirited activities in connexion with sport and the Y.M.C.A.; he was appointed a justice of the peace in 1916. During the war he held a commission in the R.A.M.C. and served in Mesopotamia. He was one of the founders and the first president of the Lowestoft Literary and Scientific Society, and was for a long period officially connected with St. John's Church. He was for many years a member of the Lowestoft Education Committee, and was appointed chairman of the Joint Higher Education Committee in 1921, which office he held until his death. He was a member of the British Medical Association, and was chairman of the North Suffolk Division from 1920 to 1921. He leaves a widow and two sons. A colleague writes: Dr. Hutchinson's scientific attainments were of a very high order, both as a physician and surgeon, and also as a naturalist. He was an exceptionally successful and practical surgeon, exhibiting manual dexterity of a very high degree. Among his hobbies were cabinet making and the manufacture of scientific instruments.

DR. JOHN KERWICK, who died on January 27th, was born in 1870, and was educated at the Middlesex Hospital and the Royal Dental Hospital. He obtained the diploma L.D.S.R.C.S. in 1891, and the M.R.C.S., L.R.C.P. three years later. After holding the post of house-surgeon at the Dental Hospital he succeeded to the practice in Carlisle which had been founded by his father, and carried on by his uncle. He was dental surgeon to the Cumberland Infirmary from 1899 to 1911, and again during the war; he was also honorary dental surgeon to the Border Home for Incurables. He was an active member of the North of England Odontological Society and of the British Dental Association, a Fellow of the Royal Society of Medicine, and a past-president of the Carlisle Microscopical Society. During the latter part of his life he resided in the village of Dalston. The countryside always appealed to him; he was an enthusiastic gardener, and he had many friends among the agricultural community. He contributed papers to dental journals, and was the editor of the *Transactions* of the North of England Odontological Society. He leaves a widow and three sons.

The following well-known foreign medical men have recently died: Dr. BIEDERMANN, formerly professor of physiology at Jena, and author of a work on electrophysiology; Professor KARL SVEHLA, head of the Czech children's clinic at Prague; Professor BEUTTNER, head of the obstetrical clinic at Geneva, aged 63; Dr. JULIAN CORONEL, professor of clinical medicine in Ecuador; Dr. RAOUL BRUNON, honorary director of the medical school of Rouen, and corresponding member of the Académie de Médecine, aged 75; Dr. ALBERT KÖNIG, an eminent hygienist of Frankfort; and Dr. KAMINSKI, director of the civil health service of Bucarest.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THIS week the House of Commons discussed supplementary estimates for the Royal Parks and for Colonial Services. Three days were spent in committee on the Coal Mines Bill. The Mental Treatment Bill and the Road Traffic Bill were before Standing Committees.

On February 25th the Parliamentary Medical Committee met at the House of Commons and received a deputation from the British Medical Association. Dr. Fremantle was in the chair. The first subject raised by the deputation concerned medical men who, under the new Local Government Act, find themselves both members of local authorities and the servants of those authorities. The deputation and the committee accepted the principle that medical men retaining posts under public authorities must be disqualified from membership of those bodies. Attention was, however, drawn to the injustice to doctors who, preferring to keep their seats on local bodies, resigned their salaried posts. It was pointed out that a man who took this course after paying for many years to a superannuation fund would lose his contributions. The conference arranged that the British Medical Association should draft a one-clause bill to provide that all such contributions should be returnable. When this has been drafted the Parliamentary Medical Committee will consider it.

Many questions arose from the Mental Treatment Bill. The first discussed was the better safeguarding of doctors who recommend voluntary treatment or take any part in dealing with insanity. No definite decision was taken on the manner in which the bill could be strengthened. Neither was any recommendation made for a phrase to be substituted for "not capable of volition" in Clause 5 of the bill. A long definition put forward by the British Medical Association did not secure the full approval of the Parliamentary Committee. The meeting desired to secure minor improvements in the position and constitution of the Board of Control. One was that there should be three types of members, and that the persons who did the visiting in the country should not be Assistant Commissioners but full Commissioners, though not members of the small central board.

The conference discussed the Chiropodists Bill, and decided that chiropodists did not merit legal registration, as they were only qualified to deal with some foot troubles. On the Road Traffic Bill the Association's representatives claimed that doctors attending road casualties should have a legally enforceable fee. There were varying views on this, but no decision; nor was any decision arrived at on the claim of voluntary hospitals to a share of the insurance paid to injured persons whom they treat. It was pointed out that the bill permits the Minister to hold an inquiry after any road accident. The Association's delegates were of opinion that he should have power to investigate the physical and mental condition of the drivers concerned.

Dr. Brackenbury spoke for the British Medical Association on the position of doctors employed by local authorities, Dr. Langdon-Down on mental treatment, and Dr. J. W. Bone on the Road Traffic Bill and other issues.

The Parliamentary Medical Committee decided, at the same meeting, that at its next meeting, on March 11th, it would hear Sir Malcolm Delevingne on dangerous drugs, and on the work of the League of Nations for their control.

Mr. Snowden proposes to introduce the Budget on April 14th.

Road Traffic Bill.

SECOND READING.

The Road Traffic Bill was read a second time without a division by the House of Commons, on February 18th, after prolonged debate. In this, Mr. HERBERT MORRISON, Minister of Transport, explained—as stated in last week's parliamentary report—that the Government could not accept an amendment inserted by the House of Lords to ensure voluntary hospitals a share of the insurance taken out by motorists. Mr. Morrison also expounded Clause 5 of the bill, relating to the disqualification of certain persons as drivers. He said this clause made certain physical defects an absolute bar to the obtaining of a driver's licence. It also provided that a person suffering from physical defects which were not an absolute bar might obtain a general driving licence or a licence limited to the driving of an invalid carriage, or of specially adapted vehicles, if he showed the licensing authority that a general or limited licence could safely be issued to him. Clause 19 dealt with the maximum hours for the drivers of heavy motor vehicles. Clause 23 empowered the Minister to direct inquiries into all cases of accidents.

Colonel ASHLEY, formerly Minister of Transport, supported the proposal of the bill that a declaration of physical fitness and the fact that an applicant was not suffering from physical disabilities

should suffice to secure the grant of a licence. With regard to hospitals, he hoped Mr. Morrison would retain in the bill the subsection inserted by the Lords, and would make it work. There was a strain on the resources of hospitals on the great roads. When a man received money for injuries the hospital which treated him should be allowed (as proposed by the House of Lords) to get back, up to £25, the money it had expended on his nursing and doctoring. Colonel Ashley explained that he would agree to put a municipal hospital on the same footing.

Mr. WEST RUSSELL referred to road accidents resulting from drunkenness, and thought that in Clause 15 the bill did not give the public adequate protection against them. Penalties ought to apply if it were clearly proved that the man was under the influence of drink at all. They had a right to expect that any man driving a motor car on the public highway should so control himself as to be sure there was nothing to interfere with his nervous condition while he was at the wheel.

Dr. SALTER said that in 1929, though the figures had not yet *been published, in all probability over 7,000 people had been killed* in this country by the impact of motor cars, and the injured *would probably exceed 170,000.* It was estimated that yearly 20,000 people suffered concussion owing to motor accidents. A frequent after-consequence of concussion was permanent impairment of the mental faculties. That was one of the gravest aspects of the problem of the road. An army of people was appearing, who, as the result of accident, had more or less to depend on relatives or the community for their livelihood. Last year the number of people killed on the road was greater than those who lost their lives from all the notifiable diseases. More than twice as many people were killed on the roads as perished in childbirth. More were killed on the road than at their places of occupation and work. If the speed limit was abolished the number of fatalities would go up by leaps and bounds. Many of his friends believed there would be practically a 50 per cent. increase if the speed limit was abolished. Under the existing law they would, within four or five years, have 10,000 a year killed and 250,000 injured. More than two-thirds of those killed in London last year —333 out of 1,257—were pedestrians, and only 264 were occupants of vehicles. The balance was almost entirely of pedal cyclists, who were run down by vehicles. Deaths increased by 15 per cent. each year; the motor vehicles only increased by 7 per cent. That seemed to indicate that there was *growing recklessness*, or some comparable cause. He was unable to understand the callousness exhibited on the question. If a medical man produced a new vaccine which led to 7,000 deaths in one year prompt measures would be introduced to put a stop to his activities. People bought cars guaranteed to do ninety or ninety-five *miles per hour*, with the intention of using them. The dangerous driving clause of the bill would be ineffective. Clear roads did not exist in this country, and the greatest number of fatalities occurred *on roads outside* the crowded areas. At Bromley, on a three or four mile stretch of open road just outside the County of *London*, an average of two people were killed each week. In Bermondsey, where 600 trees were knocked down every year, the destruction was from motors mounting the pavements owing to excessive speed. As the congestion in London and other great towns became greater the average pace of vehicles was reduced, and the death *rate went* down. Private cars and light motors were responsible for most *of the deaths. Speed* went to the head like champagne, and if all speed limits were abolished for private cars thousands of drivers would give way to this intoxication. A speed limit should be in addition to, and not in *substitution for, the dangerous* driving clause.

Mr. LLEWELLYN JONES said that, as coroner for a Welsh county, he had investigated an increasing number of fatal accidents. Most happened to vehicles driven by men of long experience. Very rarely was a novice involved in an accident, except where he was the victim. In 75 or 80 per cent. of the cases the motorist was a man of long experience.

Sir GERVAIS RENTOUL said that in 1928, according to the Royal Commission, 29,628 of the accidents on the roads of this country were caused by non-mechanical vehicles or by pede-trians. One-eighth of the fatal accidents, and one-quarter of the non-fatal ones, were due to these; 23 per cent. of the total accidents were found to be due to the fault of pedestrians.

Mr. TINKER thought that the compensation to hospitals should not be limited to £25. They should be entitled to receive the actual cost before any money was paid to the patient.

Sir WILLIAM JOWITT, *Attorney-General, referred to Clause 15*, which deals with the offence of drunkenness in charge of a car. He said this clause ought to be made as drastic as possible. It would be monstrous if persons found guilty of drunkenness in charge of a car should not be sent to prison. The words in the bill had been suggested by Lord Buckmaster, but the Government would consider any others which were proposed.

As stated above, the bill was read a *second time.*

On February 20th the House carried a motion authorizing its consolidation, in committee, with the Omnibuses Bill. On the same date a money resolution associated with *the Road Traffic Bill* was considered.

Mental Treatment Bill.

COMMITTEE STAGE.

Consideration of the Mental Treatment Bill by a Standing Committee of the House of Commons began on February 25th, with Mr. Cecil Wilson in the chair. The sitting was occupied in examination of Clause 1, subsection (1), which ran:

Any person who is desirous of voluntarily submitting himself to treatment for mental disorder, and who makes a written application for the purpose may without a reception order be received as a voluntary boarder in an institution within the meaning of this Act, or in any hospital or nursing home approved for the purposes of this section by the Board of Control, or, with the consent of the Board, into single care.

Dr. VERNON DAVIES moved to omit the word "*mental*" *before* "disorder." He explained that he did so to free the procedure from the stigma popularly attached to mental disorder and to encourage early application for treatment. He contended that to specify "mental" was unnecessary. There was no danger of persons applying in order to get a rest, or because they suffered from other bodily ailments. A medical man would not advise his patient to apply for treatment unless there were *early* signs of mental illness. The fact that patients under the bill could apply at out-patient clinics was another safeguard. The physician there could decide whether other signs of illness were due to the brain. There were also neurological cases with no mental symptoms, which he might describe as premental. He thought these would not be covered by the bill. Dr. Vernon Davies added that he acted independently as a practitioner with many years of experience. Some of his amendments—for example, the present—were also recommended by the Royal Medico-Psychological Association, but he put it forward on his own responsibility. He gave an assurance that he and other medical men were actuated only by desire for the good of the patient.

Mr. GREENWOOD found the amendment hard to accept. It would make the clause carry very little meaning. There must be a name for mental disease, and it must be described. "Mental disorder" was the least offensive of the names which had been used to describe mental disease.

Dr. FREMANTLE regretted the Minister's *non possumus*. The proposed amendment did not widen the scope, because treatment was to be in a hospital nursing home approved for the purposes of the section—that was, for mental treatment. He wished, from his experience of health administration, to reinforce what Dr. Vernon Davies had said about the amendment. Medical superintendents of mental institutions were charged with a sense of responsibility to the public and to the public authority; in fact, that sometimes led to accusations against them of being hard and rigid towards the patient. These superintendents, banded in the Royal Medical Psychological Association, said the words of the clause would keep out early neurological cases which did not yet display mental disorder. There was no reason why such cases should be cut out.

Mr. RHYS DAVIES said the title of the bill would indicate to the patient that his treatment was to be mental. Was it necessary for a man, in order to secure treatment, to declare that he was suffering from mental disorder?

Mr. GREENWOOD: His doctor would declare.

Mr. RHYS DAVIES: The words are "*any person who is desirous* of voluntarily submitting himself." They indicate that the request must come from the patient himself.

Mr. C. WILLIAMS thought the word "disorder" was a bad word. It was difficult to see how the ordinary person could be persuaded to assert that he was suffering from "disorder," which would suggest a very serious derangement. He thought "sickness" would be a more persuasive word.

Miss LAWRENCE said there was a difficulty of drafting. If the words "mental disorder" were omitted the purposes of the section would be obscure. The Royal Commission definitely recommended that the system of voluntary boarders should be limited to those who definitely wished it. If they once said that a doctor could put a man away——

Dr. DAVIES: What do you mean by "put him away?"

Miss LAWRENCE: I use the words because I do not want to make the profession liable to ignorant attacks outside. She added that the opinion of legislators in that room was superior to that of the heads of the medical profession on a question of drafting.

Dr. MORRIS-JONES said he did not like the words "mental disorder," but thought that the committee could not exclude from the section the fact that it dealt with cases of mental illness. He thought that this latter phrase would meet all the purposes of the clause.

Mr. GREENWOOD said he was prepared to substitute the word "illness" for "disorder."

Sir BASIL PETO thought the clause would stop people from submitting themselves for treatment which would prevent mental disorder. Even the amendment suggested by the Minister would apparently rule out preventive treatment.

Mr. D. R. GRENFELL said people should be able to get treatment without confession or humiliation as quietly as they went to the dentist, free from any sense of inferiority or incompetency.

Dr. VERNON DAVIES said he objected to the word "mental." From the associations of that word the man in the street could not get away. He asked the Minister, before the report stage, to consider the substitution of "nervous" or "psychological."

Mr. GREENWOOD said the committee must face the fact that it was dealing with mental diseases. There must be a description in the bill. Members themselves were perpetuating the stigma by pretending that the sickness had no name. "Disorder" itself was an unfortunate term. To find another word in place of mental was difficult, but he would consider the matter.

The amendment was by leave withdrawn, whereupon Mr. GREENWOOD moved to delete "disorder" in order to substitute "illness."

Dr. FREMANTLE preferred the former term as covering cases which had not reached the stage of illness. Sir GEORGE BERRY concurred.

Mr. RHYS DAVIES said that to the layman "illness" implied an expectation of recovery, while "disorder" might not.

The committee then substituted the word "illness."

Dr. FREMANTLE moved to insert that the application for reception as a voluntary boarder should be made "to the person in charge of the institution into which he wishes to be received." This would be better than an application to the clerk to the authority.

Mr. GREENWOOD had no objection to such words if the committee desired. He would prefer simply "to the person in charge." That phrase would cover nursing homes and single-care cases.

Mr. KINLEY, as an amendment to Dr. Fremantle's motion, proposed to add "or to the medical officer of health for the area." He said he did so as the first step towards eliminating the Board of Control from having anything to do with the new service for the prevention of lunacy. He wanted to shut them out absolutely from the bill, and to provide in every local area an official who would be the connecting link between the new local service and the Minister in London.

Dr. MORRIS-JONES agreed with Mr. Kinley, but thought his amendment impracticable at present. Medical officers of health as such knew nothing of mental illness, which required special study.

Mr. C. WILLIAMS pointed out that Dr. Fremantle's amendment would allow a voluntary patient to choose an institution in which he had confidence.

Sir BOYD MERRIMAN asked the committee to remember the liability of those in charge of institutions. If any question were to arise afterwards about the liability of such a person, would it not be better that he was able to say, "Here is a written application addressed to me"? There was a serious necessity for these words, and he was glad the Minister had accepted them.

On Mr. Kinley's amendment Dr. FREMANTLE, as an old medical officer of health, said it would not be practicable.

Mr. GREENWOOD said the purpose of the written statement was that there should be something definite to indicate the desire for treatment. Naturally that should go to the person in charge of the institution. If a written statement were made to the medical officer of health it would have to be referred from him to an institution—an unnecessary process in, say, a threatened breakdown from persistent insomnia.

Mr. Kinley's amendment was then negatived, and "to the person in charge" was inserted after the words in the bill "a written application for the purpose."

Mr. GREENWOOD moved to substitute "voluntary patient" for "voluntary boarder." He proposed to substitute this throughout the bill, and, by reference, in similar legislation. Colonel HENEAGE hoped that this would not alter the legal status of persons who wished to leave an institution. Mr. GREENWOOD said it would not, subject to the prescribed seventy-two hours' notice.

The amendment was approved.

Dr. VERNON DAVIES moved amendments to permit the admission of voluntary patients into single care without the special consent of the Board of Control. He was strongly in favour of the Board of Control, but not in association with the voluntary patients. In the mind of the public the Board of Control was associated with lunacy, and to bring it in would put a strong barrier in the way of early treatment among the proud working people, who were so sensitive about lunacy. The bill did not propose that early mental cases at out-patient clinics should be reported to the Board of Control. It was wrong that a poor woman who came into hospital for two or three days' rest should be notified to the Board of Control. A safeguard would, however, still be required for the infant who was sent in by guardians.

Sir BASIL PETO pointed out that at present the power of the Board of Control was only concerned with approval of institutions, and did not handle the applications of patients for treatment.

Mr. GREENWOOD said there was not the same need for scrutiny of single cases going into institutions as for those going into single care at houses of which the authorities had no official knowledge. If approval was not required in each such single case, approval would be required of the persons undertaking single care with power to revoke. If Dr. Davies withdrew his amendments, he would propose to insert "into the charge as a single patient of a person so approved, and any approval under this section may be granted subject to such conditions as the Board think proper, and may be revoked at any time." That meant the Board should approve, under conditions, the person into whose care the single patient went, but not the admission of each such patient.

Dr. DAVIES said he was willing to accept the Minister's proposition.

Discussion was then adjourned till February 27th.

Local Authorities Enabling Bill.

Municipal Trading in Milk.

Mr. MCSHANE, in the House of Commons, on February 14th, moved the second reading of the Local Authorities (Enabling) Bill. He explained that the bill was a permissive measure, placing public authorities on the same footing as limited companies if they wished to trade. In particular, he advocated municipal trading in milk. This was, he said, one of the most unsatisfactory food supplies of the people, in spite of a host of inspectors, on whom the London County Council alone spent £100,000 a year. According to the Ministry of Health, out of 67,000 samples of milk taken at random in 1928, 8.2 per cent. were adulterated. In one sample a quantity of paraldehyde was found. During the war Rotherham had a municipal supply of milk. After the war it sought powers to continue the undertaking, but these powers were refused.

Dr. SALTER seconded the motion for the second reading of the bill. He said that practically every municipal authority was breaking the law and overstepping its powers. At the present moment no borough in London could provide a subway for its citizens unless at the same time it constructed below the surface of the road a urinal. He held that local councils should have the power of manufacturing and supplying bread. Small-scale baking ought to disappear. Numbers of employees worked in overheated underground bakeries, badly ventilated and only made habitable by the constant pressure of the sanitary authorities. These dreadful little places should be scrapped, and the bread supply of great towns concentrated under municipal auspices. He himself had helped to found a modern bakery, which supplied 60,000 persons.

Dr. VERNON DAVIES asked if Dr. Salter allowed night baking.

Dr. SALTER said his bakery was obliged to carry on night baking because of the competition of small bakeries. The Factories Bill would have the effect of abolishing the practice. He went on to deal with milk, and said that 8 per cent. of the milk which came to London was definitely tuberculous. The percentage in different towns was practically never below 8 per cent., and was often as high as 20 per cent. Every year from 13,000 to 15,000 tuberculous cows were slaughtered in this country, but apparently the number of tuberculous cattle never diminished. With 2,000,000 milch cows in the country, only 850 herds were known to be tubercle-free. Every year 2,300 human beings died in this country from disease caused by the bovine bacillus, which reached them almost exclusively through tubercle-infected milk. Practically nothing was done by the Ministry of Health or the Ministry of Agriculture to protect the public from this source of infection. Mr. Somerville Hastings, Dr. Fremantle, and others, with himself, had interviewed officials of both Ministries to get some move on in this question. He was deeply disappointed to find how little progress had been made recently, and what little prospect there was of getting more done in the immediate future under the existing conditions of privately owned and privately distributed milk supply. If a town were allowed to supply milk to its inhabitants, whether by contracting with farmers and managing the delivery itself, or by obtaining the milk from its own farms, it would effect a rapid change. If surgical tuberculosis thereafter occurred every cow from which milk was drawn would have an immediate veterinary inspection, and every cow suspected of tuberculosis would be immediately eliminated. He saw no hope for the elimination of tuberculous milk except by establishment of a municipal milk supply.

Sir KINGSLEY WOOD: What about a municipal medical service?

Dr. SALTER said he strongly advocated a State medical service. The question of setting it up could only be dealt with by a national department.

Sir GERALD HURST moved the rejection of the bill.

Mr. E. D. SIMON said it was humiliating and intolerable that Manchester was not permitted to sell cheap sugar, on medical advice, to children who needed it. That had been attempted during the war, on medical advice, by the Public Health Committee, which was promptly told that it had no power to do it.

Mr. WOMERSLEY remarked that even Dr. Salter might object to being a municipalized doctor.

Dr. SALTER: Not at all; on the contrary.

Mr. GREENWOOD said his view was that the State exercised far too detailed a supervision over local authorities. Nothing would stop the grant of wider powers to local authorities in the very near future.

The bill, which applies to Scotland as well as to England and Wales, was read a second time by 150 to 124. Dr. VERNON DAVIES moved to send it to a committee of the whole House. This was defeated by 144 to 119, and the bill was sent to a Standing Committee.

Effect of Diet on the Teeth.

Asked, on February 13th, by Dr. Fremantle, if he would ensure that all children should be instructed in the effect which a diet deficient in vitamin D had upon the teeth and how decay of the teeth could be prevented by a proper choice of foodstuffs, Sir C. TREVELYAN referred to the *Handbook of Suggestions on Health Education*, issued by the Board of Education for teachers. Dr. FREMANTLE pointed out that his question referred to experiments since the Handbook was published, and asked whether the Handbook could be revised in the light of important results being issued by the Medical Research Council. Sir CHARLES TREVELYAN said he would consider the matter.

In a written answer, on the same date, Mr. GREENWOOD told Dr. Fremantle that the researches at Sheffield University, now being published by the Medical Research Council, into the effect of a proper dietary for expectant mothers and for children in the prevention of dental decay, were known to him. It was a common practice at maternity and child welfare centres to give advice as to a correct dietary, including instruction for the prevention of dental decay, and he did not consider it necessary to issue any special paper on this subject.

On February 18th Mr. JOHNSTON, replying to Dr. Fremantle, said that he had been informed of the report of recent investigations at Sheffield University, now being published by the Medical Research Council, which extended and amplified previous accounts of these important investigations into the relation of diet to the proper development of the teeth. The results did not show that oatmeal and other cereals were necessarily deleterious, but that they increased the body's requirements of vitamin D. The fact was that the Scottish people had far better teeth when they consumed more meal than they were doing to-day.

Dr. FREMANTLE: Does the hon. gentleman not realize that it is necessary to show that oatmeal by itself would be very deleterious, and that it is necessary to have such things as cod-liver oil, or something like that, with it? Mr. JOHNSTON: The same statement has been made about fish, sugar, milk, and other necessaries of life.

Mr. SANDERS: Will the hon. gentleman's department take care not to place too much importance upon the varying superstitions and illusions of the medical profession? Mr. JOHNSTON: The answer is in the affirmative.

Dr. FREMANTLE: Will the hon. gentleman deny the suggestion that the reports of the Medical Research Council under the Government are superstitions and illusions? Mr. JOHNSTON: No, Sir, but I would say they frequently contradict themselves.

Miss RATHBONE asked what proportion of the agricultural and urban workers of Scotland were in a position to pay for cod-liver oil and other articles of diet recommended. No answer was given.

Deaths from Diphtheria.

On February 12th Mr. GREENWOOD, in reply to a question by Mr. Freeman, gave the following table regarding deaths from diphtheria, for the years 1920–28.

	1920.	1921.	1922.	1923.	1924.	1925.	1926.	1927.	1928.
England (excluding Monmouthshire)	5,150	4,353	3,783	2,420	2,299	2,544	2,177	2,535	2,929
Wales and Monmouthshire	516	419	295	242	202	230	217	197	262
Scotland	699	611	536	492	442	505	490	485	488
Canada	Not available	1,297	1,024	851	848	615	546	1,012	913
United States of America	13,395	15,520	13,104	11,014	8,726	7,403	7,114	8,425	8,233
Germany	7,891	5,953	4,490	4,413	3,624	2,799	2,189	2,512	Not available

Silicosis.

On February 13th Mr. CLYNES said, in reply to Mr. Hoffman, that the central bureau for the purposes of the diagnosis and treatment of silicosis, for research purposes and training, would be in Sheffield. He could not say when the proposed Silicosis Bill would be introduced, but everything would be done to expedite the matter.

On February 20th, replying to Mr. Maridy Jones, Mr. Clynes said that, though he appreciated the hardship in cases of silicosis prior to January 1st, 1929, he had no power under the Act to give the Various Industries (Silicosis) Scheme any retrospective application. No figures were available as to the number of miners granted compensation under the scheme for the year 1929, as the returns were not due till March 1st, and as tabulation of cases for each coalfield occupied considerable time, it would be some months before he could furnish reliable figures for 1929.

On February 20th, Mr. Clynes told Mr. Hopkin that he still had no evidence to show that the condition of the lungs described as anthracosis was a cause of disablement. The Medical Research Council were setting up an expert committee to institute and co-ordinate research into pulmonary disease from silica and other dusts. With the concurrence of the Mines Department Mr. Clynes proposed to bring the question of the effects of coal dust under the committee's consideration.

National Health Insurance.

In reply to Mr. Rhys Davies, on February 12th, Mr. GREENWOOD said it was estimated that during the five years 1924–28 the number of new entrants to health insurance averaged rather over 1,000,000 a year, divided almost equally between men and women, the figures in 1926 being somewhat higher than the average owing to a special accession of voluntary contributors under the Contributory Pensions Act, 1925. No information was available regarding the number of persons joining approved societies.

Replying to Mr. Sorensen, on February 20th, Mr. GREENWOOD said insurance doctors were not only entitled, but required by their terms of service, to order on the proper form any drugs or prescribed appliances reasonably necessary for treatment of their patients. Dr. VERNON DAVIES asked whether it was not a fact that doctors were not allowed to prescribe medicine for panel patients regardless of cost. Mr. GREENWOOD answered that the law required them to prescribe what was reasonable for the cases.

Psittacosis.—Mr. GREENWOOD told Sir George Bowyer, on February 13th, that the question of placing an embargo on parrots, with a view to the danger of a spread of parrot disease, was under consideration, though at present he was not satisfied that such a measure was necessary. He had seen a newspaper report of the inquest on Miss Rogers, who succumbed to this disease. The steps taken by his department had been summarized in a memorandum recently issued to local authorities and now on sale. In reply to Mr. Hacking, on February 20th, Mr. Greenwood said that the parrots associated with cases of psittacosis in this country were mostly green parrots imported from South America. He could give no definite assurance that parrots which had been in the country a certain time and had not been in contact with the disease were immune from spreading infection, but the risk was negligible.

Tubercle Bacilli in Milk.—Mr. GREENWOOD, replying on February 17th to Mr. Lawther, said that he understood that some samples of milk alleged to have been pasteurized had been found by local authorities to contain tubercle bacilli. Pasteurized and tuberculin-tested (Grade A) milks were not examined for the tubercle bacillus as a matter of routine, and he could not say how many samples had been so examined. He had reports of a few instances in which tubercle bacilli had been found in the milks. He was not aware of any examinations which had shown the presence of bovine tubercle bacilli in children brought up entirely on pasteurized milk.

Deaths from Tuberculosis.—On February 17th, in reply to Mr. Bromley, Mr. GREENWOOD said that the number of deaths certified as due to tuberculosis in England and Wales in 1927 and 1928 were 33,173 and 36,023 respectively. The figures for 1929 were not yet available.

Refuse Dumps.—Replying to Dr. Fremantle, on February 18th, Mr. W. R. SMITH said he understood that representations of the danger to shipping caused by smoke from the South Hornchurch dumps had been made by the Port of London Authority to the Departmental Committee which was considering the question of the collection and disposal of London refuse.

Women's Medical Service in India.—Mr. BENN, replying to Major Pole, on February 24th, said that an annual grant of Rs.3,70,000 was made by the Government of India to the National Association for Supplying Medical Aid to the Women of India, towards the cost of the women's medical service. The grant was administered by the council of the association.

Storage of Fresh Fish.—Replying to questions by Mr. A. M. Samuel, on February 24th, about the steps taken to ensure the freshness of the fish supply, Mr. BUXTON said the provision of galvanized iron storage shelves with waste water gutters formed part of the recommendations of the report on the handling and storage of white fish at sea, recently issued by the Department of Scientific and Industrial Research. Steps were already being taken by some owners to equip their vessels with the apparatus necessary for carrying out the recommendations in the report. Adequate safeguards against the exposure for sale of fish intended for the food of man, but unfit for human consumption, already existed in Public Health Acts, under which such fish might be condemned and the owner or person in possession fined or imprisoned. The description "stale" applied to fish was a trade term, and did not imply that it was unfit for consumption. He combated the suggestion that fish curers made a practice of buying unwholesome fish.

Flogging in Prisons.—Mr. CLYNES, replying to Mr. Hastings on February 17th, said in no case within the memory of present officers of the prison service had the administration of corporal punishment taken place in two or more stages. If the medical officer stopped a flogging on medical grounds that was final, and the flogging was never resumed at a later date. Earlier in the week, in reply to a question, Mr. Clynes said that girls in reformatories were never flogged, as such treatment would be contrary to the rules and spirit of reformatory schools, Borstal institutions, or prisons. In girls' schools caning on the hands with a light cane was allowed, but only one case occurred last year.

Drunkenness: Doctors' Reports.—Replying, on February 13th, to Sir N. Grattan-Doyle, who asked whether any action was to be taken concerning the observations of metropolitan magistrates respecting the recent Order that the doctor's report as to the condition of a person charged with drunkenness should not be presented by the police officers in the witness-box, Mr. CLYNES stated that this Order was not to the effect stated. It did away with the practice of including, in a memorandum of expenses incurred by the police, the short effect of any medical report for which expense had been incurred, and with the practice of referring to this memorandum in court, in certain circumstances, without evidence on the point being taken. He had seen or received representations from individual magistrates which would be carefully considered. Should any further action appear necessary or desirable it would be taken.

Death from Anthrax.—Replying to Mr. Jowett, on February 13th, Mr. CLYNES said he had received a report on the death from anthrax of a woman wool-sorter in Bradford. Mr. Clynes said the evidence of Dr. Eurich, the bacteriologist, showed that this woman had been sorting Syrian grey wool, but previous to the onset of the disease she had also sorted other material, and the precise origin of infection did not seem to have been established at the inquest. The extension of the wool-sorting regulations deserved, and would receive, prompt and serious attention, but before any decision was reached it would be necessary to make further inquiries and review all the information available. Mr. Clynes added that the factory inspector reported that the regulations were fully observed by the firm in question, and were applied not only to scheduled, but also to non-scheduled wools, so that even if grey Syrian had been scheduled it would not apparently have made any difference in this case.

Dangerous Drugs.—On February 19th Mr. A. HENDERSON told Colonel Heneage that British representatives in Turkey had from time to time impressed upon the Turkish Government the desirability of their acceding to the Opium Conventions, and that the attitude of Persia had been the subject of discussion at the League of Nations, of which Persia was a member. Neither the Turkish nor the Persian Government could be in any doubt of the importance attached by the British Government, as by other parties to the Opium Conventions, to their undertaking at an early date the obligations of these instruments. On February 24th Mr. SHORT, in reply to Dr. Fremantle, said that the Home Office had for a long time done everything in its power to promote co-operation in the enforcement of the international conventions relating to dangerous drugs and in the suppression of the illicit traffic. The League of Nations Advisory Committee, on which the British Government was represented, had given constant attention to this question. As a result of the recommendations which they had drawn up, great progress in co-ordinated action had been made. The discoveries recently brought before the Advisory Committee on Opium were, in fact, made as a result of co-operation between the authorities of several countries. He understood that the Advisory Committee, in its report to the Council of the League on the proceedings at its recent meeting, made further recommendations on the subject. These would receive the careful and sympathetic consideration of the British Government.

Medical Inspectors of Factories.—Answering Dr. Vernon Davies on February 19th, Mr. CLYNES said medical inspectors of factories were appointed in pursuance of the general powers conferred by Section 118 of the Factory and Workshop Act, 1901, for the appointment of such inspectors as might be necessary for the execution of the Act. They constituted a separate, but integral, branch of the Factory Department. The senior medical inspector who was in charge of the branch acted under the directions of the chief inspector of factories. He could not accept Dr. Davies's suggestion that, in view of the recommendation adopted by the country at the Washington Conference, he should constitute a separate health department for this service. Mr. Clynes said the intention of the Washington recommendation was to secure the establishment of a medical branch in connexion with factory inspection, and this was effected in the existing arrangements.

Propagation of Mentally Deficient.—Major GLYN asked, on February 19th, whether Mr. Clynes's attention had been drawn to public statements by judges regarding the consequences of mentally deficient persons bearing children, and whether he would set up a committee to inquire into the whole matter, unless this subject could forthwith be referred to an existing commission, and legislation in accordance with their recommendations be introduced at an early date. Mr. GREENWOOD replied that the statements in question had for some time past been under consideration. The issues involved were far-reaching and controversial. They could only be examined effectively by a suitable body specially set up for the purpose, and such an investigation could not at present be undertaken.

News in Brief.

From the reports of the Government chemist on the samples of imported preserved milk analysed by his department, Mr. Greenwood is satisfied that all the milks examined were nutritious, and that they did not contain anything to render them harmful as an article of diet.

The total number of persons killed below ground in mines in the United Kingdom during 1929 was 994, of whom 403 were at the working face, 176 on roads, 220 in haulage accidents, 34 concerned in explosions of firedamp or coal dust, and 161 in other underground accidents.

During 1929 451 experiments (all inoculations), of which 74 were on dogs, were performed with the object of discovering a prophylactic serum for distemper.

Expenditure by local authorities in England and Wales during the year ended March 31st, 1928, on the administration of the Vaccination Acts amounted to £190,754. The cost of the Government lymph establishment, after allowing for receipts from the sale of lymph, was £13,030.

The Minister of Agriculture is convinced, after inquiry, that the embargo on Continental pork is necessary.

In England and Wales, on January 4th, 1930, those receiving institutional relief numbered 222,124, and those receiving domiciliary relief 871,220. The total of 1,093,344 excludes lunatics in county and borough asylums, casuals, and persons in receipt of domiciliary medical relief only.

The memorandum explaining the effect of the Local Government Act, 1929, upon the provisions of the Lunacy Acts will be issued as long as possible in advance of the appointed day on which the relevant parts of the Act come into operation.

Medical News.

PROFESSOR G. ELLIOT SMITH, M.D., F.R.S., will give a lecture on "The Human Brain" at the house of the Royal Society of Arts, John Street, Adelphi, W.C., on Wednesday, March 12th, at 8 p.m. The chair will be taken by Sir Oliver Lodge.

THE Institute of Ray Therapy in Camden Road, St. Pancras, of which an account was given in the *Journal* of January 25th (p. 163), will be formally opened by the Lord Mayor of London on Thursday, March 13th, at 3 o'clock.

A CHADWICK Trust lecture on infant welfare schemes will be given by Dr. Stella Churchill at the house of the Medical Society of London, 11, Chandos Street, W.1, on Monday, March 3rd. The chair will be taken by Sir William J. Collins at 5.15 p.m.

AT a meeting of the Royal Sanitary Institute to be held on March 14th, in the Council Chamber, Middlesbrough, a discussion on "Ventilation of cinemas, etc.," will be opened by Dr. W. S. Walton. The chair will be taken at 4 p.m. by Dr. Charles Porter.

AN announcement by the Royal Society regarding the Smithson Research Fellowship appears in our advertisement pages. Applications are invited from British subjects for this Fellowship, established for research in natural science with a view to the discovery of new laws and principles. Preference will be given to candidates not more than 35 years of age, and ordinarily the Fellow will be required to carry out his investigation in the University of Cambridge.

A POST-GRADUATE course in tuberculosis, arranged by the Joint Tuberculosis Council, will be held in the X-ray Department of the Hospital for Consumption and Diseases of the Chest, Brompton, S.W.3, from March 17th to 22nd. The course will be conducted by Dr. Stanley Melville, assisted by members of the hospital staff. At the first meeting, at 2 p.m., arrangements will be made for dividing the class, which is limited to twenty-five members, into small groups for studies in the *x*-ray department (screening and dark room, reporting, diagnosis) and for visiting the wards and out-patient department. The provisional programme includes lectures on the diagnosis (*x*-ray) and on the surgical aspect of pulmonary tuberculosis, technique, bronchiectasis and lung abscess, intrathoracic new growths, and dental radiology. Clinical demonstrations will be given during the week, and, if possible, demonstrations of the technique of lipiodol injection. There will also be opportunities for visiting manufacturers, and for the discussion of any films that members of the class bring with them. The fee for the course is three guineas.

THE Fellowship of Medicine announces that Professor F. R. Fraser will lecture on the uses and abuses of digitalis at the Medical Society Lecture Room at 11, Chandos Street, Cavendish Square, on Tuesday, March 4th, at 4 p.m. Mr. Nicol Rankin will give a special demonstration on the guillotine enucleation of tonsils in children at the Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, on Tuesday, March 4th, at 9 a.m. A demonstration on clinical laboratory findings will be given by Dr. F. A. Knott at the Royal Waterloo Hospital on Thursday, March 6th, at 2.30 p.m. The lecture and demonstrations are free to medical practitioners. Special courses on the following subjects will be given in March: diseases of the chest at the Brompton Hospital from March 10th to 15th, occupying all day; orthopaedics at the Royal National Orthopaedic Hospital from March 10th to 22nd, occupying all day; neurology at the West End Hospital for Nervous Diseases from March 17th to April 12th, every afternoon at 5 o'clock; venereal diseases at the London Lock Hospital from March 17th to April 12th, during the afternoons and evenings; medicine, surgery, and gynaecology at the Royal Waterloo Hospital from March 24th to April 12th, in the afternoons and some mornings; and gastro-enterology at the Prince of Wales's Hospital from March 31st to April 5th, occupying all the day. Copies of all syllabuses will be sent on application to the Secretary, Fellowship of Medicine.

THE post-graduate lectures and demonstrations on medical, surgical, and special subjects given by the honorary staff of the Manchester Royal Infirmary will be resumed on Tuesday, March 4th, and will be continued each week, with the exception of April 22nd, till June 3rd. On Fridays, commencing March 7th, demonstrations of clinical cases and methods will be given in the wards and special departments; they will be continued (with the exceptions of April 18th and 25th) until May 30th. The lectures and demonstrations, for which there is no fee, will commence at 4.15 p.m., and tea will be served at 3.45 p.m.

SOME 350 medical men and women and their guests were present at the dinner of the London Irish Medical Golfing Society, which was held at the May Fair Hotel on February 20th, with the president, Mr. Hugh Lett, in the chair. All the Services were represented by medical men, and among the distinguished guests were Lord Moynihan of Leeds, Lord Russell of Killowen, Mr. Arthur Greenwood, Minister of Health, Mr. A. V. Alexander, First Lord of the Admiralty, and Sir Robert Stanton Woods. In the course of the evening Lord Russell of Killowen, Mr. Hugh Lett, Mr. Michael Smith, and Lord Moynihan made brilliant speeches in proposing and replying to toasts.

THE second number of the new series of the *Liverpool Medico-Chirurgical Journal* has now appeared. It contains the full text of the Sir William Mitchell Banks Memorial Lecture, which was delivered in November, 1929, at the University of Liverpool by Professor Claude Regaud, who took for his subject "Radium therapy in the treatment of malignant tumours." There is also a pen portrait of the late Professor Ernest Glynn, and various clinical articles, as well as reviews. This journal is published half-yearly by Messrs. H. K. Lewis and Co., Ltd., 136, Gower Street, W.C.1. The price for the present issue—which is a double one—is 5s.

THE date of the forthcoming congress of the International Society for Microbiology, given in our last issue as June 25th, has been altered by the Central Committee in Paris to July 20th to 25th. To facilitate travelling arrangements, those intending to be present at the congress are invited to communicate with Professor W. W. C. Topley, London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1, or Dr. R. T. St. John-Brooks, Lister Institute of Preventive Medicine, Chelsea Gardens, S.W.3.

THE twenty-sixth Italian congress of dermo-syphilography will be held at Rome from April 24th to 26th. Further information can be obtained from the secretary, Dr. Vincenzo Montesano, Piazza Campo Marzio 3, Roma 120.

THE Gas Light and Coke Company, the oldest and largest gas company in the world, has issued a booklet on the occasion of its absorption of the areas of the Grays and Tilbury Gas Company and the Pinner Gas Company, Ltd. It is now authorized to supply gas over an area of 460 square miles. In 1929 it served a population of over four million, and employed twenty thousand people. In spite of the competition of the electrical industry, the increase in the annual sale of gas by the company during the last five years is only about eleven million therms less than the increase in the whole of the preceding twenty. It appears that the highest consumption of gas per acre in any residential district is in the Harley Street area, and that about five thousand members of the medical profession are "personal users" of gas fires. The booklet is illustrated, and particulars are given of research, training, and testing departments. There are also sections on the making of gas, central heating, and the application of gas in industry.

THE Joint Tuberculosis Council has prepared and circulated to all medical officers of health and tuberculosis officers a memorandum on the notification of tuberculosis with special reference to the chief objectives of this procedure, the clinical indications for it, and the ways in which medical practitioners can assist in preventing tuberculosis. Notification is urged (1) when suggestive constitutional symptoms are present with corroborative evidence; (2) when tubercle bacilli have been found; (3) in cases of haemoptysis or pleural effusion where there are other suggestive symptoms or signs; (4) in acute general tuberculosis and tuberculous meningitis; (5) in persistent chronic adenitis, arthritis, or bone disease where other causes than tuberculosis have been excluded; (6) in tuberculous dermatitis and lupus vulgaris; and (7) in *tuberculosis of the abdomen, the genito-urinary tract*, or elsewhere.

A STATE Institute of Hygiene has been brought into being in Prague, and in connexion with it a quarterly journal, entitled *Les Travaux de l'Institute d'Hygiene Publique de l'Etat Tchécoslovaque*, is to be published. The first issue, dated January, 1930, contains an account of the organization of this institute and an illustrated description of the section concerned with serums and bacterial vaccines. Further information may be obtained from the secretary of the editorial committee, Korunní Tr., Prague XII, Czechoslovakia.

A COMPLETE course of French study at the Sorbonne, Paris, is announced for June 29th to August 20th. The course consists of three parts: (1) preparatory work, with afternoon visits in Paris; (2) afternoon lectures (more advanced) on present-day questions in literature, politics, and economics; (3) eight days' journey, in small groups, in Western France. A second course, July 28th to August 24th, will only comprise the parts (1) and (2). All arrangements are under the direction of M. Henri Goy, Directeur du Bureau des Renseignements Scientifiques, Sorbonne, Paris, to whom inquiries should be addressed.

THE eighth international congress of the history of medicine will be held at Rome under the presidency of Professor Pietro Capparoni from September 22nd to the 27th.

THE sixth international congress of industrial medicine will be held at Geneva in August, 1931, when the following subjects will be discussed: (1) The remote results and evolution of traumatic lesions of the spinal column. (2) Injuries to blood vessels (arteritis and thrombo-phlebitis). (3) Cutaneous infections in relation to industrial accidents. (4) Previous condition in relation to consequences of industrial accidents. Further information can be obtained from the general secretary, Dr. Yersin, 1, Rue du Rhone, Geneva.

THE KING has approved of the appointment of Dr. Norman Lockhart Joynt, *M.C.*, to be an official member of the Executive Council of the Presidency of the Virgin Islands.

DR. ROBERT DOERR, professor of hygiene at Basle, has been awarded the Josef Schneider gold medal by the University of Würzburg.

DR. J. TRICOT-ROYER of Antwerp, president of the International Society of the History of Medicine, has been made an Officer of the Crown of Italy.

THE fortieth anniversary of the École de Psychologie of Paris, founded by Dr. Bérillon, has been celebrated at a meeting attended by Professors Richet, Pierre Janet, Roux, Menetrier, and Marcel Labbé.

THE following appointments have recently been made in *foreign faculties of medicine*: Dr. *Ernst Leupold*, professor of general pathology and pathological anatomy at Cologne; Dr. H. Burckhardt of Marburg, professor of medicine at Kiew in the Ukraine; Professor Poffe, dean of the medical faculty at Rostock; and Dr. Louis Debayle, dean of the medical faculty at Nicaragua.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863*, and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

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MEDICAL SECRETARY, *Medocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 21361 Edinburgh).

QUERIES AND ANSWERS.

PAIN FOLLOWING HERPES ZOSTER.

DR. NORMAN WILSON (Alassio) writes: I should be grateful for suggestions for the treatment of persistent pain following herpes zoster.

TREATMENT OF HAEMORRHOIDS.

DR. G. FRANCIS SMITH (Watford) writes: I should be glad to know what is regarded as the best treatment for haemorrhoids, particularly with regard to injections. Removal is unpopular, and my experience of urethane and quinine, for instance, is unsatisfactory. Carbolic seems occasionally to cause sloughing.

DIARRHOEA FOLLOWING INTAKE OF SUGAR.

"R. M. R." writes: I should like to have an opinion on the following case. The mother of a boy, aged 4, reports "whenever he takes anything sweet, whether sugar, confectionery, or fruit, it runs through him." He has four actions of the bowels during the day; the motions are generally fluid, and of a dark colour. He has had this trouble for two months. He looks well and is very active. There used to be pain when the bowels acted, but not now. He has lost flesh. He improved on reducing the sugar and prescribing dilute hydrochloric acid, but the trouble does not clear up.

LEAD URINALYSIS.

"M. D." writes: I wonder if Dr. W. E. Cooke of Wigan (February 22nd, p. 359) was able to detect lead in the urine of his cases of plumbism. Lately in a marked case, in a house painter, of lead colic with the blue line in the gums I failed to detect lead in the urine by the test given in Taylor's *Medicine*; in this test a little ammonium oxalate is added to the urine, and there is a deposit of lead on a strip of magnesium immersed in it. This may be verified by treatment with iodine fumes causing the yellow iodide to appear. Can any of your readers say if the test given in Taylor's *Medicine* is trustworthy?

BROKEN SLEEP.

"M. W." (London), replying to the question of "Broken Sleep" in the *Journal* of February 22nd (p. 371), writes: I suggest that "D. S." should try dial 1½ grains at bedtime if the insomnia is not associated with pain.

"B. H." writes: "D. S.'s" trouble may be in part due to chilliness at 3 or 4 a.m., or possibly to early morning noises, after which he wakens. Some form of head covering and a screen round the head of the bed might be useful, and medinal 7½ grains at bedtime occasionally is very effective.

"F. A. B." writes: Sleeplessness coming on about 3 to 4 o'clock every morning suggests an acid dyspepsia. "D. S." might try Parke Davis's antacid lozenge.

TURBINATE CAUTERIZATION FOR COLDS.

"RELIEVED" writes: Having derived considerable benefit in the form of freedom from colds by having my turbinates cauterized, I repeated the procedure two years later, purely as a prophylactic measure. I should be grateful for opinions as to how often it might be advisable to be recauterized, from this point of view.

PRECIPITATE EJACULATION.

"R. M. L." (Birmingham) writes in reply to "N. D." (February 15th, p. 320): *Ejaculatio praecox* is a psychological mechanism, and is usually due to an unconscious fear of lack of virility. Appropriate psychological treatment will effect a cure.

URTICARIA FOLLOWING SERUM ADMINISTRATION.

DR. E. W. GOODALL (Hemingford Abbots, Hunts) writes in reply to "C. E.'s" questions in the *Journal* of February 22nd: The patient is probably asthmatically sensitive to horse emanations and products, and the urticaria was due to the horse serum. An asthmatic subject should not be given antidiphtheria serum in the event of an attack of diphtheria without a preliminary skin test, to ascertain whether he is susceptible or not. If he is susceptible, the serum should not be given, even in small doses.

INCOME TAX.

Change in Proprietorship; Cash Basis.

"W. R. B." was in partnership with A. until September, 1928; A. then retired, and "W. R. B." took an assistant. The practice has been assessed on the cash basis for many years. "W. R. B." did not purchase A.'s share of the debts outstanding at his retirement, and the revenue authorities are now claiming tax from A. on sums paid over to him in respect of such debts. Due notice was given requiring the authorities to assess the practice from September, 1928, as if it had then ceased and been restarted. Is this correct?

*** No; we can find no justification in the Income Tax Acts for assessing A. for a period subsequent to his retirement from the practice. On the other hand, "W. R. B." will be assessable in respect of the full profits of the practice, and if only that portion of the cash receipts which is retained by him is included in his income tax return, that statement will not represent the full gross income of the practice. Consequently, the alternatives are (1) to allow the existing assessments to remain unchallenged; (2) to claim a discharge of the assessments on A., and (*a*) for "W. R. B.'s" liability to be computed on the basis of including all post-October 1st, 1928, receipts as his, or (*b*) to render the returns for the financial years 1929–30 onwards on the basis of the value of the bookings, and not on the cash receipts.

Public Appointment; Motor Expenses.

P. H." is an assistant county medical officer, and his council makes him an allowance for travelling expenses calculated at 4½d. per mile. Can he claim "any deduction from income tax, and, if so, at what rate?"

*** The income tax allowance is restricted to expenses incurred wholly, exclusively, and necessarily in the performance of the duties of the office. We are of opinion that "P. H." can clearly claim a deduction of the excess of expenses so calculated over the amount of the allowance based on the mileage rate. But the authorities will no doubt start from the assumption that the council's allowance is adequate, and strict proof of the amount of the excess will be required—for instance, if "P. H." uses a four-seater car when, for official purposes, a two-seater car would serve the purpose, some reduction in his actual expenditure would strictly be justified in calculating the allowance.

LETTERS, NOTES, ETC.

A GENERAL METHOD FOR MALLORY'S TRIPLE STAIN.

MISS E. E. HEWER, D.Sc., lecturer in histology at the London School of Medicine for Women, writes: In the *Journal* of February 15th (p. 282) Dr. MacConaill outlines a general method for Mallory's triple stain, again emphasizing the fact that the material need not be fixed in a sublimate mixture. In a paper published in June, 1926, in the *Journal of the Royal Microscopical Society*, and entitled "The effect of fixative on staining reaction," I drew attention to the fact that Mallory's triple stain can be used after such fixatives as formol, formol saline, formol-acetic-Muller, Bouin, and neutral formol-Muller, with only slight variations in the colour reactions obtained. In view of the fact that this staining method is of such value, it is most regrettable that textbooks still continue to copy the statement as to Zenker fixation, in spite of the well-known excellent results of using other fixatives.

LARGE HYDROCELES.

DR. ROBERT B. COLEMAN (Bromley, Kent) writes: On September 7th, 1916, at the C.M.S. Hospital, Old Cairo, I operated on an Egyptian patient for hydrocele, the fluid from which measured 27 pints (540 oz., against 192 oz. reported). This hydrocele was of the bilocular variety—a single sac, but hour-glass in shape—the upper part being behind the peritoneum in the abdomen. The patient made an excellent recovery, and since the testicle had to be removed with it, owing to the very elongated cord, the sac was later inflated and allowed to dry; it remains an interesting specimen to this day. The case was reported in the *British Medical Journal* of December 7th, 1918 (p. 629).

AXILLARY BREAST.

DR. R. Y. STONES (Neston, Wirral) writes: In the *Journal* of February 15th (p. 283) Dr. R. E. Anderson describes two cases of axillary breast, and details of the following case, which misled me, may be of interest to others. An African woman, about 25 years old, a few months pregnant, was admitted on Christmas Eve, 1922, to my hospital at Maseno, Kenya Colony. Her temperature rose rapidly. As there were always sporadic cases of plague about, though no epidemic was occurring at the time, I carefully examined her for buboes. She complained of pain in the right axilla, and on examination a firm, tender swelling, about the size of a walnut, was found. I aspirated this swelling, and, to my surprise, drew off colostrum. The patient died later in the night, and a further examination of her axilla revealed the galactocele, with a small commencing bubo alongside, which I had missed. Aspiration of this second swelling after death proved the presence of *B. pestis*.

RHYTHMIC HAIR MOVEMENT.

DR. J. C. BENNETT (Hyde, Cheshire) writes: I should like to record a strange case of rhythmic hair movement which I observed in a patient suffering from scirrhous cancer of the breast that had been treated by implanted radium tubes. The patient, aged 32, had a small hard nodule in the left breast, with slight implication of the skin. On admission to hospital she was found to have small but definite glands in the axilla and in the supraclavicular fossa, and a number of tubes containing radium were inserted at and around the tumour. Reaction was very great, and superficial sloughing of the skin occurred. When this had healed a small hard mass still persisted in the upper and inner breast segment. Sixteen more tubes were then buried in the tissues, and shortly after, when the patient left hospital, she again came to see me. There was great pain and some swelling in the left arm, and a similar condition in the breast and around the tendons of the pectoral muscles. Whilst examining this I discovered what struck me as a rather curious phenomenon. The small fine hairs in the region of the outer side of the infraclavicular fossa and supraclavicular fossa were exhibiting a rhythmic rise and fall at intervals of about five seconds. The skin would show the characteristic "gooseflesh" condition and then smooth out again as one watched it—the hairs standing erect and then subsiding. Evidently waves of nervous impulse were being thrown into the sympathetic motor supply of the arrectores pilorum. I do not know the significance of this, but it was evidently caused by the action of radium on the local sympathetic nerves. As the other side of the chest was not affected, it would appear to bear out Langley's conclusions that there is no true reflex arc, as there is in the medullated nerves, and that the effect was produced by local means. Whatever the cause, it was a rather interesting and, to me, strange occurrence.

PRESCRIBING OF ASPIRIN.

AT a meeting of the Pharmaceutical Society, held in Edinburgh, on February 19th, Mr. D. B. Dott read a paper on acetylsalicylic acid in solution with potassium citrate. The questions dealt with were whether aspirin was dissolved in water by means of sodium bicarbonate retained character and therapeutic properties method of dissolving aspirin with any advantage. He stated that aspirin remained almost entirely stable under either condition, and that either solution gave a satisfactory method of administering this drug.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 51, 52, 53, 56, 57, 58, and 59 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 67.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

203. Anatoxin Prophylaxis against Diphtheria.

S. AHRENDT LARSEN (*Ugeskrift for Laeger*, December 19th, 1929, p. 1154), of the epidemiological division of the State Serum Institute in Copenhagen, states that this institute has, during the last few years, inoculated more than 2,500 children with anatoxin, which, in Denmark, is preferred to the toxin-antitoxin system of preventive inoculation, because the former is not poisonous and can be kept at room temperature for an unlimited period without deteriorating. Further, the fact that anatoxin contains no serum, and cannot, therefore, provoke serum disease, is a point in its favour when it is compared with the toxin-antitoxin mixture. The ability of anatoxin to convert a Schick-positive to a Schick-negative reaction was demonstrated in a group of 40 children, all of whom were Schick-positive at the beginning, and 36 of whom were Schick-negative two months after the first injection. The injections of anatoxin being voluntary, there was a certain number of children who were able to serve as controls because of objections raised by their parents to this procedure. In one children's home, exposed to infection with diphtheria, there were 40 children inoculated, of whom not a single one developed diphtheria, whereas among the 16 children who were not inoculated there were 6 who developed the disease. In the same home, between three and four months later, a new epidemic of diphtheria broke out, and all of the 5 new cases of diphtheria occurred among the 32 children who had not been inoculated, none of the 21 inoculated children developing this disease. All the injections of anatoxin were given subcutaneously, great care being taken not to introduce it into the muscles. The first injection of 0.5 c.cm. was followed about two weeks later by an injection of 1 c.cm.; the third and last injection 1 (c.cm.) was given after a week. The author recommends, however, an interval of at least three weeks between the first and second injections. The Schick test was not performed beforehand as it is already known that about 80 per cent. of children between the ages of 1 and 7 years are Schick-positive, and a fourth injection in each case seemed undesirable. The author has himself seen no case of anaphylactic shock after the second injection, but he has been informed by a Danish colleague of a case in which artificial respiration was required after the second injection. The child suffered, however, no permanent ill effects.

204. The Basal Metabolism in Heart Disease.

O. JERVELL (*Norsk Mag. f. Laegevid.*, December, 1929, p. 1269) has investigated the basal metabolism in 45 patients suffering from different forms of cardiac disease; in 14 cases it was found to be somewhat below the normal, in 22 it was raised 10 per cent. or more, in 17 more than 15 per cent., and in 4 over 50 per cent. Four out of 16 cases of mitral disease, and 4 out of 6 cases of aortic insufficiency, showed an increased basal metabolism; 12 cases with hypertension gave decidedly high values, even in the presence of compensation. No parallelism was found to exist between a rise of blood pressure and increased metabolism. Cases of hypertension, however, were more frequently accompanied by increased basal metabolism than were cases with normal or only slightly raised blood pressure. Compensated cases without rise of blood pressure, as well as 5 cases of neurotic heart, all showed a normal basal metabolism. Increased basal metabolism in patients with heart disease is of great diagnostic importance when Graves's disease may possibly be present; in such circumstances it may be supposed that the increase may sometimes be due in part to cardiac insufficiency or hypertension, and not only to thyroid intoxication as such. The increased consumption of oxygen is probably due to a defective resynthesis of lactic acid into glycose, as shown by Eppinger and his collaborators.

205. The Association of Pulmonary Gangrene and Tuberculosis.

M. ROCH and G. BICKEL (*Rev. Méd. de la Suisse Romande*, January 25th, 1930, p. 25) remark that little is known about the etiology of pulmonary gangrene, and particularly about the local parenchymatous changes which predispose to that infection. While the healthy pulmonary parenchyma is frequently invaded by certain aerobes, such as the pneumococcus and tubercle bacillus, it offers a much greater resistance to the anaerobes of gangrene. This explains both the rarity of forms of spontaneous infection and the fact that the infection, when it does occur, is found almost exclusively in lungs which have been previously impaired. The most important predisposing cause of pulmonary gangrene is bronchial dilatation, and little importance has been attached to the part taken by tuberculosis in the genesis of the disease. Most writers insist on the antagonism existing between the tubercle bacillus and the putrefactive anaerobes, and agree with von Leyden that the coexistence of tuberculosis and pulmonary gangrene is very exceptional. The present authors do not consider that this association, though infrequent, is so rare as is usually considered, and cite cases in support of this assertion. They arrange such cases in four groups: those in which the pathogenesis of the gangrene is quite separate from that of the tuberculosis, and the association of the two is a mere coincidence; those in which the gangrene is the result of an extension to the lung parenchyma of an infection following bronchial dilatation, or of a fetid bronchitis accompanying the tuberculosis; those in which the gangrene develops in a tuberculous area; and those in which gangrene constitutes the primary lesion, tuberculosis developing much later. Cases are reported illustrating each group. The authors maintain, however, that an antagonism does exist in some respects between the two diseases, and that, in general, gangrene only appears when the tuberculosis is latent. This, they add, is somewhat astonishing, as it would be thought that a debilitating disease, such as tuberculosis, would diminish the patient's powers of resistance to all other infections.

206. Etiology of Post-vaccinal Eruptions.

P. SEIER (*Derm. Woch.*, October 19th, 1929, p. 1511) states that a post-vaccinal exanthem, an eruption occurring eight to twelve days after vaccination, though known to Jenner, is an exceptional occurrence. As a rule it does not cause any constitutional disturbance. It may or may not be accompanied by a rise of temperature, and usually disappears in a few days without leaving a trace or at most causing only slight pigmentation. The exanthem may be morbilliform, scarlatiniform, urticarial, or papular. The rarest variety, of which the author records a case with an account of a biopsy, in a male infant, aged 1 year, is that resembling erythema multiforme. Two different views are held as to the nature of post-vaccinal eruptions. While Kalischer, Sobotka, Fürst, Huguenin, Rille, Groth, and Pirquet regard them as specific, like generalized vaccinia, others, including Bohn, Behrend, Schimmelpfenig, Pfeiffer, Epstein, Jochmann, and De Biehler, do not consider them specific, but analogous to toxin, drug, or anaphylactic rashes, and possibly attributable to absorption of the contents of the pustules. Although the author was unable to inoculate vaccinia on the cornea of a rabbit with the contents of a vesicle, he succeeded in finding changes in one of the vesicles resembling Guarnieri's corpuscles. He therefore concludes that his case was an example of generalization of the virus of vaccinia.

Surgery.

207. Traumatic Rupture of the Innominate Artery.

J. FEUZ (*Zentralbl. f. Chir.*, December 21st, 1929, p. 3203) records a case which is of interest owing to its rarity and the difficulties of diagnosis. A man, aged 27, while driving a motor car, ran it into a telegraph pole in order to avoid a car coming in the opposite direction. His chest was driven violently against the steering wheel, and he was admitted to hospital shortly afterwards in a condition of shock. There was considerable cyanosis of the face; the respiration was superficial and laboured, and there was blood-stained expectoration. The right radial pulse could not be felt, while the left was soft and rapid. A few ecchymoses were seen over the sternum, and there was tenderness of the whole of the right half of the thorax. Death ensued a few hours after admission. At the necropsy about 300 c.cm. of fluid blood was found in the right pleural cavity, and about 100 c.cm. in the left; the pleura was sprinkled over with small haemorrhages. The lungs were emphysematous, and showed many haemorrhagic foci. The myocardium was intact, but there were numerous small haemorrhages in the endocardium. The innominate artery was ruptured about 1.5 cm. from its origin, and the ruptured surface was surrounded by greyish irregular clots; the neighbouring tissue was soaked with clotted blood. No signs of syphilis or arterio-sclerosis were found in the artery, nor were any pathological changes found in the vascular system. With the exception of the

right second rib, which was fractured, no bony injuries had occurred. The absence of any damage to the sternum, clavicle, or first rib excluded the possibility of the artery having been directly injured by a fragment of bone. The rupture must have been due either to a sudden violent compression or to a violent rise of intravascular pressure at a point where the suddenly compressed artery was more or less completely occluded.

208. Liposarcoma of Mammary Gland.

R. A. LIFVENDAHL (*Surg., Gynecol. and Obstet.*, January, 1930, p. 81), who records an illustrative case, states that tumours composed of structures resembling embryonic and fatty tissue are not frequent, their sites of predilection being the lower extremities. Their malignancy is generally regarded as moderate, because there is usually a well-defined capsule; their growth is slow, and they are freely movable in the surrounding tissues. There is, however, a marked tendency to recurrences, and occasionally metastases occur in the lungs, mediastinum, subcutaneous tissue, and joints. Severe complications may also result from pressure on adjacent vessels and nerves, with subsequent alteration of the organs supplied. Moreover, the occurrence of dilated and tortuous veins over the mass, in the presence of infection, ulceration, abscess, or gangrene, predisposes to sepsis, especially when an operation is performed. Lifvendahl's patient was a woman, aged 41, who noticed small masses in both breasts seven months after giving birth to a healthy child whom she was suckling. Both breasts were amputated, but the fascia, pectoral muscles, and axillary glands were not removed. Three months after the operation metastasis in the lungs developed and death followed. Examination of the tumours showed the typical appearances of liposarcoma. Although sarcoma of the mammary gland occurs in 2 to 3 per cent. of all tumours of the breast, Lifvendahl has been unable to find any other case of liposarcoma of the breast on record.

209. Supracondylar Fracture of the Humerus in Children.

S. C. IVERSEN (*Ugeskrift for Laeger*, November 21st, 1929, p. 1041) has re-examined 37 of the 39 children who were treated at his hospital in the period 1922-27 for supracondylar fracture of the humerus. The treatment of these cases was uniform, and practically every child was admitted as an in-patient on the assumption that the success of treatment largely depended on careful supervision. Of the 37 patients, only 2 were over the age of 12, and there were 20 boys to 17 girls. The left arm was involved in 25 cases, the right in 12. The lesion was an extension fracture in 27 cases, and a flexion fracture in 7; in the remaining 3 cases there was no displacement whatever. The re-examinations were made from one to six years after discharge, when almost complete restoration of the normal appearance of the arm was found in 15 cases. In 20 cases permanent changes—deformity or limitation of the range of movement, or both—were found. While the usefulness of the arm could not be said to be diminished, in some cases the cosmetic value of the arm was reduced by the cubitus varus. In only two cases were there such serious changes (*deformity, limitation of range* of movement, trophic disturbances) that the functional value of the arm was appreciably reduced. The *author concludes* that the general opinion as to the *good functional results* following the treatment of most such cases is justified by his own observations.

210. Haemorrhage from the Male Breast.

B. MARTIN (*Zentralbl. f. Chir.*, January 18th, 1930, p. 130), who records a personal case, states that only fourteen previous examples of haemorrhage from the male breast have been recorded, these being collected in a thesis by Jeran. One patient had a carcinoma, five a benign tumour, and in one no tumour could be found. Martin's patient was a man, aged 57, who had a tumour of the left breast for eighteen months, and a spontaneous blood-stained discharge from the nipple for six months. The breast and axillary glands were excised, and histological examination of the growth showed the condition to be a cystadenoma with carcinomatous degeneration in parts. Recovery ensued.

211. Isolated Fracture of the Transverse Lumbar Process.

G. TOSCHI (*La Chir. degli Organi di Movimento*, November, 1929, p. 286) records, with radiographic illustrations, eighteen cases of processes in the lumbar region, and two where the body of the vertebra was also injured. The accident is not common and is difficult to recognize without a good radiogram. Most of the author's cases were due to direct violence. Of the 34 fractures observed, 10 affected the first lumbar vertebra, 8 the second, 9 the third, 5 the fourth, and 2 the fifth; there were 17 male patients and 2 female. The fragments usually remain in good position, and, if complete rest for two or three weeks is taken, union occurs normally. As regards the symptoms, there is no definite characteristic position; *standing upright* is almost impossible, or sitting without support, the dorsal decubitus being usually preferred. The author discusses the character of the pain, the functional disturbances, late ecchymosis, abnormal mobility of the fragments, and some of the difficulties of radiographic examination in these cases. In treatment, it is added, rigid support of the spine is unnecessary, and may do harm.

Therapeutics.

212. Stramonium in Post-encephalitis.

A. L. JACOBSON and F. EPPLEN (*Journ. Amer. Med. Assoc.*, December 28th, 1929, p. 2027) remark that, except for the limited value of [illegible] in diminishing tremor, no remedial or [illegible] have been in general use for the treatment of the many variations of the Parkinsonian syndrome; not until the various alkaloids of the Solonaceae (a group including belladonna, hyoscyam[illegible] were used was any noteworthy benefit [illegible] mine and small amounts of atropine and scopolamine constitute the chief alkaloids of stramonium leaves. Encouraged by the favourable report of Carmichael and Green on the effectiveness of stramonium in diminishing post-encephalitic rigidity, the present authors undertook to check these observations in a series of hospital and private cases of both the post-encephalitic and the idiopathic paralysis agitans types. Six brief case histories are given, which show the benefits of this treatment. The United States Pharmacopoeia tincture of stramonium was administered orally three or four times daily in doses ranging from 20 to 70 minims. Such symptoms as fatigability, myalgia, ptyalism, hyperhydrosis, and muscular rigidity were invariably relieved; the bradykinesia was improved, and the closely related mental retardation was strikingly affected. Tremor was always benefited, but better results were obtained by the addition of one or two daily doses of scopolamine. No change was noticed in the pareses. Stramonium seemed to be most valuable in the most advanced cases. The authors consider it an excellent palliative remedy for all the sequels of encephalitis, except the pareses. It is of great benefit in idiopathic paralysis agitans, but not so much as in the syndrome of post-encephalitic periods. Very large doses are necessary; toxic manifestations are rare and seemingly transient.

213. Relief of Ocular Pain.

ORBITAL injections of concentrated alcohol in the treatment of painful eyes the vision of which has been completely lost have been advised by Grüter, and favourable results have been reported by many authorities, notably Jaensch and Danis. L. WEEKERS (*Le Scalpel*, January 25th, 1930, p. 85) has confirmed the value of this form of treatment, and has also tried orbital injections of slightly concentrated alcohol in painful ocular affections when vision has not been destroyed. The results in these cases also have been excellent, the effect on the pain being practically immediate. Exceptionally a slight oedema of the pupils and conjunctiva is noticed for two days, but this causes no inconvenience. Though slight diminution of the corneal sensibility persists for a few days, this returns to normal very rapidly, while the relief as regards the pain usually persists. Ophthalmoscopic examination reveals no circulatory trouble in the optic nerve after the injection, and in no case was any harmful effect noted on the vision. Weekers first injects into the orbit 1 c.cm. of a 2 per cent. solution of novocain, as in retro-ocular anaesthesia. The needle is left in place, and after some minutes 1 c.cm. of 20 to 40 per cent. alcohol is injected, the alcohol being still further diluted by the oedema caused by the anaesthetic injection. He emphasizes the importance of having the point of the needle in the centre of the orbit at the moment of injection. If the needle is entered at the level of the external palpebral commissure, it must be pointed upwards and inwards; otherwise the alcohol will be injected against the external orbital wall and a transient paralysis of the right external muscle will result. These injections should, he thinks, be reserved for those ocular affections which cause great and persistent pain, when the usual analgesics prove of no avail. Weekers has employed this method in a considerable variety of morbid conditions, including traumatic lesions, corneal ulcers, neuralgic keratitis, scleritis, and hypertensive iridocyclitis; in the last-named the best results were obtained. Apart from their action on the ocular tension, injections of alcohol do not apparently have any effect on the progress of the disease; patients are relieved by the treatment, but the objective symptoms continue unchanged.

214. Serum Therapy in Typhoid Fever.

J. VERGELY (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, January 10th, 1930, p. 7) has used Rodet's serum with success in six cases of enteric fever during the last two years. He describes two typical cases in detail, and remarks that while the first of these was mild and uncomplicated, the second patient's illness caused great anxiety on account of advanced pregnancy, which terminated in abortion. The author advises that serum should be given as soon as possible after the diagnosis has been established, the usual routine treatment of the disease being followed simultaneously. He thinks it probable that the intestinal ulcers have not healed when the temperature falls, and therefore the dietetic restrictions should not be relaxed. It is advisable to give the first serum injection before the tenth day of the illness; when used towards the fourteenth day it has no effect. A blood culture should be made, therefore, at the commencements of the illness. Vergely has encountered no complication following the injection of serum, except an occasional local urticaria at the site of injection, and one case of generalized urticaria. It is claimed that the treatment shortens greatly the course of enteric fever and appears to prevent the occurrence of complications.

Ophthalmology.

215. Muscle Transplantation for Paralytic Strabismus.

S. R. GIFFORD (*Arch. of Ophthalmol.*, December, 1929, p. 651) considers that the results obtained in paralytic strabismus by advancing the paralysed muscle, combined with tenotomy of the opponent, are usually only temporary; the original squint recurs subsequently. The methods of Hummelsheim, O'Connor, and others merit, he thinks, more frequent application. Good results were obtained in three cases, here reported, in which a modified Hummelsheim operation was performed. In two of these the outer third of the superior and inferior recti were sutured under the tendon of the external rectus, tenotomy of the internal rectus being also performed. In the third case, following an apparent previous section of the muscular portion of the internal rectus, tenotomy of the external rectus was performed, and the inner thirds of the superior and inferior recti were sutured under the insertion of the internal rectus after its adhesions to the globe had been separated. The technique of the operation is described. This method differs from that of Hummelsheim in the free exposure of all three tendons and the insertion of the muscle transplants beneath the tendon of the paralysed muscle. Hummelsheim sutured his transplants under Tenon's capsule over the muscle insertion. Methods employed by other authorities are cited by Gifford, who adds that little reaction followed the operation in the three present cases, and that there was no visible lump beneath the conjunctiva such as is seen after a tuck. The only danger in the operation is that of weakening the vertical recti; this can be avoided by careful exposure of the whole muscle before the outer third is isolated. The method cannot be employed in cases of complete paralysis of the third nerve, since here the vertical recti are paretic. In these cases Weiner's method of suturing the superior oblique to the internal rectus tendon would seem more advisable. Before resorting to operation, sufficient time must have elapsed to eliminate the possibility of recovery of the paretic muscle.

216. Perforating Injuries of the Eye.

H. L. BEGLE (*Amer. Journ. Ophthalmol.*, December, 1929, p. 970) describes briefly some cases of injury to the eye by small particles of steel, with a view to illustrating the direct ratio between the severity of the injury and the size of the foreign body; the influence of the location of the entrance upon the amount of a permanent disturbance; the occasional freedom of the crystalline lens from important opacity secondary to its penetration by fragments of steel; the difficulty of removing these fragments from the crystalline lens when once the capsule has healed; and, finally, the question whether a minute steel particle might ultimately be absorbed and disappear from the tissues of the eye. Begle then records fourteen cases. One patient, a toolmaker, aged 45, was struck in the eye by a foreign body when at work. The injury affected him so little that for four days he did not report the matter, his vision then being only slightly blurred. There was a small crescent-shaped wound of the cornea in the pupillary area, downward and nasalward from the centre of the cornea. Almost directly behind the corneal wound there was a small wound of the anterior capsule of the lens. A minute foreign body lay in the centre position of the lens; the lens substance around it was clear, but the spicule was partly covered by a grey film. The eye was slightly injected. Under cocaine anaesthesia a fragment of the steel was drawn by a magnet through the capsular wound into the anterior chamber. It was allowed to remain there for twenty-four hours to enable the capsular wound to close under the same conditions as when the steel entered the lens. Within five days the patient was back at work, and three years after there was no opacity of the lens substance, though a small capsular opacity was visible at the side of the perforation. In the case of another man, aged 34, who was injured in the right eye by a flying piece of steel, it was several weeks before his vision began to fail, and not until then was the injury recognized as serious. There was a scar in the pupillary zone of the cornea, and a small fragment of steel in the lens cortex. Cataract formation was advanced. It was impossible to draw the steel through the lens capsule since there was no sharp edge, and it could not be made to cut through the capsule. Some weeks later, the eye having become red and irritated, another attempt was made, and succeeded with little difficulty. Begle concludes that if a fragment of steel lies in the lens, and the opacification is not advanced, but there is useful vision, an attempt should be made to remove the fragment as early as possible, for eventually, through siderosis, complete opacification will result. A strong magnet should be used, and repeated attempts be made if necessary. If this is unsuccessful, incision of the anterior capsule is worth trial. It has been assumed that if an *x*-ray examination fails to show the presence of a foreign body complete resting has occurred, and the fragment has become resorbed. Such an assumption, Begle maintains, is not justified by a negative *x*-ray examination alone. He agrees that a small foreign body may pass entirely through the lens and yet the patient may retain useful industrial vision; the reason given is that opacification of the lens is limited to a punctate opacity at the point of entrance in the anterior capsule and a disc-shaped opacity of the posterior lens capsule at the point of exit.

217. Optic Neuritis after Whooping-cough.

G. H. HOGG (*Med. Journ. of Australia*, August 3rd, 1929, p. 169), who recorded a case of optic neuritis in whooping-cough (see *Epitome*, October 1st, 1927, para. 300), reports another example of this rare complication in a girl aged 3 years and 5 months. When examined five months after the onset of whooping-cough she was quite blind in her left eye, and with the right eye she could only see large toys at a distance of 30 to 40 cm. There was bilateral optic atrophy, most marked in the left disc. Slight improvement of the vision of the right eye occurred after two months' treatment with strychnine, but the appearance of the discs remained the same. Hogg has collected seven other cases of optic neuritis in whooping-cough in patients aged from 3 to 40; in five of these recovery took place, and in two atrophy supervened.

218. Malaria Therapy in Interstitial Keratitis.

IRENA MRAZOVA (*Bratislavské Lekarské Listy*, December, 1929, p. 1259) tried therapeutic inoculation with malaria in twelve cases of interstitial keratitis, combining it with preliminary and subsequent antisyphilitic treatment. The subjective and objective symptoms were relieved during the attack of malaria, but recurred and even became worse subsequently; appreciable improvement was noted in only two cases. The malaria did not prevent recurrences or have any prophylactic effect, and the Wassermann reaction remained positive throughout.

Obstetrics and Gynaecology.

219. The Radium Dosage for Menorrhagia.

N. ASHERSON (*Journ. Obstet. and Gynaecol. of the British Empire*, Winter, 1929, p. 778) summarizes the results of radium treatment in 98 cases of menorrhagia not due to uterine fibroid or malignant disease, during five years at University College Hospital. Of these, 66 were cases of menorrhagia of the menopause, and amenorrhoea resulted in all but one case. The dose, which had to be repeated in only six instances, was as a rule 1,200–1,800 milligram hours of radium element. After dilatation and curetting under general anaesthesia, a tube of 50 mg. of element in a platinum container with walls 0.5 mm. thick, and covered by a 2 mm. rubber screen, was left in the cavum uteri up to thirty-six hours. No case receiving 1,800 milligram hours of element dosage required a second application. Twenty-three patients with essential menorrhagia (intractable menorrhagia apart from the menopause and unaccompanied by clinically detectable pelvic abnormality) were treated by one or two radium applications. Although only one failed to show improvement, in only about one-fifth did complete amenorrhoea ensue.

One patient, becoming pregnant sixteen months later, was delivered of a living child which had double inguinal hernia. By subdivision of the patients treated into age groups the conclusion is drawn that in patients between puberty and the menopause the size of the radium dose required to produce amenorrhoea is inversely proportional to the age of the patient. It is also noted that of 80 cases of menopausal haemorrhage treated by radium malignant disease of the uterus did not supervene in a single case. It is therefore suggested that in the radiotherapeutic induction of a premature menopause a prophylactic against carcinoma of the cervix has possibly been found.

220. Anaemia in Pregnancy.

C. E. GALLOWAY (*Journ. Amer. Med. Assoc.*, November 30th, 1929, p. 1695) gives results of blood examinations made on 382 pregnant women, from which it appears that in a large number (65 per cent.) of pregnant women anaemia is present, and that it becomes more marked as pregnancy advances. The degree of anaemia was never severe; no examination revealed a haemoglobin percentage lower than 50, and the lowest average percentage for any period was 66; the lowest red cell count recorded is 3.2 million per c.mm., and the lowest average during the third trimester was 3.87 million per c.mm. Galloway found no difference in the tendency towards anaemia between multiparae and primiparae. Only 19 per cent. of the patients received treatment other than diet, with simple iron and liver preparations. It was found that liver therapy was not so beneficial as iron, or a combination of iron and arsenic. Seventy-four cases did not respond to diet and tonics, but twelve to twenty exposures to ultra-violet rays, at two-day intervals, gave satisfactory improvement in 51 cases. The author adds that the important treatment of anaemia in pregnancy, as in all forms of anaemia, is the elimination of foci of infection, such as pyelitis and infected teeth and tonsils.

221. The Low Caesarean Operation.

H. MAGOS (*Bruxelles-Méd.*, December 1st, 1929, p. 123) discusses his experience of treating 21 patients by the low Caesarean operation preceded by trial labour. He considers that the great advantage of this method lies in the fact that the trial labour may terminate in a normal delivery. If an operation is found to be necessary there is less danger of infecting the peritoneum in the low operation, and also there results a more resistant scar than in the high operation. In cases of contracted pelvis he finds it advisable to let labour proceed, and to follow the progress of the head by abdominal palpation. The bag of membranes does not hinder engagement except in hydramnios. Rupture of the membranes should be avoided. If after six to eight hours of intense labour the head still floats at the superior strait, in spite of an advanced dilatation, it becomes necessary to decide whether the state of the mother or child demands surgical intervention. If the membranes are ruptured when the patient comes under observation the trial labour should not be prolonged. The most important point in the preparation of the patient is catheterization of the bladder. Even with this precaution the bladder may not contract sufficiently to allow an incision to be made in the lower segment, in which case a high Caesarean operation has to be performed. Occasionally the foetus may have to be extracted through the incision by means of forceps. Post-operative treatment should be devoted to care of the bladder. Patients are said to suffer no shock after this operation, and to run very little temperature.

Pathology.

222. Development of Immunity in Experimental Typhus Fever.

Y. FUKUDA (*Zentralbl. f. Bakt.*, December 16th, 1929, p. 83) cites evidence that in guinea-pigs immunity to typhus fever always follows an active infection with the virus, and that it may be the sequel of a symptomless infection. In his first experiment [illegible] were injected intraperitoneally with [illegible] virus-containing brain from a "passage" guinea-pig on the fourth day of fever. The twenty animals developed fever six or seven days later, the temperature rising above 39.2° C.; they remained febrile for a week and then recovered. A fortnight after the end of the fever each animal was injected intraperitoneally with one-tenth of a virulent brain; none of the animals developed a temperature during the succeeding three weeks, and were therefore regarded as having acquired an active immunity. In his second experiment four groups of four guinea-pigs were injected subcutaneously with 5 c.cm. of immune serum, taken from guinea-pigs fourteen days after the end of a febrile attack. On the following day Group I received 0.0001, Group II 0.001, Group III 0.01, and Group IV 0.1 of virulent brain. A control guinea-pig was included in each group, and received virus but no serum. In the first group the animals remained afebrile, and when reinjected eight weeks later with 0.1 virulent brain all gave a typical febrile reaction. In the second group there was no fever after either the primary or the secondary injection. In the third group three animals developed some fever after the first injection, but did not respond to the second. In the fourth group all animals reacted to the first but not to the second injection. The control animals all reacted to the first but not to the second injection. The blood of Group I animals, taken on the fourteenth day after the first injection, proved to be avirulent, while that of Group II was virulent. The author explains these results as follows. In Group I the virus was destroyed by the immune serum; no true infection developed, and the animals were therefore susceptible to a second injection. Group II developed a symptomless infection, sufficient, however, to produce an active immunity. In Group III the serum was not able to suppress all symptoms of disease, and in Group IV it had no appreciable effect on the course of infection; in both groups active immunity developed as the result of infection. The author concludes that for a given dose of virus there is a corresponding dose of serum which, while suppressing the actual symptoms of disease, allows the virus to develop in the body and to call forth an active immunity in the host.

223. The Glycogen Content in Heart Muscle.

A. COSTA (*Lo Sperimentale*, December 30th, 1929, p. 605), using the micrometric histological methods of Tangl and the chemical analytical procedure of Polenski, has estimated the amount of the glycogen content in the heart muscle of man in cases of spontaneous cardiac hypertrophy, and in the experimental cardiac hypertrophy of rabbits produced by the technique of Rosenbach. The operation was performed on twenty rabbits, and a number of healthy rabbits were examined as controls. The results of Costa's observations show that in rabbits the diameter of the cardiac muscle fibre was increased in hypertrophy, the percentage of glycogen was lowered, but the total glycogen content was unaltered. Regarding the glycogen content as an index of muscle metabolism, it appears that disintegration and synthesis proceed *pari passu*, and the reserve glycogen, which remains unchanged in amount, is a phase of metabolic equilibrium. From stained sections it was discovered that the distribution of the glycogen is unequal and variable in site; it is deposited in the sarcoplasm and in the perinuclear plasm of the muscle cells. It is added that the specimens of muscle obtained from the left ventricle in human cases at necropsies give results which are subject to the correction of error from the rapid degeneration of glycogen after death.

224. Immunizing Value of Heated Vaccine Virus.

H. ZEHNDER (*Zeit. f. Immunitätsforsch.*, December 30th, 1929, p. 365) has endeavoured to repeat Nakagawa's experiments on the immunizing effect of a vaccine made from heated vaccinia virus. The cocto-immunogen was prepared by heating raw vaccine lymph, diluted one-fifth, for forty minutes to 98°–99° C., centrifuging, and using the supernatant fluid. In some experiments the centrifuged deposit was used. Rabbits were inoculated daily for eight to ten days into the left testicle with increasing amounts of the cocto-immunogen; fifteen to thirty days after the last injection the animals were injected into both testicles, into the cornea, and into the skin with diluted living vaccine virus. On the day previous to the infection blood was taken from the ear vein, and the serum was tested for viricidal power. The results showed that the left testicle, into which the heated vaccine had been introduced, was insusceptible to living virus; the right testicle, however, reacted to a greater or less degree, while the skin and cornea reacted like those of control rabbits. No viricidal bodies were found in the serum of the vaccinated animals. Examination of the testicles showed that even in the insusceptible left testicle the virus was present a week after inoculation. In a second group of control rabbits receiving a single dose of living vaccine two to four weeks before the test dose, the testicles, skin, and cornea all proved insusceptible to the second infection, the serum contained viricidal antibodies, and no virus was found in the testicles. Rabbits treated by eight to ten intratesticular injections of ox serum or of muscle extract behaved in the same way as those receiving the cocto-immunogen. The author therefore concludes that the insusceptibility of the treated testicle in rabbits inoculated with the cocto-immunogen is merely the result of a non-specific local increase in tissue resistance, and is not due to a true specific immunity.

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Vitamin Ext. of Malt & Cod Liver Oil

(Toffee Flavoured) **(Savory & Moore)**

A perfect blend of Pure British Malt Extract with highest grade Cod Liver Oil. Its unusual Toffee Flavour appeals. The high essential Vitamin content A, B, and D renders the preparation particularly acceptable in deficiency diseases, supplementing the Vitamin content of an ordinary diet.

Invaluable for Delicate Children, Convalescents, Nursing or Expectant Mothers.

Prices: 1-lb. 1/9; 2-lb. 3/-; 4-lb. 5/6 per jar.

Fructole Ephedrine Co. (Savory & Moore)

An elegant and palatable preparation with a fruit base. It offers a ready means of controlling the desired dose of Ephedrine Hydrochloride. Each teaspoonsful contains 1/8th of a grain of Ephedrine Hydrochloride.

Indications: Whooping Cough, Colds, Asthma, and allied conditions.

Price: 4-oz. 2/6; 8-oz. 4/6 per bottle.

JOHN BELL & CROYDEN

Incorporating Arnold & Sons,

50-52, WIGMORE STREET, LONDON, W.1.

Dr BENGUÉ'S BALSAM

A Reliable Preparation

for the relief of pain in chronic or acute Rheumatism, Gout, various forms of Neuralgia and Neuritis, Sciatica, and Lumbago.

Free Sample and Literature forwarded on request.

BENGUÉ'S ETHYL CHLORIDE

Supplied in GLASS and METAL tubes for LOCAL and GENERAL anæsthesia.

All tubes can be refilled.

Illustrated Price List will be forwarded on request.

PULMO (BAILLY)

PULMO is indicated in Influenza, Colds, Catarrh, Laryngitis, Tracheitis, Bronchitis, Asthma, Pneumonia, and all Pre-Tubercular conditions.

PULMO acts specifically on the diseased tissues and morbid secretions of the Respiratory Tract.

Samples and Literature on application to the Sole Agents:

BENGUÉ & CO., LTD.

BENGUÉ & CO., LTD., *Manufacturing Chemists,* **24, Fitzroy Street, LONDON, W.1.**

Agents in India: Messrs. Smith, Stanistreet & Co. Ltd., 18, Convent Road, Entally, Calcutta.

The Ideal Laxative

REGULOL

REGD.

"REGULOL" IS AVAILABLE IN TWO FORMS: "PLAIN" or "COMPOUND." The latter is a combination with Phenolphthalein 4 grains per oz., and is indicated in more acute forms of Constipation where the simple lubricating effect of Paraffin is insufficient.

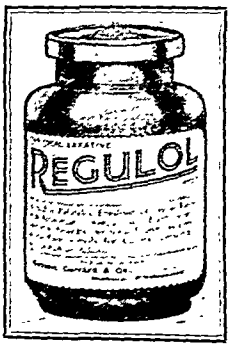
CUXSON, GERRARD & Co., Ltd.

Oldbury, *Birmingham.*

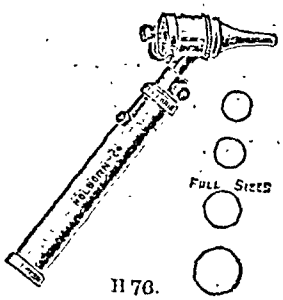
IT is a highly palatable Emulsion of Liquid Paraffin with Agar-Agar, possessing all the advantages of the former without its objectionable qualities, and forming probably the best possible remedy for Chronic Constipation in Children and Adults.

SAMPLE 1-lb. JAR FREE ON REQUEST.

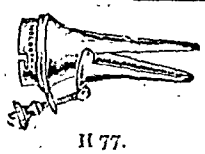
Please indicate whether Plain or Compound is required.



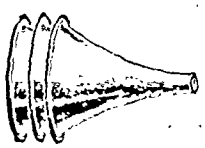
THE HOLBORN SURGICAL INSTRUMENT CO., LTD.
26, THAVIES INN, LONDON, E.C.1



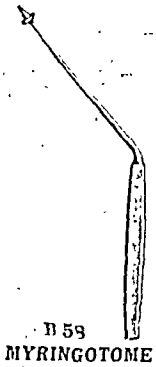
B 76.
WAPPLER MODEL AURISCOPE, with 3 specula and handle with rheostat; **45/-**
Extra small Speculum, 6/-.
Velvet-lined case for above, 7/6.
Auriscope with 1 speculum and Ever Ready Torch handle, **27/6**



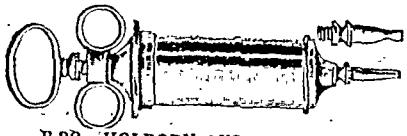
H 77.
NASAL SPECULUM dilating to fit Auriscope body, **10/6**



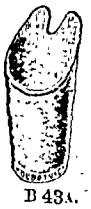
B 12.
PRITCHARD'S EAR SPECULA, round or oval end, *per set of 3.*



B 59
MYRINGOTOME
Nickel-plated, **2/9**
Stainless steel, **6/9**



B 26. HOLBORN AURAL SYRINGE, all metal with 2 pipes, nickel-plated.
2 oz., **8/6**; 3 oz., **9/6**; 4 oz., **10/6**; 6 oz., **13/-**



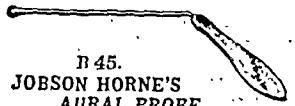
B 43A.
NOOTS' EAR TANK nickel-pld., **4/6**



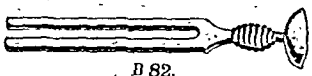
B 41.
RUBBER AURAL SYRINGE, **1/-** each.



B 56.
HEATH'S WOOL CARRIER, **1/9**

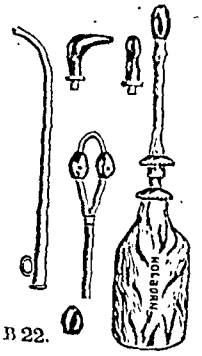


B 45.
JOBSON HORNE'S AURAL PROBE, 2 sizes, **2/-** each.

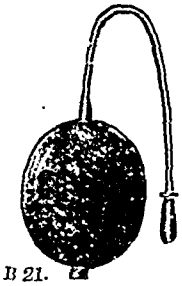


B 82.
GARDINER BROWN TUNING FORKS,

C 128	C 256	C 512	A 1435
8/6	5/6	4/6	4/6



B 22.

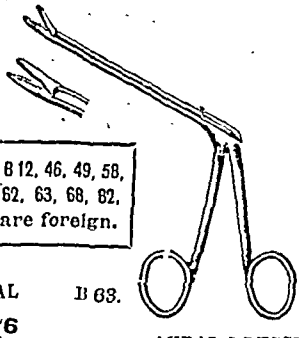


B 21.
LENNOX BROWN POLITZER BAG, **4/-**



B. 46.
QUER'S AURAL CURETTE, nckl.-pltd., **4/6**
Stnless steel, **8/-**

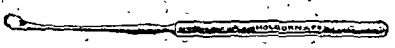
B 12, 46, 49, 58, 62, 63, 68, 82, are foreign.



B 63.



B 62.

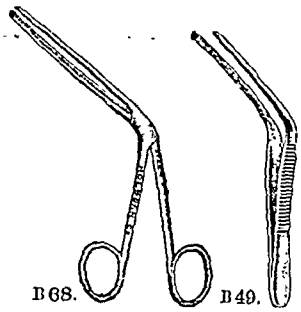


B 69.
HEATH'S EAR SCOOP, nickel-plated, **3/9**; Stainless steel, **7/-**

B 22. THE "HOLBORN" POLITZER BAG, capacity 7 oz., with flat base to stand on the table, with nasal olive, **9/6**
Extra for Eustachian catheter and vulcanite mount, 3/3; Gardiner or Lennox Brown Nozzle, 2/- each; Allen's double nose-piece, 5/-; set complete, as illustrated, **21/-**

AURAL DRESSING FORCEPS.

	nckl.-pltd.	stnless stl.
B 63. Hartmann's Crocodile pattern	9/-	14/-
B 62. Ditto, simple model	3/6	9/-
Ditto, extra fine	4/-	9/-
B 68. Golden Square pattern	7/6	13/-
B 49. Wilde's Spring pattern	2/6	5/-



B 68. B 49.

FOR DEAFNESS
Doctors prefer "ARDENTE" because

1. It is individually fitted to suit the case for young, middle-aged, or old.
2. It is simple and true-to-tone, and leaves the hands free.
3. It removes strain, thus relieving head noises.
4. It conveys sounds from all ranges and angles.
5. It is entirely different, uncopyable, and carries a guarantee and service system.
6. It is suitable for "hard of hearing" or acutely deaf.
7. It is helpful for conversation, music, wireless, home, office, public work, and sports

"ARDENTE" STETHOSCOPE.
Mr. R. H. Dent makes a Stethoscope specially for members of the medical profession suffering from deafness. Many are in use, and excellent results are reported on the latest, as evidenced by the interest shown at the last B.M.A. Meeting.

MEDICAL REPORTS.
Commended by all leading medical journals.—Mr. Dent will be happy to send full particulars and reprints on request.

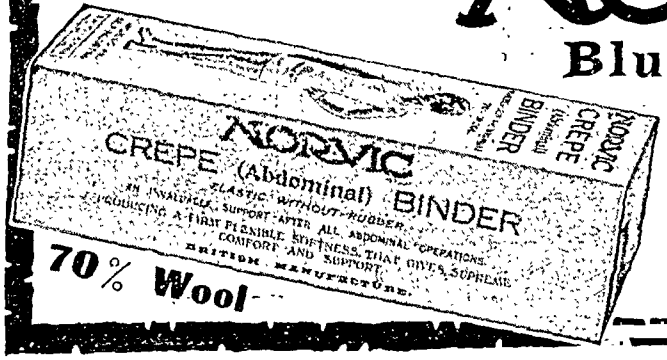
HOME TESTS ARRANGED FOR DOCTORS AND PATIENTS.
Medical Prescriptions made up to the minutest detail.

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(Midway between Oxford Circus and Bond St.)
Tel. : Mayfair 1380/1718.

9, Duke Street, CARDIFF.
27, King Street, MANCHESTER.
116, New Street, BIRMINGHAM.
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206, Sauchiehall Street, GLASGOW.
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111, Princes Street, EDINBURGH.
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MR R.H.DENT'S ARDENTE FOR DEAF EARS

Recognised by Hospitals and Medical Men
NORVIC *Regd.*
Blue Carton
Crêpe Binders



Always prescribe "NORVIC" for their durability and efficiency. Exceptionally elastic, washable, and invaluable in maternity and after surgical operations.

Prices:—6 in. 4/6, 8 in. 6/-, 11 in. 8/3.

Stocked by all the leading Chemists and Druggists; Boots 700 branches; Timothy White Ltd.; Taylors Drug Stores; and Parkes Chemist Ltd.

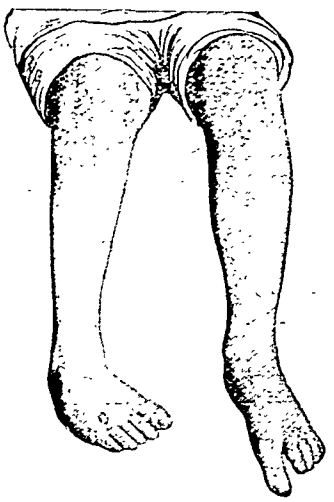
SURGICAL SERVICE
SALTAIR

SALTAIR SURGICAL SERVICE

Guarantee

"We guarantee to alter, exchange, or accept the return of any appliance without cost, ordered by the Medical Profession, if not found suitable within fourteen days from date of supply."

Salt and Son Ltd.



SALT'S PATENT VARUS BOOT AND LEG INSTRUMENT

A Typical Case of Talipes Varus.

Illustrations, reproductions of photographs, of a boy with and without Salt's Patent Varus Boot and Leg Instrument.

Photographs were taken when boot, etc., were first applied.

The first illustration shows how the ankle goes over outwardly, so that when standing weight would accentuate mal-position.



The second illustration shows Varus Boot and Instrument applied.

It will be seen that the front of the foot has been everted by boot, the ankle being held in correct position by "T" Strap fastening over instrument.

Salt's Patent Varus Boot and Leg Instrument has been successful in over 2,000 cases of Talipes Varus.

Write for full particulars.

SALT AND SON LTD.
7, CHERRY ST., BIRMINGHAM.

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ESTABLISHED 1793

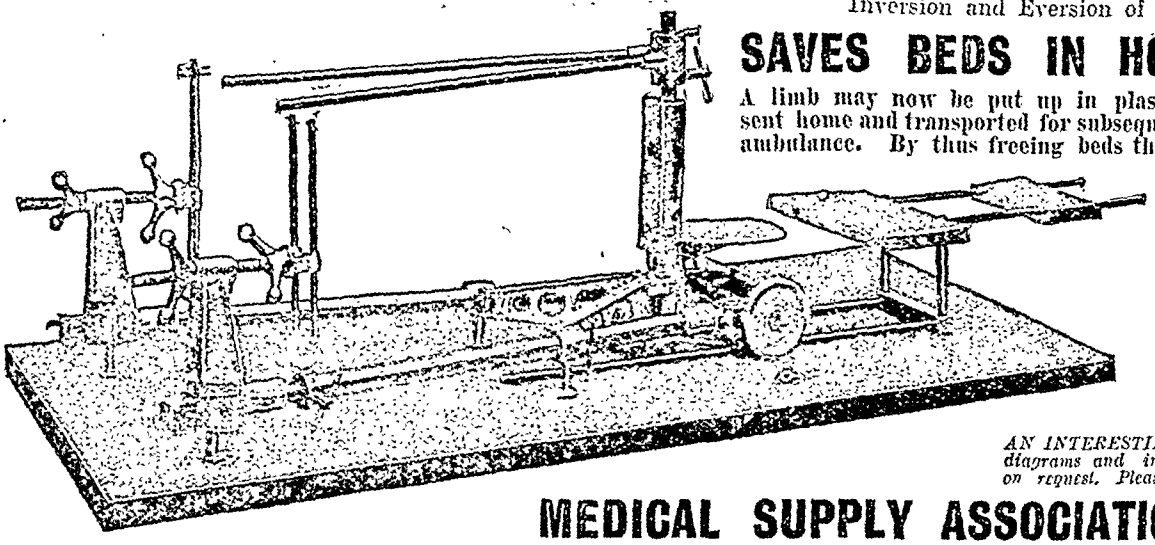
An IMPROVED and MODIFIED

Portable Traction Apparatus

An exceedingly efficient and convenient apparatus for putting up in plaster the lower limbs or trunk; also when applying bone plates or Parham and Martin's Bands to long bones of the lower extremity. Provides the more essential movements of expensive and bulky Orthopædic tables at a fraction of the cost.

Quickly adaptable for the following positions:

Extension of whole lower limbs.
Movements about hip-joint:
Abduction to any degree—
Hyperextension—Flexion—
Internal and External Rotation.
Flexion of knee-joint.
Inversion and Eversion of foot.



SAVES BEDS IN HOSPITALS

A limb may now be put up in plaster, the patient sent home and transported for subsequent treatment by ambulance. By thus freeing beds this new apparatus saves its cost many times over.

Folds compactly for storage or transit in plywood case 35 in. × 15 in. × 11 in.

AN INTERESTING LEAFLET giving diagrams and instructions, post free on request. Please ask for a copy.

MEDICAL SUPPLY ASSOCIATION, Ltd.,

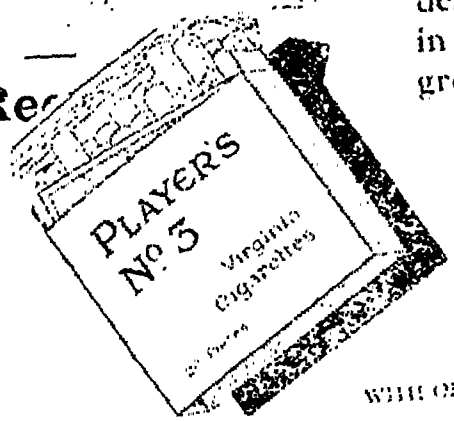
Telephone: Terminus 5432 (6 lines).

167/185, Gray's Inn Road, LONDON, W.C.1. | 12, Holly Street, SHEFFIELD. | 10/13, Teviot Place, EDINBURGH. | 4, Newport Road, CARDIFF.

PLAYER'S No 3

"The EXTRA QUALITY Virginia"

These superb cigarettes owe their mild, delicate flavour to scrupulous care in the selection of only the choicest growths of fine Virginia leaf.



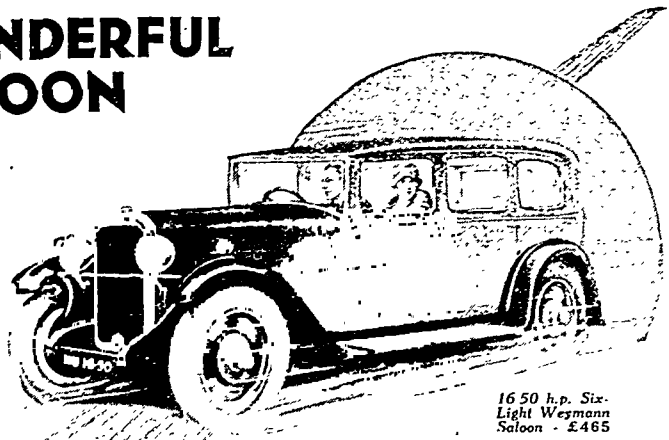
10 for 8d.
20 for 1/4
50 for 3/3
100 for 6/4

Virginia Cigarettes

WITH OR WITHOUT CORK TIPS

CHOOSE THIS WONDERFUL WEYMANN SALOON

The 16/50 h.p. Humber 6-Light Weymann Saloon is one of the most attractive of the new Humbers. The fabric body is manufactured on true Weymann principles, and has, of course, all the wonderful Weymann features of lightness and flexibility with great strength. A choice of very pleasing colour schemes is given—blue with grey wheels and mouldings, or green with beige wheels and mouldings. You should make a point of seeing and trying one of these very attractive cars.



16 50 h.p. Six-Light Weymann Saloon - £465

HUMBER

Send for Catalogue (M) 125 and ask us to arrange a trial run for you with your local Agent.

16 50 h.p. Humber 6-Light Weymann Saloon - - £465
16 50 h.p. Humber 4-Door Weymann Coupe - - £475

Sliding Roof on these models £10 extra. Triplex Glass and Dunlop Tyres.

HUMBER LIMITED, COVENTRY
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94, NEW BOND STREET, W.1
London Service Depot:
Canterbury Road, Kilburn, N.W.6
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SUCH CARS AS EVEN HUMBER NEVER BUILT BEFORE

B.3C.



GAMAGES-HOLBORN

52nd Anniversary SALE

NOW PROCEEDING

Big Reductions on LIVERIES

CHAUFFEURS' OVERCOATS, JACKETS, and BREECHES

Tailored from Dark Blue Melton Cloths, correct in style and smart in appearance. Overcoats as illustrated. READY-TO-WEAR in all fittings. Patterns on request.

Usual Price, 95/-
SALE PRICE **82/6**

CHAUFFEURS' BLUE SERGE SUITS

These are very smartly cut and tailored from a dependable quality Serge specially chosen for its hard wearing qualities, and are offered READY-TO-WEAR. In a wide range of sizes from which a perfect fitting suit is assured to men of practically any build.

Usual Price, 84/-
SALE PRICE **72/6**

IMPORTANT

Patterns of these offers, together with simplified self-measurement charts, will be sent post free on request.

These offers made to order at same price if required.

GAMAGES, HOLBORN, LONDON, E.C.1.
Telephone: HOLBORN 8484.



SLEEPING IN THE OPEN

Gaining the vital benefits of fresh air every hour of the night or day. Sleeping, reading, or writing in a charming shelter that can be revolved to face any part of the garden. For baby, for the invalid, for the woman who wants quiet, and the man who wants peace. A delightful acquisition, warm and storm-proof.

Boulton & Paul Revolving Garden Shelters. *Health Houses.*

Write for Booklet 611. Many designs and sizes. BOULTON & PAUL LTD., NORWICH, or 139, Queen Victoria St., London, E.C.4. Tel.: Central 4642.

THE POSTAL ACCOUNT

It is often supposed that to live a long way from the nearest branch of a bank, or to be constantly unable to go to the bank in person, is a handicap to the enjoyment of the full advantages which, it is admitted, a banking account offers. Perhaps it is assumed that to conduct an account by post involves 'more letter writing', or is costly, or is not welcomed by the Bank. It is the aim of the Westminster Bank to dispel such misconceptions by a leaflet entitled *The Postal Account*, which explains the convenience of the method, and offers some clear suggestions.

The Secretary of the Bank will be pleased to send a copy on application

WESTMINSTER BANK LIMITED

HEAD OFFICE: 41 LOTHBURY, LONDON, E.C.2



THE PRUDENTIAL ASSURANCE Co LTD

IS THE LARGEST INSURANCE INSTITUTION IN THE BRITISH EMPIRE

LIFE • FIRE • ACCIDENT • MARINE

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REPRESENTATIVES EVERYWHERE

ALLIANCE DRUG & CHEMICAL CO.

10, Beer Lane, Gt. Tower St., E.C.3.

Telephone: ROYAL 5885.

Tel. Address: "NALTROF," BILGATE, LONDON.

Established 1812 — Reorganized 1902.

The Company specializes in providing the Medical Profession at THE LOWEST POSSIBLE inclusive prices (no charge for Bottles, etc., or Cases, etc.) with pure and reliable Drugs, Chemicals, Pharmaceutical Preparations, Compressed Tablets, Pills, Surgical Dressings, and Stock Mixtures of approved formulæ as used by the London and other Hospitals.

We append a few sample prices for guidance of the great saving that can be effected.

NOTE.—For terms see detailed list. Orders received through London Merchants or Bankers. Goods carriage forward. All packages free. Export cases extra.

WRITE FOR DETAILED PRICE LIST.

INFUSIONS CONCENTRATED.

1-7 in 6-lb. Bottles.

Aurant. @ 2/4 lb.
Aurant. Co. @ 2/2 lb.
Columbæ @ 1/3 lb.
Cinchon. Acid @ 2/6 lb.
Gentianæ @ 1/6 lb.
Rhei @ 2/6 lb.
Senegæ @ 4/6 lb.
Lassar's Paste, 14 lb. @ 1/2 lb.; 1 lb. @ 1/4 lb.
*Lin. Belladon. Meth., 5 lb. @ 2/2 lb.; 1 lb. @ 2/5.
*Liq. Æther Nitros. (Sp. Æther Nit. Substitute), 5 lb. @ 2/3 lb.
*Liq. Ammon. Acet. Conc. (1-7), 6 lb. @ 1/- lb.
" " Aromat., 6 lb. @ 1/- lb.
Petroleum Jelly Flav., B.P., 7 lb. @ 7½d. lb.
Bismuth Carb., 3 lb. @ 11/11 lb.
Chloroform Pur., 8 lb. @ 3/4 lb.
Pot. Bromide, 7 lb. @ 2/1½ lb.
Quinine Sulph., 4 oz. @ 2/2 oz.

PILLS TASTELESS COATED.

Potass. Iodid., B.P., 3 lb. @ 18/6 lb.
Sod. Sulph. Feathery cryst., 7 lb. @ 3d. lb.
Sp. Æther Nit., B.P., 4½ lb. @ 4/6 lb.; 1 lb. 4/10
Sp. Ammon. Aromat., B.P., 6 lb. @ 3/6 lb.
Syr. Cascara Aromat., B.P., 6 lb. @ 2/9 lb.
" Glycero-Phosp. Co., 6 lb. @ 1/9 lb.

SYRUPS.

Aurant., B.P., 7 lb. @ 1/10 lb.
Easton's, B.P., 7 lb. @ 1/6 lb.
Ferri Iodid., B.P., 7 lb. @ 1/10 lb.
Ferri Phosp. Co., 7 lb. @ 8d. lb.
Hypophosph. Co. B.P.C., 7 lb. @ 1/- lb.
Pruni Virg., B.P., 7 lb. @ 1/- lb.
Rhamni, 7 lb. @ 1/2 lb.
Rhei, B.P., 7 lb. @ 1/1 lb.
Scillæ, B.P., 7 lb. @ 8d. lb.
Sennæ, B.P., 7 lb. @ 1/2 lb.
Tolut., B.P., 7 lb. @ 10½d. lb.

TABLETS COMPRESSED.

	Per 1,000.
Blaud's (Sugar-coated), gr. 5...	3/10
Nitroglycerini, B.P., gr. 1-50th	6/-
Perchloride of Mercury (Coloured) ...	15/-
One Tablet in 1 pint of water is equivalent to 1 in 1,000.	
Thyroid Gland, gr. 5	12/6

We can supply smaller quantities at slightly increased rates.

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice.

TINCTURES.

in 5-lb. Bottles.

	B.P. Aquos.	B.P. Aquos.
Belladon.	... 4/3	1/6 Hyoscyam. ... 4/3 2/4
Benzoin Co.	... 4/7	— Nucis. Vom. 3/10 1/4
Camph. Co.	... 3/-	1/6 Opii 6/7 4/6
Card. Co.	... 2/6	1/6 Quin. Ammon. 3/3 —
Gentianæ Co.	2/8	1/6 Rhei. Co. ... 2/8 1/9

Ung. Acid Boric., B.P., 28 lb. pail @ 11d. lb.
" Hydrarg., B.P., 7 lb. @ 4/6 lb.
" " Ammon., 7 lb. @ 1/11 lb.
" Ichtamolis, B.P.C., 7 lb. @ 1/10 lb.
" Zinci Ox., Benz., 28 lb. @ 1/- lb.

*Minimum quantity at these prices: Home Trade 3, Export 12 Winchester Quarts assorted. We can supply smaller quantities than advertised at slightly increased rates.

EXHIBITED AT THE B.M.A. MEETINGS SINCE 1898

BY APPOINTMENT TO H.M. THE KING

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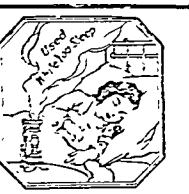
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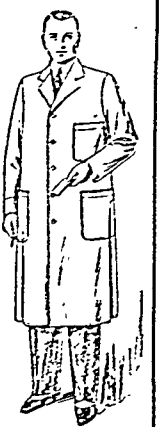
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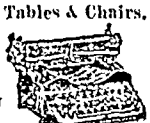
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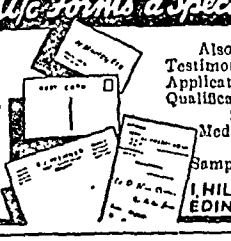
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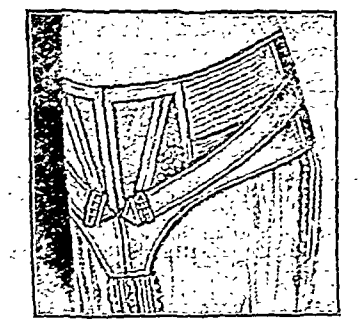
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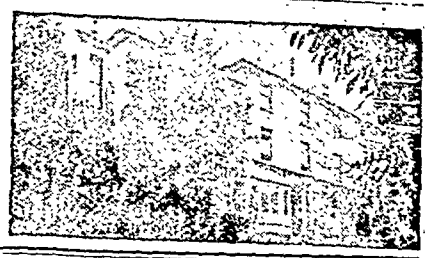
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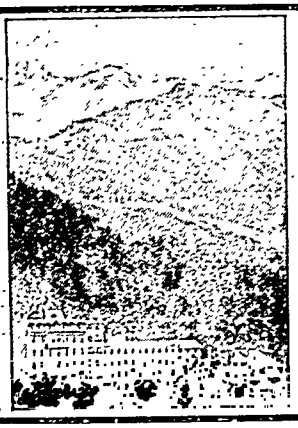
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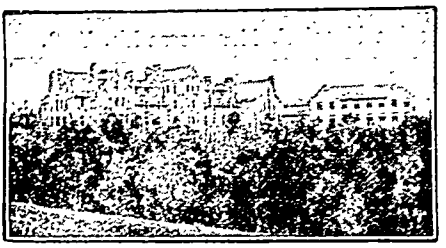
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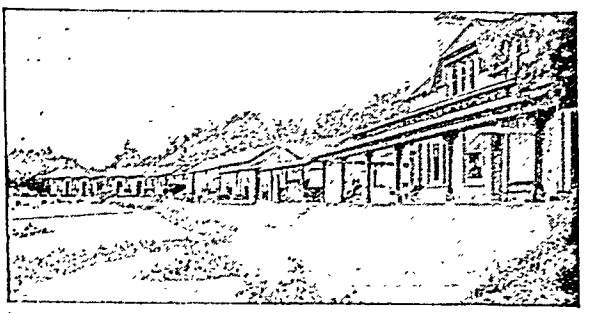
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PERCY SARGENT,
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C. O. G. DOUIE, Secretary.

University of London.

A Course of Four Lectures on "*Chemistry of Muscle in Relation to Problems of Cellular Physiology*" will be given by Professor Dr. OTTO MEYERHOF (of the Institut für Physiologie, Kaiser Wilhelm Institut fur med. Forschung, Heidelburg), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on THURSDAY, FRIDAY, MONDAY, and WEDNESDAY, MARCH 6th, 7th, 10th, and 12th, at 5.15 p.m. At the first Lecture the Chair will be taken by Professor A. V. HILL, O.B.E., Sc.D., F.R.S. (Professor of Physiology in the University).

Admission free, without ticket.

EDWIN DELLER, Principal.

University of London.

A Course of Two Lectures on "*The Growth and Developmental Mechanics of Bone*" will be given by Professor J. C. BRASH, M.A., M.D. (Professor of Anatomy, and Dean of the Faculty of Medicine in the University of Birmingham), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on TUESDAY and THURSDAY, MARCH 11th and 13th, at 5 p.m. Lantern illustrations. At the First Lecture the Chair will be taken by Professor G. ELLIOT SMITH, M.D., D.Sc., F.R.C.P., F.R.S. (Professor of Anatomy in the University).

Admission free, without ticket.

EDWIN DELLER, Principal.

The Royal Society.

SMITHSON RESEARCH FELLOWSHIP.

Applications are invited from British subjects, without distinction of sex, for the Smithson Research Fellowship, established, in accordance with the bequest of the founder, Mr. Edward Walter Smithson, for Research in Natural Science, with a view to the discovery of new laws and principles "rather than the exploitation of what is known."

Preference will be given to candidates not more than 35 years of age.

The appointment will be made for four years in the first instance, but may be renewed for further periods of one year each up to a maximal total tenure of eight years.

The stipend will be at the rate of £800 a year during the first two years' tenure of the Fellowship, but may subsequently be increased.

Under normal conditions the Fellow will be required to carry out his research in the University of Cambridge.

Applications must be received at the offices of the Royal Society not later than October 11th next.

Printed copies of the regulations and forms of application can be obtained from the Assistant Secretary of the Royal Society, Burlington House, London, W.1.

The University of Sheffield.

DEPARTMENT OF PATHOLOGY AND BACTERIOLOGY.

The Council are about to appoint an ASSISTANT BACTERIOLOGIST.

Salary £300 per annum, rising to £350 after one year

Intending candidates are requested to communicate with the Professor of Pathology, from whom particulars can be obtained. Applications must be received by the undersigned not later than March 3rd.

W. M. GIBBONS, Registrar.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

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...lasting about th ...in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 15th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

City of Carlisle.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council of the City and County Borough of Carlisle invite applications for the appointment of Assistant Medical Officer of Health at a salary of £750 per annum. The duties of the appointment are principally those connected with the diagnosis and treatment of Tuberculosis and the medical inspection and treatment of school children, including Eye work and Refractions.

Candidates must not be more than 40 years of age, and must be fully qualified and registered Medical Practitioners holding the Diploma in Public Health or an equivalent qualification.

Candidates must either have held a previous appointment as Tuberculosis Officer with the approval of the Minister of Health, or should, subsequent to qualification,

(1) Have had at least three years' experience in the practice of their profession;
(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a Hospital as resident officer in charge of beds occupied by general medical or surgical cases; and
(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

The gentleman appointed will be required to devote the whole of his time to the duties of the office, to reside in the City, and will not be allowed to engage in private practice.

The appointment is an established post under the Local Government and Other Officers Superannuation Act, 1922, and the gentleman appointed will be required to pass a medical examination, and contribute 5 per cent. of his salary to the Superannuation Fund.

Applications, stating age, qualifications, and experience, accompanied by copies of not more than three recent testimonials, and endorsed "Assistant Medical Officer of Health," must reach me not later than the first post on Friday, March 14th.

Canvassing, either directly or indirectly, is prohibited.

Applicants may, if they desire, forward sealed copies of their applications and testimonials to the members of the Selection Committee, a list of whose names will be supplied by the undersigned, upon request.

Town Clerk's Office, Carlisle. FREDK. G. WEBSTER, Town Clerk.

February 24th, 1930.

The Southampton Children's HOSPITAL AND DISPENSARY FOR WOMEN. (45 Beds.)

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER (lady). Appointment for six months. To commence duties on April 1st. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, stating age, and accompanied by copies of testimonials, to be sent in not later than March 14th to the undersigned, from whom further particulars may be obtained.

ELLA R. MATTHEWS, Secretary.

Grosvenor Sanatorium, Ashford, KENT.

SECOND ASSISTANT MEDICAL OFFICER (male, single, under 40 years of age) required for above Institution. Salary £250, with board, lodging, and laundry. Applications, together with copies of recent testimonials, to Dr. J. ALEXANDER MILNE, Medical Superintendent.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow.

ANNUAL SUBSCRIPTION £1. ENTRANCE FEE 10/-.

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including indemnity of £2,500 and costs, and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

City and County of Kingston-upon-Hull.

APPOINTMENT OF MEDICAL SUPERINTENDENT.

The Corporation invite applications for the appointment of a Medical Superintendent of the CITY FEVER HOSPITAL and the SANATORIUM at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum, together with housing accommodation, rates, and lighting. The age of candidates is not to exceed 40 years.

At present the Fever Hospital contains 112 beds and the Sanatorium 132 beds, but extensions are contemplated, and it is proposed later to build an Orthopædic Hospital on the site, of which the Medical Superintendent will have administrative charge.

Candidates should either have held an appointment of Medical Superintendent of a Sanatorium with the approval of the Ministry of Health, or should, subsequent to qualification,

(1) Have had at least three years' experience in the practice of their profession,

(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases and gynæcological or surgical cases, and

(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

They should further possess a wide clinical knowledge of infectious diseases.

The gentleman appointed, who should be married, will be under the administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than March 8th.

Health Department, Guildhall, Hull. W. M. FRAZER, Medical Officer of Health.

February 18th, 1930.

City and County of Kingston-upon-Hull.

APPOINTMENT OF TUBERCULOSIS OFFICER.

The Corporation invite applications for the post of Clinical Tuberculosis Officer at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum. The age of candidates is not to exceed 40 years.

Candidates should either have held a previous appointment as Tuberculosis Officer with the approval of the Ministry of Health, or should, subsequent to qualification,

(1) Have had at least three years' experience in the practice of their profession,

(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases, and

(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

The gentleman appointed will rank as a Senior Assistant Medical Officer of Health, and will work under the general administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than March 8th.

Health Department, Guildhall, Hull. W. M. FRAZER, Medical Officer of Health.

February 18th, 1930.

Willesden Urban District Council.

HEALTH DEPARTMENT.

APPOINTMENT OF DENTISTS.

The Willesden Urban District Council require the services of Two Dentists.

The duties attached to this post include the Dental Inspection and Treatment of School Children and the Dental Inspection and Treatment of Expectant and Nursing Mothers, and Children under five years of age, and such other duties as the Council or Medical Officer of Health may require to be undertaken.

The Dentists work under the administrative control of the Medical Officer of Health.

The appointments are terminable by a month's notice on either side, is subject to the Council's regulations concerning Officers of the Council, and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The age of candidates should not exceed 40 years, unless they are at present occupying an established post under the Act.

The successful applicants will be required to pass a medical examination.

Candidates must possess a registrable qualification in Dentistry, and devote their whole time to the duties of the office.

Commencing salary £420, rising by four annual increments to £517 10s., with Civil Service bonus in addition, which bonus fluctuates according to the rise or fall in the cost of living, revision being made every six months—namely, March 1st and September 1st. At the present time the commencing salary and bonus is at the rate of £572 6s. 4d. per annum.

Travelling expenses within the district paid by the Council.

Application forms may be obtained on application by letter (enclosing stamped addressed envelope) to the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6, and should be returned to him duly filled in by applicant, together with copies of three testimonials, not later than Friday, March 7th.

Town Hall, Dyne Road, N.W.6. E. A. PRATT, Clerk of the Council.

Willesden Urban District Council.

APPOINTMENTS OF ONE PART-TIME ANÆSTHETIST. ONE PART-TIME OCULIST.

Applications are invited for the above appointments.

Part-time Anæsthetist.—The salary attached to the post of Part-time Anæsthetist is at the rate of £300 per annum, and the Anæsthetist will be required to attend four times per week at the Willesden Health Centres for the purpose of administering anæsthetics in connection with dental cases.

Part-time Oculist.—The salary attached to the post of Part-time Oculist is at the rate of £225 per annum, and the Oculist will be required to attend three times per week at the Willesden Health Centres to carry out refraction work mainly in connection with school children.

Further particulars of the above appointments can be obtained from the Medical Officer of Health, Health Department, 54, Winchester Avenue, Kilburn, N.W.6.

Applicants should state their qualifications, age, and experience.

All applications should reach the Medical Officer of Health not later than 9 a.m. on Friday, March 7th.

Town Hall, Dyne Road, Kilburn, N.W.6. E. A. PRATT, Clerk to the Council. February 15th, 1930.

Scarborough Hospital and DISPENSARY. (70 Beds.)

Wanted, May 1st, Two HOUSE SURGEONS (male or female). Duties include Home Visiting. Salary £126 per annum, with board, residence, etc. Appointment for six months. Applications, stating age, with copies of testimonials and essential particulars, to be sent to the undersigned by March 17th, from whom further particulars may be obtained.

J. DOUGLAS MUNBY, Hon. Secretary.

City of Plymouth.

MEDICAL SUPERINTENDENT.

MENTAL HOSPITAL.

The Visiting Committee invite applications for the post of Medical Superintendent to the Plymouth City Mental Hospital, Ivybridge, near Plymouth.

Candidates must be duly registered Medical Practitioners who have had experience in the management of a Mental Hospital.

The salary will be £750 per annum, rising by £50 per annum to £1,000 per annum, and the Committee will provide, in addition, a furnished house at Blackadon (where the Medical Superintendent will be required to reside), and coal, light, laundry, vegetables, and dairy produce free. The total value of these emoluments is estimated, and will be taken for the purpose of the Asylum Officers Superannuation Act, 1909, as being worth £200 per annum.

The person appointed must devote his whole time to the duties of the office, and such duties will include those of Certifying Officer under the Mental Deficiency Acts and also (if required) of Medical Officer in Charge of the Mental Clinic.

Canvassing, directly or indirectly, will be a disqualification.

Forms of application and further particulars may be obtained on application to the undersigned.

Applications to be sent to the undersigned, endorsed "Medical Superintendent, Mental Hospital," not later than March 1st.

Dated this 6th day of February, 1930.

Municipal Offices, Plymouth. R. J. FITTALL, Town Clerk.

City of Exeter.

ASSISTANT TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the joint appointment of Assistant Tuberculosis Officer and Assistant Medical Officer of Health for the City and County of the City of Exeter, at a salary of £600 per annum, rising to £700 per annum by four annual increments of £25, subject to deductions in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applicants must be registered Medical Practitioners of not less than three years' standing, and possess the Diploma of Public Health. Special experience with regard to Tuberculosis is essential.

Although the work will be largely in Tuberculosis, the successful candidate will also be required to take a part in the general work of the Department, under the supervision of the Medical Officer of Health.

Applications, endorsed "Assistant Tuberculosis Officer," accompanied by three testimonials, must be received by me not later than Thursday, March 20th.

Application forms and condition of appointment may be obtained at my office, and further particulars, if required, from the Medical Officer of Health.

H. LLOYD PARRY, Town Clerk.

February 20th, 1930.

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as EIGHTH ASSISTANT MEDICAL OFFICER (men) in its Mental Hospital Service. Candidates must be under 35 years of age and be registered to practise both in Medicine and Surgery in England. Salary £445 a year, rising by annual increments of £25 to £570 a year. No emoluments. Charges made for board, lodging, etc. (at present £2 9s. a week) if required to be resident. Candidates appointed will be pensionable under the Asylums Officers Superannuation Act, 1909. Form of application, on which full particulars are given, can be obtained from the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Applications must be received by Thursday, March 6th.

Canvassing disqualifies.

MONTAGU H. COX, Clerk of the London County Council.

COLONIAL MEDICAL SERVICES.

Vacancies exist at present for Medical Officers in:—

(*a*) **THE WEST AFRICAN MEDICAL STAFF;**
(*b*) **THE EAST AFRICAN MEDICAL SERVICE;**
(*c*) **THE MALAYAN MEDICAL SERVICE.**

Qualifications.

Applicants must be British subjects of European parentage and between 22 and 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held hospital or public health appointments or who have special knowledge of anæsthetics, radiology, surgery, medicine, ophthalmology, gynæcology and midwifery, diseases of the ear, nose and throat, venereal diseases, etc.

Courses of Study.

Selected candidates will normally be required to take a special course of study in tropical medicine and hygiene either at the London School of Hygiene and Tropical Medicine or at the Liverpool School of Tropical Medicine, or at the University of Edinburgh, before taking up their appointments. Tuition fees and the usual training allowance will be paid from Government funds.

Further particulars and forms of application may be obtained, on application in writing, from the PRIVATE SECRETARY (APPOINTMENTS), COLONIAL OFFICE, 2, Richmond Terrace, Whitehall, London, S.W.1.

County Borough of Hastings.

PUBLIC HEALTH DEPARTMENT.

DEPUTY MEDICAL OFFICER OF HEALTH AND DEPUTY SCHOOL MEDICAL OFFICER.

The Council invite applications for the appointment of Deputy Medical Officer of Health and Deputy School Medical Officer (male or female) at a salary of £600 per annum, rising by annual increments of £25 to £700 per annum, with an allowance of £10 per annum for local travelling expenses.

Applicants must be Medical Men or Women, under 40 years of age, holding a special qualification in State Medicine or a Diploma in Public Health, with not less than three years' experience after qualifying.

Preference will be given to applicants who have had experience of school medical work, infectious diseases and other branches of public health work, and have held a resident Hospital appointment.

The person appointed will work under the direction and control of the Medical Officer of Health and will be employed mainly in the School Medical Service, but will also assist the Medical Officer of Health in other departments of the Health Services of the Corporation.

The person appointed will be required to reside within the Borough of Hastings, to devote the whole of his or her time to the duties of the office, to contribute to the Council's Superannuation Scheme, and to pass a medical examination.

Canvassing Members of the Council will be a *disqualification.*

Applications, on forms to be obtained from me, must be addressed to me, endorsed "Deputy Medical Officer," at the Town Hall, Hastings, not later than March 15th.

D. W. JACKSON, Town Clerk.

Eastern Dispensary, Leman Street, E.1.

Applications are invited for the post of OPHTHALMIC SURGEON to this Institution. Attendance alternate Tuesdays at 5.30 p.m. Candidates must be Fellows or Members of a Royal College of Surgeons in the United Kingdom, or Masters in Surgery of a British University. There is an honorarium attached to the post.

GEORGE W. ILSLEY,
February 25th, 1930. Secretary.

County Borough of Southampton.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the position of Assistant School Medical Officer at a salary of £600 per annum.

The gentleman appointed will hold office during the pleasure of the Council, and the appointment will be determinable by two months' notice on either side. He will be required to carry out duties in connection with the Medical Inspection and Treatment of School Children, the Public Health Acts, Mental Deficiency Acts, 1913-27, Maternity and Child Welfare and *Venereal Disease* work, etc.

He must devote the whole of his time to the duties of the office and the performance of such other duties as may be required under the direction of the Medical Officer of Health.

The appointment will be subject to the approval of the Board of Education and the Minister of Health.

The Local Government and Other Officers Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

Forms of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.

Applications on the prescribed form, endorsed "Assistant Medical Officer of Health," stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office, Municipal Offices, Southampton, on or before March 15th.

R. RONALD H. MEGGESON,
February 24th, 1930. Town Clerk.

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing March 17th. Salary £130, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Medical Staff Committee, not later than the first post Wednesday, March 12th. Selected candidates will be invited for an interview Saturday, March 15th.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE HOUSE SURGEON, to commence duty on April 1st. Remuneration £100 p.a. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital not later than Friday, March 14th.

Royal Manchester Children's HOSPITAL.

Out-patients' Department: Gartside Street, MANCHESTER.

Wanted, for the Out-patients' Department, Two ASSISTANT MEDICAL OFFICERS, non-resident, salary £150 per annum, who will be appointed for six months.

Candidates must be doubly qualified and on the *Medical Register.* Particulars of the duties can be obtained from the Secretary. The hours of duty are from 9 a.m. till 1 p.m., or until the work of the Dispensary is finished. Patients' attendances number 87,000 per annum. Duties to commence April 1st.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
February 17th, 1930. Secretary.

Royal Manchester Children's HOSPITAL, PENDLEBURY, near MANCHESTER. (190 Beds.)

Wanted, a RESIDENT MEDICAL OFFICER and a RESIDENT SURGICAL OFFICER, salary £125 per annum, who will be appointed for six months.

Candidates must be unmarried, doubly qualified, and duly registered. Previous Hospital experience essential.

Applications, stating age, and accompanied by copies of not more than three testimonials, to be sent to the undersigned not later than March 6th. Duties to commence April 1st.

Canvassing, directly or indirectly, may disqualify.

By Order,
W. M. HUMPHRY,
February 17th, 1930. Secretary.

Leicestershire and Rutland MENTAL HOSPITAL, NARBOROUGH.

The Committee of Visitors invite applications from duly qualified Medical Practitioners for the position of MEDICAL SUPERINTENDENT of the Hospital. The salary will be £800 per annum, together with furnished house, gas, coal, light, rates, water, laundry, and garden produce, valued at £150 per annum for superannuation purposes. There will be no other emoluments.

The appointment is subject to the Asylum Officers Superannuation Act, 1909, and will also be subject to three months' notice on either side.

The person appointed will be expected to act as Medical Adviser under the Mental Deficiency Acts, the services for which will be paid by fees.

Applications, endorsed "Medical Superintendent," stating age, whether married or single, previous experience, qualifications, and if appointed date when applicant can take up duties, together with copies of three recent testimonials, to be sent to the undersigned not later than *10 a.m. on Friday, March 14th.*

Canvassing, directly or indirectly, will disqualify.

10, New Street, Leicester. W. J. FREER, Clerk to the Visiting Committee.
February 19th, 1930.

Birkenhead General Hospital. (156 Beds.)

Applications are invited for the post of *SENIOR HOUSE SURGEON (gentleman)*, salary £150, with board and residence, to take up duties March 17th; also HOUSE PHYSICIAN *(gentleman)*, salary *£100*, with board and residence, required about March 12th.

Both appointments are for a period of six months, but may be extended with the Committee's approval.

Also CASUALTY OFFICER (gentleman). Salary £100, with board and residence, to commence duties March 15th. Six months' appointment.

Applications, stating qualifications, experience, and nationality, to be sent to the undersigned as early as possible.

W. H. DANIELS, A.C.I.S., *Secretary-Superintendent.*

Birmingham and Midland Eye HOSPITAL.

Applications are invited from duly qualified *Medical Practitioners for the post of* RESIDENT SURGICAL OFFICER at the above Hospital. Salary £150 per annum.

The Resident Staff also consists of two House Surgeons, and in the event of one of these being promoted, applicants should state whether they will be willing to accept the appointment of House Surgeon at a salary of £110 per annum.

Applications, with testimonials and evidence of registration, must be received not later than first post on March 18th.

Church Street, Birmingham. C. A. MASON, Gen. Supt.
February 24th, 1930.

Miller General Hospital, Greenwich Road, S.E.10. (151 Beds.)

Applications are invited for the three following posts:

RESIDENT MEDICAL OFFICER (the Senior of five resident posts). Salary £250 p.a.
CASUALTY OFFICER. Salary £150 p.a.
HOUSE PHYSICIAN. Salary £125 p.a.

Candidates (male) must be unmarried. Board, residence, and laundry are provided. Each appointment is for six months from April 1st next.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the *Secretary* by Tuesday, March 4th next.

January 27th, 1930.

Putney Hospital (CHESTER REQUEST), *Lower Common*, Putney, S.W.15.

Wanted, at once, a RESIDENT MEDICAL OFFICER (male). Salary £150 a year, with rooms, board, and lodging.

Applications, stating age, with copies of testimonials, to the Hon. Secretary, from whom further information may be obtained.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management, not later than March 10th.

H. R. NORTH, Secretary.

Salford Royal Hospital. (263 Beds.)

Applications are invited for the following vacancies, which will occur in the Resident Medical Staff (male) on March 31st next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.
HOUSE SURGEON (attached to the Orthopædic Department). Salary at the rate of £125 per annum.
HOUSE SURGEON. Salary at the rate of £125 per annum.
CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (*Final*).

Forms of application, which may be obtained from the undersigned, must be delivered on or before March 10th.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
February 17th, 1930.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on April 1st next for a period of six months. Salary at the rate of £100 per annum, with board, apartments, etc.

Applications, stating age, qualifications, experience, if any, to be forwarded to the undersigned *on or before Wednesday, March 5th.*

By Order of the Board,
HERBERT J. DAFFORNE, Gen. Supt. & Secretary.

FORTHCOMING VACANCIES.

The R.S.O. Appointment.—Holders of F.R.C.S. degree preferred. Twelve months' appointment from May 1st. Advertisement will appear at the end of March.

King Edward VII Hospital, WINDSOR. (181 Beds.)

RESIDENT MEDICAL OFFICER, male or *female*, also SENIOR HOUSE SURGEON required, to begin duty on March 31st. Applicants must be fully qualified, registered, and have held resident appointment previously. Salary attached to the first mentioned appointment is at the rate of £200 per annum, and to the second £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than March 10th.

A. E. CHURCHER, Secretary.

Hounslow Hospital, Staines Rd., HOUNSLOW, MIDDLESEX. (70 Beds.)

Wanted, April 1st, Male HOUSE SURGEON and Male ASSISTANT HOUSE SURGEON. Salaries £120 and £100 per annum respectively, with board, residence, etc. The appointments will be for six months. The Assistant House Surgeon will be eligible for appointment as House Surgeon.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent by March 10th (marked "House Surgeon" top left-hand corner) to W. T. Ross, Secretary, Hounslow Hospital, Staines Road, Hounslow.

Hospital of St. John and ST. ELIZABETH, 60, Grove End Road, N.W.8.

Applications are *invited for the post of* ASSISTANT PHYSICIAN at the above Hospital. Candidates must be Members of the Royal College of Physicians of London. The duties include the charge of beds. There is no Out-patient Department.

Applications, with copies of three testimonials, should be submitted on or before March 15th to the undersigned, from whom further particulars may be obtained.

F. DUDLEY HOBBS, B.A., Secretary.

East Suffolk and Ipswich HOSPITAL. (265 Beds—7 Residents.)

Applications are invited for the posts of Two HOUSE SURGEONS (male, British). Salary for each appointment at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent *to the undersigned.*

The Hospital, *Ipswich.* ARTHUR GRIFFITHS, Secretary.

All Saint's Hospital (for Genito-URINARY DISEASES).

In-patient Dept.: 91, Finchley Road, N.W.8.
Out-patient Dept. & Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required April 1st, for a period of nine months. Salary at the rate of £150 per annum. The duties are as under:

Three months as Assistant House Surgeon (non-resident); three months as Junior House Surgeon (non-resident); three months as Senior House Surgeon (resident, with board *and laundry*).

Promotion *at the end of each period* of three months is subject to the approval of the Board of [illegible] of the Assistant and Ju[illegible] of attendance at th[illegible] every afternoon and three evenings weekly.

Applications, stating age, experience, qualifications, and enclosing copies of recent testimonials, should reach me not later than March 14th.

D. H. EADE, Secretary.

Northampton General Hospital.

There will be vacancies on April 1st next, for Two HOUSE SURGEONS and Two ASSISTANT HOUSE SURGEONS. British nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidates will be appointed for a period of six months, and will be eligible for re-election for a further period.

Candidates must be duly qualified and registered.

Applications, stating age, sex, qualifications, etc., with copies of testimonials, to reach the *undersigned not later than first post on* March 5th.

H. ST. JOHN WOOD, Secretary-Supt.
February 17th, 1930.

Kent County Ophthalmic and AURAL HOSPITAL, MAIDSTONE. (72 Beds.)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON (male), which becomes vacant on March 13th next. The Hospital is recognised by the *Examining Board for the D.O.M.S. and D.L.O. Diplomas.* Candidates must be duly qualified and registered Medical Practitioners, single, and of British birth and nationality. The appointment will be for six months, with an option of a further six months. Salary at the rate of £200 per annum, *with board, residence,* and washing.

Applications, stating age, together with copies of not more than three testimonials, should be sent to the undersigned.

JOHN W. STRICKLAND, Secretary.

Royal South Hants and SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

Applications are invited for the posts of JUNIOR HOUSE SURGEON, salary £130; CASUALTY OFFICER, salary £120, with rooms, board, and laundry. Six months' engagement, commencing April 1st. Candidates, who must be male and unmarried, should apply at once to the *undersigned, stating age,* and enclosing copies of testimonials.

By Order,
HY. TRUSSON, Secretary.

St. Mary's Hospitals, Manchester.

Two *HOUSE SURGEONS* for the WHITWORTH STREET WEST HOSPITAL (Maternity); and Two for the WHITWORTH PARK HOSPITAL (Gynæcological); each for a period of six months from May 1st next. Salaries at the rate of £50 per annum, with board and residence.

Application, with copies of three testimonials, to be sent to the undersigned *on or before* March 12th.

R. RATCLIFFE, Secretary.

Royal National Orthopædic HOSPITAL, 234, Great Portland Street, W.1.

Applications are invited for the post of HOUSE SURGEON (Two). Salary £150 per annum, with board, quarters, and laundry. *The appointment* is for six months from April 1st, [illegible] for a further period of six months [illegible] of the Medical Board.
[illegible]s of testimonials, should [illegible] later than March 7th.

Royal Cornwall Infirmary, TRURO. (70 Beds.)

HOUSE SURGEON required with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
		YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
February 26th, 1930. ALFRED COX, Medical Secretary.

Seamen's Hospital Society.

The Committ
cations for the
charge of Out-
HOSPITAL, Greenwich.

The elected candidate will have beds allotted to him and will be appointed for twelve months, but will be eligible for re-election.

Candidates must be Doctors or Bachelors of Medicine of a University in the United Kingdom, and Fellows or Members of the Royal College of Physicians of London.

Applications to be sent in on or before March 8th, to the undersigned, from whom further particulars can be obtained.

By Order,
R. E. V. BAX,
February 7th, 1930. Secretary.

Bootle Borough Hospital.

(General—100 Beds).
Derby Road, BOOTLE.

Applications are invited from Medical Men for the two posts of JUNIOR HOUSE SURGEON for the six months ending September 30th. Salaries at the rate of £150 per annum, with board, residence, and laundry.

Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned on or before March 7th.

J. A. BEARDSALL,
Secretary-Superintendent.

Queen Mary's Hospital for the EAST END, E.15.

Telephone: Maryland 2616.

Applications are invited from fully qualified and registered Medical Men for the combined post of HOUSE ANÆSTHETIST and HOUSE PHYSICIAN. Salary at the rate of £120 per annum.

The Hospital contains 216 beds, including 49 maternity beds and other special departments.

Candidates, who must have held previous Resident appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Tuesday, March 4th.

RAPHAEL JACKSON (Major),
Secretary.

Hull Royal Infirmary.

(272 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON (male) vacant February 28th.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned on or before Tuesday, February 25th.

R. J. CARLESS,
February 11th, 1930. House Governor.

The Willesden General Hospital,

London, N.W.10.

APPOINTMENT OF CLINICAL ASSISTANTS.

Applications are invited for the appointment of Clinical Assistants in the Medical and Gynæcological Out-patient Departments.

The appointments are for a period of six months from April 1st, and the successful applicants will be expected to attend at the Hospital regularly and to take charge of the Department when the Medical Officer is absent.

The Medical Out-patient Department is held on Tuesdays at 2 p.m. and Fridays at 9.30 a.m.

The Gynæcological Out-patient Department is held on Thursdays at 9.30 a.m.

Applications to be addressed to the Secretary of the Hospital, not later than Monday, *March 10th.*

Ear and Throat Hospital,

BIRMINGHAM.

HOUSE SURGEON wanted, with clinical experience, and also in administering anæsthetics. Salary at the rate of £150 per annum, with board and residence. Duties to commence April 1st. Appointment for six months, to September 30th, when one of the other House Surgeon appointments will be vacant.

Applications and testimonials to be forwarded on or before March 18th to the undersigned.

S. G. GREW,
February, 1930. Secretary.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE, TAVISTOCK SQ., LONDON, W.C.1.

T/A: ARTICULATE, WESTCENT, LONDON, *Tel.*: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s. Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by *not* later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted. — Male Assistant for general and panel Practice, industrial district of Manchester; ex H.S. preferred. Good house, unfurnished. Would suit one wishing a permanency and with view if suitable. Good salary and commission. Vacancy March 21st. A married man preferred (arrangements could be made for a single man). Please give full particulars. Interview necessary. Usual bond. —No. 1510, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, British, for semi-rural private and panel Practice in West Riding, Yorks, with view to *Partnership. University Graduate preferred.* Must be good Anæsthetist, keen and energetic, Protestant and abstainer, and able to drive car. Dispenser kept, little night work. Pleasant surroundings. Salary £300 per annum, indoor, *with half midwifery and anæsthetics fees.* References required. Usual bond. — Address, No. 1070, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Junior Assistant, single, abstainer. Salary £300 per annum, with rooms, coal, light, and attendance, and 10/- extra for each confinement. Usual bond.—Apply, A. H. JAMES, M.D., The Park, Blaenavon.

Wanted. — Outdoor Assistant, with view, single, highly qualified, with surgical experience. Health resort, North England. Photograph and essential particulars.—Address, No. 1503, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — *Assistant, outdoor,* male, preferably married, with view to Partnership in private and panel Practice; outskirts of London. Salary £400. House, rent free.—Address, No. 1575, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, in good mixed Practice, adjacent to large Midland Town. *Protestant.* £300—£350, according to experience.—Address, No. 1522, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant with view, male, single, Protestant, Scotch or English. Good working and panel Practice, 50 miles London. Salary £300. Usual bond. Photo. — Address, No. 1508, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistants for Country and Town Practices. State full particulars. — BRITISH MEDICAL BUREAU, 33, *Cross Street*, Manchester.

Wanted. — Outdoor Assistantship by M.B., B.Ch.Belf., at once. Experience hospital and practice. Keen and energetic. Total abstainer. Free now.—Address, No. 1535, B.M.A. *House*, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, age about 25 years, for Urban residential Practice.—Address, with references and photograph, to DR. SPROAT, Rawdon, near Leeds.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL *BUREAU, 33, Cross Street*, Manchester.

Wanted. — Outdoor Assistant, male, single, keen *and energetic*, in private non-dispensing and panel Practice. Excellent prospects for good man.—Address, No. 1314, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Welsh-speaking ASSISTANT. Abstainer, and late H.S. preferred. Salary £500 per annum. Usual bond. Outdoor.—Address, No. 1165, B.M.A. House, *Tavistock Square*, W.C.1.

Wanted.—A University Graduate, ex-H.S. and H.P., *aged about 30.* Must have had experience in both private and panel practice, and capable of taking SOLE CHARGE. Rooms and attendance. *Liberal salary* to a good man. Protestant, and one prepared to take over the Practice at an early date.—Address, No. 1072, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship in or near London; ex C.S.O., ex H.S., experienced G.P. and Public Health. Used to sole charge. Abstainer, single, and motorist. Can *be seen by appointment after March 6th.*—Add., No. 1525, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, by M.B., M.R.C.P., *æt. 26, ASSISTANTSHIP* with view, in non-dispensing Practice in N. England or S. Scotland. *Capital available.* — *Address, No.* 1536, B.M.A. House, Tavistock Square, W.C.1.

Assistantship (outdoor) or *LOCUM required by Canadian General* Practitioner, for three or six months from April 4th, whilst reading for M.R.C.P. Aged 48. —Address, No. 1574, B.M.A. House, Tavistock Square, W.C.1.

East Anglia (50 miles from London).—ASSISTANT wanted, with a view to Partnership. Full particulars on application.—*Address, No. 1502, B.M.A. House*, Tavistock Square, W.C.1.

Immediately, for excellent *Country Practice, Shropshire.* Scot or Englishman preferred, age about 30. Must be University Graduate, ex H.S., and some experience G.P.; keen, energetic, drive car. Definite view to Partnership to man with capital. Married quarters *available, but single man preferred.* Appointment indoor or outdoor, by arrangement. Liberal salary to suitable man. Testimonials, social references, and interview essential. Photo.—Address, No. 1518, B.M.A. House, Tavistock Square, W.C.1.

Outdoor Assistant, part-time, male. Two hours morning and evening. £5 per week.—Address, No. 1517, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B., B.Ch., D.P.H., *aged 30, seeks* ASSISTANTSHIP, whole or part-time. Experienced panel and private. Excellent references. Moderate. Interview. Free in London now. — Address, No. 1530, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-*Dispensers.*—*Write*, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctor (aged 57) seeks work at *BRANCH, LOCUM* or ASSISTANTSHIP; active, conscientious worker; has made and sold two Practices; or as Physician Companion to invalid. Terms equivalent 3 gns. a week, indoor; references. —No. 1526. B.M.A. House, *Tavistock Sq., W.C.1.*

Dispenser (lady) desires RE-ENGAGEMENT with Doctor or at Institution. Apothecaries' Hall certificate. 20 years' experience. Free now.—Miss M. HOLMES, "Moyleen," *Marlow-on-Thames*, Bucks.

Wanted. — Doctor for Practice in Newfoundland. Two or three Practices available. Active man needed.—Apply, Dr. CLUNY MACPHERSON, St. John's, Newfoundland. (Telegraph: Macpherson, St. John's, (Newfoundland).)

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in *private* practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Ex Medical Superintendent of a large Poor Law Institution, retired on superannuation, is open to accept a SIMILAR POST or Sanatorium, Hydropathic or Convalescent Home. Could invest if required.—Address, No. 1519, B.M.A. House, Tavistock Sq., W.C.1.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BOTSFORD, 13, Mitre Court Chambers, Temple, London. Central 6839.

Lady Dispenser desires RE-ENGAGEMENT. Qualified, thoroughly experienced, bookkeeping, accounts, parish returns, etc. Good testimonial. Disengaged now. Moderate salary.—Address, Miss DANIEL, 18, Mary *Street, Taunton.*

Lady Housekeeper desires charge of widower's household (maids) and children (similar post for last 7 years). Y.A.D. 4 years. Excellent references. Salary not essential. *Could bring good maid if required.*—Address, No. 1321, B.M.A. House, Tavistock Square, W.C.1.

Lady, 26, with hospital train- ing and four years' secretarial experience, expert stenographer and typist, drives car, seeks post as SECRETARY to Doctor.—Miss M. GOWING, 93, Belgrave Road, S.W.1.

M.D.Edin., D.P.H.Cantab. male, aged 30, physically unfit for G.P., experienced, reliable, drive car, desires WORK, private, institutional, or other. State particulars. —Address, No. 1527, B.M.A. House, Tavistock Square, W.C.1.

Part-time Work in London wanted by M.B., Ch.B.(Edin.). Good experience of panel and private practice.—Address, No. 1512, B.M.A. House, Tavistock Square, W.C.1.

Reception-Secretary.—Lady, 32, refined, of good appearance, desires POST with Doctor or Dentist, London or near. Shorthand, typing. Used to telephone and interviewing. *Knowledge of nursing.* Moderate salary.— "D. M.," 3, Ashford House, Wimbledon, S.W.19.

Typewriting.—Expert undertakes *Theses, Testimonials, etc.* Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work— Dispensers (capable of undertaking *returns*, clerical work, etc., connected with *Ministry of* Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Widow, aged 40, seeks employ- ment as SECRETARY, or Tutor to young *children.* Previous experience School Teacher. Liverpool and district only.—NEAL, 19, Stamfordham Drive, Allerton, Liverpool.

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For Reliable Locums and Assistants
AT SHORT NOTICE, CONSULT
British Medical Bureau
(Northern Branch),
33, CROSS ST., MANCHESTER.
Telegrams—"LOCUM, MANCHESTER."
Telephones—CENTRAL 5925; after office hours: 2549 RUSHOLME.

PARTNERSHIPS.

West Midlands. — Partnership. Half share in private and panel Practice. Average receipts £2,250. Panel about 1,700. Very exceptional old house for sale, in excellent repair and well equipped with modern conveniences. Good garden, tennis court, garage, and stabling. Premium for Practice 2 years' purchase. House £3,500.—Address, No. 935, B.M.A. House, Tavistock Square, W.C.1.

For immediate Disposal, Half SHARE in old-established Practice near London. Panel about 2,300, appointments, etc. Leasehold house, large garden. Present owner retiring shortly.—Address, No. 1514, B.M.A. House, Tavistock Square, W.C.1.

Half Share old-established (60 years) middle and working-class PRACTICE in sound industrial Lancashire town, doing over £2,000, panel 1,600 (and increasing). Partner used major surgery desired as scope. Comfortable house to rent prior sale. Death vacancy in "family" Practice reason disposal. Private vendor.—BM/BEEX.

North Staffs. — Partnership in excellent panel and private Practice. Average cash receipts £3,715 p.a. Panel nearly 5,000. New small Hospital. Good house available, 2 reception rooms, 5 bedrooms. Garage. Electric light. Rent £52 p.a. Premium—1/3rd share—1½ years' purchase, part by arrangement. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near Manchester. — Partnership in old-estab. Practice. Gross cash receipts last year £4,280. Panel 5,732. Good detached house available, 2 reception, 5 bedrooms. Garage and garden. Rent £60 p.a. Premium for 8/25ths share (about £1,350) £1,920, £1,000 down, balance by arrangement. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Yorks. — Partnership in old-established Practice of £1,400 yearly. Panel £550. Appts. £25. House for Partner or live with Vendor. Great scope. Price half share 12 years' purchase. — MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, BROWN ST.

Partnership in old-established Country Suburban Practice for sale. One-quarter share of £2,800 to commence (£1,000 of which are appts.), 2 years' purchase; further share later on; ultimate succession. House, with surgery, could be rented or purchased. Plenty of leisure time, and sports of all kinds. Scope for increase. Little night work. — Address, No. 1521, B.M.A. House, Tavistock Square, W.C.1.

T. C.D., F.R.C.S. — Surgical PARTNERSHIP wanted in Southern England, with prospect of Hospital appointment. —Address, No. 1513, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted at about the end of 1930, old-established small PRIVATE ASYLUM. Must be solid concern of long standing and in good repute. Small overhead expenses essential. Preferably East or South of England. Write in strictest confidence, giving fullest details in first instance, particularly with regard to price, expenses, and profits over last five years. Fancy prices will only waste time of experienced would-be purchaser.—Address, No. 114, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Practice or Partnership offering scope for surgery in town of not less than 25,000 inhabitants. Income £1,250 p.a. Preferably non-panel and non-dispensing. Advertiser holds Fellowship, is aged 30, has held House appointments for over two years, and has had experience of own general practice. — Address, No. 1051, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B. — Panel and private PRACTICE in London (S.W. preferred, but not essential). Income about £1,500 p.a.—Address, No. 1531, B.M.A. House, Tavistock Square, W.C.1.

Cheshire. — Old-established in pleasant district, owner retiring. Receipts over £700. Panel 630, increasing, much scope. Appts. about £60. Nice house, garage, good garden, to rent or sell.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Death Vacancy. — Lancs Town. Old-estab. PRACTICE. Cash receipts 1929, £1,693. Panel nearly 1,000. Scope for surgery. Good house, 2 reception, 4 bedrooms. Garage. Premium 1 year's purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy.—Manchester.— Old-estab. PRACTICE. Cash receipts £1,600. Panel over 2,000. Good scope. Excellent house, 5 bedrooms. Premium 1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

East of Scotland University Town. — Middle-class PRACTICE about £1,200, steadily increasing. Panel 650. Very attractive detached modern corner house to be sold with the Practice. It contains three public rooms, 5 bedrooms, good garden, and garage for two cars. It is situated in pleasant open suburb. — Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For Sale in the Scottish Borders, a well-established and growing PRACTICE, with a panel of about 1,000. Average receipts for the last three years about £1,700. Vendor desirous of retiring. Introduction given. Price 1½ years' purchase. An excellent house of modern construction is for sale along with the Practice. — Address, No. 1509, B.M.A. House, Tavistock Square, W.C.1.

For immediate Sale, old-estab. PRACTICE near London. Panel 2,300, appointments, etc. Large leasehold house, garden, garage. Year and half purchase for cash. — Address, No. 1515, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—X-Ray Practice, full equipment. Splendid opening for M.B. or D.M.R.E.—Address, No. 1504, B.M.A. House, Tavistock Square, W.C.1.

For Sale, in a large Lancashire Town an old-established PRACTICE, with a panel of about 2,300. Average receipts for the last three years about £2,500. This Practice is capable of further development. Vendor desirous of retiring. Introduction given. Price one and a half years' purchase.—Address, No. 1071 B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Cash Practice (look-up), East London. Average receipts over £1,100. Small panel. Corner house, lease. Good scope. Premium £1,0 0.—Address, No. 1532, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Country Practice, [illegible] prs. effects. No agents. Owner desires to go abroad. —No. 1516, B.M.A. House, Tavistock Sq., W.C.1.

For Sale. — Very old-established HOMŒOPATHIC PRACTICE, Chester, owing to sudden death. Good freehold house.—Full particulars, POTTS, MARTIN & CO., Solicitors, Chester.

Glos. — Old-established unopposed Country PRACTICE. Average receipts £1,000, increasing including panel £900 and appointment £52. Commodious house for sale or rent. Premium 1½ years' purchase.—Add., No. 1528, B.M.A. House, Tavistock Square, W.C.1.

Hants–Berks borders.—Old-established country PRACTICE. Income £900. Panel 400. Premium £1,400. Good house (2 reception, 7 bedrooms, etc., surgery), large garden, garage. Rent £50.—Address, No. 1533. B.M.A. House, Tavistock Square, W.C.1.

Hammersmith, Kensington, or near, within easy access of St. Paul's Schools.—Wanted, a sound PRACTICE, with good-sized panel. Income £1,500 up. Medium-sized house for rent or sale. Ample capital —THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2.

Lancs Town, near Coast. — Old-estab. PRACTICE. Average cash receipts £2,000. Panel 2,150. Good house, 2 reception, 5 bedrooms. Rent £80 p.a. on lease.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, N.W.—Practice yielding £900 p.a., including panel £80. Price £1,000. Rent, including garage, £110, plus share of rates.—Address, No. 1310, B.M.A. House, Tavistock Square, W.C.1.

Manchester.—Old-estab. Practice. Cash receipts 1929, £1,765. Panel 1,400. Good house, 2 reception, 3 bedrooms. Rent £45 p.a., or would sell for £700. Good introduction. Vendor retiring. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Old-established, in populous district. Good house, rent £40. Receipts £1,500. Panel £1,100. Residence one and a half miles away, in pleasant suburb. Price: Practice, residence (freehold), debts £25, goods, surgery fittings, and waiting room furniture, £1,200, good part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Suburban Practice. Cash receipts 1928, £1,650. Panel 900. Good scope. Excellent house, 3 reception, 5 bedrooms. Garage and garden. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North of Scotland. — Health Resort. — Good-class PRACTICE. Small panel. Income over £1,700. Price £2,400. No offers.—Address, No. 1370, B.M.A. House, Tavistock Square, W.C.1.

Nursing Home for Disposal in Bedford-shire. Freehold house, furniture and all fittings, together with goodwill, £2,500. Excellent scope for Maternity work and co-op. for Private Nurses. Ill health reason for selling. —No. 1411, B.M.A. House, Tavistock Sq., W.C.1.

North Wales.—Death Vacancy. —Beautiful Seaside Town. Cash receipts last year £200. Small panel, much scope. Excellent modern house, 2 bedrooms. Garden and garage. For sale or would let on lease.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Old-established Practice for Sale in busy Lancashire town. Total income £1,200. Panel and appointments £100. Good house on lease. Reason for sale ill-health. 1½ years' purchase; good terms to suitable man.—Apply, HOUGH, HOSEASON & Co., Ltd., Manchester.

Practice wanted immediately, Lancs or Cheshire. Income £2,000—£2,500. Large panel. Capital available £2,000.—Address, No. 1571, B.M.A. House, Tavistock Square, W.C.1.

Southern County. — Country Town and Rural PRACTICE, £1,150 p.a., in very beautiful district. Panel 250. Excellent opportunity for surgery. Extremely nice and pleasantly situated house; ample accommodation, garage, electric light, gas. Good garden with tennis lawn. Freehold £2,100. Premium 1½ years' purchase. Sport of all kinds.—Address, No. 1572, B.M.A. House, Tavistock Sq., W.C.1.

Sound Practice for Disposal, Manchester district. Six months' introduction offered.—For terms and particulars apply KNOTT & CASTLE, Solicitors, 3, Norfolk St., Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience *Mr. PERCIVAL TURNER can advise in all cases.* Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Two years' purchase offered for *good panel and private PRACTICE in or near London. Income from £1,800 upwards.* Advertiser has ample capital. — Address, No. 1520, B.M.A. House, Tavistock Square, W.C.1.

Well-established Panel and Private *PRACTICE for sale in suburb 7 miles N.W. London. Unlimited scope. Corner house, garden, with garage, on very favourable lease. — Address, No. 1063, B.M.A. House, Tavistock Square, W.C.1.*

Urgent. — Midland City. — NUCLEUS of £500. Panel and private. Scope. House to rent. Separate surgery. Garage. *Electric light. Centrally situated.* Premium £500 or offer. — Address, No. 1573, B.M.A. House, Tavistock Square, W.C.1.

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Eastbourne.—Good residential dist let. Freehold detached HOUSE for sale, just vacated. Suitable for Doctor. 3 reception, 7 bedrooms and dressing room, 2 bathrooms. Double-fronted corner House, non-basement, overlooking large private gardens, with use of same. — *Write "OWNER," Smith's Library,* Eastbourne.

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Part-time Consulting Room, in Wimpole Street.—Adam Waiting and Consulting Room. Suit a young Surgeon or Physician wanting a West End address, or anyone in provinces wishing for a London address and occasional consultation. With plate £100 a year, without plate £50 a year, inclusive of attendance, telephone, heat, light, etc. — Address, No. 1523, B.M.A. House, Tavistock Square, W.C.1.

Small Furnished or partly Furnished FLAT in London wanted by Doctor. Two rooms. Telephone. Hot water. Restaurant arrangements. Near garage. Fee moderate.—Address, No. 1511, B.M.A. House, Tavistock Square, W.C.1.

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Equipment.—Furniture for General Practice and Consulting Room, second-hand, wanted immediately. Particulars, price.—Address, No. 1534, *B.M.A. House, Tavistock* Square, W.C.1.

For Sale. — Ward's Beaumont COUCH, adjustable, roll-up mattress, £5; SCHALL'S 12 lamp electric light bath, new, £6; Pr. procelain arm baths, carbon electrodes, £2 10s.; ditto leg baths. Various batteries. —BADCOCK, 42, Dorset Street, W.1.

For Sale.—£30.—K.B.B. Mercury VAPOUR LAMP, standard pattern, Type "A," with horizontal burner, for 200 volts D.C.—Apply, Dr. KEPPEL-COMPTON, 8, Cranbury Terrace, Southampton.

Hanovia Alpine Sun *Standard model.* A.C. Local and General. In good order. Cost £18, accept £23.—Dr. BAIN, Upminster, Essex.

Instruments.—Doctor retiring has for sale cheap: artery, sinus, dissecting forceps, specula (ear and vaginal), ear syringe, mid. forceps, etc. Full list on application. —Address, No. 1507, B.M.A. House, Tavistock Square, W.C.1.

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Medical Surgical Sundries Ltd.
Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (particulars on application). Sample bottle (500) of Cough or Expect. Mist. Tablets, 1/- post free.
Showroom: 97, Swinderby Road, Wembley.

X-Ray Equipment, 10 K.V.A., modern, complete, for sale. *Harley St.* Radiologist, leaving London. Splendid condition, practically new. Immediate sale desired. —Address, No. 1505, B.M.A. House, Tavistock Square, W.C.1.

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Remittances must accompany all orders. Apply at the office, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

St. Bartholomew's Hospital, ROCHESTER.
(Rochester, Chatham, Gillingham, and District.)
(126 Beds.)

The House and Finance Committee invite applications for the post of HOUSE PHYSICIAN, vacant on April 1st.
Candidates must be unmarried, qualified, and registered Medical Men. The appointment is for six months, and the salary is at the rate of £175 per annum, with board, residence, and laundry. The officer appointed will have charge of the Medical beds. Some knowledge of Ophthalmic work is desirable.
Applications, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, to be sent to the Secretary not later than March 13th.

Diploma in Advanced Psychology (FOR NURSES).

Under the auspices of the British College of Nurses, an intensive course of Fifteen Lectures on Psychology, Morbid Psychology, and the nursing of the commoner Mental and Nervous Disorders, will be held on Tuesday evenings, commencing on March 18th, at 8 o'clock.

Full particulars may be obtained from the Secretary, British College of Nurses, 39, Portland Place, W.1.

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

(1) SENIOR RESIDENT MEDICAL OFFICER (male). Salary £150 per annum.
(2) RESIDENT HOUSE SURGEON (male). Salary £100 per annum.
(3) RESIDENT HOUSE PHYSICIAN (male). Salary £100 per annum.

Appointment No. 3 to date from April 1st, and appointments Nos. 1 and 2 to date from May 1st. All appointments to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him as follows: No. 3 not later than March 14th; Nos. 1 and 2 not later than April 16th.

Herefordshire County Council;
ROSS URBAN AND LEDBURY AND ROSS RURAL DISTRICT COUNCILS.

ASSISTANT COUNTY MEDICAL OFFICER and MEDICAL OFFICER OF HEALTH.

The Herefordshire County Council, the Ross Urban, and Ledbury and Ross Rural District Councils require a Medical Officer who will act as an Assistant County Medical Officer and a Medical Officer of Health to serve the area of the District Councils named, and to be responsible for the Poor Law Institution at Ross.

Salary £685 per annum, with travelling expenses.

Applications must be received by Saturday, March 15th, by the Clerk of the County Council, Shirehall, Hereford.

London Hospital, E.1.

Applications are invited for the post of DIRECTOR of the Department for Venereal Diseases. Candidates must be fully qualified and must possess special knowledge and experience of the diagnosis and treatment of these diseases.

The salary for the post is £800 a year, and the Director will be required to devote not less than 30 hours a week to the work of the Department.

Applications and testimonials should be submitted by March 14th.

Further particulars may be obtained from the undersigned.

E. W. MORRIS, House Governor.

The Middlesex Hospital, W.1.

A vacancy for a SURGEON to the Hospital is hereby declared.

A vacancy for an ASSISTANT SURGEON to the Hospital will also occur, and applications for this latter office are invited, to be sent to the undersigned before noon on Monday, March 17th next, accompanied by diplomas and testimonials.

Candidates must be Fellows (or have passed the qualifying examination for Fellowship) of the Royal College of Surgeons of England.

By Order of the Board,
S. R. C. PLIMSOLL,
Feb. 28th, 1930. Secretary-Supt.

County Mental Hospital,
PRESTWICH, near MANCHESTER.

ASSISTANT MEDICAL OFFICER required. Commencing salary £500 per annum, rising to £600 by yearly increments of £25, plus £50 per annum on obtaining the D.P.M., less charges for board, furnished apartments, attendance, and laundry, valued at £150 per annum if received in full. Further increases according to promotion.

Candidates must be unmarried and registered under the Medical Act. The appointment is subject to 3 per cent. deduction from salary under the Asylums Officers Superannuation Act, 1909. Apply, stating age and full particulars, to the Medical Superintendent.

Birmingham Union.
ERDINGTON HOUSE.

RESIDENT ASSISTANT MEDICAL OFFICER (Female).

Applications are invited from fully qualified Medical Practitioners for the above appointment at the Erdington House. The Institution accommodates 1,800 inmates, of whom aproximately 800 are mental patients of varying types and 250 are sick, the remainder being aged and infirm, ordinary House cases, etc. Parts of the Institution are certified under the provisions of the Mental Deficiency Acts, 1913 to 1927.

The person appointed will be required to assist in the general medical work of the Institution and to undertake such other duties as may be assigned to her by authority, and, should occasion arise, to assist at other Institutions.

The minimum and maximum of the scale of salary attached to the appointment are £250 and £350 per annum respectively, and the salar[illegible] late will be fixed with[illegible] to qualifications and [illegible], full residential emoluments (rations, apartments, laundry, and attendance) will be provided. A percentage deduction will be made from the salary and value of emoluments for superannuation purposes, and for this purpose the emoluments are valued at £200 per annum.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded so as to reach me not later than March 10th.

Canvassing, directly or indirectly, will disqualify.

Union Offices, Edmund Street, Birmingham. C. P. BEECH, Clerk to the Guardians.
February 21st, 1930.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on April 4th and 14th respectively.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, March 3rd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their Meeting on Wednesday, March 5th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
February, 1930. Secretary.

Queen's Hospital, Birmingham.
A GENERAL HOSPITAL AND MEDICAL SCHOOL.

Applications are invited for the following posts:

(1) PATHOLOGIST. Candidates must be registered Medical Practitioners.
(2) CASUALTY SURGEON. Candidates must be Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland.

Each of the above appointments are tenable for three years, with eligibility for re-election, and each carries an honorarium of £100 per annum.

Applications, stating experience, qualifications, and date of birth, together with diplomas, evidence of registration, and copies of recent testimonials, to be sent to the undersigned on or before Saturday, March 15th.

Birmingham. G. HURFORD,
Feb. 25th, 1930. House Governor.

Macclesfield General Infirmary.
(100 Beds.)

Wanted at once, SECOND HOUSE SURGEON, male. Salary at the rate of £150 per annum, with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

Applications, stating age, nationality, and qualifications, with copies of testimonials, to be sent to the undersigned

A. L. HANRAHAN, Secretary.

Urban District Council of HENDON.

MEDICAL OFFICER OF HEALTH.

The Urban District Council of Hendon invite applications from qualified Practitioners (not under 33 years of age), who are holders of a Public Health qualification, for the position of Medical Officer of Health.

Forms of application and conditions of appointment may be obtained from the undersigned.

Commencing salary £1,000 per annum inclusive, rising by annual increments of £50 to £1,200.

The post will be designated under the Local Government and Other Officers Superannuation Act, 1922.

[illegible] undersigned not [illegible] 0th.
[illegible] directly, will be [illegible]

Dated this eleventh day of February.
Town Hall, The Burroughs, Hendon, N.W.4. LEONARD WORDEN, Clerk to the Council.

Cardiff Royal Infirmary.
(Associated with the Welsh National School of Medicine.)

Applications are invited for the post of HOUSE SURGEON to the Surgical Unit of the above Institution.

Salary at the rate of £50 per annum, with board and lodging. Appointment is for six months, commencing March 24th.

Forms of application can be obtained from the undersigned, and should be returned, with copies of three recent testimonials, on or before March 15th.

R. ARMSTRONG,
February 25th, 1930. Medical Supt.

Victoria Hospital, Burnley.
(120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £125 per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING,
Feb. 3rd, 1930. Secretary-Supt.

District Infirmary,
ASHTON-UNDER-LYNE.
(General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident Staff comprises a Resident Surgical Officer and Three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Feb. 17th, 1930. Gen. Supt. & Sec.

Stannington Sanatorium for CHILDREN.
(310 Beds—Medical and Surgical Tuberculosis.)

Wanted, JUNIOR RESIDENT MEDICAL OFFICER (female). The appointment will be for a period of six months, with an honorarium at the rate of £50 per annum.

Applications, with copies of testimonials, should reach the Medical Superintendent, Stannington Sanatorium, Clifton, Morpeth, Northumberland, not later than March 10th.

Cumberland Infirmary, Carlisle.

HOUSE PHYSICIAN required at once (male). Six months' appointment. Previous Hospital experience desirable. Salary at the rate of £155 per annum, board, residence, etc.

Applications, stating age, with copies of not more than four testimonials, should be sent immediately to the undersigned, who will supply further particulars if desired.

J. G. HOWITT,
February 24th, 1930. Secretary.

Central London Ophthalmic HOSPITAL, Judd Street, W.C.1.

There is a vacancy for the post of HON. DENTAL SURGEON to the above Hospital. Candidates must have a Medical as well as a Dental qualification.

Applications, with copies of not more than four testimonials, must be received by the Secretary not later than Saturday, March 8th.

H. R. S. DRUCE, Secretary.

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Tactear, Manchester. Tactear, Dublin. Manchester, 3152 Ardwick. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of *HONORARY MEDICAL REGISTRAR* for a period of one year, eligible for re-election annually for a total period of not more than three years. An honorarium at the rate of £100 per annum is attached to the post. The successful candidate must hold no appointments at a General Teaching Hospital during his term of office. The duties include the preparation of the Medical Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as substitute for the Physicians and Assistant Physicians when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of *HONORARY ASSISTANT SURGEON*. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver Surgical Courses of Lectures to the Nurses and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

Leicester Royal Infirmary.
(420 Beds.)

HOUSE SURGEONS.

Vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 18th, 1930.

Leicester Royal Infirmary.
(420 Beds.)

HOUSE PHYSICIANS (Two).

Vacancies are expected on April 1st. Salaries at the rate of £125 per annum. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Election about the middle of March. Applications should be made to the House Governor and Secretary on or before March 4th.

February 18th, 1930.

St. Paul's Eye Hospital,
Old Hall Street, LIVERPOOL.

HOUSE SURGEON required April 1st. Six months' appointment. Salary £120 per annum. Board, residence, etc. Applications, with copies of testimonials, should be sent to the Secretary, at the Hospital, on or before March 15th.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith Road, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, Two HOUSE SURGEONS, and One RESIDENT ANAESTHETIST for six months from April 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act. Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, March 7th. Selected candidates will be required to call upon such members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, March 21st, at 4 p.m., and the House Committee Meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Blackburn and East Lancashire
ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male), to commence duties March 17th, required at a salary of £130 per annum, with board, residence, laundry, etc.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Sec.

This Institution is recognized for the Surgical Practice required for the *F.R.C.S.* final examination.

Queen's Hospital, Birmingham.
MEDICAL SCHOOL.

For fully qualified candidates the following Resident posts will become vacant on April 1st: Thr One HOUSE SURGEO' One DENTAL HOUSE p.a. in each case, with full board. Further particulars from the undersigned, to whom applications, accompanied by three recent testimonials, should be sent at once.

G. HURFORD,
House Governor.

Bristol Eye Hospital.

Applications are invited for the post of HOUSE SURGEON. Vacant immediately. Unmarried man preferred. Appointment for 12 months. Application to be received by the Secretary not later than Thursday, March 13th.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital 338 Beds.)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS.
February 24th, 1930. Supt. & Sec.

Charing Cross Hospital.
REGISTRAR TO EAR, NOSE, AND THROAT DEPARTMENT.

The Council invite applications for the post of Registrar to Ear, Nose, and Throat Department. Honorarium £100 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

Charing Cross Hospital.
MEDICAL REGISTRAR.

The Council invite applications for the post of Medical Registrar. Honorarium £150 per annum.

A copy of the regulations can be obtained from the undersigned, to whom applications, together with copies of three testimonials, must be submitted not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

Charing Cross Hospital.
OBSTETRIC REGISTRAR.

The Council invite applications for the post of Obstetric Registrar. Honorarium £100 per annum.

Applications, together with copies of three testimonials, must be submitted to the undersigned not later than Monday, March 3rd.

Charing Cross Hospital, PHILIP INMAN,
London, W.C.2. House Governor.

General Hospital, Gt. Yarmouth.
(72 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON (male, unmarried). Salary £150 per annum, with board, residence, and laundry. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

The County Hospital, York.

HOUSE SURGEON wanted, woman preferred, whose principal duties will be in the Eye, Ear, Nose, and Throat Department. Salary £150, with board, residence, etc. The appointment will be for 12 months, with possibility of extension. Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the Manager not later than March 12th.

Liverpool & Samaritan Hospital
FOR WOMEN.

HOUSE SURGEON wanted for period of six months commencing April 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be sent to the undersigned before March 3rd.

13, Rodney St., J. ST. GEORGE WILSON.
Liverpool.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) for five months from March 12th (during first month duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, at once, to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates *must attend Committee of Management.* Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
Feb. 25th, 1930. Secretary-Supt.

A Surgeon is required for the EDINBURGH HOSPITAL FOR CRIPPLED CHILDREN, with Major and Minor Clinics in the South-Eastern area of Scotland. Applicants *must be duly qualified Medical Practitioners* who have wide experience of Orthopædic work. The Surgeon appointed will be required to confine his private practice to orthopædic surgery. The Lectureship of Orthopædics in the University of Edinburgh will be associated with this appointment. Total emolument £1,000 per annum. Applications, with testimonials, should be sent to R. W. MARTIN, W.S., Hon. Secretary, Edinburgh Hospital for Crippled Children, 5, Hill Street, Edinburgh, from whom further particulars may be obtained. Applications must be lodged by April 12th.

Westminster Hospital,
Broad Sanctuary, S.W.1.

DENTAL DEPARTMENT.

There is a vacancy for a CLINICAL ASSISTANT to the Dental Department. A candidate must be a Licentiate in Dental Surgery and a registered Dental Practitioner. Applications, together with copies of three testimonials, should be addressed to the undersigned on or before Friday, March 7th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

Applications are invited for the office of ASSISTANT MEDICAL REGISTRAR. The post is a whole-time one, and the salary attached to the office is at the rate of £160 per annum. Candidates should have held a resident post at a General Hospital.

The appointment is of six months' duration. Applications should be submitted to the undersigned not later than Saturday, March 15th.

CHARLES M. POWER, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

There will be a vacancy in the office of SENIOR RESIDENT AND CASUALTY OFFICER for duty commencing April 1st next.

The appointment is for six months and may be renewed for a further period of six months. Candidates should have previously held a resident appointment. Salary £104 per annum, with board-residence.

Applications should be submitted to the undersigned not later than Saturday, March 15th.

CHARLES M. POWER, Secretary.

Westminster Hospital,
Broad Sanctuary, S.W.1.

There is an immediate vacancy for a HOUSE SURGEON to the Eye, and Ear, Nose, and Throat Departments.

The appointment is for six months (non-resident), and the salary attached to the office is at the rate of £102 per annum.

Applications should be sent in at once to the undersigned.

CHARLES M. POWER, Secretary.

Leeds Maternity Hospital.
(102 Beds.)

Applications are invited for the position of ASSISTANT RESIDENT MEDICAL OFFICER. Salary payable £26 per annum. The appointment is for two months from March 8th to April 30th.

At the end of this period the holder of the above appointment may apply for the post of Senior Resident Medical Officer for a further period of three months. Applications to be addressed to the Secretary, *The Medical Faculty,* Leeds Maternity Hospital, Hyde Terrace, Leeds.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 25165.

Royal Northern Hospital,
Holloway, London, N.

Applications are invited for the following posts:

HOUSE PHYSICIAN for nine months (six months House Physician and three months Casualty Officer) from April 15th.

OBSTETRIC HOUSE SURGEON for six months, from April 15th.

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by March 8th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, *Secretary.*

THE OLDEST AND LEADING MEDICAL AGENT

PERCIVAL TURNER,
(Established 50 years.) LTD.
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After Office Hours: EPSOM 9142.

Terms post free on application.

London, S.E. — About £2,600 p.a. Very few mids. Panel over 5,800. Nine-roomed house to rent.—No. 8620.

London, E.—About £2,500 p.a. Lady PARTNER required for 1/2 share. Panel over 1,500. No mids. Small flat.—No. 8619.

Lancs Town.—About £2,000 p.a. Mids. 2—4 gns. Visits 2/6 up. Panel over 2,100. House, 5 beds., etc., to let.—No. 8618.

Lancs. — Death Vacancy. — Average £1,600 p.a. Appts. about £150 p.a. Panel 950. Mids. from 2 gns. Visits 2/6 up. House, 5 bed., etc., to rent or buy. Premium £1,600.—No. 8617.

Liverpool. — 1/3 share of over £4,000 p.a. Old-estab. Appts. £100 p.a. Panel about 4,700. Mids. 3—5 gns. Visits 3/6—5/-. House, 4 bed., etc.—No. 8616.

Eastern Counties. — Country.— About £1,200 p.a. Panel and appts. over £900 p.a., fees 2/6—10/6. Mids. 2—5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Wores. — Country Practice. — Unopposed, 4½ miles. £1,100 p.a. Fees 5/- to 10/-. Panel and appts. £410. House, 5 bed., etc. Rent or buy. Easy terms. —No. 8612.

Cheshire Town. — About £900 p.a., increasing. Visits 3/6—5/-. Mids. 3 gns. Panel about £400. Small house for sale. Urgent sale.—No. 8597.

S. Wales. — Town Nucleus. About £600 p.a., increasing. Mids. from 2 gns. Visits 2/—3/6. Panel about 400. House, 4 bed., etc. Sep. surg. and dispensary. House-Practice £2,100 or offer, part down.—No. 8609.

Home Counties.—Country Practice. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 230. Mids. 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £220 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250. —No. 8602.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Small panel about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage. —No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8603.

Lincs.—Unopp. Country Practice. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 3/- to 10/-. House, 5 bed., etc., to rent, large garden.—No. 8592.

Suffolk Death Vacancy.—About £1,000 p.a Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice.— £1,000 or more p.a. Panel and appts. about £250 p.a. Visits 3/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8585.

N. W. Scotland. — About £800 p.a. Panel and appointments about £614 p.a. Good det. house, 3 recep. rooms, 4 bed., etc., garage and garden, to rent. Premium, including furniture, only £1,200.—No. 8577.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants.

Full particulars on application to Mr. Percival Turner.

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
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Telephone: Mayfair {1782 / 1783}

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

NORTHERN BRANCH.

The Manchester Medical Agency, lately under the control and management of the Manchester Medical Committee, has now been taken over by the British Medical Bureau as their Northern Branch.
Medical Practitioners in the North requiring the services of the Bureau are recommended to consult the Branch Manager, at the Offices, 33, Cross Street, Manchester.
Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal. Full particulars sent free.

1 DEATH VACANCY.—Lancs.—Practice of over £1,600 p.a. in manufacturing town. Panel 950. House (4/5 bedrooms) and garage for sale or rent. Scope.

2 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

3 LEICESTERSHIRE. — Country Practice about £1,000 p.a. (£450/£500 from panel). Easy distance of good town. Suitable house to rent. Premium 1½ years' purchase.

4 LIVERPOOL. — Partnership in Practice about £2,200 p.a. in good-class residential suburb. Panel about 1,000. Visits up to £1 1s. Small villa, with surgery and garage, to rent. Partner must be English or Scotch and well qualified. One-half share at 1½ years' purchase. Preliminary assistantship.

5 YORKSHIRE (N.R.).—Country Practice of £1,500 p.a. (about £400 from panel), close to first-rate town. Good house (5 bedrooms) to be sold. Golf and hunting. Premium —house and Practice—£5,000.

6 YORKSHIRE.—Seaside Town.—Partnership in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

7 LONDON, N.W.—Practice of £868 p.a. in thickly populated suburban district within 5 miles of Marble Arch. Panel 480. House to be sold or let. Premium £1,000.

8 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

9 HOME COUNTY.—Increasing Practice in attractive country town about 30 miles from London (N). Receipts 1929 over £700. Small panel. Good corner house (6 bedrooms) to rent. Premium 1½ years' purchase.

10 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

11 LONDON, N.—Good middle-class Practice of £1,600 p.a. in first-rate residential district. Panel 800. Very attractive well-built house (8 bed and dressing rooms) and beautiful garden for sale. Premium 1½ years' purchase.

12 NORTH MIDLANDS.—Steadily increasing PRACTICE of about £1,150 p.a. in first-rate city. Panel 680. Nice corner house (5 bedrooms), in residential part, to rent. Premium 1½ years' purchase.

13 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

14 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

15 SOUTH-EAST COAST. — Partnership in non-dispensing Practice over £4,000 p.a. in favourite residential town and seaside resort. Panel 950. Choice of houses. One-fifth or one-fourth share at 2 years' purchase.

16 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

17 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

18 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering-place. Receipts last year £930 (including panel £230). Ground floor flat to let. Premium £1,050.

19 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. Educational facilities. Premium £1,000.

20 LONDON, S.W.—Cash and Panel Practice in populous district. Receipts 1929, £460. Panel 550. Rent of Surgery 15/- weekly. Premium £650.

21 LONDON, S.W. — Partnership in mixed Practice of over £6,200 p.a. in one of the best outlying residential suburban districts. Panel over 5,000. House (5/6 bedrooms) for sale or rent. Premium one-sixth share 2 years' purchase. Partner should be young and married or about to be.

22 NEAR BIRMINGHAM.—Partner required in middle-class Practice over £2,000 p.a., in good residential town. Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

23 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one-third share 2 years' purchase.

24 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

25 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

26 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

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Practices and Partnerships for Disposal (continued).

27 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,650.

28 LONDON, S.W. — Good middle-class non-dispensing PRACTICE in pleasant residential suburb. Receipts year ended September 30th, 1929, £2,428. No panel. Excellent detached corner residence (7 bedrooms). Premium—house and Practice—£4,000.

29 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

30 LANCASHIRE. — Practice ot £1,500 in rapidly growing district within a few miles of a popular resort. Panel over 200. Very nice compact house (4 bedrooms), with beautiful garden and orchard, for sale. Prem.—Practice—£1,500.

31 LIVERPOOL. — Practice of over £1,200 p.a. Panel 600. House (4 bedrooms), garage and garden, for sale. Golf near by. Scope. Premium £1,550.

32 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

33 SOUTH AFRICA.—Practice nearly £3,000 p.a. in one of the pleasantest Towns in the Cape Province. House (4 bedrooms) to rent. Excellent surgical centre. Purchaser should be able to undertake major surgery. Premium £2,200, part by instalments

34 WEST OF ENGLAND.—Practice averaging £1,350 on outskirts of important City. Panel 1,787. Pleasantly situated house (4 bedrooms), garage and large garden, for sale Premium £2,100. Considerable scope.

35 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £730. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

36 EASTERN COUNTIES. — Partnership in Country Practice over £1,700 p.a. in prosperous agricultural district. Panel 1,050. Accommodation available. Premium two-fifths share £1,400.

37 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

38 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

39 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

40 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

41 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

42 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent Sport.

43 LONDON, N.W.—Partnership in Practice over £3,000 p.a. in suburban district. No panel. Visits 5/6 to 10/6 and upwards. One-third share at 2 years' purchase. Partner must be English and well qualified.

44 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

45 NURSING HOME in favourite Town on Kent Coast. Clear net profit £750 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

46 GLAMORGAN. — Easily worked Practice averaging £820 p.a. in semi-rural and industrial district, easy distance of Cardiff. Panel over 500. Small house to be let or sold. Good prospects of increase. Premium £1,200.

47 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

48 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

49 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

50 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

51 EASTERN COUNTIES. — Partnership in Country Practice of £2,300 p.a. Panel 1,600. House, with garage and garden, to rent. Premium one-third share 2 years' purchase or possibly a little less.

52 W. OF ENGLAND. — Ophthalmic PRACTICE about £900, in residential seaside resort. Semi detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium 1½ years' purchase.

53 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering-place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one-third share £2,100.

54 MIDLANDS. — Country Practice about £1,000 p.a. in residential district and hunting centre. Panel 600/700. House, with 8 bedrooms, to rent. Premium £1,300.

55 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

56 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

57 BRITISH EAST AFRICA. — Assistant required in General and X-ray and Electro-therapeutic Practice.

58 DEATH VACANCY. — CORNWALL.—Country PRACTICE about £1,000/£1,200. Panel 800. Suitable and convenient house.

59 SOUTH COAST.—Practice about £800 p.a. in first-rate Residential Town and favourite Watering-place. Panel about 200. House (5 bedrooms) in good position. Scope in all directions. Premium 1½ years' purchase. Preliminary Assistantship entertained

60 SOUTH COAST.—Practice £1,328 p.a. in favourite Watering-place. Panel 1,370. Large well situated house to rent. Great scope. Premium 1½ years purchase.

61 WEST MIDLANDS. — Country Practice (held by Medical Woman) in beautiful Village. Receipts £530 p.a., steadily increasing Semi-detached 10-roomed House, with nice garden and garage, to rent. Premium 1½ years' purchase.

62 SOUTH COAST. — Increasing Practice £1,515 p.a. in favourite Seaside Resort. Panel 400/500 Large house for sale. Scope for increase. Premium 1½ years' purchase.

63 KENT & SUSSEX BORDER. — Practice averaging nearly £1,100 p.a. in beautiful Country District. Small panel. Very convenient house (5 bedrooms) for sale. Sport. Premium 1½ years' purchase.

64 EAST ANGLIA.—Partnership in Practice about £3,300 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

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All Communications to be addressed to Mr. A. V. STOREY, General Manager.

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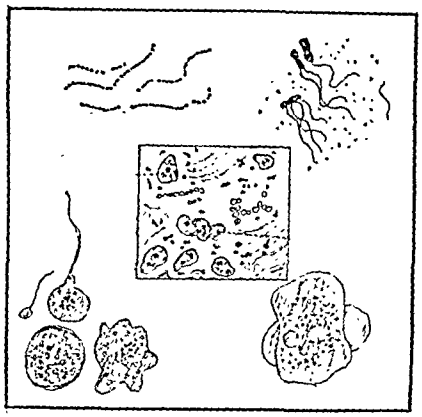
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5. BORDERS OF LINCS AND YORKS.—PRACTICE in old-established, mainly agricultural, situated in pleasant district. Receipts average over £840 p.a. Panel produces nearly £300, and appointments £70. Fees from 3/-. Nice house, well situated, containing 2 reception, 4 bedrooms, etc. Three acres of garden. Rent on lease £56 p.a. Very low expenses. No local opposition. Premium 1½ years' purchase.
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10. WITHIN 100 MILES OF LONDON.—PARTNERSHIP.—Third share of old-established mixed-class and increasing Practice in small pleasant market town in an agricultural district. Cash receipts last year over £3,100, including appts, worth £300 and panel with mileage producing £500. Visits 3/6 to 15/-. Opposition slight. Railway station. Compact house (consulting and waiting rooms, 2 sitting, 5 bedrooms, dressing and bathroom, etc.). Garden. Garage. Price, freehold, £900. Premium 2 years' purchase.
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18. NEAR LIVERPOOL.—Mainly better working-class PRACTICE, producing about £700 p.a., including panel of 854. Fees 2/6 to 5. Mid. 3 to 5 gns.; about 20 cases yearly. Suitable house available on rental. Premium £1,000.
19. LIVERPOOL.—Middle and working-class PRACTICE. Receipts for immediate past twelve months £1,247, including panel of 602 Fees from 2/6. Suitable house, with 2 reception, 4 bedrooms, etc Large garden. Price for leasehold £1,550, of which £1,300 could remain on mortgage. Premium £1,550.
20. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 320. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
21. SOUTH COAST.—FAVOURITE HEALTH RESORT.—Old-established mixed-class PRACTICE, producing about £1,000 p.a. Small panel of 223. Fees from 2/6. Suitable house, with 3 reception, 5 bedrooms, etc. Large garden. Price for leasehold £1,400, £1,250 on mortgage. Premium £1,200.
22. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 350. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
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25. YORKS.—PROSPEROUS LARGE TOWN.—Well-established compact PRACTICE, averaging nearly £1,600 p.a., including panel of 1,400. Fees 3/- upwards. Not much midwifery. Low expenses. Very well situated double-fronted house, 2 reception, 4 bedrooms, etc and good professional accommodation. Garden. Price for freehold £1,500 (£1,000 on mortgage). Premium 1½ years' purchase.
26. YORKS.—LARGE TOWN.—Old-established mainly working-class PRACTICE, producing over £1,200 p.a., including panel of over 1,400. Fees 2/6 to 5/-. Well-situated house, with good garden. Price £1,500. Premium £1,200.
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MARCH 8TH, 1930.

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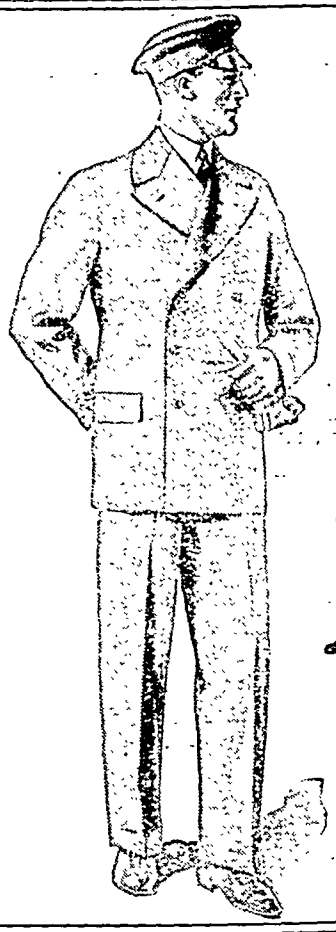
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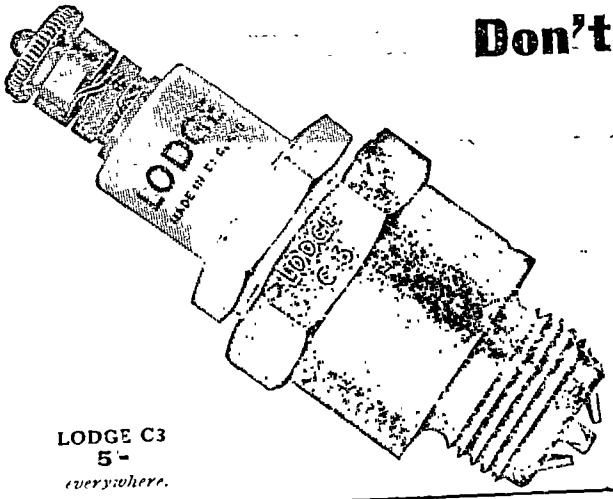
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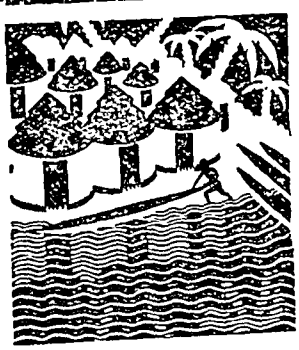
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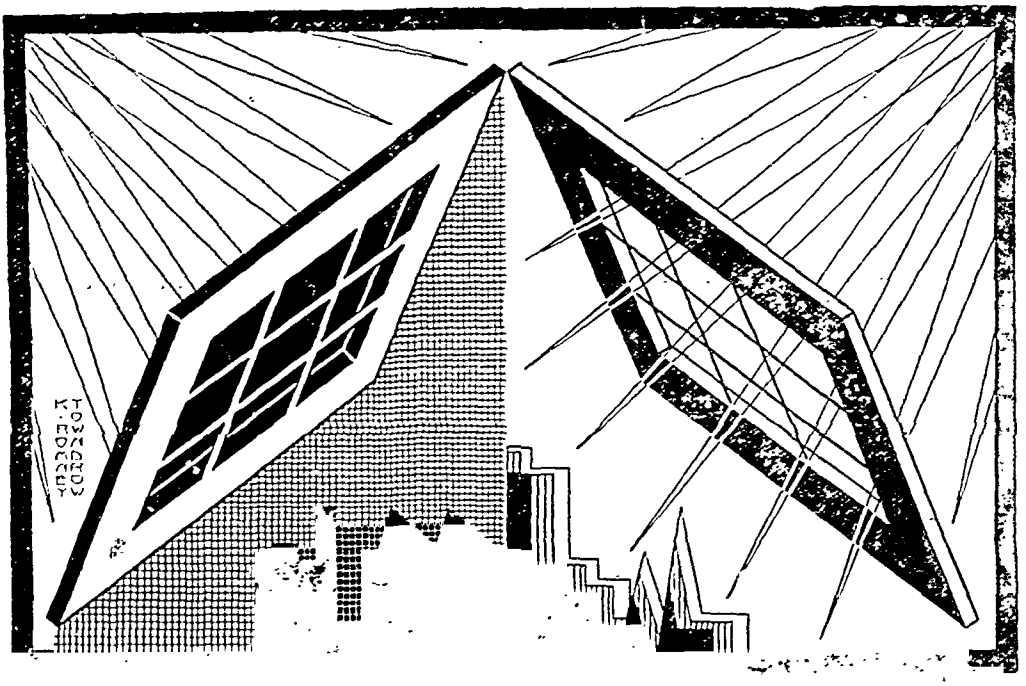
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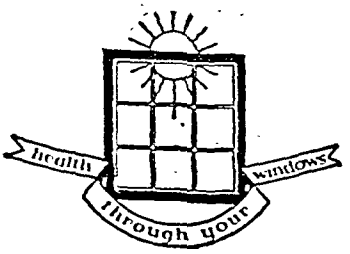
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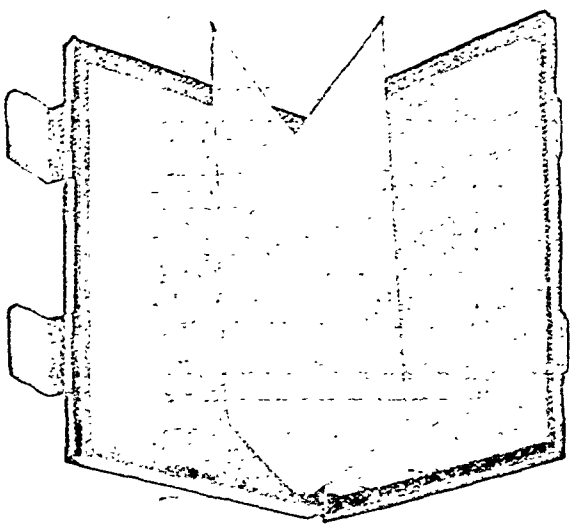
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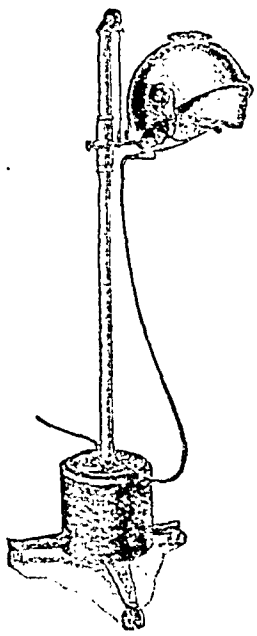


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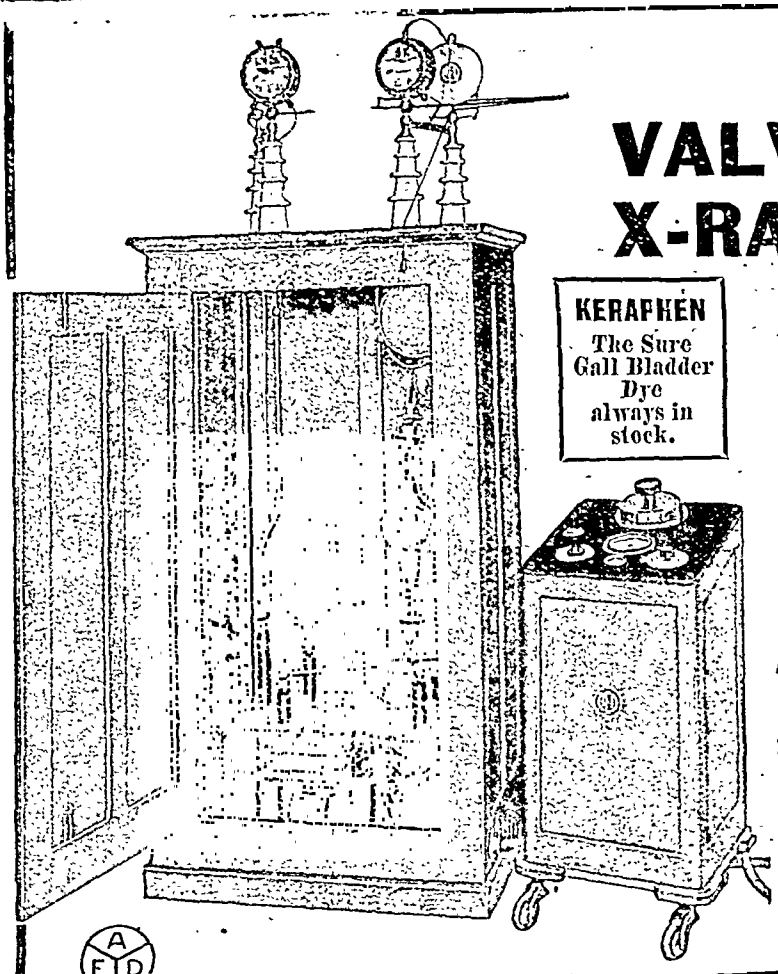
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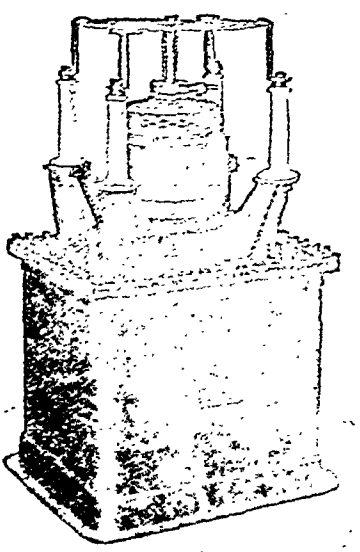
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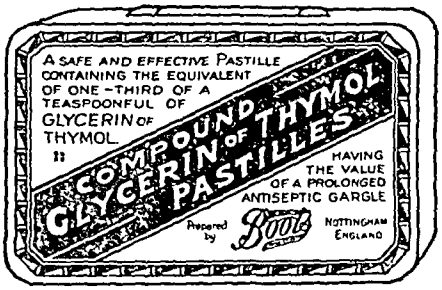
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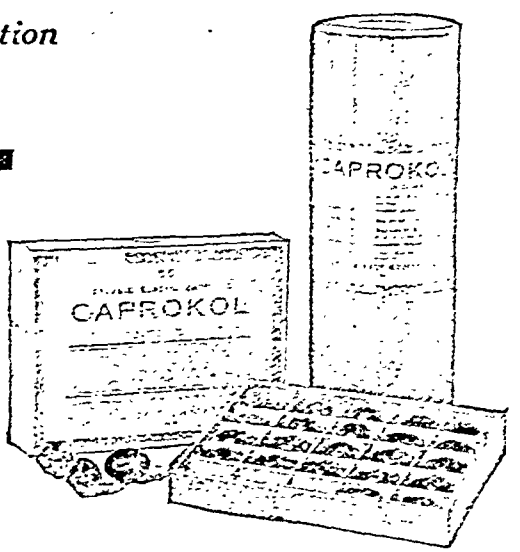
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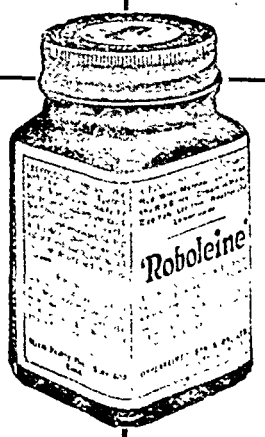
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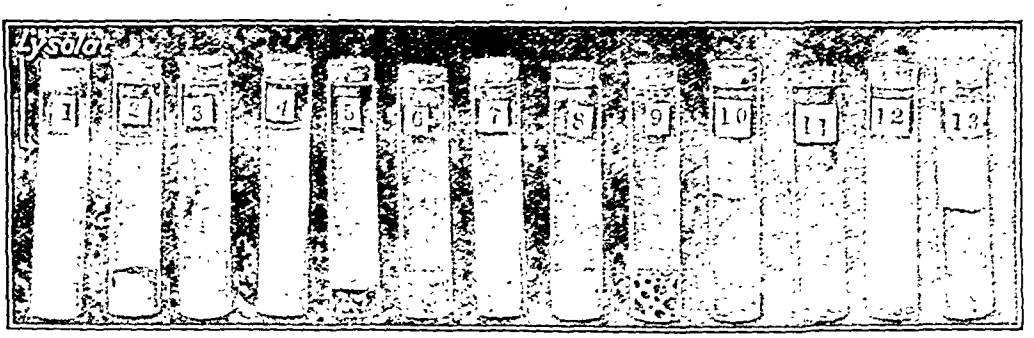
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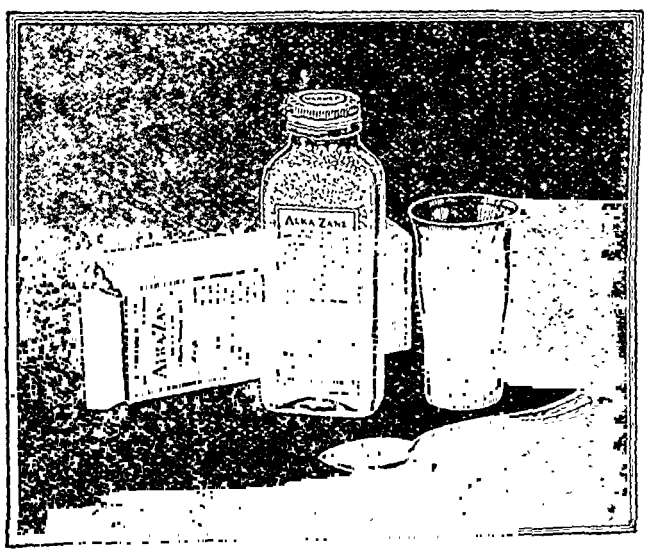
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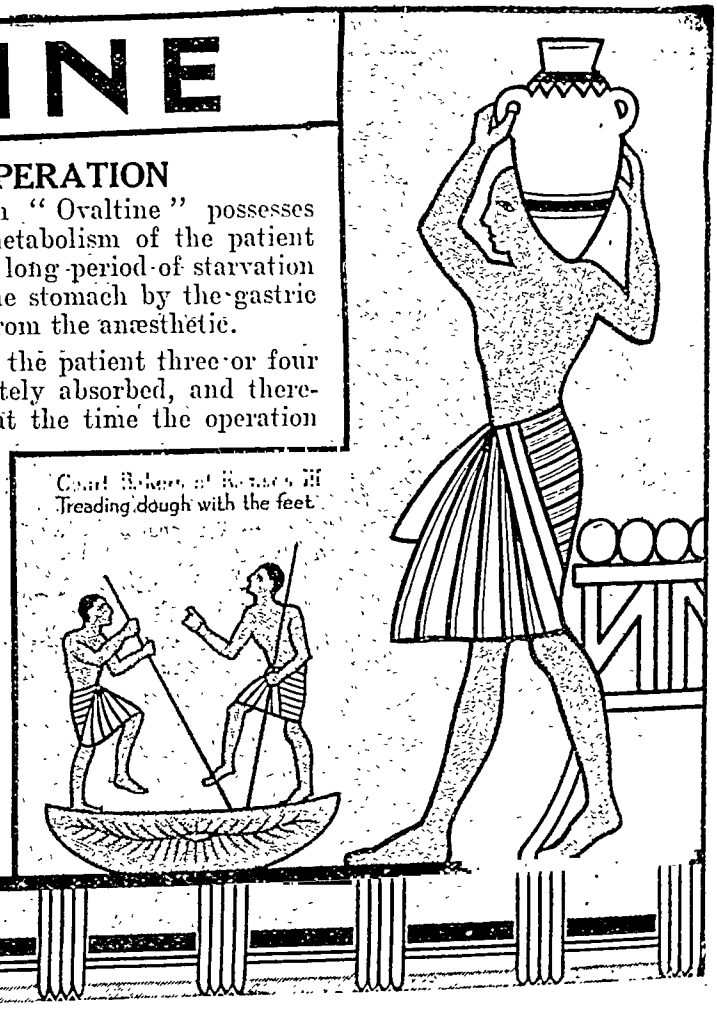
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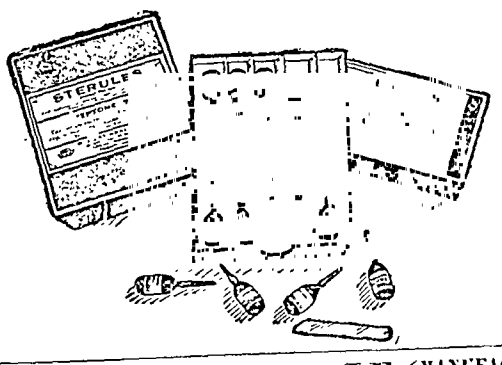
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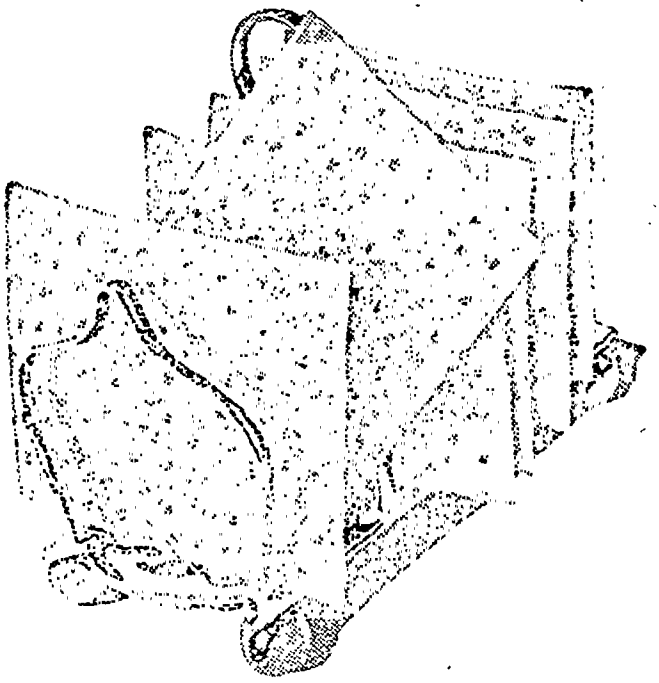
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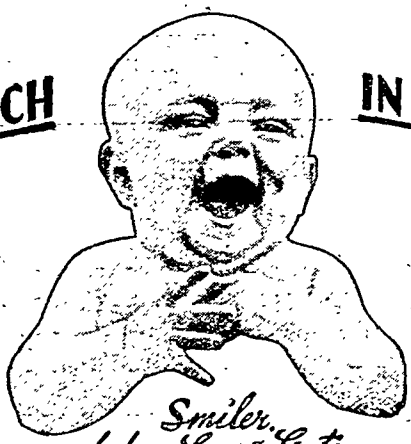
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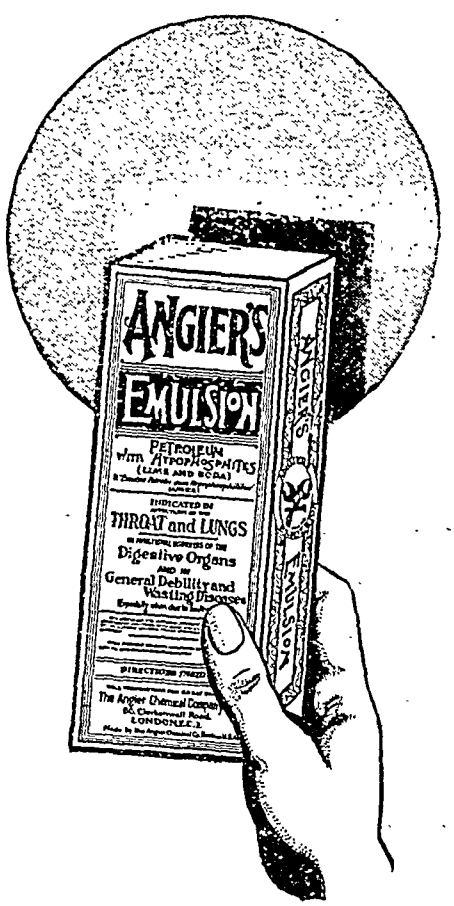
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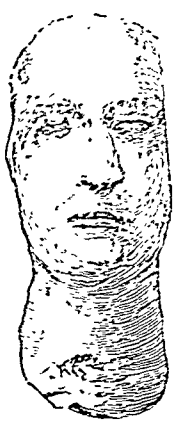
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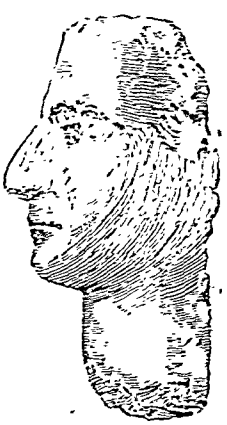
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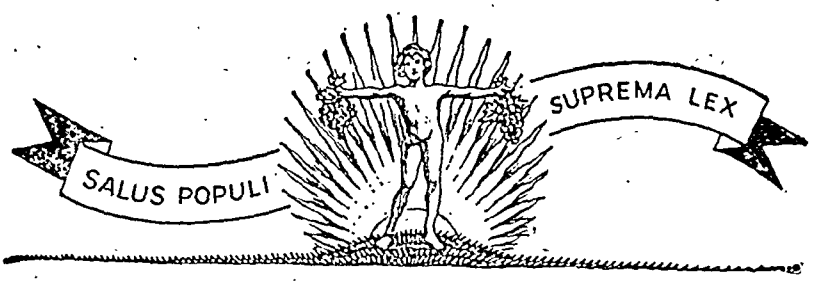


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Remarks
ON
INDIGESTION FROM A SURGEON'S STANDPOINT.*

BY
H. W. CARSON, F.R.C.S.,
SENIOR SURGEON, PRINCE OF WALES'S GENERAL HOSPITAL; CONSULTING SURGEON, HERTFORD COUNTY HOSPITAL.

To discuss indigestion among the common complaints is obviously correct, because it is probable that nearly everyone from time to time experiences sensations due to temporary upsets in the complicated co-ordination of gastro-intestinal physiology; but the fact that some of these upsets are due to surgical disorders, and may necessitate an operation of more or less severity, raises them above the plane of minor ailments, though they may still be common complaints.

The title of this address suggests that indigestion may be divided into strict categories—that there is a type with which the surgeon must deal, a type for the physician, and doubtless another for the gynaecologist. But is that really so? I would rather say that the standpoint—that is, the point from which we view the patient—is the same for all medical men, and that the time has gone by when the surgeon was merely a craftsman obeying the order of his superior, the physician. Nowadays we all, whatever our label, insist on making our own diagnosis. We are all equally equipped to investigate conditions, however obscure; we use the same diagnostic tools, and, in most cases, come to the same conclusions. We still differ, though to a constantly diminishing extent, on treatment; but with an increasing appreciation, not so much of the nature of a disorder as of the stage at which it has arrived, we must inevitably reduce the number of those cases where differences still exist. We surgeons can take some credit for insisting on what has well been called the living pathology—that is, for exposing to the eye and permitting the minute examination of diseased organs at an early stage—a study more fruitful than is an examination, after death, of structures so altered by prolonged disease that the early signs are unrecognizable. I would mention, as an example, how the knowledge that has resulted from the histological examination of the gall-bladder, removed at an early stage of the disease, has led to a correct estimation of the effect that cholecystitis has on the general health, and to a realization of how much more important the *disease* of the gall-bladder is than the *stones* it may happen to lodge. Or, as another example, how a critical examination of displaced viscera has led us to modify the views at first held on visceroptosis. Of course, it may be years before some ingrained beliefs are abandoned—such as, for instance, that hyperchlorhydria is a disease, and that it is due to overwork, or that recurring abdominal pain in children is due to "bilious attacks," or that gall-stones can be cured by medical treatment. But, gradually, knowledge is spreading that surgery has done much to explain the early stages of many abdominal complaints, and that certain abdominal disorders, as far as their treatment is concerned, are purely surgical from the very beginning.

DISORDERS OF THE STOMACH.

When one talks of indigestion, one thinks at once of the stomach, and certain questions arise which require an answer. A. Is the stomach itself diseased, or is it acting in sympathy with some other diseased organ? B. If the stomach is at fault, is it because of some physiological variation or of a pathological change? C. If a pathological change, is that amenable to medical treatment, or must some direct attack be made on it by a surgical operation?

A. We know that a perfectly healthy stomach may be so affected by disease in other viscera that its disordered action may simulate a definite lesion. The best known instances are the dyspepsias in lesions of the appendix and in gall-stones. It is accepted that gastric pain is due to disordered muscular action, and is really an exaggeration of normal sensations, such as hunger, which are associated with hypermotility. The presence of some irritable focus, such as a chronic appendicitis or cholecystitis, excites a hyperperistalsis in the stomach, and pain results. It is for the diagnostician to distinguish between this condition and a similar condition due to a local lesion, for it is obvious that treatment directed to a referred condition must be ineffectual while the causative lesion is still active.

It is interesting to note that appendicitis will more readily excite symptoms of duodenal ulcer in persons of the duodenal diathesis—stalwart, well-developed men, in whom hypermotility and hypersecretion are the rule—and symptoms of gastric ulcer in the hyposthenic type with a narrow chest, poor physique, and a tendency to visceroptosis, in whom gastric motility and secretion are both on a lower plane. Our first duty, then, is to distinguish between actual and referred symptoms, and everything depends on a correct answer to this first question.

B. Investigation has proved that the stomach is very responsive to internal and external stimuli. The flow of gastric juice is excited or inhibited by many causes, some of them physical, others mental, and even the level of the gastric curvature may vary at the call of the emotions, so that the "sinking feeling" has a real physical basis. Too much reliance cannot, then, be placed on decimal variation in gastric acidity, but, if there is a pathological change in the stomach, the investigation of gastric secretion may be of real assistance. We know, too, that a small proportion of healthy and otherwise normal people have no free hydrochloric acid in their gastric secretion, but whether that renders them more liable to develop diseases associated with low gastric acidity—for example, pernicious anaemia or gastric cancer—is not known. We do know that they have a normal appetite and good digestion, in spite of this apparent anomaly. It is very doubtful whether variations in gastric secretion give rise to symptoms, and to distinguish between physiological variations and pathological variations requires other means of investigation, among which the *x*-ray barium meal examination and the chemical examination of the stools have chief place.

C. Having determined that a pathological lesion is present, the question arises as to the prospect of permanent cure, and the choice of methods to ensure it. It is here that the medical view and the surgical view diverge. Until quite recently the disappearance of symptoms was looked upon as evidence of cure, but with more exact methods of examination we know now that, while in practically every patient with gastric or duodenal ulcer confined to bed, and treated on medical lines, all the symptoms will disappear in a few days, the ulcer takes many weeks to heal, and may even remain unhealed. We know also that from time to time the *x* rays will demonstrate the gradual diminution in size and eventual disappearance of really large crater ulcers under medical treatment. The question we have to answer is: What type of ulcer gives a reasonable chance of cure by medical means, and what are the chances of such a cure being permanent? We know that all superficial ulcers of the stomach and duodenum are associated with remission of symptoms, sometimes for long periods, but that there is a tendency to recurrence. It is probable—and I think I have proved it by seeing many of these conditions during abdominal operations—that during a remission the ulcer really heals. Have we any assurance that a superficial ulcer healed under medical treatment will be less likely to recur than one which heals without treatment? There can be no answer to the question until we can collect the after-histories of thousands of contrasted cases. With regard to crater ulcers, the matter is less controversial. Remissions in these cases are less the rule, and these ulcers behave like all other ulcers with a more or less fixed base in their reluctance to heal and their tendency to break down again. In spite of the gratifying progress seen by the *x* rays in some of these cases treated medically, I am convinced that the proportion of recurrences is so high that medical treatment is not ideal for these cases, even if we overlook the fact that these are

* A paper read before the East Herts Division of the British Medical Association on January 2nd, 1930.

essentially the cases in which grave complications occur. Of these complications, perforation has lost much of its terror since early intervention became the rule, but haemorrhage is still a serious sequel, and one that is too often beyond surgical skill. I have at present in my wards a patient who had on two occasions been entered for admission for a duodenal ulcer, and had twice refused the bed owing to remission of symptoms. The ulcer perforated a few days ago, and he has had a hard fight for his life.

Another point bearing on the choice of treatment arises from one's views on the etiology of gastric and duodenal ulcer. The opinion is widely held that these ulcers are not primary, but are secondary to some septic focus elsewhere; and, in their turn, the teeth, the tonsils, the nasal sinuses, the gall-bladder, the appendix, and indeed the whole intestinal tract, have been suspected of being the source of the infection. I have been impressed by this theory, as, in the days when I treated lesser curve ulcers by excision only, I saw many recurrences at the site of excision—a very natural sequel if all I had done was to remove a result and leave the cause behind. I have also seen patients with duodenal ulcer, upon whom I have performed gastro-jejunostomy, fail to obtain relief until the appendix or the gall-bladder has been removed at a subsequent operation. In accordance with this belief, it has long been an accepted line of treatment by physicians and surgeons alike to look for, and, if they are present, deal with all forms of sepsis in the upper respiratory and alimentary tracts as a preliminary to treating the ulcer. But it is impossible by any means other than a laparotomy to obtain a real knowledge of the condition of the gall-bladder or appendix; nor is it possible to get rid of these two common foci of infection by any means except their removal by operation. If, then, there is reason to suspect that an ulcer in the stomach or duodenum is associated with a lesion of the appendix or gall-bladder, a permanent cure can be hoped for only by operation.

LESIONS OF THE APPENDIX.

I need not apologize for taking up your time by discussing the dyspepsia associated with and due to chronic appendicitis. The old controversies as to whether the appendix, crippled by an attack of acute inflammation, could, when apparently quiescent, give rise to symptoms, have all died down, and there is general agreement that an abnormal appendix can give rise to dyspeptic symptoms. Indeed, it is probably a frequent cause of the type of dyspepsia in children commonly labelled "bilious attacks." But the symptoms may be anomalous; they may be indefinite, or they may point to a different organ, and so we undoubtedly see mistakes made in the diagnosis of appendix dyspepsia. Many times has the appendix been removed, and a duodenal ulcer or cholecystitis left undiscovered and untreated. These mistakes do and will occur in spite of all our care; but their number may be reduced by the strictness of our investigation, and perhaps particularly by our realizing that such mistakes are possible.

What symptoms are we to rely on for a diagnosis of chronic appendicitis? Some cases are quite easy. There is a history of characteristic attacks with intermissions during which the patient may, or may not, be free from discomfort. But it is in the cases where there have been no definite attacks that difficulty arises. Indeed, some surgeons maintain that the chronic appendix does not exist unless there have been definite acute attacks. I believe that there is a type of chronic appendicitis, characterized by sclerosis and thickening of the organ with obliteration of the lumen from the tip, which can arise independently of acute attacks of inflammation. This type of appendicitis gives rise to a train of symptoms referred to the stomach and accompanied by some minor local discomfort.

Probably the commonest error is to confuse appendicitis and visceroptosis. We know now that variations in level of the abdominal viscera occur in quite healthy people; but it is not difficult to diagnose pathological visceroptosis. The symptoms are typical; the patient herself is typical. But the question we have to answer correctly is this: "I know this patient has visceroptosis; I know that all her symptoms could be due to that disorder; but can I be certain that the fixed pain she complains of in the right iliac fossa is not due to a coexisting disease of the appendix?" We have all seen scores of cases of visceroptosis in which the removed appendix gives every sign of chronic inflammation. And so the appendix is removed and the patient starts on the long downward path of repeated operations. Two months ago a patient was referred to me who had had eleven operations; last week I saw a woman of 35 who had begun her operative life—if you might so call it—at 18, and had had six more operations since then. Each operation seems to give temporary relief, but is soon followed by what is euphemistically called "adhesions," and another operation is done. There is no doubt that there is real difficulty in excluding disease of the appendix in cases of agreed visceroptosis; but my advice would be that, in spite of an occasional brilliant success from anchoring operations, visceroptosis is not a disorder which is likely to benefit from surgery.

Unfortunately, the barium x-ray examination rarely helps much in the diagnosis of appendicitis. Occasionally it is possible to visualize the appendix and to prove that it is adherent and tender, but, unless the appendix is visualized, no opinion can be given, and we know that many of these atrophic sclerosed appendices are quite free from adhesion. I should sum up the question by saying that local pain, and even tenderness in the appendix area, unaccompanied by "indigestion," must not be accepted as evidence of appendicitis in the absence of a history of acute attacks.

DISEASE OF THE GALL-BLADDER.

Chronic cholecystitis presents an even more difficult problem. I do not refer here to cases complicated by the presence of gall-stones, for many of these give rise to a characteristic train of symptoms which makes diagnosis easy. It is the type where a low-grade streptococcal infection deep to the mucosa leads to gradual thickening and distortion of the gall-bladder, often with adhesions to the neighbouring structures. This pathological condition has been discovered and investigated purely by the efforts of the surgeons, who have been able to see the early changes in the gall-bladder, and, by removing the organ, to examine it histologically and bacteriologically at all stages of the disease. We know that the infection is generally due to a streptococcus; that it is blood-borne; that its seat is deep to the mucosa, which for a long time is unaffected; that it leads to gradual changes in the appearance of the gall-bladder; and that it may have effects on the general health much more widespread than its effect on the digestive apparatus. The healthy gall-bladder is a bright sky blue in colour, a colour which extends down to the cystic duct, which is enclosed in a fatty envelope. When the gall-bladder is diseased, the first change is seen near the cystic duct, where the fatty envelope seems to be spreading towards the fundus. The gall-bladder loses its bright colour, the last to disappear being at the fundus, and at the same time it becomes thickened and contracted until it reaches the stage, so often seen in the post-mortem room, of a yellow, shrunken, distorted organ. With this occurs a local hepatitis, so that the gall-bladder becomes intimately adherent to the liver, instead of being attached to it by a loose areolar bed.

The symptoms are not too clear-cut in the absence of stones, but, in most cases, the patient complains of an almost constant aching and dragging in the right hypochondrium, not referred to the angle of the scapula as frequently as when stones are present. Loss of appetite with flatulent dyspepsia, and a disinclination to take fatty foods, are common—taking food excites the pain, especially if adhesions are present—and sometimes there is definite loss of weight. From time to time mucus may form and lodge in the cystic duct, giving rise to a modified kind of colic. The only clinical sign of any diagnostic value is the occurrence of local tenderness elicited by Murphy's method, but occasionally one finds the liver enlarged.

There are two methods of investigation which may, as technique becomes standardized, lead to a great advance in the diagnosis. The x-ray examination of the gall-

bladder after administration of the dye tetraiodophenolphthalein has already proved its value. The dye may be administered intravenously or by the mouth in capsule. The former method is certain, but has technical difficulties: the latter is less certain, as one is not always sure that the dye is absorbed, but it is easy. In both cases the patients must be carefully prepared. The dye is excreted almost entirely in the bile, and should appear in the healthy gall-bladder four hours after intravenous administration, or twelve hours after oral administration. The shadow, light at first, becomes denser as the bile becomes concentrated, and repeated photographs are taken; a meal rich in fats is then given, and the gall-bladder empties. The patient is without food for at least fifteen hours. *Failure to obtain a shadow* after intravenous administration shows something amiss in the biliary apparatus; after oral administration, it may mean only a failure of absorption, and is a demand for intravenous administration. *Mottling of shadow* suggests calculi, which are often defined very clearly. *Irregularity of contour* suggests adhesions, and *variations in density and time of appearance and disappearance* suggest functional derangement. A wide experience is necessary to assess the value of this last sign.

The other method is one employed and perfected by Dr. Vincent Lyon of Philadelphia, who has demonstrated this method to me on several occasions. It involves the use of a duodenal tube, which is passed through the stomach into the first part of the duodenum; a saturated solution of magnesium sulphate is introduced through the tube, and in a few minutes the contents of the duodenum are withdrawn by suction. The magnesium sulphate relaxes the sphincter of Oddi, and Dr. Lyon maintains that he is able to collect the bile from the common duct, from the gall-bladder, and from the hepatic ducts into separate receptacles, and examine each specimen microscopically, chemically, and bacteriologically. I have seen many results of these experiments, and I am satisfied that from them a great deal can be learned about the condition of the biliary passages.

The treatment of an infected gall-bladder is removal. There is no certainty that any form of medical treatment has any avail. Many spas, such as Carlsbad, Neuenahr, and Harrogate, make claims to cure cholecystitis, but it is doubtful whether the improvement, if any, is more than temporary. Drainage of the gall-bladder is useless in view of the site of the infection. Cholecystectomy is said to be a dangerous operation, but in experienced hands there is hardly any danger, and, so long as the condition is uncomplicated, the risk is limited to post-operative chest complications, which can generally be avoided by careful choice and preparation of the patient.

INFECTION OF THE MESENTERIC GLANDS.

There is one form of indigestion to which I have drawn attention that is worthy of notice. It results from infection of the mesenteric glands, and is generally tuberculous in character. Though it usually affects children, no age is exempt, and I have now under my care a case in a man of 24. The glands are infected from the intestine, probably by milk, and though the disease is at first local, the glands may later on become foci for widespread tuberculous disease elsewhere. The symptoms are due to disordered intestinal peristalsis, and consist of short-lived colicky pains not well localized, brought on by exercise, and relieved by heat and pressure. The pain is so severe that children will cry out. Vomiting is unusual. There is no sign of intestinal ulceration. The lesion can be distinguished from appendicitis by the character of the pain, which may occur frequently, but lasts only a few minutes or less. There are never attacks lasting two or three days with pyrexia and abdominal rigidity, such as one sees in appendicitis. Between the attacks the patient is quite well; but, as the condition progresses, caseation with adhesions may occur, and complications of the minor obstruction type may arise, while recovery from the attacks is not so complete, with the result that the patient's nutrition suffers. Three stages are recognized: enlargement of the glands, probably in the early period a simple infection; then caseation; and finally calcification. The caseation stage is the danger stage, as at this period the serous covering is often affected, and adhesions may form, leading to obstruction; while, later still, with the giving way of the gland capsule, widespread peritonitis with massive adhesions leads to a condition in which there is little hope of cure. The glands first affected are those in the ileo-caecal angle, and the predisposing cause is probably a pathological appendix. Treatment is surgical, and consists of laparotomy and removal of the appendix. If any caseating glands are found they should be removed, the greatest care being taken to reperitonize the bed from which they have been removed. Subsequent treatment is on ordinary sanatorium lines, avoidance of milk, unless its bacterial cleanliness is assured, and obtaining either actual or artificial sunlight.

DYSPEPSIA OF THE MIDDLE-AGED.

In conclusion, I would say a few words about the surgical dyspepsia of late middle-age. Here there is only one essential—namely, to disprove the possibility of cancer before any treatment is instituted. This is sometimes very difficult, but failure to do so leads to the disaster of inoperability, which one sees too often in abdominal cancer. The cases one must be most suspicious of are those where symptoms occur for the first time after the age of 50, and in all cases the onset is most insidious. We are not yet in a position to state, even approximately, the life-history of cancer, but I think we shall find eventually that it is much longer than is generally supposed, and that there is a premonitory stage marked by symptoms which at present elude us. We have long suffered under the tyranny of the dead-house, and our textbook symptomatology is that of the terminal stages. Take, for instance, a subject germane to our present inquiry, that of cancer of the stomach. We are still asked to make our diagnosis on certain symptoms—wasting, vomiting, pain, and a tumour—which are all late symptoms, and which, if one only knew the early symptoms, should never occur. We are beginning to recognize some of the early symptoms of cancer of the stomach, of which one may enumerate loss of appetite, loss of energy, a heavy feeling in the epigastrium affected by food, flatulence, and belching—all symptoms which precede pain and loss of weight. In the same way cancer of the colon should no longer be diagnosed by pain, loss of weight, and signs of obstruction. There is a preliminary stage of loss of energy, and variations in the accustomed regularity of bowel evacuations, which might make one suspicious and lead to a minute investigation. Cancer of the pancreas, again, is rarely diagnosed before the occurrence of jaundice. There is only one remedy for this, and it lies in the hands of the family doctor. What we need is a series of cases, collected by general practitioners, of malignant diseases proved by operation, in which all the incidents, however trivial, for which the doctor has been consulted for two or three years before the known onset of cancer are reported and analysed.

Suppose, now, you have a case of cancer of the stomach. You look up the patient's history. You find that, three years before, he came to you saying that he had had a little indigestion. He had, perhaps, been working over his desk, and thought he had got a bit of cramp. A little later he turns up with a story that he has been eating something that disagreed with him, and had had a poor night with epigastric pain. A few months later he says he is not feeling "quite the thing," and could you give him a tonic? Or take a case of cancer of the colon. You find in your notes that perhaps, two years before, the patient had come to you saying that, although he had always had a regular action of the bowels once a day, it had become irregular, and he had had to take a mild aperient. A few months later he turns up saying: "A funny thing happened to me last night. I got a pain in my stomach, and found I was full of gas. It did not last long, but it upset me." And, later still, he complains of occasional diarrhoea, or increasing constipation, and there is another request for a tonic.

If cases were tackled in this way, there would gradually arise, and, I hope, creep into our textbooks, a knowledge of a series of minor incidents which are common to cancer cases, and from which we might learn enough to make us watchful and apprehensive of the occurrence of cancer. We could then adopt those methods of minute investigation which we rely on to detect the early signs of disease.

THE MODERN TREATMENT OF LUPUS ERYTHEMATOSUS.*

BY

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THE subject I propose to discuss here is the treatment of lupus erythematosus by means of certain compounds of gold. Up to recent years there was no cutaneous complaint which was more disappointing to deal with than this, but since 1922 the position in regard to its therapeusis has been very greatly improved. Before going into the details, I think it will not be a waste of time if I develop shortly the position of this disease in relation to tuberculosis of the skin. Every practitioner is, of course, well acquainted with lupus vulgaris, the common manifestation of tubercle of the skin. The two names, lupus erythematosus and lupus vulgaris, both with the common denominator lupus, express the clinical similarity of the two conditions, although it is true that it is easy enough to diagnose typical cases of the one from the other.

Lupus vulgaris is a disease of childhood and youth, scarcely ever beginning after the age of 25, and is characterized by the well-known apple-jelly nodules. It is prone to ulceration and has no tendency towards symmetry. Histologically it is distinguished by the usual histology of tuberculous tissues—giant cells, imperfect fibrous tissue, etc. On the other hand, lupus erythematosus is rare before the late twenties, it has no apple-jelly nodules, and clinically it appears merely as a permanent scaly erythema and has a great tendency towards a symmetrical distribution. This tendency leads to the well-known "butterfly" or "bat's wing" formation, stretching from cheek to cheek of the patient, involving the nose *en passant*. In bad cases it often affects the scalp, and, especially when of an acute type, the hands and feet in addition. Histologically it presents no feature beyond a small round-cell infiltration round the blood vessels. But there are intermediate cases which are extremely hard to diagnose accurately. Even Dr. Sequeira, who had an unrivalled experience at the London Hospital in lupus, used at times to confess himself at a loss. It is often very hard to make out the apple-jelly nodules, which may be very small in certain kinds of lupus vulgaris, and in an early case of lupus erythematosus the typical symmetry has not yet had time to develop itself. Lupus erythematosus is, I believe, a good deal commoner than is generally supposed. There are many cases of permanent patchy and scaly erythema on the face which are really cases of this disease but go unrecognized. On the other hand I have had a case myself which, when I first saw it, I thought was typical lupus erythematosus, and which I treated as such, but when the erythematous factors had subsided typical lupus vulgaris was revealed.

The great problem, to which much work and study have been devoted, is the relationship of lupus erythematosus to tuberculosis. As is well known, in addition to real tuberculosis of the skin, such as lupus vulgaris and tuberculoderma, there is an important class of eruptions known as tuberculides, which are supposed to differ from frank tuberculosis in that they do not contain the bacillus itself but are due to the toxins produced by that organism. Such are the eruptions known as lichen scrofulosus, acne scrofulosorum, and Bazin's disease, and possibly the rare acne agminata, and those indefinite lumps known as sarcoids. A large quantity of work has been done to show that lupus erythematosus should really be reckoned as a member of this class. It is true that the subjects of the disease, especially in the acute form, often develop tuberculosis of the lung. Sometimes they give positive reactions to the various tuberculosis cutaneous tests. Ramel, for example, finds that tuberculin gives a positive reaction when injected into a patch of lupus erythematosus. On the other hand, the positive reaction is by no means universal. A good many patients with acute lupus erythematosus have actually died without exhibiting any signs of real tuberculosis, either during life or post mortem. Barber thinks that there are two kinds of lupus erythematosus, one of which is a tuberculide, but the other a streptococcide, and due to some focal infection; most often in the tonsils. He has published cases in which the patients were cured by excision of the infected tonsils, and others in which a positive reaction was obtained by the inoculation of a streptococcal vaccine. The issue is still doubtful.

The form of treatment which I now propose to discuss rather lends support to the tuberculide theory. Gold was first tried in the treatment of tuberculosis almost a hundred years ago, and at one time injections of gold cyanide, of course appropriately diluted, were employed in the treatment of lupus vulgaris, but it was not until 1922 that Martenstein[1] published a series of forty-two cases of lupus erythematosus which he had treated with a new organic gold compound known as krysolgan. This consists of a benzene ring to which the gold is attached through the medium of sulphur. In his results he claimed 66.5 per cent. cures, most of the remainder greatly improved, four unaffected, and, it is true, four made worse. These figures were far better than had ever been obtained before in the treatment of the disease. A few patients had seemed to improve under quinine, either given by the mouth or intravenously injected. Others had been reported as favourably influenced by local application of carbon dioxide snow—a painful, barbarous, and uncertain method, which I myself had long discarded—and a few more cases seem to heal spontaneously. On the whole, however, the disease was a very disappointing one to deal with.

Naturally, after Martenstein's work, the gold treatment was tried by other dermatologists, but it did not spread very quickly, at all events in this country. Even in 1926 an authoritative article by one of our leading lights on the modern technique of treatment of this disease never even mentioned it. However, in the 1927 meeting of the British Medical Association at Edinburgh, Dr. Semon read an article on the treatment by krysolgan, and it appeared from the subsequent discussion that a good many British workers had then tried it, but with results hardly comparable with those of Martenstein. No one claimed more than 30 per cent. of absolute cures, and a good many cases remained uninfluenced.

Meanwhile, however, another compound of gold had become conspicuous in the therapeutic world as a valuable aid in the treatment of tuberculosis of the lung. I refer to sanocrysin. This, as of course you are aware, unlike krysolgan, is an inorganic compound, and is really a double thiosulphate of gold and sodium, very analogous in composition to the well-known "hypo" which we use to fix our photographs with. Originally discovered in 1845, it remained in obscurity until about 1918, when Moellgaard took it up as a treatment for tuberculosis. It occurred to some of us who were disappointed with the results obtained from krysolgan, and who hoped for something better, that possibly, if lupus erythematosus were really allied to the tuberculides, a compound which had shown itself valuable in the most fatal of all tuberculous affections might be of great use in a condition of much lower virulence, but somewhat of the same nature. I tried it myself for the first time on a patient, a man, aged 55, who had made some improvement with krysolgan, but subsequently hung fire. His progress was dramatic. Within two months the whole disease, which had been extensive, causing great swelling of the nose, with large patches on both cheeks, the upper lip, and chin, had disappeared, leaving only a few slight and inconspicuous scars, and I had the pleasure of showing him at the October, 1928, meeting of the Dermatological Section of the Royal Society of Medicine, where the other members had no hesitation in admitting that the disease was cured. I also showed three other patients treated in the same way at the same time. But although the idea of trying sanocrysin occurred to me spontaneously, I cannot claim to have been actually the first to use it in this way. Schamberg and Wright[2] had published already in 1927, in the *American Archives of Dermatology*, a series of cases successfully treated with various gold compounds, including sanocrysin, and I have no doubt that other workers were using it also about the same time. Indeed, it is almost inevitable that, after trying krysolgan, one should cast about for other similar bodies to carry on the good work, if krysolgan has failed.

* A lecture given to the Portsmouth Division of the British Medical Association, January 16th, 1930.

Both these drugs are given intravenously. In most cases this presents no great difficulty, but, as everybody knows, there are patients who seem absolutely destitute of suitable cutaneous veins. Both these compounds are freely soluble in water, and as they are always sent out by the manufacturers in sealed glass ampoules, it is very convenient to dissolve them *in situ* and to draw the solution straight into the syringe to be used for injection. They are both very unstable in solution, and the solution must on no account be kept from day to day. Sanocrysin solution is quite colourless, but it soon precipitates metallic gold, not as a shining metal, but in the form of an impalpable black stain, which it is difficult to remove wholly from the wall of the syringe, and which also frequently leaves a black mark in the skin of the patient at the site of repeated injections. The dose of these two compounds is very different. That originally prescribed for krysolgan was initially 0.015 grain, and the maximum dose was 1.5 grains. In the case of sanocrysin, however, we begin at 0.05 gram, and as much as a whole gram of sanocrysin may be given in one injection. Lately, however, I have given up doses larger than 0.5 gram. When one considers that there are fifteen grains in every gram, it follows that, on the whole, the dose of sanocrysin prescribed is from ten to fifteen times as great as that of krysolgan. Probably much larger doses of krysolgan could be given to many patients with impunity, but one hesitates to exceed the limits laid down by the manufacturers. Personally, I have never had any toxic symptoms following its administration, but several instances where these have occurred have been published. Gold is, as we are all aware, a metal powerful both for good and for evil, and although the benefits from the use of sanocrysin in lupus erythematosus are unquestionable, and I believe that its reputation among those who treat phthisis is gradually becoming enhanced, there is no doubt that it is not a drug to be put in the hands of children.

The clinical response in the administration of these drugs is, as might be expected, by no means uniform for every patient. My practice is always to begin with krysolgan, and a very small dose—that is, 0.015 grain, and gradually work up by weekly doses to 1.5 grains. Not infrequently a distinct improvement is seen after the first one or two doses, but, on the other hand, after about six weeks' treatment progress frequently slackens. I then switch on to sanocrysin, beginning with a dose of 0.05 gram, and gradually work up to either 0.25 or 0.5 gram, occasionally even to a whole gram. Patients who have been favourably affected by krysolgan almost always improve further under sanocrysin. Sometimes the improvement is preceded by a local reaction occurring immediately after the injection, during which the affected areas become redder and slightly heated. In other patients the areas fade gradually and the scaling diminishes without any temporary exacerbation.

As to the ultimate result of this form of treatment, I regret that I have no proper statistical analysis of my cases to set out. I suppose in the last three years I have treated about forty cases. I can remember ten certainly which have been discharged as cured, and have remained cured. The great majority of the remainder have been greatly improved. Some of the lesions have cleared up completely, although perhaps one may remain obstinate or, after apparent cure, relapse has taken place. This much I think I can claim conscientiously, that in every case except one the disease has been arrested and has ceased to spread. When I remember the cases which I used to see in former times, and the inexorable way in which the disease used to invade and destroy the complexions of nice-looking people (and you must remember that lupus erythematosus is commoner among women than among men), I think that much credit must be attributed to the gold treatment. I mentioned above one patient who had grown worse under krysolgan and sanocrysin. Finding that this treatment was unsuccessful I tried neo-silver salvarsan, and I am happy to say that, under this, considerable, and I believe permanent, improvement has taken place. In this case the disease was chiefly on the hands.

Additional evidence of the value of the gold treatment of lupus erythematosus is afforded by the action of the manufacturing chemists. Imitation is the sincerest form of flattery, and since krysolgan was introduced by Schering, other manufacturers have imitated and claim to have improved upon it. There are quite a number of other organic gold and sulphur compounds now on the market, made by various chemists. Among these I may mention aurephos, triphal, lopion, allocrysin. Schering has lately introduced one which is claimed to be a great improvement on krysolgan; it is called solganol, and, like all the others, is said to have increased therapeutic value combined with less toxicity. The maximum dose may be as much as a whole gram, but I have as yet had no personal experience with it.

I must not conclude without mentioning some of the possibly unpleasant effects of these compounds. One, very frequent but unimportant, is a metallic taste in the mouth immediately following the administration. This is a phenomenon common after the injection of many metallic drugs—for example, salvarsan, antimony, and sodium cacodylate. Some diarrhœa occurs occasionally, and there may be a febrile reaction, which soon passes off. More serious are the effects on the skin and mucous membranes. A follicular pruritic eruption is not uncommon, and unless this be regarded as a danger signal and the administration of gold be immediately ceased, it will probably be followed by a generalized exfoliative dermatitis. One such case has occurred in my experience, and gave me considerable anxiety for nearly a month, but it ultimately cleared up, and with it the erythematosus. Another serious complication may be a troublesome and painful stomatitis with a very sore tongue. This may be so bad as to interfere with swallowing and cause the patient to refuse food. In lupus erythematosus this is not of vital importance, but when it occurs in phthisical patients may do great harm.

There is one way in which the risk of the unpleasant accidents may be minimized. All these toxic effects are probably the result of the fixation of gold in the liver cells. If the liver cells are fully occupied by some harmless or beneficial substance they will not be able to take up the metal, consequently it is a wise precaution to give patients who are being treated in this way plenty of dextrose a few hours before each injection. This gives the liver something to do and prevents it getting into mischief. In addition, it is wise after patients have had several injections of their maximum dose to lengthen the spaces between doses to two, three, or even four weeks; and one is encouraged to do this by the fact that often improvement continues to make progress as long as three weeks after the last injection.

I myself feel that gold will one day be held to be at least as valuable in tuberculosis as mercury is in syphilis, and although the time is not yet, I hope I have shown that this is a promising field for further work.

REFERENCES.
[1] *Klin. Woch.*, 1922, p. 2235. [2] *Arch. of Derm. and Syph.*, xv, p. 113.

THE STRUCTURE OF THE HUMAN ERYTHROCYTE.

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If we accept the definition of structure as "the mutual relation of the constituent elements of the whole as determining its peculiar nature and character," and if we remember that cytological structure is brought into evidence only by alteration of the physico-chemical properties of various parts of the cell contents by the action of reagents, then no apology need be tendered if, to render the constituent elements of the erythrocyte visible, an unusual method is adopted.

Walker and Allen (1927) have shown that Golgi bodies and chondriosomes can be artificially produced by adding lipins—lecithin and kephalin—to certain colloidal and protein mixtures and subjecting them to the same processes as are utilized for the demonstration of Golgi bodies in cells; and Walker (1928) has made out an excellent thesis for the study of these artefacts as a guide to variations of the physiological state and pathological conditions. He has shown that saturation or oxidation of the lipins produces similar pictures in the artificial emulsions as in certain cell states.

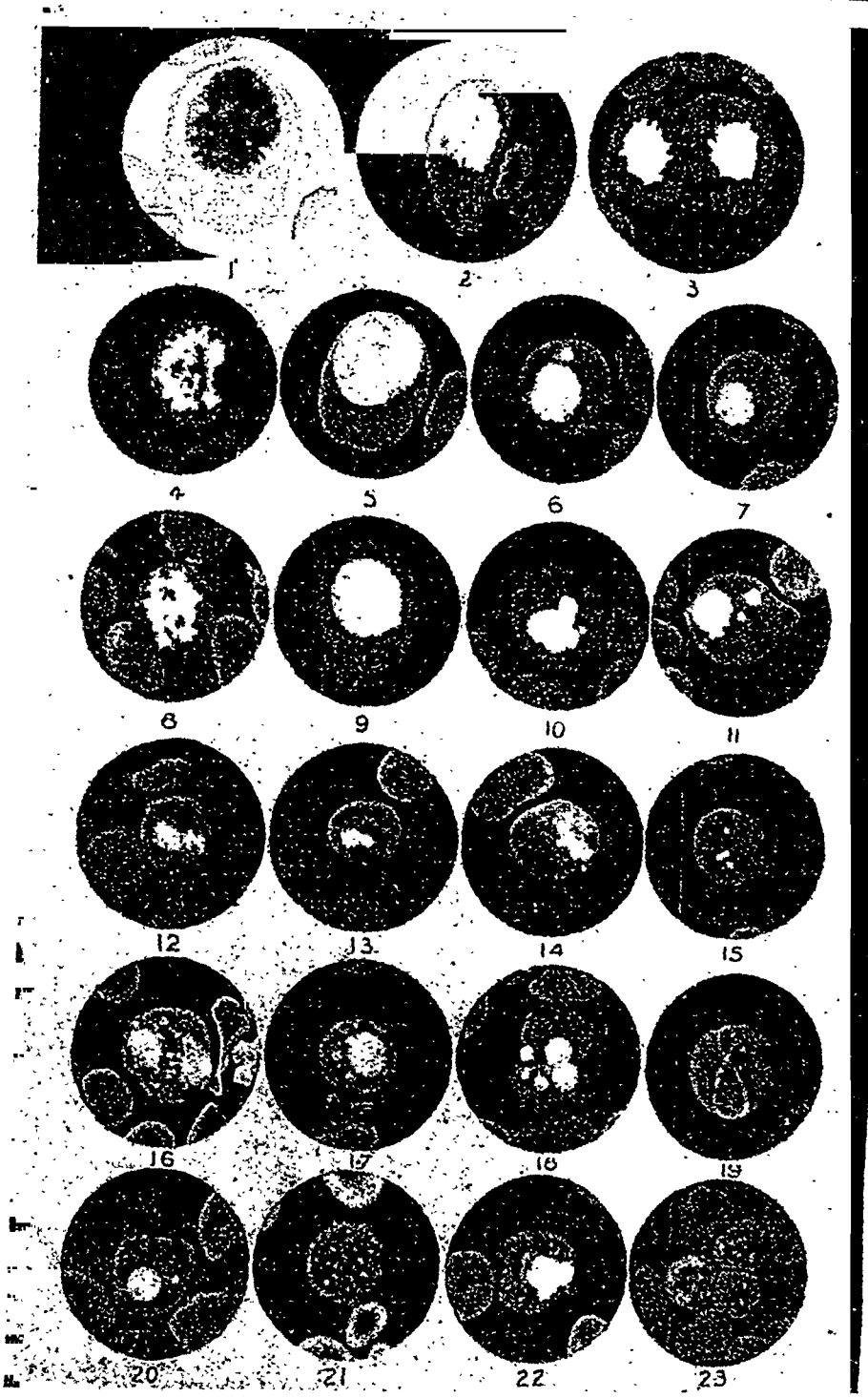


PLATE I.

(Magnification 1,000 diameters.)

FIG. 1.—A megaloblast of the first generation.
FIG. 2.—A polar view of a spireme.
FIG. 3.—A first generation megaloblast in late telophase.
FIGS. 4 AND 8.—Daughter nuclei in the process of reconstruction.
FIGS. 5, 6, 7, 12, AND 13.—Second generation megaloblasts showing the process of karyolysis.
FIGS. 9, 10, 11, 14, AND 15.—Second generation megaloblasts showing the processes of pycnosis, karyorrhexis, and karyolysis. Fig. 15 illustrates a megalocyte containing Howell-Jolly bodies.
FIGS. 16, 17, AND 18.—These illustrate the bizarre figures produced by pycnosis and karyorrhexis. In Fig. 17 is seen a schizocyte.
FIG. 19.—Illustrates a Cabot's ring in a polychromasic megalocyte.
FIG. 20.—Illustrates a megaloblast with the appearance of a cell membrane at its upper pole.
FIGS. 21 AND 22.—Illustrate punctate basophilia obtained with Giemsa's stain.
FIG. 23.—Illustrates stippling and reticulation obtained with brilliant cresyl blue.

Mention of Professor Walker's work is necessary, because the method of approach to the demonstration of the structure of the erythrocyte would appear, in some respect, parallel. In both, consideration of the lipins plays an important part. The methods differ in that Walker has built up certain cell structures from lipins and deduced from their reactions chemical changes in the normal and pathological cell. The micro-chemical dissection of the erythrocyte, on the other hand, is based on a known reaction of lipins. Advantage was taken of this to unbuild the corpuscle and fix the protein of the stroma so as to render it visible. Bütschli (1894) and Hardy (1899) have shown that fibrillar structure can be demonstrated in stretched films of colloidal solutions by the fixatives used for cells, and Bütschli suggested that some of the fibrillar structure seen in fixed cells was due to pre-existent stresses.

A volume could be written on "the peculiar nature and character" of the erythrocyte, but as we are concerned with the microscopic aspect of its architecture, its homogeneity, shape, elasticity, and the effect of injury will be mentioned, and then only in so far as they assist in the visualization of its structure.

The erythrocyte by the usual staining methods or by dark-ground illumination appears structureless. By incident light, in fresh specimens, the homogeneous biconcave disc is sometimes seen to bulge in the centre, but the bell-shaped corpuscle returns to the biconcave shape. Corpuscles in the capillaries curve as they come in contact with obstructions and elongate under pressure, but quickly return to the original shape when the pressure point is passed. The haemoglobin is contained in the biconvex peripheral ring, and does not vary its position with the movements of the corpuscle. On scission, little, if any, haemoglobin is lost, and the resulting parts assume the biconcave shape of the original cell. In Plate I, Fig. 17, a schizocyte is seen below the nucleated red cell, and its appearance suggests that the haemoglobin is confined to the periphery of the distorted corpuscle. Ehrlich (1881) naïvely explained the phenomenon by saying that it is the nature of the red cell protoplasm to take on this biconcave shape, just as it is the nature of a drop of oil to assume a globular form when split off from the parent bulk. The cut surfaces of the divided corpuscle unite at once; but in the absence of a nucleus there cannot be actual repair except in a purely physical sense. These facts lead one to imagine the haemoglobin to be retained in an invisible spongy stroma which prevents loss on injury and which, by its form and position in the corpuscle, is responsible for the shape. An envelope or membrane containing lipins surrounding the cell completes the mental picture. The shape, elasticity, and the result of scission suggest the presence of stresses within the erythrocyte. How true is this conception, and to what extent it is demonstrable, will be seen later.

There are several problems bearing directly on the question of structure which call for attention. The fate of the erythroblast nucleus, the presence or absence of an envelope or cell membrane, and the basophilic substances found in erythrocytes, must be considered.

I.—THE FATE OF THE ERYTHROBLAST NUCLEUS.

The nucleus of the erythroblast undergoes certain changes which are represented in Plate I. The first generation cell (Fig. 1) undergoes mitosis. Fig. 2 is a polar view of a spireme, Fig. 3 a stage in late telophase, and Figs. 4 and 8 the daughter nuclei in the process of reconstruction.

After reconstruction the nucleus of the second generation cell may disappear by simple karyolysis, by pycnosis and karyolysis proceeding simultaneously, or by a combination of pycnosis, karyorrhexis, and karyolysis. The stages of pure karyolysis are represented from the reconstructing nucleus (Fig. 4) by Figs. 5, 6, 7, 12, and 13. Fig. 13 shows the final remnant of the nucleus before karyolysis is complete, and even at this late stage nuclear structure is still visible.

Commencing at the daughter cell Fig. 8, the stages of pycnosis, karyorrhexis, and karyolysis combined are shown in Figs. 9, 10, 11, 14, 15, and 19. The nuclear chromatin soon becomes aggregated into structureless masses from which particles are separated and scattered irregularly in the cytoplasm. The final stages of this process are seen in the Howell-Jolly bodies in an orthochromasic corpuscle (Fig. 15), and in the Cabot's ring in a polychromasic megalocyte in Fig. 19. Pycnosis and karyorrhexis may take place at any stage and the familiar bizarre forms be produced as in Figs. 16, 17, and 18.

The cells in the photomicrographs are megaloblasts, but similar changes take place in normoblasts. In normoblasts the usual stages in the disappearance of the nucleus are pycnosis and karyolysis. Nuclear structure soon becomes indiscernible and the chromatin particles fused into one dense mass which undergoes solution. The end-result of these processes is the complete disappearance of the nucleus, and the erythrocyte normally enters the blood stream without any trace of chromatin.

This brief survey is necessary because the statement that the basophilic substances—punctate basophilia, diffuse polychromasia, and reticulation—are nuclear remains, continues to be made. The normoblast is sometimes illustrated and described as extruding its nucleus. *The molecular disruption* preceding this phenomenon is very difficult to imagine, and, if it ever does occur, must be the unique example of cellular hara-kiri in biology.

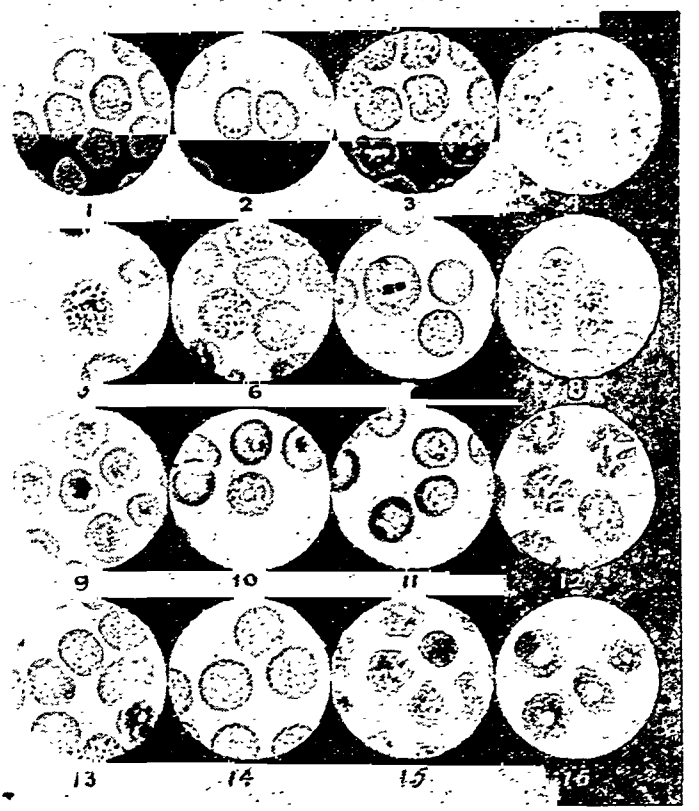


PLATE II.
(Magnification 1,000 diameters.)

FIG. 1.—Illustrates the suggestion of pores obtained by the action of hydrogen peroxide and weak alcohol on erythrocytes.

FIGS. 2, 3, 4, 5, 6, 7, AND 8.—Illustrate various forms of punctate basophilia obtained by the method described in the text.

FIGS. 7, 8, 9, 10, 11, AND 12.—Illustrate various forms of reticulation obtained by the same method.

FIG. 13.—Illustrates two polychromasic erythrocytes obtained as above.

FIGS. 14 AND 15.—Illustrate the spongy stroma of the erythrocyte. Fig. 15 shows the haemoglobin in the process of being discharged.

FIG. 15.—Illustrates the spongy stroma of the erythrocyte with a limiting membrane. In one erythrocyte the haemoglobin is seen leaving the corpuscle *en masse*.

II.—THE ENVELOPE OF THE ERYTHROCYTE.

There is no reason to believe that in its nucleated state the red cell differs from its neighbours and does not then possess a cell membrane. Occasionally, in blood films, there is evidence that an envelope exists. In Plate I, Fig. 20, the envelope of the megaloblast appears fixed at the upper pole and a thin delicate membrane can be traced; but after the nucleus has undergone solution no limiting membrane to the normal erythrocyte can be demonstrated. Rohonyi (1916) and Knaffl-Lenz (1918) deny that there is a true covering membrane because the rate of absorption of ions by pure haemoglobin and by red corpuscles is identical. And if haemolysis with water be observed under dark-ground illumination diffusion of the haemoglobin takes place, but no alteration in the exterior of the corpuscle can be seen. The "ghost" is still homogeneous.

The work on monomolecular films of oil on water commenced by Pockels (1891) and Rayleigh (1899) was applied to fatty acids in solvents, such as ether, by Langmuir (1917). On these lines Görter and Grendel (1925) extracted the lipins of a known number of erythrocytes with acetone and found that the quantity of lipins obtained would cover each erythrocyte with a layer two molecules in thickness. They conclude that there is a bimolecular layer of lipins on the surface of the erythrocyte. They do not take into consideration the possibility of lipins being combined with the protein of the stroma—the lecitho-protein of some writers—but whether their contention is strictly correct or not is immaterial to the present work.

We are forced to the conclusion that the erythrocyte does not possess a cell membrane, but has on its surface a molecular condensation of lipins—lecithin and kephalin. These contain unsaturated fatty acids which are insoluble. If, however, the fatty acids are saturated or oxidized they are rendered soluble in water and dilute alcohol.

If erythrocytes are treated with a mixture of hydrogen peroxide, industrial spirit, and water, the lipin covering is oxidized and dissolved either partially or completely. Partial solution is seen in Plate II, Fig. 1, and the result gives the appearance of pores. The weak alcohol has fixed the cell, but before fixation has become complete oxidation and solution of areas of the covering have taken place.

The benzidine test for blood depends upon the oxidation of benzidine by hydrogen peroxide in the presence of a catalyst. The catalytic agent in this case is haemoglobin. If to the mixture of alcohol, water, and hydrogen peroxide, benzidine be added, we have a means of proving by the blue meri-quinonoid product whether or not the haemoglobin has been reached.

III.—PUNCTATE BASOPHILIA, DIFFUSE POLYCHROMASIA, AND RETICULATION.

The above are the three basophilic conditions described by Ehrlich (1885), but for completeness and contrast Howell-Jolly bodies and Cabot's rings, Plate I, Figs. 15 and 19, deserve brief note. As mentioned in a previous paragraph, Howell-Jolly bodies and Cabot's rings are minute granules of chromatin, and represent the final remnants of the

nucleus. They are visible in fresh preparations by dark-ground illumination and stain purplish red, as chromatin does with methylene blue-eosin dyes, in fixed films. On these grounds I think we may accept them as nuclear remains.

On the other hand, there is every reason to believe that punctate basophilia, diffuse polychromasia, and reticulation (Plate I, Figs. 21, 22, and 23) have no relationship to the nucleus. The arguments for this belief have been the subject of preliminary papers (1928, 1929). The reasons for denying them any connexion with the nucleus are that the conditions are not visible by dark-ground illumination, nor do the staining reactions with methylene blue-eosin preparations resemble those of chromatin.

The abundance of reticular substance in embryos and young animals (Gruner, 1913) and in diseases associated with normoblastic crises, such as Addison's anaemia, von Jaksch's anaemia, and myeloid leukaemia, is not associated with changes in the nucleus (1928). There does not appear to be any connexion between the younger normoblasts and the older normoblasts and the amount of reticular substance. That the basophilic substance is the same in the three conditions is supported by the work of Hawes (1909) and Key (1921, 1924), who pointed out the close numerical agreement between stippled and polychromasic cells and reticulocytes, and is I think confirmed by the following results. If the reagents mentioned in Section II are flooded on to fresh blood films, and the proportions of the reagents altered in the several films, any type of punctate basophilia and reticulation may be produced. In Plate II, Figs. 2 to 8, are seen various types of stippling. The extremely fine granules, coarser granules, and granules of irregular shape, single, and aggregated into clumps, are reproduced, and Fig. 7 shows punctate basophilia with the bar form of reticulation in the same corpuscle. Reticulation is seen in Figs. 7 to 12. The unfragmented granulo-filamentous form is seen in Fig. 9, the fragmented reticulum in Figs. 8, 10, and 11, and the bar form in Figs. 7 and 12.

The granulo-filamentous form of reticulation requires some explanation. Whether demonstrated by brilliant cresyl blue, itself an oxidizing agent, or by the method described above, two facts are apparent. The first is that around

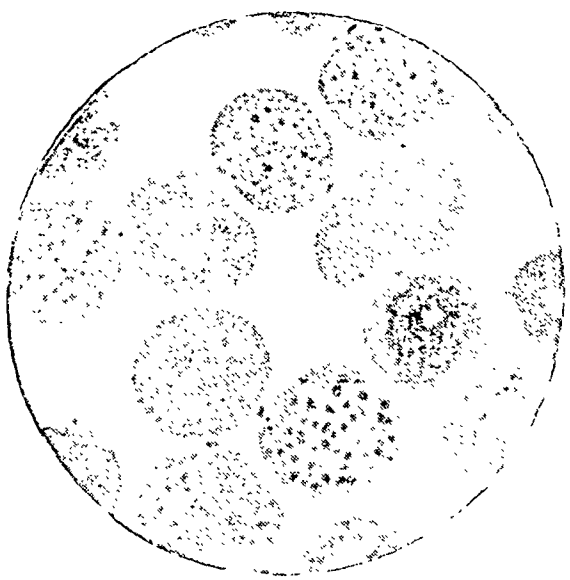


PLATE III.

This is an enlargement of Fig. 13 in Plate II. (× 2,000 diameters.)

the mass of filament there is a pale areola; and the second that the unfragmented reticulum frequently appears in the centre of the corpuscle. The biconcave centre of the corpuscle, being almost devoid of haemoglobin, is the place where one would not expect reticulation if our arguments were sound. There is, however, the fact that no other substance in the erythrocyte except haemoglobin gives the blue meri-quinonoid end-product with benzidine and hydrogen peroxide. The probable explanation is that the lipins covering the centre of the corpuscle have been solutioned and allowed the benzidine and hydrogen peroxide mixture to enter, and at the same time the alcohol has slowly fixed the protein at the periphery of the stroma. The result has been the squeezing out of the haemoglobin into fine strands from the meshwork of the stroma to the centre of the corpuscle where it has come in contact with the reagents. A corpuscle is shown in Plate IV in which the haemoglobin

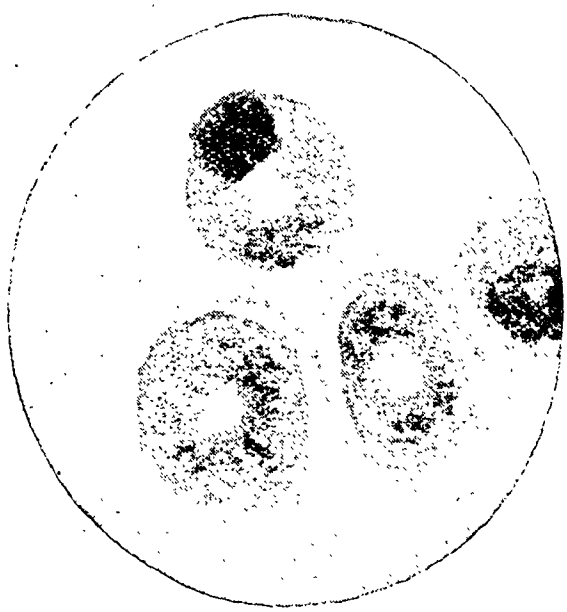


PLATE IV.

This is an enlargement of Fig. 16 in Plate II. (× 3,000 diameters.)

has been expressed into the centre and is being expelled. In fact, this is merely the stage farther than Fig. 9 in Plate II.

Diffuse polychromasia is the most difficult of the basophilic conditions to reproduce artificially. The two cells in Plate II, Fig. 13, of which Plate III is an enlargement, closely resemble the condition except for the surrounding rim of uncoloured substance.

IV.—THE STRUCTURE OF THE ERYTHROCYTE.

In the production of the basophilic conditions the unsaturated fatty acids of the lipin covering of the erythrocyte have been oxidized and partially dissolved, the protein of the stroma fixed by the alcohol, and reaction has taken place between the haemoglobin, benzidine, and hydrogen peroxide. The various stages of the reaction seen in the photomicrographs are explained by the degree of penetration of the lipin covering and the relation between the fixation of the protein of the stroma and the amount of haemoglobin set free before fixation is complete. This is suggested by the corpuscles in Plate II, Figs. 6 and 13, and is better illustrated by Plate III, in which all the stages are seen.

If a larger percentage of hydrogen peroxide and water is used, solution of the lipins occurs and the haemoglobin is discharged. The protein of the stroma, however, is not immediately fixed, with the result that before complete fixation has taken place the colloidal protein of the stroma has filled up the central depression of the corpuscle. This is seen in Plate II, Fig. 14, the previous stage of which is Fig. 15. In the latter figure the haemoglobin is in the process of being discharged, and the protein is seen to have obliterated the central depression.

If the alcoholic solution of benzidine is used undiluted, and the percentage of hydrogen peroxide increased, we have rapid oxidation and solution of the lipins, rapid discharge of the haemoglobin, and rapid fixation of the stroma. The fixation of the stroma protein is so sudden that the central depression is not encroached upon to any great extent. The final result is seen in Plate II, Fig. 16, and in the enlargement of this (Plate IV). The haemoglobin is seen being expelled in a mass from the corpuscle in one of the figures, the spongy stroma is illustrated and fine trabeculae are seen at the periphery connecting the stroma with a faint ring suggestive of a fine covering.

We have, then, our mental picture of the structure of the erythrocyte demonstrated—the condensation of lipin molecules on the surface which acts as a limiting membrane enclosing a spongy stroma in the interstices of which haemoglobin is contained.

Conclusions.

1. The normoblast nucleus disappears by karyolysis or by pycnosis and karyolysis, with or without karyorrhexis, and when the erythrocyte enters the blood stream no trace of the nucleus remains.

2. The erythrocyte does not possess a histological cell membrane, but has on its surface a molecular condensation of lipins which acts as an envelope. Whether or not this is a bimolecular layer, or what physico-chemical relationship between the lipin covering and the protein of the stroma exists, are fields for further investigations.

3. The basophilic conditions of the erythrocyte—punctate basophilia, reticulation, and diffuse polychromasia—are expressions of the same process and vary only in degree. The staining substance is not chromatinic.

4. The presence of these conditions, when obtained by the usual staining methods, would appear to indicate a defect in the lipins on the surface of the erythrocyte.

5. During the course of the work it was noticed that not all blood films behaved in the same manner. Accurate standardization of the reagents and the time, or the employment of other methods on similar lines, might lead to the elucidation of certain problems in connexion with the genesis and life-history of the erythrocyte, and also with its behaviour in disease.

The photomicrographs are by W. E. Cooke and C. F. Hill.

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TYPES OF ACUTE MASTOID INFECTION.*

BY

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While, in what may be described as the classical textbook cases of acute mastoiditis, the diagnosis is easy, experience has taught me that atypical cases are frequent and that, in these, diagnosis is often extremely difficult. It is probable that in all cases of acute middle-ear inflammation the lining of the mastoid antrum and cells participates in the inflammatory process. It is only, however, in those cases in which the inflammation spreads to the bone, owing either to defective drainage or to the intensity of the infection, that the term "mastoiditis" should be properly applied. The early recognition of such a condition is of the utmost importance, both from the point of view of preservation of the hearing and also of the general health.

As an aid to diagnosis, I have tried to classify cases into groups, but, in dealing with them in this way, I wish it to be clearly understood that cases are not infrequently met with showing characteristics of two or more groups in combination.

The Classical Type.

Dealing first with the classical type, there is present a history of recent earache with discharge, and tenderness and swelling over the mastoid process. Fever and constitutional disturbance are present. Characteristically, the discharge has either suddenly ceased with the onset of the mastoid swelling or has been distinctly intermittent in type, being sometimes profuse and sometimes scanty. The periods of diminution in the discharge are generally accompanied by an increase in the pain. In contradistinction to such intermission, the discharge may be continuously very profuse. This profusion indicates involvement of a wide area, and therefore of the mastoid antrum and cells. The character of the temperature chart is of some assistance. Most usually, after a few days' fever, the temperature falls, and then, after a short period, commences to rise again. While this remission, if present, is very significant, not infrequently it does not occur, the temperature remaining high from the commencement of the acute otitis.

A characteristic factor in the tenderness over the mastoid process is that it is confined to one particular spot, and is deep and not superficial. In testing for this the finger should be firmly passed down over the mastoid process while the eye is being watched. The presence of tenderness is always evidenced by a flinch. This obviates, to a large extent, the personal factor of the patient.

Having thus detailed the characteristic symptomatology, it may be said that any, or all, of these symptoms or signs may be absent.

Cases Without Aural Discharge.

Cases presenting signs of inflammation of the mastoid process, but with a normal middle ear, are not infrequently seen. In these a history of previous aural discharge may be present. The explanation is simply that while the middle-ear inflammation, suppurative or catarrhal, has cleared up, the infection in the mastoid process has progressed.

Latent Type.

The characteristic of cases in this group is the triviality of the signs and symptoms, and I can best illustrate this class by a description of a case recently dealt with.

The patient, a clergyman aged 32, following a "cold," had earache with discharge for twenty-four hours only. For two months afterwards he suffered from a vague ache in the ear, with considerable diminution in the hearing and a general feeling of unfitness. During this period the temperature was normal and he was able to continue his duties. The diagnosis of a suppurating focus in the mastoid was made on this history, combined with the presence of a localized tender spot towards the apex of the process, with some opacity and injection of the tympanic membrane. Operation showed pus under tension in the mastoid cells, and drainage produced rapid restoration of the hearing, with return to health.

The difficulty in such cases is to persuade the patient that he has a condition sufficiently severe to need an operation. If left, the suppuration will probably eventually reach the surface and produce manifest symptoms, but complications may supervene.

The points that I have found of most help in diagnosis in this group have been: the presence of a dull ache in the ear; a point of localized tenderness, which may be situated at any portion of the mastoid process; if discharge is present, either its profusion or intermission: the persistence of a defect in hearing of a conductive type; some bulging of the posterior superior meatal wall; and, finally, a haziness in outline of the mastoid cells, in a skiagram, as compared with the other side.

Fulminating or Osteomyelitic Type.

While in the majority of cases of acute mastoiditis the disease will progress for a considerable period without any great risk to life, in the class which I am now trying to describe I believe that early operation is of paramount importance. The cases are associated with a streptococcal infection, frequently haemolytic in type, and, in them, the infection from the beginning widely invades the bone and produces severe constitutional disturbance. They are most commonly met with in association with epidemics of acute sore throat and are due to a spread of infection up the Eustachian tube. There is high fever from the commencement, and the discharge from the ear is unusually profuse, watery, and often blood-stained. Widespread tenderness over the mastoid occurs early. Such cases not infrequently

* Read at a meeting of the Bath and Bristol Branch of the British Medical Association, January 29th, 1930.

develop septicaemia, and the mortality is probably 10 per cent. The infection is these cases does not, however, seem prone to invade the respiratory tract.

The diagnosis is based on the coexistence of an acute sore throat, the high temperature, rapid pulse, furred tongue, profuse bloody discharge, and widespread mastoid tenderness. Early operation is indicated with provision of the freest possible drainage. Scarlatinal antitoxin sometimes seems to be helpful in septicaemic cases.

Mastoiditis in Infants with Enteritis.

It has been pointed out recently that many infants dying of an acute gastro-enteritis show, at necropsy, the presence of an acute otitis media and mastoiditis. It has been suggested that this latter infection is the primary one, and that the gastro-enteritis is a secondary result of the acute toxaemia of the middle-ear infection. I am not prepared to offer any opinion on this, but would only emphasize the importance of examining the ears of infants suffering from any acute febrile infection.

Parotid Mastoiditis.

Cases are occasionally met with in which an inflammatory swelling occurs in front of or above the ear as a result of mastoiditis. Such swelling is often associated with some oedema of the eyelids on the same side, and errors in diagnosis are common. The explanation of such cases is that the infection reaches the surface through cells at the root of the zygoma. If this possibility is recognized the diagnosis can be established by the signs or history of the middle-ear disease, together with the presence of some tenderness over the mastoid process.

Bezold's Mastoiditis.

This is a similar type, in which, however, the swelling occurs in the neck, the explanation being that the suppuration bursts through a cell at the apex of the mastoid process and on the deep side of the sterno-mastoid insertion. The remarks just made as to diagnosis apply here also.

Tuberculous Mastoiditis.

Tuberculosis of the middle ear and mastoid process is usually met with in the infant. In a typical case, it is characterized by occurring in a child of under 1 year with painless and watery aural discharge, enlarged glands around the ear, and facial paralysis on the same side. The infection has been introduced via the Eustachian tube by infected milk.

Spurious Mastoiditis.

Two conditions may simulate an acute mastoid infection—namely, a furuncle of the posterior meatal wall and the so-called herpes oticus.

A furuncle of the posterior meatal wall not infrequently produces a tender swelling behind the auricle. Owing to the meatal swelling, the membrane is invisible and diagnosis may be difficult. If the hearing is relatively good in the affected ear, otitis media is unlikely. The slight degree or absence of fever or constitutional disturbance is also helpful. In addition, tenderness on moving the auricle is suggestive of a furuncle rather than of a bone infection. Sometimes, however, it is impossible to decide whether one is dealing with a meatal furuncle or a mastoid suppuration, except by the performance of an exploratory incision. If, as a result of such incision, it seems reasonably probable that the soft parts only are involved—that is, that one is dealing with a meatal condition—it is important to avoid any interference with the bone, owing to the risk of introducing infection. I can remember a case of infection of the soft parts in which a fatality ensued as the result of opening the bone.

Herpes oticus is the name given to a rare condition, in which herpetic inflammation of the ganglia of the seventh and eighth cranial nerves gives rise to intense pain in and around the ear, with a herpetic eruption on the pinna and in the meatus, facial paralysis, and nerve deafness. The combination of earache, aural discharge from the ruptured vesicles, deafness, and facial palsy, not infrequently leads to a mistaken diagnosis of acute otitis media and mastoiditis. If it is realized that such a condition may occur, it will be recognized.

The diagnosis of an acute infection of the mastoid process, therefore, depends on the recognition of one or more of the many possible signs and symptoms. Pain may be slight or absent. Tenderness is usually present and often strictly localized. Fever and aural discharge are not infrequently absent. Some defect in hearing is more or less constant, and swelling, when present, may be situated behind, in front of, above, or below the ear.

In conclusion, a word or two as to the type of operation to be performed. The object of such operation is to provide drainage. Care should therefore be taken to open up all infected cells. Since, however, the middle ear will recover if not interfered with, it is unwise to pass a bent probe into the aditus to make sure that one has opened the antrum. This proceeding, although commonly done, is extremely liable to dislocate the incus, with resultant permanent damage to the hearing.

It was formerly the practice to pack the operation cavity with gauze and to continue such packing until the cavity had become obliterated. This, in addition to being painful, is unnecessary. In latent cases the incision can be sewn up except for the provision of a small rubber drain at the lower end. In the more acute cases, I find that the best results are obtained by leaving wound and cavity widely open. If, however, instead of filling the cavity with gauze, either thin rubber dam or a strip of oil-silk is used, the pain associated with subsequent dressings is entirely obviated. As soon as the cavity is granulating and showing signs of closing, I believe that there is nothing to be gained by attempting to keep it open with any form of packing.

BRAIN ABSCESS WITH UNUSUAL FEATURES.

REPORT OF TWO CASES.

BY

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BRAIN abscesses may be classified under the three headings of adjacent, traumatic, and metastatic. The two cases which are here recorded belong to the last group, for, although the second case is of aural origin, yet pathologically and clinically it falls into the metastatic class. In both instances the main cerebral infection was contralateral to the original focus.

CASE I.

A man, aged 24, was admitted to the Northern Infirmary, Inverness, on May 25th, 1929. Ten days before admission he had received a punctured wound of the right lower eyelid from a garden stake. The wound oozed a little, and he had some headache, especially on the right side, for a few days afterwards. His vision was not affected. He had had a similar accident to the left upper lid ten years previously.

Examination revealed a punctured wound of the inner half of the right lower eyelid extending upwards and inwards for half an inch, but apparently not perforating the conjunctiva. Both lids showed some inflammatory oedema, and pus was present in the conjunctival sac. The bulbar conjunctiva showed chemosis and generalized congestion. The remaining structures of the eye were normal.

Progress Notes.

May 26th to June 3rd: The chemosis and discharge disappeared, but there was some bleeding from the nose, and severe frontal headache, worse at night. He vomited twice. The general condition improved.

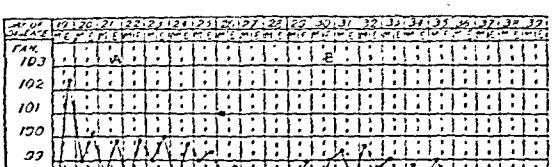
June 4th: Pressure below the supraorbital margin revealed considerable tenderness on both sides. No pus was seen in the middle meati, and no oedema or redness of skin over the frontal sinuses. Transillumination and x-ray examinations showed relative obscurity. The diagnosis made was double acute frontal sinusitis, and conservative treatment was ordered.

June 6th to 12th: Headaches not so severe, less tenderness on pressure over the sinuses. He complained of stiff-neck and tenderness of the muscles of the nape of the neck, giving pseudo-head retraction. There was some pain in the epigastrium.

June 13th: The patient was generally irritable. The knee-jerks were not elicited, but the Babinski test gave a flexor response. Some paresis of the right side of the face was noted. At no time was there any convulsion.

June 14th: An exploration was made for orbital abscess, but no pus was found. Paralysis of the muscles of expression of the right side was observed.

June 19th: The patient became drowsy and resented being moved. The tongue was furred. There was now complete paralysis of the right side of the body, gradual in development. Slight tenderness still persisted over the frontal sinuses. The right pupil was rather larger, and reacted more sluggishly. There was slight papilloedema of the right disc, but cerebration too poor to permit determination of the visual fields. The Babinski reaction was extensor, and marked ankle-clonus on the right side was noted. Optic aphasia and perseveration were present; the abdominal reflex was indefinite. Pain was produced by tapping over the left temporal region, but further examination of the nose and ears was negative. Marked emaciation was noticed from the date of the previous examination.



A, Exploration for orbital abscess. B, Lumbar puncture; operation; atropine 1/100 grain, morphine 1/6 grain.

June 23rd: Incontinence of urine and faeces supervened. A lumbar puncture was performed; the spinal fluid was under marked pressure, but clear. The cytological and bacteriological examinations were negative. The procedure was followed by a convulsion, but no further paralysis.

June 24th: Under local anaesthesia a horse-shoe incision was made over the left temporal region, and a flap was reflected downwards. The skull was trephined, and the opening enlarged downwards towards the ear. The membranes were under tension, and no pulsation was present. The dura was incised, and the brain explored; at a depth of 1½ inches about a drachm of thick pus was evacuated. A drain was inserted, and the wound partially closed.

June 25th: Secondary haemorrhage occurred, probably from the dural vessel.

July 4th: The patient died, seven weeks after the accident.

Post-mortem Report.

The brain showed generalized oedema and a temporo-sphenoidal abscess 1 inch in diameter, involving the left internal capsule and spreading towards the base. There was very little attempt at encapsulation. The frontal sinuses were not apparently inflamed, and no pus was present in either of them. No thrombosis of ophthalmic veins was present.

Comment.

At first sight this would seem to be a metastatic brain abscess originating from the septic focus in the right lower eyelid and carried through the circulation to the left cerebral hemisphere. A consideration of the usual characteristics of metastatic brain abscesses reveals, however, some unusual features.

Well-Engleton,[1] in his monograph, states that metastatic brain abscesses have an apoplectic onset, and are usually situated in the white substance of the brain. It is true that this apoplectic stage may be of very short duration, but careful watch was kept in this case for that symptom.

There would appear to be three possibilities for the spread of infection in this case.

1. An examination of the anatomy of this area shows that the veins of the lower lid join the angular vein, which passes through the foramen caecum to enter the superior ophthalmic vein, and thence the other venous sinuses. Experimentally[2] it has been shown that, in the presence of a disturbance of the circulation such as a thrombosis the flow from one venous sinus to another may follow abnormal paths. It would therefore be possible for a retro-thrombophlebitis to spread by this vein to the left cerebral hemisphere. This route of infection is mere conjecture, as specimens for pathological examination could not be obtained. On its assumption, however, it would seem that the condition that was taken to be a double acute frontal sinusitis was really a thrombosis of these veins, causing the frontal headache and pain on pressure over the sinuses. This would account for the absence of any macroscopical changes in the frontal sinuses.

2. The second possible route of infection is from the frontal sinuses. Infection may have occurred here, and a thrombosis of the veins which drain these sinuses have followed, leading to the left-sided brain abscess by a retro-thrombophlebitis. In this eventuality, owing to the absence of any macroscopical changes in the sinuses, we must assume that the sinusitis subsequently cleared up.

3. The third possibility is that the infection was purely haematogenous; although some of the usual phenomena were not observed, this was owing to their transient nature.

I am indebted to Dr. T. Chalmers, under whose care this patient was admitted, for permission to publish this case.

The second case which I am reporting is of interest more from the clinical picture it presents than from any pathological consideration.

A woman, aged 21, was admitted to the Northern Infirmary on September 27th, 1929. She had had an intermittent discharge from the right ear since an attack of measles at the age of 7. Since August the discharge had been worse, and she had had pain in the right ear from the fortnight preceding admission. Two days before admission her local doctor was called in because she was feverish. He found she had a temperature of 104° F., and on examination of the ear he pulled out a piece of cotton-wool and obtained a copious discharge of foul-smelling pus. The evening previous to admission he had noticed some mental confusion. The patient, who had recently graduated M.A., was of considerable intelligence.

Examination showed that the tongue was coated and there was sordes in the mouth. The right drum showed destruction in its lower half; some granulations were present on the inner tympanic wall, and there was a suspicion of cholesteatoma present. The discharge was moderate in amount, and of foul odour. No bulging of the posterior meatal wall was observed, but there had been a recent furuncle there. No mastoid tenderness was present; she heard a whisper at 3 ft. The left ear was normal.

The patient showed marked mental confusion and could not reply to questions, although it was obvious that she understood them. She appeared to have lost all memory for words. Given a pencil she indicated its use, although not able to state its name. Asked her own name, she understood the question, but gave a little nervous cough, and could not reply. She wrote in a good hand, but the letters formed a mere jumble and made no sense. The abdominal reflex was present, and a Babinski extensor response; there was no real Kernig sign, but a slight head retraction. The pupils were equal and reacted to light. A suspicion of facial paresis was noted on the right side. No dysdiadokokinesis and no difference in the pull of the two hands could be detected; past pointing was normal. She had vomited that morning.

A lumbar puncture was performed; the cerebro-spinal fluid was not under pressure. It was sterile, and slightly turbid, and the cell count was 580 per c.cm. The blood film showed a leuco-cyto-sis—90 per cent. polymorphs. No growth was obtained on culture.

On the same day an operation was performed under chloroform and ether anaesthesia, the usual post-auricular incision being made. The cortex was thick and sclerotic, with few cells. The sinus bulged far forwards into the antrum, which contained pus and cholesteatoma under pressure. There were a few granulations on the sinus wall, otherwise it appeared healthy. The dura of the middle fossa was exposed, and found to be bulging, but there were no granulations present on its surface. The radical mastoid operation was completed, and the cavity, after cleaning, was packed with eusol gauze; 100 c.cm. of 10 per cent. hypertonic saline solution was injected intravenously at the conclusion of the operation.

Progress Notes.

On September 28th the condition was unaltered; the packing was removed from the ear, and the temporal lobe was explored, but no pus was found. A further 100 c.cm. of hypertonic saline solution was given intravenously. The temperature was 101° F. and the pulse 124. In the afternoon the patient was very restless and had a slight convulsion, but did not lose consciousness. The temperature was then 102° and the pulse 160.

September 29th: She had a convulsion at 2 a.m. lasting two minutes, with twitching of face and arms; she was very restless, but quite conscious. The temperature was 100° and the pulse 124. The wound was dressed, and a further 50 c.cm. of saline solution was given. In the evening the cerebral irritation became more

marked, and the patient died at 11 p.m. She was conscious until the last half-hour.

Post-mortem Report.—The brain showed generalized oedema, and the abscesses were present in it as follows. (1) A large subdural abscess covered the whole surface of the superior part of the left hemisphere, extending towards the base, and especially marked at the anterior part of the frontal lobe. (2) A left frontal lobe abscess, half an inch in diameter, contained thick grumous pus. There was some attempt at encapsulation. No stalk connecting it with the subdural abscess was found. (3) A right temporal lobe abscess, three-quarters of an inch in diameter, was situated nearer the occipital lobe, and not immediately adjacent to the mastoid region. This appeared to be more recent than the frontal lobe abscess, as there was very little attempt at encapsulation. The left mastoid and the sinuses showed no evidence of infection.

Comment.

It is obvious that the history given of this patient's illness was totally inadequate, but further inquiry from her doctor and relatives failed to elicit any other facts.

The case was diagnosed as meningitis, with the suspicion of a right temporo-sphenoidal abscess, but the possibility of a contralateral brain abscess was not seriously considered. The facial paralysis was taken to be due to involvement of the nerve in its canal, and not to a cortical disturbance. It was the only real localizing sign present, and in view of the post-mortem findings this is rather remarkable, as there must have been considerable pressure over the whole motor area from the very large subdural abscess. The infection here was haematogenous, but again we were unable to obtain any history of an apoplectic onset. Since the cerebral condition was of several days' or weeks' duration, during which time the patient was not under medical observation, this fact may be discounted. The duration of the illness would also account for the fact that the blood cultures were sterile, as organisms are soon eliminated from the blood once the cerebral infection has commenced. The findings in the cerebro-spinal fluid are what one would expect in view of the pathological findings.

The aphasia stands out pre-eminently in the clinical picture. This should have directed our attention to the left hemisphere, especially when we had ascertained that the patient was right-handed. It differs, however, in some respects from the aphasia observed in a temporo-sphenoidal abscess of the left side. Obviously several of the higher centres[3] were involved, and if we analyse her symptoms we can pick them out.

1. She had a motor aphasia, since she could not repeat sentences, or, indeed, speak at all. This centre is usually said to be located in Broca's area; Marie and Head contend, however, that motor aphasia is not caused by interference with a specific area or tract, but that the area of the cortex involved is in relation to the squamous suture.

2. Whether she had a partial word-deafness is more difficult to determine, owing to the above symptom. At any rate, she had not a total word-deafness, since some questions asked were certainly understood.

3. She had a sensory agraphia, since she could not write a sensible sentence; this centre is in the angular gyrus. It does not appear that she had a word-blindness (alexia), which would have indicated involvement of the second occipital convolution.

4. There was probably involvement of some of her association tracts, but this is impossible to determine.

It is rather remarkable that with a subdural abscess of such a size the patient remained conscious until the end of her illness. One would have expected her to be far more drowsy and comatose than she was.

The post-mortem findings call for little comment. Jobson[4] and others have recorded cases of contralateral brain abscesses, but it would seem that these were not true metastastic abscesses, but rather due to a retro-thrombophlebitis. I have been unable to find a reference to a chronic otitis causing metastatic abscesses in the brain, without showing any other evidence of the generalized pyaemia, but no doubt it has occurred.

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A SIMPLE AND SAFE METHOD OF OESOPHAGEAL INTUBATION.

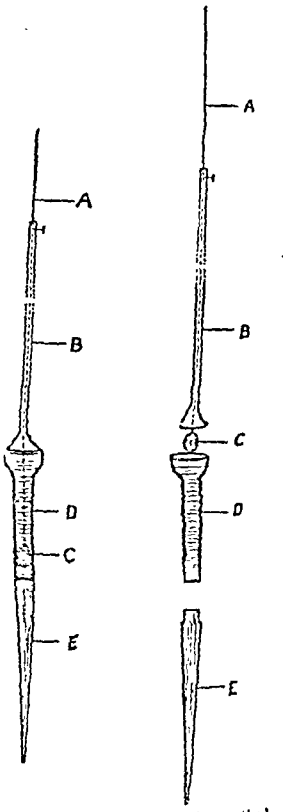
BY

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A PATIENT reduced to fluid nourishment is immeasurably better off when he can take this by the mouth than when he must receive it directly into the stomach—in other words, a tube in the oesophagus is far preferable to a tube in the stomach, all things being equal. This qualification is necessary since intubation of the oesophagus may involve difficulty and danger in the introduction of the tube, and discomfort and uncertainty afterwards. Unless these defects of intubation can, to a great extent, be eliminated the procedure will not commend itself as a substitute for gastrostomy. It is the purpose of this short communication to describe a method of intubation which in large measure, I think, disposes of these objections.

In the first place, several concessions to gastrostomy should, in my opinion, be made. Gastrostomy is, I consider, the best treatment when the stricture is at the cricoid end of the oesophagus, and, except as an emergency or in special circumstances, it is preferable to the use of long flexible feeding tubes which extend from the mouth to the stomach, and to the use of those made of perishable material, or of such as are employed with anchoring threads in the mouth. After conceding so much to gastrostomy, however, there still remains a considerable field for intubation in those cases where the obstruction is in the thoracic part of the oesophagus or at the cardiac end, and especially where the growth is not very extensive and where the condition of the patient is good.



The drawings illustrate the method of intubation described. A, Wood-carrier. B, Cannula. C, Wool plug. D, Souttar's tube. E, Gum-elastic tip.

The suitability of the case for intubation having been determined, the object in view is to traverse the stricture with a tube of suitable size by means of a technique that is as quick and simple and safe as possible. The best tube to use is the one devised by Souttar. Being a closed spiral of wire it is flexible and it is made with certain tortuosities which favour retention. The average length of the tube should be about 2¼ inches, but on occasion a longer one up to 3 inches could be used. The lumen should not exceed 6 mm. at the lower end and 10 mm. at the expanded end. The larger sizes of Souttar's tubes I consider dangerous, requiring as they do considerable stretching of the friable stricture and the use of a very large oesophagoscopy tube.

The essence of the method of intubation now to be described is the fitting on the lower end of the tube of a gum-elastic tip which guides the tube safely and surely through the stricture, and then, having done its work, is disengaged from the tube and passes down into the stomach and intestines. The gum-elastic tips are conical in shape and about 3½ inches long. Their bases are specially made to fit into the lower end of the tubes, the latter being filed

so as to make the union perfectly smooth and uninterrupted. The appliance for introducing the tube serves also for expelling the gum-elastic tip. It consists of a very slender rod enclosed in a cannula. The latter is expanded and flattened below and is perforated for a screw above. The former has fine hooks and a thread at its lower end to serve as a wool-carrier.

To prepare the equipment for use the following procedure is necessary—namely,

1. Lightly fit the gum-elastic tip to the tube; on no account must the union be firm, as it requires to be easily broken when the tube has been placed in position.

2. Affix wool to the wool-carrier in bulk sufficient just to engage the lumen of the tube and support its weight.

3. By means of the screw adjustment extend the wool-carrier so that the little wool piston just touches the gum-elastic tip when placed inside the tube, whilst at the same time the flattened lower end of the cannula makes contact with the tube.

4. Fix the wool-carrier in this position by tightening the screw.

The apparatus being assembled and prepared in this way is ready for use. The oesophagoscope is now passed and the face of the stricture brought into view. One or two rubber-tipped Jackson's bougies are now passed to dilate the stricture and to determine the exact position. Everything is now ready for passing the tube. The gum-elastic tip, being soft and pliable, easily and safely finds its way through the stricture, carrying with it, harmlessly and unerringly, the metal tube. When the expanded upper end of the tube reaches the face of the stricture the downward movement is discontinued and the gum-elastic tip expelled. This is achieved by loosening the screw which fixes the wool-carrier, so that it is free to push out the tip. After so doing the final step consists merely in withdrawing the wool plug into the expanded upper end of the tube. In doing this the tube must be held in position with the flattened lower end of the cannula until the wool plug, having reached the tubal expansion, is quite free and the introducing mechanism comes away unimpeded. It will be seen that the use of the oesophagoscope is unfortunately essential, but the actual placing of the tube is easy and safe, only requiring one simple action and occupying but a few seconds.

The efficiency of Souttar's tubes is surprising. Even the smallest size, with a diameter of 4 mm. at the lower end, is fully adequate for fluids and may continue to function well for months. Trouble can arise from displacement of the tube downwards or obstruction of the lumen. I have little experience of displacement upwards of Souttar's tubes, but on a number of occasions I have known a tube to work its way harmlessly through the stricture and pass into the stomach.

The maximum length of service of an intubation tube is obtained when the largest size possible, within the limits previously stated, is used, and when nothing but thin fluid nourishment is given, succeeded on each occasion by a drink of water to flush out the tube.

All the appliances referred to in this communication are made by Messrs. Mayer and Phelps of London.

COMPARISON OF A THOUSAND SERUMS TESTED BY THE WASSERMANN AND KAHN METHODS.

BY

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In the series of investigations of 1,000 serums now reported the Wassermann technique used was that devised by Colonel Harrison; Kahn's technique[1] was closely followed, as laid down by the inventor. The antigen was supplied by Messrs. Parke, Davis & Co., London. An attempt was made to use symbols in expressing the comparative strengths of the reactions in either case. A list of equivalents is given in Table I.

TABLE I.—*Comparative Strengths of the Kahn and Wassermann Reactions.*

Reaction.	Comparative Strengths.				
Wassermann	++	+±	+	±	−
Kahn	++++	+++	++	+	−

For diagnostic purposes the two tests were in agreement in 98.4 per cent. of cases, and they appeared to be of equal strength in 94.6 per cent. In 3.8 per cent. the cases showed quantitative differences; 40 per cent. of these were treatment cases. In 87 per cent. the Wassermann reaction appeared to be the stronger of the two. Disagreement between the two tests was apparent in only 1.6 per cent. of the 1,000 cases; these are listed in Table II. Of these, it will be noted that 50 per cent. are treatment cases, and that the Wassermann test appeared to be the more sensitive. In two doubtful cases—one of general paralysis, and another of pernicious anaemia—the serums were in bad condition, and the results should not, perhaps, be included. In both instances, unfortunately, we have no further knowledge of the cases.

TABLE II.—*Disagreements.*

Clinical Description Given.	Wassermann Reaction.	Kahn Reaction.
Gonorrhoea and pregnancy	+	−
? Congenital syphilis...	−	+
Treatment case	+	−
Previous ++ (Wassermann reaction) treated	±	−
Arthritis case	Trace	−
Treatment case	±	−
Ulcer of lip	+	−
Treatment case	+	−
Treatment case	+	−
? General paralysis	−	++++
Previous positive (treatment case)	−	+++
Treatment case	±	−
Rash and alopecia (four months)	+	−
Addison's anaemia	−	+++
Treatment case	±	−
Adherent placenta	−	++

Summary.

1. This series would seem to suggest that the Kahn test and the Wassermann reaction can be fairly strictly compared.

2. In this series the results are in favour of the Wassermann reaction.

3. It is valuable to test a serum by both methods.

4. The convenience, simplicity, and rapidity of Kahn's method make it a very useful test where conditions would render a Wassermann test difficult or impossible.

5. The Kahn test should not supplant the Wassermann.

6. The Kahn test is more difficult to read, and is more affected by external temperature than is the Wassermann test—that is, apart from tropical conditions.

REFERENCE.

[1] Kahn *The Kahn Test: A Practical Guide.* Baillière, Tindall and Cox.

ARTIFICIAL PNEUMOTHORAX.

BY

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ARTIFICIAL pneumothorax is comparatively easy to induce; the immediate death rate is low, and the continuance of treatment interferes little with the patient's vocation. The results contrast favourably with those of untreated cases of equal severity. The only drawbacks to the use of this treatment by the general practitioner are: (1) lack of *x*-ray apparatus—a very valuable, if not essential, adjunct to this procedure; (2) the difficulty of selecting suitable cases, on which the whole success of the treatment depends; and (3) the lack of a definite course on tuberculosis in many of the medical schools.

It is not possible to induce artificial pneumothorax in every case. There must always be a percentage of failures, depending on the type of case selected and the number of doubtful cases tried. The percentage of deaths later on among artificial pneumothorax failures will give some idea of the range of cases attempted. The two chief causes of failure are extensive adhesions and pockets. In our experience the treatment is of little use in these as the collapse is negligible. We consider that the only way to say whether or not a pneumothorax is possible is by trying it. The *x*-ray appearance and the movement at the costo-diaphragmatic angle may be useful, but can in no way displace the trial by needle.

The probability of the occurrence of pleural effusion is quite outside our prognostic powers. Whether this fluid is due to tubercle, local anaesthetic, cold air, too much gas, and so on, we have found it quite impossible to say. We agree that the prognosis is not ultimately worse, but we do not agree that it is improved. The mental effect is very detrimental, and during the fever the patient's condition may be rather alarming. The loss of weight in a large percentage is at the beginning noticeable, probably owing to altered metabolism caused by purely mechanical intervention, and in some cases displacement of the mediastinum.

The results of combining sanocrysin with artificial pneumothorax treatment have not been what we expected. Sanocrysin in our hands has been, we think, a failure. We believe that, possibly, on the whole we delay too long before inducing a pneumothorax—not using this method till we are honestly convinced that there will be little response to the usual treatment. This is probably better than indiscriminate advocacy of the method. At present we operate on no really early case. We have found no material change in the blood pressure attributable to this treatment.

STATISTICS OF 111 CASES.

End-Results of 89 Successful Inductions, 1924–29.

Period since Induction	No. of Inductions in Period.	No. of Cases Alive.	No. of Cases Dead.	Percentage Alive Now.
Under six months	17	16	1	94.0
Six to twelve months	10	9	1	90.0
Twelve to eighteen months ...	11	6	5	54.5
Eighteen months to two years ...	15	8	7	53.3
Two to three years	23	10	13	43.5
Three to five years	13	6	7	46.0
Totals	89	55	34	

Number of successful inductions 89 = 80 per cent.; number of failures 22 = 20 per cent.

Percentage of cases alive out of inductions which took place: over one year ago, 58 per cent.; over two years ago, 44 per cent.

Generally it seems to be better for the patient to have one physician the whole time through, especially if there is anything out of the common in the psychology of the patient or in the technique of the case. We try never to vary the diet of a patient who has either haemoptysis or fluid, if we can avoid it.

Immediate Results. On Discharge from the Sanatorium.

Eighty inductions were successful; of these 14 died or were given up = 17.5 per cent.; 66 left the sanatorium with prospect of further refills. Of these 66, 44 were improved and 22 showed little or no improvement. Of the total inductions, therefore, 55 per cent. left definitely improved.

Of the improved cases, as regards weight, 3 remained stationary, 17 gained weight, 22 lost weight, and 2 were doubtful. Of the improved cases, therefore, 50 per cent. lost weight, in most cases slight.

Analysis of 12 Cases (3 Male, 9 Female) at Present in the Sanatorium.

Haemorrhage was the reason for induction in 4 cases. Two of these patients had temperatures usually over 100° in the evening for some weeks, and one reached 102.8° on occasions. The two others had no high temperatures, but frequent small haemorrhages. The average refill in these four patients (all women) was 450 c.cm.; the average end-reading 0 + 8, 2 + 8, 3 + 8, and − 2 + 4. In none has haemorrhage been repeated after the third refill, and they are all up and about as we write.

Active disease, almost confined to one side, was the reason for induction in four cases. Three of these patients had done extremely well, and the other one has definitely improved. All run normal temperatures.

Disease on both sides, more extensive on one, was the reason for induction in the remaining four cases. Of these patients, one shows little or no improvement, one shows slight improvement, and two have definitely improved. Three of the four run normal temperatures as a rule.

Points of Importance or Interest regarding Inductions or Refills.

Inductions.

Do not keep the patient in suspense between deciding on the induction and doing it.

The technique should be simple and speedy. The sooner the needle is in the chest the better.

Morphine is in most cases unnecessary: it upsets the patient and makes him more apprehensive than need be. No preparation at all is necessary.

The operation should cause extremely little pain. Novocain is probably the best anaesthetic. It is more important to anaesthetize the pleura than the skin.

We use the sharp needle for inductions, and have never had any trouble with it.

The idea of pneumothorax, suitably explained, appeals to the average patient, and consent to the operation is not difficult to get.

X-ray treatment is extremely useful before, during, and after the employment of artificial pneumothorax.

The air should be run in slowly, and only 300 to 400 c.cm. given the first time. If the patient is nervous, give even less

The site of puncture will vary with each case. Where a first puncture is unsuccessful another may be tried at the same sitting, and three more if necessary on a future occasion. When the procedure succeeds it usually does so before then.

The air should not be introduced before there is reasonable certainty that the needle is in the pleural cavity.

The single manometer, *plus x* rays, is quite satisfactory for the average case.

In doubtful cases the patients should be warned that failure is probable.

Refills.

It is better to exceed rather than to let the number of refills be insufficient. Large refills are to be avoided.

The optimum pressure should be found as soon as possible and maintained.

The intervals must vary in each case; fix the optimum pressure and endeavour to maintain it over the greater part of the period. Give a refill at once on any signs of renewed activity.

The patient should for some time rest on the day of refill; we generally keep patients in bed for the remainder of the day. We never let a patient up all day at once after the induction, no matter how good the temperature, but gradually increase the time allowed.

Artificial pneumothorax may be abandoned at any time. It should be remembered that though the treatment does throw an extra strain on the sounder side, this may be partly neutralized by rest in bed, and by the removal of general toxaemia due to the bad lung, which undermines the resistance and retards the healing of the better side.

Toxic cases do best.

The side on which the operation is done, whether right or left, seems to have little or no influence on the result. We have about equal proportions of good and bad on either side.

Treatment of Fluid.—Fluid is a very common accompaniment; in a large percentage of our cases fluid appeared at one time or other. Where the amount is small it is as well to leave it alone; where it is large and upsets the appetite we remove it. We have had few serious cases of pleural effusion—that is, where the fluid became infected by other organisms.

Shortness of Breath.—It is surprising how soon the average patient gets accustomed to artificial pneumothorax treatment, and how little distress it causes him.

Loss of Weight.—Though about 50 per cent. of the patients lose weight, this has little influence on the ultimate prognosis.

Return to Work.—It is difficult to state with accuracy the number of cases fit for work, as this depends so much on the type of work the patient attempts to do, his home surroundings, and his employer, etc. Again, many of the patients are women who are occupied with light housework. A good number of the men we know are engaged in rather heavy work, and doing quite well at it.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CONGENITAL OBSTRUCTION OF THE POSTERIOR URETHRA.

THE case here recorded is of interest because of the peculiar condition of the skin, and also owing to the absence of dilatation of the ureters and of hydronephrosis, although the bladder wall was much thickened.

This case is that of a male child, aged 3 days, admitted to Dr. William Johnson's ward at the Royal Liverpool Children's Hospital on March 7th, 1929, with the history that there had been no micturition since birth. The birth was normal and the child passed meconium three times before admission to hospital. Circumcision was performed the day before admission, but no urine was passed subsequently. The parents were healthy, and there was one other child, a healthy boy. The child was apparently full term. The remnant of the umbilical cord showed no signs of infection. The whole skin of the body was in a condition of solid oedema, with absence of pitting on pressure. The limbs were stiff, as if in rigor mortis. Nothing abnormal could be detected in the heart, lungs, or abdomen. The child was drowsy and refused its feeds. Death occurred a few hours after admission, no urine having been passed.

Post-mortem Examination.—There were no external structural abnormalities. The skin condition was as described above. The kidneys were smaller than normal, congested, and tough on section. The capsule of each kidney was more adherent than normal, but not so adherent as to tear the kidney substance on stripping. The surface of the kidney was smooth. The cortex and medulla were of normal proportion, and of normal appearance to the naked eye. There was no hydronephrosis. The ureters were not dilated, but the wall of the lower end of the right ureter was thicker than normal. The bladder wall was one-third of an inch in thickness, both epithelial and muscular coats being thickened. The bladder was not dilated, but contained about one drachm of thick yellow urine. There was a septum in the urethra, immediately distal to the verumontanum. The passage of the finest probe was not possible either way. The septum was apparently complete, and not valve-like in type. The urethra distal to the septum was of normal calibre, but the proximal urethra was dilated, and an ordinary lead pencil could be passed from the bladder up to the obstruction. There was nothing abnormal found in other organs. Microscopical examination of the kidneys showed slight generalized fibrosis, with hyaline swelling of the glomeruli, but the tubules were of normal microscopical appearance.

Young, Frontz, and Baldwin (*Journal of Urology*, October, 1919, vol. iii) report twelve cases of congenital obstruction of the posterior urethra observed at Johns Hopkins Hospital, the youngest patient being 11 days old. They have also collected twenty-four cases from the previous literature. In the latter series two infants died shortly after birth, and the necropsy revealed a valve at the lower end of the verumontanum, with dilatation and hypertrophy of the bladder, dilatation of the ureters, and hydronephrosis. One case recorded by them is that of a foetus (5 to 6 months) with a similar condition, and another case is that of a still-born child. The other cases were of infants and older children.

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A CASE OF SCLEREMA NEONATORUM.

SCLEREMA neonatorum occurs so rarely that the following case seems worth recording.

On Christmas Day a 4-para in the early stages of acute pneumonia was delivered of a premature male infant weighing about 5 lb. The infant, though small, was vigorous. On the second day the nurse called my attention to a slight swelling of the foreskin and a bluish patch of induration on the right buttock. Urine was freely passed. In a few days the induration extended all over the infant's body, limbs, and face, and at this stage his body was more or less rigid. The eyes could not be opened and sucking became impossible. There was regurgitation of fluid through the nose, with development of snuffles and a haemorrhagic discharge. Crying ceased, respiration became slow, and during the last hour of life blood came freely from the nostrils with every breath. The induration was of a peculiar icy blue colour. There was no pitting on pressure. The skin felt hard and could not be pinched. The temperature was subnormal.

I believe the etiology of this disease is little understood. One view is that it is a coagulation or degeneration of the subcutaneous fat in premature infants which some authors attribute to external cold. In the case above described it may have been due to a toxin derived from the placental blood. It is interesting to note that though the mother made a rapid recovery lactation never appeared, possibly owing to atrophy of the fat-producing cells of the secreting acini.

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PERFORATED DUODENAL ULCER.

THE main points of interest in the following case of perforated duodenal ulcer are (*a*) the patient's advanced age, (*b*) the short history of gastric symptoms, (*c*) the absence of malignant disease, and (*d*) the patient's easy convalescence and subsequent good health.

The patient, a man aged 75, was admitted to Croydon General Hospital, on March 26th last, with a history of three days' "indigestion"; previously his digestion had been good. Seven hours before admission he had sudden severe pain in the epigastrium, followed by repeated vomiting. When we saw him he was collapsed; he had a dry tongue, brown in colour, and a rigid abdomen. His temperature was 97° F., and his pulse rate 72. The heart, lungs, and urine were normal. A diagnosis was made of acute perforated gastric ulcer.

With the patient under gas and oxygen anaesthesia the abdomen was opened, and a small perforated ulcer, simple in character, was found in the first part of the duodenum. The ulcer was invaginated with a purse-string suture, free fluid was swabbed out, and the abdomen closed without drainage. The operation was completed in about twenty minutes.

Twenty-four hours after the operation the patient was given small feeds by the mouth, and a week later he was allowed to sit up out of bed. Convalescence was uninterrupted, and on April 15th he was discharged, having been given instructions about his diet and the advisability of taking alkaline medicines. Since then he has gained about 10 lb. in weight, and has had no abdominal discomfort. He is still careful about his food.

I have so far failed to find in the literature any reference to a case of simple perforation in a patient of such advanced age. In a similar case, of which an account was published in the *British Medical Journal* of July 20th, 1929 (p. 109), the patient's age was 70.

I am indebted to Mr. E. M. Cowell, the surgeon in charge of the case, for permission to publish these notes.

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Reports of Societies.

TREATMENT OF SYPHILIS.

AT a meeting of the Medical Society of London, on February 24th, with Mr. DONALD J. ARMOUR in the chair, Colonel L. W. HARRISON opened a discussion on the treatment of syphilis.

Colonel Harrison said that, in discussing so large a subject, he could only make some general observations; he would deal first with the treatment of the disease in its early stages, and afterwards with the treatment of later manifestations. Recent experiments on rabbits, conducted by Brown and Pearce in America, had thrown some light on the disease in man. These workers had observed the course of the untreated disease, produced experimentally, as well as its course under treatment. Their results showed a series of latent periods alternating with relapses, in the manner of relapsing fever, and similar to those observed in man. Further, the severity of each phase was inversely proportional to that of the phase preceding it; thus a rabbit developing two primary sores by inoculation was less likely to show generalized symptoms, later, than a rabbit with only one primary lesion. If the sites of the primary lesions were excised within forty-eight hours of inoculation, generalized symptoms were more likely to occur; after early interference these secondary manifestations usually arose in bones, but if the excision was made later the bones appeared to have acquired immunity, and secondaries usually appeared in the skin; interference still later with the primary sore led to the appearance of secondary lesions in the eye, without manifestations in bones or skin. In short, the animal developed a resistance to the disease proportional to the time of interaction between the spirochaete and the tissues. It had been observed frequently in the past that the longer the disease was active in man or animal the less likely was reinfection by reinoculation. This experimental interference with the degree of severity of the primary lesion threw a light on the development of late neuro-syphilis in man; in these human cases there was rarely a history of secondary manifestations, and the primary lesion was often slight. The inference was that at an early stage the virus had spread throughout the body, including the central nervous system; changes in the cerebro-spinal fluid, which occurred in some cases before the serum reactions became positive, offered corroborative evidence of this hypothesis. The patient, therefore, had foci of spirochaetes throughout his system in sites of varying accessibility. It could be argued from this that the disease should be allowed to run its course untreated as far as the end of the secondary stage, in order to avoid the later development of syphilis of the central nervous system. But there was evidence that the expected immunity did not always develop, and the longer the spirochaetes were allowed to remain in the tissues the greater became their resistance to remedies introduced into the general circulation. The decision, then, must be in favour of early treatment; but since this meant dispensing with the natural resistance of the patient it was important that the substitute should be thorough in action and sufficient in quantity. The remedies for the early stages fell into two groups: spirochaeticidal agents, and stimulants to provoke tissue reaction. Of the first group, arsenobenzene preparations fell into a class by themselves; while such agents as bismuth and mercury, with others not in general use, such as tellurium and gold, formed a second class. The effects of the arsenobenzene preparations were rapid and transient, but so dramatic that in the early days of their use they were thought to cure the disease in one administration. There was evidence, however, that their action did not reach the central nervous system, or even the organisms buried in the vasa vasorum of the cardio-vascular system. Since the introduction of salvarsan most of the cases of paraplegia, and of paralysis of cranial nerves, had occurred in patients treated with arsenobenzene preparations. He considered that the administration of these preparations stopped abruptly the interaction between the spirochaete and the tissues, and so prevented the development of immunity. In his opinion this explained why the recurrences of syphilis in the central nervous system were much more frequent since the introduction of salvarsan than they had been in the days of mercury. Arsenobenzene preparations were insufficient by themselves, and should be used in conjunction with bismuth and mercury. Mercury was valuable for the variety of ways in which it could be used, though the toxicity of its curative dose was too high to make it a perfect remedy. It had been largely replaced by bismuth, however, for injection, since it was shown by Levaditi that the spirochaeticidal properties of bismuth were greater. Where arsenobenzene preparations were contraindicated the use of a soluble preparation of bismuth established control of the disease, and could be followed by a salt which was more slowly absorbed. Solutions of bismuth, generally speaking, were more quickly absorbed than suspensions of the soluble salt; of the insoluble preparations, those suspended in watery solutions were more evenly absorbed than were those suspended in oil. Liquid paraffin was an unsatisfactory medium of suspension; in his experience the oxychloride of bismuth was well and easily absorbed; this salt, and the subsalicylate, he preferred to bismuth in a state of fine subdivision. He felt strongly that it was a mistake to give a first course of arsenobenzol alone, following it up later with a course of bismuth or mercury. Experience went to show that cases of neuro-recurrence had been those treated with arsenobenzene preparations in the early stages. He believed in spacing out treatment; he usually began with three doses of some arsenical preparation, followed by three of bismuth; he then allowed an interval of two weeks before giving two more. A certain number of cases were intolerant, and developed dermatitis; usually the dermatitis showed a definite incubation period. During the latter part of the course he added potassium iodide to the treatment. Many authorities held that arsenical preparations were contraindicated in cardio-vascular syphilis, especially syphilitic myocarditis, but he did not agree with this view. Trouble would, of course, arise if arsenical preparations were given blindly and the case was not kept under careful observation; but if small doses were given an improvement was to be expected, provided that the patient was not too much of a wreck before treatment was begun. For syphilis affecting the liver, however, arsenobenzol preparations were contraindicated. In syphilis affecting the central nervous system the best results were obtained by feeling one's way; small doses of some preparation should be given twice a week at first, and, later, the remedy should be pushed. In tabes he had obtained his best results from the use of sulpharsenobenzene with bismuth, or silver salvarsan. Tryparsamide gave uncertain results in general paralysis of the insane, and here the best treatment still seemed to be pyrogen therapy, especially by the induction of malaria. Finally, he wished to refer to the second group of remedies, those which stimulated the tissues to reaction; he would like to stress the importance of the patient's metabolism in combating the disease, and he had found the administration of thyroid gland to be most beneficial in provoking tissue activity.

Sir JAMES DUNDAS-GRANT said that he still believed inunctions of mercury to have a definite value.

Dr. ANTHONY FEILING agreed that neuro-recurrences were more frequent in those who had been treated by courses of arsenobenzene followed by mercury. He had recently been using bismuth in cases of tabes, almost to the exclusion of arsenobenzene preparations. General paralysis of the insane was so resistant to ordinary remedies that malaria still offered the best chance of improvement.

Dr. COTTON spoke of a series of cases of cardio-vascular syphilis which he had treated with intravenous injections of novarsenobillon and with continuous mercury and potassium iodide. On comparison of his results with those in a series of untreated cases he had found the difference in the mortality rate to be not more than 10 per cent.

Dr. W. R. RUSSELL spoke of several methods, other than malarial infection, of producing pyrexia in general paralysis of the insane. These had not succeeded in obtaining a temperature of more than 100° F. for four or five days, and it had been decided that malaria was more reliable.

Dr. RUSSELL BRAIN had found the use of malarial therapy valuable in the treatment of tabes, though he would not, of course, advise it in the cases which responded to ordinary antisyphilitic measures.

Dr. TREVES BARBER and Dr. CAWADIAS also spoke, and Colonel HARRISON replied.

TREATMENT OF LUNG ABSCESS.

AT a meeting of the Section of Medicine of the Royal Society of Medicine, on February 25th, with the president, Dr. R. A. YOUNG, in the chair, a discussion was held on the treatment of lung abscess.

Dr. F. G. CHANDLER, opening, said it was not proposed to discuss etiology or diagnosis, but the cause of lung abscess did throw light on treatment, and accurate localization was a preliminary to surgery. The possibility of a foreign body being present in the lung had always to be excluded by careful study of the history and by *x*-ray examination, with bronchoscopy if there was the slightest doubt. As regards accurate diagnosis, physical signs had to be looked for in cases of abscess of the lung, while great help was obtainable from radiological examination, especially by the lateral view. If no foreign body could be detected a patient with lung abscess should be treated first by medical means, for in many cases complete recovery was possible after removal of the contents of the abscess by coughing; in other cases medical treatment was useful while the abscess became localized. Such treatment comprised rest in bed; an attempt at postural drainage, which the speaker considered of doubtful value; inhalations; sedatives for the cough; and attention to all oral and nasal sepsis. Arsenic was useful in view of the frequency of spirochaetes in the pus of abscesses in the lung. The duration of medical treatment depended upon the urgency of the symptoms, the tendency to localization, and the degree of cough; deterioration in the general condition of the patient, and enlargement of the abscess as shown by *x* rays, indicated the need for surgery. Dr. Chandler then mentioned the value of lipiodol in diagnosis, and, passing on to the various methods of surgical treatment, he said he thought bronchoscopy of little value except where there was a foreign body present, or some definite obstruction to a bronchus. Artificial pneumothorax was useful for deep-seated abscess of the lung, but there were many dangers in this method, especially the risk of producing an empyema if the abscess was situated superficially. The operative treatment by drainage was especially suitable for the localized type of abscess, but it was of the greatest importance to make certain that the two layers of the pleura were adherent; stitching these layers together was useless, and the operation must be performed in two stages with an interval for pleural adhesions to develop if these were not already present. In cases where drainage did not completely cure the condition and a sinus persisted phrenic evulsion was valuable, while in chronic persistent cases thoracoplasty had to be considered. Dr. Chandler finally emphasized the importance of local anaesthesia in operations on lung abscess.

Mr. TUDOR EDWARDS stressed the value of accurate diagnosis, especially as regards the previous history, and the signs and symptoms. The symptoms were either intermittent or continuous, and if continuous the condition of bronchiectasis was simulated. X-ray examination was essential for diagnosis, both lateral and oblique views being valuable, while the fact that lipiodol did not enter the affected portion of lung helped in a difficult case. The speaker agreed that medical treatment should be given a good trial before there was resort to surgery, and he mentioned postural drainage and the exhibition of arsenic as being particularly advantageous. Artificial pneumothorax was useful only when the abscess was situated near the hilum of the lung, and in superficial cases the danger of septic pyopneumothorax was great. In all cases when medical measures failed external drainage was the method of choice, and it should be adopted when either the general or local condition of the patient was getting worse. Local anaesthesia was best, but in a nervous patient gas and oxygen might be used. The abscess should be previously emptied by postural drainage, and whether the operation comprised one or two stages would depend upon the state of the pleura. The two layers must be adherent; if this was not the case the wound must be packed with iodoform gauze for seven to ten days before the pleura was incised. Healing might take several months; in basal abscesses particularly phrenic evulsion often hastened a cure. Thoracoplasty was not necessary if adequate treatment was given in the early stages, and this operation was reserved for patients where this had not been the case. Lobectomy by means of the cutting diathermy was useful when there were multiple small abscesses present. Mr. Tudor Edwards added that his mortality rate for forty-five cases, excluding malignant disease, was 17.7 per cent.

Dr. L. S. T. BURRELL said that the treatment of lung abscess depended upon its position and character; it should aim essentially at securing drainage of the pus. If this was taking place through a bronchus recovery could be expected, but cases were frequently met with in which this drainage was insufficient, and the retained pus seemed to soak into a large area of lung. He thought it ought to be possible to take steps to prevent this, and in early cases where bronchial drainage seemed ineffective he recommended artificial pneumothorax. There were many theoretical objections to this, but the success of the treatment in certain cases was remarkable. Even if pyothorax occurred the patients might still recover, and Dr. Burrell believed that artificial pneumothorax did prevent the spread of pus in the lung. In later cases of chronic abscess surgical measures were necessary, and he thought that in the future the ideal treatment would be lobectomy of the affected portion of the lung.

Mr. J. E. H. ROBERTS remarked that the discussion had been mostly concerned with one type of lung abscess which gave good results; pulmonary suppuration was, however, of many types. He instanced frank gangrene of the lung, localized abscess in a mass of gangrene; multiple abscesses in a spongy lung; a large single abscess lined by granulation tissue, or, more rarely, by stratified squamous epithelium, interlobar empyema; bronchiectatic abscess cavities, bronchiectasis; and abscesses forming behind some bronchial obstruction. When compiling statistics it was very important to be quite clear which type of abscess was meant. He agreed about the value of *x* rays in diagnosis, and he mentioned cases where radiological examination had been the only means of diagnosis. Exploratory puncture was dangerous in lung abscess, and it was very difficult to determine when medical treatment had continued sufficiently long. With regard to operative procedures, Mr. Roberts emphasized the necessity of obtaining access to a greater area of lung than that provided by removal of a portion of one rib; two or three ribs might have to be dealt with.

Mr. HERBERT TILLEY said he was interested in the subject of lung abscess because of the risk of its following operations upon the upper air passages. He thought this was especially likely if such operations were performed in the sitting up position, as was common in America, where pulmonary complications of tonsillectomy, for example, occurred more frequently than in this country. He had recently visited Chevalier Jackson's clinic, and had been impressed with the value of bronchoscopy. As performed in that clinic this method seemed comparatively simple; local anaesthesia was used for older people, but children walked quite happily to the operating theatre for the passage of a bronchoscope without any anaesthesia at all. Aspiration of lung abscesses was carried out two or three times a week in this way, and argyrol drops were sometimes introduced. Mr. Tilley thought the method should be seriously considered in cases of lung abscess.

Dr. H. V. MORLOCK described a series of thirty cases of lung abscess treated at Victoria Park Hospital. Of eleven patients treated medically nine had recovered completely, while two had died. He thought that, generally speaking, the surgeon should be called in after about eight to ten weeks, but earlier if the patient's condition was deteriorating. Five patients had been treated with artificial pneumothorax with four recoveries, despite pyothorax in two instances. Other cases had been treated by drainage, or,

as in two instances, with thoracoplasty. Dr. W. E. LLOYD mentioned the frequency of abscesses in the right lung as proof of the danger of inhaling foreign material at operation. In elderly people the possibility of lung abscess secondary to malignant disease had to be remembered. He mentioned cases where fetor of the breath had been the only sign.

The PRESIDENT thought pulmonary suppuration was probably commoner than was generally realized, because so many patients recovered spontaneously. Fetor of the breath was an important sign, and abscesses were often discovered only on *x*-ray examination. He thought it important for the profession and the public to realize that thoracic surgery was now in the position that abdominal surgery had occupied a generation ago; if there was careful team work there should be great possibilities ahead. The tendency was to operate for intrathoracic conditions at a much earlier stage than heretofore.

MYELOPATHIC ALBUMOSURIA.

A MEETING of the Section of Medicine of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on February 7th, with the president, Dr. ROWLETTE, in the chair. A case of myelopathic albumosuria was reported jointly by Drs. A. R. Parsons, Garratt Hardman, J. T. Wigham, and J. Lait.

Dr. PARSONS recounted the history of the patient, who had been under his charge. The recognition of Bence-Jones "protein" was discussed, and the difficulties in detecting it in urine were elucidated. Dr. Parsons dealt with the history of the disease, and commented on the fact that it appeared to be rare in Ireland; the first Irish case had been reported as recently as ten years previously, and the present case was only the fourth on record. Drs. WIGHAM and LAIT described the post-mortem findings. An interesting feature was the presence of bilateral fibrotic pulmonary tuberculosis. This was first detected by *x*-ray examination, which also showed that the bony growth on the left third rib consisted of a localized rarefaction and expansion. Radiograms of the spinal column showed that all the vertebrae were slightly more translucent than normal, indicating a general decalcification of bone. Dr. T. GARRATT HARDMAN described his radiological findings, which emphasized the importance of supplying the radiologist with full information about any case examined radiologically. In this particular instance the detection of the lung tuberculosis led to a tentative diagnosis of tuberculosis of the rib, the peculiar features of the urine not having been mentioned. Dr. Hardman said that Baetjer, radiologist to the Johns Hopkins Hospital, had described the appearance of myeloma in bone as follows: "It is a multiple lesion, and the bones are pierced by small focal spots of destruction. It does not expand or destroy the cortex. There is marked rarefaction of the bones, the cortex may be thinned out, pathological fractures are common. It is very difficult to make a diagnosis from the roentgenogram alone." The speaker added that the *x*-ray appearance in this case did not conform to Baetjer's description, inasmuch as definite expansion of the bone was present.

Dr. G. E. NESBITT discussed the difficulties in detecting the Bence-Jones substance in routine examination of urine. Dr. J. SPEARES referred to his case, the first described in Ireland, and emphasized two points of diagnosis—the weakness of the patient, and the tenderness, especially upon percussion, over the bones. He asked Dr. Parsons about the condition of the patient's tongue. In his own case the patient had been unable to protrude it from the mouth, and it looked almost like the textbook "wooden tongue." Dr. G. BEWLEY referred to the case described previously by him. If urine testing was performed carefully it was not easy to miss the Bence-Jones protein, since the low temperature at which precipitation began was most striking. Dr. A. GOFF described the illness of his patient, the third case of the triad referred to by Dr. Parsons. The illness had come on suddenly, and drenching sweats which stiffened linen were a striking feature. There was also extreme weakness, which had improved most remarkably with the onset of the warm weather. He had undertaken rough estimations of the amount of "albumose" in the urine, and had found that towards the end of the illness the amount was nearly doubled.

Dr. PARSONS, replying, said that in his case the tongue was quite normal. He confirmed Dr. Bewley's opinion about the case of recognizing the abnormal substance in the urine. As a contrast to Dr. Goff's case the duration was only eight weeks.

Clinical Cases.

Dr. P. MACCARVILL showed a case of xanthoma tuberosum multiplex in a woman aged 39. The eruption had appeared rapidly in the last nine months or so, and was accompanied by jaundice. The upper part of the abdomen contained a large mass which, although it extended to the left costal margin, Dr. MacCarvill believed was an enlarged liver. There was little noteworthy in the previous history, with the exception of eight pregnancies during the last twelve years. A full clinical examination still left the cause of the illness in uncertainty. The speaker inclined to the opinion that the icterus and enlarged liver were the result of multiple xanthomatous nodules. Finally he discussed the condition in general, and drew attention to the importance of distinguishing it from the very common xanthoma palpebrarum.

Dr. J. SPEARES showed a case of persistent pneumothorax where diagnosis had been difficult. A girl, aged 8, had been seen by him first in September, 1929; the only complaints were shortness of breath while running about, and a cough for seven years. Clinical examination, helped by *x*-ray investigation, revealed a large unilateral pneumothorax, or possibly an air-containing cavity. Dr. Speares dealt with the rarity of such a picture, and the difficulty in explaining how it came about, discussing the differential diagnosis between pneumothorax and a large air-containing cavity, and referring to the possibility of a bronchial fistula. He said it was important to keep in view the fact that the condition seemed to be causing but slight trouble. He therefore deprecated the use of a puncture needle or lipiodol injection as diagnostic procedures which were not entirely devoid of risk. In such a case as this any diagnostic method likely to inflict shock should not be used without a clear notion of what gain was to be expected from it.

Dr. R. STUMPF showed a case of lupus vulgaris treated by radiotherapy and the Gerson diet, describing this method of diet and the indications for its use. The case was of very long standing, but under treatment by *x* rays and the Gerson diet it proceeded to heal with a rapidity which was quite unusual. A notable feature was the absence of scarring.

MATERNAL MORTALITY.

AT a meeting of the Newcastle-upon-Tyne and Northern Counties Medical Society on January 9th, with Dr. H. S. BROWN, the president, in the chair, Dr. E. FARQUHAR MURRAY opened a discussion on maternal mortality.

Dr. Farquhar Murray stated that 3,596 maternal deaths had occurred in Britain during 1928, nearly half the number being due to sepsis. The figures for Northumberland, Newcastle, and Durham were 29, 22, and 102 respectively; 52 deaths had occurred at the Princess Mary Maternity Hospital during 1928, half of the number being primiparae. About sixty women were sent into the maternity hospital by doctors each month on account of complications. The amount of ill health associated with maternity was enormous, but no reliable estimate could be made. Many deaths and much of the ill health were due to an absence or insufficiency of medical supervision and nursing. The present maternity service, while excellent in parts, was in others hopelessly primitive. The medical and nursing supervision must be intensified and organized if real improvement was to be obtained. The provision of maternity clinics in industrial areas would place examination facilities at the disposal of the doctors, linking them with the

midwives and maternity hospital, and make for better supervision and efficiency. Provision should be made for expert assistance to be available in necessitous cases.

Mr. H. HARVEY EVERS emphasized the fundamental importance of ante-natal care, co-ordinated with intra-partum and post-natal supervision. Puerperal sepsis, the toxaemias, and the haemorrhages, as the chief clinical causes of maternal mortality, were discussed in his paper. The outstanding features of each were briefly mentioned, and the salient points of prophylactic methods were clearly indicated. The present tendency to expect too much from ante-natal care alone was deplored; this care must be regarded as an adjunct to, and not a substitute for, good practical midwifery. The general conditions of domestic midwifery and the facilities must be improved if maternal mortality was to be materially reduced.

Dr. HAROLD KERR devoted his short paper to a consideration of maternal mortality from the more purely public health point of view. A short statistical review of maternal mortality in Newcastle-upon-Tyne was submitted, and some of the associated public health problems were indicated. Dr. L. M. WEEKS presented the attitude of the general practitioner in industrial as well as in purely private practice. He laid particular stress upon the value of good nursing, good ante-natal care, and readily accessible assistance from specialists. Dr. GEORGE STEPHENSON, taking the pathologist's standpoint, contributed an analysis of the statistics of maternal deaths in the Royal Victoria Infirmary, and emphasized the overwhelming importance of sepsis.

HORMONES CONTROLLING REPRODUCTION.

AT a meeting of the Eugenics Society held in the rooms of the Royal Society, Burlington House, on February 26th, with Professor E. W. MACBRIDE in the chair, Dr. B. P. WEISNER, of the Animal Breeding Research Department, Edinburgh, delivered an address on the hormones controlling reproduction.

He would not, said the lecturer, deal with hormones exercising only an indirect effect on reproduction—for example, the secretion of the thyroid gland—his address was concerned exclusively with those hormones that influenced reproduction directly: and in discussing this subject he would consider not only the hormones themselves and the differences between them, but the way in which the reaction of the genital system to hormones varied from species to species. The conditions in the male were relatively simple: there had been a continuous evolution of knowledge through the work of Berthold, Brown-Séquard, Nussbaum, and Steinach, culminating in Koch's recent success in extracting the testicular hormone in highly concentrated form. This substance, it had been shown, exercised a powerful action in controlling and promoting the production of male sexual characters, inciting the mating instinct, activating the prostate and vesiculae seminales in immature animals, and reactivating them in castrates. Furthermore, this secretion activated that function of the epididymis whereby it maintained spermatozoa in a viable state. Differences in the viability of sperms, and thus indirectly of reproductive capacity, were in some measure due to differences in the supply of testicular hormone. This hormone, apparently, controlled the development of the typical testicular structure, and by its means embryonic female gonad could be transformed into a testoid organ. In female mammals, continued the lecturer, the conditions were rather more complicated: in these the sex cycle dominated genital function, and there were great differences between species and species. In the cycle of most lower mammals there were two completely differentiated phases: the sexual and the reproductive. During the former the complex conditions for fertilization were created, and the mating reflex, the so-called sex instinct, could be incited. During the reproductive phase the uterus provided the conditions for the nidation of the egg, and later the maternal reflexes could be incited. The sexual phase was set into activity by means of oestrin: the reproductive phase by a hormone of the corpus luteum. The presence of these hormones within an extract could be ascertained by injecting it into immature mice and then examining their vaginal epithelium. Oestrin produced cornification; the luteal hormone (kythin) produced mucification. The mucified vaginal epithelium, unlike the cornified epithelium, did not consist of flat keratin scales without staining nuclei, but of mucous cells each having a darkly staining nucleus. Kythin was the pregnancy hormone: its injection prolonged pregnancy and prevented oestrus. The injection of oestrin, on the other hand, interrupted pregnancy or prevented it. In lower vertebrates the uterus and vagina reacted apparently alternatively to the two hormones in question. Kythin, stated Dr. Weisner, fulfilled an important biological function; it was secreted independently of fertilization, and, whether fertilization took place or not, it induced the conditions of pregnancy. Thus the germ plasm, playing no part itself in preparing the uterus, was relieved of somatic functions. On the other hand, in the absence of fertilization, the preparation of the uterus led to the occurrence of pseudo-pregnancy, the price paid for the relief of the germ plasm, and an integral part of all sex cycles in all female mammals. In human beings pseudo-pregnancy was represented by the pre-menstrual phase, the menstruation representing a pseudo-birth. In the menstrual cycle, however, there was no sexual phase, the whole cycle being equivalent to the reproduction phase of the lower mammals. But while in the latter the reactions of the genital system to the ovarian hormones occurred in alternation, in the menstrual monophasic cycle they were synchronous and complementary. In human beings both ovarian hormones were secreted at the same time. The ovary did not function independently or only according to its own rhythm. Transplantation of an immature ovary in an ovarectomized mature female led to immediate maturation of the graft; transplantation of a senile ovary into a mature female, to recurrence within it of follicular maturation. Such experiments indicated the presence of extra-ovarian factors regulating and conditioning ovarian function. These factors, said Dr. Weisner, were located in the anterior lobe of the pituitary; not merely one sex hormone governing the function of the ovary, but two distinct factors—an oestrogenic hormone, which induced follicular maturation and secretion of oestrin, and a kythogenic hormone, which induced the formation of kythin, and thus led to the development of pregnancy conditions. The presence of oestrogenic hormone in extracts could be recognized by the appearance of vaginal cornification on their injection into immature mice; the presence of kythogenic hormone by the appearance of mucification. These hormones were obviously antagonistic in animals having a bi-phasic sex cycle, but synergic in monophasic animals. The testicle also depended for its integrity on the supply of anterior pituitary secretions. In rats, ageing of the testicle could be repaired in a few days by injecting oestrogenic hormone, this treatment had brought about not only complete restoration of spermatogenesis, after its senile disappearance had been observed, but reactivation of accessory glands. Just as other hormones than those secreted by the sex glands influenced reproduction, so the effects of the hormones of the sex glands were not restricted to the genital functions. They had a marked influence on the metabolism and the spontaneous activities of experimental animals, and thus, concluded the lecturer, the control of reproductive hormones implied much more than the control of reproduction.

THE first annual general meeting of the North of England Dermatological Society was held in Manchester on February 7th, with Dr. SAVATARD, the president, in the chair. The following officers were appointed for 1930: president, Rupert Hallam; vice-presidents, G. H. Lancashire and R. Stopford Taylor; honorary secretary, P. Brooke Mumford; other members of council, W. Dyson, J. T. Ingram, and E. F. Skinner; editor, L. Savatard. The following meetings were arranged: March 14th, at Sheffield; May 9th, at Liverpool; June 13th, at Leeds; October 10th, at Manchester. The business meeting was preceded by a demonstration of cases and followed by a dinner at Parker's Restaurant.

Reviews.

THE PATIENT AND THE DISEASE.

THAT in the practice of medicine the doctor should treat the patient rather than the disease is an exhortation of highly respectable parentage and standing. A necessary preliminary to this achievement is the ability to recognize and estimate the qualities which give to the patient the mark of a distinctive personality, and Professor GEORGE DRAPER'S *Disease and the Man*[1] may be briefly described as a contribution directed to this end. Its scope is the quality of the patient as well as the nature of the disease, and it undertakes to show that there are features in human constitutions which incline one group of persons in one disease direction and other groups in other disease directions. Thus the purpose of the book is a study of personality and of the relation of this to diagnosis and to disease incidence; while at the same time an attempt is made to conduct the necessary studies by methods which in their results approach in accuracy those of the laboratory. The enterprise is certainly a very engaging one; and it is supported by knowledge gathered over a wide area, by sound reasoning, and by practical clinical observations collected in a clinic specially organized for the purpose. Hence, while individual chapters deal with genetics, morphology, endocrine function, anthropology, sex, and psychology, these are in turn treated as avenues which converge to a common centre, where the patient in all his variety is to meet the physician in all his completeness.

Though very different in much of its subject-matter from other guides to practice, Professor Draper's book is essentially a study of clinical medicine, with the emphasis on the patient rather than on the disease; and the plan of examination is designed to detect and display, not merely anatomical structure (normal or abnormal) and functional activities (physiological or pathological) but the total personality of the patient. The proposed plan of clinical investigation is based upon the suggestion that the clinical portrait of the individual may be spread across the four panels of a screen, each panel carrying a separate portion of the complete picture. The first panel represents morphological character, the second physiological, the third immunological, and the fourth psychological. When all these are known and appreciated the patient is known, and included in this knowledge may be a recognition of his individual disease proclivities. Indeed, the claim is made that an anthropological classification may be arranged on a basis of disease potentiality as this can be determined by estimation of the four panels which together display the facts necessary to decide to what group the individual belongs. Further, there is found by experience that though details vary and the lines are not rigid ones, some measure of interrelation exists between the sectional pictures, so that where one panel is known a shrewd guess may be made as to the kind of facts which will be found in some of the other sections of the complete picture. In this way are worked out various types of "races," each having a more or less clearly defined morphological and psychological pattern, and each, as shown by collected observations, meaning a proclivity to a particular pathological condition such as gastric ulcer, pernicious anaemia, and so on. This scheme, as bluntly stated here, may seem to have a somewhat fantastic or manufactured quality, but the reader of Professor Draper's book will certainly not accept any such view. Even if he does not go the whole way with the argument he can hardly refuse a large part of the journey, and the travelling is as pleasant as it is interesting.

As Professor Draper views the situation, modern medicine suffers from an unfortunate cleavage between mind and body, and while the physical or mechanistic view of diagnosis and treatment is recognized the facts of the psychological "panel" are largely neglected and unappreciated. The emotional factor contributed by the patient is left out of court, and the clinical picture is in corresponding degree incomplete, for in every state of bodily suffering of whatever kind or degree this factor is in greater or less proportion included. The plea, therefore, is that a psychological estimate and judgement should be included as a necessary element in the examination of each patient. The physicians of an older school had their "general impressions" about patients and took these as important factors in prognosis and treatment, and even in diagnosis. In recent years many developments of knowledge in regard to the agencies which act upon man from the outside have occurred, and with attention turned in this direction the personality of the patient and the quality of his individual reactions to environmental influences have received inadequate consideration. There are signs of a reaction to the older tradition, this, however, being made more exact by associating with it methods of measurement. As in other reactions, there is here a risk of a good cause being qualified by the excesses of its advocates, and the author is careful to point out that overemphasis of the psychological aspect of physical disease is just as dangerous as its complete exclusion. Towards the establishment of a reasonable relation and proportion of the two factors his book renders practical service, and it deserves the careful study of all clinicians.

[1] *Disease and the Man.* By George Draper, M.D. Anglo-French Library of Medical and Biological Science. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1930. (5½ × 8¼, pp. six + 270; illustrated. 12s. 6d. net.)

MEDICAL ENTOMOLOGY.

WE have received for review the first of a series of four books on veterinary and medical entomology, written by Professor W. S. PATTON and various collaborators—in this instance Dr. ALWEN EVANS. The subsequent parts will be devoted to a consideration of entomology as applied to public health, to tropical hygiene, and to veterinary science. The present part deals with medical entomology[2] as required for tropical medicine.

The plan of the book is novel—startlingly so. It is based on the course for the diploma in tropical medicine as given at the Liverpool School. This course consists of twenty-eight meetings—each comprising lecture, laboratory work, and demonstrations. The volume is divided into chapters to correspond with these meetings, and full details about their conduct are given. They commence with the actual notes of the lecturer, complete even to such reminders as "*Briefly describe a typical case,*" "*Treatment and prophylaxis briefly described.*" These notes are followed by the subject-matter which accompanies the demonstration specimens—and this also includes such minutiae as "*Preserved in alcohol in a tube,*" "*Please do* not move the slide." and so on. Each specimen is illustrated, and most of the illustrations are excellent. Interspersed between these demonstration notes are pages of explanatory text. Each section concludes with an indication of what is required for examination purposes and what may with safety be forgotten.

Now a textbook of medical entomology should fulfil one of two functions—either instruct the elementary student or provide the advanced worker with detailed information. The system on which this book is based definitely limits its use to students at the Liverpool School. The minute instructions which no doubt render it invaluable to them are of little use to workers elsewhere, and produce a feeling of irritation which does much to discount the many other invaluable features in the book. (In passing, it may be remarked that a similar effect is caused by the continuous use of the old astrological and zoological signs to signify sex instead of spelling males and females in full.) The arrangement of the book to accompany a definite series of lectures and demonstrations makes it difficult to use it as a work of reference. This is doubly unfortunate as it is full of information, much of which is not obtainable elsewhere—the chapters on the myiasis-producing flies, for example, are unique. There are hundreds of excellent illustrations, mostly original, which can be found in no other publication, and which in themselves are well worth the modest pound asked for the whole book.

There are no good modern textbooks of medical entomology available in the English language. The present

[2] *Insects, Ticks, Mites, and Venomous Animals of Veterinary Importance, Part I: Medical.* By Walter Scott Patton, M.B., Ch.B.Ed., F.E.S., and Alwen M. Evans, D.Sc. To be obtained from Miss M. Braun, *Department of Entomology, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.* 1929. (Cr. 4to, pp. x + 785; 374 figures, 60 plates, 3 maps. 20s. post paid.)

volume contains more than enough excellent material to provide such a textbook. But its arrangement, as we have already indicated, is such as to limit its practical use to Liverpool students; while its bulk and wealth of intricate detail, which should render it invaluable as a volume of reference, are such that the student will be either swamped or driven to give to entomology an altogether disproportionate share of his time in the D.T.M. curriculum. The price of the book, however, is so low that even with these disadvantages of arrangement it is really good value, and it is well worthy of a place in every tropical library.

PRACTICAL MAMMALIAN PHYSIOLOGY.

"A NUMBER of facts fundamental to physiology can be seen by the student very readily and appropriately in the frog. But other facts there are, of great value and interest especially to the future practitioner of medicine, which can be better displayed and more easily obtained in the mammalian preparation." Not many will dissent from this observation with which Sir CHARLES SHERRINGTON introduced the first edition of his course of practical exercises in *Mammalian Physiology*.[1] After ten years a second edition of this admirable book has been called for. In its preparation the senior author has shared the labour of revision with his colleague Dr. E. G. T. LIDDELL. To those familiar with the book it is necessary only to say that revision has been restricted chiefly to matters of detail, only one new exercise having been added. If there be others who, charged with the instruction of classes in physiology or engaged in experimental work, are yet unfamiliar with this book, the occasion of a new edition is an opportunity for introducing to them a laboratory companion which should prove of great service. Some twenty-two exercises are described in full detail and admirably illustrated. Many are further illuminated by neat historical annotations elucidating the origin of the observations and their place in physiological thought. The price is not excessive for so elegant and well illustrated a production.

The course outlined in the above-mentioned book is too comprehensive for the usual medical curriculum. Its service is that of a store from which the teacher may make his choice for student exercise or demonstration. Opportunity may therefore be taken of drawing attention to a smaller, less ambitious—and withal less expensive—book which has just appeared. This is *An Introduction to Practical Mammalian Physiology*,[2] by Professor SWALE VINCENT and Dr. SAMSON WRIGHT. Its aim is to present a selected practical course in the subject, to which medical schools could introduce their classes without serious claims upon time or upon expensive apparatus. The course offered is well designed and is described in a manner which should make it a popular student's laboratory manual.

THE OPIUM PROBLEM IN INDIA.

Narcotics in India and South Asia[3] is the title of a booklet published by Williams and Norgate, which contains the result of investigations made during 1927–28 by Mr. H. G. ALEXANDER. The author is lecturer on international relations at Woodbrooke, Birmingham, and his Asiatic tour was made possible by a travelling fellowship awarded to him by the Selly Oak Colleges. Mr. Alexander's father was the well-known secretary to the Anti-Opium Society, which waged successful warfare on the Indo-Chinese trade in the drug, and he took an active part in furnishing evidence to the Royal Commission of 1894–95.

Mr. Alexander endeavoured to divest himself of previous prejudices, and to pursue his investigations in British India, the Native States, Burma, Malaya, and Java impartially and dispassionately. He inclines to the view that undue emphasis may have been laid by reformers on the admitted evils of opium smoking and opium eating, while paying too little attention to "manufactured drugs, whether derived from the opium poppy or the coca leaf, which are increasingly used all over the world for purely vicious purposes." Mr. Alexander accepts the view that opium is not to be regarded as a prophylactic against malaria, as the Royal Commission had maintained, and he condemns the too prevalent practice of "doping" babies with the drug. At the Ghazipur opium factory of the Government it appears that, besides preparing excise opium for Indian consumption and smoking opium for export, medicinal opium is there manufactured for English use, while from contraband seizures of opium morphine was extracted, and to the extent of thousands of pounds was, until March, 1928, consigned to London.

While thinking that the Indian Government might be "getting an overdose of blame," Mr. Alexander dwells on its contradictory policy of "taking measures whose avowed intention is to decrease consumption while its agents are trying to push sales in order to increase revenue," and he thinks that the Government policy of "maximum revenue with minimum consumption" inevitably "increases the reluctance of the Government to adopt a policy of honest restriction." The belief that India is being swamped by opium smuggled in from China is disputed by Mr. Alexander, who holds that such illicit commerce proceeds from Rajputana or from Persia. Since the export of Indian opium by the Government to China was stopped large stocks of Malwa opium have accumulated in Rajputana, and from this source, it is alleged, a stream of contraband opium finds its way into British India and to seaport towns. Assam, Berar, and Orissa, and most of the great cities, are "black spots" in the matter of excessive consumption of opium. Mr. Alexander is in agreement with some eminent pharmacologists that opium smoking is not the most harmful method of self-administration of the drug, though the official view has hitherto been that it is a pernicious and degrading vice. He concludes that neither opium smoking nor opium eating calls for the attention of Western reformers so much as the export to the East of manufactured habit-forming drugs, such as morphine and cocaine, and spirits, since "so long as we go to the East with these things in one hand, Chinese and Indians and Malays are not likely to have much use for programmes of social reform that we carry in the other."

The booklet is well worthy of perusal by any student of the opium problem, especially in the light of the recent discussions of the Advisory Committee of the League of Nations at Geneva.

THE FEMALE SEX HORMONE.

TWO RECENT MONOGRAPHS.

KNOWLEDGE about sex hormones has developed in a curiously irregular fashion: its beginnings date back to the time when prehistoric man discovered the elementary fact that removal of the sex glands modifies the growth of the body; the possibility of its scientific application was first exploited when Brown-Séquard administered orchitic extracts with a view to producing rejuvenation. Whereas, however, knowledge about sex hormones is more ancient than that of any other branch of endocrinology, between 1889 and 1920 the latter strode forward, and fruitful studies were made of other hormones, while knowledge of the sex hormones remained practically at a standstill. Thus it may be said that about ten years ago the experimental and observational data concerning the internal secretions of the sex glands compared unfavourably in amount with those that had been acquired in most other fields of endocrinology; since then, however, knowledge of the female sex hormones has advanced considerably; accurate methods have been devised for their identification and assay, and intensive research, directed upon the problems they present, has revealed a system of hormonic control of remarkable complexity and interest.

Unfortunately, the mass of work that has been done on the subject illustrates in a striking manner one of the main difficulties in the study of the data of modern biological science. The sheer bulk of the literature makes its mastery almost a full-time occupation. As, moreover,

[1] *Mammalian Physiology: A Course of Practical Exercises*. By E. G. T. Liddell, D.M., and Sir Charles Sherrington, O.M., M.D., D.Sc.Cantab., F.R.S. New edition. Oxford: The Clarendon Press; London: Milford, Oxford University Press. 1929. (8 × 11, pp. xii – 162; 59 figures. 15s. net.)

[2] *An Introduction to Practical Mammalian Physiology*. By Swale Vincent, M.D., D.Sc., and Samson Wright, M.D., M.R.C.P. London: Published for the Middlesex Hospital Press by J. Murray. 1929. (Demy 8vo, pp. viii – 37. 3s. 6d. net.)

[3] *Narcotics in India and South Asia*. By H. G. Alexander, M.A. London: Williams and Norgate. 1929. (5½ × 8½, pp. 64. 2s. 6d. net.)

the technique of research is difficult and results are worthless unless a rigidly accurate technique has been maintained, the literature is of varying value, and only those familiar with the experimental methods of endocrinology can separate the wheat from the chaff. In these circumstances only the specialist would be advised to follow original literature; for all others the only useful mode of approach is by way of authoritative and critical monographs. Of these latter, two may be specially commended: *The Internal Secretions of the Ovary*,[1] by Dr. A. S. Parkes (chosen by the new editors of Monographs on Physiology as their first production, since the death of Professor Ernest Starling), and *The Female Sex Hormone*,[2] by Dr. R. T. Frank. Both authors have made important contributions to present-day knowledge of endocrinology, and this fact alone lends special interest to their monographs.

Dr. Frank's work is divided into two parts: the first concerned with the biological, pharmacological, and chemical aspects of the subject; the second with the clinical investigations and results. The author, having reviewed the work done during the last decade, summarizes his own views on the many controversial problems that have arisen, stating the general conclusion that the existence of at least two sex hormones is well established. The female sex hormone, known as oestrin, menformon, and by a host of other scientific and trade names, and occurring in the follicular fluid and placenta, and in the blood and urine of pregnant patients, is, in his view, an anabolic factor which produces all the growth phenomena in the Müllerian tissue and in the breast, the type of phenomena produced depending on the amount employed and the duration of its action. This hormone occurs also in small quantities in all sorts of unlikely material—for example, yeast, many plants, male urine, bile, and the testis; some occurs in corpus luteum, which, however, contains another hormone that inhibits ovulation. The difficulties attending quantitative estimations of female sex hormone are indicated by the fact that Frank and his co-workers rarely found more than 200–300 mouse units per litre in the urine of pregnant women, whereas Continental authors, using the same technique, mention figures of 1,000–7,000 mouse units per litre. In the second part of his work Frank describes the method for estimating the amount of female sex hormone in the blood and urine; he presents clinical evidence to the effect that hypo- and hyper-function of the ovaries can be detected in certain cases by means of a blood test, and shows that this test is of service in the diagnosis of pregnancy. Of special interest is a chapter devoted to the pharmacology of ovarian extracts.

"I have," says Dr. Frank, "repeatedly put myself on record as entirely sceptical concerning the effect of desiccated, unconcentrated ovarian preparations. . . . The effects on the basal metabolism of oophorin and similar desiccated ovarian powders have never given uniform results and have not stood the test of careful scrutiny and repetition. . . . I have, during a number of years, tested the marketed preparations biologically, and found them, one and all, wanting in efficacy."

Similarly he tested the biological activity of a number of commercial extracts of the female sex hormone, which, according to the manufacturers, had been biologically standardized; his tests showed an activity varying from 0 to 30 per cent. of the amount claimed. "These titrations," he says, "are extremely disappointing, showing that even if the material left the hands of the manufacturer with the amounts of mouse or rat units labelled, deterioration rapidly destroys most of the activity and makes the clinical use illusory." He does not discuss the unassayed preparations, but the results obtained with those alleged to have been standardized indicate how unlikely it is that these would possess any activity.

The present position of female sex hormone therapy Frank sums up as follows:

"Assay and biological standardization of the water-soluble commercial extracts now placed upon the market show a woeful lack of potency and rapid deterioration of the products. Unpleasant local reactions may arise at the site of injection. The prices of these pharmaceutical preparations are prohibitive. Consequently I warn against their general use until better products are at our disposal."

Of the future, however, he writes more optimistically:

"If, as is to be hoped for, the future places a concentrated and stable female sex hormone in our hands, this powerful drug will enable us to produce transient stimulation of the uterus. Upon the withdrawal of the drug a single menstruation should occur, but it must not be forgotten that the ovaries are not stimulated by the female sex hormone. The possession of a potent aqueous corpus luteum extract may enable us to control too frequent and too prolonged menstruation. Again this effect may be expected to be transient. On the other hand, an active anterior lobe pituitary preparation should enable us, when it has been successfully elaborated, to actually stimulate the ovaries to increased function and activity."

Some idea of the scope of Dr. Parkes's monograph is indicated by the bibliography, which contains no fewer than 661 references to English, American, and Continental literature. Parkes, indeed, has assimilated completely present-day knowledge about the ovary, and the well-digested product he presents in a monograph of only 206 pages. The early chapters on the various types of oestrous cycle in animals, and of anatomy, form the best possible introduction to the study of a subject in which animal experiments have played a vital part in the building up of sound working hypotheses. The differences between the various kinds of animals are clearly set out, and the similarities well correlated; in this way the results of different workers, which appear at first sight to be contradictory, are shown in many cases to represent different types of reaction peculiar to particular species.

The comprehensive review of the subject given in the first part of the book forms an excellent introduction to the detailed study of the ovarian hormones. The function of the corpus luteum and of the pituitary, and their interrelationship with the oestrus hormone, are all fully discussed; and a chapter on parturition, and the way in which it is influenced by the internal secretions of the ovary, summarizes well the present-day knowledge of some at least of the factors involved in the onset of labour. A large amount of space is devoted to the oestrus-producing hormone, and from the historical survey of the work in this field we realize the difficulties that have had to be overcome in producing active extracts of this substance. Advances have come largely from improvements in methods of preparation, but perhaps even more from improved methods of physiological assay, and the stages by which our knowledge has advanced are clearly indicated, and the methods of testing the potency of extracts, and of their standardization, are fully explained.

Laboratory investigation of the function of ovarian hormones has advanced greatly during recent years, and the author does not hesitate to draw definite conclusions from sound experimental evidence in animals; but he is extremely cautious in the application of these results to clinical problems, and, indeed, there appears to have been but little orderly clinical research into the action of ovarian extracts, in spite of the fact that their use is widespread. Partly owing to the difficulty of assessing the importance of functional changes in women, and partly on account of the irresponsible way in which these extracts are so often used, the day of rational therapy by these means has not yet come; but the very firm foundation laid by animal research will encourage us to look forward in the near future to a new and potent weapon for clinical therapeutics.

Both monographs—Parkes's *Internal Secretions of the Ovary*, for its admirable survey of present-day knowledge of the ovary as an endocrine organ, and Frank's *Female Sex Hormone*, for its cautious and critical review of female sex hormone therapy—deserve careful study alike from physiologists and clinicians. Interesting and important laboratory results have been obtained, but it is evident that their clinical application presents technical difficulties which have not yet been fully overcome. This fact must be stressed, because a new therapeutic agent of much potential importance has been discovered, and it will be a great misfortune if its value is obscured by the disappointment that will inevitably follow if it is extensively employed before these technical difficulties have been surmounted.

[1] *The Internal Secretions of the Ovary*. By A. S. Parkes, Ph.D.Manch., D.Sc.Lond. Monographs on Physiology. London and New York: Longmans, Green and Co. 1929. (5¾ × 9, pp. xv + 242; 69 figures. 21s. net.)

[2] *The Female Sex Hormone*. By Robert T. Frank, M.D., F.A.C.S. London: Baillière, Tindall and Cox. 1930. (6½ × 10, pp. 321, 85 figures. 25s. net.)

ENLARGED PROSTATE AND PROSTATECTOMY.

SECOND LETTSOMIAN LECTURE BY SIR JOHN THOMSON-WALKER.

THE second Lettsomian Lecture[1] was delivered by Sir John Thomson-Walker before the Medical Society of London on February 26th, with Mr. H. W. CARSON, past-president, in the chair.

Selection of Cases for Prostatectomy.

Sir JOHN THOMSON-WALKER said that in the selection of cases for prostatectomy the points to be considered were the prostate, the urinary organs, and the general condition of the patient. With regard to the first point, two conditions were to be considered: the fibrous prostate, and the malignant prostate. The term "fibrous prostate" had been adopted without any very careful definition of the pathology, and it included a number of conditions of varied pathology. Out of 44 prostates weighing 20 grams or less, which he had taken as representing this type of prostate, the result of microscopical examination was as follows: adenocarcinoma 1; adenoma with little change in stroma 14; adenoma with amyloid bodies 3; hyperplasia of the stroma 5; chronic prostatitis and fibrosis of stroma 14; and multiple small calculi 7. Another type of fibrous prostate not included in this list was the adenomatous prostate which had been subjected to such treatment as deep *x*-ray therapy, causing fibrosis of the stroma. Evidently, therefore, the surgical term "fibrous prostate" covered a number of different pathological conditions, such as adenomatous enlargement, chronic prostatitis, fibrosis of the stroma, and a form of early malignant growth which developed around the internal meatus. At the operation difficulty in enucleation was the principal feature. It might be impossible to remove the gland by enucleation, but by transvesicular dissection these prostates could be cleanly and thoroughly removed.

Of the malignant prostate there were two distinct clinical forms, which might be termed primary and secondary. In the primary malignant prostate the changes in the gland were cancerous from the outset; in the secondary the character was that of the ordinary enlarged prostate, and the malignant changes were engrafted. The proportion of primary malignant prostates to simple was about 1 to 6. Among 2,496 cases of enlargement of the prostate which he had seen in private practice, there were 347 cases of undoubted malignant growth (13.9 per cent.), as against 2,149 cases of simple enlargement.

The secondary malignant growth was a growth engrafted on a simple enlargement of the gland. These patients came to the surgeon with symptoms of simple enlargement, and rectal examination confirmed the diagnosis. The malignant growth might develop in one of three localities. It might infiltrate the base of the prostate in the neighbourhood of the internal meatus, in which position it was not discovered until operation. It might affect the periphery of the enlarged gland, in which case the examining finger recognized an enlarged prostate of elastic consistency with a firm area at one part. At the operation the enucleation proceeded smoothly except at this area, where the gland was tough and adherent; a leathery plaque was not infrequently left behind on the wall of the prostatic bed, and might be dissected away in the open operation after removal of the organ. Finally, the malignant change might develop in the substance of the enlarged prostate. In 521 cases in his private practice where a pathological report was obtained on a specimen removed by suprapubic prostatectomy, there were 96 cases in which areas of carcinoma were discovered. In these cases there had been no suspicion of malignancy before operation, and the operation was performed by enucleation in the belief that the prostate was the seat of a simple enlargement. He compared his own figures with those of other workers as follows:

	Cases.	Malignant.
Albarran and Hallé	169	14
Wade...	134	14
Jocelyn Swan	23	4
Thomson-Walker...	521	96

The prognosis in such cases was important and extremely interesting. He had endeavoured to trace the subsequent history of the 96 cases in his series, and found that it was as follows:

Died from other causes within a year	13
Not traced	17
Alive and without recurrence	41
Died without recurrence	23
Died with recurrence	2

Of the 64 cases known to have had no recurrence the following were the periods:

	Alive.	Dead.
1 to 5 years	6	9
5 to 10 years	20	8
10 to 17 years	15	6

Urinary Complications.

Of all the risks to which the sufferer from enlargement of the prostate was exposed, those connected with the urinary organs were the most common and most frequently fatal. These complications were, however, to a large extent amenable to treatment before operation; they consisted of renal inefficiency and sepsis. With the increasing obstruction of a large prostate and residual accumulation, the renal function became impaired and a well-known train of symptoms developed indicating a varying degree of uraemia. These clinical symptoms were invaluable in the diagnosis of renal inefficiency, but there were cases of serious impairment of renal function in which they were slight or absent.

For more than thirty years urinary surgeons had endeavoured to measure the renal function accurately by means of special tests, and of late years they had received most valuable assistance from the biochemist and physician. The form of renal inefficiency which resulted from urinary obstruction was that in which the nitrogenous products were excreted in diminishing quantities in the urine and were accumulated in the blood. It followed that the estimation of the activity of the kidney in the excretion of these nitrogenous bodies, together with the estimation of the nitrogenous bodies in the blood, furnished an indication of renal function. In a series of 274 cases of enlargement of the prostate in which prostatectomy or cystotomy was performed the figures for the urea concentration test were as follows:

Urea Concentration	Cases.	Died from Uraemia.
2 per cent. and over	194	0
1.8 to 2 per cent.	21	1
1.5 to 1.8 per cent.	34	3
1.5 per cent. and under	25	3

The particular interest of these figures was in the cases where a high urea concentration was obtained and the patient died from uraemia or a low urea concentration test was recorded and the patient nevertheless survived. In ten instances where the urea remained at 1.5 per cent. or under, the second stage of prostatectomy was performed and the patient survived. In nine cases where the concentration was at this same low level a single-stage prostatectomy was performed, the patients surviving. The conclusion to be drawn from these 274 cases was that there was no risk of uraemia following prostatectomy if the urea concentration figure was 2 per cent. or more, but there was a serious risk with a figure below 1.8 per cent., and still more so below 1.5 per cent. With extreme care it was possible to operate successfully even where the urea concentration was below 1.5 per cent. Such patients might recover when no complications, such as bronchitis, haemorrhage, or sepsis, were present.

[1] The report of the first lecture was published in the *British Medical Journal*, March 1st, p. 402.

The estimate of the urea content of the blood gave additional information with regard to the functional activity of the kidney. The normal urea content of the blood was 20 to 40 mg. per 100 c.cm., but such figures were too low in dealing with old men, and a blood urea of 50 mg. might be present without indicating serious impairment of renal function. The ultimate cause of the symptoms grouped under the term "uraemia" was not the accumulation of urea in the blood, but the production of a chemical body or bodies to which the accumulation of urea in the blood ran closely parallel. The parallel, however, was not always close enough to make the blood urea figure an absolutely reliable test of the uraemia. A very low protein diet might so reduce the blood urea as to make the observation worthless. It was possible also to have a very high blood urea without the patient being in any danger of uraemia. Further, an excessive protein diet might raise the blood urea content. In most cases, however, the urea content of the blood varied inversely to the percentage of urea secreted in the urea concentration test. The blood urea content was invaluable in watching the progress of a case where the bladder had been drained in chronic retention with serious renal inefficiency. It was not necessary for a successful prostatectomy that the renal function should be perfect, or even approximately perfect; a reduced renal function might be adequate for the operation. Laboratory figures of the renal function tests formed only one factor among many in estimating the prognosis of the operation.

Sepsis and the Cholesterol Test.

The lecturer passed to the consideration of sepsis in relation to enlarged prostate and prostatectomy. Infection might occur before the operation, might be introduced at the time of the operation, or might occur subsequently while the wound was still open. He was concerned for the moment with the first of these occurrences. The simpler cases were those in which the infection was confined to the bladder; these were sometimes complicated with epididymitis. In the more complicated cases involving pyelitis, pyelonephritis, and recurring attacks of fever, the patient eventually drifted into the condition known as urinary septicaemia. If the infection was moderate and there was no evidence of renal involvement, a few weeks' preparation by bladder washing, together with diuresis and the use of urinary antiseptics, would suffice as a preliminary to the removal of the prostate. Where the more severe grade of sepsis was present, prostatectomy would be necessary in two stages.

As for the selection of cases for prostatectomy where sepsis was present and had been treated, in the mild cases, in which the infection had been confined to the lower urinary tract, there was no difficulty, but when the infection had been severe the decision was less easy to make. When the sepsis had been confined to the bladder it generally cleared up pretty quickly as a result of drainage and constant irrigation. A method which promised greater accuracy with regard to prognosis was the estimation of the blood cholesterol. Cholesterol played an important but an ill-defined part in the process of immunity, and its amount in the blood was liable to be affected by many external factors, all of which were not fully recognized. It was known to be increased in arterio-sclerosis, in granular kidney, in other degenerative conditions of later life, in uraemia, especially where the red cells fell below 50 per cent. of the normal, and in malignant disease. It would seem that, on the average, the cholesterol tended to reach high figures where rapid healing was occurring, and remained low where the healing of the sepsis was delayed, but there were individual cases which completely upset the clinical application of these figures. The question the surgeon had to face in regard to such a test was whether he could make the decision as to operation from the figure of the cholesterol content of the blood. The lecturer's view was that he could not do so at the present time, and that much more careful work was required before this test of the resistance to sepsis was brought up to the level of reliability that the estimation of the urea content of the blood or the urea concentration test had reached in relation to renal inefficiency.

Circulatory Risks.

A large proportion of the patients who were submitted for prostatectomy showed signs of arterio-sclerosis; a few had valvular disease, and some had impairment of the myocardium. The degree of circulatory strain that was permissible in any given case must be decided by the physician and the anaesthetist. The first striking point in regard to the systolic blood pressure in cases submitted to prostatectomy was that a large number showed a low blood pressure, a considerable number a very low pressure. This was contrary to what one would expect from the age of the patient, and was certainly against the view that senile enlargement of the prostate was always accompanied by arterio-sclerosis. On the other hand, there were a number of cases where the systolic blood pressure was very high. With a very high blood pressure a large number of cases of serious haemorrhage would be expected, yet in 15 cases with a systolic pressure of over 200 only 2 showed severe post-operative haemorrhage, and in no case was there serious haemorrhage at the operation. In 20 cases with low blood pressure 4 were associated with severe haemorrhage at the operation and 2 with post-operative haemorrhage.

The occurrence of thrombosis in a proportion of cases where the blood pressure was very low and the patient was immobilized in bed for a period of time seemed almost inevitable. When a septic focus lay in close relation, practically in direct communication, with a plexus of veins, clotting became a certainty. The lower the blood pressure the greater the probability of thrombosis and of pulmonary embolism. Experience of various grades of blood pressure had led him to fear the low blood pressure patient. In the prevention of pulmonary embolism the prevention and treatment of sepsis was of the first importance, and after this came measures that had for their object the prevention of stagnation in the pelvic veins.

With regard to glycosuria, the prostatic operation, like other operations, had shared in the benefit of modern progress. Glycosuria was at one time regarded as a contra-indication to prostatectomy; it was now only considered a cause for delay. Diabetes was a disease belonging to a somewhat earlier period of life than prostatic enlargement, and the point had been discussed whether senile glycosuria was the same as ordinary diabetes so far as prostatectomy was concerned. In the lecturer's view no distinction could be drawn.

While the prostate might in some cases remain in a state of moderate enlargement for a number of years—five or six—without any appreciable increase in size or amount of obstruction, the gland eventually entered on a period of more rapid enlargement. An accident such as a chill or a dietetic indiscretion would precipitate the second stage, with acute retention. But while the prostate might remain stationary for some years, it had to be remembered that the patient was growing older, and the age factor had a certain influence on the seriousness of the operation. It was the experience of urinary surgeons that the operation could be successfully performed in extreme old age. Among his own cases he had had 27 patients who were 80 years old or more, with 3 deaths. After the operation these old men might pass safely through an uncomplicated convalescence, but they had very little chance of surviving an attack of bronchitis or severe haemorrhage. In spite of the moderate death rate in prostatectomy among patients who were very old, it was impossible to be indifferent to advancing age as an argument in favour of prostatectomy being undertaken early rather than late.

THE next election to the Grocers' Company research scholarships will, as announced in our advertisement pages, take place in May. These scholarships were founded to encourage original research in sanitary science, and are each of the value of £300 a year, with an allowance to meet the cost of apparatus and other expenses in connexion with the work. They are tenable for one year, but are renewable for a second or third year. Forms of application may be obtained from the clerk to the Grocers' Company, Grocers' Hall, London, E.C.2, to whom they must be returned before the end of April.

British Medical Journal.

SATURDAY, MARCH 8TH, 1930.

A REACTIONARY DOCUMENT.

JUST over a week ago the British Medical Association and the Society of Medical Officers of Health became aware of the existence of a most important document, issued by the Ministry of Health, which affects the position and duties of large numbers of medical practitioners, and may have most serious effects on the health services of the nation. No official intimation of the issuing of this document had been given, either to the Association or to the Society, and a request by one of them for a copy was met with the reply that it was "out of print." The publication is a "Draft dated January 31st, 1930, of an Order proposed to be made by the Minister of Health under the Poor Law Act, 1927, for the consolidation, with adaptations consequent upon the passing of the Local Government Act, 1929, of Poor Law Orders." If the Rules, Orders, and Regulations contained in this draft are confirmed and issued, a blow may have been struck at Poor Law reforms, at hospital development, at health progress, and at the independence and usefulness of the medical profession from which, in many areas at any rate, recovery will be difficult. We do not place the blame for this, except technically, upon the Minister of Health, or upon the Ministry as a whole. There is yet time for them to stop the mischief if they will do so; but it is clear that the activities of the Poor Law department of the Ministry are such as to require the utmost vigilance and restraining influence. This department appears to be still living in the Elizabethan, or at least the early Victorian age, and to have an imperfect idea of the changes which the Local Government Act of last year was intended to bring about.

It will be observed that the proposed Order is "for the consolidation with adaptations" of Poor Law Orders, and the adaptations are numerous and important enough to show that they could have gone much further if there had been the will to do so. The Order is one which, if made, must not merely guide, but govern, the procedure, the methods, the machinery, the outlook of the new Poor Law authorities—that is, the councils of counties and of county boroughs. It says in so many words that it shall apply to "every Council and every Poor Law officer, assistant officer, and servant employed at the commencement of the Order or thereafter appointed by the Council." This necessarily includes all medical officers, whether part-time or whole-time, and whether employed in connexion with a hospital or institution or otherwise. Yet the Order is to consist of Rules, some of them drawn up seventy or eighty years ago, Rules with regard to the pettiest details of administration, some of which have already ceased to be accurately observed by the more progressive boards of guardians, and which are likely to prove intolerable to those who have the wider outlook and interest represented by county councils and county borough councils. In fact, this Order, if made, will present to the members of these bodies a false picture of the situation in which they begin their duties on April 1st next. It may possibly be of some value as a convenient historical review illustrating a condition of affairs, obsolete or obsolescent, which at present obtains in some parts of the country, but which Parliament and all who care for the public health had imagined would come to an end in a month's time. If the Order should be issued the memorandum accompanying it can honestly do no less than point this out, and should certainly contain the further statement that some of its Rules are set out merely for the sake of historical completeness and not as indicating what the new authorities should do.

In this draft Order there is not the least recognition that the new authorities are the administrators of other health services to which those of the Poor Law must be related. There is no hint that hospital arrangements may be varied or expanded or related to those of other institutions, after consultation with an advisory committee statutorily recognized. There is no mention at all of the medical officer of health as chief medical adviser to the council and to its Public Assistance Committee, although the Minister of Health, in an official letter to the British Medical Association,[1] has said that he "would not welcome any administrative organization which would obscure" that position. It may be argued that these vital omissions are justified by the fact that the Order is merely a consolidation of others which are unrelated to these facts. This is no justification, for that is exactly the complaint. Already the draft Order contains adjustments of one kind or another, and even refers to the creation of new officers. Further, the Rules laid down will, if obeyed, prevent or hinder the adjustments and reforms that are necessary, and will, in fact, cut across and render nugatory the arrangements which some of the larger county boroughs and a few of the counties have already made to this end in anticipation of April 1st.

No less important than these omissions is the position which the Order assigns to medical officers in relation to other officials concerned in Poor Law administration. For example: "The Council shall appoint one or more Public Assistance Officers. . . . The Public Assistance Officer shall supervise and control in the performance of their duties all officers and servants engaged on Poor Law functions." "The Master of an institution shall govern and control the institution and the officers"—including the medical officers. It may be that certain Poor Law medical officers have hitherto been working technically under Rules which, as survivals of archaic usage, have been thus archaically phrased. This is no excuse for perpetuating an obnoxious situation when, as now, the old Orders come to be rescinded and a new one made. It is intolerable that the master of a workhouse should be given the duty of governing and controlling the medical officer to the institution, or that a lay officer should supervise and control in the performance of their duties operating surgeons at a municipal hospital or any other medical officers who take part in Poor Law work.

These things together, those left out and those put in, make up, as we have said, a false picture of the duties and opportunities of the new local Poor Law authorities. Happily—also under the auspices of the Ministry of Health—we have been presented with another picture. In Chapter IV of the last annual report of the Chief Medical Officer of the Ministry there is a presentation of the situation and of the position and duties of authorities and their medical officers which is quite different from and inconsistent with the picture as set out in the draft Order under consideration. It is recognized that the two documents have a different purpose, but both pictures cannot be true. There is no doubt which

[1] *British Medical Journal Supplement*, November 22nd, 1929, p. 239.

of them was intended to be the true one, or the one to be desired by all who wish for a reformed Poor Law administration and who have regarded the Local Government Act, 1929, as a first big step towards such reform. The main business of a Minister of Health is to care for the health of the people. The Order now "proposed to be made" would be a serious hindrance to such care. It would handicap authorities in carrying on and developing their health services. It would tend to fix the less enlightened authorities in obsolete, reactionary, very imperfect methods. It would delay the proper extension of hospital provision and usage. It would prevent the cordial co-operation of the medical profession in all its branches. It would call a halt to, or even set back, that progress in national health provision upon which the community appeared to be entering with mutual good will. To try adequately to amend this draft Order would be futile. We can only urge the Minister of Health most strongly, and even at this late hour, to withdraw it.

CONGENITAL WORD-DEAFNESS.

IN the current number of the *Journal of Neurology and Psychopathology*[1] there will be found an article by Drs. C. Worster-Drought and I. M. Allen on congenital word-deafness, or, as the authors prefer to call it, congenital auditory imperfection. This condition is very rare, and so any description of it may seem to many to be of purely academic interest, but the detailed study of the reactions of the patient throw a new light on many problems of cerebral function, and illustrate the intimate connexions between physiology and psychology. For this reason the subject cannot fail to be of interest to all thoughtful physicians, for in this field we find the most paradoxical phenomena which are of the utmost importance, and at the same time not a little obscure.

The defect under discussion is analogous to congenital word-blindness, but much rarer, probably because the power of understanding written speech has been more recently acquired than the power of understanding spoken speech, and hence is more liable to derangement. The child who is afflicted with congenital word-deafness can hear but cannot clearly distinguish between sounds, or attach a significance or meaning to them. Hence he neither differentiates sounds which come to him from outside nor controls the sounds he himself emits. He is quite unable to understand spoken words unless, as we shall see directly, he has learnt to lip-read. As an infant his cry is monotonous, and does not vary with his emotional states. He is late in learning to talk, and, when he does, he easily develops a "language" of his own, which can only be understood by his immediate relations if they take great pains to learn it. He is unable to produce correct sounds of any sort, and therefore cannot sing in tune or recognize discords. The language defect is by far the most noteworthy symptom, and has been called idioglossia, having long been regarded as a disease in itself, and attributed to a special form of mental defect, the reversion to a primitive form of speech, and even to pure laziness on the part of the patient. Naturally, these children are very difficult to teach, and many of them have been regarded as idiots and segregated in institutions as such. This, however, is seldom justified, for they are found to be at least potentially normal in their general intelligence. Further, their auditory and speech apparatus are normally developed.

The condition is apt to be familial, and associated with a family history of insanity, epilepsy, and other psychopathic manifestations. There is no evidence of trauma as an etiological factor, and the distribution of the presumed lesion is difficult to assign to any lesion that could easily happen. There is no known case in which a post-mortem examination has been performed, and so any localization must be inferential; but it is presumed that the trouble is due to an aplasia of the post-temporal cortex. Sooner or later a post-mortem examination is sure to be obtained, and it will be of the greatest interest to discover whether this inference is confirmed. Among congenital defects there are not a few which are presumably due to localized aplasias causing the dropping out of specific functions without apparently interfering with general mental development. The three most obvious are: congenital word-blindness, true Little's disease, and the subject of the present study. This is certainly conclusive evidence in favour of definite localization of function in particular areas of the cortex; yet children suffering from any of these defects, if recognized early and properly taught, can learn a great deal, and even to a large extent overcome their disabilities. Their power of learning illustrates the remarkable plasticity of the cortex in taking on functions vicariously. This power has been strikingly illustrated by Lashley's experiments on the ability of rats to learn to thread mazes and perform other tricks after various areas of the cortex have been removed; but perhaps the most striking example is afforded by the work of Gault, at the Northwestern University, Chicago, who has devised a vibrator which can respond to the sound waves of the human voice. These vibrations are amplified and conveyed to the fingers of the subjects of the experiment, who are totally deaf children. Gault has succeeded in training these children to interpret these vibrations, and therefore "hear" through their fingers an ordinary lesson given by a school teacher.

In the interest of patients suffering from these conditions it is clearly desirable that all medical men should be alive to the possibilities of educating them, for it is a most obviously cruel injustice to condemn them to imbecility by deprivation of the education which is their right. In the case of the congenitally word-deaf education is admittedly difficult, for it is found that these children are often unable to understand written speech owing to a general aphasia and defect in what Head has called "internal speech," by which he means the process of translating the meaning of any given image that may be presented to the mind into a form of expression by which it can be reconveyed to the external world. They can, however, appreciate geometrical forms, and are often able to lip-read. They can copy sounds with some facility, but have great difficulty in integrating them into consecutive words. For these reasons careful individual teaching is necessary, and, owing to the tendency of the child to relapse into his idioglossia when excited or anxious to convey his meanings to others in a hurry, it may be necessary to isolate him for considerable periods while education is taking place. It has been observed that, if not taught, these congenitally word-deaf children are apt to become spiteful, asocial, and delinquent, and this is true of all those who are under-taught for any reason. The reasons for this are threefold. First, the mental activity of such children demands outlet somewhere and somehow, and if not led into desirable channels by education it will tend to follow the urges of purely

[1] *Journal of Neurology and Psychopathology*, vol. x, No. 39, January, 1930. Published by the British Medical Association. 30s. per annum, single numbers 8s. 6d.

instinctive reactions, which, being essentially individualistic, are sure to lead to asocial behaviour. Secondly, these children are apt to harbour a sense of grievance, either against fate for making them different from others, or against their elders for not giving them the same chances as others, and in their attempts to get even they may find themselves in conflict with authority. Thirdly, they may exhibit what Adler has called a psychic compensation for organ inferiority, which leads to an aggressive attitude towards the world, with considerable potentiality for evil.

It will be seen how many problems are raised by a discussion of this rare pathological condition; but this merely goes to prove that for the physician there is no limit to the field of his inquiry, and that the investigation of one problem is apt to raise a host of others all clamouring for solution.

THE L.C.C.'s OPPORTUNITY.

On April 1st the London County Council takes over the municipal hospital system of the metropolis, and as that day approaches the medical profession, particularly in London, will feel a growing desire to know what is about to happen. In the first place, it will be interested to learn whether the Council has approved any scheme for the constitution of a body which, in the words of Clause 13 of the Local Government Act, 1929, shall "represent both the governing bodies and the medical and surgical staffs of the voluntary hospitals providing services in or for the benefit of the county or county borough." As will be seen from our paragraph printed at page 463, a scheme for voluntary hospital representation in the County of London has now been accepted by the Central Public Health Committee of the L.C.C. and awaits consideration by the Council. There will be general agreement that the consultations with the new body, when it is set up, should be frequent and friendly, and that no attempt should be made to confine them within the bounds of a legal definition of the precise meaning of the clause. Whatever the wording of Clause 13 may be, the intention of the late Minister of Health—Mr. Chamberlain—was that it should be interpreted in a generous and cordial spirit, and it was his hope that the co-operation between the voluntary hospital system and the municipal hospital system should be genuine and sincere.

The L.C.C. will clearly gain much by availing itself of the accumulated experience of the voluntary hospitals, particularly in the management of the municipal hospitals which are now gathered under one control instead of being in the hands of many separate boards of guardians. The fact that all these hospitals are now grouped under single control immediately arouses an interest in them and in their development which has of necessity been lacking in the past; and the medical profession throughout the metropolitan area (forming more than a quarter of the practitioners in England and Wales) will be directly affected by the working of this vast new hospital scheme. It is, of course, clearly understood that the administration and organization of the municipal hospitals must remain in the unfettered hands of the L.C.C., and that the Council is not compelled to take the advice of the representatives of the voluntary hospitals or to act upon their suggestions. But there are few schemes, however good, that cannot be improved by wider views and fresher comments, and, however wisely the Principal Medical Officer is advised by those whom he chooses for this purpose, the burden now put upon him must be almost more than one man can carry.

The medical profession would appreciate very highly being informed from time to time not only about the organization and progress of this great hospital scheme, but also about any subsidiary schemes the L.C.C. may have in hand that bear on medical practice. Unfortunately the Council's agenda paper only becomes available to the public on the Saturday before the meeting on the following Tuesday, and there will, therefore, be little or no opportunity for the weekly professional journals to make any comment on what is coming before the Council in relation to far-reaching schemes of great importance to the medical profession.

Since the concentration of this big hospital system in the hands of the L.C.C. places a large number of medical men and women under the immediate control of one body, it is not unreasonable to hope that in any scheme of administration or organization of the municipal hospitals some place may be found for a constitutional body representing at any rate the senior medical officers in the employ of the Council, and that this body may be regularly consulted and have an opportunity of expressing its views upon any plans which involve professional aspects of the medical service and the treatment of patients. There is ample precedent for this in the almost invariable practice of the governors of voluntary hospitals to consult their medical committees before taking action in such matters. It may be objected that the L.C.C. is in a different position to the voluntary hospitals in that it has the advice of a medical officer of health of great experience. This argument, though valid to some extent, is not a complete answer, and we may repeat our point that even the ablest administrator at the head of such a vast scheme is none the worse for the considered opinion of those upon whose shoulders will be laid the burden of carrying it out.

PERIODICAL VARIATIONS IN GROWTH.

THE need for establishing normal standards of height and weight and other physical factors among children in this country has already been emphasized in these columns on more than one occasion. It is, however, a mistake to imagine that this real defect in our scientific basis of normality can be remedied by anyone possessed of the necessary measuring apparatus, and some of the difficulties connected with any investigation in this subject are well illustrated in a recent monograph by Dr. Gustav Nylin.[1] This worker was primarily concerned with the variations which occur in the rate of increase in height and weight of children, in their standard metabolism, and in the oxygen capacity of their blood. His measurements were made with the greatest care, by standardized apparatus, on large groups of school children in Spånga and Stockholm. All sorts of difficulties arose almost at once—for example, in settling the exact time of day for the measurements, for it had been observed by previous workers that boys will show a decline in height of about 1 cm. during the day, regaining this amount completely by next morning. However, Dr. Nylin was able to get round such possible sources of error, and his statistical methods appear to have been most elaborate. His results reveal a definite periodicity of growth in children during the year. The height increase showed a well-marked maximum over the period March to May, a smaller but distinct maximum during November to January, and two minimal periods—September to November and January to March. On the whole, weight

[1] Gustav Nylin. Periodical Variations in Growth, Standard Metabolism, and Oxygen Capacity of the Blood in Children. *Acta Medica Scandinavica*, Supplementum xxxi. Stockholm: D. A. Norstedt und Söner. 1929.

increase varied inversely with the height increase, a maximal period in height increase being associated with a minimal period in weight increase, and vice versa. Investigations into the standard metabolism for children about the age of 6 years showed that there was a periodicity closely connected with the periodicity in height increase, and, roughly speaking, both these factors were maximal when the radiation of the sun reached its maximum. Both in school children and pre-school children the oxygen capacity of the blood shows a periodicity, with a minimum during the dark period of the year and a maximum during the light period. These close relations between the sun's rays and increase in growth were made the object of a special experiment in which two groups of children were irradiated with ultra-violet light. It appeared from these that irradiation tends to stimulate the height increase but retard the weight increase, but the results of such experiments have to be very carefully interpreted in terms of the exact periods of the year during which they take place. Seeking for the causes of all these variations, Dr. Nylin divided possible factors into exogenous and endogenous. Among the former have to be discussed such factors as food, school, and climate. The difficulties of assessing these various possible causes are very great. The work carried out in this country on the question of milk and its influence on the growth of school children[1] is given full consideration, and many interesting observations bearing on the question of climatic conditions are put forward and discussed. Dr. Nylin is, on the whole, against the view that periodical variations in growth are due to variations in the water content of the body, and, while admitting the importance of sunlight for growth, he points out that his findings of a period of maximum increase in height during the winter months November to January are against such a connexion. On the whole, he is inclined to consider that endogenous factors are of more importance, but that these are affected by varying external factors, of which the most active is light. Precisely what these endogenous factors are is not made clear, and further inquiry is doubtless needed. Dr. Nylin's piece of work is most elaborate, and shows evidence of much laborious investigation. It should be studied by anyone who is thinking of embarking upon any anthropometric work, if only because it provides some indication of the difficulties.

[1] *British Medical Journal*, 1929, i, 23.

COLOUR VISION.

OF recent years there has been considerable revival of interest in the question of colour vision, one of those problems of immense theoretical interest and of no small practical importance which, despite years of labour and research, seem no nearer an adequate solution to-day than half a century ago. Apart altogether from the theoretical arguments, it is known that any colour can be matched by a mixture of three primary colours; consequently any colour sensation may be regarded as the composite effect of three component sensations. The problem of the measurement of the proportions in which the three primaries participate in producing the resultant sensation must be measured on a luminosity basis, since this is the only property they have in common. From the relative luminosities of these three sensations in the production of the various spectral colours the well-known sensation curves are obtained which refer to a white light spectrum. By modifying the curves for any other distribution the trichromatic specification for any given radiation can be obtained, and by an extended application of this process any problem of colour mixing can be reduced to the fundamental terms of luminosity. All this is the result of mathematical manipulation, and does not depend on any assumption theoretically fundamental. These trichromatic colour data, with the deductive superstructure which has been erected upon them (in which the central figure is the colour triangle), have been determined several times, most notably by Maxwell (1860), König (1892), and Abney (1913); but in all of these determinations the accuracy is low and leaves much to be desired. As an addition to their already extensive series of monographs, the Committee on the Physiology of Vision of the Medical Research Council has published the results[1] of an investigation conducted by W. D. Wright of the Imperial College of Science and Technology upon this subject. There are two important points wherein new aspects are introduced into these determinations. In the first place, a new system of co-ordinates has been used whereby the units are changed from a fundamental luminosity basis to one in which the amounts of the three primary colours which make up white have equal colouring values, so that when mixed they produce a colourless sensation; that is, for white light the three primary colours are stimulated in equal proportions. In the second place, an important step forward has been taken in devising a more satisfactory trichromatic colorimeter. One of the greatest stumbling-blocks in the past investigation of this problem has been the inadequacy of the apparatus which has been devised for measuring colours. Not only has this handicap reduced the value of much experimental work, but it has entailed the somewhat unfortunate result that lack of standardization has made it difficult or impossible to correlate and compare the data of different observers. The instrument employed provides a method of filling one-half of a photometric field with a mixture of three spectral primary colours, and the other half with a spectral colour of any wave-length, and mixed, if desired, with any given amount of any spectral colour. The main experiments consisted in obtaining a series of colour matches throughout the spectrum and calculating the resultant coefficients with the new units based on monochromatic colours. The results are of importance and of considerable interest. At the same time it is freely admitted by the author that much more remains to be done. The scope of colorimetric science will always be limited until the data for what may be called a normal eye have become standardized, and there are many points in the science of colorimetry which are urgently requiring elucidation, such as the elaboration of suitable filters, determinations of sensitivity both for saturation and for hue, and observations dealing with the peripheral field and the extra-foveal retina.

[1] Medical Research Council. Special Report Series, No. 139. Reports of the Committee upon the Physiology of Vision. VII. A Re-determination of the Trichromatic Mixture Data. By W. D. Wright. London: H.M. Stationery Office. 1929. 1s. 3d. net.

MEDICAL RECORDS IN PUBLIC SCHOOLS.

THE value of the taking of records systematically and periodically in public schools was the subject of an address by Dr. G. E. Friend, medical officer at Christ's Hospital, on assuming the presidency of the Medical Officers of Schools Association at its annual general meeting on February 21st. Records of various sorts, he said, were very generally kept by and for the school medical officer, but if they were to be of definite value their method and object must be clearly thought out. Careful statistics on the clinical side were of obvious service in preventive work, and the work of the school medical officer was as much preventive as curative. One form of record would be a summarized list of all cases of illness in the school during a term, showing the duration, and the complications, if any. A card index with a card for each boy, showing after date of birth and of admission the particulars of any communicable illness from which he had suffered, was advantageous in several respects, from providing an immune team to forecasting the extent of an impending epidemic. It took only an hour of the officer's time once a term to

keep the record up to date for a school of 800 boys, and a complete list of the immune and non-immune for any disease could be made from it by a couple of intelligent convalescents in two hours. Another form of record he found useful was a spot map of the dormitories from the point of view of cases of infection. The value of dietary records was perhaps more debatable. Dr. Friend's own experience had shown that one could not safely rely on anything less than a regular analysis of the dietary, term by term when satisfactory, but week by week when things did not seem to be quite right. The dietary, of course, must be considered in relation to weight records of the boys. Dr. Friend described how he estimated the value of the proteins, fats, and carbohydrates in the cooked foodstuffs, also roughly the vitamin content. Unless one had had personal experience of such an analysis, it was impossible to realize how an apparently adequate dietary could vary, sometimes in the direction of excess of one or more constituents (generally the carbohydrate), but more often in the direction of deficiency. A third class of record, in addition to the clinical and the dietetic, was the physical. Dr. Friend said that at Christ's Hospital he was led to take up the systematic measurement of the boys towards the end of 1916, when it became evident that the war was bound to affect adversely the feeding of the school population. Amongst other measures, the weights and heights were taken at the beginning and end of each term, but before the end of the first year it was found that to watch the dietary effectively a mid-term weighing was also necessary. Measurements of the chest on full expansion and inspiration were also made once a year, at the December measuring. The object was to furnish a comprehensive check on each boy and each house, and also to show the general progress of the school by age groups in relation to diet and sickness. He had found the results so useful that he had gone on with the method although the urgent necessity perhaps no longer existed. The mere fact of seeing each boy partially stripped every six weeks was very helpful. The more experience he had of weighing as a routine the more he was convinced that it was one of the most important clinical aids the school medical officer had at his disposal. It might be objected that such work was unnecessary, that it was impossible for anyone who was not a whole-time medical officer to undertake, or that its introduction would cause irritation in various directions. He was sure that practice would show that none of these objections were valid, or if there was any substance in the third objection, it was of a purely temporary nature. The method was of real clinical value, and in view of the criticisms that appeared from time to time, chiefly in the lay press, he thought it was also useful to be in a position to bring forward evidence based on actual data that the dietaries in public schools were adequate, or, if such evidence was not forthcoming, to ascertain where they fell short of the standard necessary for growth and perfect health.

INTERNATIONAL CONGRESS OF HISTORY OF MEDICINE.

WE have just received the preliminary programme of the eighth international congress of the history of medicine, which, as we announced last week, will be held in Rome from September 22nd to the 27th. The Committee of Honour consists of His Excellency Benito Mussolini as president, Professors R. Alessandri, V. Ascoli, R. Bastianelli, and D. Giordano, and his Excellency Balbino Giuliano, the Minister of Education, as vice-presidents, and many other scientific and political notabilities. The chairman of the executive committee is Professor Pietro Capparoni, the president of the congress, with Professors Bilancioni and Castiglioni as vice-presidents. The opening meeting will be held in the Grand Hall of the Senatorial Palace and the ordinary meetings in the Accademia dei Lincei. Members of the congress will be allowed a rebate of 30 per cent. in their railway journey from the Italian frontier to Rome from September 10th to the 27th, and on their return journey from September 22nd to October 12th, as well as reduced rates in some of the principal hotels in Rome, a list of which is given in the programme. A series of attractive tours, including visits to Turin, Milan, Venice, Florence, and Padua, have been arranged before the congress by the Italian Touring Company. In addition to the usual receptions by municipal authorities and scientific bodies, the members of the congress will be received in audience by the Pope. Visits will also be paid to the galleys of Tiberius in the Lake Nemi and the monastery of Mortecassino, which formed an important place of study during the Middle Ages. Other functions are the opening of a National Museum of the History of Medicine in the recently erected Arcliio-pedale de S. Spirito in Sassi and the exhibition of manuscripts, incunabula, and rare books and prints in the Biblioteca Casanatense and Vatican library. The congress will end with a banquet, and will be followed by an excursion to the island of Cos for a "Hippocratic Day," organized by the Congress of Hydrology, which will meet in Rhodes in the second half of September. Communications are invited on any subject connected with the history of medicine, but more particularly on the first two of the following: (1) How Europe defended herself against leprosy in the Middle Ages, introduced by Professor Jeanselme of Paris. (2) The medical and scientific relations between Italy and the other European nations during the scientific renaissance in the sixteenth and seventeenth centuries, introduced by Professor Castiglioni of Padua. (3) On the need for making the study of the history of medicine a compulsory subject in all universities, introduced by Professor Ladislao Szumowski of Cracow. The subjects of papers should be communicated to the secretary by April 30th, and after the papers have been read a typewritten copy, which should not exceed ten large octavo pages, should be sent to the secretary for insertion in the *Proceedings*. The subscriptions are as follows: for members of the International Society of the History of Medicine and members of the Italian Society of the History of Medical and National Sciences 100 lire; for all other members of the congress 150 lire; for members of the family of those taking part in the congress and medical students 50 lire. Those wishing to take part in the congress should signify their intention without delay to the general secretary, Dr. Filippo Rocchi, Corso Vittorio Emanuele 173, Rome.

A LONDON MEDICAL GUIDE.

IN *The Medical Signpost*[1] Dr. T. T. B. Watson and Dr. Alfred Welply have given the London practitioner a guide for which he should be grateful. In a modest prefatory note they claim that the handbook gives easy access to information "which a practitioner daily requires, and which he is often unable to obtain without considerable inconvenience and delay." A glance at the contents suggests that the claim is justified. The book is divided into three parts, of which the first gives general information as to the source, the method of obtaining, and in many cases the cost of the various services which the practitioner may from time to time require in his own work, or wish to obtain or advise for his patients, of whatever class, and also as to his obligations under a number of Acts and Regulations. The second indicates the various services, municipal and voluntary, available within each of the metropolitan boroughs; and the third is intended for notes on the conduct of the individual practice, to be made by the principal for the benefit of any locumtenent in whose charge it may be left,

[1] *The Medical Signpost*, 1930. Compiled by T. T. B. Watson, M.B., B.Ch., and Alfred Welply, M.D. Enfield, Middlesex: Stanley Woodfield. 1930. (Demy 8vo. Pp. 215. 10s. net.)

with a spare page for a sketch map of the district. The arrangement throughout the book is alphabetical, even to the third section, where printed headings are inserted to ensure against omission of any of the main points essential to the efficient working of a practice in the absence of the principal. It is therefore seldom necessary to consult the index or table of contents. The cross-references required by the alphabetical arrangement seem adequate without being cumbersome. In producing a book of this type the necessity for boiling down a great mass of information almost to dryness makes it difficult to avoid false emphasis, if not real inaccuracy. This danger the compilers have tried to meet by confining themselves to the points most likely to cause practical difficulty, and referring the reader, under each head, to an authoritative source of detailed information where such exists. It is not surprising, however, if some points remain where modification appears desirable. For example, on page 19, under "Dangerous Drugs Acts," there is a statement that the "penalty for not keeping records correctly through inadvertence is a fine not exceeding £50." This surely needs elaboration if it is not to convey a false idea of the general tenor of the Acts. Inaccurate record keeping through inadvertence is not a distinct offence. The fact is that prosecution can only be instituted with the consent of the Attorney-General or by the Director of Public Prosecutions, so that it is unlikely to be based solely on minor inaccuracies. The limit of £50 is only applicable to a case in which the court is satisfied that the error was in fact due to inadvertence, and in no way connected with the commission or intended commission of any other offence against the Act. On page 36, if the income limit under the National Health Insurance Acts is mentioned, it should be explained that this is not applicable to manual workers. The address of the National Ophthalmic Treatment Board is not, as stated on page 43, B.M.A. House, but 1, High Street, Marylebone, W.1, though information about local ophthalmic services may be obtained from the Medical Secretary, B.M.A. House, as well as from the Board. These and other minor defects will doubtless be rectified in future editions of a very useful work.

PSITTACOSIS IN THE ARGENTINE REPUBLIC.

IN a communication to the Seventh Congress of the Argentine Medical Association on November 29th, 1929, Dr. Enrique Barros,[1] professor of morbid anatomy in the University of Córdoba, gives a full and interesting account of the severe epidemic of psittacosis which broke out suddenly in Córdoba last July and August on the occasion of an exhibition of birds in that city. The disease was at first mistaken for enteric fever or malignant influenza, but presented several atypical features which did not correspond to either of these diseases. Its true nature was discovered by Professor Barros, who eight years previously had made a study of the literature of psittacosis in Aschoff's Institute of *Morbid Anatomy* at Freiburg. Inquiry showed that all the cases had occurred among individuals or families who had purchased parrots at the exhibition. Subsequently cases occurred in Alta Gracia and Tucuman, which were traced to parrots purchased at Córdoba. Isolated outbreaks at Buenos Aires, which bore no relation to the Córdoba epidemic, also developed, resembling the similar small outbreaks in France which followed the great epidemic of Paris in 1891–92. Professor Barros contributes brief histories of 64 cases which occurred at Córdoba, and a discussion of the clinical and bacteriological aspects of the disease.

THE KING has appointed Dr. Maurice A. Cassidy, C.B., F.R.C.P., physician to St. Thomas's Hospital, to be physician to His Majesty's Household in succession to Dr. Herbert French.

[1] *Revista de la Asociacion Médica Argentina*, January and February, 1930.

PEPTIC ULCER.

A REVIEW OF THE COLLECTIVE INQUIRY.

BY

LORD MOYNIHAN OF LEEDS,

PRESIDENT OF THE ROYAL COLLEGE OF SURGEONS OF ENGLAND.

DR. ARTHUR P. LUFF has now concluded his report on the "Collective Investigation" of cases of peptic ulcer.[1] The labour has been arduous and responsible; and has contributed something of real value to our knowledge, something of a kind which has, I think, no parallel in other countries. The raw material for the inquiry came from a number of sources; no individual surgeon appears to have contributed a large proportion of the total, and the results, in consequence, are to be regarded as indicating the average which may be attained by competent workers throughout the country, rather than the highest results within the experience of the most skilful.

In a letter to the *British Medical Journal* (January 4th, p. 40) I criticized the word "pyloric" as used to indicate the position of a group of ulcers. There is no doubt that this word is very loosely and very inaccurately used, and that we should more clearly understand what we are talking about if the word disappeared altogether from surgical literature. It is only a peg upon which to hang the half-truths. If cases of "pyloric" ulcer are all included among cases of duodenal ulcer probably the truth of the matter would suffer little damage.

The results of the investigation in many instances corroborate and fortify the general impressions derived from the experience of the last quarter-century; in other cases they act as a useful corrective.

Duodenal ulcer, including pyloric ulcer, was found to be far more common in males than in females; and rarely originated after the age of 50. It was frequently associated with, and appeared therefore to be in some degree dependent upon, or perpetuated by, hyperchlorhydria. As the appropriate method of surgical treatment the operation of gastro-enterostomy was chosen in approximately 95 per cent. of cases. The average mortality was in the neighbourhood of 4.5 per cent., the "good" results about 90 per cent. Gastro-jejunal ulcer occurred more often than the figures appear to indicate; for I think it is certain that in many cases, if not in all, in which severe pain (6 per cent.) or haemorrhage (2.4 per cent.) was present after the short-circuiting operation, an ulcer was the cause; the ulcer may have been the old ulcer, a new one near to it, or at the anastomosis. If this is so the incidence of gastro-jejunal ulcer would appear to have been almost 10 per cent.; a figure which Hurst and Stewart would probably regard as too low, which I regard as far too high. Some of the causes of death were preventable. Nowadays we should hear nothing of "shock" as a cause of mortality in such operations as gastro-enterostomy. When surgeons consistently spend as much care over the preliminaries of operation as over the operation itself; when, that is to say, a patient is adequately prepared for operation by such measures as transfusion of blood, administration of glucose, dental toilet, and so forth, "shock" will surely not occur. The mere craft of surgery has, I think, almost reached its limits, few operations can be conceived that have not already been practised, few organs remain aloof from surgical interest, no great improvement will occur either in technical methods or in immediate and remote results. If ulcer of the duodenum, and ulcer or cancer of the stomach, for example, are to be treated by operation, it is not possible to obtain much better results than are within our reach to-day. We may learn to avoid operation by checking the development of these diseases, or we may

[1] *British Medical Journal*, December 7th and 14th, 1929, and February 22nd, 1930.

find other ways of treating them when developed, but the craft of surgery in itself can do little more for us. In the most practised hands the mortality of operations in cases of duodenal ulcer, for example, is well below 1 per cent., and there is not much room for improvement there. What can be done, however, is to bring average results up to the best by adopting the methods of the most successful surgeons, and these are concerned not so much with dexterity, rapidity, or any magical manipulative skill, as with simple unremitting care, before, during, and after operation.

Medical treatment subsequent to operation was necessary in 4.5 per cent. of cases. It should be a matter of routine in all cases. In my own practice I give to every patient after operation two printed papers, one indicating the ordinary daily diet, the other the foods or the conditions to be avoided; charts of abstinence and of indulgence. Such precautions are really necessary, for otherwise patients, feeling better than they have done perhaps for years, are a little prone to be reckless, and tobacco is hardly recognized as an enemy.

The final report of cases of *gastric ulcer* shows that our general opinions, based upon post-mortem knowledge and the experience of the operation room, are well founded. Ulcers of the stomach were found oftenest upon the lesser curvature; ulcers near the pylorus were comparatively rare. Hyperchlorhydria was found in 40 per cent. of cases; and a low acidity in over 50 per cent. The old view promulgated in days not long past when gastric ulcer was confused with duodenal ulcer, that hyperchlorhydria was an almost invariable, and probably causative, condition in cases of gastric ulcer is shown once again to be unfounded.

The operations preferred by the contributors to this series of reports are not always those upon which many surgeons are now accustomed to rely.

Posterior gastro-enterostomy alone was performed in nearly 50 per cent. of cases, and gave only 50 per cent. of good results. I am a little surprised that the results were even so satisfactory. It is approximately twenty years since I abandoned the operation of gastro-enterostomy for gastric ulcers, unless distal to the position of the suggested new opening, or there were grave reasons forbidding gastrectomy; such reasons, as a matter of experience, are infrequent. My friend Mr. Herbert J. Paterson has never quite agreed with me upon this matter. He still contents himself with the short-circuiting operation. I have found the operation of gastrectomy for gastric ulcer to be far more satisfactory, and very safe; I have yet to meet a case in which the ultimate result was disappointing; and secondary operations are almost unknown. The operation of gastrectomy has the advantage of difficulties. The grave disadvantages of gastro-enterostomy are not only its ineffectiveness in encouraging an ulcer to heal, as these statistics show once again, but also centre round the case of its performance; for a multitude of operations have been needlessly and crudely performed for a variety of diseases for which a short-circuiting operation is utterly unsuited. The consequence is that physicians and others who see these cases only, and fail to take into account the condition for which the operation was improperly undertaken, are apt, very wrongly of course, though perhaps naturally, to condemn the operation, merely as an operation. The condemnation should reach, not the operation, but the operator, for experience shows, beyond cavil, that, judiciously applied and skilfully performed, there is perhaps no major operation whose admirable results, early and late, surpass those of gastro-enterostomy. Gastro-enterostomy alone as applied to gastric ulcer is, however, not satisfactory; the ulcer itself must always be treated, wherever it lies. It is made clear by this investigation that the immediate results of gastro-enterostomy, for both gastric and duodenal ulcers, are better if the ulcer is directly treated. The following tables show this:

	Duodenal Ulcers.	Pyloric Ulcers (mostly Duodenal).	Gastric Ulcers.
Posterior gastro-enterostomy with removal or infolding of ulcer. Post-operative mortality (percentage).	1.8	1.3	4.6
Posterior gastro-enterostomy without interference with ulcer. Post-operative mortality (percentage).	5.7	2.5	11.4

The advantages of the operation when combined with removal or infolding of the ulcer are also remarkably demonstrated by the number of "very good" results obtained. These results show the number of patients restored to full health, able to take any kind of food over periods of some years, and able to resume full work.

	Duodenal Ulcers.	Pyloric Ulcers (mostly Duodenal).	Gastric Ulcers.
Posterior gastro-enterostomy with removal or infolding of ulcer. Percentage of very good results.	81.2	72.4	91.7
Posterior gastro-enterostomy without interference with ulcer. Percentage of very good results.	64.5	44.7	50.9

Nevertheless too much reliance must not be placed upon these figures; for a difference in the skill and competence of the surgeons concerned in the treatment of each group may be enough to account for differences in the figures. There are, so far as my direct observation goes, few surgeons of wide experience who do not deal directly with an ulcer wherever it may lie, and these are the very men who might be expected to ensure the best results.

The operation of gastro-enterostomy alone should therefore in my judgement no longer be considered adequate in any form of peptic ulcer. In cases of ulcer of the stomach it may be combined with the cauterization of the ulcer (Balfour's method) or with excision of the ulcer. Mr. A. J. Walton, a most expert and accomplished surgeon, prefers the latter method, which in his nimble hands shows a low mortality and a high proportion of good results. The operation has the advantage of conserving a large part of the stomach, and in this series gave over 80 per cent. of "very good" results with a post-operative mortality of 4.6 per cent. It is interesting to observe that partial gastrectomy, performed in 101 cases, had a mortality of 6 per cent., and the "very good" results are only 63.6 per cent. This is quite contrary to my own experience, which in numbers greatly exceeds the total here investigated. I am whole-heartedly in favour of gastrectomy when the operator can confidently expect a mortality hardly greater than that of gastro-enterostomy.

Gastro-jejunal ulceration occurred in three cases in which it was recognized and treated by further operation, and probably in other cases when severe pain and haemorrhage were present. The general mortality for all types of operation was almost 9 per cent., which is higher than it should be. No case of ulcer leading to cancer was observed in this series. Medical treatment was found to be necessary after operation in "several" cases.

The report concludes with the cases of hour-glass stomach. It is interesting to me to observe that 65 cases are analysed: for when long ago I wrote the first surgical paper on this subject I could find in all the literature, and upon museum shelves, evidence of only 40 cases

recognized by previous observers. Gastric ulcer was found to be twice as frequent in males as in females; yet hour-glass stomach was five times as frequent in females. Partial gastrectomy was the operation selected in one-half the cases. An operation which in the absence of pyloric stenosis has served me extremely well, gastro-enterostomy, was not performed. The general mortality, 12.3 per cent., is high. Good results followed operation in 90 per cent. of the survivors. No case of ulcus carcinomatosum was observed.

Dr. Luff has taken great pains to tabulate all the information placed at his disposal, and the solid success of his labours is evident to all. In surgery, however, there are influences beyond the reach of tabulation, and individual rather than collective opinions will surely continue to control our thoughts and actions.

May I express the thanks and convey the congratulations of all members of our Association to Dr. Luff, and suggest to him that a similar investigation as to the results of medical treatment for these conditions might well prove informative.

MATERNAL AND CHILD WELFARE IN AUSTRALIA.

DAME JANET CAMPBELL'S REPORT.

THE trend of the statistics relating to maternal mortality in Australia, as shown in Dame Janet Campbell's report,[1] to which we made brief reference in our issue of February 22nd (p. 346), is in striking contrast with that of the statistics relating to the mortality of infants under 1 year—a state of affairs which is paralleled very closely in our own country. Almost stationary between 1911 and 1922, since 1922 the maternal mortality has risen steadily and almost without interruption in every State in the Commonwealth, the rate in 1928 reaching the disquieting figure of 5.98 per 1,000; yet, during the same period the death rate of children under 1 year per 1,000 live births has fallen almost steadily, reaching in 1928 the lowest level yet recorded—namely, 52.96. It may be suggested that the tendency of the maternal death rate to rise is only apparent, and attributable to the increasing accuracy in recording the exact causes of death; or that the explanation lies in the rising proportion of first births associated with a declining birth rate. From the immediate and practical point of view such possible inaccuracies may be disregarded, and the fact must be faced that in Australia, as here, there is an increasing maternal death rate, in spite of improving standards of hygiene and the advance of modern medicine.

Maternal Mortality.

In analysing the causes of maternal mortality during 1919-28, Dame Janet Campbell found that an unduly large proportion of deaths might have been avoided if circumstances had been more favourable; thus, whereas in England and Wales during this period only one-tenth of maternal deaths were due to accidents of pregnancy, including abortion, in Australia deaths from this cause numbered about one-seventh of the total. The incidence of fatal abortion appears to be higher in Australia than it is here, though how far this state of affairs is due to natural causes and how far to criminal interference is a question that cannot be answered in the light of available data. Of the other causes of maternal mortality, puerperal sepsis—the most important—accounted for nearly one-third of the deaths at the time of childbirth. Toxaemia accounted for rather more than one-fifth, haemorrhage for about one-eighth, and accidents of childbirth, chiefly due to difficult labour, for about one-tenth. These figures are far from representing the total toll of childbirth; for every woman who dies as the result of child-bearing many others are injured more or less seriously, and there is no way of measuring accurately the extent, or the social or domestic effects, of maternal morbidity. Furthermore, a high maternal mortality and morbidity involves the loss of many infant lives from causes which kill or maim the mother, the maternal mortality rate indeed being so intimately associated with the neo-natal death rate that measures which are successful in reducing the former will, Dame Janet Campbell believes, assuredly also lead to a reduction of the later.

Infant Mortality.

The tables representing the infant mortality during the period 1901-28 reveal a very different picture. At the beginning of the century the infant death rate in Australia was 96 per 1,000 live births; in 1928 it was 52. The decline affects chiefly infants in the 1–12 months period, whose mortality rate has been reduced from an average of 63 in the first five years of the century to 24 in 1928. In the same period the death rate of infants under 1 month has fallen very little, and the death rate of infants in the first few days of life has even shown a slight tendency to rise. Some such figures are what one might have expected. Deaths during the first week are due to obstetric and developmental rather than to pediatric causes, and measures which are successful in reducing mortality after the first month have but little effect in protecting the younger babies. A relatively high maternal death rate is always likely to be associated with a correspondingly high neo-natal death rate.

There is no registration of stillbirths in the Commonwealth, but from information obtained through the maternity allowance returns it appears that the stillbirth rate averages about 30 per 1,000 live births and remains fairly constant. This rate corresponds closely with that shown in the English returns, which, until 1927, when the registration of stillbirths came into force, averaged fairly constantly 30 to 33 per 1,000 live births. Some of these deaths are, of course, unavoidable—those, for example, due to congenital defects—but a reduction of stillbirths and of neo-natal deaths might be expected to result from improved maternal hygiene and more efficient care of the premature, delicate, or debilitated baby during the early weeks of life.

Facilities for Infant and Child Welfare.

The practical problems of maternal and child welfare in Australia are complicated by the fact that throughout the Commonwealth there are great, sparsely inhabited districts, where communities may be widely separated from one another and the standard of convenience is very different from that in the towns. To some extent these problems are being met by various voluntary agencies, and for most of their activities official support is now available. In every State there are a number of infant welfare centres staffed by qualified nurses, who also visit in the homes. These centres resemble private clinics, and are very different from some of the busy municipal centres in this country. They are attended by women of all social classes, there being no sharp dividing line of poverty to separate Australian mothers into different groups. On the other hand, medical control is more or less perfunctory, largely, suggests Dame Janet Campbell, because most of the mothers have their own family doctor, to whom the baby is taken in case of illness, in part to emphasize the fact that the centres have a strictly limited function and are not concerned with the cure of disease.

As in England, there is an unfortunate gap between the time when the infant ceases to attend the centre and its admission to school, when it comes within the care of the school medical service. In an endeavour to bridge this gap various voluntary agencies, operating in the larger cities, have established day nurseries and free kindergartens; but though most of these receive Government recognition and financial aid, they are quite inadequate to cope with the problem as a whole.

Maternal Welfare.

Practically all maternity hospitals in large centres have ante-natal clinics attached to them, but on the whole facilities for systematic supervision of pregnancy are inadequate: thus, ante-natal work has scarcely developed at all in connexion with infant welfare centres, and only here and there has an ante-natal clinic been started

[1] Report on Maternal and Child Welfare in Australia. By Dame Janet M. Campbell, D.B.E., M.D., M.S., Senior Medical Officer for Maternity and Child Welfare, Ministry of Health, London. H. J. Green, Government Printer, Canberra, Australia.

experimentally to see whether it will prove popular with the women. The provision of maternity beds seems good; many maternity hospitals in the larger centres have made, or are undergoing, alteration, with a view to meeting modern requirements more adequately; new maternity wards have been added to the general hospitals in country districts, bush nursing hospitals are being provided in districts too sparsely populated to support larger institutions, and it seems as if the supply of accessible maternity beds will keep pace with the demand for in-patient accommodation.

Bush nursing associations exist in all States, except South Australia, for the purpose of providing medical, nursing, and domestic help for women in isolated districts. The nurses are fully trained, and possess a midwifery certificate, in addition to which they are now encouraged to obtain a certificate in mothercraft. Dame Janet Campbell makes special mention of the admirable work of the Australian Inland Mission, under the auspices of the Presbyterian Church, which has organized nursing and medical aid in some almost inaccessible districts, and has now twelve well-equipped stations in the interior.

Suggestions for Future Action.

From her review of the present position in Australia the author concludes that the time has arrived when effective development depends on securing an agreed policy, in order that the work as a whole may be rendered efficient, scientific, and not unduly dependent on the good will and generosity of individuals; above all, that it should take its proper place in organic relation with other branches of public health work. At the forefront of her proposals she puts improved professional education in midwifery and infant hygiene, pointing to the action of the Universities of Sydney and Melbourne in creating professorships in obstetrics as an indication of the increased importance now being attached to midwifery and as a first step towards much-needed reforms in the curriculum. The real difficulty is the provision of adequate facilities for clinical study, and Dame Janet Campbell suggests that if, in any training institution attached to a medical school, there is not sufficient opportunity for the proper teaching of both medical students and midwives, the students should always have preference, and midwifery pupils should not be accepted until the requirements of the students can be adequately satisfied. Provision of post-graduate instruction is recommended as a means of encouraging older and more isolated practitioners to realize the advantage of systematic ante-natal supervision and of co-operating with any scheme for maternal and infant welfare which may be in operation in their districts. While it is desirable in the training of midwives to use maternity institutions as extensively as possible, it is recognized to be of greater advantage to train a small number of midwives efficiently than to allow certification after instruction which falls below the minimum requirements. Training in mothercraft, now looked upon in Australia as an essential qualification for all infant welfare nurses, should, in Dame Janet Campbell's view, receive full official recognition and support. To secure a uniformly high tradition and standard of instruction it would be as well to lay down general regulations to which all approved mothercraft schools should be expected to conform; for example, that the whole of the course should be under medical direction and control, and that the accommodation, facilities for teaching, qualifications and equipment of the staff, length of the training period, and so forth, must reach a certain minimum standard.

A further group of recommendations is concerned with modifications in legislation and administrative machinery, whereby the data essential to a correct understanding of the problem under review might be more accurately collected, and the work of child welfare organizations and maternal welfare schemes facilitated and improved. These recommendations cover the institution of a uniform system for recording maternal deaths, registration of stillbirths, and notification of births throughout the Commonwealth, and the revision of the arrangements for the notification, prevention, and control of puerperal sepsis. A certain amount of puerperal sepsis occurs in connexion with septic abortion, much of which is said to be self-induced; this is a matter which would repay investigation, not only in order to ascertain the extent of the mischief, but, if possible, to control it.

Having outlined the main requirements of an effective maternity service, taking in pre-natal supervision, the confinement, domiciliary and institutional midwifery, post-natal care and auxiliary assistance, and considered the problems facing the infant and child welfare services, Dame Janet Campbell proposes that, to meet the special conditions obtaining in the Commonwealth, a properly organized division of maternal, infant, and child welfare should be established in each State as a branch of the health department, under the control of a whole-time medical director, responsible to the chief medical officer of health. This division should be made responsible for the supervision of all matters concerned with the welfare of expectant and nursing mothers, and of children under school age as far as these can properly come within the scope of the State health department as part of the public health service. It is evident, from an examination of the activities now in being, that, whereas much valuable work has been accomplished in health education since the initiation of the welfare movement by voluntary agencies, a point has been reached at which the detachment of these activities from the practising medical profession, and from the official health agencies, is a serious handicap to further development and satisfactory results. The enlistment of voluntary agencies under the staff direction of the State health department has become essential to successful development of the maternal and child welfare service.

It is fully recognized that the organization suggested for each State is beyond the present resources of some States, and it was no doubt to meet difficulties of this kind that the Royal Commission on Health recommended that the Commonwealth Government should assume some degree of active responsibility; this the Government has already done in passing the Maternal Allowance Act of 1912, and no departure from established policy would seem to be involved in a more definite participation in the work of safeguarding maternal and infant health. A national centre is essential for, among other activities, the collection of information, the examination of problems on a national scale, the investigation of work done by the State authorities, and the encouragement of research. Dame Janet Campbell suggests that the establishment of a division of maternal and child welfare as part of the Commonwealth Department of Health would be a step which the Government could most profitably take, and records as her considered opinion that a medical woman should be appointed director of the division, if one can be found with the necessary personality and qualifications. Further action of the Commonwealth Government, she proposes, should be in the direction of granting subsidies, properly conditioned and adequately supervised, towards the extension and improvement of the work for maternal, infant, and child hygiene, and the encouragement and subsidizing of research into various aspects of such activities.

Scotland.

Elsie Inglis Memorial Hospital.

THE completed Elsie Inglis Memorial Maternity Hospital and Nurses' Home, Edinburgh, was formally opened on February 28th by Mr. William Adamson, Secretary of State for Scotland. Lord Provost Whitson, who presided, congratulated the executive committee of the hospital on the successful completion of its work. Mr. Adamson said that the Queen desired him to convey an assurance of her keen interest in the welfare of that hospital. Its work had been developed by women, and its staff consisted entirely of women. The hospital was accessible, and had a splendid outlook on the King's Park on the south. In referring to maternal mortality, Mr. Adamson said that the sixty beds provided by the hospital and its fifteen ante-natal beds formed an important contribution to the solution of this problem, which was a very urgent one in Edinburgh. Many more beds, however, were urgently required, and he hoped that the corporation of Edinburgh and the parish council would find adequate accommodation until more permanent provision could be made. The present hospital,

he added, was a worthy memorial to the woman who was the first to provide maternity care for working-class women in Edinburgh in the hospice in the High Street. Miss Chadburn, M.D., of London, said that she represented the London hospitals, where about 400 beds, distributed among five hospitals, were under the charge of women. These 400 beds required a working income of £60,000 per annum. After the opening ceremony a dinner was held in the Caledonian Hotel, Edinburgh, at which Mrs. Whitson, the Lady Provost, presided. "The Success of the Elsie Inglis Maternity Memorial Hospital" was proposed by Dr. Jane Walker. In proposing the toast of "Sister Hospitals," Dr. Joan Rose referred to the Elsie Inglis Memorial Hospital at Belgrade, where she said those who had served with the Scottish Women's Hospitals in the war were still remembered.

Milk and Nutrition.

At a meeting of the Scottish National Milk and Health Association, held in Glasgow on February 21st, Mr. W. J. Harvey, treasurer of Edinburgh, who presided, referred to the large-scale experiment which had just been inaugurated in Lanarkshire in feeding school children with milk (*British Medical Journal*, February 22nd, p. 357). The experiment, he said, was the result of two similar experiments that were undertaken several years ago by that association. There was still much prejudice against milk, particularly as a food for adults. The association had the support of the medical profession and the local authorities, and the milk industry should utilize this opportunity for more intensive propaganda. Dr. Gerald Leighton of the Department of Health for Scotland said that investigations had originally been carried out with 1,000 children, but this number was not regarded by statisticians as sufficient to warrant generalizations of any significance. He hoped that, as the result of the present experiment with 20,000 children, they would be able by this time next year to advocate a policy of giving children as much milk as they could digest. Mr. A. W. Hunter, referring to the testing of cows, said that the farmers complained that the authorities would not lay down a definite test; tests differed in various counties. Responsibility for clean milk rested primarily with the farmer, but he thought that local authorities themselves should observe the regulations more strictly.

In the annual report of the education authority of Glasgow, submitted at the statutory meeting on February 20th, reference was made to an investigation upon the nutritive value of milk which had been carried out in Glasgow. During the first year of the experiment children receiving milk had shown an increase of 21 per cent. in height and weight over those receiving biscuit, while in the second year the increase in height had been 23 per cent. and in weight 45 per cent. This investigation had emphasized the value of separated milk, which, being cheap, could be added with advantage to the diet of growing children where fats, such as butter or margarine, were otherwise sufficient.

Edinburgh Hospital for Crippled Children.

The Hospital for Crippled Children at Fairmilehead, Edinburgh, whose foundation stone was laid by H.R.H. the Duchess of York last October, is advertising for a surgeon. It has been arranged between the committee of the hospital and the University of Edinburgh that a university lectureship in orthopaedics will be associated with this appointment. A small committee, consisting of three members appointed by the hospital and two by the university, will nominate a candidate for the joint position. The salary will be £1,000 per annum, and the surgeon appointed will probably be required to confine his private practice to orthopaedic surgery. It is not expected that the hospital will be opened until 1932, but the appointment is being made now so that the advice of the successful candidate may be available in regard to details of construction and the arrangement of the work affecting the major and minor clinics which are to be established in the South-East of Scotland. A sum of nearly £60,000 has been subscribed towards the £75,000 required to complete the hospital, which will deal with orthopaedic work not only in Edinburgh but in the counties of the Lothians, Peebles, Selkirk, Roxburgh, Berwick, and the western half of Fifeshire. About seventy-five beds will be provided at first. Particulars of the appointment may be obtained from the honorary secretary, Edinburgh Hospital for Crippled Children, 5, Hill Street, Edinburgh.

Relief of Incurables in Glasgow.

At the annual meeting of the Association for the Relief of Incurables in Glasgow and the West of Scotland, on February 26th, Lord Provost Kelly, who presided, said that 354 patients had been cared for by the association last year. Of these, 145 were in Broomhill Home, 75 at Lanfine Hospital for Consumptives, and 144 had been treated as outdoor patients. In Broomhill Home, at the end of 1929, there were 23 patients with an average residence of over twenty-two years, and 23 with an average of fourteen and a half years. An appeal was now being made for contributions to extend this home. These institutions, in being both homes and hospitals, were unlike any other charitable institutions in the district. Referring to their financial position, the Lord Provost said that the contributions of the employees during the past year had never been exceeded. The contribution of the Ladies' Auxiliary, amounting to £2,379, was also a record.

Red Cross Work in Edinburgh.

The annual meeting of the Edinburgh Red Cross Committee, held in the City Chambers, Edinburgh, on February 25th, was presided over by Lord Provost Whitson. The report showed a satisfactory financial position. During 1929 many books, magazines, and gramophone records were received and distributed to military and civilian hospitals in Edinburgh and Midlothian. The emergency help scheme, inaugurated in 1921 to assist ex-service men, had been maintained; and assistance was given in 28 cases at an expenditure of £116. The strength of the Edinburgh Voluntary Aid Detachments was 125 mobile members and 135 immobile members, an increase of 18 in the number of mobile members. At a hospital organized for the 156th Infantry Brigade at Riccarton for a fortnight in July, 1929, 20 in-patients and 476 out-patients had been treated. Arrangements have been made for a V.A.D. camp to be held this summer at Gosford House, Aberlady. In referring to the high efficiency of the Edinburgh Voluntary Aid Detachments, Colonel Wood, D.D.M.S., Scottish Command, remarked that the percentage of mobile members in Edinburgh was the highest in Great Britain.

Neurology and Surgery.

Sir Charles Ballance delivered a lecture in Glasgow University (under the Macewen Memorial Foundation) on February 28th, on "The dawn and epic of neurology and surgery." Principal Rait presided. In paying tribute to Sir William Macewen's exceptional judgement, the lecturer said that the pathological investigation pursued during the first seventy years of last century had laid the foundation of the more perfect clinical diagnosis of the present day, and rendered advances in surgery possible. A neurological surgeon must be a trained physiologist before he began to operate on the nervous system. Surgery and medicine owed as much to-day to the experimental method as to the discoveries of anaesthesia and of the microbic origin of disease. It was difficult for those who had recently joined the profession to realize how surgery was paralysed sixty years ago by the presence of sepsis, tetanus, hospital gangrene, and other wound diseases, for which no means of prevention had been discovered. The lecturer remarked that the most glorious period in the history of surgery had occurred during his own lifetime. The art and science of surgery was still progressing.

Post Office Medical Officership.

At a social gathering in the General Post Office, Edinburgh, Dr. K. M. Douglas, who had been medical officer to the Post Office there for forty-two years, was presented with a wireless set. Mr. James Munnoch, controller, who presided, said that Dr. Douglas had succeeded his father as medical officer, so that the combined service of father and son extended over seventy years. On Dr. Douglas's retirement a short time ago, four medical officers were appointed for the postal service in different parts of the city.

England and Wales.

Voluntary Hospital Representation for London.

THE scheme for voluntary hospital representation in the County of London for the purposes of Section 13 of the Local Government Act has been accepted by the Central Public Health Committee of the London County Council. This scheme, which is put forward by the King Edward's Hospital Fund for London, the Conference of Teaching Hospitals, and the London Regional Committee of the British Hospitals Association, rests on the basis that each hospital shall nominate its own representatives on electoral bodies and committees, by whom a central committee of forty shall be elected. The Central Public Health Committee states that certain points which it had raised have been satisfactorily met in the scheme. One of these points was that, for the purpose of consultations between representatives of the Council and of the voluntary hospitals, the committee of forty should nominate not more than five or six representatives to express their views, and this has been promised. The Central Public Health Committee is satisfied that the new scheme secures adequately the representation of voluntary hospitals contemplated by Section 13.

Central Association for Mental Welfare.

The fifteenth report of the Central Association for Mental Welfare (24, Buckingham Palace Road, S.W.1) places in the forefront a note of gratitude to its president and chairman of executive, Sir Leslie Scott, for his real and practical help in carrying through negotiations with the late Minister of Health, ensuring the position of mental welfare work under the Local Government Act. The hope is expressed that that great measure will have a most far-reaching influence in securing the continuity of care and control over defectives which has long been earnestly desired by all concerned with their welfare. The unification of public health services under one authority, the definite recognition that public health includes mental as well as physical health, and the further recognition of the important part played by voluntary societies in the sphere of public health, are all felt to be factors which should lead to a great expansion in mental welfare work in the near future. The report contains particulars of the development of the work in new areas; local mental welfare associations have been started during the year under review in Sunderland, Darlington, Leicestershire, Oxfordshire, and Bournemouth. The report also describes the considerable educational work which is being carried out, including the organization of training courses in mental welfare work for teachers, medical officers, and others. Occupation and handicraft centres are rapidly increasing as a result of the Mental Deficiency Act, 1927, by which local authorities are bound to provide training for defectives under supervision. The reports of the local associations which are appended to the report of the central body show what great extension is proceeding in this respect. The important work of the case department is one which cannot be tabulated in figures, although an attempt is made to do so. The main work consists in advising local authorities, parents, and friends of facilities for treatment and training, and as to procedure. The Middlesex County Council has agreed to pay a block grant of £2,094 per annum to the association for the organization of occupation centres and home teaching in the county.

District Nursing in London.

An important period of adjustment is foreshadowed in the fifteenth annual report of the Central Council for District Nursing in London, in consequence of the operation, in April next, of the Local Government Act of 1929. This Act will have far-reaching effects on district nursing, by transferring the duties of the boards of guardians to the London County Council. In the London area extensive changes have occurred during the year. Owing to serious financial difficulties, the work of the St. Pancras District Nursing Association has been taken over by the Metropolitan Association, which has established a branch home with five resident nurses in the district. Nursing arrangements have also been systematized in several other districts, and new associations employing Queen's nurses have been started in Middlesex for Stanwell and Northolt, both on a provident basis. The total awards made to district nursing associations in 1929 amounted to £4,412, which included £750 from the reserve funds of the council. In addition to the £3,000 entrusted to the council by the trustees of the London Parochial Charities, £400 was also given by the trustees for the administrative work of the council, and £200 was granted for bursaries. Contributions were also received from the Society of Apothecaries, the Companies of Armourers and Braziers, and Ironmongers, and from the Grimthorpe, Samuel Lewis, Peabody, and Guinness trustees. A new *Supplement* of the *Directory of District Nursing* has been published, incorporating the issue of 1927 and the subsequent changes that have taken place.

University of London Medical Graduates Society.

The first meeting and dinner of medical graduates of the University of London resident in Manchester and district was held on February 28th, at the Midland Hotel, Manchester. Sir StClair Thomson, president of the University of London Medical Graduates Society, was in the chair, and among those present were Mr. W. McAdam Eccles (honorary treasurer), Dr. Dorothy C. Hare (joint honorary secretary), Dr. R. H. B. Adamson, Mr. William Billington, Dr. J. W. Bride, Dr. E. Vipont Brown, Dr. A. W. Berry, Mr. J. G. Clegg, Dr. M. M. Collins, Dr. T. A. Goodfellow, Dr. F. A. Hogben, Dr. J. C. Jefferson, Dr. R. E. Lane, Dr. G. J. Langley, Dr. P. G. McEvedy, Dr. J. Ramsay, Mr. J. H. Watson, and Mr. Harry Platt (acting local honorary secretary). There were also present as guests Professor A. H. Burgess, President of the British Medical Association, Professor H. S. Raper, Professor A. Ramsbottom, Professor E. D. Telford, and Dr. Catherine Chisholm. After "The Health of the King" had been honoured, Sir StClair Thomson proposed the toast of "Prosperity to the Society," observing that, though not yet two years old, the membership was rapidly increasing, 120 new life members having been enrolled during the year 1929, and 25 since January 1st, 1930. Mr. Harry Platt followed, saying how greatly honoured Manchester was by having a dinner of the society in that city. Mr. McAdam Eccles proposed the toast of "The Guests," which was responded to by Professor Burgess. A very pleasant evening ended with a conversazione, when old friendships were renewed and fresh ones made.

Maudsley Hospital.

The second part of the thirteenth course of post-graduate instruction at the Maudsley Hospital, Denmark Hill, has now started, and will continue until the end of May. A series of six lectures on the practical aspect of mental deficiency, by Dr. F. C. Shrubsall on successive Tuesday afternoons, began on March 4th, and the first of a series of twelve clinical demonstrations in neurology, by Dr. Golla on Thursday afternoons, was held on March 6th. The first six of these demonstrations are being given by Dr. Golla at the Hospital for Paralysis and Epilepsy, Maida Vale, and the second six, by Dr. F. M. R. Walshe, will take place at the National Hospital for Paralysis, Queen Square. Twelve lectures on morbid psychology will be given by Dr. Edward Mapother, medical superintendent of the Maudsley Hospital, on Wednesday afternoons, from March 12th, and three lectures on therapeutics, by Dr. A. A. W. Petrie, on Tuesday afternoons, commencing March 25th. Two lectures on abnormalities of the fundus oculi will be given by Mr. Foster Moore, on April 14th and 28th, and there will be six lectures on crime and insanity, by Dr. W. Norwood East, on Tuesday afternoons, beginning on April 15th. Six demonstrations in clinical psychiatry will be given by Dr. Edward Mapother on Wednesday afternoons, from April 30th. During May there will be eight lectures on the psychoneuroses, by Dr. Bernard Hart; four lectures by Sir Hubert Bond, on the legal relationships of insanity and treatment; two demonstrations in laboratory methods, by Mr. S. A. Mann; and four lectures, by Dr. Golla, on the pathology of mental diseases, followed by demonstrations of the pathology of

the central nervous system, by Mr. C. Geary. The fee for this part of the course is ten guineas, and inquiries should be addressed to the director of the Central Pathological Laboratory, Maudsley Hospital, Denmark Hill, S.E.5.

London Ambulance Service.

The ambulance services which have been controlled by [illegible] as Board and by the various [illegible]me under the direction of the [illegible] on April 1st. These services, together with the London County Council accident service (hitherto administered by the Fire Brigade Committee), will all be under the Central Public Health Committee of the Council, and will be known as the "London Ambulance Service." The service will consist of two sections, one the "Accident Section" and the other the "General Ambulance Section," the latter comprising the amalgamated ambulances of the Metropolitan Asylums Board and the boards of guardians. The fleet of guardians' ambulances comprises 46 vehicles, which it is considered may be reduced to 30. There will be one central call office for both sections, where priority will be given to accident cases.

Ireland.

Orthopaedic Hospital of Ireland.

AT the annual meeting, in Dublin, of the Orthopaedic Hospital of Ireland, Lord Glenavy presiding, the report for 1929 showed that the number of crippled and deformed children treated during the year was 1,666, of whom 1,460 attended the dispensary and gymnasium and 206 were in-patients. The daily average number of in-patients was 71, the highest figure recorded. The out-patient department continued to increase in size and usefulness; many children were cured by manipulation and plaster appliances. Modern equipment was being used in the gymnasium, including an artificial sunlight lamp for tuberculous bone disease and rickets. In moving the adoption of the report His Excellency the Governor-General remarked that the hospital had been treating deformed children for more than half a century. An effort was being made to provide an open-air extension outside the city, and the fund for this purpose was steadily increasing. He appealed for support in establishing a country home for the hospital. Dr. M. J. Russell, medical officer of health for Dublin City, said that, in spite of all the houses that had been built in and around Dublin, there were more insanitary rooms and dwellings in that city to-day than ever before. Wealthy employers should be asked to build more houses for their employees in order to relieve the municipality.

Free State Census Returns.

According to a report of the *Census of the Irish Free State*, 1926, volume v, the birth rate was normal compared with that of twenty-six countries; the number of children under 15 years of age was also normal, but there was an extraordinary number of orphans and widows, although marriages were comparatively fewer. In spite of larger families the Saorstat appeared exactly half-way down the list of twenty-seven countries as regards the number of children under 15, estimating per 100 of the population between the ages of 15 and 65. Later marriages explained the comparatively higher death rates among parents of young children. Fatherless children exceeded motherless by about 13,000. The proportion of motherless children was greater in the country than in the towns, the reasons being presumably that mothers were older in the country, and fewer motherless children were sent to town orphanages. Low death rates of elderly females and late marriages among males accounted for the large number of widows. In 1926, for every 1,000 of the population between the ages of 15 and 65 there were 74 widows, compared with 65 in England and Wales. The number of persons of 65 and over was also higher—63 per cent. higher than in England and Wales, twice as high as in the United States and Australia, and nearly three times as high as in South Africa. Old age pension schemes were a heavier burden than in any other country.

India.

Child Welfare in the Central Provinces and Berar.

THE immensity of the problem of decreasing the mortality of children in the Central Provinces and Berar is indicated by the fact that nearly one-third of the total mortality of this district in 1928 was due to infants dying under the age of 1 year. This infant death rate of over 238 per 1,000 births was again higher than that in any other province in India. Strenuous efforts are being made to induce a better state of things, and in the annual report for 1928 Major C. M. Ganapathy, I.M.S., director of public health for the Central Provinces, mentions that fourteen new infant welfare centres were established, bringing the total of these institutions to thirty-five at the end of that year; the establishment of additional ones is contemplated. A nursery school was opened in Nagpur to continue the care of children from infancy until the school-going age, and to maintain continuous health supervision. At some of the infant centres arrangements are in force for training native midwives, who are paid for attending the classes; they subsequently enter for examinations, on passing which they are registered and receive certificates. In the year under review eighty-eight midwives were being so trained, and it is hoped that the scheme will extend considerably. Ante-natal clinics have been instituted in the centres wherever medical supervision can be obtained. In order to meet the demand for trained health visitors to take charge of these centres a well-equipped health school under medical control was opened in August, 1928. Health propaganda work was continued throughout the year, and baby weeks were organized in several towns. A large number of municipal committees gave financial and other support to women engaged in conducting labour cases and visiting houses where children had been born. Important factors in infant mortality are recognized as being ill-informed interference by untrained midwives and the lack of proper post-natal care; it is believed that the preventive measures being taken will soon make their influence felt.

The Extension of Medical Treatment in Madras.

A triennial report of the working of the civil hospitals and dispensaries in the Presidency of Madras has been received, covering the years 1926, 1927, and 1928; attention is drawn in it to the considerable progress that has been made in the scheme of subsidizing medical relief in certain rural areas which were out of the reach of existing hospitals and dispensaries, and so had no provision for medical aid, the inhabitants being dependent upon unqualified village doctors and quacks for treatment. In 1925 the Government sanctioned the establishment of 235 rural dispensaries, and 164 additional ones were opened during the period under review. District medical officers inspect these dispensaries periodically and report any defects in their working. The scheme for the training of dhais (native midwives), which was devised to reform the uncleanly and dangerous methods of barber-midwives practising [illegible] has been another noteworthy feature of the [illegible] tioned in 1926, it has enabled fifty-eight dhais to be trained and certified, and arrangements are now being made for the employment of first-class midwives in rural dispensaries, so as to abolish the deplorable conditions which have hitherto attended the confinements of women in these rural areas. The subsidy originally granted to the rural medical practitioners who were appointed to conduct this dispensary work was found to be inadequate, and several dispensaries had to be closed. Their financial support has now been increased, and it is probable that the scheme will be extended before long and considerably improved. The Government has decided to introduce compulsory medical examination in the case of all pupils studying in recognized secondary schools and school departments, and to remodel the present hospital in Madras; details of what has been accomplished already in this respect appeared in the *Journal* of January 25th (p. 168). Antirabic treatment has been extended, and provision made for dental treatment. Additional financial support has been given to leprosy institutions by the British Empire Leprosy Relief Association and the Govern-

ment. Numerous educational lectures, illustrated by lantern slides and cinematograph films, have been delivered in the Presidency, and pamphlets have been distributed dealing with hookworm infection and the dangers of soil pollution. Considerable improvements have resulted in tea, coffee, and rubber estates, but further work is still needed to bring their sanitary conditions up to the modern standard. Major-General J. W. D. Megaw, I.M.S., Surgeon General to the Government of Madras, who compiled the report, expresses gratification at the steadily progressing development that is evident in many branches of medical work in the Presidency, but he is dissatisfied with the standard of efficiency in some of the hospitals, and doubts whether the utmost is being made of what facilities are available. He urges that more attention should be paid to improving the existing institutions, in view of the large sums which are being spent on medical relief and education.

In his report of the King Institute of Preventive Medicine, Guindy, Madras, for the year ending March 31st, 1929, the director, Dr. C. G. Pandit, publishes an interesting table showing, in six specified districts where cholera was epidemic, the relation between the incidence of this infection in patients who had been inoculated previously by cholera vaccine, and those who had not been so treated. It is made clear that the adoption of this measure reduced the total number of attacks to nearly one-tenth in the inoculated, as compared with the remainder, the appropriate correction having been made in respect of the relative numbers treated in each group. Most of the deaths in inoculated patients were found to occur before the fifth day—in other words, before the maximum degree of protection had had time to develop. The figures indicate, therefore, that vaccine treatment gives an almost perfect immunity against cholera if use is made of it before infection occurs. Other vaccines issued by the Institute include influenza vaccine, but, in this case, the director reports that neither its value as a prophylactic nor as a curative measure has been convincingly demonstrated, and there has been a marked fall in its popularity. There has been a general increase in the demand for a puerperal vaccine composed of different strains of streptococci and *B. coli*. An extended trial of it at the Government Hospital for Women and Children gave very promising results, both as a prophylactic and as a curative, and requests for it are now being received from institutions outside the Presidency. Investigations have been conducted by the staff of the Institute in respect of various epidemics of cholera and typhoid fever.

Treatment of Leprosy in Burma.

The measures taken to deal with leprosy in Burma consist at present of treatment in voluntary leper asylums, Government wards attached to these asylums, and in outpatient departments. There are five leper asylums in Burma; two special leprosy clinics—one at Rangoon and another at Mönywa; a leper clinic at the latter place; and a skin clinic at Mandalay for the outdoor treatment of this disease. In his triennial report on the hospitals and dispensaries in Burma for the years 1926 to 1928, Colonel W. H. C. Forster, I.M.S., Inspector-General of Civil Hospitals, Burma, states that a Government committee has been reviewing the general policy to be adopted with regard to leprosy, and certain proposals have now been submitted. It is suggested that there should be a permanent official committee composed of the Inspector-General Civil Hospitals, the Director of Public Health, and the Director of the Pasteur Institute. Asylum segregation should be abandoned in favour of the creation of "propaganda treatment survey centres," further expenditure on asylum construction being discontinued. Treatment would be placed under the advisory control of this official committee. The Burma Pasteur Institute, which was opened in 1915, has among its other duties the task of supervising the treatment of leprosy in asylums, and has prepared, year by year, large quantities of hydnocarpus oil for this purpose. A few cases of this disease have been treated at the Institute, with the object of testing the material so prepared, and various new methods have been examined as they appeared. Alepol is now being made up in a solution suitable for injection and issued to asylums which have reported favourably on its use.

Correspondence.

CHOLECYSTITIS AND COLITIS.

SIR,—The paper on colitis by Dr. H. L. Tidy in the *Journal* of January 25th (p. 135) was most interesting. There is, however, a condition which I pointed out some years ago that is a provocative cause of mucous colitis—namely, chronic cholecystitis with or without gall-stones.

In making an analysis of our series of cases, we found that 20 per cent. had a history of mucus in the stools. Of these, 65.2 per cent. have been entirely relieved of their so-called mucous colitis by the removal of the gall-bladder.[1] The interesting thing that developed in connexion with this study was that in all these cases which showed a mucous colitis we cultured a staphylococcus from the wall of the gall-bladder.

Some years ago a patient, who had had a colostomy done by a London surgeon for the relief of colitis, presented herself some eighteen months afterwards in the hope of having the colostomy closed; but as mucus was still pouring, not only from the colostomy wound, but the rectum as well, and as there was evidence of a marked ulcerative colitis, I removed the gall-bladder on the chance that it might be one of these infected ones, as she showed some evidence of gall-bladder disease. The mucous colitis cleared up in three months, and then the colostomy was closed.—I am, etc.,

Toronto, Feb. 14th. F. N. G. STARR.

THE SIGMOIDOSCOPE IN COLITIS.

SIR,—The arguments for and against the use of the sigmoidoscope in conditions of colitis have interested me very greatly. This instrument has been used as a routine by us during the last eighteen months to assist in the elucidation of inflammatory conditions of the lower bowel, in both the acute and chronic stages of the disease. In a series of over 500 sigmoidoscopic examinations we have not seen any ill effects result from its use, either during its passage through the sphincter or on its further progress up the rectum and pelvic colon.

In Egypt, where symptoms of colitis may be produced by widely different causes, ranging from a bacillary dysentery infection to a bilharzial infiltration of the mucosa of the lower bowel, it is especially important to view the diseased area, a short visual examination often being sufficient to allow of an accurate diagnosis to be made of the etiological factor responsible for the symptoms of the colitis. It is a well-known fact that in bacillary dysentery it is often impossible by laboratory methods to isolate the specific organism after the first week or so of the onset of the disease. It is in such cases that we have found the assistance of the sigmoidoscope to be invaluable, the appearance of the lesions through the instrument being highly characteristic, and allowing accurate diagnosis in cases which otherwise would have remained unclassified.

In a series of cases of acute inflammation of the large gut recently investigated by us, laboratory examination failed to isolate the causative organism in 39.6 per cent., due to the patient's late arrival for treatment, most of them being admitted in the second week of the disease; yet in these laboratory negative patients typical bowel lesions of bacillary dysentery infection were seen through the sigmoidoscope in all except 7 per cent. This allowed us to commence treatment without further delay, confident that we were not dealing with some other specific bowel condition probably requiring an entirely different line of treatment. We have also obtained most valuable information about the progress of healing of various bowel lesions under different methods of treatment.

These facts not only justify the use of the sigmoidoscope, but make its employment an essential procedure in the routine examination of cases with symptoms indicating an inflammatory condition of the colon where the diagnosis is in doubt.—I am, etc.,

A. G. BIGGAM, M.D., M.R.C.P.,
Professor of Clinical Medicine, University of Egypt; Director of the Medical Unit, Kasr-el-Aini Hospital.

Cairo, Feb. 25th.

[1] *Canadian Medical Association Journal*, February, 1922.

THE APPLICATION OF GAMMA RADIATION TO DEEP-SEATED TUMOURS.

SIR,—In the application of gamma radiation to deep-seated tumours the use of two or more convergent beams so adjusted as to intersect within the tumour has been tried. I suggest in what follows a mode of application which appears to possess certain advantages, and which, so far as I know, has not hitherto been tried.

Only one beam is required, but this beam is caused to describe continually a conical path, the apex of the cone being within the tumour. Thus the radiations reaching the tumour are virtually focused in the tumour, in the sense that this becomes the *region of maximum radiation*. As the beam sweeps out its conical path its track where it traverses the surface of the body approximates to a circle of entry. The beam traverses this circle in one revolution. It follows that the risk of surface burns must be much less than if a fixed beam—or two or more such fixed beams—are employed. This reasoning applies also to risk of lesions within the body of the patient. In fact, the concentration is obviously a maximum within the tumour, and falls off rapidly in the surrounding tissues. The fact of continually changing inclination of the rays within the tumour might be expected to be in itself advantageous. Of course, the use of two or more such beams, suitably spaced around the cone of revolution, would be admissible.

A very simple mechanical arrangement will suffice to realize this mode of application of gamma radiation. The drive may be purely mechanical or electrical, and the whole apparatus carried on a suitable stand, combining steadiness with easy adjustment of the cone of radiation. It will be evident that the convergent rotating beam may be caused to describe any path called for by the extent and form of the tumour. A central rotating cam of the required form and dimensions would suffice for this purpose.—I am, etc.,

J. JOLY.

Radium Institute, Royal Dublin Society,
Feb. 24th.

MORTALITY FROM GASTRO-ENTEROSTOMY AND PARTIAL GASTRECTOMY.

SIR,—I feel I cannot let pass without comment the report of the collective investigation into the after-history of gastro-enterostomy published in your issue of February 22nd (p. 348). When this investigation was first suggested it appeared to many that the results were not likely to represent the true state of affairs as accurately as the records of hospitals with an adequate follow-through system, and, furthermore, there was every probability that the errors might be large enough to render the findings of the investigation totally misleading. We are not told what percentage of the results were obtained from such hospitals, but it is certain that many large groups of statistics were withheld on this account.

That these fears were not unfounded appears to be shown by the mortality figures in Table XXVI. Here the percentage of deaths from posterior gastro-enterostomy combined with local treatment of the ulcer is 4.6; from partial gastrectomy 6.0; from posterior gastro-enterostomy without interference with the ulcer 11.4. Now there are few surgeons with considerable experience of partial gastrectomy (even including those who do not limit the operation to the more extensive and severe cases) who would care to claim such a low figure, and yet these results are supposed to represent the average results which might be expected at the hands of the average operator. I believe the explanation can only be either that the method of investigation adopted has in some way produced an unconscious selection of results, or that in an undue proportion of the cases there were very limited resections, such as pylorectomies, performed by especially skilled operators. The 11.4 per cent. mortality for simple posterior gastro-enterostomy is, on the other hand, still more difficult to explain. Let us allow that this group includes a large number of cases in which the omission of local treatment was due, not to the routine of the surgeon concerned, but to the fact that the ulcers were particularly serious, of great extent, and inaccessible, and still a mortality of over 10 per cent. appears stupendous.

I can see no explanation of such a figure except as the result of the unconscious selection of cases already referred to. It is only natural that such selection would act in reverse ways when it came to the consideration of an extensive operation like partial gastrectomy, performed too frequently as a last resort, where a high mortality would be expected, and the comparatively simple gastro-enterostomy, where a fatality is unexpected, so that the occasional deaths attract an undue amount of attention and remain deeply impressed upon the memory of the doctor.

As an advocate of partial gastrectomy I should be gratified if I could convince myself that the figures given were even approximately correct. My own figures, published elsewhere, over a series of 150 of each type of operation are 8.5 per cent. for partial gastrectomy, and less than 1 per cent. for gastro-enterostomy, and they have of necessity made me a hesitating and half-hearted advocate of what I think otherwise is a thoroughly reliable operation. Discrepancies such as these obviously cannot be lightly passed over as errors of observation.

As a further example of the difficulty of interpreting the results of the investigation I would mention Table III of the interesting series of hour-glass contraction of the stomach. As I understand this term, it should be limited to real fibrotic stricturing, and not applied to mere muscular spasm, which may produce very similar radiograms. Eight of the 65 cases were treated by "posterior gastro-enterostomy and excision of ulcer"; this makes one suspicious that cases of spasmodic contraction have not been excluded, for it is almost impossible to excise these ulcers without performing at least a sleeve resection of the stomach—one type of partial gastrectomy.

The cynical aphorism, "statistics may be made to prove anything, even the truth," is frequently on our lips in these days of biomathematics; but I am apprehensive that the truth has not been reached in this investigation, where the data have been collected from diverse sources uniform neither in method nor interpretation.—I am, etc.,

NORMAN C. LAKE.

London, W.1, March 1st.

*** A review by Lord Moynihan of the results of the collective inquiry appears at page 458 this week.

DIAGNOSIS OF PULMONARY TUBERCULOSIS.

SIR,—Dr. Arnott Dickson, in his lecture on the diagnosis and treatment of pulmonary tuberculosis, states that "the evidence should be strong before a chest case with definite physical signs and sputum is accepted as tuberculous in the consistent absence of the tubercle bacillus." In view of this pronouncement I venture to draw attention to some methods of obtaining a more reliable specimen of sputum than is often presented to us. In a short communication entitled "The early detection of tubercle bacilli in sputum" (*Journal*, 1928, vol. i, p. 627) I described several methods by which I had obtained a *good specimen with positive* results, when with previous specimens the results had been negative. The details will be found in the paper referred to, but the main points, in order, are coaxing the patient to cough out into a basin, and *preferably with the mouth* wide open; the sniffing of the vapour of volatile mustard oil (a few drops in the bottom of a six-ounce bottle warmed over a spirit lamp) to excite cough; the intralaryngeal injection, by means of a *laryngeal syringe*, of a weak solution of sodium bicarbonate to which is added a little hydrogen peroxide, or the transnasal instillation of the same liquid (with the head thrown back while about half a drachm is gently *syringed through the nose* and the patient pants in and out through the mouth, avoiding swallowing); the catching of a patch of sputum on the laryngeal mirror; or the administration of small doses of potassium iodide for a few days.

The practice of these procedures will, I am sure, diminish the number of cases of "consistent absence of the tubercle bacillus," and justify a prompt and confident adoption of the appropriate treatment.—I am, etc.,

JAMES DUNDAS-GRANT.

London, W.1, March 3rd.

SIR,—Dr. Dickson's lecture, which was published in the *Journal* of March 1st (p. 376), is remarkable in compressing the essentials of his subject into the briefest possible space and is, in my humble opinion a model of its kind. It should prove helpful to those whose days are devoted to tuberculosis work, as well as to the general practitioner

I should like to add two simple points in clinical examination which I do not remember to have seen in print, and which I have found helpful in my work as a tuberculosis officer for the past fourteen years.

The first point is that the patient should always be asked to breathe through the mouth during the examination. I have the patient seated on a stool, the back straight, the knees together, and the hands resting on the lap. The examiner's hands are placed flatly and firmly one on either side of the chest, and the patient is asked to take deep breaths in and out through the mouth. The difference in movement between the two sides is then very evident. Compare this with the same movements when nose-breathing is practised and the change will be manifest—indeed, the alteration in expansion of the two sides may even be reversed. In auscultation also mouth-breathing gives very much clearer breath-sounds than nose-breathing, and a cough, followed immediately by a deep inspiration through the mouth, brings out the finest crepitations, even in a very early case. This is not nearly so marked in nose-breathing, in which the sounds are much more muffled.

The second point is that, in percussion (and I agree with Dr. Dickson that very light percussion is essential), the plexímeter finger should be pressed very firmly against the chest wall. In this way as much (or more) can be ascertained from the touch of the plexímeter finger as from the sound of the percussion note; but only if the plexímeter finger be in the most intimate contact with the chest wall.

I am glad to learn that Dr. Dickson finds real help from Verne's photometric test. I have gained more assistance from this test, both in diagnosis and in prognosis, than from any other extraclinical method, save only a positive sputum.—I am, etc.,

Lewisham, S.E., March 1st. ROSE JORDAN.

OESOPHAGEAL OBSTRUCTION IN CHILDHOOD.

SIR,—In the December number of the *Archives of Disease in Childhood* (1929, vol. iv, No. 24, p. 347) there was published a very interesting and important article by Drs. Sheldon and Ogilvie on obstruction of the oesophagus in childhood. Since no correspondence is published in the *Archives*, and in view of the editorial remarks in your issue of January 4th (p. 28), I should be obliged if you would grant me space to make some comments on their paper.

The authors have collected and discussed twelve cases of oesophageal obstruction which have been treated in the Hospital for Sick Children, Great Ormond Street. Although some were originally diagnosed as cardiospasm or achalasia of the cardia the authors consider that they were all cases of congenital stenosis of the oesophagus. It seems to me, from the descriptions given in the article, that the diagnosis of some of the cases and the conclusions based upon them are open to serious criticism. Probably the authors have much more information at their disposal, and I quite appreciate that exigencies of space make it difficult to give a really full description of twelve cases, but it would certainly have added greatly to the value of the paper if fuller details had been published.

I venture to assert that there are only two certain ways of diagnosing congenital stenosis of the oesophagus, one being oesophagoscopy and the other a post-mortem examination. Apparently not one of these patients was examined with the oesophagoscope, and of the four on whom necropsies were performed, one, Case 10, showed no abnormality of the oesophagus. From this case the authors arrive at a conclusion which I find it very difficult to accept. Seeing that they take it as a typical example of the whole group, it may be profitable to discuss it at some length.

They consider that the child had a stenosis of so severe a degree that vomiting was present from birth. The symptoms continued until she was more than 3 years old, and yet, when she died a year later, there was not the slightest trace of any abnormality in the oesophagus. They assume that as a result of maintaining a fluid diet, the stenosis underwent a spontaneous cure, and they give various reasons for this assumption. They state that they can find no record in the literature of a case of achalasia occurring in the middle of the oesophagus, nor at the junction of the middle and lower thirds. I think it is safe to suggest also that they have found no record of the spontaneous cure of a proved case of congenital stenosis. Incidentally, I have had a child under my care with obstruction in the middle of the oesophagus, clearly demonstrated by *x*-ray screening, but undoubtedly due to spasm, as proved by negative findings at oesophagoscopy and by variation in the site of obstruction.

Secondly, they state that in achalasia there is always hypertrophy and usually dilatation of the muscular wall of the oesophagus, and in order to ascribe Case 10 to this condition, it is necessary to assume that achalasia (and, I suppose, spasm) can undergo spontaneous cure, with disappearance of the hypertrophy and dilatation, under treatment by fluid diet alone. I find this an easier assumption than theirs. In congenital narrowing, as distinct from the membranous type of obstruction, the essential lesion is a definite deficiency of tissue; it is difficult to believe that the maintenance of a fluid diet will lead, in the course of twelve months or less, to a production of new tissue, and will do so with such exactitude that no trace of the original deficiency can be found! In any case of oesophageal obstruction of long standing there must be some hypertrophy, and there may be dilatation (as seen in their radiograms), so the authors will have to accept its disappearance not only as a possibility, but as a fact.

Among the cases collected in my paper on this subject is one originally reported by Greig. This patient lived to the age of 82 on a fluid diet, but it did not cure her stenosis. The balance of evidence in Case 10 seems to be very much in favour of spasm as the cause of the obstruction. In some of the others also, I think that, on the published details, there is considerable doubt about the diagnosis.

As I said at the beginning of this letter, the paper by Drs. Sheldon and Ogilvie is an important one, and in my opinion the most valuable part of it is the strong evidence which the authors produce that non-organic obstruction of the oesophagus can occur in infancy—an opinion which is fundamentally different from the one they have formed.—I am, etc.,

London, W.1, Feb. 26th. C. C. BEATTY.

ANAESTHETICS FOR SHORT OPERATIONS.

SIR,—As a teacher of dental anaesthesia I feel that Dr. H. H. Brown's letter in the *Journal* of February 22nd (p. 352) requires some comment. While it is quite possible that the state of analgesia described can be obtained by Dr. Brown and others of great experience, to advocate the routine use of chloroform in dental work, much less its use in the ordinary dental chair, would have one unfortunate result—namely, to increase the work of the coroners. Perusal of both the medical and lay press shows that most of the fatalities in anaesthesia have been where chloroform has been given, and many of these disasters occurred in dental cases. The wholesale adoption of the method advised by Dr. Brown would be contrary to the experience of most teachers and anaesthetists. I may add that I am by no means biased against the use of chloroform in suitable cases and, in fact, use more of it than many of my colleagues.—I am, etc.,

Liverpool, Feb. 27th. G. F. RAWDON SMITH.

SIR,—I have been much interested in Dr. H. Marcus Bird's article on anaesthesia for short operations on children, published in the *Journal* of January 25th (p. 147), and also in the subsequent correspondence.

I have during the last two years performed the operation of tonsillectomy, using the guillotine method, on 1,495 children at the Manchester Northern Hospital. In all these cases somnoform has been the anaesthetic used. This is a mixture containing ethyl chloride 83 per cent., methyl chloride 16 per cent., ethyl bromide 1 per cent. It has been administered by the closed method—3 c.cm. of the mixture I find is sufficient for children up to 12 years of age. Ethyl chloride alone does not appear to be taken so easily, and the patient does not appear to be so comfortable after the operation. Complete anaesthesia is induced in about fifty seconds and remains for about forty seconds, which time is ample for removal of the tonsils and curetting the adenoids.

Dr. VERNON DAVIES said he had placed on the paper amendments with the definite object of removing voluntary patients from any interference by the Board of Control. He recognized that the Board at present had a large number of voluntary boarders under its care, but he suggested that the bill should change the whole outlook on the question. Its whole object was to induce voluntary patients at the earliest possible stage to submit themselves willingly to treatment with the knowledge that no stigma of certification or of lunacy would attach to them. Once the Board of Control came in, and once a man knew that if he went to a general hospital or a special hospital as a voluntary patient his case would be notified to the Board of Control, the association of lunacy would immediately be brought into the patient's mind, and into the minds of his friends. Another aspect of the case was that of suicide. People on the borderline of suicide would not submit themselves to treatment on account of the fear of being classified as mentally unfit. Suicide increased practically every year. The people liable to it were unemployed and short of money, they had domestic worries, and could not face the outlook. Dr. Robertson of the University of Edinburgh had recently declared that the stigma of certification prevented poor people on the borderline from submitting themselves to the present method of treatment under voluntary control, and they therefore became suicides. Dr. Davies declared that if his amendments to cut out the Board of Control were accepted a large number of these persons would put themselves under treatment on the first sign of early mental worries. If, however, the doctor said, "You have been coming to me for a month and you are no better, so it is essential that you should come to the hospital, but understand that if you come in you must sign an application form, and that means that you cannot leave this place for seventy-two hours without my permission; it also means that I shall have to notify the Board of Control, and that one of these gentlemen may come and inspect you." In that case the patient would say, "I am not going in. I am not going to have even the suspicion of a Commissioner of Lunacy coming to see me." Then the whole purpose of the bill would be lost. People would not come for treatment in the early stages. They would become suicides, or be certified.

Sir BOYD MERRIMAN supported Mr. Greenwood, and thought it would be a profound mistake to do away with the responsibility of the Board of Control with regard to voluntary patients. It was essential that there should be some control of these patients.

Miss SUSAN LAWRENCE said it was erroneous to assert that at present the Board of Control dealt only with lunatics. Mental deficiency of voluntary boarders and certified lunatics were all under its control. Persons with sufficient money to be treated privately did not now complain, because they could be classed as voluntary patients under Section 229 of the Lunacy Act. These patients at present could be received at a licensed house if two of the Commissioners consented in writing Decent treatment and safety of such patients was a responsibility of the Board of Control, and the patient had to give twenty-four hours' notice before leaving. The bill was extending the same treatment to rate-aided voluntary patients. There were two hospitals for the treatment of early mental deficiency—the Maudsley Hospital, and another established under special Act by the London County Council. These hospitals took lunatics. Some of their voluntary patients passed beyond that stage and were certified in the hospital. Yet there was no reluctance to enter the Maudsley Hospital or the other registered hospital. The voluntary boarders outnumbered the certified boarders. The early mental and severe mental cases required the same doctors and the same staff. If early cases were put in a special asylum they would not get good expert service. All doctors were the same. In their heart of hearts they loved a severe case, and experts in lunacy would not be secured unless they were in contact with the deeply mentally afflicted. The House could do a great deal of good by the existing machinery. If in the quest for perfection they rejected it they would lose this bill. In the present session there was no time to do more than was proposed in this bill.

Mr. RHYS DAVIES said it was not generally understood that the rich voluntary boarder was under the control of the Board of Control. It had been assumed that it was the institution, and not the individual, which was under that control. The bill would definitely put the voluntary boarder, for all practical purposes, in the same category as the registered lunatic.

Dr. MORRIS-JONES remarked that, on second reading, the bill received universal assent, and was carried without a division, but if the amendments now under discussion were passed they would jeopardize the bill.

Mr. SOMERVILLE HASTINGS thought that people suffering from mental disease ought to be under the supervision of the Board of Control. This issue was in danger of confusion with the question whether the hospitals or institutions in which early cases were treated should be definitely connected with lunatic asylums. That point was very doubtful, and it was a great mistake to bring it up when discussing the supervision of the Board of Control.

Mr. RICHARD RUSSELL thought that a great deal of the opposition was based on purely sentimental reasons on account of the name "Board of Control." He suggested that the name of the Board might be changed when it was dealing with the voluntary patient.

Mr. KINLEY'S amendment was then rejected without a division. On the motion of Mr. GREENWOOD, and in fulfilment of a promise given by him on the first sitting of the committee, the final words of Clause 1, Subsection (1) were amended. As they originally appeared they provided that a voluntary patient might be received "with the consent of the Board into single care." Mr. Greenwood moved to delete these words and to insert instead "into the charge as a single patient of a person so approved, and any approval under this section may be granted subject to such conditions as the Board think proper and may be revoked at any time." The amendment was accepted without discussion.

The committee passed to the discussion of Subsection (2) of Clause 1, which provides that any young person under 16 may be admitted for treatment for mental disorder on a written application from the parent or guardian accompanied by a medical recommendation, and shall be received as a voluntary boarder.

Mr. WOMERSLEY moved to leave out the word "sixteen" and to insert instead "eighteen." He said the amendment was put down on behalf of the Municipal Corporations' Association. The first steps to the bill proposed an age of 18 years, but the House of Lords had substituted 16. Mr. GREENWOOD said the Lords had substituted 16 years, this being the age at which a person might legally marry. He would have preferred 18, but did not wish to reopen the question, and thought the Lords' amendment should be accepted. By 33 votes to 4 the committee agreed that "sixteen years" should remain part of the clause.

In accordance with an amendment by Dr. Fremantle, previously carried, the word "illness" was substituted for the word "disorder" in Subsection (2), and "patient" for "boarder." In Subsection (3a), dealing with the qualification of the person who should sign the medical recommendation for a juvenile voluntary boarder, Mr. CHARLES WILLIAMS proposed to leave out the words "who shall be either the usual medical attendant of the person to whom the application relates, or a person who has been approved for the purpose of making such a recommendation either by the Board of Control or by the local authority within whose area the said person then is."

Mr. GREENWOOD said the local authority referred to in this amendment was that of the county or county borough. The words had been inserted by the House of Lords after a discussion on the fundamental question of safeguards for patients, and the Government had agreed to them to provide added protection for voluntary patients. As the proposal originally stood, the recommendation was to be signed only by a registered medical practitioner. The officials through whom the county or county borough might act would be a matter of administrative practice.

Dr. DAVIES said the council would appoint a medical man specifically for this purpose. Mr. WILLIAMS withdrew his amendment.

In the same subsection, on the motion of Captain GUNSTON, the words "medical practitioner" were substituted for the words "a person who has been approved." Dr. FREMANTLE also moved to provide that this medical practitioner should be approved both by the Board of Control and the local authority, instead of by either, as the bill contemplated. He said he proposed this at the instance of the Council of Mental Hygiene. The medical superintendents in their association felt that many local authorities might possibly approve some medical man who was not really fit for the job. It was therefore felt that the Board of Control should have a share in the appointment.

Mr. GREENWOOD said that he dare not ask the county councils and the county borough councils to submit to this. They would be up in arms. Dr. FREMANTLE thereupon withdrew his amendment.

In Subsection (5) of Clause 1, which provides that a voluntary patient must give seventy-two hours' notice in writing of his intention to leave, Dr. FREMANTLE proposed to substitute "three clear days" for the words "seventy-two hours." He said this was brought forward as the considered opinion of the medical superintendents, and by the Medical Women's Federation as well. It was for the convenience of the patients in order that adequate arrangements might be made for them by their relatives and friends.

Mr. GREENWOOD said the days would always end at midnight, which would be no more convenient than the expiration of seventy-two hours. Under the present law the period was twenty-four hours, which was too short to make adequate arrangements for the care of a person who desired his release. A number of people thought seventy-two hours was too long, but Dr. Fremantle's amendment would make the period still longer. The recommendation of seventy-two hours was made definitely by the Royal Commission on Lunacy. Dr. FREMANTLE withdrew his amendment, as did Dr. DAVIES another amendment on the same section, which proposed to refer to the patient's "desire" to leave the institution instead of his "intention."

Sir BOYD MERRIMAN moved to leave out the words:

"If any voluntary boarder by or in respect of whom such a notice has been given is not allowed to leave the institution, hospital, home, or place at the expiration of the notice, he shall be entitled to recover as liquidated damages from the person in

charge ten pounds for each day or part of a day during which he is detained."

He said that if a really serious wrong was perpetrated and a man was detained who ought never to have been so detained it was preposterous to say in advance that the damages were to be limited to £10.

Mr. GREENWOOD said this was the same provision as in the principal Act. He was inclined to think that £10 was an unnecessary limit in a case of wrongful detention. He was therefore willing to take out the lines as suggested by Sir Boyd Merriman.

Mr. RHYS DAVIES inquired what redress a patient would have, if the amendment were accepted, against those who had detained him against his will.

Sir BOYD MERRIMAN said the common law allowed an action for damages.

Mr. COVE suggested that the subsection should be amended to provide that the damages should be not less than £10 a day.

Mr. SORENSEN suggested that some specific provision should be retained in order to draw attention to a right that might otherwise be overlooked.

Sir BOYD MERRIMAN contended that to make the £10 penalty a minimum figure was overlooking the fact that a rantankerous patient might acquire a technical right of action because he had been detained for an hour over the seventy-two hours. A technical case might also arise where a man who was detained over the seventy-two hours was eventually certified as a lunatic. Although technically wrongfully detained, everybody would agree that it was in his own interests that he should be detained.

On a division the committee by 21 votes to 13 deleted the words "if any voluntary" at the beginning of this proviso, which is now regarded as excised from the bill. The committee then adjourned until March 4th.

The discussion was resumed on March 4th. On Clause 1, which gives power to receive voluntary boarders, Mr. C. WILLIAMS moved an amendment providing that a voluntary boarder should leave the institution, hospital, home, or place on receiving from the person in charge seventy-two hours' notice in writing requiring him to leave, or, if he was a person under 18, on such notice being given to his parent or guardian.

The amendment was negatived.

Dr. FREMANTLE moved an amendment providing that the person in charge should have power to admit or to discharge a voluntary patient and to take steps to have such patient dealt with under the principal Act, or under Section 5 of this bill, with the approval of the Board of Control. He said that, although his amendment included the point dealt with in the previous amendment, it also dealt with an entirely different matter. He had been asked to put forward this amendment by the Royal Medico-Psychological Association, the Medical Women's Federation, and the Council for Mental Hygiene. The object was to give a definite status to the person in charge.

Mr. GREENWOOD could not accept the amendment. It meant that the person in charge was to be at liberty if he so wished to act quite irrespective and independently of any arrangements that might have been made by the authority responsible for the institution.

The amendment was rejected by 27 votes to 3.

On the question that Clause 1, as amended, should stand part of the bill, Mr. C. WILLIAMS asked if the medical members of the committee were satisfied that the position of the patients was now sufficiently safeguarded.

Dr. VERNON DAVIES replied that, speaking as a medical man, he thought the amendments inserted had definitely strengthened and improved the clause. Although the clause perhaps did not go as far as one would wish, there was every reason to congratulate the committee on the changes which had been made. Sir BOYD MERRIMAN also expressed the view that the clause had been improved by the insertion of the amendments. The clause was then added to the bill.

Clause 2 provides for notice of the reception, death, or departure of voluntary boarders, and for boarders who become incapable of volition.

Dr. VERNON DAVIES moved the omission of Subsection (1), which provided that, where a person was received as a voluntary boarder, notice of his reception should, before the expiration of the day next following the day on which he was received, be sent to the Board of Control by the person in charge. He said that the obligation to give notice to the Board of Control would prevent voluntary patients from submitting themselves for early treatment, as the association of the Board of Control with lunacy was a very strong factor in the minds of these people. They might be wrong, but the idea was there, and it had to be reckoned with.

Mr. GREENWOOD opposed the amendment. He said that a long discussion took place on the Board of Control last week, and the committee could not reopen the matter. The subsection was an essential safeguard to the liberty of the individual, and must remain as an integral part of the bill.

The amendment was rejected by 25 votes to 7.

Subsection (3) provides that if any voluntary boarder becomes incapable of volition he shall not be retained as a voluntary boarder for a longer period than one month, but shall, on or before the expiration of that period, be discharged.

Sir BOYD MERRIMAN moved to substitute, for "incapable of volition," the words "incapable of voluntarily submitting himself to treatment." He explained that this was the first of a series of amendments which dealt with an important point which was raised on the second reading. The Minister of Health had indicated to him that he would probably meet this point by drafting an amendment to define the words "incapable of volition," and he (Sir Boyd Merriman) was anxious to hear exactly what the right hon. gentleman proposed to do. The whole committee was aiming at the same object, but to him, as a lawyer, to say that a person was "incapable of volition," even for the time being, was to say that he was completely mad. He was sure that the Minister did not mean that. The intermediate class between the voluntary patient and the lunatic consisted of persons unable to make up their minds to co-operate in their own treatment, and he asked the committee to say so. Under the clause, as he would amend it, the patient whose condition improved could, after a month, be dealt with as a voluntary patient. His objection was to terminology, and not to the substance of Clause 5.

Mr. GREENWOOD thought that too much importance was attached to the form of words. The persons covered by Clause 5 would to-day be certifiable, but with a chance of recovery, and he thought that the term "capable of volition" pretty well expressed what the committee had in mind. He did not think the phrase suggested by Sir Boyd Merriman was sufficient for its purpose. If the term was accepted in Clause 2 it would have to be accepted in Clause 5.

The CHAIRMAN ruled that the decision now taken must affect the whole bill, and the issue could not again be discussed.

Mr. GREENWOOD argued that it would be convenient to keep the phrase "incapable of volition" in Clause 2, but to extend it in the definition clause by some such words as "incapacity to express willingness or unwillingness to accept treatment for mental illness."

Mr. SOMERVILLE HASTINGS thought that Sir Boyd Merriman's amendment improved the bill. It covered two types of patients. The first was the voluntary patient, who suddenly became like a log; the other the individual who temporarily developed an illusion, say, of persecution, which the medical officer believed to be only temporary.

Dr. VERNON DAVIES said there was sane volition and insane volition. The phrase in the bill was too compact. "Incapable of a desire of submitting himself to treatment" was clear, and could only bear one interpretation. Some cases capable of voluntarily submitting themselves to treatment really ought to be certified.

Sir BOYD MERRIMAN thought that the words suggested by Mr. Greenwood met the point he had raised. There was a real practical difference between a man incapable of volition in all respects and only incapable of collaborating in his own treatment. A man might be able to feed himself and manage his affairs, but quite unable to give thought to his own health as a result of mental illness.

Dr. MORRIS-JONES said that medical men of experience in mental work did not like the phrase "incapable of volition," because that was an expression of opinion, and could not be testified to as a fact. It was important that medical men making a recommendation should testify to a fact, not to an opinion.

Mr. GREENWOOD suggested that members should table alternative definitions.

Dr. FREMANTLE suggested that Clause 2 should read, "If any person received as aforesaid becomes at any time incapable of expressing willingness or unwillingness to receive treatment. . . ."

Dr. VERNON DAVIES said the issue involved was so important that discussion should be deferred till the Minister had drafted a definition and put it on paper.

Mr. GREENWOOD thereupon moved that the committee should adjourn till March 6th.

The committee adjourned accordingly.

After-Effects of Poison Gas.

On March 3rd Mr. F. O. ROBERTS, replying to Mr. Lawther and Mr. Shepherd, said that in dealing with individual claims for war pensions, each of which was carefully considered, medical officers of the Ministry of Pensions were always alive to any symptoms or history of gas poisoning. The effects of such poisoning had been the subject of special investigations by medical experts, both on the staff of the Ministry and outside. The conclusions arrived at did not support the suggestion made by Mr. Shepherd that there was necessarily a connexion between exposure to gas and the subsequent development of tuberculosis. In present circumstances he did not think that the setting up of a special commission to inquire into the possibility of tuberculosis developing after years of discharge from war service would be justified. Mr. LAWTHER asked whether, as the War Office

Committee which was considering these claims regarded the setting up of such a commission as necessary in order that the fullest opportunity should be given of reaching an understanding on the matter, the Minister would reconsider his decision. Mr. ROBERTS replied that he was willing to consider any suggestion in reference to the matter. The best medical advice that he could secure had been given to him, and on that he was bound to act. Mr. OLDFIELD asked whether, in view of the great ambiguity which arose in discussing some of these gas poisoning cases, the Minister would always give the benefit of any reasonable doubt to the applicant. Mr. ROBERTS replied that that was already done. Mr. EDE asked if the Minister had consulted the French medical authorities who were in charge of the gas-mixing factories in France during the war, and who held strong views on the question of the delayed action of gas in relation to tuberculosis. Mr. ROBERTS: No, Sir. I have not had a chance of consulting those authorities, but I will certainly take advice about it. Major COHEN asked if the authorities of the British Legion, at Preston Hall, who had made a special study of this question, had been consulted. Mr. ROBERTS replied in the affirmative. He said that he had the report of those experts. He had read it on more than one occasion, and had it in mind when he gave his original answer that afternoon.

Mr. ROBERTS, on March 3rd, told Colonel England that the number of ex-service men who had died from the effects of gas poisoning, and whose disability had been recognized by his department as being attributable to, or aggravated by, war service, during each of the last ten years, could not be given with any degree of completeness, since the effects of gas poisoning would ordinarily appear in the form of specific disabilities of the respiratory organs. Any claim submitted in consequence would be recorded under these disabilities.

Chemical Warfare.—On March 3rd Mr. A. HENDERSON told Sir W. Edge that the Convention prohibiting chemical and bacteriological methods of warfare had been ratified, or definitely acceded to, by Australia, Austria, Belgium, Canada, China, Egypt, Finland, France, Germany, India, Italy, Liberia, New Zealand, Persia, Poland, Rumania, South Africa, Spain, Turkey, Russia, the United Kingdom, Venezuela, and Yugoslavia. The Convention had been signed, but not yet ratified, by Abyssinia, Brazil, Bulgaria, Chile, Czechoslovakia, Denmark, Estonia, Greece, Japan, Latvia, Lithuania, Luxemburg, The Netherlands, Nicaragua, Norway, Portugal, Salvador, Siam, Sweden, Switzerland, the United States of America and Uruguay. He understood that Denmark, The Netherlands, and Portugal intended to ratify shortly. While it was impossible to state precisely the activities of foreign nations in this connexion, many nations were, he understood, continuing research work.

Accommodation for Mental Patients.—Replying to Mr. Sorensen, on February 20th, Mr. GREENWOOD said that representations by local authorities, complaining of unnecessary delay in the sanctioning of plans for new buildings, were frequently made to the Board of Control and other departments concerned, though he had no precise figures. Delays in the past were attributable to inadequate staffs, which had recently been strengthened, and the Mental Treatment Bill contained proposals for the reorganization of the Board to facilitate its operations. He hoped to avoid further delays under the new bill. Mr. CLYNES, on February 17th, told Mr. Ramsbotham that he was advised by the Minister of Health that any persons mentally defective within the meaning of the Mental Deficiency Acts, 1913-27, whether or not they were suffering from the after-effects of encephalitis lethargica, could be dealt with in a certified institution willing to receive them. At present there was an insufficiency of institutional accommodation throughout the country, although if the persons concerned had dangerous and violent propensities the Board of Control had provided accommodation at the Rampton State Institution. He would consider, in consultation with the Minister of Health, whether advice could usefully be given to magistrates on the matter.

Applications for Discharge of Mental Patients.—Mr. GREENWOOD informed Mr. Richardson, on February 27th, that there were objections to the recommendation that Section 79 of the Lunacy Act be posted up in waiting rooms of public asylums, with a view to informing relations and friends of patients of their rights relating to applications for discharge, of which they would have otherwise been in ignorance, but the rules of the Board of Control required the managers of every institution, on the admission of every rate-aided patient, to send a notice embodying the substance of Section 79 to all persons whose names appeared as relatives or friends of the patient on the statement of particulars accompanying the reception order. He would see that this was carried out.

Dismissals under the Board of Control.—Mr. GREENWOOD told Mr. Sorensen, on February 27th, that during 1929 notice from the Board of Control was received of eighteen dismissals and one resignation of officers on the ground of proved ill-usage of patients. He could not say at present the number discharged from licensed houses. The cost of the Board of Control, he told Mr. Richardson, was £84,987 for 1928 and £87,418 for 1929. Sums of £40,506 and £42,849 respectively, representing the cost of State institutions, were included in these figures.

Clinic for Treatment of Rheumatism.—On February 20th Mr. GREENWOOD told Mr. Lewis that, though he would watch with interest the new British Red Cross Society clinic for the treatment of rheumatism, he did not think it necessary at this stage to set up a special body to co-operate with the society. Research was constantly under the consideration of the Medical Research Council, who would acquaint themselves with the results of the new clinic.

Cancer Remedies.—On February 20th Mr. GREENWOOD, in reply to Mr. R. S. Young, said that in judging the value of any treatment of cancer submitted to him the Ministry of Health was guided by all relevant information available, including results in application to specific cases. This was so when the remedy originated outside the recognized medical profession. He promised to inquire into the claim of a Mr. Evans who had supplied to the Ministry of Health in 1923 the names of thirty patients he professed to have cured. Mr. R. S. Young alleged that since that year none of these people had been communicated with by the department.

Welfare Centres and Birth Control.—Mr. GREENWOOD, replying to Mr. E. D. Simon on March 3rd, said that the Ministry of Health had never withheld, or threatened to withhold, grants payable to local authorities in respect of maternity and child welfare work on the ground that medical officers had given information on birth control to women attending the centres.

Administration of Anaesthetics by Midwives.—On March 3rd Mr. GREENWOOD informed Brigadier-General Brown that he had received a resolution from the South Berkshire Women's Unionist Association asking him to give careful consideration to the desirability of authorizing certified midwives to give anaesthetics in cases of childbirth. He understood that the question of giving anaesthetics at the time of childbirth was being considered by the Maternal Mortality Committee, and he proposed to await their report.

Food Value of Milk.—On February 25th Mr. ADAMSON told Mr. Hurd that 20,000 children in 68 schools of the Lanarkshire Education Authority would be included in the present investigation into the value of an additional daily ration of milk in the dietary of the school child. Of these children, 10,000 would receive milk and 10,000 would receive no ration, but would be weighed and measured for comparison. The results of a previous investigation showed that the addition of milk to the diet produced a marked improvement in the physical condition of children of all school ages.

Nystagmus.—Mr. TURNER, replying to Mr. Shield on February 25th, said that in 1928, the last year for which information was as yet available, the incidence of new cases of nystagmus, in proportion to the number of miners employed, was greatest in Ayrshire.

National-Health Insurance.—On February 26th Mr. GREENWOOD informed Mr. Rhys Davies that draft regulations with respect to the issue of certificates for national health insurance purposes by medical practitioners, and the definition of drugs for the purpose of medical benefit, were in preparation. He could not say when they would be before Parliament.

Excessive Prescribing by Panel Practitioners.—Mr. JOWETT, on February 27th, asked Mr. Greenwood whether he would decide not to impose a fine on certain panel doctors referred to in a resolution of the London Insurance Committee. Mr. Jowett summarized this resolution as requesting the Minister to impose a fine of £100 on four panel doctors for prescribing for their insured patients drugs and dressings beyond the average, although the tribunal appointed by him to consider this charge found in no individual prescription evidence of irregularity or extravagance, and reported that these practitioners were actuated by high idealism and had organized an efficient treatment centre in a neighbourhood where the chances of maintaining health were poor, and added to their report a recommendation that any penalty should not be more than a formal one. Mr. GREENWOOD replied: The practitioners concerned have exercised their right to make oral representations on the question what amount of money, if any, should be withheld; and I cannot anticipate the decision at which it will be my duty to arrive after receiving the report of the persons appointed by me to hear these representations. I must not, however, be understood to accept Mr. Jowett's references to the report of the referees in this case as being either a complete or an accurate summary of their findings. Mr. MILLS: Is it not a fact that panel doctors in practically every insurance area are constantly in conflict with these committees?

Bakers' Dermatitis.—Replying to Mr. Cecil Wilson, on February 27th, Mr. CLYNES said that in 1922 there were 102 cases in which bakers obtained certificates of disablement under the Workmen's Compensation Act from certifying surgeons in respect of dermatitis; there were 334 cases in 1926, 275 in 1927, and 389 in 1928. The increase might be due to the new Order which came into force in January, 1923, which relaxed considerably the conditions under which compensation for dermatitis had been payable. The disease became notifiable under the Act on May 6th, 1916. The main precautions were care of the hands and arms and scrupulous personal cleanliness, to promote which a Welfare Order under the Factory Acts, May, 1927, required the provision in bakehouses of washing facilities and prominent display of precautionary notices on the prevention and cure of dermatitis. These provisions had secured improved conditions of work and a wider knowledge of the disease.

Regulations for Safety in Cinematograph Theatres.—Mr. CLYNES told Mr. Ede, on February 27th, that the principal regulations for securing the safety of the public in cinematograph theatres were those made under the Cinematograph Act, 1909. It was open to local licensing authorities to supplement these by special conditions inserted in the licences issued by them, and many authorities did so, though he did not know how many.

Notes in Brief.

During 1926 to 1929 inclusive, 13 children under 14 years of age were certified as having died as a result of vaccination or vaccinia. In view of the fact that vaccination was compulsory no compensation had been paid to parents.

Obituary.

SIR ALFRED FRIPP, K.C.V.O., C.B., M.S., F.R.C.S.,

Honorary Surgeon to H.M. the King; Consulting Surgeon to Guy's Hospital.

WE had to announce last week the death, after a short illness, of Sir Alfred Fripp, sometime Surgeon in Ordinary to the King and to King Edward VII, and for more than thirty years a prominent member of the surgical staff of Guy's Hospital.

Alfred Downing Fripp was born at Blandford, on September 12th, 1865. He was the eldest son of Alfred Downing Fripp, R.W.S., who was the grandson of Nicholas Pocock and the brother of George A. Fripp, R.W.S. This ancestry explains the ardour with which the surgeon collected water-colour drawings. He was sent to school at Blandford; from there, in 1879, he passed to Merchant Taylors, recently moved to Charterhouse Square; here Dr. William Baker was his head master. Fripp already showed his aptitude for sport, playing in the first cricket eleven for three years. Entering at Guy's Hospital in 1884, he became dresser to Mr. Davis-Colley, who thought highly of him; he was captain of both the cricket and Rugby football clubs; he played forward, and was the first to arrange for the good programme which the Rugby club still has. In addition, he was an exceptionally fine swimmer, and was very fond of boating; he hardly ever missed a Henley meeting. He took his M.S. at the University of London, and his F.R.C.S. in 1893. A fellow student, who worked much with him, writes: "I had a deep regard for this happy, broad-shouldered fellow, who worked well and played well." After finishing his house appointment he became demonstrator of anatomy, and was elected assistant surgeon to the hospital in 1897, and, when his turn came, full surgeon, from which post he retired on reaching the age limit of 60 in 1925.



Fripp was a first-rate surgeon. He took infinite pains in examining each case and in judging every patient as an individual; it was a pleasure to see him operate; he was bold, methodical, and careful, without being slow; his cheerfulness and his kindness helped his patients greatly; he always considered sympathetically all the little discomforts which often follow operations, and he had an unusual power of imparting confidence. He quickly became a thoroughly good and popular teacher; students flocked to his out-patients or his wards, for he told them just the points that would be useful to them in practice. Occasionally he contributed a case to the pathological and clinical societies, but he did not write much: his only book was *Human Anatomy for Art Students*, which was written in conjunction with his colleague A. R. Thompson. Fripp always took a pleasure in organizing, and it was he, together with Dr. Lauriston Shaw, who in 1891 amalgamated the various athletic and other clubs at Guy's into one clubs union, to the great advantage of the clubs and the Medical School. This was the first union of its kind. Except that for a short while he was surgeon to the Hospital for Children and Women, Waterloo Road, Fripp was not attached to any other hospital than Guy's.

Just as he was finishing his house-physiciancy a message arrived from Mr. Jalland of York to say that he wanted a locumtenent while he went for a holiday. Fripp had looked forward to a holiday himself, but, on the advice of a member of the staff, he went to do Jalland's work. One evening a call came asking Jalland to go to the barracks. Fripp went in his place, and found the patient to be the Duke of Clarence, who was stationed in York with his regiment; by a strange chance he and Fripp had previously spent an evening together in Cambridge. This led to Fripp's introduction to the late Queen Victoria, to the Prince of Wales (afterwards King Edward VII), and to our present King. In 1897 Fripp was appointed Surgeon in Ordinary to the Prince of Wales, who in 1898 slipped on a staircase and broke his kneecap. His Surgeon in Ordinary was recalled from his honeymoon to be associated with those who had been already summoned to attend the Prince. Fripp was reappointed Surgeon in Ordinary when the Prince became King Edward VII. He held the same appointment, and subsequently that of Honorary Surgeon, to our present King, and that of Surgeon in Ordinary to H.R.H. the Duke of Connaught. He was awarded the C.B. and the C.V.O. in 1902, he was knighted in 1904, and made a K.C.V.O. and a Knight of Grace of the Order of St. John in 1926. His very early association with royalty led to his being nicknamed at Guy's "The Baron," or sometimes "My friend the Prince," for there happened to be at this time a popular play having this title. In 1899 the Prince of Wales was president of Guy's Hospital. Sir Cosmo Bonsor had just been appointed treasurer; he and Fripp worked energetically to form a re-endowment fund, which was necessary owing to the great falling off of the agricultural rents of the hospital. The Prince presided at a festival dinner at which the sum of £114,347 was collected. Ever since this Fripp, who had a remarkable aptitude for raising money for charities, was most hard-working in obtaining funds for Guy's; many very large donations have been due to him, and it was in consideration of all that he had done for the hospital that he was appointed a governor on his retirement from the post of surgeon.

In 1899 Fripp went out to the South African war as surgeon and chief civilian officer of a Yeomanry hospital of 520 beds. For this work he was mentioned in dispatches. His wife went with him, and for her services received the R.R.C. He contributed to this *Journal* in 1900 "Letters from South Africa on Military Hospitals," and on his return to this country he, Sir Cooper Perry, and others were appointed to report upon the military medical service. As a result, an Advisory Board for Army Medical Services was formed, with Fripp as a member. All this meant a long period of very hard and difficult work, into which Fripp threw himself with all his customary initiative and energy. In the great war he was consulting surgeon to the Royal Navy, and many casualties from the North Sea battles passed through his hands. He also did work for King Edward's Hospital Fund, the Hospital Sunday Fund, the Hospital Saturday Fund, and the Red Cross.

Whatever Fripp took up, he strove desperately hard at it; therefore, as he had many interests outside surgery, he was always working at high pressure. The chief of these was assisting invalids, especially those who were just not the cases for hospitals. He had been for many years a strenuous helper of the Invalid Children's Aid Association, always thinking of new plans for raising money and of new classes of invalids to benefit from it. Two years ago he broadcast for it and by this means got over £1,000;

altogether he has raised £10,000 for it, besides inciting innumerable people to become subscribers. It is owing to his enterprise that the home at West Wickham, with eighty beds for children suffering from rheumatic heart disease, was opened in 1928. He founded many branches in London, and was chairman of the Hackney branch, the meetings of which he always held at his house. It is largely due to him that the association has now on its books 52,000 invalid children, all being aided directly by it. There are, of course, many other doctors helping, but this association was especially dear to Fripp's heart, and no trouble was too great for him to take over any case that chanced to come to him personally.

When a student Fripp was an ardent first-nighter, and he remained so till the end; consequently, he came to be an excellent critic and to know almost everyone in the theatrical profession. Many of the leading actors and actresses were his personal friends, and many, from the most celebrated to the humblest, are beholden to him for kindnesses that only a member of our profession can bestow. Few people have had more friends than he. This was entirely due to his honesty, his good nature, his cheerfulness, and his kindliness, which led to his unselfishly putting himself to no end of trouble for anyone in distress. To give only one example of his making friends: we have seen he was a cricketer; within a few weeks of the arrival of an Australian team Fripp knew the members personally. The medical profession owes a great deal to him, for he showed the large world outside it that its vocation is to relieve suffering unostentatiously among rich and poor alike, not letting the right hand know what the left hand doeth.

He always loved Lulworth Cove; for many years he had had a house there, where he worked hard in his garden. The house needed extensive repairs, so he built himself another, moving into it a few months ago, and there he died just before midnight on February 25th. His wife, the daughter of the late Thomas Haywood of Reigate, his two sons, and his three daughters survive him. His eldest son is registrar in the orthopaedic department of Guy's Hospital.

[The portrait printed on the previous page is reproduced from a photograph by Arbuthnot.]

JOHN EVANS, D.S.O., M.D.,

Regional Medical Officer for North Wales.

WE regret to report the death, on February 15th, of Dr. John Evans of Carnarvon, after a distinguished career. He was born in March, 1869, and received his medical education at Liverpool and University College, London. In 1892 he graduated M.B.Lond., and obtained the diplomas M.R.C.S., L.R.C.P.; he proceeded M.D. in the following year. He held appointments as house-physician, registrar, and medical tutor at the Royal Infirmary, Liverpool, and then went to Carnarvon, where he conducted a large practice until his retirement from it in 1920, on being appointed regional medical officer for North Wales. He was a member of the British Medical Association, and served as honorary secretary of the North Carnarvonshire and Anglesey Division from 1906 to 1913; he was also an honorary life member of the Order of St. John of Jerusalem.

Colonel R. H. MILLS-ROBERTS, late president of the North Wales Branch of the British Medical Association, writes:

I first met John Evans in Carnarvon, not long before the South African war. He had, after a brilliant career at the Liverpool Royal Infirmary, joined the late Dr. Robert Parry in partnership; later on he practised alone in the same town. In 1900 John Evans took a combatant commission in the old 3rd V.B. Royal Welch Fusiliers—afterwards converted into the 6th Battalion Royal Welch Fusiliers in the Territorial Army—and became a subaltern in the Carnarvon (H.Q.) Company. He was afterwards promoted captain, and retained command of the company until the great war. He was an excellent Territorial officer, and knew all there was to know in connexion with the work; the papers and appreciations that he wrote after a staff ride or field exercise were masterpieces, and were sometimes sent to the War Office. He frequently acted as adjutant to the battalion. He was one of the original members of the Carnarvonshire Territorial Association, and a regular and valuable attendant at the meetings. He was also a keen Freemason and a local magistrate. In 1914 John Evans did an enormous amount of work in preparing the 6th Battalion Royal Welch Fusiliers for oversea service. He was a man of boundless energy and courage. It was not generally known that he was blind in one eye, but despite this fact he immediately signed on for oversea service as a combatant officer in charge of a company, although in those days a Territorial's obligation did not involve foreign service. When the War Office later requested doctors holding combatant commissions to transfer to the R.A.M.C. Captain Evans complied, and was appointed, with the rank of major, to one of the field ambulances in the Welch Territorial (53rd) Division. He was promoted later on to the command of the unit, with the rank of lieutenant-colonel. He was at the Suvla Bay landing, and afterwards served with the Egypt Expeditionary Force until the end of the war, being awarded a well-merited D.S.O. in 1919. After the war he returned to his practice in Carnarvon, and for some time acted as chairman of pensions boards at Bangor. He was also visiting physician to the Pensions Hospital in that city until it was closed. He was appointed regional medical officer under the Ministry of Health for the North Wales district in 1920. The North Wales doctors were satisfied because they realized that the appointment had been given to a man who not only knew his work, but would also do it, and for whose professional opinion they had the highest esteem. They also realized that they would deal with a man who would always play the game with all concerned. His integrity was above suspicion, and his cheery presence will be greatly missed. He was a great conversationalist and raconteur, with a scintillating brain. As a public servant he will be difficult to replace.

Professor JOHN HAY (Liverpool) writes:

My acquaintanceship with Dr. John Evans dates back to the time when he was medical tutor at the Royal Infirmary, and I was one of his students. I can clearly remember his vivid personality and his enthusiasm. He was a splendid teacher and a most genial and kindly man, always eager to help any students with whom he came into contact. It was a great loss to the School of Medicine and to the Royal Infirmary when he left Liverpool to return to Wales. As regional medical officer for North Wales he found full scope for his ability and personality. Every medical man in his region felt he had a friend in John Evans, and his tact and cheerfulness smoothed out the constantly recurring difficulties which were the inevitable accompaniment to his position.

Dr. D. LLEWELYN WILLIAMS, Divisional Medical Officer (Wales), writes:

The late Dr. John Evans was one of the first batch of regional medical officers to be appointed under the Ministry of Health. He immediately proved himself to be a capable administrator and a sound clinician. The insurance practitioners of North Wales soon found that in Dr. Evans they had a physician of the rank of a consultant, upon whose opinion they could always rely; though a strict disciplinarian, he proved himself to be a counsellor and friend to all insurance practitioners, and, in time, they learnt to look forward with pleasure to his visits. His reports always impressed me as being the work of a man of ability and excellent judgement, and displayed remarkable thoroughness. He was very popular among his medical colleagues, both on the staff of the Ministry in Whitehall and of the Welsh Board of Health. He was a loyal friend and colleague, and will be greatly missed by those who worked with him. His passing away at a comparatively early age is a distinct loss to North Wales and the department which he served so loyally.

THE LATE DR. JAMIESON B. HURRY.

DR. F. J. ALLEN (Cambridge) writes: Dr. Hurry was peculiarly generous in his public gifts. He seemed to realize that it is a duty of those possessing wealth to spend much of it for the benefit of the public rather than for private luxury. In addition to his munificent gifts to the town of Reading, he endowed "The Michael Foster Studentship in Physiology" at Cambridge. He founded this in 1912, with an endowment of £50 a year, the studentship to be awarded in alternate years with a stipend of £100. In 1919 he increased the endowment to £100 a year, and provided for the re-election of the student for a second year in suitable cases, or for the election of another student without any interval.

DR. THOMAS M. CARTER, who died suddenly on February 21st, at the age of 61, studied medicine at the Bristol General Hospital, where he won the gold medal in 1891. In that year he obtained the diplomas M.R.C.S., L.R.C.P., and graduated M.D. in 1893. He practised in Bristol till the outbreak of war, when he was senior major of the 6th Battalion Gloucestershire Regiment. In 1916 he received a commission in the R.A.M.C., and served in Egypt and in the Mediterranean. Proceeding to France, he was appointed to command No. 3 Convalescent Depot at Boulogne, and was awarded the O.B.E. After the war he returned to Bristol, and became a whole-time officer in the National Medical Service. Dr. Carter took an active part in community life. He was a city councillor for six years, honorary secretary of the Bristol branch of the Bristol and Gloucester Archaeological Society, chairman of the Old Bristolians Club, and a past-president of the Bristol Masonic Society at the time of his death. He was a member of the British Medical Association. He leaves a widow, a son, and three daughters.

We regret to announce the death of Dr. W. MCDONOGH ELLIS, which took place in a London nursing home on January 29th, after a short illness. Qualifying M.R.C.S., L.R.C.P. in 1886, Dr. [illegible] M.D.Brux., with honours, in 1888, [illegible] appointments as clinical assistant at [illegible] for Sick Children, Great Ormond Street, and at Moorfields Eye Hospital, and as house-surgeon at University College Hospital. About twenty years ago he took up practice at Woldingham, remaining there till the time of his death. Among his contributions to the medical journals was a report of a case of sudden death during labour (*Lancet*, 1888), and of a case of acute goitre occurring during the puerperal period (*British Medical Journal*, 1890). Dr. Ellis's interests were not solely confined to his practice, and he devoted a great part of his time to the service of the public of the district in which he lived, holding positions on many committees and boards. He was also particularly interested in the work of the British Medical Association, at the time of his death being one of the deputy representatives of the Reigate Division. A patient writes: "Dr. William McDonogh Ellis will be sorely missed amongst his many patients and large circle of friends. The heaviness of mourning is upon our little community; there is scarcely a household but feels stricken; not one of us but sorrows that in this life we shall see his face no more. 'The beloved physician,' a phrase tender in its age-long association, is the one that comes to us, unsought, as we think of him."

We regret to announce the death of Mr. ARCHIBALD R. FEE, B.A., Ph.D., on February 23rd, of septicaemia and broncho-pneumonia following a simple dental operation about a week previously. He was a keen and devoted investigator in experimental physiology, in which subject he was carrying out researches at University College, London, with the aid of a Beit Memorial Fellowship for Medical Research. Only 24 years old at the time of his death, he had already made considerable contributions to the physiology of the kidney. Some of these papers will appear posthumously. His greatest ambition and firm determination was to qualify in medicine, and he had already begun some preliminary studies directed to that end. His loss creates a great gap among his many friends, as among the ranks of those devoted to scientific research. Dr. Fee's home was in British Columbia, which he left with a university degree before he was 20 years old.

By the death, on February 16th, of Dr. T. MCFETRIDGE of Edlington, near Doncaster, at the early age of 45, the West Riding has lost one of its most popular colliery practitioners. Although in failing health for two years, he remained at work until three weeks before his death, which occurred unexpectedly, when he was believed to be on the road to recovery. Born in co. Antrim, Thomas McFetridge received his medical education at Edinburgh, where he graduated M.B., Ch.B. in 1914. He then joined Drs. Battersby and Willey in practice in Doncaster. In 1916 and 1917 he held a commission in the R.A.M.C., and served in East Africa, after which he returned to Doncaster. He took special interest in ambulance work, and in 1921 was made an honorary member of the Order of St. John. During his student days he had been very keen on outdoor sports, particularly hockey, and he was an Edinburgh "blue." He was a regular playing member of the Doncaster hockey team until his health broke down. Dr. McFetridge was a member of the British Medical Association. He leaves a widow and one son. A colleague writes: Fifteen years' hard work in the colliery village of Edlington had endeared him to all his patients, and successors will find it hard to fill his place. The quietest and most unassuming of men, he had a kind word for each child and a pat for every dog.

We regret to announce the sudden death, on February 17th, at the age of 66, of Geheimer Sanitatsrat Professor Dr. JULIUS SCHWALBE, editor of the *Deutsche medizinische Wochenschrift* since 1894. Professor Schwalbe was also co-editor with the late Professor Ebstein of a handbook of practical medicine in five volumes, and works on therapeutic technique, diseases of old age, and a series on diagnostic and therapeutic errors and their prevention. On many occasions the Medical Secretary's department of the British Medical Association has been indebted to him and his staff for help in connexion with various matters raised by members.

The following well-known foreign medical men have recently died: Dr. VERDUN, professor at the faculty of medicine and pharmacy of Lille; Dr. CARL AUGUST HAMANN, professor of applied anatomy and clinical surgery at the Western Reserve University School of Medicine, Cleveland, since 1911, aged 61; Dr. CLARENCE FLOYD HAVILAND, clinical professor of psychiatry, Columbia University College of Physicians and Surgeons, New York, since 1927, aged 54, of influenzal pneumonia; and Professor THEODOR SOMMERFELD, an authority on industrial hygiene and author of numerous publications on tuberculosis, aged 69.

Universities and Colleges.

UNIVERSITY OF LONDON.

DR. FRANCIS DAVIES has been appointed, as from August 1st, 1930, to the University readership in anatomy, tenable at King's College.

The Geoffrey E. Duveen travelling studentship in oto-rhino-laryngology, of the value of £450, has been awarded for 1930 to Dr. C. S. Hallpike.

Professor L. T. Hogben has been appointed, as from August 1st, 1930, to the University Chair of Social Biology at the London School of Economics. Professor William Wright has been appointed a governor of the East London College.

The title of Honorary Fellow of University College has been conferred on Mr. Henry Tonks, F.R.C.S., Slade Professor of Fine Art in the University of London since 1917. The title of Fellow of University College, London, has been conferred on Mr. Gwynne Williams, surgeon to University College Hospital and vice-dean of University College Hospital Medical School, and on Mr. Harold Muir Evans, surgeon to the Lowestoft Hospital.

In the annual record of the work of University College, London, for the year ending February, 1930, which has just been issued, it is announced that the fund inaugurated in connexion with the celebration of the centenary has reached £223,880. A bequest of £12,000 from the late Lady Durning Lawrence is to be applied

to the electrical equipment of the department of chemistry. The department of psychology has been provided with better accommodation, and the reorganized department of municipal engineering and hygiene with an adequate laboratory.

At the January matriculation examination 176 candidates were successful in the first division and 584 in the second division, while 58 took the supplementary certificate in Latin.

UNIVERSITY COLLEGE.

Two lectures, illustrated by lantern slides, on the history of our knowledge of the mechanism of heredity, will be given by Dr. Charles Singer at University College Hospital Medical School, W.C.1, on March 10th and 24th at 4.15 p.m. The lectures are open to all medical students of the University of London.

UNIVERSITY OF MANCHESTER.

PROFESSOR F. E. TYLECOTE, M.D., D.P.H., F.R.C.P.Lond., has been elected chairman of convocation for the ensuing year.

UNIVERSITY OF ABERDEEN.

THE Senate of the University of Aberdeen has decided to confer the honorary degree of LL.D. on, among others, Emeritus Professor Ashley W. Mackintosh, M.D., honorary physician to H.M. Household in Scotland, and consulting physician to the Royal Infirmary, Aberdeen.

The Services.

HONORARY SURGEON TO THE KING.

COLONEL C. L. ISAAC, T.D., Assistant Director of Medical Services, 53rd (Welsh) Division, Territorial Army, has been appointed Honorary Surgeon to the King.

DEATHS IN THE SERVICES.

Lieut.-Colonel Gilbert Saunders Griffiths, Bengal Medical Service (ret.), died at Gibraltar, aged 75, on January 1st, at the residence of his son, Dr. G. H. C. St. G. Griffiths, Colonial Medical Service. He was born on May 3rd, 1854, the son of Thomas Griffiths of Bideford, was educated at the Middlesex Hospital, and took the M.R.C.S. and L.S.A. in 1876. Entering the I.M.S. on September 30th, 1876, he became surgeon lieutenant-colonel after twenty years' service, was placed on the selected list on October 1st, 1902, and retired, with an extra compensation pension, on June 1st, 1904. His whole service was spent in military employ, during which he saw a good deal of active service. He served in the Afghan war of 1878-80, taking part in the Arambi Karej expedition, and the action at Bhagas, and received the medal with a clasp; in the Zhob Valley campaign, on the North-West frontier, in 1884; and in the Sikkim campaign, on the North-East frontier, in 1888, receiving the frontier medal with a clasp. After his retirement he lived for some time at Clifton, but since the war had resided chiefly in Italy and at Gibraltar. In 1887 he married Katherine Celestine, daughter of Henry Colling of Okehampton, Devon, and leaves two sons, one of whom served as surgeon lieutenant R.N. with the Grand Fleet in the war, and is now in the Colonial Service; the other served in France, Egypt, and Palestine as a captain in the R.A.F. He had three brothers in the medical profession: Lieut.-Colonel W. E. Griffiths, I.M.S., Lieut.-Colonel A. Griffiths, R.A.M.C., and Dr. E. Griffiths of Blainey, New South Wales.

Lieut.-Colonel William Coates, Bengal Medical Service (ret.), died at Hove on February 13th, aged 78. He was born on January 20th, 1852, the son of the late Dr. Coates, of Dohanaughta, Galway, and graduated as M.D. and M.Ch. in the Queen's University, Ireland, in 1876. Entering the I.M.S. as surgeon on March 31st, 1877, he became surgeon lieutenant-colonel after twenty years' service, was placed on the selected list for promotion on July 6th, 1903, and retired on July 4th, 1907. Most of his service was passed in civil employ in the Punjab, where for several years he was civil surgeon of Peshawar, and later, for many years before his retirement, of Lahore. He served in the Afghan war of 1878-80, when he took part in the action at Ali Musjid and Kharasiah, in the operations in and round Kabul, and in the famous march under General, afterwards Lord, Roberts, from Kabul to Kandahar, and the battle of Kandahar, which relieved the British garrison besieged in Kandahar, finally settled Ayub Khan, one of the claimants to the Afghan throne, and put an end to the war. He was mentioned in dispatches in G.A.O. No. 137 of 1880, and received the medal with four clasps, and the Kabul-Kandahar bronze star. He also served in the Mahsud Waziri campaign of 1881. After retirement, he rejoined for service in the war of 1914-18, and served as registrar of the York Place Indian Hospital at Brighton in 1914-15, from the opening to the closing of the hospital. He was given a Good Service pension on August 8th, 1927.

Medical News.

THE third Sir Charles Hastings lecture, on Health and the Empire, will be given in the Great Hall of the British Medical Association House, Tavistock Square, W.C.1, on [illegible] March 12th, at 8 p.m., by Sir Andrew [illegible], M.D., director of the London School of Hygiene and Tropical Medicine. The chair will be taken by Lord Riddell, *president of the Royal Free Hospital*. These lectures were inaugurated by the British Medical Association for the purpose of offering to the public information by the highest authorities on matters of general health interest. Admission to the lecture is free by tickets obtainable from the Financial Secretary, B.M.A. House, Tavistock Square, W.C.1. Seats not occupied by ticket holders by 7.50 p.m. will be available for other members of the public.

PROFESSOR E. W. HEY GROVES of the University of Bristol will deliver the Harveian Lecture before the Harveian Society of London on Thursday, March 13th, at 8.30 p.m., at 11, Chandos Street, Cavendish Square, W., and not at Paddington Town Hall as previously stated. His subject is: Should medicine be a mendicant? Visitors will be welcome.

A COURSE of lectures on midwifery will be given at the City of London Maternity Hospital, City Road, E.C.1, on Tuesdays at 5 p.m., from March 25th to June 10th. Particulars will be given in our diary of post-graduate lectures published weekly in the *Supplement*.

THE annual dinner of the Cambridge Graduates' Medical Club will be held at the May Fair Hotel, Berkeley Street, W., on Thursday, March 27th, at 7.45 p.m., with Dr. H. Morley Fletcher, treasurer of the club, in the chair. The annual meeting will precede the dinner.

THE annual general meeting of the Biochemical Society will be held in the department of physiology and biochemistry, University College, Gower Street, W.C., on Friday, March 14th, at 3 p.m. The subjects on which communications will be made include comparative rates of absorption of certain sugars from the human intestine, rate of liberation of arginine in the tryptic digestion of proteins, fermentation by yeast preparations, micro-determinations of hydroxyl groups, alcohol isolated from the urine of pregnancy, an improved method for the preparation of oestrin and the isolation of active crystalline material from urine, observations on the relation of carotene to vitamin A, oxidation-reduction potentials of cultures of haemolytic streptococci, and the phosphorus distribution in blood during hypervitaminosis.

H.R.H. PRINCE GEORGE, President of University College Hospital, will open the new preliminary training school for nurses, presented by the Rockefeller Foundation, on Wednesday, March 19th, at 3.30 p.m. The ceremony will take place in the library of the medical school.

A JOINT meeting of the Section of Psychiatry of the Royal Society of Medicine with the British Psychological Society, at 1, Wimpole Street, W., on Tuesday next, March 11th, at 8 p.m., will discuss "The role of psychotherapy in the treatment of the psychoses." The speakers will be Dr. H. Devine, Dr. Edward Glover, Dr. R. D. Gillespie, and Dr. H. Yellowlees.

THE Fellowship of Medicine announces that Mr. W. *Girling* Ball will lecture on the differential diagnosis and treatment of infections of the urinary tract at the Medical Society's lecture room, 11, Chandos Street, Cavendish Square, on Tuesday, March 11th, at 4 p.m. Mr. J. Bright Banister will give a demonstration of gynaecological operations at the Chelsea Hospital for Women, Arthur Street, on Monday, March 10th, at 2 p.m., and Dr. J. E. M. Wigley will give a dermatological demonstration at St. John's Hospital, Leicester Square, on Tuesday, March 11th, at 6 p.m. This lecture and the demonstrations are free to medical practitioners. On March 10th an all-day course will start at the Brompton Hospital for Consumption and Diseases of the Chest, comprising lectures, demonstrations, and ward rounds, and lasting for one week. From March 10th to 22nd there will be a course at the Royal National Orthopaedic Hospital, beginning with operations each morning at 9 or 10 o'clock, and followed at 11.30 by a lecture-demonstration; in the afternoon there will be clinics in the out-patient department. From March 17th to April 12th a course in neurology will be held at the West End Hospital for Nervous Diseases at 5 p.m., and during the same period one in venereal diseases at the London Lock Hospital, occupying every afternoon and evening. There will be an all-day course in medicine, surgery, and gynaecology at the Royal Waterloo Hospital from March 24th to April 12th, and an all-day course in gastro-enterology at the Prince of Wales's Hospital, Tottenham, from March 31st to April 5th. Copies of all syllabuses and other information are obtainable from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

THE fiftieth anniversary of the foundation of the Ophthalmological Society of the United Kingdom will be celebrated by a banquet to be held in the hall of the Fishmongers' Company on Friday, April 4th.

THE seventh of a series of dances in aid of the Royal Medical Benevolent Fund Guild will be organized by the Middlesex Hospital and held on Thursday, March 27th, from 8.30 to 12.30 o'clock, in the Great Hall of the British Medical Association, Tavistock Square, W.C. Tickets (single 6s., double 11s., including light refreshments), may be obtained from Mrs. A. E. Webb-Johnson, 35, Grosvenor Street, W.1. Application for bridge tables should be addressed to Miss Warwick James, 2, Park Crescent, W.1. Tickets, 6s. each; players to provide their own cards and markers.

A POST-GRADUATE course will be held in Vienna from May 26th to June 7th, dealing with tuberculosis and its treatment. In connexion with this course classes will be held at certain institutions in Vienna for dealing with special diseases. Further information can be obtained from the secretary of the International Post-Graduate Courses, Dr. A. Kronfeld, Porzellangasse 22, Vienna IX.

THE twelfth salon des médecins for the exhibition of pictures, sculpture, engravings, and decorative art by medical practitioners, dentists, veterinary surgeons, pharmacists, and their families, will be held at 117, Boulevard St. Germain, Paris, from June 15th to the 24th. Further information can be obtained from the organizer, Dr. Paul Rabier, 84, Rue Lecourbe, Paris XV.

UNDER an agreement with University College, London, Messrs. H. K. Lewis and Co., Ltd., the well-known medical booksellers and publishers, are erecting a new building on the site of 134, Gower Street, of which they will occupy the basement and the ground and first floors, the three upper floors being occupied by the College with a separate entrance and stairway from Gower Street. When this building is completed it has been arranged that the company shall use the whole of the building while their old premises of 136, Gower Street, and 24, Gower Place, are being pulled down. On this site a new building will be erected by the company in general conformity with the new premises at No. 134 and the rest of the College buildings in Gower Street. Some sacrifice of space and convenience on the company's own site at the corner has been made to architectural necessities, in order to secure a satisfactorily artistic effect in carrying out the general design, but the completed building, with the portions to be occupied by the company in what was No. 134, will give much needed increased space. The scheme originated shortly after the late Professor Simpson's retirement from the chair of architecture at University College, and he prepared the first plans. His son, Mr. J. R. Moore Simpson, A.R.I.B.A., has designed the building now to be erected, and the work is in the hands of Messrs. Ford and Walton, who completed the building of the British Medical Association's House. While Messrs. Lewis are in occupation of No. 134 there will be many temporary difficulties to contend with, but plans are being carefully considered to ensure that these shall be overcome.

AT the annual meeting of the Glasgow Eye Infirmary, held on February 24th, it was stated that contributions from employed persons amounted to nearly-half of the infirmary's total revenue.

THE twentieth annual professional nursing, midwifery, and public health exhibition and conference has been held this week at the new Horticultural Hall, Westminster. Lectures were given each day, and various cinematograph films, including the Harvey film, were shown.

THE register of members (July, 1920, to November, 1929) of the Chartered Society of Massage and Medical Gymnastics contains particulars of the purposes of the society, conditions of registration, and of the admission of members to the roll of biophysical assistants. A place index is appended, and the present issue gives additional professional qualifications. The price of the register is 4s. It should be noted that the address of the society after March, 1930, will be Tavistock House (North), Tavistock Square, W.C.1.

THE problem of landing from fishing vessels, and under the general conditions obtaining on them, an increased proportion of fish in first-class condition has for some years engaged the attention of the Food Investigation Board, and under the supervision of the Food Transport and Distribution Committee of the Board an inquiry was carried out in 1927 and 1928 on the causes of deterioration of commercially handled fish and of the methods by which the rate of such deterioration might be slowed down. In a special report (No. 37, H.M. Stationery Office, price 1s. 6d. net), entitled "The Handling and Stowage of White Fish at Sea," which has been issued from the Department of Scientific and Industrial Research, Messrs. Adrian Lumley, J. J. Piqué, and George A. Reay describe the technique of this inquiry, which, they are able to show, has produced results capable of immediate commercial application. The investigators reach the general conclusions that the deterioration of fresh fish while on board the trawler is mainly due to bacteria present when the fish is caught and acquired during the process of gutting, handling, and stowage; that ice acts as a preservative by slowing the activities of bacteria, but does not arrest their growth; and that by the use of cleanlier and more careful methods than those at present employed the deterioration of the fish in ice will proceed at a still slower rate, whereby the duration of freshness will be extended from 6–7 to 10–12 days, the fish will be consistently fresher, age for age, and a larger proportion of the total catch will be landed fresh.

THE *Journal de Médecine et de Chirurgie Pratiques*, founded by Lucas Championnière, and continued first by his sons Just and Paul and later by his grandsons Henri-Paul and Just-Lucas Championnière, will celebrate its centenary this year. The present editors are Maurice Vigneric, son-in-law of Lucas Championnière, and René Mignot.

DR. THORVALD MADSEN of Copenhagen, president of the Health Committee of the League of Nations, has been made a doctor *honoris causa* of Frankfort University, and Dr. Egaz Moniz, professor at the medical faculty of Lisbon, has received a similar distinction from the Lyons medical faculty.

PROFESSOR RUDOLF KRAUS of Vienna, formerly director of the Butantan Serotherapeutic Institute at São Paulo, has been appointed director of the bacteriological institute of Chili; Dr. Karl von Angerer of Munich, professor of hygiene at Erlangen; and Dr. Fritz Paneth of Berlin, professor of chemistry at Königsberg.

IN our issues of May 14th, 28th, and June 4th, 1927, we published a series of articles describing a medical tour of the Czechoslovak spas. Another visit to Czechoslovakia on corresponding lines has been arranged for the coming Easter holidays. The party will leave Liverpool Street Station on the evening of Monday, April 14th, and travel via the Hook of Holland and Germany. The places to be visited include Teplice-Sanov, Carlsbad, Jáchymov, Franzensbad, Marienbad, Prague, Podebrady, Luhacovice, Trencin-Teplice, Pistany; three days will be spent in the Tatra Mountains, and a night at Dresden on the way home; and the party is due back in London on the morning of Monday, May 5th. As on the last occasion, special facilities and courtesies will be extended to the visitors by the Czechoslovak Ministry of Health. Readers who wish for particulars should communicate with Mr. Henry Baerlein, Bath Club, 34, Dover Street, London, W.1.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9561, 9562, 9563, and 9564* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TINNITUS AURIUM.

DR. W. A. M. SWAN (London, N.W.1) would be grateful for suggestions for treatment of very troublesome tinnitus aurium in a patient aged about 65. She refuses electrical treatment, diathermy, etc., and most of the usual nerve sedatives have been tried without effect.

Effects of the Prolonged Administration of Liquid Paraffin.

"P. C. F." asks whether the continued administration of liquid paraffin in large doses over a period of years to young children for the treatment of chronic constipation is likely to inhibit growth. He suggests the likelihood that a bowel perpetually coated with a fine film of paraffin may be hampered in its work of assimilation.

Hot Feet.

"W. M." writes: I should be grateful if anyone could suggest some remedy for hot feet. An old lady, who all her life suffered from cold feet, now has the opposite, necessitating getting out of bed at night and walking about to cool them. Various things have been tried, but with little effect.

Rheumatic Manifestations after Dick Immunization.

Dr. C. Fraser Brockington (Bromsgrove) asks whether there is any record of the occurrence of rheumatic symptoms after the injection of scarlet fever toxin. A man, aged 26, who was very strongly Dick-positive, received his first inoculation of 500 skin doses on May 21st, 1929; a moderate local reaction followed, but no general reaction. One week later he had a second inoculation of 1,000 skin doses, which was followed by a rise of temperature to 100°, severe local and general reactions, intensive headache, muscular aches and pains, and a furred tongue. On June 1st, eleven days after the first injection, the first interphalangeal joints of the fifth and middle fingers of the left hand were swollen, red, and painful for one day. On June 4th he had a third inoculation of 2,500 skin doses, which gave rise to severe local and general reactions, intense headache, pains and aches, and a temperature of 100°. On June 15th the first interphalangeal joint of the index finger of the right hand became swollen, red, and painful, the condition lasting for one day. On June 18th he had a fourth inoculation of 3,000 skin doses, which caused very little reaction, but thirteen days later there was a temporary swelling of the first interphalangeal joint of the fifth finger of the right hand, lasting twenty-four hours. The Dick reaction was negative on July 3rd, 4th, and 5th, and no further inoculations were given.

Buccal Ulcer.

"W. G." writes: In reply to the inquiry of "R. D." in the *Journal* of February 8th (p. 267) about the treatment of intermittent crops of buccal ulcers, I found far the best treatment was to apply a small pointed piece of copper sulphate as soon as a spot was felt or seen, and repeat for one or two days if necessary. My patient usually noticed that the ulcers were worse when salads, tomatoes, and such-like were eaten.

Broken Sleep.

"E." writes in reply to the inquiry by "D. S." (February 22nd, p. 371): For wakefulness in the early hours of the morning I suggest a cup of hot tea with an unsweetened biscuit. I find this very useful.

Glass Permeable to Ultra-violet Rays.

Mr. G. L. Pilkington, on behalf of the Vita Glass Marketing Board, writes: Dr. Dyson says (February 22nd, p. 372) that even when the sun is shining in winter the minute particles of water in our damp atmosphere effectually cut off all the ultra-violet rays. The National Physical Laboratory has been taking direct photographs during this last winter at Teddington, and in no instance has it found that the spectrum did not extend as far as wave length 3,100 A.U., a point well within the health band of the ultra-violet rays in sunshine. Experiments we have done ourselves in North-country manufacturing towns give similar results, and photographs taken in a room glazed with Vita glass in our works at St. Helens on dull winter days with no direct sunshine show the spectrum ending below 3,100 A.U., whereas in a similar room glazed with ordinary glass the spectrum always ends at 3,200 A.U. The statement that "ultra-violet rays cannot pass through even the very thinnest piece of clothing" is against the weight of evidence, as many materials transmit these rays in a high percentage, notably artificial silk. The question of clothing, however, is not of very great importance, as the work of Eidinow, Colebrook, and Hill has shown that an area of skin represented by face and hands is quite sufficient to give a beneficial result from prolonged insolation. The fact that the face of the average person in this country is much paler in winter than it is in summer shows that the skin is sensitive to the seasonal variations in the intensity of the ultra-violet light.

Income Tax.

Purchase of New Car.

"H. W." explains that A and B are in partnership, each supplying his own car. Depreciation has not been claimed, it being agreed that the cost of renewal should be allowed when incurred. A has recently bought a new car for £400, but wishes to retain the old one (worth about £30) for occasional professional use. If this is done can he claim cost of renewal, and, if not, would it affect the matter if the old car were sold by A to the firm for £30.

*** A cannot claim to deduct the cost of replacing the old car so long as it is retained and is available for use. If he sells it to A and B it is arguable that A could claim cost of renewal, but as the income tax liability has to be computed and assessed on the firm as a distinct entity and not on A and B separately, such a sale would savour of an artificial transaction for tax purposes only, and we think that the authorities would refuse it. A and B would, of course, have the right of appeal to the District Commissioners or to the Special Commissioners, but in view of the above consideration we should not regard the prospects of appeal as very good. This case illustrates the disadvantage of not claiming the annual deduction for depreciation of cars.

LETTERS, NOTES, ETC.

Treatment of Ulcerative Colitis.

Dr. R. Bindon Brew (Penarth) writes: In view of the recent articles in the *Journal* on ulcerative colitis it may be of interest to record the case of a widow, aged 35, who, at the end of April, 1929, suffered from diarrhoea, with blood in the motions. The haemorrhage increased and she was confined to bed about the middle of May. When I saw her on May 22nd the pulse was 120, the temperature 100° F.; there was tenderness and rigidity in both iliac fossae, with signs of perityphlitis and pericolitis. The motions averaged twenty a day; they were offensive, bright red in colour, and contained about half a dozen green sloughs, the size of a shilling, in each motion. No pathogenic organisms or parasites were detected, and there was no serological reaction for typhoid or dysentery bacilli. No improvement followed the administration of tincture of opium, and she was admitted to hospital, which she left a month later without benefit. On July 28th she was still incontinent; the rigidity persisted in both iliac fossae, and the motions were dark brown in colour, containing pus and a material resembling red jelly. Her feet became swollen, and within four or five days dropsy spread to the whole of the body; the heart was dilated, and there was evidence of ascites. I attributed this dropsy to the profound secondary anaemia, since there was no albumin in the urine. Mental symptoms then developed, including forgetfulness and visual hallucinations. She was treated with tincture of digitalis, a bismuth mixture, and tincture of opium. The dropsy cleared up in about three weeks, and on September 5th she was given 25,000 units of antidysenteric serum. Two days later the pus and red jelly disappeared from the stools; she was able to get up on September 10th for a few hours, and rapidly regained health. Menstruation, which had been absent throughout her illness, started again. There has not been any suggestion of relapse.

Artificial Pneumothorax.

"T. G. M." writes: At the meeting of the Medical Society of London on February 10th Mr. Morriston Davies, in his support of the treatment of pulmonary tuberculosis by artificial pneumothorax, states what is, of course, a commonplace when he says: "In pneumothorax the presence of activity in the opposite lung did not necessarily preclude it." Now that may be true as a mere matter of clinical observation, but such a view is almost always associated with an axiom, as it is in this case. "In many cases what was wanted was a partial collapse with immobilization and resting of the lung." The question has been asked why it is that immobilization of the one lung does not produce a flare-up in the partially affected lung. The partly affected lung is called upon to make up for the lack of ventilation in the collapsed lung, and seeing that there is no definite means of determining whether toxicity which may be present may not be due to the smaller lesion, such advocacy is surely contrary to all that is meant by demobilization and rest. The question of lung reserve does not meet the objection, since, except with absolute rest, it is not to be hoped that the reserve may not be fully called upon. The assumption is that the salutary operation depends upon some other principle than their demobilization.

Large Cerebral Haemorrhage with Few Symptoms.

"E. A. C." writes: I was called to see a man whose wife sent an urgent message that he was suffering from a "terrible" headache. I found him [illegible] vomited two or three times, and was very [illegible]s arms about. In reply to my query as to [illegible] was denied. There was no inequality of the pupils, [illegible]e pulse was regular, though rapid. I gave him 1/4 grain morphine with atropine 1/150 grain; a quarter of an hour later he appeared better, though he was unconscious. I was again sent for in less than an hour, and found him dead. At the inquest evidence was given that he had received an injury about six weeks before. First aid was administered at the place where he was working, and he did not think it necessary to consult a doctor. His wife said that after the accident she noticed that his hearing was not so good, and that he complained of pains in his head. On the surface of the left side of the brain I found a track of adhesions about an inch wide, between the dura and brain surface, extending the whole length, and, opening the left side of the brain substance, an extensive haemorrhage, occupying the whole length, was revealed. Since this man was in good health, not suffering from any specific disease, and his brain was otherwise healthy, it is difficult to dissociate the history of this apparent trivial injury, which did not give rise to any serious symptoms six weeks preceding his death. Perhaps some reader could quote a parallel case.

Vacancies.

Notifications of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 48, 49, 50, and 51 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 45 and 47.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 75.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

225. Oedema in Bright's Disease.

H. CHABANIER, C. LOBO-ONELL, M. LEBERT, and E. LÉLU (*Journ. d'Urol.*, December, 1929, p. 598) state that in recent years numerous observations of the syndrome formerly designated "epithelial nephritis or oedematous Bright's disease," but now termed "lipoid nephrosis," have determined the different humoral characteristics of this affection. Attention, however, has been paid rather to the processes of cure and the value of therapeutic measures than to the pathogenic significance of the humoral changes. The authors agree that the pathogenesis is obscure, and report in detail a case which illustrates its complexity. The patient had albuminuria and a marked anasarca, which subsided after an acute attack of diarrhoea. The symptoms returned and the patient entered hospital, from which time the disease could be classified as passing through three phases. During the first, injections of thyroid extract produced no results. During the second, seven intramuscular injections of neptal were given, which resulted in a lessening of the oedema, but had no effect on the humoral changes. In the third phase, thyroid extract was again administered together with ammonium chloride, and, the weight having increased, two intravenous injections of sodium citrate were given. At the end of this phase a second crisis of profuse diarrhoea occurred, which was followed by a progressive return to normal of the humoral characters, and final cure. During treatment a hyper-nitrogenous diet was given. The authors remark that a characteristic of the disease is diminution of the proteins of the plasma; this is caused by a reduction in the serum albumin, the serum globulin remaining normal, or even being raised in some cases. This increase in the globulins cannot be fully explained by the dilution of the blood or by the albuminuria and loss of serum albumin by the kidney. The authors suggest that disturbance of the equilibrium normally existing between the proteins of the plasma may be due to metabolic irregularities, and cite the frequency of lowered basal metabolism in oedematous forms of Bright's disease. Another characteristic is chlorine retention; the authors believe that this change in the renal elimination of chlorine is due to the disequilibrium in the plasma proteins, and is not a primary cause of the disease. Changes also occur in the plasma lipoids. The final disappearance of the oedema in the present case is attributed to the very intense diarrhoea, which apparently drained away the excess of water. With regard to the part played by the treatment and diet in aiding the cure, the authors refer to several cases in which cure has followed similar measures.

226. Imperfect Inoculation against Diphtheria.

P. LEREBOULLET and J. T. GOURLAY (*Paris Méd.*, December 14th, 1929, p. 519) state that although the successful results of active immunization against diphtheria are generally recognized in France, several cases have been recorded, especially at the Société de Pédiatrie, of diphtheria, the diagnosis of which was confirmed bacteriologically, occurring in persons who had received the proper number of injections of anatoxin. Most writers, however, have insisted on the small proportion of such cases, which amounts to some 3 to 5 per cent. of those injected. The present authors maintain that a considerable number, and perhaps the majority, of these apparent failures have not really been properly inoculated. Inquiry in many cases showed that the child had not received the three injections, that a Schick test had been mistaken for an inoculation, or that the child had been registered as inoculated when as a matter of fact he had escaped. In several cases the practitioner had injected antitoxin and not anatoxin, in one instance of this kind owing to illegible writing on the doctor's prescription. The authors maintain that the incidence of diphtheria among those inoculated with anatoxin is very small, if the following cases are not included: (1) those which have been given only one or two injections instead of three; (2) the numerous cases in which there has not been the proper interval of three weeks between the first and second injections, and a fortnight between the second and third; (3) those in which diphtheria developed in less than two months after the last injection (the date of complete immunization after inoculation being variable); and (4) cases in which inoculation was not properly carried out, for reasons already given. Among 17,000 children who had been inoculated with anatoxin at the Hôpital des Enfants Malades, Paris, there were only five in whom the diagnosis was confirmed bacteriologically who developed diphtheria. One was a mild laryngeal case, and four were faucial cases, two of which were cases of Vincent's angina in diphtheria carriers. On the other hand, there were ten mild faucial cases in patients who had had only two injections, and at least fifteen in those who had had only one.

227. Pernicious Anaemia in a Boy.

P. F. ECKMAN and O. W. ROWE (*Minnesota Med.*, December, 1929, p. 788) report the successful treatment of a case of pernicious anaemia in a boy, aged 11, who was almost moribund when first seen. On examination the haemoglobin percentage was found to be 25; the red corpuscles numbered 1,450,000 per c.mm., and the white cells 20,100, 70 per cent. of the latter being polymorphonuclears. Anisocytosis and poikilocytosis were marked. There were numerous macrocytes present, many of which were polychromatophilic or loaded with basophilic granules. The cells were generally well filled with haemoglobin. A few normoblasts and an occasional megaloblast were noted. Many of the polymorphonuclears were rather larger than normal and showed very definite over-segmentation and stranding: some of these nuclei contained as many as eight to ten thinned-out lobules. These cells are regarded by Watkins as diagnostic of pernicious anaemia. Owing to the patient's condition he was given a transfusion of 450 c.cm. of citrated blood on the day of admission; his condition definitely improved, the haemoglobin percentage rising to 42, the red blood cells to 1,808,000, and the white blood cells falling to 12,700. Examination of the vomitus showed no free hydrochloric acid present, and a combined acidity of 26. On the fourth day treatment with liver extract was begun, using four phials (Lilly's 343) daily; a few days later the dosage was increased to six phials, with the addition of a raw liver cocktail once daily. The diet was made as general as possible, and included certain portions of meat, fruit, and cooked vegetables each day. Before any appreciable effect was noted in the blood counts a very obvious change in the patient's general attitude, appearance, and appetite occurred very soon after beginning the administration of liver extract. After three months' treatment his count remained quite normal and he had put on 20 lb. in weight.

228. Treatment of Stokes-Adams Syndrome.

F. W. PRICE and B. S. NISSE (*Amer. Heart Journ.*, December, 1929, p. 197) classify the conditions under which Stokes-Adams attacks may occur as follows: (1) in suddenly developed, transient, complete auriculo-ventricular block; (2) when periods of complete block or increased grade of block occur in a patient the subject of partial heart-block; (3) if the ventricular rate in permanent complete block falls below 30 per minute. Of these three groups the second is the largest; cases corresponding to the first group are rare, while periods of asystole become less frequent when complete block is established. The morbid conditions causing auriculo-ventricular block are overaction of the vagus, diminished irritability of the ventricular myocardium, and gross lesions—sclerotic, gummatous, or inflammatory—involving the junctional tissues. Therapeutic measures in Stokes-Adams syndrome are directed essentially to increasing the ventricular rate, and to the resolution of a junctional lesion if present. Antisyphilitic treatment has at times been successful where gummatous infiltration has been the causative factor. The exhibition of the iodides is considered harmful in cases other than syphilitic, since they depress the myocardial irritability. The administration of thyroid extract has occasionally given good results, while atropine is specially valuable in preventing attacks when these are due to vagal overactivity. Digitalis may increase the excitability and contractility of the heart muscle in complete block, but it is contraindicated in partial block owing to its depressant effect on the conducting system. Adrenaline is the only potent therapeutic agent during an attack, intracardiac injection being usually necessary. For the prevention of attacks, barium chloride by the mouth, half-grain doses twice daily, increasing to one grain thrice daily, is recommended. The authors describe two cases: in one of them exceptionally severe Stokes-Adams attacks were stopped by the administration of barium chloride when other remedies had failed; in the other, complete block complicated by Stokes-Adams syndrome was relieved by barium chloride and adrenaline, the former drug alone being ineffective.

229. Cerebro-spinal Meningitis simulating Acute Poliomyelitis.

J. MAGE and L. VAN BOGAERT (*Ann. de Méd.*, November, 1929, p. 377), who record a fatal case, emphasize the rarity of the spinal forms of cerebro-spinal meningitis, of which only a few genuine examples have been published. In most cases the condition is a diffuse meningomyelitis with predominance of motor or sensory disturbance according to the extent of the areas invaded. In such cases the disease is manifested by flaccid paralysis similar to that found in acute poliomyelitis. During the first days of the disease the patient notices a feeling of weakness in one or more limbs, which he has difficulty in moving. As a rule the loss of power is accompanied, or even preceded, by more or less violent pain in the limb affected and corresponding part of the trunk, whether it be the scapular or lumbar region. In some cases these symptoms do not appear until after the meningeal phenomena have subsided, while in others the symptoms of meningitis and poliomyelitis occur simultaneously. In any case the paralysis is flaccid, and is accompanied by loss of the reflexes and sometimes by sphincter changes. The paralysis becomes more definite during the following days, and may even invade the neighbouring groups of muscles, while the pain and sphincter troubles disappear. Muscular atrophy is then noted with, sometimes, changes in the electrical reaction, and even reaction of degeneration. Subsequently a partial regression of the paralysis and atrophy follow, only a few muscular groups being affected. The present patient was a man, aged 20, in whom the disease assumed three characteristic stages: (1) a stage of invasion resembling poliomyelitis, though the nature of the disease was soon discovered by the presence of meningococci in the spinal fluid; (2) a stage of attenuation of the symptoms, although the patient proved refractory to polyvalent anti-meningococcal serum, of which more than 500 c.cm. were injected; and (3) a terminal stage of *Staphylococcus aureus* meningitis. At the necropsy, in addition to the lesions of acute meningitis, the most important changes found consisted in a process of anterior poliomyelitis, though it did not present the appearance of the massive and acute degeneration found in Heine-Medin's disease.

Surgery.

230. Carcinoid of the Vermiform Appendix.

A. POP (*Zentralbl. f. Chir.*, December 14th, 1929, p. 3168), who records an illustrative case, states that among the benign tumours of the appendix a considerable number of cases of carcinoid have been recorded. The nature of these tumours has led to considerable discussion without any decision having yet been reached. Of 139 cases of carcinoid of the appendix collected by Simon, 77 per cent. were at the distal end (especially the tip), 14 per cent. in the middle third, and only 7 per cent. at the proximal end; in 2 per cent. the whole organ was affected. In the majority of cases the tumours were found accidentally at the necropsy. In 65 per cent. of the cases of carcinoid of the appendix females were affected, only 35 per cent. of the patients being males. The condition is liable to occur at any age, especially in the second and third decennium, which corresponds to the usual period for inflammatory processes in the appendix. Pop's experience does not agree with that of Millner, who asserts that carcinoid constitutes 1 per cent. of all cases of appendicitis, as among nearly 3,000 cases of appendicitis operated on in Professor Jacobovici's clinic at Cluj, where Pop is working, the present case was the only example of carcinoid. The patient was a girl, aged 16, admitted to hospital with symptoms of acute appendicitis. Appendicectomy was performed, and the appendix was found to present a carcinoid at the proximal end and acute appendicitis at the distal end. Recovery was uneventful.

231. Fractures of the Carpus.

IN order to ascertain the reasons for the persistent distressing pain and limitation of function following carpal damage, H. H. RITTER (*Surg., Gynecol. and Obstet.*, December, 1929, p. 838) has made a study of 25 cases of carpal injury, and reports his conclusions. A brief review of the anatomy of the carpus is given and the mechanism of the injuries is described. When the hand is in dorsal and radial flexion, as it is in falls on the outstretched hand, the scaphoid is in direct contact with the radius and lies between that bone and the os magnum, so that the shock of a blow starting in the hand is carried through the os magnum to the scaphoid and thence to the radius. If the radius does not give way (Colles's fracture), the scaphoid breaks, receiving the full force of the violence with the wedge-shaped os magnum jammed against it; if the force continues the anterior ligament yields, with resulting dislocation of the semilunar bone. If the hand is in dorsal and ulnar flexion the violence is transmitted through the semilunar bone against the anterior ligament, which tears, allowing this bone to escape through a rent in the capsule and become dislocated. The scaphoid is more often damaged than all the other carpal bones, and dislocation of the semilunar bone is frequently associated with a fracture either of the scaphoid or the articular surface of the radius. Much of the disability following carpal injuries is due to damage of the intra-articular soft structures. Osseous union in carpal fractures is exceptional; fibrous union the rule. Signs and symptoms common to all carpal injuries are swelling, limitation of motion, pain aggravated by motion, and acute tenderness over the site of the lesion. Early attempts at closed reduction of scaphoid fractures and semilunar dislocations should be made, and, if these fail, an open operation should be performed immediately. Carpal fractures treated unsuccessfully by immobilization should be operated on within three months lest irreparable arthritic changes take place. These fractures, except fractures of the tubercle of the scaphoid, do not heal readily, and no fracture or dislocation of the carpus exists without an associated chondritis, synovitis, and tenosynovitis. Both wrists should always be x-rayed as an aid to diagnosis, but physical findings should be the guide in judging end-results.

232. Joint Complications of Varicella.

A. MARTIN (*Journ. de Med. de Paris*, November 28th, 1929, p. 1014) remarks that, although varicella is usually a mild disease, cases sometimes occur in which articular, peri-articular, or para-articular complications develop during convalescence, or, more rarely, in the first few days of the disease. Since 1919 Martin has seen three cases of suppurative arthritis of the limbs, four of suppurative myositis, two of suppurative bursitis, and one of suppurative synovitis. The symptoms of suppurative arthritis are typical, and the condition may lead to ankylosis. If an operation is not performed septicaemia develops, and death ensues. The muscles involved in suppurative myositis were the biceps on the fifty-third day, the supinator longus on the twenty-eighth day, and the glutens maximus in two cases on the thirty-fifth and fortieth days respectively. In each case the suppuration appeared in the neighbourhood of the joint. The diagnosis of myositis is difficult; before operation it was impossible to say whether the lesion was in the bone or the joint. In the three cases in which a bacteriological examination was made streptococci were found. In the cases of suppurative bursitis the olecranon bursa was involved in one case and the trochanteric bursa in the other. Recovery followed operation in three weeks and three months respectively. In the case of suppurative bursitis the synovial sheath of the peronei was involved with considerable oedema of the foot and pain in the movements of the tibio-tarsal joint, simulating osteomyelitis of the tarsus or astragalus. The temperature fell again after incision, but the synovial sheath remained thickened for three months and required treatment by ultra-violet rays and heliotherapy.

233. Treatment of Hernia by Subcutaneous Injections.

F. S. JAMESON and J. CANTALA (*Med. Journ. and Record*, January 15th, 1930, p. 87) describe the method of Piña Mestre of treating inguinal hernia by injections, the results of which are said to compare most favourably with those following herniaplasty, recurrence being less frequent than after operation, and the procedure being simple, harmless, and practically painless. As a rule the hernia is eradicated in ten to fifteen days, and it is not necessary for the patient to stop working during this time. The mortality is *nil*, and the only contraindications are haemophilia and irreducibility of the hernia. The aim of this method is to cause in the canal a seroplastic exudation, which results in adhesions; these obliterate the canal. Mestre found that vegetable, stimulating, and astringent solutions were more efficacious and less irritating than metallic ones; accordingly he devised a mixture the active principles of which are alcohol and tannic acid. When making the injections 2 c.cm. of novocain solution are first injected through the external abdominal ring into the inguinal canal or into the neighbourhood of the internal abdominal ring; the needle is left in place, and after a few minutes the contents of one ampoule of the solution of Mestre are injected very slowly. As the needle does not penetrate the columns of the ring the peritoneum is not reached. No general reactions occur; if slight pain is experienced after the first two or three injections, it can be relieved by the application of hot water to the injection site. There are two types of local reaction—aseptic inflammation of the canal and swelling of the cord—but, unless these are severe, the injections need not be postponed and may be continued daily. The authors have employed this method in 64 cases, in which four recurrences followed. Two of the latter were

due to the carelessness of the patients, but were cured by a few additional injections. The poor health of one patient interfered with the formation of adhesions, and in the fourth case a large sliding hernia could not be controlled long enough to permit adhesions to develop. A properly fitting truss must be worn during the treatment. I. MAYER (ibid., p. 91) states that this method results in cure in 92 per cent. of cases, and that, though meant primarily for inguinal hernias, it can also be used in femoral and umbilical hernias. He claims that permanency of result rather than shortness of treatment is to be desired, and does not advocate a rapid course of ten to fifteen days, since firm obliterating adhesions cannot be thus produced. Fifteen cases are reported, in some of which the patients received treatment thirty years ago.

234. Hydronephrosis.

VON LICHTENBERG (*Amer. Journ. of Surg.*, December, 1929, p. 747) describes hydronephrosis as urinary obstruction or clogging resulting from a distinct anatomical alteration or from a neurogenetic disorder of the urinary tract. The pathological changes in the kidney arising from this can be designated as "back-flow kidney," which term includes the various forms of pyelectasis. Hydronephrosis is not a disease of the kidney, but a disorder of the genito-urinary system. The nature of the obstruction may be mechanical, as in cases of strictures or kinks, or be dynamic following disturbances of the innervation. "Urinary constipation" may exist for some time without symptoms, which in congenital cases may not occur until the second or third decade, by which time the disease is too far advanced for conservative surgical intervention. In some cases there are attacks of pain with retention interchanging with free urinary outflow. Treatment must aim at the relief of symptoms and the prevention of further damage to the renal parenchyma. A conservative procedure is indicated in all cases with bilateral "constipation," or where the other kidney is affected. Acute purulent infection of the parenchyma is no contraindication for plastic surgery, and a case of bilateral urinary constipation with a carbuncle of the kidney on one side was cured by means of a uretero-pyeloneostomy. The temporary outflow of the urine from a small nephrotomy combats the infection, protects the anastomosis, and helps healing. A temporary fistula of the kidney in all plastic operations upon the kidney pelvis is given as the reason for the good operative results obtained. In cases of infected back-flow kidneys,

only after thorough investigation

The majority of cases of distal obstruction can be relieved by conservative measures without the removal of the kidney, and uretero-pyeloneostomy proved satisfactory in many cases, while in spastic conditions an operation similar to the pyloroplasty of Heinecke-Mikulicz is recommended. In strictures at the same point surgical dilatation with bougies has been successful. In 80 cases operated on for renal obstruction the kidney was removed 33 times; the remaining 47 cases were treated conservatively, and there were no deaths in either group.

235. Treatment of Varicose Ulcers and Eczema.

U. CAVALLUCCI (*Rif. Med.*, December 21st, 1929, p. 1722) has treated 156 cases of varicose veins of the legs, of which 89 were complicated with eczema and 67 with ulcers, by the injection of phlebosclerosing substances such as sodium salicylate, mercury biniodide, and quinine bichloride. The eczema and ulcers healed more rapidly and more permanently than was the case with the older methods, which did not prevent frequent and rapid recurrences. The author considers sclerosing injections indicated especially for patients with superficial varices, excepting those with obstruction in the deeper venous circulation. They are not suitable for the subjects of claudicatio intermittens, nor in very advanced and cachectic cases, in plethoric persons, or in those affected

of distilled water), injecting 0.5 to 2 c.cm. of the solution; he found that a minimum of three to a maximum of eight injections over a period of ten to twenty days was sufficient to complete the cure.

236. Banti's Disease cured by Splenectomy.

B. DESPLAS, A. CAIN, and E. PEYRE (*Bull. et Mém. Soc. Nat. de Chir.*, December 14th, 1929, p. 1346) report a case of Banti's disease in a man aged 50. The first symptoms were slight—namely, delayed digestion and a feeling of heaviness in the right hypochondrium; they were relieved by treatment, though after three years enlargement of the liver was noticed. Six years after the first indication of any trouble the patient had a severe haemorrhage followed by faintness, and became very weak, although he recovered slowly until the following year, when he was seized with violent colic, which was followed by three further haemorrhages. After a preliminary examination a diagnosis of mitral disease of the heart was made and digitalis was given, but later enlargement of the liver, and the discovery that the spleen was very large, hard, and painless, caused the diagnosis to be altered to splenomegaly with anaemia. The hypertrophy of the liver suggested Banti's disease which had reached the stage of cirrhosis. Two blood transfusions were given before the operation for splenectomy was performed, and one immediately afterwards. On the third day after the operation pneumonia and oedema of the limbs developed, with raised temperature, but these subsided after another blood transfusion and the patient made a complete recovery. The operation was rendered particularly difficult by the obesity of the patient and thoracic respiration, and also by the fact that resection of the lower costal margin was necessary. Two years afterwards the patient was in excellent health; the anaemia had completely disappeared, and no trace of the original symptoms remained.

Therapeutics.

237. Medical Treatment of Gastric Ulcer.

F. W. WHITE (*New England Journ. Med.*, November 28th, 1929, p. 1075) records his observations, which extended over six or eight years, on the medical treatment of fifty cases of gastric ulcer. X-ray screening and skiagrams proved very useful in the diagnosis and in the observation of progress, lesser curvature ulcers being easily seen, in contrast with the greater difficulty experienced in the case of pyloric and duodenal ulcers. Skiagrams of these lesser curvature ulcers were taken at intervals of two or three weeks during the treatment, and showed that the deformity might change and disappear, the edges of the ulcer become flattened, the crater filled, exaggerated peristalsis return to the normal, and pyloric spasm disappear coincidently with the symptomatic improvement. These changes might be very rapid even in large ulcers, which might disappear in from four to six weeks. One patient, aged 70, died of arterio-sclerosis ten years after being successfully treated for ulcer, and at the necropsy the stomach was found to be normal. As regards the differential diagnosis, gastric ulcer has no one characteristic symptom, but when all the symptoms are considered a very accurate conclusion is nearly always possible, especially if the early results of medical treatment are watched during several weeks of intensive study. Gastric ulcer usually shows early and definite signs of improvement, while cancer is unlikely to alter much. White remarks that, in selecting cases, serious complications such as perforation, recurrent haemorrhage, or persistent pyloric obstruction contraindicate medical treatment. This begins with rest in bed for a week or two, and frequent feeding with the modified "Sippy" diet, with the addition of cereal gruels of a low or moderate alkali content. Focal infections are treated, and tobacco is reduced or prohibited. Belladonna or atropine may be given to relieve the pyloric spasm. Treatment is continued during the remission of symptoms, and the patient is warned that supervision will be required for two years. These patients, like diabetics, must be taught to conduct their own later treatment. All the fifty cases recorded were watched for three years or more: 46 per cent. are reported as being well, and 76 per cent. as either well or better, but one was unimproved. Late operations were performed in seven cases. Periodical re-examination for from three to nine years in fifty cases of gastric ulcer revealed only one case of a suspected development of cancer in an inoperable ulcer; this low figure may be due to the fact that, when the size was measurable, the majority of ulcers were found to be of small or medium size.

238. Dextrose in Pneumonia.

W. W. G. MACLACHLAN, G. J. KASTLIN, and R. LYNCH (*Amer. Journ. Med. Sci.*, January, 1930, p. 93) present some clinical observations, made during the past four years, on the use of dextrose in pneumonia, a treatment which they believe to be of great value, though of definite limitations. They consider that the best way of giving dextrose in pneumonia is as follows. From 400 to 600 grams are given daily by the mouth in the form of dextrose lemonade (200 grams of dextrose dissolved in 1 litre of water, to which the juice of two or three lemons is added). The litre thus contains 800 calories, and the patient should take two to three litres each twenty-four hours. When it is impossible to give dextrose by the mouth in sufficient amount, or when the case appears to be of a toxic nature, a 25 per cent. solution of dextrose is injected intravenously four to six times every twenty-four hours. The quantity injected never exceeds 200 c.cm. at one time, and it must be introduced slowly, at least half an hour being allowed for the procedure. The nutritional value would appear to be the most important factor in this therapy, but

the clinical signs of *improved circulation* after the intravenous injections may, the authors think, indicate a direct action on the heart muscle. This method is a physiological one, and even when an effective polyvalent serum is employed it may still be of value as an auxiliary measure. The authors state that in a first series of 160 cases, dextrose was given only in small amounts intravenously, and only to the patients with toxic conditions; this accounts for the marked difference in the results which were obtained in a second series of 126 cases which occurred in a year when the general mortality was the same. In the second series, which showed a 22 per cent. lower mortality than the first, dextrose was given much earlier in the disease and in larger quantities, both by the mouth and by intravenous injection when necessary. A definite lowering of mortality was noted in all groups which received adequate dextrose treatment.

239. Treatment of Angina Pectoris.

P. MORAWITZ (*Deut. med. Woch.*, November 29th, 1929, p. 1993) regards angina pectoris as a disease dependent on several anatomical and functional conditions, none of which are obligatory. These are arterio-sclerosis, syphilis, narrowing or blocking of the coronary arteries, spastic conditions like claudicatio intermittens, gastro-cardiac complexes, exercise, position of the body; they add abuse of tobacco, but mention that tobacco-angina is rare in the absence of coronary sclerosis. The diagnosis of angina pectoris vera is difficult or impossible, because the physical signs, when present, are not specific, but common to other diseases. Treatment is chiefly general and directed to the *regulation of living*; physical measures such as massage, baths, diathermy, and high frequency currents are commended. During an attack such a medical remedy as nitroglycerin or amyl nitrite may be tried, but these may be without effect or act too slowly. In cases of cardiac insufficiency with coronary sclerosis, Morawitz advises small doses of digitalis combined with chinidin; adaline, bromural, and luminal, given with theobromine, digitalis, iodine, and papaverine, are useful as nerve sedatives. The syphilitic form of the disease is treated with neosalvarsan and other antisyphilitic remedies. Good results have been obtained by the intravenous injection of glucose, 20 c.cm. of a 25 to 50 per cent. solution being injected twice a week. The author cannot recommend the surgical treatment by section of the cervical sympathetic or excision of the thoracic ganglion, considering that so unphysiological an operation, by interfering with the cardiac nervous system, would have a deleterious influence on the heart's action.

240. Treatment of Perforating Plantar Ulcer.

LOUSTE and JUSTER (*Bull. Soc. Française de Derm. et de Syph.*, November, 1929, p. 1080) agree that the treatment of perforating ulcer of the foot is often very disappointing. They report the case of a woman, aged 42, who had been under treatment for five years for tabes dorsalis, and had four series of injections, including novarsenobenzol and grey oil. A perforating ulcer appeared subsequently in the right great toe, and during eight months, in spite of treatment by sulfarsenol and insulin, no improvement resulted. Local ultra-violet irradiations were then tried for one month, and resulted in complete cicatrization.

241. Spleen Therapy in Laryngeal Tuberculosis.

ACCORDING to Dr. F. HUTTER (*Wien. klin. Woch.*, November 28th, 1929, p. 1513) the favourable influence of spleen therapy in tuberculous affections has been confirmed by many workers; raw calf spleen is administered by the mouth or extracts may be injected. The author reports success from spleen therapy in cases of laryngeal tuberculosis, the raw calf spleen being administered as follows. For four weeks he gives daily 50 to 100 grams of spleen, either minced and mixed with soup or lightly grilled, or minced and mixed with condiments, fat, and hard-boiled egg. After two to three weeks of rest the course of treatment is repeated again, and so on. Gastric intolerance of the raw spleen was overcome by the administration of pepsin and hydrochloric acid.

242. Lysed Typhoid Vaccines.

G. CALABRIA (*Rivista Sanitaria Siciliana*, December 1st, 1929, p. 15[illegible]) reviews the favourable results obtained by the administration of lysed typhoid vaccines, which, he claims, reduce the duration of the infection to fifteen to twenty days, and prevents complications and relapse. The dose of the specially prepared vaccine is 0.5 to 1 c.cm. intravenously, or 1 to 3 c.cm. intramuscularly; the dose is gradually increased, injections being given on alternate days until a fall in temperature is obtained. Intramuscular injections, although slower in action, are said to be safer. Resolution may occur in twenty-four hours, and in these cases an intense reaction follows, anaphylactic in type, followed by collapse lasting ten to fifteen minutes. After this the temperature rises to a point higher than that observed before the injection of vaccine, but it begins to fall after ten minutes or so, and the patient recovers consciousness, a normal temperature being regained within twenty-four hours. In the majority of cases, especially with intramuscular injections, the curative process is more gradual and progressive; more injections are necessary, and the reactions are less intense. During the reaction the red and white blood corpuscles are diminished, but in a later stage they increase. The vaccine is said to be contraindicated in renal and heart disease.

Anaesthetics.

243. Death during Induction of Anaesthesia.

R. W. HORNABROOK (*Med. Journ. of Australia*, December 21st, 1929, p. 838) records a case of death occurring in an unmarried woman, aged about 30, during the induction of anaesthesia for examination purposes in a consulting room. The patient had been placed in the lithotomy position upon an ordinary table only two-thirds the length of an operating table, but, having satisfied himself that the pulse was steady, regular, and of good volume, and that she was free from nervousness, and without any abnormality beyond a huskiness of voice, the author departed from his usual routine of never inducing anaesthesia with the patient in an abnormal position and without a preliminary injection of morphine and atropine. Owing to the huskiness of the voice, chloroform was given on a Schimmelbusch mask held well above the face preparatory to continuing with ether. Only a few drops had been used when the patient's heart stopped suddenly, and did not recommence beating, although artificial respiration was continued for two hours, and oxygen was administered through a laryngeal tube. At the necropsy the heart was found to be enlarged, the cavity of the right ventricle being much dilated and distended with dark fluid blood; its wall was thin, and the orifice of the right coronary artery was narrowed. The left lung was adherent to the chest wall, and dilated bronchi at the base contained pus. Death was due to cardiac dilatation and syncope of the right side of the heart. Hornabrook concludes that it was a mistake to induce anaesthesia with the patient in the lithotomy position. He considers that, even when only very small amounts of an anaesthetic are required for any purpose, the patients should be placed upon an operating table, and such a position as the lithotomy one should not be permitted until anaesthesia has been obtained, since the blood pressure is increased by it. He thinks that properly fitted operating theatres in hospitals or nursing homes should be regarded as essential for examinations under anaesthetics.

244. Spinocain in Spinal Anaesthesia.

R. RIVOIRE (*Presse Méd.*, January 25th, 1930, p. 117) discusses the disadvantages and risks attending the use of novocain in spinal anaesthesia; these are essentially due to its diffusion in the cerebro-spinal fluid, the most constant danger being arterial hypotension. The vaso-constrictor nerves leave the cord from the third lumbar to the second dorsal vertebra; the hypotension thus occurs early; it tends to increase as the anaesthetic diffuses, and more nerves are progressively paralysed. Rivoire remarks that a spinal anaesthetic should therefore be non-diffusible, and should remain where it is injected until the anaesthetic effect ends, its action being regular, constant, and prolonged. If of lower density than the cerebro-spinal fluid, it will float up and paralyse the nerve roots with the patient in the Trendelenburg position; if of greater density, the spinal nerves will only be affected when the patient is seated or in Fowler's position. In either case the upper level of the anaesthesia can easily be controlled by the volume injected, and by the degree of inclination of the operating table. The author thinks that the spinocain of G. Pitkin fulfils all these requirements, and he recalls Barker's earlier work on these lines which was reported in the *Journal* in 1907 (vol. i), 1908 (vol. i), and 1912 (vol. i). After much experimenting Pitkin (see *B.M.J.* August 3rd, 1929, p. 184) obtained a stable substance, which he termed amyloprolamin, and, using this as a solvent of novocain, he prepared two solutions of different densities; the one, light, by adding ethyl alcohol, which he named spinocain; the other, heavy, by adding propantriol. Spinocain is of much lower toxicity than novocain, and can therefore be given in much larger doses. It enhances the intensity of the analgesia by increasing its regularity and duration, the latter being from one and a half to two hours. Rivoire considers that there are practically no contraindications to its use, except in supraphrenic operations, when another form of anaesthesia is necessary. To guard against arterial hypotension, ephedrine should also be administered, owing to its vaso-constrictive action, in doses governed by the height

of the anaesthesia desired and the arterial tension of the patient. Post-operative headaches are caused not only by meningeal reaction, but also by hypotension of the cerebro-spinal fluid, due generally to a leaking of the fluid through the tear in the dura mater made by the needle. This can be prevented by using fine needles with short bevels. An hour before the operation an injection of scopolamine and morphine should be given for its sedative effect, and five minutes before the puncture a subcutaneous injection of Pitkin's novocain-ephedrine solution should be administered. The puncture should be made between the twelfth dorsal vertebra and the sacrum, and always in the median line, in order to avoid entering a vein. Owing to its light density spinocain should never be given to a sitting patient, and the patient should not sit up till all the anaesthetic is either fixed or eliminated. Details are given of the doses of spinocain and the heavier solutions, and the positions to be assumed to obtain the various degrees of anaesthesia.

245. Spinal Anaesthesia.

A. E. OLSON (*Minnesota Med.*, January, 1930, p. 4) reports an experience in the use of spinal anaesthesia at St. Luke's Hospital in 168 operations upon the abdomen, pelvis, and lower extremities, most of which were of the major type. He remarks that, while it has a definite field of usefulness, it should be restricted to major operations below the umbilicus in patients whose systolic blood pressure is over 100 and who are physically able to react from the fall in blood pressure. An hour before the operation 5½ grains of allonal are given, and half an hour later 1/4 grain of morphine, with 1/150 grain of atropine, is injected hypodermically. The eyes are covered and the patient is encouraged to breathe deeply to combat nausea; the stomach should be empty in case it may prove necessary to supplement the anaesthesia with a general anaesthetic. A dose of 50 mg. of ephedrine hydrochloride should be given hypodermically with the novocain locally before the puncture; the dosage of novocain is on a basis of 10 mg. to each 10 lb. of body weight. After puncture the head of the operation table is lowered about 15 degrees. During the operation the blood pressure is recorded every five minutes, so that a fall to below 60 may be combated by the injection of 10 minims of adrenaline hydrochloride (1 in 1,000) intramuscularly. In the case of a fall to below 40, intravenous normal saline injections are given with 1 minim of adrenaline in every 100 c.cm. In 25 consecutive cases the only post-operative complications were paralytic ileus in one, pneumonia in one, immediate headache in two, headache after one week's interval in four, and vomiting in six.

246. Novocain Anaesthesia in Gynaecology.

M. ARCIERI (*Il Policlinico*, Sez. Prat., January 13th, 1930, p. 45) states that the local use of novocain, contrary to the practice in general surgery and ophthalmology, has not been much employed in obstetrics and gynaecology. He records eighteen cases in women, aged from 27 to 67, with various gynaecological conditions, such as vaginal prolapse, stenosis of the cervix, cystocele and rectocele, vagino-perineal laceration, and endometritis, in whom infiltration anaesthesia of Frankenhauser's ganglion and internal pudic nerve with a 1 per cent. solution of novocain was sufficient to allow the necessary operations to be performed. The technique was simple and the results were good. The method is said to be specially suitable for private practice.

Obstetrics and Gynaecology.

247. Secondary Anaemia in Pregnancy and the Puerperium.

SINCE the exact nature and course of secondary anaemia affecting the gravid woman is not well understood, P. B. BLAND, L. GOLDSTEIN, and A. FIRST (*Amer. Journ. Med. Sci.*, January, 1930, p. 48) have undertaken a study of 300 cases (200 maternity ward patients and 100 private ones) in the various periods of gestation and in the puerperium, a special effort being made to determine, if possible, the relationship of the existing anaemia to the various associated maternal conditions. Of the hospital patients, one-half exhibited an anaemia during pregnancy, with red cell counts below 3.5 million per c.mm.; of the private cases, 26 per cent. gave counts below the same figure. Thus 42 per cent. of the entire group, regardless of the time of examination, gave counts below 3.5 million cells. It was found that in 82 per cent. of the ward patients and 62 per cent. of the private ones the haemoglobin determinations were 74 per cent. or less. The severity of the anaemia was apparently not affected by parity, age, or blood pressure. There was no conclusive evidence that improvement occurs at term. In 35 patients having two blood determinations in pregnancy, a gain of 200,000 cells or more was found in 14, and a reduction of the same number in 14 others. Several etiological factors, including ill health, foci of infection, toxaemia, and syphilis, were investigated, but the extent of their influence could not be determined. In a large number of the patients a remarkable and rapid recovery occurred within a few days after delivery. It was noted that 34 of 48 women (71 per cent.) having red cell counts below 3.5 million in the last trimester of pregnancy gained over 200,000 cells per c.mm. within ten days after delivery; and of 23 patients definitely anaemic during pregnancy, 20 were fully recovered in six months after delivery. The large percentage of private patients with anaemia indicates that environment alone was not responsible for the condition. Its etiology remains undisclosed; the withdrawal of iron from the maternal corpuscles by the foetus, the existing hydraemia of pregnancy, and a pre-existing chlorosis are all probable factors in its production, and the subject needs further investigation.

248. Disproportion between Foetus and Pelvis.

G. FITZGIBBON (*Journ. Obstet. and Gynaecol. of the British Empire*, Winter, 1929, p. 756) remarks that improved ante-natal supervision, although benefiting the complications of pregnancy, has failed to control those of labour. At present the number of women treated by induction of labour or Caesarean section has increased, but the number of craniotomies, difficult deliveries, and disastrous forceps sequels has not diminished. Inductions and Caesarean section are performed sometimes inadvisedly, and sometimes are not employed when they are really indicated. FitzGibbon states that little more than 1 per cent. of cases of foeto-pelvic disproportion are due to pelvis deformity, and that fewer than 20 per cent. present even mild indications of a rachitic diathesis; the remainder are normal, healthy women in whom the disproportion is only an accident connected with a particular confinement. The increased incidence of foeto-pelvic disproportion during the past two generations may be traced to increased facilities of transport, with intermarriage of differing physical stocks. The findings that may be encountered on vaginal examination during the progress of a trial labour in cases of disproportion are described, together with the therapeutic indications. If early in the first stage the membranes bulge as a large bag into the vagina, and the cervix, although dilated to admit two fingers, is not taken up but projects as a definite vaginal cervix, the prognosis for pelvic delivery is bad and very early rupture of the membranes is to be expected. Caesarean section is indicated at once unless, in a multipara, examination under anaesthesia reveals a compound presentation which was undetected on abdominal palpation. If shortly after rupture of the membranes the cervix is only dilated from three fingers to two-thirds of full, and, instead of crowning, the head has re-formed a vaginal portion, Caesarean section is indicated. The single exception is the multipara in whom non-descent of the head is due to obliquity of the uterus; in such a case, judged by the previous history and by abdominal examination, internal version is justifiable. Vaginal examination less than four hours after rupture of the membranes may show: (1) full dilatation of the cervix, with the head on the perineum; (2) full dilatation, with the head, partially moulded, still engaged in the brim; (3) a cervix which has ceased to dilate and has moved backwards over the presenting part so that the posterior and anterior lips are thinned and elongated respectively; (4) a cervix which has re-formed a vaginal portion with the inner os partially closed down and the outer os relatively more dilated—at the same time the head is free above the brim, often asynclitic, or partially extended. The respective treatments advised in these cases are: (1) low or middle straight forceps application; (2) moderate forceps traction, pubiotomy, or Caesarean section if this is insufficient; (3) forceps traction if the cervix is almost fully dilated and the posterior lip out of reach, otherwise pubiotomy or Caesarean section; (4) Caesarean section. FitzGibbon remarks that in the three groups the forceps is being employed at present with disastrous results and to the exclusion of proper treatment, or the labour is allowed to persist until maternal distress or attrition of the soft parts has occurred.

249. Radium Treatment of Cancer of the Vulva.

I. DE BÜBEN (*Surg., Gynecol. and Obstet.*, January, 1930, p. 110), from ten years' experience with radium and high-voltage therapy in thirty-one cases of cancer of the vulva, considers that radium therapy ranks first among the methods of treatment of the condition. Although permanent cure is exceptional in advanced cases, temporary improvement generally results, the condition being improved and the suffering ameliorated, the life of the patient being prolonged and made tolerable. For local treatment with radium the implantation method gives very satisfactory results in combination with irradiation of the lymph glands with Roentgen

rays. The results compare favourably with those reported in the literature, and of the thirty-one patients two were free from recurrence six years later, while four are still under observation. One lived four years, two three years, three two years, and five lived one year, while seven died within a year. At the end of treatment the patients were instructed to report for examination every three months, and later every six months. The results of such treatment are said to be more encouraging in vulvar cancer than in vaginal cancer. Since cancer of the vulva is rare, the data so far obtained are scarcely sufficient to warrant a definite opinion, but from the few cures obtained, and the palliative effects produced, the author considers the employment of radium to be an indispensable method of treatment.

250. Temporary Operative Sterilization.

SERDUKOFF (*La Gynécol.*, September, 1929, p. 513) states that a conference held in 1928 of Russian gynaecologists expressed the opinion that temporary sterilization by surgical means is not justifiable except for urgent medical reasons. Nevertheless, he quotes the report of a Russian clinic in which during three years 75 operative sterilizations were performed in women aged from 26 to 34, the reasons being medical in one-third, economic in over one-third, and in one-fourth consisting solely in the patient's wish not to bear children. Serdukoff approves of operative sterilization on medical grounds, but does not regard it as justifiable as an alternative to repeated artificial abortions. Sterilization on social or eugenic grounds, he remarks, is not justifiable by joint agreement by patient and doctor; in such cases the necessity should only be admitted after a medical consultation which has confirmed it, and fixed the requisite duration of artificial sterility. The induction of temporary sterility by spermatotoxic injections, or those of corpus luteum extracts, or by radiological applications to the ovaries, is unsafe; such injections and radiation may injure the ovaries and germ cells, and the latter induces a sterility which may be lasting. Surgical treatment of the Fallopian tubes is the best method. Serdukoff describes the operation he prefers; he states that it can be performed after laparotomy or colpotomy, and on the gravid as well as the non-gravid uterus. A catgut ligature is tied round the tube two centimetres from the uterine end, and the tube is cut across distally. The proximal portion of the tube, freed by interstitial dissection in the myometrium, is removed, the uterine wound is sutured, and the distal end of the tube is implanted in the wall of the uterus as far as possible externally to the first wound. Serdukoff has employed this operation on medical grounds in thirty-four patients, whose average age was 32; none subsequently became pregnant.

Pathology.

251. Incidence of Undulant Fever in Pregnancy and Abortion.

E. L. CORNELL and C. R. DE YOUNG (*Amer. Journ. Obstet. and Gynecol.*, December, 1929, p. 840) have recently investigated the incidence of undulant fever in pregnancy and abortion in Chicago. The patients were from the middle and lower classes, and included whites, coloured people, and Mexicans, who lived in all parts of the city, and therefore presented a rough cross-section of the population. Blood specimens from 1,015 pregnant women were tested by the macroscopical agglutination method with polyvalent *Brucella abortus* and *Brucella melitensis* antigens. The cultures used for the antigens were *Br. abortus* 705 isolated in England, *Br. abortus* 456 isolated from a bovine foetus and supplied by the Washington Bureau of Animal Industry, *Br. melitensis* 803 isolated from a guinea-pig inoculated with goat's milk, and *Br. melitensis* 428 supplied by the Pasteur Institute of Algeria. Of the 1,015 blood serums, none gave definitely positive results and only five gave slightly positive reactions. Clinically these five patients were in good health, and there was no interruption of pregnancy; they had had no illness which suggested undulant fever. In addition to this series of cases twenty-three cases of abortion were studied, all except one proving negative to the agglutination test, and this exception giving only a weakly positive reaction with placental blood, in a dilution of 1 in 80, the venous blood being negative. In six cases cultures were made from the placental material. None yielded *Br. abortus* or *Br. melitensis*. Six other cases in which a clinical diagnosis of undulant fever was made or suspected by the patient's physician gave a positive agglutination test with formalinized antigens in dilutions of 1 in 300 to 1 in 2,000. Only one of these patients was a woman, and she had given birth to a normal child at full term three months before becoming ill, and had no history of previous abortion. The authors suggest that partly cooked meat and liver from infected cows and pigs may be a possible source of infection.

252. Br. abortus in Human Pathology.

M. KRISTENSEN (*Ann. de Méd.*, November, 1929, p. 339) states that from April 1st, 1927, to December 1st, 1928, specimens of serum from about 4,600 patients were examined at the Danish Serotherapeutic Institute, and in 500 cases agglutination with *Br. abortus* was found. The minimum titre was 1 in 100, but usually the reaction was much more marked (1 in 400, 800, or 1,600); 223 more cases of the kind were noted between December 1st, 1928, and June 1st, 1929. In most of the positive cases the deviation of the complement reaction also yielded a positive result. During the same period the serum of 148 patients agglutinated *B. typhosus* and of 190 patients *B. paratyphosus* B. Infection by *Br. abortus* is therefore at least as frequent in Denmark as enteric fever. Not a single one of the patients had been infected as the result of living in Mediterranean countries or other regions where Malta fever is prevalent, but the great majority had drunk raw cow's milk or cream, or had been in contact with cows suffering from contagious abortion; in only a minority of cases was no information available as to the source of contagion. The occurrence of the cases was almost always sporadic, but was naturally most frequent in the most populated areas. The much greater frequency of the incidence of the disease in men was shown by the fact that of the 500 patients 391 were men and 109 women. It was remarkably rare in young children, there being only one patient under the age of 6. The specific treatment employed in Denmark has been: (1) serum therapy, including the use of an Italian serum against Malta fever, and a serum prepared by injecting horses with Danish strains of *Br. abortus*; and (2) vaccine treatment with *Br. abortus*, either alone or in combination with other organisms such as staphylococci or typhoid bacilli. At the present time there appears to be a tendency to substitute vaccine treatment for serotherapy.

253. Atypical Plasmodia in Malaria.

G. VILLAIN (*Arch. de l'Inst. Pasteur de Tunis*, November, 1929, p. 352) has noted abnormal forms of haematozoa in patients with severe malarial infection, and records six cases in which such forms were found. There was an evident correlation between the intensity of the attack and the plasmodial aberration. The atypical forms were of two types. In one the organisms showed an extreme polymorphism, with the cytoplasm and chromatin most fantastically arranged. The chief characteristic of these was the multiple, disordered elongation of the whole plasmodial body; its arrangement in fine, long, contorted, and often anastomotic filaments suggested the *Plasmodium tenue* of Christophers. In the other type there were forms transitional between those just described and the classic rings of young schizonts. Pigment was absent from these atypical schizonts, and both normal and abnormal forms were noted in the same preparation. Only one of the patients had previously received quinine; plasmodiolysis due to this drug could not be assigned as a cause of the abnormalities. Villain believes that the atypical forms are due to a greater aggressiveness of the plasmodia, to a weakness of the host, or to an association of these. He does not think that they represent different species or subspecies, but that they are simply biological variations of the three common types, particularly of *P. falciparum*. He advises that the blood of all malarial patients, whether proved or suspected, should be most carefully examined, and considers that the presence of atypical plasmodia should be taken to indicate a grave prognosis and a call to intensify specific treatment, whatever the clinical symptoms may be.

254. Specificity of Soluble Toxins of Haemolytic Streptococci.

G. F. DICK and G. H. DICK (*Journ. Amer. Med. Assoc.*, December 7th, 1929, p. 1785), as the result of comparative observations and experiments with the soluble toxins produced by scarlet fever and by erysipelas *haemolytic streptococci*, came to the following conclusions. No direct relation was demonstrated between spontaneous immunity to scarlet fever and spontaneous immunity to erysipelas toxin. An attack of scarlet fever does not confer immunity to erysipelas. Artificial immunization with scarlet fever toxin produced immunity to scarlet fever without conferring immunity to erysipelas toxin. Erysipelas streptococci yield considerably weaker toxin than scarlet fever streptococci. Erysipelas antitoxin produced by immunizing against toxin from a single strain of erysipelas streptococcus neutralizes the homologous toxin and toxins from other strains of erysipelas streptococci, but does not neutralize scarlet fever toxins. Scarlet fever antitoxins obtained from one strain of scarlet fever streptococcus neutralizes the homologous and other scarlet fever toxins, but does not show any cross-neutralization with erysipelas toxins. The soluble toxins produced by scarlet fever and by erysipelas haemolytic streptococci are immunologically specific and distinct.

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MEDICAL RESEARCH COUNCIL MONOGRAPH, "DIET AND THE TEETH," 1929, p. 304.

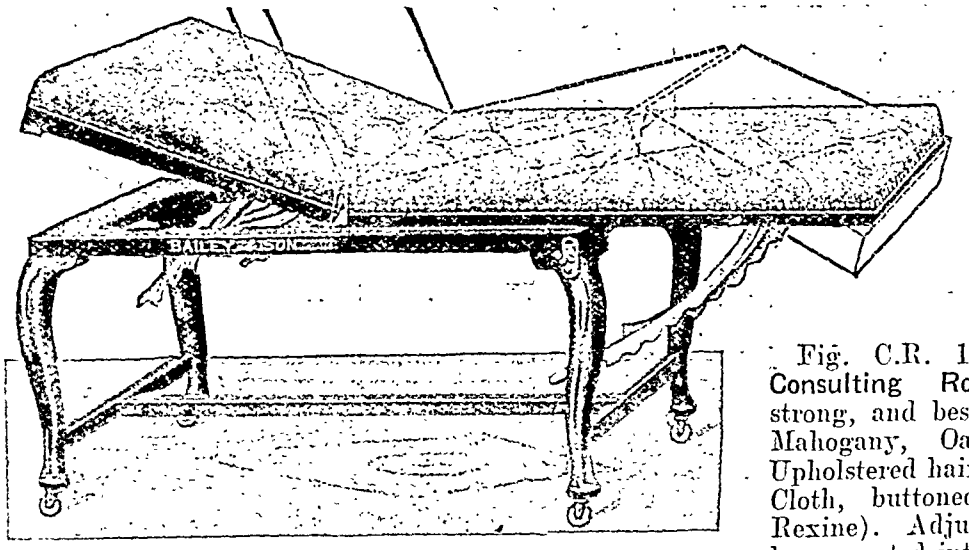
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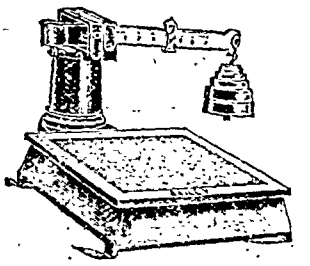
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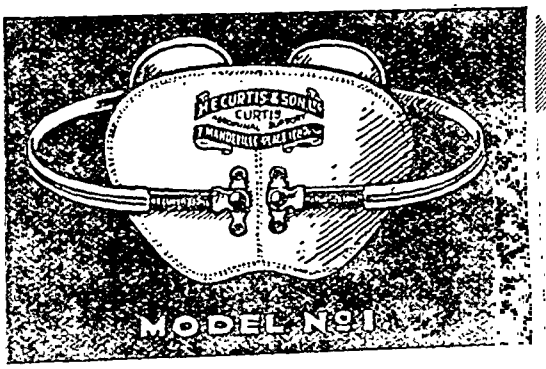
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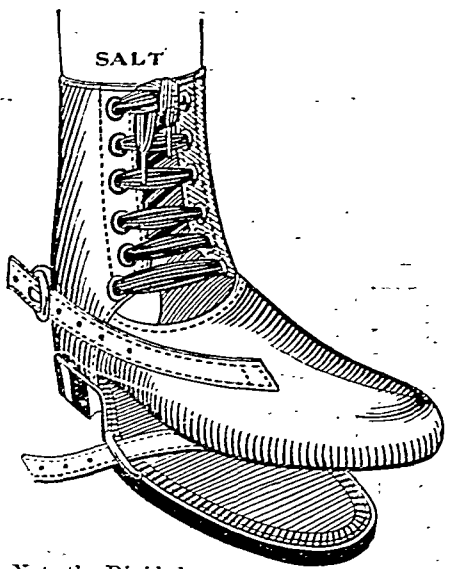
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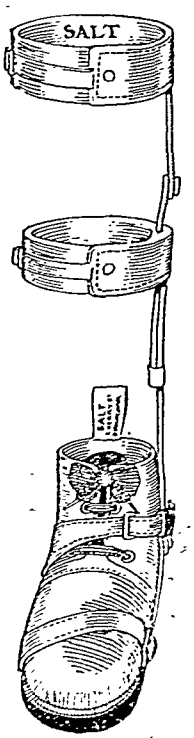
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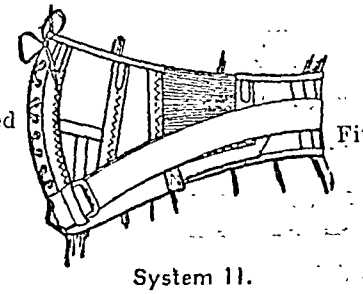
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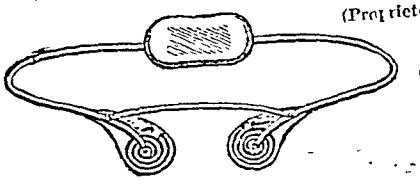
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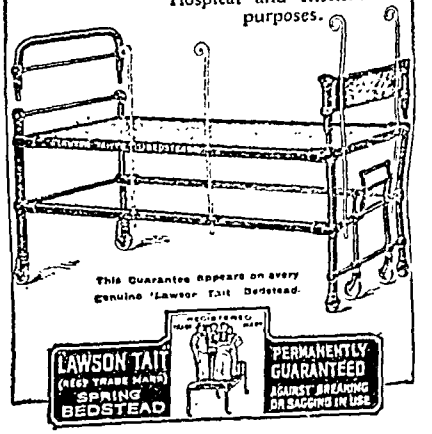
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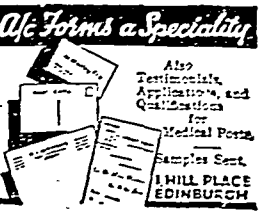


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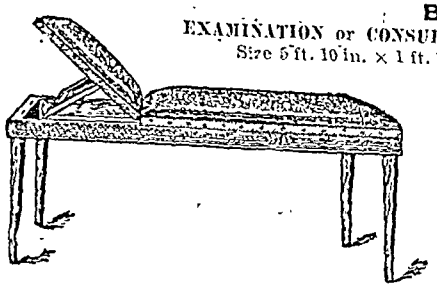
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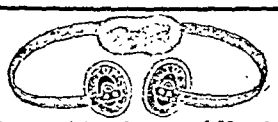
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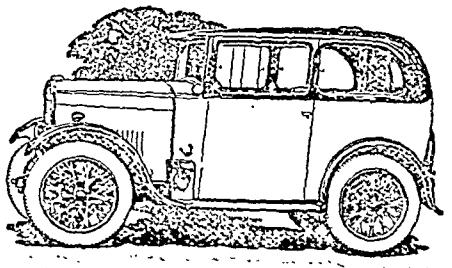
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A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
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Six acres of ground, highly situated, facing Finsbury Park.
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For further particulars, apply to the MEDICAL SUPERINTENDENT.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

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Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

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For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 29.)

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FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.
Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.
For full particulars apply to *The Secretary*, Nordrach upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

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Physician Superintendent . J. M. JOHNSTON, M.B., D.P.H., etc.

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A Course in Advanced Medicine suitable for candidates preparing for the M.D. and M.R.C.P. Examinations will begin on Monday April 28th. Early application is necessary as [illegible] is limited.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

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North Middlesex Hospital, [illegible]

A ONE WEEK COURSE [illegible] ENTEROLOGY will be held [illegible] to April 4th inclusive.

Enquiries and applications to the Dean at the Prince of Wales's General Hospital, or to the Secretary, [illegible] of Medicine, 1, Wimpole Street.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,

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Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

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A Course will be held at the above, commencing March 17th, 1930, in SURGICAL PATHOLOGY (fee £6 6s.) and OPERATIVE SURGERY (fee £6 6s.). Fee for both sections £10 10s. Those wishing to join the class should communicate with the DEAN.

Greenwich, February 25th, 1930.

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For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

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In-patient Dept.: 91, *Finchley Road, N.W.8.*
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HOUSE SURGEON (male) required April 1st, for period of nine months Salary at the rate of £150 per annum, duty as under:

Three months as Assistant House Surgeon (non-resident); three months as Junior House Surgeon (non-resident); three months as Senior House Surgeon (resident, with board and laundry).

HOUSE SURGEON (male) required April 1st, *for period of six months.* Salary at the rate of £150 per annum, for duty as under:

Three months as Junior House Surgeon (non-resident); *three months as Senior* House Surgeon (resident), with board and laundry.

The duties of the Assistant and Junior House Surgeons *consist of attendance at the Out-*patient Department every afternoon and three evenings weekly. Promotion at the end of each three months is subject to the approval of the Board of Management.

Applications, stating age, experience, qualifications, and enclosing copies of recent testimonials, should reach me not later than March 14th.

D. H. EADE, Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which *will occur in the Resident* Medical Staff (male) on March 31st next:

HOUSE PHYSICIAN. Salary at the rate of £125 per *annum.*

Two HOUSE SURGEONS. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before March 17th.

By Order of the Board,
GEORGE RUDDLE,
Gen. Supt. & Secretary.
Salford Royal Hospital.
March 3rd, 1930.

North Lonsdale Hospital,
BARROW-IN-FURNESS.

Applications for HOUSE SURGEONS are invited from fully qualified male Practitioners experienced in the adminstration of Anæsthetics. Salary £150 per annum, with board, residence, and laundry. *Applications*, stating age, qualifications, and experience, and accompanied by *copies of three recent testimonials*, to be sent to the Secretary so as to reach him not later than March 17th.

Queen's Hospital, Birmingham.
MEDICAL SCHOOL.

For fully qualified candidates the following Resident posts *will become vacant* on April 1st: Three HOU[illegible]OUSE SURGEON. One [illegible]NTAL HOUSE SURGEC[illegible] each case, with full bc[illegible] from the undersigned, [illegible] ccom-panied by three recent testimonials, should be sent at once.

G. HURFORD,
House Governor.

Royal United Hospital, Bath.

Wanted at once, a HOUSE SURGEON. Salary £150 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be addressed to the undersigned.

GERALD A. KENYON.
February 28th, 1930. Asst. Secretary.

Royal Cornwall Infirmary,
TRURO. (70 Beds.)

HOUSE SURGEON required with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing. Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained

St. Mary's Hospital, W.2.

There will shortly be two vacancies for the post of CLINICAL ASSISTANT in the X-ray Department. Honorarium for Senior Clinical Assistant £100 per annum; for Junior Clinical *Assistant £50 per annum.*

In addition, the Senior Clinical Assistant undertakes the epilation of children suffering *from ringworm sent by certain local authorities*, for which a separate payment is made.

Applications, giving particulars of qualifications and experience, are invited, and should be forwarded to the *undersigned on or before* March 21st.

A copy of the regulations may be had on application to the Secretary's Office. The appointment, in the first instance, is for a period of six months.

W. PARKES, Secretary.

Central London Throat, Nose, AND EAR HOSPITAL,
Gray's Inn Road, W.C.1.

ASSISTANTS IN THE OUT-PATIENT DEPARTMENT.

There are vacancies for Two Assistants in the Out-patient Department.

Assistants are graded first, second, and third, according to experience in the specialty and length of service at the Hospital.

The posts are honorary, tenable for one year, subject to re-election. Attendance is required *at two clinics each week to assist the Surgeons* in seeing the patients.

*Applications should be sent to the under-*signed on or before March 10th.

JOHN YOUNG, Secretary-Supt.

Hounslow Hospital, Staines Rd.,
HOUNSLOW, MIDDLESEX. (70 Beds.)

Wanted, April 1st, Male HOUSE SURGEON and Male ASSISTANT HOUSE SURGEON. Salaries £120 and £100 per *annum respec*tively, with board, residence, etc. The appointments will be for six months. The Assistant House Surgeon *will be eligible for appointment* as House Surgeon.

Applications, stating qualifications, age, and *experience, and enclosing two copies of testi*monials, should be sent by March 10th (marked "House Surgeon" top left-hand corner) to W. T. Ross, Secretary, Hounslow Hospital, Staines Road, Hounslow.

Hull Royal Infirmary.
(272 Beds.)

Applications are *invited for the post of* CASUALTY HOUSE SURGEON (male) vacant now.

The *appointment* will be for *six months* in the first instance and will be terminable by one month's notice on either side.

Salary £130 per annum, including board, residence, and laundry.

Applications and copies of testimonials should reach the *undersigned at once.*

R. J. CARLESS,
March 4th, 1930. House Governor.

Lady Chichester Hospital,
HOVE.
(For Early Nervous Breakdowns.) (50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty on April 18th, with board, lodging, and laundry, *and* an honorarium at the rate of £50 per annum.

Applications must be made in writing, *and* be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton, not later than Thursday, March 20th.

Royal Alexandra Hospital for SICK CHILDREN, BRIGHTON.
(100 Beds.)

HOUSE SURGEON (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-ray treatment. No canvassing allowed.

To commence duty on March 29th.

Applications, *in writing, accompanied* by *testimonials, should* be sent to A. F. GRAVES, Secretary.

Stirling District Mental Hospital,
LARBERT.

JUNIOR ASSISTANT *MEDICAL OFFICER* (male) required. Salary £300 per annum, with board, *lodging, and laundry.* Appointment subject to provisions of Asylums Officers Superannuation Act. Apply, *stating age*, with *testimonials*, to the Medical Superintendent.

South London Hospital for WOMEN,
South Side, Clapham Common, S.W.4.

The Board of Management invite applications from fully qualified Medical Women for the undermentioned appointments:

HOUSE PHYSICIAN; HOUSE SURGEONS (Three). Each for a period of six months from May 1st.

Salary at the rate of £50 per annum, with board, residence, and laundry. Candidates are *expected to call on Members of the Hon. Medical Staff* (particulars to be obtained from the Secretary) before Saturday, March 29th, by which date applications and copies of testimonials must reach the Secretary at the Hospital.

Seamen's Hospital Society,
Greenwich, S.E.10.

The Committee invite candidates for appointment of Two HOUSE PHYSICIANS at the HOSPITAL *FOR TROPICAL DISEASES*, Endsleigh Gardens, W.C. Candidates must be male, doubly qualified and registered. The elected candidates will be *required to take up* duty on April 1st. Salary at the rate of £150 per annum, with board, residence, and washing. The appointment will be for six months.

Applications, stating age, together with copies of not more than three recent testimonials, to be sent in on or before March 19th to the undersigned, from whom further particulars can be obtained.

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Seamen's Hospital Society.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, *Greenwich, for six months from April 1st.* Salary £110 *per annum, and a proportion of fees, with board, residence, and washing.* Candidates must be male. Applications, with copies of three testimonials, to be sent in by *March 19th to the undersigned.*

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Seamen's Hospital Society.

MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by March 19th to the undersigned.

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Bedford County Hospital.

ASSISTANT HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing March 17th. Salary £130, *with board*, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Medical Staff Committee, not later than the first post Wednesday, March 12th. Selected candidates will be invited for an interview *Saturday*, March 15th.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS required to commence *duty on April 1st* next. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is *for six* months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned before Wednesday, the 12th inst.

H. J. LANCASTER,
Gen. Supt. & Secretary.

General Hospital, Gt. Yarmouth.
(72 Beds—Two House Surgeons.)

Applications are invited for the post of HOUSE SURGEON (male, unmarried). Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
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March 5th, 1930.

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Part-time Consulting Room, in Wimpole Street.—Adam Waiting and Consulting Room. Suit a young Surgeon or Physician wanting a West End address, or anyone in provinces wishing for a London address and occasional consultation. With *plate £100 a year*, without plate £50 a year, inclusive of attendance, telephone, heat, light, etc. — Address, No. 1523, B.M.A. House, Tavistock Square, W.C.1.

To Let. — Fine Suites of MEDICAL ROOMS and single CONSULTING ROOMS. Also Residential Medical Flat and a Maisonette; 7 rooms. No Agents. Ring Welbeck 9753, or write Box 9449, SCRIPPS'S ADVERTISING OFFICES, *South Moulton Street*, W.1.

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APPOINTMENTS.—Contd.

Victoria Hospital, Burnley. (120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (*male*). *The appointment* is for six months, and carries a salary of £125 *per annum*, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with *testimonials*, should be addressed to the undersigned forthwith.

GEO. W. COOLING,
Feb. 3rd, 1930. Secretary-Supt.

St. Paul's Eye Hospital, Old Hall Street, LIVERPOOL.

HOUSE SURGEON required *April 1st*. Six months' appointment. Salary £120 per annum. Board, residence, etc. *Applications, with copies* of testimonials, should be sent to the Secretary, at the Hospital, on or before March 15th.

House Surgeon required for Ayr COUNTY HOSPITAL, for six or twelve months, commencing on April 1st. Salary at *the rate of* £150 per annum, with board and residence. Applications, with two copies of testimonials, to be lodged with the Secretary, County Hospital, *Holmston Road, Ayr, not later* than March 12th, at 11 a.m.

Beckett Hospital & Dispensary, BARNSLEY. (150 Beds.)

JUNIOR HOUSE SURGEON required, to commence duty immediately. Applicants must be fully qualified and registered.

Salary attached to this appointment is at the *rate of* £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the *undersigned* as early as possible.

ARTHUR L. BOURNE,
March 4th, 1930. *Secretary-Supt.*

The Northern Infirmary, INVERNESS.

Wanted for *April 1st next*, HOUSE PHYSICIAN and JUNIOR HOUSE SURGEON (combined post), fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, *stating age, medical school*, qualifications, and experience, with copies of recent testimonials, to be sent before 22nd inst., to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

March 3rd, 1930.

Liverpool Hahnemann Hospital, HOPE STREET.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital, which falls vacant on March 25th. Appointment is for six months, renewable. Salary at the rate of £100 p.a. Knowledge of *Homœopathy desirable but not essential. Duties* include casualties, occasional anæsthetics, and assisting at operations.

Apply, stating age, sex, experience, and enclosing copies of recent testimonials, to the *REGISTRAR* before March 17th.

East Suffolk and Ipswich HOSPITAL.
(265 Beds—7 Residents.)

Applications are invited for the posts of *Two HOUSE SURGEONS (male, British)*. Salary for each appointment at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, *ARTHUR GRIFFITHS*,
Ipswich. Secretary.

Ear and Throat Hospital, BIRMINGHAM.

HOUSE SURGEON wanted, with clinical experience, and also in administering anæsthetics. Salary at the rate of £150 per annum, with board and residence. Duties to commence April 1st. Appointment for six *months, to* September 30th, when one of the other *House* Surgeon appointments will be vacant.

Applications and testimonials to be forwarded on or before March 18th to the under-signed.

S. G. GREW,
February, 1930. Secretary.

Westminster Hospital, Broad Sanctuary, S.W.1.

Applications are invited for the office of ASSISTANT MEDICAL REGISTRAR. The post is a whole-time one, and the salary attached to the office is *at the rate of* £100 per annum.

Candidates should have held a resident post at a General Hospital.

The appointment is of six months' duration.

Applications should be submitted to the undersigned not later than *Saturday, March 15th*.

CHARLES M. POWER, Secretary.

Westminster Hospital, Broad Sanctuary, S.W.1.

There will be a vacancy in the office of *SENIOR RESIDENT AND CASUALTY OFFICER* for duty commencing April 1st next.

The appointment is for six months and may be renewed for a further *period of six months*.

Candidates should have previously held a resident appointment. Salary £104 per annum, with board-residence.

Applications should be submitted to the under-signed not later than *Saturday, March 15th*.

CHARLES M. POWER, Secretary.

King's College Hospital, Denmark Hill, London, S.E.5.

Applicants are invited for the appointment of MEDICAL OFFICER in charge of the Female Gonorrhœa Department. Applications, stating qualifications and experience, accompanied by not more than four recent testimonials, to be sent on or before March 15th to the House Governor, from whom particulars as to salary, and duties can be obtained.

City of Nottingham.

APPOINTMENT OF RESIDENT MEDICAL SUPERINTENDENT, NOTTINGHAM CITY INFIRMARY.

The Nottingham City Council invite applications from duly qualified persons (preferably married) for the appointment of Resident Medical Superintendent at the Nottingham City Infirmary.

Salary £900 per annum, rising (subject to satisfactory service) by two annual increments of £50 to a maximum of £1,000 per annum. An unfurnished house, with light, fuel, and laundry will be provided but this will not include food or servants.

The above-mentioned salary is inclusive of all duties and the person appointed will not be allowed to engage in private practice.

The appointment will be subject to the approval of the Ministry of Health.

Applicants, in addition to possessing the usual professional qualifications, must (1) have held the position of House Physician or House Surgeon in a public General Hospital, and (2) have had considerable experience as a Medical Officer in a Poor Law Infirmary or similar Institution.

Further particulars as to the terms of the appointment and of the duties to be performed in connection therewith may be obtained on application to me, the undersigned, and the successful candidate will be deemed to have had notice of and to have accepted such terms.

The appointment will be subject to the Superannuation Scheme in force, and the successful candidate will be required to pass a medical examination.

Applications, stating age, qualifications, and full particulars of present and past experience, together with copies (which will not be returned) of not more than three recent testimonials, endorsed "Resident Medical Superintendent," to be delivered at my office not later than first post on Wednesday, March 19th next.

Canvassing, whether directly or indirectly, is prohibited and will be deemed a disqualification.

Dated this 28th day of February, 1930.

Guildhall, Nottingham. W. J. BOARD, Town Clerk.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. The post is tenable for six months, but may be extended for a further six months. This post is open to ladies.

Salary is at the rate of £75 per annum, with board-residence. Candidates must have experience of Refractions.

Application forms may be obtained from the undersigned, and should be returned completed, with copies of recent testimonials, at the earliest possible date, as the appointment commences immediately.

R. ARMSTRONG, March 3rd, 1930. Medical Supt.

Hove Hospital (Carr-Burton MEMORIAL), Sackville Road, HOVE.

A RESIDENT MEDICAL OFFICER (male) is required, who must be unmarried and under 40 years of age. The Hospital contains 24 beds.

The appointment affords excellent opportunity for Surgical experience and for acquiring knowledge of Radium treatment.

Salary £150 per annum, with board, apartments, and laundry.

Candidates should state when they could take over the duties.

Expenses not exceeding one guinea will be paid to any applicant invited to attend for interview.

Applications must be sent in by March 22nd, addressed to the General Secretary, 113, Queen's Road, Brighton.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE HOUSE SURGEON, to commence duty on April 1st. Remuneration £100 p.a. Applications, with copies of testimonials, should be sent to the Secretary of the Hospital not later than Friday, March 14th.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Metropolitan Borough of SHOREDITCH.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Borough Council invite applications for the appointment of an Assistant Medical Officer of Health.

The salary will be at the rate of £650 per annum, rising by annual increments of £25 to a maximum of £750 per annum. No bonus will be payable.

Candidates must be duly qualified and registered as Medical Practitioners, must have had experience in Maternity and Child Welfare work, and possess a Diploma in Public Health. Preference will be given to those who have held a resident appointment in a Children's Hospital, and had experience in Artificial Light Treatment. The person appointed will be required to devote the whole of his or her time to the duties of the office, to act under the administrative control and supervision of the Medical Officer of Health, and to pass a medical examination as to physical fitness for the position. The appointment will be subject to the approval of the Ministry of Health, and to the provisions of the Shoreditch and Other Metropolitan Borough Councils (Superannuation) Act, 1922.

Applications, on printed forms to be supplied, and accompanied by copies of not more than three recent testimonials, must reach the undersigned not later than noon on March 31st, endorsed "Assistant Medical Officer of Health."

The Council will proceed to make the appointment at their meeting on Tuesday, April 15th.

Shoreditch Town Hall, Old Street, E.C.1. March 4th, 1930. R. CYRIL RAY, Town Clerk.

Woolwich and District War MEMORIAL HOSPITAL,

Shooters Hill, London, S.E.18.
(General Hospital—112 Beds.)

(*a*) HOUSE PHYSICIAN. Vacant April 1st.
(*b*) HOUSE SURGEON. Vacant May 1st.

The Board of Management invites applications from suitably qualified male candidates for appointment as (*a*) House Physician, (*b*) House Surgeon. It is desirable that the House Surgeon shall be experienced in Obstetrics.

An honorarium of £125 per annum will be paid in respect of each appointment, which will be for a period of six months as from (*a*) House Physician, April 1st, and (*b*) House Surgeon, May 1st.

Applications, accompanied by copies of not more than three recent testimonials, should be sent to the undersigned to reach him not later than 10 a.m. on Monday, March 24th, for the House Physician, and 10 a.m. on Friday, April 4th, for the House Surgeon.

EDWIN RADFORD, Secretary-Superintendent.

The Manor House Hospital, Golders Green, London, N.W.11.
(112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Appointment for six months, renewable if mutually agreed. Preference given to one having held six months previous appointment as a House Surgeon. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, should reach the undersigned as soon as possible.

JAMES W. LINKHORN, Secretary.

City of Salford.

INFECTIOUS DISEASES HOSPITAL.

Applications are invited for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £200 per annum, plus board, residence, and laundry. The appointment will be for one year. Form of application may be obtained from the Medical Officer of Health, 145, Regent Road, Salford, to whom it must be returned, endorsed "Junior Assistant Resident Medical Officer," not later than March 22nd.

H. H. TOMSON, Town Clerk.

Manchester Babies' Hospital, Burnage Lane, LEVENSHULME.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from May 1st. Salary at the rate of £50 per annum, with laundry.

Applications, together with copies of testimonials, should be sent to the undersigned and marked "J.R.M.O." by Monday, March 24th.

ANGELA LOPEZ, Secretary.

Derbyshire Royal Infirmary, DERBY.

(General Hospital 338 Beds.)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS, February 24th, 1930. Supt. & Sec.

Walsall General Hospital.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must give three names for testimonials.

The appointment will be for six months.

The Hospital contains 150 beds and is equipped in all Special Departments.

Applications must be forwarded to the undersigned not later than the first post Tuesday, 18th inst.

WALTER FRANCOMBE, March 1st, 1930. Secretary.

Hospital of St. John and ST. ELIZABETH
60, Grove End Road, N.W.8

Applications are invited for the post of ASSISTANT PHYSICIAN at the above Hospital. Candidates must be Members of the Royal College of Physicians of London. The duties include the charge of beds. There is no Out-patient Department.

Applications, with copies of three testimonials, should be submitted on or before March 15th to the undersigned, from whom further particulars may be obtained.

F. DUDLEY HOBBS, B.A., Secretary.

Manfield Orthopædic Hospital, NORTHAMPTON. (128 Beds.)

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER. Salary £200 to £250 per annum, according to experience, together with board, residence, and laundry.

Applicants must be duly qualified, registered, and unmarried. Previous Hospital experience essential and a knowledge of Orthopædics desirable.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, to be sent to the undersigned, not later than Friday, March 14th.

H. G. LEWIS, Secretary-Supt.

County Mental Hospital, Chester.

FOURTH ASSISTANT MEDICAL OFFICER (gentleman, unmarried) wanted. Salary £350 per annum, with furnished apartments, board, washing, and attendance.

A further payment of £50 is given to those holding a Diploma in Psychological Medicine. It is a condition of the appointment that applicants undertake to work for the D.P.M.

The appointment is subject to the provisions and privileges of the Asylums Officers Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to reach the Medical Superintendent on or before March 20th.

The Southampton Children's HOSPITAL AND DISPENSARY FOR WOMEN. (45 Beds.)

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER (lady). Appointment for six months. To commence duties on April 1st. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, stating age, and accompanied by copies of testimonials, to be sent in not later than March 14th to the undersigned, from whom further particulars may be obtained.

ELLA K. MATTHEWS, Secretary.

The County Hospital, York.

HOUSE SURGEON wanted, woman preferred, whose principal duties will be in the Eye, Ear, Nose, and Throat Department. Salary £150, with board, residence, etc. The appointment will be for 12 months, with possibility of extension. Applications, stating age, together with copies of not more than three recent testimonials, to be sent to the Manager not later than March 12th.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

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TELEGRAMS: Tactear, London. Tactear, Manchester. Surgical, Glasgow. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Manchester, 3152 Ardwick. Glasgow, 477 Douglas. Dublin, 551 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the following posts:

(*a*) HOUSE PHYSICIAN, vacant on April 1st;
(*b*) HOUSE SURGEON, No. 1, vacant on April 1st;
(*c*) HOUSE SURGEON, No. 2, vacant on April 5th.

Each appointment is tenable for a period of six months, but is terminable at any time by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence, and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned, on or before Wednesday, March 19th.

W. H. HEAD, Secretary-Supt.

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

(1) SENIOR RESIDENT MEDICAL OFFICER (male). Salary £150 per annum.
(2) RESIDENT HOUSE SURGEON (male). Salary £100 per annum.
(3) RESIDENT HOUSE PHYSICIAN (male). Salary £100 per annum.

Appointment No. 3 to date from April 1st, and appointments Nos. 1 and 2 to date from May 1st. All appointments to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him as follows: No. 3 not later than March 14th; Nos. 1 and 2 not later than April 16th.

Birmingham and Midland Eye
HOSPITAL.

Applications are invited from duly qualified Medical Practitioners for the post of RESIDENT SURGICAL OFFICER at the above Hospital. Salary £150 per annum.

The Resident Staff also consists of two House Surgeons, and in the event of one of these being promoted, applicants should state whether they will be willing to accept the appointment of House Surgeon at a salary of £110 per annum.

Applications, with testimonials and evidence of registration, must be received not later than first post on March 18th.

C. A. MASON,
Gen. Supt.

Church Street,
Birmingham.
February 24th, 1930.

Kensington, Fulham, and
CHELSEA GENERAL HOSPITAL,
194, Fmborough Road, Earl's Court, S.W.10.

The Board of Management invite applications from fully qualified Practitioners for the post of CASUALTY (Resident) MEDICAL OFFICER. The Hospital, the In-patient Department of which is in process of rebuilding, has an extensive Out-patient Department still working, and General and Special Out-patient Clinics. The appointment to be held for six months from April 1st. Salary £100 p.a. Applications, accompanied by copies of three testimonials, should be forwarded to the undersigned not later than March 24th.

L. MAY NORTON, Supt.

Liverpool Open-air Hospital
FOR CHILDREN, LEASOWE.
(250 Beds for Surgical Tuberculosis and Orthopædics.)

Vacant on March 31st, the post of JUNIOR MEDICAL OFFICER at the above Hospital. Salary £150 per year, with board, residence, and laundry.

Applications to be sent to the Senior Medical Officer not later than March 22nd.

Royal Manchester Children's
HOSPITAL.

The Board of Governors invite applications for the post of ASSISTANT PHYSICIAN. To attend two days per week at the Out-patients' Department, and take charge of six beds at the Hospital, Pendlebury. He will be required to attend sick members of the staff at the Hospital, Pendlebury, and in addition to do urgency work and holiday duties at the Out-patients' Department and the Hospital. Candidates must be Members of the Royal College of Physicians, London. Honorarium £50 per annum. Applications, in duplicate (typed), with copies of not more than six testimonials, to be addressed not later than March 29th to the Secretary, from whom further particulars of the duties of the office can be obtained. Canvassing not allowed.

By Order,
W. M. HUMPHRY,
March 7th, 1930. Secretary.

Royal Southern Hospital,
LIVERPOOL.

Wanted, One HOUSE PHYSICIAN and One HOUSE SURGEON. The salary for both appointments is £60 per annum, including board and residence.

One MEDICAL OFFICER to take charge of the Special Departments. Salary £60 per annum, including board and residence.

One CASUALTY OFFICER, at a salary of £100 per annum, with board and residence.

The appointments will be for six months from April 1st.

Applications and copies of testimonials to be sent to the undersigned on or before Saturday, March 22nd.

ALLEN NALDRETT, Supt. & Sec.

Royal Northern Hospital,
Holloway, London, N.

Applications are invited for the post of RESIDENT MEDICAL OFFICER. Candidates must be registered Medical Practitioners of at least two years' standing. The appointment is for one year from May 1st.

Salary £200 per annum, plus an allowance for work undertaken in connection with the National Insurance Act, with board, residence, and laundry. Preference will be given to candidates experienced in practical operative surgery.

Applications, accompanied by copies of testimonials, should be sent on or before March 15th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

The General Hospital,
BIRMINGHAM.

[illegible] are invited for the post of REGISTRAR. [illegible]ttached to Two Surgical Units and to the Gynæcological Department. The salary will be £100—£20—£140.

The appointment will be made for one year in the first instance and be subject to renewal for two further years. Candidates must have had previous Surgical experience.

Applications, giving full details of qualifications and experience, and accompanied by testimonials, should reach the undersigned by March 17th.

A. H. LEANEY,
February 26th, 1930. House Governor.

Royal Buckinghamshire Hospital
AYLESBURY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) for six months. To commence duty March 31st. Salary £180 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROWN, Secretary.

Royal Sussex County Hospital,
BRIGHTON.

Notice is hereby given that a Meeting of the Elective Committee will be held in the Board Room at the Hospital on Wednesday, April 2nd, at 12.15 p.m., for the purpose of electing an HONORARY CLINICAL ASSISTANT to the Ophthalmic Department, and such Elective Committee is hereby convened accordingly.

Applications are invited for this office from gentlemen who are Fellows or Members of the Royal College of Surgeons of England, Edinburgh, or Ireland, or Masters or Bachelors of Surgery of one of the Universities of the British Empire, and who are duly registered under the Medical Acts.

Applications, with proof of the necessary qualifications, must reach the Secretary-Supt. at the Hospital before 12 noon on March 22nd.

By Order of the Board of Management,
L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

HOUSE SURGEON (male) required April 21st, with charge of beds, part casualties, and anæsthetics. Salary £150 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of testimonials, should reach the undersigned not later than March 24th.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

Bristol Homœopathic Hospital.
(Bruce Melville Wills Memorial.)

The Bo[illegible] applications for the [illegible] MEDICAL OFFICER, [illegible] annum, with board, laundry, residence, etc., in the Hospital.

Good Surgical and general experience. A good opportunity for a man reading for higher surgical examination.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel), Secretary.

Royal South Hants and
SOUTHAMPTON HOSPITAL,
SOUTHAMPTON.

Applications are invited for the posts of JUNIOR HOUSE SURGEON, salary £140; CASUALTY OFFICER, salary £130, with rooms, board, and laundry. Six months' engagement, commencing April 1st. Candidates, who must be male and unmarried, should apply at once to the undersigned, stating age, and enclosing copies of testimonials.

By Order,
HY. TRUSSON, Secretary.

Eccles and Patricroft Hospital,
near MANCHESTER.

HOUSE SURGEON required immediately. Commencing salary £125, plus board, etc. Period of six months, renewable. (Hospital—60 beds—general.)

Apply, with testimonials, to above.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY MEDICAL REGISTRAR for a period of one year, eligible for re-election annually for a total period of not more than three years. An honorarium at the rate of £100 per annum is attached to the post. The successful candidate must hold no appointments at a General Teaching Hospital during his term of office. The duties include the preparation of the Medical Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as substitute for the Physicians and Assistant Physicians when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver Surgical Courses of Lectures to the Nurses and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR. The holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women and for emergency operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach me not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, be in attendance at a Meeting of the Board at 5 p.m. on Tuesday, March 25th, when the election will be made.

H. A. MADGE, Secretary.

London Hospital, E.1.

Applications are invited for the post of DIRECTOR of the Department for Venereal Diseases. Candidates must be fully qualified and must possess special knowledge and experience of the diagnosis and treatment of these diseases.

The salary for the post is £800 a year, and the Director will be required to devote not less than 30 hours a week to the work of the Department.

Applications and testimonials should be submitted by March 14th.

Further particulars may be obtained from the undersigned.

E. W. MORRIS, House Governor.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIANO, LONDON."

NURSES
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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

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FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

THE
NEW MENTAL NURSES CO-OPERATION,
139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the Supt.
Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6105 Padd.

Leicestershire and Rutland
MENTAL HOSPITAL,
NARBOROUGH.

The Committee of Visitors invite applications from duly qualified Medical Practitioners for the position of MEDICAL SUPERINTENDENT of the Hospital. The salary will be £800 per annum, together with furnished house, gas, coal, light, rates, water, laundry, and garden produce, valued at £150 per annum for superannuation purposes. There will be no other emoluments.

The appointment is subject to the Asylum Officers Superannuation Act, 1909, and will also be subject to three months' notice on either side.

The person appointed will be expected to act as Medical Adviser under the Mental Deficiency Acts, the services for which will be paid by fees.

Applications, endorsed "Medical Superintendent," stating age, whether married or single, previous experience, qualifications, and if appointed date when applicant can take up duties, together with copies of three recent testimonials, to be sent to the undersigned not later than 10 a.m. on Friday, March 14th.

Canvassing, directly or indirectly, will disqualify.

10, New Street, W. J. FREER.
Leicester. Clerk to the Visiting
February 19th, 1930. Committee.

Scarborough Hospital and
DISPENSARY. (70 Beds.)

Wanted, May 1st, Two HOUSE SURGEONS (male or female). Duties include Home Visiting. Salary £126 per annum, with board, residence, etc. Appointment for six months. Applications, stating age, with copies of testimonials and essential particulars, to be sent to the undersigned by March 17th, from whom further particulars may be obtained.

J. DOUGLAS MUNBY, Hon. Secretary.

Shrewsbury Dispensary.

MEDICAL OFFICER required. Candidates must be fully qualified. No restrictions as to private practice. Applications, with copies of three recent testimonials, to be received not later than March 22nd.

Particulars from A. E. COOPER, 22, Claremont Hill, Shrewsbury.

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Northern Suburb. — Middle-class PRACTICE. About £1,350 p.a. Mids. 2—5 gns. Visits 3/6 to 10/6. Panel over 700. Good house, with large garden to rent.—No. 8625.

London, S.E. — About £2,600 p.a. Very few mids. Panel over 3,000. Nine-roomed house to rent.—No. 8629.

London, E.—About £2,500 p.a. Lady PARTNER required for 1/2 share. Panel over 1,500. No mids. Small flat.—No. 8619.

Lancs Town.—About £2,000 p.a. Mids. 2—4 gns. [illegible] over 2,100. House, 5 [illegible]—No. 8618.

Lancs. — Death Vacancy. — Average £1,600 p.a. [illegible] p.a. Panel 950. Mids. [illegible] up. House, 5 bed., etc. [illegible] Premium £1,600.—No. 8611.

Liverpool. — 1/3 share of over £4,000 p.a. Old-[illegible] Appts. £100 p.a. Panel about 4,700. Mids. 3—5 gns. Visits 3/6—5/-. House, 4 bed., etc.—No. 8616.

Eastern Counties. — Country.— About £1,600 p.a. The whole or 1/2 share with early succession. Panel and appts. over £900 p.a., fees 2/6—10/6. Mids. 2—5 gns. House, 5 beds, etc., good garden tennis, etc., to rent.—No. 8614.

Worcs. — Country Practice. — Unopposed, 4½ miles. £1,100 p.a. Fees 5/- to 10/-. Panel and appts. £410. House, 5 bed., etc. Rent or buy. Easy terms —No. 8612.

Cheshire Town. — About £900 p.a., increasing. Visits 3/6—5/-. Mids. 3 gns. Panel about £400. Small house for sale. Urgent sale.—No. 8597.

S. Wales. — Town Nucleus. About £600 p.a., increasing. Mids. from 2 gns. Visits 2/—3/6. Panel about 400. House, 4 bed., etc. Sep. surg. and dispensary. House-Practice £2,100 or offer, part down.—No. 8609.

Home Counties.—Country PRACTICE. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 230. Mids. 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £220 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250. —No. 8602.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Small panel about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage. —No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs' pur.—No. 8603.

Lincs.—Unopp. Country PRACTICE. About £850 p.a. Clubs and appts. about £70 p.a. Panel £282 p.a. Mids. 2—4 gns. Visits 5/- to 10/-. House, 5 bed., etc., to rent, large garden.—No. 8592.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids. 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8589.

Mid.-Wales Country Practice. — £1,000 or more p.a. Panel and appts. about £250 p.a. Visits 5/- to 5/-, plus mileage. Few mids. at 3 gns. House, 9 bed., etc., rent £70 furnished or £50 unfurnished. Premium only £1,000, includ. drugs, car, etc.—No. 8585.

SPECIAL NOTICE.

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants.

Full particulars on application to Mr. Percival Turner.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)

(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London. Oxford Street, W.1. Telephone: Mayfair {1782 1783}

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 DEATH VACANCY. — South Devon. — Country PRACTICE over £750 p.a. in delightful part, easy distance of coast. Panel about 400. House (4 bedrooms), garage, garden. Main drainage. Rent £45. Cottage Hospital.

2 NURSING HOME in favourite Town on Kent Coast. Clear net profit £750 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

3 EAST ANGLIA.—Partnership in Practice of £3,600 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

4 WEST OF ENGLAND.—Good-class Family PRACTICE of nearly £1,000 p.a. in centre of important City. Panel 1,100. Good freehold house, with garden, for sale. Considerable scope. Premium £1,000.

5 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

6 SOUTH-EAST COAST.—Seaport Town.—PRACTICE of nearly £1,550 p.a. (including over £750 from the panel). Corner house (5 bedrooms) for sale. Scope. Premium 1½ years.

7 SURREY.—Partnership in steadily increasing Practice in delightful residential town. Receipts 1929, £2,600. Panel over 900. Very nice detached house (4 bedrooms), with garage, etc., to rent. Hospital. Scope for increase. Premium 1/3 share £1,600.

8 LONDON, S.W.—Practice of nearly £800 p.a. in suburb easy distance of Charing Cross. Panel 830. Four rooms available for Practice. Ample scope. Premium 1½ years' purchase.

9 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (3 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

10 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750.

11 SOUTH MIDLANDS. — Practice about £450 p.a. in industrial district, close to first-rate town. Panel 100. Nice house (5 bedrooms), with garage, to rent. Considerable scope. Premium £550.

12 DEATH VACANCY. — Lancashire. — Practice of over £1,600 p.a. in manufacturing town. Panel 950. House (4/5 bedrooms) and garage for sale or rent. Scope.

13 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

14 LEICESTERSHIRE. — Country Practice about £1,000 p.a. (£450/£500 from panel). Easy distance of good town. Suitable house to rent. Premium 1½ years' purchase.

15 LIVERPOOL. — Partnership in Practice about £2,200 p.a. in good-class residential suburb. Panel about 1,000. Visits up to £1 1s. Small villa, with surgery and garage, to rent. Partner must be English or Scotch and well qualified. One-half share at 1½ years' purchase. Preliminary assistantship.

16 YORKSHIRE (W.R.).—Country Practice of £1,300 p.a. (about £400 from panel), close to first-rate town. Good house (5 bedrooms) to be sold. Golf and hunting. Premium —house and Practice—£5,000.

17 YORKSHIRE.—Seaside Town.—Partnership in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

18 LONDON, N.W.—Practice of £868 p.a. in thickly populated suburban district within 5 miles of Marble Arch. Panel 480. House to be sold or let. Premium £1,000.

19 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

20 HOME COUNTY.—Increasing Practice in attractive country town about 30 miles from London (N). Receipts 1929 over £700. Small panel. Good corner house (6 bedrooms) to rent. Premium 1½ years' purchase.

21 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

22 LONDON, N.—Good middle-class Practice of £1,600 p.a. in first-rate residential district. Panel 800. Very attractive well-built house (8 bed and dressing rooms) and beautiful garden for sale. Premium 1½ years' purchase.

23 NORTH MIDLANDS.—Steadily increasing PRACTICE of about £1,150 p.a. in first-rate city. Panel 680. Nice corner house (5 bedrooms), in residential part, to rent. Premium 1½ years' purchase.

British Medical Bureau

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Practices and Partnerships for Disposal (continued).

24 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

25 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

26 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

27 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One third to one-half share at about 1½ years' purchase.

28 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering-place. Receipts last year £930 (including panel £230). Ground floor flat to let. Premium £1,050.

29 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. Educational facilities. Premium £1,000.

30 LONDON, S.W.—Cash and Panel Practice in populous district. Receipts 1929, £460. Panel 550. Rent of Surgery 15/- weekly. Premium £650.

31 LONDON, S.W. — Partnership in mixed Practice of over £6,200 p.a. in one of the best outlying residential suburban districts. Panel over 5,000. House (5/6 bedrooms) for sale or rent. Premium one-sixth share 2 years' purchase. Partner should be young and married or about to be.

32 NEAR BIRMINGHAM.—Partner required in middle-class Practice over £2,000 p.a., in good residential town. Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

33 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one third share 2 years' purchase.

34 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

35 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

36 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

37 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

38 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

39 LANCASHIRE. — Practice of £1,500 in rapidly growing district within a few miles of a popular resort. Panel over 200. Very nice compact house (4 bedrooms), with beautiful garden and orchard, for sale. Prem.—Practice—£1,500.

40 LIVERPOOL. — Practice of over £1,200 p.a. Panel 600. House (4 bedrooms), garage and garden, for sale. Golf near by. Scope. Premium £1,550.

41 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

42 SOUTH AFRICA.—Practice nearly £3,000 p.a. in one of the pleasantest Towns in the Cape Province. House (4 bedrooms) to rent. Excellent surgical centre. Purchaser should be able to undertake major surgery. Premium £2,200, part in instalments.

43 WEST OF ENGLAND.—Practice averaging £1,350 on outskirts of important City. Panel 1,750. Pleasantly situated house (4 bedrooms), garage and large garden, for sale. Premium £2,100. Considerable scope.

44 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £730. Panel 400. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

45 EASTERN COUNTIES. — Partnership in Country Practice over £1,700 p.a. in prosperous agricultural district. Panel 1,050. Accommodation available. Premium two-fifths share £1,200.

46 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

47 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

48 SCOTLAND. — Practice nearly £2,000 in University Town. Panel over 1,900. House to be sold or let.

49 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

50 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

51 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

52 SOUTH COAST.—Partnership in Practice about £4,000 p.a. in favourite watering-place. Panel 2,300. Large well-situated house (6 bedrooms) to rent. Premium one-fourth share 2 years' purchase.

53 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

54 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

55 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

56 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well situated house (6 bedrooms) to rent. Premium £1,000.

57 W. OF ENGLAND. — Ophthalmic PRACTICE about £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium 1½ years' purchase.

58 S.W. OF ENGLAND. — Partnership in Practice about £4,000 p.a. in watering place. Panel about 1,700. Choice of residence to rent or purchase. Hospital and scope for surgery. Premium one third share £2,100.

59 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

60 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Post free* 12/6.

All Communications to be addressed to Mr. A. V. STOREY, General Manager.

THE MEDICAL AGENCY

(ESTABLISHED BY J. A. REASIDE IN 1893)

WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2.

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FOR SALE.

KENT COAST.—PARTNERSHIP in old-established, panel Practice. Fees 5/- to 1 gn. Suitable hou nearly £3,500. One-third share for disposal 2 years' purchase. Suitable only to well-qualified man of sound experience and good address.

HOME COUNTIES.—PARTNERSHIP in Country residential Practice situated within easy access of Town. Receipts approx. £3,000 p.a. Well selected panel. Premium for one-third share, 2 years' purchase. Suitable only to well-qualified and experienced man, preferably married, age about 35.

BUCKS.—NUCLEUS G.P., situated in charming and growing residential locality, with excellent scope for development. Suitable house available. Receipts nearly £500 p.a Select panel 230. Premium £650. Suitable for semi-retired Practitioner.

SOMERSET (Borders of DEVON).—PARTNERSHIP in well-established rural Practice situated in charming locality. Receipts approx. £1,600 p.a. Panel and appointments. The whole Practice might be for sale to suitable applicant. Premium for half share Partnership, 2 years' purchase, Practice 1½ years.

LONDON, S.W.—PARTNERSHIP in well-established G.P. Residential locality. Receipts approx. £2,800. Panel 2,500. House to rent. Suitable for Scotch or English Practitioner. Premium for half share 2 years' purchase.

DEVON.—PARTNERSHIP in good-class, non-panel, and non-dispensing Practice. Suitable to experienced man used to better-class Practice; good at medicine and capable at anæsthetics. Receipts over £3,200. Premium for 1/4th or 1/3rd share, 2 years' purchase (larger share in 2—3 years' time).

LONDON, N.W.—Well-established G.P., situated within easy distance of West End. Excellent house. Receipts (average) nearly £900. Panel 480. Premium £1,000.

LONDON, E.—Lock-up Surgery.—Middle and working-class, main thoroughfare. Receipts (approx.) £850. Panel 547 (increasing). Excellent scope. Premium £1,000.

LONDON, N.E.—Well-established middle-class G.P., situated in main thoroughfare. Excellent house to rent. Receipts about £1,350. Panel 700. Premium £2,000.

HERTS.—(Near Elstree).—Excellent NUCLEUS, with splendid scope. Receipts £117. Small panel. Prem. for house and Practice £1,450.

NORTH WALES.—DEATH VACANCY.—Good-class PRACTICE, situated in Seaside Health Resort. Large house for sale or to rent at £85 p.a. Receipts approx. £1,200 p.a. Small panel. Prem. 1 year's purchase.

CORNWALL.—DEATH VACANCY.—Old-established Country Town PRACTICE. Receipts £1,300 p.a. Panel 900. Appointments, Hospital. Locum in charge. Premium 1 year's purchase. House to rent.

STAFFS.—County PRACTICE near manufacturing area. Receipts average £1,100 p.a. Panel 1,300. Good-sized house for sale or to rent at £50 p.a. Premium £1,000 cash for quick sale.

LANCS.—Middle and working-class G.P. Receipts £5,000. Panel 1,200. Medium-sized house to rent or for sale. Premium £5,000, part down, balance by arrangement.

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8. [illegible] good mixed-class PRACTICE in beautiful town. Receipts for last twelve months increasing. Fees 3/6 to 20/-. Excellent containing 2 reception, 6 bedrooms, etc. Rent on lease £65 p.a. Premium £1,800.
9. SOUTH-EAST COAST.—PARTNERSHIP.—A one-third share (with increase later) in an old-established non-dispensing non-panel Practice, in favourite residential resort. Gross cash receipts average over £3,000, with good scope. Fees 5/- to 21/-. Good corner house, with 6 bedrooms, etc. Can be purchased or rented. Premium 2 years' purchase. Scope for surgery if desired.
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21. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 320. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
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23. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 330. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
24. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £250. Moderate premium accepted.
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27. YORKS.—LARGE TOWN.—Old-established mainly working-class PRACTICE, producing over £1,200 p.a., including panel of over 1,400. Fees 2/6 to 5/-. Well-situated house, with good garden. Price £1,500. Premium £1,200.
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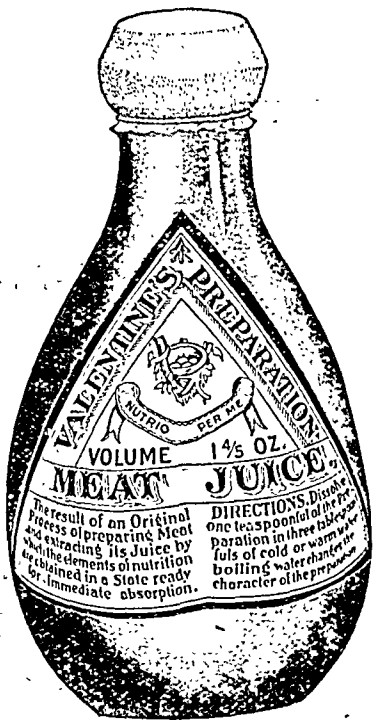
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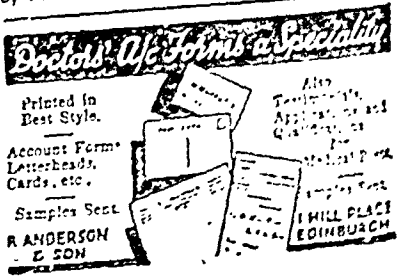
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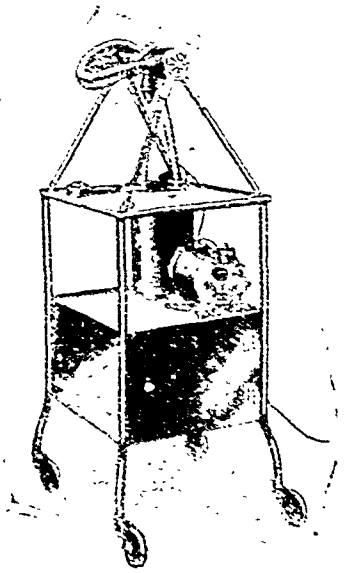
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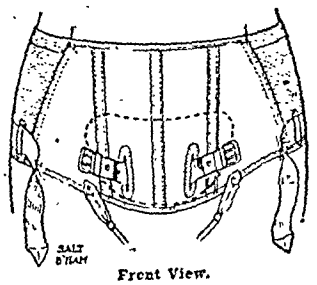
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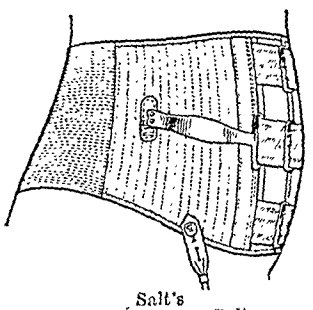
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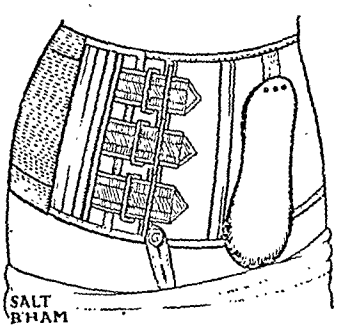
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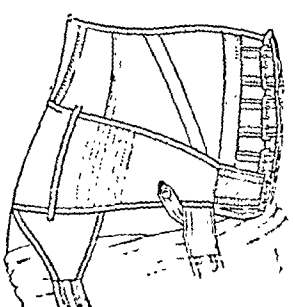
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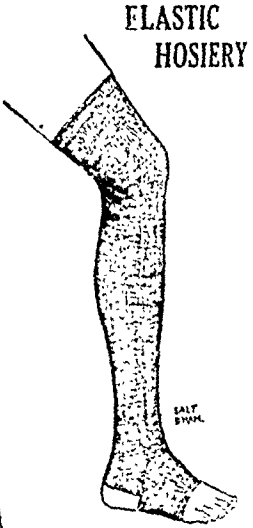


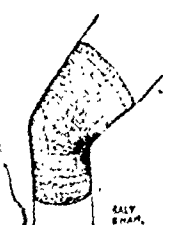
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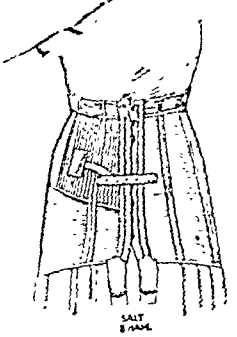
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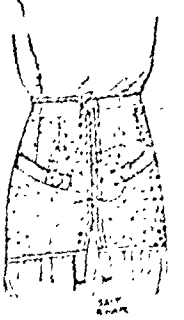


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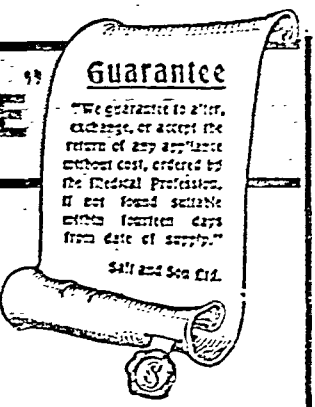


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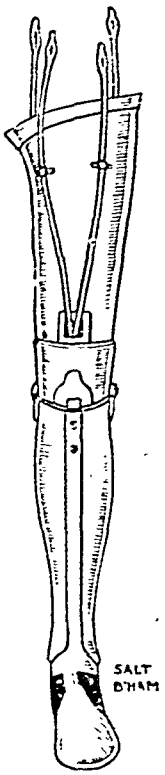
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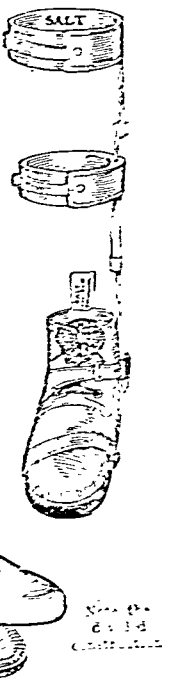
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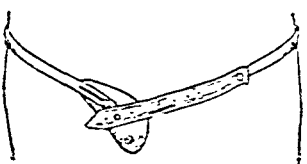
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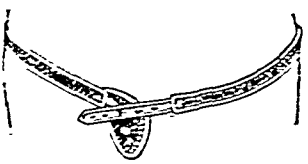




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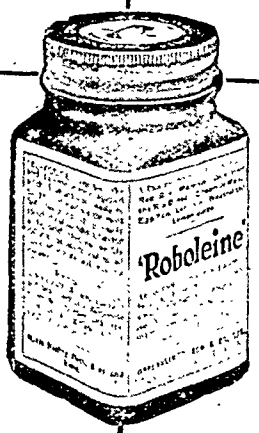
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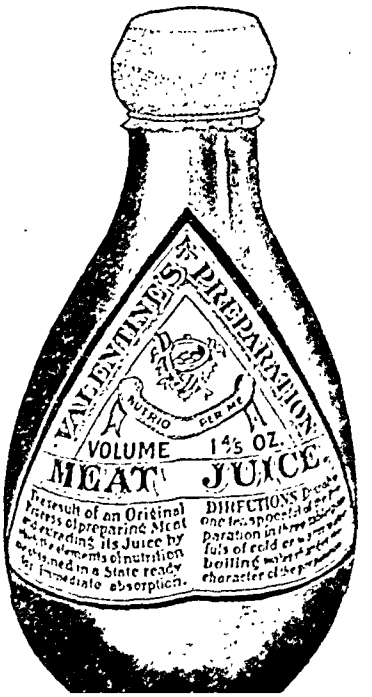
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Lysol as originally manufactured is more than two and a half times as strong as Carbolic Acid in bactericidal power, but in spite of this it is many times less toxic. Another advantage it possesses is that its soapy nature gives it an emollient action which is of great assistance in Obstetrical practice, Gynaecology, and similar purposes.

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In this country, however, the name "Lysol" became a generic term during the War, and, as a result, any antiseptic containing 50% Cresylic Acid may be termed lysol.

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It is now generally recognised, and has been again recently stressed by gynaecologists, that the principal causative agent in Puerperal Septicaemia is the Streptococcus Haemolyticus.

It is an interesting and important fact that Monsol, which is well known to have a selective action on Gram-positive organisms, has a particularly selective action on the strain Haemolyticus among the Streptococci.

The following table showing the relative dilutions at which Monsol is effective illustrates this.

STRAINS OF STREPTOCOCCI

DESIGNATION OF STRAIN	*SOURCE*	*DILUTION OF MONSOL*
"Diphtheritic"	Throat	1-100
Salivarius. Barnes 445	Mouth-Tonsillitis	1-100
Erysipelatis. 226	Lesion	1-150
Enterococcus Tissier 775	Faeces	1-150
Urine 8213	Urine	1-150
Rheumaticus. Beattie	Joint	1-300
Sputum A	Unresolved pneumonia	1-700
Sputum B	Unresolved pneumonia	1-700
Viridans 1080	Tonsil	1-1000
HAEMOLYTICUS 2060	—	*1-1500*
HAEMOLYTICUS B.C. 1498	—	*1-1500*
Mastitidis 2470	Mastitis	1-1500
Scarlatinae. Sherman 1892	Scarlet Fever	1-1500

The use of Monsol in obstetrics is, therefore, specially indicated owing to its selective germicidal power; while its non-irritant action on the most delicate mucous membranes and tissues, renders possible its use at dilutions far stronger than are germicidally necessary.

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Trade enquiries to
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Dried Milk for Safety

At————deaths from diarrhoea and enteritis fell from 105 in 1923 to 67 in 1924, but rose to 109 in 1926. There was a fall in 1927 to 61, and a further fall in 1928 to 56. Professor ————M.O.H., writes: "Once more the relationship between these diseases and the sub-soil (four-foot) temperature, which used to be so constant, failed to re-appear. Among the most important factors in bringing about this amazing decline in mortality from these causes, I think we must place the wide substitution of dried milk for so-called fresh but highly contaminated milk————" Dr.————adds that until the methods of the farmers and others concerned in the milk industry have been revolutionised, and consumers have been provided with facilities for storage and education in the handling of milk, he is definitely of the opinion that liquid milk should be banished from the dietary of infants.

"Medical Officer,"
Jan. 4th, 1930.

This resumé shows clearly the advance made in medical opinion during the last few years. Figures such as these show conclusively that raw cows' milk—"Nature's food for the calf"—is unsafe and unsuitable for the human infant. Discrimination in the choice of a dried milk food is, however, essential.

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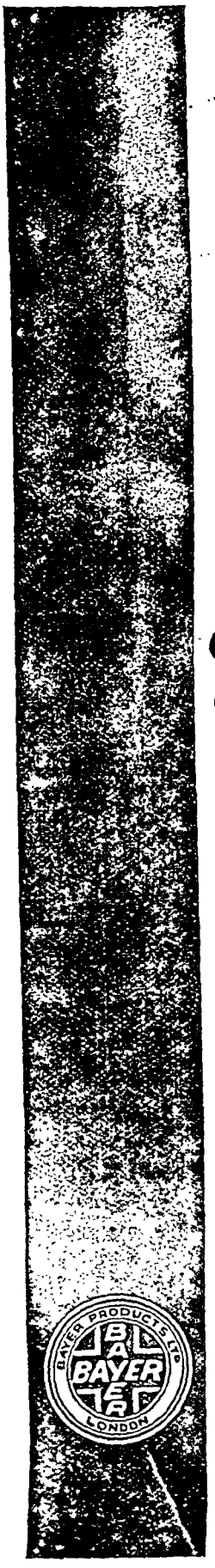
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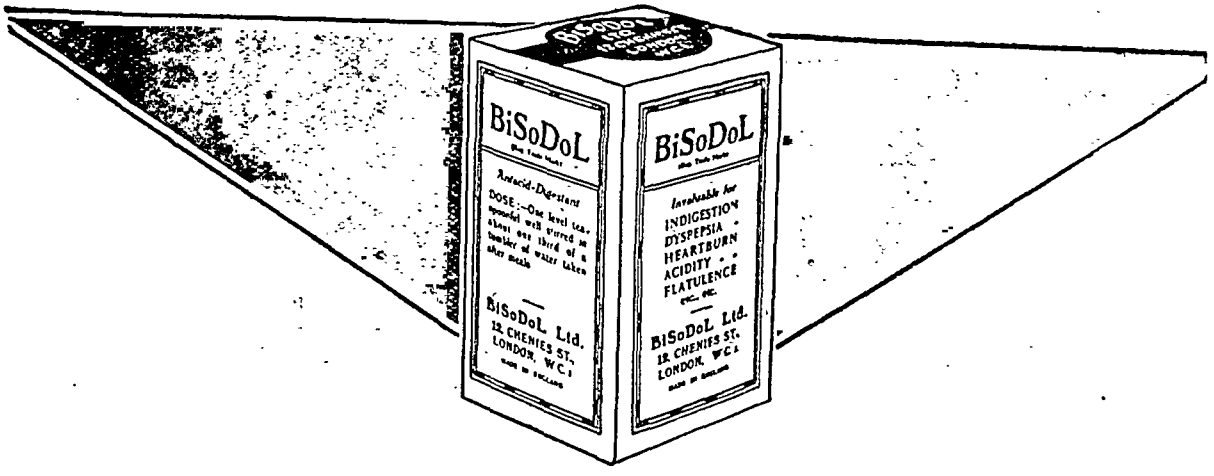
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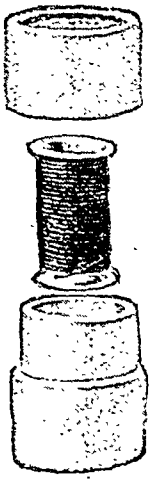
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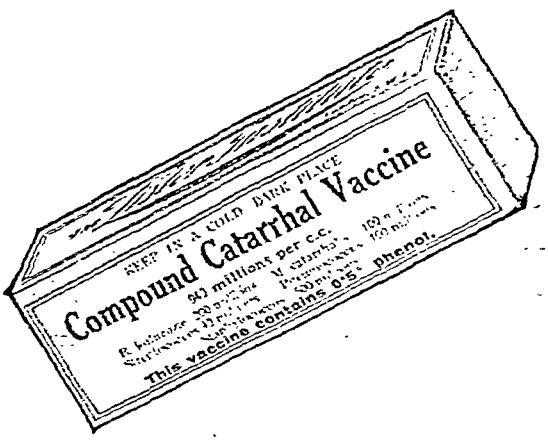
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BY
SIR THOMAS LEWIS, M.D., F.R.C.P., F.R.S.,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

WITH the greatest activity of medicine, that which ministers to the immediate needs of sick individuals, and which may be called *curative medicine*, we have here no direct concern. Our present interest is directed to that activity the immediate purpose of which is to advance knowledge; and this for convenience will be spoken of as *progressive medicine*. Progress in medicine can be followed historically along two main lines. The first is that traced from Hippocrates through Sydenham; it is the method of observation, and it has given us our descriptions of disease. The capacity of clinical observation to separate and define diseases was greatly enforced by the work of the famous morbid anatomists; the combined observations laid the foundations of modern clinical medicine. Laennec and Skoda, exponents of tested methods of physical examination: Bright, Hodgkin, Corrigan, Addison, who so ably identified and described individual diseases; these names but exemplify that most brilliant period of clinical activity, which was at its height in the earlier years of last century.

The second line of progress has been by the experimental method, using this word in its broadest sense; it is exemplified in the physiological field by the work of the physician Harvey and by Claude Bernard; in the bacteriological field by Pasteur and Koch.

While the methods of pure observation have long since passed their period of greatest activity, the experimental method continues to display amazing progress and growth. The experimental method in its development and in its deeper searchings has found the use of the lower animals increasingly necessary to its study of health and disease, and has led to the foundation of physiology and pathology as independent sciences, and to the great growth of modern laboratories; thus progress in medicine has come to be identified more and more with the work of these independent sciences and with the laboratories. Research, and especially experimental research—using the term experimental as it will be used throughout to designate experiment and not necessarily experiment on animals—tends to be delegated more and more to the laboratories, while clinical investigators have been brought by circumstances to become again content with observation, the ancient, traditional method of medicine. Cleavage along these lines is distinct and is deplorable, since it tends also to split off clinical medicine from invaluable contacts with physiology and pathology, and to render these last too exclusively intent upon their own spheres of work.

The final and practical aim of almost all medical science is to maintain health and to combat disease in mankind. It is in the very nature of things that the study of disease, to be effective, must begin as it must end, with disease itself, and that all knowledge applicable to human disease must owe its inspiration, directly or indirectly, to intimate contact with disease as this exists in living man. If the vitality of medicine is to be increased, it must be clearly recognized that there is a fertile science that deals primarily with patients, and this must be encouraged to a more vigorous growth. The science might be called "experimental medicine" if this term had not come to convey too strongly the idea of experiment on animals. It would be called clinical pathology, if the latter were not now fenced around by test tube and needle. It may be termed *clinical science*. This science seeks, by observation and otherwise, to define diseases as these occur in man; it attempts to understand these diseases and their many manifestations, and here especially makes frequent use of the experimental method. It makes definite experiments upon disease or watches the effects of experiment conducted by injuries, however these arise; it culls, or actually creates, and uses physiological and pathological knowledge immediately related and applicable to the diseases studied. Its value has been abundantly and frequently displayed in this country by such experimental clinicians as Ferrier, Horsley, Mackenzie, and Head. The very mention of these names is in effect a definition of the science that is in mind. Their work was not work that could be delegated to laboratories; it was inspired and sustained by direct contacts with disease; it was carried through in very large or chief measure by observations on sick people. The chief motive of the present paper is to inquire how this clinical science now stands. Admit that, like other sciences, it can be fostered; admit that, as with these, its development may not be left solely to sporadic enterprise, but can be hastened and guided by the creation of opportunity, and it is not hard to show that it now suffers from neglect.

We may begin to display this neglect by considering the present training and opportunities of the young worker, who, having completed his training in the preliminary sciences, aspires to clinical research. The first part of his course is set. He must become competent to manage sick people. In the past for two, in the future for three, valuable years—and while a contemporary student seeking a career in physiology is finally preparing for, or is actually engaged in, first researches—his attention is largely focused upon fitting himself to recognize a multitude of types of patients, and to tend their immediate needs. Qualification, at the least, is, and must continue to be, inevitable. Under our present-day system qualification is, however, but a preliminary: it is the later stages of preparation, through which the student must now pass inevitably, or almost inevitably, that require our very careful and serious consideration. The governing fact is that no student after qualification can expect to obtain control of clinical material, and at the same time to enjoy freedom to work upon it under adequate facilities, unless he enters upon and completes a well-defined career in a general teaching hospital. This career is of a conservative and most exacting type: it comprises not only house appointments with their valuable and early experiences of responsibility in handling disease, but a series of higher examinations, junior appointments, and heavy routine work, extending over years and arranged from one standpoint—namely, the training of a consulting physician. The man, ardent for research, who enters upon this course begins a long period of intense work, drawing him continually to its natural goal—consulting medicine: for his researches there is no certain prospect, and from this standpoint the ending is almost always barren. The reason is that preparation for success as a consultant and preparation truly suited to a career of clinical research present irreconcilable and deep-seated differences. Because the man who aspires to do research has at present no real option, but must pursue the first form of preparation, whether he desires ultimately to embark upon consulting work or not, it becomes imperative that we should examine this system and point out its defects in so far as it adversely affects a research career. And let it be said that on the matter of the suitability of our hospital system of training as a preparation for curative medicine no opinion is here offered other than to state that in many respects it is admirable for the purpose for which it has been devised: it is, however, a distinct question from the one now considered. The opinion that is put forward is that this system, and the atmosphere surrounding it, is but-

* For 25 years engaged almost wholly in research work upon problems arising directly or indirectly out of contact with patients; for many of the earlier years verging upon, or partly in, consulting practice, I have had what is perhaps a unique first-hand experience of the ways of medical research within the walls of a teaching hospital, from the time when there were no facilities or aids worth the name, to more recent times when these have come. Out of this experience, and out of an unusual association with younger workers, there should be something that can usefully be said to help those on their way. What is said is not put down hastily, but is the outcome of long years of experience, thought, and discussion; the views are in fact developed from those expressed (*Morning Post*, April 25th, 1914) by myself sixteen years ago.

I would be deeply concerned if anything written in this article should give rise to the impression that it has been inspired by any personal difficulties in obtaining facilities for work in the past, other than those difficulties that have been inherent in the situation; on the contrary, I recognize and gratefully acknowledge that my work in past years could never have been carried out without the abundant good will and help of my hospital colleagues.

ill suited to the advancement of medicine by research, and reasons for this view will be considered at some length.

An obvious defect in present training is the natural emphasis laid upon diagnosis. Diagnosis makes intense and incessant demands upon a man's time and energy over the early years of his studies. All who frequent the wards of general teaching hospitals realize how dominant is its note and recognize the constant urge of their surroundings towards it. Diagnostic knowledge and ability is the first essential of good practice; it therefore becomes in teaching hospitals the most direct and universal measure of medical learning; it is the stepping-stone to personal success. Its highly competitive character is mainly responsible for the atmosphere of intenseness in these institutions. It demands intimate and long experience of all kinds of diseases and of the manifold variations and incidents that each may display. But, from our present standpoint, it lends an exaggerated importance to knowledge of numerous rare diseases, of newly described phenomena of minor interest and of newly described methods and tests. A desire for encyclopaedic knowledge is fostered and grows; it moves in the direction of detail, for the phenomena studied are of great complexity and diversity, and present few of those connecting links in the form of principle or generalization that would serve to lighten what otherwise becomes a feat of giant memory. The result, and the quick result, of this system is the loss of much that is of value in the earlier training. By unavoidable neglect, the physics and the chemistry of the earlier student days pass into oblivion or become so rusty as to be of no more than occasional service. Even physiology, more recent in the recollection and offering easier points of contact, suffers very seriously; so that few can maintain more than a little part of their learning in it, and none can hope in these years to keep abreast of its continued advance. The physician at an early stage can and does throw much or all of this knowledge to the winds; there is knowledge of far more value to his daily work, and this he assiduously and rightly gathers in.

Again, in the attempt at clinical omniscience, learning drifts into superficialities and is not profound, for there is little time for critical weighing, for sorting, or comparison, and therefore there is little correlation of observation and simplification of ideas. Intensive clinical training, as this exists, leads in general to no real grasp of the problems set by disease or of means of solving them; it is too purely observational for this.

Between the method and outlook of curative medicine on the one hand and of progressive medicine on the other there are definite, inevitable, and sometimes profound divergencies. Consider diagnosis again. A diagnostician goes into his wards with one chief goal in view—it is to place a label correctly, to say that here is a species or a subspecies that someone has described, its name being this or that. It is legitimate to define diagnosis from our present standpoint as an attempt to recognize the known. That is an end-point.

When the clinical researcher goes to his wards his purpose is not to recognize the known, but to face the unknown. Diagnosis to him is but a starting-point, and when made it must be absolute. A diagnosis that is not reached without demonstrable security is unpermissible. Thus, while the interminable daily discussions as to what malady this or that patient suffers form a vital part of the consultant's training and of his work, they possess a very limited value to the research worker. And here it is to be repeated that he who would work with proper facilities in clinical research, works perforce at the present time in institutions in which, owing to its admittedly high practical value, diagnostic acumen is the password to the control of material.

A second divergence that it is important to recognize consists in the fact that curative medicine deals with the individual, while progressive medicine is collective in its outlook. The difference is largely controlled by the factor of time. If a man, by intent or otherwise, goes overboard, help comes, not from him who pauses to consider effects, but from him whose hand goes forth instantly to grasp and throw a rope. To the patient is distinctly and very properly the very centre point of consideration, but to progressive medicine he is but an incident. To the former the patient is a human being in trouble, and the object of knowledge possessed or sought is the mitigation of this trouble, the comfort and relief of the sick man. To the latter the patient is one who exhibits phenomena of disease, phenomena to be compared and correlated with those displayed by other subjects. Samaritanism, the greatest guiding force of medicine as a whole, is in practice an ever-present and direct, and in progressive medicine a much more distant, and therefore less obtrusive, motive.

When we consider these divergencies we realize that, while curative medicine is essentially observational, it constantly repeats itself; for that reason it is safe, for both the doctor and his patient; for the same reason it tends to be in large part sterile. Progressive medicine to be fertile must from the nature of things be experimental and original. And in this connexion we must note what will be obvious to thoughtful people—namely, that experimental research upon disease may very readily come into conflict with full solicitude for the sick. When such conflict threatens, as it not infrequently does, it is unquestionably right that research should give way unhesitatingly; any other system would be intolerable. Interference giving rise to temporary discomfort, the patient willingly co-operating, may be permissible; interference calculated to bring risk, however slight, to a patient's health must remain unjustifiable. This element of conflict is to be noted first, because it has to be safeguarded under any system of work. No worker can reasonably expect to be relieved of full responsibility in the care of any patient remaining in his charge; but, on the other hand, it is to be realized that no investigator can be successful who allows, or is forced by circumstances to allow, solicitude for his patients to preoccupy his mind.

The divergence between the individualistic and the collective method has been considered here from one relatively simple aspect—namely, from that of the different attitudes that may be adopted towards a patient within the ward of a hospital. It is perhaps almost unnecessary to point out that each method of thought has its practical applications to health, and that these applications, the one considering the health of the individual, the other of the community, often come into direct antagonism. This long-recognized antagonism will not be discussed further than to point out that it really constitutes but one of the issues in the general problem we are considering.

The third and chief divergence between curative and progressive medicine from our present standpoint is, however, intellectual.

In his daily work a practising physician has little or no control over the questions presented to his mind; mainly diagnostic, they are brought to him for solution one after another in great profusion. His solutions are reached in by far the greater number of instances by no process of logical reasoning, but upon the basis of previous experience or upon the basis of what we call intuition, a faculty often remarkably developed. Inevitably his mental activities are chiefly of this kind. The questions are not only profuse, but diverse; the mind is jerked forcibly from one question to another. When problems relating to the mechanism of disease present themselves, as they inevitably do to the more active minds and in the earlier years, then, before a clear line of thought can be established or followed to a satisfactory conclusion, the mind is torn from its problem to be confronted with others. The practice of medicine from its very nature is destructive to consecutive thought; its continued practice weakens the very habit to think consecutively, and therefore clearly, upon problems relating to the nature of disease, a matter very vital to progress. The atmosphere of the teaching wards is one with effort, mental and physical, but it is not an atmosphere of sustained argument. The problems faced by the investigator, properly circumstanced, are under his progressive control; they are never numerous and rarely disconnected; his observations are made without hurry, his thoughts are equally deliberate, and so his conclusions shape after long pondering, criticism, and revision.

The physician is forced by his daily work to ... frequently upon an insecure basis of fact and ...

In his work many of his decisions are frankly opportunist, many are wrong. But if most are right and many of the rest are harmless, then his work is a success, despite frequent mistakes. As a doctor he is sound, for his decisions, like the questions, are independent of one another. An investigator who draws false conclusions early in his research may see the whole structure of the work topple, for here conclusions follow in sequence and an early fallacy affects all; moreover, his work is placed on record and is submitted to close and critical supervision. To a physician, mistakes, if not too frequent, are of little consequence—they are indeed inevitable: they do not shake self-confidence as they do in the case of the research worker. Self-confidence is by general consent one of the essentials to the practice of medicine, for it breeds confidence, faith, and hope. Diffidence, by equally general consent, is an essential quality in investigation, for it breeds inquiry. Here, then, are chief characteristics, each necessary in its own sphere, each unsuited to the other. The two irreconcilables do not stand alone, but find natural companions. A natural companion of confidence is an easy and uncritical acceptance of statements of fact and of hypothesis; it is often coupled with a very wide and diverse acquaintanceship with other men's work and thoughts. The companion of diffidence is scepticism; it tends to be coupled with knowledge less extensive, but derived more from personal experience and analysis, knowledge more precise, and often more fundamental. The very essence of daily observation and thought in scientific work is the continual effort to discriminate as closely as possible between what is true and what is less true or actually false. The standard of truth attained by constant and deliberate cultivation among scientific men in their work greatly transcends that in any other sphere of human thought. It is the standard that allows no statement to pass without full qualification, without full display of its limitations. It is a standard essential to progressive work, but one highly inconvenient, and even obstructive, in the practice of everyday life. The mind of the craftsman dwells on what he knows, and he delights to use and to display this knowledge. The investigator's mind dwells in the main on the unknown and puzzling, and his eagerness is often towards displaying doubts and difficulties. The adoption of a laboratory diffidence by a practitioner would soon ruin his practice. The acceptance of the easy standard of conclusion found in practice would similarly end a research worker's usefulness.

The divergencies between practical and scientific medicine, and especially between their manner of thought and standard of accuracy, are in actual fact profound and far-reaching. They are perhaps as profound as, they are certainly not dissimilar to, those exhibited in the past between orthodox religion and science.

Preliminary consideration has now been given to the training available for the man who desires to devote himself to clinical science. It is a training developed to suit the consultant practitioner rather than the research worker. It has also been shown at length how widely the methods of work and of thought in these two spheres differ. It is the methods of curative medicine that dominate in general hospitals, and it is in this atmosphere that the bulk of investigational work upon patients is now done. Many, if not most, of the difficulties that at present face the clinical investigator arise out of the past and present control, be it direct or indirect, exercised by curative medicine over the facilities for such work and its recording. This control, absolute a few years ago, still predominant to-day, was quite natural, and indeed strikingly beneficial, in its period. If we omit consideration of quite recent times, it is true to say that investigational work in clinical medicine has been undertaken almost exclusively by, or at the exclusive encouragement of, men earning their livelihood in practice, and that practically the whole of our familiarity with the forms of disease as these are found in living human beings, and with the spontaneous manifestations of these diseases, is due to the efforts of such workers. This indispensable knowledge has been gained by the method which in the beginning of all biological science is fertile—namely, by observation of spontaneous phenomena, the method from the earliest times most natural to, and assiduously cultivated by, physicians. Eventually, however, the fertility of this method greatly declines by a process of exhaustion, and, for those who can read the signs, this time has come in medicine.

There are, no doubt, many important forms of disease yet to recognize, important and spontaneous manifestations yet to note; but the experience of the last few decades has shown this type of work to be decreasing in fertility, while its place is being filled by other and more successful methods of exploration. It is also evident that the continued separation of disease into types can be pressed too far, and that a subdivision which may perhaps have some immediate practical use can help to conceal underlying mechanisms held in common, and thus to hinder progress in studying the nature of disease. It is abundantly clear that present progress in clinical medicine is less and less due to observing what chances to happen in beds filled by the routine demands of unselected sick people and of teaching, and more and more attributable to intensive study of selected cases in which manifestations are deliberately sought or actually provoked, or upon which new and often highly technical methods are employed, which are derived from prolonged and searching studies in laboratories. It is equally clear that successful research work in medicine is becoming more and more difficult for the man engaged in practice to prosecute; it is becoming more and more the province of men who train themselves in technical methods of work and in suitable habits of thought.

It is far from my intention to imply that work of a progressive kind cannot be carried out exceptionally by men engaged in practice; on the contrary, there are some directions—for instance, prognosis—in which investigations can rarely be pursued with equal prospects of success by any other group of workers. There *is* the intention to imply that in general neither the training nor the daily routine of practice conduces to the type of investigational work which progress in medicine now chiefly demands; and that the practice of general medicine by continually acceding to opportunist and hurried conclusions definitely tends to unfit a man for research. Conversely, the prosecution of research in medicine tends in general to unfit for practice; and the more whole-heartedly and continuously research is undertaken, and the deeper the research goes, the less fitted the worker becomes for the care of unselected patients. This is clearly recognized by workers themselves, and, as long as there is no reasonable prospect of careers in research, will continue to discourage them from developing full research efficiency. It is in part for this reason that research in medicine is most compatible with specialism; the opportunity to undertake progressive work is in fact often the main justification for specialism. It is not possible in research to maintain full familiarity with general medicine, with its ever-changing devices and palliatives, when so much of both time and energy are concerned in studying matters that have no immediate relevancy to practice, and in laboriously and accurately collecting data and critically forming conclusions. The idea, more prevalent perhaps in certain foreign countries than in our own, that research is a suitable introduction to general consulting practice, is not only intrinsically unsound, but has proved itself mischievous. After his qualification a man, by attempting investigational work for a short space, and thus familiarizing himself with methods and especially with the difficulties of gaining new knowledge, will often broaden his views and increase his capacity as a teacher. Ability to undertake research, however, apart from its providing a possible gauge of intelligence, is no criterion of practical capacity; and experience in research, especially on the laboratory side, has little or no value in practice; consequently, when preliminary years are spent in large part in this way, they displace years of more valuable practical experience. The proper sequel to such research is not practice but further research—in short, a career largely concerned with investigation.

The serious aspect of the wide-spread encouragement of transient research is that, while such work rarely possesses scientific value, yet the reporting of it has acquired a recognized commercial value, and its realization in the

latter way becomes much more often than not the real goal in view. The goal referred to is in certain circumstances a perfectly legitimate one. It is a most desirable and healthy thing that good teachers should use the medical press to inform; it is right that contacts between consultants and general practitioners should become established by this means, and that through periodicals new work of established value should be brought to the knowledge of the profession as a whole. But the present system is obviously capable of, and is actually subject to, grave and frequent abuse; the abuse consists in the redundant publication of articles intended to pass muster as records of serious original research. Now the editors of the journals concerned are for the most part either whole-time editors or are actually engaged in practice. In neither case are they trained by long practical experience of research to deal with such articles critically or to judge them well; their daily contacts are with curative rather than with scientific medicine. Thus it comes about that there is little or no attempt on the part of editors collectively to stem the tide of pseudo-scientific publication; its amount is controlled almost exclusively by the desires of writers, and the tables of our libraries groan under an ever-increasing weight of periodicals. Research is widely exploited for professional ends; records of imperfect and actually unsound work find an almost open path to the printing press; reports of purely repetitive work have reached an extraordinary and most undesirable magnitude; many papers are republished almost in duplicate. The effect of such publication has passed beyond the bounds of menace; it has grown to form a distinct barrier to progress, with which more serious workers recognize they have to contend. The baneful effects are twofold. By its mass it conceals work that has value; by its quality it undermines the general standard of accuracy in observation and thought. Current teaching in the wards and textbooks, current methods of thought in practical daily work, are built in very large part upon the basis of published articles, past and present. The quality of such articles is a matter of vital concern to professional work, both directly and also indirectly, through its influence on progress.

Main functions of workers in progressive medicine are to consolidate old and to explore new ground, to watch the general tendencies of teaching, and to bring the results of their work within the reach of practitioners and thus to practical application. From several of these standpoints there is, in considering the present position of medical research, something more to be said.

In research, one step forward leads to another; researches begin from an accepted foundation and proceed. It behoves the worker to examine closely the foundation from which he starts and to make sure that this ground is solid. In research that directly concerns patients this preliminary work of consolidation is particularly arduous. A physiological worker can in very large measure start from the records left by previous workers; in medicine, as things now stand, this procedure is less safe. The relative unreliability of clinical statement of fact, and especially of conclusion, comes from several sources. Clinicians who record facts and views are not chosen, as for the most part are physiologists, for their ability to use precise methods of observation and of thought; in medicine inaccuracies in statement of fact are, owing to the material used, more difficult to detect, penalties for mistakes are less severe; the standard of truthfulness, in the sense previously indicated, is far less rigid, than is the case in physiology. A very grave defect in medical publication, from the standpoint of progress, is the dearth of systematic statements of evidence. In a very large proportion of instances, satisfactory and recorded evidence for current clinical beliefs is either most difficult to discover or is non-existent. Far too much stress is laid upon suggestion; far too little upon the proof. In this relation it is sufficient to mention therapeutics, but the defect is not confined to this branch.

There is a great work to do in close and critical revision of present beliefs in every branch of clinical medicine. Upon the extent and thoroughness of such consolidation the future rate of progress will in large part depend, as it has depended *in no small* measure in the case of cardio-vascular knowledge in the past few decades.

It is essential to concerted progress that there should be more exact definition of terms applied to disease and its manifestations, for close definition would bring increased clarity and would diminish the prevailing confusion of tongues. It is essential to progress that closer attention and study should be given to the precise laws relating to cause and effect; that they are widely misunderstood is illustrated sufficiently by a common tendency to enumerate under "etiological" headlines many and diverse causes of a single effect. It is essential to progress that observational work should be far more widely supplemented by the experimental method and by its manner of thought, and particularly that a full understanding and rigid use of controls and comparisons should develop extensively. Finally, it is essential to draw more closely together the bonds between physiology and pathology on the one hand, and clinical medicine on the other.

These activities, these reforms, have become beyond the power of curative medicine; they can be properly encompassed only by men who are not beset by numerous and diverse daily tasks, who have ample leisure for study and for reflection, who in training have acquired special and suitable experiences and have deliberately cultivated those habits of mind that conduce to successful investigation, who, in brief, make research a life work.

REMEDIES.

The present weaknesses of medicine, regarded from the standpoint of its progress, have been discussed from those points of view that suggest remedies.

The great contribution of curative medicine to knowledge of disease as displayed by mankind has been emphasized. Curative medicine has done more than that. The allied sciences physiology and pathology are its direct offspring, and have ultimately drawn their chief inspiration from it. Not many decades have passed since it became recognized that physiology must assume its own control; within a brief period its progress as a science became remarkable. Pathology has become more recently, though less completely, free, and is making not dissimilar history. These associated sciences are rapidly outstripping clinical medicine in new developments. The fault must be assigned to medicine, which, failing to pull its weight and keep abreast of the rest, threatens to disrupt the team. It is for clinical medicine, the most dependent but the most important of the group, to maintain contact and to draw renewed strength from its more vigorous progeny, and not, as now, to lag preoccupied. The remedy lies in the emancipation of clinical science from the controlling influences and demands of routine practice; for therein lies its chief weakness. Just as it became necessary to the full development of physiology, so it has become necessary to that of progress in clinical science, that its workers should enjoy independence.

The first step to be taken is the training of a group of workers with a view to their devoting their lives primarily to research, making disease as this occurs in man the centre point of their studies. The essence of the worker's training in all the concrete sciences consists in the development of correct methods of work and thought; accuracy in observation and in measurement; in biological science especially, a full understanding of the experimental method; a firm grasp of the nature and use of evidence; to know how to test and how to weigh, to know how to sift out error, to be able to judge the truth or falsity of statements. From the time of qualification the worker we are considering should enjoy full freedom to develop along these broad and recognized lines; he should have the opportunity to acquire such technical methods as may be needed in the pursuit of given problems, and freedom from the recurring fear of failure as an expert and practising diagnostician. He should have ample leisure to maintain close contacts with physiology; for, if he become a successful worker, he will not only put physiology to practical use, but, like his predecessors from Harvey's time down, will help the growth of physiology, and will stimulate progress in directions in which from time to time it will respond to stimulation—namely, into the more biological channels.

A simultaneous step must be the assurance that careers will be provided for those who train themselves successfully. And careers must be assured to individual workers at the earliest possible moment. Young and competent men cannot be expected to hazard the best years of their lives in long and special training without reasonable prospect of corresponding careers before them.

There are at present a very few academic posts, the units, concerned primarily with organized teaching in the schools, appointments of uncertain development and destiny, but offering, it is true, limited possibilities of research. Sure it is that as long as these posts are concerned with the function, important as it is, of teaching general medicine, their capacity to advance medicine by research will remain limited. There are also one or two purely research posts with full facilities; but these are personal appointments, and, being such, cannot be regarded as possessing stability.

It is unreasonable to expect, it would be unwise to advocate, the sudden creation of many posts; for there are not the adequately trained men to fill them. But the vicious circle now existing, whereby there can be no posts till there are trained men, and no trained men till they can see the prospect of posts, must be broken. It can be broken by clear statements of policy that posts will be made for those who render themselves competent for such careers. The posts must be full-time posts, for full-time work can alone ensure the leisure for efficient study, and freedom from that most distracting of thoughts, the imminence of an alternative career. The workers must be secured free and full access to the material they desire to study, and *full medical charge of that material*: work upon patients in another's charge fails to give sufficient freedom of control and dulls the fine edge of personal responsibility. General hospitals provide the necessary wealth and diversity of material; a teaching element in general hospitals sorts the material and renders it quickly available. The presence of research departments in general teaching hospitals stimulates teaching, and links science and art. For these and other reasons these hospitals are very probably the most suited to house such departments; but if that is the decision these departments should enjoy independence of the more purely curative departments, they must in no sense be subordinated to these, as is the strong and natural present tendency. The need is for *research physicians*, and their departments should include adequate but not abundant beds, and proper laboratory facilities; there should be arrangements for exchange of patients with other departments of the same institution, ensuring by this means supply of material and relief from the care of patients no longer suited to research. Their teaching should be limited to the demonstration of new methods and observations, and to the exposition of new ideas.

The future creation of research posts requires the present promise of financial backing; their creation in teaching institutes would require the early promise of active co-operation by these institutes; the alternative is the foundation of special hospitals or institutes.

The future of medicine lies with the younger and recently qualified generation and with their successors. It is within their power to bring clinical science in this country to a great revival. It is for them to bind themselves into a new association, which by influence and by example may carry the standard of observation and thought to precisely the same level as prevails in allied sciences, and firmly to link up with these on the one hand and with practical medicine on the other. To this end existing associations of physiologists and pathologists will not suffice them. There are problems arising out of contact with patients that are of little or no interest to the associated sciences. It is necessary that clinical science should enjoy its own intimate and untrammelled discussions. It is necessary that it should constitute its own courts of inquiry, of criticism, and of approbation. It is necessary to its full development that it should have its separate scientific societies, should control its own publications, and should be able to confine its original reports to journals restricting themselves exclusively to original matter of proper quality. It should develop its own training ground for new recruits. It should achieve independence and freedom.

EIGHT HUNDRED CONSECUTIVE OPERATIONS FOR APPENDICITIS.

BY

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On returning from France in 1919 I decided to take careful note of all cases of appendicitis that I operated upon, first with a view to more firmly establishing, modifying, or altogether disestablishing the very definite ideas that I held upon the treatment of the disease; and, secondly, in the hope of being of some assistance in the diagnosis of its atypical forms; but I determined to publish no results until the number of cases exceeded 500. When this total was reached I decided to go on over a ten years period. This produced 782 cases, and another month completed the 800. The period covered is from January, 1919, to February, 1929. The total does not include the very many cases in which I have removed the appendix as an adjunct to operations upon the bile passages, stomach, or duodenum, nor those in which I have removed a diseased appendix when I came across it while I was operating in the peritoneal cavity for some other purpose. It is strictly limited to operations performed for appendicitis *per se*, or its results, and it includes all of those cases. An additional point of interest is the fact that in December, 1921, I made a radical change in my operative technique—a change suggested to me by Mr. Upcott of Hull—and its results have been so good that it is now my universal practice.

A glance at my tables will show that 462 cases (that is, 57 per cent. of the whole number) were either interval cases—that is, cases that had weathered at least one acute attack—or they were acute cases that had gone on to perforation. This is a very undesirable state of affairs, and it is especially undesirable when we consider that, apart altogether from the risks of the severe, and possibly fatal, complications that may develop during the course of palliative treatment, early operation offers the quickest and least painful method of recovery from the initial attack, with, of course, the additional advantage that this recovery is final.

In my opinion there are four principal reasons why early operation is not the universal practice.

1. The first, and, as I think, now the commonest, is the fact that patients do not summon the doctor soon enough.
2. The second is the fact that textbook descriptions are frequently misleading, in that the symptoms there described are in reality late symptoms, and consequently practitioners may be tempted to await their appearance before calling in surgical aid.
3. The third is that symptoms are frequently atypical, because the appendix is by no means always in the normal anatomical position.
4. It is extensively held, and, I regret to say, taught, that operation is unnecessary until palliative measures have failed; and that it is inadvisable after the second day of the attack.

My object is to combat these reasons. The first can only be combated by the education of the people, and more particularly by educating them to avoid aperients for abdominal pain. Abdominal pain means that some intraperitoneal structure is inflamed, distended, perforated, or obstructed, and the giving of an aperient in such circumstances is about as sensible as would be the waggling about of a septic finger. I am convinced that castor oil is responsible for more perforated appendices than is any other single thing or act. For the second reason the makers of books must be held responsible, and I hope they will mend their ways; while the third can only be combated by our own experience and acumen, and the fourth will disappear when those of us who are opposed to its teaching are able to convince its holders that better results are to be obtained by its abandonment.

Acute appendicitis is still the commonest of all acute abdominal emergencies, and while it is met with in patients of all ages, by far the greater number of cases occur between the ages of 12 and 25, and consequently the majority of patients are otherwise healthy and vigorous

young people. The attack commences suddenly, and the first symptom is pain, usually referred to the umbilicus. Shortly after the onset of the pain nausea or vomiting supervenes, to be quickly followed by tenderness over the right iliac fossa. These symptoms—pain, vomiting or nausea, local tenderness, and in that order—are the classical symptoms of appendicitis, and upon them alone one would be justified in making a diagnosis. Fever, leucocytosis, increased pulse rate, local swelling, dry furred tongue, peritonitic facies, etc., are undoubtedly symptoms of appendicitis, but they are late symptoms, which in an ideal world would never be encountered, and their presence means that someone has been responsible for inadvisable delay.

If, therefore, we see a patient who exhibits the above three symptoms—pain, vomiting, and local tenderness in the right iliac fossa (which I repeat because of the enormous importance of the sequence)—our first suspicion must be that he is suffering from appendicitis. Up to this point we are, of course, only suspicious; we must be reasonably certain before we can recommend a patient to submit to operation. The scope of this article does not permit of an exhaustive examination of the differential diagnosis of appendicitis from other diseases. It must suffice to say that before a positive diagnosis of appendicitis is made the possibilities of the case being one of pneumonia, diaphragmatic pleurisy, renal or ureteral calculus, or infection, intestinal obstruction, biliary colic, gastric or duodenal ulcer, acute pancreatitis, intussusception, tuberculosis, carcinoma, salpingitis, ruptured ectopic gestation, cyclic vomiting, pneumococcic peritonitis, Henoch's purpura, hip disease, a gastric crisis of tabes, etc., must be weighed; as also must it be decided whether the patient has a definite abdominal lesion of surgical consequence, or is merely suffering from an unimportant temporary disturbance, such as a bilious attack in a child, or a transient colic in an older patient; and the only warning that I would issue in this connexion is that it should always be remembered that a patient who has had many trivial attacks of colic or biliousness, or whatever it has been called, may on this occasion have a really important lesion.

If after a careful review of the case the diagnosis is still in doubt I advise the following course in all cases of acute abdominal emergency. Keep the patient in bed, and apply a warm fomentation over the painful and tender area. Starve him—absolutely. He must not even have a drink of water by the mouth, and, of course, he must have no opiate. The whole immediate object is to allow an inflamed structure to quieten down, extravasated products to become localized, or an obstructive viscus to become released; and this can best be done by the abolition of peristalsis. Having ordered this treatment, see the patient again in two or three hours. By this time the diagnosis will have become reasonably certain, or, if not now certain, the time has arrived for the assistance of a colleague with the case. Assuming that the diagnosis of acute appendicitis is now established, I am definitely of the opinion that, save in the circumstances mentioned below, immediate operation should be advised.

There is one great pitfall to avoid during this preliminary stage: beware of the sudden apparent improvement. Most practitioners have already had, and all in the course of time will have, experience of the following case.

He is called to see an acute abdomen, and, suspecting an attack of appendicitis, he orders palliative treatment. At a subsequent visit he is received with joyful smiles, and is told that the patient is so much better. The pain suddenly ceased, and all is well. All may be well; but, if the attack was really acute, it is more likely that a tragedy is in progress, and that the sudden relief from pain was due to the appendix rupturing, with a consequent release of the pressure upon its distended walls. Before joining in the general rejoicing the doctor should examine the patient carefully, and if he finds that the relief from pain has been followed by an increased pulse rate, a rising temperature, an increased area of local tenderness, a grey and anxious facial expression, and other signs of peritoneal infection, he can be sure that, far from all being well, all is very ill indeed, and instant operation has become imperative.

In order to get that operation carried out all our tact and firmness may have to be brought to bear, for we must remember these two things: (1) Pain is the only thing that really concerns a patient who is acutely ill. (2) It is very difficult to persuade him that he is not better when his pain has markedly diminished in severity. Finally, we should remember that in the early stages of the attack the severity of the vomiting is usually directly proportional to the degree of distension of the appendix, and therefore the more severe the retching the more likely is the appendix to perforate early; also, we must remember that, as a general rule, those attacks which commence by waking the patient out of his sleep are going to be severe, and they brook no delay.

I have rapidly passed over the symptoms of appendicitis in its diagnosis from other conditions, first because these things are too well known to need a lengthy recapitulation here, and secondly, because I want to devote some space to the consideration of the most difficult element in differential diagnosis. This is the apparently paradoxical diagnosis of appendicitis from itself. I stated as my third reason why early operation is not universal, "the symptoms are frequently atypical, because the appendix is by no means always in the normal anatomical position." This fact presents the greatest problem in the whole question. The symptoms already described are those of an attack in the normally situated appendix. Normally the appendix is lying behind the ileo-caecal junction, with its tip directed towards the spleen. My own experience of the inflamed appendix is that it is not often in this situation, and quite possibly that is why it becomes inflamed. Where may it be?

For practical purposes of diagnosis it should be realized that the appendix may be internal to, external to, behind, or below the caecum. When it is internal to the caecum it is probably lying in the normal direction, but its tip may be in front of or behind the mesentery, and upon this distinction will the local signs vary. If it is in front of the mesentery there will be early and considerable local tenderness and rigidity, and the diagnosis should present no difficulty; but if it is behind the mesentery these local signs will be less well marked because of the intervening coils of small intestine, and the consequent freedom from irritation of the parietal peritoneum.

When the inflamed appendix is external to the caecum it may be in the iliac fossa pointing upwards, lying between the caecum and ascending colon internally and the parietal peritoneum externally. In either of these sites the parietal peritoneum will be irritated at an early stage of the attack, so that tenderness and rigidity will be well marked, and should not be mistaken.

When the appendix is behind the caecum the symptoms may be very slight, and their meaning obscure. Usually pain is less, and it may be altogether local, while tenderness over the appendix is often very slight, as very little, and sometimes no, parietal peritoneum is involved. Vomiting and nausea may be absent, as also may local rigidity. A very valuable sign which is nearly always present in these cases is the local tenderness which can be elicited by pressure in the flank below the right costal margin at the outer border of the erector spinae; though it must be remembered that this is a common situation for tenderness in the prevalent sufferer from chronic rheumatism.

When the appendix is below the caecum its distal end is frequently hanging over the brim of the true pelvis, and it is in this event that the greatest difficulty in diagnosis arises—largely because the inflamed appendix is for the time being entirely a pelvic organ. There is no local tenderness or rigidity of the anterior abdominal wall, and, furthermore, the inflamed tip may be lying upon the bladder or rectum, causing painful micturition or tenesmus; or it may, by irritation of the peritoneum over the obturator foramen, give rise to symptoms suggesting an inflammatory condition of the right hip-joint; or by attachment to the Fallopian tube make the diagnosis between appendicitis and acute salpingitis almost impossible. Before the pelvic appendix perforates epigastric pain and vomiting will be the most marked symptoms, and may lead to a suspicion of a lesion of the upper abdomen; while after perforation the true state of affairs may be in doubt until a rising tide of dullness appears above the inguinal ligament giving us the unwelcome information that the pelvis is full of pus. It is this type of attack that is urgently in need for a rectal examination. Rectal examination should, of

course, be made in all cases of abdominal illness, but in the ordinary course of events its omission is an easily condoned sin, for there are few things that patients object to so much, and more especially do they object to such examinations in children. If, however, there is one class of case more than another in which a rectal examination is imperative it is in the case of the suspected pelvic appendix.

Finally, as to the situation of the appendix. It must be borne in mind that in a small proportion of cases the caecum has not descended into the right iliac fossa, and therefore the appendix may be found anywhere between the liver and its normal site, while in a patient with a very movable caecum it can wander into an inguinal hernia sac or other unusual situation.

Before discussing treatment I should like to say a word or two about the probable results of rupture of the appendix in these various situations. In the case of the internal or pelvic appendix they are likely to be hazardous or tragic. If the internal appendix is lying in front of the mesentery its rupture places the patient in imminent danger of extensive flooding of the coils of small intestine, and a consequent and rapid general peritonitis; therefore this type is by far the most dangerous to leave. If the appendix is behind the mesentery there is more chance of the formation of a limited, local abscess, but a very real risk of the onset of acute intestinal obstruction due to the involvement of the ileo-caecal region in the inflammatory products. Delay with the external appendix will, on the other hand, probably result in nothing more serious than a well shut off local abscess (though this is surely serious enough); while in the case of the retrocaecal appendix we have the additional risk of portal infection, subphrenic abscess, etc. Delay with the perforated pelvic appendix will certainly lead to serious trouble; at the best a local abscess or a collection of free pus in the pelvis with all the dangers of septic absorption, and a weary and prolonged convalescence, followed by the lifelong risks and discomforts incidental to a pelvis full of adhesions; at the worst a catastrophe; and it is the pelvic appendix that is most frequently overlooked, because its symptoms show the greatest departure from the usual textbook description.

TREATMENT OF ACUTE APPENDICITIS.

In considering the treatment he should recommend for acute appendicitis the uppermost thought in a doctor's mind should be that appendicitis is an acute inflammatory infection of an intraperitoneal structure that may lead to the death of his patient. The second thought should be that it is quite impossible for him, or for anyone else, to know the actual state of the particular appendix under review without seeing it. If he accepts these thoughts the only conclusion that he can come to is that immediate operation is the proper, as it is the safest, treatment.

That this view, in early stages of the attack, is becoming fairly generally recognized is a matter to be thankful for, but unfortunately it is still extensively held that immediate operation should not be advised if the patient is not seen, or the disease not recognized, until the second, or later, day of the attack. I entirely dissent from this view, and, excepting as mentioned below, I advise operation as soon as possible after diagnosis, irrespective of the stage and duration of the attack. I absolutely refuse to trust the appendix, and my experience of my own and others' work convinces me that the advocates of the alternative policy greatly exaggerate the risks of operation during the later days of an acute attack. That there were grave risks in the pre-aseptic days I readily admit, but these risks disappeared with the abandonment of the use of strong antiseptic lotions, the introduction of the practice of surgeons wearing sterile gloves and masks (by far the *greatest* surgical advance in my own time), the better understanding of the functions of the peritoneum, and the *improved* technique in the toilet of the wound. I must leave my results to prove the truth or otherwise of *my contention*. Most of my own acute cases were operated upon on the second or a later day. In none did I regret *my decision* to operate; in many of them I was supremely thankful for the views I hold.

The only occasions upon which I would advise delay, or an alternative treatment, are when:

1. The attack has practically subsided before the patient is first seen.
2. The patient is unable, because of some intercurrent disability, to stand an operation.
3. Operation is refused.

If the attack has practically subsided when the patient is first seen, and he is an otherwise healthy individual, operation may safely be deferred, but the appendix should be removed before he is allowed to get about again. In my experience an exception to this rule is justified in the case of patients past 50 years of age, for I have seen a fair number of such patients in whom the diagnosis was certain who have had no recurrence. This is not to say that operation should not be advised in patients past middle life if they are seen in an early or acute stage of the attack. On the contrary, it should be urged with more than usual force, for, if operation becomes imperative at a later stage, these middle-aged people do not stand it as well as healthy young adults do. *A fortiori*, early operation should be strongly urged in the case of children, for not only is there a tendency to rapid gangrene or abscess formation, with little attempt at localization, in these young people, but their small body weight makes them bad subjects for the resisting of an acute septic infection.

If the patient is unsuitable for operation, or if operation is refused, we must, of course, trust to palliative treatment, and I know of no better treatment than that which I have already recommended to be carried out while we are doubtful of the diagnosis at an early stage of an acute attack: but if it has to be long continued the patient must be kept going with rectal feeding, etc. If and when, in either of these classes of patients, the case is getting progressively worse, we are faced with a very difficult problem. My own opinion is that in the case of a patient who is an altogether unsuitable subject for operation we should continue to do our best by palliative measures, and that hopeless operations should not be advised. If, on the other hand, delay in operation upon an otherwise suitable patient is due to his refusal to submit, we must do our best to make him submit, and we shall not often fail.

OPERATION.

Of the operation of interval appendicectomy I have nothing to say here, for I have no knowledge that is not generally known, and no methods that are not generally practised. In acute cases my drainage procedure has been considerably modified in recent years, and now follows the lines indicated to me by Mr. Upcott of Hull. I always employ the usual oblique incision, excepting when I am in some doubt as to the appendix being the guilty organ with which I have to deal. I then use a right rectus incision. I have called my incision the usual oblique incision, instead of McBurney's, because the latter implies separation, rather than division, of the fibres of the deep muscles, and I do not always separate them. If the case is an early one and a first attack—that is, if I have reason to believe that the appendix is still freely movable and can readily be drawn out of the peritoneal cavity—I do separate the fibres of the internal oblique and transversalis: but if I am doubtful of its mobility, or there is a palpable swelling, I divide them. As a matter of fact, I have no particular preference for either method, and rarely decide which I shall employ until I am commencing the operation.

Having opened the peritoneum, one of many conditions may present itself.

1. We may open directly into a local abscess adherent to the anterior abdominal wall.

In this event the wisest course is to mop out the pus gently with gauze, insert a drainage tube, close the remainder of the wound, and apply warm moist dressings, leaving the removal of the appendix to a later date. In the cases of such local abscesses in children a single drainage tube may not be a sufficient drain, and it may be found wiser to leave the whole parietal wound open, lightly stuffing the whole abscess cavity with gauze. The same course should be adopted in local abscesses in children

which are not adherent to the anterior abdominal wall, or, better still, the abscess, before it is opened, should be made adherent to the parietal peritoneum by means of a few sutures of fine catgut. Whatever course is adopted, it cannot be too strongly insisted upon that in all cases of appendix abscess in children in which the appendix is not removed at the primary operation efficient, and even more than sufficient, drainage must be provided.

Instead of opening directly into a local abscess we may find:

2. The appendix acutely inflamed, or gangrenous, but unperforated, and freely movable; or,
3. The appendix acutely inflamed, or gangrenous, unperforated, but densely buried in adhesions; or,
4. The appendix acutely inflamed, or gangrenous, but perforated, and freely movable, with more or less extensive suppurative peritonitis; or,
5. The appendix acutely inflamed, or gangrenous, and perforated, but shut up inside a local abscess not adherent to the anterior abdominal wall; or,
6. Generalized purulent peritonitis

In either of the second, third, fourth, or fifth event the appendix should be removed unless there is some strong reason for its being left behind. In the unfortunate event of a general suppurative peritonitis being disclosed the appendix itself has probably spent its virulence, and in view of the value of time it can well be left alone unless it presents itself in the wound; certainly no prolonged search should be made for it.

It is of the method of dealing with the parietal wound after the removal of the appendix that I wish to write in detail. In my undergraduate and house-surgeon days we were taught that anything, even sterile blood, was a dangerous foreign body in the peritoneal cavity, and, as such, must on no account be enclosed. Consequently, extensive drainage by tubes and gauze was employed in all cases where it was thought that there was any chance of the peritoneum being even locally infected, as in the case of acute unperforated appendicitis; or soiled with blood from a ruptured ectopic pregnancy. I always held, even before much effort was made to prove it, that this lack of faith in the peritoneum was unjustified, as it seemed to me highly probable that Nature would make the greatest provision for the resistance of infection in those regions where successful invasion would lead to the greatest disaster. Furthermore, it was no uncommon event in the "clean" cases of those days to find superficial suppuration in the wound without any evidence whatever of peritoneal infection: which fact, as I always maintained, was a sufficient proof that the peritoneum was by no means the least resistant structure to bacterial invasion. Still, early teaching dies hard, and I continued to drain many things, I am sure, quite unnecessarily.

For many years I have aimed at the elimination of the drainage tube from the general peritoneal cavity. It is a long time since it disappeared in cases of blood soiling, and for several years I have closed the abdomen completely in cases of perforated gastric or duodenal ulcer, pyosalpinx, etc., and with the happiest results. Until December, 1921, I still retained it in cases of suppurative appendicitis, and, although I had got down to smaller and smaller tubes, I had never had the courage to close the peritoneum completely when appendix pus had been present. Before this time I had noticed that the after-history of an appendix abscess, in which I had removed the appendix, cleansed the peritoneum, and inserted a tube, was as follows.

For the first day there was a fairly profuse discharge of blood-stained serum. The wound then remained dry until the third day, when it commenced to suppurate, and there was more or less free discharge of pus through and from around the tube. With the commencement of this suppuration there was a considerable improvement in the patient's general condition, so much so that we looked anxiously for pus to appear, and felt that at last we knew what our predecessors meant when they spoke of laudable pus. When suppuration was established the tube was removed, cleansed, and reinserted for a longer or shorter period, and we had to deal with a suppurating wound of the extent of the drain track and the infected parietal parts, which wound was healed in four weeks.

Our results were good, in that the patients recovered, and we only had a very small number of incisional hernias to deal with later, but I felt that we had not reached finality, and that there was a pathological process at work that we were not understanding, for there should be some way of preventing this secondary suppuration in the abscess cavity.

In the light of the results of my present treatment the solution is easy, for it is beyond doubt that there had been no secondary suppuration in the abscess cavity itself, but a secondary infection of the tube track from the suppuration of the abdominal wall; that, in fact, instead of being beneficial, the insertion of the tube had been actually harmful.

For the institution of my present methods I am indebted to Mr. Upcott. In the autumn of 1921 a letter from him on the subject was published in the *British Medical Journal*, and he very kindly gave me fuller particulars of his technique, and his reasons for it. The stages are as follows; the description applying to the cases in class 5, where the appendix is perforated, and lies embedded in a local abscess not adherent to the anterior abdominal wall. Suitable modifications are made as required for cases in classes 2, 3, and 4, the essence of the method being that whenever the appendix is removed the peritoneum is closed, except in cases of general suppurative peritonitis.

1. An incision that inflicts the least amount of trauma on the abdominal wall.
2. The free peritoneal cavity is packed off with strips of gauze.
3. Adhesions are separated until the abscess is opened, when the pus is mopped up as fast as it escapes, and the abscess cavity is carefully dried.
4. The appendix is removed.
5. A fresh piece of gauze is placed in the abscess cavity, and the original packing removed. Any collection of pus in the pelvis or kidney pouch is carefully mopped up.
6. The gauze is removed from the abscess cavity, and the peritoneum completely closed with a continuous catgut suture.
7. The muscular and aponeurotic layers are closed with interrupted catgut sutures, an interval being left for the emergence of a strip of rubber half an inch wide, which is laid along the peritoneal suture line. The skin is closed with silkworm-gut, excepting for the small space left for the rubber strip.
8. A dressing wet with 5 per cent. saline, to encourage exudation, is applied. This should not be changed for two or three days.

Excepting that I have not always, nor usually, left the saline dressing unchanged for two or three days, I have carried out this technique with the most satisfactory results, immediate and remote, and on only two occasions since December, 1921, have I inserted a drainage tube into the peritoneal cavity when I have removed the appendix. These exceptions were not because of weakening faith, but because in these two cases the whole of the appendix was gangrenous and sloughing, necessitating the removal of an ellipse from the wall of the caecum, and I dared not place unlimited faith in my suture line. As a matter of fact in both cases all was well, and there was no fistula.

There is nearly always some suppuration, but it is entirely extraperitoneal, and is much more limited in amount than it was when a tube was inserted into the abscess cavity. The peritoneum has looked after itself; healing is by at least a week more rapid; and the resulting scar is more firm. Though it is not the matter of first importance when one is dealing with a life-saving operation, it is an interest and satisfaction that, so far as I know, no patient has developed a ventral hernia after this operation.

In the hope of further advance and greater safety in healing I have tried various methods of preventing this muscle suppuration. I have used hipp, spirit, eusol, etc., but I cannot say that any of them has been helpful, and I have abandoned their use almost entirely. Very occasionally I give the abscess cavity a final mop out with gauze wet with eusol, and it may, or may not, be helpful.

I have also drained the muscle layers in all acute cases in which the appendix is not perforated. In these cases the rubber strip is removed in forty-eight hours, when it has served the very useful purpose of allowing the postoperative serous exudate to escape into the dressings. A primary union has invariably resulted. I am sure that this

is a wise proceeding. Since first doing it I have had no trouble whatever with the abdominal wall, and when the sutures are removed it is impossible to recognize any evidence of the use of a drain; whereas, if the wound is completely closed at the time of the operation, there is at least some risk of suppuration among the muscles, with, possibly, serious extension.

For the employment of this method Mr. Upcott's reasoning was that serous membranes are tissues specially organized for protection against infection, and that they can be safely left to perform this function. On the other hand, muscles have specialized for the one function of movement, and fall a ready prey to microbic infection. I am fully convinced, both by theory and practice, that these views are sound. As a final proof that they are I asked Dr. Cookson, pathologist to the Sunderland Royal Infirmary, to make some observations for me. This he very kindly did.

He provided me with six culture tubes, and during an emergency operation upon a case of acute appendix abscess one of our residents inoculated these as follows. The first from the wound as soon as I had made the superficial incision. The second from beneath the external oblique muscle. The third from beneath the deep muscles. The fourth from the peritoneal cavity before the abscess was opened. The fifth from the abscess cavity. The sixth from the muscles after the peritoneum was closed. Dr. Cookson reported that numbers one, two, three, and four were sterile; numbers five and six were infected. Number five would necessarily be so, and although the fact of number six being infected completely confirmed the above views, it was somewhat surprising, for I had endeavoured to protect the muscles very carefully during operation. It was certainly instructive.

The following are the analyses of my cases.

TABLE I.—*Acute Cases in which the Appendix was Removed at the Primary Operation.*

Situation of the Appendix.	Appendix was not Perforated, and was Adherent.	Appendix was not Perforated, but was Adherent.	Appendix was Perforated, and was not Adherent.	Appendix was Perforated in a Local Abscess.	Died.	Total.
Internal to caecum and in front of ileum	69	28	2	11	0	110
Internal to caecum and behind ileum	18	8	5	17	1	49
External to caecum	25	12	8	24	0	69
Retrocaecal	45	25	11	42	0	131
Towards pelvic brim ...	45	12	17	6	0	80
In true pelvis	23	16	10	15	3	67
Totals	226	111	53	115	4	509

TABLE II.—*Acute Cases in which the Appendix was not Removed at the Primary Operation.*

	Recovered.	Died.	Total.
Circumscribed local abscess	26	1	27
Diffuse general suppurative peritonitis ...	7	6	13
Totals	33	7	40

TABLE III.—*Interval and Subacute (Resolving) Cases.*

Situation of the Appendix.	Not adherent.	Adherent.	Died.	Total.
Internal to caecum and in front of ileum	49	36	0	85
Internal to caecum and behind ileum	7	18	0	25
External to caecum	5	18	0	23
Retrocaecal	7	47	0	54
Towards pelvic brim	30	14	0	44
In true pelvis	4	16	0	20
Totals	102	149	0	251

In the interval cases and subacute cases there were no deaths, and if we confine the death rate to the acute cases it is exactly 2 per cent. If, however, we eliminate the cases of diffuse suppurative peritonitis we have a death rate of 0 per cent. for interval and subacute cases; of 0.93 per cent. for the whole of the acute cases; and of 0.64 per cent. for all cases.

By general peritonitis in the above list is meant diffuse suppurative peritonitis, in which the peritoneal cavity contained pints of pus, in which the appendix was neither seen nor searched for, and in which the only operative procedure was the introduction of drainage tubes. Each of these patients had been ill for more than a week before admission, and in only one was the appendix ever seen at all, and that was post mortem; but the history of the cases left no doubt in my mind that the appendix was the cause of the peritonitis. Naturally, in such cases, there was a very high mortality, and I was very thankful that seven out of thirteen cases recovered.

It is obvious that lesser degrees of suppurative peritonitis were present in all the cases where the appendix was perforated and free—that is, fifty-three cases—and the amount of free pus varied from a few drachms to two pints. These cases accounted for two further deaths, in both cases the appendix being pelvic, while a perforated appendix in a local pelvic abscess accounted for a third. Another death resulted from acute obstruction which came on five days after the removal of an acutely inflamed appendix adherent behind the lower end of the ileum, while the remaining death occurred in a healthy woman, 30 years of age, who had been admitted to hospital with a large local abscess, adherent to the anterior abdominal wall. She had been ill for ten days before admission, and I simply incised the abscess and inserted a drain. A week later, during a satisfactory progress, she died suddenly from a pulmonary embolus.

Of the acute non-perforated appendices the degree of inflammation varied from acute catarrhal inflammation to complete gangrene. As the essential point is that they were not perforated no useful purpose would be served by further particularization.

Of the perforated appendices, 53—as already noted—were free, and 142 were in local abscesses of greater or lesser extent. Of these 142 cases, the appendix was removed at the primary operation in 115, whilst simple drainage was employed in 27. A subsequent appendicectomy was performed in 18 of the latter. In 7 cases the caecum was undescended, and in 2 of these the greatest difficulty was experienced in removal of the gangrenous appendix tucked up between the liver and the ribs.

I have limited my analysis to cases actually operated upon by me, and to all of those cases. Many others have been operated upon from my wards by my colleague Mr. G. S. Robinson, on similar lines, and with equally good results, and I am definitely and finally of the opinion that, once the appendix is removed, an intraperitoneal drain is entirely useless and unnecessary, and it may be harmful.

While I shall not be content to admit that the treatment of appendicitis is completely satisfactory until such time as the recovery rate is 100 per cent., I think I can fairly claim that the above results show a definitely favourable advance upon the generally accepted mortality rate; and that they justify my advocacy of immediate operation in all acute cases—with the aforementioned exceptions—and my faith in the peritoneum. It only remains for me to express my sense of the greatest indebtedness to those who have assisted me in attaining these results, and more particularly to my house-surgeons, and to the theatre and ward nursing staffs.

Since February, 1929, I have operated upon a further 112 cases, of which 70 were acute, and 42 were resolving, or interval. They are not analysed in detail, and would not have been noted at all but for the unfortunate fact that there were five deaths among them. The ages of the patients who died were respectively 53, 59, 15, 56, and 52 and all were gravely ill on admission. Adding these cases to the 400 detailed above we get a total of 912 cases, of all degrees of severity, with 16 deaths—a mortality rate for the whole number of 1.75 per cent.

CLINICAL EXPERIENCES WITH PERCAIN, A NEW LOCAL ANAESTHETIC.

BY

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LOCAL *anaesthesia—a term used in this article to cover* tissue infiltrations, nerve trunk and splanchnic blocks, and spinal anaesthesia, whether for the production of "anaesthesia" or "analgesia"—has not been, and possibly never will be, as popular in this country as on the Continent and in certain parts of the United States. This is probably largely owing to the traditional ideas established in the minds of the public, which make them less likely to co-operate willingly with the surgeon, and create a bias in favour of complete unconsciousness. It must be pointed out that the technique of local anaesthesia demands much more than the somewhat perfunctory attention usually paid to it; moreover, the special care that must be given to certain details in the performance of operations under local anaesthesia of necessity restricts the surgeon's freedom of action, and this may at times be considered a sufficiently grave inconvenience to outweigh any advantages the method might offer. The last point in its turn will depend upon the type of operation and the temperament of the surgeon.

Other things being equal, however, the disadvantages would be minimized if the local anaesthetic could conform with the following desiderata.

1. Practical non-toxicity in relatively large doses and the absence of idiosyncrasy.

2. Rapidity of action in order that the injection itself may be painless and that complete anaesthetization of the area may be induced within a reasonable period of time.

3. Good powers of diffusion and penetration.

4. A duration of anaesthesia sufficient to enable the most extensive operation to be performed without reinjection.

5. An ideal quality would be a prolonged period of dulled sensibility after the anaesthetization proper had passed away.

6. There should be no impairment of tissue vitality or retardation of healing—a fatal defect of quinine and urea hydrochloride, a substance that exhibits the previously mentioned quality to a pronounced degree.

7. The substance should be readily eliminated.

In addition to these physiological properties the local anaesthetic should have the following physical characteristics.

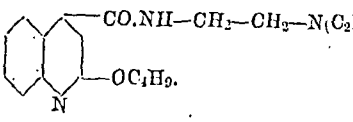
1. It should be stable both in the solid and in the dissolved condition.

2. It should be unaffected by exposure to air, or by exposure to heat, for the purpose of sterilization; or by admixture with saline, adrenaline, and such substances as may reach it from the walls of vessels, instruments, and syringes.

3. For spinal injection it would be advantageous for the solution to be effective in such low concentration that the specific gravity could, if necessary, be made lower than that of the cerebro-spinal fluid—that is, about 1006. Inexpensiveness would, of course, be an added attraction.

The anaesthetic group in use at the present time (the novocain group) possesses many of these characteristics and gives on the whole considerable satisfaction. Among the chief disadvantages, however, are the following: the anaesthesia, even in conjunction with adrenaline, is not sufficiently long for the performance of some major operations, so that reinjections of the mes necessary; there is no post-operative anaesthesound waed sometimes there is abnormal post-operative pain bd, in t be admitted that this is due we only had a very small emostasis, which must be meticulous when adrenaline is used, or to the employment of heterotonic solutions); it is liable to destruction by oxidation, is none too stable on heating, and is very labile in the presence of even traces of alkalis. In contrast with cocaine, its action on intact mucous and other surfaces, such as the conjunctiva, nasal mucosa, and urethra, is lamentably inferior. Its mild vaso-dilator action is readily counteracted by the use of adrenaline.

We have recently tried in a considerable number of cases of all types a new local anaesthetic, percain, made by Ciba of Basle, and handled in this country by the Clayton Aniline Company. Percain is a quinoline derivative, being the hydrochloride of diethyl-ethylene diamide of alpha-butyl oxycinchoninic acid, with the structural formula



It forms colourless crystals soluble in water; the solution may be sterilized without deterioration by boiling. In the preparation of such solutions, however, care must be taken that no alkali comes into contact with them lest precipitation should occur, a particularly serious event where the concentration is so low. Glass free from alkali should be used, and the saline prepared with doubly distilled water, containing no trace of sodium carbonate or bicarbonate; accidental contamination by these may be countered, however, by the addition of a minute quantity of dilute hydrochloric acid—for example, two or three drops per litre. Percain is miscible with adrenaline. The specific gravity of effective dilute solutions in water may be as low as 1002, and, therefore, by the use of varying degrees of tonicity of saline, solutions of any specific gravity likely to be desired can be produced. This, it should be realized, is the first time that a watery solution of anaesthetic having a specific gravity either equal to or even appreciably less than that of the cerebro-spinal fluid has been available. This fact promises to revolutionize the whole technique of spinal anaesthesia, since it enables anaesthesias to predetermined levels to be obtained with reasonable certainty. The special methods adopted to obtain high-level anaesthesia with percain are at present being standardized by Dr. Howard Jones, senior anaesthetist to Charing Cross Hospital.

The following are the outstanding physiological qualities that attracted attention. (1) The extreme degrees of dilution in which the drug is capable of producing efficient anaesthesia. (2) The prolonged period of action. With regard to the former, its effective concentration on the cornea of the rabbit is 1 in 120,000, compared with 1 in 15,000 for cocaine; weight for weight, therefore, it is easily the most powerful local anaesthetic known. Against this it must be admitted that percain is far from being non-toxic, a subcutaneous dose of 0.01 gram per kilo being lethal to the rabbit, giving rise to excitement, dyspnoea, and cramps, with death from respiratory paralysis; rapid intravenous injection is fatal in a dose of 0.0045 gram per kilo. This may be compared with the following figures for other local anaesthetics: cocaine, injected slowly intravenously in the rabbit, 0.019 gram per kilo; cocaine hypodermically in dogs, 0.025 per kilo; novocain intravenously in rabbits, 0.06 per kilo. The British Medical Association Committee's scale of relative toxicities is as follows: cocaine 1.0; stovaine 0.625; novocain 0.49; beta-eucaine 0.414. (Allen, however, gives the toxicity of novocain as being six to seven times less than that of cocaine.) On this scale, therefore, percain would stand at about 4.0.

Percain shows inhibition of bacterial growth, but in the concentrations employed is not definitely bactericidal. Hofer states that its minimal effective concentration in the rabbit subcutaneously is 1 in 140,000, and that "there seems to be a particular sensitivity of the splanchnic system to the preparation, these vessels being enormously swollen in the killed animal." Owing, however, to the extreme intensity of its action there would appear to be not the slightest likelihood of anything approaching the lethal dose being needed for operative procedures. There is, further, as far as can be ascertained, no record of

such personal idiosyncrasy as is notorious in the case of cocaine.

With regard to the second quality—namely, prolonged period of action—percain is surpassed only, though easily, by quinine and urea hydrochloride; this last substance, however, has two almost insuperable contraindications—its painful induction and sometimes disastrous local toxic effects. With percain a duration of anaesthesia of between two and six hours, according to the concentration, is alleged to be obtained.

Personal Tests.

We have tested the anaesthetic properties of percain upon ourselves, with the following results. The intradermal injection (1 in 2,000 without adrenaline) produced immediate and complete insensitivity lasting about two and a half hours. Subcutaneous infiltration (without massage or kneading, which we have found to accelerate induction) was followed by anaesthesia in about five minutes, lasting over three and a half hours. In neither case was there subsequent hyperaesthesia or dermal change (for example, desquamation). In the intradermic, and to a less extent in the subcutaneous injections, there was an immediate severe hyperaemia coterminous with the anaesthesia. In the infiltration of a small subcutaneous nerve (perineural infiltration with the same concentration) there was anaesthesia in about twelve minutes, lasting over five hours.

Clinical Experiences.

Our experience, which now extends over four months, would appear to support the claims made. The substance has been employed in local infiltration (of the Schleich type), nerve blocks, paravertebral anaesthesia, splanchnic blocks, and spinal anaesthesia. The concentrations used have been 1 in 1,000 to 1 in 2,000. It is usually recommended that ten minims of adrenaline (1 in 1,000) to each ounce of local anaesthetic solution is the appropriate dose; we find that this may be doubled or even trebled with no deleterious effect, but with greatly enhanced convenience as regards speed and intensity of action. The addition of adrenaline is essential, as without it percain seems to have a much greater local vaso-dilator action than novocain. In the above concentrations we have frequently employed three or four ounces of solution; in one instance seven and a half ounces were used (this was a partial gastrectomy with parietal and splanchnic infiltrations; the concentration was 1 in 1,500, and the total quantity, therefore, about 2 grains).

In the considerable number of cases now dealt with we have observed no evidence of toxic effect, either general or local; there has been no undue tissue reaction and no impairment of healing after any local infiltration. Thiersch grafts removed under subcutaneous infiltration (1 in 2,000) take in a perfectly normal manner. There has been no evidence of neuritis or impaired conduction after any nerve block.

When due attention is paid to the special points to be observed in all operations under local anaesthesia—for example, avoidance of traction on structures attached outside the infiltrated field—the procedures could be carried through without giving pain to the patient. Phenomena of sensory dissociation are quite frequent, painful sensation always being lost, but that of pressure and touch sometimes being retained. This, of course, is commonly observed in all forms of local anaesthesia, although never to the same startling extent as with small spinal injections. Post-operative anaesthesia was uniformly seen, varying from three to six hours. This admittedly falls short of the ideal, which would have a duration of several days; but nevertheless it is sufficient to confer a very distinct advantage.

A detailed list of the cases in which percain has been used would be tedious and unnecessary; the following summary will, however, indicate the practically unrestricted scope of the preparation. Finger operations (infiltration of root); Dupuytren's contracture (wrist infiltration and ulnar and median block); simple subcutaneous tumours; diagnostic removal of glands; oral anaesthesia for radium (lingual and dental nerve blocks); scalp anaesthesias, Thiersch grafts, sympathectomy, herniorrhaphies, varicocele and hydrocele operations, anal operations, simple mastectomy, ventriculography, colostomy. Among the more extensive procedures are: gastro-enterostomy, gastrostomy, appendicectomy, cholecystectomy (with a localized splanchnic block in addition), gastrectomies, thyroidectomies, pituitrectomies. In these, general hypnotics have, in addition, been administered—hyoscine or morphine.

Surface Anaesthesia.

We have no experience of percain in its application to the conjunctiva and to the nasal mucosa. It has been repeatedly employed in a 1 in 1,500 concentration to the urethral mucosa for the performance of cystoscopy—but has not seemed quite equal in intensity to the usual cocaine-chloretone combination.

Spinal Anaesthesia.

While percain can be claimed to show a distinct advance on previous local anaesthetics in its application to infiltration and nerve-blocking anaesthesia, there can be no doubt that its greatest attraction lies in the special advantages it confers in spinal anaesthesia. These are the duration of action and the low specific gravity of effective solutions. The latter characteristic has made necessary and possible some important modifications of the usual technique of administration: these, as has already been stated, are still in process of standardization, and will therefore not be dealt with fully in this article. Our experience of some hundred cases, however, enables us to make certain positive statements. The anaesthesia takes somewhat longer to develop than that with novocain, but the rate varies, of course, with the concentration employed. It may last anywhere up to six hours, again depending on dose and concentration. As an indication of the extent of action it may be stated that complete anaesthetization of the abdomen, including the splanchnic nerves, may be obtained by the injection of 12 to 16 c.cm. of a 1 in 2,000 solution at the first or second lumbar interspace. The most prolonged abdominal operation may therefore be performed under intrathecal injection alone. The anaesthesia has persisted several hours after the completion of resection for gastro-jejunal ulceration, the abdomino-perineal removal of the rectum, and operations of like severity.

The fall of blood pressure produced by splanchnic paralysis is probably less severe than with novocain, though, of course, it lasts much longer; it can to a large extent be overcome by administration of ephedrine, but particular care must be taken of the posturing of the patient for many hours after the operation is completed. It may be emphatically stated, however, that in this long series of cases no instance of serious vasomotor collapse has been met with such as to give rise to the least anxiety or to call for any special treatment. The early sickness which is so common with novocain injections is relatively infrequent with percain, as are also post-operative headaches.

Sensory and motor dissociations have been observed apparently in a greater proportion of cases than with other intrathecal agents, possibly in part owing to the very low specific gravity of the solution. No irritant effects on nerve roots or cord have been observed. The upper level of action has been sufficiently high in some cases to cause numbness and tingling of the hands; the need for caution with regard to the avoidance of phrenic paralysis when using a drug with a four hours' action is obvious. So far, at any rate, the trouble has not arisen.

Conclusions.

Weight for weight, percain is less expensive than novocain, and when the dilution is taken into account (0.075 to 0.05 per cent. as compared with 0.5 per cent.), it is very much cheaper. Contrasted with ether and gas and oxygen the cost per patient is infinitesimal.

As a result of our experience we are led to conclude that percain marks a definite advance over existing local anaesthetic substances, and particularly we believe that it promises to mark a very considerable advance in spinal anaesthesia.

A STUDY OF THE TENDENCY TOWARDS DELINQUENCY OF BACKWARD CHILDREN.

BY

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AND

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In discussions on juvenile delinquency it is often stated that mental defect and mental backwardness are associated closely with misconduct in the child. So far as certifiable mental defect is concerned, Professor Burt has laid it down that not more than 7 per cent. of juvenile delinquents are mentally defective within the meaning of the Act. Although there have been some authorities who have put the percentage as high as 20, most now find themselves pretty well in agreement with Professor Burt's figures, but it is frequently stated that if mental defect is not closely associated with delinquency, the moron or backward child often shows asocial conduct. This appears to be one of those generalizations which are not supported by carefully worked out statistics, and it seems desirable to bring forward some evidence as to whether this is the case or not. If such is to be adduced, we must not estimate how many delinquents are backward, but try to determine how many backward children become delinquent. An opportunity to do something towards this end was afforded by the fact that during the last nine years several cases have been referred from the schools of the city of Bath to Dr. Thomas, the deputy school medical officer, as supposedly defective. One hundred of these children who were not found to be certifiable under the Act, and were therefore not placed in a special school, have been carefully investigated and followed up. The appended figures give a summary of the result of this investigation.

NUMERICAL SUMMARY OF FINDINGS.

Children reported by school masters and mistresses as probably subnormal = 100 (boys 56, girls 44).

BOYS.

At the date of the inquiry the ages of the 56 boys ranged from 22 to 8. Of these, 1 showed an I.Q. (intelligence quotient) of 60–70 per cent.; 18 an I.Q. of 70–80 per cent.; 27 an I.Q. of 80–90 per cent.; 9 an I.Q. of 90–100 per cent.; while 1 showed an I.Q. of 116 per cent.

Conduct in School.

Forty boys showed good conduct in school: 16 were complained of in some way or another; 10 were noted as asocial with other children at school—that is, were either leaders in mischief, spiteful with other children, or too easily led; 15 were noted as unsatisfactory in their conduct in the home.

Of the troublesome cases, 5 were noted as causing difficulty both at home and in the school; 11 were troublesome in school, but good at home; and 10 were troublesome at home, but good in school.

Of the 10 who were asocial with other children, 3 showed a correlation with complaints from both the home and the school; 3 with complaints from the home; 2 with complaints from the school; and 2 without complaints from either.

During their school period, therefore, 28 showed some abnormality in conduct—that is, 50 per cent. Of these, 7 were noticed to have some defect of physical health—that is, 25 per cent.—but, of the well-behaved boys, 11 were noted to have a defect of physical health—that is, 39 per cent.

In 18 cases there was a broken parental relationship. By this is meant that either the father or mother was dead or separated. Of these, 13 cases showed conduct disorder. Of the 5 cases who showed no conduct disorder, 1 had neither parent and was in a home; in 1 case the father had deserted; and in 3 cases the father was dead. Of the 13 cases with conduct disorder, 4 had lost both parents, 5 had lost their father, and 4 had lost their mother.

Family History.

With regard to the family history: in 24 cases nervous or mental manifestations were noted. Of these, 8 had some sort of conduct disorder, and 16 were of good conduct. In 3 cases there was pronounced physical ill health in the family. Of these, 1 showed conduct disorder and 2 were of good conduct. In 6 cases, one or more members of the family were certified as mentally deficient. Of these, 3 showed conduct disorder and 3 were of good conduct.

The home conditions were reported as bad in 6 cases. Of these, 4 showed conduct disorder, and 2 were of good conduct. One boy had had encephalitis lethargica, but there was no conduct disorder, either at school or later.

In one boy, who showed conduct disorder in all respects, there was a history that his family had had a very bad experience during the Irish revolution, which had left a strong emotional impression on the boy. This is the boy referred to below, who was sent to a Home Office school and is only now doing well. He had no special treatment.

Of the 56 boys examined, 37 have now left school, and of these 17 showed no conduct disorder while at school, and 20 gave some trouble of one sort or another. It has been impossible to trace 4 cases, 3 of whom had shown conduct disorder at school.

Of the 16 who have been traced who showed no trouble during school age, none have given any trouble since leaving school: 13 are in work and are doing well; 2 have had work and did well in it, but are now out of work; 1 has so far found no work.

Of the 17 who have been traced and had given trouble during school age, 10 are in work and doing well; 3 have had work and did well in it, but are now out of work; 1 had work and was fairly satisfactory, but is now out of work; 1 has definitely been dismissed for misconduct; 1 is a waster and has never got work; 1 got into the hands of the police for stealing, was sent to a reformatory school, from which he tried to escape, and his term therefore was lengthened; he is now reported as of good conduct.

Of the 37 supposedly defective boys who have left school, 4 cannot be traced; 23 are in work and are doing well; 5 have had work and done well, but are at present out of work; 1 has had work and was fairly satisfactory, but is at present out of work; 3, one of whom has had work, have been definitely unsatisfactory, though one is now reported as having improved, and one has not yet found work, but is of good conduct. One boy 100 per cent. I.Q. is doing very well in a garage.

The boy with 116 per cent. I.Q. behaved well at school, but was uncontrolled at home and pilfered. His father had died in an asylum, his mother was nervous, and he was sent to a training ship, where he is training for the navy and apparently doing well.

The following list shows the types of employment: errand boy, 8, factory worker, 5; milkman, 3; gardener, 2; farm worker, 2; motor mechanic, 2; grocer, 2; warehouseman, 1; clerk, 1; chair-maker, 1; labourer, 1; soldier, 1; page-boy, 1; total 30.

GIRLS.

At the date of the inquiry the ages of the 44 girls ranged from 22 to 8. Of these, 2 showed an I.Q. of 60–70 per cent.; 16 an I.Q. of 70–80 per cent.; 22 an I.Q. of 80–90 per cent.; 3 an I.Q. of 90–100 per cent.; while 1 showed an I.Q. of 130 per cent.

Conduct in School.

Twenty-four girls showed good conduct in school; 20 were complained of in some way or another; 14 were noted as asocial with other children at school; 10 were noted as unsatisfactory in their conduct in the home.

Of the troublesome cases 7 were noted as causing difficulty both at home and in the school; 13 were troublesome in school, but good at home; 3 were troublesome at home, but good in school.

Of the 14 who were asocial with other children, 5 showed a correlation with complaints from both the home and the school; 2 with complaints from the home; 4 with complaints from the school; 3 without complaints from either.

During their school period, therefore, 26 showed some abnormality in conduct—that is, 59 per cent. Of these, 6 were noticed to have some defect of physical health—that is, 23 per cent., about the average for the total school population—but of the well-behaved girls 6 were also noted to have a defect of physical health—that is, 33 per cent. Of the 12 cases of defect in physical health 5 suffered from rheumatic infection; 3 of these had conduct defect and 2 were without conduct disorder.

In 17 cases there was a broken parental relationship. By this is meant that either the father or mother was dead or separated. Of these, 9 cases showed conduct disorder. Of the 8 cases who showed no conduct disorder, 1 had lost both parents; in 7 cases the father was either dead or unknown. Of the 9 cases with conduct disorder, 6 had lost both parents and were either boarded out or in homes; 2 had lost their father; 1 had lost her mother.

Family History.

With regard to the family history: In 9 cases nervous or mental manifestations were noted. Of these, 7 had some sort of conduct disorder, and 2 were of good conduct. In 7 cases there was pronounced physical ill health in the family. Of these, 2 showed conduct disorder and 5 were of good conduct. In 9 cases one or more members of the family were certified as mentally deficient. Of these, 7 showed conduct disorder, and 2 were of good conduct.

The home conditions were reported as bad in 10 cases. Of these, 7 showed conduct disorder, and 2 were of good conduct.

Of the 44 girls examined 36 have now left school, and of these 9 showed no conduct disorder while at school, and 21 gave some trouble of one sort or another. It has been impossible to trace 2 cases, one of whom showed conduct disorder at school.

Of the 8 who have been traced who showed no trouble during school age, none have given any trouble since leaving school: 7 are in work and are doing well, and one has been married for a year.

Of the 20 who have been traced and had given trouble during school age, 16 are in work and doing well: 1 has had work and did well in it, but is now out of work; 1 had work but was dismissed for misconduct; 1 cannot get work; and 1 is in a mental institution.

Of the 30 supposedly defective girls who have left school, 2 cannot be traced; 23 are in work and are doing well; 1 is married; 1 had work and did well, but is at present out of work; 1 cannot find work; 1 has had work and proved definitely unsatisfactory; and 1 is in a mental institution.

One girl 100 per cent. I.Q. showed no conduct disorder and is now in steady work. The girl with 130 per cent. I.Q. gave a considerable amount of trouble, both at school and at home, from pilfering and lying, but on being removed to another school the mistress gave her positions of trust and her conduct improved very markedly.

The following list shows the types of employment: domestic service, 11; factory worker, 5; tailoress, 3; barmaid, 2; waitress, 1; laundress, 1; nursemaid, 1; gardener, 1; messenger girl, 1; total, 26.

BOTH BOYS AND GIRLS.

Taking boys and girls together, at the date of the inquiry the ages of the 100 children ranged from 22 to 8. Of these, 3 showed an I.Q. of 60–70 per cent.; 34 an I.Q. of 70–80 per cent.; 49 an I.Q. of 80–90 per cent.; 12 an I.Q. of 90–100 per cent.; 1 an I.Q. of 116 per cent., and 1 an I.Q. of 130 per cent.

Conduct in School.

Sixty-four children showed good conduct in school; 36 were complained of in some way or another; 24 were noted as asocial with other children at school; 25 were noted as unsatisfactory in their conduct in the home.

Of the troublesome cases, 12 were noted as causing difficulty both at home and in school; 24 were troublesome in school, but good at home; 13 were troublesome at home, but good in school.

Of the 24 who were asocial with other children, 8 showed a correlation with complaints from both the home and the school; 5 with complaints from the home; 6 with complaints from the school; 5 without complaints from either.

During their school period 54 showed some abnormality in conduct. Of these, 13 (24 per cent.) were noticed to have some defect of physical health, but of the well-behaved children 17 (37 per cent.) were noted to have a defect of physical health.

In 35 cases there was a broken parental relationship. Of these, 22 showed conduct disorder. Of the 13 cases who showed no conduct disorder 2 had lost both parents and in 11 cases the father was either dead or unknown. Of the 22 cases with conduct disorder 10 had lost both parents, 7 had lost their father, and 5 had lost their mother.

Family History.

With regard to the family history: in 33 cases nervous or mental manifestations were noted. Of these, 15 had some sort of conduct disorder and 18 were of good conduct. In 10 cases there was pronounced physical ill health in the family. Of these, 3 showed conduct disorder, and 7 were of good conduct. In 15 cases one or more members of the family were certified as mentally deficient. Of these, 10 showed conduct disorder and 5 were of good conduct.

The home conditions were reported as bad in 16 cases. Of these, 11 showed conduct disorder and 4 were of good conduct.

Of the 100 children examined, 67 have now left school, and of these 26 showed no conduct disorder while at school, and 41 gave some trouble of one sort or another. It has been impossible to trace 6 cases, 4 of whom had shown conduct disorder at school.

Of the 24 cases that have been traced who showed no trouble during school age, none have given any trouble since leaving school; 20 are in work and are doing well; 2 have had work and did well in it, but are now out of work; 1 has so far found no work, and 1 girl has married.

Of the 37 that have been traced and had given trouble during school age, 26 are in work and doing well; 4 have had work and did well in it, but are now out of work; 1 had work and was fairly satisfactory, but is now out of work; 2 have been dismissed from work for misconduct; 1 cannot get work; 1 is a waster and has never got work; 1 got into the hands of the police and was sent to a reformatory school; and 1 is in a mental institution.

Of the 67 supposedly defective children who have left school, 6 cannot be traced; 46 are in work and are doing well; 6 have had work and done well, but are at present out of work; 1 has had work and was fairly satisfactory, but is at present out of work; 4, two of whom have had work, have been definitely unsatisfactory; 1 girl is married; 1 cannot find work, and 1 is in a mental institution.

Two children who proved normal—that is, 100 per cent. I.Q.—have done well and given no trouble. Two children who were supernormal gave trouble through pilfering and lying at an early age, but when put into better circumstances their conduct has improved and they seem to be turning out well.

In considering these figures it is perhaps worthy of note that most, if not all, these children were of the type who might well be sent to child guidance clinics as at present established and being established in many centres. With the exception of one or two, none of them received the specially organized treatment which is offered at these clinics, although in many cases they were the subjects of particular care on the part of both the teachers and the school medical department. None the less, the striking feature of the whole investigation is that adaptation to environment was difficult to a large proportion of them at school age, but 90 per cent. of them succeeded later in adapting themselves. This would seem to indicate that the enthusiasts for child guidance, amongst whom the present authors count themselves, should not make too extravagant claims for their methods. It is sometimes implied in the publicity notices of child guidance clinics—not with more particularly in other countries than this—that but for child guidance the younger generation must grow up neurotic, criminal, and maladjusted; but former generations have lied and stolen and played truant in their youth and yet grown up to figure wonderfully well in the struggle for civilized existence. Should we therefore hold with certain opponents of child guidance who maintain that the whole thing is a fad and of no practical service to the community? It would seem that the truth lies somewhere between these extremes, for it certainly does not benefit the individual or the community that pilfering, lying, or truancy should continue any longer than absolutely necessary, even though in many cases a successful adaptation may be made later. Further, if, as is generally admitted, specialist clinics are desirable for children for various physical disabilities, specialist clinics for mental disabilities are also necessary. Another interesting feature of the early difficulty of adaptation and later relative success is that it corresponds with certain, so far unpublished, observations of Dr. Thomas on the progress of mental development of certified mental defectives who, when they are at such a low level as to come within the official designation of feeble-minded, do progress rather than remain, as is sometimes supposed, at a constant level. Since mental defect is held by the recent departmental committee to consist more of difficulty in social adaptation than of intellectual incapacity, this slow development of adaptability in these backward children is characteristic. It also supports our opinion that no very elaborate treatment is necessary in child guidance work.

Certain other factors are brought out by the inquiry. The presence of physical disability did not show any marked correlation with conduct disorders. The chief influences in association with maladaptation were bad homes, broken parental relationship—though the absence of the father did not seem to make for trouble in any special degree—and what might be described as a psychopathic family history. The presence of nervous and mental disabilities or mental defect in other members of the family showed a high correlation with misconduct. The poor adaptation made by the two supernormal children is interesting; in one case—the boy—there is a definite psychopathic trait, while in the case of the girl it would seem that the routine work of early school life which was below her capacity failed to awake and hold her interest.

OSTEITIS DEFORMANS: ITS TREATMENT BY ULTRA-VIOLET RAYS.

BY

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OSTEITIS deformans was described for the first time by Paget in 1876, but nothing is known about its etiology. It is seldom seen before the age of 40, and is equally common in males and females. The main symptom is pain, which is attributed to rheumatism in most cases. The disease is frequently overlooked until gross deformity appears, or an *x*-ray photograph is taken.

Pathology.

The normal bone rarefies, and is slowly invaded by fibrous tissue, leading to softening and bending. Coincident with this destruction some regeneration and ossification occur at a slow rate. In the long bones the normal curves are exaggerated at first, and later abnormal curves make their appearance. The subperiosteal bone laid down is more porous, roughened on the surface, and considerably larger than the normal.

The long bones of the lower extremities, the pelvic bones, and the skull are most commonly affected, but any bone may be the seat of the disease. In advanced cases most bones suffer, leading to great deformity. The diagnosis is not easy when only one bone is affected.

Various treatments have been suggested, but none has proved of any value. I was prompted to write this paper by the excellent results obtained in four cases that have been under observation for nearly three years, but the number of cases is small, and the period of observation short, for a disease progressing so slowly. The complete disappearance of symptoms, and the marked return of the bones to normality, as shown by radiograms, has tempted me to take this step with a view to getting a greater number of patients treated by this method, and having my findings confirmed or otherwise.

The cases described illustrate well the difficulties of arriving at a correct diagnosis.

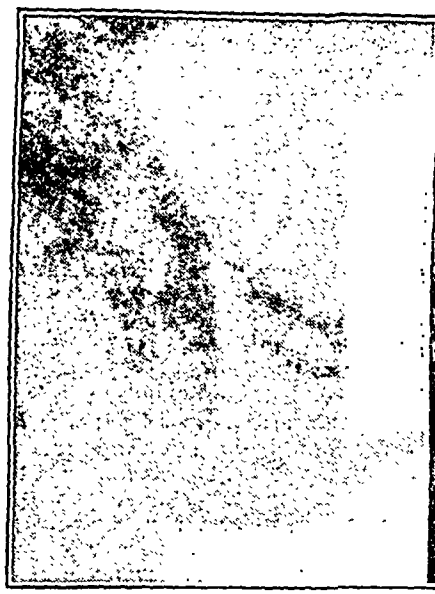


FIG. 1.



FIG. 2.

CASE I.

The patient was a man, aged 55. There was nothing of importance in his family or personal history until 1925, when he was knocked down by a motor cycle and severely bruised. In 1918, however, he had complained of aching in the right groin, and was advised to diet himself. The pain diminished, but did not disappear entirely. In the summer of 1927 severe pain was felt in the same region. Sleep became impossible without hypnotics, and he was unable to follow his occupation. The local doctor suspected appendicitis, and referred him to a consultant. The diagnosis was uncertain until an *x*-ray photograph (Fig. 1) was taken, which showed osteitis deformans affecting the ischium.

He was seen by me in December, 1927. He looked ill owing to the pain he had suffered, the sleepless nights, and the worry of losing his employment. He was put on general ultra-violet ray treatment three times a week; at the end of twelve sessions the pain was distinctly less, and after twenty-four doses he had practically lost it. There was a marked improvement in health, and he resumed his work. With the exception of short breaks he persevered with treatment until the beginning of 1929, when a pause was suggested. After a period of five weeks there was a slight return of the aching, and treatment was restarted twice a week, when the pain again disappeared. He has since maintained excellent health in spite of a sedentary occupation and long working hours. An *x*-ray photograph, taken ten months after the commencement of ultra-violet ray treatment (Fig. 2) shows a remarkable improvement in the condition of the bone.

CASE II.

An unmarried woman, aged 68, had previously been well, and there was nothing significant in her family history. In the summer of 1926 she bruised the right shin against a bath. In September of the same year aching started in the right leg, and she noticed a slight bowing. A bone-setter diagnosed arthritis, and advised exercises and diet, but the pain continued to get worse.

She was seen by me in January, 1928, when she had marked anterior bowing of the right tibia, and considerable enlargement of the diameter of the bone. A radiogram showed typical osteitis deformans, with great thinning of the compact bone. She was put on an ambulatory splint, taking the weight on the tuber ischii, in order to prevent a fracture, and a course of general ultra-violet irradiation three times a week was started. The tone of the muscles was maintained by a course of graduated faradic contractions. At the end of twenty treatments the pain had diminished considerably, and after three months she had lost all symptoms. An *x*-ray photograph showed regeneration of bone, and the calliper was discarded. This patient had been advised to have one-month courses of irradiation, with six-week intervals. There has been no return of symptoms, and she has maintained perfect health.

Two other cases, one in a woman, aged 54, suffering from osteitis deformans affecting the tibia, and the other in a man, aged 70, with Paget's disease affecting both femurs, have responded by disappearance of pain within three months of the commencement of treatment, and apparent arrest of the disease, as evidenced by regeneration of bone.

I much regret that the calcium content of the blood was not determined before and during the treatment; it might have thrown some light on this obscure condition.

All the cases were irradiated from a mercury vapour lamp. The area of skin exposed was increased gradually so as to raise the patients' tolerance to the rays, and the doses given were designed to produce the faintest erythema possible.

When the symptoms have disappeared it is important to impress upon the patients that treatment should not be discontinued for too long a period. This should not be difficult with a form of treatment which is not in the very least unpleasant, and is generally followed by a feeling of well-being.

PRIMARY CARCINOMA OF THE APPENDIX.

BY

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IN the last few years a considerable amount of literature in many languages has accumulated on this subject, but up to 1906 only 42 cases had been reported. By 1926 the number of recorded cases had reached 300, and last year Selinger of New York reported 34 new cases from the Post-Graduate Hospital.

Etiology.

Here there is scope for the many views as to the etiology of cancer in general. Primary carcinoma of the appendix has been reported by MacCarty and McGarth in a child of

5 years. This fact, together with the embryological and phylogenetic position of the appendix, lends force to the theory that it arises in displaced or embryonic remains; but when we ask why the displaced cells should take on malignant characteristics at this early age, we are met by the host of problems related to carcinoma in general. Again, the appendix and inflammation are closely related, and the most frequent age at which carcinoma of the appendix appears corresponds to that at which inflammation of the appendix appears. The oldest patient was aged 81 years, reported by Rogg in 1913. More cases have occurred in females than in males, but statistics here are rather confusing, because although appendicitis is acknowledged to be more frequent in males, the female abdomen is more frequently operated upon than the male abdomen, and more female appendices are sent for routine section.

The case under consideration was that of a small girl, aged 13 years, who for the previous six months had complained of occasional attacks of sharp pain in the abdomen. Recently the pain had become localized to the right iliac fossa, and was followed by nausea. The mother stated that the pains were becoming more severe and made the child cry out. The appetite was good, the bowels regular, and there was no loss of weight.

On examination the girl appeared quite healthy and well nourished. There was no anaemia, or any abnormal general features. Palpation of the abdomen detected some "guarding" of the muscles over the right iliac fossa, and there was distinct local tenderness on pressure. Per rectum nothing abnormal was detected. A diagnosis of subacute appendicitis was made, and operation decided upon.

On opening the abdomen the appendix was found lying quite free in the abdominal cavity, without adhesions. The base was thick, hard, and solid, as though a hard green pea had been inserted into it. The distal portion was slightly distended. The caecum appeared normal, and there were no enlarged mesenteric glands. The appendix was removed, together with a small cuff of the caecum, the stump infolded in the usual way, and the abdomen closed. On cutting into the nodule at the base of the appendix it was found to be very hard and solid, almost obliterating the appendix lumen.

The report on the microscopic section by one of us (H. S.) was as follows: "The sections made from the nodular appendix show a carcinoma which in places resembles the basal-celled type, and in others a scirrhous type. In most places the lining mucosal epithelium is intact, but in one place there is infiltration of the mucosa by malignant growth. The growth extends to the peritoneal surface. The stroma is mainly fibrous."

Diagnosis.

As in the case we are reporting, no one has yet made a diagnosis of primary carcinoma of the appendix before operation. It may be found post mortem, it may be found on routine microscopical examination of the appendix—which, indeed, is the reason for the increasing number of cases recently recorded—or it may be recognized when the abdomen is opened. The case presents the usual symptoms of a subacute or chronic appendicitis and clinically is diagnosed as such, or the appendix may be perforated by the growth, and symptoms of acute appendicitis ensue.

Statistics of the Mayo Clinic and other large clinics where great numbers of appendices are examined as a routine show the frequency of primary carcinoma to be under 1 per cent.

Pathology.

It has been denied that this condition is really a carcinoma, but that the tumour represents endothelial proliferation as a result of inflammation or displaced epithelial cells. Hertzler points out in support of this view that the usual round-cell infiltration is absent, and that the connective tissue retains its acidophilic properties. For this reason the name "cancroid" has been suggested. Fortunately, the condition is generally benign, but there are several records of metastases in the liver, the peritoneum, or the lymph nodes. Also, although the growth is generally confined to the mucous and submucous layers with a tendency to infiltrate the muscular layer, it is nearly always limited by the serosa. Different types of cells have been found. The spheroidal-celled type is most common, but, as one would expect, cuboidal, cylindrical, endothelial, and mixed types and colloid degeneration may all be represented.

Selinger, in his article in the *Annals of Surgery* (1929), quotes the latest word by P. Masson:

"Carcinoids result from proliferation of the intranervous argentaffin cells of the neurocoine type. They pile up in the nerve fibres, finally rupture their sheaths, and infiltrate the intestinal tissue of the mucosa and then that of the submucosa."

Conclusions.

Primary carcinoma of the appendix is not so rare as to constitute a pathological anomaly, but is becoming more and more widely recognized. Occurring as it may do in young children, it provides a further field for research and speculation on the origin and nature of cancer in general. Considerations of the phylogenetic and ontogenetic development of the appendix together with this pathological change may throw further light on the problem.

The general benignity of the growth, unless it occur at the base of the appendix or infiltrate the neighbouring structures, suggests that treatment should be limited to removal of the appendix without resection of the ileo-caecal region.

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SYMMETRICAL GANGRENE COMPLICATING RHEUMATOID ARTHRITIS.

BY

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RAYNAUD'S disease has been reported from time to time as a complication of rheumatoid arthritis, giving rise to attacks of local syncope and asphyxia in the extremities, and loss of tissue, notably in the ears and the tips of the fingers. Llewelyn Jones mentions that in one advanced case in which Raynaud's symptoms developed, areas of skin over both heels underwent a necrotic change. Records of cases of symmetrical gangrene due to other causes are difficult to find, and it is for this reason that the following case was thought to be of interest.

A married woman, aged 32, with two children, stated that as a child she had always had cold hands and feet. Eight years previously she was first taken ill with an attack of acute rheumatism affecting both feet, the left ankle, both knees, and both hands and wrist-joints. The condition became gradually worse, treatment at Bath affording little relief. Six weeks before admission to hospital she noticed that her hands and feet were very cold and painful, and that the circulation was poor. Four weeks later she discovered that the right foot and the left hand were changing in colour, gradually becoming black; this change was accompanied by excruciating pain, more especially at night.

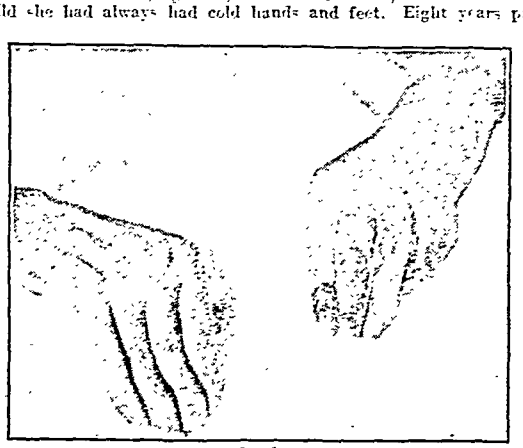


FIG. 1.

The patient was admitted into hospital on November 12th, 1929. She was pale and markedly wasted, and all four extremities showed advanced arthritic changes of the rheumatoid type. There was well-marked dry gangrene of the right foot affecting all the toes and extending proximally for two inches along the dorsum of the foot, with a well-marked line of demarcation; there was also gangrene of the left hand (see photograph, Fig. 1). The left foot

and right hand were blue, cold, and congested, but sensation in the limb was not affected. The ears were warm and of normal colour. The chest showed clinical signs of bilateral advanced active apical tuberculosis, which was confirmed by an *x*-ray examination; there was also evidence of myocardial degeneration. The Wassermann reaction was negative. The blood count was as follows: haemoglobin 58 per cent., red cells 3,500,000 per c.mm., white cells 15,000, colour index 0.8. No atypical cells were seen, and the urine was found to be normal.

Two days after the patient's admission the left foot became gangrenous, and a line of demarcation rapidly developed in the region of the mid-tarsal joint. Owing to the intense pain in the limb, operative measures were undertaken without delay. A peri-arterial femoral sympathectomy was performed in Hunter's canal,



FIG. 2.

and the femoral vein was also ligatured. At the operation the diameter of the femoral artery was found to be no larger than that of a slate pencil. Five days later the leg was amputated above the ankle-joint under local anaesthesia. Seven days later the right leg was amputated above the ankle, and the left hand at the wrist. The wounds healed rapidly, and the patient was discharged to her home two weeks later. So far there has been no recurrence of the gangrene.

Microscopical examination of the blood vessels in the amputated limbs showed the main artery with its lumen obliterated by an ante-mortem clot. There was also evidence of adhesions in the surrounding tissues, and of obliterating endarteritis in the small vessels.

The typical attacks of local syncope, pointing to Raynaud's disease as the cause of the gangrene, were absent in this particular instance. There is every reason to regard the cause as rather due to a toxic endarteritis, possibly rheumatic in origin or perhaps accentuated by the active tuberculosis, combined with thrombosis, the result of the sluggish circulation in a bed-ridden patient.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

THE STATIC TREATMENT OF ENLARGED PROSTATE.

The term "static electricity" applies to electricity at rest, of a high voltage stored up and held in a Leyden jar, or in the fields of a reposz machine. In 1750 Jallabert of Geneva published the first recorded on the medical uses of static electricity. He discovered as well as that static administrations increased the pulse rate and that the skin temperature of the patient. He also claimed that a static bath was valuable in cases of amenorrhoea, and that an increased secretion of sweat and urine was induced. Jallabert also demonstrated that paralysed muscles when treated by electrical sparks responded with a convulsive movement of individual muscles wherever the sparks were applied. This was the first demonstration that the static current induces "independent muscular contractions," independent of the nervo-muscular mechanism, a property which explains the peculiar efficiency of the static modalities in effecting tissue drainage with the removal of local stasis. Benjamin Franklin and John Wesley subsequently became advocates of the therapeutic use of static sparks. The Holtz and Topler-Holtz machines were not invented until 1865. These, and later the Wimshurst machine, made possible the production of currents in greater quantity and voltage than was possible with the friction machines.

To Dr. Morton of New York is due the credit of having discovered what are now known as the static induced and static wave currents. In conjunction with Dr. W. B. Snow much useful therapeutic work was carried out, especially in rheumatoid arthritis and other inflammatory conditions, and it was observed that removal of induration and accompanying swelling (tissue drainage), with the relief of pain, tenderness, and muscular tension, was effected with the static modalities. How is it that static electricity fills this unique role? It is because no other form of electricity is generated under anything like the same conditions as the static current, and electricity from no other source possesses to the same extent its unique qualities or characteristics, which are (1) high voltage relative to an infinitely small amperage, (2) the property of diffusion derived from the preceding qualities, (3) ionization of the air to these currents. Furthermore, the current is a constant current and a directional current of high potential, and produces its effects upon the muscular cells beneath skin and fat, whereas the low galvanic current is only effective when applied directly to muscular tissue—that is to say, static current produces cell contractions of the muscular and elastic tissues of the body independent of the neuro-muscular [illegible] we have a powerful remedy, safe and universal application, yet neglected.

The [illegible] of static wave current to diseased conditions is [illegible] but I propose here to deal with the treatment of [illegible] prostate, simple or post-gonorrhoeal. In treating an [illegible] prostate the method employed is as follows: [illegible] patient is placed upon an insulated couch, lying [illegible] side; a suitable rectal electrode connected with [illegible] is introduced into the rectum, in the media[illegible] machine in contact with the gland. The usual duration [illegible] and [illegible] is thirty minutes, the length of the spark-gap [illegible] treatment [illegible] increased as relief of the condition permits —that is, [illegible] ce increases.

I have often [illegible] during a course of treatment that sexual power [illegible] been increased, and in many cases restored. In [illegible] and epididymitis the relief is prompt. To explain these [illegible] results one may recall the action of the static wave current on the tissues: (1) increase in circulation; (2) contractile effect on the swollen infiltrated tissues, and on all muscular and elastic tissue in and around the gland. Briefly, massage with drainage and direct stimulation is obtained. Bearing in mind these properties, it will be seen how readily the swollen and enlarged prostate can be reduced, the symptoms relieved, and the patient restored to comfortable existence.

London, W. ROLF CREASY.

MULTIPLE ANEURYSMS.

THE following case of multiple aneurysms may be of interest.

On September 3rd, 1929, a man, aged about 60, with one leg, arrived at a boarding-house in this town. He complained of not feeling well, and retired early to bed, where he was found dead next morning.

I performed a post-mortem examination on September 5th. He was a well-built, muscular man. The left leg had been amputated through the thigh. On the inner side of the right thigh, just above the knee, was a large, hard swelling. The peritoneal cavity was full of blood, and there was much recent blood clot in the retroperitoneal tissues. There was an aneurysm just above the bifurcation of the abdominal aorta, roughly spherical in shape, and about 2½ inches in diameter. This had ruptured through a slit 1 inch long in the anterior surface. The swelling on the right thigh proved to be an aneurysm of the femoral and popliteal arteries, and was about 6 inches long by 3 inches in diameter, and filled with laminated blood clot. No other aneurysms were found. The heart was enlarged (weight 14 oz.), and there were atheromatous patches on the aorta, but no valvular lesions.

Dr Henderson of Bayswater, who had attended the man during life, tells me that the left leg was amputated some years ago for a femoral aneurysm which was causing gangrene of the foot. The aneurysm in the right thigh had recently consolidated and ceased to pulsate. The man denied having had syphilis.

Clacton-on-Sea. S. ALEC GRANT, M.R.C.S., L.R.C.P.

Reports of Societies.

SPINAL ANAESTHESIA.

At a meeting of the Section of Anaesthetics of the Royal Society of Medicine, on March 7th, with Mr. R. E. APPERLY in the chair, Mr. CHARLES DONALD read a paper on spinal analgesia with spinocain, and Dr. HOWARD JONES a paper on percain with special reference to high thoracic nerve-root block.

Mr. Donald referred to the claims made by Dr. Pitkin of New Jersey for spinocain as an anaesthetic—namely, that with a minimum of toxicity the preparation gave absolute control of analgesia, no fall of blood pressure, and an absence of post-operative complications. The solution contained novocain, of which the toxicity was certainly not high; strychnine, which was introduced to maintain the blood pressure; alcohol to reduce the specific gravity of the mixture below that of cerebro-spinal fluid; and a viscous starch solution to delay the rate of absorption. In theory, the solution should behave like the bubble in a spirit level when injected, and its effects should be controllable by the position of the patient, but in practice it had been wayward. Less analgesia resulted from an injection of a dose of spinocain than from the injection alone of an amount of novocain equal to that included in the dose; this indicated a slower rate of absorption of spinocain. With an injection of 2 c.cm. results varied; 3 c.cm. gave analgesia to the transverse nipple line and 3.5 c.cm. to the level of the second rib. In the spinal canal spinocain did not behave like a light fluid, so that he had given up tilting the patient until analgesia was obtained; relaxation was often disappointing. He had found that 3 c.cm. gave analgesia in fifteen to twenty minutes, whether expanded with cerebro-spinal fluid first or not: it was not, therefore, any more controllable than novocain. He had never had symptoms of respiratory paralysis, though analgesia had reached the second rib in twenty-four cases. More than half the cases gave the same results with equal doses of spinocain, whether expanded or unexpanded. Old persons, persons of full habit, and those who were seriously ill were more quickly affected than others, and required a smaller dose. Ephedrine was used with a local anaesthetic before insertion of the needle; this was supposed, like the strychnine, to help to maintain the blood pressure. In practice the blood pressure always fell a little, though only about one-third, or less, of his cases had shown a fall of more than 20 mm. of mercury. The use of intrathecal strychnine had often been tried but invariably discarded. The effects of ephedrine were not conclusive. As to complications, there had rarely been anxiety while the patient was on the table; one had died during operation, and three others within a few hours, but all these had been *in extremis*. There had been no cases of post-operative pneumonia, paraplegia, or ocular palsies. Two patients had developed paralytic ileus, but it was probable that they would have done so whatever the anaesthetic. Most of his patients had been constipated for a day or two after operation. Spinocain could be used with safety for 23 per cent. of operations below the diaphragm; it could be pushed to include more than the lower abdominal field, but in the upper abdomen its effects were variable. It had not justified the major claims of Pitkin—namely, complete controllability and maintenance of blood pressure. The only advantage it showed over novocain was its slower rate of absorption.

Dr. HOWARD JONES, before beginning his communication on percain, offered a criticism of Pitkin's theory of the action of spinocain. It was useless to put alcohol in the solution in order to reduce the specific gravity, since, as soon as mixing occurred, the heavier constituents would react to gravity. The ascent of the anaesthesia and its disappearance from above downwards suggested gravitational diffusion. Further, any method which depended on the withdrawal of a specific quantity of cerebro-spinal fluid was unreliable. Turning to percain, he would remind his hearers that the specific gravity of cerebro-spinal fluid varied between 1003 and 1010. Percain could be used in dilutions of 1 in 1,000, 1 in 2,000, 1 in 1,500, and, in small doses, in dilutions of 1 in 500 or even less. The drug was so potent that its weight in solution added practically nothing to the specific gravity of the solvent. It was used in normal saline, and in saline of strengths between 0.5 and 0.9 per cent.; and the solution so formed might be hyperbaric, isobaric, or hypobaric to the cerebro-spinal fluid. With hyperbaric solutions there was a danger of spread by gravity if the patient was placed too early in the Trendelenburg position; time should be allowed for the absorption of sodium chloride to reduce the specific gravity of the solution, or else hypobaric solutions only should be used. A solution with a specific gravity of 1005 to 1006 was usually hypobaric; the dorsal roots must be well soaked after the injection, by placing the patient on his face. If this was omitted there was danger of producing an anterior root block only, with paralysis of muscles and no analgesia. Solutions should be fresh, and used at body temperature. The duration of anaesthesia was proportional to the concentration of percain; a concentration of 1 in 2,000 gave analgesia for three-quarters of an hour, and a concentration of 1 in 1,000 gave analgesia for two hours or more; 15 c.cm. of 1 in 1,000 was usually sufficient for appendicectomy. The injection was made without withdrawal of fluid; as soon as a pressure resistance was felt the injection was made slowly, 2 c.cm. at a time. Usually the patient did not complain of headache. The fall of blood pressure was not as severe with percain as with novocain or stovaine, and the pulse was but little affected. The drug was relatively non-toxic, owing to the high dilutions in which it was used and to its slow absorption. Vomiting often occurred during high operations owing to vagal reflexes. It was advisable to have the thorax slightly tilted downwards to avoid any chance of vasomotor paralysis; phrenic paralysis was unlikely to occur with the doses employed. Breathing might become shallow and cease when the intercostal muscles were paralysed, since diaphragmatic breathing led to anoxaemia and depression of the vasomotor centre: this in turn gave rise to shallower breathing, and a vicious circle was established. The treatment was to give gas and oxygen, allowing rebreathing to occur; the carbon dioxide generated by the patient stimulated the respiratory centre and restored deep inspiration. Failures with percain were due to miscalculation, or to anterior root block preponderance, due to insufficient soaking of the posterior roots in the ventral position, or to the use of hyperbaric solutions, which gave rise to root block in the ventral position. Vomiting and headache occurred sometimes as after-effects, but were usually not severe. At Charing Cross Hospital ephedrine had been found to act as a cure for spinal headache. Percain was particularly valuable on account of the small excess of its dose; 7½ mg. of percain had a longer effect than 150 mg. of novocain.

Mr. PETER DANIEL said that he had found percain to be an excellent anaesthetic from the point of view of the surgeon. He thought the tendency to vomiting, due to vagal reflexes, might be controlled by the application of a swab soaked in percain to the oesophageal orifice during operation.

Mr. NORMAN C. LAKE said that he had produced the vagal inhibition suggested by Mr. Daniel by the injection of percain into both sides of the oesophagus, with good results. He had found the after-effects of percain to be mild, and had used it for regional anaesthesia in removing a pituitary tumour, with no other anaesthetic.

Mr. C. JENNINGS MARSHALL said that he had found percain to be an invaluable form of spinal anaesthesia. Relaxation was complete under its influence. Mr. A. G. ALLEN said he had had very good results with percain as a local anaesthetic for dental work. Mr. E. FALKNER HILL said that where spinocain was used, though analgesia lasting one and a half hours could not be guaranteed, it was often obtained. Vocal control was an essential if spinal anaesthesia was to be perfected. LIEUT.-COLONEL G. REES-MOGG mentioned the possibility of urgency of micturition after spinal anaesthesia. Dr. T. H. SELLORS said that he had used percain as a regional anaesthetic, with good results; and that it was also useful to anaesthetize the urethra in cystoscopy, and as a dressing for burns and raw surfaces.

Mr. FRANKIS EVANS described three cases in which he had used percain as a spinal anaesthetic with success. Mr. DICKSON WRIGHT described two cases in which severe cyanosis and delirium had occurred in patients after the use of percain. Mr. R. E. APPERLY said that he had used percain as a regional anaesthetic with good results.

Mr. DONALD, in replying, said that he held no brief for spinocain, but that the viscous medium helped to cause slow absorption. It was often not the anaesthetic, but the anaesthetist, who was responsible for good results in spinal anaesthesia.

Dr. HOWARD JONES said that headache and vomiting should not be too readily attributed to the anaesthetic. These symptoms might follow simple lumbar puncture. The same argument applied to the development of such a symptom as cyanosis; causes other than the anaesthetic might be found.

MALIGNANT DISEASE OF THE EAR.

AT a meeting of the Section of Otology of the Royal Society of Medicine, on March 7th, with Mr. M. W. MOLLISON in the chair, several papers were read on malignant disease of the ear, and cases and specimens were demonstrated.

Mr. G. J. JENKINS described three cases illustrating a very similar syndrome. In each instance there was a history of severe injury to the head occurring some years before the development of the disease, which was of slow growth and low malignancy. The first patient, who came to King's College Hospital in 1926 for severe pain and profuse haemorrhage in the left ear, had a history in 1916 of a blow on the head, though not such as to produce unconsciousness. The trauma was followed by twitching of the left side of the face and paralysis, but eventually all signs cleared up except deafness in one ear. On examination ten years later a polypus was found blocking the meatus. The treatment comprised operation and radium therapy; in this and in the other cases success was attained. The æ-ray appearance in all three cases was similar. The injury to the head suggested that the cyst was due in some way to injured blood vessels, but a pathological examination revealed the characteristics of sarcoma. In these cases there was a curious conical or triangular infiltration of the membrane.

Mr. E. BROUGHTON-BARNES dealt with the early diagnosis of carcinoma of the ear; his own experience was limited to three cases, but he had collected a number of others from the literature. In eight out of ten cases the condition was squamous-celled epithelioma; in one it was squamous adenocarcinoma, and in the remaining case rodent ulcer. Most of the patients had had otorrhoea for some years. Four symptoms occurred with special frequency—namely, pain, facial paralysis, granulations of the meatus, and tendency to bleeding. When epithelioma arose in the meatus the patients sought advice early on account of the pain, and there was an opportunity for early diagnosis; it was otherwise when the growth was in the mastoid. In one of the speaker's cases, a woman aged 76, there was early growth in the meatus; here there was prompt recognition by section, and a good result followed very simple radium treatment, a radium needle being worn in the meatus for ten days. The ulcers disappeared completely, and two and a half years afterwards the patient was perfectly well, the hearing in the affected ear being at least as good as in the other.

Mr. HERBERT TILLEY exhibited a case of malignant disease of the right external auditory meatus in a man who had complained of stabbing pain in the right ear and occasional but slight discharge. Examination revealed a pale excavating ulcer on the deep antero-inferior wall of the right meatus. The granulations were hard and resisting when probed, but nevertheless bled freely. Sir J. DUNDAS-GRANT demonstrated microscopical sections from a case of epithelioma of the external auditory meatus, in which the probe had revealed a remarkably extensive area of bare bone on the posterior wall of the meatus. Mr. T. JEFFERSON FAULDER exhibited a specimen of malignant disease of the right ear, and Mr. GILBERT CHUBB and Mr. F. C. ORMEROD showed a patient who had had a carcinoma in the external acoustic meatus; this had been treated by radium, and there had been no recurrence of growth or pain for more than a year. Five needles, each containing 1.3 mg. radium, had been inserted into the wall of the meatus on the superior, posterior, and inferior aspects, and a total dose of 1,404 mg. hours had been given. The growth and pain disappeared in about a month after the removal of the radium.

Mr. A. R. TWEEDIE asked whether the cases reported by Mr. Jenkins could be definitely said to be malignant. The question of trauma was an important factor, and the fact that the character and the microscopical appearance were cystic rather suggested a vascular lesion. In a slowly progressive condition such as this, one rather hesitated to advise an operation which was certainly going to mean a good deal of mutilation and involve a long time in recovery. Dr. DAN MCKENZIE said that an interesting point was the occurrence of facial paralysis in connexion with the development of the growth, thus offering one more possibility to be borne in mind in a case of facial paralysis. The method of treatment in this disease would vary according to its type and situation. In the deep cases illustrated by Mr. Jenkins, where the malignancy was mild, radium offered itself as the remedy. When epithelioma occurred in isolated and removable points such as the pinna, the speaker thought diathermy was indicated rather than radium. If the disease was in and about the bone in the mastoid he did not think that diathermy was serviceable; the whole of the growth could not be removed by that means, and its utilization did not seem to confer any advantage over ordinary curetting. Mr. JENKINS, in reply, said that the cases were of definite though of low-grade malignancy. They were of slow growth, one of them lasting for ten years, and another for six. This was not one of the growths which gradually infiltrated the tissue; it projected itself forward by mere invasion, pushing other tissues out of the way. He did not think there was any argument against early operative procedure; such procedure was not dangerous.

A paper by Professor J. S. FRASER was read in his absence, containing particulars of eleven cases of malignant disease of the external auditory meatus and the middle ear. Among 646 cases seen in private practice from 1906 to 1929 in which the external acoustic meatus was affected, he had had three cases of malignant disease of the external meatus; in the statistical tables of the Royal Infirmary, Edinburgh, out of 6,605 cases of affection of external ear and meatus there had been 13 of malignant disease.

THE PHYSIOLOGY OF INSECTS AND HUMAN DISEASE.

THE digestive and respiratory systems of insects were discussed in a lecture given by Dr. V. B. WIGGLESWORTH, of the London School of Hygiene and Tropical Medicine, to the Royal Society of Tropical Medicine and Hygiene on February 20th.

Dr. Wigglesworth pointed out that such a study was important from the aspect of human disease when it was remembered that the digestive tract of the insect often formed the chief culture medium of the pathogenic organism during its sojourn in the intermediate host, and that it was frequently through the respiratory system that insects proved most vulnerable to poisonous agents for their extermination. He described in detail the physiology of digestion in an omnivorous insect such as the cockroach, and then compared it with that of an insect which had become strictly adapted to a diet of blood—namely, the tsetse-fly. He said that so far as present knowledge went the only special adaptations in the tsetse-fly to an exclusive diet of blood were the loss of those enzymes which acted upon carbohydrates, a great increase in the quantity of proteolytic enzymes, and the acquisition of factors affecting the coagulation of the blood. Whether the rapid absorption and excretion of liquid from the blood—which occurred in the tsetse-fly as in most blood-sucking insects—was asso-

ciated with any special changes in the absorptive properties of the mid-gut, had not yet been determined. But the rapid removal of fluid presented many interesting problems in both absorption and excretion, the solution of which in insects might well prove of great importance in physiology generally. The gut of the tsetse-fly contained some greatly hypertrophied cells, whose cytoplasm was stuffed with little rod-shaped but highly pleomorphic micro-organisms resembling large bacteria. Whether these "bacteroids," as they were called, were true symbionts, as had been argued, could not be regarded as proved at the present time, but their constant occurrence in cells specially prepared to receive them, and their hereditary transmission, suggested that they did in fact contribute something of value to the economy of their host. Similar organisms occurred in other blood-sucking insects—the louse, for example—but they were absent from the flea and the mosquito. Possibly they manufactured for their hosts some accessory growth factor comparable to the vitamins necessary for mammalian growth. With regard to the respiratory system, Dr. Wigglesworth advanced a theory, complementing the work of Krogh, according to which the extent of air along the terminal tracheoles was controlled by the osmotic pressure of the tissue fluids; and since the osmotic pressure increased in active tissues, the supply of air was greatest where it was most needed. He described experiments on mosquito larvae by which this theory was substantiated, and related these findings with the effect of oil as a larvicidal agent.

In the course of some discussion after the lecture Colonel F. P. MACKIE, I.M.S., mentioned that in work in Uganda it had been found that certain trypanosomes could infect parts of the alimentary canal of the host to the exclusion of other parts. Some passed into the salivary glands, others developed only in the proboscis. In malaria, again, it had always seemed inexplicable to him why in certain species of mosquito the malarial parasite should undergo a partial development and then cease; and, again, why in some species, which had never been incriminated as carriers in the field, transmission should be obtained in the laboratory. He believed the solution to be in the physiological reactions of the insects concerned. Certain species of phlebotomus, again, were capable of providing a suitable environment for the parasite of kala-azar, and others had no such power. Most important of all was the question of plague, the distribution of which in the East had been supposed to depend largely upon the distribution of *Pulex cheopis*; but experiments in his laboratory on a large scale had shown that *P. brasiliensis* and other species were equally valid as plague carriers.

Dr. C. M. WENYON referred to some recent work in Russia whereby species of mosquito other than anopheles appeared to harbour the malarial parasite in the initial stages of its development; but development was stayed, apparently, by something in the tissue fluids of the insect.

RADIUM TREATMENT OF CANCER.

AT a meeting of the Liverpool Medical Institution, held on February 13th, Mr. C. THURSTAN HOLLAND and Dr. J. M. WOODBURN MORISON of Edinburgh opened a discussion on radium in the treatment of malignant disease.

Mr. THURSTAN HOLLAND said, in his opening remarks, that radium never had been, and never would be, "the cure for cancer": like the knife, diathermy, and so forth, it was a local remedy, and no local attack could ever be entirely successful. In criticizing very severely the methods and propaganda for raising money for radium, he said that these had led the general public to believe that, given enough radium, cancer need no longer be feared. Statistics purporting to contrast the results of radium treatment with surgical treatment were unreliable: thus, the five-year "cure" was not necessarily a "cure"; in the large majority of cases the removal of a tumour was not enough; the condition was already generalized, and it was merely a matter of time before some kind of protection gave way and recurrence or metastases followed. Each year considerably over half the cancer mortality was from disease of the gastro-intestinal tract and its appendages, and these organs, said Mr. Holland, could not be a very hopeful field for radium treatment.

Dr. J. M. W. MORISON referred to the excellent pioneer work of the radium institutes of London and Manchester, and of the various research organizations in this country. Outlining the policy of the National Radium Commission, he said that the Commission, far from imagining that the problem of the use of radium in the treatment of cancer had been settled, believed that it called for careful research under the guidance of the faculties of medicine of the universities, in association with the great teaching hospitals. In the great Continental centres the trend in radium therapy was to avoid, wherever possible, the direct introduction within the tissues of tubes and needles, the line of advance being the development of the surface applicator, so designed that the distribution of tubes and needles on the outer surface gave what was, for all practical purposes, a uniform irradiation on the skin surface. The work of Murdoch and Stahel at l'Hôpital Burgmann in Brussels was a genuine advance. Radium therapy was still in the experimental stage, but the results, he believed, justified its use and the promotion of further research.

Mr. G. C. E. SIMPSON suggested that the openers had taken too pessimistic a view. Surgeons experienced in the diagnosis and treatment of cancer should not be superseded by a new class of specialist—the radiological expert on cancer. While in every centre he should have at his disposal the advice of such experts, the surgeon, in present circumstances, was justified in using radium if he had made himself familiar with the treatment adopted and the results obtained in great surgical clinics which had advanced radium treatment in recent years. In operable cases such treatment had advantages over mutilating operations, and in some sites—for example, the floor of the mouth—radical surgery of cancer was highly dangerous, and generally ineffective, while radium treatment, in many cases, produced apparent cure.

Mr. F. STRONG HEANEY agreed with Mr. Thurstan Holland that radium was not a "cure" for cancer, but surgeons and gynaecologists, he said, had not really held exaggerated ideas about its value. Appeals for funds were made by laymen, and often worded without reference to medical men; it was regrettable that exaggerated claims had been made, but the medical profession itself was fully aware of the limitations of this very valuable weapon for treating cancer. Objection had been taken to the so-called five years' standard of non-recurrence, but the only way of comparing results was by adopting some arbitrary period. Cases, he held, must be selected by persons in a position to judge the possibilities of the alternative lines of treatment. The collaboration of the radiologist and the physicist was indispensable: whether in the hands of surgeons or radiologists, methods were still largely empirical. Radium would continue to be preferred to deep therapy until the latter gave better results.

Dr. RAWDON SMITH said that, while certain of the methods for raising money were to be deprecated, he hoped that the public would subscribe for radium in Liverpool, where both research work and radiotherapy were behind-hand.

Mr. PHILIP HAWE said that treatment by the radium bomb was only justifiable in the most expert hands: its dangers were so great, and its value so doubtful, that it was unlikely to come into more general use. He was much impressed during a visit to Brussels by the value of combined methods, involving the use of radium, surgery, and *x* rays. For example, carcinoma of the rectum was probably best dealt with by a preliminary colostomy, followed, after eight days, by an application of radium, and then, in two months, by a perineal resection. Operable breast cases were dealt with by a preliminary course of *x*-ray therapy, followed by operation on the usual lines, and, finally, by another course of *x* rays. For treatment of superficial recurrences and inoperable cases radium was used, and for deep recurrences *x* rays. With extensive radiation regular blood examination was very important, a leucopenia being a danger signal.

Professor W. J. DILLING said that, from personal knowledge of the results obtained at the Radium Institute in Paris, he was convinced that further supplies of radium

were necessary in Liverpool in order that patients might not be denied the benefit that this therapeutic agent afforded in certain types of malignant disease. In Liverpool the ideal system for the effective utilization of radium was the establishment, under the supervision of the university, of a radium institute, where a directing medical officer, specially trained in the physics and modern technique of both *x*-ray and radium therapy, could advise surgeons about dosage and methods, and organize research with a view to improving technique and the results of treatment. The decision of the Radium Commission to lend radium to only one hospital in an area was not, in his opinion, likely to facilitate the use of this therapeutic agent in the most deserving and appropriate cases.

Dr. C. O. STALLYBRASS discussed the best way of securing the co-operation of the surgeon and the radiologist, and the question of training radiologists in the treatment of cancer.

Mr. FRANK JEANS said that neither Mr. Holland nor Dr. Morison was a pessimist; treatment, whether by radium or by surgery, might be productive of good or bad results; radium had not yet supplanted surgery. Naturally patients preferred radium, but the fact had to be faced that there was a great deal of cancer and very little radium, and surgeons had to operate nearly as much as ever before. Extravagant claims had been made for radium, perhaps on the assumption that the public would not subscribe for research, but would for a promise of cure.

Protrusion of the Mandible.

Mr. G. C. E. SIMPSON and Mr. H. G. WATKIN made a joint communication on a case of protrusion of the mandible in a man of 28. The lower teeth were 19 mm. in front of the upper, and the man was unable to eat well, and ashamed to eat in public. Mr. Simpson said the condition was in some cases congenital, and in others caused by finger-sucking, or early loss of temporary incisors, whereby the lower teeth got too far forward, etc. Once started it tended, unless checked, to increase from mechanical causes, and dental measures were most valuable before the loss of the deciduous molars. Angle and Whipple's operation of dividing the mandible on both sides, at about the level of the premolar teeth, was mentioned, and the results obtained on some of the deformities by this method were shown; but there were objections to it: first, the injury to the inferior dental nerve in the canal, and its effect on the front teeth, and, secondly, the probability of sepsis. Bruhn of Düsseldorf (as a result of co-operation of dental surgeon and surgeon in military orthopaedic surgery) relieved the condition by resecting the mandible below the notch, but above the inferior dental foramen, by a subcutaneous osteotomy, and this operation had also been performed by Babcock in Philadelphia. This method was chosen, and Mr. Watkin first fitted cap splints to the jaws, packing the splint to lever the jaw into the best position, as studied on models of the patient's bite, and the osteotomy was performed. After six weeks in the splints it was found that the upper posterior molars locked the bite, and that the incisors did not meet. After extraction of these teeth, and grinding down of some posterior teeth which had never met and been worn to the pattern of their opponents, the patient was left with sixteen teeth in good occlusion. The patient was now able to eat satisfactorily. Photographs and models were shown, and emphasis was laid on the advantage of the co-operation, from the start, of the surgeon and dental surgeon in the treatment of deformities and fractures of the jaws.

SPINAL CORD TUMOUR.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, held in the Royal College of Physicians on January 24th, with the president, Mr. R. ATKINSON STONEY, in the chair, Mr. C. J. MACAULEY read a paper on two cases of spinal cord tumour, and showed lantern slides.

The first case was that of a woman, aged 47, who began to suffer from weakness in the legs about six months before her admission to hospital. This progressed steadily until she was unable to walk, and for the past month she had been confined to bed. She had suffered from troublesome twitchings in both legs, but never had any pain; there was no sphincter disturbance. On examination, both legs were paralysed in flexion, with spasticity, increased knee-jerks, and ankle clonus. There was considerable sensory disturbance below the fifth intercostal space, on both sides. A radiogram of the spine failed to show any evidence of disease, and the Wassermann test was negative. The fluid withdrawn by lumbar puncture was yellow in colour, and showed a marked increase in globulin. The Queckenstedt phenomenon was present, an anomalous finding which may have been due either to an error in technique (the patient not having been warned against straining) or to the presence of a partial block. Lipiodol was injected into the subarachnoid space by cisterna puncture, and the radiogram showed arrest at the level of the third dorsal vertebra. Operation was carried out under ether anaesthesia, and a tumour was found at the exact level indicated by the radiogram. It was removed without difficulty. The patient stood the operation well, but developed acute respiratory trouble and died the next day. The tumour on section proved to be a fibromyxoma.

The second case, in a woman aged 35, whose illness began three months prior to admission, ultimately developed into complete spastic paraplegia. The patient gave no history of pain, but there was marked sensory disturbance in the limbs. The Wassermann test was negative. The cerebro-spinal fluid showed a marked increase in globulin, but without xanthochromia. The spinal pressure was not affected by compression of the jugular veins, but was markedly raised when the patient strained forcibly. Lipiodol injected by cistern puncture was arrested opposite the upper border of the third dorsal vertebra. At operation, carried out under local anaesthesia (except in its final stage), a tumour, reddish, soft, vascular, and adherent, was found at the level indicated by the radiograms. It was removed piecemeal, but apparently completely. There was much difficulty in separating the tumour from the cord, and considerable oozing. The patient made a good recovery from the operation, and after some weeks showed slight evidence of return of function. This improvement was not maintained, and at the time of writing the patient was still bed-ridden. The tumour, on section, proved to be a psammoma.

The PRESIDENT said that he had recently seen Dr. de Martel operate on a case of spinal cord tumour under local anaesthesia. There was apparently a distinct amount of pain and discomfort, but during the operation the patient was in the sitting position. This position was of great advantage, and to render possible its adoption local anaesthesia was necessary.

Dr. E. T. FREEMAN demonstrated a manometer for measuring the pressure of the cerebro-spinal fluid. Dr. CYRIL MURPHY drew attention to the fact that in the first case the cells in the fluid were 2,000 per c.mm., while in the second case they were only 4 per c.mm. Purves-Stewart had stated that deep tumours showed little pleocytosis, while in superficial ones the cells were greatly increased.

Dr. V. M. SYNGE said that if xanthochromia was present it was, he believed, positive evidence of spinal cord tumour, and that as a rule there was a great deal of globulin but no increase of cells.

Mr. A. A. MCCONNELL suggested that increase of girdle pain on coughing or on compressing the veins was an important sign of spinal block. He was interested to notice that lipiodol had been used, having regard to the fact that a good deal had recently been written about the dangers of its use, but in these cases it had apparently been very successful.

Sir WILLIAM WHEELER said he was struck with the usefulness of lipiodol in the cases described by Mr. MacAuley. He drew attention to the fact that this method was discouraged by some authorities, but these authorities had unusual facilities for expert neurological examinations. He mentioned a recent case with symptoms of spinal cord tumour in which pain was absent from start to finish. There was little or no sensory disturbance in the legs, but complete paralysis. The cases mentioned demonstrated the fact that root pain, though an important symptom, is not always present. He referred to an instructive paper by Adson. Thirty-five cases are mentioned in which laminectomy revealed no tumour. In his own case, although the lesion was localized by expert neurologists, no tumour was found at operation.

Mr. MACAULEY, in replying, said that in the second case it was impossible to get a strict line of demarcation. He thought that the importance of localizing the tumour was so great that, whatever pain was suffered after lipiodol injection, it was worth it.

Transplantation of External Biliary Fistula.

Mr. F. GILL read a paper on transplantation of external biliary fistula, and showed lantern slides.

Reviewing the literature of the subject, the lecturer said that in the *Collected Papers of the Mayo Clinic*, 1923,

Walters reported a case where this operation was successfully carried out. Recent reports of successful transplantation of a fistulous tract into the stomach or duodenum by Masson, St. John, Lahey, and Lilienthal had served as a stimulus to the use of this method. The procedure appeared to be ideal when dealing with cases of stricture of the common and hepatic ducts, in which an insufficient amount of duct remained below the liver to permit anastomosis to the duodenum or stomach: also in cases where extensive adhesions were present. Mr. Gill's own case, in a patient whose common hepatic duct was wounded during cholecystectomy, was as follows:

A married woman, aged 55, was admitted to Sir Patrick Dun's Hospital on June 2nd, 1929, complaining of pain in the upper part of the abdomen, shooting round to the back. The history was one of typical biliary colic. The patient suffered from flatulence and dyspepsia; there was tenderness and rigidity in the right hypochondrium, and slight jaundice.

At the operation on June 7th, 1929, the gall-bladder was found to be atrophic and to contain many stones. It was fixed by numerous adhesions to the duodenum and omentum; the junction of the cystic with the common hepatic duct was difficult to expose. The gall-bladder was removed. On examining the region of the cystic duct it was found that there were two openings—the cystic duct stump which was held in the clip, and above this the common hepatic duct, which was cut into near its termination. An attempt was made to close the opening in the common hepatic duct by interrupted sutures, and a drainage tube was placed down to the stump of the cystic duct. Bile began to flow freely a few days later. The amount varied; at times, when the discharge was slight, the motions were normal in colour, and when the discharge was increased the motions were clay-coloured. The amount of bile became less and less, and the tube was removed. The patient was discharged from hospital on July 27th, but the fistula persisted, and the amount of bile coming from it increased.

She was readmitted on October 31st, having lost 20 lb. in weight in six months. It was decided to transplant the biliary fistula into the duodenum or stomach, as great difficulty was anticipated in carrying out any other plastic operation with the extensive adhesions that were certain to be present.

The fistulous tract was transplanted into the pyloric portion of the stomach; the duodenum was firmly bound down by adhesions, and no attempt was made to separate them. The wound is now healed, the stools are normal, and the patient feels well and is putting on weight. From this case Mr. Gill was convinced of the ease with which a coned-out fistula could be transplanted. The only precaution necessary was that the external fistula should have been present long enough, so that it could be coned out as a well-established tract, and left attached to the liver.

The PRESIDENT suggested the possibility that after a time the fistula might contract. He asked if the cases mentioned by Mr. Gill had been recently operated on. Mr. A. A. MCCONNELL said that in some cases adhesions might be met with, and then the procedure might not be as simple as it looked on the lantern slides.

Mr. GILL, in replying, said that one of the cases he mentioned had been operated on two years ago, and the other about five years ago. No stricture had formed in either of these cases. He had found the operation very easy, and, by keeping the tube in position, had kept well away from the tract.

Hydatid Cyst of Liver.

Mr. ARTHUR CHANCE showed a specimen of hydatid cyst of the liver.

The patient, a woman aged 35, was seen on December 20th, 1929; she then had a very large abdominal tumour. Two months previously she had had an attack of severe epigastric pain and vomiting, lasting four days. Six days later she noticed a lump in her abdomen, which gradually enlarged, and on December 10th she became jaundiced. The tumour was situated in the middle line; it was rounded and immovable, and a very distinct thrill could be felt. Mr. Chance diagnosed pancreatic cyst, and *x*-ray examination showed that the stomach was very much pulled down, with an obvious filling defect in the lesser curvature. At operation a cyst was found, with a very thick and vascular wall. An incision was made into the cyst, and a large quantity of fluid came away, containing a number of small bladders, indicating its hydatid nature. A drainage tube was inserted, and enormous quantities of fluid poured out for six days.

It was stated that the best thing to do in these cases was to inject into the cyst some pure formalin. The disadvantage of drainage was that sometimes the cases continued to drain for months or even years. Dealing with the possible source of the infection, Mr. Chance said that the patient had always lived in France, except during the last two years, when she had lived in London. She had lived in a house where a dog was kept, and was fond of uncooked vegetables.

Reviews.

OPHTHALMOLOGY.

A TEXTBOOK of small dimensions suitable for the student on *The Pathology of the Eye*[1] certainly deserves a place in ophthalmological literature; a very readable handbook of this nature has lately appeared from the pen of Dr. J. S. FRIEDENWALD of Johns Hopkins University, the substance of which is based on the author's course of lectures at that institution. The book is a good one, not the least of its virtues being the manner of its writing: this is good throughout, and in parts excellent. In the main the teaching is sound, especially on such difficult and dangerous ground as focal infections and tuberculous infections of the eye. The author is undoubtedly right in considering that in this country and America the influence of septic foci is stressed with more promiscuity than reason. Why, he asks, do these organisms not cause infective lesions in the lungs whither they must travel first, and where they have a much greater opportunity of gaining a nidus if they are pathogenic? Not the least interesting parts of the book refer to the author's own observations; these are numerous and touch on many subjects; but, unfortunately, in a book of this size the space allotted by necessity to them is smaller than would allow us to appreciate or criticize adequately those of them which are not yet published elsewhere. His work on cataract leads him to support the theory, already advanced in Germany, that the main factor at fault is the permeability of the lens capsule: and on glaucoma, that it is due to an acute vascular crisis brought about by capillary dilatation. He has also made interesting observations on the retinal vessels in arterio-sclerosis, on the nature of keratitic precipitates, on the pathology of subacute panophthalmitis, and on the ocular lesions of foetal syphilis. There are, however, some points to which attention may be drawn. Few would agree that the mere loss of the blinking reflex is adequate to explain the phenomena which may be included under the term "neuroparalytic keratitis"; or that colobomata "involving the iris, choroid, or optic disc" are due to "a delayed atresia of the blood vessels, which in the embryo connect the ciliary with the hyaloid vascular system." This explanation forms the basis of one theory to account for colobomatous defects in the anterior part of the optic cup, but can hardly be applicable by any stretch of imagination to colobomata in the region of the optic nerve. Again, it may be questioned whether local venous engorgement is responsible for the exophthalmos of hyperthyroidism. Moreover, the painful inflammation which occurs after short-waved light is not essentially a conjunctivitis, but it derives its characteristics and its subjective symptoms from damage to the corneal epithelium, and is essentially a keratitis. The mechanism of papilloedema is said to be due to a lack of balance between the pressure inside the eye and that in the subarachnoid space, involving an obstruction to the outflow of the perivascular lymphatic channels; increased venous pressure is ruled out owing to its absence in thrombosis of the cavernous sinus, a deduction which takes no account of the venous anastomoses in the posterior part of the orbit. In the discussion of herpes zoster ophthalmicus the rare oculomotor paresis and optic atrophy are mentioned as complications, while the commoner accompaniments, as irido-cyclitis, are omitted; as also is the common occurrence of other anomalies (teeth, etc.) in association with lamellar cataract. In discussing the etiology of glaucoma, the author dissents from a dialysation theory for the origin of the intraocular fluids, and supports the older secretory theory on the ground of the proven circulation of the aqueous humour: but he makes no note that the more recent expositions of the former view insist that it also is not incompatible with the fact of a circulation of fluid and is in no way antagonistic to it. These, however, are small points, and they are mentioned because the book is good and is likely to become widely read among ophthalmological students, and will be welcomed into ophthalmological literature. The volume is admirably produced and well printed. The illustrations are numerous and valuable; the majority of them are photomicrographs and are excellent.

[1] *The Pathology of the Eye.* By Jonas S. Friedenwald, M.D., F.A.C.S. London: H. Kimpton. 1930. (Demy 8vo, pp. xx + 345; 253 figures. 21s. net.)

while only a few fail to convey the impression that is desired.

We welcome as a well-known friend the appearance of the sixth edition of Sir JOHN H. PARSONS's handbook on the *Diseases of the Eye*.[2] To the laudatory reviews which have appeared in these columns with each successive edition we would add little, with the exception of one thing: that, apart from being brought up to date by certain necessary alterations, it is little changed from its predecessor. The tendency for most standard works as they advance in years is to become larger and more complex. To do so with the present work would be to fall between two stools, and the result would be neither a textbook nor a handbook. In retaining its individuality and characteristics it still remains the best manual in ophthalmology in our language for the student or the practitioner.

THE CAPILLARY CIRCULATION.

THE Silliman Memorial Lectures at Yale for the year 1922 were given on *The Anatomy and Physiology of Capillaries*,[3] and published by Professor AUGUST KROGH of Copenhagen in the same year. Since then so much new work, especially that of Sir Thomas Lewis and Dr. E. M. Landis, has been done, that the present enlarged edition is in many respects a new book. It consists of fifteen chapters, an appendix on methods for the study of the anatomy and physiology of the capillaries, and a comprehensive bibliography. In the section on the structure of the capillary wall the author says that there is not any evidence that the endothelial cells are contractile, though they passively undergo changes in shape as the result of contraction of the muscular coat (Rouget cells and fibrils) of the capillaries. Heimberger's observations on the presence in living human subjects of arterio-venous anastomoses in the skin are described; these may contract so as to become closed, and must be regarded as extremely useful in maintaining the temperature of exposed parts. Knowledge of the innervation of the capillaries has been carried a good deal further since the first edition of this work, and Busch, working at Copenhagen, has confirmed Woollard's observations on this subject. The section on vascular reflexes has also been much expanded by inclusion of an account of Lewis's observations on the skin reactions and the H-substance allied to histamine.

In considering the complex reactions of the cutaneous capillaries reference is made to the so-called vaso-neurotic constitution characterized by the instability of the innervation of the vascular system, which varies considerably, not only from time to time, but from place to place. Even the same capillary may vary between normal parts, thus constituting true capillary aneurysms, Parrisius's figures of which are finely reproduced. The discussion of the changes in the permeability of the capillary wall has also been expanded as a result of Landis's recent findings, and leads up to the last chapter dealing with some applications of the physiology of the capillaries to complex processes in health and disease, such as the absorption of substances from the intestine into the blood, the formation of glomerular urine, and urticaria, inflammation, circulatory shock, and oedema.

PROGRESSIVE RELAXATION.

UNDER the title *Progressive Relaxation*[4] Dr. EDMUND JACOBSON, of the physiological department of the University of Chicago, presents to the medical profession the problems of neuro-muscular relaxation, and the therapeutic applications of rest. The whole subject is approached by means of laboratory investigations, which the author thinks more controllable than are clinical methods. Much of the painstaking work which has been done, and much that the author recommends his readers to undertake, would be impracticable under the ordinary conditions of general medical practice. The book loses in value because the advice to general practitioners is evidently given by one who understands little of the everyday routine in a general practitioner's life.

The earlier chapters deal with the therapeutic value of complete rest and the deleterious results of what is called "neuro-muscular hypertension." The clinical manifestations of such states as anxiety, pain, and toxic diseases as they affect the neuro-muscular apparatus, reflexes, and so on, are discussed in detail, to bring out the obvious need for relaxation of the muscles and complete rest as a desirable therapeutic agent. The technique of progressive relaxation, by practice on the part of the sufferer under the directions of the physician, is then fully dealt with, and the main point is that the patient is trained to remain "effortless," completely at rest, and so fully relaxed. The author emphasizes that the relaxed state is obtained only by practice. The middle part of his book deals at length with the physiological observations upon reflexes, conduction of the nervous impulse, stimuli of various kinds, etc., in published work by a host of other workers, past and present, to prove that in reality much of the "nervous patient's state" is accounted for by a heightened neuro-muscular tonus. Psychological factors related to relaxation are discussed, and lessened mental activities are noted as the patient becomes more "relaxed." The author meets the criticism that his method might be called hypnosis, and devotes a chapter to this argument in the later part of his work. Dr. Jacobson's very full discussion of muscle tonus and nervous regulation, quoting historical work and summarizing much of the recent observations, makes the book unnecessarily long.

The last three chapters, which deal with spastic oesophagus, mucous colitis, various medical conditions, and the general therapeusis of relaxation, are interesting to the clinician, but not very convincing, owing to the small number of cases treated and the incompleteness of the clinical records as compared with the minute details quoted in the physiological section of the book. All will be disposed to agree with the author's general conclusion that the methods discussed by him should be used, when possible, along with diet, drugs, and operative or other appropriate treatment for the good of the patient.

THE DISEASES OF INFANCY.

CHANGES in the regulations for the medical students in France have introduced a compulsory examination on the hygiene and diseases of the period of infancy, and largely to supply the information demanded by the authorities a new textbook has been written by numerous authors and edited by Professor A. B. MARFAN and Dr. H. LEMAIRE, under the title of A Précis of the Hygiene and Diseases of Infancy.[5] In an introduction Professor Marfan explains how he was instructed to arrange the course of lectures in these subjects for the Faculty of Medicine in Paris, and how he divided up the work. The lectures by his various colleagues and assistants have formed the basis for this new volume. After the usual introductory chapters on general lines, there follow sections on the diseases of the various systems, with interpolated chapters on syphilis and tuberculosis. Disorders of the newly born, infectious diseases, and congenital malformations are also fully treated, and the book concludes with a section on general therapeutics and on hygiene and preventive medicine. The period of infancy which is dealt with in this book is limited by the completion of the primary dentition, and throughout the various sections it is this period which alone receives attention. The result is a new outlook on children's diseases somewhere between that of the usual book on diseases of the newly born and that of the book on children's diseases in general. On the whole the teaching is clear and dogmatic, and for the most part controversial matter has purposely been omitted. Here and there, however, strictly French views are expressed without reference to criticisms from other countries, and Professor Marfan's own contribution on rickets is notably an exposition of his own special ideas, with a happy disregard for other people's contrary views. The section on congenital heart disease

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[2] *Diseases of the Eye.* By Sir John Herbert Parsons, C.B.E., D.Sc., F.R.C.S., F.R.S. Sixth edition. London: J. and A. Churchill. 1930. (5½ × 8½, pp. viii + 678; 348 figures, 21 plates. 18s.)

[3] *The Anatomy and Physiology of Capillaries.* By August Krogh, Ph.D., LL.D., Professor of Zoo-physiology, Copenhag.: University. Second edition, revised and enlarged. New Haven: Yale University Press; London: Milford, Oxford University Press. 1929. (Med. 8vo, pp. xiii + 422; 101 figures. 18s. net.)

[4] *Progressive Relaxation.* By Edmund Jacobson, Ph.D., M.D. Chicago, Illinois: University of Chicago Press. 1929. (Med. 8vo, pp. xiii + 428; 69 figures. 22s. 6d. net.)

[5] *Précis d'Hygiène et des Maladies du Nourrisson.* Publié sous la direction de A.-B. Marfan et Henry Lemaire. Paris: J. B. Baillière et Fils. 1930. (8 r. 8vo, pp. 1169; 114 figures. 120 fr.)

is particularly good, with a careful description of the development of the heart as an introduction to the subject.

The general arrangement and production of this book are very satisfactory, although many radiograms have come out badly in the course of reproduction. A fairly complete index is included, which is all to the good, and rather unexpected in a work of this nature. Professor Marfan and his colleagues can be congratulated on a useful contribution to the literature of paediatrics.

CHEMISTRY OF THE ALKALOIDS.

Allen's Commercial Organic Analysis[6] is a very well known book. When first introduced it was intended to supply practising analysts with technical information and methods of analytical procedure. It has now appeared in a fifth edition, and in its general character has become a larger work of reference. The seventh volume is devoted almost entirely to the subject of alkaloids. The book has been prepared on the plan of dividing the subject-matter into sections, and allotting the preparation of each section to a writer chosen for his special knowledge in that sphere. There is thus an article on the aconite alkaloids by F. H. Carr, one on the cinchona alkaloids by Oliver Chick, another on the opium alkaloids by F. O. Taylor. In all, nearly forty drugs are dealt with in that manner. Tea, coffee, and cocoa are also included in the group, because caffeine and theobromine are now usually considered to be properly grouped among the alkaloids. The scheme of production, allowing as it does of individual freedom of treatment by different contributors, has obvious advantages, but it seems to result in some heterogeneity of style and composition. In the directions for the analysis of whole coffee beans there occurs (p. 378) the sentence: "Examine megascopically in order to detect foreign substances," but this only appears to mean "examine with the naked eye." On page 518 it is stated that "since the body soon becomes tolerant to cocaine, little or none may be found in the organs after death in the case of habitual takers." The sentence is set down as if it were a self-evident fact that acquired tolerance leads to the speedy disappearance of the alkaloid from the organs.

Extensive as are the researches on alkaloids that have been made by workers in various countries, it is remarkable how many gaps remain among items of information needed in everyday work. Should anyone want to know how long a hypodermic solution of cocaine hydrochloride could be kept without decomposition, or what heating for sterilization it would bear without chemical change, it would apparently not be easy to find authoritative answers. It is stated in "Allen" that many of the processes proposed for the assay of ipecacuanha are invalidated by the readiness with which emetine undergoes decomposition. That is only half the information that ought to be forthcoming. Analysts and others want to know what are the precise causes of decomposition, as well as the conditions under which the article is stable. This, however, is not due to failure on the part of the authors. Incredible as it may seem, many such facts of direct practical importance are hardly known. Those who have collaborated in the production of the present volume have done their work well. They have included all the published information, with bibliographical references to the source, as well as a large contribution from their own experience.

NOTES ON BOOKS.

DR. ABRAHAM LEVINSON'S valuable monograph on the *Cerebro-spinal Fluid in Health and in Disease* originally came out in 1919, and a second edition followed in 1923 (vide *British Medical Journal*, 1919, ii, 634; 1923, ii, 183). This work has steadily increased in size with the continued additions to knowledge, so that its third edition[7] runs to 386 instead of the original 231 pages, and the price has almost doubled. The short account of the Kahn test for syphilis, which does not require the haemolytic system (complement, amboceptor, and red blood corpuscles), has been written by Dr. R. L. Kahn, who is responsible for this test. The present edition fully maintains the position of Dr. Levinson's book as a most useful guide and source of reference.

MR. ARLETT'S *Course in Physics*[8] has been planned on a series of lectures delivered to first-year medical and dental students during the past six years. An attempt has been made to illustrate the methods and principles of physics by frequent reference to medical practice. There are sections on general physics, heat, light, electricity, an appendix of examination questions, and an index. In commenting on the criticism that there has been much perfunctory teaching of physics and chemistry in medical schools, the author states that it is now becoming possible to raise the standard of instruction, so that a syllabus can be closely adapted to the future requirements of the student in the more professional subjects of his curriculum.

The scholarship and lucid exposition that distinguish Professor ARTHUR THOMSON'S *Outlines of Zoology*[9] have already been referred to in this column. In the eighth edition there is a fuller consideration of the physiological aspect of the subject, and of the structure and development of certain types, such as the mud-fishes. Most of the supplementary illustrations have been drawn from specimens.

The forty-ninth volume of the *Transactions of the Ophthalmological Society of the United Kingdom*[10] embodies the text of various communications brought before the society during the session ended April, 1929, together with the reports of the transactions during 1922–29 of the North of England, Midland, and Irish Ophthalmological Societies, and of the proceedings of the Oxford Ophthalmological Congress, 1929. The volume is well illustrated by numerous diagrams and photographs, and by half a dozen plates, several of which are in colour.

The Health Resorts Section of the *Medical Directory*, edited by Dr. FORTESCUE FOX and published as *An Annual Guide to the Spas and Marine Health Resorts of Great Britain and Ireland and New Zealand*,[11] gives detailed information about medicinal waters, of health resorts of the British coasts, and of inland climatic health resorts. Lists of hydros, hotels, and other residential accommodation are appended.

PREPARATIONS AND APPLIANCES.

"DUO-FOCAL" SPECTACLES.

DR. HERBERT D. EVERINGTON (Sanderstead) writes: I have designed a new form of spectacles to which I have given the name "Duo-focals," and believe that these offer several advantages over ordinary bi-focal glasses. They consist of an ordinary pair of spectacles, having distance lenses mounted in the usual manner. Hinged to the outer and posterior part of the fronts are two smaller, semicircular *plus* lenses, which can be swung into position behind the distance lenses, thereby adding the convex lenses required to form correct reading glasses. The *plus* lenses, when not in use, are folded back, and lie along the inside of the arms of the spectacles. The change is made by the wearer without removing the glasses from the face; all he has to do is to pull the frames forward, when the forefingers quickly carry out the little operation. The reading lenses are mounted so as to allow bi-focal vision when in use. The distance lenses are preferably of the meniscus type, but the *plus* lenses may be flat. This combination offers the following advantages over ordinary "bi-focals": (1) a full field for distance, without restriction of the lower segment; (2) an ample field for reading, which is in the correct position, instead of a small field, placed inconveniently low; (3) good bi-focal vision, and, when this is no longer required, the avoidance of the danger that may result from looking through the wrong lenses. With advancing presbyopia, the *plus* lenses can be strengthened at frequent intervals, and more cheaply than with bi-focal lenses. The cost of the "Duo-focals" in the first place is no more than that of bi-focals, and it would often be less. They are made for me by Messrs. Curry and Paxton, 195, Great Portland Street, W.1.

[6] *Allen's Commercial Organic Analysis*. Vol. vii: The Vegetable Alkaloids. Editor: C. Ainsworth Mitchell, M.A., F.I.C. Fifth edition, revised and partly rewritten. London: J. and A. Churchill. 1922. (Med. 8vo, pp. xi + 651; illustrated. 30s. net.)

[7] *Cerebrospinal Fluid in Health and in Disease*. By Abraham Levinson, B.S., M.D. With a foreword by L. Hektoen, M.D. Third edition, thoroughly revised. London: H. Kimpton. 1923. (Med. 8vo, pp. 386; 83 figures, including 5 coloured; plates. 25s. net.)

[8] *A Course in Physics for Medical and Dental Students*. By Richard Arlett, M.Sc. With foreword by L. R. Wallerstorfer, M.A. London: Milford, *Oxford University Press*. 1930. (Cr. 8vo, pp. xviii + 259; 143 figures. 8s. 6d. net.)

[9] *Outlines of Zoology*. By J. Arthur Thomson, M.A., LL.D. Eighth edition, revised. London: Milford, Oxford University Press. 1929. (Cr. 8vo, pp. xxxviii + 972, 528 figures. 21s. net.)

[10] *Transactions of the Ophthalmological Society of the United Kingdom*. Vol. xlix. London: J. and A. Churchill. 1929. (Demy 8vo, pp. xxxvi + 537; illustrated. 30s.)

[11] *An Annual Guide to the Spas and Marine Health Resorts of Great Britain and Ireland and New Zealand*. By R. Fortescue Fox, M.D., F.R.C.P., F.R.Met.S. London: J. and A. Churchill. 1930. (6¾ × 9¾, pp. 455; illustrated. 1s.)

THE HASTINGS POPULAR LECTURE.

SIR ANDREW BALFOUR ON "HEALTH AND EMPIRE."

THE Hastings Popular Lecture was delivered in the Great Hall of the British Medical Association House, Tavistock Square, on Wednesday evening, by Sir Andrew Balfour, K.C.M.G., C.B., director of the London School of Hygiene and Tropical Medicine. The chair was taken by Lord RIDDELL, who was supported on the platform by Dr. H. B. Brackenbury (Chairman of Council of the British Medical Association), Mr. Bishop Harman (Treasurer) and Mrs. Harman, Dr. G. F. Buchan, Mr. McAdam Eccles, Mr. E. B. Turner, Dr. E. Graham Little, M.P., and Mr. Stanley Duff, secretary of the National Conference of Friendly Societies.

Lord RIDDELL, in introducing the lecturer, said that in addition to his work in medicine Sir Andrew Balfour was a novelist of distinction. In one of his admirable novels the hero called upon a certain Sergeant Riddell to hold the lamp. That was the chairman's function that evening.

Sir ANDREW BALFOUR then gave the lecture on "Health and Empire," the text of which appears in this week's *Supplement*. It was admirably delivered, occupied just one hour—a remarkable feat of concentration—and the points were evidently appreciated by the large audience.

Dr. GRAHAM LITTLE, in proposing a vote of thanks to the lecturer, said that he had a special pride in doing so as the representative in Parliament of London University, for Sir Andrew Balfour was the director of the latest and one of the finest of the University schools, which now numbered forty-five. The school was a happy product of American and British zeal, for much of the money had been furnished by the Rockefeller Foundation. Sir Andrew had done wisely in pointing out the need for health education; nowhere was such education more needed than in Parliament. In conclusion Dr. Graham Little referred to the value of the school of which Sir Andrew Balfour was the head as a link of Empire, for students from all the Dominions and British possessions were attracted to its laboratories.

Dr. G. F. BUCHAN, medical officer of health for Willesden, seconded the vote of thanks, and spoke of the great importance of strong and progressive health administrations as a factor in maintaining the Empire. The question of health must not be considered as the exclusive responsibility of medical men. It was a matter in which the whole public should be informed, interested, and active.

The vote of thanks was heartily carried.

Sir ANDREW BALFOUR then replied to three questions which had been handed up from the audience. The first question was, "What is being done in Canada and elsewhere with regard to the registration of dairymen and butchers in order to prevent infectious disease?" In Canada and in many British possessions a great deal was being done along the lines of the registration of dairies. It was recognized that milk was an important source of infection, and when laws were framed in the Colonies concerning health matters they always embodied important regulations with regard to milk supply, including dairy registration. Even in such a remote island as Mauritius stringent regulations were in vogue. Canada, in its large towns like Toronto, was far ahead of most places in milk hygiene. With regard to butchers the case was rather different. Much more attention was paid to the question of butchers in the United States than in this country or in the British Dominions. Of course, the process of cooking generally eliminated any infection which the butcher might convey, but it was a disagreeable thing to bear in mind that butchers suffering from disease might handle meat.

The second question was, "Could some machinery be devised for acquainting European settlers in tropical countries with particulars as to medical research and facilities for treatment?" It was no doubt true, as the questioner added, that very many people abroad were not aware of the work of the London School of Tropical Medicine. The ideal thing would be that before people went out to the Tropics at all they should get authoritative information on the subject. Many of the medical departments in the different countries had taken up this matter and had gone in for extensive propaganda among the settlers, but often the settlers remained a little suspicious of people who were on hygienic errands. In Kenya, for example, among the farms, the medical officer might be greeted with the remark, "I know what you want. You want us to pull down these buildings and put up new ones. Well, we are not having any." Something was being done, however, in most of the large British colonies to educate not only the native but the European colonist. What more could be done it was difficult to say. The Tropical Diseases Bureau was always willing to answer inquiries, whether from lay or medical correspondents. But the question really resolved itself into the requirement that the local people should make known what facilities actually existed.

The final question was in the shape of a request to say something about the work of the Singapore Health Bureau. This bureau functioned under the auspices of the League of Nations. It had been founded at Singapore to collect and disseminate information about epidemic disease in the Far East so as to give early warning concerning outbreaks. Every year there was a meeting of sanitary administrators held at Singapore, and he believed that close contact was maintained with the Dutch authorities at Java and Sumatra; the Dutch had a great ideal of hygiene and the necessity of preventive medicine, and put some of our own colonies to shame by what they had done in that way.

Dr. BRACKENBURY, in proposing a vote of thanks to the chairman, said that among his many qualities Lord Riddell had two pre-eminently: he was full of public spirit, and he had an intense love for and desire to promote the welfare of hospitals and public health movements. Whenever anyone concerned with hospitals and the public health appealed for his assistance, he was rarely known to refuse. The British Medical Association much appreciated his kindness in this respect. It might not be known to the public how large a part of the energies of the Association was directed to research and the promotion of public health. As a fact, a very large sum of money, representing a considerable proportion of the Association's income, was devoted every year to advance the science and art of medicine. He wished to refer to one or two things that Sir Andrew Balfour had said. This question of health and Empire was not a merely historical question, with all its achievements and adventures belonging to the past; these activities were continually going on throughout the Empire, often in a dramatic form. That was brought home to him when, two years ago, he was in South Africa. At that time there had been a fairly rapid extension of plague through a large portion of the Union, and the great anxiety of the health authorities was to prevent the disease invading the Cape Province itself. The activities of the health department of South Africa were concentrated on one single pass in the mountains to prevent even one rat finding the only means of access open to it into the Cape. He also saw something of another service to which Sir Andrew Balfour had alluded—namely, the service in the Rand mines to preserve the health and promote the welfare of the natives who were employed there. A magnificent service it was, going on day by day, and effecting a wonderful change in the condition of affairs. Thousands of natives employed in these mines received daily benefit in this way. At the head of the service was a medical man who was also President of the Medical Association of South Africa (British Medical Association).

Mr. STANLEY DUFF seconded the vote of thanks to the chairman. They were all aware of Lord Riddell's many and diverse activities, but he doubted whether a more appropriate chairman could have been found for that occasion.

Lord RIDDELL, in reply, said that he thought he ought to pass a vote of thanks to the British Medical Association for inviting him to be present. Sir Andrew Balfour had effectively demolished the myth of the "good old days" to which so many people clung; they were in fact pestiferous old days, and for evidence on that point it was sufficient to read Chadwick's report on the state of England in 1834. Still, he found no pleasure in reproving his ancestors, and no doubt some eminent lecturer, speaking in that hall a hundred years hence, would equally complain of the ignorance and laxity of the people of 1930.

British Medical Journal.

SATURDAY, MARCH 15TH, 1930.

RESEARCH PHYSICIANS.

EARLY in February the Biochemical Society, together with many members of the Physiological Society, gave a banquet at the Hotel Victoria to the four Nobel Prize Laureates in medicine and chemistry for the year, of whom two—Sir Frederick Gowland Hopkins and Professor A. Harden—are British. Half-way through the dinner a figure shaped in transparent ice was borne in aloft and placed before the Swedish Minister and the representatives of science at the high table. The chef, seeing "Medicine" on the front of the menu card, had devised an orthodox physician, in frock-coat and with binaural stethoscope in his ears. The effigy, rapidly melting, was soon taken away. But the figure, vanishing, and disregarded by the biochemists and physiologists at their meeting to honour work done in medical science, was an emblem of what is at the heart of the difficulties discussed by Sir Thomas Lewis in his paper which we publish this week at page 479.

The science of medicine is being rapidly advanced by those who have left all contact with patients, and work exclusively in the laboratories of physiology and pathology. The practice of its art becomes yearly more intricate, as the advance of knowledge from all sources adds to the burden of detailed information which the consultant and teacher in general medicine must carry for his work. His intellectual leisure is as much curtailed as is that of the medical student, whose bondage to the ever-increasing medical curriculum has awakened pity. It grows ever harder for the clinician to emulate the scientific achievements of his great predecessors in the last century, who made discoveries by relatively easy methods of observation. The surface yield is nearing exhaustion, and deeper methods of working, with complex machinery and sustained effort in its use, are now required. Must the clinician, in face of these difficulties, soon renounce the pride of his intellectual heritage, and hand over to his own offspring, the physiologists and pathologists, the great duty of advancing knowledge? Lewis answers emphatically, "No, provided that the difficulties are faced and the pathway through them clearly defined." The problems peculiar to surgery are not considered in his argument. In the field of medicine he draws very clearly the distinction between two activities of the physician's mind: the one concerned with diagnosis and care of the individual sick man; the other seeking to advance knowledge of the laws that co-ordinate the phenomena of disease. Diagnostic work, the virtue of the good clinician, is in no danger of decay in Britain. Medical research—the instrument of progressive medicine, as it is styled by Lewis—has in our country made two great advances in the present century, one in the field of heart disease, the other in new knowledge of the uses of vitamins. These forward movements did start from a basis of diagnostic work that defined the clinical problems, but the essential advances came through the *experimental* method appropriate to laboratories. It is the relationship of clinical workers to the use of such laboratory methods that Lewis is discussing in his analysis of the future of progressive medicine, and the views developed by him in this connexion lead to conclusions with which we find ourselves in agreement.

All thinkers will admit that no one but a clinician, and a clinician of experience, can do the work of describing the natural history—that is, the ordinary progress—of a disease, with its complications and after-effects, as they are actually seen in man. To the clinician belongs the whole field of the so-called clinical entities, and his will always be the appropriate task of testing means whereby these conditions may be quickly identified, and pushing back the possibility of diagnosis earlier and earlier to the manifestations which lie at the very beginnings of the disease, where a happy chance may allow precaution in treatment almost to join hands with prevention. It is not denied that research by physicians who are, first and foremost, diagnosticians may continue to yield important results, as it has done in the past. But Lewis insists that diagnosis and clinical observation do differ essentially from the method of experimental medicine. The pathways diverge, and no man can hope to remain for long a master of both routes. The technique of experimental medicine grows more complex; its associations with physiology and pathology are now so intimate that the time required for their comprehension cannot be found by the clinician, who must by daily experience maintain his general skill in diagnosis. Even more important than these difficulties is the distinction that Lewis reveals in the mental discipline of the two forms of medical work. Training in diagnostic skill makes for quick decisions, and it demands a memory abundantly stored with wide clinical experience. Experimental research cares less for immediate diagnosis of a malady, and it can neglect the laborious clinical training that alone gives such powers of diagnosis. It may delay judgement until the evidence is fully and satisfactorily collected; and it will therefore insist on proof in a scientific form that is unattainable in the immediate demands for decision and action characterizing curative medicine. An insistence on rigid proof and a dislike for the hasty airing of untested hypothetical explanations make up the mental atmosphere of workers in the scientific laboratories of physiology and pathology. This mental environment and the appropriate conditions for study of the problems of research can be, and are, reproduced in clinical medicine, but only by recognizing that between the two main bodies of workers—the diagnosticians and therapeutists on the one hand, and the non-clinical laboratory workers on the other—there is a gap which demands an intermediate group—clinicians trained to rigid scientific methods of thought and observation, who will inquire into problems, on the living patient, of which the physiologist or pathologist might not comprehend the importance, and which in any case he could not study for lack of clinical knowledge. Such workers, according to Lewis's reasoning, should not seek the wide experience of disease required for consulting practice; they must make their choice early for scientific research, and look to a career neither as pathologists nor as general consultants, but as whole-time research physicians, each in a restricted field of clinical experience. If such a choice is to be made it is plain that the career must lie as a practical possibility in front of the man. In it he will soon have lost his chance of fitting himself for the customary alternative of consulting practice; and his future must be assured on the path which he has chosen.

Two questions therefore arise, and their right answer is a matter of deep importance to the progress

of British medicine. Does the further development of scientific medicine require that the research physician be so unhesitatingly separated from the diagnostician? We think that a strong case has been stated for this view. Secondly, the need for workers in this relatively novel group being granted, how can the opportunity of hospital beds and the financial provision be obtained for them? The recently published report of the Medical Research Council for 1928–29[1] devotes an entire section to a careful analysis of the position of clinical research in Britain. This reasoned judgement—and it is one that merits deep attention on account of the experience that the Council has gained in the years during which it has been seeking to foster research on medical problems—is that men of the intermediate group are emphatically needed. In 1916 the Council had established Sir Thomas Lewis in a research post at University College Hospital of the type which he is now describing; and the conspicuous success of that experiment has now led the Council to announce formally its intention of providing stable careers for other men who may elect to follow that lead in clinical research. That encouraging guarantee of increased financial support will be an important factor in aiding recruitment for this band of workers. With regard to the needed opportunity of hospital beds the Council cannot make any direct provision. It will naturally occur to many of our readers that this difficulty might be overcome, in London at any rate, by some association with the five medical units that have about sixty beds apiece allotted to them at different metropolitan medical schools. The primary duty of these units is the instruction of medical students, and their position in that respect was admirably discussed by Sir Wilmot Herringham in the *British Medical Journal* of September 29th, 1923. General teaching makes it impossible that their directors should detach themselves from the entanglement of general diagnostic work. But it was intended that the units should also be a place of training for men who might later devote their powers to research. In this respect the scheme was incomplete, for there was no life career open in clinical research. The units send their trained assistants either into pure laboratory work or into the consultants' world of diagnostic medicine; and in the one direction no less than in the other the helm immediately points away from the course of clinical research. The report of the Medical Research Council and Sir Thomas Lewis's clear analysis should go far to convince those who have at heart the progress of medicine in Britain that some posts must be created for research physicians.

THE HASTINGS LECTURE.

THE Hastings Popular Lecture, which was delivered by Sir Andrew Balfour in the Great Hall of the British Medical Association on Wednesday, and is printed in this week's *Supplement*, forms the third of a series of lectures instituted in honour of Sir Charles Hastings, the founder of the Association. These lectures are addressed to the public rather than to the profession, and therefore their subject-matter will probably always to some extent appear lacking in novelty to the medical man. They serve, however, as a reminder that the objects for which the Association exists are not limited to the maintenance of professional interests and the furtherance of medical discovery, but include also an endeavour to enlighten the public on matters relating to health—an object the importance of which has become increasingly realized in recent years. Because of its world-wide influence, the British Medical Association is the best agency for the dissemination of such knowledge, though the daily press would be a valuable adjuvant if the choice of fit subject-matter could be ensured. It is only natural that a lecture instituted in memory of Charles Hastings should carry the mind back to the early years of the last century and move us to inquire what were the features in the Association he founded which have rendered it so permanent and explain its phenomenal growth. The records of the time show that, apart from the sound ideals of the founder, existing circumstances rendered his institution peculiarly fitted to further the movement then taking shape for the betterment of the profession; and for evidence of the need of such a movement one has but to study the condition and status of the profession a hundred years ago.

In his discourse Sir Andrew Balfour endeavoured to convey to the public some idea of the saving in life and treasure which has accrued to the British Empire from the application of the knowledge gained during the last hundred years. Any approach to a complete estimate is evidently impossible; the sum total of the benefits derived is large beyond the powers of computation, but the lecturer adduced examples of losses sustained in the earlier years of the period, before the modern discoveries of medical science were available, using these as an index of what would doubtless be sustained at the present time in the absence of medical intervention. Briefly, he refers to the scourges of cholera and relapsing fever to which we were exposed in the sixties, to the ravages of scurvy, the decimation caused by epidemics of yellow fever, typhoid, and plague, and to the appalling loss of life from malaria. These and other instances cited serve to indicate the magnitude of the undertaking which medical science was called upon to face, and which it faced with wonderful success. These diseases are now under control, or would be so if the recommendations of the medical profession could be fully complied with by the authorities responsible for the public health; and it may be truly said that the whole aspect of the British Empire as regards the incidence of disease has been transformed. The means which have wrought this change are discussed by the lecturer under the three headings of hygiene, medicine, and organization, or the practical application of remedial measures. As director of the London School of Hygiene and Tropical Medicine he views with pardonable jealousy a seeming tendency of Medicine to claim the lion's share of credit for recent progress; the honourable part played by Hygiene will, however, surely be gladly admitted by all. The change for the better in the matter of hygiene began in this country about the middle of the last century, when the enthusiasm and unremitting labours of Edwin Chadwick and his disciples laid the foundations of sanitary science. They preached the gospel of cleanliness, and, as bearing on the importance of public enlightenment, the lecturer notes that the acceptance of their teaching by those in high places and by the populace, even when repeated outbreaks of cholera came to the assistance of the reformers, was not easily effected, and that it needed the most dogged determination to achieve a sanitary revolution. When the efficacy of public health work was finally recognized in Great Britain, and the ultimate responsibility placed on the Government, the Dominions and Colonies were not slow to follow the lead of the Motherland.

[1] Cmd. 3496. London: H.M. Stationery Office, 1930. Price 3s. net.

and in some matters they are now ahead of the Old Country. However, the efforts of both physician and hygienist were beset with difficulties and obscurities until their path was illuminated by the light of science, although the application of the principles of sanitation accomplished much in the way of prevention and amelioration. It was not until the dawn of the era of tropical medicine, with its surprising revelations, that any considerable advance was made either from the purely medical or the purely sanitary standpoint.

Of the great achievements of that era our readers need no reminder—of Bruce and Mediterranean fever and trypanosomiasis, of Theobald Smith and Texas fever, of Manson and filariasis, of Ross and malaria, of Gorgas and yellow fever; it is probable, however, that the public has but a very imperfect knowledge of the magnitude of the benefits they derive from these and similar discoveries. It cannot be considered unimportant that the public should be informed on such subjects, especially as the practical realization of these benefits depends largely on its co-operation and that of the public authorities, without which the efforts of medical men are impotent. This co-operation has for the most part been unstintingly accorded, and too much praise cannot be given to our health authorities for the work they have already accomplished. But Sir Andrew Balfour has felt constrained to "report it as deficient" (to use the expression of Francis Bacon) in certain particulars. For example, he states that as an Empire we have not done our best to cope with malaria, although it is admitted that the difficulty is enormous. Here and there Ross's method of dealing with the disease has been pursued with advantage, and remarkable results have been obtained; but the method has in many places been neglected or not applied with the thoroughness and energy which ensures success. Similarly, in the matter of hygiene due consideration does not appear to be accorded to our merchant seamen, and the conditions under which they serve afloat compare unfavourably with those obtaining in the ships of other maritime nations. On the whole, however, if we cast our minds back ninety-eight years, to the time when Charles Hastings founded the British Medical Association, there will be found abundant grounds for congratulation on the progress to be credited to the account of medical and sanitary science.

PAINFUL SPASMODIC FLAT-FOOT.

THE discussion on spasmodic flat-foot, at a well-attended meeting of the Section of Orthopaedics of the Royal Society of Medicine, on March 4th, fully justified the choice of the subject by the council. Mr. S. A. S. Malkin, in his opening paper, thoroughly explored his subject-matter, which, as he remarked, had long been neglected as the ground for a full-dress debate. All orthopaedic surgeons, and most other surgeons, are familiar with the type of case which occurs in weedy, overgrown adolescents, with clammy feet and rather low vitality. As the speakers in the discussion agreed, such cases are less common than they were some years ago, when lads on leaving school were more commonly obliged to work for long hours carrying burdens too heavy for their immature frames. Such patients were very often grocers' errand boys and the like. The introduction of the carrier tricycle and the motor bicycle has relieved the younger generations of the burdens which oppressed their foregoers of thirty and more years ago, and adult porters are becoming rarer and rarer, till a porter's knot is unknown except in some river and dockside localities. It was generally agreed at the meeting that the spasm of the abductors in this form of flat-foot is to be regarded as secondary to the joint lesion, whether the latter be simply overstretching of ligaments or actual synovitis. As Mr. Malkin pointed out, the group of muscles in which spasm is observed, the peronei and extensors of the toes, are the weaker of the two groups concerned with movements of the foot, and some surprise might be felt that they should prevail; but it must not be forgotten that the position of extreme eversion is the only one the adoption of which obviates the necessity of movement in the transverse tarsal joints in locomotion. This may be seen in cases of rheumatoid or other obvious arthritis such as occurs in elderly waiters, whose shuffling gait is largely due to disuse of the everted metatarsus in walking, and instinctive avoidance of any pressure upon it. Treatment has not altered in essentials for the last thirty years or more, except that massage and re-education of muscles have come to have a more important place. The immediate results have been generally favourable, but most speakers were agreed that complete cure was seldom attained. The operation of removal of all or part of the navicular bone, practised by Lund of Manchester, has been abandoned and almost forgotten by post-war orthopaedic surgeons, and since Lorenz of Vienna declared a good many years ago that the spasm was a reflex phenomenon due to synovitis in the joints between the two rows of tarsal bones, which spasm could be relieved by the injection of cocaine into those joints, no striking innovation in treatment has come to the front. Mr. Trethowan, however, in this discussion gave his hearers much food for reflection when he rather bluntly declared that in his experience in all these cases, with very few exceptions, synovitis and spasm were but manifestations of intoxication from remote septic foci, and that the offending focus was almost invarably situated in the tonsil, and its removal followed by disappearance of symptoms. So constant was this sequence of events that he now preferred to call these feet not "spasmodic flat feet" but "tonsil feet." That septic foci in tonsils, teeth, or elsewhere may well be the origin of synovitis or general arthritis has long been an accepted postulate, and the manifestation of the disease in the tarsus may be due to the well-known selective action of the poison, which finds in damaged tissue a favourable site for development. It is true that septic tonsils are very common and spasmodic flat-foot comparatively rare, but it may be that there is a tertium quid as yet unknown, the presence of which is necessary for the production of the tarsal lesion. Wider and longer experience is needed before this pathology will be accepted definitely, and we hope that others as well as Mr. Trethowan will explore further the line of research on which he has been working. But the patient who has been suffering from painful spasmodic flat-foot will care little for pathology or septic foci as such. What he asks for is cure. Can we give him a restitutio ad integrum? Nearly every speaker in the discussion agreed that it would be necessary after active treatment for the patient to wear some support for the weakened feet and muscles, varying from a wedge sole to steel instruments extending to the calf, if he is to follow any avocation necessitating much standing or any weight-bearing. But to our mind the best advice that can be given involves the abandonment of such occupations. If the errand boy can be apprenticed to a tailor and learn to sit cross-legged upon a board, that mere posture will correct tendencies to valgus of the foot and ankle, and at the same time favour the resumption of postural tone in the formerly over-stretched adductors and flexor muscles. This and other sedentary occupations, especially if they are not associated with much beer, may be confidently recommended to the sufferers from painful splay-foot.

POST-VACCINAL ENCEPHALITIS.

"THE price of compulsory vaccination on a scale likely to save lives must be paid in lives." This conclusion, drawn by Professor Major Greenwood from a study of data bearing on the vaccination problem and presented in his paper summarized at length in our issue of March 1st (p. 398), derives most of its force from the appearance, at a time when the prevalent small-pox is mild and but rarely fatal, of a post-vaccinal encephalitis which is fatal in some 50 per cent. of cases. Professor Greenwood's statement does not imply, and he does not intend it to imply, that vaccination does not in fact protect against small-pox; but the trend of opinion about the desirability of compulsory vaccination is bound in some measure to be determined by the extent to which it may be found possible to control, or to prevent completely, the incidence of a dangerous post-vaccinal complication. Little progress in this direction may be expected while next to nothing is known about the etiology of post-vaccinal encephalitis. So far, however, as Dr. Simon Flexner points out in an interesting paper on post-vaccinal encephalitis and allied conditions, recently published in the *Journal of the American Medical Association* (February 1st, p. 305), there has been a great deal of conjecture and hypothesis on this subject, but only very little scientific observation. Vaccinia virus itself has been regarded by some as the offending agent; or vaccinia virus introduced into the skin by vaccination has been held to rouse into activity a second micro-organism already present, though latent in the body. Finally, from the fact that the condition has a fixed incubation period of about ten to thirteen days after vaccination, coinciding with the period during which antibody formation reaches a maximum, Glantzmann and others have suggested that the first action of the vaccinia virus is to sensitize nervous tissue, after which, at the height of antibody production, an allergic reaction occurs, producing a kind of "shock," which ushers in the encephalitic process. This view obviously fails to account for the rarity of post-vaccinal encephalitis. The latent ultra-microscopic virus hypothesis implies the existence of a synergic process unknown to pathology; moreover, suggests Dr. Flexner, the virus itself must be conceived not only to have appeared suddenly in the world but to have become somehow widely disseminated, while having only a capricious activity. It may be added that animal inoculations carried out with nervous tissues and cerebral spinal fluid have so far failed to yield results supporting either this or any other theory of the cause of post-vaccinal encephalitis. That vaccinia virus itself may sometimes act as the provocative agent of encephalitis has been held by a number of pathologists. McIntosh and Turnbull were able in two cases to recover vaccinia virus from the brain in fatal cases, but this and similar findings do not prove that the virus was responsible for the lesions. Observations on man and experiments in animals have shown that vaccination is not a local process, but a general infection with, as a rule, a single local lesion. In rabbits, for example, the virus may be found in the blood, internal organs, and buccal mucosa, from the second to the tenth day after vaccination. The brain of the rabbit, however, is resistant to directly injected vaccinia virus. Only after adaptation by organ to organ passage does the virus become effectively pathogenic, and then the response is of the nature of a fulminating infection in which the lesions are more meningitic than encephalitic. The central nervous system tends to escape focal lesions from generalized vaccinia, even when the skin, mucous surface, and internal viscera are widely affected. So far, then, as the available data can be interpreted, it appears that vaccinia virus is not the specific instant of the encephalitis that attends vaccination. The complication arises in man only once in several thousand vaccinations; there would therefore seem to be much reason in Dr. Flexner's pessimistic view that unless accident intervenes, or some certain method of evoking the condition experimentally can be discovered—for example, by reproducing it in animals—the search for the etiology of post-vaccinal encephalitis, and thence for a method of controlling it, is likely to be protracted.

HYGIENE OF CREWS' SPACES ON MERCHANT SHIPS.

WE are glad to note that the proper body to take action in this matter—namely, the Association of Port Sanitary Authorities—has now made a definite move in the right direction. An important deputation from this organization, consisting of the president, Alderman Mrs. L. M. Foster-Welch (Southampton), Councillor J. E. Jones (Bristol), the honorary solicitor, Mr. W. R. Platts, with the port medical officers of London, Manchester, Newport, and Dover, attended at the Board of Trade offices on March 6th, to explain the attitude taken up by the association on the question of insanitary housing of seamen on British ships, and to suggest appropriate remedies. Dr. A. Vernon Davies, M.P., accompanied the deputation. Mr. A. J. Foley, assistant secretary, represented the Board of Trade, and had with him the heads of the various sections of the Marine Department. We have no details of what took place, but we understand that the speakers put forward a strong case for Government intervention, and that it was well received. They had certainly plenty of available material to draw upon. The question has been a sore one with port medical officers for years, and has been dealt with on many occasions in their annual reports. The position is somewhat as follows. Though seamen and firemen are housed separately, it is the usual practice to crowd each section into a common room with a cubic capacity equivalent to 120 cubic feet of space per man. A separate messroom can be provided at the expense of the air space in the sleeping room, but the ordinary practice is to use the common room for sleeping, eating, resting, recreation, and storage of clothing and of food. In the majority of British ships these living quarters are still placed in the most dangerous, uncomfortable, and unhealthy position—namely, the forecastle—where, even in moderately rough weather there is such a buffeting from head winds and seas that ventilators and stovepipes have to be unshipped, ports closed, and deadlights screwed down; there is also a considerable amount of wet and damp from leaks, soaked clothes, oilskins, or condensation water. With crews' quarters of this type it is quite unusual to find provision for isolating cases of infectious disease. By a simple rearrangement and by provision of more air space all these unhygienic conditions could be avoided, but unfortunately no one has the power to order the necessary rearranging. All that the Board of Trade can enforce is the 120 cubic feet, firm construction, protection from weather and sea, proper means of lighting and ventilation, and freedom from bilge and cargo effluvia; all that the port medical officer can do is to serve Public Health Act notices for abatement of nuisances arising within the legalized space. Yet there are British shipowners who voluntarily provide their sailors and firemen with two-berth or three-berth cabins amidships or aft, with separate messrooms, drying rooms, oilskin lockers, washhouses, baths, and hospitals, and all these amenities are compulsory on the ships of certain other countries. On the other hand, new ships are being built with crews' quarters in the old position and of the old type. In our opinion the Government of the day made a great mistake in not taking up this question immediately after the war, when shipping was depleted and trade was booming. Ten years have already been lost, and an enormous number of new un-

hygienic ships must have been launched during that period. We venture to trust, however, that the present Government will take its courage in both hands and produce the necessary legislation. It is well known that the Foreign Secretary was particularly enthusiastic in this direction before the last General Election.

RHEUMATIC PERICARDITIS IN CHILDHOOD.

AN interesting example of the close criticism to which accepted views about juvenile rheumatism are being subjected is found in an article on rheumatic pericarditis in childhood contributed by Professor Leonard Findlay, with Dr. J. W. Macfarlane and Dr. Mary Stevenson, in the current issue of the *Archives of Disease in Childhood*.[1] In the first place these authors bring forward evidence to prove that they are justified in dealing with pericarditis as distinct from involvement of the heart as a whole. Despite the statements of great authorities of the past—for example, of Sturges and Cheadle—in support of the view that in rheumatic involvement of the heart there is a pan-carditis, the Glasgow workers point out that in thirty post-mortem examinations of children who had died from all forms of rheumatic heart disease, they found implication of the pericardium in only 50 per cent. Furthermore, having established that pericarditis can be considered apart from involvement of the heart as a whole in rheumatism, Professor Findlay and his associates find themselves at variance with accepted views of its relation to other rheumatic phenomena. It is generally held that there is a close relation between chorea and pericarditis, a view often summarized in the phrase that chorea *plus* nodules *means* pericarditis. The authors, indeed, include in their paper an interesting historical survey of the literature dealing with the association of pericarditis and chorea, but when they analyse their own cases they show that the association is not very close. They have taken the records of 51 cases of rheumatic pericarditis admitted to the Royal Hospital for Sick Children, Glasgow, between the years 1915 and 1928. In 4 of these a heart lesion was the only manifestation of rheumatic mischief; in 2 cases pericarditis was the sole cardiac sign, there being no evidence of endocarditis either at the time of the acute illness or subsequently. In 44 out of the 51 patients there was a definite rheumatic arthritis as part of the syndrome; in 17 this arthritis preceded by a definite period the appearance of pericarditis, while in 26 the pericarditis ensued during an attack of arthritis. Of the cases with chorea and pericarditis, 15 in all, there were only 2 in which chorea was the sole rheumatic manifestation other than the cardiac involvement. In the other cases with chorea, arthritis was also a feature of the rheumatic trouble. Thus, far from a frequent association of chorea with pericarditis, the authors found that in only two cases did these conditions so coincide that there could be any question of considering one as a complication of the other. On the other hand, their analysis suggests that arthritis is the almost invariable precursor or accompaniment of pericarditis. This conclusion is important, if it can be supported from other centres, for the difficulty of explaining the association of pure chorea and pericarditis has long been recognized. While the substitution of arthritis for chorea does not solve the whole problem, at least it may be acknowledged that in both conditions there is inflammation of a serous membrane. On the other aspects of rheumatic pericarditis the Glasgow workers are generally in agreement with accepted views. Thus, with regard to the gravity of the condition, they found that 26 of their 51 patients died, while most of the surviving 25 show evidence of cardiac disease and disability. Curiously enough, their figures for sex incidence reveal a predominance among females, though a male majority is usually recorded. The incidence of nodules—in 6 of the 51 patients—is lower than that recorded in other investigations. The study of the cases here presented is interesting from many points of view, and while the conclusions will not be accepted in their entirety their unorthodox nature will stimulate and refresh.

[1] Vol. v, No. 1, February, 1930, p. 400.

BIOLOGICAL STANDARDIZATION OF DRUGS.

THE fourth annual report of the pharmacological laboratory of the Pharmaceutical Society contains a summary of the results of a number of investigations which are of great interest to the medical profession. A considerable part of the biological standardization carried out in this country has been centralized in these laboratories under the direction of Dr. J. H. Burn, and as a result it is possible to obtain information about the amount of variation in the material tested. These results furnish striking evidence of the importance of biological standardization. For example, the result of testing nine samples of strophanthin was to show that the strongest had two and a half times the physiological activity of the weakest. Since strophanthin is intended for intravenous injection, it is obvious that variation on such a scale is a matter of serious importance. It is fairly generally known that liquid extract of ergot made according to the directions of the current *British Pharmacopœia* is inert, but the report shows that the method laid down in the United States Pharmacopœia is also unsatisfactory. This method produces an active preparation, but unfortunately half the activity is lost within two or three months, even under the best conditions of storage. The problem of preparing a satisfactory extract of ergot is therefore still unsolved. Tetra-iodophenolphthalein sodium is a drug which is finding increasing use, but the toxic effects it sometimes produces are a serious problem. Toxicity tests have shown that some samples of the drug are nearly 50 per cent. more toxic than others. The need for the biological standardization of certain drugs is now generally recognized, but these examples indicate new applications for this method. The increasing use of potent drugs in doses sufficient to produce a full physiological effect seems likely to reveal an increasing need for supplementing tests of chemical purity with tests for physiological activity. The second part of the report deals with the work of the nutrition department, which has conducted a large number of routine tests, chiefly for the estimation of the vitamin A and D content of preparations. Quantitative estimations have yielded the interesting result that the best samples of milk have only a five-hundredth the vitamin D content of a good average sample of cod liver oil. The antirachitic action of 20 drops of cod liver oil is therefore equivalent to that of at least a pint of good milk.

THE Lumleian Lectures before the Royal College of Physicians of London will be given by Dr. Carey F. Coombs at the College, Pall Mall East, S.W.1, on March 26th, 25th, and 27th, at 5 p.m.; the subject is syphilis of the heart and great vessels. Any member of the medical profession will be admitted on presentation of visiting card.

THE Minister of Health on March 11th received a deputation from the Welsh Parliamentary Party, who asked him to make an appointment to the chairmanship of the Welsh Board of Health, an office unfilled since the resignation of Sir Thomas Hughes. The Minister said he did not think it necessary to discuss the history of this question, but he recognized the force of the claim, and accepted the principle that a chairman should be appointed.

INDIAN MEDICAL DEGREES.

The General Medical Council and Indian Qualifications.

HISTORY OF A TEN-YEAR CONTROVERSY.

THE General Medical Council, through its Executive Committee, has taken the important decision of refusing to recognize for the time being the medical degrees of the Indian Universities (Bombay, Calcutta, Lucknow, Madras, and Punjab) as furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery in this country. For some years past the recognition given to these degrees has been conditional and renewed for short periods; the recognition now lapses entirely.

This decision will not be unexpected by those who have studied the weighty addresses which Sir Donald MacAlister delivers every session from the chair of the Council. During the last ten years those addresses have contained a recurring reference to the Indian universities and the continuance of the recognition of their degrees as entitling the holders to have their names inserted in the British *Medical Register*. When the present controversy began it did not seem likely to be protracted or enlarged. The General Medical Council, for its part, was desirous of helping the medical colleges in India to overcome some admitted deficiencies which were revealed in the years following the war, and the universities, for their part, gave evidence of a desire, in face of obvious difficulties, to bring up their standards to those required by the Council.

The Council has not only shown great patience in handling the situation, but twice during these ten years the chairman of its Examination Committee (Sir Norman Walker) has visited India at the invitation of the Government, and the Council also approved the appointment of an able and experienced officer of the Indian Medical Service as an inspector, upon whose reports the recognition of the university degrees has from time to time been conditionally continued. Neither Sir Norman Walker nor Colonel Needham, in their visits to the colleges, acted as a mere inspector; they conceived it as their function to consult with and advise the Indian educational authorities, always with a view to some more satisfactory arrangement than a conditional recognition from year to year. Of late, however, certain events in India have intensified the difficulties, and a spirit, not of apathy, but of resistance, has manifested itself, which, reflected in some words used in the Legislative Assembly last autumn, has had the effect of delaying a satisfactory settlement, if not of destroying its prospects altogether.

The Position of the General Medical Council in Respect to India.

It will be useful to place clearly on record the precise interest of the General Medical Council in Indian degrees and diplomas. The General Medical Council has no jurisdiction in India, no right of intervention in Indian medical education so far as India itself is concerned. If no medical graduate of an Indian university proposed to practise in Great Britain or in any country with which Great Britain has reciprocity, or to apply for a commission in His Majesty's service, the Council would have nothing to say. If it were simply a question of suitable professional training for doctors practising in India under Indian conditions, the authorities there, with their special knowledge of local requirements, would be the best and indeed the only judges. India is autonomous, and the Council has no power to intervene. But when East meets West (as it does continually), and the Council is called upon to recognize an Indian qualification as equivalent to a British one for registration in Great Britain, its statutory duty under the Medical Act of 1886 is to inquire into the conditions under which the qualification has been obtained and the measure in which these conditions fulfil the requirements, not of India, but of Great Britain. The President of the Council has made the point as clear as language can make it. "Our primary interest," he said, at the November session, 1928, "is that recognized Indian medical degrees shall guarantee a standard of proficiency sufficient for practice in this country. It is this interest, which we cannot forgo, that alone justifies our intervention in Indian medical education." The Council is the body whose recognition of Indian medical diplomas for registration is by law equivalent to a guarantee of their sufficiency for effective practice of medicine, surgery, and midwifery beyond the limits of India.

As with most other debates, the roots of this controversy extend far beyond the immediate point at issue. Many factors enter into the situation, the most assertive at the moment being Indian nationalism, proud, sensitive, instinctively suspicious of British ideals of education and character. Indian customs, like that of purdah, which has limited the opportunities of obstetric instruction (where the trouble began), have to be taken into account. Then there is the necessity, which the Indian is under, of pursuing his studies in a foreign tongue, so that while his acquaintance with English textbooks may be word-perfect, he suffers often throughout his curriculum from inability to follow entirely the conversational English of the clinic and the examination room. The further fact has to be reckoned with—the fact out of which, the present Prime Minister once said, the difficulties of government in India arise—that India is a continent of peoples whose civilization is advancing at different rates of progress. Even the climate, which makes it harder in India than in England to work throughout the three academic terms a year, is not to be disregarded.

The Rise of Indian Medical Education.

Until recent years medical education in India was directed by the Indian Medical Service. The surgeons of the East India Company, the body under which, up to the middle of the last century, Indian affairs were conducted, gave the first impulse to the medical education of the Indian student. At first it was little more than an apprenticeship in dispensing, but even a hundred years ago the medical student, as the term is understood in the West, began to emerge. Regular college instruction was provided, at first in chemistry, anatomy, and materia medica, and later, as the benefits of the plan became apparent, in all the subjects of the medical curriculum. The colleges which were established at Calcutta, Madras, and Bombay, and afterwards at Lucknow and Lahore, were all Government institutions, and in the closest relationship with the Indian Medical Service. The professors were presidency officers—not whole-time professors, but engaged in civil practice as well—and for a long period they were all Europeans.

It was in these circumstances, with the I.M.S. acting as sponsor for medical education in India, and spreading Western ideas of medicine, surgery, and sanitation, that, in 1892, the General Medical Council first recognized an Indian medical degree as entitling the holder to have his name on the British *Register*. No doubt the members of the Council sitting in London at that time knew little about the actual conditions of instruction and training in India, but they did know that the teachers and examiners were all men who had been educated in British schools and were carrying the spirit and tradition of those schools into their Eastern environment. The fact that entrance to the I.M.S. could only be gained by passing an examination in London led to almost all the candidates for that service, both Indian and European, being holders of British qualifications.

The Indian Medical Service, following upon the recent Indian reforms, has undergone a drastic transformation. From certain points of view it is only the simulacrum of its former self. Another important change has been the devolution of medical administration, including the provision for medical education, from the central to the provincial Governments. The latter, under the Government of India

Act, 1919, have a large measure of independence. These changes have been followed, as was only to be expected, by a great diminution in the proportion of European teachers in the older colleges, while in two additional colleges established in recent years and affiliated to the Universities of Calcutta and Bombay respectively, the professorial staff includes no Europeans.

The curriculum in India differs at some points from the one followed in this country. The custom which obtains here of providing for registration of medical students subject to their passing a recognized preliminary examination in arts, and in addition a practical and theoretical examination in chemistry and physics, does not hold good in some of the Indian universities. In such universities the custom is, after matriculation, which is sometimes passed at the age of 14, to require students before admission to a medical college to pass a university intermediate arts and science examination, or its equivalent, after two further years' study. As the matriculation standard in India is not accepted as the equivalent of the recognized preliminary examination required from intending medical students in this country, the single intermediate examination, which includes chemistry and physics, operates in lieu of the two separate examinations required from British students. The number of students passing the intermediate is greater than the number of vacancies in the medical colleges, and thus a further selection is necessary, a selection said not always to be based on educational grounds.

No student of the history of medicine in India would withhold praise for the excellent work which the Indian medical colleges have accomplished in the past. The best tribute to this work is the high honours which some Indian students have obtained in British examinations. During the war conditions changed for the worse, as they did in many other fields, owing to overcrowding and pressure. The immediate matter which opened up the present controversy was the revelation of a discrepancy between regulation and practice in midwifery instruction. Information on this point reached the General Medical Council in 1920. The subject was one in which it was always difficult in a country like India to arrange for practical instruction. The inadequacy of obstetrical training was at that time recognized, and recently commissioned officers of the I.M.S. who had graduated at colleges where the training was obviously inadequate were required to go for an intensive course to Madras, where opportunities were more abundant.

The Council, on learning that matters were not as they should be in midwifery, addressed a letter of inquiry to to the universities, and after receiving the replies the Executive Committee—which in these questions acts with plenary powers as if it were the Council itself—resolved that unless it received by a given date information that the arrangements and requirements with regard to midwifery had been brought into satisfactory accordance with the Council's resolutions, the recognition hitherto granted to the degrees must terminate. The universities pleaded—a plea which was endorsed by the Secretary of State (the late Mr. E. S. Montagu)—for an extension of time to reform the midwifery and gynaecological part of their curriculum. A temporary arrangement was arrived at—namely, that the Council should nominate one of its members to the Government of India as a visitor to the Indian universities. The result was that early in 1922 Sir Norman Walker, a man with exceptional experience of educational administration, left for India.

Sir Norman Walker's visit created in India an impression of good will. The Indian universities were satisfied that means must be found for resolving the perplexities regarding the standard of obstetrical knowledge. Some of them expressly accepted his suggestions for the improvement of the teaching of midwifery. He dealt, equally sympathetically, with inadequacies in other respects which had become apparent.

A Special Inspector Nominated.

One very important outcome of Sir Norman Walker's report on his return was the proposal that the Government of India should be invited to appoint an officer as special inspector of the universities. The choice fell upon Colonel R. A. Needham, who had had twenty years' experience in the I.M.S., and was at the time Deputy Director-General. The Secretary of State approved the proposal, and Colonel Needham commenced his duties forthwith and submitted his first reports in 1923. Although called an inspector, he had wider functions—namely, to endeavour to co-ordinate the standards in all essential branches of medical training at the different colleges, and to report to the General Medical Council regularly on the maintenance or improvement of the standard, so that recognition might be continued from year to year. Colonel Needham's reports, which were most carefully framed, were highly valued by the Executive Committee. He made reference to defects as he saw them, such as congestion in the colleges, or inadequacies of teaching, or deficiencies in the examination, but he was also careful to acknowledge every effort at improvement, both for what it was and what it promised. Some of the colleges were evidently concerned, apart from the question of external recognition, to provide better facilities for study in midwifery, to extend the curriculum in general (which varied in different parts of India between thirteen and eighteen academic terms), and to extend the too limited period of hospital study after the examination in anatomy and physiology.

An unfortunate episode was the refusal of Calcutta University in June, 1924, to admit the inspector to be present at its final examination. The university was warned that in the absence of a report the conditional recognition would automatically terminate. No report was forthcoming, and the recognition of the Calcutta degrees lapsed in November, 1924. After that date, for four years, the degrees granted by Calcutta did not confer a title to registration in this country. Calcutta made some approaches to the Council in 1925, but the Executive Committee was unable, on the information afforded, to resume recognition, and so matters continued until 1928, when Calcutta applied for recognition of its degrees, and stated that it had revised its regulations. Inspections were consequently resumed, and in the absence of Colonel Needham on leave, Colonel Megaw, I.M.S., was commissioned to visit and report, with the result that the recognition of the Calcutta degrees was accorded, as with the other universities, conditionally, and for a limited period.

Meanwhile, at the end of 1926, on the proposal of the then Secretary of State (Lord Birkenhead), Sir Norman Walker paid a second visit to India. His object was to see the courses of study and the examinations at the universities, to remove difficulties as far as possible, and to have regard to the new situation, now rapidly developing, whereby fresh universities and colleges, including faculties of medicine, were in process of formation in many parts of the Indian Empire. The years 1922–27 saw a large increase in the number of colleges in India, and scattered as they were from Bombay to Rangoon, and from Lahore to Madras, they rendered the conditions of regular visitation and inspection by the direct agency of the Council almost out of the question.

Sir Norman Walker's report on this second visit (fully summarized in the *British Medical Journal*, ii, 1927, p. 312) is perhaps the most comprehensive of recent documents on the subject of Indian medical education. It contains many valuable suggestions, and the picture it gives is, on the whole, reassuring. Sir Norman Walker found excellent maternity hospitals at Madras and Bombay, and the prospects of such at Calcutta and Lahore. He praised the hospital departments in many particulars, especially in respect to ophthalmology. But he pointed out certain defects, such as the isolation of the examinations, the fact that the examiners were all more or less connected with the college or district in which the examination was held, whereas in this country examiners from other universities are brought in; and another point emphasized was the need for maintaining uniformity in examinations from year to year by the appointment of examiners for a certain term.

An All-India Council Mooted.

The principal matter which grew out of Sir Norman Walker's report, however, was the need for new steps to be taken in India itself for the setting up of a responsible and co-ordinating central authority. The existence of conditional recognition from year to year on the report

of an inspector to a body sitting in London was unsatisfactory alike to those who sought recognition and those who bestowed it. However able the inspectors, and whatever good will was shown to the colleges, it could only be a temporary expedient. The time had come when India itself should give some guarantee of uniformity of standards through an authoritative body with which the Council in London could consult.

The suggestion took the form of an All-India Council, whose relation to the various colleges would be not unlike the relation of the General Medical Council to the examining bodies in this country. It is worth while to turn from India for a moment to consider what that relation is. The universities are independent and autonomous, and may impose what conditions they like as to the granting of their medical degrees. But the General Medical Council —by virtue of its right to require information about the course of study and examination for qualification, to inspect the final examination, and to report defects to the Privy Council, which may suspend the right of registration of qualifications granted by the university in default —acts as a co-ordinating and controlling influence. As a matter of fact, conditions being what they are in this country, this disciplinary possibility is quite in the background, and the Council, which itself is composed largely of representatives of the teaching and examining bodies, exercises a benevolent rôle by the suggestions which it makes from time to time for improvement in the curriculum and by circulating among all the bodies the views and practice of each. There may be no exact analogy in other professions for the position of the General Medical Council in this respect, but it must be remembered that, while it is important to conserve the independence of the universities, the public interest is involved in medicine to a greater extent than in other faculties, and therefore a minimum standard must be exacted from all.

The medical colleges in India from the first were isolated units, organized by and dependent on the Government, and staffed by Government medical officers. When a university was founded in their presidency or province they became colleges of the university, still retaining, however, in great measure their independence. So long as the work of the colleges integrated with that of the Indian Medical Service a certain amount of co-ordination was possible. But with the coming of provincial Governments into control of the administration, including university appointments, the colleges lapsed into a greater insularity than ever. Provincial medical councils have been set up, but these do not concern themselves with the maintenance of standards of medical degrees granted by provincial universities, and from the mere fact of geography they could not serve as a means of maintaining uniformity of standards throughout India. At present there is no co-ordinating body in India, and for the General Medical Council to endeavour to act as such would in the nature of the case be ineffective. The system which has obtained for the last seven or eight years has been temporary, and has now become unworkable.

A Temporary Commissionership of Standards.

An All-India Medical Council therefore seemed to offer the way out, one that did not trench on Indian prestige and at the same time satisfied the General Medical Council as furnishing a body with which it could discuss questions of recognition. It was acknowledged, however, that the setting up of such a body must take time. What was to happen meanwhile? Was there to be a hiatus in the recognition of the degrees or an attempt to continue the increasingly difficult procedure of inspection under the aegis of the Council? To bridge the gap it was proposed to set up a Commissioner of Medical Qualifications and Standards, an official whose appointment would be by the Government of India, who would have his headquarters at Delhi, and who with his staff would continue and expand the work already done by the Council's inspector. The reports of such a commissioner would be accepted by the General Medical Council as were those of its own visitor. The central and provincial Governments agreed to this course, and at the end of 1928 it seemed that this vexed question of Indian qualifications was at last approaching a settlement. A bill for the establishment of an All-India Medical Council had been introduced into the central Legislature. The bill provided that this body should exercise supervision over the standard of professional teaching and examination throughout India, having special regard to the external and central or non-provincial aspects of medical qualifications. The appointment of a central commissioner had been approved by the Government of India, for one year in the first instance, and the Secretary of State had suggested that it was desirable to offer the appointment to Colonel Needham—a nomination with which the General Medical Council was heartily in accord, having had experience of Colonel Needham's special qualifications, and knowing how desirable it was that the commissioner should be familiar with British standards. The pay of the officer was even fixed. On the strength of all this the Council continued provisionally the recognition of the degrees of Bombay, Calcutta, Madras, Lucknow, and Lahore for a further period, postponing the consideration of recognition of those of Patna and Rangoon until it received the reports from the new commissioner.

The Impasse Created by the Legislative Assembly.

Shortly before he was due to sail so as to reach India in time for examinations to be held at the end of 1929, Colonel Needham received an intimation from the India Office cancelling his appointment. The reason for this was the action taken in the Legislative Assembly. The Finance Committee of the Legislature had given some warning of what might follow by rejecting the credit for the appointment of the commissioner. The Government, however, brought the matter before the Assembly, and there the suggested arrangement for the commissionership was opposed by the Nationalist and Congress parties on the ground that the creation of the post was of no urgency, but might very well be postponed until the following session. The objection really amounts to this: that India, while not averse from an All-India Medical Council, regards the proposal for filling the necessary interregnum by the temporary appointment of a commissioner as reflecting on Indian prestige. Many of the arguments used by Nationalist members were captious. One objection was that the officer proposed for the appointment belonged to the Indian Medical Service (although the I.M.S. has mothered Indian medical education); another, made by a Hindu leader, was that the proposal involved disrespect to the Indian universities, which, the speaker said, he would rather close than see submitted to this indignity; and there was much talk of dictators and British tyranny. The position of the central and local Governments, which, aware of the gravity of the case, supported the proposal, was put forward, but after a prolonged discussion the opposition was still dissatisfied, and the motion was "talked out." An effort was made to secure the continuation of the debate on the following day, but this was refused by the President of the Assembly, and the session came to an end without any decision being taken.

In view of what had happened the Government of India asked that Colonel Needham should not sail, and the Secretary of State could do no other than comply. It was stated that at the next session, early in the present year, the matter would again be brought forward, but in the meanwhile not only has the proposal for a Government commissioner broken down, but the formation of an All-India Council is stayed. The responsibility for this grave result cannot be placed on the General Medical Council. In his reply to the Secretary of State on "these perplexed and perplexing matters," the President of the General Medical Council stated that the Executive Committee had postponed its final decision until its meeting in February, but he added that the inevitable absence of authoritative reports on the actual standards of study and examination for Indian medical qualifications was of serious import. The committee would be deprived, by the action taken in India, of the guarantees of sufficiency necessary under the Medical Act of 1886, on the basis of which alone it could be in a position to continue recognition of Indian medical degrees. "When the Government of India," said the President further, "is in a position to supply such guarantees by means of satisfactory reports from a Commissioner of Medical Standards and Qualifications, or from a legally constituted All-India

Medical Council, the Executive Committee . . . will give applications from Indian universities, transmitted by the Government of India, its careful and sympathetic consideration."

New Proposals from India.

In January the Secretary of State informed the General Medical Council that the Government of India was of opinion that it was not possible to reopen the question of the appointment of a commissioner in view of the strong opposition in the Assembly, and also in view of the opinion of the quinquennial Indian universities conference, which had met at Delhi in October. This conference, while favourable to the establishment of an All-India Medical Council, regarded the appointment of a commissioner as not in accordance with the best interests of medical education in India, and as wholly opposed, not only to practice elsewhere, but to the whole trend of Indian public opinion, medical and legislative.

The universities conference did, however, make the suggestion that, pending the creation of the India Medical Council, a board consisting of representatives of the Government of India and of the medical faculties of the universities should be set up as a temporary measure for determining and supervising medical qualifications and standards. The Viceroy's department, in transmitting this suggestion, regarded it as a sound one, and proposed that the board should have as its president the Director-General of the Indian Medical Service, and as members one representative from each of the faculties. It was further proposed, by the Government, that the board should appoint three inspectors, specialists respectively in medicine, surgery, and midwifery, who would report on standards of medical education and examination, and on whose reports the board would decide whether guarantees should be given to the General Medical Council that the possession of the degree of a particular university ensured the minimum qualifications required for British registration.

The Secretary of State, in forwarding these new proposals, said that it was assumed that the three inspectors would possess British qualifications, and it seemed likely that their reports, being reports of specialists in the subjects of the final examination, would be more authoritative than those of a single commissioner. Mr. Wedgwood Benn hoped that the measures proposed would be acceptable to the Council. The President could only reply that the decision of the Executive Committee at its meeting at the end of February could not be anticipated, and that the questions of the composition of the proposed temporary board and its independence and sufficiency would have to be discussed.

Meanwhile the main proposal for the eventual establishment of an All-India Medical Council has not enjoyed an uninterrupted development. An informal council of Ministers of the provincial Governments, misunderstanding the proposal as an encroachment on their control of the medical services—which, as stated, have lately been decentralized and placed in their hands—disapproved of the bill for the creation of the council, and therefore the Government of India decided for the time being to proceed no further. A later message from the Viceroy's department to the Secretary of State, dated January 6th, stated, however, "Local Governments now agree that only solution of present difficulties is to be found in the establishment of All-India Medical Council. We are most anxious to proceed with legislation with the least possible delay, but in view of intricacy of the subject and necessity of alterations in the bill, as originally drafted, to meet criticisms and suggestions received from various quarters on which it will probably be necessary to consult local Governments, it will not be possible to introduce legislative measure this session."

Some of the universities, notably Lucknow and Bombay, have expressed concern at the prospect of their medical graduates ceasing to be recognized as possessing a registrable qualification. "We find it difficult to think," writes the vice-chancellor of Lucknow, "that when the King George's Medical College has, in equipment and courses, been brought to a standard satisfactory to your inspectors who have come from year to year, the students who pass out now should be given a qualification of less value than the students who passed out in former years, especially when it is our constant endeavour to continue making further improvements."

The General Medical Council's Decision: Indian Degrees not to be Recognized.

The Executive Committee of the General Medical Council met on February 24th, and after a consideration of all the facts and representations passed a series of important resolutions, the first of which reads as follows:

> That in the absence of authoritative information respecting the medical qualifications and standards of the Indian Universities of Bombay, Calcutta, Lucknow, Madras, and Punjab, the Executive Committee of the Council, in fulfilment of its duty under the Medical Act, 1886, Section 13, is unable for the time being to recognize the medical degrees of these universities as "furnishing a sufficient guarantee of the possession of the requisite knowledge and skill for the efficient practice of medicine, surgery, and midwifery" in this country; and that accordingly the conditional recognition hitherto granted to these degrees has now lapsed.

With regard to the Indian proposal to set up a temporary board, the Committee resolved:

> That the proposal . . . has been carefully considered by the Executive Committee; but it is unable to accept the proposal as furnishing a satisfactory method of supplying the Council with authoritative information on medical qualifications and standards in India, and with the necessary guarantees of sufficiency.

In a late message the Government of India proposed to appoint temporary inspectors of the qualifying examinations of the Universities of Rangoon and Patna. Here again the Executive Committee has found it undesirable to renew the practice of approving the appointment of separate *ad hoc* inspectors, which it had already found inadequate for the purpose of ascertaining the sufficiency of the standards for Indian medical degrees, actually required and enforced by the universities.

To separate representations from Bombay and Lucknow it was resolved simply to reply forwarding a copy of the above resolutions. There, apparently, the matter has for the time being come to an end.

ENLARGED PROSTATE AND PROSTATECTOMY.

THIRD LETTSOMIAN LECTURE BY SIR JOHN THOMSON-WALKER.*

THE concluding Lettsomian Lecture, by Sir John Thomson-Walker, on the general subject of "Enlarged prostate and prostatectomy," was delivered before the Medical Society of London on March 5th, with the president, Mr. DONALD J. ARMOUR, occupying the chair.

Suprapubic Prostatectomy.

Sir JOHN THOMSON-WALKER described the two operations for the removal of enlarged prostate—namely, that by the perineal and that by the suprapubic route. At the present time, largely owing to Freyer's advocacy, the suprapubic route was almost universally employed. Its popularity depended on the ease of approach and the readiness with which the enlarged prostate could be shelled out with the finger. It was generally believed, also, that the late results were better than those following the perineal operation.

In suprapubic prostatectomy there were two procedures at the present time—one the closed method described by Freyer, and the other the open method practised by Judd and by the lecturer himself. Freyer's method consisted in making a small incision two inches long, introducing the finger into the bladder and the forefinger of the other hand into the rectum, the abdominal walls being depressed by the knuckles. Judd's method was described in the *Proceedings* of the Mayo Clinic, but it was a short description, and it was not easy to know exactly all the details. The method the lecturer himself practised was to make a long incision, about five inches; the forefinger was passed into the bladder, and enucleation took place by the same method as employed by Freyer. The patient was

* Sir John Thomson-Walker's two previous lectures were reported in the *British Medical Journal* of March 1st (p. 422) and March 8th (p. 451) respectively.

then placed in the Trendelenburg position, and the retractor introduced into the bladder, the bladder base being freely exposed. Haemorrhage was controlled by suture and packing with gauze. All shreds and flaps were removed; a large opening was provided between the bladder and the prostatic cavity and a rubber tube introduced. Very careful post-operative treatment was carried out, an important part of which was constant irrigation with weak solution of silver nitrate. The tubes were removed on the fifth day, and the catheter on the seventh day, but the latter was reintroduced if urine was not passed by the twelfth day. If haemorrhage still threatened, the catheter was repacked with gauze.

The lecturer said that he had already discussed, in his second lecture, the nature of the fibrous prostate. In most of such cases enucleation by the closed method was a difficult and unsatisfactory operation, and it might be impossible to complete the enucleation by that means. The ultimate results were highly unsatisfactory in the majority of cases. The ragged walls which were left promoted sepsis, and post-operative contraction of the outlet of the bladder was a likely sequel. In many cases the fact that the prostate was adherent was not discovered until the operation had begun, and occasionally not until the prostate was partly enucleated. He found no difficulty at all, on the other hand, in dissecting out adherent prostates by the open suprapubic method.

Surgical Accidents and Failures.

A list was shown on the screen of the cause of death in 269 cases at St. Peter's Hospital, where suprapubic prostatectomy had been done for simple enlarged prostate.

Surgical accidents (shock, cardiac failure, haemorrhage)	64
Renal failure (uraemia)	67
Septic complications (pyelonephritis, pelvic cellulitis, etc.)	63
Diseases of lungs (pneumonia, bronchitis)	28
Diseases of circulation (cerebral haemorrhage, coronary thrombosis, venous thrombosis, pulmonary embolism)	26
Diseases of bowel (acute dilatation of stomach, etc.)	3
Asthenia and general debility	10
Various (acute mania, influenza, pancreatitis) ...	8

As for the merits of the two operations, the closed, blind, or Freyer method had the advantage of rapidity, which in some cases was a matter of importance. The rapidity must, of course, depend on the skill of the surgeon, but, other things being equal, this was the most rapid of the suprapubic methods. The operation was, moreover, easier to perform. Once the surgeon had learned to find the line of cleavage he would succeed, in some measure at least, in removing the obstruction. The disadvantage was that sepsis was more likely to occur, haemorrhage was not so easily controlled, and post-operative obstruction might be expected. The open operation had the advantage that many causes of sepsis were removed or avoided, haemorrhage was efficiently controlled, and post-operative contraction more effectively guarded against. Its disadvantage was in its greater difficulty, and a knowledge of bladder surgery was necessary.

Mortality of the Operation.

In order to obtain a general view of the mortality in suprapubic prostatectomy the lecturer had collected statistics from various sources representing the different conditions under which the operation was performed. These included statistics from eleven general hospitals in different parts of the country for the last ten years and one hospital for seven years. The statistics for these twelve hospitals in cases in which operation had been performed for simple enlargement of the prostate were as follows:

Total operations	3,451
Total deaths	675 (19.5 per cent.)
One-stage operations	2,060
Deaths	424 (20.5 per cent.)
Two-stage operations	1,234
Deaths	215 (17.4 per cent.)

The figures for St. Peter's Hospital, London, a special hospital devoted to this class of case, during a period of twenty-nine years, showed that there had been 2,691 cases, with 268 deaths, a mortality of 9.9 per cent. The fluctuations of the mortality in different years were remarkable, which illustrated the fallacy of taking only a short period of time or relatively a few cases on which to estimate results. In the lecturer's private practice, for the eleven years 1919–29, he had performed suprapubic prostatectomy on 472 cases of this description, with 25 deaths, a mortality of 5.2 per cent. The total number of private cases was 608, with 37 deaths, a mortality of 6.08 per cent.

General Hospitals, Special Hospitals, and Private Experience.

He thought it was the experience of all surgeons that there was a very considerable difference between the mortality in their private practice and in their hospital work. There was a further difference between the mortality following prostatectomy carried out in the wards of a special hospital and in the wards of a general hospital. Evidently there was some factor at work outside the immediate control of the surgeon which produced so constant a difference in mortality. Before operation the patients seen in private practice were, on the whole, better cared for and subjected to less physical strain and less exposed to effects of unsuitable diet than hospital patients. Further, hospital patients as a rule were submitted to operation at a later stage of the disease, and infection of the urinary tract was rather more frequently present in them than in private patients. The principal cause of the difference in the statistics was to be found in the different conditions under which post-operative treatment was carried out in a general hospital, a special hospital, and private practice. In a general hospital the patients were necessarily treated in large freely ventilated surgical wards, and the post-operative care was in the hands of the resident surgeon. The private patients were in special homes, and the post-operative treatment was carried out by the operating surgeon or his permanent assistant. Between these was the special hospital, where the grouping of cases led to special measures in regard to nursing, and where the post-operative treatment was in the hands of a specially trained officer.

Preparation of Patients and After-Care.

There were two other points on which he spoke with some diffidence because they related to matters of surgical opinion rather than to the discussion of general management. He was not certain that sufficient attention was paid to the complete examination and careful pre-operation treatment of these cases, or that the measures taken to combat post-operative sepsis and haemorrhage were universally adequate. With regard to the influence of the type of operation on the death rate, the list he had quoted showed, for a total of 2,060 single-stage operations, a mortality of 20.5 per cent., and for 1,234 two-stage operations a mortality of 17.4 per cent. In St. Peter's the mortality for the two-stage operation was slightly higher than for the single-stage. If these figures were taken at their face value they were misleading in any comparison of the two procedures. Where the single-stage operation was the rule, the two-stage operation was reserved for the more serious cases, and was naturally accompanied by a higher mortality. It appeared that in general hospitals where the whole of the cases were operated on in two stages, there was a moderate improvement in the death rate. His own preference was in favour of a more careful and prolonged preparation, with a single-stage operation, and more careful instruction in post-operative treatment in these cases.

The operation might be said to have failed or to have been incompletely successful when free voluntary micturition was not re-established or when frequent micturition and bladder retention were not relieved, or when there were recurrent attacks of cystitis and similar conditions, or the development or recurrence of stone, or where the wound did not close. These failures could be traced to two causes—namely, sepsis and obstruction. In his own series of private cases the day at which urine was passed after operation averaged from the tenth to the thirteenth, and the average day at which the wound was dry was the sixteenth.

At the conclusion of the lecture a cinematograph demonstration of open prostatectomy was given, with Sir John Thomson-Walker as operator. The photographic work was that of the medical department of Kodak, Ltd. A description of this film when it was first shown before the Royal Society of Medicine appeared in the *British Medical Journal* (July 6th, 1929, p. 23).

Scotland.

Vital Statistics of Scotland.

THE quarterly return of the Registrar-General for Scotland, dealing with the quarter ended December 31st, 1929, and including a supplementary return for the whole year 1929, has just been issued. Vital statistics show that the birth rate has fallen, being the lowest on record, while the death rate is higher than those of the preceding six years. This rise is attributed to a severe epidemic of influenza in the early months of the year. The birth rate of the year was 19 per 1,000, or 0.8 less than that of the previous year, and 1.7 less than the quinquennial mean. The marriage rate was slightly higher than that of the previous year. The death rate was 14.5 per 1,000, which is 1.2 more than that of the previous year, and 1.0 more than the quinquennial mean. The infantile mortality rate was 87 per 1,000 registered births, which is 1 above that of the previous year, but 2 less than the mean of the preceding five years. Death rates from tuberculous diseases and from tuberculosis of the respiratory system both show further reduction, being the lowest yet recorded. Those who died from malignant disease numbered 7,107, which is the largest number recorded as yet in any one year, being 206 more than that of the previous year. The death rate for the principal epidemic diseases was slightly below that of the previous year. With regard to the statistics of the quarter, births numbered 21,998, which was 1,405 less than those of the fourth quarter in the previous year. The number of deaths registered during the fourth quarter was 15,353, or 2,070 more than those in the third quarter, but 506 less than those in the fourth quarter of the previous year. The death rate for the quarter was 12.4 per 1,000, the lowest fourth quarter death rate yet recorded, despite the fact that the death rate for the year had risen. The figures for the causes of death during the quarter show that 3.5 per cent. were attributable to the principal epidemic diseases. Deaths from epidemic diseases, other than those grouped under the principal diseases, included 40 from cerebro-spinal meningitis, 24 from encephalitis lethargica, and 38 from erysipelas. There were 130 deaths from diseases and accidents of pregnancy, or a mortality rate of 5.9 per 1,000 registered births, which is 2.5 less than that of the fourth quarter of the previous year.

Installation of Glasgow Chancellor.

In succession to the late Lord Rosebery Sir Donald MacAlister was installed on March 4th as Chancellor of the University of Glasgow. Sir Donald was Principal of the University for twenty-two years and retired last October. Principal R. S. Rait presided at the commencement of the ceremony, and the new Chancellor took the chair after the administration of the oath. Among those upon whom he conferred the degree of Doctor of Laws were Sir George Newman, Chief Medical Officer of the Ministry of Health, and the new Principal and Vice-Chancellor of the University of Glasgow. In his address the Chancellor referred to the Glasgow School of Theology, which included both the University Divinity School and the Trinity College of the United Free Church. These would now be united as a result of the recent union of the Churches.

Presentation to Professor G. M. Robertson.

On March 7th Professor George M. Robertson, superintendent of the Royal Edinburgh Hospital for Mental Diseases, was presented with his portrait at a dinner held in the Hall of the Royal College of Physicians, Edinburgh. Lord Provost Whitson presided. The presentation was made by Mr. T. M. Gardiner, chairman of the Board of Managers, who paid a tribute to Professor Robertson's exceptional ability.

Forthcoming Visit of the Prince of Wales to Edinburgh.

The Prince of Wales will visit Edinburgh on June 12th in connexion with the bicentenary of the Royal Infirmary, which took place last year. The chief purpose of the visit is to assist an appeal for funds to extend the institution. The foundation stone of the present buildings was laid in 1870 by King Edward VII, then Prince of Wales. The proposed extension, which will cost approximately £300,000, will provide a gynaecological and maternity hospital, a new nurses' home, and other buildings, to be erected on the neighbouring site of George Watson's College. His Royal Highness will also visit Murray House, Moredun, on the outskirts of Edinburgh. This home has 20 beds for sailors and soldiers who were disabled in the war but are not bedridden.

Edinburgh Medical Officer of Health.

The Edinburgh Town Council, on March 6th, discussed the appointment of a successor to Dr. William Robertson, M.O.H. for Edinburgh, who retires this year. Thirty members voted to confine the election to officers already in the service of the Town Council, and thirty voted for an open appointment. The Lord Provost gave his casting vote in favour of advertising the post. It was intimated that a new scheme, drawn up by Dr. W. Robertson, for the Public Health Department, would be circulated.

Waiting List at Royal Infirmary, Edinburgh.

The report of a special committee, appointed to consider the waiting list of the Royal Infirmary, Edinburgh, states that the list is revised every three months, and that 2,419 patients are at present waiting for admission. According to the report of the Mackenzie Committee, there was a deficiency in Scotland of about 3,000 beds, and the committee is of the opinion that about 870 represents the proportion in its own area. Although the Infirmary to-day is working at full pressure the committee is satisfied that no patient requiring immediate attention is ever refused admission. Every applicant who has been on the waiting list for more than three months receives a personal communication, and if he no longer desires admission, or has been treated elsewhere, or if no reply is received within a fortnight, his name is removed from the list. Between 400 and 500 names are removed every quarter for these reasons. Only a small percentage, never exceeding 20 per cent. of the names on the list at any quarterly revision, were found to have been waiting admission for six months or over. Current cases on the list are classified, graded, and starred for priority in treatment. Nearly four-fifths of the total number are surgical cases. The committee recommends that one of the male wards should be converted into a female ward, because of the larger number of female patients. It is pointed out that the gradual extension of the Astley-Ainslie Convalescent Institution, and the radium institute at Beechmount, when completed, will help to solve the problem. A substantial reduction, however, depends on carrying out the proposals that have been made for extending the Infirmary.

Leith Hospital.

According to the annual report of the Leith Hospital there were 2,078 in-patients during 1929, an increase of 134 on the previous year, and 18,734 out-patients; 1,269 patients were also treated in the children's wing. The ordinary income for the year amounted to £17,357, and the ordinary expenditure to £18,251, while the extraordinary income was £2,806 and the expenditure £664. At the annual meeting the chairman remarked that in the past twenty-one years expenditure had risen gradually from £6,000 to £18,000, with the growth of special departments, and the continual demand for fuller service. The purchase of ground for future extension in the neighbourhood of the hospital was under consideration.

Royal Public Dispensary, Edirburgh.

The annual report of the Royal Public Dispensary, Edinburgh, points out that the helpful and philanthropic medical work of this dispensary had been carried on since the year 1776 in the densely populated district of the Pleasance and surrounding neighbourhood. Baillie G. D. Brown, who presided at the annual meeting, remarked that the number of new patients attending the dispensary last year was 832, while 302 had been treated by medical students under the supervision of the medical officers in their own homes. An important recent branch of the activities of the dispensary was child welfare work, in which excellent service was being rendered. It was added that the finances of the institution were in a sound condition.

England and Wales.

Medical Society of London.

THE 157th anniversary dinner of the Medical Society of London, held on March 6th at the Hotel Cecil, was noteworthy for the number of distinguished Canadian guests who attended in honour of the president, Mr. Donald Armour, senior surgeon to the West London Hospital. These included Colonel the Hon. J. L. Ralston, Minister of National Defence, the Hon. Lucien Pacaud, acting High Commissioner for the Dominion, Sir George McLaren-Brown, European General Manager of the Canadian Pacific Railway, Mr. C. J. Smith, Vice-President of the Canadian National Railways, and Mr. William C. Noxon, Agent-General for Ontario. Other guests at the high table were Dr. Hamed Mahmud, Egyptian Chargé d'Affaires, the President of the Royal College of Physicians, the Regius Professors of Medicine at Oxford and Cambridge, the Master of the Society of Apothecaries, the medical heads of the Navy, Army, and Air Force, the President of the British Medical Association, the Editors of the *Lancet* and the *British Medical Journal*, and the presidents of kindred medical societies. The after-dinner speeches were few and short and good. Sir Humphry Rolleston gave the toast of "The Medical Society of London" in a few graceful words. The President, in reply, touched on the progress of the Society along peaceful lines after its early dissensions, growing yearly in strength and stature, and always adhering to the purposes of its foundation as laid down by Lettsom in these words: "The institution of this Society is to give the practitioners in the healing art frequent opportunities of meeting together, and conferring with each other, concerning any difficult or uncommon cases, which may have occurred; or communicating any new discovery in medicine, which has been made, either at home or abroad." The Society, said Mr. Armour, still prided itself upon what might be called, professionally speaking, the cosmopolitan character of its meetings. Unlike its rebel offspring, now grown to Gargantuan proportions under the name of the Royal Society of Medicine, its Fellows were not "sectionists"; they did not work in watertight compartments; they did not encourage specialism as such. To its most carefully selected and jealously guarded list of Honorary Fellows a single addition had been made this year, the first in three years. Sir Arthur Keith's absence in Egypt, seeking health, and perhaps new problems to elucidate, prevented him from being present that evening, but they anticipated with the greatest pleasure his oration before the Society in May, on "Modern medicine and evolution." The health of "The Guests" was adroitly proposed by another past-president, Dr. Eustace M. Callender, and Colonel Ralston, who responded, told several new stories and expressed the pleasure felt by himself and his fellow countrymen in dining with the oldest London medical society under the presidency of the first Canadian to hold that office.

A London Post-Graduate Course in Mental Deficiency.

In co-operation with the Central Association for Mental Welfare, the University of London has arranged a course of lectures on mental deficiency and allied conditions, supplemented by clinical instruction. It will be held at the University, Imperial Institute Road, S.W.7, and be based on the requirements for the diploma in psychological medicine; it is intended more especially for medical practitioners who are engaged as school medical officers, certifying officers to local authorities under the Mental Deficiency Act, medical officers of institutions, and others definitely concerned with the care of subnormal or abnormal persons. The course will consist of two parts, the first occupying the week May 5th to 10th. Dr. A. F. Tredgold will deliver seven lectures on the nature and pathology of mental deficiency, its etiology and classification, the characteristics of aments, clinical varieties, moral deficiency, and differential diagnosis. Dr. F. C. Shrubsall will give three lectures on the administrative procedure in the ascertainment and treatment of the mentally defective; Professor Cyril Burt will lecture twice on the psychology of mental defectives; and Dr. Norwood East will give one lecture on crime and mental defect. Clinical work will be arranged in the form of visits to special schools for mentally defective children, and to residential institutions in or near London; there will also be clinical demonstrations. The second part of the course extends from May 12th to 17th. Two lectures will be given by Professor Burt on general psychology, and three by Dr. Tredgold on the borderland of mental deficiency, and Dr. Bernard Hart will discuss degenerative processes and associated types of delinquency. Dr. E. O. Lewis will give a lecture on the incidence of mental deficiency; Miss Lucy G. Fildes three lectures on educational disabilities; and Dr. Shrubsall three lectures on encephalitis lethargica, causes of retardation other than mental defect, and the value of social inquiry in relation to the defective or maladjusted child. Clinical work will be arranged in the form of visits to hospitals and clinics, and attendances at case conferences. Either course may be taken separately, and applications must be sent to Miss Evelyn Fox, c/o University Extension Department, University of London, South Kensington, S.W.7, by April 14th. The registration fee is 10s. 6d., and a fee of three guineas is payable for either part of the course. The fee for the whole course is £5 15s. 6d.

Ireland.

National Health Insurance in the Free State.

IN a recent discussion in the Dail on a vote for £2,621 to complete the sum necessary to defray the expenses of the National Health Insurance Commission, General Mulcahy, Minister for Local Government and Public Health, referred to the increased expenditure on sickness and other benefits. The number of insurances, he said, had increased more rapidly than had been anticipated. On being asked whether medical certification could not be arranged on a county instead of on a dispensary basis, General Mulcahy replied that he had failed, so far, to reach an agreement with the medical profession, which had rather reluctantly consented to the repayment to the Treasury of the extra amount entailed by dispensary certification. The sum of £800 had been fixed by the Ministry of Finance to be paid to the Treasury for the year under review. The Minister has been misinformed. No consent has been given by the medical profession to an agreement for reimbursing the Treasury of the extra amount required to administer the certification grant on a dispensary basis.

Sligo Mental Hospital.

At the last meeting of the Committee of Management of the Sligo and Leitrim Mental Hospital the following letter from the Appointments Commission was read:

"In compliance with the statutory request received under Section 6 (2) of the Local Authorities (Officers and Employees) Act, 1926, in connexion with the above-mentioned position (Resident Medical Superintendent, Sligo District Mental Hospital), I am directed by the Local Appointments Commissioners to state that they recommend Dr. John Dunne, Grangegorman Mental Hospital, Dublin, for appointment to the position. A summary of the recommended candidate's qualifications is given hereunder."

After long discussion a resolution was passed unanimously, declaring that the Appointments Commissioners had no right to send a doctor appointed by them without consulting the committee representing the ratepayers of Counties Sligo and Leitrim, and that in the considered opinion of that committee Dr. Thomas Gilgriest, who has filled the position of assistant resident medical superintendent for thirty-three years with credit and distinction, should be elected. The committee, therefore, requests the Department, before accepting the recommendation of the Appointments Commissioners, to give a full statement of the reasons for refusing to sanction promotion under Section 5, and a more detailed statement of the findings which guided them in this selection. In connexion with this dispute the contention of the hospital committee that Dr. Gilcriest should be promoted to the office of resident medical superintendent has a good deal of support from lay and medical opinion. The Local Authorities (Officers and Employees) Act, 1926, makes provision for promotion

subject to the sanction of the Minister for Local Government and Public Health. The Minister, however, in the recent vacancies in Clonmel and Sligo, refused his sanction of the promotions recommended by the asylum committee of the assistant medical officers in the mental hospitals in which the vacancies occurred, and directed that the offices be filled by recommendations made by the Appointments Commissioners through the means of selection boards. The selection boards are debarred by statute from confining their selection to the assistant medical officers of the institutions in which the vacancies occur, and must take into account the claims of all qualified applicants, which include those of a number of assistant medical officers from other mental hospitals. Prior to the passing of the Act creating the Appointments Commission and the selection boards, the senior medical assistant was almost invariably promoted by the asylum committees to the office of medical superintendent when it became vacant.

Presentation to Dr. W. W. Murphy.

On his retirement, after thirty years' service, from the honorary secretaryship of the County Wexford Medical Practitioners' Association, Dr. William W. Murphy of Coolgreaney was entertained at dinner by the members of the association, and presented with an ornamental clock. Dr. Murphy has taken a very active interest in the welfare of the medical profession in all parts of Ireland. He is chairman-elect of the Irish Committee of the British Medical Association; he is also a member of the Irish Medical Committee and Irish Medical Association.

Correspondence.

PEPTIC ULCER.

SIR,—In my article in the *Journal* of March 8th, the word "gastro-enterostomy" on page 460, line 6, should read "*gastro-gastrostomy*."

May I suggest that Mr. Norman Lake (p. 466) rather spoils my aphorism? He quotes, incorrectly, "Statistics may be made to prove anything, even the truth." In its original form this read "Statistics may prove anything, even the truth." I intended to indicate an inherent vice in statistics, not to impute corruption to their compiler! So my aphorism is not "cynical": and for cynicism I have no talent.—I am, etc.,

Leeds, March 8th. MOYNIHAN.

SEX HORMONES OF THE ANTERIOR PITUITARY.

SIR,—A considerable amount of publicity was provoked by the recent announcement by the dean of the Faculty of Medicine of McGill University concerning the successful extraction by Professor Collip of a substance in crystalline form from the human placenta which exerts a very profound influence upon the ovary. In the official announcement it was stated that this success marked the final stage of a long series of experimental studies carried out by many workers in different countries, and generous acknowledgement was paid to the contributions of my colleague Dr. B. P. Wiesner. Since in certain accounts which have appeared in this country erroneous statements seem to have been made, it appears to us desirable that the facts of the matter as we see them should be set forth.

It has been established for a long time now that the elaborated products of the anterior lobe of the pituitary exert profound influences on growth, on the incitement and on the inhibition of oestrus and so forth, and the influence of the pituitary on the ovary has commonly been referred to the action of the sex hormone of the anterior pituitary. Dr. Wiesner and I, in 1928, endeavoured, we think successfully, to show that the relation of anterior lobe and ovary is by no means so simple, and that in order to accommodate all the facts that have now been demonstrated, it is necessary to postulate the existence of two gonadotrope factors in the anterior lobe. Since then, further work on these two factors has been continued, and the results have been reported on several occasions. Moreover, extracts containing these factors have been supplied for use in clinical practice, and in due course those clinicians who have used them will record their conclusions in appropriate journals. But, of course, from our point of view, this clinical application was regarded as being essentially experimental, and we have been eagerly and, it may be said, confidently awaiting the conclusions derived from clinical experience.

In view of the fact that such tentative reports as we have received have been definitely encouraging, Dr. Wiesner, who attended the Physiological Congress at Boston and gave a demonstration of this work, drew Professor Collip's attention to it and to its promise. We regard it as exceptionally fortunate that Professor Collip should have been attracted to this particular field, and particularly that he should have thought it worth while to extend the work. Naturally, we have read with the greatest possible interest the preliminary account given by Professor Collip in the *Canadian Medical Journal*, and we eagerly await the publication of the details of his methods of preparation. For, from the paper that has appeared, it is quite impossible to gather whether the substance which he has isolated represents the oestrogenic or the kyogenic factor, and, what is even more interesting to ourselves, whether the hypothesis concerning the duality of the sex hormone of the anterior pituitary which we have adumbrated is correct or otherwise.

There is one point in Professor Collip's paper which is puzzling, for he seems to have found it desirable to abandon the use of sulphosalicylic acid for the reason that he found it a barrier to further purification. In this department, Wiesner and Patel have elaborated methods which remove and recover this agent, and the methods now in use have given us extracts of greatly increased purity and potency. Reports concerning the experimental and clinical use of these extracts will appear in the near future. Now that work on these substances is being prosecuted on both sides of the Atlantic, it may be expected that great advances in our knowledge of their nature and in the usefulness of their application will be made.—I am, etc.,

F. A. E. CREW.

Animal Breeding Research Department, University of Edinburgh, March 16th.

TYPES OF ACUTE MASTOID INFECTION.

SIR,—To Mr. Wright's instructive list of acute mastoid infections (March 8th, p. 437) I should like to add the form described by Gruber (*Diseases of Ear*, translated by Law and Jewell, 1890, p. 407), and by Lue (*Transactions* of the Ninth International Otological Congress, Boston, 1912, p. 194). Lue calls it "sub-periosteal temporal abscess of otic origin without intra-osseous suppuration." There is extreme displacement of the auricle downwards and forwards, and bulging of the upper wall of the external meatus. Gruber formulates the rule that "abscesses in the neighbourhood of the upper third of the auricle are to be opened from the external auditory canal, unless any special circumstances should indicate another situation." The observance of this rule may, as Lue says, spare our patients the useless opening of the bone. I have had at least two cases which bore out the conclusions arrived at by Gruber.—I am, etc.,

London, W.1, March 16th. JAMES DUNDAS-GRANT.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—In the *Journal* of March 1st Dr. W. Arnott Dickson, in his excellent address on the diagnosis and treatment of pulmonary tuberculosis, deals very drastically with the Pirquet tuberculin skin reaction. After a sufficient trial of the test, both in children and in adults, he declares that it is "for diagnostic purposes of no value whatever. . . . In known cases of tuberculosis the test was negative in almost as many cases as it was positive." In contrast to this opinion and experience, he refers to some remarks of mine on the subject in the *Journal* of October 12th, 1929, as "a panegyric of the test" qualified by my admission that it "may . . . fail to appear in an actually tuberculous condition."

This airy phrase, and the seriously incomplete quotation of my words (the two words "although rarely" being omitted), give a very misleading impression of what I said.

In the article referred to I was dealing not with pulmonary tuberculosis, but with all forms of the disease in childhood. The gist of a short paragraph dealing with the matter was that it was an extremely delicate test of tuberculous infection, and if properly performed seldom failed even in advanced and acute disease; that in the first two years of life it had great diagnostic value; that in later childhood a positive test only permitted a "tuberculous" interpretation of the evidence, and had not even corroborative value, but that a negative result of the test was of great value at all times in excluding tuberculous disease.

Dr. Dickson and I are probably agreed that a positive reaction means the existence of a focus of tubercle; but that it gives no information as to the extent, activity, and site of that focus, and has therefore a very limited diagnostic value. But we differ greatly in regard to our experience of failure of the test in what he calls "known cases of tuberculous disease"; in such cases he has had many failures, while I have had very few. The principal value of the test is when, having been performed by a correct technique, it is negative; in such cases tuberculous disease can be excluded.—I am, etc.,

Edinburgh, March 7th. CHARLES MCNEIL.

SIR,—In his interesting paper on the diagnosis and treatment of pulmonary tuberculosis, Dr. Arnott Dickson makes some remarks on diagnostic tests, but, curiously enough, he entirely omits any mention of the only tuberculin test which is now commonly held to have any real diagnostic value—namely, the subcutaneous test.

There is no need to enlarge on the futility of the von Pirquet test in any but infants, for this has long since been established, but it has always been an enigma to me why more use is not made of the subcutaneous test in adults or adolescents. Clive Riviere, writing in 1921, in the third edition of *The Early Diagnosis of Tubercle*, states—speaking of the practitioner: "At the outset he must know that the value of any particular tuberculin test is no longer a matter of opinion, but one of ascertained fact. For an enormous mass of material, gathered from all quarters, is now to hand as a standard, the results of every form of test on every form of tuberculosis, and also on the healthy. Such material, when sifted, admits, in most cases, of but one interpretation. It is, therefore, no longer open to any individual to say, 'I believe in this or that tuberculin test in diagnosis,' unless his belief is supported by these incontrovertible facts. . . . No one, to take a concrete example, can in these days rely on a positive von Pirquet reaction as evidence of active tuberculosis in the adult and retain our respect for his intelligence; a vast mountain of fact is against him."

But the subcutaneous test stands on other ground. Though of small value on the positive side, it is of the greatest value on the negative side; and, after all, in the really doubtful case, what greater satisfaction can there be than to be able to send away the patient with the assurance that he has no active tuberculosis? No doubt a large proportion of cases will give a positive reaction, leaving the diagnosis still in question; but the small proportion of negative results is enough to justify the use of the test. To quote Riviere again: "A negative result furnishes strong evidence against the presence of active disease"; and again, "There is general agreement on the value of a negative subcutaneous test in suspected early or slight disease."

It is, of course, understood that the subcutaneous test should only be undertaken in the absence of contraindications. Koch's rule was that "Patients with temperatures over 37° C. (98.6° F.) in the axilla are unsuitable for the diagnostic administration of tuberculin, and should under no circumstances be submitted to the tuberculin test." Riviere says: "A careful three- or four-hourly record [of temperature] must be kept for some days before the injection, which should be abandoned if the temperature rises above 99.2° F. in the mouth, or 99.8° F. in the rectum"; but even this is *running* the risk of a dangerous focal reaction. The test is therefore strictly limited in its applicability.

With reference to Dr. Dickson's remarks on the treatment of tuberculous empyema, I should be interested to hear whether surgeons who specialize in thoracic surgery are agreed that it is good treatment to withdraw the purulent effusion and wash out the pleural cavity with weak iodine solution as advocated by Dr. Dickson, the lung afterwards being kept collapsed by air. I have no experience of such cases, but should imagine that the proceeding would not always be easy to carry out, nor without danger. But, of course, the condition is desperate.—I am, etc.,

London, S.W.5, March 3rd. E. WEATHERHEAD, M.B.

SIR,—Dr. Arnott Dickson in his lecture (*Journal*, March 1st, p. 379) states that "ultra-violet light, the panacea of the moment, is of very problematical value in lung tubercle." It would be of great value and interest to know whether Dr. Dickson bases this opinion on his own observations. At the second international conference on light and heat in medicine and surgery I gave an analysis of 123 cases of chronic pulmonary tuberculosis treated with ultra-violet light. Some of these had done extremely well. Wood published a series of cases in the *Lancet* (August, 1926), and a number of authors, including Lo Grasso, have claimed good results in America. Does Dr. Dickson's experience not bear out these claims?—I am, etc.,

London, W.1, March 4th. M. WEINBERG.

THE ETIOLOGY OF DENTAL CARIES.

SIR,—No excuse surely is necessary for the intrusion of a practising laryngologist into a correspondence upon dental caries. If, however, any be called for in my own case, it is to be found in the fact that I have been looking into the mouths of a whole generation of the English race—that race with the unhappy distinction of having the worst teeth on earth—and that I find those teeth to be little, if any, less carious to-day than they were when I began my long-continued inspection thirty years ago. True, they are better cared for nowadays by the dentist, as the fillings and the gaps in the ranks show; but the disease itself, although its havoc is now being restrained, does not seem to be much, if any, less prevalent than it used to be. And this is surely a disturbing and regrettable fact.

Those of us who, for many years past, have been following with interest Dr. J. Sim Wallace's patient and painstaking work are well aware of his claim that, if certain dietetic rules were generally observed, dental caries would be greatly reduced, if not, indeed, entirely abolished. The matter, of course, is one pertaining to the public health, and so I am impelled to ask why the public health authorities of Britain have been so hesitant in undertaking the instruction of the people upon this important detail. I understand that one or two experiments in this direction have already been made by certain medical officers of health, and, it is said, with conspicuous success. But, in spite of this encouraging result, no general movement upon national lines has, so far as I know, been made to inculcate Sim Wallace's teaching. Why is this? Have his experiments not been confirmed? Have his observations been found to be inaccurate? Have his doctrines been proved to be false?

These are not idle questions. They are questions the answers to which are of importance to every man and woman in Britain. There must be some reason, one would think, why our leading authorities have hitherto refrained from broadcasting this teaching on the prophylaxis of dental caries, and I, and I am sure many other medical practitioners, would like to know what that reason can be.—I am, etc.,

London, W.1, March 4th. DAN MCKENZIE.

DENTAL INDICATIONS OF PELVIC DEFORMITY.

SIR,—I recently published a paper (*Proceedings of the Royal Society of Medicine*, December, 1929) showing how the shape of the maternal pelvis influences both the maternal and infant mortality. I suggested, by comparison with races and peoples untouched by civilization, that the inlet of the female pelvis should be round, to match the part of the child's head, which engages in it (the sub-occipito-bregmatic circumference or halo measure), and that the oval or kidney-shaped inlet such as our textbooks depict

is always the result of rickety or osteomalacic change, due in the first place to defective diet, and then to confinement indoors with long sitting on the softened pelvis. The oval shape I believe to be pathological; it is caused by the falling forward of the sacrum between the iliac bones; the position which normally corrects this—namely, the squatting and the use of the sacro-iliac joints—has been abandoned by civilized man.

I want to go a step further. The teeth, I think, are the first to indicate the light and vitamin D deficiency; then the pelvis is affected, and last of all occurs the obvious rickety deformity seen in the legs, so that when these signs of rickets appear both the pelvis and teeth have been already damaged. On consulting the Carnegie Trust Report for 1917 I see that in districts where an open-air, natural life is lived (Shetland, Skye) the teeth are perfect, there is no rickets, and the women have easy labours, so that neither midwife or doctor is needed. On the other hand, where an indoor life begins, the town van calls with civilized food—white bread, jam, and tea—the change from the old conditions is marked, the teeth are bad, rickets is prevalent, women begin to die in childbirth, and the midwife, the doctor, and the maternity hospital become an urgent necessity. This is the case in some Highland districts, Harris, Argyle, then Glasgow.

What I am desirous of obtaining is further evidence of the interrelation of perfect teeth, the absence of rickets, easy and safe childbirth, and evidence of the converse—a high rate of dental caries and of rickets, with difficult and dangerous maternity.

I should appreciate notification of any facts bearing on this problem, and any *x*-ray studies of the pelvic inlet in the case of easy labours, showing that the sacrum does not encroach on the inlet in such people. Our canal-boat women would probably furnish the kind of evidence I want, with their open-air life and simple food. They certainly bear large families of twelve and fourteen children; they are healthy, and cannot engage either nurse or doctor at their confinements, since they are always on the move.—I am, etc.,

London, W., March 8th. KATHLEEN VAUGHAN, M.B.Lond.

RETENTION OF URINE.

SIR,—I was away at the time, and I am afraid that I missed the letter in your issue of February 15th (p. 309) written by Mr. Kenneth Walker. It is with great trepidation that I venture to reply to any criticism from one whose opinion I hold in the greatest respect, but I feel that Mr. Kenneth Walker has not quite appreciated that I used the words "a fine needle," whereas he refers to a "trocar." The withdrawal of a cannula might quite well lead to leakage into the cellular tissue of the space of Retzius; but this is not likely to follow the withdrawal of a fine needle unless the bladder be as thin as parchment, which is surely an uncommon state of affairs in cases of stricture, the bladder wall usually being thicker than normal in these cases due to hypertrophy.—I am, etc.,

Hove, March 7th. H. J. MCCURRICH.

APPLICATION OF GAMMA RAYS TO DEEP-SEATED TUMOURS.

SIR,—Professor J. Joly, in the *British Medical Journal* of March 8th (p. 466), describes a method which was used several years ago by the late Dr. Robert Knox at the Cancer Hospital, Fulham Road, London, for the application of *x* rays to a deep-seated tumour. He not only devised a method for the rotation of the source of rays, but also one in which the tube was stationary and the patient rotated with the couch. In some respects the method has not the value of that of several ports of entry.—I am, etc.,

Leeds, March 10th. LEO A. ROWDEN.

SIR,—When I was honorary assistant in the *x*-ray department at the Cancer Hospital, London, an apparatus similar to that described by Professor Joly was constructed in 1913 or 1914, under the supervision of the late Dr. Robert Knox. The patient was placed upon a couch in the horizontal position, and, the *x*-ray tube being fixed to the periphery of a wheel above the couch, the beam of rays was so directed that the central ray was focused upon the deep-seated tumour. The wheel, with the attached *x*-ray tube, was then rotated by means of a small electric motor, describing a continuous circle, the central ray thus taking a conical path. The skin surface of the patient was protected in such a way that entry of the rays was only permitted in a narrow circular path. The method was given an extensive trial and it worked successfully, but the therapeutic results were not considered to be in any way better than when irradiation through multiple ports in the ordinary manner was employed. The apparatus was cumbersome; it was difficult to calculate accurately the dose delivered, and the revolving tube was a source of annoyance to the patient.—I am, etc.,

London, W., March 7th. CHRISTOPHER KEMPSTER.

ANAESTHETICS IN MIDWIFERY.

SIR,—May I be allowed to contribute to your correspondence on this subject?

I think few people would deny that, whatever the reason, very few poor mothers do actually enjoy "the blessings of an anaesthetic." Why is this? Undoubtedly the question of expense *is* of the first importance. At one institution, renowned over the world for its midwifery, cases of normal labour are given chloroform at the end of the second stage only if they have come in as "staff" cases of the resident doctors and paid a fee. Would not a contribution from the Baldwin-Dawson fund increase the numbers enjoying "the blessings of an anaesthetic" there?

I venture to think that if, for example, the local authority paid even a guinea to practitioners for each anaesthetic given during labour, the number given would tremendously increase: at present, however, midwifery is generally poorly paid. Even in middle-class practice not a few cases of normal labour are delivered without any attempt being made to mitigate their pains; and in one town, not a hundred miles from here, I am told that it is a common practice to apply the forceps without an anaesthetic.

My experience as a resident obstetric officer was very similar to Dr. Bodman's. By using students for the purpose as well as myself, and continually insisting on the necessity of an anaesthetic, I managed to have about half the normal cases anaesthetized *à la reine* over a period of several months. But the administration of an anaesthetic throughout the second stage takes time, and often interferes with the anaesthetist's other work, his sleep, or his meals, so that unless he is almost continually spurred from within or without to do it, it is not done. I am quite sure that unless the resident staffs of maternity hospitals are considerably increased it will not be possible to give every patient an anaesthetic. Resident anaesthetists, with no other duties, should be appointed. This can be brought about by means of the Baldwin-Dawson fund.

I am also convinced, largely for the same reasons as Dr. Bodman, that anaesthesia is desirable in nearly every case; and I happen to be one of those apparently unusual people who cannot bear a woman crying out in labour without wishing to relieve her pain.

Dr. Rowland alludes to "misdirected enthusiasm in matters medical," and Dr. Hamilton to the "absurdity" of the appeal. Should it not be the natural aim of every husband to ensure that his wife goes through labour with the minimum amount of pain? Not a subject, this, merely "for the classroom or the medical press."—I am, etc.,

Leeds, March 8th. A. M. CLAYE.

SIR,—I should be grateful if you will allow me, as a layman, to reply to the letter of Dr. F. M. Rowland in the *Journal* of March 1st (p. 414), presumably inspired by Mrs. Stanley Baldwin's appeal to provide anaesthetics for women in childbirth. It will certainly be surprising to Mrs. Baldwin, and to many others, to learn from Dr. Rowland that anaesthetics are invariably available under the existing machinery of the Midwives Act for the poorest mother, either in her own home or in an institution. If this were the case the appeal would undoubtedly be un-

necessary and the funds already subscribed would have been given under a misapprehension. Unfortunately anaesthetics are not available in the cases mentioned by Dr. Rowland. The majority of the poor are not attended by a doctor but by a midwife, and it is obviously impossible for the midwife, when dealing with a case single-handed, to administer the anaesthetic and effect the delivery simultaneously. In those comparatively rare cases where a doctor is called in, it is usually due to a complication where the use of an anaesthetic is imperative.

So far as maternity hospitals and institutions generally are concerned, it is true that anaesthetics are used in connexion with certain deliveries, but replies obtained from the majority of these institutions show definitely that the giving of the anaesthetic for normal deliveries—and this is the basis of Mrs. Baldwin's appeal—is the exception rather than the rule. The reason is practically always the same—institutions and hospitals have not the funds available for paying the salary of a resident anaesthetist or anaesthetists. The general public does not realize that in large maternity hospitals, such as Queen Charlotte's for instance, babies are born at all hours of the day and night, and that consequently one resident anaesthetist is unable to cope with the work. Two at least are essential, and it is for this reason that one may be sure of hearty public support, and institutional approval, of Mrs. Baldwin's campaign.—I am, etc.,

DIGBY C. H. D'AVIGDOR.

Queen Charlotte's Maternity Hospital, N.W.1,
March 4th.

ANAESTHESIA FOR SHORT OPERATIONS.

SIR,—I feel bound to reply to the letter of Mr. Herbert H. Brown in the *Journal* of February 22nd (p. 362); he extols the use of *light* chloroform anaesthesia for minor operations.

May I point out that all the work of Levy and others on chloroform anaesthesia indicates that fatalities are most likely to occur by the secretion of adrenaline due to sensory stimulation under light chloroform anaesthesia. Moreover, the chloroform fatalities recorded show that a high percentage occurred during induction, or under light anaesthesia for minor operations.

The last occurrence of this kind which I noticed in the newspapers was the case of a labourer, aged 29, who was given chloroform for tooth extraction. It is chiefly those in the prime of life and of robust health who are killed by this drug, and I do not believe that any care, skill, or forethought can prevent the accident in those who have what is perhaps only an idiosyncrasy to chloroform. It is possible to go through life and encounter none of these patients, but the truly expert anaesthetist will not take the risk of meeting them with chloroform, because he knows that, should he be unfortunate enough to do so, skill would be useless; all he could do would be to swear before the coroner to the absolute purity of his chloroform, the exercise of his unavailing care, and the futility of his skill.

Dr. Brown might retort that he has referred to analgesia, not anaesthesia, but reflexes still exist during light anaesthesia. They certainly exist and are often exaggerated during the analgesic state, and it is possible also that these fatalities depend upon the existence of the vago-inhibitory reflex. Since ethyl chloride, gas, and ether are available it seems a great pity to trust anyone's life to luck.—I am, etc.,

F. FISHER WADDY.

Northampton, March 5th.

THE TEACHING OF ANATOMY.

SIR,—I was much interested to read in the *Journal* of March 1st (p. 373) the report of the Arris and Gale lecture on anatomy, by my old and valued friend Mr. McAdam Eccles. I sincerely hope that his lecture will be followed by an improvement in the teaching of this subject. May I add some remarks of my own, the views of a general practitioner?

Wherever possible models should be used, instead of diagrams, and models that can be handled. Some years ago I made several models for the School of Anatomy in Uganda, Central Africa (where, of course, dissecting is a difficulty), and among them a complete model of the body, except that the limbs terminated at mid-arm and mid-thigh. A skeleton was taken as a base, and the bones covered with linen; the muscles were made of felt, padded where necessary, the arteries, veins, and nerves of coloured silk of appropriate thickness, and the membranes of muslin and chiffon. With this model the position of any organ, vessel, muscle, or nerve could be seen and felt.

The more superficial muscles of the lower arm and lower limb were shown in plaster casts, corrected and painted. I know of no more useful way for a student to read up the anatomy he has learnt than by buying such casts, which are cheap, correcting their anatomy with a knife or bradawl, and painting the corrected model.

I also made a model of the nervous system, using twelve sections to show the "cord," from the crura to the lumbar region, with tin cerebral hemispheres. Silk cords passed from painted representations of parts of the body to the cerebral cortex via the sections. This enabled students to see the nerves in continuity from their origin to their termination; and the openings for the nerves being large allowed additions or corrections to be made at any time.

Another useful method is to practise drawing the skeleton to scale (no book gives it), and to learn the horizontal relationship of all organs and bones to the vertebral bodies, and therefore to each other. Once that has been done the different structures are seen by the scientific eye, without effort, whenever a patient is approached.

Mr. Eccles wants us to learn the movements of joints, and gives an excellent instance. But at present we cannot say of *any* joint that we are sure what muscles move it, how they move it, and which of them do not move it at certain angles. Lastly, and most important, the student should be taught to recognize bones and joints as well as other structures by their feel, in the living body. Every time he has a warm bath let him finger bones and joints until he can make out the lie and movement of every prominence and ridge and articular edge with his eyes shut. Far more useful than visible surface anatomy is "tactile anatomy," but such a book has yet to be written.—I am, etc.,

S. T. PRUEN, M.D.

Cheltenham, March 4th.

ANTIMALARIAL MEASURES.

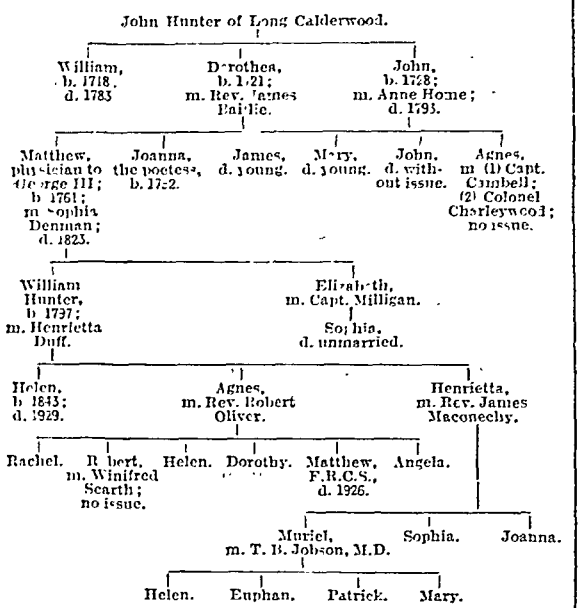
SIR,—In view of recent correspondence about the advantages or otherwise of screening buildings in malarial countries the following facts may be of interest. Until the year 1925 no attempt had been made to introduce screening of barracks into India. The Indian Government considered it too expensive, and the climate-wise said it was impracticable because it would make the barracks so hot that the inhabitants would die of heat exhaustion. In the Punjab two military stations continued year after year to record a high incidence of malaria in spite of the yearly antimalarial campaign of drainage, oiling, quinine prophylaxis, etc. One station was Miam Mir, renamed Lahore Cantonments to dissociate it from its evil reputation as a pestilential spot. The other station was Amritsar. Both places in 1925 had a very high malarial incidence. In 1926 the infantry barracks at Lahore Cantonments were mosquito-proofed with a 1/16-inch mesh rustproof gauze wire netting, fitted with corridor swing doors, and rendered fool-proof and mosquito-proof. The same thing was done at Amritsar. The soldiers occupying these barracks found them cooler than the non-screened barracks, and blessed the mosquito-proofing, as it did away with the mosquito-bar net for each individual bed cot, its stuffiness, and the time and trouble spent on putting it up, taking it down, and keeping it in repair. Another advantage was that the electric punkah could swing close down over the sleepers, and they derived the full benefit of the current of air. The malarial incidence for Lahore and Amritsar dropped 50 per cent. in 1927 and 1928. I am told the improvement still continues, and I also hear that all new military buildings in malarial districts to be built in India will be screened.—I am, etc.,

COLONEL LATE R.A.M.C.

February 25th.

THE HUNTER FAMILY.

SIR,—In your issue of February 22nd, in a report of the Hunterian Oration by Professor Hey Groves, the following statement is made: "We have also to deplore the loss of the last known descendant of the Hunter family in the person of Miss Helen Hunter-Baillie, the great-grand-niece of John Hunter, who died in February, 1929, at the age of 86." May I point out that this is incorrect? This great lady was the last of her generation—the third generation—but the children of her two married sisters are still alive and are great-great-grand-nieces of John Hunter. These are the children of Mrs. Oliver, of whom four are alive, and the three daughters of Mrs. Maconechy. These are the fourth generation. The four children of Miss Muriel Maconechy, my wife, are the sole representatives of the fifth generation.



The accompanying genealogical tree makes this descent more clear than it can be expressed in writing.—I am, etc.,

Guildford, March 1st. T. B. JOBSON, M.D.

THE RED CROSS CLINIC FOR RHEUMATISM.

SIR,—May I make known through your columns that the Red Cross Society's clinic for the treatment of rheumatism, which H.M. the Queen opened on March 4th, will be available for treatment on and after March 17th, and that applications for appointments may now be made either by letter or telephone. Between now and the opening date representatives of approved and friendly societies, trade unions, and others interested in the treatment of rheumatism are invited to visit the clinic and inspect the building and its equipment.

As the medical press all along has taken so great an interest in the progress of the clinic from the days when it was a scheme on paper only right up to the present time, I am desired by the committee to ask you to give them the opportunity of acknowledging with gratitude the co-operation the British Red Cross Society has received from so many sources in organizing, furnishing, and equipping the clinic. Particularly I would mention the authorities of the spa and of the Royal Mineral Water Hospital at Bath, and of the Devonshire Hospital, Buxton, in the training of our staff, and the very great help accorded to us by the spas and by the medical profession, all of whom regard the clinic as a step, and a big step, towards a wider appreciation among the general public of the value of physiotherapy in the treatment of rheumatic diseases.—I am, etc.,

London, W., March 7th. F. C. DAVIES, Secretary.

Obituary.

MAURICE RICHARD JOSEPH HAYES, F.R.C.S.I.,

Professor of Materia Medica and Therapeutics, University College, Dublin; Consulting Radiologist, National Maternity Hospital, Dublin.

WITH much regret we announce the death of Professor M. R. J. Hayes, F.R.C.S.I., which took place at his home in Monkstown, co. Dublin, on March 2nd.

Maurice Richard Joseph Hayes was the son of Thomas Hayes of Oola, co. Limerick, and was born in 1878. He received his early education from the Jesuits at Mungret College, Dublin, and was an ecclesiastical student for some years. He then entered the Catholic University Medical School, Dublin, and obtained the diplomas L.R.C.S.I., L.R.C.P.I., and L.M. in 1906; two years later he became a Fellow of the Royal College of Surgeons in Ireland. He was also a Fellow of the Royal Academy of Medicine in Ireland. In 1907 he was appointed radiologist to the Mater Misericordiae Hospital, Dublin, but resigned after some time, and entered that private practice which was to become so large in recent years, in consequence of his widespread repute as a radiologist and a recognized authority on deep ray (Erlangen) treatment. In 1917 he received a commission as captain in the Royal Army Medical Corps, and, later, on the establishment of the Free State, he was appointed Major-General, and later Director-General of the Irish Free State Army Medical Corps, rendering great service in the organization of that branch during those troubled years.



As a radiologist his opinion was highly valued, and he made it a practice to keep abreast with the latest advances in that branch of science. He attended congresses and conferences all over Europe, and was a well-known and popular speaker at many of these functions. In 1928 he was appointed by the Minister for Local Government and Public Health to represent the Free State at the International Convention on Cancer in London, and last year he attended the International Congress on Medicine at Cairo. He frequently contributed to debates on his own subject, and wrote many valuable papers to medical journals. He spoke at the last meeting of the Dublin University Biological Society. Throughout his whole medical career he took a very active part in medical politics. During the National Health Insurance fight he acted as medical secretary of the Conjoint and Irish Medical Committees until the appointment of the Irish Medical Secretary of the Association in 1914. He was one of the most active members and supporters of the British Medical Association in Ireland. He was vice-president of the Leinster Branch, 1924–28; president, July, 1928, to April, 1929; member of the Leinster Branch Council, 1918–29; honorary secretary of the Dublin Division, 1914–23; and member of the Dublin Division Executive Committee, 1918–29. He was honorary secretary of the Section of Electro-therapeutics and Radiology at the Annual Meeting of the British Medical Association in Aberdeen in 1914, and vice-president of the Section of Radiology at the Annual Meeting in Edinburgh in 1927. He was elected a direct representative on the Free State Medical Council in August, 1927.

Professor Hayes had been ill for a period of about three or four weeks. At first his ailment appeared to be influenza, but subsequently it took a septic turn and affected his heart. His health had been undermined by his continuous x-ray work, and he himself believed that being so constantly in the atmosphere of x rays his heart must suffer, no matter what precautions were taken. He married in 1926 Agnes, daughter of Mr. Owen Walsh, of Ninch Park, Laytown, co. Meath, who, with two sons and two daughters, survives him.

[The photograph reproduced is by Lafayette, Dublin.]

H. STANSFIELD COLLIER, F.R.C.S.,

Formerly Surgeon to St. Mary's Hospital and the Hospital for Sick Children, Great Ormond Street.

HORACE STANSFIELD COLLIER, who died on February 26th, will be remembered with affection and gratitude by many of his contemporaries at St. Mary's Hospital and at the Hospital for Sick Children, Great Ormond Street. He was a student of St. Mary's Hospital, and before qualifying in 1888 decided upon surgery for his future career. The enthusiasm and energy displayed in his work were remarkable, and it is feared were the cause of his early breakdown in health at a time when he had risen to a high position in the surgical world of this country. He was demonstrator of anatomy at St. Mary's Hospital from 1894 to 1898, and surgical tutor from 1897 to 1902. In 1897 he was elected to the staff of St. Mary's Hospital as assistant surgeon, and shortly after this was appointed to the surgical staff of the Great Ormond Street Hospital. He did a colossal amount of surgery during the period 1897–1911, and completely overtaxed a constitution that was none too strong—his health giving way in 1911, which necessitated his retirement from hospital practice.

Stansfield Collier was a man of most lovable disposition and attractive personality. He gathered round him a host of friends among his colleagues, students, and the practitioners with whom he became associated. His generous disposition always made him thoughtful of the future careers of those junior to him, whether in surgery, medicine, or any of their branches, and he spared no effort to help and encourage them in their early struggles. There are many occupying high positions in the medical profession today whose successful careers were largely due to the helping hand extended to them by Stansfield Collier. His career as a surgeon was meteoric. The brilliancy of his diagnosis and operative skill soon made him known far outside the confines of the hospitals with which he was associated. He speedily acquired a very large practice and was in great demand all over England. He was a man of great originality, both in operative technique and in the scientific after-treatment of his cases. He spared no effort, however desperate the situation might be, and he never gave up hope, so that on many occasions most remarkable recoveries resulted in apparently hopeless cases. One example may be mentioned. A gymnastic instructor in the army fell in the course of his exercises and fractured the sixth and seventh cervical vertebrae. He lay completely paralysed for some months. Collier performed the operation of laminectomy, removing the broken fragments of bone pressing on the cord. This patient made a complete recovery and afterwards became the faithful chauffeur to his surgeon until his retirement from practice.

Stansfield Collier was a brilliant and attractive teacher, and was held in the highest esteem by the large number of students who attended his lectures and tutorial classes in surgery. He wrote many original articles, which appeared in the medical journals.

W. H. WILLCOX.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on March 8th the following medical degrees were conferred:

M.B., B.CHIR.—C. L. Owen, J. R. S. Webb, C. G. Windsor.
M.B.—G. W. Pickering.
B.CHIR.—C. F. Blockington.

UNIVERSITY OF LONDON.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

Division of Tropical Medicine and Hygiene.

THE following passed the examination at the termination of the eighty-seventh term (October, 1929-February, 1930):

*W. C. Davidson (Duncan medal), *C. J. Hackett, *N. M. MacLennan, *J. T. Sorley, *J. P. Strahan, W. K. Stratman-Thomas, F. Adam, C. R. Aggie, R. C. Affleck, J. J. Buick, R. C. Burgess, A. D. Cust, J. Czarkowska, R. M. Dowdeswell, E. Egan, A. P. Farmer, A. M. Fratel, P. V. Gharpure, F. W. Gilbert, D. E. Gowenlock, A. B. Grey, D. B. L. Harris, C. G. Hewer, W. J. Hutchinson, P. D. Johnson, G. Kinneard, W. H. Kneedler, S. L. Kocher, B. Krishna, W. R. Little, N. N. Lowther, A. F. Mackay, E. K. Malone, W. A. Mirza, Z. Mitersteln, G. M. C. Powell, W. Scott, S. H. Swift, W. H. Tayne, G. E. Tilsley, E. A. Trim, L. E. Vine, B. E. Washburn, K. L. Wig, C. T. Williams, F. Williams.

* With distinction.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week discussed unemployment, fiscal policy, and various Supplementary Estimates. On March 11th, in committee on the Coal Mines Bill, the Government was defeated by 274 votes to 282. Mr. MacDonald announced that consideration of the bill would continue. No dissolution of Parliament is contemplated.

The Parliamentary Medical Committee met on March 11th, Dr. Salter presiding. It accepted an invitation by the recently formed Scientific Section of Parliament, of which Lord Rayleigh is chairman and Major Church secretary, for a joint meeting to discuss the disposal of refuse and sewage. It also invited the Scientific Section to attend an address on medical science and industry, to be delivered by a spokesman from the London School of Hygiene and Tropical Medicine.

At the same meeting the Parliamentary Medical Committee was addressed by Sir Malcolm Delevingne on control of the narcotic drug traffic by the League of Nations. He reviewed the opium traffic in China, which, with the breakdown of the Government, had much increased, and was encouraged by the military commanders. He also surveyed the traffic in refined derivatives in Europe and America, commenting on the low proportion of addicts in the United Kingdom. He said this country was interpreting the law in its spirit, whereas certain Continental countries followed the letter. The League of Nations was recommending a model administrative code to signatories of the Opium Convention.

Mental Treatment Bill.

COMMITTEE STAGE CONTINUED.

The Mental Treatment Bill was further considered by a Standing Committee of the House of Commons on March 6th. The committee resumed discussion of Clause 2, which provides for the notice of the reception, death, or departure of voluntary boarders, and makes provisions as to boarders who become incapable of volition. On the motion of Mr. ARTHUR GREENWOOD Subsection 3 was amended so as to substitute another form of words for "incapable of volition." The Minister said that when his amendment was made the subsection would read:

"If any person received as aforesaid becomes at any time incapable of expressing himself as willing or unwilling to continue to receive treatment, he shall not thereafter be retained as a voluntary patient for a longer period than one month, and shall, if he has not been previously discharged, be discharged on the expiration of twenty-eight days from the date on which he became incapable of so expressing himself, unless in the meantime he has again become capable of so expressing himself or steps have been taken to deal with him either under the principal Act as a person of unsound mind or under Section 5 of this Act as a person who is likely to benefit by temporary treatment."

The Minister said the new words "expressing himself as willing or unwilling to continue to receive treatment" had been carefully considered in the light both of the medical and of the legal issues involved, and the term "incapable of volition" would disappear from the bill entirely. Certain other amendments would have to be made in later clauses of the bill.

Sir BOYD MERRIMAN withdrew the amendment he had moved at the previous sitting to cover the same point, and the committee agreed to Mr. Greenwood's amendment, although Mr. Charles Williams added a warning that it might have to be reconsidered on report.

Dr. FREMANTLE moved to amend Subsection 3 further by substituting "six months" for "one month" as the period during which a voluntary patient might be retained after becoming incapable of expressing willingness to continue treatment. He said medical experience did not hesitate to say that one month was not long enough to give the patient in which to change his condition without having to be certified or discharged. This was the definite experience of the medical superintendents and of the London County Council. In its Maudsley Hospital that Council had unique experience in treating cases which were medically described as "ins and outs." These cases were very common, and under suitable conditions, such as those at Maudsley Hospital, they recovered, but very seldom did so within a month. When a patient was very melancholic and submitted to voluntary treatment, but after a short time lost volition, such a patient required three months or more to recover, and the general experience of Maudsley Hospital was that six months was required. Parliament wished to prevent the certifying as a lunatic of a woman who had an attack of mental disorder during confinement or afterwards, and who, coming in as a voluntary boarder, lost volition but recovered it after three months. Under the bill as it stood she would be treated under the Lunacy Act.

Mr. GREENWOOD said the committee must remember that it was dealing with people who of their own free will went into an institution as voluntary patients. It would be very serious to

suggest that if a person who thought he was going in for a fortnight or three weeks lost control of himself he should be incarcerated for six months.

Dr. FREMANTLE protested against the word "incarcerated." He said the committee was endeavouring to get these patients treated with the best hospital treatment.

Mr. GREENWOOD said that the detention of a person for a long period of time, if not anticipated when that person went in as a voluntary boarder, was next door to incarceration. He denied Dr. Fremantle's suggestion that at the end of a month the patient who had lost volition would immediately be certified as a lunatic. The voluntary boarder would be transferred to the category of persons who could not look after themselves, but who could recover under treatment, and for whom, under Clause 5, treatment would be available without certification.

Mr. HASTINGS said that patients who, after being admitted voluntarily to hospital became definitely, though temporarily, insane, but were clearly able to express themselves as unwilling to receive treatment, could not come under Clause 5. As the bill stood, with the new wording which the Minister had put into it, temporarily insane patients who desired to get out would have to be certified after a month.

Sir BOYD MERRIMAN said that a refractory patient who refused voluntarily to submit to treatment was entitled, under Clause 1, to walk out of the hospital unless steps were taken to keep him there. If he was incapable of expressing willingness or unwillingness he could be dealt with under Clause 5, but if he definitely refused he must be certified. He agreed with the Minister that, to avoid raising the question of the liberty of the subject, the period must be one month and not six months.

Dr. FREMANTLE asked if the Minister's interpretation of the bill was that when a person became incapable of looking after himself he could be kept one month as a voluntary boarder even though he had lost volition, and could then be treated under Clause 5 as a temporary patient for another six months. Did the Minister mean that the patient, having lost volition, would be allowed seven months before he was finally certified?

Mr. GREENWOOD: And possibly a period of a second six months after that.

Dr. FREMANTLE then withdrew his amendment, and moved as an alternative:

"Or (if received at an institution or hospital for voluntary boarders only) for a longer period than six months."

He said this was the next best proposal advanced by the London County Council as the result of experience in the Maudsley Hospital, which was run on the highest plane of medical therapeutics.

Mr. GREENWOOD could not accept the amendment, as he saw no reason for giving special institutions power to detain persons for another six months.

The amendment was then negatived, and further drafting amendments were made to carry out the intention of the Minister in Subsection 3, Clause 2.

Dr. FREMANTLE moved to add at the end of Subsection 3 the words:

"Provided that any written declaration by him, if he is over 16 years of age when he was capable of volition, desiring that in the event of his losing volition his status should for a period of six months remain unaltered, be legal and binding on all concerned."

He said he was trying to state the case for those with most experience—the Royal Medico-Psychological Association.

Mr. GREENWOOD said that while this amendment might appeal to many medical men it was very serious to propose that a person should sign away his liberty beforehand. When the stage arrived at which the patient was incapable of looking after himself the question should be taken on its merits without any previous undertaking having been given. In any event, such a new method of dealing with a voluntary patient would need more consideration than could be given it in a small amendment.

Dr. FREMANTLE said the interests of those who had asked him to move the amendment were to get the bill through. He agreed that the amendment proposed was a big one, and he hoped it would be raised some years hence in an amending bill. In the meantime he withdrew it.

Clause 2, Subsection 4, deals with the case of a patient under 16 who ceases to have any parent or guardian, or whose parents or guardians do not perform their duty towards him. The subsection provides that the person in charge shall report the circumstances of the case to the Board of Control, which shall give such directions as it thinks fit. Dr. VERNON DAVIES moved to add words to make this section operative in cases where the parents or guardians "fail to remove such person from the institution, hospital, home, or place when so requested in writing by the person in charge."

Mr. GREENWOOD said the object of the amendment was covered by the word "duty," but if the proposed words were inserted it would seem to be the main duty of a guardian to take his ward away from an institution when it was convenient for the person in charge rather than when it was for the real convenience of the patient.

Dr. VERNON DAVIES withdrew his amendment.

Mr. KINLEY moved in the same subsection to provide that the Board of Control should take action "in conjunction with the local authority for the area."

Mr. GREENWOOD said the Board of Control was an independent safeguard of persons who were in these institutions. If the Board was compelled to act in agreement with local authorities that would immediately destroy one of its important functions. If it differed from the local authority there would be no machinery for settling what was to happen to the patient.

Dr. FREMANTLE said the Board of Control would wish to be in touch with the local authorities and to use their machinery.

Mr. GREENWOOD said the Board already possessed such powers as were needed, and it was not necessary to give them any more.

The amendment was then negatived.

Clause 2, Subsection 5, runs:

"If any person fails to give any notice required to be given by him under this section he shall for each day or part of a day during which the default continues be liable to a penalty not exceeding five pounds."

Mr. KINLEY moved to omit the subsection. He said the committee had agreed on a previous amendment that the limitation of damages was a wrong principle.

Mr. GREENWOOD said that in the previous case the committee had been dealing with damages to persons wrongfully detained. This subsection did not deal with the same kind of offence. It proposed a fine because people were not doing their duty, and if the words were cut out nobody could be punished. He doubted whether, in a case where the Board of Control had not been notified, they would ever be able to recover damages.

Sir BOYD MERRIMAN said there might in common law be an obligation to give notice of death to the Registrar of Births and Deaths, and also, in certain cases, to the coroner, but he did not think there would be, without a penalty, power to enforce notification to the Board of the reception of a patient or of his death. It would be difficult for the Board of Control to prove as an ordinary litigant that it had suffered any damage from non-receipt of such a notice.

Mr. GREENWOOD said penalties were provided under the Lunacy Act for similar failures to carry out duties, but not for this particular case.

Dr. FREMANTLE asked why the imposition of penalties could not be left to the local authorities. They were trusted with minor matters, and it seemed retrogressive to put a penalty in the bill. In some cases the local authority might not consider it necessary to inflict a definite penalty, but would get its way by other means.

Mr. GREENWOOD said the clause did not deal merely with local authorities. Some of the institutions were not under their control. Considering the number of private institutions it was clear that Parliament ought to have some safeguard in the form of a penalty which would keep people up to their responsibilities.

The committee then agreed to Subsection 5 with a drafting amendment to make clear that the obligation to give notice referred to events both under Subsection 1 and Subsection 2.

Clause 3 deals with the visitation of voluntary patients, and provides that any Commissioner may at any time visit such a patient and report to the Board of Control on the case, which may at its discretion order the discharge of the patient, or his treatment as a person of unsound mind under the Lunacy Act, or else as a person incapable of volition and under the present bill.

Mr. RICHARD RUSSELL moved an amendment to provide that any visit by a Commissioner should only be "at the request of any person received as a voluntary patient or under the provisions of any local Act."

Mr. GREENWOOD said the idea that the Board of Control ran about certifying people was without any foundation. For the general protection of persons under the bill it was essential to keep independent power of inspection by the Board.

Admiral BEAMISH thought that it ought to be possible to combine the clause and the amendment so that a Commissioner might at any time visit a patient, and any voluntary patient might request a Commissioner to come and see him. He asked whether the bill permitted the voluntary patient to get in touch with the Commissioners.

Mr. GREENWOOD said that at present any resident in an institution, or his friends or relatives could make representations to the Board of Control, and it was to-day one of the normal functions of the Board to carry out regular systematic inspection of these places. But if every voluntary boarder could demand the presence of a member of the Board of Control there would be an enormous increase in the bureaucracy. They could not give the right to every individual that he should be visited by the Board. The work would be utterly beyond the power of any Board of practicable size.

Sir BOYD MERRIMAN asked whether the clause contained any real safeguard. If there were to be only five Commissioners was there any real probability that these would visit voluntary patients with sufficient frequency to make their visits of real effect?

Mr. GREENWOOD said there were to be five members of the Board, but it was also proposed to have a considerable staff of visiting Commissioners in addition. While the Board of Control would keep in touch by visitation, its primary work would be central administration.

Dr. FREMANTLE said it was true that Clause 11 provided for Commissioners other than the Board of Control. Those who were now being turned off the Board of Control would be free and available to go on visits, but the bill proposed that on their deaths they should only be replaced by assistant commissioners and inspectors. An amendment was needed to Clause 11 to provide that the senior Commissioners not in the Board of Control should be continued in their proper status to carry out the duties of visitation under Clause 3.

Mr. Russell's amendment was then negatived.

Mr. KINLEY moved another amendment to provide that any order by the Board of Control changing the status of a voluntary patient should only be made with the approval of the local authority for the area. He said that the local authority would be a safeguard against the bureaucracy which was centred in London, and would secure that a patient was not spirited away without his medical man or the local medical officer of health having power to say a word in his defence.

Mr. GREENWOOD said the question to be decided was a patient's mental state and whether he was fit to be treated as a voluntary patient. That was an expert question on which the Board of Control, with all the information on the case at its disposal, ought to be capable of making a decision. The last safeguard must be the law courts.

Mr. Kinley's amendment was defeated. Clause 3 was added to the bill, and the committee adjourned until March 11th.

Clause 4 was discussed on March 11th.

Miss LAWRENCE resisted an amendment, moved by Dr. Vernon Davies, to extend to other institutions and to the domiciles of single cases the permission to receive and lodge friends or relatives of voluntary patients, which the clause accords in registered hospitals and licensed houses. Miss Lawrence said the permission was already possessed by licensed houses. Registered hospitals which were not supported by public funds desired the same concession. Public authorities did not, lest half their time should be taken up by refusing applications.

The amendment moved by Dr. Davies was rejected.

Dr. FREMANTLE moved an amendment to provide that, in calculating the number of inmates of a licensed house, relatives should not be reckoned if not occupying accommodation approved by the Board of Control. He did so on behalf of several associations representing those who controlled such houses.

Miss LAWRENCE said the Board had to be strict in such matters. Additional visitors might be accommodated in a villa. The Government wished to leave the licensed houses in cold storage so far as this bill was concerned.

Dr. MORRIS-JONES pointed out that licensed houses were not allowed to increase their beds beyond those authorized in 1890. Consequently the permission to admit relatives would only be used in exceptional cases.

Mr. GREENWOOD contended that if a visitor occupied accommodation not licensed by the Board of Control no question would arise. He was prepared to consider the point of substance, if any, on the report stage.

Dr. FREMANTLE withdrew his amendment and the committee agreed to Clause 4 with drafting amendments.

Clause 5 provides for treatment without certification of persons temporarily incapable of expressing themselves as willing or unwilling to receive such treatment.

Sir BASIL PETO moved that admission to an institution maintained by a local authority should not be to an asylum, mental hospital, registered hospital, or licensed house. This would assure patients that they were not to be spirited away to an asylum and put on the road leading to permanent detention.

Mr. GREENWOOD said between a quarter and a third of the persons now in mental hospitals would, when the bill passed, be treated as temporary patients. Local authorities would not accept the burden of providing new accommodation for them.

Mr. WOMERSLEY said the Association of Municipal Corporations was already of opinion that substantial financial assistance would be required to carry out their obligations under the bill.

Mr. SOMERVILLE HASTINGS suggested that temporary patients would be better treated in the municipal hospitals which would be taken over on April 1st. The Middlesex Hospital received numbers of such patients. It found that many suffered from some physical condition, which required to be treated in a general hospital. To treat these temporary patients in an asylum might have a deleterious effect.

Sir BASIL PETO pressed his amendment. The mere fact of taking people to the vast institutions called mental hospitals was sufficient in most cases to ensure keeping them there for ever.

Mr. GREENWOOD cited the report of a large mental hospital two-thirds of whose admissions were voluntary. He could not agree to divert to mental cases beds in general hospitals, which were needed for general cases, while special provision was available in institutions provided for mental cases. Nor could he agree to separate the medical men treating early cases from other specialists in mental disease. Local authorities already had powers to deal with early cases in special institutions, but to command them to do so would put upon them an impossible burden and bring the bill to nought.

The amendment was defeated and the committee adjourned.

Tuberculin-tested Cows and Cattle Shows.

Mr. GREENWOOD, in a reply to Mr. Christie on February 27th, said he had informed producers of certified and Grade A (T.T.) milk that he could not in future consent to the temporary withdrawal of animals from licensed herds for the purpose of sending them to a show unless the show was restricted to tuberculin-tested cattle. Conditions at shows where both tested and untested animals were housed involved serious risk of infection to the tested animals. He had consulted the Minister of Agriculture before coming to this decision.

At the House of Commons on March 4th, the Conservative Agricultural Committee decided to make representations to the Ministry of Agriculture against this decision. Miss LAWRENCE told Dr. Vernon Davies, on March 5th, that it was possible, by exercising sufficient care, to obtain clean milk from cows living in defective cowsheds, but there was more difficulty in producing clean milk in unsatisfactory surroundings, and for practical purposes the structural conditions laid down in the Milk and Dairies Order were the minimum that should be required as a basis for the production of clean milk. In answer to a further question by Dr. Davies, Miss Lawrence said that the only satisfactory test for tubercle bacilli in milk was one which took several weeks to carry out, and it was therefore necessary, in order to obtain the maximum possible safeguard, to lay down conditions as to the testing of the cattle and their isolation from untested animals. When a cow was found to be tuberculous it was rarely possible to determine how she had become infected, but the association of tested with untested animals at a show involved a risk of infection unjustifiable in the interests of consumers.

Housing Conditions.

The Bishop of Southwark, in the House of Lords on February 26th, called attention to recent annual reports of medical officers of health on bad housing conditions, and asked the Government when it proposed to introduce legislation dealing with the slums.

Lord MARLEY, replying for the Government, said that the reports which the Bishop of Southwark had cited were seriously disturbing the Government. Ministers felt that these reports understated the actual position. The debate was adjourned to March 4th.

On March 4th the House of Lords resumed the debate. Lord DICKINSON said that the Royal Commission of 1885 pointed out that nearly 900,000 people were living in London in an overcrowded condition; after forty years' continuous labour on the part of local authorities, there were still 800,000 people living in London under these conditions.

Lord PARMOOR said the Government intended to introduce a slum clearance bill this session and pass it into law. There would be nothing in the bill to discourage reconditioning, but that would not be one of its main features. The Association of Municipal Corporations considered that any large measure of reconditioning would hinder the carrying out of slum clearance schemes. The Government considered that the work of providing alternative dwellings while slum clearance schemes were being carried out was absolutely necessary, and they intended to press on as quickly as possible with such schemes. They also contemplated that local authorities should undertake in advance larger amounts of new building. He hoped that the Government would have the honour of introducing a really drastic measure in order that the abomination of the slums should be ended.

Therapeutic Value of Vitamin Extracts.—Dr. FORGAN, on February 27th, asked Mr. Greenwood if he would institute an inquiry into the therapeutic and prophylactic values of medicinal and nutritional preparations of vitamin extracts, with a view to their standardization and prescription, as far as deemed advisable, under the National Health Insurance scheme. Mr. GREENWOOD replied that methods for the quantitative estimation of vitamins were being actively studied under the auspices of the Medical Research Council. Knowledge in the subject was not yet sufficiently advanced to justify the consideration of the question of adopting and applying official standards of strength for medicinal preparations of these substances.

Vaccination of Workhouse Inmates.—Dealing, on March 6th, with an allegation by Mr. Carter that 400 pauper inmates of St. Pancras Workhouse were vaccinated without their consent being asked, Mr. GREENWOOD said an inmate had had small-pox for three or four days, and it was considered advisable medically to examine the other men, and to advise them to be vaccinated. Any who objected were at liberty to refuse. No leave was stopped on this account. One man had stated that he had been told, on arriving with a new admission order, to be vaccinated or get out. Mr. Greenwood explained that the delay in readmitting this man was due to a misunderstanding not likely to recur. The duty of a Poor Law authority would not be affected by a refusal of the applicant to be vaccinated, but in certain circumstances it might be proper that relief should not be given in a particular institution.

Eyesight Tests for Motor Drivers.—During consideration of the Road Traffic Bill by a Standing Committee of the House of Commons, on March 11th, Dr. SALTER moved an amendment to require an applicant for a driving licence to produce a certificate stating that he had satisfactorily passed an eyesight test as to visibility and colour. The amendment was rejected by 11 votes to 4, after Dr. Salter and others had discussed night-blindness and colour-blindness in drivers.

Medical News.

AT a meeting on February 7th of prominent citizens of Winnipeg, including medical practitioners and their wives, a congratulatory address was presented to Dr. W. Harvey Smith, president-elect of the British Medical Association and of the Canadian Medical Association. The address, which was tendered on behalf of the Winnipeg Medical Society, referred in laudatory terms to the services rendered in the past by the president-elect, and gratitude was expressed for the assistance and the sympathy given by Mrs. Harvey Smith.

THE William Mackenzie medal for 1929 for original contributions to ophthalmology of outstanding merit has been awarded by the custodians, the Glasgow Eye Infirmary, on the advice of a committee representative of the University of Glasgow, the surgeons of the Glasgow Eye Infirmary, the surgeons of the Glasgow Ophthalmic Institution, and the Fellows of the Royal Faculty of Physicians and Surgeons of Glasgow, to Professor Dr. van der Hoeve of Leyden, Holland.

THE Section of Anæsthetics of the Royal Society of Medicine will hold a reception at the Wellcome Historical Medical Museum, Wellbeck Street, W.1, on Wednesday, April 2nd, at 8.30 p.m. During the evening Lord Dawson of Penn, president of the society, will give an address on Henry Hill Hickman. As announced in the letter from Dr. Cecil Hughes, honorary secretary of the Hickman Memorial Fund, published in our issue of February 22nd, the memorabilia connected with Hickman which have been collected by Mr. Henry Wellcome will be on view.

THE Minister of Health will open the department for treatment of cancer by radium at the North Middlesex Hospital, Edmonton, on the afternoon of Tuesday, March 18th. Mr. Greenwood will also lay the foundation stone of the extension to the nurses' home which has been provided by the Edmonton Board of Guardians.

AT the meeting of the Medico-Legal Society, at 11, Chandos Street, W.1, on Thursday, March 27th, at 8.30 p.m., Professor J. S. Haldane will read a paper on carbon monoxide poisoning and its medico-legal aspects; a discussion will follow.

AN extraordinary general meeting of the Cremation Society of England will be held at 23, Nottingham Place, W.1, on Wednesday, April 2nd, at 3 p.m., to consider and if approved pass a special resolution changing the name of the company to "The Cremation Society." The annual meeting of subscribers will be held immediately after the extraordinary general meeting, when the report and financial statement for 1929 will be submitted.

THE next meeting of the London Clinical Society will be held at the London Temperance Hospital on Tuesday, March 18th. It will be a clinical evening. Cases will be on view from 8.30 p.m.

THE Irish Medical Schools' and Graduates' Association will hold a dinner on St. Patrick's Day, March 17th, at 7.45 p.m., at the Savoy Hotel, London (Abraham Lincoln Room). The guest of honour will be Mr. Cecil B. Harmsworth.

AT the meeting of the Royal Microscopical Society to be held at 20, Hanover Square, W.1, on Wednesday, March 19th, at 7.30 for 8 p.m., Mr. Joseph E. Barnard, F.R.S., will deliver his postponed presidential address on resolution and visibility in medical microscopy.

A MEETING of the West Kent Medico-Chirurgical Society will be held at the Miller General Hospital, Greenwich, S.E.10, to-day (Friday, March 14th), at 8.45 p.m. Dr. H. V. Morlock will read a paper on the treatment of heart failure.

THE Fellowship of Medicine announces that Dr. John Parkinson will lecture on *x*-ray examination of the heart on Tuesday, March 18th, at 4 p.m., at the Medical Society, 11, Chandos Street, Cavendish Square. There will be two clinical demonstrations on Thursday, March 20th: one at 2.30 p.m., at the Royal Westminster Ophthalmic Hospital, Broad Street, W.C., by Mr. M. L. Hine, and the other at 3 p.m., at the National Hospital for Diseases of the Heart, by Dr. F. W. Price. The lecture and demonstrations are free to medical practitioners. Two special courses begin on March 17th: one in neurology at the West End Hospital for Nervous Diseases, Welbeck Street, will take place daily at 5 p.m. for a month, and the other on venereal disease at the London Lock Hospital, occupying every afternoon and evening for four weeks. From March 24th to April 12th there will be an all-day course in medicine, surgery, and gynæcology at the Royal Waterloo Hospital; and from March 31st to April 5th an all-day course in gastro-enterology at the Prince of Wales's Hospital, Tottenham. Copies of all syllabuses and information in regard to post-graduate work in London, including details of the general course, consisting of attendance at the clinical practice of more than forty London hospitals, may be obtained from the Secretary of the Fellowship, 1, Wimpole Street, W.1.

AT a reception held at the Egyptian Legation in London on March 12th the Chargé d'Affaires, Dr. Hamed Mahmud, presented to Lord Moynihan of Leeds, President of the Royal College of Surgeons, the Grand Cordon of the Order of the Nile, bestowed on him by His Majesty King Fuad.

THE KING has appointed Dr. Norman Scott Carmichael to be Surgeon-Apothecary to His Majesty's Household at the Palace of Holyroodhouse, in succession to Dr. William Macrae Taylor, deceased.

DR. J. MURDOCH, chief medical officer of the department of radiology and radium therapy at the Burgmann Hospital, Brussels, will give an address at the University of Sheffield on Tuesday, May 6th. This will be the third of a series arranged by the University in co-operation with the Yorkshire Branch of the British Empire Cancer Campaign. Dr. Murdoch has charge of the Service des Tumeurs at the Burgmann Hospital, and his address will be devoted to the subject of radium therapy in cancer. The address will be open to all medical practitioners. Details as to time and place will be announced later. In order to facilitate arrangements practitioners from outside areas wishing to attend are asked to send their names to the secretary, Clinical Studies Committee, The University, Sheffield.

WE have received from Dr. Kumud Sankar Ray, joint honorary secretary of the Indian Medical Association (formerly the All-India Medical Association), 6A, Corporation Street, Calcutta, four printed documents relating to medical questions now under consideration by the Government of India, with special reference to the future of the independent medical profession in that country: (1) Resolutions passed at the sixth session of the All-India Medical Conference, held at Lahore on December 27th and 28th, 1929; (2) Dr. B. C. Roy's presidential address to the conference; (3) an address by Colonel B. Nauth, I.M.S. (ret.), chairman of the reception committee; and (4) "Some problems of the medical profession in India," compiled for the Association by Dr. K. S. Ray. These publications may be consulted in the library of the British Medical Association, Tavistock Square, London.

WE are asked to state that hospitals situated within eleven miles of St. Paul's desiring to participate in the grants made by King Edward's Hospital Fund for London for the year 1930 must make application before March 31st to the honorary secretaries of the Fund at 7, Walbrook, E.C.4 (G.P.O., Box 465A). Applications will also be considered from convalescent homes which are situated within the above area, or which, being situated outside, take a large proportion of patients from London.

AN article by Sir Thomas Oliver on pulmonary asbestosis appeared in the *Archiv für Gewerbepathologie und Gewerbehygiene*, 1930, Band I, Heft 1 and 2. Reference is made to the publication in the *Journal* of December 3rd, 1927, of the papers by Sir Thomas Oliver, Dr. W. E. Cooke, and Professor Stuart Macdonald, which were read at the Annual Meeting in Edinburgh that year, and certain new cases are now described.

IN a circular letter addressed to local authorities the Minister of Health states that as the rate of Civil Service bonus now payable on the basis of an average cost of living figure of 70 will remain in operation for six months commencing March 1st, there will be no alteration during that period in the range within which bonus may be paid by local authorities to those of their officers whose remuneration is subject to the Minister's sanction.

WE are informed by the Ministry of Health that the Pan-Hellenic Health Exhibition, announced in our issue of February 15th, p. 319, has had to be postponed indefinitely owing to the impossibility of finding suitable premises.

A SCHEME has been issued by the Ministry of Health under section 101 (6) of the Local Government Act, 1929, setting forth the annual contributions to be paid from April 1st, 1930, to March 31st, 1933, by the London County Council and by the councils of the metropolitan boroughs to voluntary associations providing maternity and child welfare services in the County of London. Councils are authorized to require the observance of conditions relating to the efficiency, alteration, inspection, and financial supervision of the service provided, but the consent of the Minister of Health must be obtained before any contribution may be reduced or terminated. Disputes and differences arising between councils and voluntary associations are required to be referred to the Minister, whose decision is final and binding.

THE March issue of *The Prescriber* is largely devoted to spa treatment, emphasis being laid on the merits of British spas and mineral waters. Articles are contributed by Drs. Fortescue Fox, H. E. Rhodes, J. R. Collins, G. V. Worthington, and F. A. Mearu.

THE Paul Ehrlich gold medal for 1930 has been awarded to Professor Karl Landsteiner of Vienna by the Rockefeller Institute of New York for his discovery of human blood groups.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863, and 9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh)

QUERIES AND ANSWERS.

INFANTILE SEBORRHOEIC ECZEMA.

"M.B., CH.B." writes: I would be grateful for suggestions in the treatment of the intractable infantile seborrhoeic eczema sometimes found in otherwise healthy breast-fed babies. A baby, breast-fed nine months, has had it, more or less, since 5 weeks old; eight teeth; irritation intense.

HYPERIDROSIS AFTER HYSTERECTOMY.

"E. G." writes: A patient who had a panhysterectomy performed three months ago is suffering from almost continuous attacks of sweating. I have tried all the usual remedies, and would be grateful for any suggestions for treatment of this troublesome condition.

PRECIPITATE EJACULATION.

"B.M./J.D.L." writes: The "layman" treatment for this condition is a pint of draught ale half an hour before the act, and I have prescribed it several times with invariable success.

TINNITUS AURIUM.

DR. A. BETTS TAPLIN (Liverpool) writes in reply to Dr. W. A. M. Swan (March 8th, p. 477): I have treated a number of cases of tinnitus aurium of this kind purely by suggestion with marked success, and I recommend him to try this method in the case he mentions.

TURBINATE CAUTERIZATION FOR COLDS.

DR. C. DE W. GIBB (Torquay) writes: In reply to "Relieved" (March 1st, p. 428), I recommend a thorough investigation of the condition of the nasal accessory sinuses as being likely to indicate a treatment capable of eradicating the need of periodic cauterization of the turbinates. I have so often found chronic infection of one or more nasal sinuses in patients previously accustomed to cauterization of the turbinates.

PAIN FOLLOWING HERPES ZOSTER.

DR. CLAUDE WILSON (Tunbridge Wells), *in reply to Dr. Norman Wilson's inquiry (March 1st, p. 427) writes*: About two years ago I found, above the signature of Dr. F. Gardiner (Edinburgh), the paragraph quoted below (Latham and Crisp English's *System of Treatment* (1912), vol. iii, p. 1043). It has been of great help to me and to many of my patients, and is, I think, not widely known. "For the subsequent pain, which is most severe in elderly people, the use of analgesics, such as phenacetin, is often required, but sometimes it is only removed by injections of morphine. Much better, in my estimation, than these drugs is the use of the ethyl chloride spray. Various areas of the skin over the root ganglia and the cutaneous branches may be frozen by this plan on successive days with relief to the patient."

LEAD URINALYSIS.

DR. N. ASHERSON (London, W.1) writes: Your correspondent, "M. D." (*Journal*, March 1st, p. 428) will find that there is only one absolutely delicate test for the presence of minute traces of lead in any tissue or fluid, and that test is the spectroscopic one. Some years ago, in connexion with the lead treatment for malignant disease, I had the opportunity of putting this method to the test. A one-hundredth part of a milligram of lead can be thus detected. Broadly speaking, the test consists of: (1) a photograph of the spectrum of an arc is taken (control spectrum); (2) the tissue or fluid to be tested must be evaporated, dried, or incinerated (not necessarily completely). Urine must be evaporated down and the residue well dried and charred in a receptacle not lead glazed. A portion of the suspected tissue is put in the arc and another spectrum photograph taken. (3) A portion of a salt of the metal whose presence is suspected—for example, lead—is placed in the arc and a third spectrum photograph obtained (known spectrum). Thus, as the three spectra are taken on one plate, and one below the other, a graphic record is obtained and the presence or absence of the similar lines in the spectrum of (2) and (3) will provide the test. The method is a very rapid one, and a whole series of tests can be rapidly determined. Chemists can also, by the spectroscopic test, give a shrewd guess as to the amount of lead present. By this method I was able on several occasions to detect the presence of lead in the faeces of mechanics working with "lead petrol." I would suggest that "M. D." gets in touch with a chemist who is working with spectro-analysis. Any chemistry department of a big college would have the apparatus. I am not surprised that "M. D." found no lead in the urine. In a case of a man, aged 60, who died after eighteen hours as a result of the intravenous injection of 20 c.cm. of "choriotrope" (0.5 per cent. lead), though the urine was blood-stained, the spectroscope showed no trace of lead. There was no trace in the kidney or salivary glands, and only a trace of lead (spectroscopically) in the liver. One can only surmise that the lead had gone to the bones. I radiographed a series of gall-bladders after intravenous lead injection, but the results were negative. Colloidal lead is *not* opaque to *x* rays. I was unable by *x*-ray examinations to detect the deposit of lead in bones.

DR. W. E. COOKE (Wigan) writes in reply to "M. D.'s" question in the *Journal* of March 1st: Lead was found in considerable amounts in the urines of all the cases of lead poisoning from tap water coming under notice. I have no experience of the clinical test mentioned in "M. D.'s" query.

INCOME TAX.

Deductible Expenses.

"E. C. B." finds the income tax on his share in a partnership to be "very high," and desires information as to the basis of return and expenses deductible.

*** The strictly correct basis of stating the gross receipts of a practice is the amount of the gross bookings less a carefully—that is, item by item—calculated allowance for probable losses by bad debts. The Revenue authorities will normally accept the basis of cash receipts, provided that the work of the practice is not expanding and that such receipts include payments received for all practice work, even though handed over wholly or in part to a previous proprietor or partner. This is a practical difference between professional and trade profits which is mutually convenient, but no such difference is provided for by law. The only classes of allowable expense that occurs to us, in addition to those specified by "E. C. B.," are maintenance and repair of instruments, drugs if borne by him, cost of repair and decoration of waiting room and surgery, and depreciation of car.

LETTERS, NOTES, ETC.

BORROWED RADIUM.

DR. ARTHUR WHITFIELD (London, W.) writes: Some two to three years ago I lent my small amount of radium to a doctor to treat a patient of his. Unfortunately I forgot to make a note of his name, and I have no means of finding it. He has probably finished with it and forgotten to return it. If this letter should catch his eye will he kindly send it back to me?

EXHAUST GASES IN THE GARAGE.

As the danger of carbon monoxide in exhaust gases is not fully recognized by all motor car users, the Automobile Association has issued to garages holding the A.A. appointment a showcard giving hints for motorists when running their engines in a confined space. The advice includes the following maxims: "Never run an engine in this garage for longer than is absolutely necessary. Never run the engine for warming or tuning-up unless doors, windows, and other ventilators of the garage are open. Warm up the engine or tune it up in the open air rather than in the garage. Maintain the exhaust system in good condition and free from leakage." Copies can be obtained by members of the A.A. for use in their own garages on application to the secretary, Fanum House, New Coventry Street, W.1.

AN *X*-RAY REPORT BOOK.

MESSRS. H. K. LEWIS AND CO., LTD., medical publishers, 28, Gower Place, W.C.1, have prepared a report book for entering details about patients investigated by *x* rays, with columns for notes about the size and number of the films taken, the part of the body exposed to *x* rays, and a report of the conditions found. The size of the page is 13½ in. by 14 in., and the book is half bound in red sheepskin with cloth sides. The price ranges from £1 7s. 6d. for 50 openings to £1 17s. 6d. for 200.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 52, 53, 54, 55, 58, 59, 60, and 61 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 56 and 57.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 87.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

255. The Etiology of Influenza.

I. S. FALK, R. W. HARRISON, R. A. MCKINNEY, and G. W. STUPPY (*Journ. Amer. Med. Assoc.*, December 28th, 1929, p. 2030) present a summarized preliminary report of a series of studies on the etiology of influenza, which were commenced in Chicago during the height of the epidemic of 1928-29. Experiments were made on monkeys both with cultures of Pfeiffer's bacilli and of pleomorphic streptococci that had been isolated from the blood of a very early human case. Infection with the latter by means of nose and throat sprays and intratracheal injections produced in the animals a disease closely resembling human influenza. Serological studies on samples of blood collected shortly after the epidemic from approximately fifty persons demonstrated the presence, in apparently significant concentrations, of agglutinins against the pleomorphic streptococci and more or less closely related diplococci. The agglutinins were specific so far as this could be determined by absorption tests. Of the many hundreds of cultures isolated from human and monkey sources eight morphological and cultural groups of organisms were definable; of these, however, only two seemed likely to be of etiological significance as regards the epidemic. One group consisted of highly pleomorphic, green-producing streptococci, which varied in their Gram-staining and fermentative properties, and which had not been found normally in the blood or respiratory tract of monkeys. The second group consisted of non-pleomorphic, Gram-positive, relatively large, green-producing diplococci. The organisms of both groups were facultative aerobes, and insoluble in bile. The first group were said to be decidedly more effective in producing experimental influenza in the monkeys. In a significant number of cases infection with these streptococci caused acute disease of the upper respiratory tract in members of the laboratory staff. The investigators deem it not improbable that the pleomorphic streptococci were etiologically related to the influenza outbreak.

256. Psittacosis.

MEYER (*Med. Welt*, January 25th, 1930, p. 117) enumerates several symptoms which he regards as pathognomonic of psittacosis; constant intense thirst is a prominent feature, while severe symptoms of collapse occur early and can be relieved only by the strongest cardiac tonics. Psittacosis produces a peculiar form of pneumonia quite distinct from the influenzal type; tracheitis and bronchitis do not occur, but severe pharyngeal ulceration is common. The physical signs of psittacosis pneumonia resemble those of broncho-pneumonia; dullness is absent, but auscultatory signs are definite. The cerebral symptoms resemble those of typhus fever, there being confusional states, insomnia, and delirium. Bulbar symptoms may supervene in the form of severe tremors, and there is persistent hyperpyrexia with tachycardia. The spleen is always enlarged and diarrhœa very common; the diazo-reaction in the urine is always positive. Leucocytosis and eosinophilia have not been observed. The actual infective agent in human psittacosis is still uncertain, but "Nocard's bacillus," which resembles that of typhus, can be found in human subjects. In some cases, however, a haemolytic streptococcus has been recovered, but its etiological relationship is doubtful, and Meyer believes that some other virus is concerned. Therapeutic treatment is mainly symptomatic, and is especially directed to the cardiac weakness. Blood transfusion has proved efficacious.

257. G. ADAMY (*Deut. med. Woch.*, February 7th, 1930, p. 217) states that Professor Emden and himself discovered several small house epidemics of psittacosis last Christmas at Hamburg, which is the chief port for the introduction of parrots into Germany, into which about 500 parrots are imported monthly. They subsequently learnt that Professor Hegler of St. George's Hospital, Hamburg, had reported three cases in the previous July. Since then the number of cases in Greater Hamburg has risen to thirty, and six have proved fatal. The present author's observations confirm the view that psittacosis is an infectious disease, that inter-human transmission may occur, and that the disease runs a mild course in children and young persons. As a rule it lasts for two and a half to three weeks. The obvious official measures to be taken are supervision, or, better still, complete prohibition, of the importation of parrots.

258. Paroxysmal Tachycardia of Unusual Duration.

L. GALLAVARDIN, P. VEIL, and R. FROMENT (*Lyon Méd.*, January 5th, 1930, p. 3) remark that attacks of paroxysmal tachycardia usually continue for several minutes or hours. While paroxysms of one, two, or even six days' duration are occasionally observed, those lasting more than ten days are extremely rare. Of 160 patients with this disease only eleven had attacks of longer than ten days, and this proportion is certainly high, since the milder degrees of such tachycardia may not come under notice at a clinic. These eleven patients were separated into two groups. In the first group of seven patients the duration of the tachycardia was between ten days and one month, and only one of these patients showed any signs of heart failure. The remaining four patients constituted the second group, and in them the abnormal rhythm was observed over periods of between one and twelve months. Cardiac failure appeared in two patients. The authors have found that in prolonged paroxysms a relative tolerance is established, and that even if failure does not supervene, signs of circulatory embarrassment are apt to appear on the third or fourth day after the establishment of abnormal rhythm. Among these signs are engorgement of the liver, transient albuminuria, and dyspnœa on exertion. Many patients suffering from prolonged tachycardia have been able to continue their occupations without discomfort. Bouveret is cited as originating the belief that failure begins to appear after a few days and progresses inevitably to a fatal termination. On the other hand, the fact that the liability to failure does not depend upon the duration of the paroxysm has been demonstrated in the cases described by Janicot, Vaquez, and Lewis, in addition to the authors' present series. It is suggested that the variable tolerance of the heart to attacks of paroxysmal tachycardia depends largely upon the extent of underlying myocardial damage, the rate and constancy of the new rhythm, and the age of the patient.

259. Birth-marks as a Site for Vaccination.

HANSEN (*Ugeskrift for Laeger*, September 26th, 1929, p. 827, and January 2nd, 1930, p. 16), since his appointment as vaccination officer in 1885 in his district, has made a practice of vaccinating all the angiomas he found in children coming to him for vaccination, the only exceptions being when the parents refused—a rare event—and when the angioma was situated near the eyes. He has kept records of these vaccinations from 1890 onwards; the average yearly number was about 6. The healthy skin around the birth mark was scratched, and its surface was very lightly scratched to avoid much bleeding. Among approximately 260 cases thus treated there was not a single instance of troublesome inflammation after the vaccination, the scar of which persisted. In the light of this experience the author challenges a statement by Oluf Thomsen in a recently published book on vaccination in which he says: "Vaccination of birth-marks with the object of making them disappear is absolutely objectionable." Hansen questions the validity of this sweeping verdict, and points out that by his procedure a double advantage is gained.

Surgery.

260. Sarcoma of the Thyroid Gland.

I. ARONS (*Annals of Surgery*, January, 1930, p. 44) states that malignant disease of the thyroid gland is infrequent, epithelial tumours predominating over those of mesoblastic origin. Thyroid malignancy occurs most frequently in districts where endemic goitre is prevalent, and develops in the majority of cases in goitrous subjects. Chronic irritation produced by foci of degeneration in old colloid goitres may induce parenchymatous or stroma hyperplasia, occasionally resulting in carcinoma or sarcoma respectively. Other etiological factors are trauma, a previous inflammation of the gland, or the injection of various irritants into large thyroids. Unlike benign goitre, where females outnumber males in the proportion of seven to one or even ten to one, sarcoma of the thyroid affects both sexes equally, the average age being 53. Diagnosis of sarcomas and carcinomas of the thyroid is difficult until the capsule of the gland is perforated by the growth and it is clinically impossible to distinguish between the two forms of malignancy, though in the case of sarcoma the rate of growth and approach of death are much more rapid than in carcinomas, the usual expectancy being only

two or three years after the inception of the disease. The first sign of cancer of the thyroid is a change in the primary benign goitre, which usually becomes hard, bossy, nodular, and irregular, and grows rapidly in size. Hard palpable lymph nodes may be present and may be removed for histological examination. Other symptoms may be the enlargement of subcutaneous veins over the tumour or fixation of the tumour to the skin, with tremor, palpitation, loss of weight, tachycardia, and increased metabolic rate in some cases. Dyspnoea, a frequent symptom, is produced by sabre-sheath stenosis of the trachea; the sarcoma may penetrate the trachea and give rise to the presence of blood in the expectoration. If the growth begins on the posterior aspect of the thyroid a dysphagia frequently develops, due to direct attachment to the oesophagus. Pressure of the growth upon the cervical sympathetic nerves, or infiltration of the sarcoma in the region of the carotid sheath, may produce paralytic miosis, loss of the pupillary reflex, unilateral facial hyperaemia and sweating, enophthalmos and narrowing of the palpebral aperture. Fever, as high as 102.5°F., is more common with sarcoma than with carcinoma. Sarcomas may be of the mixed round and spindle-cell, lymphoid, or round-cell types, with the greatest number of mixed cells. Surgical treatment can only be palliative, but tracheotomy and lobectomy in some cases prevent or delay death by the local effects of the tumour. Radium and *x* rays have been used, but although the initial response may be favourable the sarcoma rapidly metastasizes by the blood vascular system to the thoracic and abdominal viscera.

261. Enterocystoma.

RUTH E. MILLAR and G. ROBERTSON (*Brit. Journ. of Surg.*, January, 1930, p. 373) describe a case of enterocystoma in a girl, aged 8, who had suffered from attacks of severe sickness for four years. Each attack lasted twenty-four hours, and was sudden in onset and termination, with an interval of only one month latterly between the attacks. During the last four months these had become increasingly severe and frequent, with bile-stained vomiting, and pain in the right iliac fossa and epigastrium. The child was admitted to hospital for an operation for appendicitis. When the abdomen was opened an elongated, tense cystic tumour was found superimposed upon the caecum, the long axes of the tumour lying parallel to the intestine. The sausage-shaped mass, which on its deep aspect was connected for two-thirds of its length by a mesentery to the true mesentery of the ileo-caecal angle, was typically intestinal in appearance and exhibited peristalsis. Both ends were blind, with a constriction near the middle, and the end which pointed to the hepatic flexure was larger and more bulbous than the other, which overlaid a normal appendix. The inferior aspect of the bulbous end was attached by a band to a pericolic membrane enclosing the ascending colon and blending on the lateral aspect of the gut with the parietal peritoneum. After removal of the cyst peristalsis could be stimulated in it for two hours by means of warm, moist gauze pads. The cyst, which was unilocular, was found to contain 2 ounces of a transparent viscous mucoid fluid; it was 11 cm. in length, the maximum girth being 10 cm. The authors remark that these tumours are difficult to diagnose, and may be symptomless, though vague abdominal pain and recurrent attacks of vomiting are common. They occur most often in young females, and may become malignant, causing persistent ascites. Treatment must consist in the removal, with resection of the intestine if necessary. In the present case the cyst was separated from the bowel, with a mesenteric pedicle which made removal a simple operation. It is suggested that progressive hypertrophy of the muscle coat of the enterocystoma during four years explained the increasing severity of the attacks; tension of the cyst from increase of content would excite an attack by supplying the stimulus to the hypertrophied muscular coat.

262. Intussusception of the Ileo-caecal Angle.

INTUSSUSCEPTION of the ileo-caecal angle is only possible in cases where the mesentery of the ascending colon is sufficiently free; it is met with particularly in children and infants. J. VIDLICKA (*Bratislavské Lekárske Listy*, January, 1930, p. 3) believes that the cause is most frequently some pathological change of the intestine, such as a benign tumour, enteritis, or intestinal parasitism. The mechanism is explainable on the spastic theory of Nothnagel and Proping. The most important clinical symptoms are ileus, blood in the stools, and swelling in the right epigastrium. The abdomen remains soft, and the temperature need not be high. An *x*-ray examination reveals stenosis of the distal ileum and a narrow ring in the ascending colon. At the beginning of the illness, if the surgeon finds no other changes except oedema of the intestinal wall, simple devagination and fixation of the caecum suffice. In cases of gangrene or adhesions resection of the affected part is necessary.

Therapeutics.

263. Serum Treatment of Scarlet Fever.

F. VAN BORMANN (*Jahrb. f. Kinderheilk.*, December, 1929, p. 1) records his observations on 694 cases of scarlet fever treated with antitoxin and 292 controls. The dose used was always 25 c.cm. of unconcentrated or 10 c.cm. of refined antitoxin, and, except in the severest cases, a repetition of the dose was not necessary. The weight and age of the patients were not taken into consideration. The injections were given intramuscularly, except in the severest cases, which had intravenous injections. In the majority of the cases the antitoxin used was that supplied by the Behring works at Marburg, but a weaker Vienna serum, an American serum, and a Saxon serum were also employed. The cases fell into three groups: (1) a toxic group in which the initial symptoms were pronounced, including a subgroup of fulminating cases; (2) a very mild group, in which the toxic and septic symptoms of the initial stage were ill-marked and the temperature did not rise above 101.3°; and (3) a septic group, in which the clinical picture was characterized by complications from the first. The onset of desquamation did not appear to be affected by the injections unless perhaps it was a little accelerated. No influence, however, was noticed on its duration or character. In the toxic cases the temperature curve was the best indication of the action of the serum, especially as the fall of temperature was accompanied by general improvement in all the toxic symptoms, such as rapid pulse, malaise, and cerebral manifestations. As a rule there was a rapid fall of temperature to a subfebrile level within twelve to twenty-four hours after injection; the throat condition also showed a considerable improvement. A comparison of the temperatures of cases treated by serum with those of untreated cases showed only a distinct difference when the serum was given before the fourth day of disease. When the serum was given later the temperature curves were identical in the treated cases and the controls. Seven fulminating cases which were not treated by serum were all fatal, whereas out of 14 in which serum was given 5 recovered. In 4 of the 9 fatal cases the patients were moribund on admission and died a few hours after injection; another 2 died of lobar pneumonia five days after injection, and the other 3 died of toxaemia, in spite of serum given fairly early in the disease (third and fourth days).

264. Carbon Dioxide Inhalation in Pneumonic Atelectasis.

IN view of the lack of progress in the prevention and cure of pneumonia, contrasting with that in other diseases, such as typhoid and diphtheria, it has been suggested that there must be some special factor in pneumonia which is at present unrecognized and untreated. YANDELL HENDERSON, H. W. HAGGARD, P. N. CORYLLOS, and G. L. BIRNBAUM (*Arch. Int. Med.*, January, 1930, p. 72), who advocate the treatment of pneumonia by inhalations of carbon dioxide, maintain that there is such a factor—namely, occlusion of an affected organ and lack of drainage. When an air tube becomes closed all the protective mechanisms for clearing the lungs, such as the cough reflex, are incapacitated. The air in the occluded portion of the lung is soon absorbed, and the alveoli become deflated, collapsed, and gradually filled by secretion. In pneumonia it is the blocking of the lung air passages, bronchi, or bronchioles, by plugs of thick, sticky secretion which is the critical pathological factor in the production of atelectasis (termed apneumatosis by Coryllos) and the conditions characteristic of an undrained infection. Before birth the lungs are normally atelectatic, and if they are not fully distended soon after birth, pneumonia is likely to develop. It is known that, after surgical operations, massive lobar or lobular atelectasis of the lung is a rather frequent occurrence, and is the condition from which post-operative pneumonia develops. This atelectasis is prevented and relieved and the risk of pneumonia eliminated by the inhalation of an oxygen mixture containing carbon dioxide. The inhalation of 5 per cent. carbon dioxide, now the standard treatment for carbon monoxide poisoning, is also an effective preventive of post-asphyxial pneumonia, and of the asphyxia of the newborn. Experiments on dogs reported by the present authors demonstrate that atelectasis and pneumonia, artificially induced in these animals, are overcome by inhalation of this gas. The authors report that several hundred patients with pneumonia have been treated with oxygen and 5 per cent. carbon dioxide. In one series of 126 cases only 9 patients died, while a number recovered by crisis immediately after the inhalation. Nearly all the patients treated early recovered, and the deaths were practically limited to cases in which this treatment was introduced late in the disease. In a larger series of cases not so treated the mortality was 31 per cent. The authors

conclude that success depends on commencing the inhalation of carbon dioxide as early as possible, and believe that the results will be as effective as those obtained in post-operative and post-asphyxial pneumonia.

265. Treatment of Diabetes Insipidus by Pituitary Insufflation.

BOISSERIE-LACROIX and A. CHOAY (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, December 20th, 1929, p. 1005) report a case of a boy, aged 7 years, with diabetes insipidus which was successfully treated by powdered pituitary substance. The daily amount of urine averaged at first 7¾ pints, and in spite of negative radiographic, ophthalmic, and Wassermann examinations, antisyphilitic treatment was tried without any improvement resulting. Injections of the posterior lobe of the pituitary gland were then given, with great diminution of the polyuria and thirst. As the hypodermic injections were painful, intranasal insufflation of the powdered posterior lobe was substituted for them, the daily dose being approximately 1 grain. The patient continued this treatment for a year, with remarkable improvement in his general condition; the weight increased by nearly 9½ lb., and the quantity of urine passed in twenty-four hours fell to 35 to 53 oz. It is stated that A. and L. Choay have treated twenty cases of diabetes insipidus by intranasal administration of the powdered posterior lobe; they believe that this method has all the advantages of hypodermic injections while being painless, and therefore particularly applicable in children and in cases in which the daily polyuria does not exceed 25 to 35 pints. The only contraindication of this treatment is any pathological condition of the nasal passages.

Neurology and Psychology.

266. Skin Reactions in Neurological Conditions.

THE skin is innervated by both sensory and sympathetic nerve fibres, and the general effects of destruction of each type of nerve are well known. Sometimes, however, it is difficult to decide where the damage lies, whether in the nerve, the ganglion, or central to this. K. E. HARRIS (*Brain*, December, 1929, p. 484) describes two simple tests which easily determine whether the peripheral sensory and sympathetic nerve fibres are degenerate or not. The sensory nerve test is performed by inflicting a suitable injury, such as a needle scratch. When normal skin is injured a triple response of the blood vessels ensues. At the site of injury a spot appears (local vaso-dilatation), followed by whealing (local oedema); around the wheal is a flare (reflex arteriolar flare), and it is this flare that is of interest in nerve lesions. In a patient pre-existing anaesthesia of more than a week's duration, if a flare appears on the anaesthetic skin after injury the peripheral sensory nerve fibres are intact and the anaesthesia is either due to a lesion central to the dorsal root ganglion or is hysterical in origin. If the flare fails to appear, the peripheral sensory fibres are degenerated. The sympathetic nerve test is performed by faradizing the skin. Erection of the hairs may be produced by a reflex through the central nervous system, and Lewis and Marvin have shown that goose-skin appears around the electrodes if the skin is stimulated by a strong faradic current. This is due, not to a central reflex, but to the spread of nerve impulses along a plexus of sympathetic fibres in the skin. The absence of this local reaction to faradism indicates degeneration of these fibres. The application of these tests is illustrated in a case of sarcoma of the first rib, complicated by a cervical sympathetic paralysis, and later by paraplegia.

267. The Mechanism of Epileptic Fits.

A. SALMON (*Studium*, January 1st, 1930, p. 9) reviews the evidence for the existence of a vegetative epileptic centre situated in the diencephalic region, possibly connected with the infundibulum, and liable to react to toxic, reflex, endocrine, and emotional stimuli. Demole has shown that while depression of the infundibulum by calcium chloride results in sleep, its stimulation by potassium chloride produces motor responses and epileptiform seizures. Electrical stimulation of the pituitary body, owing to its contiguity with the infundibulum, gives rise also to severe convulsions, as does any sudden increase in tension in the third ventricle. The deep sleep which follows the seizure has lately been explained as due to depression of the infundibulum. Hypnotic drugs with a selective action on this centre have proved very useful in epileptic treatment. The functional relations of the infundibulum with the pituitary body may also explain the frequent association of diseases of the latter with epileptiform seizures, such as occur in pituitary and infundibular tumours, acromegaly, Simmonds's syndrome, and dystrophia adiposo-genitalis, during the treatment of many cases of epilepsy with pituitary extract. Supporting evidence is afforded by the deficiency of pituitrin in the cerebro-spinal fluid of epileptic patients, the occurrence of seizures after removal of the pituitary body, and the lesions of this gland found at necropsies. An epileptic centre in the diencephalon may also account for the frequent association of hyperthermia and seizures, due probably to irritation of the tuber cinereum. The ventricular situation of such a centre, specially sensitive to alterations in the cerebro-spinal fluid, explains the part played by these in the mechanism of epilepsy better than the hypothesis that the fluid acts by transmitting epileptic toxins. Salmon adds that meningocortical lesions may bring about changes in the cerebro-spinal fluid, and, by diminishing inhibition of the lower centres or in some other way, producing a cerebral vasomotor reaction which may affect the vegetative centre of the diencephalon, and initiate an epileptiform fit. Epileptic seizures of endocrine origin can also be explained on the grounds of the physiological relations of the various glands with the pituitary body, and the consequent reaction on the diencephalic-pituitary system. The existence of such a centre may also throw light on the seizures occurring in epidemic encephalitis and those consequent to emotional factors. The author concludes that, while the infundibulum is not the only centre concerned, the fit being a violent reaction of all the cerebro-spinal centres, it is certainly the starting point of the epileptic impulse which determines the seizure.

268. Cavernous Epidural Angioma.

W. T. CONNELL and W. D. HAY (*Canadian Med. Assoc. Journ.* January, 1930, p. 75) report a case of cavernous angioma of the epidural space in a woman, aged 31, which resulted in compression of the spinal cord. The first clinical signs appeared in 1918, when stabbing pains were felt over the lower ribs on the right side, followed a little later by involvement of the other side. Treatment for intercostal neuralgia was unsuccessful. The right foot began to drag while walking, and some weeks later the left foot became similarly affected. The condition progressed, and at the end of 1918 the patient was confined to bed, a diagnosis of spastic paraplegia being made. Two years later she was paralysed from the waist downwards, but retained perfect use of the upper part of the body; the legs were not wasted, but all power of voluntary muscular movement was lost. The knee- and ankle-jerks were exaggerated, and a positive Babinski sign was present in both legs. Tactile pain and temperature sensations were completely lost on the right side two inches above the umbilicus, and also on the left leg and back of the thigh. There was loss of control over the bladder; the reflexes and sensations of the upper part of the body were normal. The Wassermann reactions of the blood and spinal fluid were negative, and the fluid was under low pressure; there was no increase in its globulin content, and the cell count was 8. A diagnosis of spinal compression due to a slow-growing tumour was made, but the patient refused to have laminectomy performed. In 1921 the anaesthesia on the left side became absolute and reached the same level as on the right side. The patient eventually died in 1929 from cystitis and pyelonephritis. A vascular tumour was found in the epidural space at the level of the sixth and seventh vertebrae, involving the laminae and to some extent the roots of the arches, but leaving the bodies of the vertebrae free. The spinal cord at this level was compressed so that nothing but the meninges remained for a distance of 3 centimetres. Histological sections of the cord below the lesion revealed destructive changes in the pyramidal tracts and the columns of Goll and Burdach. The authors think that the angioma originated from the plexus of veins in the epidural space. They have been unable to find any similar record in the literature.

Obstetrics and Gynaecology.

269. Endometriosis of the Bladder.

ACCORDING to B. OTTOW (*Zentralbl. f. Gynäk.*, December 7th, 1929, p. 3330) endometriosis of the bladder resembles that of the umbilicus, inguinal canal, or abdominal operation scar in that menstruation leads to pain, increased tenderness, and increased congestion in the tumours, and sometimes to bleeding from them. Clinical details are given of cases in which, apart from operation, such symptoms permitted the diagnosis of heterotopic endometriosis in an abdominal scar or in the posterior vaginal fornix. Ottow believes that a similar history, combined with characteristic cysto-scopic findings, should lead with certainty to diagnosis of endometrioid tumours presenting in the bladder. In J. Müller's case (*Arch. klin. Chir.*, 1927) a bullous oedematous swelling containing blood cysts pushed forward the vesical mucosa near a ureteral opening, and was much larger and more congested during the menstrual period; the tumour was

regarded as a cavernous angioma, but was proved microscopically after removal to be an endometrioma. Ottow describes two cases in which women, aged 43 and 29 respectively, complained of dysuria preceding the menses by a day or two and completely disappearing a week afterwards; the cystoscopic appearances (during and between the menses), which are illustrated in colour, corresponded with those of Müller's case. A diagnosis of endometrioma was made, and was confirmed in the second case by histological examination of the tumour excised from the utero-vesical space. In the first instance the patient, an older woman, was treated by *x*-ray ovarian castration. After the ensuing menstruation the dysuria ceased and the size of the tumour, as determined cystoscopically, diminished; the blood cysts, however, persisted. Cases of vesical endometriosis hitherto recorded number about fifteen. Ottow emphasizes the diagnostic importance of cystoscopy, and regards the removal of a tumour fragment for biopsy as unnecessary and possibly harmful. A. PLAUT (ibid., p. 3358) records the case of a nullipara, aged 28, who had complained for a year of dysmenorrhœa and of dysuria during menstruation, and was found to have a small fibroid as well as adnexal adhesions. At operation a tumour was found infiltrating the posterior vesical wall, and was removed locally. More radical excision was not undertaken because the history was thought to point to endometrioma, a diagnosis afterwards confirmed microscopically. Endometrial tumours were not found elsewhere.

270. Radium and Surgery in Uterine Cancer.

F. A. MAGUIRE (*Journ. Coll. of Surgeons of Australasia*, November, 1929, p. 243) gives a brief preliminary report of some patients treated for a year at the Radium Clinic of the Royal Prince Alfred Hospital, Sydney, and reports in detail eleven of the cases. The series included patients whose condition might have been regarded as operable from the beginning, those apparently inoperable, those who had been operated on and whose condition had been considered totally inoperable, and those cases rendered operable by the use of radium. Two patients, both of whom had very advanced malignant disease, died; in six patients the growths may be regarded as being held in check, while two patients, on whom panhysterectomy was performed, are apparently clinically free from disease. For the purposes of radium treatment Maguire classifies cases in three groups: those considered to be operable; those which when first seen would be considered inoperable; and borderline cases which, at first apparently inoperable, may be rendered operable by the use of radium. In the first group of operable cases the condition is rendered much more favourable for operation if radium is used, for this will clear up the primary growth, allow the cervix to heal, and give a clean field for operation. In the second group of hopelessly inoperable cases radium will definitely check the immediate haemorrhage, stop the discharge, and, temporarily at any rate, stop the absorption of toxins by dealing with the growth locally. The patient immediately improves, loses her toxaemia, and is rendered more comfortable. Life is prolonged and suffering relieved. The same effects are obtained by the use of radium in borderline cases, and often operation becomes at least feasible. If an operation is performed within three months of the application of radium little extra difficulty is experienced from fibrosis. Pain, when due to the infiltration from the primary growth, is definitely relieved by the application of radium. Regarding the dosage and types of application, Maguire believes that when it is desirable to clear up a local condition and render it operable a massive dose over a short period is indicated, while in inoperable cases where it is desired to give a maximum amount of relief small doses over long periods are more appropriate.

271. Bimanual Gynaecological Examination.

L. FRAENKEL (*Münch. med. Woch.*, January 10th, 1930, p. 53) emphasizes the value of using the hands alternately for both vaginal and rectal examinations in gynaecological conditions, since much more accurate information about pelvic tumours palpated through the vaginal wall and fornices can be obtained if the right hand is used for the right side of the pelvis and the left hand for the left side; the awkward position which the right hand has to assume when palpating the left fornix, and vice versa, diminishes its sensitiveness. In a case of tenderness in the right iliac fossa, when there is difficulty in deciding whether there is a lesion in the appendix or in the Fallopian tube, he recommends the following manœuvre to separate the structures. The right adnexa are palpated bimanually in the usual way, and are then held downwards against the posterior wall of the pelvis by the left hand through the abdominal wall, while the right hand is removed from the vagina and palpates McBurney's point. If this is now found to be tender, while the mass lower down under the left hand is not, evidence is obtained in favour of an appendicular rather than a genital lesion, and vice versa.

Pathology.

272. Symptomless Infections in Monkeys Inoculated with Yellow Fever.

A. PETTIT and G. STEFANOPOULO (*C. R. Soc. de Biologie*, December 6th, 1929, p. 719) have encountered two instances in which monkeys inoculated with yellow fever virus developed a septicaemia without showing any symptoms of disease. The first monkey, *Macacus cynomolgus*, remained perfectly well for twelve days after inoculation; on the thirteenth day it appeared ill, and the following day it was killed. At necropsy there were no lesions suggestive of yellow fever. Nevertheless the blood of this monkey, withdrawn on the third day after inoculation, and again just before the animal was killed, produced typical yellow fever in two other macaques that were injected with it. The second instance concerned a *Macacus rhesus*, an animal that is more susceptible to yellow fever virus than is *M. cynomolgus*. This animal was inoculated with 7 c.cm. of a filtered suspension of infective liver, the injection being made intraperitoneally and into the liver. The animal remained perfectly well till thirty-six days after inoculation; it suddenly died without any warning symptoms. Post-mortem examination revealed a slight yellow discoloration of the cartilages, and a typical chamois yellow liver; the lungs appeared normal. Sections of the liver and kidney showed the usual fatty degeneration. The blood of this animal was tested thirty days after inoculation for the presence of neutralizing antibodies, with a negative result. The authors consider that the investigation of these "non-apparent" infections should be carried out in human beings, particularly among the indigenous population of yellow fever districts.

273. Blood Examinations in Achylia.

A. BORGBJAERG and M. C. LOTTRUP (*Acta Med. Scand.*, December 30th, 1929, p. 539) found that 50 per cent. of persons with achylia gastrica suffered with anaemia, usually slight and of simple type. The colour index was above 1 in 22 per cent. of the cases, megalocytosis was present in 15 per cent., and frequently the haemoglobin percentage was raised. Megalocytosis may occur with a colour index less than 1. With a positive Congo red reaction megalocytosis is rare; it is always present in pernicious anaemia, but not in cancer of the stomach. The size of the red cells varies in the same patient, and may increase with arsenic or iron treatment; liver diet frequently, but not always, removes the megalocytosis. By careful blood examinations of achylic patients it may be possible to detect early cases of pernicious anaemia. Patients with gastric ulcer and achylia have shown after gastrotomy the blood picture of pernicious anaemia.

274. Resistance of Haemolytic Streptococci to the Bactericidal Action of the Blood.

R. HARE (*Brit. Journ. Exper. Path.*, December, 1929, p. 375) finds that the ability of virulent strains of haemolytic streptococci to grow in normal human defibrinated blood varies with the age of the culture from which they are taken. (The term "virulent" is defined on a purely *in vitro* basis, and is used to denote streptococci from a 16-hour hydrocele fluid broth culture that are able to withstand the bactericidal action of normal human defibrinated blood sufficiently to be able to multiply in it after 1 to 3 hours.) Working with a virulent strain that had been passaged through mice, it was found that organisms taken from a culture 4 to 46 hours old were able to multiply in normal blood, whereas those taken from the same culture after 88 and 112 hours were unable to do so. With a rather less virulent strain multiplication occurred with organisms from a 12-hour but not from a 29 to 120-hour culture. With an avirulent strain no multiplication occurred at all with organisms taken from a 6 to 75-hour culture. Experiments on phagocytability indicated that if normal human serum was inoculated from a 16-hour broth culture of a virulent strain the organisms during at least the first 3 hours of growth proved highly resistant to phagocytosis. If the inoculum was made from a 32-hour culture the organisms during the first hour of growth were fairly susceptible to phagocytosis, but after 3 hours they became resistant. When the inoculum was made from a 72-hour broth culture the organisms developed only a slight degree of resistance to phagocytosis. The author concludes that haemolytic streptococci from broth cultures near the logarithmic phase of growth are better fitted to withstand the bactericidal action of normal human defibrinated blood than those from cultures in the decline phase. This is probably due in part to the ability of streptococci from cultures in the logarithmic phase to multiply faster than those in the decline phase, and in part to the assumption by growing streptococci of some degree of resistance to phagocytosis, which disappears when the organisms become senescent.

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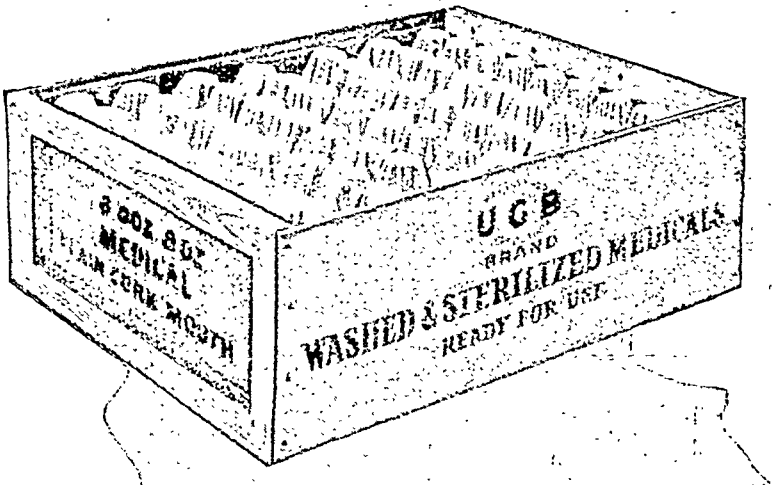
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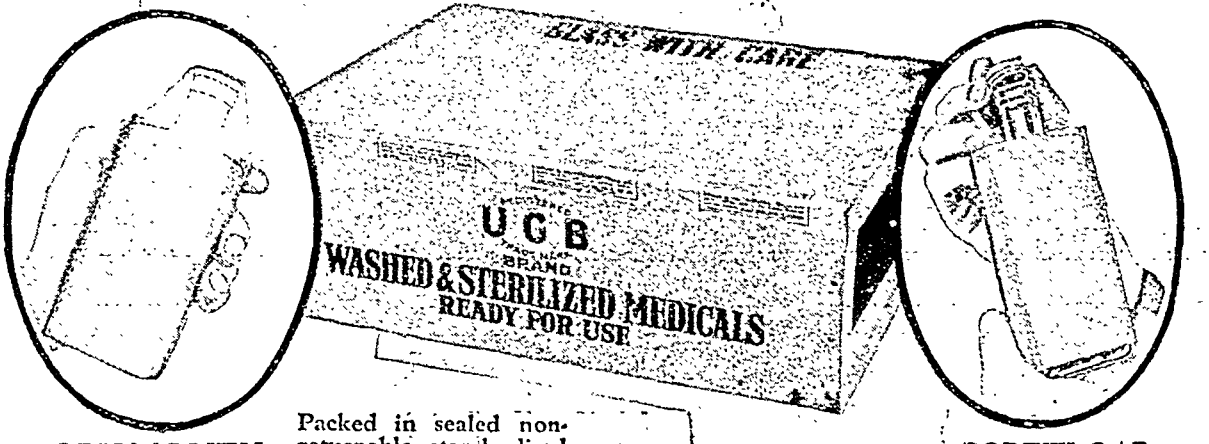
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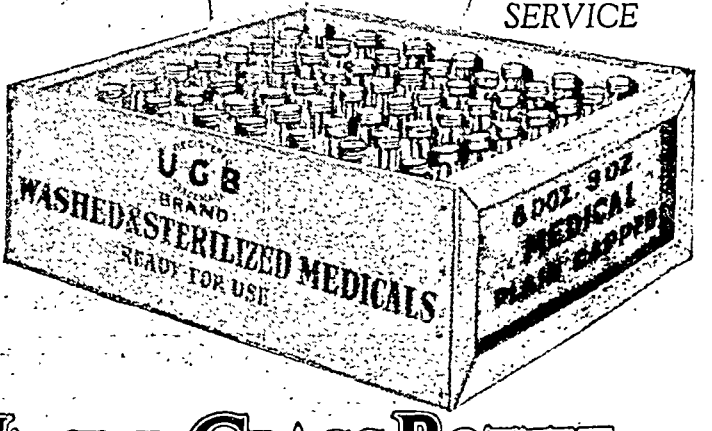


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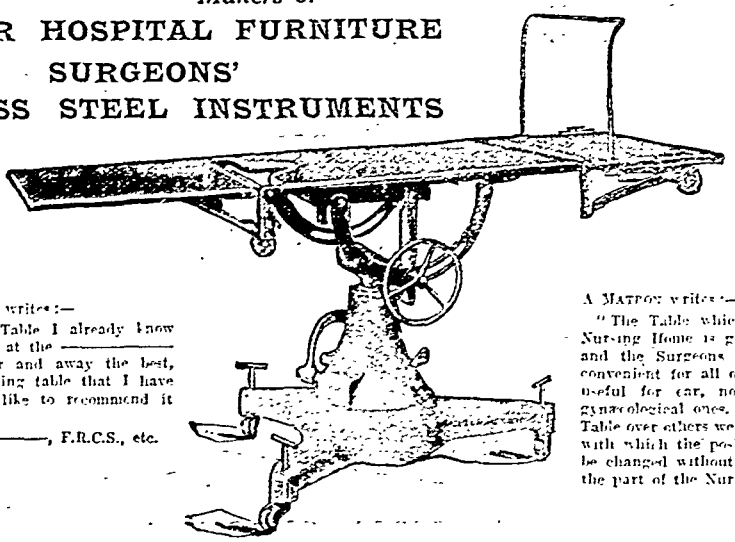
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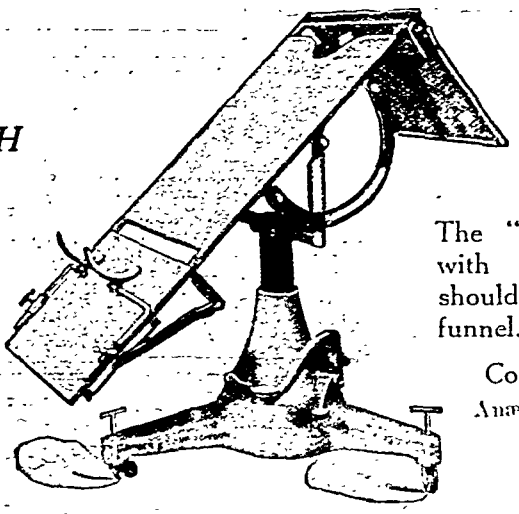
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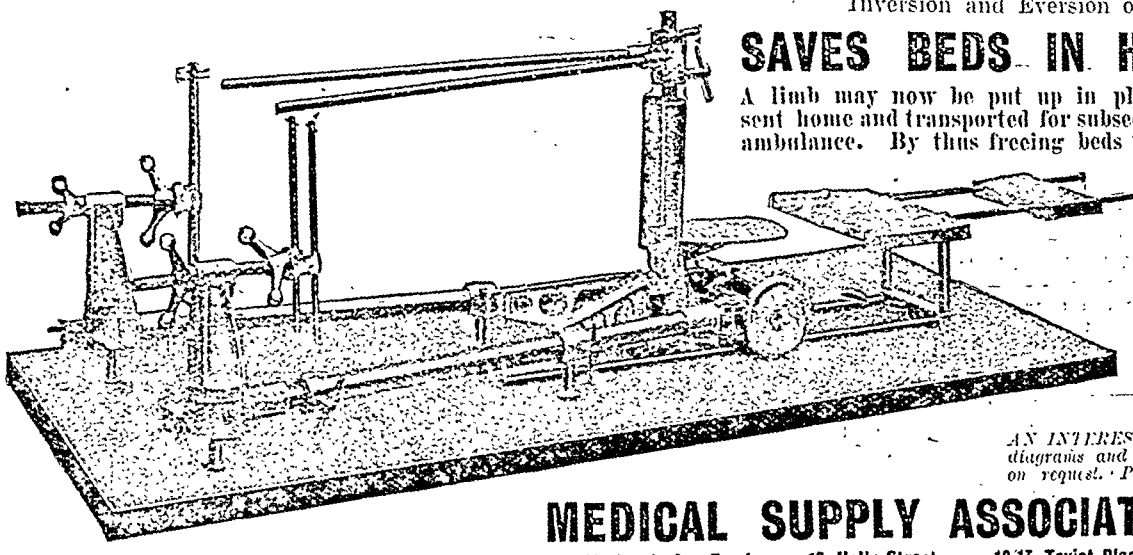
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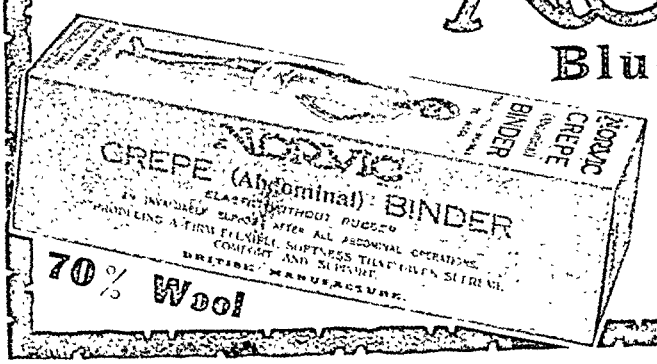
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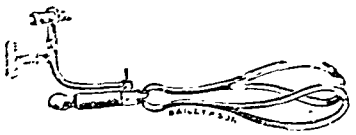
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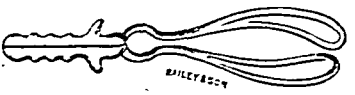
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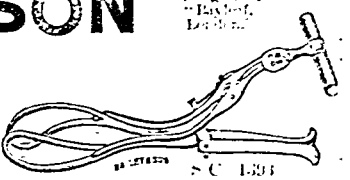
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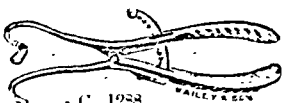
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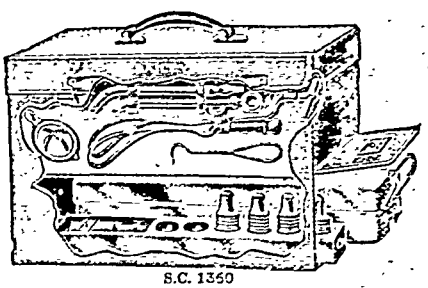
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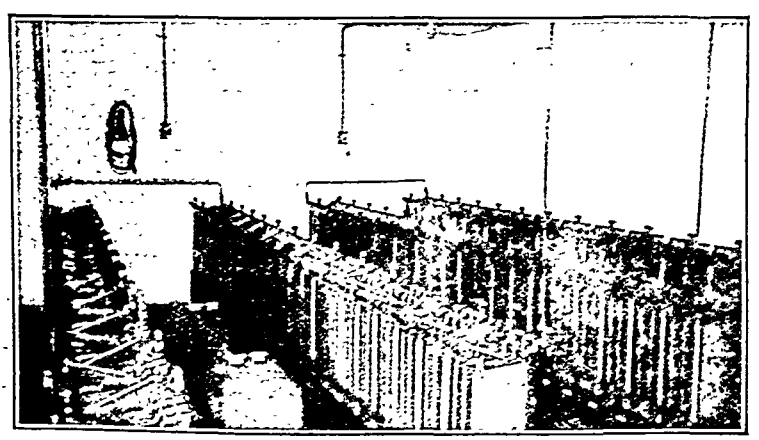
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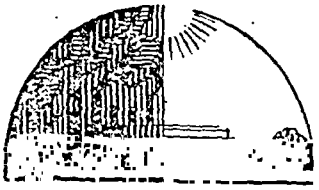
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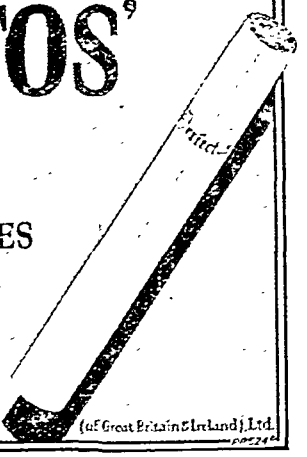
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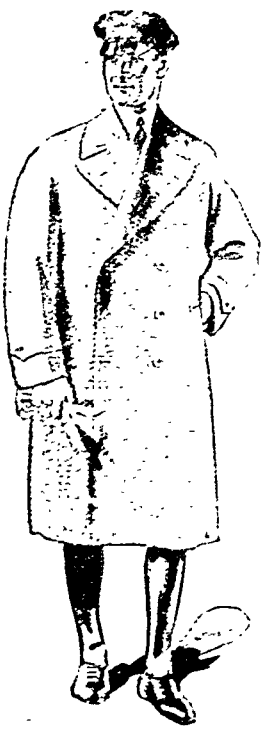
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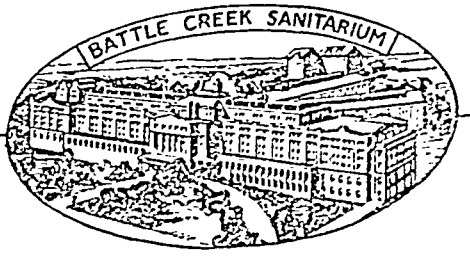
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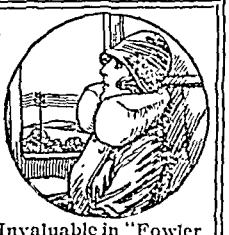
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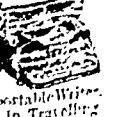
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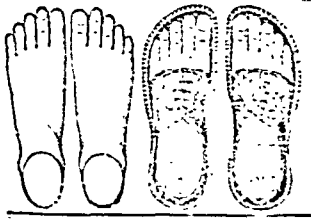
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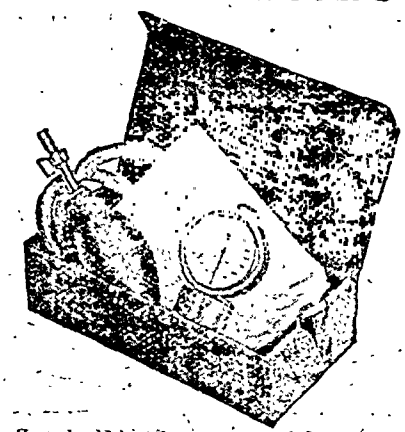


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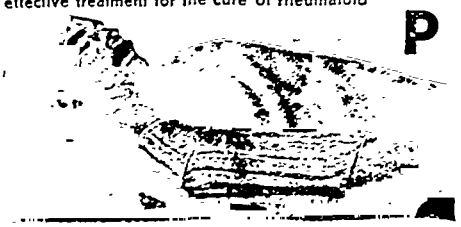
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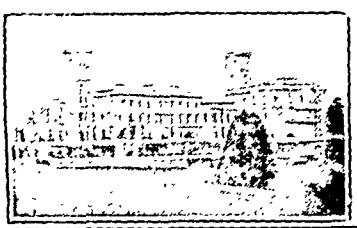
(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply, The Secretary,

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.



King Edward VII Convalescent Home for Officers of the Navy, Royal Marines, Army, and Air Force.

Massage.
All forms of Electricity.
Ultra Violet Rays.
Special Dieting.
Golf Course in the Grounds.

TERMS:
4 C to G per day.
Inclusive.

Hard Tennis Court.
Squash Racquets
Badminton.
Sailing.
Bathing, etc.

Officers on the Active List are eligible to travel by rail at Government expense.
For Booklet apply—HOUSE GOVERNOR, OSBORNE HOUSE, EAST COWES, ISLE OF WIGHT

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.. Reliance 2102.

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
PHYSICIAN-SUPERINTENDENT: J. G. FORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS WEEKLY TOWARDS [illegible] modern principles.
For further partic[illegible]

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0552.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illness.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

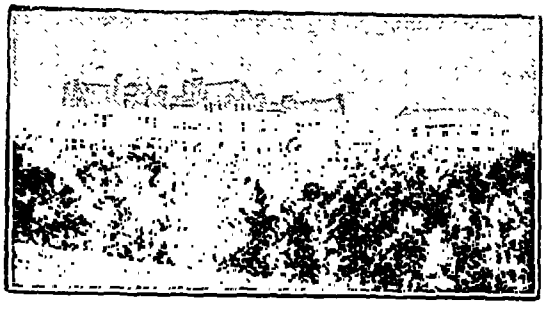
Telegrams: "[illegible]" FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: [illegible] 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actinotherapy. Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: **Dr. Hubert James Norman**, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

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TOR-NA-DEE SANATORIUM

MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

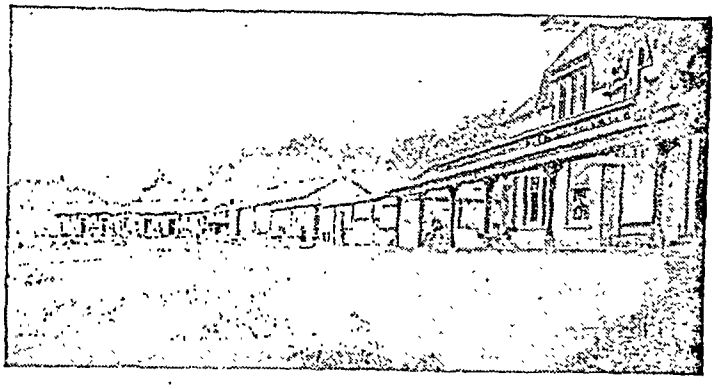
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Physician Superintendent - J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

THE COTSWOLD SANATORIUM



Specially built in 1898 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis on Nordrach lines. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. Special Treatment by artificial Pneumothorax (*X-ray controlled*), Tuberculins, and Ultra-Violet Rays is available, when necessary, without extra charge. X-ray plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms.

Full day and night Nursing Staff.

Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.

Apply: The Secretary, The Cotswold Sanatorium, Cranham, Gloucester.

Telephone: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds and provide many miles of graduated walks with magnificent views. Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Med. Supt., H. Morriston Davies, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.



KINGUSSIE, N.B.

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Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in B ' of the British Isles." Bracing and dry mountain climate. Well shelte built for the Open-air Treatment of Tuberculosis. Opened in 1901. sea-level. Electric light throughout buildings and in pat shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis. Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras.

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PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

Established 1900 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss N. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

PEEBLES HYDRO.

Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.

All modern Baths, Douches, Massage, and Electrical Treatment. Ultra-Violet Radiation. Physician in attendance.

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Electric Light, Central Heating, Electric Lift, three Billiard Tables, Ball Room, Winter Garden, Swimming Bath, Hard and Grass Tennis Courts, Badminton, Croquet Lawn, Golf Course. Prospectus from Manager. 'Phone: Peebles 2.

DROITWICH SPA

Famous for Brine Baths, the ideal Winter Tonic, and treatment for Rheumatism. Mixed Bathing. Stay at Raven or Park Hotel, adjoining Baths. *Brochure on request.*

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Tel. & Telegrams: "Haynes, Brentwood, 45"

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

Home for Invalids requiring REST, CARE, or SUPERVISION. Large house and beautiful garden of nearly 8 acres; own produce; gravel soil. Car, etc. Special care to Chronic Patients.—"Duncroft," Staines, Middlesex.

SCHOOL OF MEDICINE

OF

THE ROYAL COLLEGES, EDINBURGH.

(Founded 1505)

SUMMER SESSION, 1930.

Opens on APRIL 22nd.

The Lectures qualify for the English and Scottish Universities and other Medical Examining Boards.

One-half of the Qualifying Classes required for graduation in the University of Edinburgh may be attended in this School.

The School offers a large choice of Teachers upon the various subjects comprised in the Medical Curriculum.

Calendar, giving particulars of the Classes, Fees, Examinations, &c., sent (price 6d.) on application to THE DEAN OF THE SCHOOL, Surgeons' Hall, Edinburgh.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

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PROVIDES HIGHLY SUCCESSFUL ORAL AND POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS.

Special Preparations for all Surgical Qualifications.

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¶ The Surgical Tutors of the College all hold either the M.S. Lond. or F.R.C.S. England, or both, and are highly experienced teachers.

¶ The Postal Courses are throughout clear, concise, and up to date, and the test questions are carefully selected from those set at previous Examinations, so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time, and much unnecessary reading is saved.

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ADVANCED MEDICINE.

A Course in Advanced Medicine suitable for candidates preparing for the M.D. and M.R.C.P. Examinations will begin on Monday, April 28th. Early application for admission is advisable.

Further particulars may be obtained on application to the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., London Hospital Medical College, Mile End, E.

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From Specialist Tutors, in conformity with the Regulations of the various Universities.

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MARLBOROUGH COLLEGE,

Near MACCLESFIELD,

Specialises in

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List and Prospectus from Principal.

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"Praise must be given to the ... method of treatment ... Lancet.

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THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and the North Middlesex Hospital, Edmonton, N.18.

A ONE WEEK COURSE IN GASTRO-ENTEROLOGY will be held from March 31st to April 4th inclusive.

Enquiries and applications should be sent to the Dean at the Prince of Wales's General Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

PRINCE OF WALES'S GENERAL HOSPITAL N.15.

The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BESTIANS, F.R.C.S., Dean.

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Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5

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Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prof. Exams. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 527, Oxford Road, Manchester.

F.R.C.S.(Edin.).

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Preparations for Medical Preliminary, and *Chemistry, Physics, Anatomy, Physiology,* and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations, Postal Courses, and* Oral Classes. Suggestions for the higher Medical [illegible]tions for the higher Sur[illegible] *uggestions for the Special* Refresher Course. Openings for women. Terms for writing theses.

Medical *Prospectus gratis along with list of* Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (*Telephone*: HOLBORN 6315.)

Royal College of Surgeons of ENGLAND.

LICENCE IN DENTAL SURGERY.

Notice is hereby given that the FIRST PROFESSIONAL EXAMINATION will commence on FRIDAY, MAY 2nd, and that the SECOND PROFESSIONAL EXAMINATION will commence on FRIDAY, JUNE 13th, 1930.

Candidates are required to give not less than twenty-one days' notice in writing of their desire to present themselves for examination to the Director of Examinations, Examination Hall, Queen Square, London, W.C.1, from whom all particulars relating thereto may be obtained.

DIPLOMA OF FELLOW.

Notice is hereby given that the next PRIMARY and FINAL EXAMINATIONS for the Diploma of Fellow will commence on TUESDAY, JUNE 3rd, and THURSDAY, MAY 22nd, 1930, respectively.

Candidates are required to give not less than fourteen days' notice of their desire to present themselves for examination.

Particulars relating to these examinations may be obtained from the Director of Examinations, as above.

March 6th, 1930.

University of Durham College OF MEDICINE, NEWCASTLE-UPON-TYNE.

POST-GRADUATE COURSES IN OBSTETRICS AND ANTE-NATAL WORK AT THE COLLEGE AND PRINCESS MARY MATERNITY HOSPITAL.

Each Course will be of three months' duration and be given twice annually, commencing in April and October. Full particulars will be forwarded on application to the DEAN, University of Durham College of Medicine, Newcastle-upon-Tyne.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The SUMMER SESSION will begin on Tuesday, April 29th, 1930.

The Medical School provides courses in *Preliminary* Intermediate, and *Final* Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research.

NEARLY 1,000 beds available for teaching; additional clinical material being provided by affiliation to an Infirmary and other Institutions.

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually.

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For further particulars and illustrated prospectus, apply to the School Secretary.

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CITY OF LONDON MATERNITY HOSPITAL, CITY ROAD, E.C.1.

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MEDICAL STUDENTS admitted to Hospital practice, *with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly* Courses.

PUPILS TRAINED as Midwives and *Monthly* Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

[illegible] LIVERPOOL.)

COUR[illegible] (lasting about three [illegible] in Tropical Medicine commence on October 1st and January 6th, and for the *Diploma in Tropical* Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this *University.*)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

LONDON SCHOOL OF CLINICAL MEDICINE.

SEAMEN'S HOSPITAL, Greenwich.

A Course will be held at the above, commencing March 17th, 1930, in SURGICAL PATHOLOGY (fee £6 6s.) and OPERATIVE SURGERY (fee £6 6s.). Fee for both sections £10 10s. Those wishing to join the class [illegible] *ith the* DEAN.

[illegible] 26th, 1930.

Royal College of Physicians of LONDON.

Dr. CAREY F. COOMBS will deliver *the* LUMLEIAN LECTURES on March 20th, 25th, and 27th, at 5 p.m., at the College, Pall Mall East, S.W.1.

Subject: "*Syphilis of the Heart and Great Vessels.*"

Any Member of the Medical *Profession admitted* on presentation of card.

By Order of the President,
H. M. BARLOW,
Bedell & Secretary.

F.R.C.S.(Edin.)

CLASSES, with Museum and *Anatomical Demonstrations*, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Refraction and the Ordering of GLASSES taught by *Practising Ophthalmic* Surgeon in London. £8 8s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

Shrewsbury Dispensary.

MEDICAL OFFICER required. Candidates must be fully qualified. No restrictions as to private practice. Applications, with copies of [illegible]ree recent testimonials, to be received not [illegible] than March 22nd.

[illegible] Particulars from A. E. COOPER, 28, Claremont Hill, Shrewsbury.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Tropical Medicine and Hygiene.

The School provides two courses yearly, each of 20 weeks. The next course commences on September 30th, 1930. Composition fee, to include hire of microscope, etc., £34 5s.

Diploma in Public Health.

The next course of study, covering a period of 12 months, commences on October 1st, 1930, and is so designed that students wishing to do so can proceed to the new academic diploma instituted by the University of London.

The composition fee of £54 covers the cost of the necessary practical work and instruction in infectious diseases, etc.

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The course of study, covering one academic year, commences early in October. Composition fee, £47 15s.

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Special three-monthly advanced courses. Fee £5 5s.

Applications for prospectuses and for other information should be addressed to the Secretary, Keppel St. (Gower Street), London, W.C.1.

AUTOMOBILE ENGINEERING TRAINING COLLEGE,

CHELSEA, LONDON, S.W.3.
(Day and Residential.)

Founded specially to TRAIN BOYS of good education for the Automobile Industry. The curriculum combines an essentially practical modern works' experience with training in administration. Appointments for qualified Students. Candidates will be accepted for Probationary Term commencing April 24th. Syllabus from ASSISTANT REGISTRAR.

(AMENDED ADVERTISEMENT.)

Parish of Portsmouth.

THIRD ASSISTANT RESIDENT MEDICAL OFFICER.

The Guardians of the above-named Parish [illegible] the appointment of
Medical Officer for
[illegible] INSTITUTION, and

The appointment will be made for a period not exceeding two years, and will be subject to one month's notice on either side. Salary £250 per annum, with furnished apartments, rations, and all other allowances.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896, for which purpose the value of emoluments has been fixed at £125 per annum.

Candidates must be single gentlemen, duly registered, and possessing the qualifications required by the Orders of the Ministry of Health, and preference will be given to candidates having a knowledge of the treatment of Mental Diseases.

A Resident Medical Superintendent is in attendance.

Applications to be made on *printed forms* which may be obtained at the Guardians' Offices, 1, St. Michael's Road, Portsmouth, and must be returned to me, accompanied by [illegible] more than three recent testimonials, and description of diplomas, certificates of degrees, licences, and other instruments held by the candidate, by first post on Monday, March 24th.

Selected candidates will have notice to attend, and third-class railway fare and reasonable personal expenses will be allowed.

By Order,
W. E. GODFREY,
March 5th, 1930. Clerk to the Guardians.

The Public Service Commission,

INDIA, invite applications for the appointment of a PROFESSOR OF PATHOLOGY AND BACTERIOLOGY at the CALCUTTA SCHOOL OF TROPICAL MEDICINE, CALCUTTA. *Terms: Agreement for five years subject to three months' notice on either side.* Pay, Rs.850 per calendar month, rising to Rs.[illegible] per calendar month, plus non-practising allowance of Rs.500 per calendar month (equivalent at current rate of exchange £1,215 to £2,250 per annum). The initial rate of pay will be fixed according to age, qualifications, etc. Provident Fund with 75 per cent. Government contribution. Strict medical examination. Applicants should note that they may be required to proceed to India at their own expense for interview.

(Applications for appointment will be accepted from Members of the Indian Medical Service on special terms.)

Forms of application and further particulars should be obtained by request by post-card from the Secretary to the High Commissioner for India, Education Department, India House, Aldwych, London, W.C.2. Last day for the receipt of applications, May [illegible].

Wellington Hospital Board, NEW ZEALAND.

RADIOLOGIST.

Applications are invited from registered Medical Practitioners for the above position on the staff of the Wellington General Hospital, Wellington, New Zealand. Applicants must be qualified in Radiology and must have had at least five years' practical experience in Radiographic diagnosis. Preference will be given to the applicant with experience in the control and management of radium emanation plants and deep X-ray therapy.

Salary £900 per annum, rising by annual increments of £50 to a maximum of £1,050. Non-resident salary to commence at date of embarkation.

Applications, stating age, qualifications, and experience, together with copies of testimonials, will be received by the undersigned up to Tuesday, May 20th.

R. BROWN, Secretary.

BARBADOS.

A vacancy at present exists for a SANITATION OFFICER in BARBADOS.

Candidates, who must be under 45 years of age, must possess a complete double qualification and be on the British *Medical Register*. Salary *£600 per annum, rising* by annual increments of £25 to £750 per annum. Quarters and passages are not provided. Private practice is not allowed. The appointment will be for a period of three years.

Further particulars and forms of application may be obtained, on application in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Completed applications must reach the Private Secretary not later than March 29th, 1930.

Royal Victoria and West Hants HOSPITAL, BOURNEMOUTH.

(Poole Road Branch—66 Beds.)

HOUSE SURGEON (male, British nationality) required to commence duty immediately. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act. Applications, stating place of birth, with copies of three testimonials to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL,
March 6th, 1930. Secretary.

Charing Cross Hospital.

ASSISTANT PHYSICIAN.

The Council invite applications for the post of Assistant Physician (male).

Candidates, who must be Members of the Royal College of Physicians of London, must send in their applications together with copies of three recent testimonials, to the undersigned not later than Monday, March 31st.

Charing Cross, PHILIP INMAN,
Hospital, W.C.2. House Governor.

The Society of Apothecaries of

LONDON invite applications for the post of WHOLE-TIME MEDICAL REGISTRAR to the [illegible]. Salary £500 per annum, rising by annual increments of £25 to £600. Private practice or [illegible] is desirable; medical qualifications as in the [illegible]. Forms of application to be filled in with [illegible] of appointment, may be obtained from the Clerk, Apothecaries' Hall, Water Lane, Blackfriars, London, E.C.4, and must be lodged [illegible] April 5th.

PHILIP HERE, Clerk.

Borough of Walthamstow.

MEDICAL OFFICER OF HEALTH.

The Council invite applications for the appointment of a Medical Officer of Health, Superintendent of Isolation Hospital, School Medical Officer, and Maternity and Child Welfare Officer for the Borough.

The salary of the appointment will be £1,100.

Candidates must be duly qualified Medical Practitioners and possess a recognised Diploma in Public Health and the requisite qualifications required by the Sanitary Officers Order, 1926, and the Regulations of the Ministry of Health, to whose approval the appointment will be subject.

The appointment is also subject to the Local Government and Other Officers Superannuation Act, 1922, to a satisfactory medical examination, and to the regulations in force for the time being relative to staff appointments.

Candidates must be not more than 45 years of age. List of duties to be obtained on application, from the undersigned.

Applications, accompanied by copies of three recent testimonials, and endorsed "Medical Officer of Health," to be delivered to the undersigned, by post only, not later than 12 o'clock noon on Friday, March 21st.

Town Hall, C. SYDNEY WATSON,
Walthamstow, Town Clerk.
March 5th, 1930.

County Borough of Ipswich.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER to the IPSWICH SANATORIUM. Salary £350 per annum, with board, lodging, washing, etc., subject to deductions in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922. The appointment will be for one year in the first instance. Applicants must be unmarried and must be fully qualified and registered, and must not exceed 30 years of age. They must have held a resident post in a General Hospital and also in a Hospital for the treatment of Diseases of the Chest.

Applications, stating age, qualification, experience, and accompanied by recent testimonials, should be sent to the undersigned not later than March 26th.

Ipswich Sanatorium, W. F. SUTCLIFFE,
Suffolk. Medical Supt.

Bolton Infirmary & Dispensary.

SECRETARY'S OFFICE.

(233 beds, including Auxiliary Hospitals.)

Applications for the appointment of HOUSE SURGEON to take charge of Casualty Department and Casualty Beds, salary £150 per annum, with board, residence, and attendance, are invited from ladies and gentlemen having a registered Medical and Surgical qualification. The appointment will be for six months.

Applications, stating age and nationality, with copies of testimonials (previous experience essential), should be forwarded to the undersigned not later than Monday, March 24th.

ALBERT E. BRISCOE, Secretary.

London Hospital, E.1.

Applications are invited for the post of ASSISTANT RADIOLOGIST. Candidates must hold a Radiological Diploma. Attendance at the Hospital will be required on five half days a week.

Applications, with testimonials, should be sent to the House Governor of the Hospital not later than by the first post on Saturday, March 29th.

For further particulars apply—

London Hospital, E. W. MORRIS,
E.1. House Governor.

City of London Hospital for DISEASES OF THE HEART AND LUNGS,

Victoria Park, E.9.

(Bus, Tram, and Rail: Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on May 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Monday, April 7th.

GEORGE WATTS, Secretary.

Lewis Hospital, Stornoway.

An experienced SURGEON SUPERINTENDENT is required for the above Institution, to take up duties on May 15th next. Knowledge of X-ray and Light Treatment essential. Salary and travelling allowance, excluding private practice fees, etc., £1,050. Applications, with twelve copies of testimonials, to be lodged with the Honorary Secretary, care of Post 56, April 5th. Conditions of appointment can be obtained from the Secretary.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invite applications from registered male Medical Practitioners for the post of Assistant Medical Officer. Applicants must be over 25 year of age, and must possess the Diploma of Public Health. The duties of the post include the Medical Inspection of School Children, work under the Maternity and Child Welfare and Tuberculosis Acts, and Venereal Diseases Regulations, and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County. The salary will be £900 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained together with further particulars from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Saturday, March 29th. All communications must be marked "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Hall, DUDLEY AICKLAND,
Kingston-upon-Thames. Clerk of the
March 11th, 1930. Council.

The Hospital for Sick Children,

Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, Tadworth Court, Tadworth, Surrey, on April 25th.

Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on Monday, March 31st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but a successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a minimum of four weeks.

Candidates must possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, April 2nd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
March, 1930. Secretary.

Royal Albert Hospital and Eye INFIRMARY, DEVONPORT.

There will be a vacancy for an ASSISTANT HOUSE SURGEON (unmarried) on April 1st next.

Applicants must be fully qualified registered, and the appointment will be for six months. Salary £100 per annum, with apartments, board and laundry free.

Applications, stating age, accompanied by copies of not more than three testimonials, should reach the undersigned not later than Saturday, the 22nd instant.

By Order of the Committee,
FRANK ROWE,
March 10th, 1930. Secretary.

Macclesfield General Infirmary.

(100 Beds.)

Wanted at once, SECOND HOUSE SURGEON (male). Salary at the rate of £150 per annum, with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

Applications, stating age, nationality, and qualifications, with copies of testimonials, to be sent to the undersigned.

A. E. HONEYBURN, Secretary.

Peace Memorial Hospital, WATFORD, HERTS.

SECOND RESIDENT MEDICAL OFFICER (female). £150 per annum. Appointment for six months, eligible for renewal.

Applications, stating age and full particulars, with at least three recent testimonials, should be received later than March 24th by the undersigned. No canvassing permitted.

Birmingham Union.

DUDLEY ROAD HOSPITAL.

JUNIOR ASSISTANT MEDICAL OFFICERS (Male).

Applications are *invited from fully qualified* Medical Practitioners for appointments as Junior Assistant Medical Officers (male) at the Dudley Road Hospital, Birmingham.

The Hospital accommodation is fixed by the Guardians at 926 beds, divided into Medical, Surgical, Children's, Infectious, Gynæcological, and Obstetrical Sections. There are completely equipped Pathological and Biochemical Laboratories, X-ray, Electrical Massage, and Sunlight Departments. Approximately 5,000 operations are performed annually.

The appointments will be for a period of six months in the first instance, but may be extended at the end of that period.

The persons appointed will be required to assist at operations, to administer anæsthetics, and undertake casualty work, and such other *duties as may be assigned* to them by the Chief Medical Officer, and, should occasion arise, to assist at any of the other Institutions under the control of the Guardians.

The salary attached to the appointments will be at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

A percentage deduction will be made from the salary and value of emoluments for *superannuation purposes*, and for this purpose the emoluments are valued at £230 per annum. *Fourteen days'* leave will be granted to the successful candidates during their term of office.

Further particulars of the appointments may be obtained from the Chief Medical Officer, F. W. ELLIS, Esq., M.D., F.R.C.S., Dudley Road Hospital.

Applications, stating age, experience, and *qualifications, accompanied by copies of recent* testimonials, should be forwarded so as to reach me not later than Wednesday, March 19th.

Union Offices, Birmingham. February 28th, 1930.

C. P. BEECH, Clerk to the *Guardians.*

Borough of Bridlington.

APPOINTMENT OF MEDICAL OFFICER OF *HEALTH AND SCHOOL MEDICAL OFFICER.*

The Town Council of Bridlington invite applications for the appointment of Medical Officer of Health for the Borough, subject to the *provisions of the Public Health* (Officers) Act, 1921, and the Sanitary Officers Order, 1926.

The gentleman appointed will be required to perform all the duties imposed on a Medical Officer of Health, School Medical Officer, Maternity and *Child Welfare Medical Officer*, Medical Superintendent of the Infectious Diseases Hospital, and, act as Port Medical Officer of Health, and carry out all such duties as the Council, with the consent (if necessary) of the *Minister of Health*, may from time to time direct. He must reside in the Borough, and devote all his time to the duties of the office, and must not engage in private practice.

The appointment will be subject to the approval of the Minister of Health, and the salary to cover all the duties specified above will be *£800 per annum inclusive.*

Full particulars of the appointment may be obtained on application to the undersigned.

Applications, endorsed "Medical Officer," stating age, qualifications, and experience, accompanied by copies of not more than three *recent testimonials, should reach the* undersigned not later than Thursday, the 20th instant.

Canvassing, either directly or indirectly, will be a disqualification.

Town Hall, Bridlington. March 5th, 1930.

GEORGE MELVIN, *Town Clerk.*

Edinburgh Hospital for Women

AND CHILDREN,
Whitehouse Loan, EDINBURGH.

Applications are invited from qualified Medical Women for the post of JUNIOR HOUSE SURGEON at the above Hospital. The appointment *is for six months from April* 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before March 22nd.

Elsie Inglis Memorial Maternity

HOSPITAL,
Spring Gardens, EDINBURGH.

Applications are invited from qualified Medical Women for the post of HOUSE SURGEON for above Hospital. The appointment is for six months *from April 1st, with* board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before March 22nd.

City of Nottingham.

APPOINTMENT OF RESIDENT MEDICAL SUPERINTENDENT,
NOTTINGHAM CITY INFIRMARY.

The Nottingham City Council invite applications *from* duly qualified persons (preferably married) for the appointment of Resident Medical Superintendent at the Nottingham City *Infirmary.*

Salary £900 per annum, rising (subject to *satisfactory service) by two annual increments* of £50 to a maximum of £1,000 per annum. An unfurnished house, with light, fuel, and laundry will be provided but this will not include food or servants.

The above-mentioned salary is inclusive of all duties and the person appointed will not be allowed to engage in private practice.

The appointment will be subject to the approval of the Ministry of *Health.*

Applicants, in addition to possessing the usual professional qualifications, must (1) have held the position of House Physician or House Surgeon in a *public General Hospital*, and (2) have had considerable experience as a Medical Officer in a Poor Law Infirmary or *similar Institution.*

Further particulars as to the terms of the appointment and of the duties to *be performed* in connection therewith may be obtained on application to me, the undersigned, and the successful candidate will be deemed to have had notice of and to have accepted such terms.

The appointment will be subject to the Superannuation Scheme in force, and the successful candidate will be *required to pass a* medical examination.

Applications, stating age, qualifications, and full particulars *of present and past experience*, together with copies (which will not be returned) of not more than three recent testimonials, endorsed "Resident Medical Superintendent," to be delivered at my office not later than *first post on Wednesday*, March 19th next.

Canvassing, whether directly or indirectly, is prohibited and will be deemed a disqualification.

Dated this 28th day of February, 1930.

Guildhall, Nottingham.

W. J. BOARD, Town Clerk.

Borough of Brighouse.

HIPPERHOLME URBAN DISTRICT COUNCIL.
HALIFAX RURAL DISTRICT COUNCIL.
BRIGHOUSE JOINT HOSPITAL BOARD.

[illegible] invited for the positions of OFFICER OF HEALTH [illegible] CAL OFFICER for the Borough of Brighouse. Medical Officer of Health to the *Hipperholme Urban District* Council, Medical Officer of Health to the Halifax Rural District Council, and Medical Superintendent to the Brighouse Joint Hospital Board.

Total salary £850 per annum.

The *appointment* will be subject to the Sanitary Officers Order, 1926; the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930; the approval of the Ministry of Health and Board of Education; and will be terminable by three months' notice.

Applications, stating age, previous experience, and qualifications, together with copies of not more than three recent testimonials, to be forwarded to the undersigned on or before March 21st, in an envelope endorsed "Medical Officer of Health."

Town Hall, Brighouse. March 3rd, 1930.

ERNEST H. CLEGG, Town Clerk.

City of Salford.

INFECTIOUS DISEASES HOSPITAL.

Applications are invited for the post of JUNIOR ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £200 *per annum*, plus board, residence, and laundry. The appointment will be for one year. Form of application may be obtained from the Medical Officer of Health, 143, Regent Road, Salford, to whom it must be returned, *endorsed* "Junior Assistant Resident Medical Officer," not later than March 22nd.

H. H. TOMSON, Town Clerk.

East London Hospital for Women

AND CHILDREN, Shadwell, E.1.

Applications are invited *for the resident* post of WHOLE-TIME CASUALTY OFFICER *(male)*. The appointment is for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided.

Applications, together with testimonials, should be sent to the undersigned not later *than March* 29th.

W. M. WILCOX, Secretary.

N.B.—Residents at this Hospital are eligible as candidates for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications for positions of MEDICAL SUPERINTENDENT (man or woman) in the Public Health Department for duty at (a) EASTERN (Fever), (b) COLINDALE (Tuberculosis), (c) NEW END (General), (c) QUEEN'S, Sidcup (Convalescent, *male patients*), *and (c) TOOTING* HOME (Chronic Sick and Convalescent) HOSPITALS. Candidates must be qualified by law to practise *both Medicine and Surgery* in England. The scales of salary are: (a) and (b) £900 a year, rising by four annual increments of £60 and one of £10 to £1,150 a year, (c) £950 a year, (d) £1,000 a year and certain emoluments, and (e) £750 a year and certain emoluments, with house or unfurnished quarters in each case.

In the case of women, *marriage terminates* contract of service. Application forms containing full details obtainable (stamped addressed foolscap envelope necessary) from the Clerk of the Council, the County Hall, Westminster Bridge, S.E.1, to whom they *must be returned* by March 24th. Canvassing disqualifies.

MONTAGU H. COX, *Clerk of the London County Council.*

Hertfordshire County Council.

COUNTY SANATORIUM, WARE PARK, near WARE.

ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Assistant Medical Officer *(male)* at the above Sanatorium. Salary £350 per annum, with board, lodging, and laundry. Preference will be given to applicants who have had some experience of the institutional treatment of *Tuberculosis.*

Forms of application giving full particulars of the appointment can be obtained from the undersigned.

Clerk of the Peace Office, Hertford, Herts. March, 1930.

ELTON LONGMORE, Clerk of the County Council.

Bury Infirmary, Lancashire.

(A General Hospital of 170 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON. *Applicants* must have held a previous Resident appointment. The appointment is for six months at a salary at the *rate of* £250 per annum, with board, residence, and laundry.

The *appointed candidate* will be required to take up *duties on April* 26th.

Applications, stating age, qualifications, and nationality, with copies of three recent testimonials, to be sent to the undersigned not *later than the first post of* Saturday, March 22nd, endorsed "Senior House Surgeon."

ALEX. W. MAITLAND, *Honorary Secretary.*

Bury Infirmary, Lancashire.

(A General Hospital of 170 Beds.)

[illegible] invited for the post of [illegible]ON, who must have both qualifications, and have [illegible] in the administration of *Anæsthetics. The appointment* is for six months at a salary at the *rate* of £150 per annum, with board, residence, and laundry.

The appointed candidate will be required to take up duties on April 1st.

Applications, stating age, qualifications, and *nationality, with copies* of three recent testimonials, to be sent to the undersigned not later than the first post of Saturday, March 22nd, endorsed "*Third House Surgeon.*"

ALEX. W. MAITLAND, *Honorary Secretary.*

Manchester Babies' Hospital,

Burnage Lane, *LEVENSHULME.*

Applications are invited for the post of JUNIOR RESIDENT MEDICAL *OFFICER.* Appointment is for six months from May 1st. Salary *at the rate* of £50 per annum, with laundry.

Applications, together with copies of testimonials, should be *sent to the undersigned* not later than March 24th, marked "J.R.M.O." by Monday, March 24th.

ANGELA LOPEZ, *Secretary.*

The General Hospital,

BIRMINGHAM.

Applications are invited for the following [illegible] from April *15th:*

R[illegible] Salary £120 per [illegible]ree). Salary £70 per [illegible] full details of qualifications, and accompanied by testimonials [illegible] desired), should reach the *undersigned* by March 24th.

A. H. LEANEY, *House Governor.*

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
		YORKSHIRE WEST RIDING COUNTY COUNCIL *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch), British Medical Association, P.O. Box 156, Wellington, New Zealand
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 9, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
March 12th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

West London Hospital, Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY MEDICAL REGISTRAR for a period of one year, eligible for re-election annually for a total period of not more than three years. An honorarium at the rate of £100 per annum is attached to the post. The successful candidate must hold no appointments at a General Teaching Hospital during his term of office. The duties include the preparation of the Medical Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as substitute for the Physicians and Assistant Physicians when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach the Secretary not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They need not canvass members of the Board, but forwarded copies must be delivered at their residences not later than 10 a.m. on Tuesday, March 25th, when the election will be made.

H. A. MAIDE, Secretary.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (resident) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence on April 1st, or as soon thereafter as possible. Applications, stating age, qualifications, and experience, to be sent to the Honorary Medical Superintendent.

West London Hospital, Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY OBSTETRIC REGISTRAR. The Holder of the post is eligible for re-election annually for a total period of not more than three years. The duties include the preparation of the Obstetric Registrar's Report for the year and the supervision of the records of cases. The candidate appointed must be available as a substitute for the Surgeon and Assistant Surgeon for Diseases of Women and for minor gynæcological operations when required, and be prepared to undertake such teaching for the Post-Graduate College as the Board may approve.

Candidates are required to be registered under the Medical Act. Applications, with copies only of testimonials, must reach the Secretary not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.45 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They need not canvass members of the Board, but forwarded copies must be delivered at their residences not later than 10 a.m. on Tuesday, March 25th, when the election will be made.

H. A. MAIDE, Secretary.

Liverpool Open-air Hospital FOR CHILDREN, LEASOWE. (250 Beds for Surgical Tuberculosis and Orthopædics.)

Vacancy on March 31st, for the post of JUNIOR MEDICAL OFFICER at the above Hospital. Salary £150 per year, with board, residence, and laundry.

Applications to be sent to the Senior Medical Officer not later than March 22nd.

West London Hospital, Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY ASSISTANT SURGEON. Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, on a rota to be arranged, periodically to deliver Surgical Lectures of half-an-hour to the Nurses and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies of testimonials, must reach the Secretary not later than Thursday, March 20th. Candidates must attend the Meeting of the Medical Council on Friday, March 21st, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They need not canvass members of the Board, but forwarded copies must be delivered at their residences not later than 10 a.m. on Tuesday, March 25th, when the election will be made.

H. A. MAIDE, Secretary.

The Loughborough and District GENERAL HOSPITAL AND DISPENSARY.

[illegible] HOUSE SURGEON [illegible] March. RESIDENT HOUSE SURGEON [illegible] and laundry. Applications [illegible] Salary £80 per annum [illegible]

FRANK P. TOONE, Secretary.

[illegible] 1930.

ASSISTANCIES.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—Assistant, with Surgical experience, single, British. Salary £375 p.a., with rooms, coal, light, and attendance, and 10/- extra for each confinement. Usual bond.—Apply, A. H. JAMES, M.D., The Park, Blaenavon, Mon.

Wanted. — Outdoor Assistant, male, single, abstainer, keen and energetic, with view if suitable, in non-dispensing private and panel Practice, Liverpool. Rooms and attendance. Car provided.—Add., No. 1823, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, beginning of April, in Newcastle-upon-Tyne. Mixed industrial Practice. Salary £250 and commission on mids.—Address, No. 1753, B.M.A. House, Tavistock Square, W.C.1.

Wanted, experienced, unmarried, indoor, male ASSISTANT, Protestant. Country Practice, Yorkshire. Aged 26 to 30. Salary £250. Send photograph and essential particulars. — Address, No. 1807, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Male Assistant, for private, panel, and industrial Practice (Yorkshire). Previous experience. Usual bond. Salary commencing £250, all found. *Age about 25 and single.*—Address, No. 1832, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, young Male Assistant, indoor, Protestant, good working, middle, and panel Practice, country town. Salary £300, commission mids., with or without view. *Photo, testimonials.*—Address, *No. 1828*, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a male Assistant (outdoor), salary £300 per annum, all found, for a *residential urban district.*—Address, with references, No. 1825, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, in mixed Practice near large City. Protestant. Provide own motor cycle.—Address, stating essential particulars, No. 1817, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Junior Indoor Assistant, S. Wales, mixed Practice. Suit recently qualified man. Protestant. Must be sober. Usual bond. State age, etc. Scotsman preferred.—Address, No. 1915, B.M.A. House, Tavistock Square, W.C.1.

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Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (particulars on application). Write for price list of Tablets and Government Surplus articles.
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For Sale. — Set fifteen MEZZOTINTS, "CRIES OF OLD LONDON." Issue price, 150 guineas. Offers.—Address, No. 1837, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

The Royal Infirmary, Sheffield.

The Weekly Board invite applications for the post of OPHTHALMIC HOUSE SURGEON. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Gen. Supt. & Secretary.

Beckett Hospital & Dispensary, BARNSLEY. (150 Beds.)

JUNIOR HOUSE SURGEON required, to commence duty immediately. Applicants must be fully qualified and registered.

Salary attached to this appointment is at the rate of £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the undersigned as early as possible.

ARTHUR L. BOURNE,
March 4th, 1930. Secretary Supt.

Walsall General Hospital.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than the first post Tuesday, 18th inst.

WALTER FRANCOMBE,
March 1st, 1930. Secretary.

Whitehaven and West Cumberland Hospital, WHITEHAVEN. (90 Beds.)

Wanted, JUNIOR HOUSE SURGEON (male). Salary £100 per annum, including board, residence, and laundry. Twelve months' appointment. After six months as Junior the opportunity is given of becoming Senior for the second six months at the rate of £150 per annum.

Applications, stating age, nationality, etc., together with copies of three testimonials, to be sent to the Secretary, endorsed "House Surgeon," not later than March 22nd.

R. HIGGINS, Secretary.

The Mount Vernon Hospital, NORTHWOOD, MIDDLESEX.

There is a vacancy for a RADIOLOGIST; the appointment is a whole time one.

Applications are invited from registered Practitioners. His duties will commence on June 1st. Salary £1,000 per annum.

Applications, to accompany not more than three testimonials, to be addressed to W. J. Morcom, Secretary, Office, 7, Fitzroy Square, London, W.1

County Council of Durham.

VENEREAL DISEASES MEDICAL OFFICER.

The County Health Committee invite applications for a Clinical Venereal Diseases Medical Officer at a salary of £750 per annum, rising by three biennial increments of £50 and a further one of £37 10s. to a maximum of £937 10s. per annum. Travelling expenses will be paid by the County Council.

The appointment is terminable by three months' notice on either side, and will be subject to the following conditions:

1. The officer appointed must be a registered Medical Practitioner, with not less than three years' experience in the practice of his profession subsequent to qualification, must devote the whole of his time to the duties of the office, and must not engage in private practice.
2. Applicants for the post of Venereal Diseases Medical Officer must comply with the following conditions which are laid down in Section 5 of the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, made by the Minister of Health under Section 59 of the Local Government Act, 1929:
   "Any person appointed by the Council of a County or County Borough to be a Venereal Diseases Officer shall be a registered Medical Practitioner, who, prior to the 1st April, 1930, has held the appointment of Venereal Diseases Officer with the approval of the Minister, or who (1) has had at least three years' experience in the practice of his profession subsequent to qualification, and (2) is in possession of a certificate, given by the Venereal Diseases Officer of a treatment centre at which not less than 500 patients attended for the first time during the 12 months preceding the issue of the certificate, testifying that he has attended at the treatment centre for a period of not less than three months and has received during that period not less than 130 hours' instruction in the modern methods of diagnosis and treatment of venereal diseases."
3. The holding of a Diploma in Public Health, and practical experience in Bacteriological laboratory work will be deemed additional qualifications for the post.
4. He will act under the directions of the County Medical Officer, and will be required to reside in the City of Durham or other approved centre.
5. He will be required to give instruction in modern methods of diagnosis and treatment to general practitioners attending the clinics.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination, as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary.

Applications, endorsed "Venereal Diseases Medical Officer," together with copies of not more than three recent testimonials, must be received by the County Medical Officer, Shire Hall, Durham, not later than the 29th instant.

Shire Hall, Durham. March 11th, 1930.

HAROLD JEVONS, Clerk of the County Council.

Kettering Urban District Council.

APPOINTMENT OF PART-TIME MEDICAL OFFICER FOR ANTE-NATAL CLINIC.

Applications are invited for the appointment of a part-time Medical Officer for Ante-Natal work in connection with the Maternity and Child Welfare Service of the Council. Remuneration £1 11s. 6d. per session.

Particulars of the terms and conditions of the [illegible] ted on application [illegible] pplications, giving [illegible] and qualifications, must reach me not later than March 20th.

Council Offices, High Street, Kettering. March 5th, 1930.

JOHN CHASTON, Clerk of the Council.

Clayton Hospital, Wakefield.

(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required *immediately*. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER, Gen. Supt. & Secretary.

North Riding of Yorkshire

COUNTY COUNCIL.

ASSISTANT MEDICAL OFFICER (Maternity and Child Welfare.)

Applications are invited for the above post at a commencing salary of £600, rising by annual increments of £25 to £650 per annum.

Travelling expenses will be paid by the County Council according to scale.

Applicants must be registered Medical Practitioners of not less than three years' standing, and with special experience in Maternity and Child Welfare work and its organization. The Diploma of Public Health or its equivalent will be considered an additional qualification.

The person appointed will be required to devote the whole time to the duties of the office, reside at an approved centre, and will be under the administrative control and supervision of the County Medical Officer.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and will be terminable by three months' notice on either side.

The person appointed will be required to pass a medical examination as to physical fitness.

Applications, marked "Assistant Welfare Medical Officer," together with copies of not more than three recent testimonials, must be sent to the undersigned not later than March 25th.

HUBERT G. THORNLEY, Clerk of the County Council.

County Hall, Northallerton. March 11th, 1930.

Bristol Homœopathic Hospital.

(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER, at a salary of £120 per annum, with board, laundry, residence, etc., in the Hospital.

Good Surgical and general experience. A good opportunity for a man reading for higher surgical examination.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel), Secretary.

Connaught Hospital

(100 Beds)

FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.

JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Royal Buckinghamshire Hospital

AYLESBURY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) for six months. To commence duty March 31st. Salary £180 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROWN, Secretary.

The Children's Hospital,

SUNDERLAND. (70 Beds.)

Wanted, beginning of May, Two RESIDENT MEDICAL OFFICERS (female). Candidates must possess double qualifications (registered). Salary £100 per annum, with board residence, and laundry. The appointments are for six months. Applications, stating age, with copies of three recent testimonials, to be received by the undersigned not later than March 22nd.

S. C. FRYERS, House Governor & Secretary.

The St. Helens Hospital,

LANCASHIRE.

Wanted, a fully qualified man as RESIDENT MEDICAL OFFICER, to commence duties at once. Salary £250 per annum, together with board and laundry.

Apply, with three recent testimonials, to the Secretary, The St. Helens Hospital, St. Helens.

Applications to be received not later than March 22nd.

Hull Royal Infirmary.

(212 Beds.)

Applications are invited for the following posts (male):

HOUSE SURGEON to the Special Departments, vacant April 10th. Salary £150 per annum, with board, residence, and laundry. Duties mainly in the Ophthalmic and Ear, Nose, and Throat Departments.

CASUALTY HOUSE SURGEON, now vacant. Salary £130 per annum, with board, residence, and laundry.

Both appointments will be for six months in the first instance, terminable by one month's notice on either side.

Applications should be sent to the undersigned.

March 10th, 1930. R. J. CARLESS, House Governor.

Willesden General Hospital.

SURGICAL OUT-PATIENTS' DEPT.

Applications are invited for the appointment of CLINICAL ASSISTANTS to the Surgical Out-patients' Department, which is held on Monday and Friday at 2 p.m. The successful applicants will be expected to attend the Hospital regularly and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from the beginning of April.

Applications should be addressed to the Secretary not later than Tuesday, March 25th, from whom full particulars of the appointment can be obtained.

R. J. HEARNE, Secretary.

West Bromwich and District

GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON.

Candidates (male) must be doubly qualified and unmarried.

Salary at the rate of £200 per annum, with board, residence, and laundry.

The appointment is for six months, and the candidate appointed will be required to take up his duties on April 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned at once.

By Order, FRANK I. HANCOCK, Secretary & Supt.

Edward Street, West Bromwich.

Derbyshire Royal Infirmary.

DERBY.

(General Hospital—338 Beds.)

Applications are invited for the combined post of OPHTHALMIC HOUSE SURGEON and RESIDENT ANÆSTHETIST.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS, March 10th, 1930. Supt. & Secretary.

St. Mary's Hospital, W.2.

OBSTETRIC REGISTRAR.

The Board of Management invite applications for the above post, which will fall vacant on Monday, April 21st. Candidates for the appointment must be Fellows or Members of the Royal College of Surgeons of England or Graduates in Surgery of a British University. An honorarium of £50 per annum will be paid, with luncheon and tea provided. Copies of the regulations for the Obstetric Registrar may be obtained on application to the Secretary's office. Applications, with copies of not more than three testimonials, should reach the undersigned on or before Thursday, March 27th.

W. PARKES, Secretary.

Ancoats Hospital, Manchester.

RESIDENT SURGICAL OFFICER.

Applications are invited for the post of Resident Surgical Officer, which becomes vacant on April 30th next.

Appointment for twelve months. Salary £200 per annum, with board, apartments, and laundry. Candidates holding an F.R.C.S. degree will be preferred.

Applications, stating age, qualifications, previous experience, etc., together with copies of three recent testimonials, to be forwarded to the undersigned on or before April 3rd next.

By Order of the Board, HERBERT J. DAFFORNE, Gen. Supt. & Secretary.

Hallam Hospital, WEST BROMWICH.

RESIDENT HOUSE SURGEON AND RESIDENT HOUSE PHYSICIAN.

Applications are invited from full qualified male registered Medical Practitioners for the above appointments. The appointment in each case is for twelve months, but either party may give six weeks' notice terminating the engagement. The Hospital has 420 beds and a staff of nine Visiting Consultants.

Preference will be given to applicants who have had Hospital experience.

Salary £250 per annum, together with furnished quarters, rations, laundry, and attendance.

Further particulars may be obtained from the undersigned.

Canvassing, either directly or indirectly, is strictly prohibited, and will be deemed a disqualification.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, must be forwarded so as to reach me not later than first post on Wednesday, March 19th.

By Order,
A. H. WARD,
Clerk to Board.

22, Lombard Street, West Bromwich.
March 10th, 1930.

Royal Victoria Infirmary, NEWCASTLE-UPON-TYNE.

The Committee invite applications for the post of RESIDENT MEDICAL OFFICER (male).

Candidates must be registered Medical Practitioners and Graduates of a recognized British University or Fellows or Members of one of the Royal Colleges of Physicians and Surgeons of Great Britain or Ireland.

The appointment is for one year and is renewable annually for a period not exceeding three years.

Salary £250 per annum, rising by annual increments of £25 to £300 per annum.

Full information can be obtained by application to the undersigned, to whom applications, stating age, qualifications, and experience, accompanied by three recent testimonials, should be sent on or before Monday, March 24th.

S. DUNSTAN,
House Gov. & Sec.

March 7th, 1930.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

The following Resident posts will be vacant on May 1st next:

SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.

JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.

Board, residence, and laundry.

Appointment held for six months, but holders are eligible for re-appointment for a further term.

Candidates (male) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Monday March 31st next.

FREDK. W. DREWETT,
Director.

March 10th, 1930.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY PHYSICIAN.

Candidates must be Graduates in Medicine of a recognized British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, must be sent in by the first post on Monday, March 31st next.

(One of the present Honorary Assistant Physicians is an applicant for the post.)

FREDK. W. DREWETT,
Director.

March 10th, 1930.

The Manor House Hospital, Golders Green, London, N.W.11. (112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Appointment for six months, renewable if mutually agreed. Preference given to one having held six months previous appointment as a House Surgeon. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, should reach the undersigned as soon as possible.

JAMES W. LINKHORN, Secretary.

Salford Royal Hospital. (263 Beds.)

Applications are invited for the following vacancies, which will occur in the Resident Medical Staff (male) on the 31st instant:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

Two HOUSE SURGEONS. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before the 20th instant.

By Order of the Board,
GEORGE RUDDLE,
General Supt. & Secretary.

Salford Royal Hospital,
March 10th, 1930.

Devonshire Hospital, Buxton, DERBYSHIRE. (300 Beds.) (For Rheumatism and Allied Diseases.)

ASSISTANT HOUSE PHYSICIAN.

The Committee invite applications for this post. To commence duties at once. The successful candidate will be engaged for a period of not less than six months. The appointment is not open to ladies. Salary commencing £150 per annum, rising to £175 after three months' service, with furnished apartments, board (excepting stimulants), and laundry. Applications, with copies of three recent testimonials, endorsed "Assistant House Physician," to be sent in at once. The Hospital contains a Pathological Laboratory and X-ray Department, with full-time Officers, and there are Two House Physicians. This appointment offers special facilities for anyone preparing a thesis or wishing to do research work.

Canvassing will disqualify.

By Order,
TOM B. HARRISON,
Gen. Supt. & Secretary.

North Riding Infirmary, MIDDLESBROUGH. (General Hospital—150 Beds.)

Applications are invited for a SECOND and THIRD HOUSE SURGEON (males), to take up duties as soon as possible in the former case, and middle of April in the latter case.

Appointments for six months, with salary at the rate of £150 and £125 p.a. respectively, with board, residence, and laundry.

It is desirable that candidates for the post of Second House Surgeon should have had some previous Hospital experience.

Applications, stating age and nationality, with testimonials (copies), should be sent to the undersigned forthwith.

CHARLES POSTGATE,
Secretary-Superintendent.

Kensington, Fulham, and CHELSEA GENERAL HOSPITAL, 194, Finborough Road, Earl's Court, S.W.10.

The Board of Management invite applications from fully qualified Practitioners for the post of CASUALTY (Resident) MEDICAL OFFICER. The Hospital, the In-patient Department of which is in process of rebuilding, has an extensive Out-patient Department still working, and General and Special Out-patient Clinics. The appointment to be held for six months from April 1st. Salary £100 p.a. Applications, accompanied by copies of three testimonials, should be forwarded to the undersigned not later than March 24th.

L. MAY NORTON, Supt.

Lady Chichester Hospital, HOVE. (For Early Nervous Breakdowns.) (50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty on April 18th, with board, lodging, and laundry, and an honorarium at the rate of £50 per annum.

Applications must be made in writing, and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton, not later than Thursday, March 20th.

Eccles and Patricroft Hospital, near MANCHESTER.

JUNIOR HOUSE SURGEON required immediately. Commencing salary £125, plus board, etc. Period of six months, renewable. (Hospital —60 beds—general.)

Apply, with testimonials, to above.

Norfolk and Norwich Hospital, NORWICH.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management, in compliance with Law 29, hereby gives notice that there is a vacancy for an Honorary Assistant Surgeon, which will be filled on Friday, April 11th, at 2.30 p.m.

Candidates for the office of Assistant Surgeon shall produce evidence of being Masters or Bachelors of Surgery of one of the Universities of the British Empire, or of being Fellows of one of the Royal Colleges of Surgeons of the British Empire, and of being registered according to the provisions of the Medical Act.

Applications, with copies of testimonials, must be sent not less than fourteen days before the day of election to the undersigned, from whom further particulars regarding the post may be obtained.

By Order,
FRANK INCH,
House Gov. & Sec.

March 14th, 1930.

Metropolitan Hospital, Kingsland Road, E.8.

The Committee of Management are prepared to receive applications for the appointment of a PHYSICIAN to the Department for Diseases of the Skin.

Candidates must be Fellows or Members of the Royal College of Physicians of London, and Graduates in Medicine of a University recognized by the Medical Council, and not engaged in general practice.

There are seventeen members of the Medical Staff upon whom candidates will be required to call, and to each must be sent a copy of application and testimonials.

A list of the staff and further particulars will be furnished upon application to the undersigned.

Applications will be considered if received on or before March 31st.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management require a HOUSE SURGEON (male) at once till August 12th (during first month duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, at once, to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
Secretary, Supt.

March 10th, 1930.

Shropshire Orthopædic Hospital AND AGNES HUNT SURGICAL HOME, OSWESTRY.

Two HOUSE SURGEONS (male) required in April. Appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board, residence, and laundry. Two weeks' holiday for each six months' service.

Applications, stating age, with copies of three recent testimonials, should be received by the Secretary-Superintendent on or before March 31st.

London Temperance Hospital, Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER. The appointment will be for a period of six months at a salary of £175 per annum, and will date as from April 16th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

London Temperance Hospital, Hampstead Road, N.W.1

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for a period of six months at a salary of £100 per annum, and will date as from April 15th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: MANCHESTER: 176, *Oxford Road.* GLASGOW: 28, *Windsor Terrace.* DUBLIN: 23, *Upper Baggot Street.*

TELEGRAMS: Tactear, London. Surgical, Glasgow. Tactear, Manchester. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas. Manchester, 3152 Ardwick. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the following posts:

(*a*) HOUSE PHYSICIAN, vacant on April 1st;
(*b*) HOUSE SURGEON, No. 1, vacant on April 1st;
(*c*) HOUSE SURGEON, No. 2, vacant on April 5th.

Each appointment is tenable for a period of six months, but is terminable at any time by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence, and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned, on or before Wednesday, March 19th.

W. H. HEAD, Secretary-Supt.

Royal Manchester Children's
HOSPITAL.

The Board of Governors invite applications for the post of ASSISTANT PHYSICIAN. To attend two days per week at the Out-patients' Department, and take charge of six beds at the Hospital, Pendlebury. He will be required to attend sick members of the staff at the Hospital, Pendlebury, and in addition to do urgency work and holiday duties at the Out-patients' Department and the Hospital. Candidates must be Members of the Royal College of Physicians, London. Honorarium £50 per annum. Applications, in duplicate (typed), with copies of not more than six testimonials, to be addressed not later than March 29th to the Secretary, from whom further particulars of the duties of the office can be obtained. Canvassing not allowed.

By Order,
W. M. HUMPHRY,
March 7th, 1930. Secretary.

Birmingham and Midland Eye
HOSPITAL.

Applications are invited from duly qualified Medical Practitioners for the post of RESIDENT SURGICAL OFFICER at the above Hospital. Salary £150 per annum.

The Resident Staff also consists of two House Surgeons, and in the event of one of these being promoted, applicants should state whether they will be willing to accept the appointment of House Surgeon at a salary of £110 per annum.

Applications, with testimonials and evidence of registration, must be received not later than first post on March 18th.

Church Street, Birmingham. C. A. MASON, Gen. Supt.
February 24th, 1930.

County Mental Hospital, Chester.

FOURTH ASSISTANT MEDICAL OFFICER (gentleman, unmarried) wanted. Salary £350 per annum, with furnished apartments, board, washing, and attendance.

A further payment of £50 is given to those holding a Diploma in Psychological Medicine. It is a condition of the appointment that applicants undertake to work for the D.P.M.

The appointment is subject to the provisions and privileges of the Asylums Officers Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to reach the Medical Superintendent on or before March 26th.

East Suffolk and Ipswich
HOSPITAL.
(265 Beds—7 Residents.)

Applications are invited for the posts of Two HOUSE SURGEONS (male, British). Salary for each appointment at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

Woolwich and District War
MEMORIAL HOSPITAL,
Shooters Hill, London, S.E.18.
(General Hospital—112 Beds.)

(*a*) HOUSE PHYSICIAN. Vacant April 1st.
(*b*) HOUSE SURGEON. Vacant May 1st.

The Board of Management invites applications from suitably qualified male candidates for appointment as (*a*) House Physician, (*b*) House Surgeon. It is desirable that the House Surgeon shall be experienced in Obstetrics.

An honorarium of £125 per annum will be paid in respect of each appointment, which will be for a period of six months as from (*a*) House Physician, April 1st, and (*b*) House Surgeon, May 1st.

Applications, accompanied by copies of not more than three recent testimonials, should be sent to the undersigned to reach him not later than 10 a.m. on Monday, March 24th, for the House Physician, and 10 a.m. on Friday, April 4th, for the House Surgeon.

EDWIN RADFORD,
Secretary-Superintendent.

Seamen's Hospital Society,
Greenwich, S.E.10.

The Committee invite candidates for appointment of Two HOUSE PHYSICIANS at the HOSPITAL FOR TROPICAL DISEASES, Endsleigh Gardens, W.C. Candidates must be male, double qualified and registered. The elected candidates will be required to take up duty on April 1st. Salary at the rate of £150 per annum, with board, residence, and washing. The appointment will be for six months.

Applications, stating age, together with copies of not more than three recent testimonials, to be sent in on or before March 19th to the undersigned, from whom further particulars can be obtained.

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Seamen's Hospital Society.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by March 19th to the undersigned.

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Seamen's Hospital Society.

MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from April 1st. Salary £110 per annum, and a proportion of fees, with board, residence, and washing. Candidates must be male. Applications, with copies of three testimonials, to be sent in by March 19th to the undersigned.

By Order,
Greenwich. R. E. V. BAX,
March 3rd, 1930. Secretary.

Liverpool Hahnemann Hospital,
HOPE STREET.

Applications are invited for the post of RESIDENT MEDICAL OFFICER to the above Hospital, which falls vacant on March 25th. Appointment is for six months, renewable. Salary at the rate of £100 p.a. Knowledge of Homœopathy desirable but not essential. Duties include casualties, occasional anæsthetics, and assisting at operations.

Apply, stating age, sex, experience, and enclosing copies of recent testimonials, to the REGISTRAR before March 17th.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

St. Mary's Hospital, W.2.

There will shortly be two vacancies for the post of CLINICAL ASSISTANT in the X-ray Department. Honorarium for Senior Clinical Assistant £100 per annum, for Junior Clinical Assistant £50 per annum.

In addition, the Senior Clinical Assistant undertakes the radiation of children suffering from ringworm sent by certain local authorities, for which a separate payment is made.

Applications, giving particulars of qualifications and experience, are invited and should be forwarded to the undersigned on or before March 21st.

A copy of the regulations may be had on application to the Secretary's Office. The appointment, in the first instance, is for a period of six months.

W. PARKES, Secretary.

The Guest Hospital and Eye
INFIRMARY, DUDLEY.
(General Hospital—104 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON (male). Duties include Medical, Surgical, Eye, Ear, Nose, and Throat, Orthopædic, Radium, and Venereal Diseases work. Salary £150 per annum, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
The Guest Hospital, Dudley. March 3rd, 1930. Secretary.

Royal Southern Hospital,
LIVERPOOL.

Wanted, One HOUSE PHYSICIAN and One HOUSE SURGEON. The salary for both appointments is £60 per annum, including board and residence.

One MEDICAL OFFICER to take charge of the Special Departments. Salary £50 per annum, including board and residence.

One CASUALTY OFFICER, at a salary of £100 per annum, with board and residence.

The appointments will be for six months from April 1st.

Applications and copies of testimonials to be sent to the undersigned on or before Saturday, March 22nd.

ALLEN NALDRETT, Supt. & Sec.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

HOUSE SURGEON (male) required April 21st, with charge of beds, part casualties, and anæsthetics. Salary £150 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of testimonials, should reach the undersigned not later than March 24th.

L. L. W. LANCASTER GAVE,
Secretary-Superintendent.

Victoria Hospital, Burnley.
(120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £125 per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B and B.S Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING,
Feb. 3rd, 1930. Secretary-Supt.

Stirling District Mental Hospital,
LARBERT.

JUNIOR ASSISTANT MEDICAL OFFICER (male) required. Salary £350 per annum, with board, lodging, and laundry. Appointment subject to provisions of Asylums Officers Superannuation Act. Apply, stating age, with testimonials, to the Medical Superintendent.

The London Lock Hospitals,
91, Dean Street, W., and
285, Harrow Road, W.9.

The Board of Management invite applications for the following appointments:
(1) SURGICAL REGISTRAR to the Male Lock Hospital, and
(2) SURGICAL REGISTRAR to the Female Lock Hospital.

Honorarium in each case £100 per annum. The appointments are for one year. Candidates, who must be doubly qualified and duly registered, are invited to send in their applications, together with three copies of testimonials only, to the Secretary at 285, Harrow Road, W.9, not later than 10 a.m. on March 24th. Copies of the Laws and By-laws relating to these appointments can be obtained on application to the Secretary. Candidates must be Fellows (or Members) of the R.C.S. England, or Surgical Graduates of a University of the United Kingdom.

By Order of the Board,
HY. J. EASON,
March 6th, 1930. Secretary.

The London Lock Hospital,
91, Dean Street, W.

The Board of Management invite applications for the post of FIRST HOUSE SURGEON and SECOND HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. The salary attached to both appointments is at the rate of £200 per annum, with furnished rooms, full board, and laundry. The appointments are for six months. Duties to commence April 5th. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W., on or before March 24th.

By Order of the Board,
HY. J. EASON,
March 6th, 1930. Secretary.

Royal Cripples Hospital,
BIRMINGHAM.

Applications are invited for the appointment of HONORARY CONSULTING PHYSICIAN to the Royal Cripples Hospital.

The duties are to see cases referred by members of the Surgical Staff, either in the Out-patient Department at Broad Street, or at the Woodlands Hospital, Northfield, or otherwise by arrangement, and do not entail regular attendance at the Hospital.

The holder of the appointment is eligible to share in the Medical Staff Fund.

Applications must reach the Chairman of the Medical Board, Royal Cripples Hospital, 80, Broad Street, Birmingham, on or before March 27th.

The Hospital for Sick Children,
NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT SENIOR HOUSE SURGEON (male or female) for a period of seven months as from April 1st. Salary at the rate of £95 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 21st.

The Hospital for Sick Children,
NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT HOUSE PHYSICIAN (male or female) for a period of seven months as from April 1st. Salary at the rate of £95 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 21st.

The Hospital for Sick Children,
NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female), non-resident, for a period of seven months as from April 1st. Salary at the rate of £100 per annum. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle, on or before March 21st.

Royal Surrey County Hospital,
GUILDFORD. (180 Beds.)

Wanted, April 1st. HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating essential particulars, with copies of testimonials, to be sent to the General Supt. not later than March 19th

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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W. J. HICKS, *Secretary.*

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19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me by Wednesday, March 26th.

W. COCKBURN, Supt. & Secretary.

A Surgeon is required for the EDINBURGH HOSPITAL FOR CRIPPLED CHILDREN, with Major and Minor Clinics in the South-Eastern area of Scotland. Applicants must be duly qualified Medical Practitioners who have wide experience of Orthopædic work. The Surgeon appointed will be required to confine his private practice to orthopædic surgery. The Lectureship of Orthopædics in the University of Edinburgh will be associated with this appointment. Total emoluments £1,000 per annum. Applications, with testimonials, should be sent to R. W. MARTIN, W.S., Hon. Secretary, Edinburgh Hospital for Crippled Children, 5, Hill Street, Edinburgh, from whom further particulars may be obtained. Applications must be lodged by April 12th.

General Hospital, Nottingham.
(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, not later than Saturday, March 29th. Duties to commence on Friday, April 11th. The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

Freemasons Hospital and NURSING HOME,
237, Fulham Road, Chelsea, S.W.3.

By the resignation of the Physician-in-charge, the post of RADIOLOGIST at the Freemasons Hospital is vacant. Candidates are requested to state full qualifications and experience, and to lodge their applications on or before March 25th. For further information apply to the Honorary Secretaries.

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London, S.E. — About £2,600 p.a. Very few mids. Panel over 3,800. Nine-roomed house to rent.—No. 8620.

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Lancs. — Death Vacancy. — Average £1,600 p.a. Appts. about £130 p.a. Panel 950. Mids. from 2 gns. Visits 2/6 up. House, 5 bed., etc., to rent or buy. Premium £1,600.—No. 8617.

Liverpool. — 1/3 share of over £4,000 p.a. Old-estab. Appts. £100 p.a. Panel about 4,700. Mids. 3—5 gns. Visits 3/6—5/-. House, 4 bed., etc.—No. 8616.

Eastern Counties. — Country.— About £1,800 p.a. The whole or 1/2 share with early succession. Panel and appts. over £900 p.a., fees 2/6—10/6. Mids. 4-5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Worcs. — Country Practice. — Unopposed, 4½ miles. £1,100 p.a. Fees 5/- to 10/-. Panel and appts. £410. House, 5 bed., etc. Rent or buy. Easy terms.—No. 8612.

Cheshire Town. — About £900 p.a., increasing. Visits 3/6—5/-. Mids. 3 gns. Panel about £400. Small house for sale. Urgent sale.—No. 8597.

S. Wales. — Town Nucleus. About £600 p.a., increasing. Mids. from 2 gns. Visits 2/—3/6. Panel about 400. House, 4 bed., etc. Sep. surg. and disp. Houses. Practice £2,100, or offer, part down.—No. 8609.

Home Counties.—Country Practice. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 230. Mids 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel about 1,500. Appts. about £280 p.a. Fees from 3/6. Mids 2 gns. up. Choice of houses. Premium £2,250 —No. 8608.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Select panel about £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage —No. 8607.

Oxfordshire Town. — £730 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8605.

Suffolk Death Vacancy.—About £1,000 p.a. Country PRACTICE. Appts. £164 p.a. Small panel, but scope. Mids 2—10 gns. Visits 5/- to 21/-. Good house and garden.—No. 8590.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8599.

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LONDON, S.E.—Within easy access of City and West End.—Well-established G.P. Suitable house available, separate surgery. Panel approximately 1,250. Receipts about £1,800. Excellent scope. Premium £3,600 or near offer (cash).

ESSEX.—NUCLEUS non-panel G.P., with excellent house, for sale or to rent. Receipts approx. £250 p.a. Scope for panel if desired.

WEST COUNTRY.—Oxford or Cambridge 'Varsity Graduate desired as PARTNER, with view to Succession in three or four years' time, in old-established, good-class, non-panel Practice, situated in country town. Receipts over £2,000 p.a. Half share is offered to well-qualified man, aged about 30, at 2 years' purchase.

LONDON, S.E.—Middle and working-class G.P. in residential locality. House to rent. Receipts approx. £1,100. Panel 600. Premium £1,500 cash.

DERBYSHIRE.—PARTNERSHIP in old-established, non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share at 2 years' purchase.

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MIDLANDS.—Large Town.—Well-established G.P. Receipts £2,500. Panel 1,900. Choice of two residences for sale or to rent. Premium 1½ years' purchase. Partnership up to half share would be entertained.

WARWICKSHIRE.—Industrial Town.—Working-class PRACTICE. Receipts approx. £675 p.a. Panel 800. Premium for quick sale £800 cash.

YORKS.—PARTNERSHIP in middle and working-class Town Practice. Receipts approx. £3,000 p.a. Panel over 2,000. House to rent. Premium for 1/4th share 2 years' purchase.

YORKS.—Spa Town.—Well-established G.P., with choice of two residences to rent. Receipts approx. £600 p.a. Panel 500. Several appts.

LANCS.—Cash and Panel middle and working-class G.P. House to rent. Receipts £750. Panel 700. Premium £1,050. £600 down and balance by instalments.

DURHAM.—PARTNERSHIP in increasing Practice situated in colliery district. Receipts £1,600. Panel 1,550. Premium for half share 2 years' purchase.

YORKS.—Well-established middle and working-class Town PRACTICE. Receipts approx. £1,520. Panel nearly 1,700. House to rent. Premium £2,250.

HOME COUNTIES (S.).—PARTNERSHIP in old-established Country G.P. Medium-sized house to rent. Receipts over £2,200. Panel nearly 1,200. Premium for 1/2 share, 2 years' purchase. Suitable to well-qualified man not less than 30, preferably married.

LONDON.—We have several small PRACTICE with rooms at £100 p.a. in or around London, suitable for either sex. Details on application.

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7 DEATH VACANCY. — South Devon. — Country PRACTICE over £750 p.a. in delightful part, easy distance of coast. Panel about 400. House (4 bedrooms), garage, garden. Main drainage. Rent £45. Cottage Hospital.

8 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

9 EAST ANGLIA.—Partnership in Practice of £3,600 p.a. in Country Town. Panel 1,356. After prelim. Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anæsthetist.

10 WEST OF ENGLAND.—Good-class Family PRACTICE of between £1,000—£1,100 p.a. in centre of important City. Panel 1,100. Good freeho. house (6 bedrooms), with garden, for sale. Considerable scope. Premium £1,000.

11 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

12 SOUTH-EAST COAST. Seaport Town.—PRACTICE of nearly £1,550 p.a. (including over £750 from the panel). Corner house (5 bedrooms) for sale. Scope. Premium 1½ years.

13 SURREY.—Partnership in steadily increasing Practice in delightful residential town. Receipts 1929, £2,600. Panel over 900. Very nice detached house (4 bedrooms), with garage, etc., to rent. Hospital. Scope for increase. Premium 1/3 share £1,600.

14 LONDON, S.W.—Practice of nearly £800 p.a. in suburb easy distance of Charing Cross. Panel 830. Four rooms available for Practice. Ample scope. Premium 1½ years' purchase.

15 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,757. House (3 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

16 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750.

17 SOUTH MIDLANDS. — Practice about £450 p.a. in industrial district, close to first-rate town. Panel 100. Nice house (5 bedrooms), with garage, to rent. Considerable scope. Premium £550.

18 DEATH VACANCY. — Lancashire. — Practice of over £1,600 p.a. in manufacturing town. Panel 950. House (4/5 bedrooms) and garage for sale or rent. Scope.

19 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

20 LEICESTERSHIRE. — Country Practice over £720 p.a. (about one-half from panel). Easy distance of good town. Detached house to rent. Premium 1½ years' purchase.

21 YORKSHIRE (W.R.).—Country Practice of £1,300 p.a. (about £400 from panel), close to first-rate town. Good house (5 bedrooms) to be sold. Golf and hunting. Premium—house and Practice—£5,000.

22 YORKSHIRE.—Seaside Town.—PARTNERSHIP in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

23 LONDON, N.W.—Practice of £868 p.a. in thickly populated suburban district within 5 miles of Marble Arch. Panel 480. House to be sold or let. Premium £1,000.

24 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

25 HOME COUNTY.—Increasing Practice in attractive country town about 30 miles from London (S.). Receipts 1929 over £700. Small panel. Good corner house (6 bedrooms) to rent. Premium 1½ years' purchase.

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26 ESSEX.—Partnership in Practice nearly £1,800 p.a. in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

27 LONDON, N.—Good middle-class Practice of £1,600 p.a. in first-rate residential district. Panel 2,200. Very attractive well-built house (8 bed and dressing rooms) and beautiful garden for sale. Premium 1½ years' purchase.

28 NORTH MIDLANDS.—Steadily increasing PRACTICE of about £1,150 p.a. in first-rate city. Panel 623. Nice corner house (5 bedrooms), in residential part, to rent. Premium 1½ years' purchase.

29 WEST MIDLANDS. — Partnership in Practice of about £2,250 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

30 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

31 LONDON, W. — Good middle-class non-panel PRACTICE £1,150 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

32 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

33 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering place. Receipts last year £930 (including panel £230). Ground floor flat to let. Premium £1,050.

34 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £55. Beautiful surrounding country. Educational facilities. Premium £1,000.

35 LONDON, S.W.—Cash and Panel Practice in populous district. Receipts 1929, £460. Panel 550. Rent of Surgery 15/- weekly. Premium £650.

36 LONDON, S.W. — Partnership in mixed Practice of over £6,200 p.a. in one of the best outlying residential suburban districts. Panel over 5,000. House (5/6 bedrooms) for sale or rent. Premium one-sixth share 2 years' purchase. Partner should be young and married or about to be.

37 NEAR BIRMINGHAM.—Partner required in middle-class Practice over £2,000 p.a., in good residential town. Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

38 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one-third share 2 years' purchase.

39 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

40 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

41 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

42 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

43 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. Suitable flat (2 bedrooms) to let. Premium £400.

44 LANCASHIRE. — Practice of £1,500 in rapidly growing district within a few miles of a popular resort. Panel over 200. Very nice compact house (4 bedrooms), with beautiful garden and orchard, for sale. Prem.—Practice—£1,500.

45 LIVERPOOL. — Practice of over £1,200 p.a. Panel 600. House (4 bedrooms), garage and garden, for sale. Golf near by. Scope. Premium £1,550.

46 KENT.—County Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years purchase.

47 SOUTH AFRICA.—Practice nearly £3,000 p.a. in one of the pleasantest Towns in the Cape Province. House (4 bedrooms) to rent. Excellent surgical centre. Purchaser should be able to undertake major surgery. Premium £2,200, part by instalments.

48 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first rate town. Receipts 1929, £730. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £600 only.

49 EASTERN COUNTIES. — Partnership in Country Practice over £1,700 p.a. in prosperous agricultural district. Panel 1,050. Accommodation available. Premium two-fifths share £1,200.

50 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

51 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

52 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well built house (5 beds.) for sale or rent. Prem. £1,250.

53 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

54 SOUTH COAST.—Partnership in Practice about £3,850 p.a. in favourite watering place. Panel 2,300. Large well situated house (6 bedrooms) to rent. Premium one-third share 2 years' purchase.

55 LANCASHIRE.—Practice about £4,000 (net) in first rate Town. Panel 2,500. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,500.

56 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

57 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one half share 1½ years' purchase.

58 NORTH OF ENGLAND — Practice about £600 p.a. in Inland Spa. Panel over 500. Well situated house (6 bedrooms) to rent. Premium £1,000.

59 W. OF ENGLAND. — Ophthalmic Practice about £800, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium 1½ years' purchase.

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61 SOUTH OF ENGLAND.—Practice about £700 in steadily growing semi-rural district near important town and coast. Panel 300. Very comfortable house (3 bedrooms) for sale or rent. Premium 1½ years' purchase.

62 MIDLANDS. — Partnership in Practice over £3,000 p.a. in rural district about 6 miles from important town. Panel 2,650. House to rent or purchase. Premium 1/3 share 1½ years' purchase.

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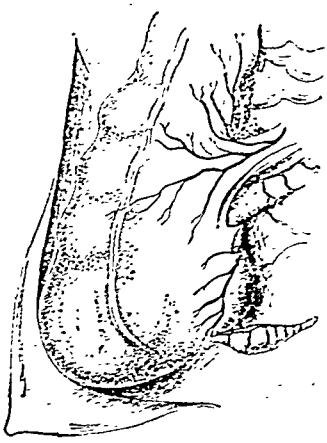
1. PARTNERSHIP.—SUFFOLK.—Third share of old-established increasing Practice in small pleasant market town in good agricultural district. Cash receipts last year over £3,100, including appt. £500 and panel producing £500. Expenses light. Railway station. Compact house (consulting and waiting rooms, 2 sitting, 5 bedrooms, dressing room, bathroom, etc.). Garden. Garage. Price for freehold £900. Premium 2 years' purchase. Sport.
2. KENT COAST TOWN.—Popular Resort.—PARTNERSHIP.—A share representing over £1,000 p.a. is for disposal owing to the sudden death of the senior of four partners. Gross cash receipts for past 12 months £7,590, and increasing. Panel produces about £2,000 p.a. Suitable house, with 2 reception, 5 bedrooms, etc. Can be rented. Cottage Hospital, and scope for some surgery. Premium 2 years' purchase.
3. PARTNERSHIP.—WEST MIDLANDS.—The third share (with increase to half in 4 years and eventual succession if desired) is offered in very old-established mixed-class Practice in small town, largely residential, in midst of agricultural district of exceptional beauty. Cash receipts average £2,367 p.a., including panel of 1,084. Opposition not strong. Expenses light. Choice of two houses (small) which can be bought for £600 or £700. Premium 2 years' purchase. Excellent sport.
4. BIRMINGHAM SUBURB.—Well-established middle and working-class PRACTICE, offering large scope. Receipts for immediate past year nearly £1,200, including panel of 1,595. Low expenses. Exceptionally nice house, thoroughly modernized and redecorated. Contains 7 rooms, with dressing room, bathroom, etc. Good professional accommodation. Price for freehold £1,000, or can be rented on lease at £70 p.a. Premium £2,100.
5. SURREY.—In a beautiful residential district within 40 miles of London (good train service) a small mixed-class PRACTICE worth about £600 p.a. and offering scope. Select panel of 200. Charming house with ample accommodation in very pretty grounds (tennis court, etc.) of 1¼ acres. Price, freehold, £3,500. Premium 1½ years' purchase.
6. SOUTH-WEST OF ENGLAND.—Old-established and increasing PRACTICE in pretty district 5 miles from Hospital town and within 10 miles of the sea. Income last year £1,489, including Union, etc. (£105) and panel of 780. Railway station near. Detached house (professional rooms, 2 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Rent on lease £45 p.a. Premium £2,100.
7. LONDON.—EASTERN [illegible] good middle-class PRACTICE averaging [illegible] of 715. Fees 5/6 upwards. Not much [illegible] nice house, with large garden, tennis court, etc. Contains 10 rooms, in addition to bathroom, etc., and professional rooms. Two garages. Rent on lease £120 p.a. (upper part well let off). Premium £2,000.
8. WITHIN FIFTY MILES OF LONDON.—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 538, and appts. worth about £60. Visits 5/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (5 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Electric light. Price for freehold £5,000. Premium £1,050. Exceptionally good educational facilities for boys.
9. LARGE UNIVERSITY CITY (WEST).—Good-class old-established non-dispensing PRACTICE worth last year £1,274, including select panel of about 350. Visits up to 21/-. Very little midwifery. Good house in best part of City, overlooking park, with ample accommodation. Vendor's freehold, but will be let on lease. Premium only £1,200.
10. CAMBS.—Old-established Country PRACTICE, averaging for the past three years over £1,200 p.a. Panel of 870. Visits 5/- upwards, medicine extra. About 30 cases of midwifery from 2 to 3 gns. Nice house, with 2 reception, 6 bedrooms, etc., and garden. Rent on lease £80 p.a. Premium £1,800.
11. PARTNERSHIP.—In a most desirable outlying residential suburb a suitable Partner (University Graduate, experienced, 30 to 35 years of age and married preferred) can acquire a share (producing at first about £1,200 p.a., but larger might be considered, with further shares up to a third at arranged intervals) in an old-established good mixed-class Practice, averaging over £10,000 p.a. Very good house, with ample accommodation, garden, etc., on rental. Premium 2 years' purchase. Short preliminary assistantship essential.
12. PARTNERSHIP.—LONDON, S.W.—PLEASANT RIVERSIDE SUBURB.—A one-sixth share is offered in an old-established mainly better-class Practice, rapidly increasing, and with scope for still further development. Average gross cash receipts for past two years £6,213 (last year £6,662). Panel of over 5,000. Fees 5/6 to 21/-. Mid. 5 to 20 gns. Very good house, with 5 to 6 bedrooms, etc. For sale or might be rented. Premium 2 years' purchase.
13. LONDON, S.W.—Very old-established chiefly middle-class PRACTICE, rapidly increasing and offering still further scope. Gross cash receipts for the immediate past twelve months approximately £5,000. Panel of about 1,500; could be much increased. Fees from 2/6 to 21/-. Two houses available, on rental. Very suitable for two friends in partnership. Premium 1¼ years' purchase.
14. MIDLANDS.—Old-established good mixed-class PRACTICE in beautiful country district near large town. Receipts for last twelve months estimated to be £900, and increasing. Fees 5/6 to 20/-. Excellent house with all conveniences, containing 2 reception, 6 bedrooms, etc. Rent on lease £65 p.a. Premium £1,800.
15. SUSSEX.—Unopposed old-established Village PRACTICE in delightful surroundings, producing about £1,100 p.a., including panel of 545 and capable of considerable increase. Exceptionally charming residence standing in 3½ acres of well-laid-out garden, tennis court, etc. and containing lounge hall, 2 reception, 7 bedrooms (3 fitted h. & c. water basins, dressing and 2 bathrooms, etc. Central heating Electric light. Garage. Price, freehold, £3950. Premium £1,650.
16. YORKS.—LARGE TOWN.—Very old-established middle and working class PRACTICE, offering exceptional scope for increase. Income for last year £1,500, including panel of over 1,700. Visits 4/6 to 5/-. Conveniently situated house, with 2 reception, 4 bedrooms, etc. Rent on lease £56 p.a. Premium £2,250.
17. HOME COUNTY.—Near Sea.—Old-established unopposed Country PRACTICE in pretty district. Receipts last financial year £1,115, including union, etc., £55, and panel 400. Railway station near. Good house in own grounds (about one acre, but more can be had if wished), containing 2 reception, 6 bedrooms, etc. Water laid on and electric light available. Price, freehold, £1,650. Premium £1,625. Educational facilities and sport.
18. LONDON, W.—Chiefly middle-class PRACTICE, averaging about £700 p.a., including panel of 750. Visits 5/6, 5/-. No midwifery. Suitable house, with 4 beds., etc. Rent on lease £95 p.a. Prem. £750.
19. PARTNERSHIP.—OXON.—Delightful residential district, near good town.—A one-third share (to commence with) in an old-established good mixed-class Practice, averaging for the past three years £1,540, and offering good scope. Panel of nearly 1,000. Fees 5/6 to 21/-. Choice of two houses at rentals of £100 and £50 p.a. Sport of all kinds. Premium 2 years' purchase.
20. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 5/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Premium £2,300. Cottage Hospital, and good scope for major surgery.
21. NEAR LIVERPOOL.—Mainly better working-class PRACTICE, producing about £700 p.a., including panel of 854. Fees 2/6 to 5/-. Mid. 3 to 5 gns.; about 20 cases yearly. Suitable house available on rental. Premium £1,000.
22. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A one-third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, on rental. Premium £2,250.
23. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
24. YORKS.—(North Riding).—Country PRACTICE in beautiful district. Average income over £750, including panel of about 330. Fees 5/6 to 21/-, medicine extra. Nearest opponent 4 miles. Suitable house with 2 reception, 4 bedrooms, etc., and garden of 1 acre. Rent on lease £30 p.a. Prem. 1½ years' purchase, part by instalments.
25. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
26. KENT.—Old-established Country PRACTICE, in favourite locality, and within 5 miles of the coast. Income for past 12 months £1,185, and increasing. Visits 5/- to 21/-. Panel of about 380. Appts. worth about £50 p.a. Convenient house, with ample accommodation. Nice garden. Price for freehold £1,800. Premium 1½ years' purchase.
27. YORKS.—PROSPEROUS LARGE TOWN.—Well-established compact PRACTICE, averaging nearly £1,600 p.a., including panel of 1,400. Fees 5/- upwards. Not much midwifery. Low expenses. Very well situated double-fronted house, 2 reception, 4 bedrooms, etc., and good professional accommodation. Garden. Price for freehold £1,600 (£1,000 on mortgage). Premium 1½ years' purchase.
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30. NEAR WORCESTER.—Old-established Country PRACTICE, averaging over £1,000 p.a., including panel of about 600. Fees 2/6 to 10/6. Good house, with ample accommodation. Rent on lease £35 p.a. Premium £1,350, £1,000 down, balance easy instalments.

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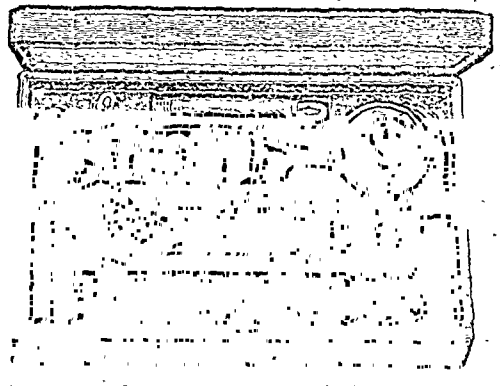
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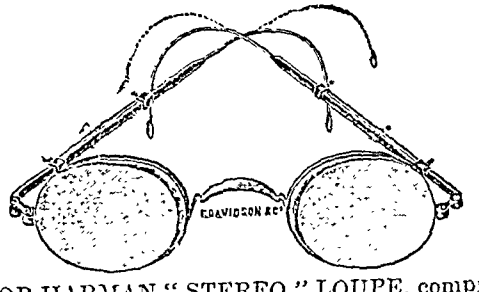
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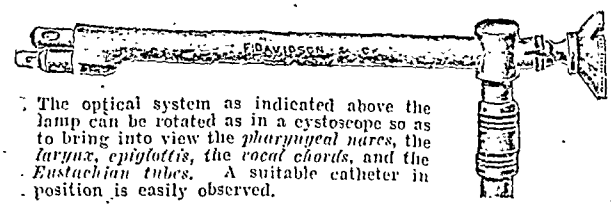
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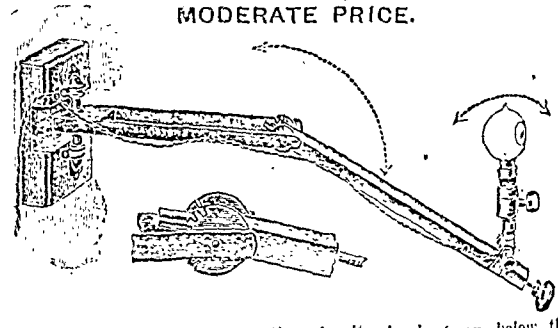
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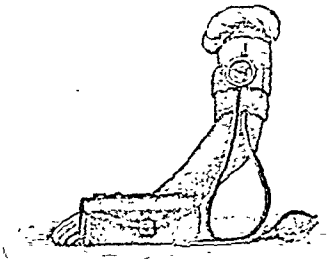
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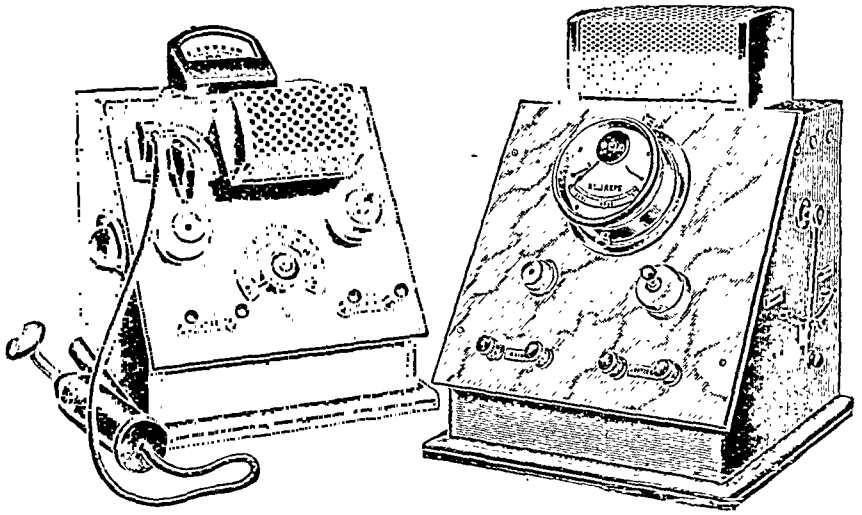
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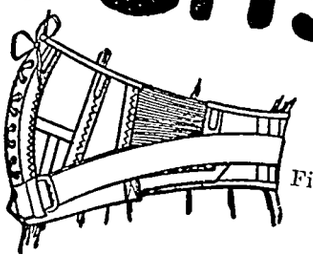
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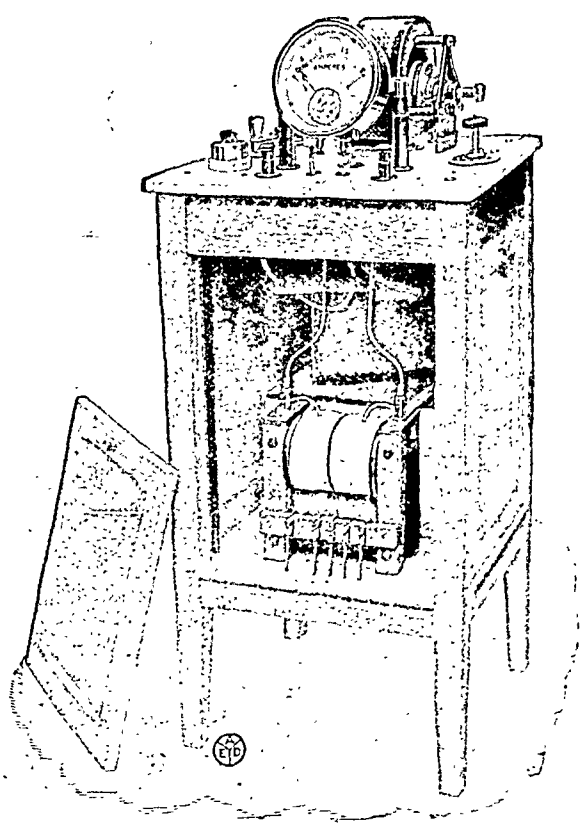
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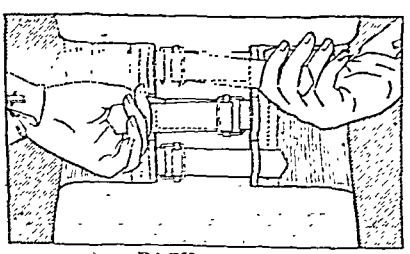
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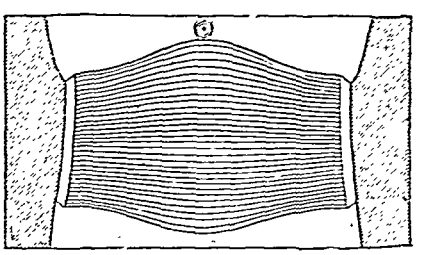
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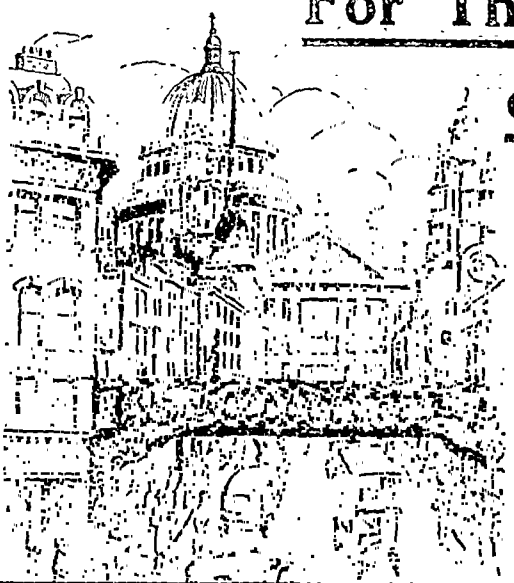
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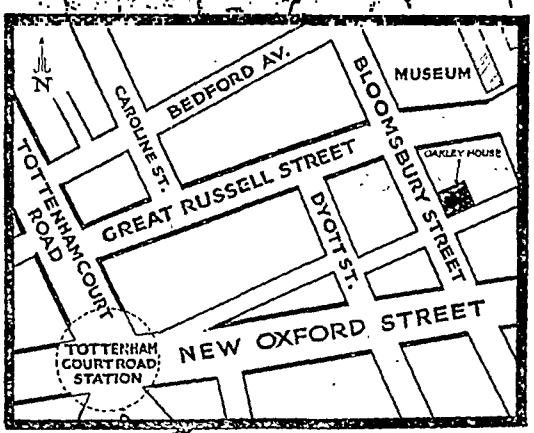
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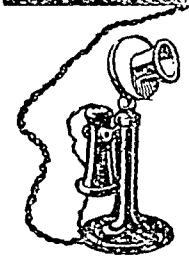
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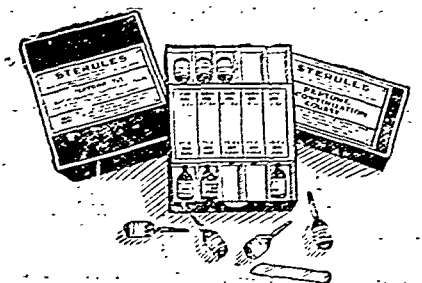
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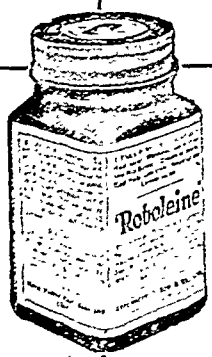
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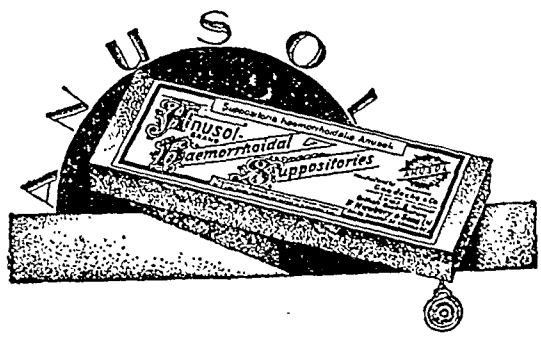
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PHEDROS is recommended to relieve the paroxysms and allay acute symptoms of coughs, bronchitis, etc.

Each fluid ounce contains:

Chloroform	2 minims
F. E. Ephedra	40 minims
Syrup Squill	160 minims
Syrup Ipecac	40 minims
Ammonium Chloride	8 grains
Syrup Tolu	q.s.

DOSE: One to two teaspoonfuls according to age.

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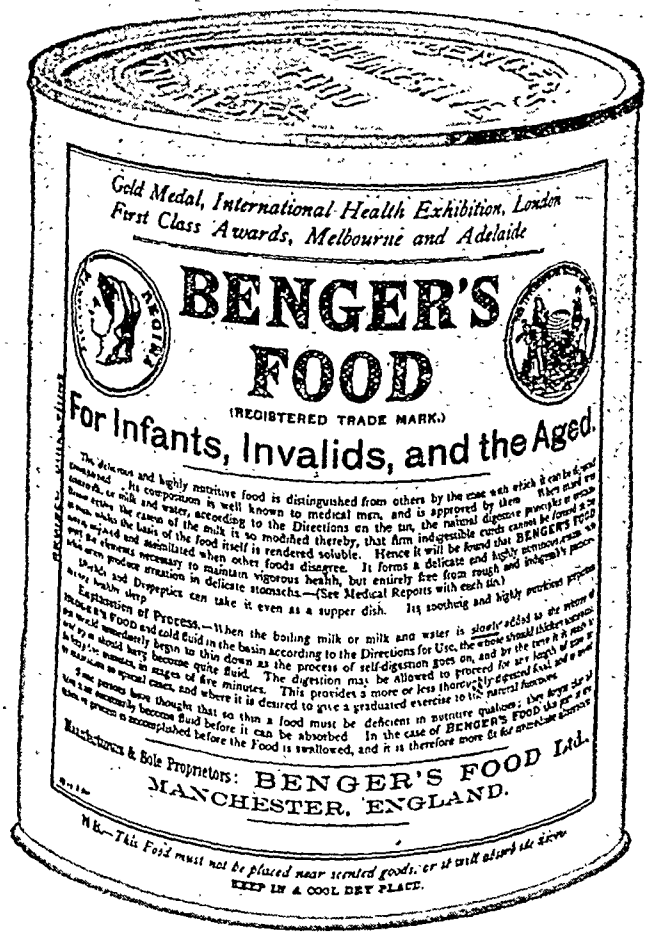
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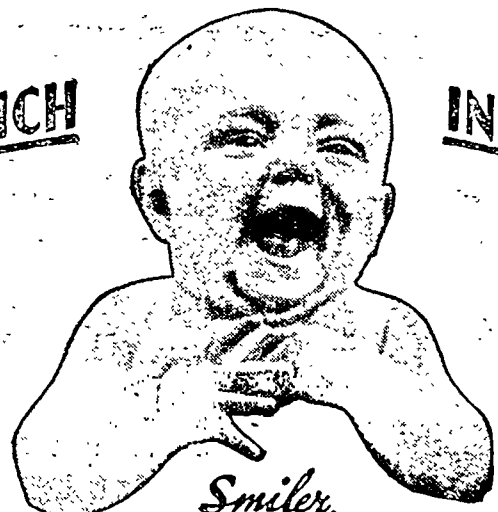
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"Medical Officer,"
Jan. 4th, 1930.

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Salivarius. Barnes 445	Mouth-Tonsillitis	1-100
Erysipelatis. 226	Lesion	1-150
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Urine 8213	Urine	1-150
Rheumaticus. Beattie	Joint	1-300
Sputum A	Unresolved pneumonia	1-700
Sputum B	Unresolved pneumonia	1-700
Viridans 1080	Tonsil	1-1000
HAEMOLYTICUS 2060	—	*1-1500*
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Mastitidis 2470	Mastitis	1-1500
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MONSOL BRAND



MILK



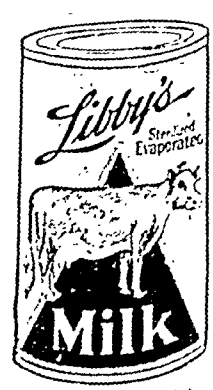
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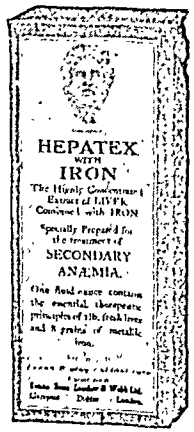


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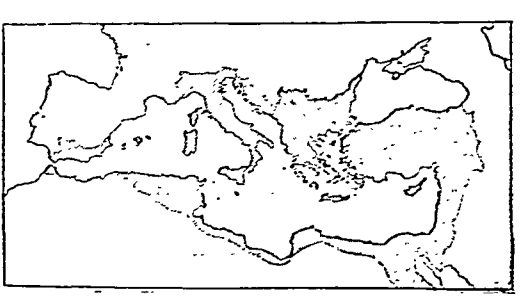
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A British Medical Association Lecture

ON

PREDESTINATION IN DISEASE.

DELIVERED BEFORE THE WIGAN DIVISION ON DECEMBER 13TH, 1929,

BY

W. LANGDON BROWN, M.A., M.D.CANTAB., F.R.C.P.,
PHYSICIAN TO ST. BARTHOLOMEW'S HOSPITAL.

THE word "predestination" brings the grim figure of Calvin before the mind. But it is not with the theological aspects that I wish to deal. The flames of hell have lost their terror, but as man must be frightened about something, he terrifies himself about germs or cancer or whether he is eating enough vitamins. This fills the void, which disbelief in hell has left, quite satisfactorily. True, the scientific doctrine of determinism approximates to predestination. On that view every act is predetermined by our reaction to some afferent impulse—determined by our original make-up as modified by the effect of previous impulses. This doctrine has been carried to its logical conclusion by Freud when he maintains that slips of the tongue or pen and forgetfulness are the result of causes which can be discovered and which throw light on the working of the unconscious level of our minds. On this view the only variable factor in a man's behaviour comes from his environment, which may vary the kind of stimulus he receives—the rest is predestined.

Now I would like to say, in passing, that while I object to the doctrine of the verbal inspiration of Freud, and while I think he bases his views of the origin of the instincts too much on one instinct, I do really feel that when the dust of controversy has cleared away Freud will be recognized as one of the most original thinkers of our time, and his scientific achievement equal to that of Darwin. But I do not intend to-night to delve into the mysteries of the unconscious. Mine is a less ambitious task—that of estimating the effect that modern work has had on the doctrine of diatheses.

DIATHESES.

Even in the days of Hippocrates the doctrine of diatheses was taught, and it survived into the latter half of the nineteenth century. What exactly is meant by diatheses? Jonathan Hutchinson, in his lectures on "The pedigree of disease," in 1884, defined a diathesis as any bodily condition, however induced, in virtue of which the individual is, for a long period, or usually through the whole life, prone to suffer from some peculiar type of disease. Some diatheses, he said, are inherited, others are acquired. Of some the effects are permanent or constant, of others they are transitory, or recurrent after intervals of health. Later on, in the same course of lectures, he defined diathesis more briefly as "any condition of prolonged peculiarity of health giving proclivity to definite forms of disease."

But the bacteriological conception of disease that had been initiated by Pasteur had already thrown the doctrine of diatheses under a cloud. The scrofulous diathesis was a conception which was particularly open to attack. Not only were some observers confusing syphilitic with tuberculous diseases under that heading, but even those who were free from this gross error did not sufficiently distinguish between the tendency to infection by tubercle and a condition in which such infection had already occurred. It may be said that both syphilis and tubercle are infective granulomata, but it must certainly be admitted that a definition which does not draw a clear distinction between them is really worthless. Moreover, the strumous diathesis was open to a similar criticism, that it did not distinguish between the liability to, and infection by, tubercle. Nothing much can be said in favour of a classification which confused some cases of glandular tubercle with syphilis and attempted to separate others into two different diatheses. Yet, curiously enough, it was exactly the same point which, after helping to overthrow the doctrine of diathesis, then helped to dethrone the bacteriological factor from its supremacy. When it was realized how ever-present the tubercle bacillus was, how exposed everyone was to its inroads, and how comparatively few submitted to those inroads, it was forced upon our attention that the seed was not all-important, the soil must also be considered. Fortunately that seed falls upon stony ground in most of us. And so back came diatheses, with a difference. A new interest was awakened in the subject of natural immunity.

But despite Jonathan Hutchinson's gallant attempt to stem it, the tide was to run strongly against diatheses for some years to come. Nor is this surprising if we read those lectures. Surely never was the saying that the wisdom of one generation is the foolishness of the next better illustrated. Here was a man of unique clinical insight, extraordinary powers of observation, and great experience, making inevitable mistakes which would not be tolerated to-day in a candidate for his diploma—inevitable because he had not the data on which to base a correct opinion. Who to-day would dare to speak of the malarial diathesis, or who would attribute leprosy to the eating of unwholesome fish? Yet mingled with these errors are numerous shrewd guesses at future developments. Thus he quotes Spencer Watson as saying, in 1882, that "free exposure to sunlight and warmth would do much to enable a child improperly fed to effect assimilation in such a way as to keep clear of rickets." And he concludes thus: "We may certainly believe it probable that our climate and the narrow, sunless streets of our large towns take their share in the production of rickets." Yet it was not until after the war that this view was set on a sound scientific basis. We shall be very lucky if, forty-five years hence, our theories and conclusions of to-day stand the test of time as well as those of Jonathan Hutchinson.

When I entered St. Bartholomew's Hospital in 1894, only one of my teachers referred to diatheses without an apologetic smile. Sir Dyce Duckworth alone maintained a robust faith in them. Yet at that very time Weismann, the Calvin of biology, was laying down the rigid doctrine of the germ plasm. No acquired character was transmitted, he averred, for acquired characters only affected the somatic cells, and in the germ plasm alone did heredity reside. Later on the discovery of the chromosomes and the rediscovery of Mendel's work seemed to place this doctrine on an assured basis. This inevitably brought the idea of predestination into medicine. The progress of human thought is always in a spiral; the turn of the spiral had now been reached, and, as I have already said, back came diatheses, with a difference.

It is interesting to see how, even in some matters of detail, the old ideas have been coming back. In 1852 Dr. Laycock published his lectures on "Physiognomical diagnosis," in which he called attention to certain facial types which assisted in the diagnosis of the diseases from which their owners were suffering; and Draper at Columbia University is at present studying this subject anthropometrically, and trying to establish by direct measurements the existence of certain types, such as the gall-stone type, the peptic ulcer type, and the pernicious anaemia type. He has collected a mass of data in his book *Human Constitution*, and has certainly revived an interest in the subject of diathesis. I have had the pleasure of his company in my wards at St. Bartholomew's Hospital, and it was clear that his system enabled him to make shrewd and often correct guesses at the diagnosis, though I think he will have to do far more work before his conclusions command wide acceptance.

My main purpose is to discuss certain recent investigations which give us some hopes that we are arriving at clearer views as to the factors which go to determine liability to disease, factors which admit of some accuracy of determination, some degree of measurement. I refer to such subjects as inborn errors of metabolism, idiosyncrasy, endocrine balance, and the posture of the viscera. I will deal first with those which express themselves through some recognizable chemical disturbance.

Inborn Errors of Metabolism.

This term was introduced by Sir Archibald Garrod to describe certain congenital abnormalities which could be diagnosed by chemical tests. They are so rare that a man may spend his whole professional life in busy practice and never see a case. They may lead to a disease in some instances, but they more frequently cause no discomfort. It might be thought, therefore, that their study is a wasted endeavour. But by years of careful observation Sir Archibald Garrod was able to arrive at certain general conclusions which have thrown much light on the way in which the body works, and on some important factors in our constitutional make-up.

The inborn errors which are at present recognized are albinism, alkaptonuria, cystinuria, pentosuria, and porphyrinuria. Four out of the five, therefore, are characterized by the presence of an abnormal substance in the urine. But each of these substances, though not normally excreted, is a normal intermediate product of metabolism. The peculiar feature, then, is that in persons suffering from such conditions the ordinary breaking down of their tissue cells stops short at a certain point, and the product formed at that stage is excreted. In the remaining example, albinism, there is evidently a closely similar state of affairs. The albino is unable to manufacture any pigment containing melanin, and if he is given melanin he merely excretes it as such, although he can manufacture the pigments of blood and bile just like an ordinary man.

Now we have been gradually forced to recognize that each successive step in the building up or breaking down of all tissue components, even of individual fractions of proteins and of individual sugars, is the work of special enzymes or ferments set apart for each particular purpose; and, to quote Garrod: "If any one step in the process fail, the intermediate product in being at the moment of arrest will escape further change, just as when the film of a cinema is brought to a standstill the moving figures are left, foot in air." Very curious, you may say, but not important, considering the rarity of these conditions. But wait a moment; Garrod quotes a far-seeing remark which Claude Bernard made in 1880: "Would anyone dare to maintain that it is necessary to distinguish the laws of life in a pathological state from those laws in a normal state? That would be like distinguishing between the laws of mechanics in a house that falls down and in a house that remains standing." In other words, the great value of the study of these inborn errors of metabolism is that they have shown us some of the intermediate steps taken in the ordinary metabolism of tissues and have helped to prove that each step requires its own special ferment.

These inborn errors of function are the chemical analogues of structural malformations; they do not tend to get worse, but they may predispose to further trouble. The alkaptonuric passes a urine which darkens on standing and reduces Fehling's solution, thus perhaps leading to an erroneous diagnosis of, and unnecessary treatment for, diabetes. But he may also develop a special form of arthritis and be inconvenienced by ochronosis, a pigmentation of his conjunctivae and of his cartilages similar to that which may be developed by prolonged use of carbolic acid—for example, as a dressing—and essentially due to a similar chemical cause. The cystinuric has no inconvenience unless he contract an infection of his urine, when he may develop a cystin stone in his kidney or bladder. The pentosuric is unable to deal with the special sugar which is set free in the breakdown of the nucleo-proteins of his cell nuclei, but will suffer from no inconvenience unless he tries to insure his life, when he is very likely to be unnecessarily rejected. As for the porphyrinuric, we know that the haematoporphyrin of the blood pigment is a sensitizer to light. If haematoporphyrin is injected into each of two albino rabbits and one is kept in the dark no harm will result to it, but if the other is allowed to run about in sunlight it will die. It has no protective pigment, and the free haematoporphyrin makes it fatally sensitive to light rays. Haematoporphyrin in the combined state enables actinic rays to reach the hidden recesses of our body through the blood stream, but the individual who is unable to decompose it when red blood corpuscles die a natural death is so sensitive to light that every summer he is apt to develop a vesicular rash on any exposed part.

Such errors of metabolism fulfil Jonathan Hutchinson's definition of a diathesis—"any condition of prolonged peculiarity of health giving proclivity to definite forms of disease." A further point of great interest is that these inborn errors of metabolism are liable to occur in several members of the same family, most often in collaterals of the same generation, born of normal parents. Direct transmission from either parent to child is very rare. Like many such abnormalities, they are specially liable to occur in the offspring of marriages between first cousins. Much has been said against such marriages, but it is generally admitted to-day that the mere fact of consanguinity of parents cannot cause "an anomaly to appear *de novo* in their children, but it is obvious that the reappearance of a latent character which both parents tend to transmit is likely to be favoured by the mating of members of certain families" (Garrod). What is often forgotten by opponents of such marriages is that favourable variations are just as likely to reappear as unfavourable ones. Hereditary genius has apparently been fostered by the marriage of first cousins. Of course, if such intermarriages were frequently repeated in a family, the ordinary bad effects of prolonged inbreeding would assert themselves.

The proportion of first-cousin marriages in this country is estimated at between 3 to 5 per cent. of all marriages, yet of 34 cases of alkaptonuria 15 were in the children of first cousins—that is to say, 44 per cent. of the cases sprang from marriages which constitute less than 5 per cent. of the total marriages. The late Professor Bateson pointed out that the mode of incidence of alkaptonuria finds a ready explanation if the anomaly in question be regarded as a rare recessive character in the Mendelian sense. Naturally such recessive characters are more likely to occur when the parents are consanguineous.

I have dwelt at some length on this rare group because of the light they throw on questions of wider interest. They show that each step in metabolism requires its special ferment, that the absence of some special ferment may induce a predisposition to a disease, and that this lack may be transmitted according to the Mendelian laws of heredity. Such clear-cut results in this narrow field will doubtless find applications in wider fields. In gout we have an error of metabolism, which is sometimes clearly inherited, but sometimes apparently acquired. Yet that apparent acquisition may perhaps only be a latent inborn tendency made active by habit or environment. The chemical factor is an inability to deal with the uric acid set free by the breakdown of nucleo-proteins, yet it often requires the presence of a low-grade sepsis to make it effectively noxious. Routine analyses of the blood have shown that many more people have excess of uric acid there than have ever had gout. Of all hereditary diseases haemophilia is the most striking, both because of its dramatic and often tragic manifestations, and because, as a corollary of this, of the detailed knowledge we have of its method of transmission. Cases have been traced back in an exalted family as far as 1500; Dr. Drury mentions a family in South Africa, springing from old Dutch settlers, in which haemophilia has been traced back for twelve generations, over a period of 250 years and affecting 610 individuals.

In every case the method of transmission is the same—by the female line, though only males are affected. This gives us some clear evidence to go upon, for sex is a Mendelian characteristic, dependent on a chromosome. Females have an even number of chromosomes, males have an odd number, being one short. This odd one is called the X chromosome, but some sperm cells contain this, others do not. The union of an egg cell with a sperm cell containing an X will result in the offspring being a female, while such union with a sperm cell which does not contain an X mean; that an unpaired X will result, and the offspring will be male. It would therefore appear that haemophilia is due to the transmission of an X chromosome derived from the egg cell which has remained unpaired at fertilization. If it is paired this peculiar chromosome is rendered harmless. We know that in certain

animals particular characters are transmitted by particular chromosomes, but this, as far as I know, is the only instance in which we can apparently associate the transmission of a disease in man with one recognizable chromosome. But, further, we know that the haemorrhagic tendency to haemophilia, unlike purpura, is due to a delay in the coagulation time, and that this delay is due to a lack of one of the constituents of the fibrin ferment—namely, thrombogen. Here, therefore, we have a deadly disease due to the lack of a particular ferment which is transmitted according to definite Mendelian laws. In other words, it fulfils the same criteria as those demanded by the rare and seldom serious inborn errors of metabolism.

The transmission of the pseudo-hypertrophic form of muscular dystrophy is similar—that is, it is transmitted by the female line but usually attacks males. However, girls occasionally suffer from the disease, though it is five times more common in boys than in girls, but this is sufficient to destroy any idea of its necessary connexion with the X chromosome. Spiller's remark in Osler and McCrae's *System of Medicine*, that "it seems extraordinary that sex should influence the onset of this disease, especially at so early an age," ignores the fact that sex is dependent on the chromosomes, and is determined at the moment of fertilization.

Another rare familial disease which has some interesting bearings on my topic is familial haemorrhagic nephritis, of which I have seen examples in two different families. The most striking group is the family described by Hurst, of which I saw two members. In this family there were 27 persons in three generations, of whom 16 suffered from nephritis. The males were much the most seriously affected, all the affected ones having succumbed with the exception of one child in the third generation, while the females were involved to a much lesser degree, and only two succumbed. In the early stages there was merely haematuria, and Leonard Guthrie, who studied some of the earlier cases, preferred not to label them as nephritis; but later on undoubted nephritis developed, and typical uraemia has closed the scene in several. In the two patients I had the opportunity of seeing, the passage from haematuria to nephritis was distinctly observed in the boy, but not in the girl. Dr. Hurtley kindly made some biochemical tests, and we found it possible to predict the onset of the haemorrhage by noting an increased concentration of the urine and an increased output of neutral sulphur. This suggested to us that some abnormal protein breakdown was the immediate cause of the haemorrhage, and that repeated irritation of the kidney in this way led to nephritis. It is an interesting fact that in some members of the family certain articles of diet, especially black currants or claret, would induce an attack. I strongly suspect, therefore, that the nephritis in this family was the consequence of some error in metabolism which resulted in the excretion of intermediate products in a form damaging to the kidney. This has an interesting bearing on Aschoff's views as to the importance of a pre-renal factor in inducing nephritis, while bringing the familial type into close relationship with the other errors of metabolism I have mentioned.

Idiosyncrasy.

I next come to the subject of idiosyncrasy as a factor in predestination in disease. Sir Humphry Rolleston considers that idiosyncrasy is a semi-popular rather than a scientific term, but briefly defines it as an unusual physiological equation. It is a special instance of allergy, a term introduced by von Pirquet to describe all forms of altered reactivity of the organism. It therefore includes hypersensitiveness on the positive side and immunity on the negative side, but is now commonly confined to the former condition. Very often allergy is restricted to an inborn sensitiveness, while the term "anaphylaxis" is applied to an acquired sensitiveness. Here we are only concerned with an inborn sensitiveness. Morley Roberts has made the profound remark that "immunity is assimilation." There is one flesh of birds and another of beasts. From the welter of amino-acids which result from the disintegration of food proteins each animal has to build up its own characteristic and specific tissues. Specificity is chemical as well as morphological. To some foreign proteins we are naturally immune—that is, we can assimilate them automatically; to others we acquire immunity—that is, we learn to assimilate them; but to some foreign proteins immunity is neither congenital nor acquired. The tissues continue to resent the intrusion of such. They will not assimilate them. Such proteins excite anaphylaxis, or, more strictly, allergy, in varying degrees. Richet has defined anaphylaxis as the last stand of the race against adulteration of its protoplasm. In extreme degrees anaphylactic shock is fatal because assimilation would mean too profound an alteration of bodily structure. In less degrees both allergy and anaphylaxis declare themselves in violent attempts to get rid of the foreign invader. These attempts take the form of diarrhoea and vomiting, of giant urticaria, or of asthma. Hypersensitiveness, then, is the refusal on the part of the individual's protoplasm to attempt to deal with certain foods and drugs in order to conserve its own identity. If inborn errors of metabolism indicate a difficulty in katabolism, idiosyncrasy indicates a difficulty in anabolism. It gives a scientific basis for the old saying that one man's meat is another man's poison. The substances which excite these reactions are not in the least toxic to the ordinary individual. Freeman has injected himself intravenously with doses which would be fatal to a sensitive subject without any symptoms resulting. He has given rabbits enormous doses of an extract of grass pollen, such as would kill a pollen-sensitive asthmatic, without any results. Indeed, one can hardly imagine a rabbit being sensitive to grass pollen. Such rabbits could not survive in the struggle for existence.

Some years ago I saw an extreme example of hypersensitiveness to eggs in a young man. He was made very ill by the minutest trace of egg-white, whether he was conscious of taking egg or not. He did not know that a roll might be glazed by egg-white until it produced the following distressing symptoms—an immediate tingling sensation on the tongue, followed by a shudder; then copious salivation, first frothy, then in long viscid strings, difficult to spit up; next, spasmodic contractions in the throat, rendering it most difficult to swallow even saliva; then severe abdominal pains and cramps, continuing for about eight hours. A larger quantity of anything containing egg albumen would cause violent diarrhoea and vomiting, with alarming collapse. I have noted that egg-sensitive persons are liable to be upset by eating chicken, and it is well known that if one emanation from an animal causes a reaction others from that animal will do likewise. The man who gets asthma from horse dandruff will get a violent rash and joint swellings from an injection of horse serum, and may have an alarming and even fatal collapse. On this fact the protein skin tests have been based, and it has been claimed that in this way the peccant protein may be discovered. Unfortunately this method has not proved the success in practice that was anticipated. The patient may show a reaction to a large group of substances, and is not constantly sensitive to the same substance. Thus I saw a patient who was emaciated and profoundly depressed, but whose chief objective trouble was a painful swelling of the tongue and lips. His skin reactions showed that he was highly sensitive to cereals, which were accordingly removed from his diet, and he made a dramatic improvement, gaining 16 lb. in weight in one month. Later on he relapsed, and a repetition of the skin tests showed that, although he was no longer sensitive to cereals, he gave a marked reaction for some other groups.

Intradermal tests are the best, and the Schick test for diphtheria and the Dick test for scarlet fever, which are based on that method, have proved of great value in distinguishing between those who are naturally immune to and those who are susceptible to these diseases.

Briefly to summarize this section—immunity and hypersensitivity are the opposite poles in an assimilative process; if the cell can assimilate a substance it is immune to any toxic results that substance might produce; if it is hypersensitive to that substance this is because it cannot assimilate it. From the make-up of their protoplasm some individuals are quite unable to do this, and are therefore predestined to suffer if exposed to material which for them may be highly toxic.

The Sympathetic-Endocrine Balance.

Time will not allow of my making more than a brief reference to the important factor of the endocrine balance. That some individuals inherit an imperfect equipment of endocrines is well recognized; a family tendency to thyroid disturbance is frequently seen—and, curiously enough, the balance may lead to overaction in one member and to underaction in another of the same family. Now there is a very interesting point in connexion with Graves's disease. It is always accompanied by a persistent and usually enlarged thymus. The thymus should have atrophied before puberty; it is an infantile gland which retards the development of sexual maturity. On the other hand, Graves's disease seldom develops before puberty, so that it would appear that only those patients in whom the thymus fails to atrophy are capable of developing Graves's disease. Here, therefore, we have again a family liability to a disease, in this case associated with the persistence of an infantile gland. Cases of hypopituitarism also tend to run in families. As for pluriglandular syndromes, these are, in my experience, usually associated with a gonadal defect, which naturally interferes with fertility. In this way a family in which the endocrine balance is too grossly disturbed tends to die out. Mott has shown that exactly the same thing happens in some families liable to mental disease. The mental trouble tends to occur earlier and earlier in each generation until, by producing dementia praecox, in which there is usually gonadal deficiency, the propagation of this inherited defect is checked. It is to be regretted that this method of eliminating mental disease is not more widely adopted by nature.

We know that the endocrine glands, the thyroid, adrenals, and pituitary, co-operate with the sympathetic nervous system, while the pancreas, and possibly the parathyroids, co-operate with the vagus. Eppinger and Hess have tried to classify the neurotics into two main groups—the sympathicotonics and the vagotonics. While not accepting all their conclusions, which are certainly too hard and fast, we may agree that there is a group whose tendency to an overactive sympathetic is displayed by tachycardia, overaction of the thyroid, adrenals, and pituitary, a tendency to high blood pressure, a raised blood sugar, and a liability to glycosuria. Such individuals easily develop a temperature from a trivial infection. Temperamentally they are liable to phobias. On the other hand, we have the type where the overacting vagus displays itself by a slow pulse, liability to syncope, asthma, hay fever, urticaria, spastic constipation, and low blood sugar. They react badly to infections, and their temperament is one of vague apprehension. Such patients are often a good deal benefited by belladonna, which paralyses the vagal endings. I have referred to the chemical idiosyncrasies of the asthmatic, but he is also the victim of this overacting vagus. But this overaction may be relative rather than absolute; I mean that an underacting sympathetic may tip the balance in the direction of the vagus. Thus Widal reported the case of an asthmatic who subsequently developed myxoedema; treatment by thyroid extract not only relieved the myxoedema but also the asthma. Indeed, the relief of the asthmatic paroxysm by injections of adrenaline is another example of restoring the balance in favour of the sympathetic. These tendencies to a disturbance of the balance in one direction or another certainly run in families, and Cammidge has collected family histories which suggest that their inheritance follows Mendelian laws.

Achlorhydria.

I wish specially to call your attention to the way in which the absence of hydrochloric acid in the gastric juice may predispose to various diseases. In many respects we do not attach the same importance to gastric digestion as formerly. A man can assimilate his food after a total gastrectomy, and the pancreas is not so dependent on gastric HCl to start its secretion as Bayer and Starling concluded. But in one respect the HCl is now known to be of greater importance than was suspected, and that is in its bactericidal action. Indeed, as I pointed out a good many years ago, it may well be that the reflex hyperchlorhydria excited by some infection lower down in the alimentary tract is an attempt to check further bacterial invasion from the mouth. Now achlorhydria may be acquired as the result of prolonged chronic gastritis, but it may also apparently be congenital. Indeed, according to Izod Bennett, it is just about as common as red hair. Bennett and Ryle in 1921 found by fractional test meals on 100 healthy medical students at Guy's Hospital, that 5 per cent. had complete achlorhydria, while 15 per cent. had hyperchlorhydria, the remaining 80 per cent. having normal curves. Now it is a well-known fact that certain diseases are always associated with achlorhydria, whether congenital or acquired, while certain other diseases are more likely to occur in its presence. Let me take, as the most striking instance, *pernicious anaemia*. When Dr. William Hunter, some thirty years ago, called attention to the association between pernicious anaemia and oral sepsis, one wondered why the disease was not far more common, considering how little attention was then paid to oral hygiene. Then it became clear that it never occurred unless achlorhydria was also present. Other sufferers from pyorrhoea might suffer from many diseases, but never from pernicious anaemia. I have seen pernicious anaemia develop in achlorhydria that has been acquired—for example, by short-circuiting—but that the achlorhydria which is responsible is usually congenital is suggested by this being an abnormality affecting 5 per cent. of the population, and is made almost certain by Hurst's observation of its more frequent occurrence in the families of patients with pernicious anaemia. The discovery of the efficacy of liver treatment in pernicious anaemia has given a new orientation to our outlook, but the primary importance of achlorhydria remains. Indeed, recent work by Castle of Boston helps to reinforce it. He showed that the normal products of the digestion of meat by gastric juice had much the same effect as liver. He concluded that this acid digest stimulated the patient's liver to produce something which prevented the breakdown of red corpuscles; the normal liver we administer contains that substance pre-formed.

Another disease which is invariably associated with achlorhydria is *subacute combined degeneration of the cord*. Collier, Batten, and Risien Russell, in 1900, showed that this disease might anticipate or follow pernicious anaemia, or occur independently. They concluded that it was due to the same toxin. Since then repeated fractional test meals have proved that it never occurs without achlorhydria, and it is also recognized that some degree of cord change is often found in pernicious anaemia, if it is carefully looked for. Once degeneration of the cord has occurred, treatment by liver is, of course, unable to restore it, but in the earlier stages, when there are only toxic symptoms and before structural changes have occurred, this remedy is of decided benefit. Curiously enough, this disease seems specially common in Newcastle, and although most neurologists would not accept the diagnosis in some of the cases reported there by Ungley and Suzman, two facts stand out—toxic symptoms resembling subacute combined degeneration of the cord were often relieved by liver treatment, and achlorhydria was common in the healthy members of the families of patients suffering from suspected or declared cord changes of this kind.

I have been greatly struck with the frequency of *achlorhydria in ulcerative colitis*, and with the great benefit which has been derived from the administration of HCl in these cases. I was led to this by Hurst's observation of the frequency of achlorhydria in various forms of irregular *diarrhoea*. In such cases I have generally found a normal intestinal flora on bacteriological examination of the stools, or at any rate the absence of any definitely pathogenic organism. This indicates a weakness of defence rather than of strength of attack. I saw a man in a severe attack which cleared up on HCl which he continued to take for eighteen months after recovery. Six months after giving it up he had an even more severe attack, from which he bled so seriously as nearly to lose his life. After transfusion and routine administration of HCl he slowly recovered again, and is now apparently well. But such a man should continue to take HCl for the rest of his life.

Hunter called attention to another feature of pernicious anaemia—namely, glossitis leading to a loss of papillae. Now this raw, sore tongue is found in certain other conditions, and it is gradually becoming recognized that these are generally, if not invariably, associated with achlorhydria.

Sprue was the first of these in which this triad of symptoms—anaemia, glossitis, and achlorhydria—was recognized, and, as we know, it is characterized by a general thinning of the mucosa of the alimentary tract and by diarrhoea. We all know the neurotic woman who, generally about the time of the climacteric, complains of a sore tongue. It might be suggested by a cynic that this is due to the habitually caustic use such patients make of that organ, for their bad temper is proverbial. They are the *despair of the general practitioner, for they are a mass of* phobias, and naturally particularly of cancerphobia. Now it is an interesting fact that many of these patients have achlorhydria, and some of them can be benefited more by HCl and parathyroid with calcium salts than by all the nerve sedatives inside or outside the Pharmacopoeia. Here we have the triad of achlorhydria, glossitis, and purely functional nervous symptoms.

Lately, however, a more definite syndrome has been recognized—achlorhydria, glossitis, anaemia, dysphagia, and sometimes an enlargement of the spleen. The anaemia is usually not of the *pernicious type, but is secondary in* character. I take it that the dysphagia, which is referred to the oesophagus, is due to a similar loss of mucous membrane lower down than the mouth. My colleague Dr. George Graham kindly allows me to mention a case, as yet unpublished, in which the dysphagia cleared up on liver extract, although here, too, the anaemia was not of the pernicious type.

Two other conditions remain to be mentioned in which achlorhydria *is very common. One is acne rosacea* and the other *rheumatoid arthritis*. Herein we get a therapeutic suggestion for two troublesome diseases. But by no means all cases of the latter have complete achlorhydria, though some reduction in the normal secretion of acid is very common. If a fractional test meal is normal in a case of rheumatoid arthritis, it suggests that the infective focus is below the duodenum, and it should direct our attention specially to the pelvic organs.

I believe that the real route of infection which achlorhydria permits is by way of the duodenum. Normally the duodenal contents should be sterile, but *duodenal* intubation will prove that in such cases marked infection is present.

We arrive, then, at the conclusion that there are certain diseases, such as pernicious anaemia and subacute combined degeneration of the cord, in which total absence of HCl is invariable, and others in which it is very common. Hurst even thinks that in *cancer of the stomach* achlorhydria exists before the new growth, and is not a result of the growth. Some years ago I saw a woman who wished for the fullest examination because her mother and daughter had died of cancer of the stomach. Nothing could be found but achlorhydria. Yet she, too, subsequently died of malignant disease of the stomach.

It is the 5 per cent. of the population who are congenital achlorhydrics that we may regard as having an inborn predisposition to certain grave diseases. The recognition of this state of affairs places in our hands a valuable therapeutic weapon, for since so many of these diseases can be relieved by a drachm of the dilute HCl of the *British Pharmacopoeia* in a glass of orangeade or lemonade at meals, it is highly probable that this treatment would have a valuable preventive action also. I would suggest that it is worth while for anyone whose near relation suffered from pernicious anaemia to have the acidity of his resting gastric juice estimated, and for him to take HCl as a routine if this is found to be *nil*. And I should like to bear testimony to the splendid and indefatigable efforts of Hurst and his fellow workers in emphasizing the great importance of this syndrome of achlorhydria, glossitis, and anaemia. To my mind it is one of the most helpful generalizations of recent years.

Next I wish to point out that the response of the stomach to various attacks upon it will differ according to certain peculiarities, possibly inherited, which are characteristic of the individual patient. Thus, as Barclay showed, the long thin subject tends to gastroptosis, while the short, stout type of man is more apt to show the hypertonic well-contracted stomach. For, as Sherrington puts it, there is a variation in the posture of the stomach by which the effect of gravity can be allowed for. But this may influence the type of dyspepsia he may develop in response to some stress or strain. If we may take Bennett and Ryle's figures as typical of the general population they will help to explain this fact.

Digestion starts in the mouth, and indigestion often starts there too. Apart from the bolting of food, and the tendency, if mastication is difficult, to take pappy carbohydrates, which without insalivation cannot be digested in the stomach, the constant swallowing of pus from *oral sepsis is now* well recognized as a fertile cause of dyspepsia. It may be considered that the typical effect of this is gastritis, by which I mean a diffuse inflammatory reaction of the mucous membrane of the stomach, resulting in an increased secretion of mucus and a masked secretion of HCl. I stress this because of the tendency to use the term "gastritis" in a very vague sense—a tendency much increased by the war, since gastritis was one of the few digestive diseases a soldier was allowed to have, by regulation.

One can readily understand that if a man is one of those who naturally have a low secretion of HCl oral sepsis is more likely to produce gastritis in him. On the other hand, C. H. Miller has shown that the starting-point of a gastric ulcer is generally a septic infection of a lymphoid follicle, while Bolton has shown that hyperacidity tends to keep such an ulcer from healing. Therefore, if a man is one of those who naturally have a high secretion of HCl oral sepsis is more likely to produce a peptic ulcer in him. Then, again, take the effect of alcohol. This typically also excites gastritis, and it is this special type of gastritis which is a necessary precursor of cirrhosis. If cirrhosis occurs it will produce portal congestion, and therefore more gastritis. Thus a vicious circle is set up. And if there is another cause for gastritis, like oral sepsis, present, the chances of his developing cirrhosis are increased, which explains why one man falls a victim to cirrhosis while his equally erring brother escapes. But if the too free imbiber of strong drink has a natural tendency to hyperchlorhydria and a hypertonic stomach, he is more likely to be rewarded with a duodenal ulcer than with cirrhosis; for, as Hurst pointed out, and as my experience would confirm, not only is the hypertonic stomach practically always present when there is a duodenal ulcer, it is there before ulceration occurs and after the ulcer is healed.

It would therefore appear that such mechanical and chemical idiosyncrasies as I have described will determine the type of digestive disease that will result if one of the exciting causes is present.

Yet one more example and I have done. The liability in certain families to early arterial degeneration is well known, and one special form of obliterative arteritis is known only to attack Jews. In Osler's phrase, it would appear that in some families *inferior* rubber is used in the tubing.

In conclusion, although I have ranged over a large, possibly too large, an area, I hope I have been able to give some idea of the more modern views on diathesis or proclivity to certain diseases. There are peculiarities of metabolism in some individuals which may take the form of a lack of some ferment or important secretion, or may display itself in an intolerance to the assimilation of substances to which the ordinary individual is immune. Some start out with an inadequate supply of endocrines or with a disturbance in the balance between the two great divisions of the visceral nervous system—the sympathetic and parasympathetic or extended vagus. The very posture of the viscera will modify the type of disease produced by similar causes. These predispositions to disease can be shown in many instances to be inherited according to Mendelian laws and to reside in the chromosomes of the nuclei of the gonads. It might be thought that they would be such a handicap in the struggle for existence that they would lead to their own disappearance by the destruction of the individuals possessing them. In some cases this is so, but we must remember that a defect which is not fatal to propagation will continue to be propagated—not perfection, but survival, is Nature's aim. But the importance of a knowledge of the family history is greatly enhanced by these recent observations, and for that knowledge we must depend on the general practitioner, who is, and must continue to be, the backbone of our profession.

UNDETECTED SYPHILIS AND RHEUMATIC INFECTION IN CHILDHOOD.*

BY

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IN the course of work with rheumatic children I have recently been forced to consideration along new lines. Having had referred to me a child with acute rheumatism and carditis, it ultimately became evident that the rheumatic infection was superimposed upon a congenital syphilitic taint. Shortly afterwards a similar case was encountered, and I investigated a small series of cases with the object of obtaining information on the relationship between congenital syphilis and rheumatism. I obtained results which in their suggestiveness were to me striking and unexpected.

The following are the details, in short, of nine children dealt with in my rheumatic clinics, and who, I hold, were congenital syphilitics, and the striking feature in the cases is the frequent absence of clinical signs pointing to the presence of a syphilitic infection. I am impressed with the suggestion that an important subgroup of rheumatic children can be defined—namely, those in whom the rheumatic infection is superimposed upon congenital syphilitic infection, and more particularly untreated and undetected syphilis—and that prognosis in such cases may be seriously influenced.

The rheumatic child is not a clinical entity except in so far as the rheumatic infection is concerned, and it is possible to consider this infection in relation to the basic soil in which it acts, and to recognize that prognosis may be materially affected thereby.

When my interest was first keenly engaged in the consideration of the occurrence of rheumatic infection in congenital syphilitic children I searched my records for cases with unusual symptoms, or which had shown poor response to treatment, and carried out a Wassermann test on them. In this first group of cases there were 20 children, and to my surprise I was given a positive Wassermann reaction in 9 cases. Since then I have performed many Wassermann tests on rheumatic children coming to me for the first time, and usually the reactions have been negative. A few have been positive, but in this communication I deal only with my original group of 9 children, and the points that their examination appears to raise.

I wish to avoid laying any emphasis on the proportion of positive reactions in any series of cases, as I am dealing here with selected cases. I would also state that, as the result of many Wassermann tests on rheumatic cases, I have found no evidence that either in early or late conditions is the Wassermann reaction affected by the rheumatic infection itself.

The following is a brief synopsis of the 9 cases. I give these more fully later.

A.—*Evidence as to Rheumatic Infection.*

All the cases were sent to my rheumatic clinics by doctors, with a diagnosis of rheumatism.

In 5 instances (S. H., G. H., B. K., M. R., and F. P.) the children suffered from definite acute rheumatism and carditis while in hospital.

In 1 instance (M. M.) there was a history of rheumatic fever, and the child, when first seen, suffered from established valvular lesions (mitral and aortic).

In 1 instance (E. W.) there were various rheumatic symptoms, which were relieved by sodium salicylate. There were no cardiac signs.

In 2 instances (E. B., B. B.) there was a history of rheumatism; cardiac murmurs were present, but the exact significance of these was doubtful.

B.—*Evidence as to Congenital Syphilitic Infection.*

In 3 cases (E. W., E. B., B. K.) syphilis was admitted by the parent and the child's Wassermann reaction was positive. Of these 3 cases, in 2 instances there were no clinical signs of congenital syphilis.

In 1 case (S. H.) syphilis was denied by the parents and the Wassermann reaction of both parents was negative. The child, however, showed clinical evidence of congenital syphilis, and repeated Wassermann reactions were positive.

In 1 case (G. H.) the child showed clinical evidence of congenital syphilis and the Wassermann reaction was positive.

In 4 cases (F. P., B. B., M. R, M. M.) the children had no clinical signs of congenital syphilis, but the Wassermann reaction was positive.

In all these 9 children I concluded there was evidence both of syphilitic and of rheumatic infection, but *in 6 of the 9 cases there were no clinical signs of congenital syphilis.*

Training and experience are against the acceptance and direction for treatment of a laboratory reaction in the absence of clinical evidence, but the results in these cases show cause for hesitation, at least in regard to this matter of rheumatism and syphilis. If the syphilitic taint may be present in the absence of all discernible clinical signs pointing to infection, and if under such conditions it may yet cause the myocardium to be a point of weakness, it is obvious that, in the event of rheumatic infection occurring—however much it may be a pure coincidence—it must be important, both for prognosis and treatment, to recognize the position by any means at our disposal. A Wassermann report may be misleading owing to many technical causes, and sometimes repeated reports are contradictory or indefinite, and thus again one has to consider if there is a call for doing this test, or paying attention to it when done, if there are no clinical signs of congenital syphilis. In view of the cases I report I cannot but conclude that a Wassermann test should be made—if not in all serious rheumatic cases, certainly in cases displaying unusual symptoms or perplexing physical signs; and, further, that unless the reaction is definitely negative, antisyphilitic treatment should be combined with that of sodium salicylate. An accurate definition of what we are to understand by a diagnosis of acute or active rheumatic infection is still wanting, and nodules are rare in the Liverpool area.

With regard to 3 of the cases I report (B. B., E. W., E. B.) it may be held that the grounds for a diagnosis of rheumatic infection are insufficient. While I consider that most, if not all, paediatrists would agree with my diagnosis on examination of the children, I recognize that there is associated with such criticism another problem—namely, how frequently are there met with children who display no recognizable signs of congenital syphilis, who have a variety of rheumatic symptoms and cardiac signs responding in some degree to antirheumatic treatment, and who are nevertheless sufferers from congenital syphilis.

With regard to treatment, my experience is too limited to permit me to say anything further than that in those cases in which I have employed antisyphilitic treatment (S. H., B. K., G. H., M. R.) I have noted improvement, whether the child displayed recognizable clinical evidence of syphilis or not. Cowan and Rennie[1] have stated:

> "We have found a positive Wassermann reaction in patients who had had acute rheumatic fever, but the recognition of even a specific element in the case, and resultant specific treatment, will sometimes turn the balance in the right direction."

In this country, however, little emphasis has been laid either on the possible importance of clinically undetectable syphilis (or for that matter on its existence at all) or on the need for bearing syphilis in mind when dealing with rheumatic children.

The work of Warthin[2] within recent years has been very noteworthy in that he demonstrates as a common result of syphilitic infection diffuse myocardial degeneration—an interstitial myocarditis leading to fibrosis. Johannessen,[3] Gestiera,[4] Friedländer,[5] and other authors also stress the frequency of myocarditis in congenital syphilitics. But there is this very important point to be borne in mind—that it is sometimes, or often, unaccompanied by any clinical signs of congenital syphilis. Thus Friedländer writes:

> "I am especially desirous of emphasizing the point that in many cases syphilitic myocardial degeneration may be the only manifestation of congenital syphilis."

*The subject of a communication to the Southport Medical Society, January 8th, 1930.

As regards the place of syphilitic infection in producing gross endocardial and valvular lesions the position is even less clear, and in connexion with congenital infection little is known. Matusoff and White[6] state: "It does appear, however, from our study, that well-marked clinical evidence of such involvement is not common." There is ever present the doubtful factor of superadded rheumatic infection.

Warthin (loc. cit.) says: "In the younger individual latent syphilis of the heart probably predisposes to secondary bacterial endocarditis"; but McCulloch,[7] as the result of twelve years' supervision of 1,500 cases of congenital syphilis, says:

"We feel very strongly that children who have congenital syphilis and who live to be a year or more of age do not suffer from heart disease any more than any other normal group of children. Each syphilitic child receives from time to time a very careful physical examination, so that we are inclined to believe that we have not overlooked any heart disease in these children."

Even, however, when we accept McCulloch's observations we are dealing with children recognized as suffering from congenital syphilis, and presumably under treatment, whereas syphilitic myocarditis is apparently often unaccompanied by clinical signs of congenital syphilis, and may even show a negative Wassermann reaction (Friedländer). It may be that rheumatic infection is no more common among congenital syphilitics than among other children—we do not know. But it is possible that there are many children suffering from congenital syphilis who have no obvious signs or symptoms, who are not recognized, and who are not treated. When rheumatism does affect such a child the prognosis must be affected, and it is possible that many bad rheumatic hearts are based on congenital syphilis.

Whether the incidence of the double infection be great or small, recognition of such a subgroup of rheumatic children should help to a flank attack on this subject of surprising difficulty—the etiology of rheumatism. The recent valuable papers of Nabarro and MacDonald[8] and of Cronin Lowe[9] emphasize, I think, the need and value of flank attacks and the probing into rheumatic manifestations under varying but determined physical conditions.

CASE HISTORIES IN DETAIL.

CASE I.

S. H., male, born 1920. Parents alive and healthy. Family: daughter, now aged 19 years, alive and well; then a miscarriage; then patient; then premature twins who died. Patient was admitted to another hospital on November 15th, 1928, suffering from "subacute endocarditis following tonsillitis" after having been treated as an out-patient. His abdomen had been noticed to be large since he was 7 years old, and he had been languid for two years. His liver extended to the umbilicus and was tender, the spleen extended five inches below the costal margin, his voice was husky, and Wassermann reactions recorded on November 8th and December 1st, 1928, were both positive (+).

The Wassermann reaction of both parents was negative, that of the father being tested twice. The patient was treated with mercury and iodide, and the liver diminished rapidly in size. He suffered, however, from a progressive anaemia of secondary type, and on February 25th, 1929, the blood picture was: red blood cells 2,737,000 per c.mm., white cells 3,300, haemoglobin 64 per cent., polymorphs 64 per cent., large lymphocytes 14 per cent., small lymphocytes 18 per cent., transitionals 4 per cent.

During January and February, 1929, he suffered from tonsillitis, pyrexia, cardiac weakness with diffuse systolic murmur, and involvement of the base of the left lung. He was transferred to the Royal Liverpool Children's Hospital on March 22th, 1929. At this time the heart was not enlarged, there was systolic bruit in all areas, the liver was palpable one inch below the costal margin, and the spleen was very large and extended below the umbilicus. A radiogram of the lungs was negative. A report on the van den Bergh reaction on April 24th was: "Direct=negative, indirect=medium positive." An electro-cardiogram seemed normal; blood fragility normal, blood culture negative. A Wassermann reaction on April 27th was strongly positive (++). He was treated with mercury and given a course of injections with kharsulphan (5 injections=0.06 to 0.14 gram). The Wassermann reaction on August 29th was still strongly positive (++); the spleen remained very large, the liver was palpable, there were many subcutaneous haemorrhages, and there were dilated veins over the lower thorax and upper abdomen. The heart was not appreciably enlarged; there was a rough aortic systolic murmur. Blood pressure: systolic 120, diastolic 70.

He was given another course of treatment with kharsulphan, but on October 11th the Wassermann reaction was still strongly positive (++). At this time, however, he was greatly improved in his general health, and had returned to school. The spleen showed no reduction in size. He was given another course of kharsulphan and continued in fairly good general health. On December 2nd the spleen was still very large, blood platelets 310,000, red blood cells 5,100,000 per c.mm., white cells 5,200, haemoglobin 105 per cent. Heart not enlarged, ? systolic murmur in aortic area.

This child is a congenital syphilitic with distinct clinical signs. He has suffered while under observation from acute rheumatism. Antisyphilitic treatment has been markedly beneficial, but the hepatic and splenic conditions are unsatisfactory, and raise problems outside the scope of my present survey.

CASE II.

G. H., female, born 1923. Parents alive—mother asthmatic and with Wassermann reaction (December 5th, 1929) negative. Nine other children, all weakly.

The patient had jaundice when 3½ years old, followed by diphtheria and pneumonia. She was admitted to the Royal Liverpool Children's Hospital, Heswall, on July 10th, 1928, suffering from pericarditis. On admission there was pyrexia, cardiac dilatation, pericardial friction, and a basal systolic murmur. The liver was large, the spleen palpable, blood culture sterile; facies of congenital syphilis. On treatment with sodium salicylate the pericardial friction disappeared in a few days, but later recurred, with tachycardia, and double mitral bruits. An electrocardiogram on January 7th, 1929, showed slight left ventricular preponderance. During the latter part of January and the early part of February, 1929, the child suffered from acute pyrexial pericarditis, with pleurisy and involvement of the left lung. Tachycardia and anaemia were present, the liver remained large, and the spleen became larger. In the beginning of April treatment was commenced with mercury (grey powder), and at the same time she began to improve. On August 2nd the Wassermann reaction was strongly positive (++), and at this time she was in fairly good general health, with a diffuse cardiac systolic murmur. On September 24th treatment was begun with potassium iodide in addition to mercury, and on November 8th the Wassermann reaction was negative. At this latter date the child was well, but the heart was slightly enlarged, and in addition to a systolic bruit there was suspicion of a presystolic mitral bruit. The liver and spleen were still large.

This child has clinical evidence to support a positive Wassermann reaction. She has suffered from acute rheumatism and carditis.

CASE III.

B. K., female, born 1919. The father contracted syphilis during the war.

The child was well till 1924, when she had pneumonia, measles, and pertussis, and remained weakly thereafter. During 1927 she suffered from suppurating cervical glands, which were repeatedly dealt with surgically. In September, 1927, she was treated in a hospital for acute rheumatism and carditis, the heart was greatly enlarged, a double murmur was present at the mitral area, and the electro-cardiographic report was: "left ventricular preponderance, P–R interval rather long, but not sufficiently long to indicate partial heart-block." A radiogram of the lungs was reported to be suggestive of tubercle. There was no enlargement of liver or spleen. Early in 1928 further scraping operations were performed on her neck, and in September, 1928, she was admitted to the Royal Liverpool Children's Hospital, Heswall, with the reported condition: "endocarditis, chronic osteitis of left femur, hoarseness, large unhealed wounds on neck from gland operations." At this time there was tachycardia, the left border of the heart was 3½ inches from mid-sternum, mitral systolic and diastolic bruits were heard to angle of left scapula, the pulmonary second sound was greatly accentuated, the aortic second sound was soft, with a blowing diastolic murmur.

On two occasions the Wassermann reaction was strongly positive (++). During May, 1929, she was given four injections (0.06, 0.12, 0.24, and 0.3 gram) of sulfarsenol, and at the close her neck was healed, the hoarseness of voice greatly improved, the leg greatly improved, and the heart improved. On July 6th the Wassermann reaction was positive (+). Potassium iodide and mercury were continued by the mouth, and during July and August a further course of sulfarsenol was given (0.12, 0.18, 0.24, 0.3, and 0.36 gram), and at the close she was in greatly improved health, had put on weight, and the glands and leg were well. She still had a large heart, with double mitral bruits.

She continued well, and gained steadily in weight. On October 26th she was stated to be "very well"; the heart was still large,

and there was a rough systolic murmur present. The Wassermann reaction on November 5th was still positive. When seen on December 6th she had continued well, but the heart was still large, with a diffuse rough systolic bruit.

This child is certainly a congenital syphilitic who has suffered from acute rheumatic infection.

CASE IV.

M. R., female, born 1920. Father a soldier. Two other children older than patient are alive and well. Since birth of patient there have been two miscarriages. The patient was a premature child, and has always been frail and tiny. She has had measles, pertussis, and scarlet fever.

She was taken ill in the beginning of September, 1929, and was admitted to the Royal Liverpool Children's Hospital on September 14th with acute rheumatism and carditis. The heart was dilated, and there were present double murmurs, both at the mitral and at the aortic areas. The general rheumatic symptoms improved slowly under treatment with sodium salicylate, but the cardiac condition remained unsatisfactory and the myocardial tone did not improve.

A Wassermann reaction on October 10th was "positive (+)," and on October 17th grey powder administration (1 grain daily) was commenced. By October 28th the heart tone was much improved, and dilatation of the heart was less marked. Another Wassermann reaction, taken on November 9th, showed the report "negative, but lysis is slightly delayed in serum dilution of 1 in 5." On November 19th another Wassermann report was: "Wassermann test is negative, but lysis is delayed in the presence of the larger quantities of the patient's serum." By November 22nd the cardiac condition had further improved, and while there were still double murmurs present at the mitral area, at the aortic area there was only a systolic murmur. Blood pressure: systolic 115, diastolic 75.

On December 21st a Wassermann reaction of the mother's blood was negative.

This child certainly suffered from acute rheumatism and endocarditis. She showed no detectable signs of congenital syphilis, and the mother's blood Wassermann test was negative. Shortly after the commencement of the administration of small doses of grey powder she commenced to show signs of improvement, and the Wassermann reports as detailed above were more than suspicious.

The evidence in favour of congenital syphilis is slender, but by no other means do I find the facts more readily explicable.

CASE V.

F. P., male, born 1915. There are three other children in the family, and a baby, born before the patient, died at 3 months from a "poisoned navel." One child is three years older than the patient, and the other two are younger.

He was first seen on July 11th, 1927, and had previously been treated for ? tuberculous cervical glands and nervous debility. During summer, 1927, he had various abdominal symptoms, and he was admitted to the Royal Liverpool Children's Hospital, Heswall, on August 11th of that year. While there he had an attack of acute rheumatism with pericarditis, involvement of the base of the left lung, and the development of double mitral murmurs. An electro-cardiogram on October 31st, 1927, showed left ventricular preponderance. He improved slowly but steadily, returned to school, and on May 24th, 1928, there was no enlargement of the heart and only a basal systolic murmur. He was kept under supervision, and had minor variations in health. On August 29th, 1929, there was nothing specially to be noted in the heart except a rough basal systolic murmur. On this date a Wassermann reaction was done, and the report was "reaction strongly positive (++)." He continued well and at school, and received no special treatment. He showed no clinical signs of congenital syphilis, but suffered occasionally from diarrhoea. Systolic blood pressure 110. Wassermann reactions taken on November 28th and December 12th were both negative.

This child suffered from acute rheumatism and carditis while under observation in hospital. A Wassermann test was done because the manner of his progress after illness seemed unusual, the cardiac signs variable and contradictory, and an altogether satisfactory diagnosis of the cardiac condition difficult to arrive at. It may, however, be that the first—or positive—Wassermann report was due to some error in the test.

CASE VI.

M. M., female, born 1916. Father died of pneumonia. One sister died of rheumatism; three others alive and well.

She was first seen on December 19th, 1927, with a history of acute rheumatism three years previously and several periods in hospitals because of heart trouble. The heart was greatly enlarged, and there were double murmurs at both aortic and mitral areas. Institutional care was refused, and while attending the rheumatic clinic for occasional observation her condition has remained practically stationary. There were no clinical signs of congenital syphilis, but a Wassermann report on August 29th, 1929, was "strongly positive (++)."

CASE VII.

E. W., female, born 1914. Father died in an asylum of general paralysis. Mother had injections during pregnancy with patient, and is aware she had syphilis. Patient was treated as a baby with rashes and sores for congenital syphilis.

Patient was first seen on September 26th, 1929, with the complaint of rheumatism, fleeting erythematous rashes, pains round the joints, shortness of breath, and easily tired. There was no clinical sign of congenital syphilis, and there was no obvious cardiac disability. Blood pressure: systolic 130, diastolic 70. Wassermann reactions of both mother and patient were recorded on September 26th, and showed reactions strongly positive (++). She was treated with sodium salicylate and sodium bicarbonate, and the symptoms on October 17th were greatly relieved.

There is no doubt that this child is a congenital syphilitic, but she shows no definite clinical signs. She also shows no definite signs of rheumatic infection, but she has suffered from rheumatic symptoms, which were relieved by sodium salicylate.

CASE VIII.

E. B., female, born 1921. Mother has had ten children; the first three were premature and died; the fourth and fifth died shortly after birth; the sixth is living and well, aged 18; the seventh a miscarriage; the eighth was premature and died; the patient was the ninth, and the tenth is alive and weakly.

Patient was first seen on July 6th, 1929, with a history of faints, shortness of breath, lack of energy, rheumatism, flitting joint pains, and cardiac murmurs. There was a loud rough systolic murmur over the precordial area, loudest in the aortic area, the heart was enlarged, and there was considerable albuminuria, with pus and *B. coli* in the urine. The mitral first sound was slapping in character; an electro-cardiographic report showed "T" inverted III, otherwise normal. Pulse small, no tachycardia. The Wassermann reaction on August 30th was positive (+).

She was at first treated with sodium salicylate, and though somewhat relieved showed no marked improvement, and on admission to the Royal Liverpool Children's Hospital, Heswall, on October 4th, there were double murmurs apparently at both mitral and aortic areas. During October and the beginning of November she was given grey powder (1 grain daily), and had a course of injections with sulfarsenol (0.06 to 0.14 gram). On November 12th she was greatly improved, the heart was not appreciably enlarged, there was only an aortic systolic murmur, and the Wassermann report was negative.

This child, because of history, original Wassermann reaction, and response to treatment, appears to be a congenital syphilitic, but has no clinical signs of the condition. She has also had rheumatic symptoms, with accompanying development of cardiac murmurs.

CASE IX.

B. B., female, born 1916. Father died, aged 40, after three "strokes"—the first "when quite young." Mother has had "heart trouble" since rheumatic fever when aged 12 years. The eldest child is paralysed, there have been two miscarriages and two stillbirths, and three other children are said to be well.

She was first seen on August 29th, 1927, being sent by the doctor as "old rheumatic endocarditis with anginoid symptoms, cough, and dyspnoea on exertion." She gave also a history of flitting pains and joint swellings. The heart sounds were weak, there were no murmurs, and the heart was not definitely enlarged. Precordial pain was present.

She improved under treatment with rest and sodium salicylate, but at later periods suffered from recurrent rheumatic symptoms, painful joint swellings, breathlessness, and precordial pain. There were no clinical signs of congenital syphilis. A Wassermann reaction on September 4th, 1929, showed "reaction strongly positive (++)." She was given grey powder (1 grain daily), and on November 8th another Wassermann test proved positive (+). A course of injections was proposed, but this was refused, as she had recently improved so much.

This child had a suspicious history and symptoms with a positive Wassermann reaction, but she has no clinical signs of congenital syphilis.

SUMMARY.

1. A series of 9 cases is described of rheumatic infection in congenital syphilitic children; in 6 of the 9 cases there were no obvious signs of congenital syphilis.

2. It is suggested that *undetected* syphilis may in some ses form a basis for the serious course of rheumatic fection, and, further, that the study of rheumatism may aided by the grouping of rheumatic cases along non-eumatic lines.

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THROAT INFECTIONS AS AN ETIOLOGICAL FACTOR IN PUERPERAL FEVER.

*WITH A REPORT OF TWENTY-FOUR CASES.**

BY

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THERE are a number of possible causes of puerperal infection, and in bringing evidence in support of the theory that organisms can be conveyed from the throats of apparently healthy attendants to the patient's genital tract during labour, I do not thereby exclude other sources of infection.

Faulty antiseptic methods cannot be the sole cause of puerperal sepsis, because: (1) the rate has not fallen during the past twenty years, in spite of the almost universal use of antiseptics; (2) it occurs in cases of "born before arrival"; (3) it occurs most frequently in hospitals, in spite of the most elaborate care; (4) it occurs in the private practice of even the most careful doctors and midwives. We have therefore to look for other etiological causes which are not influenced by efficient antiseptic technique. Our quest is simplified if we confine ourselves to the study of haemolytic streptococcal infections, not only because this organism is the most important cause of puerperal fever, but also because of its special characteristics, which are invaluable in its identification.

An analysis of the cases of puerperal sepsis admitted to the recently established special block for puerperal fever in connexion with the Jessop Hospital shows that there is not, as has been supposed, a winter prevalence of puerperal infection. The same characteristics are shown by the number of admissions to the puerperal fever beds at the Monsall Hospital, Manchester[1] (Chart 1). On the other hand, there

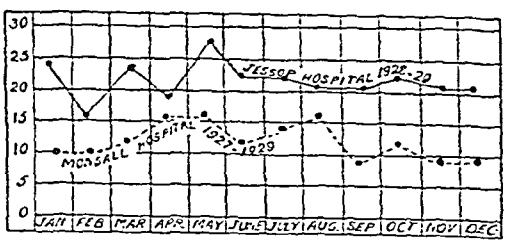


CHART 1.—Average monthly admissions of cases of puerperal sepsis, Jessop Hospital (1928-29) and Monsall Hospital (1927-29).

is a marked winter prevalence of puerperal infections caused by haemolytic streptococci, which in 1929 fell from 51 per cent. of the admissions to the Jessop Hospital in the first quarter to 14.5 per cent. in the summer quarter. This curve almost exactly corresponds with the latest available figures (1911 to 1924) of the average quarterly mortality from puerperal fever in England and Wales:[2] so that the type of infecting organism not only varies directly with the mortality from puerperal fever, but also with the time of the year when haemolytic streptococcal infections of the throat are known to be most prevalent (Chart 2).

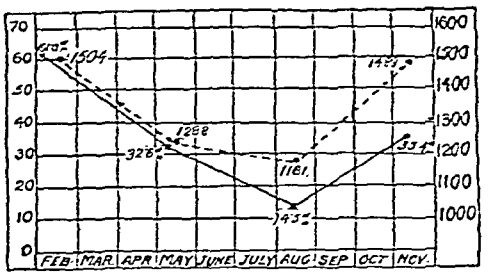


CHART 2.—Comparison between the average quarterly mortality (per million births England and Wales) from puerperal fever, 1911 to 1924, and cases of puerperal infection from haemolytic streptococci (per cent. of admissions of puerperal sepsis) to Jessop Hospital, 1929.

The following classified list (Table I) gives the causal organism which has been found in 236 cases of puerperal infection admitted to the Jessop Hospital last year. In

TABLE I.—*Type of Infecting Organism in the Genital Tract of 236 Cases of Puerperal Fever admitted to the Jessop Hospital.*

1929.	Total.	Haem. Strep.	Strep. viridans.	Strep.	B. coli.	Staph. albus.	Staph. aureus.	Various.
First quarter	59	35 (61.0 %)	2	6	2	2	2	9
Second quarter ...	65	15 (22.8 %)	6	5	11	13	1	10
Third quarter... ...	55	8 (14.5 %)	4	9	15	11	0	8
Fourth quarter ...	56	20 (35.6 %)	3	5	8	8	2	10
Totals	235	79	15	25	36	39	5	37

addition to the winter incidence of haemolytic streptococci, an interesting feature is the relatively high proportion of infections by *B. coli* in the summer, which may be related to the dry weather at that time.

Reference to the analysis of the type of labour (Table II) which preceded the onset of puerperal fever in the cases admitted to the Jessop Hospital in 1929 shows the surprising fact that those which had spontaneous labours had the highest rate of haemolytic streptococcal infections, while "failed forceps" cases, in which there is usually the maximum amount of manipulation and trauma, were only infected by haemolytic streptococci in 12.5 per cent. of the cases admitted.

TABLE II.—*Haemolytic Streptococcal Infections in Relation to Type of Delivery in 236 Cases admitted to Septic Block, Jessop Hospital (1929).*

	Total.	Infected by Haemolytic streptococci.
		Per cent.
Spontaneous deliveries (including "B.B.A.") ...	144	42.5
"B.B.A."	[92]	41.6
Operative deliveries (including failed forceps")	52	34.5
"Failed forceps"	[8]	12.5
Abortions	40	5.0
Total	236	

A most potent argument against the supposition that want of surgical cleanliness is really responsible for haemolytic streptococcal infections is found in the fact that this organism was present in only 5 per cent. of the septic

* From the Department of Obstetrics and Gynæcology, University of Sheffield.

abortions, most of which were criminal. It is not to be supposed that doctors and midwives are more septic than criminal abortionists. It is probable that the latter, while infecting their victims with every other type of organism, unconsciously protect them from haemolytic streptococci by carrying out their manipulations under the clothes, which at least form an efficient mask for the "operator's" throat.

The Endogenous Theory.

The possibility that the patient may harbour haemolytic streptococci in her vagina requires consideration. As a matter of fact, the theory, though logically possible, rather fails from want of evidence, because it has been shown (Bigger and FitzGibbon,[3] Lockhart,[4] Burt-White and Armstrong[5]) that haemolytic streptococci are rarely present in the vagina, and only then when the woman has been recently associated with a source of infection (Burt-White[6]). Burt-White and Armstrong found haemolytic streptococci only once in fifty-five cases (1.8 per cent.), and their results have been confirmed by a much larger investigation carried out in the ante-natal department of the Jessop Hospital by Dr. Pindar and Dr. Kirk.[7]

Bigger's[8] opinion that haemolytic streptococci are incapable of existing in the vagina as saprophytes which become pathogenic on reaching damaged tissue is supported by the figures given in Table II, which show that the cases with the greatest amount of trauma have the lowest percentage of haemolytic streptococcal infections. Thus, not only do the laboratory results agree, but they also coincide with the consensus of clinical opinion among obstetricians that, while prenatal vaginal infection is possible, it is not an etiological factor of high importance in the incidence of puerperal infection.

True autogenous infection, by which organisms pass to the genital tract from a focus of sepsis elsewhere in the body, must be a possible factor in the etiology of puerperal infection. In this series there is no conclusive example that the throat was such a focus. Among the fifteen patients who were examined, only one throat (Case 1) was found to be infected by haemolytic streptococci, and this was probably a secondary infection. In two of the cases (Cases 12 and 13) the infection travelled in the reverse direction—that is, from the patient's vagina to her throat, which, though free from haemolytic streptococci at the onset of the illness, became positive during the course of a puerperal infection caused by haemolytic streptococci. Therefore, despite the fact that I do not report an instance of genital infection from the patient's throat, we may deduce that they will be found in a larger collection of cases.

The Throat Carrier Theory.

As far as I am aware, Kanter and Pilot[9] were the first to suggest that puerperal infection could be caused by the "spraying" of organisms on to the patient from the throat of her attendant during labour. Attention was recently focused upon this etiological factor by the publication of a report upon an outbreak of puerperal sepsis by Watson and Menely.[10] The authors confess that their observations were inconclusive in regard to the mode of spread of the infection, but they based their prophylactic measures entirely upon the assumption that "throat carriers" were a prime factor in the epidemic.

Case Records.

I am aware that the cases which I am about to report do not furnish conclusive proof that the patients were infected from the throats of attendants, but the cumulative effect of the evidence is very striking, and shows, I believe, a prima facie case for further investigation. I will begin with the account of some cases which occurred in two maternity hospitals—one of which is in Sheffield—which I will call Hospital "A" and Hospital "B."

Cases in Hospital "A."

The pyrexial rate in this hospital, which is to some extent a special hospital (in that no "emergencies" are admitted), is 0.8 per cent., and the B.M.A. morbidity, which includes deaths from all causes, was 1.25 per cent. These figures show that the technique for the conduct of labour was efficient, and they emphasize the consternation which was caused when an acute case of haemolytic streptococcal infection took place.

Case 1.

Mrs. O., aged 28, a 2-para, was delivered naturally at full term on January 8th, 1929. She came into hospital thinking she was in labour, but, as there was no sign of its onset after six days it was induced by castor oil and quinine. No vaginal examinations were made. The rectum was examined twice. The delivery was conducted by Sister B. and Nurse S. A small perineal tear was sutured in the lithotomy position by house-surgeon "No. 1." It is of importance to note that no haemolytic streptococci were found in a routine swab taken just before the perineal repair, so that the patient was not then infected.

On January 11th her temperature rose to 103°; pulse 140. A second culture from the vagina gave a heavy growth of haemolytic streptococci.

Result.—The patient recovered after the temperature had been elevated for fourteen days.

The antiseptic used was mercury biniodide. The skin was painted with iodine before the perineal suture. Sterile gloves and gowns were worn, but no masks.

An extensive bacteriological investigation was undertaken by the bacteriological department of the Sheffield University. The results may be summarized as follows.

Table III.

Name.	Source.	Haemolytic Streptococci.	Remarks
Mrs O.	Vagina just after delivery	Negative	—
Mrs. O.	Vagina third day	Positive	Heavy growth
Mrs. O.	Throat, 5th day	"	A few colonies
Mrs. O.	Urine, 5th day	"	A few colonies
H S. No. 1	Throat and nose	"	Sutured perineum
Sister B.	Throat and nose	"	Delivered
Nurse S.	Throat and nose	"	Delivered
Nurse N.	Throat and nose	"	Nursed afterwards
Nurse K.	Throat and nose	"	Nursed afterwards
Charwoman ...	Throat and nose	"	No contact with patient
Remaining nurses and non-professional staff (11)	—	All negative	—
27 patients... ...	Throat, nose, and vagina	All negative	Five in same ward
Surgeon	—	Negative	Rectal examination before labour

The blankets and dressings were sterile.

The facts arising out of this are:

1. The patient had no haemolytic streptococci in the vagina immediately after labour, but there was a profuse growth on the third day when the temperature rose. The same organism was recovered from her throat some days later. It is impossible to determine whether this was the primary or a secondary infection; or whether the throat was infected by one or other of the "carriers" either during or after labour.
2. Six apparently healthy persons out of fifty examined were found to have haemolytic streptococci in their throat and noses; three of them were directly concerned with the delivery. Two others performed nursing duties, including toilet of the vulva, during the first three days of the puerperium.
3. The charwoman had haemolytic streptococci in her throat and nose. She was in frequent contact with the nursing staff, but had no contact with the patient or the house-surgeon No. 1.
4. None of the 27 patients was found to harbour the organism in throat, nose, or vagina.

All the staff who were found to be infected were kept off duty. One of them developed a severe haemolytic throat some days later.

From this time, masks made of turkey towelling, covering the mouth and nose, were worn for all deliveries. They were not used until six months later (after Cases 2 and 3) for post-partum nursing. During the ensuing six months there were no cases of pyrexia, and, though numerous ante-partum and post-partum vaginal swabs were taken,

haemolytic streptococci were found. In July the accidental demonstration of haemolytic streptococci in the vaginae of two patients on the same day led to a bacteriological examination of the throats of the whole staff, and those of the two patients and their husbands. The details of the cases are as follows.

CASE 2.

Mrs. G., aged 27, a primipara, was delivered spontaneously at full term on July 9th, 1929. A small laceration was sutured. No vaginal examinations were made. The rectum was examined twice. *The antiseptic used was mercury biniodide.* Sterile gloves, gowns, and masks were worn.

On July 10th a purulent discharge from the baby's eyes led to a swab being taken from the mother's vagina, from which haemolytic streptococci were grown. This organism was not present in the throat. The puerperium was afebrile and the perineum healed well. The patient was swabbed *during the first* twenty-four hours by Nurse W. and Nurse B., who were subsequently proved to be "carriers." The throats of the patient, her husband, and the whole staff were negative.

CASE 3.

Mrs. C., aged 33, a 2-para, was delivered spontaneously at full term on July 9th, 1929. A superficial laceration was sutured. One vaginal and two rectal examinations were made during labour. Antiseptic measures were the same as for Case 2.

Immediately after the delivery of the placenta the nurses were called away to another case, and Nurse B. carried out the rest of the post-partum toilet *unmasked*. This nurse was subsequently proved to be a throat "carrier."

On July 10th a discharge from the infant's eyes led to a vaginal swab being taken from the mother, from which haemolytic streptococci were grown. The organism was not present in her *throat or in her husband's. There was no rise of temperature* during the puerperium, but the perineum did not heal by first intention. The two nurses were excluded from the wards.

The infection was apparently communicated to the patient in Case 2 from the throat of either of the two nurses who attended to her during the first twenty-four hours of the puerperium. The patient in Case 3 was probably infected from the throat of the nurse who carried out the post-partum toilet. The use of masks was therefore extended to all post-partum nursing.

No further cases of infection were discovered during the following three months. A re-examination of the whole staff was again undertaken in September because a patient developed a sore throat (non-haemolytic as it proved), but no "carriers" were found. In November, for a similar reason, the staff were again examined. On this occasion one nurse (Nurse F.) was found to have haemolytic streptococci in her throat. She was sent off duty, but inadvertently was allowed to return to the wards after one negative throat examination instead of three. This swab was probably negative as the result of recent gargling, because a few days later she was found to be again positive, and remained so for a long time.

She was a possible source of infection to a patient with whom she was in contact in the ward for two days. This patient (Mrs. B.) was found to have haemolytic streptococci in her vagina when her membranes ruptured two days after admission. No examinations had been made. Morphological differences in the organisms obtained from the patient's vagina and the nurse's throat raised a doubt as to their identity, so that this case is not included in his series.

The facts concerning these cases may be summarized as follows: During the year haemolytic streptococci were isolated from the vaginae of four patients. Two (Case 1 and Mrs. B.) had pyrexia. Case 1 was associated with six carriers. Mrs. B. was associated with still another carrier, but the identity of the two strains was open to doubt. Of the four patients, only Case 1 had haemolytic streptococci in her own throat. There have been no further infections in this hospital.

Cases in Hospital "B."

This hospital is a training school for midwives, and it employs outside midwives to give "district" experience to the pupils. The pyrexial rate for the past year has been 1.2 per cent., and the British Medical Association standard of morbidity, including deaths, was 6.45 per cent. These figures show how efficiently the work of the hospital has been done.

The history of the outbreak begins with a case of haemolytic streptococcal infection in a "district" case, whence infection appears to have spread to the hospital itself. The pupils resided in the hospital, and were, of course, in close contact with other nurses. The midwives lived in their own homes. The details of the cases may be tabulated as follows.

TABLE IV.—*Cases Arising in Connexion with Hospital "B."*
Antiseptic Methods: "District" cases, lysol; hospital cases, lysol and sterile gowns; no rubber gloves and no masks

Case and Place of Delivery.	Date of Delivery and of Onset of Fever.*	Type of Labour.	Haemolytic Streptococci.		Contacts.	Haemolytic Streptococci in Throat.
			Cervix.	Throat.		
Case 4, 1-para. Home.	Nov. 27 [Dec. 2]	Forceps	Positive	Negative	Midwife E Pupil X Doctor Husband	Positive Positive Negative Negative
Case 5,† 6-para. Home	Dec. 3 [Dec. 7]	Spont.	Positive	Not examined	Midwife E Pupil X	Positive Positive
Case 6,‡ 3-para. Home	Dec. 6 [Dec. 9]	Spont.	Positive	Not examined	Midwife P Pupil X	Negative Positive
Case 7, primip. Hosp.	Dec. 18 [Dec. 20]	Spont	Septic, but no bacteriological examination		Pupil Y Pupil H	Positive Positive
Case 8, 2-para. Home	Dec. 21 [Dec. 22]	Spont.	Positive	Negative	Midwife E Pupil X	Positive Positive
Case 9, 4-para. Hosp.	Dec. 21 [Dec. 24]	Spont.	Positive	Negative	Nurse S Pupil Y Pupil H	Left hospital, not examined Positive Positive
Case 10, 2-para. Home	Dec. 23 [Dec. 25]	Spont.	Positive	Negative	Midwife E Pupil X	Positive Positive
Case 11, primip Hosp.	Dec. 24 [Dec. 25]	Spont.	Positive	Negative	Nurse S Pupil Y	Not examined, left hospital Positive
Case 12, primip. Hosp.	Dec. 25 [Dec. 28]	Spont.	Positive	Negative, + 14 days later	Nurses Pupil Y Pupil V	Not examined, left hospital Positive Negative
Case 13, 2-para. Hosp.	Jan. 1/30 [Jan. 4]	Spont	Positive	Negative, + 14 days later	Nurse M Pupil Y Pupil Z Pupil L	Not examined bad septic throat Jan. 4 Positive Positive Negative

* The first date is that of delivery, and the second (in brackets) that of onset of fever.

† Reported by courtesy of Mr. J. Chisholm.

‡ Reported by courtesy of Professor M. H. Phillips.

I have only seen the charts of Case 7, which show that patient was infected, but no bacteriological information is available.

It will be observed from the above table that in this outbreak ten patients became septic, and nine of them were proved to have haemolytic streptococcal infections, and, although there was no bacteriological examination in Case 7, her infection was probably of the same nature. Five of the patients were confined in their own homes, and four of them had spontaneous deliveries. All of these five were attended by Pupil X., who was subsequently proved to be a throat carrier. Midwife E. (throat positive) was with Pupil X. for four of the cases, and Midwife P. (throat negative) for the fifth.

Pupil X. appears to have been the innocent cause, not only of infecting these five "district" cases, but also of communicating the infection to her fellow nurses in the hospital itself; *for on December 18th the patient, Case 7,* who was delivered in hospital by Pupil Y. (throat positive), became septic. Then in quick succession five other women developed acute haemolytic streptococcal infections. Pupil Y. was a direct contact with five out of the six, though other positive "carriers" were concerned with some of the patients.

The matron reports that the health of the nursing staff was excellent up to December 21st, when, two days after the first septic case in hospital, a nurse developed a septic finger. Within a fortnight five other nurses were laid up with septic fingers or sore throats. Two nurses developed symptoms rather suggestive of scarlet fever, which were, perhaps, examples of streptococcal rash *so often seen* in

puerperal fever. The throats of the remaining twelve nurses were examined for haemolytic streptococci and six were found to be positive. It was impossible to send all the carriers off duty, so they were instructed to use antiseptic throat sprays, and those who had not had scarlet fever were given a prophylactic dose of scarlet fever antitoxin. Masks were ordered to be worn for all deliveries and for post-partum swabbing. These measures appear to have been successful, for no further cases of infection have occurred amongst either the patients or nurses up to date (five weeks).

Isolated Cases.

The evidence afforded by the following eleven instances of puerperal infection from haemolytic streptococci is all the more forcible in that the cases were unrelated with each other, and therefore the possibility of "herd" infection is eliminated. In ten cases direct contacts with the patient during labour were found to be positive throat carriers. In Case 23 the husband alone was positive, but the nurse refused to have her throat examined. The husband's throat must always be regarded as a possible source of infection to his wife's vagina.

TABLE V.—*Isolated Cases.*

Antiseptic Precautions: Records are incomplete, but where known lysol was used (violet-green once). Gloves were rarely worn.

Case and Place of Delivery.	Date of Delivery and of Onset of Fever.*	Type of Labour.	Haemolytic Streptococci.		Contacts	Haemolytic Streptococci in Throat.
			Cervix.	Throat.		
Case 14, primip. Home.	Jan. 16 [Jan. 17]	Spont. (7 m.)	Positive	Negative	Midwife Doctor Husband	Positive. Negative. Negative.
Case 15, primip. Home.	Feb. 11 [Feb. 14]	Spont.	Positive	Negative	Mother† Husband† Doctor Nurse Father† Friend†	Positive. Positive. Negative. Negative. Negative. Negative.
Case 16, 7-para. Home.	Feb. 11 [Feb. 14	Spont. (7 m.)	Positive	Not examined	Doctor Husband Mother†	Positive. Negative. Negative.
Case 17, 15-para. Home.	Mar. 3 [Mar. 13]	Spont.	Positive	Not examined	Handywoman Doctor	Positive. Negative.
Case 18, primip. Home	Mar. 11 [Mar. 13]	Spont.	Positive	Not examined	Doctor Nurse Husband Friend†	Positive. Positive. Positive. Positive.
Case 19, primip. Home.	Mar. 14 [Mar. 17]	Spont.	Positive	Negative	Doctor Mother† Husband	Positive. Positive. Positive.
Case 20, primip. Home.	July 29	Spont.	See note§	Not examined	Nurse	Positive.
Case 21, 3-para. Home.	Sept. 27 [Oct. 1]	Version	Positive	Not examined	Nurse Doctor	Positive. Negative.
Case 22, primip. Home.	Nov. 19 [Nov. 20]	Forceps	Positive	Not examined	Doctor Mother† Aunt† Husband	Positive. Negative. Negative. Negative.
Case 23, primip. Hosp., mem. rupt.	Nov. 20. No fever Died, 3 days	3 days' labour; Caesarean section	Positive on admission, before exam. or operation	Not examined	Husband Doctor Handywoman	Positive. Negative. Refused examination.
Case 24, 4-para. Home.	Dec. 10. Fever.	Spont.	Positive	Not examined	Midwife	Positive.

* The first date is that of delivery, and the second *(in brackets)* that of onset of fever.

† Present during labour. ‡ Included as controls.

§ Haemolysis of streptococci not recorded, but presumption very strong.

Case 17 is reported by courtesy of Mr. J. Chisholm. The child had *erysipelas.*

In eight out of the eleven cases recorded in Table V labour was natural, and in two it was operative. In another, though eventually delivered by Caesarean section after three days in labour, trauma was not a factor in the infection, because haemolytic streptococci were found in the cervix on admission to hospital. No attempts had been made to deliver before she was sent in, though a number of vaginal examinations had been made.

SUMMARY OF CASES.

An analysis of the twenty-four cases here reported brings out the following points: eleven of the patients were primiparae, and thirteen had had one or more children. Labour was *natural in twenty* (83.5 per cent.) and operative in four (16.5 per cent.). Some form of lysol was the most commonly used antiseptic, but cases occurred in spite of the use of efficient antiseptics, and of every modern aseptic method except masks. No further cases occurred after masks were worn, in spite of the fact that in Hospital "B" known carriers had to be kept on duty.

DISCUSSION.

The correspondence between the average mortality (1911–24) from puerperal sepsis, as reported by the Registrar-General, and the incidence of haemolytic streptococcal puerperal infections admitted to the Jessop Hospital during the past year confirms the accepted opinion as to the importance of this organism in puerperal fever. It also suggests the presence of a common etiological factor.

I have shown that, while the rate of puerperal sepsis remains more or less constant throughout the year, puerperal infections by haemolytic streptococci are highest in the winter. Infections of the throat by this organism are most common during the same season, and it is almost impossible to resist the deduction that these two facts are correlated. From the ease with which haemolytic streptococci are killed, and the fact that in some cases sterile rubber gloves were worn, it is very improbable that the organisms were conveyed to the patient from the hands of the attendant. Further, it has been shown that handling is not of itself a factor in the spread of the disease, for the natural labours had the highest proportion of haemolytic streptococcal infections (46.5 per cent.), and septic abortions the lowest (5.0 per cent.).

Pre-natal infection of the vagina by haemolytic streptococci is a possible explanation of the winter incidence of puerperal sepsis from this organism, but, as I have shown, the suggestion is unsupported by positive evidence, and the facts which are known weigh against it. When the organism has been found in the vagina during pregnancy (excluding labour itself) it has not caused puerperal fever. Further, if it were a frequent inhabitant of the vagina, operative deliveries and criminal abortions should carry the highest, instead of the lowest, proportion of haemolytic streptococcal infections.

Genital infection from a remote focus of haemolytic streptococci in the patient herself must be a danger to every parturient woman. In this series of cases no such focus was found. The rectum has often come under suspicion as a cause of puerperal infection, and while I have no direct observations, on account of technical difficulties, upon the frequency of haemolytic streptococci in the faeces, strong negative evidence against their presence is found in the immunity of even extensive vaginal operations *from this type of infection.*

It appears, therefore, that neither the patient nor the hands of her attendants are, in fact, the general source of infection by haemolytic streptococci. On the other hand, the supposition that the patients are infected from the throats of attendant carriers affords an explanation of the facts as we know them in regard to puerperal fever. We can understand how a patient can become *infected* in spite of conscientious antiseptic technique during labour; and how the "B.B.A." patient, even *without* a vaginal examination, can be infected by the nurse who attends to the post-partum toilet. The theory explains why the risk of puerperal sepsis is highest in maternity hospitals, for one carrier in an institution may spread the infection to throats of others of the community, thereby increasing the number of infected units who are *capable of* "spraying" infection on to the patient in labour. The same explanation is applicable to the higher rate of puerperal sepsis in the towns than in the country.

In support of the theory, I have submitted the records of twenty-four cases in which the patients were apparently infected from the throats of the attendants. Indirect evidence is also afforded by the fact that the use of masks stopped the epidemic in Hospital "B," and prevented a recurrence in Hospital "A." Still another line

which adopted the use of masks seven months ago has had no case of haemolytic streptococcal infection (except one which was infected on admission) during the whole of this time, whereas previously such cases occurred with sufficient frequency to cause grave anxiety.

I conclude, therefore, that the spread of haemolytic streptococcal infection from the throats of carriers to women in labour is a factor in the etiology of puerperal fever which requires most careful investigation from every possible angle.

PROPHYLAXIS.

To those who are prepared to take prophylactic measures upon prima facie evidence, and before absolute proof is obtainable, I would make the following suggestions:

1. Masks of suitable material, completely covering the mouth and nose, should be worn by *all* persons present whenever the vulva is exposed during labour or the puerperium.
2. The occurrence of even a mild sore throat in the private home of an expectant woman should necessitate a careful bacteriological examination for haemolytic streptococci. If positive, search should be made for other domestic carriers. In any case, the patient's throat and vagina should be examined for haemolytic streptococci.
3. In institutions nurses and patients with even slight sore throats should be isolated from lying-in wards.
4. In institutions the first rise of temperature should necessitate an immediate vaginal or cervical test for haemolytic streptococci. If positive, the throats of contacts must be examined, and any carrier removed from the wards.
5. Doctors in private practice should have their throats examined at frequent intervals. If they have a case of puerperal sepsis, they should, for their own protection, have the throat of the patient and of all contacts examined.
6. It should be part of the duty of the Local Supervising Authority to have examinations of the throats of midwives who are concerned with cases of puerperal fever.

RECOMMENDATION.

There is enough evidence for the throat "carrier" theory to justify a full investigation. The time for isolated study has gone by, and some authoritative body should plan and control the research in selected areas. The full co-operation of the profession, and of the public health services would be essential, but, above all, the bacteriological work must be above suspicion.

The deductions made in this paper depend entirely upon the very expert bacteriological work which has been so ungrudgingly carried out in the department of bacteriology (Professor J. S. C. Douglas) by Dr. Edington in the University laboratories, and by Dr. Kirk in the laboratory attached to the Jessop Hospital for Women. The county bacteriological departments at Derby and Wakefield have also given most valuable assistance in the examination of contacts.

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SPONTANEOUS INOCULATION OF MELANOTIC SARCOMA FROM MOTHER TO FOETUS.

REPORT OF A CASE.

BY

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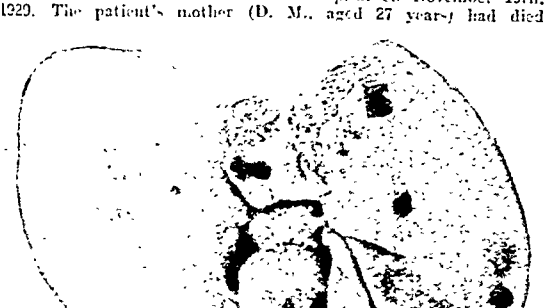
AND

R. HELLENSCHMIED, M.D.

(From the German Hospital, London.)

THE following is, we believe, the first reported case of transmission of a malignant neoplasm from mother to child by spontaneous inoculation.

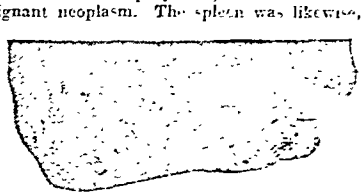
The child, B. M., aged 8 months, a well-developed boy of normal size, was admitted to the German Hospital on November 19th, 1929. The patient's mother (D. M., aged 27 years) had died



Inferior surface of the liver showing melanotic tumours.

at the German Hospital on July 4th, 1929, of melanotic sarcoma with visceral and subcutaneous metastases. There was no post-mortem examination, but she was known to have been suffering from melanotic sarcoma for a long time previously. Eighteen months ago she had undergone operation at the London Hospital for melanotic sarcoma of the thigh. The child was delivered on April 9th by Caesarean section at full term at the London Hospital, and was thought to be quite normal at birth. Development seemed to be satisfactory till recently, when enlargement of the abdomen and a somewhat cachectic appearance of the skin was noticed.

On admission to the German Hospital the liver was found to be enlarged, reaching down to the umbilical level and some large, hard, rounded nodules could be felt projecting on its anterior surface, suggesting malignant neoplasm. The spleen was likewise, but evenly, enlarged, its lower border (on palpation) being three fingerbreadths below the costal margin. Otherwise the child seemed fairly healthy and quite lively and happy at first, excepting that at times there was moderate fever. Nevertheless, after some time the child began to show increasing cachexia. The Wassermann and Meinicke reactions were negative, and so was Pirquet's cutireaction for tuberculosis. The blood count (November 22nd) was: haemoglobin 76 per cent., erythrocytes 4,620,000 per c.mm. of blood, colour index 0.81, white cells 12,400 (polymorphonuclear neutrophils 32 per cent., lymphocytes 57 per cent., monocytes 10 per cent., eosinophils 1 per cent.); nothing abnormal was noted in the appearance of the red cells.



Lower portion of the upper surface of the right lobe of the liver, showing the melanotic tumours felt during life.

The liver and the bosses on it probably increased somewhat in size, but certainly only very slowly. About the middle of January, 1930, the child, who was gradually losing in weight and becoming more cachectic and obviously ill, developed considerable fever and left-sided purulent otorrhoea. The blood count on January 13th was: haemoglobin 60 per cent., erythrocytes 4,320,000 per c.mm., colour index 0.7, white cells 16,550 (myelocytes 4 per cent., metamyelocytes 10 per cent., polymorphonuclear neutrophils 36 per cent., lymphocytes 45 per cent., monocytes 4 per cent.). The pyrexia continued, and the child died on January 24th.

We may say here that the child's urine throughout, whenever examined, was clear and of a golden brown colour, sometimes deeper than at other times. It was free from albumin, sugar, indican, acetone, diacetic acid, and excess of urobilin or urobilinogen. The colour deepened when the urine was kept, but never became blackish. Only on one occasion (January 15th) was a supposed positive reaction for melanogen obtained—that is to say, on using the potassium nitroprussiate (Legal's) test for acetone we obtained a *deep* green coloration on addition of the glacial acetic acid, but this test is of doubtful value.

Necropsy (January 25th).—There were several minute subcutaneous melanotic nodules scattered over the front and back of the thorax of the emaciated child. The liver was enlarged (weighing 455 grams after being kept for some days in alcohol), and several melanotic rounded tumours (up to the size of a pigeon's egg) projected under the capsule, notably those that had been palpated during life in front of the liver. The spleen was moderately enlarged (weighing 100 grams), but was otherwise not

abnormal in appearance. There were a few minute subpleural melanotic patches in the lungs, and some small melanotic nodules were attached to the periosteum at the back of the anterior wall of the thorax. Many of the abdominal lymphatic glands showed melanotic infiltration; one or two of these glands were adherent to the kidneys and pancreas. Otherwise macroscopically the viscera appeared normal. We were not permitted to examine the head and central nervous system.

Microscopical Examination.—The melanotic tumour cells were typical in all the pieces of growth. The small nodule in the liver which we examined was found to be surrounded by a kind of spurious capsule, due to compression of the neighbouring tissue, and suggesting that the tumour growth had not been very rapid, but there were also melanotic tumour cells outside this spurious "capsule," and many of the Kupffer "Sternzellen" in the neighbourhood contained melanin granules. A piece of lung showed minute broncho-pneumonic areas, as well as a minute subpleural melanotic growth. A tiny subcutaneous nodule appeared to be encapsuled by the distended wall of a capillary blood vessel. Pieces of pancreas and kidney showed nothing abnormal, but a small lymphatic gland adjacent to the pancreas was infiltrated with the melanotic growth. A lymphatic gland removed from the right inguinal region was free from melanotic growth, and so was the piece of spleen examined. The slight splenomegaly was apparently due to increase of the splenic pulp. The Malpighian follicles of the spleen were not large, and contained very little "germ-centre."

Remarks.

The main facts of the case may be shortly stated as follows. A woman known to be suffering from melanotic sarcoma was delivered, three months before her death, of a child who appeared at first to be healthy. When 8 months old the child was admitted to hospital with an enlarged liver on which bosses could be distinguished by palpation, suggesting a malignant neoplasm. With increasing cachexia the child died at 10¼ months of age, minute nodules having developed beneath the skin shortly before death. The post-mortem examination showed that the bosses which had been felt in the liver were melanotic tumours. The size of the growths suggested that the primary infection was in the liver, but there were many infiltrated lymphatic glands in the abdomen and minute metastases in the lungs and in the subcutaneous tissue. Palpation during life and examination after death pointed to the growth of the neoplasm in the liver having been rather circumscribed and slow, as if there was considerable resistance on the part of the child's tissues. The tumour cells from which the growths in the child's liver had developed had evidently been carried to the hepatic capillaries (via the blood stream in the umbilical vein) from the placenta, which is known to have been melanomatous.

The splenomegaly noted by us in the child may be compared to that which has been occasionally known to be associated with hydatid disease of the liver. The spleen of infants and children becomes readily enlarged from any toxic or distending cause. Thus, the spleen was enlarged in a boy with hydatid disease of the liver shown by A. F. Voelcker at the Medical Society of London in November, 1907. A certain amount of splenomegaly was still present in February, 1909, after successful treatment by drainage of the hydatid cyst, when Dr. Voelcker again showed the case.[1] In our case the following note kindly given us by Mr. Eardley Holland, who performed the Caesarean section on the mother at the London Hospital, makes it certain that melanotic tumour cells must have passed from the mother through the placenta (owing to actual melanotic metastases in the placenta) into the foetal blood stream. The blood in the umbilical vein having chiefly to circulate through the liver, some of the melanotic cells were caught up in the hepatic capillaries, and these cells were the parents of the multiple melanotic tumours (the "primary" tumours, as far as the child was concerned), some of which could be palpated in the enlarged liver when the child was eight months old.

This is the note by Mr. Eardley Holland, who is going to publish separately an account of the case from the obstetrical and gynaecological point of view.

"I saw the mother in consultation with her doctor on April 5th, 1929. She was an ill woman, in about the thirty-eighth week of pregnancy, with multiple melanotic nodules scattered liberally beneath the skin of the abdomen and thorax. The uterus was above the usual size at term, and a large soft mass occupied the lower segment. On April 9th I delivered a live child by Caesarean section. The lower uterine segment was occupied by a huge black placenta, which proved to be infiltrated with mass of melanotic growth. The mother made a smooth recovery, and the child left the hospital thriving and without evidence of disease."

There are many remarkable published examples of different varieties of inherited constitutional predisposition to malignant neoplasms.[2] Especially notorious is the case of constitutional predisposition due to familial multiple polyposes of the large intestine.[3] We would suggest that J. S. Manson's examples of the "hereditary transmission of sarcoma" (mother and two sons affected with lymphosarcoma)[4] were examples of inherited constitutional predisposition to lymphosarcoma, and analagous to rare cases of familial tendency to lymphatic leukaemia,[5] which, like myeloid leukaemia, is probably also of neoplastic origin. Our present case, as above stated, has nothing to do, as far as we can judge, with any inherited constitutional predisposition to malignant neoplastic growth.

It is, as mentioned above, apparently the first case of the kind reported in human pathology. We have not ever heard of any analogous case in animals—that is to say, a case of congenital malignant tumour due to intrauterine inoculation of the foetus by the passage of malignant tumour cells from the placenta to the child by way of the umbilical vein. Nature's experiment in the present case could only be imitated in experimental animal pathology by inoculating the blood stream of the umbilical vein at the moment of birth with a dilute emulsion of tumour cells obtained from a sarcoma or carcinoma that had previously developed spontaneously or had been artificially produced in any part of the mother's body.

Professor J. A. Murray has, however, kindly referred us to a paper by Dr. Makoto Takahashi,[6] who also quotes similar experimental work carried out by other investigators on rats or mice. Takahashi produced growths in the lungs by the intravenous injection of carcinomatous or sarcomatous material. He found that a large proportion of the cells introduced into the blood stream disappeared after undergoing vacuolation, surrounded by leucocytes. Although the lung capillaries formed an efficient filter some tumour cells were able to pass through the lungs and give rise to growths in various parts of the body. The cells which passed through the lungs and were disseminated in that way exhibited a predilection for a limited number of sites.

In regard to the last-mentioned "metastatic predilection" we might add that the author did not refer to the wonderful examples of the predilection in human pathology of metastases from particular tumours for particular sites—for instance, the predilection of metastases from the Hutchison type of suprarenal medullary "sarcoma" (neuroblastoma) in children for the orbits and skull, and the generalized infiltrating metastatic osteogenic carcinomatosis of the skeleton occasionally resulting from a primary carcinoma of the prostate gland.[8] Such examples might be compared with the secondary pyaemic foci limited to the lung skeleton, which formerly occasionally occurred in septic cases.

In regard to the way in which in our case the maternal melanotic tumour inoculated the foetal circulation by "growing through" the placenta, an analogy may be found in what happens in cases of true congenital tuberculosis, but, of course, tubercle bacilli are much less likely to be held up in the blood capillaries of the foetal liver than are large tumour cells. Some years after Koch's discovery of the tubercle bacillus it was maintained that the bacillus could not pass through the placenta and infect the foetus in utero, and it was held that only a constitutional predisposition towards tuberculosis could be inherited, and even that was denied by many authorities. However, it was soon proved that in very rare cases the foetus was actually infected in utero owing to the tuberculous process in the mother infecting the placenta, and producing one or more tuberculous lesions in the placenta. By means of such placental lesions the tubercle bacilli were enabled to "grow through" the placenta, with a resulting tuberculous inoculation of the foetal circulation and true congenital tuberculosis. It was alternatively but less convincingly suggested by A. Sitzenfrey, in 1909,[9] that tuberculous foci localized in the decidua vera, might penetrate the amnion, infect the liquor amnii, and thus give rise to intrauterine infection of the foetus—indeed, F. W. Andrewes[10] already

in 1903 had suggested that pre-natal tuberculosis might in some cases possibly be caused by the foetus swallowing liquor amnii containing tubercle bacilli derived from a disintegrating lesion of the placenta. How rare cases of true congenital tuberculosis must be may be judged by the fact that in 1916 one of us was able to summarize all the hitherto proved and probable cases of true congenital tuberculosis in a short article published in the *British Journal of Children's Diseases*.[11]

In our present paper it would perhaps have been better to use the term "malignant melanoma" instead of melanotic sarcoma, as it might possibly be suggested that the primary growth in the mother (the site of which is not certain) was a melanotic carcinoma. The tumours in the child's liver were obviously of multiple metastatic type, and it is the absence of any primary tumour in the child that makes the case unique, the real primary growth having been, of course, in the dead mother. The inoculation of the child may have taken place not long before, or even at, birth.

The liver, now in the museum of the Royal College of Surgeons of England, was demonstrated by us on February 28th, at the Section for the Study of Disease in Children, of the Royal Society of Medicine.

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APHONIA, DYSPHONIA, AND THE "SINGER'S ATTITUDE."

BY

SIR JAMES DUNDAS-GRANT, K.B.E., F.R.C.S., M.D.

AT the last meeting of the Section of Laryngology of the Royal Society of Medicine I referred to my application to the treatment of functional aphonia of Mr. Negus's observation that in certain animals, particularly the climbing ones, the efforts made with the fore limbs were accompanied by an approximation of the vocal cords. Mr. Negus kindly placed at my disposal an apparatus containing a strong spiral spring, which resisted the pressure made by the hands on the two ends. The result was most satisfactory, as the involuntary approximation of the cords added a valuable additional factor in the restoration of voice. I found that in the absence of the spring-pressure instrument a similar result was obtained by making the patient press together my hands or those of a nurse standing behind her (or him). This procedure helped to restore the voice with less frequent resort to the distressing faradic stimulation which is sometimes inevitable.

In the treatment of singers suffering from functional difficulty in voice production with paresis of the internal tensors or transverse arytenoid muscles (elliptical glottis or posterior triangular gap) I have found this "arm-adduction" pressure most helpful. The following is a recent case in point.

Miss Y., aged 23, a contralto of considerable ability who had been studying singing for over a year, found that for some weeks her voice was husky and the "attack" uncertain. The laryngoscope showed imperfect approximation of the cords, the vibrating parts of the cords having an elliptical opening between them and the cartilaginous portion a triangular one. The "arm-adduction" against resistance was followed by an approximation of the cords to almost the normal degree, and with it a great increase in the certainty of the "attack." The confidence in herself, which is of such importance to a singer, was again established, and she was at once able to apply the appropriate general principles inculcated by her teacher with every success.

The "attitude" adopted by many singers in which the hands are held together as in prayer, or in holding a little book of the words, is in most cases probably a fashionable affectation, but it may become an extra help in producing approximation of the cords if the hands are not merely in contact but compressed together. I can conceive this application of the attitude described as being of great use to a singer. It should, however, be accompanied by the lower lateral costal method of breathing, which is, for singing purposes, probably the best.

Among other ancillary helps towards combating the perverse gaping of the glottis in functional aphonia I find induction of the "inspiratory phonation" of the vowel sound "ee" followed by the expiratory "aw" effective in spite of, or, perhaps all the more, on account of, the grotesque effect. Another adjunct is the application of "Bárány's noise-box" to the two ears while asking the patient such a question as he may be anxious to answer. If the noise is suddenly turned off while he is giving his answer he may be surprised at the discovery that he is talking in a loud or even shouting voice.

I am grateful to Mr. Negus for his masterly investigation, and am pleased to have given it immediate clinical application.

A NOTE ON DISSEMINATED SCLEROSIS.*

BY

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DISSEMINATED sclerosis is one of the most common organic diseases of the nervous system met with in Northern Ireland, and apparently occurs more frequently here than in other parts of the world. In the Royal Victoria Hospital, Belfast, 728 cases of disease of the nervous system were treated in the wards during the past three years, this total including neuroses, psychoses, epilepsy, chorea, and neuritis; 105, or 14.5 per cent., of these were cases of disseminated sclerosis. I have analysed 100 cases, 40 of which were under my own observation. From this analysis I have obtained statistics regarding the sex, age, and occupational incidence, also mode of onset and relative frequency of certain symptoms. Doubtful cases were rejected, and the possibility of syphilis was invariably excluded.

ETIOLOGY.

Although the disease is stated to be equally common in males and females, I found that males were more frequently affected, the proportion being 3 to 2 (males 61, females 39). The onset is most common between the ages of 20 and 40; the average age at onset was 29, the youngest patient being 11 years and the oldest 59. Five children under 15 were affected, and three adults over 50. As regards occupation, two-thirds of the patients were town workers and one-third country workers; 10 per cent. were farmers. The hospital records show that in 1927, out of a total of 5,459 in-patients treated, 540, or 10 per cent., came from the country, and 157, or 3 per cent., were farmers.

This would seem to indicate that disseminated sclerosis was three times more prevalent in farmers and in people living in the country than among those dwelling in towns. To check this I analysed another series of medical cases (heart and kidney), and found, somewhat to my surprise, that the proportion of country cases was only 10 per cent. and farmers 2 per cent. From these findings there would seem to be no doubt that disseminated sclerosis is more common among those living in country districts. The occupational statistics which I have given do not seemingly support the contention that this disease is more common in wood workers.

Heredity seems to have no bearing on the incidence of infection. Even in families with a definite neuropathic history disseminated sclerosis does not necessarily show

* Condensed from a Presidential Address delivered to the Ulster Branch of the British Medical Association.

itself. It is said to be exceedingly rare to have more than one case in the same family. Since preparing these statistics I have seen a brother and sister affected, and have been told of another brother and sister suffering from this disease.

I do not propose to discuss the question of the specific causative agent; it will suffice to say that, although considerable evidence has been brought forward in favour of a spirochaetal infection, this has not yet been definitely proven. It has been suggested that the infection might be transmitted by an insect bite, but, owing to the sporadic occurrence of these cases, I think that this is unlikely. In the cerebro-spinal fluid there is, as a rule, no definite change, except perhaps a slight increase in the cell content. In my cases the average number of cells present was 6, but in a few cases no cells were found.

Clinical Features.

There are two distinct types of this disease: (1) the slowly progressive case with insidious onset; and (2) the case in which there is an acute onset, with striking remissions and often apparent cure. I feel inclined to believe that these types may constitute two separate clinical entities. Other types are described, depending on the part of the nervous system which is chiefly affected; these are: the spinal cord type; the cerebral type (headaches, dizziness, diplopia, optic atrophy, etc.); the cerebellar type; and the hemiplegic type.

Onset.—In 79 cases the onset was insidious, usually with weakness and ataxia of lower limbs, and frequently preceded by pains, tingling, or numbness. In 21 the onset was sudden. In 10 cases temporary diminution or loss of vision was the first symptom; in 6 cases diplopia; and in 3 cases headache and vomiting. Two cases started as hemiplegia, and afterwards developed the typical signs of the disease.

Remissions.—When the onset is insidious the course of the disease tends to be slowly progressive, with occasional partial remissions. When the onset is acute, complete, or almost complete, remissions are frequent. There were definite remissions in 25 per cent. of these cases. In one case there was a remission, with complete recovery for eleven years, before further symptoms developed.

Another patient of mine had a number of striking remissions.

This patient became ill thirteen years ago with paresis of left arm and leg, which cleared up completely. Four years later he was laid up for a time with dizziness and nausea, without paresis. Two years after this he suddenly lost the sight of his left eye. Vision gradually returned, but about a month later his speech became thick and slurring, and he lost the power of his left arm and leg; he also complained of diplopia. He recovered almost completely from this attack, and remained well and at work for a year when he had a slight attack, involving the right side of the body, which only troubled him for a short time. The following year he had a similar attack, which also cleared up. I saw him after this, and he was quite well, except that he walked with a halt. I have not seen him for some years, but am informed that he is keeping well.

Symptoms.

The percentage frequency of symptoms is shown in the following table.

	Per cent.
Paresis or paralysis of lower limbs	97
Knee-jerks exaggerated	96
Babinski's sign present	87
Ankle clonus present	79
Alterations of sensation (chiefly subjective)	79
Modification of abdominal reflexes	77
Nystagmus present	76
Paresis, paralysis, or ataxia of upper limbs	70
Bladder symptoms (precipitancy, hesitancy, or incontinence)	49
Intention tremor	48
Atrophy or pallor of optic discs	47
Diplopia (transient)	36
Dysarthria	33
Mental change	32
Dizziness	26
Temporary loss of vision	15
Defective hearing	12
Ptosis	5

The commonest symptoms, therefore, were spastic paresis of the lower limbs, with Babinski's sign and ankle clonus (in some cases marked ataxia was the chief feature); subjective sensory changes; loss or modification of abdominal and cremasteric reflexes; nystagmus; bladder symptoms; and intention tremor.

Psychical changes are more marked in the advanced cases where delayed cerebration and mild dementia are common. Emotional instability frequently occurs. Euphoria is often a feature, but depression may occur.

The following subjective sensory symptoms are frequently noted: numbness, tingling, sensation of heat or cold, pains, headaches, stiffness, and aching feeling in back. Abdominal pain and discomfort are present in some cases. Two of my patients were operated on for abdominal trouble shortly before disseminated sclerosis was diagnosed, and no definite pathological condition was found to account for the symptoms. In another case an operation was performed for the relief of intermittent claudication of the right leg; a few months later the patient was found to be a typical case of disseminated sclerosis. Such cases would suggest that the vegetative nervous system may be involved in this disease.

Objective sensory change is not so common, but frequently careful examination reveals some definite impairment. Astereognosis occurs in a number of cases. Scanning speech in my experience, is infrequent, and, if it occurs, is only found in advanced cases. Slurring speech is much more frequent.

The course of the disease is very chronic, though acute cases have been described. Most cases last from ten to twenty years, and death is frequently due to some intercurrent disease.

Whilst the ultimate prognosis is undoubtedly grave, in a large number of cases with a fairly sudden onset and definite remissions the patients may live a useful life for many years. In a small percentage of these cases complete recovery seems to occur.

Treatment.

Since remissions are frequent, and the course of the disease is so chronic, it is difficult to assess accurately the results of treatment. Massage, electrical treatment, and re-education exercises are very important. Over-exertion is to be avoided, but patients should be encouraged to move about, if able to do so. Infection by the malarial parasite is stated to have been beneficial in some cases.

Of drugs, arsenic, hexamine, and potassium iodide are frequently prescribed. Silver salvarsan seems to be of distinct value, and appears to be superior to salvarsan in this disease. A course of seven or eight intravenous injections (0.05 up to 0.15 gram) should be given at weekly intervals till 1 gram has been administered. Not more than three or four courses should be given in one year. This seems to be a small dosage, but, in dealing with a chronic disease where treatment is likely to be prolonged for many years, it is better to err on the safe side rather than run any risk of injuring the liver, which would prevent further use of the drug.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PRIMARY OVARIAN PREGNANCY.

In view of the rarity of the occurrence of ovarian pregnancy the clinical details of a case which appears to have been of this kind may prove to be of general interest.

A woman, aged 27, who had been married for six years, had given birth to a boy after a normal labour in 1921. She had had two miscarriages, in 1926 and 1928 respectively. Menstruation was of the 3/21 type, always preceded by pain.

About midday on December 10th, 1929, severe abdominal pain developed, being most marked in the right iliac fossa and spreading across the abdomen. It was thought to be due to colic, and continued all day, but became less at night, leaving, however, soreness, which prevented sleep. On the following morning the patient was able to get up and take a little breakfast, but about midday the pain returned; it was more severe than before, and again began in the right iliac fossa, spreading across to the other side. She returned to bed and applied heat to the abdomen, but the pain did not cease, and she became exhausted. On examination, at the first visit that night (9 p.m.), the temperature was found to be 101°; the pulse was 98, thready and irregular. The patient was very blanched and partly collapsed. The abdomen was slightly distended generally, with a little resistance and tenderness over McBurney's point; vaginal examination revealed

fullness and a boggy sensation in the posterior fornix. A diagnosis was made of acute appendicitis, probably with perforation, and an immediate operation was advised.

Two hours later we opened the abdomen over McBurney's point. The peritoneal cavity was found to contain dark blood clot, so a large medial incision was made. The lower part of the abdomen and pelvis were full of blood clot, and active haemorrhage was in progress, continuing after most of the clot had been removed. No bleeding points could be found, however, in spite of the gushing of pure blood; both Fallopian tubes were healthy, and the left ovary was normal. The right ovary, however, was twice the size of the left, and there was a punctured raw area about the size of a sixpenny piece, which extended into the ovarian tissue. The ovary was therefore removed, and it was noticed that while it was being held on the stretch the haemorrhage stopped. The appendix was inflamed, tortuous, constricted at the base, and covered with adhesions; it was therefore excised. A small cystic body, about the size of a split pea, was found in the blood clot in the pouch of Douglas, but, unfortunately, this and the right ovary were accidentally lost by a probationer nurse. No further bleeding points could be found, and, owing to the bad condition of the patient, the abdomen was closed as quickly as possible. Haemoplastin was injected during the operation, and afterwards at regular intervals. The patient made an uninterrupted recovery, and was discharged from hospital a month after admission.

We came to the conclusion that this was a case of primary ovarian pregnancy, the ovum having been fertilized on the surface of the right ovary. Unfortunately the loss of the two specimens robbed us of a definite conclusive diagnosis; we are at a loss to understand how all the haemorrhage came from the small rupture in the ovary.

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AN UNUSUAL CASE OF ACUTE PANCREATITIS.

THE case described below is interesting as it throws some light on the etiology of acute pancreatitis. The boy had lived on a diet containing an insufficient amount of proteins and a superabundance of carbohydrates. The pancreas was overtaxed in dealing with this excess of carbohydrates. In addition to this, the absence of a proper supply of fresh proteins possibly predisposed the pancreas to inflammatory changes. Other vitamin-containing articles were obviously taken in insufficient quantities—for example, fruits. It is difficult to avoid looking at acute pancreatitis as a deficiency disease, in some ways resembling scurvy or pellagra, after carefully studying this case.

On August 8th, 1929, a messenger boy, aged 15, cycled to a neighbouring village after his day's work. There he had a meal of chips, and then cycled home. Towards midnight he started having what he termed a "bilious attack," accompanied by slight abdominal pain and vomiting. He had been subject to bilious attacks for years, and so did not send for his doctor until late in the afternoon of the next day. Dr. Pierce saw him, and promptly sent him into the local hospital. As the boy's condition got worse we saw him together about midnight. He then showed slight rigidity of the abdominal muscles, tenderness over the upper abdomen, definite fluid in the abdominal cavity, pulse 95, temperature 99.6°. The matron of the hospital informed us that the boy showed slight cyanosis of the lips when she first saw him in ordinary daylight, and that he reminded her of cases of acute pancreatitis she had seen before. The cyanosis was not obvious in artificial light.

Operation.—At 1 a.m. on August 10th a right paramedian supra-umbilical incision was made. The abdomen contained 2 to 3 pints of clear fluid; this was evacuated. The pancreas was red, and obviously enlarged and indurated, with a thickness of 2 to 3 inches. There were no areas of necrosis, and the omental fat showed no appreciable change. A corrugated rubber drain was put down to the head of the pancreas and the abdomen closed. The drain was removed in forty-eight hours as only a slight amount of clear fluid drained out. On August 15th and 24th the patient had a "bilious attack" with vomiting, pain, and a rise of temperature to 103°, otherwise his progress was fairly satisfactory. He left hospital on September 12th, and resumed work three weeks later. Since then he has had several very mild "bilious attacks," otherwise he has been comfortable.

Since operating on this patient we have gone more fully into the history, and this proved to be very interesting. The boy had never eaten any meat or eggs in his life, but lived on potatoes, bread-and-butter, pastry, and sugar. He drank large quantities of tea and water, and sometimes milk. While in hospital he was gradually trained to eat ordinary food, and is now leading a normal life, but still has a good thirst, and a weakness for chip potatoes. He has never passed any sugar in the urine, but showed a trace of albumin occasionally while in hospital. He has always been a pale and poorly developed boy and was easily tired. The chest shows no organic disease.

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Reports of Societies.

CARDIAC INFARCTION.

AT a meeting of the Medical Society of London, on March 10th, with the president, Mr. DONALD ARMOUR, in the chair, Dr. J. W. MCNEE opened a discussion on cardiac infarction, speaking from the point of view of a general physician.

Dr. McNee said that, while working at the Johns Hopkins Hospital in 1924, he saw three cases of coronary thrombosis; the clinical diagnosis was made with such certainty that Dr. McNee looked into the matter, and discovered an extensive American literature on the clinical side. Once the clinical syndrome was recognized in this country many cases were reported, and the problem was often found to affect the general physician or surgeon rather than the expert cardiologist. The real reason for the lack of differentiation of coronary thrombosis until recent times appeared to be that the great teachers on cardio-vascular disease, such as Mackenzie, Allbutt, and Osler, did not separate coronary thrombosis from angina pectoris. The distinction was now recognized as important, for the course and prognosis differed in the two disorders. Dr. McNee added that it was possible to look back through older medical literature and make the diagnosis of coronary thrombosis on the clinical history and necropsy findings, as had been done by Ryle in discussing John Hunter's cardiac infarct. The anterior descending branch of the left coronary artery was usually affected by thrombosis, which led to infarction of the walls of both cavities of the heart, so that secondary embolism might occur either in the lungs or in some area supplied by the systemic circulation. The predisposing causes of coronary thrombosis appeared to be those of arterial degeneration in general; hereditary tendency played a part, and angina pectoris was a very common precursor. Several clinical groups were definable: (1) cases in which death followed immediately upon occlusion; (2) cases in which death followed a few minutes, a few hours, or at the most a few days after the occlusion; (3) cases in which grave symptoms of myocardial insufficiency immediately followed the accident, but death was postponed for weeks or months; (4) cases with grave symptoms easily recognized, but from which the patient eventually recovered; (5) cases without grave manifestations but with sufficient symptoms to be recognized, and (6) cases with mild and uncertain symptoms in which only a probable diagnosis could be made. Dealing more in detail with the type of case with signs and symptoms where survival occurred, Dr. McNee described how the onset was sudden and had no relation to effort. Pain was present in the majority; it was sudden, sharp, and knife-like, and differed from the pain of angina pectoris in its duration and constancy. It might last for hours or days, agreeing closely with the description of "status anginosus," and in its distribution might be irregular. If situated in the upper abdominal region, as it sometimes was, the pain might lead to the erroneous diagnosis of perforated gastric or duodenal ulcer, or gall-stones. It might radiate like the pain of angina pectoris, and not infrequently left muscular tenderness behind it, while its resistance to morphine had been noted by many observers. Dyspnœa was present in every case; the colour of the face a peculiar earthy tinge with light cyanosis, was characteristic, indicating the severe shock present. Vomiting was common at the onset, and the rapidly developing cardiac failure which occurred in some cases led to pulmonary signs, which were easily mistaken for pneumonia. Fever began, as a rule, about twenty-four hours after the onset, and the leucocyte count was usually 20,000 per c.mm. or more. In the differential

diagnosis the most difficult point was to separate an attack of coronary thrombosis from one of pure angina. Other difficulties arose with regard to upper abdominal conditions, and particular confusion entered into those cases in which emboli were detached from the infarcted area in the heart. In discussing prognosis, Dr. McNee quoted a series of patients of whom 53 per cent. died from the attack; the average duration of life of the survivors was twenty-four months. There were cases on record, however, where survival in fair health had been possible for a much longer period. Treatment consisted of rest in bed, with morphine for the pain and shock. Cardiac failure had to be dealt with if it arose, and oxygen was useful for cyanosis.

Dr. J. PARKINSON dealt with the physical signs of coronary thrombosis, stressing the point that they were often less valuable than the general picture. The pulse might be regular and of moderate rate. Auscultation was almost worthless, but occasionally a pericardial rub was heard which was diagnostic in association with the characteristic pain. A fall in blood pressure was an important sign of the disease, but with so few physical signs the electro-cardiograph became of great interest. In the first stage the R-T period was raised or lowered from the isoelectric level, and in the second stage this plateau was replaced by a deep inversion of the T-wave. The third stage of convalescence was shown by a gradual return to normal. Dr. Parkinson mentioned the necessity of looking for signs of arterio-sclerosis between attacks of coronary thrombosis; the radiological appearances of the aorta were of particular help. He thought that the present knowledge of coronary thrombosis had simplified the problems of angina pectoris. The condition might initiate, complicate, or terminate cases of angina pectoris. The prognosis was always better after the first part of the attack was over.

Dr. W. C. BARNARD, dealing with the pathological side of cardiac infarction, mentioned the historical references to the condition. He took in turn the four types described by Van Leyden under the headings of sudden death, infarction, fibrosis, and mixtures of the last two. In cases where an elderly, healthy man suddenly dropped dead it had been shown, by experiments on animals, that the probable explanation was ventricular fibrillation which stopped the heart; if the patient survived, a condition of infarction developed, the area and extent depending upon the size of the coronary artery involved and the degree of change in the artery. In "massive" cases an early stage of swelling and purple colour of the part affected passed quickly into a stage where the myocardium became a pale clay colour, and reaction began in the tissues around. Polymorphonuclear infiltration occurred, and the granulation tissue formed gradually replaced the autolysed infarcted area. In the resulting scar tissue dilatation might occur, and during the stage of infarction two other accidents might happen: the heart might rupture through the infarcted area, or later an aneurysm of the heart might rupture. Over the area of infarction pericarditis was found as part of the aseptic inflammatory reaction. Out of the large number of causes of coronary occlusion only two were common—atheroma, and syphilitic aortitis. The latter affected the coronary arteries at their orifices, and it was rare to find fibrosis of the myocardium as a result of syphilitic diseases of the coronary arteries. Atheroma might occlude the coronary arteries, but it was more usual to find a small ulcer with a thrombus on it. This condition might be missed if the coronary arteries were opened in the ordinary way.

Dr. F. J. POYNTON described a case in which it appeared that emboli from a condition of phlebitis had travelled directly into the heart, producing a condition strongly resembling coronary thrombosis. A French physician had called this an example of reflex shock in the heart, and Dr. Poynton invited an explanation. He also mentioned the difficulty of distinguishing some cases of severe food poisoning from coronary thrombosis. Dr. F. PARKES WEBER mentioned the confusion existing in the earlier literature between angina pectoris and coronary thrombosis. He thought that observations upon cases of status anginosus had given the older writers the main basis for the coronary theory of angina pectoris, but, in the light of present knowledge, the worst cases of so-called angina pectoris previously described might really be examples of coronary obstruction. Sir WILLIAM WILLCOX said it was not infrequent to encounter cases of coronary thrombosis with apparently normal hearts and blood pressures; he asked for evidence that cardiac infarction could be caused by a primary thrombosis of the arteries occurring in a toxic condition. The PRESIDENT referred to a patient in whom cardiac infarction developed one week after an abdominal operation and gave rise to difficulty in diagnosis.

PSYCHOTHERAPY IN THE PSYCHOSES.

A COMBINED meeting of the Section of Psychiatry of the Royal Society of Medicine and the British Psychological Association was held on March 11th, when the subject of discussion was the treatment of the psychoses by psychotherapy.

Dr. HENRY DEVINE, who opened, said that in the early days of psycho-analysis he had hoped that a cure might be effected in some psychotic patients by elucidating the underlying conflicts which were assumed, according to the new teaching, to be the cause of the symptoms manifested. Unhappily the hope had not been realized. It would probably be generally admitted that the therapeutic possibilities of psycho-analysis were definitely limited in their scope, and that, so far as the psychoses were concerned, they were practically negligible. Similar limitations would appear to exist in respect of the therapeutic methods associated with the names of Jung and Adler. He was inclined at one time to feel that a certain type of paranoid patient should, on clinical and pathological grounds, be responsive to analytical treatment if a suitable technique could be devised, but he cited one case which had proved disappointing. As for the desirability of submitting the manic-depressive patient to psycho-analysis during the interval between his attacks, while the manic patient might be a subject of psycho-pathological study, he was, in his mania, scarcely the subject for therapeutic analysis, and, speaking from the standpoint of an institution psychiatrist, Dr. Devine had always found the depressive patient singularly impenetrable. In spite of the psychological interest of these cases, he could not but feel that the manic-depressive psychosis was the expression of an obscure disturbance of physiological rhythm. When the patient had got over his attack he might be considered as well; the sooner he returned to his life-work and forgot all about his illness the better. To submit him to analysis during his normal period was unlikely to avert another attack; it would lead him to think about his illness, and would serve to furnish him with more psychological material to which to give expression should he fall ill again. Furthermore, analysis in these cases or in incipient psychosis would seem to be not free from danger, even when utilized for diagnostic purposes. In these cases the somewhat uncourageous policy of "leave well alone" was most desirable.

Thus it must be conceded that at present there were no specific remedies, either psychological or physical, capable of curing the pathogenic psychosis. That was not to say that treatment in those conditions was of no value; on the contrary, nowhere in medicine were persistent therapeutic efforts more necessary and at times more rewarded than in the sphere of psychiatry. Although the psychiatric methods utilized with psychotic patients could not be considered causal or specific in their aims, this did not mean that they were haphazard or unsystematized. At the outset it was essential to listen respectfully to what the patient said; supplying the patient with a free outlet for his delusional beliefs afforded relief of tension, while the psychiatrist needed to obtain a knowledge of the phenomenal world of his patient. The study of the psychotic content was very important, for how else could the seemingly irrational behaviour of the patient be understood? From a practical point of view, however, it must be confessed that the morbid impressions of the psychotic could not be suggested or analysed away. Apart from physical treatment, the main task of the psychiatrist must be to develop what was normal in the psychotic patient, and to stimulate the social consciousness in the hope that the narrow, isolated, morbid psychic content—the besetting delusion, hallucination, or

fear—might melt away or be relegated to the background. The kind of stimuli upon which reliance was placed were simple and natural ones, like games, occupation therapy, music, companionship, and general conversation, all intended to assist the patient to regain the art of living. In comparison with the more technical psychiatric methods, this kind of treatment might appear unimpressive; nevertheless it was often instrumental in bringing about a partial or complete social regeneration. In conclusion, Dr. Devine said that he did not question that psycho-analysis had rendered a service to psychiatry. The emphasis it had placed on family situations and sexual difficulties gave precision and direction to the advice to the psychotic patient at a stage when he was sufficiently receptive to respond intelligently to psychotherapy. It should be said also that the mechanisms described by Freud were constantly exhibited in psychotic patients, though he did not think it possible to rationalize all that manifested itself in the psychotic content. On the whole, however, he felt that psycho-analytical practice had not kept pace with the increasing elaboration of its theory.

Dr. EDWARD GLOVER said that in practice psycho-analysts had made contact with the psychoses from two directions. One group of investigators had taken from the first a special interest in psychiatry, and had decided to employ psycho-analysis as an instrument of investigation and treatment. On the other hand, in this country at any rate, a larger group of analysts had been interested in the psychoses as one of a number of fields of study, but had ultimately been compelled to analyse psychoses because of the demands of patients who came for treatment. But although many psycho-analysts had had the treatment of psychoses thrust upon them, their previous training had qualified them in a peculiar degree to handle psychotic states. Psycho-analysis was considered primarily for transference in neuroses. The modifications necessary in treating different conditions did not imply modifications of analytical principle. The aim in all cases was to release the individual from anxiety and guilt, and analysts were compelled to take the quickest way home even if, as was often the case, it appeared the longest way round. It was true that the psychotic might appear inaccessible because of his reduced capacity for positive transference, but a great deal of his alleged inaccessibility was only a proof of the therapeutist's protective inaccessibility to him. Dr. Glover added that the problem of psychotic study in childhood had hardly yet been approached. Advances in the treatment of the psychoses would depend less on the experience of direct treatment of what were now called psychoses and more on the experiences derived from mental processes in young children, together with those derived from the treatment of infantile psychotic states.

Dr. R. D. GILLESPIE dealt with some of the reasons why personal analysis was important; dreams were often very serviceable from this point of view, also the history of the illness. Where cure of the developed condition was so difficult prevention was the more important, but prevention in this field had hardly ever been tried. With regard to occupational therapy, he thought its effect depended entirely on how it was carried out. Mrs. MELANIE KLEIN discussed the examination of the fantasies of children, and the occasional undiminished existence in older children of fantasies characteristic of the very young, a fixation which clinically gave rise to arrest of development. One of the chief tasks of the child analyst was to discover pure psychoses in children. Dr. H. YELLOWLEES said that it was a surprise to be told by Dr. Glover that it was the therapeutist, not the patient, who was inaccessible. One was quite prepared to have it said that one's clinical observations were mistaken, as probably they often were, but it was a little hard to hear that one was too clinical and too close to one's material, and that the more theoretically the problem was viewed the more likely was a solution to be found. It was a question of what was meant by psychiatric treatment: various methods of treatment, such as occupation therapy, which had been practised in mental hospitals long before Freud, were an invaluable factor in stimulating the recovery process in psychoses.

Dr. W. H. B. STODDART considered that manic-depressive psychosis was amenable to psycho-analytic treatment. He had at the present time a patient—a case of melancholia—who was just completing her analysis after three years. It had been said that analysis should proceed only during the intervals between the melancholia, but in this case he had carried it on right through every attack. They had spent thirteen hours in absolute silence; apparently nothing happened, but that time was not wasted, because during the whole of those thirteen hours the patient was reacting upon him with hatred; she had a negative transference. The results of the treatment were quite satisfactory. With regard to paranoia, he was not optimistic about curing in a particular case, but he felt that the patients could be treated psycho-analytically in order to give them insight and to a certain extent to delay the progress of the disease. With regard to dementia praecox he was very sceptical; he thought it might be not an organic disease. Dr. SYLVIA PAYNE, physician to the London Clinic of Psycho-analysis, said that evidence of lasting cure of the manic-depressive was not lacking. Freud reported two cases with no tendency to relapse after several years. Apart from curative effects, the patients experienced relief from mental stress. Without undue optimism it could be said that psycho-analysis had proved that it could do something in psychosis, and it opened a road for advance in knowledge and research in therapeutics not so far sufficiently realized.

Dr. N. G. HARRIS emphasized the importance of other branches of psychotherapy, particularly in the work of the mental hospitals. Nearly everyone who had worked for many years in a mental hospital came up against the difficulty of treatment, but he thought the value of developing in the admission ward, for example, an atmosphere of suggestion and re-education might be more explored. The post-encephalities were extraordinarily stubborn to treat, but there was a very large functional element in most of them besides the organic condition, and he had found, while treating the organic condition, that far better results were obtained if suggestion therapy and re-education were also pursued. Dr. DORIS ODLUM spoke of the personality of those who carried out the treatment as being a factor of importance. She noticed in mental hospitals and in hospitals dealing with early nervous cases that certain personalities suited certain patients and were absolutely useless in dealing with others. Some members of the staff were always unsuccessful with paranoiacs. In future perhaps, in the treatment of psychoses, personalities rather than methods would be prescribed. Dr. F. DILLON said that his experience was that a greater proportion of cases than was commonly realized were suitable for systematic treatment by the method of analysis. It was also true that this method, improperly applied, was capable of doing more harm than other methods. In his opinion, particularly with reference to psychoses, while it might not be possible to do much good by psychotherapy, they always had the power to do a great deal of harm. The danger lay in the use of ready-made rules without reference to the patient's individual requirements. In certain phases of mental illness valuable contact could be made with the patient, and there were practically always indications of underlying mechanisms in the light of which it was surprising how often a positive working transference could be achieved. There were no positions in which a delicate psychological touch was more necessary than in the psychoses. Three other points seemed to be of considerable interest in the analytical treatment of psychoses: to be content for periods with stages of provisional interpretation; to make judicious use of loosening mechanisms short of actual interpretation where the latter was considered inadvisable; and to be on the watch to head the patient away from dangerous and possibly disrupting highly charged ideas.

Dr. DEVINE, summing up the discussion, said that his own clinical experience, the writings of psycho-analysts generally and the individual study of cases, together with the discussion with his colleagues of cases which had been psycho-analysed, had given him the impression that on the whole psycho-analysis was not an effective method of dealing with psychoses, and so far he thought that there was extremely little evidence to show that it was. It was not a suitable method of effecting treatment; it enabled one to understand, not to cure.

Dr. GLOVER remarked that analysts had never held that there was no other valid method of psychotherapy, but the method had had by no means a complete trial. Not more than a dozen trained psycho-analysts were systematically dealing with psychoses at the present moment. The outlook was promising, but they were still learning. It seemed to him time that the psychiatrist who rejected psycho-analysis should realize that the methods he employed, such as occupational therapy, only differed from analytical psychotherapy in that they had no direct application of dosage and method.

THERAPEUTIC EFFECTS OF THE OESTRUS-PRODUCING HORMONE.

At the meeting of the Section of Therapeutic and Pharmacology of the Royal Society of Medicine, on March 11th, with Dr. PHILIP HANDLE in the chair, Professor E. C. DODDS (with whom was associated Dr. J. D. ROBERTSON) opened a discussion on the therapeutic effect of the *oestrus-producing* hormone.

Professor Dodds sketched briefly the history of oestrogenic preparations since 1911-12, when they were first made by the extraction of ovary with volatile solvents. For some years there was no definite method of standardization. The only criterion of activity was that when injected into animals the substance produced rutting out of season, and growth of the genitals in immature animals. From about 1920, however, a fairly elaborate method of standardization, involving a large number of animals, had been available, and the results were calculated on a statistical basis. The activity of the product had been very greatly increased, and with the advent of purer preparations sufficient solubility in water was obtained to admit of subcutaneous injection without the unpleasant local and general symptoms that followed on the early use of the material with an oily constituent. This water-*soluble concentrated oestrus*-producing substance, which had been called oestrin, was one which, when injected *subcutaneously into ovariectomized* animals, produced oestrus. In addition, the substance might be expected, *administered in the same manner*, to produce puberty in immature female animals, and to *bring about abortion in pregnant animals*. Was it justifiable to expect that this substance, however active in animals, would give similar reactions in women? The claim was made in commercial literature that such preparations would restore menstruation. This implied that oestrus and menstruation corresponded, but the majority of workers on the subject had grave doubts as to the relation between the two, for menstruation had a number of phenomena additional to the ordinary oestrus of animals. With regard to the production of puberty, this test was very difficult to apply to the human subject; while as to the production of abortion or premature labour, this was obtained fairly easily in experimental animals, but only with great difficulty in women. On these grounds some differences might be expected between the action on animals and that on the human female. Professor Dodds went on to relate particulars of an investigation in which the material used had been manufactured from the placenta and the urine of pregnant women, and tried in some 80 cases. It was put up in ampoules consisting of 10 units per cubic centimetre. The cases treated were referred to his department from the gynaecological out-patient department, and consisted mainly of patients suffering from amenorrhoea. The course of treatment consisted of 1 c.cm. (10 units) every day for two months. Of the 80 cases treated, only 62 went through the full two months' course, and of these, 28 started to menstruate, while 59 of the 62, apart from any question of the menstruation, "felt better." The results were rather better in the married than in the unmarried. Of the 32 unmarried who went through the full course, menstruation started in 10, and of the 30 married, in 12. The *reason for* this might be that the patient was older, or there might be some other reason. Although practically all the patients felt better, irrespective of the menstrual function, when in the case of some of them normal saline was substituted for the hormone preparation, they felt just as well on its continued use as they had on the material under test. Three cases in which it was desired to produce premature labour had been treated, with roughly 300 units each. In only one did delivery occur before the expected time, so that the results were quite indefinite. With regard to the question of the menopause, five cases had been treated with injections for two months, with the result that the vaso-motor symptoms were very definitely controlled, and in two cases menstruation started again. In three cases where the ovaries had been removed menstruation also started. In conclusion, Professor Dodds felt that the material should be given a very extended trial. The trouble was the great difficulty in obtaining the material. It was for clinicians to decide whether a 30 per cent. definite response among all cases treated was significant of real value. In only one case had there been any bad results.

Dr. A. S. PARKES discussed the relation between oestrus in the lower animals and menstruation. A good deal of confusion, he said, existed on that subject. The probability appeared to be that, instead of menstruation being developed, as suggested by Marshall, *into the process* of oestrus, menstruation, as found in the lower primates was actually due to a holdover of the pro-oestrus breakdown coinciding with the breakdown of the endometrium when fertilization had failed. Thus a double phenomenon was produced, resulting in menstruation. In animals which did not exhibit the same holdover of a pro-oestrus breakdown menstruation from an undeveloped endometrium which had not been acted upon by the corpus luteum previously. On this view oestrin clinically should be sufficient to cause that part of menstruation which corresponded to the delayed pro-oestrus breakdown, but would not produce that part of the menstruation which was really due to the action of the corpus luteum. Oestrin *clinically should not be expected* to produce the premenstrual congestion of the uterus normally associated *with the menstrual phase*.

Dr. L. C. RIVETT said that in three cases in which it *had been necessary to induce premature labour* oestrin had been tried. In one of these cases the substance did seem to *start labour three weeks before term*, but there again it was impossible to say whether labour would not have started spontaneously. The present idea seemed to be to simplify these female hormones and try to make it appear that there was only one of them, but there might be many more. He instanced the breast in pregnancy. In early pregnancy the breast tissue developed and became fairly active. It then remained quite stationary until after labour, when further changes took place leading to the production of milk. That seemed to him *prima facie* evidence of two hormones, one of which stimulated the breast and the other inhibited it, and until the second hormone was removed the breast did not actually secrete milk. It was possible that the effect of menstruation on the uterine gland was to produce another hormone which stimulated the ovary, and that might be the explanation of the difference in the effect of oestrin on the woman who still had her ovaries and that on the ovariectomized woman.

Dr. H. GARDINER-HILL said that Professor Dodds had supplied the preparation to St. Thomas's Hospital, where a certain number of cases of amenorrhoea had been treated. These 43 cases belonged to three groups—namely, primary amenorrhoea, primary menstrual irregularity (that is, cases which had never had the normal rhythm) and secondary amenorrhoea, or cases in which amenorrhoea developed after a period of normal menstruation. Positive results were obtained in 33 per cent. of the cases, definitely negative results in 55 per cent., and the remainder were doubtful. In the first cases treated about two dozen injections were given, spread over a period of two or three months, but in the later cases Professor *Dodds's* method had been adopted of giving a dose of 1 c.cm. daily for about ten days, and then a second course after an interval of two or three weeks, and an improvement in the proportion of positive results followed.

After Mr. DENTON MARTIN, a veterinarian, had related some facts bearing on the subject from his experience of canine practice, the remainder of the discussion was occupied with the question of the obtaining of supplies of this material. Dr. T. IZOD BENNETT said he believed that a certain Continental firm had taken out world-patent rights for all ovarian extractions, and other manufacturers

feared to infringe an international patent. This scandal had existed for ten or fifteen years, and it was high time the subject was ventilated in the medical profession. Dr. J. W. TREVAN said that a British firm manufacturing a preparation of ovarian hormone exposed itself to the risk of High Court action, with its heavy costs, and as the evidence for the therapeutic value of the material was not conclusive, as that discussion had shown, it was little wonder that manufacturers should hesitate. He thought that clinicians who wanted to use the hormone should make representations to the Board of Trade committee on patents, stating that they were hindered in their work by the non-availability of the substance. Professor DODDS said a tribute should be paid to one firm of manufacturers, Boots Pure Drug Company, without whose assistance the expensive work in which he had been engaged in his laboratory could not have been carried on.

It was remitted to the Council of the Section to consider what, if any, action could be taken on the question of the patent.

RENAL OEDEMA.

AT a meeting of the Liverpool Medical Institution, on February 20th, Dr. O. L. V. DE WESSELOW read a paper on renal oedema. Discussing the various renal lesions with which oedema was associated, he pointed out that very gross pathological changes in the kidney might be associated with satisfactory excretion of water, and that in types of renal disease in which oedema appeared the only common factors seemed to be a high percentage of protein in the urine and a diminution in the excretion of water, the oliguria not necessarily being attributable to renal damage.

Reviewing the "retention" or purely renal theories of this type of oedema, Dr. de Wesselow suggested that the phenomena of renal dropsy were as readily explained by pre-renal deviation of water to the tissues as by failure of the kidney to excrete water. The blood volume in nephritic oedema was not suggestive of retention of water owing to renal failure. For Widal's salt retention theory due to renal failure to excrete chloride little could be said. It had been shown by Lundin and Scharf that in partially nephrectomized animals salt feeding led to enormous salt retention, but that such salt retention was dry and was not accompanied by water retention. The interesting theories of Epstein and Kylin might present a more exact picture of the processes underlying the development of renal oedema. The hypalbuminosis of the blood plasma, which had been considered by Epstein to be the cause of renal oedema, might, however, persist after the oedema had cleared. The increased permeability of the capillary wall, advocated by Kylin, needed further proof. The whole question might be clarified in the future by separate consideration of the oedema of glomerulo-nephritis and of nephrosis. Though both types of oedema happened to be associated with albuminuria, their causation need not be identical, and there seemed to be good reason for assuming that they were separate entities.

SYMMETRICAL NECROSIS OF THE RENAL CORTEX.

AT a meeting of the Edinburgh Obstetrical Society on February 12th, Drs. TURNER and J. DAVIDSON presented a paper on symmetrical necrosis of the renal cortex, which was illustrated by a clinical record of two cases occurring in Dr. Turner's practice. From a study of these cases certain points of similarity with regard to symptomatology, or rather the lack of it, were pointed out.

Both patients were multiparae, one being a 4-para and the other a 3-para; their respective ages were 37 and 33. Both were delivered of macerated foetuses at the seventh month of pregnancy. In the first case there was an antecedent history of pre-eclamptic toxaemia and accidental haemorrhage, but in the second case no abnormality during the ante-natal period was present. Both patients lived for twelve days after delivery, during which time marked diminution in the urinary secretion was present, 19 ounces being passed by the first, and 8 ounces by the second. In both there was a comparative absence of symptoms. Until the eighth and fifth days respect[illegible] features were partial suppression of urine [illegible] generalized oedema. The puerperia were [illegible] the eighth and fifth days uraemic phenomena began to appear, but were slight in degree; they consisted, first, of progressive drowsiness, stupor, and ultimately of coma, secondly of dyspnoea, and thirdly (in the first case) of uraemic vomiting. In both death supervened in the absence of convulsions. Treatment in both cases was on general lines, including free elimination, diaphoresis, and the administration of diuretics, but without benefit.

In both cases the kidneys showed the same characteristics—namely, total necrosis of the outer two-thirds of the cortex, the inner third being healthy; there was slight congestion of the medullary portion. In neither case was there thrombosis of the renal vessels, nor was there any evidence of previous nephritis.

In the first case the liver presented areas of focal necrosis of the central zone cells of the lobules.

Dr. Davidson showed specimens of kidneys from three cases of bilateral cortical necrosis of the kidneys, one relating to a case that had already been described by Dr. Turner. The second case showed the earliest changes of this condition; thrombosis of the afferent arterioles of the glomeruli was well seen in microscopic sections. The third case displayed advanced stages of necrosis, and was of interest because there was ante-mortem thrombus formation in both ovarian veins. Dr. Davidson pointed out that there had been one case previously described in literature where thrombosis, visible to the naked eye, had occurred in both renal and ovarian veins. The pathology of the condition was discussed, and lantern slides were shown illustrating the well-marked primary arterial thrombosis of the inter-lobular arteries which was due primarily to the deposition of blood platelets. Attention was also drawn to a case which was published some years ago of a man, aged 37, whose kidneys showed the typical appearance of bilateral cortical necrosis.

LEUCOSARCOMATOSIS.

A MEETING of the Section of Pathology of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on February 21st, with the president, Dr. J. LAIT, in the chair; Dr. H. F. MACAULEY reported a case of leucosarcomatosis in a boy aged 21 months.

Dr. Macauley said that the patient had been quite healthy till three weeks before admission to hospital, when he began to suffer from gastric trouble which gradually got worse; he then developed periorbital swelling with haemorrhagic staining of the overlying skin. On admission to hospital it was found in addition that the abdomen was considerably distended, and a definitely enlarged liver extending to the umbilicus could be felt, with enlargement of the spleen and right kidney as well. Blood examination showed a condition of lymphocytic leukaemia. Progress of the malady was rapid, death occurring within five weeks of the onset.

Dr. W. D. O'KELLY demonstrating a kidney from the case, said that the cells which had invaded the kidney, though varying somewhat in type, were chiefly mononuclears. The difficulty about cases such as this was the nomenclature; he thought that the proper name was leukaemia with tumour formation, for examination of the blood left no doubt that leukaemia was present.

The PRESIDENT mentioned two cases seen recently which resembled this case. The first patient, a boy aged 3, had had his tonsils removed, and returned to hospital about three weeks later with enlarged glands in the neck. General glandular enlargement was found, and lymphatic leukaemia was diagnosed by blood examination; a very large number of nucleated red cells was present. The child died of haemoptysis, and at the necropsy a large tumour in the mediastinum was found, which had apparently started in the thymus. The second patient was a man with pyrexia who had been treated at first as a case of pneumonia, but after ten days a big tumour was found to be the cause of the consolidation of the lung. He also suffered from leukaemia, and died quickly, but a post-mortem examination was not permitted. In cases in which there was leukaemia and tumours, it was difficult to decide the exact relationship of the two.

Dr. P. J. SHANLEY said he had seen the case with Dr. Macauley; a blood film supported the clinical appearance of classical chloroma. Dr. T. T. O'FARRELL mentioned a case he had seen which was similar, being a typical one of chronic lymphatic leukaemia. The condition of the patient's face resembled that in leprosy. The patient died, and at the post-mortem examination most extensive glandular enlargement was found.

Cerebral Abscess of Unusual Etiology.

Dr. T. G. WILSON described the clinical features of an abscess of the temporal lobe of the brain, which occurred in a child aged 6. The patient had very few symptoms, and a simple mastoidectomy was first performed; this operation revealed some necrosis of bone around the mastoid antrum, but the dura of the middle fossa was normal on exposure. Nine days later, however, the patient's condition was not satisfactory, and a radical mastoidectomy was performed. At this operation a fistula was found leading through the tegmen tympani into the temporal lobe of the brain, and about 3 c.cm. of fetid creamy pus was evacuated from a brain abscess through it; a Gram-negative bacillus was found in pure culture in this pus, and was isolated from the cerebro-spinal fluid. The child developed purulent meningitis five days later and died.

Professor J. W. BIGGER said the organism belonged to the pseudomonas group. It was Gram-negative; produced a brownish pigment which diffused through solid medium; was actively motile; and failed to ferment any sugar or to produce indol. The cerebro-spinal fluid was very cloudy owing to the large number of organisms present and in spite of the almost complete absence of pus cells. The organism was one of a very low degree of pathogenicity.

Mucoid Carcinoma of the Breast.

Dr. T. T. O'FARRELL exhibited a specimen of mucoid carcinoma of the breast which had been removed from a woman aged 65. On admission to hospital the tumour was found to be freely movable, with no involvement of the skin or nipple, and no glandular enlargement. Under the impression that the growth was benign a limited removal was contemplated, but, as the specimen presented a doubtful appearance when incised, a radical operation was performed. The patient made an uneventful recovery and left hospital in nine days. The growth measured 3 by 2.5 by 3 cm., being more or less spheroidal. On section it had a gelatinous appearance, with some points of haemorrhage; in places the tissue was more solid, and was closely adherent to the surrounding fat. Microscopically the specimen presented the appearance of mucoid carcinoma. It consisted of islands of spheroidal epithelium imbedded in mucoid material, which gave the typical reaction with haematoxylin. There was an occasional attempt at acinus formation, but this was exceptional. Very few mitotic figures were observed.

Empyema due to Gaertner's Bacillus.

Dr. R. H. MICKS and Dr. G. C. DOCKERAY made a communication on a case of empyema due to *B. enteritidis* Gaertner. An infant, 16 months old, was admitted to hospital suffering from pneumonia; within a few days of admission, and when the pneumonia fever had begun to decline, extensive pleurisy appeared at the base of the right lung. An effusion developed, which was drained by rib resection; it was fibrino-purulent, solid fibrin forming the greater part of the contents of the pleural cavity and fluid pus being relatively scanty. Uninterrupted recovery followed. The organism, obtained in pure culture from the effusion and seen in large numbers in stained films, was identified by Dr. Dockeray with the *B. enteritidis* Gaertner; the patient's serum after operation contained no agglutinins for the organism isolated, a feature not unusual in Gaertner infections. The stools were plated on two occasions, but no organism resembling *B. enteritidis* was found, and no explanation of the infection was forthcoming; search through the literature on the subject led to the belief that this was the first case recorded of empyema due to Gaertner's bacillus.

Dr. DOCKERAY, describing the bacillus which he had isolated from the case, stated that it was typical in so far as its microscopical and biochemical behaviour was concerned. In spite of the fact that it agglutinated with Gaertner serum to full titre, it would be necessary to await the results of agglutinin absorption tests in order to determine whether it really was *B. enteritidis*, or some very closely related serological type, such as the Dublin or Tokio strains.

Reviews.

A SYSTEM OF BACTERIOLOGY.

IT will be remembered that towards the end of last year volume iii of the *System of Bacteriology*[1] was reviewed in these columns (November 16th, 1929, p. 903). Volume ii,[1] the third to appear, is devoted to a consideration of the cocci and haemophilic bacteria. Both these groups of organisms are of outstanding importance, the former because it comprises the agents of so many common diseases of man, the latter because its consideration entails a review of that vexed question the etiology of influenza. We looked forward, therefore, to some interesting reading in this volume, and it may be said that in the main this anticipation is realized.

The volume opens with an account of the staphylococci by A. Fleming. Most bacteriologists would probably admit that, despite the importance of this organism to both surgery and medicine, they look upon its study as a somewhat dull occupation. One has the feeling that the author has approached his task in some such spirit; the account is orthodox and correct, but it is unlikely to arouse interest. Chapter II, which is devoted to the streptococci, and is contributed to by a number of authors (J. W. McLeod, T. J. Mackie, D. G. S. Percival, and C. H. Browning), is excellent. Space forbids a detailed analysis of this chapter, and where so even a standard is maintained it might be thought invidious to single out a few features for comment. Such questions, however, as the rôle of the haemolytic streptococcus in the etiology of scarlet fever, the relation of streptococci to rheumatic fever, and subacute bacterial endocarditis, call for special mention. They are questions of particular importance, and their treatment is critical and exceedingly well balanced. The next chapter on the pneumococcus, by W. Mair, J. W. McLeod, and F. Griffith, is equally good, and the account of the serological races of this organism most interesting, especially Griffith's experiments on mutation of types. Following this we have accounts of the meningococcus and the gonococcus, by E. C. D. Murray and W. J. Tulloch respectively. Both writers have given clear and eminently readable accounts of their subject, in which possible lines of future research are not obscured by a recital of what is already known.

Perhaps the best of the many good chapters in this volume is that on the influenza group of bacteria, by W. M. Scott. Here only the true haemoglobinophilic bacteria are dealt with, organisms such as *B. pertussis*, *B. ducreyii*, and *B. lacunatus*, included in the haemoglobinophilic group in the American classification, being relegated to a separate chapter of their own, for the good reason that they can be grown in media devoid of blood. The feature of the account of the influenza group is the discussion of the problem of the etiology of influenza, which is a really masterly appreciation of the situation. It should serve as a most useful baseline from which to start further research. This chapter has in addition a section on *B. pneumosintes*, contributed by McCartney, in which the claims of this organism to be the etiological agent of influenza are considered in a clear and unbiased manner. The volume closes with a chapter on *B. pertussis*, *B. ducreyii*, and *B. lacunatus*, by R. T. Hewlett, which is clear and adequate.

SPINAL ANAESTHESIA.

THE original purpose with which Dr. CHARLES H. EVANS wrote his monograph on *Spinal Anesthesia*[2] was to provide a textbook for use in the New York Post-Graduate Hospital. While claiming no very great originality either in methods of technique of spinal anaesthesia or in the choice of the drugs used, the author believes that the technique advocated and the drugs described provide adequate anaesthesia for the surgeon to carry out his work

[1] *A System of Bacteriology in Relation to Medicine.* Medical Research Council. Vol. ii. London: H.M. Stationery Office. 1929. (Sup. roy. 8vo, pp. 425. Single volumes £1 1s. net; set of nine volumes £8 8s. net.)

[2] *Spinal Anesthesia.* By Charles H. Evans, M.D. Introduction by W. Wayne Babcock, M.D., F.A.C.S. Foreword by Charles Gordon Heyd, M.D., F.A.C.S. London: W. Heinemann (Medical Books) Ltd. 1929. (6 × 9½, pp. xxii + 203; 40 figures. 25s. net.)

and a proper degree of safety for the patient. Dr. Evans does not disdain the use of supplementary general anaesthesia, and so his outlook on the matter is wide. He is very insistent on the proper choice of the patient who is to be submitted to spinal anaesthesia, and he is broadminded enough to agree that there are variations in the technique described by him which give good results in the hands of skilled administrators. This monograph is not intended for the latter, but for the beginner who wishes to learn methods which are simple and tolerably safe.

Dr. Evans's descriptions are clear and his teaching sound, and the monograph can be recommended to those who wish to undertake operative work under spinal anaesthesia. The illustrations are for the most part excellent, but it is a pity that some of the rough diagrams should not have been handed over to an artist to finish, to bring them up to the level of the less diagrammatic illustrations. By this we do not mean that clarity should be sacrificed to artistic detail. Diagrams can be constructed to look neat and tidy, which is not the case with all those here collected; for some look distinctly smudgy and spoil the effect of a work on which the publisher has obviously spared no pains, since the get-up of the book is excellent as regards type and the majority of its illustrations. Apart from these few blemishes the monograph is excellent, and written, moreover, in a manner that is extremely readable.

AN INTRODUCTION TO THE STUDY OF THE NERVOUS SYSTEM.

To write a book for students is often more difficult than writing for the adept, and to write a short book for those who have most to learn is one of the hardest of educational tasks. Dr. HEWER and Dr. SANDES have attempted this in their *Introduction to the Study of the Nervous System*,[3] which is designed to convey, especially to the student, the essentials of neurological anatomy and physiology. Much of the book attains a high standard. The anatomical sections are well done, and the coloured diagrams for the most part are clear and well arranged, though diagram 29, designed to show the innervation of the salivary and lacrymal glands, is, perhaps inevitably, somewhat reminiscent of a map of the Underground railways. Certain defects, however, must be noted. The presence of sensory fibres in the anterior limb of the capsule (diagram 13) is not generally recognized, but this may be a colour misprint. The charts designed to demonstrate visual field defects are unsatisfactory, since there are two visual fields, and not one, and the student will not derive a clear idea of the meaning of homonymous hemianopia, for example, from the diagrammatic method employed. The physiological sections, especially those with[illegible]t reach the standard of the l[illegible]tomy. The criticism, if not the [illegible]neurologist would enhance the value of subsequent editions.

HYDROGEN-ION CONCENTRATION.

BIOCHEMISTRY has, by right of use, established a proprietary interest in the concept of "hydrogen-ion concentration." The control of the hydrogen-ion concentration—the *p*H—has become one of the commonest of routine observations in biochemical laboratories. It is probable, therefore, that biochemists and physiologists will be attracted by Dr. H. T. S. BRITTON's work, entitled *Hydrogen Ions*,[4] the third volume in a series of monographs on applied chemistry published under the editorship of Dr. E. Howard Tripp.

Dr. Britton's monograph is valuable, though it does not touch directly upon many problems of general biological interest. It gives in detail the acceptable methods for the determination of hydrogen-ion concentration. The wealth of technical detail will be of great service to the laboratory worker. Thereafter, the book is given over to a survey of the value of *p*H measurements in the practical control of a wide field of applied chemical processes. Few of these applications are of direct biological importance, the interest of the author being rather in the field of industrial chemistry. Brewing, baking, milk and water supply, sewage disposal, the tanning of leathers, the paper, pulp, sugar, textile, and dye industries, ceramics, and the electrodeposition of metals—all these are dealt with in greater or lesser detail, according to the amount of available data. The biochemist will probably close the book with the satisfactory reflection that other branches of applied chemistry have been much more dilatory than his own in the practice of hydrogen-ion control. Nevertheless he can profit by perusing their studies.

It is not always realized that *p*H is something more than a logarithmic scale on which are compared observations made with the aid of certain technical methods. It is also a symbol for an important theoretical abstraction—the acid-base affinity of a system. This aspect of its proper use is becoming of increasing importance. Dr. Britton, however, offers no service to the student of the theoretical problem. His object is to describe a technical weapon and to illustrate its usefulness. This he has done well. Within its prescribed field the book is a good example of what a monograph should be.

MAN AND CIVILIZATION.

Of recent years there have been published, particularly in the United States of America, a considerable number of books, some by a single author, others by many authors under a common editorship, purporting to give a comprehensive survey of Western civilization and of the development of those essential features of the human body and mind which have enabled it to come into existence. The time has probably arrived when a pause in the production of works of this kind is desirable, as most of these publications contain valuable features, and as, between them, the ground has been abundantly covered. A third and revised edition of one of them, however, may be welcomed as showing that it has at any rate survived some tests of value. This is *Man and Civilization*[5] by JOHN STORCK, instructor in philosophy in Columbia University. Its subtitle is "An Inquiry into the Bases of Contemporary Life," and its object is described as being "to enable the ordinary educated reader to realize what might be called his place in the scheme of things." It is rather long, not so much by reason of its number of pages as because it is packed full of matter. It is an effective attempt to analyse comprehensively that combination of biological, psychological, and sociological conditions under which man now lives in civilized communities, and the way in which these conditions have survived and been developed during the unfailing continuity of life. It is not a book that can easily be read through uninterruptedly, but rather one to be intimately studied during a college or university course. The preface, indeed, states that "preliminary editions were used as required reading in the prescribed freshman course in contemporary civilization which is given in Columbia College." The book is divided into four parts, entitled: "The world we live in," "How we come to be what we are," "Human nature and social complexes," and "Contemporary ways of life." These titles do not, perhaps, of themselves indicate the nature of the contents. The analysis begins by tracing the consequences of the fact that man is a biological organism developing and existing in close dependence on a culture pattern. The essential features of that culture system, known as Western civilization, are described in their relation to other cultures. The ways in which this system leads the individual members of the group to fall into its characteristic routines, to speak its language, to use its tools, machines and techniques, and to accept its values are then traced. Finally, there is an examination of the place of economics, of the family, of art, of science, and of religion in this modern civilized life. No part of the book is inadequate for its purpose, and there are several sections which are especially valuable and suggestive. For instance,

[3] *An Introduction to the Study of the Nervous System.* By E. E. Hewer, D.Sc.Lond., and G. M. Sandes, M.B., B.S.Lond., etc. London: W. Heinemann (Medical Books) Ltd. 1929. (Cr. 4to, pp. xii+191; 55 diagrams. 21s. net.)

[4] *Hydrogen Ions.* By Hubert T. S. Britton, D.Sc.Lond., B.Sc.Bristol, D.I.C., F.I.C. Monographs on Applied Chemistry. London: Chapman and Hall, Ltd. 1929. (Demy 8vo, pp. xiv + 515; 103 figures. 25s. net.)

[5] *Man and Civilization.* By John Storck. Third, revised edition. London: Constable and Co., Ltd. 1929. (Demy 8vo, pp. v + 449; illustrated. 15s. net.)

we may mention the summary survey of contemporary economic life in Chapter XIV and the study of methods of thinking in Chapter VII on "the organization of the intellectual life." Those who agree that "the proper study of mankind is man," and that to know themselves and get along with one another is the most important business of human beings, will find in Mr. Storck's book much material for such study and, it may be also, practical help in that business.

NOTES ON BOOKS.

THE handy volume on *General Medicine*[6] in the Practical Medicine Series (1929) consists of five parts devoted respectively to infectious diseases, diseases of the chest, excepting the heart but including tuberculosis, diseases of the blood and kidneys, diseases of the heart and blood vessels, and diseases of the digestive system and metabolism. In the section on infectious diseases, compiled by Dr. George H. Weaver, assisted by Dr. T. T. Crooks, undulant fever and tularaemia take precedence of all the other diseases, which include *influenza, malaria, the acute exanthemata, epidemic diseases* of the nervous system, mumps, and enteritis. In the section on diseases of the chest Dr. Lawrason Brown draws attention to the increase of pulmonary embolism and of primary tumours of the lung, and reviews recent literature on the B.C.G. vaccine, among other subjects. Dr. George R. Minot and Dr. William B. Castle devote special attention to the treatment of pernicious anaemia and the experimental production and nature of nephritis. In the section on diseases of the heart and blood vessels Dr. William D. Stroud reviews recent work on rheumatic cardio-vascular disease, angina pectoris, and blood pressure. Dr. Ralph C. Brown deals with recent advances in the treatment of gastric diseases, peptic ulcer, duodenal stasis, the diagnosis of gall-stones, the varieties of jaundice, diverticulitis, diabetes, and exophthalmic goitre.

In issuing the forty-sixth annual volume of *The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland*[7] the publishers announce that this volume will probably be the last to be published in the more complete form, as the special appeal that was made to societies to order the book has not been successful. If further support is not forthcoming the lists of papers printed in future will be confined to those that are also published. This would be an unfortunate restriction, as the *Year-Book* is a reliable and comprehensive guide to the work of numerous societies and Government institutions. The present issue, which refers to work done in science, literature, and art during the session 1928–29, follows the general arrangement of its predecessor. In the section on medicine there are lists of reports, publications, and papers of the Ministry of Health, the British Medical Association, the Royal Society of Medicine, the Medical Research Council, and of other medical bodies.

A second edition of Professor JAMES SMALL'S *Textbook of Botany*[8] which is designed for medical and pharmaceutical students, has been published. The short accounts of carbon assimilation and geotropism have been brought up to date, and certain subjects have been treated more fully.

The second volume of *An Introduction to the Chemistry of Plant Products*,[9] by Dr. P. HAAS and Professor T. G. HILL, has the subtitle of "Metabolic processes"; its predecessor was noticed in our columns of November 17th, 1928 (p. 901). This new volume will be found of great interest by all who are interested directly or indirectly in biochemistry. The early chapters deal with the synthesis of carbohydrates, fats, and proteins by plants. Chief attention naturally is devoted to the first of these processes, for upon this depends the ultimate supply of energy for all living processes, both in plants and animals. The middle third of the book is devoted to respiration, and the last third to growth. At the end of the last chapter certain problems are discussed which have a bearing not only on plant but also on animal physiology. The importance in nutrition of traces of various inorganic elements is a problem that is easier to investigate in plants than in animals, and it is interesting to learn that traces of boron and of manganese are essential for the growth of many plants. Traces of zinc act as stimulants to the growth of moulds. From this subject the authors pass to a discussion of the presence of hormones in plants. Here, however, the evidence is much more obscure in vegetable than in animal physiology. This volume, apart from its value to botanical students, will also be of great use to those who are primarily interested in animal physiology, but wish to find a short account of the present state of knowledge in plant physiology on subjects where the two branches of physiology have a common interest.

[6] *General Medicine*. The Practical Medicine Series. Chicago: The Year Book Publishers. 1929. (4½ × 7¼, pp. 829; 46 figures. 3 dollars.)

[7] *The Year-Book of the Scientific and Learned Societies of Great Britain and Ireland*. Forty-sixth annual issue. London: C. Griffin and Co., Ltd. 1930. (Demy 8vo, pp. 413. 18s. net.)

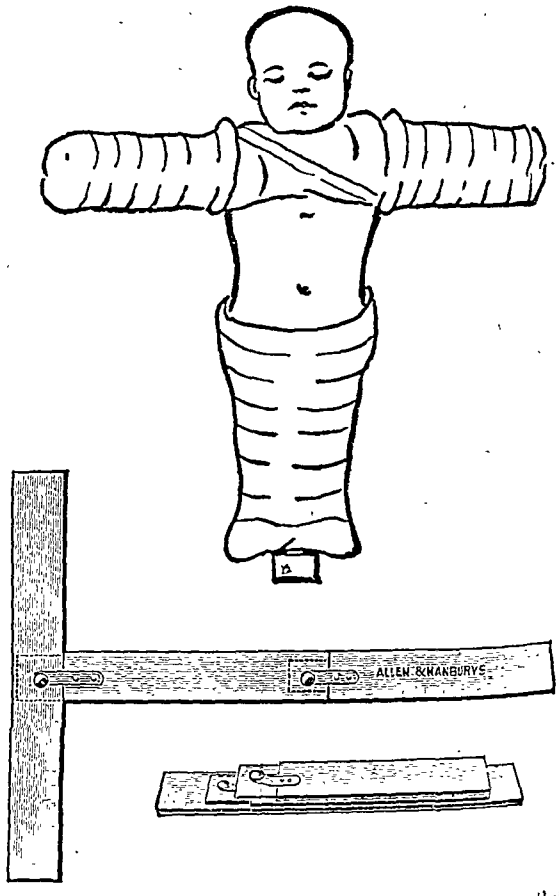
[8] *A Textbook of Botany*. By James Small, D.Sc.Lond., Ph.C., F.L.S., etc. Second edition. London: J. and A. Churchill. (5½ × 8, pp. x + 685; 1,350 figures. 21s.)

[9] *An Introduction to the Chemistry of Plant Products*. By Paul Haas, D.Sc., Ph.D., and T. G. Hill, D.Sc., A.R.C.S. Vol. ii: Metabolic Processes. Second edition. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. viii + 220; 12 figures. 10s. 6d. net.)

PREPARATIONS AND APPLIANCES.

AN AID TO OPERATIONS ON INFANTS.

MR. DENIS BROWNE, F.R.C.S. (Surgeon to the Hospital for Sick Children, Great Ormond Street), writes: In operating on babies there are certain special difficulties. Owing to their light weight and powers of contortions they need careful holding for greater or less time, according to the type of anaesthetic, and their small size makes it difficult for the holder to avoid the operators. They are very sensitive to overdoses of ether or chloroform, especially when they are toxic or starved, and their relatively large surface area and defective heat-regulating mechanism make them particularly liable to chills during operation.



In work on these cases, both as operator and as anaesthetist, I have found great help in a simple device, which holds the child firmly, prevents chilling, and permits the use of local anaesthesia, or the minimum of general. It is a "crucifix," the original model of which was a simple T of 2-inch wood, the cross limb 18 inches long, and the main one 24 inches. As this was awkward to carry, and had an inauspicious look about it when taken into a private house, I got Messrs. Allen and Hanburys Ltd. to make me a collapsible model in duralumin, with a sponge rubber padding, and this has been very satisfactory. The baby is wrapped in warm cotton-wool over as much of its body as possible, according to the operation to be done, and bandaged firmly to the frame, on which subcutaneous saline or artificial respiration can be given without removing it.

Incidentally it is interesting to see how often a baby that has been restlessly wriggling and crying will settle down and go to sleep as soon as it is firmly fixed. It suggests that possibly there were advantages, at any rate to the parents, in the tight swaddlings which so many nations used for so many ages.

ELIXIR IODO-CREOSOTI CO.

Elixir iodo-creosoti co. (Wyleys Ltd., Coventry) is a mixture containing creosote, potassium iodide, and caffeine sodio-salicylate, together with various other vegetable drugs. The compound is suitable for use in pulmonary infections accompanied by rise of temperature.

THE HUMAN BRAIN.

LECTURE BY PROFESSOR ELLIOT SMITH.

THE human brain was the subject of a lecture delivered by Professor G. ELLIOT SMITH at the Royal Society of Arts, under the presidency of Sir OLIVER LODGE, on March 12th.

The lecturer addressed himself particularly to the question of such characteristics of the human brain as may be supposed to differentiate man in the quality and range of his intellect from all other living creatures. From the time of the Greeks onwards, he said, men had been speculating as to the nature of the human intellect, but serious investigation of the brain dated back to not much more than a century ago, when Franz Joseph Gall, whose name was associated with what afterwards became known as phrenology, obtained his real renown by destroying the old traditions regarding the nature and functions of the brain and starting modern research on proper lines. Up to Gall's time the leading authorities on the anatomy and physiology of the brain had seriously believed that the important thing was the cerebral fluid, and that the brain structure was a mere organism for secreting it. Gall pricked that absurd bubble, and his work was the starting-point of an intelligent attempt to interpret the comparative anatomy of the brain. The experiments of Flourens, the famous French physiologist, suggesting that the stimulation of the brain afforded no indication at all of any localization of function, and that very much the same results occurred whatever the stimuli, were also of interest. The search for some distinctive feature of the human brain to account for the mental superiority of man occupied comparative anatomists for a long period, and acute controversy arose out of these attempts. Professor Elliot Smith referred to the lively debates which ensued upon the theory that the longitudinal eminence on the floor of the posterior horn of the left ventricle of the brain, expressing the projection into the ventricle of the calcarine sulcus, was peculiar to man. This view figured in the controversy in which Owen and Huxley were engaged in the sixties, a controversy on which Kingsley's *The Water Babies* was a skit. It was presently proved, however, that this feature was not peculiar to man, and although different anatomists had at various times set up other criteria as structural distinctions of the human brain, every one of them had in turn been shown to be false. There was no structural feature of the human brain which was not also present in the brain of the higher apes, and it was impossible to take out any particular feature and say that upon this character the intellectual superiority of mankind depended.

Professor Elliot Smith then proceeded, with the aid of a long series of lantern slides, to make clear his argument that the growth of the brain and the mind was the result of the change of increasing complexity of habit and of motion, which lay at the bottom of all evolution, that the growth of structure depended upon function, and that with greater range and complexity of function came elaboration of structure.

Professor E. W. MACBRIDE, in some observations following the lecture, recalled Bergson's remark that the human reason was a "food-getting mechanism." If one could imagine a superior being visiting this sublunary sphere and watching evolution, said Professor Macbride, he would come to the same conclusion as he saw the growth of the great central ganglion going on step by step with the increasing complexity of the habits of the animal. It was Bergson's view that the characteristic of the human reason to find a materialistic explanation of every occurrence was due to the fact that since the reason was evolved to deal with material objects, from the early flint and stones, it had an inborn tendency to resort to such a method of explanation.

Sir OLIVER LODGE, from the chair, said that he supposed no one would now go so far as to regard the brain and the mind as synonymous. The brain was the organ of the mind in the same way as the violin was the instrument of music. The brain itself could not be conceived as thinking, planning, hoping, or loving, though he admitted that all those things in our present existence could not be accomplished without a physical concomitant. The important thing, in Sir Oliver Lodge's view, was not matter, which as modern physics had shown was but a small portion of the whole, but the spiritual entity (as he viewed it) surrounding matter, in its interstices, in the space between atoms or between worlds, which entity might well have vital functions to perform.

THE DOCTOR IN THE LAW COURTS.

A JOINT DEBATE.

THE Medico-Legal Society and the West-London Medico-Chirurgical Society held a joint discussion on March 7th on "The doctor in the law courts."

Sir WILLIAM WILLCOX said that the doctor regarded the law courts with aversion; they were time-consuming, and cross-examination was apt to be unpleasant. The Medico-Legal Society had done something to remove this natural repugnance, for in that body the lion—who were, of course, the lawyers—lay down with the lambs, who were the other party to the combination. Sir William thought it important for doctors in their practice to cultivate what he called the medico-legal atmosphere. They must bear in mind that many members of the public had a natural love of litigation, and that statements made casually to a patient or to a patient's friends might have consequences in the courts. He recalled a case in which a man who was really suffering from commencing pemphigus vegetans consulted a doctor for an ulcer in his mouth. The doctor inquired as to his tooth-paste, and, on being told, said "Carbolic burn," whereupon the patient commenced a legal action against the proprietors of the dentifrice. The action, of course, went no further when it was discovered that the mouth condition was due to bullae of pemphigus.

One of the most honourable functions of the practitioner (Sir William Willcox continued) was the giving of evidence. It was worth while remembering, however, that when a subpoena was served conduct money should be paid. He recalled an occasion when, working among his out-patients one morning, a well-dressed gentleman entered whom he at first took to be a foreign doctor. He got up to shake hands with him, and the visitor pressed into his palm a guinea and a piece of paper—a subpoena to attend a compensation case which necessitated his spending several days at Aylesbury. The privilege of giving evidence carried with it no small responsibility, and might affect not only the persons involved in the action, but the doctor's own reputation. Evidence might be either of fact or of opinion; evidence of opinion was of the nature of expert testimony. Every medical man who went into the witness-box might be, and generally was, asked for his opinion. He should be very cautious in uttering opinions unless he was certain of his ground. The speaker recalled an incident in the Hadwen trial at Gloucester in 1924, when a medical witness was asked by the late Sir E. Marshall-Hall to give his opinion as regards statistics of death from diphtheria before the use of antitoxin. He replied, quite properly, that he would prefer not to answer the question as it was not his special department, and in that attitude he was supported by the judge. The language used in giving evidence as to fact should be such as was understood by persons of average intelligence possessing no special knowledge. It was better to say "nose-bleeding" than "epistaxis." Facts should be clearly and concisely stated, and comments avoided. The function of the expert witness was to assist the court by his special knowledge and experience; he should not regard himself as an *ex parte* witness. The giving of expert evidence was a responsibility not to be lightly undertaken. The statements of fact on which the inquiry was based should be carefully studied and examined in a critical spirit. The witness should refresh his mind by a careful study of recent scientific research relating to the subject, and if in doubt he should, if possible, verify by

experiment on any point. He should unsparingly cross-examine himself on every aspect of the question. He must have regard to the point of view of the judge and of the cross-examining counsel as well as to that of the counsel on whose side he happened to be. The success of an expert witness was much assisted by an appreciation of the attitude of mind of those who questioned him, and he was thus able to anticipate questions, and to meet with tolerance and charity questions which might otherwise annoy him. The witness should be careful never to put down anything in a medical report which he could not substantiate in the box. In a big case there might be half a dozen doctors on each side. Sir William Willcox thought it desirable that the several medical men on one side who were going to give evidence should confer together, not at all with the idea of getting any one of them to change his evidence, but in order to rule out irrelevancies, clear up doubtful points, and see what agreement existed. In examination and cross-examination answers should be as clear and concise as possible. Lengthy explanations and evasions of a direct answer created a bad impression. The direct affirmative or negative should be given wherever possible, and if not possible the reason for inability to give it should be shortly stated. Attempts to give lectures in the witness-box were likely to weaken confidence and to raise points of which the cross-examining counsel would take advantage. Witnesses should avoid making any statement which was not an answer to a question put. If a question was a double or triple one they should ask that it be divided. Quotations from books or reports put to the witness should be accepted with caution; it was well to ask to see the book or report.

Sir William Willcox concluded with some remarks on coroners' courts, where the rules of evidence were not strictly followed, and hearsay evidence not ruled out. Some recent criticism of coroners in connexion with two prolonged inquiries was not quite just, because on the coroner in both these cases depended the whole responsibility, the Crown having instituted no prosecution. By the present procedure, if a criminal prosecution was started, the coroner's inquiry was postponed until the result of the prosecution was forthcoming.

Lord RIDDELL spoke on medical privilege. Many doctors, he said, resented the fact that the same privilege was not given to the medical as was given to the legal profession. Such resentment grew out of a misunderstanding of the nature of legal privilege. Lawyers were not entitled to privilege at all; the privilege was that of their clients, with whom it rested to say what lawyers should and should not divulge; though even this right of the client was of a limited character, for the law did not permit solicitors and barristers to enable criminals to escape—"except through the ordinary processes of law"! There was one absolute privilege for witnesses, and that arose in a case in which a doctor was concerned. This doctor, in the witness-box, had made statements reflecting on a third party. Action was brought against him for slander, and the plaintiff in the first court recovered £50, but on the matter being taken to appeal it was laid down absolutely that any witness could say what he liked in the witness-box, whether his statements were pertinent to the case or not. The expert medical witness was a comparatively modern innovation. The first such witness appeared in the case of Miss Blandy, who was tried (and hanged) in 1752 for poisoning her father. The expert witness in that case was Dr. Adlington. One of the advantages of the medical witness was that, being an expert, he was permitted to express an opinion, while most witnesses could only deal with facts. The legal maxim was, "Who is skilled in his profession is to be believed," which was rather open to question. Lord Riddell concluded with some sound advice to the witness, not to be testy, not to appear conceited or vain, to look simple while being wise, and to take urbanity as the most effective shield.

Sir WILLIAM COLLINS said that medicine was not an exact science: it was rich in hypotheses, it could not point to many general laws, nor premise with certainty on the matters with which it was dealing; it did not lend itself very readily to precise legislation. But law, handed down from precedent to precedent or embodied in statute, was more or less an exact science. Therefore the medical witness when he went into the box was apt to be confounded with the old fallacies, the fallacy of many questions, the fallacy of *Petitio principii*, and the fallacy of *Circulus in probando*, so that when he left the witness-box he was likely to make the reflection attributed to John Hunter—that definition was of all things most damnable. With regard to coroners' courts, he recalled a time when coroners were neither doctors nor lawyers. When he was chairman of the Public Control Committee of the London County Council he endeavoured to secure that in future coroners should be qualified in both medicine and law, and this was now the case, at any rate in the county of London.

Dr. F. TEMPLE GREY referred to Lord Birkenhead's essay on "Should a doctor tell?" which was not very flattering to the profession, but contained some truths of which the profession should take note. The British Medical Association would be doing good service if, in co-operation with the Medico-Legal Society, it formed a strong committee to devise a code of conduct in such matters for the help particularly of the younger members of the profession.

Mr. MCADAM ECCLES spoke of the difficulty, when giving an expert medical opinion, of answering "Yes" or "No" while yet sticking to the whole truth and nothing but the truth. On several occasions under this line of questioning he had turned to the judge and said, "My lord, I have sworn to tell the truth, the whole truth, and nothing but the truth, and I cannot do that by answering 'Yes' or 'No,'" and the judge had always upheld him. Members of the medical profession were not partisans on either side, and if a professional man went into the box with the intention of giving evidence purely on one side he was not an expert witness. Mr. Eccles had a "bone to pick" with the courts—namely, that they tended to look upon all registered medical practitioners as possessing an equal degree of knowledge in all branches of medicine and surgery, with the result that sometimes a surgeon, who had been preceded in the box by another medical man without his special knowledge of, say, anatomy, was confronted with an opinion which had just been delivered by his confrere and asked how he could disagree with it. The most highly qualified medical man, while of great service as an expert witness in one particular line, ought not to be regarded as speaking with equal authority on some quite different line. He thought there ought to be an opportunity for medical men on both sides to confer with the medical assessor or referee, and when he had asked for that it had never been refused. Indeed, on more than one occasion the judge had said, "May I come in also?"

Dr. KNYVETT GORDON said that no pathologist should give any opinion in the witness-box as to the significance of his tests on a given patient without himself having seen the patient. There was some tendency to substitute pathological tests for clinical opinion. The error with the Wassermann test as indicative of syphilis was about 15 or 20 per cent., but even if it was much less than this, if there was any error at all, the pathologist, when asked what was the significance of the Wassermann reaction in a particular case, must say, "I do not know," or possibly state what was the margin of error.

Dr. JULIUS BURNFORD expressed some disappointment with the course of the discussion. He had hoped that the fundamentals of the question would be attacked—namely, the whole position of the medical witness in the law court as it existed at present, as to whether it was a right position, or the best from the point of view of justice, and whether it was possible for medical men to appear on opposite sides, in either civil or criminal cases, and tell the truth, the whole truth, and nothing but the truth. Many years ago Sir Clifford Allbutt, when in Leeds together with his colleagues in that town, refused to go into the witness-box without a preliminary consultation with the medical men in the case, and apparently this method served the interests of justice, although (according to a letter by Allbutt in the *British Medical Journal* in 1880) it met with opposition from the lawyers—open foes the solicitors, covert from the bar—because it tended to cut down their fees.

British Medical Journal.

SATURDAY, MARCH 22ND, 1930.

THE FEMALE SEX HORMONES.

RECENT work on the mechanism of the oestrous cycle and the regulation of ovarian periodicity has revealed in rats and other mammals the existence of an extremely complex hormonal system in which at least four internal secretions are concerned—two produced in the ovary and two in the anterior portion of the pituitary body. As far back as 1906 Marshall and Jolly[1] produced the phenomena of œstrus in the anœstrous bitch by means of an ovarian extract, subsequent work leading to the isolation of the hormone, appropriately named oestrin (Parkes), which appears to be directly responsible for producing the vaginal changes in the œstrual cycle of the rat and mouse. Later investigation has demonstrated the production in the corpus luteum of an oestrus-inhibiting hormone; and from extracts of the anterior lobe of the pituitary body have been separated an oestrogenic hormone which induces premature development of puberty in mice and rats, apparently by accelerating the maturation of the ovary, and an oestrus-inhibiting hormone which produces its effect by stimulating the development of lutein tissue. Yet other hormones regulating the female reproductive system have been postulated, but for the existence of those mentioned the body of experimental evidence is now so overwhelming that only the details of their physiological action and interrelations remain to be worked out in the laboratory.

The clinical application of these discoveries is as yet in its infancy, for although the use of ovarian extracts, above all of oestrin, is widespread, there has been but little orderly research into their action. It is probable that the discouraging results so far obtained may be attributed not to the fact that these hormones, so important in animals with a biphasic sexual cycle, are unimportant in the human subject, but to the uncertain dosage of the preparations available and the great cost of extracts having a sufficient activity. Thus Shaw,[2] who from the administration of oestrin obtained what he believed to be definite clinical improvement in a number of cases, recommends as a minimum dose about 50 rat units. Probably little of the available commercial material reaches this standard of biological activity, and it seems reasonable to expect that if more potent preparations became generally available clinical advance would follow immediately. R. T. Frank,[3] having tested a number of commercial extracts, which, according to the manufacturers, had been biologically standardized, found that they had an activity varying from 0 to 30 per cent. of the amount claimed. Possibly, however, the values attached to many of the commercial products are calculated in terms of a smaller unit than that used by Shaw; and if this is the case it is to be hoped that soon there may be some international agreement on a unit of oestrual activity. The difficulties of standardization are well illustrated in a series of papers by Coward and Burn,[4] and Marrian and Parkes,[5] and Allan, Dickens, and Dodds.[6] Of these workers, Coward and Burn were the first to insist on the fact that the animals used for standardization gave a very varied response. They found that to produce oestrous changes in some rats needed the injection of eight times as much oestrus-producing hormone in oily solution as in others; and Marrian and Parkes, and Allan, Dickens, and Dodds, working with watery solutions, found a smaller but still significant range of variation in mice. Clearly, then, biological assay may lead to gross error, and it would appear that much of the early clinical literature is undependable, simply because the writers themselves were misinformed about the biological activity of the preparations used.

The recent isolation by Doisy[7] of crystalline oestrin has in all probability solved the problem of standardization; but until the process becomes established on a commercial basis and a crystalline oestrin is sold at a reasonable cost, clinicians will have to depend on relatively impure preparations standardized by the unreliable methods of biological assay. In connexion with Doisy's work the *Journal of the American Medical Association*[8] reports a sequence of events which cannot, in view of the commercial possibilities of crystallized oestrin, be without significance. It appears that Dr. A. Butenandt, assistant to Professor Windaus of Göttingen, learning that Doisy had reported his discovery before the International Congress of Physiology held in Boston in August, 1929, announced that he, too, had isolated the hormone of the female sex gland in chemically pure crystalline form. When, however, he published the description of his product in December he completely ignored the Doisy announcement. The writer of the article in the *Journal of the American Medical Association* caustically adds: "As might have been anticipated, the German investigator promptly conferred on his product a trade name controlled through a German manufacturer."

Meanwhile, fruitful work on the extra-ovarian hormones regulating ovarian periodicity has been proceeding, chiefly in this country, in Germany, and in America. Evans[9] in 1924 had observed that the injection of an extract of the anterior portion of the pituitary gland into the normal rat resulted in the temporary disappearance of the oestrous cycle. Later, Smith and Engle,[10] and Zondek and Aschheim,[11] showed that transplants of the anterior lobe produced premature puberty in mice, but had no effect on spayed animals. In 1928 Evans and Simpson[12] demonstrated that the two hormones of the pituitary—the oestrogenic hormone and the oestrus-inhibiting hormone—had different solubilities; alkaline extracts containing the latter hormone, which Evans had previously shown to have a growth-promoting effect and to produce luteinization of intact Graafian follicles, acid extracts containing the hormone which induces premature development of puberty. Zondek and Aschheim

[1] *Phil. Trans. Roy. Soc.*, 1905.
[2] *Quart. Journ. Pharm.*, 1929, 2, 373.
[3] *The Female Sex Hormone.* London: Baillière, Tindall and Cox.
[4] *Journ. Phys.*, 1927, 63, 273.
[5] Ibid., 1929, 67, 389.
[6] Ibid., 1930, 68, 343.
[7] *Thirteenth International Phys. Congress*, August, 1929; *Amer. Journ. Phys.*, 1929, 90, 329.
[8] *Journ. Amer. Med. Assoc.*, 1930, 94, 341
[9] Harvey Lectures, 1924.
[10] *Amer. Journ. Anat.*, 1927, 40, 159.
[11] *Arch. f. Gyn.*, 1927, 130, 1.
[12] *Journ. Amer. Med. Assoc.*, 1928, 91, 1537.

showed that injection of urine from pregnant women into mice produced ovulation and precocious oestrus—effects which they concluded were due to the presence within the urine of anterior lobe hormones. On the basis of their findings they elaborated the now widely employed Zondek-Aschheim reaction for the diagnosis of pregnancy. Furthermore, they observed that implantation of fragments of human placenta was followed by hypertrophy of the anterior lobe, a phenomenon which also occurs normally in the pregnant animal. Working in Edinburgh, Wiesner[13] produced an active oestrogenic hormone by extracting placental tissue with sulphosalicylic acid, and, visiting Professor J. B. Collip's laboratory in September, 1929, he demonstrated, in what Collip has described as "a single but convincing experiment," the effectiveness of such an extract in producing premature maturity in the young rat. Collip, at Wiesner's request, looked for a method of concentrating this oestrogenic principle in placental extracts, and, according to a preliminary report published in the February issue of the *Canadian Medical Association Journal*, he has succeeded in obtaining this active principle as a micro-crystalline substance free from protein, salt, lipoid, and oestrin, which in an aqueous solution may be administered either subcutaneously or orally. Injection of amounts of the order of 0.01 mg. into the immature rat produced rapid development of the Graafian follicles, cornification and desquamation of the vaginal mucous membrane, and later appearance of corpora lutea. The hormone had very little effect on the normal adult animal. Pearl Claus[14] in 1929 reported the isolation of micro-crystals, producing a similar oestrogenic effect, from extracts of the anterior lobe pituitary body; but Collip, in opposition to all other workers, is inclined to the view that the hormone he has obtained from the placenta is produced by the placental tissue and not by the pituitary gland. Why at this stage of the investigations he should introduce such a complication of hypotheses is not clear; but whether events prove him to be right or wrong, Professor Collip is to be congratulated on adding yet another to his series of successful researches. Dare we express a hope that the absence from his paper of a detailed account of the method of extracting the placental hormone need not be assumed to foreshadow another patent?

Clinical work with the hormone of the corpus luteum and with the oestrus-inhibiting hormone of the pituitary body is even less advanced than work with the oestrus-producing hormone. The anterior pituitary hormone prepared by alkaline extraction is not yet available in any degree of purity, but the unexpectedly rapid development of the work on the female hormonal system encourages the hope that it will not resist isolation much longer. The pace at which discovery in this field is proceeding is sufficiently indicated by the fact that only five years after it had been shown that oestrus phenomena could be produced in castrated rats by injecting ovarian extracts, Doisy succeeded in isolating what appeared to be pure crystals of the oestrus-producing principle from material in which its greatest concentration was only one part in two millions. The whole series of researches, indeed, may serve as an indication not only of the skill of the modern biochemist, but of the rapidity with which biochemical discovery develops when it is concerned with material that can be investigated over a large field by animal experiment.

[13] *Nature*, 1929, March 31st.
[14] *Proc. Soc. Exper. Biol. and Med.*, 1929, 27, 29.

PREDESTINATION IN DISEASE.

MAN is born to trouble as the sparks fly upward; and among his inborn troubles are to be numbered several diseases. It is true that the word "diathesis," like the word "temperament," is not so frequently on medical lips as it was in the youth of some of us; but the whirligig of time, and the advance of science, are bringing these words, with an altered meaning, from beneath the clouds wherewith the rise of bacteriology overwhelmed them. The effect of words, even meaningless words, is very great. When the belief in "scrofula" and "struma" became untenable, "diathesis" was temporarily eclipsed. The expressions "inborn errors of metabolism," "idiosyncrasy," and "endocrine balance" have brought it once more into the light of day. And the word "diathesis" is not without its value. Even as with mass-produced motor cars one machine will show infinite superiority to its fellows, many of which possess a constitutional predisposition to trouble, so with the human machine some small inco-ordination in the working parts may produce liability to certain diseases. In his thoughtful lecture entitled "Predestination in disease," published in this issue of the *Journal* (p. 525), Dr. W. Langdon Brown discusses the effect that modern work has had on the doctrine of diathesis. Starting with Jonathan Hutchinson's definition of diathesis as "any condition of prolonged peculiarity of health giving proclivity to definite forms of disease," the lecturer proceeds to show how the failure to distinguish between liability to tuberculosis and infection by the tubercle bacillus helped to overthrow the doctrine. The overthrow was completed by such errors as the belief in a malarial diathesis, and the attribution of leprosy to eating unwholesome fish. Yet it was the same failure to comprehend the relation of soil and seed which helped to depose the bacteriological factor from its supremacy. The tubercle bacillus is ever present; all of us are exposed to its inroads; yet in most of us the seed falls upon stony ground. When these facts were realized a new interest was awakened in the subject of natural immunity.

While in the nineties Dr. Langdon Brown, as a student, was watching the death agonies of the older diatheses, Weismann was laying down the Calvinistic doctrine of the germ plasm. Later on, the discovery of the chromosomes and the rediscovery of Mendel's work seemed to place this doctrine on an assured basis; and the idea of predestination in disease was born. As Dr. Langdon Brown says, "the progress of human thought is always in a spiral; the turn of the spiral had now been reached; and back came diatheses, with a difference." The difference was between a concept intuitively arrived at and facts established by careful measurement. Kretschmer of Tübingen correlated physique studied anthropometrically with a number of well-defined psychological "temperaments." Draper, at Columbia University, is trying to establish by direct measurement the existence of certain facial types, such as the gall-bladder type, the peptic ulcer type, and the pernicious anaemia type; thus, in its ascent from turn to turn of the spiral, diathesis has passed from natural philosophy to science.

Modern researches are tracing further and further back the origin of factors which determine liability to disease. Dr. Langdon Brown mentions first those which express themselves through some recognizable chemical disturbance, such as albinism, alkaptonuria, cystinuria, pentosuria, and porphyrinuria. In four of these abnormalities metabolism stops short at a normal

intermediate product, owing to the failure or absence of an enzyme; and the product is then excreted in the urine. In albinism the individual is unable to manufacture any pigment containing melanin, although he can manufacture the pigments of blood and bile like an ordinary person. These inborn errors of function are, as the lecturer points out, the chemical analogues of structural malformation; they do not tend to get worse, but they may predispose to further trouble. They fulfil, in fact, Jonathan Hutchinson's definition of a diathesis. And in haemophilia we have a deadly disease, due to the lack of a particular ferment, which is transmitted according to definite Mendelian laws.

It is unnecessary to trace here the further course of Dr. Langdon Brown's argument, which he illustrates by idiosyncrasy, the sympathetic endocrine balance, and achlorhydria, to which 5 per cent. of the population is liable. Except inferentially, he refrains from speculating on what the future has in store for the victims of the neo-Calvinism of science. Already the researches of Hurst on achlorhydria lend hope to the suggestion that congenital achlorhydriacs may be able to take preventive measures by the daily absorption of HCl. The use of endocrine extracts may come to be placed on a sounder basis; defective enzymes may be supplied to assist metabolism; and the achievements of the thyroid and insulin may be rivalled in other directions. Just as the slightly defective mass-produced car may be coaxed or tuned into giving some sort of satisfaction, so perhaps the alkaptonuric may some day be induced to pass normal urine, and the albino to produce pigment. On the whole, the modern Calvin seems likely to be able to hold out more hope than his theological forerunner; and all-conquering man may yet produce something in the nature of antidotes to bodily predestination.

MENTAL CERTIFICATION IN SCOTLAND.

As the law stands to-day, the recoverable mental patient is in a much happier position in Scotland than in England. This is partly because there is widespread recourse to the voluntary mode of admission to the Scottish mental hospitals, and partly because in Scotland a patient can be placed in a private house or home for treatment for a period of six months, on the written recommendation of one doctor, without any legal intervention whatever. Patients may enter mental hospitals voluntarily in the early phase of their illness, and even if later their symptoms become acute they are not necessarily certified. Before the Act of 1913 it was necessary that patients who sought admission voluntarily should not be certifiable, but since the annulment of that provision a great impetus has been given to the adoption of voluntary treatment throughout Scotland. The privilege of admitting mental patients into private houses or homes without certification or legal formality exists in virtue of the well-known Schedule G of the Scottish Act of 1857, whereby it is permissible on the written recommendation of a doctor to place a patient for treatment in a private house or home for a period not exceeding six months, without certification or application to a magistrate or sheriff. The most curious feature of this schedule is, as Professor George M. Robertson, physician-superintendent of the Royal Edinburgh Hospital for Mental and Nervous Diseases, points out in his annual report, that it should have applied to private houses and homes, and not to mental hospitals. Probably the explanation is, as he surmises, that in 1857 there were but few private houses and homes, and these were not suspect, whereas in those days ill-treatment was known to occur in some of the asylums. Professor Robertson now makes the very interesting suggestion that, by a simple readjustment of the existing law, Schedule G should be made applicable to mental hospitals as well as to private houses and homes; in effect, he proposes for Scotland the abolition of certification in recoverable cases of mental illness. As an additional safeguard he would prefer that there should be recommendations from two physicians instead of one. In the course of his report he shows that this privilege of obtaining treatment in nursing homes has been available to the rich in Scotland for over seventy years, and contends that this privilege should now, in simple justice, be extended by law to the poor and to those of moderate means. "The application of Schedule G," he states, "would place the treatment of all classes on a footing of equality, and at the same time would remove the worst feature of our lunacy laws—namely, the certification of patients who are expected to make early recovery."

SOCIAL HYGIENE PROPAGANDA.

THE fourteenth annual report of the British Social Hygiene Council, for the year 1928–29, gives an account of many of the active steps which are being taken in this country and by international action to combat venereal disease. The view is expressed that a survey of the general statistics obtained from treatment centres justifies the inference that venereal disease is decreasing, and this is supported by the following facts: (1) the sequels of untreated disease are less frequent, particularly in the case of the certified deaths from syphilis of infants under 1 year old; (2) the incidence of venereal disease in the Navy, Army, and Air Force, an index of that in the civil population, has fallen; and (3) the number of persons suffering from recent infections with syphilis is fewer. Still more important in many ways is the change in public opinion which has taken place during the last twelve years. Before the agitation for the appointment of a Royal Commission no newspaper would mention venereal disease; at the present day the press is perfectly willing to give this aspect of social hygiene as much publicity as it allows to any other serious subject. The numbers of patients seeking advice at treatment centres because of the fear of having contracted venereal disease has again risen during the year under review; this might suggest the danger of propaganda producing a "phobia," but the council retorts that, nevertheless, "the best advice we can give is to urge those who have run the risk of infection to go at the earliest possible moment to the nearest treatment centre, without waiting for symptoms to appear." The work of the council in the past is abundantly justified by such results as are here indicated, but its immediate problem relates to the future. Under the new Local Government Act the grants hitherto made to the council by the Ministry of Health, and to the Scottish committee by the Department of Health for Scotland, will cease; they will be replaced by annual contributions from such local authorities as may be willing to make them. Attempts to secure amendment of the Act during the passage through Parliament were unsuccessful, but, as a result of urgent appeals, the Minister of Health has undertaken to issue a strongly worded circular to local authorities, pointing out the necessity for propaganda being financed by a central fund to which they should contribute. For the continuance of central services after March, 1930, the council will be dependent on the returning to it by each local authority of a quota of the central grant at the rate of five shillings per 1,000 of population. Every effort is now being made to bring the facts in regard to national propaganda before county and county borough authorities. The Society of Medical Officers of Health and its branches have rendered valuable assistance by recommending local authorities to support the national

propaganda of the council, and the British Medical Association has issued a letter on these lines to its members serving on public bodies. At the annual general meeting of the British Social Hygiene Council, Lord Linlithgow said that to him the position appeared hopeful, but it is obvious that if the valuable work of this body is to be continued all local authorities must be convinced of the necessity of propaganda. The present report in all its details contains ample material to secure such a conviction and to ensure the necessary action being taken.

SALE OF POISONS.

THE Departmental Committee which was appointed in July, 1926, to consider whether any modifications were necessary or desirable in the Poisons and Pharmacy Acts has just issued its report.[1] This embodies a short critical survey of present poisons and pharmacy legislation, and recommendations which in its view will simplify the law, strengthen the representative character and the disciplinary powers of the Pharmaceutical Society of Great Britain, attain elasticity and efficiency in the control of an authoritative list of poisons, and secure to the public reasonable facilities for obtaining poisons for agricultural, horticultural, industrial, and sanitary purposes, while keeping those who supply them under adequate control. The committee proposes that a new Pharmacy and Poisons Act should be passed into law, and that the profession of pharmacy and the control of poisons respectively should be kept distinct and dealt with in separate parts of the Act. It favours the continuance of the Privy Council as the central authority for pharmacy, recommending that it should have the power to nominate and determine the period of office of three additional members of the council of the Pharmaceutical Society. The committee further proposes that every person registered as a pharmaceutical chemist or chemist and druggist should become a member of the Pharmaceutical Society, any person ceasing to be so registered losing his membership. An increase in the disciplinary powers over chemists and druggists is involved in the recommendation that a "statutory committee" be appointed with power to remove from the register the name of any person who has been convicted of an offence against the Pharmacy Acts or of a criminal offence, or who has been guilty of any conduct which in the opinion of the statutory committee renders him unfit to be on the register. The statutory committee would have power to restore to the register any name or entry erased therefrom and the person concerned would have a right of appeal. Further recommendations of the committee (one of whose members, Mr. F. W. Gamble, signs a minority report) are as follows: That it shall be unlawful for any person not a registered pharmacist to use any description that might suggest that he or anyone employed in his business possesses any qualification with respect to the selling, dispensing, or compounding of drugs and poisons other than the qualification he in fact possesses; or to use the title of chemist in connexion with the retail sale of goods. It shall be the duty of the Pharmaceutical Society to enforce the provisions of Part I of the new Pharmacy and Poisons Act and to secure compliance by registered pharmacists with Part II, dealing with poisons, and the miscellaneous rules made in Part III; and to appoint inspectors, who shall be pharmacists and have powers to make their inspection effective, subject to the approval of the Privy Council as to the persons so appointed and their number. As from the appointed day, the Arsenic Act, 1851, and the provisions of the Pharmacy and Poisons and Pharmacy Acts relating to the sale, supply, and distribution of poisons, shall cease to have effect and for them the provisions of the new act shall be substituted. The committee recommends that the central authority for poisons should be the Home Secretary, assisted by a "poisons board," whose functions shall be to submit a poisons list to the Secretary of State, to consider or recommend any variation of the poisons list, and to assist the Secretary of State in making rules with respect to the sale or supply of poisons, and other matters relating to them. The poisons list, it suggests, should be divided into two parts: Part I to include poisons which may not be sold retail except by "authorized sellers of poisons"; Part II to include poisons which may be sold retail only by persons so authorized. Wherever possible, generalization should be avoided in the poisons list, and the poisons therein should be individually defined. With regard to poisons in Part I of the poisons list it is suggested that power be given to prohibit the retail sale of such of these poisons as may be specified except on the prescription of a registered medical practitioner, dentist, or veterinary surgeon, and that power be given to provide by rule for prescribing the form and regulating the use of prescriptions. The purchaser of poisons in Part I must either be certified in writing, or be known by the seller or by an authorized deputy, to be a person to whom the poison may be properly sold; and the seller must enter in a book kept for the purpose the name and address of the person giving the certificate. Persons other than "authorized sellers of poisons" may on application in writing, and on payment of a fee, have their names placed on a list of persons entitled to sell, on authorized premises, poisons in Part II. The use by any such person of a description calculated to suggest that he is entitled to sell any poison other than one in Part II shall be punishable by a fine not exceeding £5; and anyone so registered shall have his name removed from the list and for a specified period be disqualified from having his name on it if he is convicted of an offence against the Pharmacy Acts or any criminal offence rendering him unfit to have his name on the list. We hope in a later issue to return to the report of the Departmental Committee and to consider its recommendations in detail.

[1] Report of the Departmental Committee on the Poisons and Pharmacy Acts. London: H.M. Stationery Office. 1930. Cmd. 3512. 1s. net.

TULARAEMIA.

A FEW weeks ago[1] we drew attention to the prevalence of tularaemia as an endemic and sometimes an epidemic disease in Russia, and commented on its public health significance. At the time of writing the disease had been reported from that country only, but it had had a wide distribution and a long history, and it is no surprise, therefore, to find that tularaemia has recently been recognized much further west. In January of this year Dr. Th. Thjötta described three cases from Norway, and in a letter to us he mentions that at least eight other cases have been subsequently diagnosed. All the patients had a history describing a close association with hares. The three published cases occurred in hunters who had shot and cleaned hares shortly before developing the disease; the others included game dealers and kitchen maids who had skinned or otherwise prepared these animals for the table. There is little doubt that, as in Russia, the disease is not a new one in Norway. The present cases have all been associated with hares, but other rodents may be implicated, and it is suggested that a disease in man called "lemming fever," and attributed by the laity to contamination of water with dead lemmings, may also be tularaemia. There is, however, no definite proof yet that this is so. So far, apart from a few laboratory infections, tularaemia has not been recorded in Britain; but neither was it diagnosed on the Continent until recently, although there is a mass of evidence to support its antiquity. It is essentially a disease of rodents, and when the condition occurs in man it is

[1] *British Medical Journal*, February 22nd, p. 345.

always associated with contact with these animals. The commonest reservoirs of the infection are the game and fur rodents, and so far as Britain is concerned the former class must be the more important. The microbe is transmitted by inoculation, either through the agency of an insect or arachnid vector or through actual contact with the infected animal. As a rule, the disease runs a benign course, but the clinical symptoms vary considerably. Generally, however, there is a painful enlargement of the lymph nodules in the region of the inoculation about twenty-four hours after infection. An ulcer develops in about 80 per cent. of the cases, commencing as a painful red papule which heals slowly and is accompanied by a general fever and malaise. Sometimes the primary lesion is absent, and sometimes there are no symptoms other than fever and general weakness. Although the mortality is low—it is estimated as about 3 per cent.—convalescence is slow, but a permanent immunity results.

FIRST AID IN COAL MINES.

REGULATIONS regarding first-aid and ambulance services at coal mines, which come into force on April 1st, have been issued by the Board of Trade. All mine-owners are required to arrange for first-aid treatment in cases of accident and sickness occurring in or about their mines. The regulations refer to surface, underground, and transport organization. Where more than a hundred persons are employed in any one shift a first-aid room, in charge of a qualified nurse or doctor or certificated supervisor, must be adequately equipped and maintained at the surface. These provisions apply to smaller mines, but, in the absence of a room, a shelter affording protection from exposure is sufficient. With certain exceptions a prescribed number of underground workers, normally thirty, must be qualified first-aid men, who will be distributed as far as *practicable among groups of miners* working regularly at the same part of the pit. Every underground worker must be supplied with a portable first-aid outfit unless first-aid men are provided with boxes. In any case all such equipment must be examined at the surface at the end of a shift, and replenished if necessary. First-aid stations must also be organized and provided with stretchers, splints, and dressings. Owners are further directed to arrange for an effective motor ambulance service to be stationed at a base not more than ten miles by road from their mines, and it must be accessible by telephone if their underground workers exceed ten in number. Where necessary, shafts and pits must be fitted with appliances for raising the injured with the least discomfort.

OLD MEDICAL BOOKS.

ON March 20th a fairly extensive collection of old medical books was sold by auction at Messrs. Hodgson's Rooms in Chancery Lane. The only incunabulum (a book printed during the fifteenth century) in the catalogue was a Salernian "Regimen Sanitatis" by Villa-Nova, Venice, 1500; but quite a number of scarce books of the sixteenth century were offered. For example, Boorde's "Breviary of Healthe . . . expressing the obscure termes . . . concernyng Physicke and Chierurgerie," black letter, 1552; a German edition of Paracelsus on Surgery, published at "Franckfort," 1555 (and another German edition of Paracelsus, Strasbourg, 1603); Bretschneider on Health, 1564; a work of the Salernian school on the same subject, 1568; Nicolo Viti on Tumours, Rome, 1585; Roesslin on Midwifery, edited by Raynalde, 1565; two Galens from Lyons (one of them on Fevers), 1547 and 1550 respectively. Then there was F. Barbarus (physician to Lorenzo de Medici) on Gynaecology—a manuscript on 119 leaves of vellum which has never been published, so far as is known—also from the sixteenth century. Among editions of the following century were to be noted a Hippocrates of 1657; Sennart's works, 1654-56; Carie's "Farewell to Physicke," sixth edition, 1611—only two other copies of this are known; the first edition of Harvey's "Anatomical Exercitations concerning the Generation of Living Creatures, to which are added Particular Discourses of Births, and of Conceptions," 1653; a Proclamation forbidding any citizen from seeking the royal touch for the cure of the King's Evil, published 1630, and due to the prevalence of plague and a fear that the King might thus be infected; Frommann on Haemorrhoids, 1677; Diemerbroeck on Anatomy, 1683; Devaux's "Le medecin de Soi-Meme," 1682. Then followed a long list of eighteenth century productions, including one on the Uses and Abuses of Coffee, 1760. Later in the day there was a treatise by Cardan, published at Venice in 1536, apparently as a defence of old-fashioned as against new-fangled methods of treatment; a very rare book in Spanish on (American) Indian drugs and remedies against poisons, by Monardes, published at Seville, 1565; a short practice of surgery by Schylandrus, Antwerp, 1577; and an Aldine history of medical worthies, Venice, 1547. On the same day, March 20th, Messrs. Sotheby of Bond Street were selling a very early treatise on veterinary medicine—namely, that of John Ruellius, Paris, 1530, bound in morocco with the arms of Pope Paul III on the cover.

OXFORD OPHTHALMOLCGICAL CONGRESS.

THE twentieth annual meeting of the Oxford Ophthalmological Congress (founded by the late Robert W. Doyne) will be held under the presidency of Mr. A. Bernard Cridland on July 10th, 11th, and 12th, 1930. The members will assemble at Keble College on the evening of Wednesday, July 9th, and on the following morning there will be a symposium on toxic amblyopia, to be introduced *from the ophthalmological standpoint* by Dr. H. M. Traquair of Edinburgh, from the point of view of the physician by Sir Farquhar Buzzard, Bt., and from the pharmacological aspect by Professor J. A. Gunn. In the afternoon an address will be given by Sir Oliver Lodge, F.R.S., entitled "Modern theories on the nature of light." The Doyne Memorial Lecture will be delivered on the morning of July 11th by Dr. Harry Friedenwald of Baltimore, the subject being "Pathological changes in the retinal blood vessels and their significance." Addresses will be given by Professor Artur Schüller of Vienna, on recent developments in radiology associated with ophthalmology, and by Professor Jules Gonin of Lausanne, *on detachment of the retina and its treatment*. A number of independent papers will be read and the Friedenwald ophthalmoscope will be demonstrated. There will also be demonstrations in the scientific and commercial museums. The annual dinner will take place in the Hall of Keble College on July 10th. The full programme of the congress is to be issued in June. All communications should be addressed to Mr. C. G. Russ Wood (12, St. John's Hill, Shrewsbury), who is again acting as honorary secretary.

ON the occasion of the fiftieth anniversary of the foundation of the Ophthalmological Society of the United Kingdom, the Bowman Lecture will be given by Sir Arthur Keith, M.D., F.R.S., on Thursday, April 3rd. His subject is "The genius of William Bowman."

AT a meeting of the medical and science councils of the People's League of Health, on February 4th, a committee was appointed to survey the situation regarding tuberculosis of bovine origin in Great Britain; representatives to serve on the committee have been appointed by the Royal Colleges of Physicians and Surgeons.

NINETY-EIGHTH ANNUAL MEETING
of the
British Medical Association,
WINNIPEG, 1930.

THE ninety-eighth Annual Meeting of the British Medical Association will be held at Winnipeg next summer in conjunction with the sixty-first Annual Meeting of the Canadian Medical Association, under the presidency of *Professor* W. Harvey Smith, who will deliver his inaugural address on Tuesday, August 26th. The scientific and clinical business of the meeting is being organized in fourteen Sections, which will hold their sessions on Wednesday, Thursday, and Friday, August 27th, 28th, and 29th, the mornings being given up to discussions and the reading of papers, and the afternoons to demonstrations and special addresses. The names of the officers of Sections, with other preliminary notes, were published in the *Supplement* of February 15th, and further details of the arrangements will appear from time to time in later issues. Members who propose to take part in the meeting should write at once for particulars about the journey by sea and land to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1. The Winnipeg office is at 102, Medical Arts Building, Winnipeg, Manitoba. We publish below the third of a series of historical and descriptive articles on Winnipeg and its surroundings, contributed by Dr. Ross Mitchell; the first appeared on January 4th (p. 32), and the second on February 15th (p. 300).

MANITOBA.

IN 1867 four provinces, Ontario, Quebec, Nova Scotia, and New Brunswick, which up to this time had been politically separate, entered into confederation and the Dominion of Canada was born. One of the first problems to be dealt with by the first Federal Government was the creation of a new province out of that vast district west of Ontario which was under the control of the Hudson's Bay Company. Some preliminary work had already been done. In 1859 the licence of the Hudson's Bay Company was due to expire, and the Parliament of Canada of that time, which meant Ontario and Quebec, petitioned the British House of Commons not to renew the licence. A committee of the British Parliament was appointed to investigate the matter, and after hearing evidence reported that the districts along the Red and Assiniboine Rivers were likely to be needed soon for settlement: "Arrangements should be made by which these districts may be ceded to Canada upon equitable principles, and within the districts thus annexed to her the authority of the Hudson's Bay Company would, of course, entirely cease." Meanwhile the Canadian Government sent out an exploring expedition under S. J. Dawson and Professor Hind. Dawson's duty was to survey a road from Lake Superior to Fort Garry at the junction of the Red and Assiniboine Rivers, while Professor Hind was to report on the vegetation and soil of the country. Parts of the Dawson road are still being used and Hind's report was illuminating. It is of interest to note that R. M. Ballantyne, the novelist, was one of Hind's party.

As a result of the investigation, the new Federal Government decided to purchase the rights of the Hudson's Bay Company. For a payment of £300,000 the Company surrendered its rights in Rupert's Land, reserving only one-twentieth of the fertile land and a reserve of 500 acres around each post. Thus, in Winnipeg a large area on which are located the old gateway of Fort Garry, the Fort Garry Hotel, the new Hudson's Bay store, and the Legislative Building is still known as the Hudson's Bay Reserve.

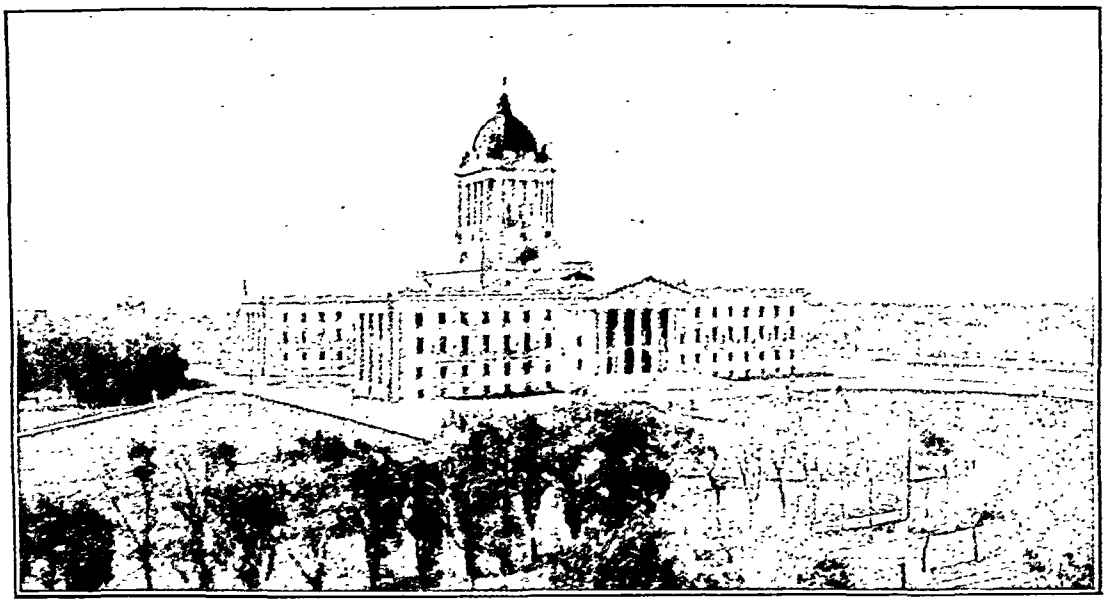
Birth of a Province.

The new province, Manitoba, entered Confederation on July 1st, 1870. Its birth, however, was not uncomplicated. A large number of the inhabitants of the Red River Settlement were French half-breeds or Métis, and the prospect of an influx of settlers from Ontario, English-speaking and of another religion, who would till the soil and drive away the herds of buffalo on which the Métis had depended for subsistence, did not please them. The arrival of Canadian surveyors to institute a new square block survey of land in place of the long narrow river lots served to fan the discontent. Under the leadership of Louis Riel, a young man who had received education for the priesthood, but had never taken orders, the discontent broke out into flame. A Provisional Government was formed, Fort Garry was seized, the Hon. Wm. MacDougall, who had come from Ottawa to be the new Governor, was not suffered to enter, many prominent citizens were imprisoned, and, finally, a young Irish-Canadian, Thomas Scott, was shot after a mockery of a trial. The fate of Scott created intense indignation in Ontario. It was agreed with the British Government that an armed force supported by both Governments should be sent out. This force was composed of British regulars and volunteers from Eastern Canada under Colonel (later Field-Marshal Lord) Wolseley, and after struggling through the wild rocky region between Lake Superior and the Lake of the Woods, reached Fort Garry in August, 1870. Just before the arrival of the advance guard Riel and his two lieutenants, who by that time had been deserted by most of their followers, quietly slipped out of the fort and the Provisional Government ceased to be. It is of interest that among Riel's prisoners in Fort Garry were Dr. J. C. Schultz, afterwards Sir John Schultz, fifth Lieutenant-Governor of Manitoba, and Dr. Cowan.

The name Manitoba is derived from two Indian words, Manito-bau, the "Spirit Strait." In the narrows of Lake Winnipeg there is an island on which the limestone is very compact and resonant. When the waves beat against the beach the roaring sound was thought by the Ojibways and Crees to be due to a Great Spirit beating a drum. The early spelling was Manitobah, the accent being placed on the last syllable, but the final "h" was soon discarded and the accent is now on the third syllable.

Growth and Development.

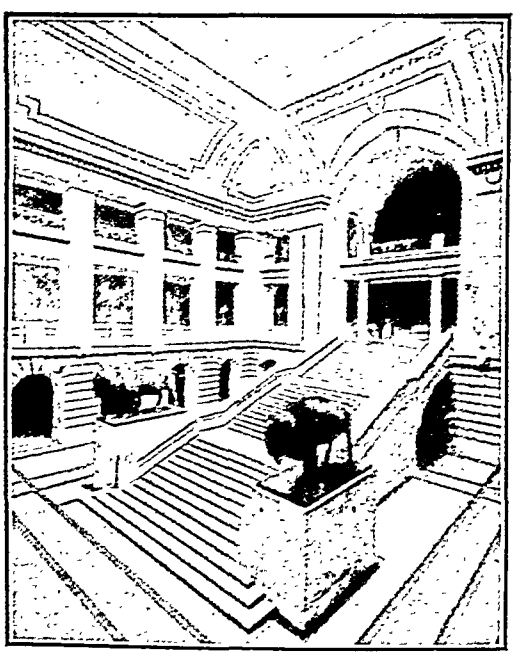
As first constituted Manitoba was square in outline and so small that it was called "the postage stamp province." In 1881 the boundaries were extended, and in 1912 a further extension of the boundary northward gave Manitoba the two best harbours on Hudson Bay—Nelson and Churchill—and 500 miles of coast-line. By this change the tiny province of 1870, containing 13,000 square miles, reached its present size of 251,000 square miles, just double that of the British Isles. The Hudson's Bay Railway, long thought to be only a visionary enterprise, has, by the action of the Dominion Government, become a fact, and steel has been laid from Le Pas, Manitoba, on the Saskatchewan, to Churchill on Hudson Bay. Close to its terminus lie the ruins of Fort Prince of Wales. The first fort was built by



LEGISLATIVE BUILDING, WINNIPEG, MANITOBA.

the Hudson's Bay Company in 1633; after its destruction by fire another, of tremendous strength, was built by Marlborough's engineers. In 1782, the French, under Admiral La Perouse, surprised the fort, captured it without firing a shot, and blew it up. In 1930 passenger trains will be running from Churchill to Winnipeg on a well-ballasted track.

Mention of the railway summons up visions of how transportation has been effected in the past. The first means of transport used by the fur traders was the birch bark canoe, which had the merits of lightness, buoyancy, ease of repair, cheapness, and ease of construction, as all the materials necessary could be found in the forests. They were, however, very vulnerable, and they could not be used to convey very heavy or bulky objects. About 1826 one of the Hudson's Bay Company's factors introduced the York boat, modelled after the old Norse galleys. The York boat was of a type light enough to be taken on rollers over portages, strong enough to shoot the rapids, sufficiently seaworthy to cross such stormy lakes as Lake Winnipeg, and with accommodation for carrying a cargo of eight pieces, each of one hundred pounds, besides a crew of eight voyageurs, including bowsman and steersman. They were propelled with oars about twenty feet long and with one large square sail.



GRAND STAIRWAY, MANITOBA LEGISLATIVE BUILDING.

As the Red River Settlement increased in numbers the settlers' needs could not be met by the Hudson's Bay ship which came annually to York Factory on Hudson Bay. Traffic sprang up between the Red River Settlement and St. Paul in Minnesota, which was on a line of railway. Goods were transported in brigades of Red River carts drawn by oxen or native ponies. These two-wheeled carts were made entirely of wood, and could be made with only a saw, chisel, and draw-knife. Each cart could carry about one thousand pounds. These, in turn, were superseded by flat-bottomed stern-wheel steamboats, which for some twenty-five years travelled up and down the Red and Assiniboine Rivers between points in Manitoba and Minnesota. In 1878 railway communication was established between Pembina in Minnesota and St. Boniface across the Red River from Winnipeg, and in July, 1881, the first train of the Canadian Pacific Railway entered Winnipeg. Within the last few months arrangements have been completed for regular air mail service throughout the West.

Manitoba's first Cabinet was formed on June 12th, 1871, when the total provincial population was 11,693, of which the white race numbered 1,565. When Winnipeg was incorporated, in 1873, the new city could muster only 215 inhabitants. The present population of Greater Winnipeg is 336,202, and the population of Manitoba in 1926, according to the Dominion census, was 638,000, of which only a few thousand were Indians. When Manitoba entered Confederation the Dominion Government retained control of the natural resources. Repeated attempts were made by provincial Governments to have these resources transferred to the province, but it is only within the last months that these efforts have been successful. How valuable these natural resources—water power, forests, and, above all, minerals—are, no one can say, but the present indications are that as further development takes place they will prove to be tremendous assets. The Minister of Natural Resources has recently stated that the water power available in the Nelson, Churchill, and Winnipeg Rivers in the province totals 5,000,000 horse power.

The New Legislative Building.

Much of the history of the Red River Settlement and Manitoba has been incorporated in the new Legislative Building. The design of the architect of the building, Frank Worthington Simon, F.R.I.B.A., Liverpool, was that that which was best in the Past should be preserved and wrought by the hand of the Present into the structure emblematic of Manitoba—"The Land of the Great Spirit." The southern entrance looks toward the Assiniboine River, along which passed the early explorers, fur traders, and colonists. At the eastern entrance are the stone figures, in heroic size, of La Verendrye, the first white man to open up the Canadian West, and Lord Selkirk, the first to establish a colony. At the western entrance one sees the figure of Wolfe, who, visioning Canada as one of the units of the British Empire, gave his life for that vision, and of Lord Dufferin, the first Governor-General of Canada to visit our West and catch a glimpse of its possibilities. In 1877 he spoke these words in Winnipeg: "Manitoba is destined to be the keystone of a mighty arch of sister provinces stretching from the Atlantic to the Pacific." Most impressive is the main entrance, which, prophetically, looks to the north. Six fluted columns of stone with Ionic capitals support an entablature in which Alfred Hodge has portrayed an allegory of the Dominion which is worthy of much study. The stone of which the building is constructed carries the mind back to far-off geological periods. It is a limestone, quarried at Tyndall near Winnipeg, of great strength and beauty, bearing marks of fossil ferns and aquatic animals.

Entering by the north one sees the main staircase flanked by two bronze buffaloes, emblems of the province, sculptured by Gardet of Paris. The staircase leads to a rotunda under the dome, and the eye is arrested by the great Brangwyn mural painting of scenes in the great war. The legislative chamber is one of quiet dignity and beauty. The mural decorations by Augustus Tack are woven about the theme "The Origin of Legislation." On either side of the Speaker's chair are massive bronze statues of Moses and Solon.

From the centre of the building rises a square tower surmounted by a dome on which is poised the gilded bronze figure of a boy typifying Eternal Youth, the Spirit of Enterprise. The figure was cast in a foundry seventy miles from Paris. During the war the foundry was completely destroyed by bombing, the figure alone remaining unscathed. It was rushed to a seaport and put in the hold of a vessel bound for America. Before it drew out of port the boat was commandeered to transport American troops, and for two years the bronze figure was carried in the ship through submarine infested waters. At the close of the war it was brought to New York and thence to Winnipeg. The attitude of the boy, who seems to have paused for a moment while in flight, is that of a runner, his face to the north, signifying that the spirit of enterprise, capable of enduring hardships, sees the vast possibilities of the Northland, with its wealth of natural resources. Under his left arm he carries a sheaf of golden grain, and in his right hand, uplifted, he holds a torch, *vitae lampada*, recalling McCrae's lines:

> "To you from failing hands we throw
> The torch; be yours to hold it high!"

Nova et Vetera.

A SCOT IN WALES, 1600–1620.

WE are indebted to the Cymmrodorion Society (64, Chancery Lane, London) for publishing an account of *A Scottish Surgeon in Wales in the Seventeenth Century*, and to its author, Marjorie Foljambe Hall, F.R.Hist.S., for sending us a copy of the study. The surgeon in question, Alexander Reid or Rhead, does not appear to have been a person of very great ability; Sir D'Arcy Power, in the *Dictionary of National Biography*, said that he made no additions of importance to the theory of medicine. The pamphlet is worth reading, however, for its picture of medical practice in the early seventeenth century, and because it contains some hitherto unpublished papers that throw fresh light on Reid's career.

Reid can hardly be said to have lived in Wales, but he settled at Holt and Chester near the border, and for nearly twenty years he apparently had an extensive consulting practice as a physician in North Wales, especially in Denbighshire. A great deal of this practice was conducted by letter, for at that time, as is well known, not only patients, but apothecaries and surgeons, consulted physicians in this way, and the latter gave many prescriptions on hearsay and without troubling to interview the patients. More than a century later we find Dr. Alban Thomas of Cardigan consulting Sir Hans Sloane by letter and getting a prescription from him (see "An eighteenth century practitioner," *British Medical Journal*, 1925, i, p 853).

Sir Roger Mostyn was a warm patron of Reid's and recommended him to his son-in-law, Sir John Wynn of Gwydir, for whom Reid prescribed an "operative julep." Unfortunately, Wynn sent this prescription to the Welsh physician, Sir Thomas Williams, asking his help in getting it made up. Williams no doubt resented this; at any rate, he criticized Reid's knowledge of Welsh simples and his prescription generally. Wynn's letter to Williams is not extant, but it appears that he incautiously communicated some of Williams's strictures to Reid, who wrote: "In your worship's last lettir a fownd enclosed a brefe schedul of your owin to Sir Thomas Williams, wherein you desyre his furtherance for the making of ye julep. His answer I redde wryten upon the back of it. But becaus in it I perceaued a selfe loone, a disdayne of others, & a censuring humor, here brefely I will examin every poynt of it." He then went on to combat his rival's arguments and support his own julep and extol its constituents. Herein was the making of a very pretty quarrel, for Williams not only condemned the prescription and asserted that many of the simples were not to be found in Wales, but he also questioned Reid's diagnosis, alleging that the disease was hepatical and not splenetical. The storm raged over the advisability of using rhubarb, which Reid condemned and Williams recommended. Whether there was any counterblast from the latter we do not know, but it is apparent that Reid kept the confidence of Sir John Wynn.

There is a curious reference to asparagus in Reid's long letter: "As for Asparagus, seeing it is a woord signifying many thinges, as one may reed in the epistel of the learned Fallopius to Mercurialis . . . it is a farre harder mater to fynd now the usual sperage than grasse rootis." Grass roots were prescribed apparently by Reid in his julep recipe, and Williams seems to have scoffed at them. It seems to have been a very typical medical dispute, in which each party quoted Terence against his colleague, and we are curious to know how it ended, if, indeed, it ever did. If the "schedul" of Wynn was brief Reid's reply was not, for it covered three closely written foolscap pages. Looking at the matter across the perspective of three centuries, it seems to have been a dispute between the advocates of active and expectant treatment, for rhubarb would doubtless have made its action felt, whereas no "grasse rootis" grown in this country could have been expected to do so.

Miss Foljambe Hall tells us of some of Reid's distinguished patients, such as the fourth Earl of Pembroke, to whom he dedicated his *Treatise of the first part of Chirurgeric* in 1638. We confess that we do not know in what circumstances an Earl of Montgomery and Pembroke was created Baron of Shurland in Sheppey, but we are glad to come across an authentic holder of the title of the doughty baron of that ilk and of the *Ingoldsby Legends*, who, after successfully defying the law, ecclesiastical and civil, came to a premature end only by witchcraft (and a septic great toe). Among other distinguished patients of Reid's were the Earl of Bridgewater, Lord President of Wales, and Lord Gerard, President of the Council of the Marches of Wales, and the Salusburys of Llewenny.

Reid's residence on the Welsh border ended about the year 1620. Sir D'Arcy Power has told, in the *Dictionary of National Biography*, the events of his subsequent career as graduate of Oxford and of Cambridge, and Fellow of the Royal College of Physicians of London. There is a short notice of him in Munk's *Roll of the Royal College of Physicians*.

MEDICAL RESEARCH COUNCIL.

ANNUAL REPORT, 1928-29.

I.

In a preface to the *fifteenth annual report*[1] of the Medical Research Council, the Committee of the Privy Council for Medical Research states that a grant of £148,000 was provided by Parliament for the Medical Research Council during the financial year, and with this amount, supplemented by private benefactors and various public bodies interested in certain aspects of research work, the Council was able to undertake a total expenditure of £168,000. The Committee draws special attention to the fact that legacies or gifts to the Medical Research Council are applied to scientific work conducted through an already existing organization, and are thus used without reduction or delay. During the past year Professor E. P. Cathcart and Sir Charles Sherrington have retired from the Council under the terms of the Royal Charter, and in their places Professor J. J. R. Macleod and Mr. Wilfred Trotter became members of the Council from October last. Sir Charles P. Trevelyan also resigned upon becoming President of the Board of Education, and Mr. A. G. Church, M.P., has been appointed in his place. Viscount D'Abernon has been appointed chairman of the Council in succession to the Earl of Balfour, who resigned for reasons of health.

GENERAL SUMMARY.

Following a precedent set on two previous occasions the report opens with an introduction in which, together with the usual summary of the events of the past year, the experiences of the last five years are reviewed. The past year has seen the completion of the new extension of the National Institute at Hampstead, which a bequest of the late Lord Justice Ronan enabled the Council to construct. No capital grant has ever been made to the Council for the provision of the Institute; the main building, formerly a hospital, together with a nurses' home, was bought with its freehold site in 1914, for a sum that now seems trifling, out of the non-expended portion of the first year's income. During the war the building was lent to various authorities, and out of savings accumulated during this period it was possible to provide the minimum scientific equipment for the Institute and the freehold site of nearly forty acres for the Farm Laboratories at Mill Hill. In each succeeding year development has been achieved out of annual income, and two recent bequests have rendered possible the establishment of an Institute that is worthy of the distinguished scientific work done within it by the staff.

Among the important activities of the Council during the past five years has been the formulation of standards for biological measurement. The establishment, maintenance, and application of such standards involve the work of highly qualified investigators in its several phases, but when the Therapeutic Substances Act was enacted the Council, in view of the steady progress maintained at the Institute, was able to accept the responsibilities legally put upon it by the Regulations of 1927. The standards must now be issued to all manufacturers of the scheduled substances, who are legally bound to apply them, and this naturally means that the Institute has had to undertake an increasing amount of work, experimental and administrative. Furthermore, it has supplied the British standards both to the overseas Dominions and to the official organizations of several foreign countries.

The Council believes that no part of the work it has directly promoted has greater biological interest or practical importance than that concerned with virus diseases. These studies "are concerned with an invisible underworld of bodies that . . . cannot be seen as definite structures by ordinary microscopic means, and the relation to them of certain objects made visible by special optical methods is still a matter of discussion." The policy of the Council has been to leave various skilled members of its staff completely free to select particular virus diseases for study, and work may be said to be upon two converging lines of effort. Along the one line attempts are being made to imitate the natural immunity which usually follows an attack of a virus disease; and along the second, investigations are conducted upon the properties and natural history of the virus itself. The Council notes the success that has been obtained in making dogs resistant to distemper, and fowls to fowl-plague. These two examples of protection have led to the successful use of similar methods in the protection of monkeys against yellow fever, but it is still doubtful whether a treated vaccine derived from "monkey virus" will protect man. So far, however, attempts to place other virus diseases—for example, foot-and-mouth disease, measles, and, according to some, influenza and common colds—under similar control have not yielded good results. The difficulties are various: foot-and-mouth disease itself gives no lasting immunity to a second attack; the only animal affected by the virus of measles is the monkey, but the disease cannot be passed from monkey to monkey; influenza is not transmissible at all to animals. "We can only hope," says the Council, "that means will be found to surmount difficulties of these kinds." Meanwhile the work on the actual nature of virus particles proceeds in many centres. Of special importance are Mr. J. E. Barnard's studies on the better optical examination of virus by using shorter wave-lengths beyond the visible spectrum; Dr. W. E. Gye's work upon virus and cancer; observations by Dr. C. Todd upon the cellular "individuality" of the animal body; and the studies in comparative pathology made possible by developments at the Farm Laboratories at Mill Hill.

The remainder of its introduction the Council devotes to a brief account of recent advances in radium therapy, and in the study of the physiology of the special senses; to a statement about the publication in progress of a *System of Bacteriology* in nine volumes, three of which have appeared; and to an important survey (discussed in the *Journal* of March 15th at page 503) of the problems of clinical research and experimental medicine.

WORK AT HAMPSTEAD AND MILL HILL.

Following the usual custom, the report proceeds to describe under their appropriate headings the investigations carried out at various centres. Biochemical and pharmacological researches conducted at the National Institute under the direction of Dr. H. H. Dale are steadily building up evidence to show that there are many delicate mechanisms for regulating this or that function of the body which depend on the production, under a given stimulus and in a localized area, of an active chemical substance of the histamine type. Yet another intensely active substance, extracted from the spleen of large animals, has been identified as acetylcholine. The demonstration that this substance, hitherto known only as an artificial product of synthesis and as a rare constituent of certain plants, occurs naturally in the animal body throws light on many physiological phenomena. Extremely minute doses injected into the circulation reproduce the effects of stimulus to the autonomic nervous system, and evidence from different sources points to the probability that the effect produced by certain kinds of nervous stimulus in the body—for example, the local flushing and heat which accompany localized pain—are due to the liberation of this or some closely allied substance near the end-points of the nerves. This, taken with the evidence of the extensive distribution of histamine in the body, offers a basis for a wider conception of a chemical machinery concerned in making delicate adjustments of the circulation to local physiological needs.

Dr. H. King and Dr. G. A. C. Gough have continued their search for synthetic substances having specific curative actions in particular protozoal diseases, while Dr. King is also studying the somewhat mysterious constitution of muscarine. Dr. O. Rosenheim is continuing his work on the chemistry of vitamin D and its relation to ergosterol,

[1] Report of the Medical Research Council for the year 1928-1929. H.M. Stationery Office. 1930. Cmd. 3426. 3s. net.

and has completed his work on a specific colour reaction for ergosterol. The work in experimental pathology has largely been concerned with virus diseases, as already indicated. The special activities of the past year have included studies of vaccinia in rabbits by Captain S. R. Douglas, with Dr. Wilson Smith, and by Dr. C. H. Andrewes on the mode of action of immune serum in infections by various viruses.

Dr. W. E. Gye and Dr. W. J. Purdy have continued their studies at Mill Hill upon filtrates of the Rous sarcoma, but for the moment have abandoned this part of the investigation, and have turned their attention to the study of immunity reactions in cancer. These are of two kinds—namely, immunity to grafts of living tumour cells, and immunity to the virus of filterable tumours. Many years ago it was proved that animals could be made resistant to cell grafts by the inoculation of living cells, especially embryonic cells of the same species. A tumour of the mouse, which was used in the experiments whereby this fact was proved, has been found in the course of the present investigations to have developed a relative insensitiveness to this form of tissue immunity. Experiments with lead selenide as a curative drug in cancer have yielded negative results.

Work on encephalomyelitis, which is occasionally associated with dog distemper, has been the main subject of inquiry by Dr. J. R. Perdrau, while Mr. G. W. Dunkin has continued his study of Johne's disease in cattle. The diagnostic agent "johnin" prepared by him is being used in many parts of the world, with, on the whole, satisfactory results, but some advanced clinical cases have failed to give positive reactions. Mr. C. Dobell has continued his work on the intestinal protozoa of monkeys and men, and towards the end of 1928 he succeeded for the first time in isolating *Entamoeba coli* in pure culture from *M. rhesus* and *M. sinicus*. The isolation of a pure simian strain of *E. coli* enabled Miss Bishop to make a detailed study of the action of emetine on this species *in vitro*. The results of this work show that emetine is about fifteen times less toxic *in vitro* for *E. coli* than it is for *E. histolytica*.

The Department of Applied Optics, now returned to the main building at Hampstead, has concentrated its work upon the problems directly or indirectly associated with the study of filter-passing viruses, particularly on the microscopic side. The practical difficulties of using ultra-violet light are being slowly overcome, and dark-ground photography with this form of radiation is being specially studied. Professor Leonard Hill and Dr. Argyll Campbell in the Department of Applied Physiology and Hygiene, in attempting to throw light on physiological problems of deep-sea diving, have studied the effects in animals of prolonged exposure to high tensions of oxygen. It has been shown that the poisonous high tension of carbon dioxide in the tissues can best be removed by lowering the proportion of oxygen in the mixture breathed. On the other hand, the process of decompression of divers can be greatly accelerated if pure oxygen is breathed for a short time. Mr. H. J. Taylor of the London Light Clinic and Mr. T. C. Angus have been investigating the infra-red region of the spectrum, and Professor Leonard Hill and Dr. Eidinow have continued their studies on the biological effects of ultra-violet radiation. Dr. R. B. Bourdillon and Mr. T. A. Webster, with several other workers, have extended their investigations on the products of irradiation of ergosterol, and a spectroscopic change, *hitherto undescribed*, has been identified as occurring in the initial stages of the irradiation.

BIOLOGICAL STANDARDS.

Various serological standards are issued in a regular manner under the Therapeutic Substances Act, and examination of samples of the different makes of therapeutic serums offered for use in this country has been continued. Mr. P. Bruce White has investigated the various methods of standardization that have been proposed for assay of anti-gas gangrene (*B. welchii*) serum. An examination into the scientific basis of the toxicity tests used for novarsenobenzene has been completed, and a full report has been published (*British Medical Journal*, March 23rd, 1929, p. 568). The British standard of digitalis has been carefully studied with outside help from Dr. J. H. Burn, Dr. J. W. Trevan, and Professor Bijlsma of Utrecht, and the new standard preparation of carefully mixed and dried digitalis has been thoroughly tested in comparison with the existing international standard. For strophanthus preparations also a standard is now available when required. Work on commercial samples of pituitary (posterior lobe) has also proceeded. Dr. Burn, with others, has investigated three actions of pituitary—namely, vaso-constriction, stimulation of uterine muscle, and a restraining action on excessive diuresis. Evidence has been obtained which seems to show that these three actions are produced by *three independent principles*. The National Collection of Type Cultures, accommodated at the Lister Institute, has again shown expansion during 1928–29. Over 5,000 cultures were distributed, and over 300 new strains were added to the collection. The work of the Standards Laboratory at Oxford, under the general direction of Professor G. Dreyer, has been maintained by Dr. A. D. Gardner and Miss E. I. Stubington, both in the whole-time service of the Council. There has been an undiminished demand for standardized cultures (suspensions) and serums. Special work has been carried out with reference to the H and O forms of typhoid and other bacilli, and excellent "O" suspensions of *B. typhosus* have been prepared from non-motile smooth variants by the broth-formalin method.

(To be continued.)

THE INTERNATIONAL TRAFFIC IN DANGEROUS DRUGS.

REVELATIONS FROM EGYPT.

[From a Correspondent.]

THE first annual report of the Egyptian Central Narcotics Bureau[1] reveals a condition of affairs regarding drug addiction in that country so bad as to be almost incredible. It estimates that no less than 4 per cent. of the population of Egypt are drug addicts. This figure is founded on censuses made over limited populations and on figures obtained from the prisons. The great majority of the addicts are young men, and hence the incidence among this class of the population must approach 10 per cent. The drugs used are heroin, hashish, opium, morphine, and cocaine, but heroin addiction is by far the commonest vice, for an interrogation of 200 addicts who were prisoners showed that no fewer than 138 used this drug. Addiction produces financial, physical, and moral ruin. The addict spends most of their wages on the drug, become physical wrecks, and commonly end in jail. The prisons of the country were built to hold 12,000, and now contain 24,000, of whom 7,000 are addicts.

The investigations of the Bureau have revealed that the drugs which are poisoning the Egyptian population are supplied by international organizations with branches all over Europe, which operate on a huge scale and make enormous profits. The nature of the profits is indicated by the fact that heroin, which is bought at £25 per kilo from the manufacturer, is sold to the retailers in Egypt for £85 per kilo, and is finally sold to the addicts for sums varying from £300 to £3,000 a kilo. The amount of heroin smuggled into Alexandria annually is estimated at two and a half tons; therefore the profits of the trade must run into millions of pounds annually. Two smuggling organizations, with centres at Vienna and Basle respectively, have been broken up by the efforts of the Narcotic Bureau. In connexion with the former case the Bureau discovered that one French factory in the Mulhouse district exported 5,016 kilos of heroin in the year 1927-28.[2] Curiously enough, the French official figures for the export

[1] Annual Report of the Egyptian Central Narcotics Intelligence Bureau for 1929. Government Press, Cairo.
[2] Loc. cit., page 5.

of heroin by the whole of France for those years only amount to 4,341 kilos.[1] This discrepancy raises a disquieting doubt as to the exact value of the figures on drug traffic that are supplied to the League of Nations. Both sets of figures are, however, considerably in excess of the total legitimate world need of heroin, which is not more than 1,500 kilos per annum.

The report is full of interesting details concerning the tricks by means of which the drug traffickers evade the law. In the first place the manufacturer employs all the resources of organic chemistry to evade such restrictions as are imposed by the laws of his country. A Swiss chemist carried on a lucrative trade for years by manufacturing a compound dionyl (acetyl propionyl morphine) which differed sufficiently from heroin (di-acetyl morphine) to evade the laws regulating the manufacture of the latter substance. The drugs are exported by gangs of skilled smugglers. Unfortunately they are peculiarly easy to conceal, and can be smuggled in a great variety of ways. In addition to such usual methods as trunks with false partitions, they have also been sent as portions of commercial consignments. Thus, in one instance, 1,000 tins of powdered glue were examined, and 24 of these were found to be filled with a heroin derivative; this discovery was only made by opening every tin in the consignment. After passing through the hands of the wholesalers in the big Egyptian cities, the drugs are finally peddled by retailers, who usually are themselves addicts.

This report deserves careful attention, because it is much the most complete and authoritative account that has yet appeared concerning the international traffic in dangerous drugs. Unfortunately the situation in Egypt is not unique, for something similar, but on a much larger scale, is happening in China, and, moreover, there is an extensive, although less intense, traffic in these drugs throughout most Eastern countries. As the report points out, Egypt and the Far East are being made the victims of the commercial greed of Europe, for the drug manufacturers of Central Europe are making huge fortunes by the wholesale poisoning of the Eastern populations. These countries are relatively helpless to protect themselves because the drugs are so easy to conceal, and the contraband trade is so lucrative that it is almost impossible to suppress it as long as the manufacture of the drugs is unchecked. There can be no doubt that it is the moral duty of the manufacturing countries to take the only step that is likely to suppress this traffic—namely, to put into practice the decision taken at The Hague in 1912, and at Geneva in 1925, and to limit the manufacture of drugs of addiction to the amount needed for medical and scientific purposes. This course is now being proposed by the Advisory Committee of the League of Nations, and it is a proposal that deserves the support of the medical profession throughout the world. In the first place, it is an obligation of honour, since it is the fulfilment of a promise made nearly twenty years ago. In the second place, it is the only way to check a great and growing evil that is becoming a fruitful source of international ill will.

All forms of State control are bound to involve inconvenience to individuals, and the rigid regulation of the sale of drugs of addiction is particularly inconvenient to the medical profession, which has to use these drugs for legitimate purposes. Fortunately for us, addiction to dangerous drugs is not sufficiently common in this country to make the urgency of the need for their regulation obvious to all, and hence the medical profession at home is apt to chafe at being cumbered with rigid regulations accompanied by severe penalties. It is important that the profession should realize that the chief purpose of these regulations is to check an evil which in other countries has grown to gigantic proportions, and which is naturally causing bitter resentment against Europe among the best citizens in Eastern countries. The Egyptian report makes unpleasant reading, but it is a relief to find that there is no hint that any of the smuggled drugs have come from this country. This suggests that the inconveniences that our medical profession has had to put up with in regard to these drugs have not been a useless sacrifice.

[1] Prov. Report, League of Nations Advisory Committee on Traffic in Opium, O.C. 1072, p. 103.

ROYAL MEDICAL BENEVOLENT FUND.

ANNUAL MEETING.

THE annual meeting of the Royal Medical Benevolent Fund was held at the House of the Medical Society of London on March 10th, with Sir THOMAS BARLOW presiding.

Sir PERCY SARGENT, joint honorary secretary, read the ninety-fourth annual report of the Fund, which recounted the steps taken to give greater publicity to the Fund's existence and work. The previous year's income from subscriptions and donations had been increased by over £600, and stood at £9,230. Gratitude was expressed in the report for the continued assistance given by the British Medical Association in collecting subscriptions from its members. The amount so collected during the year under review had been £1,590, and in addition £995 had been allocated by the Charities Committee of the Association (£169 more than the previous year). Reference was also made to a handsome donation of £630 from the Medical Insurance Agency. With regard to the distribution of funds, 416 grants had been voted, amounting to £8,639. From this sum 295 grants had been made to regular beneficiaries, who applied every year for renewal, and whose financial circumstances were annually reviewed. The remainder had been given in the form of single grants to assist persons in temporary difficulty, or as grants specifically for the purpose of education. Assistance of this latter character, amounting to £750, had been afforded to 21 applicants. The names of 191 annuitants were on the books, and the amount given in that form—namely, £5,437—was £621 more than during the year before.

Sir CHARTERS SYMONDS, the honorary treasurer, said that if the Fund were to close down that day it could meet all its liabilities and have between £700 and £800 in hand. The financial position had improved since October last, when it was feared that the income would not reach the previous year's figures, and that the amount of the grants would have to be limited. At the December meeting of the committee, however, money having come in in response to various appeals, it was found possible to vote grants without any reduction. A meeting of the vice-presidents had taken place during the year, with members of the committee, to discuss in what way greater support of the Fund might be obtained from the profession generally, and one good result of that meeting, at which several of the vice-presidents volunteered to give help in the way of personal influence, was that most of those who gave donations had become annual subscribers. He also mentioned the service in Liverpool Cathedral on St. Luke's day, when £113 was collected, and suggested that medical men in other cathedral cities might arrange for similar services to be held.

The officers of the Fund were all re-elected, with thanks for their services, and a former office was revived, that of chairman of the Case Committee, Sir THOMAS BARLOW remarking that the responsibilities of the Case Committee had increased of recent years, and it was never an easy task to adjudicate on some of the cases that came forward. It was therefore thought well to reconstitute the office of chairman of the Case Committee, and to nominate Dr. C. O. Hawthorne for that office. Sir PERCY SARGENT seconded the president's proposal, which was adopted unanimously. On the motion of Sir CHARTERS SYMONDS, seconded by Mr. BISHOP HARMAN, a number of vice-presidents were elected, including Dr. J. F. Walker, chairman of the Charities Committee of the Association, and Dr. Alfred Cox, Medical Secretary. Dr. Cox proposed the re-election of those members of the committee of management who retire by rotation, with one new member, Mr. Sampson Handley, to fill a vacancy; and the remainder of the proceedings consisted of votes of thanks to the honorary local secretaries, the medical and lay press, and others who had assisted the work of the Fund in various capacities. Sir THOMAS BARLOW made reference to the death of Sir Alfred Fripp, who had been a strong supporter of the Fund, and said how sincerely all the friends of the Fund sympathized with Lady Fripp, a member of the committee of management, in her bereavement.

Scotland.

Food Supervision in Scotland.

THE Department of Health for Scotland has issued a useful circular[1] dealing with the regulations bearing upon food. This is one of a series dealing with the effect of the Local Government (Scotland) Act, 1929, on health policy and administration. It is pointed out that in the past the public health local authorities have been concerned with food mainly through administration of the statutory measures directed towards (*a*) ensuring a pure food supply, and (*b*) the prevention of fraud on the part of the vendor, under the Public Health (Scotland) Act, 1897, the Regulations as to Food Act, 1907, the various Milk and Dairies Acts, and the Food and Drugs (Adulteration) Act, 1928. The department now points out that local authorities have also a direct interest in the wider problem of nutrition, especially in regard to the well-being of the school child and of the expectant and nursing mother. These subjects will now come within the province of town and county councils. Their attention is drawn to the provisions of the Public Health (Scotland) Act, 1897, which provided for the inspection of articles intended for food, and the seizure of food unfit for consumption; also to the Public Health Regulations (Scotland) regarding unsound food, overseas meat, and preservatives in food, issued in 1925. These regulations, it is pointed out, should be rigorously enforced. As regards milk supply, attention is directed to the Milk and Dairies Act, which came into force in 1925, providing for the appointment of veterinary inspectors by local authorities to conduct systematic inspection of dairy cows and of premises where milk is produced or handled; also to the various Orders under this Act regulating methods of storing and grading milk, the standards for condensed and dried milk, and the provisions for labelling them. The arrangements which the Department recommends for the veterinary inspection of dairy cattle are summarized, and it is urged that the sampling of milk for purposes of bacteriological examination should be at least as frequent as sampling for chemical analysis. In connexion with the licensing of tubercle-free herds under the grading system, the Department has directed that, from July 1st, 1930, the double intradermal test shall be the only one used in the tuberculin testing of cattle. With regard to the enforcement of dairy by-laws, the department considers that there is need for quicker progress in many county districts, and reminds the new authorities of their duty in regard to structural requirements and methods in dairies. It is pointed out that the Local Government (Scotland) Act, 1929, empowers councils to spend money on public health propaganda, and it is suggested that powers should be used to encourage a more extensive consumption of pure milk through popular lectures by medical and veterinary officers, circulars to medical practitioners on grading and milk supervision, and the supplying of milk to children from tubercle-free herds. The arrangements for meat inspection are also summarized; it is suggested that advantage might be taken of the extensive motor transport in the meat trade to use the facilities afforded by a conveniently located public abattoir rather than to retain a number of private slaughterhouses of various standards of efficiency and sanitation.

Eradication of Bovine Tuberculosis.

A scheme, which has been submitted to the Ministry of Agriculture, has been issued by the Scottish Branch of the *National Veterinary Medical Association* for the eradication of bovine tuberculosis. The association draws attention to the progress which has been made in America by the use of tuberculin and by slaughtering cattle giving a positive reaction, but considers that it would be impracticable to apply the American plan immediately by a widespread campaign in this country. It suggests that the appropriate scheme should be a voluntary one, and that a reliable test should be introduced to separate healthy from diseased cattle, so that the latter may be evacuated from the herd. If contiguous herds were treated in this way large tracts of country would be effectively cleared of bovine tuberculosis. A measure of compulsion might ultimately be applied to owners in intervening areas. Compensation would be given for the removal and slaughter of diseased cattle. The scheme proposes that applications should be invited from owners who wish to take advantage of the benefits conferred by it, and who are prepared to conform to the regulations laid down by the Ministry. It recommends that early preference should be given to herds owned by small holders in view of the great danger to the public from a cow with tuberculosis of the udder in a small herd. The tuberculin testing should be carried out by a practitioner selected by the owner. When he has tested the whole herd without finding a reactor a crucial test would be applied by a representative of the Ministry. If no reactor was then found, the herd would be certified by the Ministry. Reactors might be isolated in the first place, and afterwards slaughtered as far as the funds devoted to the scheme permitted. The scheme urges that an annual grant should be made for a period of years for these purposes. This grant would pay the cost of testing, compensation for reacting cattle, for disinfecting premises, and in providing temporary buildings for the isolation of reactors. In many cases owners or local authorities would be willing to bear part of the cost of eradicating the disease from their herds or districts.

[1] H.M. Stationery Office, 120, George Street, Edinburgh. 2d.

Health Administration of the Future.

On March 11th, Dr. J. Parlane Kinloch, chief medical officer of the Department of Health for Scotland, addressed a meeting of the Institute of Public Administration, at the City Chambers, Edinburgh, on aspects of health administration. Mr. John Jeffrey, secretary of the Department of Health for Scotland, who presided, said that the new authorities about to be created would be less subject to Government control than those at present. In his address Dr. Kinloch referred to the Greek ideal of healthy individual life, and to the new attitude of public health authorities towards the care of the individual. Efforts to improve conditions of environment, however, had not slackened. They were still striving to remedy evils of the slums, overcrowding, unhealthy dwellings, pollution of air and streams, deficiencies of diet, unsound and adulterated food, contaminated milk, insufficient and impure water supplies, and lack of sanitation. The health services had gradually lengthened the average span of life, from 20 years in the sixteenth century to 25 years at the close of the eighteenth century, to 47 years in 1910, and to 56 years in 1928. These figures, he said, implied much more than that the average duration of life had been doubled, for that life was more vigorous for the people as a whole. The history of public health showed that if we knew enough and could apply our knowledge, every child might enjoy a healthy life till old age. They were approaching this ideal. The Local Government Act of last year, he said, created a framework into which the unrelated services of the past would be fitted; the benefits should be enormous. It might seem to some that it was a defect in organization to have left the national insurance medical service outside the jurisdiction of the local health authorities, but the two great services were in process of being co-ordinated. The body of general family practitioners, who would continue to be the backbone of medical service in the country, could be brought into intimate contact with the new health machinery. A comprehensive domiciliary medical service could best be obtained by extending the insurance principle to the dependants of insured persons. It might possibly be further extended to classes of people like small shopkeepers who had not hitherto come within its scope. As a logical outcome of the hospital clauses of the new Act, the local authority in co-operation with voluntary hospitals would provide an institutional and specialized medical service for the whole community. Payment for such service would be made according to a person's means. *Money* should be spent rather in cutting off disease at its source than upon treatment. There should be further provision for research. With a total commitment of £10,000,000 or £20,000,000 on health services in Scotland, the two departments which were responsible for research were spending less than £10,000 a year on this service. On the other hand, with a total

expenditure of about £1,000,000 on agriculture the State had considered it necessary to spend about £70,000 on agricultural research. It was a matter of social and national economics. If the country increased its expenditure on research it would be repaid in large dividends.

Edinburgh Housing and Hygiene Exhibition.

The exhibition of housing and hygiene organized by the public health committee of the Edinburgh Corporation for sixteen days was opened on March 12th by Mr. J. C. Watson, Solicitor-General for Scotland. Lord Provost Whitson, who presided at the opening ceremony, congratulated Dr. William Robertson upon his success in arranging the exhibition. The Solicitor-General said that the fundamental capital of any country was the strength of character, of body, and of mind of its citizens. While wars in the past had left a legacy of disease, the public health administration and the medical services had prevented this occurrence after the late war. He suggested that there should be closer contact between the thinking mind of medical schools and the trained minds and exhaustive records of public health departments. If this collaboration were brought about, the experience gathered by the public health department could be used to direct and guide the research of academic workers whose experiments could be tested in the organization of the public health department. In referring to the exhibition, the speaker remarked on pioneer work that had been done in Edinburgh in cultivating a social responsibility. Over 120,000 persons visited the ten days' exhibition held two years ago; it is expected that the present exhibition will be even more successful. One of the exhibits is the simplest form of new house built by the Corporation Housing Department; as a contrast a reproduction is shown of a one-roomed slum house at present being removed under improvement schemes. Bad features of one-roomed houses, back-to-back houses, and other condemned property are indicated by plans and photographs. The Corporation Maternity and Child Welfare Department has an exhibit showing welfare clinic rooms and necessary equipment. Another shows the facilities available for protecting the pre-school child from diphtheria. A day nursery illustrates the municipal facilities offered for the day care of infants and toddler children. There is a child-garden for mental and physical development, and artificial sunlight clinics equipped with lamps. A private company gives demonstrations of the process employed in the production of irradiated tubercle-free milk. Numerous working exhibits are on view, including a model laundry, a model bakery, the preparation of pasteurized milk, and other methods of preparing food and substances in general use. A stall is devoted to food and dietetics; practical lessons are given on simple cooking by smokeless fuel, and short talks on food problems.

The Ideal Hospital.

In an address to the Edinburgh Women Citizens' Association on March 11th, on the requirements for the hospital of the future, Dr. William Robertson, M.O.H. for Edinburgh, said that Edinburgh had fallen behind Glasgow in providing modern hospitals for the treatment of the sick poor. In Glasgow some of the institutions erected by the parish council were of the same standard of construction and equipment as the best of the Scottish infirmaries. There were some councillors who thought there was a danger of local authorities, such as those in Edinburgh, trespassing on the work of the voluntary services, but some years would elapse before any municipal hospital would be ready to receive patients in Edinburgh. Dr. Robertson then discussed the best design for a hospital. Was it possible to devise something better than the long corridors with side passages and counter-crossings which caused administrative difficulties and took up much valuable space? He thought that the hospital of the future must be surrounded by large grounds, not only for possible future extensions, but also to ensure free circulation of air and liberal exposure to sunshine. A hospital should be arranged on a pavilion plan, with pavilions of one or two stories. The best arrangement was the butterfly principle, where the wings were wards, the body the administrative quarters, and the tail provided smaller wards or rooms for the isolation or nursing of special cases. Such pavilions would be dotted over an extensive site, and might be interspersed with flower-beds and well-kept lawns. It was of the greatest importance in hospital construction to provide means for free irradiation by the sun.

Ireland.

Treatment of Tuberculosis.

In presenting the annual report of the Newcastle Sanatorium, co. Wicklow, Professor T. Gillman Moorhead, M.D., referred to the fact that treatment with a salt of gold had been carried out in a number of cases during the past two years. This treatment had been introduced in Denmark about four or five years ago, and consisted in the injection of sanocrysin into the blood, with the object of destroying the bacillus of tuberculosis without affecting the body of the patient. Up to the present fairly good results had been obtained, but the treatment was still only experimental. Professor Moorhead also referred to the establishment of a tuberculosis colony in connexion with Peamount Sanatorium. He hoped that the colony would not be reserved for the exclusive use of patients treated in a single sanatorium, and that facilities would be given to patients from other sanatoriums to enter the colony as soon as possible. A single colony for the whole of the Irish Free State was likely to progress more satisfactorily at first than separate colonies attached to each sanatorium. Sanatoriums had solved the problem of immediate treatment of tuberculosis; well-managed colonies would do much to solve the problem of after-treatment. He thought that the appointment of tuberculosis officers in every county in the Free State would be of great assistance in early diagnosis, and in introducing a more systematic home treatment through trained health visitors. The average results obtained last year at Newcastle Sanatorium were as follows: in Group I there were 26 per cent. apparent cures; 15 per cent. were much improved, and 13 per cent. were improved. If a thorough system of after-care were established, the majority of these patients could be maintained in good health and fair working capacity for many years. Facilities were now available for post-graduate teaching in the sanatorium.

Dublin's Radium Supply.

At the recent annual meeting of the Royal Dublin Society Professor John Joly, F.R.S., the president, said that the society had less radium at its disposal than had many second-rate London hospitals, although it was the principal source of supply in Dublin. The society is appealing for £5,000 for the purchase of radium, and has undertaken to give pound for pound on all money subscribed.

England and Wales.

Radium Department at North Middlesex Hospital.

THE Minister of Health (Mr. Arthur Greenwood, M.P.) visited the North Middlesex Hospital, an institution under the control of the Edmonton board of guardians, on March 18th, to perform the double function of opening a new department for the treatment of cancer by radium and of laying the foundation stone of an extension of the nurses' home. The hospital possesses rather more than 500 milligrams of radium, and an excellently equipped department has been created for its utilization. The building, detached from the main hospital, consists of a reception room, with dressing cubicles for patients; a radium record and issuing room, with a specially designed indicator board for records of radium tubes issued; a strong room, containing a radium safe weighing one and a quarter tons and giving seven inches of solid lead protection in all directions against the action of radium; a treatment room, and a radium work-shop, with special lead-protected benches on which radium needles are handled and made up into silver containers. There is an excellent installation of electroscopes and other apparatus for

detecting and recording the radium content. An adjoining building houses the x-ray treatment department, which includes an apparatus for deep therapy. The walls of this room are lined with sheet lead one-quarter of an inch thick, and the operator controls the apparatus from a cabin outside. The present extension of the nurses' home provides for 100 beds (in addition to the 105 already in use), together with lecture and demonstration rooms, dining room, and offices, and the idea is to accommodate the whole of the large staff of nurses for a hospital which had 10,000 in-patients last year, and to provide them with comfortable home-like surroundings, with every benefit of proper rest and recreation. The ceremony was made rather the occasion of a "swan song" on the part of the guardians, several of whom have held office ever since the hospital was opened twenty years ago. Mr. E. E. Metivier, the chairman of the board, after referring to the fact that the opener of the hospital in 1910, Sir William J. Collins, was in the present company, gave a sketch of the hospital's noteworthy growth, and the increasing provision it had made of facilities for the neighbouring local authorities. Dr. Spencer Mort, the medical superintendent and surgical director, explained the purpose of the new radium department, after which the Minister of Health paid a warm tribute to the board of guardians and the staff for having transformed what was once a workhouse hospital of the old type into a first-rate modern institution. Before handing over the control to a different body, the guardians had crowned their work by the establishment of the new radium department. It was perhaps fortunate that this scheme was on its way before the late Government appointed the committee to consider the allocation of radium, for it meant that the Edmonton guardians had succeeded where perhaps, had they tarried a little, their path might have been more difficult. It was a matter of pride, the Minister considered, that the guardians should have been so early in the field with this modern treatment, and he believed that the new centre would be a model for local authorities in other parts of the country. After referring to the need for ensuring to nurses as many of the amenities of home as were possible, Mr. Greenwood touched on the approaching extinction of the guardians. It was natural that there should be a tinge of sadness in the air, but he believed that everybody appreciated that in the long run the coming change would work out for the public good, and at least the board of guardians at Edmonton could relinquish their work with the knowledge that they had created something which would be a valuable inheritance for their successors.

The Institute of Ray Therapy.

The Institute of Ray Therapy (Sunlight Clinic) in Camden Road, which was the subject of a descriptive article in these columns on January 25th (p. 163), was opened by the Lord Mayor of London (Sir William Waterlow), who was attended by the Sheriffs, on March 13th. Mr. Alfred T. Davies presided over the ceremony, and in some introductory remarks expressed the indebtedness of those concerned in the work of the institute to Mr. G. F. Kimber, who had paid to the account of the trustees the generous sum of £10,000. The institute had an excellent advisory council, and the equipment was the most modern in England. The council felt that with the co-operation of the trustees and Dr. Beaumont as medical director the institute would be of immense benefit not only to St. Pancras but to the whole of London. Sir William Hale-White, president of the medical advisory committee, said that the object of the institute was to enable people of small means to obtain up-to-date light treatment. No one would be asked to pay more than he could afford, and necessitous cases would be treated free. Further, no patient would be admitted except on a medical certificate signed by his own doctor, and any person who had means which enabled him to pay for private treatment would have no right to attend at the institute. A special certificate had been provided for the signature of the doctor sending the patient, and the doctor would mark on it the grade according to which the patient should be charged. The minimum for those who could pay would be one shilling per treatment, and no one would be asked to pay more than five shillings. Sir William added that apart from the financial provision, the promoters owed everything to Dr. Beaumont, who designed the building, and with the help of Mrs. Beaumont, the honorary secretary, launched the organization. The Lord Mayor, in declaring the institute open, said he understood that an important function of the institute would be to place light therapy on a sound scientific basis and estimate its capacity for good, while at the same time providing beneficial treatment for patients who were not in a position to obtain it elsewhere. He was impressed by the names of the members of the medical advisory committee, which included representatives of two Divisions of the British Medical Association. He believed the new institute to be in line with the progress which was being made in other countries in the light treatment of deficiency and other diseases, and the aim of the Camden Road centre was to be a "poor man's Riviera," where those who were ordinarily denied the invigorating effects of sunlight for the treatment of complaints which were due to or accelerated by light starvation might obtain a renewal of health and energy. Mr. Kimber, the treasurer and benefactor, in proposing a vote of thanks to the Lord Mayor, said that the origin of the whole scheme was a lecture by Dr. Beaumont at the St. Pancras Rotary Club two years ago. He was impressed by the account given by Dr. Beaumont of the benefits to be derived from light treatment, and especially by his remark, "If we only had the money there is no telling what we could do." Professor John Eyre, a member of the medical advisory committee, seconded the vote.

Middle-class Clinics.

At the annual general meeting of the National Baby Week Council, held on March 12th, with the Hon. Sir Arthur Stanley in the chair, a brief discussion took place on a subject announced as "The extension of the knowledge of parentcraft to parents whom the existing welfare services do not reach"—in other words, the establishment of baby clinics for the middle and upper middle classes. Dr. Harold K. Waller, medical officer of St. Katharine's College, Poplar, and of the Babies' Club, Chelsea, advocated the establishment of clinics to which persons would, on payment of a subscription, be entitled to go for advice. If such work was to be extended among the middle and upper middle classes, it was important that it should secure the good will of the medical profession, and it must be made clear that the work was to be confined to the giving of advice as regards the prevention of disease, and not to embrace treatment. He felt that those who stood in the social scale just above the class visited officially by the health visitor were most in need of baby clinics, for very often they lacked the sense of parentcraft which had been gained by those in a different class of society. The money spent on the extravagant decoration of nurseries and on elaborate perambulators would be better spent on a subscription to a clinic where advice could be obtained on the supervision of the baby, a matter which people were apt to regard, until difficulties arose, as coming by instinct. After Mrs. Eva Hubback, of the National Union of Societies for Equal Citizenship, had spoken on the same lines, Mr. E. B. Turner put forward the view of what he called a confirmed individualist. He was not in favour of the proposal, disliking, he said, this mass treatment. The existing centres had certainly done good work, but he thought it would be a mistake to extend the system to a class of patients who were able to go to a private doctor. His own feeling was that parentcraft could be taught much better by the family doctor than at a clinic, where work would tend to become stereotyped. Dr. D. H. Geffen, medical officer of health for Enfield, said that Mr. Turner was not looking at the matter from the right point of view. The main point was the well-being of the mothers and children. If that could be secured by the establishment of clinics, the interests of the profession were of comparatively small importance, and he believed most practitioners would rejoice in the result. The clinics would certainly increase the work of the general practitioner in one direction, for disease would often be detected in its early stages and the cases be sent to doctors. Mr. Turner said that Dr.

Geffen had mistaken the bearing of his remarks. They had not been in any way directed to protecting the practice of the general practitioner. He had had in view the health of the mothers and the children, which he believed could be better looked after in the houses than at clinics. Mrs. Newman, speaking as chairman of a centre committee, said that one-half of the mothers dealt with did not know when the babies were ill, and one respect in which the centres did good work was by informing a mother of the state of the case and sending her off to a medical man. She even thought it would be a good thing if an arrangement could be made in districts like her own (Hampshire) for paying mothers to attend the clinics once a week.

Central Midwives Board.

The Central Midwives Board for England and Wales met on March 6th. A penal session was held, followed by the ordinary monthly meeting. The following re-elections to the Board were announced: Miss Edith Greaves, Miss Ada Davies, Dr. William Allen Daley, Mr. A. B. Maclachlan, Mr. Victor Bonney, F.R.C.S., Dr. R. A. Lyster. Intimation was given of the following resolution passed by the Gloucester City Council:

> That the council be recommended to support the Minority Report of the Departmental Committee that, subject to the improvement of certain of the existing arrangements of the Central Midwives Board, the powers of approval of training institutions and teachers and of the framing of the rules as to training should remain with the Midwives Board.

The Cornwall County Council also had notified its concurrence in the Board's view that it would be undesirable to transfer the power of approval of teachers and training institutions, and of the framing of rules as to training, from the Board to the Minister of Health. It was resolved to reply to an inquiry from the town clerk of Kensington: That, while the Board fully appreciates the value of the treatment and advice given at ante-natal clinics, it does not deem it advisable to compel midwives to take or send their patients to ante-natal clinics.

Correspondence.

RESEARCH IN MEDICINE.

SIR,—The article on research in medicine, by Sir Thomas Lewis, in your last issue, contains so much that is true and suggestive that it is a pity he has not been able to speak less disparagingly of the clinicians. It may be that these poor men are "unreliable in the clinical statement of fact," that they have a "less rigid standard of truthfulness than the physiologists," "make statements without evidence," and are "superficial" and "without any real grasp of the problems set by disease." I do not doubt that their "easy and uncritical acceptance of statement of fact and hypothesis" will induce them easily to accept this diagnosis of their condition, but, after all, they are doing their best. Their "observational" methods may be slow and not as productive of results as we all could wish, but it is rash to say that they are played out. The clinician is the field naturalist of medicine, and there are still new diseases, fresh types of disease, and novel "symptom-complexes" to be described and unravelled. (One has only to think of epidemic encephalitis and "pink disease" as examples in the last few years.) Everyone will agree that the experimental method of investigation is the most satisfactory, but the difficulty is to apply it in the clinical field. We cannot really treat patients in a ward as the physiologist does rabbits in a laboratory, and I fancy that the most enthusiastic "research physician" would find himself becoming by degrees "preoccupied by solicitude for his patient" when constantly brought into contact with sick folk in a hospital—at least I hope so.

In any case, is Sir Thomas Lewis really sure that even the experimental method would be best applied by the type of worker he wishes to bring into existence? Surely to train a man for research only, to cut him off from all vital contact with students, and to disinterest him in questions of diagnosis and treatment is the most certain way to narrow his outlook and to sterilize him for the very purpose for which his post was created.—I am, etc.,

London, W.1, March 18th. ROBERT HUTCHISON.

SIR,—I have read with deep interest Sir Thomas Lewis's considered remarks on the present position and needs of medical research in this country. I am sure that all who are concerned for the future of what he calls "progressive medicine" will feel grateful to him for his fair and able exposition of the problem. With his main thesis—the impossibility of combining successfully the practice and teaching of curative medicine with experimental clinical research—there will be general agreement. But some of his statements call for comment, and some of us must beg leave to doubt the full practicability of the remedial measures under consideration by the Medical Research Council as at present forecast.

Speaking of diagnosis as a function of the practising physician Sir Thomas says: "A diagnostician goes into his wards with one chief goal in view—it is to place a label correctly, to say that here is a species or subspecies that someone has described, its name being this or that." This is surely putting a very narrow interpretation on the word diagnosis, and one which can scarcely be accepted. For the judicial and conscientious physician diagnosis implies, as its derivation signifies, the *through or thorough knowledge* of the patient and his disease. This involves an appreciation of the influences of heredity and environment, of physical type and personality, of the meaning of symptoms, and of the value of objective findings, whether made at the bedside or in the laboratory, and includes, finally, that very endeavour to "know more" which is claimed as the purpose of the researcher. Some of the best and most accurate and useful diagnoses are made without a label being affixed at all. Now, unless he can acquire by long observational training some aptitude for diagnosis in this fuller and better sense, I would maintain that a "research physician," however well trained scientifically, will seldom have sufficient knowledge and breadth of vision to produce work of prominent value. Disease cannot be studied apart from man. Disease affecting one system can only rarely be investigated properly without the study of other systems. It is upon attempts to do this that most of the faults and shortcomings of specialism depend. We should think carefully before appointing, in the person of the research physician, a new variety of specialist, and if we decide upon the appointment we should endeavour to ensure that his preliminary clinical training is both long and general. His aim may be collective diagnosis, but the study of individual diagnosis is an essential part of his education.

Pursuing his argument that the research physician must be largely relieved of the onus of diagnosis and treatment, Sir Thomas says, ". . . it is to be realized that no investigator can be successful who allows, or is forced by circumstances to allow, solicitude for his patients to preoccupy his mind," although later he insists that the workers must have full medical charge of their material. This seems to me contradictory and unsound. Without considerable and constant solicitude for the patient there can be no deep understanding of disease. Even in animal experiment this is apparent. There have, I imagine, been few finer examples of well-conducted and productive research than Pavlov's work on digestion and on conditioned reflexes. It is abundantly clear that these painstaking experiments would have been useless had not Pavlov and his associates exercised the greatest solicitude in the handling of the animals. It was necessary for the success of the work that the dogs should be treated carefully, even affectionately, that their individual temperaments and their physical and psychological reactions should be intimately studied and understood. How much more essential, if we except the case of some very localized types of disease, is such solicitude in the investigation of the more complex human organism! Furthermore, under the conditions suggested, how are the patients to be found? Can we expect that institutions will show themselves willing to allocate patients to a physician with whom diagnosis and treatment are not to be a main concern?

Once more, speaking of the practising physician, Sir Thomas says: "His solutions are reached in by far the greater number of instances by no process of logical reasoning, but upon the basis of previous experience or upon the basis of what we call intuition, a faculty often remarkably developed." I would suggest that there is no such thing

as intuitional diagnosis. The physician or his pupils may not always be able to retrace the steps whereby an able opinion has been reached; but I believe that the real basis of such opinions has always been careful observation of other cases, a working knowledge of human physiology, anatomy, and pathology, and a logical induction from the information which these provide, or, in other words, the application of those very qualities which it is so necessary to foster in the research student. Harvey and Mackenzie both combined the observational with the experimental method, and recognized that the two were complementary. The observational method, to be fruitful, requires contact with large numbers of patients, preferably under varying conditions of life and environment, and not only in a hospital ward. There is great need, all will agree, for more and better scientific method in clinical medicine, but it should also be remembered that those functions of the body which can be studied separately in an experimental way and by accurate methods are at present few.

Sir Thomas Lewis has been rightly quoted as an outstanding example of the research physician, and his work is an abiding testimony to the soundness of the principle of liberating good men from the necessity of practice in order that they may the better devote themselves to important work. It seems to me, however, that in quoting this example the Medical Research Council have not made sufficient allowance for particular circumstances. In the first place, their man is an altogether exceptional man, scientifically minded, and also with the experience of practice behind him; and secondly, it so happens that his researches have dealt with a branch of morbid physiology susceptible of study by a precise physical method. At the moment there is little indication that other morbid functions can be approached in so separate a manner and by methods so precise as those which have been employed in the study of normal and abnormal cardiac rhythm.

While, therefore, there is much in the idea of the trained research physician which must appeal to us all, there are many difficulties to be faced and some preliminary questions to be answered. Among these I would ask: (1) How and where is adequate material for the training and the research to be collected? (2) Given the material, how can curative and experimental medicine be divorced (or reconciled)? (3) How, at an early stage, are young men to be selected who will be found later to be suitable by temperament and mental equipment and at once sufficiently skilled in the methods of science and logic and sufficiently broad-minded for a task which must frequently present far greater difficulties than those already encountered in physiological and pathological research? (4) How can it be ensured that clinical research shall be organized so far as possible on profitable lines? To-day a vast amount of time, money, and labour is being expended upon isolated researches which from the very nature of the problems undertaken can have no useful end; at the same time important fields are being altogether neglected.

With a view to discovering answers to these questions, and before there is new expenditure of funds, it would be interesting to hear the views of our leaders of medical thought, of men who, although they are compelled to practise and to teach, have made medicine their life's work and are familiar with its needs. It is curious that, with the exception of Professor Elliott, whose chief distinctions have been in physiology and academic fields, the Medical Research Council includes in its number no single representative of general or special medicine. There is the more need on this account that they should hear the voice of those who live in the midst of the problems and who feel the same anxiety to see them more wisely and intimately explored.—I am, etc.,

London W., March 17th. J. A. RYLE.

PEPTIC ULCER.

SIR,—May I join with Lord Moynihan in congratulating Dr. Arthur Luff on his valuable report on the collective investigation of cases of peptic ulcer. It is a most valuable piece of work, for which the thanks of all members of the Association are due to its author.

In his admirable review of the report (*Journal*, March 8th, p. 459) my friend Lord Moynihan with gentle touch reproaches me for my advocacy of gastro-jejunostomy in the treatment of gastric ulcer. I do so because, like Lord Moynihan in the past, I have found it to be eminently satisfactory. In the series of cases under review posterior gastro-jejunostomy gave only 50 per cent. of good results, and Lord Moynihan expresses surprise that the results are even so satisfactory. I share that surprise when I note that the appendix was removed only in 29.6 per cent. of the cases. This vestigial organ is so frequently a focus of infection that I regard it as futile to perform a gastro-jejunostomy unless the appendix is removed at the same time.

Lord Moynihan emphasizes the supreme importance of medical treatment and a proper dietary after operation. This cannot be reiterated too often, for I am convinced that a very large proportion of the failures after gastro-jejunostomy are the result of neglect of this vital factor. He also pertinently remarks that "individual rather than collective opinions will surely continue to control our thoughts and actions." I prefer gastro-jejunostomy to partial gastrectomy, save in exceptional cases, because it is a less severe and less mutilating procedure, and because in my experience, if the operation be properly performed, and provided the patients adhere to a reasonable diet, good results follow in over 90 per cent. of the cases. This must have been the experience of Lord Moynihan in the past, for in 1908 he wrote: "I am a sanguine advocate of this operation (gastro-jejunostomy), than which there is in all surgery none more completely satisfactory." If this were true then, as I have no doubt was the case, it is surely true to-day. *Nihil tetigit quod non ornavit*; I am confident that in Lord Moynihan's skilled hands either gastro-jejunostomy or partial gastrectomy will give highly satisfactory results. As he so truly says, the operation of partial gastrectomy has the advantage of difficulties. He prefers the "great adventure"; I, while admitting that the mortality rate of partial gastrectomy is not greatly higher than that of gastro-jejunostomy, prefer the less adventurous as being safer and no less sure.

I do not think the cases so admirably tabulated by Dr. Luff can be used to support Lord Moynihan's contention that the results of partial gastrectomy are better than those of gastro-jejunostomy. In the cases under review, the mortality rate of posterior gastro-jejunostomy with excision or infolding of the ulcer is 4.6 per cent., while that of simple gastro-jejunostomy is 11.4 per cent.,—that is, the mortality of a simple gastro-jejunostomy is two and a half times as great as posterior gastro-jejunostomy with excision or infolding of the ulcer, and about twice as high as that of partial gastrectomy. In other words, the part is greater than the whole, which, as Euclid would say, is absurd. The inference is irresistible, that the more severe procedures were performed by the "surgical Bobby Joneses," while the simpler procedures were mainly the work of the long handicap men. If this be so, then it is not fair to claim that the late results of the long handicap men are comparable to what can be achieved by the scratch men. Lord Moynihan cannot have it both ways. He says that the mortality rate for all types of operation is too high. If this be premised, then he cannot use the late results in this series to support his contention. It is clear that Lord Moynihan himself agrees with this view, for he writes, "Too much reliance must not be placed upon these figures; for a difference in the skill and competence of the surgeons concerned in the treatment of each group may be enough to account for differences in the figures."

I doubt whether the difference of opinion between us is as fundamental as would appear. Reading between the lines, I judge that Lord Moynihan has still a very warm corner in his heart for gastro-jejunostomy. It is my hope and belief that he will live long enough to return to his first and early love, which has served him so well in the past, and in the perfecting and popularizing of which he played such an important part.—I am, etc.,

London, W.1, March 13th. HERBERT J. PATERSON.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—The comments on my address published in the *Journal* of March 1st (p. 376) have raised some points of general interest.

I should like to thank Dr. Rose Jordan for her letter (March 8th, p. 466), and to say that I can endorse the two practical points there emphasized—the importance of firm pressure by the plexímeter finger, and the help it may be to have the patient breathe with the mouth open.

If Dr. McNeil (March 15th, p. 515) considers that my quotation from his article on the von Pirquet test in any way misrepresented his views I am extremely sorry. The burden of my argument was that the Pirquet reaction may be negative in an actually tuberculous condition. This Dr. McNeil admits. In spite of that admission, he concludes his letter thus: "The principal value of the test is when, having been performed by a correct technique, it is negative; in such cases tuberculous disease can be excluded." There is here no qualifying phrase: no suggestion that "although rarely," a serious error of diagnosis may result. It is a definite assertion which, on Dr. McNeil's own showing, is fallacious. That is the crucial point.

Dr. Weatherhead (March 15th, p. 516) quotes Clive Riviere on tuberculin tests in general, but does not get down to the bed-rock difficulty in the Pirquet reaction—the presence of a negative test in a tuberculous subject. He is all out for "the only tuberculin test which is now commonly held to have any real diagnostic value—namely, the subcutaneous test." By the time the practitioner has kept a careful three- or four-hourly record of the temperature for some days and finds that the mouth temperature does not rise above 99.2 F., and then understands from Dr. Weatherhead that "even this is running the risk of a dangerous focal reaction," he will be exercising only common-sense precaution if he refuses to touch this test at all.

I admit that to pass an opinion on the value or otherwise of ultra-violet light in pulmonary tuberculosis is liable at the present time to induce in some quarters rather strong reactions, and I have no doubt that Dr. Weinbren (March 15th, p. 516) can show reasons for the faith that is in him. All I can say is that the high priest in this particular temple is, I fancy, Dr. C. H. Würtzen, consulting physician to the Finsen Light Institute, Copenhagen. I have sat at his feet and done what in me lay to evaluate his results. This particular factor in treatment is obviously difficult to isolate and assess, but I do not think that the judgement I expressed, that its value is "very problematical," erred on the side of strictness.—I am, etc.,

Gloucester, March 17th. W. ARNOTT DICKSON.

DISADVANTAGES OF SANATORIUM TREATMENT IN WINTER.

SIR,—Dr. Arnott Dickson (*Journal*, March 1st, p. 376) draws from a deep well of experience in writing of tuberculosis. I wish he had given us one more bucketful and told us of the futility, sometimes even cruelty, of submitting advanced but chronic patients to the winter conditions of a sanatorium as usually arranged. Three factors cause the evil to continue: (1) Lack of other accommodation of a more suitable type. (2) The urgent need to "do something" for patients found in overcrowded homes, or with inadequate care available. (3) The pathetic trust of the average patient that the "doctors know best" and that his part is to "stick it." He realizes also that the assets of good food, good care, and good fellowship go far to counteract the discomfort.

Two solutions of the problem are possible. Central heating should be installed, in a part at least, of every sanatorium. (The whole of the institution which Dr. Dickson controls has been heated.) Some of the Poor Law infirmaries that will be available shortly for local authorities should be utilized as tuberculosis "hospitals" for chronic cases. To achieve reform, however, there must be a more general realization that the present system is not desirable.—I am, etc.,

Peppard Common, Oxon., March 11th. ESTHER CARLING.

OPERATIVE DEATH RATES AND PROFESSIONAL OPINION.

SIR,—A perusal of Sir John Thomson-Walker's admirable third Lettsomian Lecture, in which he shows that the general operative mortality of prostatectomy is just on 20 per cent., has set me wondering how it is that a death rate as high as this should be accepted by the profession with relative equanimity when a similar death rate in the case of Wertheim's operation for cancer of the cervix evoked much adverse criticism. It is the more puzzling because prostatectomy is carried out for a disease not necessarily fatal to life if unoperated upon, whereas Wertheim's operation is performed for a disease the mortality of which, untreated, is cent. per cent. It is true that death rates much lower than 20 per cent. have been recorded for both operations—for instance, that of St. Peter's Hospital, London, of 9.9 per cent. for prostatectomy, and my recent figure of 8.1 per cent. for Wertheim's operation—but these do not affect the question I raise.

It may be argued that prostatectomy cures those whom it does not kill, or a large proportion of them, whereas Wertheim's operation only cures (meaning by that five years' survival) 50 per cent. of those recovering from the operation, but I think the real explanation of the different attitude that obtains towards these two operations lies in the fact that one is carried out on men and the other on women, and that sentiment therefore weights one scale. I am very far from complaining of this, but it is interesting to speculate whether the scales would be weighted differently if women instead of men made up the bulk of the profession.—I am, etc.,

London, W.1, March 15th. VICTOR BONNEY.

RETROGRADE NEEDLING.

SIR,—Dr. Pridie in his article on March 1st (p. 389) indicates several points in radium technique which are not sufficiently appreciated. The ease with which radium needles can be inserted into the tongue through the floor of the mouth makes one wonder that this method of *approach, especially for cancers at the base of the tongue*, is not more commonly employed. In the *Medical Press and Circular* of December 8th, 1915, I described "direct needling" of the tongue by this route. The length of my platinum needles is varied by screwing extension pieces into the radium-containing barrel; different areas are radiated by pulling out the elongated needles, which are marked in centimetres, and shortening them as required. I bury threaded short radium or radon tubes and needles with the aid of a trocar, cannula, and ramrod. Radiating several areas by one insertion of a needle, besides being economical, is less severe on the patient.—I am, etc.,

Dublin, March 16th. WALTER C. STEVENSON.

OPERATION FOR VISCEROPTOSIS.

SIR,—Mr. W. H. Carson's paper on indigestion from the surgeon's standpoint (March 8th, p. 429) was interesting, but I would like to ask him a question with regard to his statement that "visceroptosis is not a disorder likely to benefit from surgery." Has Mr. Carson personally performed the "anchoring operations" which he condemns? If so, has he followed up his cases over a considerable period? If he has, it would be interesting to see his figures; if he has not, one cannot think that he is justified in his statement.

There is a prejudice against anchoring operations, no doubt because many types of operation are not successful; but my experience, and that of others, is that Waugh's operation performed conscientiously gives good results. Carslaw's article in the *British Journal of Surgery* of April, 1928, gives results over a period of seven years which are eminently satisfactory. The statement that these operations are of no use seems founded more on tradition than on scientific investigation of the facts.

Mr. Carson also takes the common course of blaming the patient for undergoing a series of operations. Surely the people who perform the operations are more to be blamed! Either the patient is a genuine neurotic and should never have been operated upon—a rare type, I

venture to suggest—or the right operation has not been performed, and the patient still seeks relief from symptoms from which she genuinely suffers. Anyone who takes up the question of visceroptosis from the surgical standpoint seriously will have patients of this type, whom an appropriate fixation operation has cured, both of physical and of mental symptoms.

I shall probably be asked for my figures, but I do not consider two years justifies publishing them as yet. My results, however, have compelled me to continue operating for visceroptosis, and I continue to have cases referred to me for operation by the general practitioner, who is in a very fair position to judge of results.—I am, etc.,

Southsea, March 10th. O. STANLEY HILLMAN.

ANAESTHETICS FOR SHORT OPERATIONS.

SIR,—I think most anaesthetists will endorse the opinions expressed by Dr. Rawdon Smith in the *Journal* of March 8th (p. 467). My personal experience of chloroform in dental extraction, especially when given in the semi-upright position, has been most unfavourable. On one occasion the patient collapsed from heart failure and had to be laid flat on the floor. I have seen the same thing in operations for circumcision, and well remember a narrow escape from a tragedy by holding the infant by the feet with the head downwards. As far as my observation goes no one in the present correspondence has mentioned as an anaesthetic chloroform and ether in equal parts. It will be found an ideal one; children take it well and it is easily administered by the open method on a Schimmelbusch mask.—I am, etc.,

King's Tamerton, Plymouth, March 12th. H. W. WEDDER.

OESOPHAGEAL OBSTRUCTION IN CHILDHOOD.

SIR,—In the *British Medical Journal* of March 8th (p. 467) there appeared a letter from Dr. Beatty criticizing an article by Dr. Ogilvie and myself in a recent number of the *Archives of Disease in Childhood* (1929, vol. 4, No. 24, p. 347); I should be glad if you would give me an opportunity of replying in your columns to his criticism.

In gathering together the clinical data of 12 children who had obstruction of the oesophagus, it was found that the symptoms and signs were remarkably similar. In 10 cases the similarity was further enhanced by the *x*-ray appearances, which showed that the obstruction was situated at the junction of the middle and lower thirds of the oesophagus, opposite the level of the seventh thoracic vertebra. In the other two cases the obstruction was at the level of the diaphragm. The clinical picture was sufficiently uniform to suggest that a common pathological process accounted for these cases. Post-mortem evidence was available in 4 instances, in 3 of which death occurred during the height of the symptoms. In 1 the oesophagus showed narrowing without fibrosis at the level of the diaphragm, and in the other 2 there was a fibrous constriction in the oesophagus; in the fourth child, who had been free from symptoms for a year before death, and who died from a different condition, the oesophagus was found to be normal.

In searching for an explanation of these cases we suggested that the original defect in the oesophagus was one of inadequate growth, which could right itself in time by the growth of the parts, provided that the level of narrowing was not injured in some way, such as by the passage of bougies. Surely if this explanation was correct one would expect the oesophagus to appear normal a year after the cessation of all symptoms—as happened in Case 10. In our paper we confessed to the difficulty of placing these cases on one pathological basis, and admitted that it was possible that more than one morbid process was concerned. Dr. Beatty regards "spasm" as a more likely explanation of Case 10, and of some of the other cases. The same happy thought occurred to us when we wrote "the possibility of an element of spasm in several cases is suggested by the variability of the symptoms" (p. 360), although we regarded the spasm as a secondary element.

I am sorry that Dr. Beatty should have gathered that we had formed the opinion that non-organic obstruction of the oesophagus could not occur in infancy; our last remark before the summary of our paper was that "spasmodic contraction of the cardiac sphincter does occasionally occur in infants" (p. 364).

With regard to the diagnosis of congenital stenosis of the oesophagus, I am in complete agreement with Dr. Beatty about the value to be placed upon a skilful oesophagoscopy, and this is clearly stated in our article (p. 361). His alternative method of reaching the diagnosis by waiting to see what turns up at the post-mortem examination is of such doubtful value to the child that I cannot regret we failed to mention it.—I am, etc.,

London, W.1, March 11th. WILFRID SHELDON.

EFFECTS OF PROLONGED ADMINISTRATION OF LIQUID PARAFFIN.

SIR,—I am much interested in the note by "P. C. F." (March 8th, p. 478) with regard to liquid paraffin. I have many times noticed that the prolonged administration of liquid paraffin results in lack of growth, and even loss of weight, without the slightest tendency to improve the constipation. The following case illustrates the effect on the adult.

I was consulted during a ten months' voyage by an officer of the ship, who complained of loss of weight and of being thin. On inquiry, I found that he had been taking liquid paraffin for about four years for the treatment of constipation. He had become a slave to the drug, but his constipation was becoming more and more stubborn. He was of exceedingly spare build, and was becoming thinner. His appetite was very good, and he used to eat twice as much as anyone else. The urine was consistently normal. With the greatest difficulty I persuaded him to give up the paraffin and take some other aperient, such as phenolphthalein. After a week or so his appetite became less voracious, and he began to gain weight, and at the end of the voyage, four months later, had regained much of his former build.

I came to the conclusion that the patient had been the subject of self-starvation, due to the effect, as your correspondent suggests, of a film of oil always coating the mucous coat of the small intestine, thus preventing the proper assimilation of food. In this country millions of gallons of liquid paraffin are prescribed every year, and one wonders how far this fashionable aperient has been responsible for effects as described above.—I am, etc.,

Sedbergh, March 8th. THOMAS W. ROTHWELL, M.B. Ch.B.

SIR,—The use of liquid paraffin as a therapeutic agent is widespread, and it is generally believed that its action is purely mechanical and that none of it is absorbed. It is interesting, therefore, to note that Channon and Collinson[1] have found that, when the substance is administered to rats or to pigs, a certain quantity of it can be shown to accumulate in the liver. The proportion thus absorbed is small, but that any suffers this fate is contrary to the general belief. The authors also produce evidence that ordinary liquid paraffin is a mixture, not of purely aliphatic compounds, but of naphthenes (polycyclic compounds).—I am, etc.,

March 17th. E. H.

"A REACTIONARY DOCUMENT."

SIR,—The medical profession, as is perhaps natural, seems to be much less aware than the legal profession that the Local Government Act of 1929 left the Minister of Health an altogether inordinate degree of power, and the protest in your leader of March 8th (p. 453) indicates that the Minister has not been dilatory in using that power. It is unfortunate that the general public takes less and less notice of the proceedings in Parliament, for the natural consequence is that legislation is pressed through Parliament without incurring the useful check of public opinion.

There is less excuse for the belated discovery of the autocracy conferred upon the Minister by that Act, in that a statement was categorically made, during the debate on the bill in the House of Lords, by Lord Onslow, who was in charge of it for the Government, that "the power which the Minister would have is a greater power than ever was given to a Minister before," and the Lord Chief Justice, in his book *The New Despotism*, has made a very detailed and clear analysis of the position resulting from the Act, which he cites as one of the most glaring modern instances

[1] *Biochem. Journ.*, xxiii, p. 675.

of "administrative lawlessness." Power given to a department to make Orders modifying the provisions of an Act of Parliament really ultimately nullifies the authority of Parliament, as Lord Hewart points out, and various efforts were made during the passage of the bill to restrict this power. These efforts were unavailing; that power remains intact, and is now being exercised by the Minister. Lord Hewart closes his analysis with the following very pertinent observation:

"It may be observed that the *Times*, in a leading article in its issue dated February 16th, 1923, said, with reference to this clause enabling the Minister by Order to modify the provisions of the statute: 'The true precedents, it has been pointed out, must be sought further back than 1888. They are the pretensions to the dispensing powers under the Stuarts and the Statute—obsequiously passed by both Houses—which declared that anything enacted by King Henry VIII or Order in Council should have the force of law.'"

It is perhaps a little inconsistent for the medical profession, and for the *British Medical Journal* in particular, which has for so long acquiesced in the autocratic departmental control exercised under the Insurance Acts, to protest against a further extension of departmental control now promised by the Local Government Act, to the passage of which, with the menacing clause (Section 130), no organized opposition by the medical profession was made. As we sow, so shall we reap.—I am, etc.,

E. GRAHAM LITTLE.

House of Commons, March 11th.

*** The Order in question is not made under Section 130 of the Local Government Act, 1929, or under that Act at all. It is made under the Poor Law Act. Though the section named by Dr. Graham Little has nothing to do with this matter, its existence is not a belated discovery of the British Medical Association. The section was noted immediately on the introduction of the bill, and so far from efforts to restrict the power of the Minister under it being unavailing, the Association was not without influence in securing its substantial modification. However undesirable it may be to give to a Minister power to modify any Act of Parliament, there is no doubt that the issue of Regulations under many such Acts, and in accordance with their provisions, is an administrative necessity. The objection in the instance under discussion is not to the making of an Order, but to the character and terms of the Order actually proposed to be made. Though the Regulations contained in it purport to be merely a consolidation of Orders already in force, they will, in fact, re-emphasize and give a new sanction to methods of Poor Law administration, some of which are happily already obsolete or obsolescent, and obscure the opportunities for reform which should be open to the Poor Law Authorities from April 1st next.

ANAESTHETICS IN MIDWIFERY.

SIR,—As it is my appeal to which Dr. F. M. Rowland refers in your issue of March 1st (p. 414) I hope you will allow me the opportunity of a reply.

The whole of Dr. Rowland's letter seeks to perpetuate the fallacy that an anaesthetic is already given in every case when it is necessary. But the words "when necessary" reveal the weakness of his case. Extensive inquiries in maternity hospitals and other institutions have convinced me that all too often "when necessary" is almost synonymous with the need for a surgical operation. Long before this position is reached, the patient has undergone a degree of suffering which would not be tolerated for one instant in connexion with any operation not associated with childbirth. Most hospitals and institutions are ready and anxious to give an anaesthetic in every case in order to avoid shock; but the burden of their expenses is too heavy to permit the engagement of a resident anaesthetist. Since my fund has been started three London maternity hospitals have made applications for grants so that they may be enabled to give relief from suffering to still more patients than they do at present. If an anaesthetic is already administered in every case where it is necessary, why should these hospitals be so eager to secure the services of additional anaesthetists?

Dr. Rowland's statements would be more closely "in accordance with fact or practice" if every woman was, or could be, attended by a doctor at the birth of her child. A very large proportion of poor women are attended by midwives, who cannot administer an anaesthetic, and who summon a doctor only when complications arise to make his aid necessary. Does Dr. Rowland really believe that a midwife in ordinary practice in town or country can have a skilled anaesthetist at her call at a moment's notice under the provisions of the Midwives Act? No attempt is made—except in what is understood by Dr. Rowland as "when necessary" cases—to use anaesthetics generally, and until the social conscience is awakened to the need of developing our maternity services vast numbers of poor women must continue to suffer, whilst their wealthier sisters are enabled to purchase alleviation. It is to do away with this inequality that the appeal has been issued.—I am, etc.,

LUCY BALDWIN.

London, W.1, March 14th.

MARGARET MACDOWALL.

SIR,—Many of us feel that the death of Miss Margaret Macdowall must not pass without some reference being made to the valuable work that she has done. She was one of the pioneer workers in the care of mentally defective children in this country. Her intuitive understanding of their needs was remarkable. Her success did not lie in any formulated system, but rather in finding out the special requirements of each child so that it might be helped to get the best out of its limited mental capacity. Great insight, infinite patience, and an untiring devotion were the qualities which gave her work its intensely human value. In addition to her sympathetic care and training of these defective children, she had the gift of inspiring others and of imparting her outlook, and thus the unobtrusive work that she carried on for many years at Ealing, and later at Burgess Hill, has led to others following in her footsteps and developing her methods.—I am, etc.,

MAURICE CRAIG.

London, N.W.1, March 15th.

H. O. THOMAS'S LITERARY STYLE.

SIR,—In your editorial on Hugh Owen Thomas (March 1st, p. 406) you state that "he had not an attractive literary style." On reading this I went straight to my bookcase, took out the nearest of Thomas's books, opened it haphazard, and read the following:[1]

"Mr. Whiteside, now residing at the corner of Hawthorne-road and Benedict-street, while engaged in a bakery, dislocated his shoulder. He went immediately after the accident to a public hospital, where, while he was under an anaesthetic, the house surgeon attempted to reduce the displacement but failed. On the following day he repeated his visit, and was under the influence of an anaesthetic for six hours, while several of the honorary staff surgeons were superintending and assisting at attempts at reduction, but with no success. After this the patient remained contented for six weeks, when he decided to seek for aid from a popular practitioner in Manchester, but on his way to the railway station he altered his intention and came and consulted me. Stipulating that he should first procure me a photograph of the part, I promised that an attempt at reduction would be made by me, which was fulfilled next day. The dislocation was reduced in twenty minutes."

If this is not attractive, what is?—I am, etc.,

PAUL BERNARD ROTH.

London, W.1, March 5th.

[1] *Contributions to Surgery and Medicine*. Part III, December, 1837, p. 63.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on March 14th the following medical degrees were conferred:

M.B., B.CHIR.—*R. M. Windeyer, T. N. Parish.

* By proxy.

UNIVERSITY OF LONDON.

REGULATIONS for the academic diploma in clinical pathology have been approved and can be obtained on application to the Academic Registrar.

The Chancellor has reappointed Professor Rushton Parker to be his representative on the Court of Governors of the University of Liverpool for a further period of three years. Professor William Wright and Mr. W. G. Spencer have been appointed governors of East London College and Westminster Hospital Medical School respectively. Mr. G. J. Jenkins has been appointed an external examiner in oto-rhino-laryngology for 1930.

An interim grant of £75 has been made out of the Thomas Smythe Hughes Medical Research Fund to Kathleen Edith

Chevassut for the continuation of her research on the etiology and treatment of disseminated sclerosis, which is being carried out at Westminster Hospital.

Applications for grants from the Thomas Smythe Hughes and Beaverbrook Medical Research Funds must be sent in between May 1st and June 15th, 1930, accompanied by the names and addresses of not more than two persons to whom reference may be made. The grants are allocated annually for the purpose of assisting original medical research. Full particulars may be obtained on application to the Academic Registrar.

UNIVERSITY OF LIVERPOOL.

At a congregation to be held on June 5th the honorary degree of D.Sc. will be conferred on Dr. George Barger, F.R.S., Professor of Chemistry in relation to Medicine in the University of Edinburgh.

UNIVERSITY OF EDINBURGH.

Among the honorary degrees which the University proposes to confer are the LL.D. on Sir Thomas Barlow, Bt., Physician-Extraordinary to the King and consulting physician to University College Hospital; Sir David Wallace, F.R.C.S.Ed., consulting surgeon to the Royal Infirmary, Edinburgh; Dr. K. F. Wenckebach, F.R.C.P., Emeritus Professor of Clinical Medicine in the University of Vienna; and Sir William B. Hardy, F.R.S., Director of Food Investigation, Department of Scientific and Industrial Research.

NATIONAL UNIVERSITY OF IRELAND.

The Senate met on March 13th.

A resolution of condolence was adopted on the death of Dr. Maurice R. J. Hayes, Professor of Materia Medica and Therapeutics in University College, Dublin.

The Senate, having considered the reports of the examiners upon the published works submitted to them, decided that the degree of M.D. should be conferred on E. J. Keenan and S. A. McSwiney.

The following appointments were made: Professor Thomas Walsh was appointed to represent the University at the sixteenth annual conference of the National Association for the Prevention of Tuberculosis, to be held in London in July, and Dr. Denis J. Coffey was appointed to represent the University at the jubilee celebrations of the University of Manchester in May.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

An ordinary Council meeting of the Royal College of Surgeons was held on March 13th, when the President, Lord Moynihan, was in the chair.

The congratulations of the Council were given to Lord Moynihan on the presentation to him by H.M. King Fuad of the Grand Cordon of the Order of the Nile.

Professor G. Elliot Smith attended and was presented by the President with the honorary Gold Medal of the College, with a document declaratory of its award, in appreciation of his services to the Museum, more especially in preparing a descriptive catalogue of the vertebrate brains and in securing for the College the valuable Nubian collection of pathological specimens from Egypt.

Licences in Dental Surgery were granted to 34 candidates.

Diplomas in Ophthalmic Medicine and Surgery were granted, jointly with the Royal College of Physicians, to 16 candidates.

Mr. Fagge was appointed as representative to serve upon a subcommittee of the People's League of Health to consider the subject of "The cause and eradication of bovine tuberculosis" and the desirability of holding an international conference thereon.

The Services.

HONORARY SURGEON TO THE KING.

Group Captain Henry Cooper, principal medical officer for the Air Defences of Great Britain, has been appointed an Honorary Surgeon to the King, in succession to Air Vice-Marshal David Munro, C.B., C.I.E.

ROYAL NAVY MEDICAL CLUB.

The annual dinner of the Royal Navy Medical Club will take place at the Trocadero Restaurant, Piccadilly Circus, on Thursday, April 24th, at 7.30 for 8 p.m. Members who wish to be present are asked to inform the honorary secretary, Royal Navy Medical Club, Queen Anne's Chambers, Tothill Street, S.W.1, not later than seven clear days before that date.

DEATHS IN THE SERVICES.

Lieut.-Colonel Hugh Latimer Donovan, R.A.M.C. (ret.), died at South Yardley, Birmingham, on February 28th, aged 74. He was born on July 30th, 1855, was educated at Queen's College, Cork, and graduated as M.D. and M.Ch. in the Royal University of Ireland in 1877. Entering the army as surgeon on February 3rd, 1878, he became surgeon lieutenant-colonel after twenty years' service, and retired on February 23rd, 1898. He was employed for some time after his retirement at Warwick. He served in the Egyptian war of 1882, receiving the medal and the Khedive's bronze star; and in the Sudan campaign of 1885, when he was present at the action of Tofrek, was mentioned in dispatches in the *London Gazette* of August 25th, 1885, and gained two clasps to his medal. He rejoined for service in the war of 1914-18, when he served for some time in the Western Command.

Obituary.

H. W. ARMIT, M.R.C.S., L.R.C.P.,

Editor, Medical Journal of Australia.

Members of the British Medical Association in this country who knew Dr. Armit before he went to Sydney seventeen years ago to become Editor of the *Medical Journal of Australia* will regret to hear of his death, on March 12th, after a brief illness.

Henry William Armit, younger son of William Armit, sometime secretary of the Hudson's Bay Company, was born in 1871, and studied medicine at St. Bartholomew's Hospital, obtaining the M.R.C.S., L.R.C.P. diploma in 1894. With a good working knowledge of several modern languages he combined an interest in scientific research, and, in the intervals of practice in the North-West of London, he found time to translate Ehrlich and Lazarus's *Anaemia* and von Schrötter's *Hygiene of the Lung in Health and Disease*. He also attended a number of medical congresses on the Continent, and supplied reports of their proceedings to the *British Medical Journal*. In this capacity he visited Paris, Berlin, Lisbon, and Budapest. Between 1904 and his departure from England Dr. Armit held a number of local offices in the British Medical Association and took an active part in professional politics. For five years he represented the Hampstead Division in the Representative Body, and became chairman of that Division in 1910, having previously acted as assistant honorary secretary and vice-chairman. He was a member of the Metropolitan Counties Branch Council from 1907 to 1911, and vice-president of the Branch in 1909, and he had served on more than one central committee.

In 1913 a decision of great importance was taken by the Federal Committee of the Australian Branches of the British Medical Association. At that time two medical journals were already in existence in the Commonwealth, each with vested interests. It was decided to form a company with limited liability to acquire the interests of these two periodicals, and to found a weekly journal for the whole of Australia, to be called the *Medical Journal of Australia*, incorporating the *Australasian Medical Gazette* and the *Australian Medical Journal*. In accordance with this decision Dr. Armit was invited to become whole-time Editor, with offices in Sydney, and the first issue of the new periodical appeared under his direction on July 4th, 1914. Armit shouldered this heavy task in unaccustomed surroundings with characteristic energy and resource. He was a man of great industry and pertinacity, and the *Medical Journal of Australia* made steady progress. Many difficulties which presented themselves, both during the war and after, were gradually overcome, and in this the constant help of Dr. R. H. Todd was invaluable.

In his editorial work Armit was most painstaking, and he acquired at first hand a thorough knowledge of all the technical details of the printing office and the publishing department. His acquaintance with foreign medical literature, and his belief in the importance of keeping the Australian profession abreast of new work in other countries, found practical expression in his pages, and more particularly in the summaries of articles in contemporary journals, which almost from the beginning have been a feature of the *Medical Journal of Australia*.

J. W. L. SPENCE, L.R.C.P.and S.Ed., L.R.F.P.S.,

Medical Officer in Charge of the Electrical Department, Royal Hospital for Sick Children, Edinburgh.

The death took place on March 15th, at his residence at Palmerston Place, Edinburgh, of Dr. J. W. L. Spence, at the age of 58. Well known as a radiologist in that city, and as one of the pioneers of radiology in the Edinburgh Medical School, he had for many years been suffering from the effects produced by *x* rays at an early stage of his employment of this diagnostic means, and for some months his state of health had been very serious.

John Webster Lowson Spence was born at Smyrna in 1871, the son of a well-known missionary, and lived afterwards at Constantinople. After studying medicine at Edinburgh, he took the Triple Qualification in 1893, and

thereafter held a resident post in the Deaconess Hospital, Edinburgh. While conducting a general practice on the north side of the city he began to devote himself to what was then a new subject—medical electricity and radiology; he had been associated with Wilhelm Röntgen since 1897. The electrical department had been established in the Royal Infirmary of Edinburgh in 1896 under the late Dr. R. Milne Murray; he was succeeded in 1901 by Dr. Dawson Turner, who had already taken up the newly introduced diagnostic means of the *x* rays. Dr. Spence almost at once became his clinical assistant, and in 1907 he was placed in charge of the electrical and radiological department of the Royal Edinburgh Hospital for Sick Children. This post he retained for a period of twenty-two years, until his resignation at the end of last year. He also acted for many years as radiologist to Leith Hospital and to the Church of Scotland Deaconess Hospital, as well as, for a shorter period, to the Craigleith War Pensions Hospital. During the early days of the use of *x* rays, when Dr. Spence rendered most valuable service as a pioneer, the necessity of protection was little understood; at this time he suffered from *x*-ray dermatitis, which progressed seriously in later years. About 1908 his hands began to suffer severely, and in 1910 it was necessary to remove a finger of the right hand. The spreading destruction and ulceration involved a series of operations, till, in 1916, it became necessary to amputate his right arm near the shoulder. Despite this disability, he continued full work as a radiologist, to which he had now entirely devoted himself both in hospital and in private practice. In the last five years the left hand had also suffered serious damage, and his general health was greatly deteriorated, so that for some months past he had been confined to bed; it recently became necessary to remove the greater part of the remaining hand. For his services in *x*-ray work Dr. Spence was, in 1922, awarded a bronze medal and an annuity by the Carnegie Hero Fund Trustees.

Dr. Spence made numerous contributions to the literature of his specialty, including "A review of medical electricity" contributed to the *Edinburgh Medical Journal* in 1903, "*X* rays in the treatment of pyorrhœa alveolaris" in the *Montreal Medical Journal* of the same year, and "A unique case of congenital scoliosis" published in the *Archives of Pediatrics* in 1913. He was peculiarly skilful in the management of patients who were sometimes nervous in the unusual surroundings of a radiological examination, and this applied particularly to his work among children, with whom he was a universal favourite. His brightness and cheerfulness made him a welcome entertainer at the Christmas celebrations of the Sick Children's Hospital and Deaconess Hospital, in which he regularly took part. His courageous personality, as well as his radiological skill, will be greatly missed in Edinburgh medical circles.

The death of Dr. SIMSON CARSTAIRS FOWLER of Juniper Green, Midlothian, on February 8th, brought sorrow to a wide circle of friends. He had undergone an operation in the spring of 1929, but had quite recovered from it, and was in excellent health until two days before the end. He was born in Calcutta on December 26th, 1857. His father was a sea captain—both he and his wife came originally from Fife—and often took his family with him on his voyages. They stayed in Calcutta till 1863, when they returned to the family home in Scotland. After schooldays in Edinburgh Simson Fowler was with the Scottish Union and National Insurance Company, where he did well. But his heart was not in that type of work and he insisted on going into medicine at the University, where he graduated in 1887. After study in Berlin and Vienna, he went as assistant to the late Dr. Wallace in Cardiff for two years, but longed for Scotland. He was for a short time with the late Dr. Dow in Dunfermline, but when the practice of the late Dr. Gordon in Juniper Green became vacant he bought it in 1890, and had lived there ever since. Professor Lovell Gulland writes: "Happy is the nation that has no history," and happy is the doctor who spends all his working life among his own people, becoming year by year more indispensable to them and more beloved by them, who sees "his babies" growing up, marrying, and founding families of their own, who becomes an institution of the place, as weel kent as the kirk, trusted and honoured by everyone. In such a life there are few outward events to chronicle. It is a quiet influence for good which sweetens the life of the whole community and furnishes a priceless example of duty done quietly and ungrudgingly. We recognize gratefully that there are many doctors of this type in Scotland, but Fowler was an outstanding example. Not only had he charge of a large practice, which in later years he shared with Dr. Sellar, but he was medical officer of Colinton parish, and doctor to many of the charitable institutions in the neighbourhood. During the war he was in charge of the Red Cross Hospital at Kingsknowe, and he was for some time chairman of the Panel Committee of Midlothian, and was greatly interested in that and every other form of medical public work. He was a first-rate doctor, kept himself well abreast of all new things, and had the faculty of discerning what was good in the new. As happy in attending a poor widow for nothing as in the homes of the well-to-do, he was equally trusted and welcomed by all classes.

We record with regret the death, on March 1st, at the age of 54, of Dr. J. DONALDSON, who for the last thirty years has been well known in Middlesbrough. James Donaldson, who was born in Lanarkshire, received his medical education at Edinburgh, where he graduated M.B., Ch.B. in 1898. After holding the post of assistant surgeon to the Northampton General Infirmary he was for three years house-surgeon at the North Riding Infirmary, and then commenced general practice in Middlesbrough. Soon afterwards he was appointed surgeon to the North Riding Infirmary, and became honorary consulting surgeon to that institution a year or two ago. He was chairman of the Cleveland Division of the British Medical Association from 1922 to 1923. During the war he held a commission in the R.A.M.C., and served in France and Italy. A colleague writes: By the death of James Donaldson the Cleveland Division, and, in particular, the medical profession in Middlesbrough, loses one of its stalwarts. Donaldson was a keen B.M.A. man. He became a member soon after graduating, and he served his Division with faithfulness and zeal. It was not long before he was secretary, and his appointment as chairman was only delayed on account of his war service. He was a member of the Executive Committee of the Division and of the Council of the North of England Branch for many years. In addition, he was the first secretary of the Middlesbrough Panel Committee, afterwards becoming its chairman. He also served on the Executive Committee of the Middlesbrough Public Medical Service from its inception in 1912, and was chairman of this organization for two years. His colleagues will miss him sorely. Donaldson was an enthusiastic Freemason. He was a Past Master of the Ferrum Lodge and P.Z. of the Ferrum Royal Arch Chapter. He had received high provincial Masonic honours, of which he was very proud. The North Riding Infirmary benefited for a long period of years from his zealous and untiring services. He loved his hospital, and gave to it ungrudgingly of his best as honorary surgeon. Donaldson's death will be greatly deplored by a large circle of friends in all walks of life.

Dr. GEORGE MURPHY, who died on February 26th, at the age of 80, was the oldest member of the medical profession in Carlisle. He went to the Cumberland Infirmary as a pupil in 1868, being primarily concerned with the out-patients, though on occasion he was left in sole charge of the hospital. He completed his student career at Queen's College, Birmingham, and obtained the diploma M.R.C.S.Eng. in 1873, and the L.R.C.P.Ed. in the following year. After a short period of practice at Wednesbury he returned to Carlisle, where he built up an extensive connexion, taking particular interest in midwifery cases. For many years he was medical officer for the Stanwix district of the Carlisle Union, and public vaccination officer. He was also medical officer to the Carlisle Foresters and the lodge of Oddfellows. Dr. Murphy was a member of the British Medical Association, and served on the local general committee when the Annual Meeting was held at Carlisle in 1896. During the war he acted as anaesthetist at various war hospitals in the district.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

IN the House of Commons this week the Navy Estimates were introduced and discussed. References were made to the shortage of medical officers. Progress was made with the Coal Mines Bill in committee. The Mental Treatment Bill, Road Traffic Bill, and Canals Bill were before standing committees. The last has been considerably amended.

On March 18th the Conservative Parliamentary Agricultural Committee decided to press the Minister of Health to withdraw the Order prohibiting the exhibition of cattle yielding "certified" and "Grade A" (T.T.) milk.

The report of the departmental committee on the Poisons and Pharmacy Acts was presented to the House and published. This incorporates a draft bill, but the Home Office does not expect to introduce legislation on the subject in the current session.

Dr. Fremantle gave notice of his intention to ask the Minister of Health, on March 20th, if he would introduce a short indemnifying bill to exempt present sitting medical members of county and county borough councils from their disabilities to act as from April 1st next during the remainder of their present period of office, pending the reconsideration or reorganization of the methods of payment to medical practitioners for minor medical services rendered on behalf of local authorities in the course of their private practice. Dr. Fremantle further wished to ask the Minister of Health if he was aware that in rural parts of the country generally, and particularly in such rural counties as the county of Huntingdon, all practising medical practitioners were rendered ineligible for service as members of county councils by the provisions of the Local Government Act, 1929, and that therefore such councils as desire to have medical members, whether co-opted or elected, for their public health, maternity and child welfare, and midwives Acts, mental deficiency, and other committees were unable to obtain them.

The Reservoirs (Safety Provisions Bills) and the Performing Animals (Regulation Amendment Bill) were read a second time by the House of Lords on March 13th. On March 14th a Protection of Animals Bill, introduced by Mr. Foot, was read a second time in the House of Commons. Its purpose is restricted to the prohibition of rabbit coursing and the hunting of the carted stag. An Unlawful User of Vehicles Bill, to provide penalties for the unauthorized use of motor cars without intention to steal, was ruled out of order, on March 14th, by the Speaker, on the ground that the subject is already covered by a clause in the Road Traffic Bill.

Mental Treatment Bill.

COMMITTEE STAGE CONTINUED.

Discussion of Clause 5 of the Mental Treatment Bill was resumed by a Standing Committee of the House of Commons on March 13th. Mr. GREENWOOD resisted an amendment moved by Sir Basil Peto, that persons received for temporary treatment but unable to express a desire for it might be received in institutions approved by the Minister of Health and not containing certified patients. Mr. Greenwood said the Royal Commission had reported strongly against putting this matter into the hands of the Minister instead of into those of the Board of Control. It could not be done without overhauling the whole of the lunacy laws.

The amendment was negatived. So was an amendment in which Mr. Kinley proposed that any application for the treatment of a person under Clause 5 must state in distinctive type that the patient may, on the report of a Commissioner, be certified and removed to a lunatic asylum.

Mr. Greenwood accepted an amendment, moved by Dr. Fremantle, that application for the treatment of patients incapable of expressing their desires should be made to the person in charge. Answering arguments from Dr. Morris-Jones, Mr. GREENWOOD moved to add at the end of the subsection dealing with applications the words:

"Provided that in the case of a person who is to be received into a licensed house or a nursing home, or into charge as a single patient, the recommendation shall not be signed by the person in charge, or by any person in the employment of the person in charge, or by any person interested in the house or home, or by any person in the employment of any person so interested."

He said that in public institutions the doctor could have no pecuniary interest, and the point did not arise.

On the motion of Sir BOYD MERRIMAN, the committee made an amendment providing that each of the medical practitioners making a recommendation under Clause 5 should state the grounds on which he based his recommendation.

By 18 votes to 10 the committee defeated an amendment by Mr. RICHARD RUSSELL, which proposed that the Board of Control should, on the signed request of the patient, furnish to him or his authorized representative free of cost a copy of the application on which he was received and of the recommendation accompanying the application.

Drafting and consequential amendments were made to the subsections which followed.

Mr. KINLEY moved to omit Subsection (14), which empowers the Board to order the release of a person detained under Clause 5, or alternatively his treatment under the Lunacy Act as a person of unsound mind. The amendment was negatived. On the motion of Mr. GREENWOOD the committee added at the end of the clause the proviso:

Any approval granted by the Board of Control under this section may be granted subject to such conditions as the Board think proper and may be revoked at any time.

On the motion that Clause 5 stand part of the bill, Dr. FREMANTLE said he had been urged that the detention of these patients should be allowed for two years. In the experimental state of the measures he was content with the section as it stood. As the public acquired confidence in its working there would be a movement to extend the period.

The committee agreed that the clause stand part.

In moving that the committee adjourn, Mr. GREENWOOD said: "I would remind the committee—I am not making special complaints—that this is our sixth meeting, that we have only dealt with five clauses, and there are over twenty clauses in the bill and the schedules. It is very necessary that I should get the committee stage finished at a pretty early date."

Dr. FREMANTLE could not admit that the bill was an agreed one; it required thorough consideration; there was much disagreement about Clauses 6, 7, 11, and 16.

The committee then adjourned.

The Mental Treatment Bill was again considered by the Standing Committee on March 18th. Mr. GREENWOOD moved an amendment to Clause 6 giving power to local authorities, subject to the approval of the Board of Control, to contract for the reception and treatment of temporary patients in any registered hospital, institution, hospital, or nursing home approved by the Board of Control. The amendment was accepted. Mr. Greenwood moved a series of amendments framed after consultation with the County Councils Association with a view to relieving the authorities from the obligation of securing the approval of the Board of Control for administrative schemes. Approval was still to be required for research.

Dr. FREMANTLE said that personally he was not altogether pleased at the removal of the necessity for the Board of Control's approval. Dr. MORRIS-JONES associated himself with Dr. Fremantle.

Mr. GREENWOOD, in reply to questions, made it clear that the approval of the Board of Control was only removed in respect of the questions dealt with in Subsection (3). The approval of buildings remained as at present. The amendments were agreed to.

Clause 6 as amended was added to the bill, and the committee adjourned.

Road Traffic Bill.

On March 11th the Standing Committee on the Road Traffic Bill considered Clause 5 (provisions as to physical fitness of applicants for licences).

Dr. SALTER moved that the applicant should "produce a certificate in the prescribed form showing that he has satisfactorily passed an eyesight test as to visibility and colour." He said he understood the Ministry of Transport intended that when the bill became law every applicant for a licence should make a declaration whether he was suffering from certain physical disabilities. The Ministry of Health had drawn out a form with a long list of specified disabilities. Dr. Salter contended that such a declaration was useless in regard to eyesight. Large numbers of persons suffering from grave visual defects were unaware of these, and could honestly make a declaration that they were capable of driving. Ophthalmic surgeons told him that they had been consulted by people with grave eye trouble, whose first intimation that they had a visual defect was that they met with an accident while driving a car. Dr. Salter contended that four classes of persons should not be permitted to drive on the roads at all. These were people with extreme myopia, people suffering from night-blindness (who were certainly not less than 5 per cent. of the population), people suffering from disease of the eye and central nervous system, whose field of vision was irregular in shape with large blind spots, and the many thousands of people who were totally colour-blind. An authoritative work on diseases of the eye asserted that 3.5 per cent. of men and about 1 per cent. of women were congenitally colour-blind. These persons could not discriminate between the automatic colour signals which the Minister of Transport was encouraging great towns to establish. These were red for "stop," green for "go on," and amber for "about to release." People had already been charged with overrunning the colour signals in Derby and other Northern towns, who pleaded that they were colour-blind. On the railways it had been found that though a man might pass

a colour test, five years later his colour vision might be defective. Therefore it was essential that every time a man applied for a motorist's licence he should submit a medical certificate to the effect that he was not colour-blind. Within the last twelve months in Prussia a compulsory test for colour-blindness had been enforced.

Lord ERSKINE submitted that the words proposed by Dr. Salter were redundant, but added that he understood the disease of colour-blindness was increasing.

Mr. HERBERT MORRISON (Minister of Transport) said Clause 5 laid it down that certain diseases or disabilities would be an absolute bar without appeal to the driving of a motor vehicle. He did not wish to make these bars numerous. In a whole field of diseases or disabilities there was an element of doubt, and the driver should have an opportunity to claim a test. He would regard sight which if corrected by spectacles was still extremely short as an absolute bar to the grant of a driving licence. He could not say whether the limit would be 25 or 50 per cent. of the normal vision, but a standard would be laid down in the form and it would be for the applicant to satisfy himself that his sight reached that standard. It was not proposed that the applicant should produce any form of medical certificate; with great respect to the profession, there would not be complete reliance that medical certificates were always given in strict accordance with the facts, when perhaps a man's employment might depend on the result of this certificate. Nor did he propose the alternative method of maintaining doctors in the public service who would be employed upon these tests. He relied upon the fact that a man who made a false declaration was liable to very severe penalties. In regard to light signals and colour-blindness, a man who was colour-blind could in the daytime see the position of the light and know whether it was the first, second, or third light. The same man would also be able normally to read the word "stop," "go," or "caution." This was not a completely satisfactory assurance, but it was sufficient to warrant the committee in not imposing conditions which would be resented by the trade unions, who were apprehensive about all forms of tests. It might be that Parliament would pass further legislation in the future.

Mr. GEORGE OLIVER said that he was colour-blind, and before coming to the House of Commons was employed by a motor firm. He had driven constantly on the roads. He contended that it was possible for a colour-blind man to notice the change of a road sign from green to red or vice versa, and said that during a long experience on the road he never met with a serious accident.

The amendment was then defeated by 44 votes to 4.

Other amendments designed to ensure that the applicant for a licence should pass a driving test, and alternatively that he should not be disqualified for a disease or physical disability except those to be specified in a schedule issued by the Minister, were all rejected, and Clause 5 was added to the bill with drafting amendments.

Mr. MORRISON announced incidentally that he was in negotiation with ex-service men's organizations concerning the licensing as drivers of men who had lost a leg.

The committee adjourned until March 13th, when further clauses were considered.

The Navy Estimates.

On March 17th the House of Commons considered the Navy Estimates. Mr. ALEXANDER, First Lord of the Admiralty, in moving that the House should go into committee, said the Medical Director-General reported that the health of the fleet personnel for the past twelve months had been very good and no serious epidemics had occurred. Some concern was felt, however, over the difficulty of obtaining an adequate supply of medical officers, in spite of special efforts during the year by the Medical Director-General, and he appealed to medical members of the House to assist in this effort. The provision now made for the welfare of the men was a great factor in maintaining general health and efficiency.

On the vote for personnel, in Committee of Supply, Major Ross said that it appeared that nearly all the stores were being reduced—victualling, clothing, and even medical. The sum provided by the First Lord for the medical stores and surgical appliances had been reduced by some £11,000, and he suggested that Mr. Alexander was not keeping the stocks which had been supplied up to the standard.

Dr. VERNON DAVIES said that the First Lord of the Admiralty, in his original statement to the House, was rather perturbed at the lack of medical men. He was reducing the personnel of the Navy by 2,750, and he had said that he could not understand why the medical services, not only of the Navy, but of the Army, were not more popular. He (Dr. Davies) suggested that probably the terms were not quite good enough, and yet the terms were very good. The First Lord had visualized a time when boys from elementary and secondary schools would pass through the university and into the services of the Crown. They were doing that now in the medical profession, and that was the difficulty that they were up against. If he might say so without offence, medicine was becoming more of a trade and less of a profession. Many of these young men had no money; they had spent all their money on their education. They had become qualified, and were out to do the best they could for themselves. They had several opportunities before them in civil life. A young doctor could set up in a national health insurance panel practice, and there were other openings, but if he went into the Navy, even on the short service system, even though he could go out with a gratuity of £1,000, he had to give three years or five years of his time. He had to go abroad. He dare not get married, because the Admiralty would not give him a pension. On the other hand, those who did not go into the service but stayed at home, could earn as much money; they could get married and have home life. They had before them specialized services, such as tuberculosis service, school medical services, and others, in which they could work for six or seven hours a day on five days of the week, and earn from £600 to £900 a year. With that prospect on shore, why should a young doctor go to sea? He would be very silly to do so unless he had a great love of the sea. The First Lord might make up his mind that the medical services of the Crown would have to be amalgamated. It was no use asking the heads of the separate medical services to agree to such a proposal, because they were not going to commit hara-kiri. The Government would have to make up its mind that when it wanted medical men it was in competition with the great civil medical services of the country, both national and municipal. His suggestion, for what it was worth, was: Would it not be possible to give to men who had served in one or other of the services for five years a preferential claim on all medical appointments under the Crown or in the municipalities? It really was a question of choice between a man who had given five years of his life to the service of the country voluntarily and the man who had stayed at home. When the Government wanted a medical man for the Ministry of Health or any other department, the man who had served his country for five years should have a preferential claim. By offering an inducement like that they would get these young men into the service. Unless they had an efficient medical service they would not get a healthy Navy; if they did not get a healthy Navy they would have an inefficient Navy, and it was the medical men who won the war. There was never a war in all history where there was less sickness and disease, or where more people were cured after being disabled. It was the medical profession, absolutely, which won that war by keeping the men fit. It was no use having the ships unless the men were healthy and fit. He hoped that the First Lord would not be discouraged at the lack of flow into the medical service, but would recognize that there were more tempting offers made outside, and that it was up to his department to see if the service could not be made additionally attractive to these men.

The vote was agreed to.

Silicosis.

Mr. CLYNES, in reply to Mr. Kelly on March 12th, said the only complete figures he could give at present for cases of silicosis in 1929 were those dealt with under compensation schemes for silicosis in the refractories and sandstone industries. Under the refractories scheme there were 18 cases of partial disablement, 1 case of total disablement, and 10 fatal cases. Under the sandstone scheme, which came into force on April 1st, 1929, there were 2 cases of partial disablement, 7 cases of total disablement, and 5 fatal cases. The figures for the industries included under the other two schemes now in force were not yet available, but roughly, 103 cases in these industries, about half of which were fatal, had come to the notice of the department.

Mr. TURNER told Mr. Hopkin, on March 13th, that medical research was being instituted into the whole question of pulmonary disease from silica and other dusts, but he had no information pointing to an increase in the number of cases of silicosis in the anthracite district of South Wales, or any evidence of cases of disablement due to anthracosis.

Cost of Mental Hospitals.—Mr. GREENWOOD told Mr. Kinley, on March 13th, that the expenditure of local authorities in maintaining mental hospitals under the Lunacy Act for the year ended March 31st, 1929, amounted to £7,881,256, exclusive of loan charges. During the same period expenditure in respect of mental defectives borne by the local authorities was £607,301, and by the Exchequer £609,519. Local authorities had provided ninety-nine mental hospitals, fourteen registered hospitals were supported by voluntary contributions, and there were fifty-four institutions under private ownership. The Army and Navy each provided one institution, and there was one criminal asylum. The total number of patients under care amounted to 123,922.

Wells Mental Hospital.—Replying to Mr. Gould, on March 13th, Mr. GREENWOOD said the weekly number of hours worked by the nursing and domestic staff in Wells Mental Hospital was in accordance with the recommendations of the Joint Conciliation Committee of the Mental Hospitals Association and the National Asylum Workers Union—namely, sixty-six hours a week inclusive of meals. There were seventy-five beds in one dormitory of a size which gave 600 cubic feet of space for each occupant. That was unfortunately the best accommodation available at the moment. He would consider making representations through his department for an early change in the sleeping accommodation.

Residential Care of Mental Patients.—Miss LAWRENCE told Dr. Vernon Davies, on March 12th, that 29 out of 1,924 local authorities (or combinations of authorities) had made some provision for the residential care of the mentally defective. The present accommodation was inadequate, and, if the figures estimated by the Departmental Committee on Mental Deficiency were accepted, the shortage of beds was probably not less than 20,000.

Tuberculous Mental Patients.—Answering Dr. Vernon Davies on March 12th, Miss LAWRENCE said there was no organized liaison throughout the country between mental hospitals and tuberculosis officers of county or county boroughs, with a view to the diagnosis of tuberculosis among the patients in these hospitals. Many mental hospitals now received regular visits from consulting physicians and other specialists, and possessed special facilities for the diagnosis of pulmonary tuberculosis, including *x*-ray apparatus.

Lunacy Observation Wards.—Answering Mr. Arthur Richardson, on March 13th, Mr. GREENWOOD said that after the Poor Law guardians had been abolished, the use of lunacy observation wards would depend mainly on the decision of local authorities about the purposes for which the Poor Law infirmaries, of which these wards formed part, should then be used. He added that a provision in the Mental Treatment Bill would facilitate the use of such wards for mental patients.

Psittacosis.—In reply to Mr. Graham White, Mr. GREENWOOD said, on March 13th, that the results obtained concerning the discovery and isolation of the virus of psittacosis at a London hospital had not yet been confirmed, but a great deal of work was in progress, and he hoped for valuable results.

Silicosis.—Mr. CLYNES told Mr. Rennie Smith, on March 6th, that he hoped to present a bill dealing with silicosis before the end of March. The committee appointed by the Medical Research Council would advise on and supervise further investigation of pulmonary silicosis and other pulmonary conditions associated with inhalation of dusts from industrial processes, and in co-operation with the Factory Department, would obtain more accurate knowledge of causes and diagnosis.

Small-pox.—Mr. GREENWOOD told Mr. Freeman, on March 18th, that in 1929 the cases of small-pox notified in England and Wales numbered 10,967. Among those cases 39 deaths occurred which were classified as small-pox. These figures were provisional.

Treatment of Rheumatism.—Mr. GREENWOOD stated, on March 13th, in reply to Mr. Graham White, that until further experience had been gained of the treatment of rheumatism at the new clinic established by the British Red Cross Society and elsewhere, he considered it would be premature to appoint a committee to consider the best means of extending facilities for treatment. He was prepared to give sympathetic consideration to any practicable proposals which might be submitted by local authorities for provision of facilities for treatment. Dr. FREMANTLE suggested that more results would be produced by multiplying the Government grants to medical research. Mr. Greenwood did not reply.

Deaths due to Influenza.—Mr. GREENWOOD said, on March 13th, in reply to Dr. Morris-Jones, that no information was available with regard to the number of cases of influenza among the insured population, but from the Registrar-General's weekly returns it appeared that the number of deaths due to influenza registered in 107 great towns in England and Wales was 5,347 during the first eight weeks of 1929, as against 582 during the same period of 1930.

Experiments on Animals.—Mr. CLYNES, replying to Mr. Freeman on March 17th, said that the contents of certificates under Section 5, Cruelty to Animals Act, 1876, for experiments, were always and necessarily treated as confidential.

Radium.—In reply to Commander Kenworthy, on March 6th, Mr. GREENWOOD stated that the Radium Trust had thought it best, as a primary object, to obtain radium from existing sources, including such supply as was available in this country. Efforts to obtain an independent supply in the Empire and from Cornwall were under consideration. The price paid by the Radium Trust for radium would be made public in the annual report.

Reconstituted Milk and Artificial Cream.—Mr. GREENWOOD told Mr. Everard, on March 6th, that he was aware that at a recent food and cookery exhibition at Olympia reconstituted milk had been supplied to the public. He did not think it necessary to inform food and drug authorities that the sale of reconstituted milk was illegal. Mr. Greenwood further said, in answer to Colonel Ruggles-Brise, on March 6th, that he could not introduce legislation requiring all users of emulsifying machines to disclose the fact that they were supplying artificial cream. The Artificial Cream Act controlled the sale of artificial cream, and provided for the registration of premises where it was manufactured or sold.

Protection Against Gas Attack.—Mr. MACDONALD, on March 17th, in reply to a question, said that in view of the ratification, last year, of the Geneva Gas Protocol of 1925, by most of the important European States, including this country, and of the other international undertakings and agreements for the preservation of peace, the present time was not opportune to press on with plans for protecting the public against gas attack. Considerable preparatory work had been done by the Committee of Imperial Defence on this problem before ratification of the protocol. This work would always be available.

Clinics for Orthopaedic Cases.—Mr. GREENWOOD told Colonel Acland-Troyte, on February 27th, that under Section 14 (1) of the Local Government Act, 1929, county councils would be able to provide clinics for treatment of orthopaedic cases and to provide all necessary appliances. As a rule orthopaedic cases did not require special nourishment as part of treatment. Exceptional cases which did require it should receive treatment in hospital.

Proposed Medical Training School in Tanganyika Territory.—Replying to Mr. Ormsby-Gore on March 5th, Dr. SHIELS said the proposed medical training school in Tanganyika Territory was for further training of African dispensers and sanitary inspectors, and aimed at producing eventually a grade of African sub-assistant surgeons. Miss RATHBONE asked whether it was proposed to train women as medical officers and hospital assistants, in view of the grave scarcity of such trained women in the colony. Dr. SHIELS said he would take the suggestion into consideration.

Increase of Factory Inspecting Staff.—On March 10th Mr. CLYNES informed Mr. Kelly that no addition was made last year to the total strength of the factory inspecting staff. Changes which the Government had decided to make in the strength and organization of the inspectorate included increases, to be spread over five years, in the general inspection staff and the technical branches, which included the medical side. The medical staff would be raised from five to eight, and in the technical branches two medical inspectors would be added.

Medical Officers as Sanitary Inspectors.—Mr. JOHNSTON, replying to Mr. McKinlay, on March 4th, said that his attention had not been called to what that member described as a growing practice in Scotland of appointing medical officers as sanitary inspectors. He could not accept the suggestion that a medical practitioner who was also the holder of a diploma in public health was unqualified for the office of sanitary inspector.

Pension Grants.—Mr. F. O. ROBERTS informed Mr. Womersley, on March 10th, that in the last three months 117 awards had been made in respect of applications for pension grants submitted more than seven years after the men's discharge. In addition, treatment had been provided in 14 cases.

Notes in Brief.

The total amount of reserve funds possessed by approved societies under the National Health Insurance Acts was £115,500,000 on December 31st, 1929.

The total number of men insured under National Health Insurance in the United Kingdom was 9,191,800 in 1912, and 16,307,700 in 1928; of women, 3,845,600 in 1912, and 5,489,900 in 1928.

Miss Lawrence, in reply to a question, stated, on March 11th, that the deaths registered in England and Wales as due to cancer in 1915 numbered 39,847; that each following year showed an increase, the total for 1929 being 56,896.

Medical News.

THE St. Patrick's Day dinner of the Irish Medical Schools' and Graduates' Association was held at the Savoy Hotel, London, on March 17th, with Dr. W. Playfair Kennedy in the chair. Dr. W. Mulhall Corbet proposed the health of "Our Guests," and welcomed the presence of Mr. Cecil B. Harmsworth and Mrs. Harmsworth. In his reply Mr. Harmsworth referred appreciatively to his connexion with Trinity College, Dublin, and to the merits of Ireland as a resort for those interested in fishing. Lieut.-General H. B. Fawcus, D.G.A.M.S., proposed the toast of "The President of the Association," commenting on the support given in past times to the Royal Army Medical Corps by Irish medical graduates. The president responded, and contributed an account of the formation of the association at the time of the Annual Meeting of the British Medical Association at Bath in 1878. Much-appreciated musical items were contributed by Miss Peggy Hearn and Mr. Patrick Hughes, Mrs. A. P. Hughes accompanying at the piano. Towards the conclusion of the dinner the "Irish nightingale," Mrs. James Harold, delighted those present with her rendering of Irish songs.

AT a conference on birth control, to be held at the Central Hall, Westminster, on Friday, April 4th, the problem will be considered in relation to population, maternal health, and public health. At the morning session Mr. Harold Wright (editor of *The Nation*) will address the conference on birth control and the population problem; and Mr. Harold Chapple, F.R.C.S., will open a discussion on birth control in its relation to maternal health. At the afternoon session Dr. Maitland Radford, medical officer of health, Shoreditch, will open a discussion on birth control and public health authorities; and a resolution will be put to the conference urging the Ministry of Health and public health authorities to make available medical information on birth control to married people who ask for it. Tickets (1s. each) and further particulars may be obtained from the secretary, Committee for Birth Control Conference, 9, Parliament Mansions, Westminster, S.W.1.

THE presidential address entitled "The disastrous influence of a declining birth rate on the life of the nation," delivered by Dr. F. J. McCann at the annual meeting of the League of National Life held at Caxton Hall, Westminster, on October 30th, 1929, has now been published in pamphlet form, and may be obtained (price 6d. net) from Messrs. Roffey and Clark, Ltd., 12, High Street, Croydon.

A MEETING of the British Institute of Radiology, with which is incorporated the Röntgen Society, will be held at the rooms of the Institution of Electrical Engineers, Savoy Place, Victoria Embankment, on March 30th, at 6 p.m., when Dr. Bernard Leggett will read a paper on the medical and surgical applications of electricity. A meeting of medical members of the institute will be held on the following afternoon at 32, Welbeck Street, at 5 p.m., when reports on cases of thoracic disease and other topics of interest will be welcomed. A general meeting of the Society of Radiographers will be held at the house of the British Institute of Radiology (32, Welbeck Street), on March 19th, at 7 p.m., when Dr. L. A. Rowden will read a paper entitled "Radiography—old and new."

THE annual meeting of the National Council for Mental Hygiene will be held to-day (Friday), March 21st, at 5 p.m. in the Hall of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1.

AT the first meeting of the National Safety Week Council on March 4th, under the chairmanship of Sir Gerald Bellhouse, further arrangements were made for inviting the co-operation of various societies and organizations concerned directly or indirectly in promoting the objects of Safety Week, which is being held this year from May 19th to 24th. The British Medical Association is represented on the council.

THE annual meeting of the Society for the Study of Inebriety will be held at 11, Chandos Street, W.1, on Tuesday, April 8th, at 4 p.m., for the election of officers, and to receive the report of the council and the financial statement. At the conclusion of the business Dr. Percy C. Barham will open a discussion on the difficulties of the institutional treatment of alcoholism and drug addictions.

THE Fellowship of Medicine announces that Mr. A. Tudor Edwards will lecture on modern surgical developments in chest disease at the Medical Society lecture room, 11, Chandos Street, Cavendish Square, W.1, on Tuesday, March 25th, at 4 p.m. Mr. Max Page will give a special demonstration on Thursday, March 27th, at 2 p.m., at the Victoria Hospital for Children, Tite Street, S.W.3. The lecture and demonstration are free to medical practitioners. From March 24th to April 12th a special course in medicine, surgery, and gynaecology will be held at the Royal Waterloo Hospital, Waterloo Road. The whole of each day will be occupied with operations, lectures, and clinical demonstrations in the wards and out-patient departments. From March 31st to April 5th a special all-day course in gastro-enterology at the Prince of Wales's Hospital, Tottenham, will deal with the medical and surgical aspects of the subject. Copies of all syllabuses and details of the general course of work in the fifty associated London hospitals may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A CLINICAL post-graduate course in otology, rhinology, and laryngology will be held at Bordeaux from June 30th to July 12th, under the direction of Professor Portmann. Lectures and demonstrations will be given daily, and there will be opportunity for individual tuition in the various methods of examination and treatment. The fee is 300 fr., and inquiries should be addressed to the secretary of the Faculty of Medicine, Bordeaux.

THE KING has appointed Dr. J. L. Margetson, medical officer District No. 1, Montserrat, to be an official member of the Executive Council of the Presidency of Montserrat.

THE forty-third congress of the Société d'Ophtalmologie will be held at the Paris Faculty of Medicine on May 12th, when a discussion, introduced by MM. Duverger and Velter, will be held on the biomicroscopy of the lens in health and disease. During the congress visits will be paid to hospitals and laboratories, and there will be an exhibition of optical and surgical instruments at the Faculty. Further information can be obtained from the general secretary, Dr. René Onfray, 6, Avenue de la Motte Picquet, Paris VII.

IN intimating his resignation as an alderman of the Blackburn Town Council, of which he has been a member for thirty-four years, Dr. J. T. T. Ramsay, J.P., has stated in a letter to the mayor that his decision is a consequence of the passing of the Local Government Act, 1929, which, by transferring the work of the Board of Guardians to the Town Council on April 1st next, had made it necessary for him to decide whether to continue as a member of the Council or surrender a part of his professional duties. Dr. Ramsay was mayor of the borough from 1922 to 1924, and has been a borough magistrate for the last twenty-five years. He was closely associated with the introduction and development of the local school medical service. In 1926 he became a co-opted member of the Mental Deficiency Act Committee.

THE Italian Travel Bureau in London (16, Waterloo Place, S.W.1) has issued a new pamphlet, with coloured illustrations, describing briefly the spas of Italy. The bureau has also published an illustrated souvenir booklet on the Italian Art Exhibition at Burlington House, and a handbook of the holiday courses for 1930 organized by the Italian Inter-University Institute, with lists of hotels in all parts of Italy.

THE Department of Health for Scotland has appointed Peter L. McKinlay, M.D.Glas., to be a medical officer in the department. Dr. McKinlay was assistant medical statistician to the Scottish Committee upon problems of child life, and for the last five years he has been medical statistician on the staff of the Medical Research Council.

DR. ALEXANDRE GUÉNIOT, who was born in 1832, has recently celebrated the fiftieth anniversary of his election to the Académie de Médecine in the obstetrical section. He was president of the Société de Chirurgie in 1882, of the Société Obstétricale et Gynécologie de Paris in 1888, and of the Académie de Médecine in 1906.

DR. JAMES MCALISTER RAMSAY of Oakley and Dr. Fraser McEwen Sinclair of Glencraig have been appointed to the Commission of the Peace for Fifeshire.

THE National Baby Week Council has recently added a new publication to its list, entitled *Functional Disorders of the Nervous System*, by Dr. Eric Pritchard, chairman of the executive committee. Copies, price 2d., may be obtained from the secretary of the council, 117, Piccadilly, W.1. A lantern lecture on rickets and other common nutritional disease has also been prepared, price 6d.; slides may be hired.

DR. A. BARDELAC DE PARIENTE has been nominated professor *honoris causa* of the Rubio Post-Graduate Institute at Madrid.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh)

QUERIES AND ANSWERS.

MENOPAUSAL VASOMOTOR DISTURBANCES.

"D. J." inquires if any reader can suggest a proved remedy for the vasomotor disturbances of the menopause.

A FORM OF NARCOLEPSY.

DR. J. B. DAVIDSON (Northumberland) invites suggestions for the treatment of a female patient, aged 32 years, who has suffered from a form of narcolepsy for the last eleven years. Immediately the patient tries to do needlework, knitting, or darning she begins to fall asleep. During the period of recovery she has been known to cut the stockings she has been knitting. On another occasion she visited the grave of a relative, and while arranging flowers upon it fell asleep on the kerb of the tombstone.

TREATMENT OF ASTHMA.

"M. E. P." (South Africa) has a case of idiopathic bronchial asthma which has resisted every type of treatment, including morphine and its derivatives (which constantly produce sickness), adrenaline, inhalations (which cannot be tolerated), atropine, and ephedrine (hypodermic and oral). The patient is a woman aged 40, and an attack occurs regularly once a month (no relation to the menstrual cycle), having a variable duration from three to fourteen days. During the attack there is marked dyspnoea, cyanosis of the lips, and great distress. Adrenaline (10 minims) every hour, and sometimes every half-hour, gives practically no relief. Can anyone advise any form of treatment which might relieve this unfortunate woman?

GLASS PERMEABLE TO ULTRA-VIOLET RAYS.

DR. J. N. DYSON writes: Mr. Pilkington's arguments (March 8th, p. 478) as to the relative wave-lengths of 3,100 A.U. and 3,200 A.U. are entirely beside the point. The question at issue concerns the *amount* of rays; if their amount is infinitesimal, their length does not matter. With regard to his statement that artificial silk is permeable to the rays, I agree that a *thin* layer of this silk does not cut off all ultra-violet rays, but I need hardly add that most people who instal vita glass do not spend the day clothed in one thin layer of artificial silk. Ordinary clothing certainly prevents any rays from reaching the skin. Eidinow and Hill proved by their researches *not*, as stated by Mr. Pilkington, "that an area represented by face and hands is sufficient to give a result beneficial," but that an area equal to one-sixth of the body (and therefore greater than that of the hands and face), must receive at least an erythema dose, in order to increase the bactericidal power of the blood. Less than this, they proved, not only did not increase this power, but actually decreased it. Mr. Pilkington also seems to ignore the effect of the infra-red or heat rays on the skin of the face and hands. The only method of getting beneficial results from ultra-violet rays is by giving carefully measured and graduated doses to suit the individual requirements.

INCOME TAX.

Depreciation of Cars.

"Q. R. Q." asks for our views as to the proper rate of depreciation to be allowed for cars used professionally.

*** It is important to remember that the deduction allowed by the Income Tax Acts is for depreciation arising through *wear and tear*. For instance, there is no allowance for any loss which the practitioner may consider he has incurred through a reduction in value of his car through any other cause—for example, because a similar car may now cost less to buy than the one in use did originally. Further, the wear and tear allowed for is that of the car as a whole—replacements of parts, general overhaul, etc., can be charged as expenses provided that they do not destroy the identity of the car. Setting these questions aside, however, it is clear that the wear and tear to which a car is subjected shortens its life by bringing nearer the time when replacement becames economically desirable. It is, of course, obvious that the annual rate—on a "written-down" basis, as in the case of all such rates—depends in any particular instance on all sorts of factors—nature of the roads covered, degree of competence and care used in driving and looking after the car, whether the car is built to last, and so on. In such circumstances it is not surprising to find some variety in the rates allowed by the District Commissioners, who are the judges in the last resort on such questions. The two common rates are 15 per cent. and 20 per cent., and, in our opinion, the latter is usually more likely to be correct; on the written-down basis the value of a car will be reduced by the 20 per cent. allowance to 40 per cent. of its cost after four years, a figure at which most practitioners would be only too glad to dispose of a four-year old car. Practitioners should always make a point of claiming "obsolescence" allowance when replacing a car. Briefly that allowance represents the cost of replacement less the amount already allowed in respect of the depreciation of the car replaced. Consequently that claim when made puts right any insufficient depreciation allowance by reducing what would otherwise have been a greater sum to be deducted in calculating that allowance.

LETTERS, NOTES, ETC.

PNEUMOCOCCAL CEREBRO-SPINAL MENINGITIS.

DR. A. S. GUBB (Algiers) writes: A woman in her ordinary good health took the night train to Algiers (sleeping car) at 8 p.m.; at 4 a.m. she had an attack of nausea and sickness, and became very ill. On arrival at Algiers in the forenoon the right side of the face was paralysed, the features being drawn to the left; she was aphasic and unable to swallow. The right pupil was dilated and very sluggish, and the tongue was thickly coated. Her temperature was 103° F., and she was restless, but, as far as one could judge, not in pain. The bowels were confined, and were with great difficulty evacuated. As she had not micturated for several hours a catheter was passed, withdrawing 17 oz. of dark urine, which contained neither albumin nor sugar. There was no paralysis of the limbs, and the reflexes were normal. In the course of two or three hours she developed stiffness of the neck and Kernig's sign. Lumbar puncture gave exit to a turbid fluid obviously containing pus. As it appeared to be a case of ordinary cerebro-spinal meningitis, 60 c.cm. of antimeningococcal serum was forthwith injected into the spinal canal. Microscopical examination of the fluid (smear) showed a striking abundance of pneumococci; the field was paved with them. Antipneumococcal serum was then injected subcutaneously, but she became comatose and died on the second day after admission to hospital. The temperature remained high. As this inevitably fatal form of meningitis is by no means common, I thought it might be worth while to place these brief notes on record.

FREEDOM FROM RECURRENCE AFTER OPERATION FOR MALIGNANT DISEASE OF THE NOSE AND THROAT.

DR. ALBAN EVANS (Swansea) writes: The report of the meeting of the South Wales and Monmouthshire Branch in the *Supplement* of March 15th (p. 86) describes five cases shown by me of malignant disease of the nose and throat after operation. The interval of freedom from recurrence is not given in detail; as this is all-important, I shall be obliged by the publication of the operation dates of the cases in question.

E. E., epithelioma of left vocal cord; thyrotomy August 24th, 1928. Has a good voice.

S. B., epithelioma of right vocal cord; thyrotomy, December 7th, 1928. Has a good voice.

G. R., lymphosarcoma of right tonsil; operation, January 16th, 1929; radium a fortnight later.

A. T., epithelioma of right antrum and ethmoid; Moure's operation November 26th, 1929.

H. R., epithelioma of soft palate, left tonsil, and tongue; ligature of external carotid and internal jugular, and glandular dissection on January 21st, 1929; a week later the whole growth was destroyed by diathermy. On August 7th, 1929, a single gland was removed.

CHRONIC PLUMBISM.

DR. K. WATMAN (Worcester) writes: The case described briefly below is interesting because the lead limited its toxic action to the peripheral nerves (neurotropic), and also because the white cells were affected before the red cells—that is, there was no punctate basophilia. The patient is aged 48, and has worked for the last thirty-four years as a plumber. Twelve months ago had attack of herpes zoster. He now complains of lancinating pain in left shoulder, radiating down the arm to the fingers. No constipation; no colic. On examination of left arm there is marked weakness in the extensors of the wrist, wasting of extensor muscles of forearm, and marked wasting of muscles in thenar and hypothenar eminences. Sensation normal. Right arm not affected. Examination of teeth shows blue line at junction of gums and teeth, in some places continuous, in others punctate. There is no anaemia, no arterio-sclerosis, and no headache. The blood was examined at the Shire Hall by Mr. Duncan, and showed no change in the red cells—that is, no anaemia, no punctate basophilia. The white cells were 12,187 per c.mm., and differential count showed polymorphs 49 per cent., lymphocytes 46 per cent., hyalines 4 per cent., eosinophils 1 per cent. The teeth were extracted and tested for lead at the Shire Hall. They were found to contain 0.3 per cent. of metallic lead. X-ray examination of left shoulder show osteo-arthritis.

POPULATION AND FOOD SUPPLY.

DR. BINNIE DUNLOP (London, S.W.7) writes: From your notice (March 8th, p. 454) of the public health report for the Central Provinces of India one learns that strenuous efforts are being made to reduce the very high infant death rate. So I should like to point out that if these efforts be successful, there will follow a secondary result which, if observed, may cause surprise. As the birth rate is high and the food supply is increased very slowly, if at all, population is pressing heavily upon the food supply. Therefore only an improvement in the ratio between this and the number of mouths can reduce the general death rate, and a reduction of the infant death rate will raise the mortality among the older individuals.

RETENTION OF URINE DUE TO FAECAL IMPACTION.

DR. MARGARET G. JONES (Ramnad, South India) writes: In the *Journal* of December 28th, 1929 (p. 1198), Dr. J. Myles Mitchell comments on the rarity in a male child of urinary obstruction caused by faecal impaction. In this part of India such cases are not rare. The fruit of the prickly pear, used for hedges, contains stony, hard, indigestible seeds. Children commonly eat the fruit and get rid of the seeds in the bulky soft stools resulting from their vegetable diet. But if there is constipation the whole mass of faeces and seeds may accumulate for four or five days, and in the state in which the children are brought to us can only be removed by breaking up the mass digitally. These children, as we see them, have always obstruction of urine, and we are unable to pass a catheter. One boy was so much distended that bladder puncture by trocar was necessary to avoid rupture during removal of the impacted mass. In the out-patient department of this hospital of thirty beds we see seven or eight cases in a year, and in one series of twelve there were five boys and seven girls.

DISCLAIMER.

DR. D. DRYSDALE ANDERSON wishes to disclaim any authority for the account in the *Daily Chronicle* of March 14th of certain work being carried out by him and other colleagues.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 42, 43, 44, 45, 46, 47, 50, 51, and 52 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 95.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

275. Psittacosis.

MARCKS (*Zeit. f. Medizinalbeamte*, January 15th, 1930, p. 54) records an outbreak of seven cases of psittacosis in Berlin in the household of a professor who had just returned from Brazil with four parrots, three of which had died. In all the patients typhoid symptoms developed after a sudden onset of high fever; in one instance the incubation period was only three days. Pneumonia developed in all the patients at an early stage, but none had any cough or expectoration. In no instance was there any interhuman transmission of the disease, but all the patients had come in direct contact with the parrots. The disease ran a much milder course in the younger patients, aged 11 and 19 respectfully, than in the others. In the two fatal cases the necropsy showed that double pneumonia was the cause of death. Marcks concludes that this outbreak shows that special precautions should be taken with regard to parrots which have just been brought into the country, especially from America. Unnecessary contact with parrots should be avoided, and the bodies of birds suffering from diarrhoea should be burnt as well as their cages. All parrots coming from America should be medically examined and kept in quarantine before they are put on the market.

276. Endocrine Arthritis.

G. RIEBOLD (*Münch. med. Woch.*, January 17th, 1930, p. 90) considers that attacks of arthritis may arise from endocrine reactions, and divides these cases into two groups. The most frequent form of endocrine arthritis occurs at the climacteric, the period of subsiding ovarian activity. In this group the big joints, especially the knee-joints, are attacked. The condition is also without doubt to be traced to a hypofunction of the thyroid gland; many of these cases are cured by the administration of thyroid preparations. The second group of arthritis occurs in younger persons, at a time of great ovarian activity. In these cases the small joints of the fingers and toes are affected, and if the condition is of long duration there may be extension to the other joints. The attacks often pass into feverish bouts which are connected with the menstrual periods, or are associated with irregular menstruation. These patients are occasionally cured by the administration of ovarian preparations, and the attacks are probably in some way connected with disturbances of ovarian function, either hypofunction, dysfunction, or hyperfunction.

277. Bronchiectasis and Abscess Formation.

É. SERGENT (*Rev. Méd. Française*, January, 1930, p. 17), while stressing the importance of radiographic examinations aided by lipiodol in conditions associated with bronchiectasis, defines certain limitations to the method. In the first place, lipiodol injections cannot delineate the whole bronchial tree; 2 to 3 litres would be required for this. Areas of lung affected by atelectasis or sclerosis are cut off from its infiltration, and it is necessary to make films both before and after injection to avoid the deceptive indications of cavity formation sometimes given by lipiodol alone as the result of its infiltration of sclerosed peribronchial tissue surrounded by normal lung tissue; it is also possible to mistake the saccular dilatations due to emphysema for peribronchial abscesses. Chronic abscess cavities are shut off from penetration, and except where gangrene has supervened, with its characteristic fetid sputum, a large cavity delineated by lipiodol is usually bronchiectatic; finally, a large single cavity may be simulated by the superimposition of multiple smaller dilatations; hence the necessity of checking the result by stereoscopic radiography. Bronchiectasis may be secondary to abscess formation as the result of fibrotic traction, and the gradual evolution from the cylindrical to the saccular type may be followed by repeated examinations; such cases should receive early surgical treatment. It may be associated with abscess formation in the two following syndromes. (1) Bronchiectasis may supervene on the delayed resolution of broncho-pneumonia; here again the evolution from the cylindrical to the saccular type may be watched, and in some cases where the infective process is more acute there is not only weakening, but actual destruction of the bronchial walls, peribronchial abscesses being shown by small areas of deep opacity. (2) Pulmonary abscess and gangrene may both supervene on chronic bronchiectasis; again it must be remembered that abscess cavities show smooth rounded walls and are usually impermeable to lipiodol, whereas gangrenous areas are permeable and have ragged irregular walls. A condition described by American authors, where the evolution of bronchiectasis and abscess is simultaneous, is more rare, but where this occurs there is usually a lobar limitation. Bronchoscopy with aspiration is not dangerous, except in cachectic or cardiac subjects. It permits drainage when the natural outlet is insufficient, and it gives a chance of cure where areas of suppuration are recently developed. It may have radical effects in recent abscess formation and in the bronchiectasis following subacute broncho-pneumonia; in more long-standing cases it has only a palliative effect, though this is often much appreciated by patients with fetid expectoration. Most abscesses in the lung cortex are best treated surgically. It is most important not to wait for chronicity to develop before treatment is begun.

278. Communicability of Rheumatic Fever.

J. C. HATHAWAY (*Minnesota Med.*, January, 1930, p. 37) discusses rheumatic fever as a communicable disease from observations on 32 cases of acute rheumatic fever among students at Minnesota University. They were studied as two separate groups because more data were available from a recent epidemic. Nineteen cases (60 per cent.) occurred among a relatively small segregated group in the Agricultural Campus, comprising less than 10 per cent. of the University enrolment; Hathaway thinks that this strongly indicates that communicability must have been an important factor. Tonsils or teeth are regarded as the foci of infection, and tonsillitis or sinusitis is believed to initiate the attack and to be the probable portal of entry. Foci of infection were found in 69 per cent. of the cases; 85 per cent. occurred during the first four months of the year. Although the disease may occur at any age, the highest incidence appears to be from 10 to 20.

Surgery.

279. Staphylococcal Septicaemia.

I. M. WOOLLEY (*Arch. of Ped.*, December, 1929, p. 741), who records an illustrative case, states that this condition is most frequently due to *Staphylococcus pyogenes aureus*, but *Staphylococcus albus* and *citreus* are sometimes responsible. It is not limited to age, sex, or race, and has no seasonal preference. It usually occurs alone, but may be associated with other blood infections. Boils or carbuncles are the most frequent source, but abrasions, burns, infections of the ear, sinuses, and other body cavities are sometimes causal factors. The incubation period ranges from a few hours to several weeks. The onset is sudden, with chills, profuse sweating, and generalized muscular soreness; there is at first a moderate anaemia, which later develops into a severe secondary type. The stools frequently contain large numbers of the causal organism, especially when the infection is of gastro-intestinal origin, as in diseases due to infected raw milk. The skin soon shows many changes, such as multiple petechiae and superficial and deep abscesses. The skeletal muscles, joints, and bones, especially the femur, tibia, and humerus, are often involved, and spontaneous fractures may occur. Necropsies have shown that any organ in the body may be involved. The prognosis is always grave, the mortality being over 50 per cent. in cases originating from boils or carbuncles. Woolley's patient was a girl, aged 5, who, as the result of a boil on the left buttock, developed suppurative arthritis of the hip, multiple cutaneous abscesses, and osteomyelitis of the right femur; *Staphylococcus albus* was the responsible organism. Recovery finally followed the employment of vaccine therapy, cod-liver oil, ultra-violet light, and parathyroid with calcium lactate.

280. Haemangiomas of Muscle.

J. S. DAVIS and E. A. KITLOWSKI (*Arch. of Surg.*, January, 1930, p. 39) define haemangioma of muscle as a tumour of more or less extensive vascularity due to malformation and proliferation of the pre-existing vessels of the muscle. A simple angioma, by which is meant haemangioma of the muscle as distinct from lymphangioma, is probably a stage in the growth of these tumours towards the cavernous type. It is suggested that haemangiomas originate in a congenital anomaly, with trauma as a secondary factor causing growth, the congenital basis being limited to a certain district of the vascular network. Growth of these areas varies and may start at birth, or may be delayed until later life. The movements of the muscle may be an irritant causing growth, which may also be stimulated by an inflammatory reaction following

infection. Pain, which is caused by pressure of the tumour on a nerve trunk or by involvement of a nerve in the tumour itself, is the chief symptom, and occurs in the majority of cases. It is more intense when the angioma is in the long narrow muscles of the limbs than in the muscles of the head and trunk, and ceases directly the tumour is removed. Angiomas may cause numbness, formication, burning or pricking, and in many cases there is impairment of function due to the destruction of muscle tissue and the formation of tumour tissue and fat. Diagnosis is difficult owing to the indefinite symptoms, and is seldom made before operation. Angiomas are benign tumours with malignant tendency; they infiltrate the muscles, penetrate the aponeurosis and other tissues, and may invade the bone, growth being by infiltration, not expansion. An angioma infiltrates the adjacent tissue by small endothelial germs which give rise to the formation of capillaries. The interstitial connective tissue is invaded by endothelial cells forming capillaries which destroy the muscle and give place to the characteristic fenestrated tissue; development proceeds by multicentric proliferation. The employment of electrolysis, *x* rays, and radium has met with some success, but complete or partial excision is the most satisfactory method of treatment. In circumscribed angiomas excision of the tumour is sufficient, but in diffuse angiomas a good margin of healthy muscle must be removed with the tumour to ensure a permanent cure. It is only in extreme cases that amputation of the affected limb is necessary.

281. Sodium Chloride in the Treatment of Varicose Veins.

M. G. GILLESPIE and W. G. STROBEL (*Minnesota Med.*, January, 1930, p. 34) summarize their results and technique in 405 injections in 81 cases of varicose veins and ulcers during 1929, a 20 per cent. solution of sodium chloride being the only sclerosing agent used. The injections were given at three- to ten-day intervals over a period of from six to twelve weeks. With the patient seated on the end of the table and the feet resting on a stool the site of injection is located, and, after application of a tourniquet, the patient lies flat with the leg elevated to the level of the body. Usually the lowermost part of the varix is selected and sterilized; a 20 gauge needle is inserted, and blood is aspirated into the syringe, which contains 10 c.cm. of the salt solution. With the needle definitely in the lumen of the vein the leg is raised slightly higher than the body; after releasing the tourniquet the solution is slowly injected, care being taken that none escapes into the perivascular tissues. After withdrawal of the needle the leg is kept elevated; the site of the injection is compressed by gauze, and an elastic bandage is applied from the foot to above the knee. The authors state that 20 to 30 c.cm. may be injected at a time; if only 5 or 10 c.cm. are introduced, three or four injections may be made at one sitting. The authors claim that sodium chloride solution produces a more adherent and extensive thrombosis and a better end-result than other sclerosing agents. The only objections to its use are the possibility of sloughing if any of the solution escapes outside the vein wall, and that in most cases a cramping pain lasting from one to two minutes follows the injection.

282. *Alcohol Injections in Thoracic Surgery.*

G. LABAT (*Surg., Gynecol. and Obstet.*, January, 1930, p. 74) calls attention to the value of alcohol injections for the relief of post-operative pain and intercostal neuralgia, which are often sequels of thoracoplasty. Injection in the intercostal space is of little value, the only practical method being that of paravertebral block with injections close to the spinal column; it is sometimes necessary to inject one nerve above and one below those already injected. Injection of 3 c.cm. of 95 per cent. alcohol in the neighbourhood of each nerve is sufficient, and gives deeper and longer anaesthesia than when 80 per cent. only is used. Wheals are raised with 0.5 per cent. neocaine solution opposite the spinous processes at a distance of 4 cm., and through these the injecting needle is introduced toward the stump of the resected rib, with which it comes in contact at a depth of from 2 to 3 cm. After partial withdrawal the needle is reintroduced downward, inward, and forward, 45 degrees in all directions, until its point is 2.5 cm. deeper than the point at which contact was made, and the injection is made without displacing the needle. In thoracoplasty anaesthesia may be expected to last for months, and possibly until nature has provided adequate protection against irritation by the tube, but should this not be the case, reinjection could be adopted. Injection of the brachial plexus can be made with weak concentrations of alcohol without marked impairment of the motility of the upper extremity. In involvement of the entire plexus it can be injected with alcohol and neocaine in certain proportions, since they have a greater affinity for sensory than for motor nerves. Other post-operative neuralgias can be similarly greatly benefited by alcoholization of the affected nerves.

Therapeutics.

283. Ephedrine in Poliomyelitis.

M. B. BRAHDY and I. H. SCHEFFER (*Arch. Int. Med.*, January, 1930, p. 102) recall that in poliomyelitis the most important lesions occur in the central nervous system, and remark that unless the disease process is checked the meningeal irritation is followed by involvement of the nerve tissue proper. The initial toxic reaction causes an injurious hyperaemia and oedema in the cord and brain stem. This results in a local increase in pressure and an anoxaemia, which impair the function and injure the nerve cells. The rapid relief of this local reaction is of paramount importance. If the diagnosis of poliomyelitis is made in the preparalytic stage, the patient should be given convalescent serum. After the first paralysis appears serotherapy is of no avail, and treatment must be instituted to relieve the damaging local reaction in the central nervous system by diminishing the hyperaemia and oedema. In 1916 Meltzer tried epinephrine in a series of cases, and eight years later ephedrine was recommended by the medical profession. The latter drug, in contrast with epinephrine, has a less intense and more prolonged vasoconstrictor action, and is not followed by a secondary vasodilatation. Its intrathecal administration seems, therefore, to be a rational treatment in poliomyelitis. The authors describe their method of administering ephedrine; they give 40 to 60 mg. of an ephedrine salt in 1 c.cm. of sterile water and 2 to 4 c.cm. of spinal fluid. In severe cases it may be advisable to make two or more daily injections during the first few days. The results of this method in ten cases are given in detail; this small series included only bulbar cases, in all of which the patients were classified as being severely ill with a poor prognosis for life. Five died; but in a control group of similar cases the mortality was 75 per cent. The authors consider that the patients were benefited and the mortality reduced by the use of ephedrine, and that the results warrant the presentation of this preliminary report.

284. Dietetic Treatment of Tuberculosis.

E. MAYER and I. N. KUGELMASS (*Journ. Amer. Med. Assoc.*, December 14th, 1929, p. 1856) comment on the treatment of tuberculosis by Gerson's method, in which the diet contains but little sodium chloride, protein, and carbohydrate, though it is rich in fats and vitamins. They agree that an excessive calorie intake burdens the pulmonary mechanism, thereby preventing functional rest. Loss of mineral salts is repaired by a dietary rich in base-forming salts; sodium chloride is excluded because tuberculosis causes excessive tissue hydration. Much of the food is taken raw, and that which is lightly cooked is rich in vitamins; the authors consider that this marks a definite advance in the dietary of tuberculosis. The accelerating effect of vitamin D on calcium absorption in the intestinal tract helps to explain the healing of tuberculous intestinal ulcers. The authors report that twenty patients suffering from advanced refractory tuberculosis were kept for six months on a special diet equivalent to 3,500 calories; eight gained substantially in weight, and in ten instances the sputum decreased considerably, but tubercle bacilli continued present. Four patients became afebrile, while *two developed fever. Eight patients showed* definite physical improvement in lungs, and two with intestinal tuberculosis appeared to be cured; one did not improve. Alimentary disturbances, lassitude, and pain diminished. The acid-base equilibrium shifted towards the basic side. This effect was confirmed also by experiments on animals.

285. Urinary Antiseptics.

E. JAEGGY (*Rev. Méd. de la Suisse Romande*, December 25th, 1929, p. 857) emphasizes the fact that there is no panacea for urinary infections; salol and urotropine have proved disappointing, but a more intelligent understanding of certain aspects of urinary infection will make its treatment more practicable. The metastatic nature of these infections is frequently forgotten, and it is useless to give antiseptics until focal sepsis is eradicated; this applies more particularly to coccal infections. Urinary stasis must also be overcome, at whatever level it may exist, before antiseptic measures can be effective. A thorough bacteriological investigation is essential in every case of suspected bacilluria, a preliminary guide to which is the turbidity of the urine or its clearness; the administration of antiseptics, except as a prophylactic measure, is quite useless when the urine is clear. It is further essential, in the author's opinion, to determine the exact degree of acidity or alkalinity of the urine, and he recommends the routine use of aniline indicators instead of the less accurate litmus papers. All organisms found in urinary infections grow on an alkaline medium and are inhibited by an acid one, but it is possible for them to get acclimatized and to continue multiplying after the medium has turned acid; this is particularly the case with *B. coli*,

which produces an acid medium by its own chemical action. The key to success in treatment is to give the organisms no chance to become acclimatized to any one medium; after two or three weeks an acid medium should be changed to an alkaline, and vice versa, the change being accurately controlled by indicators. The reaction of the urine is much affected by diet; in general, fasting, with abundance of water, produces acidity, as does also a protein and fat diet, whereas a diet rich in milk, potatoes, and fruit has a reverse action. It is thus seen that Nature helps treatment in the first instance by destroying appetite and producing thirst by fever, which itself tends to produce acidity. In treating urinary infections by varying the reaction of the urine, full advantage should be taken of the dietetic methods. With regard to individual drugs and antiseptics, the beneficial effects of salvarsan and colloidol metals in staphylococcal infections is worthy of note. Urotropine is regarded as more of prophylactic than therapeutic value, but may be used as an adjunct to acidification; similarly, salol can be used with alkalinization, but the author prefers camphoric acid in doses of 4 grams a day, given in cachets of 0.5 gram; methylene blue he regards only as a vesical sedative. For lavage treatment silver nitrate is far more potent than any of the organic silver compounds; mercury oxycyanide, in a strength of 1 in 5,000, is much used in the Latin countries. Finally, there is some evidence that the natural metallic waters containing an infinitesimal proportion of dissociated metallic ions have a decided effect in inhibiting bacterial growth. The author has seen interesting demonstrations of the complete sterilization of ordinary tap water by mere contact with spongy silver (well known as a catalytic agent), and he suggests that there may be a future for the use in therapeutics of water thus treated with catalysts.

Disease in Childhood.

226. Anaemia Neonatorum.

A. GISMONDI (*Accademia Medica*, January 15th, 1930, p. 8) reviews the published cases of anaemia of the newborn infant and discusses a case observed by himself in the paediatric ward of the Samplerdarena civil hospital at Genoa. The infant's mother suffered from rheumatism and endocarditis. Records of the blood examination in all the cases under review show that under the title of "infantile anaemia" several different syndromes are described; the first division that has to be made is that of aplastic from regenerative anaemia. The case described by Gismondi belongs to the former type, and is the most dangerous. The author thinks that he can explain the occurrence of these two different forms of anaemia by taking into consideration the period of intrauterine life when the toxic stimuli act on the blood. In an early phase the aplastic variety occurs, while in a period nearer to birth the regenerative variety is concerned. The etiology—very difficult to ascertain in the majority of cases—was attributed in the present case to the rheumatic infection of the mother. Syphilis does not seem to be a cause of anaemia in the newly born. Treatment with liver extract was attended in Gismondi's case by most satisfactory results.

287. Chronic Diffuse Nephritis in Children.

ACCORDING to GLADYS L. BOYD (*Canadian Med. Assoc. Journ.*, December, 1929, p. 679) chronic diffuse nephritis is not rare in children; she discusses its course, prognosis, and treatment. Two main types of the disease are seen: those in which symptoms or signs, or both, follow an acute nephritis, and those in which no suggestive symptoms occur until the advent of chronic changes, and secondary arterio-sclerosis may be present. The acute cases most likely to become chronic are those in which both haematuria and oedema are present, indicating a diffuse renal lesion. Usually when symptoms persist longer than two months, or recur after a temporary cessation, the case has become chronic. Recovery may yet ensue, but in the less fortunate the disease passes into a subacute stage. Haematuria recurs frequently, the oedema persists, the renal function becomes progressively worse, sclerotic changes occur in the blood vessels, and death ensues from uraemia or an acute infection. The second type also comprises two groups of cases: those in which the disease is benign for years, and those in which symptoms of the end stage of the disease, such as uraemia and headaches, are first noted, and general arterio-sclerosis is present. In both groups vague symptoms of ill health and recurrent infections exist for some years. In the arterio-sclerotic cases death usually occurs within a few months, and infective foci are always found. The prognosis must be governed by the clinical history, signs, and symptoms, aided by the results of laboratory tests. The treatment is symptomatic except for the measures directed to prevention. All foci of infection (tonsils, adenoids, teeth) should be completely removed. Absolute rest in bed is essential during all exacerbations or acute attacks. Dietetic therapy is most important, and a suitable diet should be selected to give the most adequate rest to the kidney, to combat the secondary anaemia invariably present, and to afford sufficient nourishment. For the oedema, rest in bed, the smallest possible intake of fluid, and a salt-free diet are indicated. Saline cathartics and diuretics are often beneficial, with the addition of digitalis if cardiac weakness is present. Repeated abdominal paracentesis is often of value. Uraemia may be due to cerebral oedema or nitrogen retention; in every case an attempt should be made to rid the brain of excessive fluid. Two methods are available: the careful intravenous injection of a 1 per cent. solution of magnesium sulphate, and the slow withdrawal of cerebro-spinal fluid. Exsanguination transfusion has proved successful in a few extreme cases.

288. Coarctation of the Aorta.

A. P. THOMSON and F. W. M. LAMB (*Arch. Dis. Child.*, December, 1929, p. 377) report the case of a girl, aged 5 years, thin, but of fair health, with slight cardiac hypertrophy and a blowing systolic murmur audible all over the precordia, loudest at the base and conducted up into the vessels of the neck. A loud systolic murmur was also heard at the back in the interscapular area. The left hand as far as the wrist was uniformly dusky, blue, and congested, the right being normal. The pulsation in the femoral arteries was distinctly feeble. There was no evidence of a superficial collateral circulation. The tension in the brachial arteries was much above normal, the left being 200–220/160–190 mm., and the right being 175–215/120–145 mm. In the popliteal arteries the systolic pressure was 125 mm. The urine contained albumin, and the urea concentration, as estimated by the method of Calvert, was decidedly deficient. The child died from pneumonia and tonsillitis about six months after the first examination. At the post-mortem examination the aorta was found greatly constricted, but nowhere obliterated, from a point a little above the attachment of the obliterated ductus arteriosus, almost opposite the origin of the subclavian artery, to a considerable distance below, for a total length of 2 inches. Microscopically, there was arterio-sclerosis of the ascending aorta, of the stenosed area, where it was more marked, of the femoral artery, and of the left brachial artery. There was some fibrosis in the right kidney and a marked diffuse fibrosis in the left, the changes being so advanced as to suggest, as its basis, a congenital maldevelopment of the organ. Bonnet has described two main types of coarctation, the adult and the infantile. In the former there is an extension into the aorta of the special tissue of the ductus arteriosus, with subsequent contraction as the ductus is obliterated, the aorta appearing to be ligatured at this level. In the latter there is a failure of development of the isthmus of the aorta, the part that lies between the subclavian artery and the ductus arteriosus, and the stenosis is limited to that area. The authors consider that in the case under review the diffuse arterio-sclerosis in some way accentuated an original maldevelopment of the isthmus.

Obstetrics and Gynaecology.

239. Treatment of Placenta Praevia.

J. P. GREENHILL (*Surg., Gynecol. and Obstet.*, January, 1930, p. 113), reviewing the present-day treatment of placenta praevia, considers that all patients with a painless, causeless haemorrhage in the last three months of pregnancy should be immediately sent to hospital without a vaginal examination, and without being packed unless absolutely necessary; modern conditions of transport and accessibility of hospitals make it rarely necessary to treat the patient at home, or to pack the vagina prior to removal. Low cervical Caesarean section under local anaesthesia is advocated as being the best treatment in cases of central or partial placenta praevia, with amputation of the uterus, after removal of the baby, in infected cases. In central or partial placenta praevia with severe haemorrhage the abdominal route is said to be the best, regardless of the condition of the child, and to be the most certain way of delivering the baby alive. In the marginal condition, and for a certain proportion of cases of partial placenta praevia, the older methods with rupture of the membranes, with or without vaginal tamponade, Braxton Hicks version, and metreurysis, may be used. The more frequent employment of blood transfusion, repeated when necessary, is advocated. Although post-partum haemorrhage rarely follows the cervical Caesarean section, such a complication must be watched for, while sepsis is less frequent after laparotomy than after extensive vaginal manipulation.

290. Strangulation of the Cord by an Amniotic Band.

O. GOSSELIN (*Bruxelles-Méd.*, January, 1930, p. 292) reports a case of foetal death *in utero*, resulting from strangulation of the cord and stoppage of the circulation between placenta and child by an amniotic band. A 1-para, aged 30, had a good family history and was in perfect health; there was no history of miscarriage, and the Wassermann test was negative. Foetal movements ceased twenty-four days before the expected date of confinement, and when it arrived spontaneous labour occurred, a macerated child being born. A knotted amniotic band encircled the cord, interfering with circulation and causing foetal death by asphyxia. One end of the band was attached at a point 3 cm. from the placental insertion of the cord, while the other end had been swallowed by the child. Gosselin mentions that these bands are supposed to form between amnion and foetal ectoderm during the incurving developmental stage, in cases where the toxins of syphilis or alcoholism may be active. He believes that in the present case neither of these toxins was p[illegible]er, that these bands form from an [illegible] of the solid cellular bud from which the amnion is derived. Gosselin points out that in cases where the band is knotted one end must have become detached; that the knotting is very probably effected by foetal movements; and that for the knot to be drawn tight the band must become re-attached to another point. In his case that point was the mouth of the child.

291. Treatment of Submucous Myomata.

K. FINK (*Zentralbl. f. Gynäk.*, January 11th, 1930, p. 104), discussing the treatment of submucous myomata, states that from 1924–28 his series of 145 operations for uterine myoma included no fewer than 20.7 per cent. of submucous myomata; cases of small pedunculated tumours, extruded through the portio vaginalis, were excluded. He concludes that when treatment of submucous myomata presents technical difficulty cases in which preservation of the child-bearing faculty is of importance are few. Patients known to possess, in addition, intramural myomata should not be treated by enucleation from the uterine side; this is more dangerous than subtotal extirpation, and is not likely to preserve fecundity. The same may be said of those who possess children, and who, although still of child-bearing age, do not earnestly desire conservative treatment. After the menopause deep enucleation (per vaginam) of submucous myomata is fraught with considerable danger of perforation of the friable uterus. Vaginal enucleation should be reserved for gangrenous sessile submucous myomata in cases in which a demarcation line is in process of formation, and the tumour possesses some mobility with respect to the uterine wall. If the gangrenous myoma is tightly fixed, extirpation by the combined abdomino-vaginal route is indicated. In Fink's experience untoward results, such as infection, have not followed the use of the curette in cases of submucous myoma, but he refers to numerous instances in which the existence of the tumour has been overlooked during curetting.

Pathology.

292. The Endocrine Basis of Menstruation.

D. J. CANNON (*Irish Journ. Med. Sci.*, January, 1930, p. 3) considers that the relation between gynaecology and endocrinology is for all practical purposes a study of the menstrual function and its irregularities. An account of the menstrual process is given, and the views and work of such authorities as Frankl, Corner, Allen and Doisy, Schroeder, and Shaw are discussed. A description is given of haemorrhagic metropathia; this condition, which is now receiving attention, throws light on some of the problems of normal menstruation. Cannon summarizes this study of the menstrual process as follows. The alpha-hormone of the pituitary gland (present in the anterior lobe, and discovered by Weimas) activates follicle ripening. The follicles respond by manufacturing a hormone, oestrin or folliculin, which produces the gradual development of the endometrium which is characteristic of the interval phase of the menstrual cycle. The corpus luteum then secretes a hormone, perhaps qualitatively identical with, but quantitatively different from, the hormone of the ripening Graafian follicle. This hormone, together with the secretion of the thyroid gland, produces the full series of secretory and hyperaemic changes that characterize the early or secretory phase of pseudo-pregnancy. When the corpus luteum becomes fully matured, its luteinic portion, activated by the beta-hormone of the pituitary gland (the beta-hormone of Weimas and the special pituitary hormone), produces the final stage of pseudo-pregnancy or the menstrual decidua. The commencing degeneration of the corpus luteum, which normally synchronizes with the death of the ovum, is followed by decidual necrosis or menstruation. The special mechanism responsible for the menstrual rhythm has not yet been ascertained. Cannon believes that the normal rhythm, like the normal quantity of menstrual blood, depends upon no special mechanism or hormone, but rather upon the harmonious adjustment of all the ductless glands, the disturbance of any one of which will upset the menstrual rhythm. He suggests that, on account of the absence of a sexual cycle in the higher animals, ovulation and insemination occurring simultaneously, a monthly recurrence of ovulation is nature's method of securing fertility.

293. Spread of the Infectious Process in Poliomyelitis.

R. W. FAIRBROTHER and E. W. HURST (*Journ. Path. and Bact.*, January, 1930, p. 17) record a series of experiments on poliomyelitis produced in monkeys, the results of which do not accord with existing theories of the pathogenesis of the disease or with statements in the literature as to the regions of the nervous system from which the virus can be recovered. After intranasal and intracerebral inoculation in monkeys, poliomyelitis spreads histologically from above downwards, the various levels of the cord becoming involved more or less simultaneously. Owing to the greater susceptibility of the anterior horn cells, particularly of the lumbar region, paralysis usually appears, and later becomes complete, first in the legs; clinical findings are thus no guide to the path of entry or manner of propagation of the disease. Spread of the infection to the brain stem and cord occurs by way of the axis cylinders, and this appears to be the usual path to other parts of the central nervous system; passage along the meninges is, however, possible, and probably plays some part in the local dissemination of the infection. Meningitis is therefore not the first lesion to appear in the disease, which begins as a primary degeneration of nerve cells, accompanied by inflammation in the interstitial tissues. The virus is present in greatest amount in those regions in which nerve-cell degeneration is particularly severe—that is, in the spinal cord and brain stem; where this degeneration is slight, as in the cerebral cortex, in spite of numerous foci of inflammation, the virus is found inconstantly. The cerebral cortex is not a favourable site for survival of the virus. If the virus travels chiefly by way of the axis cylinders its appearance in the cerebro-spinal fluid would not be expected, nor is it found there except rarely.

294. The Action of Specific Diuretics.

As the result of a series of experiments on diuresis, G. M. CURTIS (*Journ. Amer. Med. Assoc.*, December 28th, 1929, p. 2016) offers an explanation of the mode of action of the specific diuretics which differs from currently accepted teachings. The clinical studies of Veil on diabetes insipidus have emphasized the importance of the state of the tissues in the phenomenon of diuresis. As the result of investigating various diuretics, Schlayer has noted that caffeine has an early extrarenal effect, and Keith and Whelan have concluded that the action of ammonium chloride and of the organic mercury compounds is not limited to the kidney, but that extrarenal factors enter into consideration. Experimenting with rabbits, Curtis found that a profuse diuresis rapidly followed administration of the diuretic. Subsequent to the injection there was a slight but definite rise in the whole blood chloride content. The rise may be slight, especially if it is associated with a rapid excretion of chloride by the kidneys. The urinary chloride becomes more concentrated even throughout the increasing diuresis, and the concentration of the electrolytes likewise rises and roughly parallels the chloride curve. The amount of sodium chloride excreted in fifty minutes was approximately a third of the entire blood chloride, and yet the latter was actually higher at the end of the experiment. It follows that, under the influence of the diuretic, chlorides rapidly leave the tissues, enter the blood stream, and pass into the urine. The conjecture that the chlorides play more than a passive part in diuresis was further strengthened by the observation that, in the experiments in which diuresis did not occur, the marked increase in chloride excretion also failed. This conjecture was also tested by injecting sugar solutions into the peritoneum. These rapidly acquired a concentration of sodium chloride; the whole blood chloride content fell, and water and sugar entered the blood stream. The chlorides were rapidly diverted from the blood, and eventually from the tissues. Thus the ordinary response to diuretics is definitely changed by intraperitoneal injections. These conclusions indicate that the primary action of the specific diuretics is on the tissues. Under their influence permeability changes are initiated, resulting in a rapid passage of electrolytes, principally chlorides, into the blood stream. These act as stimulants to the kidney and initiate the formation of urine. Associated with this action on the tissues is doubtless a similar one on the renal cells.

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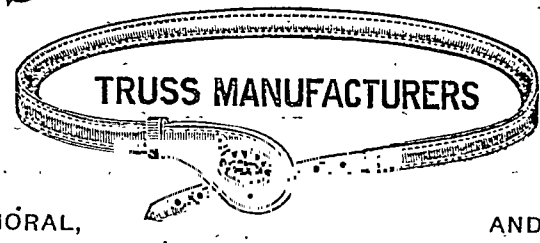
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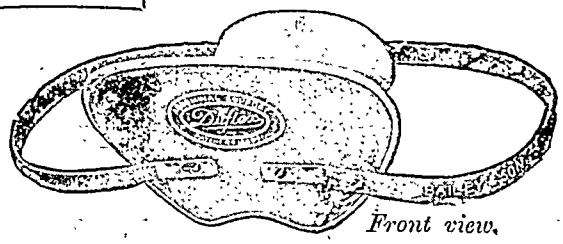
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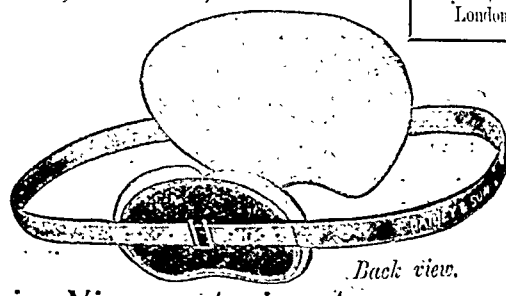
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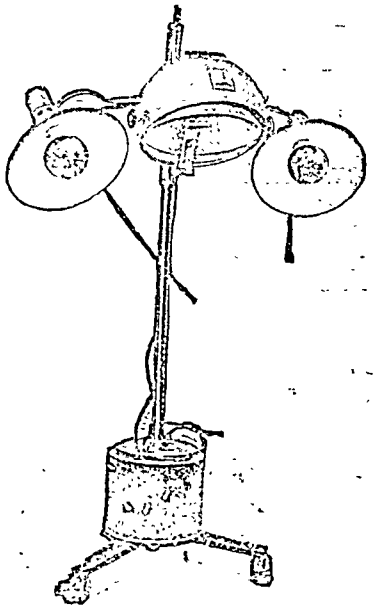
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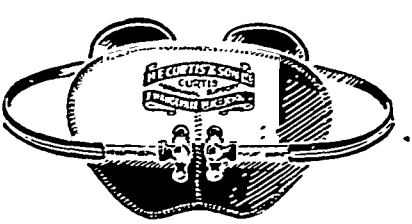
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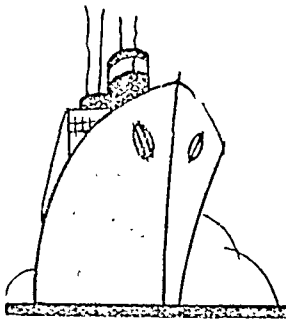
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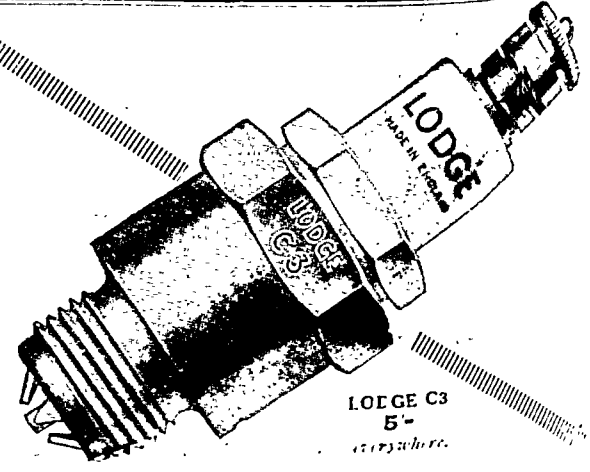
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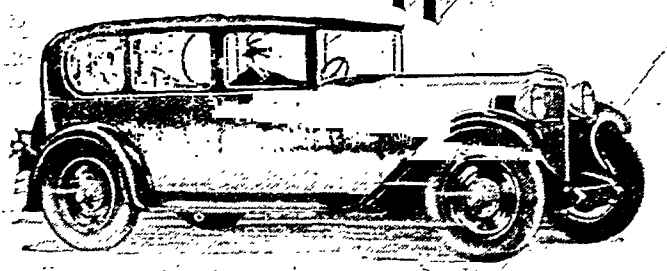


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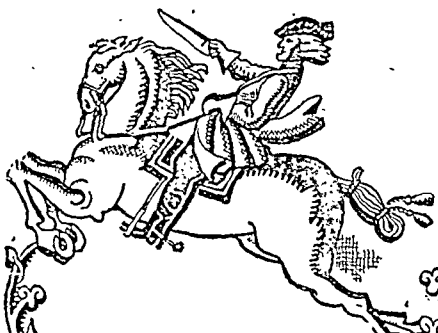
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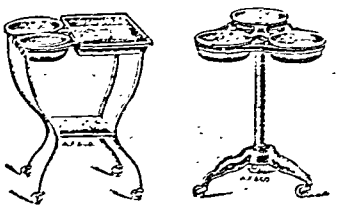
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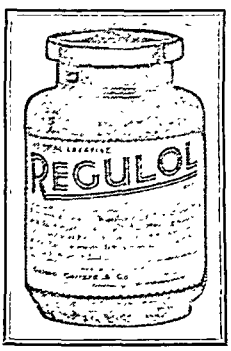
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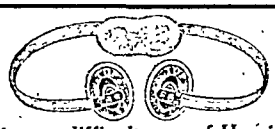
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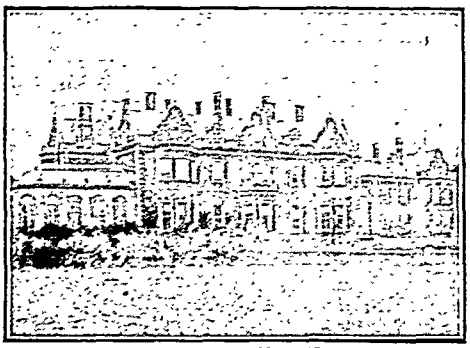
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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

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A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

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Terms:

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements. Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—

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Telephone: No. 7 Barnwood.

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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan y Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GUSTAVE E. MOULD, L.R.C.P., M.R.C.S.

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Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietress and Licensee: Dr. LOWSON. Tel.: 102 Tamworth.

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The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

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Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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A NURSING HOME OPENED IN 1911 FOR THE INVESTIGATION AND TREATMENT OF FUNCTIONAL NERVOUS DISORDERS OF ALL TYPES.

No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0333.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London. S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

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THE ROYAL EARLSWOOD INSTITUTION

FOR MENTAL DEFECTIVES, REDHILL, SURREY.

(FORMERLY THE EARLSWOOD ASYLUM.)

FOR THOSE REQUIRING CONTROL with EXPERT SUPERVISION, and needing SPECIAL TRAINING in useful Occupations, SCHOOLS, FARMING, and various TRADE WORKSHOPS.

ALL outdoor games. EXCELLENT BAND by Male Staff. Telephone:
Apply to the Secretary, Mr. H. STEPHENS, 14-16, Ludgate Hill, London, E.C.4. Central 8297.

BAILBROOK HOUSE,

BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders. Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (*see Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Bathaston 8189.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

BOWDEN HOUSE,

HARROW-ON-THE-HILL.

A NURSING HOME OPENED IN 1911 FOR THE INVESTIGATION AND TREATMENT OF FUNCTIONAL NERVOUS DISORDERS OF ALL TYPES.

No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

PARTICULARS FROM THE MEDICAL SUPERINTENDENT. *Telephone and Telegrams:* HARROW 0545.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." *Telephone:* Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0333.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London. S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

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KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

(University of London.)

ADVANCED MEDICINE COURSE.

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A similar Course will be held from September to October, 1930.

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LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

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SCHOOLS for BOYS and GIRLS.

TUTORS FOR ALL EXAMS.

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The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

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University of Glasgow.

FACULTY OF MEDICINE.

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ROBT. BROUGH,
March, 1930. Registrar.

Stockport Infirmary.

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EDWIN J. PEARCE,
Feb. 28th, 1930. Secretary-Supt.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.). POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-29 (9 Gold Medallists during 1913-29)	319
M.S.(Lond.),	1901-29 (including 4 Gold Medallists)	21
M.B.,B.S.(Lond.),	*Final* 1906-29 (Completed Exam.)	257
F.R.C.S.(Eng.),	*Primary* (1906-29)	154
	Final	149
M.R.C.P.(Lond.),	1914-29	168
D.P.H.	(Various) 1906-29 (Completed Exam.)	286
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M.R.C.S.,L.R.C.P.	*Final* 1910-29 (Completed Exam.)	433
M.D.(Dur.)	(Practitioners) 1906-29	37
M.D.	Various. By Thesis. Numerous successes.	

Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

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Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

County of London.

The LONDON COUNTY COUNCIL invites applications for appointment as MEDICAL SUPERINTENDENT (Resident) at the DARENTH TRAINING COLONY, near DARTFORD, KENT. Candidates must be men under 40 years of age unless already in the Mental Hospital Service of the London County Council or of the Metropolitan Asylums Board, and must be registered to practise both in Medicine and Surgery in England. The position is pensionable. Salary £1,000 a year, plus fluctuating temporary additions, making the total remuneration at present about £1,205 a year, with unfurnished house (rates, taxes, and water supply free). The question of improvement of remuneration, upon consolidation of basic rate and temporary additions, is under consideration. Full particulars and conditions of appointment on form of application (on which alone application can be made) obtainable by sending stamped addressed foolscap envelope to the Acting Chief Officer, Mental Hospitals Department, The County Hall, Westminster Bridge, S.E.1. Canvassing disqualifies. Applications must be received by Saturday, March 29th.

MONTAGU H. COX,
Clerk of the London County Council.

Westminster Hospital,

Broad Sanctuary, S.W.1.

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Applications, with 15 copies of each of three testimonials, should be sent in to the undersigned not later than Saturday, April 5th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

HIGHER MEDICAL QUALIFICATIONS

Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
Diploma in Ophthalmology.
Diploma in Radiology.
Diploma in Laryngology, Otology, and Rhinology.
Diploma in Tuberculosis.
Diploma in Bacteriology.
Diploma in Public Health.
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WE SPECIALISE IN POST-GRADUATE COACHING FOR ALL EXAMINATIONS.

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Name.....

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Examination in which interested.....

Derbyshire County Council.

BRETBY HALL ORTHOPÆDIC HOSPITAL, near BURTON-ON-TRENT. (147 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Assistant Medical Officer at the above Institution, at a salary at the rate of £150 per annum, with board, residence, and laundry. The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council. The officer appointed will work under the direction of the Medical Superintendent. Preference will be given to candidates who have held resident hospital appointments and who are competent Anæsthetists. Orthopædic experience is not essential, but will be considered an additional qualification.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should be addressed to the undersigned not later than April 7th.

W. M. ASH,
New County Offices, County Medical Officer.
St. Mary's Gate,
Derby.
March 15th, 1930.

London Homœopathic Hospital

(Incorporated by Royal Charter).
Great Ormond Street and Queen Square,
Bloomsbury, W.C.1.
A General Hospital—172 Beds.

RESIDENT MEDICAL OFFICER required, male or female (one of three), the appointment being for twelve months—four months Medical and Casualty Officer, four months as House Surgeon, and four months as Medical and Gynæcological Officer—with salary at the rate of £100 per annum, and board, apartments, and laundry. Candidates must be legally qualified and registered. Candidate will be required to attend a Meeting of the Medical Committee.

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Successful candidates are required to take the Hospital course of instruction in the principles and practice of Homœopathy.

EDWARD A. ATTWOOD, Secretary.

COLONIAL MEDICAL SERVICES.

Vacancies exist at present for Medical Officers in:—

(*a*) **THE WEST AFRICAN MEDICAL STAFF;**
(*b*) **THE EAST AFRICAN MEDICAL SERVICE;**
(*c*) **THE MALAYAN MEDICAL SERVICE.**

Qualifications.

Applicants must be British subjects of European parentage and between 22 and 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held hospital or public health appointments or who have special knowledge of anæsthetics, radiology, surgery, medicine, ophthalmology, gynæcology and midwifery, diseases of the ear, nose and throat, venereal diseases, etc.

Courses of Study.

Selected candidates will normally be required to take a special course of study in tropical medicine and hygiene either at the London School of Hygiene and Tropical Medicine or at the Liverpool School of Tropical Medicine, or at the University of Edinburgh, before taking up their appointments. Tuition fees and the usual training allowance will be paid from Government funds.

Further particulars and forms of application may be obtained, on application in writing, from the PRIVATE SECRETARY (APPOINTMENTS), COLONIAL OFFICE, 2, Richmond Terrace, Whitehall, London, S.W.1.

County Borough of Barnsley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council of the County Borough of Barnsley invite applications for the appointment of Assistant Medical Officer of Health and Assistant School Medical Officer at an inclusive salary of £600 per annum.

Candidates must be registered Medical Practitioners of at least three years' standing and should have had experience in the work of school medical inspection and maternity and child welfare. The possession of the D.P.H., and experience in ante-natal work, in the treatment of errors of refraction and in orthopædic work, will be considered additional qualifications.

The candidate appointed must devote his or her whole time to the duties of the office, will not be allowed to engage in private or consulting practice, and will work under the supervision of the Medical Officer of Health, who is also School Medical Officer.

Applications upon the prescribed form, which may be obtained from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), must be sent to me on or before April 8th, endorsed "Assistant Medical Officer of Health."

The appointment will be determinable by three months' notice on either side.

Town Clerk's Office, Barnsley. March 17th, 1930. A. D. MASON, Town Clerk.

County Council of the West RIDING OF YORKSHIRE.

MIDDLETON-IN-WHARFEDALE SANATORIUM.

The County Council of the West Riding of Yorkshire invite applications for the appointment of JUNIOR RESIDENT MEDICAL OFFICER at the Middleton-in-Wharfedale Sanatorium, near Ilkley (300 beds). The appointment will be for one year. Salary at the rate of £250 per annum, with board and laundry.

Applications, together with copies of recent testimonials, should be sent to the County Medical Officer, County Hall, Wakefield, not later than March 29th.

County Hall, Wakefield. March, 1930. J. CHARLES McGRATH, Clerk of the County Council.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invites applications from registered male Medical Practitioners for the post of Assistant Medical Officer. Applicants must be over 35 years of age, and must possess the Diploma of Public Health. The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare and Tuberculosis Acts, and Venereal Diseases Regulations; and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County. The salary will be £600 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained together with further particulars from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Saturday, March 29th. All communications must be endorsed "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Hall, Kingston-upon-Thames. March 11th, 1930. DUDLEY AUKLAND, Clerk of the Council.

Connaught Hospital

(100 Beds)

FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.
JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

County Borough of Stockport.

PUBLIC ASSISTANCE COMMITTEE.

RESIDENT ASSISTANT MEDICAL SUPERINTENDENT, etc. (Male).

Applications are invited from duly qualified Medical Practitioners for the position of Resident Assistant Medical Superintendent of the STEPPING HILL HOSPITAL, Assistant Medical Officer of the STOCKPORT POOR LAW INSTITUTION, and Assistant Medical Officer of the CHILDREN'S HOMES.

Salary £350 per annum, with the usual residential allowances.

The person appointed will be required to devote the whole of his time to the duties of the foregoing appointment, and will be under the general supervision of the Chief Medical Officer of the Public Assistance Committee.

The duties of the office are those prescribed by the Orders of the Ministry of Health and such regulations as may be made from time to time by the Town Council.

Applications, stating experience, accompanied by copies of three recent testimonials, are to be sent to the undersigned as soon as possible, endorsed "Resident Assistant Medical Superintendent."

By Order.

Union Offices, Shaw Heath, Stockport. March 17th, 1930. HARRY BARLOW, Clerk to the Committee.

Applications are invited from Practitioners resident within a suitable distance for the post of MEDICAL OFFICER to the MIDDLETON AND MACDONALD MEMORIAL CLINIC at 1, Ladbroke Square, and 92, Tavistock Road, W.11, for Children under five suffering from Malnutrition and Chronic Ailments.

Duties are: one session weekly for Out-patients; one session for L.C.C. Minor Ailments Treatment Centre; and one session per fortnight for the Ante- and Post-Natal Centre. Usual L.C.C. Clinic remuneration.

The officer will also share supervision of In-patients with two colleagues, in rotation, and for this a separate honorarium will be paid.

Applications should be sent to Hon. Secretary of the Clinic, 1, Ladbroke Square, W.11.

Hackney Hospital.

The Guardians of the Hackney Union invite applications from duly qualified gentlemen for the position of ASSISTANT MEDICAL OFFICER.

Candidates must be single, have held a previous resident Hospital appointment, and have had experience in Midwifery and Gynæcology.

The Hospital, which is situate at High Street, Homerton, E.9, contains 800 beds and is equipped with modern requirements.

Besides the Medical Superintendent, there are six Resident Medical Officer and a Clinical Pathologist.

The remuneration is at the rate of £350 per annum, rising £25 annually to a maximum of £375 per annum, together with rations, washing, furnished apartments, and attendance.

The officer appointed will be required to render assistance at the other establishments and departments of the Union, to assist in the training and instruction of nurses, and to devote the whole of his time to the service of the Guardians.

The appointment will be subject to the provisions of the Poor Law Officers Superannuation Act, 1896.

Further particulars as to the duties may be obtained from the Medical Superintendent.

Canvassing the Guardians directly or indirectly, will disqualify candidates.

Applications must be made upon forms which are obtainable from the undersigned. The forms must be completed and returned, with copies of not more than three recent testimonials, by March 28th.

By Order,
E. W. HARBOUR,
Clerk to the Guardians.

Clerk's Office,
Hackney Union,
2, Sidney Road,
Homerton, E.9.

Manchester Royal Infirmary.

HONORARY ASSISTANT SURGEON.

The Board of Management invite applications for the above appointment. Candidates must be Fellows of the Royal College of Surgeons of England, and are required to forward diplomas, original testimonials (not exceeding eight in number, and dated) and a certificate of age with their applications, by 9 a.m. on Monday, April 21st, addressed to the undersigned.

Candidates are required to furnish the Secretary with forty-five copies of their application and testimonials for distribution prior to the meeting of the Committee of Election.

Canvassing, directly or indirectly, is forbidden, and the Committee reserve to themselves the right, on proceeding to election, to take into consideration any complaint that canvassing on behalf of any candidate has taken place.

By Order,
FRANK G. HAZELL,
March 22nd, 1930. Gen. Supt. & Sec.

General Hospital, Nottingham.

(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, not later than Saturday, March 29th. Duties to commence on Friday, April 11th. The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

East Suffolk and Ipswich Hospital.

(265 Beds—7 Residents.)

Applications are invited for the post of HOUSE SURGEON to the Ear, Nose, and Throat Wards and General Surgical Ward (male, British). Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich.
ARTHUR GRIFFITHS, Secretary.

East Suffolk and Ipswich Hospital.

(265 Beds—7 Residents.)

Applications are invited for the posts of Two HOUSE SURGEONS (male, British). Salary for each appointment at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich.
ARTHUR GRIFFITHS, Secretary.

Hull Royal Infirmary.

The Appointing Committee are prepared to receive applications for the office of HONORARY SURGEON to the Infirmary.

A candidate must be a Fellow of the Royal College of Surgeons in England, or Edinburgh, or Ireland, or have been an Honorary Assistant Surgeon to the Infirmary for five years.

The appointment will be for a period not exceeding twenty years or until the holder attains the age of 60, whichever event comes first.

The Senior Honorary Assistant Surgeon is a candidate for the post, and in the event of his appointment the Appointing Committee will proceed to consider applications, at the same meeting, for the office of

HONORARY ASSISTANT SURGEON.

Candidates for this post must possess Surgical qualifications and be registered.

The appointment will be for five years in the first instance.

Personal canvassing in connection with either of the above posts is prohibited, but candidates may send copies of their applications and testimonials to members of the Appointing Committee.

Applications, addressed to the Chairman of the Committee of Management, should reach the Institution not later than 10 a.m. on Wednesday, April 9th.

R. J. CARLESS,
March 17th, 1930. House Governor.

Hull Royal Infirmary.

(272 Beds.)

Applications are invited for the following posts (male):

HOUSE SURGEON to the Special Departments, vacant April 10th. Salary £150 per annum, with board, residence, and laundry. Duties mainly in the Ophthalmic, and Ear, Nose, and Throat Departments.

CASUALTY HOUSE SURGEON, now vacant. Salary £130 per annum, with board, residence, and laundry.

Both appointments will be for six months in the first instance, terminable by one month's notice on either side.

Applications should be sent to the undersigned.

R. J. CARLESS,
March 10th, 1930. House Governor.

Evelina Hospital for Children,

Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) at once till August 12th (during first month duty in Casualty and Out-patient Department). Salary £150 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, at once, to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
March 10th, 1930. Secretary-Supt.

Royal West Sussex Hospital,

CHICHESTER. (111 Beds.)
(Estab. 1826.)

The Board of Management invite applications for the post of SENIOR HOUSE SURGEON (male), to commence early in May. Salary £200 per annum, with board, residence, and laundry.

Previous resident Surgical experience is essential.

Also for JUNIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, with three recent testimonials, should reach the undersigned not later than March 31st.

Particulars as to duties will be forwarded to candidates on receipt of their application.

HERBERT S. AYLMORE, Secretary.

Bootle Borough Hospital

(General—100 Beds),
Derby Road, BOOTLE.

Applications are invited from Medical Men for the post of JUNIOR HOUSE SURGEON for the six months ending September 30th. Salary at the rate of £150 per annum, with board, residence, and laundry.

Duties to commence April 1st. Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned immediately.

J. A. BEARDSALL, Secretary-Supt.

Royal Chest Hospital,

City Road, E.C.1.
(Royal Northern Group of Hospitals.)

Applications are invited for the following posts, vacant on May 1st:

RESIDENT MEDICAL OFFICER. The appointment is for six months, when re-election is required. Salary at the rate of £[illegible] per annum, with board, residence, and laundry.

HOUSE PHYSICIAN. The appointment is for six months. Salary at the rate of £[illegible] per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent on or before April 2nd to the undersigned from whom forms of application, rules, and further particulars can be obtained.

GILBERT G. PANTER, Secretary.
Royal Northern Hospital, N.7.

The Guest Hospital and Eye Infirmary, Dudley.

(General Hospital—104 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON (male). To commence duties immediately. Salary £150 per annum, with furnished apartments, board and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST,
The Guest Hospital, Dudley. March 17th, 1930. Secretary.

Lincoln County Hospital.

Wanted, a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned from whom further particulars may be obtained.

ARTHUR MOORE,
Lincoln. March 17th, 1930. Secretary Supt.

Newcastle-upon-Tyne City Mental Hospital, Gosforth, Newcastle-upon-Tyne.

Wanted, at an early date, SECOND ASSISTANT MEDICAL OFFICER (male). Commencing salary £400, rising by annual increments of £25 to £500 per annum, with the addition of £50 on obtaining the Diploma of Psychiatry, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

Liverpool Stanley Hospital.

There will be vacancies on April 1st for one Male HOUSE PHYSICIAN and One Male HOUSE SURGEON. The engagement will be for a period of six months. Salary at the rate of £100 per annum, with board, laundry, etc.

Candidates must be on the *Medical Register*, and applications, with copies of three recent testimonials, should be lodged with the undersigned on or before 25th inst.

E. W. OSBORN, Secretary.

Royal South Hants and Southampton Hospital.

CASUALTY OFFICER, male, unmarried, required, to commence duties April 1st, for six months' engagement. Salary £130 to £150 per annum, according to qualifications, with rooms, board, and laundry.

Applications, stating age, to be sent to the undersigned, together with copies of testimonials limited to five, as soon as possible.

HY. TRUSSON, Secretary.

The Hartlepools Hospital.

(100 Beds.)

Required, HOUSE SURGEON, salary £[illegible] per annum, and HOUSE PHYSICIAN, £[illegible] per annum, and HOUSE PHYSICIAN, £[illegible] Board, residence, and laundry. Must be qualified and registered.

Applications, accompanied by copies of not more than three recent testimonials, to the undersigned by April 5th.

P. NEVILLE HART, Secretary.

Shanghai Municipal Council.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT PATHOLOGIST.

An Assistant Pathologist is required in the Public Health Department of the Shanghai Municipal Council.

Candidates, preferably unmarried, should not be more than 30 years of age, and must hold qualifications in Medicine and Surgery of University standard; a D.P.H. and D.T.M. & H., though not essential, are desirable. Salary, Taels 650 per mensem, or Taels 700 per mensem if holding a D.P.H., under three years' agreement.

The agreement is renewable, in the event of *satisfactory services*, at a *triennial* increase of Taels 100 per mensem up to Taels 1,000 or Taels 1,050 per mensem if holding a D.P.H.

The Chief Pathologist, provided he holds the D.P.H., is eligible for the higher appointments of Deputy Commissioner and Commissioner of Public Health, the present maximum pay for which is Taels 1,350 and Taels 2,000 per mensem respectively.

First-class passage is given with half pay during voyage.

Eight months' leave is given on full pay, with first-class passage, after every period of five years' service *in Shanghai*.

Free medical attendance is provided, and there is participation in the benefits of a Superannuation Fund.

A Tael at the present rate of exchange equals about 1/11. Exchange is, however, subject to fluctuation.

Particulars of the appointment, and full details as to the benefits enjoyed by Municipal employees under their Terms of Service, may be obtained from Council's Agents.

Applications, in candidates' own handwriting, with full information as to their qualifications and experience, etc., accompanied by *at least* three recent testimonials, and endorsed "Assistant Pathologist" on the cover, should be forwarded to JOHN POOK & Co., Agent for the Municipal Council of Shanghai, 68, Fenchurch Street, London, E.C.3.

March, 1930.

The Government of Bengal invite

applications for an appointment as CHIEF SANITARY OFFICER for the ASANSAL MINING SETTLEMENT under the Asansal Mines Board of Health, Burdwan District, BENGAL.

Candidates must possess a diploma in Public Health and have had administrative experience in Public Health work. They must know or be prepared to acquire a knowledge of Hindustani. Age should not be under 30 nor more than 40 years. Agreement for five years. Rent free house. Pay, Rs.1,000 a month, rising by annual increments of Rs.75 to Rs.1,300 a month. In addition, overseas pay of £25 a month.

Free first-class passages out and home for officer and wife (*if married*). Sterling equivalent per annum of Rs.1,000, plus overseas pay £25, approximately £1,200; Rs.1,300 plus overseas pay £25, £1,470. (Return passage and overseas pay admissible only to an officer of non-Asiatic domicile.) Strict medical examination.

Forms of application and further particulars may be obtained upon request by post-card from the Secretary to the High Commissioner for India, General Department, India House, Aldwych, London, W.C.2. Last date for the receipt of applications April 10th.

Bolton Infirmary & Dispensary.

SECRETARY'S OFFICE.

(233 beds, including Auxiliary Hospitals.)

Applications for the appointment of HOUSE SURGEON to take charge of Casualty Department and Casualty Beds, salary £150 per annum, with board, residence, and attendance, are invited from ladies and gentlemen having a registered Medical and Surgical qualification. The appointment will be for six months.

Applications, stating age and nationality, with copies of testimonials (previous experience essential), should be forwarded to the undersigned not later than Monday, March 24th.

ALBERT E. BRISCOE, Secretary.

City of London Hospital for

DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.

(Bus, Tram, and Rail, Cambridge Heath, L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on May 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of three testimonials, should be sent to the undersigned on or before Monday, April 7th.

GEORGE WATTS, Secretary.

County Council of Durham.

VENEREAL DISEASES MEDICAL OFFICER.

The County Health Committee invite applications for a Clinical Venereal Diseases Medical Officer at a salary of £750 per annum, rising by three biennial increments of £50 and a further one of £37 10s. to a maximum of £937 10s. per annum. Travelling expenses will be paid by the County Council.

The appointment is terminable by *three months' notice on either side*, and will be subject to the following conditions:

1. The officer appointed must be a registered Medical Practitioner, with not less than three years' experience in the practice of his profession subsequent to qualification, must devote the whole of his time to the duties of the office, and must not engage in private practice.
2. Applicants for the post of Venereal Diseases Medical Officer must comply with the following conditions which are laid down in Section 5 of the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, made by the Minister of Health under Section 59 of the Local Government Act, 1929:

   "Any person appointed by the Council of a County or County Borough to be a Venereal Diseases Officer shall be a registered Medical Practitioner, who, prior to the 1st April, 1930, has held the appointment of Venereal Diseases Officer with the approval of the Minister, or who (1) has had at least three years' experience in the practice of his profession subsequent to qualification, and (2) is in possession of a certificate, given by the Venereal Diseases Officer of a treatment centre at which not less than 500 patients attended for the first time during the 12 months preceding the issue of the certificate, *testifying that he has attended* at the treatment centre for a period of not less than three months and has received during that period not less than 130 hours' instruction in the modern methods of diagnosis and treatment of venereal diseases."
3. The holding of a Diploma in Public Health, and practical experience in Bacteriological laboratory work will be deemed additional qualifications for the post.
4. He will act under the directions of the County Medical Officer, and will be required to reside in the City of Durham or other approved centre.
5. He will be required to give instruction in modern methods of diagnosis and treatment to general practitioners attending the clinics.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination, as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary.

Applications, endorsed "Venereal Diseases Medical Officer," together with copies of not more than three recent testimonials, must be received by the County Medical Officer, Shire Hall, Durham, not later than the 29th instant.

Shire Hall, Durham. HAROLD JEVONS, Clerk of the County Council

March 11th, 1930.

Norfolk and Norwich Hospital,

NORWICH.

Applications are invited for the following posts:

HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic).

CASUALTY OFFICER AND HOUSE SURGEON (*with charge of 25 beds*).

Salary for both posts £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than first post on Tuesday, April 1st.

FRANK TUCH.

March 21st, 1930. House Gov. & Sec.

East London Hospital for Women

AND CHILDREN, *Shadwell, E.1.*

Applications are invited for the resident post of WHOLE-TIME CASUALTY OFFICER (male). The appointment is for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided.

Applications, together with testimonials, should be sent to the undersigned not later than March 29th.

W. M. WILCOX, Secretary.

N.B.—Residents at this Hospital are eligible as candidates for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A.

The Hospital for Epilepsy and

PARALYSIS, Maida Vale, W.9.

A RESIDENT MEDICAL OFFICER required May 1st.

HOUSE PHYSICIAN required May 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £160 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by April 4th.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH, Secretary & General Supt.

Salford Royal Hospital.

(265 Beds.)

Applications are invited for the post of HOUSE SURGEON (male).

Salary at the rate of £125 per annum.

The appointment is for a period of six months from April 1st next.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (F.R.C.S.).

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,
GEORGE RUDDLE,
Gen. Supt. & Secretary.

Salford Royal Hospital.
March 17th, 1930.

The Sheffield Royal Hospital.

There are vacancies for Male Residents—one to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. *The Hospital is a medical school, with 340* available beds, and there are twelve resident medical officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

March 14th, 1930.

St. Mary's Hospital for Women

AND CHILDREN,
Plaistow, E.13.

Applications are invited for the post of ASSISTANT RESIDENT MEDICAL OFFICER (vacant May 1st), male or female. The appointment is for six months; board-residence *provided*. Salary at the rate of £120 per annum (£5 extra allowed for personal laundry). The duties are mainly medical. Personal canvassing not desired. Applications, with copies of three recent testimonials, to be sent to the undersigned not later than April 3rd.

A. ERNEST WILKES, Secretary.

St. Mary's Hospital for Women

AND CHILDREN,
Plaistow, E.13.

Applications are invited for the post of CLINICAL ASSISTANT in the Medical Outpatients' Departments, with access to the Wards. The appointment is for six months. Attendance Friday afternoons at 2 o'clock. Tea provided. Applications, with copies of three recent testimonials, to be sent to the undersigned as soon as possible.

ERNEST WILKES, Secretary.

Lewis Hospital, Stornoway.

An experienced SURGEON SUPERINTENDENT is required for the above Institution, to take up duties on May 16th next. Knowledge of X-ray and Light Treatment essential. Salary and travelling allowance, including private consultation fees, etc., £1,050. Applications, with twelve copies of testimonials, to be lodged with the Honorary Secretary on or before April 5th. Conditions of appointment can be obtained from the Secretary.

Worthing Hospital.

Applications are invited for the post of HONORARY RADIOLOGIST. Applications, giving age, qualifications, and experience, together with any testimonials available, to reach the undersigned not later than April 3rd.

H. O. KAYE, Secretary.

The Board of Control (Lunacy and Mental Deficiency) invite applications for the post of FOURTH MEDICAL OFFICER (male or female) at RAMPTON STATE INSTITUTION FOR MENTAL DEFECTIVES, near RETFORD, NOTTS. Salary £400, rising by annual increments of £20 to £600. Cost of living bonus is also allowed; present bonus on salary of £400 is £147 10s. Emoluments are free furnished quarters and laundry. Board and service are provided on payment of actual cost.

Candidates must be registered Medical Practitioners, unmarried or widowed, and must conform to the Civil Service nationality rule. Post is pensionable under Civil Service Superannuation Acts.

Forms of application, with further particulars, can be obtained from the Secretary, Board of Control, Caxton House West, Tothill Street, London, S.W.1, and must be completed and returned to him not later than Thursday, April 24th.

Royal Victoria Hospital, FOLKESTONE.

The Committee of Management invite applications for the post of RESIDENT MEDICAL OFFICERS, SENIOR and JUNIOR (female), to commence duty May 1st. The salaries attached to the post are Senior £125, Junior £100, with board and residence.

The appointments are for six months, subject to one month's notice on either side. The present Junior Medical Officer is a candidate for the Senior post. Applications, which should state if applicants are willing to serve in the Junior position, together with copies of recent testimonials, should be sent to the Secretary-Superintendent, Royal Victoria Hospital, Folkestone, not later than April 7th.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Medical Practitioners (male) for the post of THIRD ASSISTANT RESIDENT MEDICAL OFFICER at the NORTH WALES SANATORIUM, LLANGWYFAN, near DENBIGH (236 beds for pulmonary and non-pulmonary cases).

Salary £250 per annum, plus maintenance, the appointment being limited to one year.

Applications, stating full qualifications and experience, together with copies of three recent testimonials, should reach the undersigned not later than March 31st.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence, and laundry.

For preference candidates should hold the Fellowship of the Royal College of Surgeons.

The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than Tuesday, April 1st.

PERCY G. BROOKS, Secretary.

Blagrave Branch (60 Beds) of the ROYAL BERKSHIRE HOSPITAL, Langley Hill, Calcot, READING.

Wanted, early in April, a HOUSE SURGEON, who must be fully qualified and registered, and who will be required to undertake in addition daily duties at the Royal Berkshire Hospital.

The appointment is for six months. Salary £150 per annum, with residence, board, and laundry.

Applications, with three copies of testimonials, to be addressed to the undersigned.

Reading. HERMAN BURNEY, Secretary.

March 17th, 1930.

County Antrim Mental Hospital, ANTRIM, NORTHERN IRELAND.

ASSISTANT MEDICAL OFFICER required for above. Candidates must be duly qualified, registered, unmarried, and not over 30 years of age. Commencing salary £300 per annum, rising by annual increments of £20 to £500, with £50 per year in lieu of rations, also furnished apartments, attendance, fuel, light, and washing, valued at £50 per annum. The appointment is subject to the provisions of the Asylum Officers Superannuation Act, 1909.

Applications, stating qualifications, with copies of recent testimonials, to be with the Resident Medical Superintendent not later than April 5th next.

Royal Westminster Ophthalmic HOSPITAL, Broad St., Holborn, W.C.2.

Required for May 1st, for six months:

FIRST HOUSE SURGEON (male). Salary at the rate of £100 per annum, with share of fees for private room cases, which possibly may double his salary.

SECOND HOUSE SURGEON (male). Salary at the rate of £80 per annum.

With board, residence, and laundry.

Candidates must be duly qualified Medical Practitioners, registered in this country, and must have had experience in Ophthalmology. Applications, in which should be stated whether the candidate is prepared to accept the Second House Surgeon appointment, accompanied by copies of testimonials, are to be sent to the Secretary on or before April 7th.

Candidates are requested to call upon the Honorary Surgical Staff, a list of whom, with addresses, can be obtained on application at the office of the Hospital.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

Applications are invited for the post of HOUSE SURGEON to the Ophthalmic Department of the above Institution. The post is tenable for six months, but may be extended for a further six months. This post is open to ladies.

Salary is at the rate of £75 per annum, with board-residence. Candidates must have experience of Refractions.

Application forms may be obtained from the undersigned, and should be returned completed, with copies of recent testimonials, at the earliest possible date, as the appointment commences immediately.

R. ARMSTRONG, Medical Supt.

March 19th, 1930.

London Temperance Hospital, Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER. The appointment will be for a period of six months at a salary of £175 per annum, and will date as from April 16th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

London Temperance Hospital, Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for a period of six months at a salary of £100 per annum, and will date as from April 15th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

Macclesfield General Infirmary. (100 Beds.)

Wanted at once, SECOND HOUSE SURGEON, male. Salary at the rate of £150 per annum; with board and residence. Anæsthetic experience essential.

The appointment is for six months, subject to one month's notice on either side.

Applications, stating age, nationality, and qualifications, with copies of their testimonials, to be sent to the undersigned.

A. E. HANRAHAN, Secretary.

Tiverton Hospital, Devonshire. (35 Beds.)

HOUSE SURGEON required immediately. Salary at the rate of £100 per annum, with board, residence, and washing. Six months' appointment.

Applications to be sent, with copies of three recent testimonials, to the Hon. Sec., C. H. DEEKS, 35, Fore Street, Tiverton.

Connaught Hospital Orford Road, E.17. (100 Beds.)

MEDICAL OFFICER in charge of Electrotherapeutic and Massage Department.

Applications for above post are invited. D.R.M.E. essential. Present holder of the post is an applicant.

Appointment commences on April 1st. Applications to reach the Secretary not later than 12 noon, Wednesday, March 26th, with three testimonials or copies.

Blackburn and East Lancashire ROYAL INFIRMARY.

FOURTH HOUSE SURGEON (male), to commence duties Easter, required at a salary of £130 per annum, with board, residence, laundry, etc.

The Hospital contains 240 beds, with X-ray, Massage, V.D., Eye, Ear, Nose, and Throat Departments, Pathological Laboratory, etc. There is no outside work.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Sec.

This Institution is recognized for the Surgical Practice required for the F.R.C.S. final examination.

Children's Hospital, WESTERN BANK, SHEFFIELD.

Applications are invited immediately for the following post:

THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery Street). Salary £160 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of testimonials, to the undersigned.

T. H. G. GARTLAND, Secretary.

The Babies' Hospital, NEWCASTLE-UPON-TYNE.

PART-TIME NON-RESIDENT MEDICAL OFFICER required May 1st.

Duties, which must be considered as of first importance, are those of a House Physician, and will occupy half the day, leaving time for examination or research work. The appointment is for six months and subject to re-appointment. Salary £150 per annum.

Applications, with two testimonials and particulars of previous appointments held, must be lodged with the Secretary, 33, West Parade, Newcastle-upon-Tyne, by April 5th.

The Northern Infirmary, INVERNESS.

Wanted for April 1st next, HOUSE PHYSICIAN and JUNIOR HOUSE SURGEON (combined post), fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before 29th inst. to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

March 3rd, 1930.

Beckett Hospital & Dispensary, BARNSLEY. (150 Beds.)

JUNIOR HOUSE SURGEON required, to commence duty immediately. Applicants must be fully qualified and registered.

Salary attached to this appointment is at the rate of £140 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the undersigned as early as possible.

ARTHUR L. BOURNE, Secretary Supt.

March 4th, 1930.

The Royal Infirmary, Sheffield.

The Weekly Board invite applications for the post of OPHTHALMIC HOUSE SURGEON. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S., Gen. Supt. & Secretary.

St John Ophthalmic Hospital, JERUSALEM.

The office of REGISTRAR of the above Hospital will be vacant in June next. Candidates for the post must be of the Christian Faith, and may be of either sex. For further particulars apply to the Acting Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, London, E.C.1. The Committee will proceed to elect in April.

H. E. GARLE, Acting Hon. Sec.

March 17th, 1930.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.).*	**PUBLIC HEALTH** *(contd.).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BERKSHIRE COUNTY COUNCIL. *(Assistant Tuberculosis Officer and General Medical Assistant.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. (School Medical Inspector.)

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
March 19th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

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British Medical Journal,

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ASSISTANCIES.

Wanted. — Assistant, male, in good Practice, large industrial town near Manchester. Car provided. Panel 1,000. Good prospects for the right man. Previous experience not essential. Must be of good appearance. Salary £300, all found.—Address, (with photograph), No. 1985, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, with Surgical experience, single, British. Salary £375 p.a., with rooms, coal, light, and attendance, and 10/- extra for each confinement. Usual bond.—Apply, A. H. JAMES, M.D., The Park, Blaenavon, Mon.

Wanted.—Outdoor Male Assistant, for private, panel, and industrial Practice (Yorkshire). Previous experience. Usual bond. Salary commencing £250, all found. Age about 25 and single.—Address, No. 1973, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, young, single, for general Practice, Newcastle-upon-Tyne. Salary £250 p.a., all found — Address, No. 1984, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted, young Male Assistant, indoor, Protestant, good working, middle, and panel Practice, country town. Salary £300, commission mids., with or without view. Photo, testimonials.—Address, No. 1974, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Junior Indoor Assistant, S. Wales, mixed Practice. Suit recently qualified man. Protestant. Must be sober. Usual bond. State age, etc. Scotsman preferred.—Address, No. 1915, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, British, Southern Country Practice Salary £300 per annum. Car provided. —Address, No. 1972, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Keen, energetic male ASSISTANT for private and panel practice. Liberal salary, with rooms and attendance. Usual bond. State all essential particulars, with recent references.—Address, No. 1964, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor, in mixed Practice. Suit recently qualified man; motor cyclist preferred. Photo. and other essential particulars. — Address, No. 2054, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Experienced Assistant, good prospects suitable man. Photograph and essential particulars.—Address, No. 2 55, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — An Assistantship, with view to Partnership, by Dublin University Graduate; ex H.S., H.P., R.S.O., age 27. Experience G.P.—Address, No. 1965, B.M.A. House, Tavistock Square, W.C.1.

Wanted: — Assistantship with view, or Partnership, preferably Midlands, by M.B. (N.U.I.), ex H.S. and H.P., aged 30; good Anæsthetist. — Address, No. 1980, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship (pref. with view) or LOCUMS, by exper. (Hosp. and G.P.), energetic, popular, temperate male, 35, single (M.B., N.U.I.). Used sole charge. Drive car. Free now.—Address, No. 1976, B.M.A. House, Tavistock Square, W.C.1.

Assistant, male, single, young, energetic, wanted. Newcastle-on-Tyne Practice, mainly industrial, panel, and private. No clubs. Good house. £350 to £400 according to experience.—Address, No. 2062, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, with or without view, required by a young Indian (Parsi) Doctor, well experienced in private and panel Practice. Total abstainer, reliable, and well received. — Address, No. 2051, B.M.A. House, Tavistock Square, W.C.1.

Doctor in Practice has excellent Opening. Small house, 3 bedrooms, close to Metro. Station, key position of rapidly developing big middle-class estate. Desires ASSISTANT or PARTNER, with or without capital. Must have some experience and be reliable, keen worker. Only applications with essential particulars considered.—Address, No. 2060, B.M.A. House, Tavistock Square, W.C.1.

Glasgow Graduate (1927) desires outdoor ASSISTANTSHIP. Has held Hospital appointments and is meanwhile temporary Assistant in West of England. Conscientious, reliable, well recommended. Interview if desired. Enquiries welcomed.—Add., No. 1959, B.M.A. House, Tavistock Sq., W.C.1.

Sheffield. — Wanted, young unmarried ASSISTANT, male. Car driver preferred. Photograph returned if sent. £350 per annum, with rooms, lights, attendance, at Branch Surgery. — Address, No. 1978, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted for the Malay States.— ASSISTANT, of pure British parentage, with all-round experience, for mixed estate and private Practice in a healthy capital town. Bachelor 25—30, ex H.S. or H.P., preferred. D.P.H., D.T.M., Tropical experience and knowledge of Public Health and V.D. an advantage. Midwifery and night work negligible.

References as to character and professional work required.

Tennis, golf, boating, bathing, and all club and social amenities of an Eastern town. Good opportunity for a healthy and energetic man.

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Doctor (experienced) (telephone, car) desires WHOLE or PART-TIME WORK, Aberdeen or country.—Apply, WHITLAW, Woolmanhill, Aberdeen.

Doctor (lady) desires Assistantship for 2 or 3 months. Hospitality and nominal fee. Experienced in general practice. Excellent testimonials. Drive car.—Address, No. 1967, B.M.A. House, Tavistock Sq., W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU for DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BOTSFORD, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

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with practice and diploma of "La Source" Lausanne, wishing to perfect herself in English, requests place in Infirmary or Private House.

Please write under cipher OF.3069 Z, Orell Füssli-Annoncen, Zürcherhof, Zürich, Switzerland.

Housekeeper, lady, widow of Medical Man, desires RE-ENGAGEMENT in gentleman's house or maisonette. Experienced. Excellent references. Daily help for rough work.—Address, No. 1602, B.M.A. House, Tavistock Square, W.C.1.

Medical Officer, Institutional (preferably Poor Law), wanted to write series of articles on Hospital Organisation and Administration. Write at once, stating essential particulars.—Address, No. 1983, B.M.A. House, Tavistock Square, W.C.1.

Roan Antelope Copper Mines, Ltd., require SECOND MEDICAL OFFICER in NORTHERN RHODESIA for general work, including treatment of natives. Experience required principally medical. A knowledge of Tropical Medicine, Clinical Laboratory work, and X-ray work is necessary. Commencing salary £900 to £1,000, with prospects. Age 27 to 37 preferred. Applications should be by letter only in the first instance, giving particulars of training and experience, with testimonials, to the Secretary, Selection Trust Building, Mason's Avenue, London, E.C.2.

Secretarial work, part time, for Doctor Dentist or other wanted, within easy access from Gillespie Road (Piccadilly Tube) by Lady Dispenser. Four afternoons a week. Own typewriter. — Address, No. 1982, B.M.A. House, Tavistock Square, W.C.1.

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Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—Phone Primrose Hill 0805, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

Woman Doctor (aged 30), experienced in G.P. and clinics (has held three Hospital posts), is always ready at a few hours' notice to take PART-TIME WORK—Surgery, clinics, or morning or evening "Sorgery". —Telephone: Mountview 7875; or address No. 1952, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

Wanted by M.C., M.B., D.L.O., age 35, at present in General Practice in Scotland, holding Hospital appointment in Oto-laryngology, PARTNERSHIP or PRACTICE in Oto-laryngology. Good class district, town or one, yielding £ per £1,200.—Address, No. 1971, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Locum work in London by M.B., Ch.B.Ed., experienced in private and panel work. Drive car. Free now. — Address, No. 1966, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., B.S., age 42, LOCUM TENENS or PART-TIME WORK in London or suburbs. Can drive car. Free now. — Address, No. 2056, B.M.A. House, Tavistock Square, W.C.1.

A General Medical Practitioner (retired, and life abstainer) is willing to undertake LOCUM TENENS WORK. If duties are light, charge 5 guineas. Full particulars and references given.—Address, No. 1975, B.M.A. House, Tavistock Square, W.C.1.

Locum.—Medical Man, wide experience G.P.; free now. Own car.—Address, No. 2059, B.M.A. House, Tavistock Square, W.C.1.

Medical Man, bachelor, experienced in Hospital, panel, and private Practice, abstemious, active, cyclist, is free for LOCUMS or ASSISTANCY work. Terms: five guineas and travelling exs.—Address, No. 1954, B.M.A. House, Tavistock Square, W.C.1.

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Wanted.—Partnership or Partnership SUCCESSION in well-established X-ray Practice, with Hospital appointment preferred. Capital available. Free in about six months. — Address, No. 1956, B.M.A. House, Tavistock Square, W.C.1.

Death Vacancy. — Yorkshire, W. ... HALF SHARE ... eries attached. ... private) over £3, ... desired a suitable residence (new), with private surgery and garage, could be purchased.—Address, No. 1953, B.M.A. House, Tavistock Square, W.C.1.

Near Manchester.—Partnership in old-estab. Practice. Gross cash receipts last year £4,260. Panel 3,732. Good detached house available, 2 reception, 5 bedrooms. Garage and garden. Rent £60 p.a. Premium for 8/25ths share (about £1,350) £1,920; £1,000 down, balance by arrangement. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Partnership in Panel and Private Practice. Average cash receipts £2,000. Panel 1,700. Premium —1/2 share—£1,500. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Partnership in excellent mixed Practice. Average cash receipts £5,816. Panel 3,375. Good house available, 3 bedrooms. Rent 22s. 10d. weekly. Premium—1/3rd share—1½ years' purchase, part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership. — Advertiser wishing to sell immediately, would accept very low premium for ONE-THIRD SHARE in genuine PRACTICE in Cornwall returning £1,100 p.a. Two other partners. Choice of houses at rental. Good Hospital with election to staff. Accountant's figures. Great scope.—Address, No. 1970, B.M.A. House, Tavistock Square, W.C.1.

Required.—Partnership or PRACTICE, £1,000 up, South or South-West County or London, by experienced Graduate in late forties, robust, energetic, married, having necessary capital.—Address, No. 2051, B.M.A. House, Tavistock Square, W.C.1.

Yorkshire Partnership. — Old-established unopposed Country Practice, not much midwifery and very little night work. Total receipts £2,200. Panel 1,000. Dispenser kept. Sport of all kinds, and educational facilities. Incoming Partner should be 30—40 years of age, English or Scotch, and possess ample capital. A practical knowledge of major surgery derived from resident Hospital appointments would be a recommendation. Small 12-roomed house, electric light and water, good garden, garage for three cars, which could be sold. Practice, premium 2 years' purchase for half share. Banker's and social references desired. — Address, No. 1950, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted.—Middle-class residential PRACTICE, little or no panel, near sea preferred. Income £1,400—£1,800, or less with scope. Modern house and garden essential. Capital available.—Address, No. 1951, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Practice, middle or working-class. Income at least £1,400 p.a. London suburb preferred. Large panel essential. Advertiser will pay two years' purchase for suitable Practice.—Address, No. 1969, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — A middle-aged man (50), desires a Country PRACTICE, or would consider suitable PARTNERSHIP. Knowledge of Eye and V.D. work. S. or S.W. England. Pleasant country and golf.—Address, No. 1951, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, before end April, Practice in North-West England, earning £2,000—£2,500, large panel. Suitable for two friends. Capital available.—Address, No. 2057, B.M.A. House, Tavistock Square, W.C.1.

Cheshire. — Old-established. — Pleasant district. Nice house, large garden, garage. Receipts £700. Excellent scope. Panel 630. Appts. £60. Price, house and Practice, £2,200 or near offer, part deferred. —MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Cheshire Town, near Manchester.—PRACTICE averaging £700 p.a. Panel 500. Scope. Excellent modern house (freehold), 2 reception, 4 bedrooms. Surgery, etc., adjoining. Premium—Practice and house —£2,000. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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For Disposal, Kent, 14 miles from London. — Middle-class PRACTICE, with scope. Panel 1,500. Income £1,000. House to rent £70 per annum. Surgery attached. — Address, No. 1222, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For Disposal. — The private RADIOLOGICAL PRACTICE and X-RAY APPARATUS of the late Dr. Maurice R. J. Hayes of Dublin.—Apply, A. O'HAGAN & SON, 9, Harcourt Street, Dublin.

For Sale.—Cash and Panel Practice, near Aldgate, London. Also Branch Surgery. Suit Woman Doctor. Average receipts £1,400; used to be much more. Large comfortable House on long lease. Premium £1,800 for quick sale. — Address, No. 2055, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Small good-class PRACTICE in Channel Islands. No midwifery. 1½ years' purchase. Established seven years. Suit man wishing to live semi-retired. Beautiful House.—Address, No. 1962, B.M.A. House, Tavistock Square, W.C.1.

For immediate Sale.—Old-established West County PRACTICE. Retiring Practitioner prepared to let other end do some work for the present. Easy terms. Englishman, accustomed to good society. — Address, No. 2052, B.M.A. House, Tavistock Square, W.C.1.

Large Seaport Town, Cornwall.—NUCLEUS PRACTICE for Sale. Receipts about £300, panel 100, established nine months; excellent scope. 6 of former house available.—Address, No. 1981, B.M.A. House, Tavistock Square, W.C.1.

London, S.W. — Urgent Sale, Vendor having two other large Practices. Cash and Panel PRACTICE. Receipts £500 p.a., including panel 350. Surgery premises 15 p.w. Premium £650 or offer. Densely populated area.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London, E. (20 minutes Liverpool Street.—Excellent opportunity to acquire Cash PRACTICE on very favourable terms. Receipts last 12 months £1,293, all cash. Premium £1,700, payable £650 down, balance in 2½ to 3 years.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven St., Strand, W.C.2.

London, N.W.—£950 for Practice yielding £900, for quick sale. Charming self-contained flat, with garden. Suit bachelor or couple. Rent £78, with share of rates. Garage. — Address, No. 1965, B.M.A. House, Tavistock Square, W.C.1.

London, E. — Well-established Cash and Panel PRACTICE. Receipts average £850 p.a., including panel 715. Large corner house, long lease, rent £100 p.a. Premium £1,250. Vendor going into the country. —Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lancs Town, near Coast. — Old-estab. PRACTICE. Average cash receipts £2,000. Panel 2,150. Good house, 2 reception, 5 bedrooms. Rent £80 p.a. on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street Manchester.

London, S.W.—Very old-established PRACTICE. Receipts average £1,050 p.a., including panel. Large prominent house, rent £115 p.a., 7 years' lease. Vendor selling through age. Urgent sale. Reasonable offer considered.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Manchester. — Old-established, in populous district. Good house, rent £45. Receipts £1,550. Panel £750. Resident one and a half miles away, in pleasant suburb. Price, Practice, residence (freehold), debts (£280, good), surgery fittings, and waiting room furniture, £3,250, £1,000 part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Middle-class PRACTICE in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Near King's Cross. — Well-established Cash and Panel PRACTICE. Receipts last year £646, including panel. Surgery and living accommodation £150, long lease. Premium moderate. Suit lady or gent. —Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

North-West Coast. — Old-estab. mixed PRACTICE. Cash receipts 1929, £1,129. Panel 580. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms, Garage and garden. Premium—Practice—1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice required, suitable for two friends. Cash receipts £3,000 or over, with scope, or little less with great scope. Good panel. Capital available.—Address, No. 1958, B.M.A. House, Tavistock Square, W.C.1.

Sound Practice for disposal, Manchester district. Six months' introduction offered.—For terms and particulars, apply KNOTT & CASTLE, Solicitors, 3, Norfolk Street, Manchester.

Scotland, East Coast. — Receipts last year approximately £1,600. Panel 1,570. Excellent house for sale. Moderate premium to prompt purchaser.—ROBERT FLEMING, S.S.C., 21, Hill Street, Edinburgh.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

HOUSES, CONSULTING ROOMS

An excellent opportunity pre- sents itself in a fine CORNER PREMISES, situated in the East End of London. No Practice in a two-mile radius. Reasonable terms. —Apply, Mr. D. H. KLAUSNER, 22/24, Finch Street, E.1.

Consulting Rooms to be Let. Harley Street and District. Whole or part time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

Corner House (main road), St. John's Wood.—UNFURNISHED ROOM or ROOMS in large house suitable for Doctor starting Practice, no other Doctor near.—62, Clifton Hill, N.W.8.

Doctor would like to Exchange pleasant, ROOMY HOUSE, with garden and garage, in beautiful south inland health resort, for similar house by sea. About four weeks in summer. Mutual inspection, etc. No Locum work.—Address, No. 1953, B.M.A. House, Tavistock Square, W.C.1.

Eastbourne.—To Let, Furnished, large sunny ROOM, part-time, with Specialist, or whole-time Room. Attendance, etc. Small FLAT also, same bldg. Owned by late Harley St. Specialist. Beaut. sit., 1 min. station. —No. 2053, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Charmingly situated HOUSE on gravel soil, with extensive view and delightful garden, 220 feet above sea level. On ground floor—hall, drawing room, dining room, bedroom with its own bathroom, kitchen, larder, scullery, serving annexe between dining room and kitchen. Two other rooms until recently used as consulting and waiting rooms. On first floor—bedroom, with dressing and bathroom. Two other bedrooms. Constant hot water supply, labour saving, and standing on 3/4 acre of land. Garage. Price 3,000 guineas. —Apply, "O. M. R.," Box 786, "Mercury" Office, Hertford, Herts.

Harley Street. — Lease for Sale of modernized HOUSE, with vacant possession. 2 floors, comprising 6 exceptionally good rooms and 2 bathrooms; also ample domestic accom., service lift, and constant h.w. Rents receivable from Consulting Rooms pay all outgoings, including service. Lease 15½ years. Price £3,500. — Apply, WARMINGTON & Co., 19, Berkeley Street, W.1. Mayfair 3533/4.

SUITABLE PROFESSIONAL PURPOSES.

Kingston & Surbiton (between). — Detached RESIDENCE, hall, 2 recep., vestibule, 5 bed., dressing, bath, etc. Unique features. Garden and side entrance. Lease 51 years. £950. Vacant.—COX & MARTIN, Fife House, Kingston-on-Thames.

East Ham. — Capital Freehold CORNER HOUSE for Sale. Excellent opportunity for Medical Practitioner. Four bedrooms, 2 recep. rooms, bathroom & lavatory, kitchen, scullery, and offices, h.w. installation, side gates and garage. Gas, elec. light and telephone.—BUILDER, 3, Gooseley Lane, East Ham. Telephone: Grangewood 0143.

Small Flat to Let unfurnished. Bed sitting room; tiled bath and w.c., and lobby. Lift, constant hot water; restaurant below. Three mins. from St. James's Park.—Write, Box 782, c/o SIELLEN, 8, Serle Street, W.C.2.

Re Dr. F. Dingley Pitt, deceased.
TO PRACTITIONERS, DENTISTS, etc.
No. 65, HIGH ROAD, CHISWICK.

Mr. A. J. Fowkes will offer for Sale by Auction on the premises on Wednesday, April 2nd, 1930, at two o'clock, the above desirable CORNER RESIDENCE (occupied by the deceased for very many years and up to date of death in January last). It contains 6 bedrooms, bathroom, 3 reception rooms, consulting room with separate entrance, lobby, kitchen, scullery, and usual domestic conveniences. Held for long term at a moderate g.r.—Partics. of the Auctioneer, 230, High Rd., Chiswick, W.4. Telephone: Chiswick 0081.

Nursing Home for Sale at Oulton Broad, Lowestoft. — Accommodation; ground floor—commodious Sun Lounge, five rooms, bathroom, and domestic offices; upstairs—six rooms, operating theatre, and bathroom. Now occupied as private residence, but possession will be given on completion of purchase. Freehold £1,450.—Write Box A.5627, RAYS, Cecil Court, W.C.2.

Resident Patients. — Exception- ally fine HOUSE for disposal near London, with goodwill. Rent £115 p.a. Three acres. Eight large bedrooms, two bathrooms.—Address, No. 1977, B.M.A. House, Tavistock Sq., W.C.1.

To Dentists.—Two to Five Rooms TO LET over Doctor's Surgery in good main road position in West London. Particulars, SLADDEN & STUART, 44, Royal Cres., Holland Park Avenue, W.11. Park 7511.

Westcliff-on-Sea. — Self-con- tained FLATS, very healthy. Beautiful position, facing sea and bandstand. — "Palm Court," 4, Cliff Town Parade.

MISCELLANEOUS SALES, etc.

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As a result of our unique experience over many years, we obtain all reliefs and concessions for our numerous medical clients.

HARDY & HARDY
TAXATION CONSULTANTS:
49, Chancery Lane, London, W.C.2.
Phone: Holborn 6659. Write for Tax Guide, Free.

Acousticon Aid for Deafness for Sale (by Doctor). Tortoiseshell receiver "Dime" earpiece, in perfect order and nearly new. Cost fourteen guineas, accept seven. —Address, No. 1962, B.M.A. House, Tavistock Square, W.C.1.

Carter's Electric Invalid CHAIR, in perfect running order. For Sale, half price. Seen Dorset.—Address, No. 1979, B.M.A. House, Tavistock Square, W.C.1.

Consult GRIMALDI'S before buying your next Car, whether NEW or USED. Agents for all leading makes. 100 USED CARS IN STOCK ALL GUARANTEED 12 months. Special deferred terms for Doctors, financed entirely by ourselves. Strictest privacy ensured.—ERNEST GRIMALDI, LTD., 148/150, Gt. Portland St., W.1. Museum 3931 & 7236.

Doctor's widow has Instruments for Sale, cheap. Complete Eye-testing case, steriliser, etc.—Address, No. 1957, B.M.A. House, Tavistock Square, W.C.1.

Rough Rhyming Notes on "TREATMENT AND APHORISMS." A snappy book on treatment—a long-felt want. Best value. Published at 2/6. Sold at Foyles and at Faber & Fabers, Russell Sq., London; Fannins, Dublin; James Thin, South Bridge, and Bitces, Edin. By J. O'K. MURPHY, M.D.

The Medical Practitioners' Cash BOOK, 12/6 post free. Specially designed by a qualified Accountant for the profession. Easy to use. Saves time, worry, and Income Tax. Money refunded if dissatisfied. — CHARNWOOD PUBLISHING CO., Atlas House, Coalville, Leics.

X-Ray Outfit for Sale complete, excellent condition, formerly used in connection with ringworm. No reasonable offer refused. May be inspected at 128, High Street, Eltham.

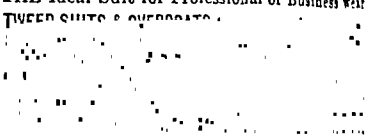
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Can secure Perfect Fitting and Distinctive Clothes of Exceptional value. FINEST QUALITY MATERIALS. *BEST WORKMANSHIP ONLY.*

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JACKET & VEST (in black or grey), £5 5s.
SOLID FANCY WORSTED TROUSERS, £2 2s.
THE Ideal Suit for Professional or Business wear

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"I strong[illegible] to visit to have satisfaction to patronize Harry Hall Ltd, as all the clothes I have had from them during 30 years have been perfect in Fit, Cut, and Finish" (Signed) S.J.A., M.A., M.B., F.R.C.P.S.

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Medical Surgical Sundries Ltd.
Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (particulars on application). Write for price list of Tablets and Government Surplus articles.
Showroom: 97, Swinderby Road, Wembley.

APPOINTMENTS.—Contd.

David Lewis Northern Hospital.
LIVERPOOL.

RESIDENT MEDICAL OFFICER.

Applications are invited for the post of HOUSE SURGEON, to commence duties as soon as possible.

Remuneration at the rate of £100 per annum, with board-residence.

Applications and testimonials to be sent to the undersigned.

H. LEVEY, Secretary Supt.

Charing Cross Hospital.

ASSISTANT PHYSICIAN.

The Council invite applications for the post of Assistant Physician (male).

Candidates, who must be Members of the Royal College of Physicians of London, must send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, March 31st.

PHILIP INMAN,
Charing Cross Hospital, W.C.2. House Governor.

St. Andrew's Hospital,
Dollis Hill, London, N.W.2.

RESIDENT MEDICAL OFFICERS.

The posts of SENIOR and JUNIOR R.M.O. vacant on May 1st (male, British). Candidates must possess registered Medical and Surgical qualifications of the United Kingdom. Applications by letter, with copies of three recent testimonials and a certificate of ability to administer anæsthetics, should be sent not later than April 5th to the Administrator.

North Lonsdale Hospital,
BARROW-IN-FURNESS.

Applications for HOUSE SURGEONS are invited from fully qualified male Practitioners experienced in the administration of Anæsthetics. Salary £175 per annum, with board-residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary so as to reach him not later than March 31st.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

TELEGRAMS: Tactear, London. Surgical, Glasgow. TELEPHONES: London, 1277 Welbeck. Glasgow, 477 Douglas.
Tactear, Manchester. Tactear, Dublin. Manchester, 3152 Ardwick. Dublin, 331 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, Tadworth Court, Tadworth, Surrey, on April 28th.

Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on Monday, March 31st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, April 2nd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
March, 1930. Secretary.

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me by Wednesday, March 26th.

W. COCKBURN, Supt. & Secretary.

Woolwich and District War
MEMORIAL HOSPITAL,
Shooters Hill, London, S.E.18.
(General Hospital—112 Beds.)

(*a*) HOUSE PHYSICIAN. Vacant April 1st.
(*b*) HOUSE SURGEON. Vacant May 1st.

The Board of Management invites applications from suitably qualified male candidates for appointment as (*a*) House Physician, (*b*) House Surgeon. It is desirable that the House Surgeon shall be experienced in Obstetrics.

An honorarium of £125 per annum will be paid in respect of each appointment, which will be for a period of six months as from (*a*) House Physician, April 1st, and (*b*) House Surgeon, May 1st.

Applications, accompanied by copies of not more than three recent testimonials, should be sent to the undersigned to reach him not later than 10 a.m. on Monday, March 24th, for the House Physician, and 10 a.m. on Friday, April 4th, for the House Surgeon.

EDWIN RADFORD,
Secretary-Superintendent.

Shropshire Orthopædic Hospital
AND AGNES HUNT SURGICAL HOME,
OSWESTRY.

Two HOUSE SURGEONS (male) required in April. Appointment for six months, with possibility of extension. Salary at the rate of £200 per annum, with board, residence, and laundry. Two weeks' holiday for each six months' service.

Applications, stating age, with copies of three recent testimonials, should be received by the Secretary Superintendent on or before March 31st.

The London Lock Hospitals,
91, Dean Street, W., and
283, Harrow Road, W.9.

The Board of Management invite applications for the following appointments:

(1) SURGICAL REGISTRAR to the Male Lock Hospital, and
(2) SURGICAL REGISTRAR to the Female Lock Hospital.

Honorarium in each case £100 per annum. The appointments are for one year. Candidates, who must be doubly qualified and duly registered, are invited to send in their applications, together with three copies of testimonials only, to the Secretary at 283, Harrow Road, W.9, not later than 10 a.m. on March 24th. Copies of the Laws and By-laws relating to these appointments can be obtained on application to the Secretary. Candidates must be Fellows (or Members) of the R.C.S. England, or Surgical Graduates of a University of the United Kingdom.

By Order of the Board,
HY. J. EASON,
March 6th, 1930. Secretary.

The London Lock Hospital,
91, Dean Street, W.

The Board of Management invite applications for the post of FIRST HOUSE SURGEON and SECOND HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. The salary attached to both appointments is at the rate of £200 per annum, with furnished rooms, full board, and laundry. The appointments are for six months. Duties to commence April 5th. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W., on or before March 24th.

By Order of the Board,
HY. J. EASON,
March 6th, 1930. Secretary.

Metropolitan Hospital,
Kingsland Road, E.8.

T[illegible] are prepared to [illegible] appointment of a [illegible] for Diseases of the Skin.

Candidates must be Fellows or Members of the Royal College of Physicians of London, and Graduates in Medicine of a University recognized by the Medical Council, and not engaged in general practice.

There are seventeen members of the Medical Staff upon whom candidates will be required to call, and to each must be sent a copy of application and testimonials.

A list of the staff and further particulars will be furnished upon application to the undersigned.

Applications will be considered if received on or before March 31st.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

A Surgeon is required for the
EDINBURGH HOSPITAL FOR CRIPPLED CHILDREN, with Major and Minor Clinics in the South-Eastern area of Scotland. Applicants must be duly qualified Medical Practitioners who have wide experience of Orthopædic work. The Surgeon appointed will be required to confine his private practice to orthopædic surgery. The Lectureship of Orthopædics in the University of Edinburgh will be associated with this appointment. Total emoluments £1,000 per annum. Applications, with testimonials, should be sent to R. W. MARTIN, W.S., Hon. Secretary, Edinburgh Hospital for Crippled Children, 5, Hill Street, Edinburgh, from whom further particulars may be obtained. Applications must be lodged by April 12th.

Freemasons Hospital and
NURSING HOME,
237, Fulham Road, Chelsea, S.W.3.

By the resignation of the Physician in charge, the post of RADIOLOGIST at the Freemasons Hospital is vacant. Candidates are requested to state full qualifications and experience, and to lodge their applications on or before March 25th. For further information apply to the Honorary Secretaries.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

The following Resident posts will be vacant on May 1st next:

SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.

JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.

Board, residence and laundry.

Appointment held for six months, but holders are eligible for re-appointment for a further term.

Candidates (male) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Monday March 31st next.

FREDK. W. DREWETT,
March 10th, 1930. Director.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY PHYSICIAN.

Candidates must be Graduates in Medicine of a recognized British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, must be sent in by the first post on Monday, March 31st next.

(One of the present Honorary Assistant Physicians is an applicant for the post.)

FREDK. W. DREWETT,
March 10th, 1930. Director.

Royal Cripples Hospital,
BIRMINGHAM.

Applications are invited for the appointment of HONORARY CONSULTING PHYSICIAN to the Royal Cripples Hospital.

The duties are to see cases referred by members of the Surgical Staff, either in the Out-patient Department at Broad Street, or at the Woodlands Hospital, Northfield, or otherwise by arrangement, and do not entail regular attendance at the Hospital.

The holder of the appointment is eligible to share in the Medical Staff Fund.

Applications must reach the Chairman of the Medical Board, Royal Cripples Hospital, 83, Broad Street, Birmingham, on or before March 27th.

Paddington Green Children's
HOSPITAL (Incorporated),
London, W.2.

HOUSE PHYSICIAN.
HOUSE SURGEON.

These appointments will become vacant on May 1st. Gentlemen (unmarried) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than the first post on Friday, April 11th. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible resident Hospital appointment are preferred. The appointments are for a period of six months.

JAMES A. HAMLIN, Secretary.

Peace Memorial Hospital,
WATFORD, HERTS.

SECOND RESIDENT MEDICAL OFFICER (female). £150 per annum. Appointment for six months, eligible for re-election.

Applications, stating age and qualifications, with at least three recent testimonials, should be received not later than March 26th by the Secretary. No canvassing permitted.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Manchester Victoria Memorial
JEWISH HOSPITAL,
CHEETHAM, MANCHESTER.
(General Hospital and Recognized Training School.)

Applications are invited for the post of HONORARY RADIOLOGIST. Applicant to be registered Medical Practitioner, with Diploma of Medical Radiology and Electrology, to take full charge of X-ray and Sunlight Departments, equipped with one 10 K.V.A. Valve Rectified Set, one Treatment Set, and Sunlight Equipment.

Applications to state days and hours at which attendance could be made at the Hospital (not less than one attendance weekly). Sister Radiographer in attendance. Applications to be addressed to the undersigned not later than April 5th.

FRED BARNES, Supt. & Secretary.

Ancoats Hospital, Manchester.
RESIDENT SURGICAL OFFICER.

Applications are invited for the post of Resident Surgical Officer, which becomes vacant on April 30th next.

Appointment for twelve months. Salary £200 per annum, with board, apartments, and laundry. Candidates holding an F.R.C.S. degree will be preferred.

Applications, stating age, qualifications, previous experience, etc., together with copies of three recent testimonials, to be forwarded to the undersigned on or before April 3rd next.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

West Bromwich and District
GENERAL HOSPITAL. (130 Beds.)

Applications are invited for the post of CASUALTY HOUSE SURGEON.

Candidates (male) must be doubly qualified and unmarried.

Salary at the rate of £200 per annum, with board, residence, and laundry.

The appointment is for six months, and the candidate appointed will be required to take up his duties on April 1st next.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to the undersigned at once.

By Order,
Edward Street, FRANK I. HANCOCK,
West Bromwich. Secretary & Supt.

Willesden General Hospital.
SURGICAL OUT-PATIENTS' DEPT.

Applications are invited for the appointment of CLINICAL ASSISTANTS to the Surgical Out-patients' Department, which is held on Monday and Friday at 2 p.m. The successful applicants will be expected to attend the Hospital regularly and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from the beginning of April.

Applications should be addressed to the Secretary not later than Tuesday, March 25th, from whom full particulars of the appointment can be obtained.

R. J. HEARNE, Secretary.

St. Mary's Hospital, W.2.
OBSTETRIC REGISTRAR.

The Board of Management invite applications for the above post, which will fall vacant on Monday, April 21st. Candidates for the appointment must be Fellows or Members of the Royal College of Surgeons of England or Graduates in Surgery of a British University. An honorarium of £50 per annum will be paid, with luncheon and tea provided. Copies of the regulations for the Obstetric Registrar may be obtained on application to the Secretary's office. Applications, with copies of not more than three testimonials, should reach the undersigned on or before Thursday, March 27th.

W. PARKES, Secretary.

Royal Victoria and West Hants
HOSPITAL, BOURNEMOUTH.
(POOLE ROAD BRANCH.)

HOUSE SURGEON (male, British nationality) required to commence duty immediately. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Act. Applications, stating place of birth, with copies of three testimonials, to be sent immediately to the undersigned. Women and married men are ineligible.

GORDON M. SAUL, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Royal Hampshire County
HOSPITAL, WINCHESTER.

HONORARY OPHTHALMIC SURGEON.

Applications are invited for the post of Additional Honorary Ophthalmic Surgeon.

Candidates, who must limit their practice to Eye cases only, must be Fellows of one of the Royal Colleges of Surgeons of Great Britain or Ireland, or Graduates in Surgery of one of the Universities of Great Britain or Ireland, and must be duly registered.

The elected candidate will be required to attend at the Hospital once a week, or oftener if required.

The appointment will be made subject to the statutes and rules of the Hospital, copies of which may be obtained from the undersigned.

Applications, stating age, with testimonials, limited to three in number, should reach the undersigned not later than Monday, April 7th.

Winchester. HERBERT MASLEN,
March 12th, 1930. Secretary.

Derbyshire Royal Infirmary.
DERBY.
(General Hospital—338 Beds.)

Applications are invited for the combined post of OPHTHALMIC HOUSE SURGEON and RESIDENT ANÆSTHETIST.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS,
March 10th, 1930. Supt. & Secretary.

London Hospital, E.1.

Applications are invited for the post of ASSISTANT RADIOLOGIST. Candidates must hold a Radiological Diploma. Attendance at the Hospital will be required on five half days a week.

Applications, with testimonials, should be sent to the House Governor of the Hospital not later than by the first post on Saturday, March 29th.

For further particulars apply—
London Hospital, E.1. E. W. MORRIS, House Governor.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Vacancy March 27th. Salary £120 per annum, with residence, board, etc. Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management not later than March 29th.

H. R. NORTH, Secretary.

THE OLDEST AND LEADING MEDICAL AGENT

PERCIVAL TURNER,
(Established 50 years) Ltd.
4 & 5, ADAM ST., STRAND, W.C.2
Telegrams: "EPSOMIAN, LONDON."
Telephone: TEMPLE BAR 9011.
After Office Hours: EPSOM 9142.

Terms post free on application.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Fees from 2/6. Living accommodation en pension.—No. 8634.

London, S.E. — About £1,500 p.a., increasing. Non-panel PRACTICE. 2/5 share for disposal for £850 cash. Choice of houses.—No. 8632.

Cornwall. — Unopposed County. About £1,400 p.a. Panel about £50. Clubs and appts. about £100 p.a. Mids. 2–3 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Suburban.—1/2 share of £2,600 p.a. Old-estab. Panel nearly full. Fees 2/6—10/6. Mids. 3–12 gns. House, 5 beds., etc., to let.—No. 8629.

London, S.W.—About £500 p.a. Cash and panel PRACTICE. Panel 550. Lock-up premises 15/- p.w. House available.—No. 8628.

London, S.E. — About £1,600 p.a. Cash PRACTICE. Panel 350. Lock-up premises at £2 p.w. Low premium.—No. 8627.

Leicestershire. — Practice over £700 p.a. Panel over 1,000. Fees 2/6—7/6. House, 4 bed., etc. Rent £70. Large garden.—No. 8626.

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Northern Suburb. — Middle-class PRACTICE. About £1,350 p.a. Mids. 2—5 gns. Visits 3/6 to 10/6. Panel over 700. Good house, with large garden to rent.—No. 8625.

London, S.E. — About £2,000 p.a. Very few mids. Panel over 3,000. Nine-roomed house to rent.—No. 8620.

Lancs Town.—About £2,000 p.a. Mids. 2—4 gns. Visits 2/6 up. Panel over 2,100. House, 5 beds., etc., to let.—No. 8618.

Liverpool. — 1/3 share of over £4,000 p.a. Old-estab. Appts. £100 p.a. Panel about 4,700. Mids. 3–5 gns. Visits 3/6—5/-. House, 4 bed., etc.—No. 8616

Eastern Counties. — Country. — About £1,800 p.a. The whole or 1/2 share with early succession. Panel and appts. over £900 p.a., fees 2/5—10/6. Mids. 2–5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Worcs. — Country Practice. — Unopposed. 4½ miles £1,100 p.a. Fees 5/- to 10/-. Panel and appts. £410. House, 5 bed., etc. Rent or buy. Easy terms.—No. 8612.

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Oxfordshire Town. — £720 p.a. Clubs, etc., £40 p.a. Panel 490. Visits 3/6 and 5/-. Mids. 3—10 gns. Good house, garage, garden. Prem. 1 yrs.' pur.—No. 8606.

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54 THE BRITISH MEDICAL JOURNAL. [MARCH 2, 1

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(FOUNDED 1880.)

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2 LONDON, W. — Partnership (with succession) in good-class non-dispensing Practice of £1,750 p.a. No panel. One-half share at first at 2 years' purchase. Partner must be well qualified.

3 W. OF ENGLAND. — Ophthalmic Practice over £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,000.

4 SOUTH COAST. — Practice about £1,350 p.a., in favourite watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium £1,850.

5. HOME COUNTY.—Practice doing about £800 p.a. in [illegible] district, under 25 miles from London. Panel active house (8 bedrooms), in 2½ acres £1,200.

6 EASTERN COUNTIES. — Easily worked Country PRACTICE of over £1,400 p.a. in very pretty part. Panel 750. Well-built house (5 bedrooms). Electric light and main drainage. Garage and garden. For sale. Schools. Premium £2,000.

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8 LONDON, E.—Cash and Panel Practice of about £850 p.a. (£520 from panel). Well-situated house (5 bedrooms) to rent. Considerable scope. Premium £1,250.

9 SOUTH COAST. — Small Practice in fashionable Health Resort. Earnings 1929, £550. Very good house (6 bedrooms), with large garage and garden, for sale.

10 EASTERN COUNTIES. — Country Practice of £835 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

11 LONDON, N.W.—Practice (carried on by Medical Woman) doing £200 p.a. in main thoroughfare. Panel about 80. Shop-fronted premises, with flat above, to rent. Good scope. Premium £350, to include furnishings and fittings of surgery and furnishings of flat.

12 DEATH VACANCY. — South Devon. — Country PRACTICE over £750 p.a. in delightful part, easy distance of coast. Panel about 400. House (4 bedrooms), garage, garden. Main drainage. Rent £45. Cottage Hospital.

13 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

14 EAST ANGLIA.—Partnership in Practice of £3,600 p.a. in Country Town. Panel 1,356. After [illegible] Assistantship one-third share offered to suitable man at 2 years' purchase. Applicant should be exper. and a good Anaesthetist.

15 WEST OF ENGLAND.—Good-class Family PRACTICE of between £1,000—£1,100 p.a. in centre of important City. Panel 1,100. Good freehold house (6 bedrooms), with garden, for sale. Considerable scope. Premium £1,000.

16 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

17 SURREY.—Partnership in steadily increasing Practice in delightful residential town. Receipts 1929, £2,600. Panel over 900. Very nice detached house (4 bedrooms), with garage, etc., to rent. Hospital. Scope for increase. Premium 1/3 share £1,600.

18 LONDON, S.W.—Practice of nearly £800 p.a. in suburb easy distance of Charing Cross. Panel 830. Four rooms available for Practice. Ample scope. Premium 1½ years' purchase.

19 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (3 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

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22 YORKSHIRE (N.R.).—Practice of £925 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

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23 LEICESTERSHIRE. — Country Practice over £720 p.a. (about one-half from panel). Easy distance of good town. Detached house to rent. *Premium 1½ years' purchase.*

24 YORKSHIRE (W.R.).—Country Practice of £1,300 p.a. (about £400 from panel), close to first-rate town. Good house (5 bedrooms) to be sold. Golf and hunting. Premium—house and Practice—£5,000.

25 YORKSHIRE.—Seaside Town.—Partnership in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) *for sale. Premium two-fifths share* £1,400.

26 LONDON, N.W.—*Practice of £868 p.a. in* thickly populated suburban district within 5 miles of Marble Arch. Panel 480. House to be sold or let. Premium £900.

27 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

28 HOME COUNTY.—Increasing Practice in attractive country town about 30 miles from London (N). Receipts 1929 over £700. Small panel. Good corner house (6 bedrooms) to rent. Premium 1½ years' purchase.

29 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

30 LONDON, N.—Good middle-class Practice of £1,600 p.a. in first-rate residential district. Panel 200. Very attractive well-built house (2 bed and dressing rooms) and beautiful garden for sale. Premium 1½ years' purchase.

31 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

32 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

33 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

34 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

35 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering-place. Receipts last year £930 (including panel £230). *Ground floor flat* to let. Premium £1,050.

36 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. Educational facilities. Premium £1,000.

37 LONDON, S.W. — Partnership in mixed Practice of over £6,200 p.a. in one of the best outlying residential suburban districts. Panel over 5,000. House (5/6 bedrooms) for sale or rent. Premium one-sixth share 2 years' purchase. Partner should be young and married or about to be.

38 NEAR BIRMINGHAM.—Partner required in middle-class Practice over £2,000 p.a., in good residential town. Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

39 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one-third share 2 years' purchase.

40 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (6 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

41 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. *Good house* (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

42 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570 Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

43 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale or rent. Premium £1,050.

44 WILTSHIRE. — Country Practice about £500 in delightful part. Small panel. *Suitable flat (2 bedrooms)* to let. Premium £400.

45 LANCASHIRE. — *Practice of £1,500 in* rapidly growing district within a few miles of a popular resort. Panel over 200. Very nice compact house (4 bedrooms), with beautiful garden and orchard, for sale. Prem.—Practice—£1,500.

46 KENT.—Country Practice over £800 p.a. in Beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Pre*mium 1½ years' purchase.*

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48 SOUTH MIDLANDS.—Rapidly increasing PRACTICE in first-rate town. Receipts 1929, £750. Panel 480. Detached double-fronted house (4 bedrooms) to be sold or let. Considerable scope. Premium £650 only.

49 EASTERN COUNTIES. — Partnership in Country Practice over £1,700 p.a. in prosperous agricultural district. Panel 1,050. Accommodation available. Premium two-fifths share £1,200.

50 SOUTH COAST. — Partnership in non-dispensing Practice about £5,000 p.a. in fashionable watering-place. Small panel. Convenient flat to let. Partner must be well qualified. (Oxford, Cambridge, or London.)

51 DEATH VACANCY. — Suffolk.—Country PRACTICE of £1,000 within easy distance of important town. Small panel. House, with large garden.

52 SOMERSET. — Easily worked Country PRACTICE over £850 p.a. in favourite Residential Village. Panel 500. Well-built house (5 beds.) for sale or rent. Prem. £1,250.

53 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

54 SOUTH COAST.—Partnership in Practice about £3,850 p.a. in favourite watering place. *Panel 2,300* Large well-situated house (6 bedrooms) to rent. Premium one-third share 2 years' purchase.

55 LANCASHIRE.—Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

56 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

57 SOUTH OF ENGLAND. — Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well built house (6 bedrooms) to rent. Premium one-half share 1½ years' purchase.

58 NORTH OF ENGLAND — Practice about £500 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

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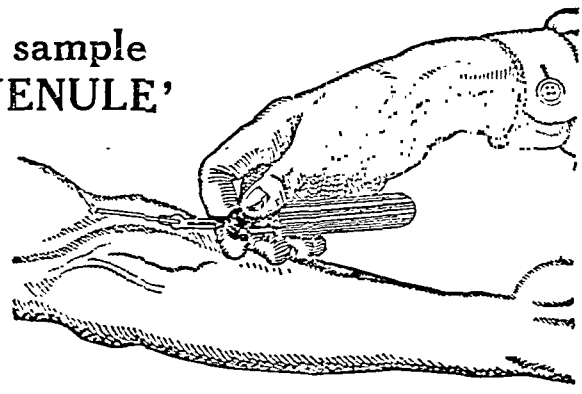
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10. LONDON.—EASTERN SUBURB.—Old-established good middle-class PRACTICE averaging about £1,350 p.a. Panel of 715. Fees 5/6 upwards. Not much midwifery. Exceptionally nice house, with large garden, tennis court, etc. Contains 10 rooms, in addition to bathroom, etc., and professional rooms. Two garages. Rent on lease £120 p.a. (upper part well let off). Premium £2,000.
11. WITHIN FIFTY MILES OF LONDON.—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 538, and appts. worth about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Electric light. Price for freehold £3,000. Premium £1,050. Exceptionally good educational facilities for boys.
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15. PARTNERSHIP.—LONDON, S.W.—PLEASANT RIVERSIDE SUBURB.—A one-sixth share is offered in an old-established mainly better-class Practice, rapidly increasing, and with scope for still further development. Average gross cash receipts for past two years £6,213 a year £6,662). Panel of over 5,000. Fees 3/6 to 21/-. Mid 20 gns. Very good house, with 5 to 6 bedrooms, etc. For might be rented. Premium 2 years' purchase.
16. LONDON, S.W.—Very old-established chiefly middle class PRACTICE rapidly increasing and offering still further scope. Gross cash for the immediate past twelve months approximately £5,000. of about 1,500; could be much increased. Fees from 2/6 to Two houses available, on rental. Very suitable for two partnership. Premium 1½ years' purchase.
17. MIDLANDS.—Old-established good mixed-class PRACTICE in country district near large town. Receipts for last twelve estimated to be £900, and increasing. Fees 3/6 to 20/-. house with all conveniences, containing 2 reception, 6 bedrooms Rent on lease £65 p.a. Premium £1,800.
18. SOUTH-WEST OF ENGLAND.—GOOD HOSPITAL TOWN.—A share in an old-established mixed-class PRACTICE is offered to the retirement of the Junior Partner. Gross cash receipts £2,300 p.a., including good appts. Small panel. Low Commodious house, with garden and garage, rent £70 p.a. Pr 2 years' purchase. Vendor on staff of Hospital, and scope for
19. YORKS.—LARGE TOWN.—Very old-established middle and class PRACTICE, offering exceptional scope for increase. last year £1,500, including panel of over 1,700. Visits 4/6 Conveniently situated house, with 2 reception, 4 bedroom Rent on lease £56 p.a. Premium £2,250.
20. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to half share in a very old-established and rapidly increasing general Practice. Average cash receipts for last 3 years last year £3,521. Panel of 1,130. Fees 5/6 to 21/-. Good its own grounds with ample accommodation. Price freehold £1,200 on mortgage. Premium £2,500. Cottage Hospital, and scope for major surgery.
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26. YORKS.—(North Riding).—Country PRACTICE in beautiful Average income over £750, including panel of about 350. Fees 3/6 to 21/-, medicine extra. Nearest opponent 4 miles house with 2 reception, 4 bedrooms, etc., and garden of Rent on lease £30 p.a. Prem. 1½ years' purchase, part by
27. MANCHESTER DISTRICT. — Old-established middle class PRACTICE, worth last year about £700, including 590, and capable of increase. Expenses small. Well situated with 6 rooms in addition to professional rooms. Large garden. freehold, £850. Moderate premium accepted.
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re can, of course, be no universal rule as to taking of laxatives. Circumstances vary, and ly the physician is in a position to judge their levance. But experience seems to show that a ood deal of harm is often done by the common abit, continued over long periods, of taking aperients at bed-time. At night, the colon is *normally* much less active than in the day; and it seems unwise, unless special reasons exist, to stir it to unwonted activity during the hours which should be allotted to sleep. It is probable that much insomnia and many rest-disturbing dreams have their origin in the taking of a nightly purgative.

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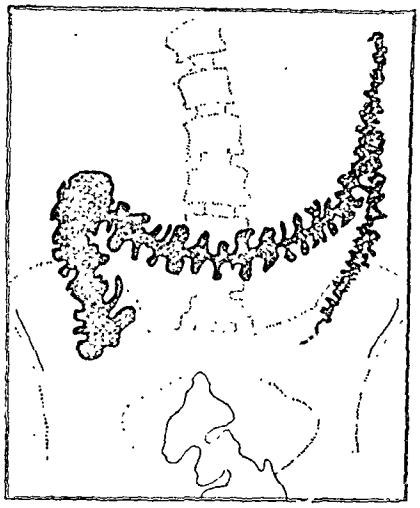
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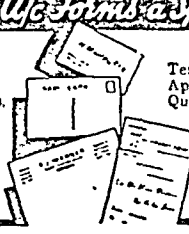
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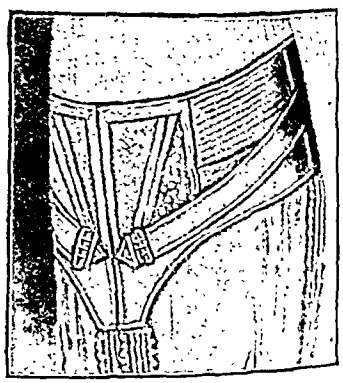
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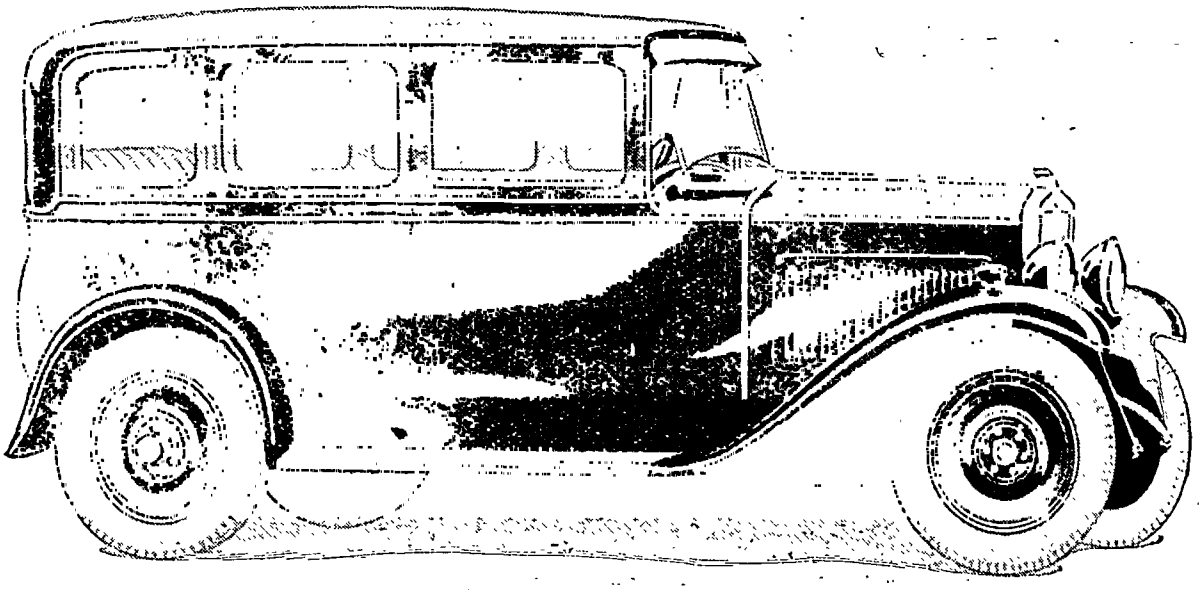
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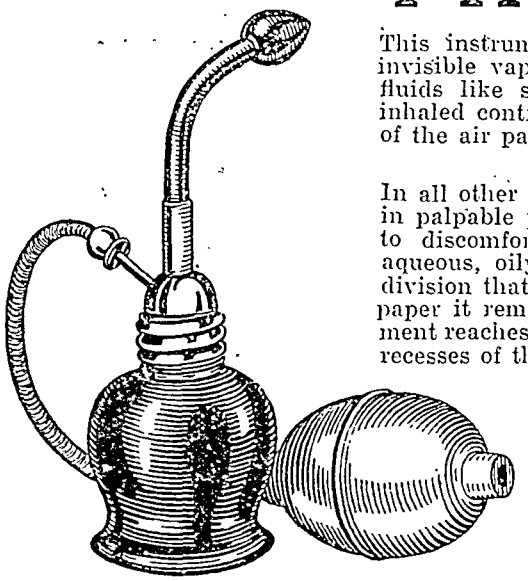
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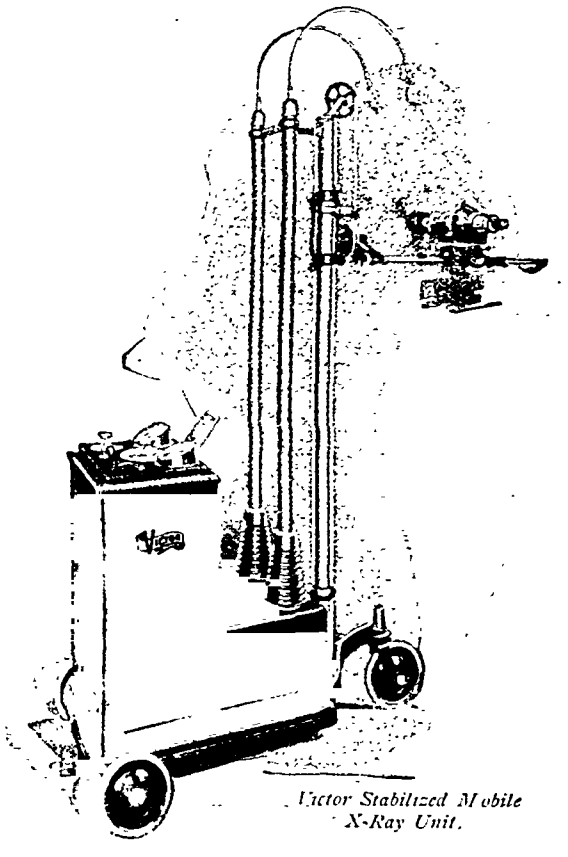
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"The effect on the bowels has always been most marked"



The effect of a deficiency of Vitamin B upon the human system is not always observed, because it shows only as General Debility, Digestive Derangement, etc., for which other causes may have been assigned.

But when the deficiency is remedied by the addition of BEMAX the definite improvements recorded leave no doubt as to the cause of the indisposition.

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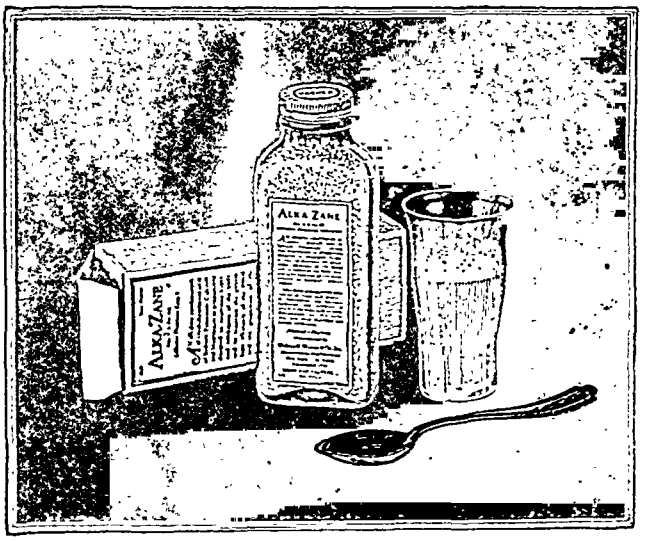
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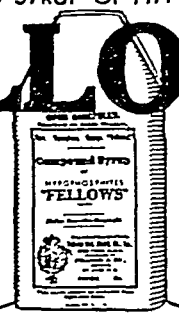
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The Ideal Spring Tonic

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Sod. Bicarb. ...	2 parts	Sod. Bicarb. ...	2 parts	Sod. Bicarb. ...	2 parts
Mag. Carb. ...	4 parts	Mag. Carb. ...	3 parts	Mag. Carb. ...	3 parts
Calcii Carb. ...	4 parts	Calcii Carb. ..	4 parts	Calcii Carb. ...	4 parts
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In 8-oz. bottles for prescribing and 80-oz. bottles for dispensing.

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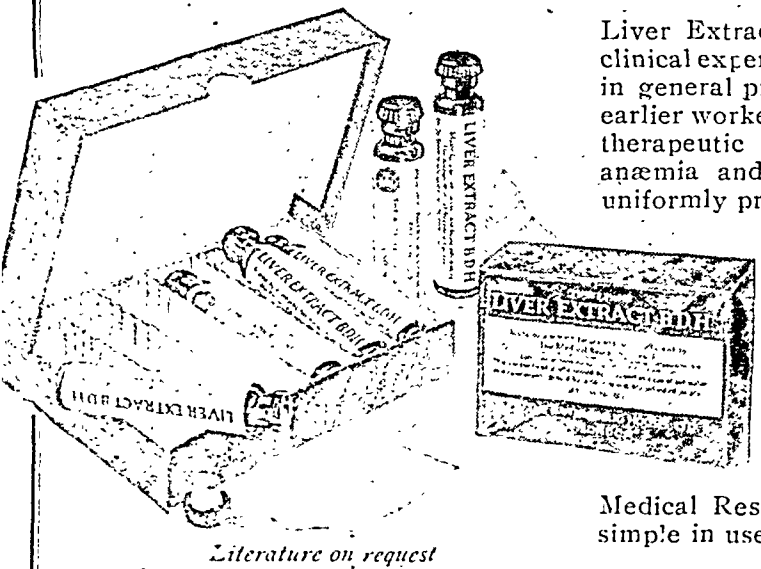
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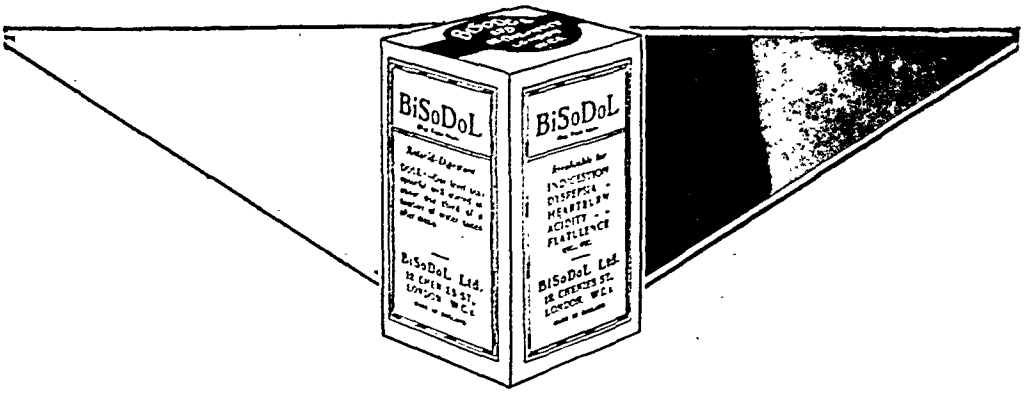
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IT IS INDISPENSABLE IN THE SURGERY

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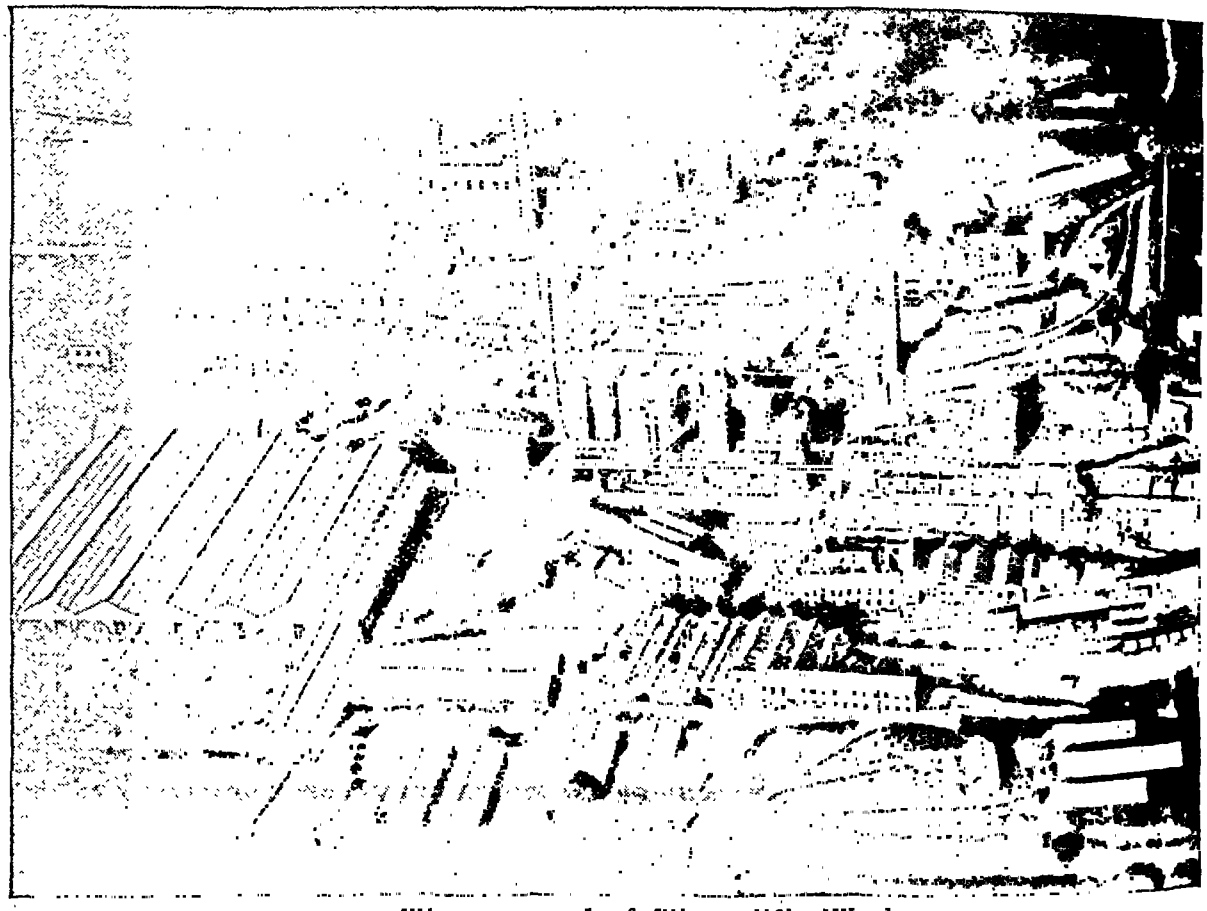
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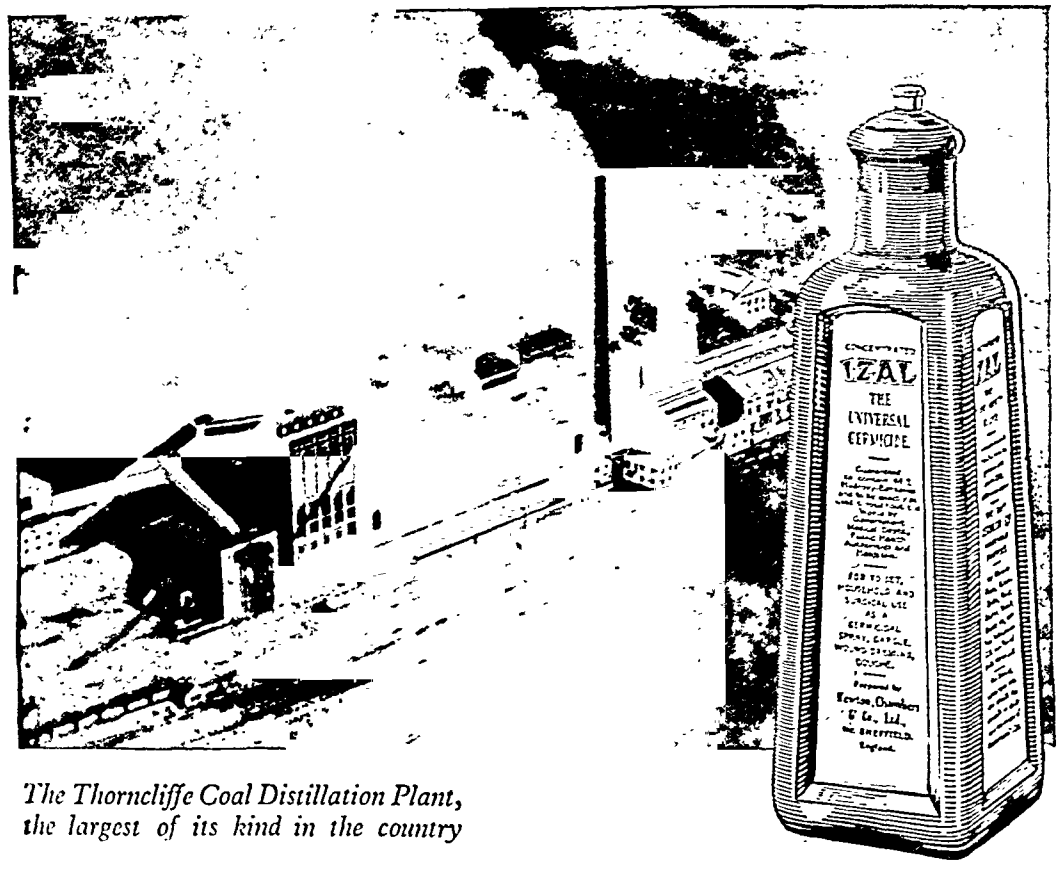
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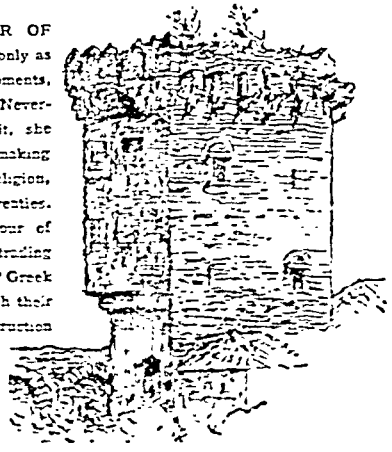
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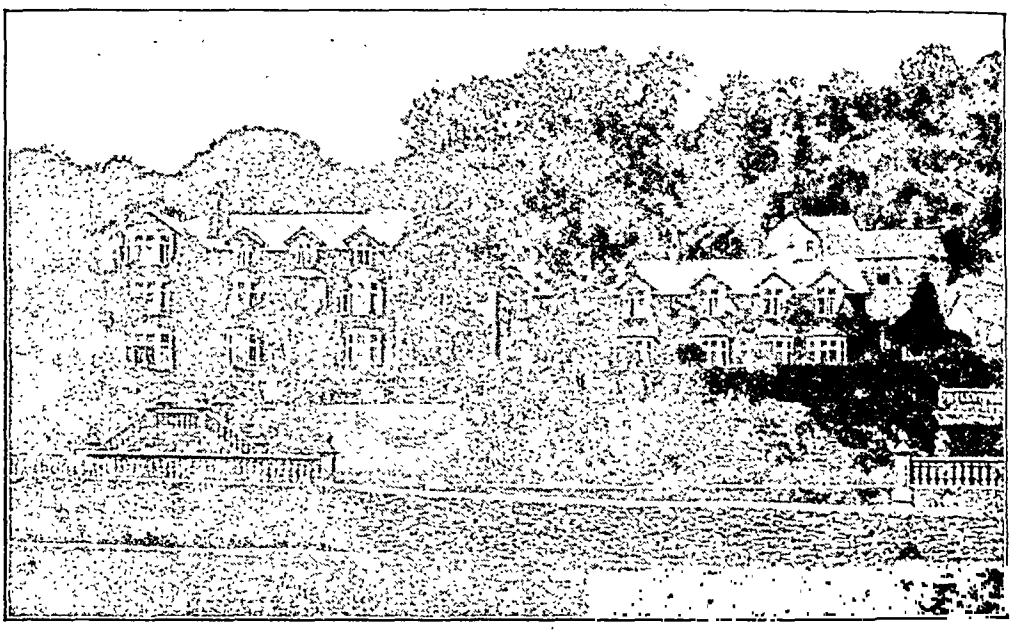


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An Address
ON
CHRONIC INFECTION OF THE CERVIX:
A FREQUENT CAUSE OF PELVIC AND GENERAL ILLNESS.

BY
JAMES YOUNG, M.D., F.R.C.S.,
GYNAECOLOGIST, ROYAL INFIRMARY, EDINBURGH; PHYSICIAN, ROYAL MATERNITY AND SIMPSON MEMORIAL HOSPITAL.

The past few years have witnessed three advances in the practice of gynaecology, each significant in the measure in which it has led to a saving of life or the alleviation of pain and illness. The first of these has been the establishment of the palliative as opposed to the operative treatment of all but the exceptional cases of active salpingitis. In the past it was customary to carry out surgical intervention, ending often in extensive and mutilating operations and attended with a not inappreciable mortality, in those cases deemed to be streptococcal, the palliative procedure being reserved for the gonococcal cases. The rapid immediate recovery which is now known to follow the same regime of non-operative expectancy in both types of case has removed from the practice of the gynaecologist one of his greatest responsibilities in diagnosis, as it has resulted in the saving of lives and in the conserving of organs which the surgeon formerly considered it necessary to sacrifice. The new treatment has further vindicated itself in the frequency with which apparently grossly damaged appendages can exhibit clinical if not functional cure. Immediate abdominal operation is now reserved for those comparatively rare cases where laparotomy is the only method of removing diagnostic confusion with appendicitis and tubal pregnancy, and, on infrequent occasions, a pelvic abscess of tubal origin requires to be drained through the vaginal vault. Where persisting symptoms finally demand active intervention this can now be planned during a quiescent period and after the lapse of an interval during which death of the infective organism can be presumed to have occurred.

The second notable advance springs from the recognition of the frequency of strains of the spinal joints in gynaecological cases. With the help of Mr. W. A. Cochrane we are carrying out a special study of these cases in the gynaecological department of the Edinburgh Royal Infirmary, the results of which will be published in due course. Meanwhile we feel justified in saying that the recognition of this orthopaedic source of many of the low back pains which used to persist after our operations for prolapse, backward uterine displacement, etc., has brought with it a very great accession to the scientific treatment of our patients.

The third noteworthy advance in our subject during recent years is the recognition of the extent of the distress and ill health caused by chronic infection of the cervix. This lesion has long been recognized, and we know that from early times one of the most common therapeutic measures consisted of the local application of caustic drugs to "erosions" of the cervix. The old textbooks bear witness to the frequency of this practice. At the same time, the older attitude did not extend much beyond one which regarded the lesion as a sort of simple ulceration from which unpleasant discharges continually drained away.

It has remained for this generation to grasp more fully the wider clinical significance of the condition, and the object of this paper is to demonstrate that in many cases it is responsible for pelvic and abdominal distress, and that it may play, in addition, a profound part in the production of general ill health. Take the following illustrative cases.

1. A 2-para, aged 31, since the birth of her second child three years ago has suffered from constant leucorrhoea with more or less constant pain in the left iliac fossa. Menstruation has been regular and excessive. The general health has been poor, headaches and attacks of faintness being common. Blood pressure, 150/100.

2. A 6-para, aged 37, for six years has had leucorrhoea with pain in the lower abdomen, exaggerated before and during micturition. There have been bladder irritability and frequency, headaches, rheumatic attacks in wrists, and constant feeling of fatigue.

These instances are selected from a large number of patients in whom chronic cervicitis was present, and in whom treatment directed to this condition resulted either in a complete cure or in a noteworthy alleviation of the clinical features.

Space forbids me to enter adequately into a discussion of causation and pathology. Suffice it to say that the disease is found more commonly in women who have borne children—the percentage proportion of parous women to nulliparae being about 93 to 7 (Fulkerson[1])—and the most usual causal factor is the damage and the consequent infection the cervix is apt to suffer during childbirth or the puerperium. Lacerations and uterine displacements (prolapse and retroflexion) are thus found as a common accompaniment of chronic cervicitis. A proportion of the cases are gonococcal, although only in comparatively few where the condition has persisted for some considerable time (the usual history) can we isolate the gonococcus. The dominant fact in the pathology of the disease is the resistance to the process of natural recovery which in other parts of the body quickly leads to the spontaneous healing of sores of a similar kind. This intractableness arises from the natural crypts and crevices which exist in the cervix and from the racemose structure of the cervical glands, and the tendency for infection, once it has passed into the deeper layers of the cervix, to be locked up in the recesses of these glands. A contributory factor arises from the lesion being placed within a narrow canal in which swelling of the tissues tends to hamper free drainage.

Curtis[2] has directed special attention to this fact of faulty drainage being an essential element in the pathology as it is a salient consideration in regard to treatment. On examination the diseased cervix is found to be commonly increased in size, with a soft, bulky, and rough rim of reddened mucosa encircling the os and covered with a muco-purulent secretion. It is common to find the cervix lacerated, with an opening up of the lower end of the canal and an exposure of the mucous lining of the endocervix. In many instances the blocked endocervical glands become distended with an infected muco-purulent secretion and bulge on the vaginal surface of the cervix as small hard cysts (Nabothian follicles). Radiating from the cervix into the surrounding parametrium we often find bands of tissue, frequently tender to pressure, which are due to cicatricial shortening in cellulitic deposits or to the healed vaginal extension of a cervical laceration. These bands immobilize the cervix and drag it from its central position. An interesting phenomenon is that such bands may sometimes be found to disappear under anaesthesia, proving them in these instances to be due to muscle spasm and not to any organic change in the affected tissue.

CLINICAL FEATURES OF CHRONIC CERVICITIS.

The most constant symptom is leucorrhoea, and this in many instances is the only pelvic complaint, although it is common to find even in such patients evidence of impaired general health. Pain in the pelvis or abdomen is the next most common local symptom. Bladder and menstrual troubles are frequent and the general health may be involved in a variety of ways, fatigue, headache, arthritis, and cardio-vascular disturbances being amongst the most frequent manifestations. Leucorrhoea consists of a more or less persistent vaginal discharge, sometimes thin and watery, more often thick and creamy, and sometimes frankly purulent. It is prone to irritate the genitals and skin surfaces of the vagina, vulva, and thighs.

Pain in Chronic Cervicitis.

The most distressing of the common symptoms of cervicitis is pain, which is felt usually in the lower abdomen and more especially in one or other iliac fossa or in both fossae. On occasion the pain is situated in the flank or in the upper abdomen, whilst not infrequently it is situated low in the back in the sacral or coccygeal regions, and pain in the hip and thigh would seem sometimes to owe its origin to cervical disease. In many patients there

[3512]

*Delivered to the Edinburgh Obstetrical Society on February 12th, 1930.

is discomfort or even acute pain during the action of the bowels. All these aches and pains are prone to exaggeration before and during the menstrual periods and as the result of exertion.

Because of its wide distribution this pain of cervical origin is apt to be a source of confusion in diagnosis. Tubal or ovarian mischief is often erroneously suspected, and in the presence of a uterine displacement the pain may easily be attributed to this, whilst a common source of abdominal confusion arises from the frequent right iliac fossa pain being mistaken for appendicitis. For all these reasons cervical pain merits our most serious attention.

I would say, in the first place, that as the result of a close study of pelvic pain and its underlying pathology over a considerable number of years I have come to the conclusion that, with the possible exception of vaginal prolapse in its varying degrees, the most common gynaecological cause of pain in the lower abdomen and pelvis in women is chronic cervical infection. The recognition of this common relationship is of profound importance, because it has enabled us to bring relief to a considerable proportion of the patients who in former days constituted our failures, and who in many instances spent their lives in a weary passage from doctor to doctor, suffering often futile operations in the process.

The evidence for this faith is twofold. In the first place, thanks to the accessibility of the diseased organ, it is in the majority of cases easy to demonstrate the relationship between the lesion and the pain. In the second place, as we shall see, the treatment of the disease, which is usually comparatively easy, leads in a large proportion of cases to relief.

Let me amplify the first statement. To understand the ease with which the diagnosis of the origin of the pain can be made we have, to begin with, to consider some simple facts in connexion with the ordinary vaginal examination. If the examining fingers are placed on the cervix and this be moved laterally, antero-posteriorly, and upwards, it is found that in health a considerable amplitude of displacement can be obtained in all these directions, and that even at its maximum this displacement is painless. In cases of cervicitis, on the other hand, this mobility is commonly restricted, and in those cases in which pain is present any attempt to displace the cervix at once provokes the symptom in the location in which it has been complained of by the patient, be it in the iliac fossa, the back, or the bowel. On occasion, pain may be elicited by manipulation of the cervix, although such pain does not appear among the symptoms of the case. In many instances the least pressure on the cervix causes severe pain—the type of case in which dyspareunia is apt to be a particularly distressing symptom. In not a few patients in whom nausea is a prominent clinical feature in the history I have, in addition, found a tendency to retch at once provoked by this procedure—an interesting demonstration of the widespread reflex nervous phenomena that may owe their origin to the genitalia. The nausea and vomiting which are common accompaniments of pelvic disease I have on repeated occasions found to be cured after treatment directed to this disease; this result I can recall more particularly as a sequel to operations for vaginal prolapse.

I have drawn attention to the risk of the abdominal pain of cervicitis being related in error to other abdominal or pelvic organs, with the attendant danger of the patient being subjected to futile operation. Here are three examples.

1. Mrs. A., aged 31, 3-para, was examined by a surgeon because of pain, tenderness, and muscle rigidity in the right iliac fossa. Appendicitis was suspected, but before operation the opinion of a gynaecologist was solicited because of a history of leucorrhoea and low abdominal dysmenorrhoea of some years' duration. On vaginal examination cervicitis was discovered with acute exacerbation of the iliac fossa pain on displacing the cervix to the left side. Treatment for cervicitis was instituted.

2. Mrs. B., aged 29, 1-para, in 1926 had an operation for appendicitis without relief of symptoms. In 1927 she had a fixation operation for retroflexion of the uterus, with removal of a cystic right ovary. The symptoms increased in severity, the pain involving the entire area of the lower abdomen and being associated with marked leucorrhoea and bladder irritability. In 1929 cervicitis was recognized and treated, and this was followed by a disappearance of all the symptoms, except some persisting diurnal frequency.

3. Mrs. C., aged 25, 2-para, in 1928 had a plastic operation for vaginal prolapse and an abdominal operation (Gilliam) for replacement of a retroflexed uterus. The symptoms were relieved but the abdominal pain and the leucorrhoea persisted. In 1929 treatment was carried out for chronic infection of the cervix, with immediate cessation of the leucorrhoea and relief of the pain.

This pain reference from the diseased cervix can be demonstrated easily and conclusively in regard to the common iliac fossa or general low abdominal pain, and also in regard to pain in the sacro-coccygeal region and in the lower bowel. It raises interesting questions both in connexion with the innervation of the cervix and the adjacent tissues and in regard to the nerve channels by which the irritant impulses arising in these sites are registered on the body surface in regions remote from their point of origin.

In the present state of our knowledge it is impossible to formulate an accurate anatomical basis for the phenomena. We know that the vaginal cervix is insensitive to ordinary painful stimuli. It can, for example, be grasped with a sharp vulsellum forceps without pain being elicited. On the other hand, it would seem that the low back distribution of the pains of labour is, at least in part, to be explained by the stretching of the cervix during the labour process. In this connexion Dr. Edwin Robertson has recently shown, in a series of observations carried out at the Edinburgh Royal Maternity Hospital, that by stretching the partly dilated cervix with the finger hooked into the cervical canal pain is at once registered in the sacral area, but here alone. These observations provide some basis for the belief that the common sacral pain of cervicitis may be a reference from the cervix itself. In regard to the common low abdominal and iliac fossa pain there is no such evidence, and we must conclude that here we are dealing with stimuli arising in the nerve elements outside the cervix and owing their origin to the irritation spreading into the surrounding tissues from the cervix. That the inflammatory process is a dominating factor is proved by the clinical demonstration that, whereas traction on these structures is painless in health, in the presence of the infective changes they become sensitive to this manipulation.

The cervix, vagina, rectum, and the adjacent structures are known to be supplied by branches from the hypogastric ganglion which is formed by elements passing into the pelvis from the renal and mesenteric plexuses, and through which it is linked up with the dorsal and lumbar spinal nerves. It establishes in the pelvis a connexion with branches passing directly to the ganglion from the second, third, and fourth sacral nerves. In the light of these facts we may explain the somatic registering of the cervical and pericervical stimuli, the common iliac fossa pain, for example, owing its origin to the central connexion between the corresponding visceral sympathetic twigs and the eleventh and twelfth dorsal nerves. Similarly we may formulate an explanation of the high abdominal pain, nausea, etc., experienced by such patients, on the basis of the linking of the abdominal and the pelvic plexuses. Any attempts thus to account for all the phenomena, however, must in the meantime be tentative pending research in this subject, which constitutes an attractive field in which data still remain to be gathered.

Bladder and Bowel Symptoms.

Bladder symptoms are very common in cervicitis, taking the form of frequency and dysuria. In some cases there is definite evidence of infection of the urinary tract with bacilluria and pyuria, and in such cases it is possible to account for the trouble either by predicating a direct spread of the inflammatory process from the cervix to the adjacent bladder or on the basis of a blood stream infection. In many instances, however, the urine is free from any abnormal elements, and it may be that in such the condition is reflexly induced by sympathetic irritation.

Bowel symptoms are less common than bladder disturbances. Constipation is frequent, but this is so often encountered in women that it is impossible to recognize any relevant bearing. Pain on movement of the bowel, however, which is a not infrequent complaint, suggests a

different category, because here the relation-ship can be directly demonstrated by the bowel pain being accurately reproduced by traction on the cervix.

Menstrual Abnormalities.

Disturbances of the menstrual function, usually in the direction of excess or irregularity, are common, and, as we have seen, premenstrual and menstrual aggravation of the pain in abdomen or back is frequently complained of.

The factors underlying the menstrual excess and irregularity so characteristic of this as of other forms of pelvic infection are somewhat obscure. In the present state of our knowledge it would seem that the alteration in the uterine function is more easily to be explained on the basis of ovarian dysfunction than in terms of a purely uterine pathology. In the majority of such cases there is no obvious uterine disease except a varying degree of hyperplasia of the endometrium with proliferation and dilatation of the glands—changes, in other words, which are more probably dependent upon some ovarian aberration. This in its turn may arise in a variety of ways. It may, for example, be due to the general pelvic congestion which accompanies the primary cervical disease, or to an involvement of the ovary in an inflammatory spread from the cervix, or, in the third place, to influences reaching the ovary by way of the sympathetic.

The dependence of the normal ovarian rhythm upon the other endocrinal glands, especially the pituitary, must naturally raise the question as to how far such disturbances of this rhythm may spring from an involvement of the pituitary in a generalized toxaemia induced by the pelvic sepsis. Such a view draws a certain amount of support from the well-authenticated part played by focal sepsis elsewhere in the body in inducing menstrual abnormalities. On the other hand, the very special relationship known to exist between pelvic infection and menstrual excess, etc., tends to align the evidence in favour of a more local origin of the menstrual disturbances of cervicitis. In two cases of this series in which the patients complained of excessive menstrual loss, and in which panhysterectomy was performed, marked ovarian changes were found. In one a large blood cyst of the ovary, and in the other irregular ovulation, as revealed by persisting and cystic follicles, were found. In the latter case, in addition to a deep-seated cervicitis with the most marked development of Nabothian follicles that I have ever seen, there were marked hypertrophic changes in the uterine muscular and mucous walls. It should be stated that in neither case was there any evidence of inflammatory changes in the tubes and ovaries.

A survey of the pathology, taken in conjunction with the clinical features, and more especially the frequency with which treatment directed solely to the cervix is followed by a restoration of the menstrual process, has led me to the conclusion that we may formulate a satisfactory explanation of the phenomena as follows: (1) infection of the cervix, leading to (2) involvement of the ovaries (by sympathetic disturbances or in some other way), leading to (3) the uterine changes associated with menstrual excess. The establishment of such a view would naturally provide us with an explanation of many otherwise obscure uterine haemorrhages and to at least a partial understanding of the so-called "bleeding uterus" or metropathia haemorrhagica.

General Ill Health from Cervicitis: Rheumatism.

It is becoming increasingly appreciated that the cervix constitutes a not infrequent source of systemic disease, and it is probable that the improved general health and sense of well-being that many women experience after treatment is largely attributable to the eradication of a focal source of sepsis. In the same way are to be explained the improvement and sometimes the dramatic arrest of an active and progressive arthritis that may supervene on treatment of this condition. A series of about a dozen such cases which I have had under my care have convinced me that, where unsuccessful attempts to find focal trouble in the teeth, tonsils, nasal sinuses, and bowel have been carried out, the cervix should always be looked upon with suspicion, and any distress there be brought under prompt control. I have referred to this matter in a communication recently published in this *Journal*,[1] and in it I have cited instances of the speedy arrest of progressive articular disease by the ablation of such pelvic foci. Take the following examples which have recently been under my care.

1. A 2-para, aged 32, had joint rheumatism for about a year, with rheumatic fever three months before her present illness. There had been leucorrhoea for some years often with unpleasant odour, otherwise there was no pelvic discomfort. The tonsils had been removed. Various joints, especially the wrists, were swollen, pale, and tender, with restriction of movement, and getting worse. The general health was poor, with shivering and sweats at night; weight 7 st. 6 lb. The uterus was large and retroverted. The cervix was infected, and manipulation evoked pain in the lower abdomen. Active treatment had to be delayed for ten days owing to fever, which on two days rose to 103° F. and was associated with acute exacerbation of the arthritis. Despite the fever, on October 31st, 1929, dilatation and cauterization of the cervix was carried out under avertin anaesthesia. Within four days the fever settled, the joint swelling and tenderness subsided, and she left the nursing home on the tenth day. On January 13th, 1930—that is, about two and a half months later—the general condition was markedly improved and the weight was 8 st. 10 lb. The wrists and other joints were normal in appearance, and there was no pain except occasional twinges in the knees. There was no leucorrhoea, the cervix being clean, with no pain on manipulation.

2. A 3-para, aged 37, had suffered from chronic ill health since childbirth nine years previously. Of the last two years she had spent eighteen months in hospital for valvular heart disease and progressive rheumatoid arthritis, with marked deformity in wrists, elbows, ankles, and knees. Leucorrhoea was discovered on the last occasion in hospital. The cervix was found to be very septic and was amputated. This was followed by rapid improvement in the condition of the joints and in general health.

Such cases teach us a very important lesson, and it is interesting to find experimental corroboration of these clinical results in the work of such investigators as Laura Moench,[2] who, in Rosenow's laboratory at the Mayo Clinic, has produced arthritis in rabbits by the arterial injection of anaerobic streptococci cultured from the cervix of arthritic women.

TREATMENT OF CHRONIC CERVICITIS

As chronic infection of the cervix is a frequent legacy from child-bearing the ideal time for its recognition and treatment is during the post-natal period—that is, before it has succeeded in producing the deep-seated structural changes and the train of local symptoms and general ill health which characterize so many of our cases. One of the strongest arguments in favour of a post-natal examination of every woman at the end of four or six weeks is the opportunity it gives for the detection of this lesion at an early and easily curable phase.

We have seen that the dominating feature of the lesion is its chronicity, and that this in its turn is dependent upon the peculiar structural arrangements in the cervix which tend to a locking up of the inflammatory discharges. This consideration gives the key to the treatment which must be directed to the opening up of the cervical canal and the establishment of tracks in the cervix along which the pent-up infection can drain freely away. For these reasons active surgical measures are essential. Experience has shown that vaginal douching and the application of caustic or antiseptic medicaments, which have often been employed in the past, succeed in effecting at the best nothing more than a superficial temporary cleansing of the vagina, whilst at the worst they not infrequently do harm by damaging the mucous membranes, and in this way aggravating the inflammatory processes already present. Among the other therapeutic measures diathermy, about which some workers have spoken highly, has in my hands proved unsatisfactory.

In cases where the cervix is greatly enlarged and deeply disorganized the best treatment may consist in amputation, although in some such cases, if the more palliative measures presently to be described fail, the better alternative is panhysterectomy. It is remarkable to find how completely a cervix that is extensively infected and enlarged, with perhaps deep lacerations and its entire substance riddled with Nabothian follicles, can recover as the result of measures directed solely to the establishment of free

drainage. In such cases, however, the treatment may require to extend over several months, and as this deliberateness of procedure is not often permissible in the hospital class of patient, in such amputation or hysterectomy may be the only possible initial alternative course to be adopted.

The routine treatment which I practise is as follows. The cervical canal is dilated to the full extent short of tearing of the tissues, and the mucosa and underlying structures of the cervical canal are seared longitudinally with the stout terminal of the electric cautery along its entire length from internal to external os and including at its lower end the "eroded" area on the vaginal surface. Three such strokes of the cautery on the posterior wall, followed by a similar number on the anterior wall, are usually sufficient. The cauterization is attended with some bleeding, and for this reason it is wise to commence behind. If there are any visible Nabothian follicles these are punctured individually and deeply. In every case it is wise to plunge the cautery deeply into the cervical tissue in one or two places, both in front and behind, and also within and outside the cervical canal.

The dilatation of the cervical canal is an important part of the procedure, since it is only in this way that free access for the cautery and the subsequent free escape of the discharges can be obtained. To allow of the dilatation an anaesthetic is necessary. Curettage is usually neither necessary nor advisable. Where there are deep lacerations with ectropion of the endocervix a repair operation should be carried out. In lacerations of a lesser degree this is not necessary, because after the longitudinal cauterization the internal tissues of the cervix tend to cicatrize and shorten in their long axis, with a consequent rolling in of the mucosa. In some cases the cauterization has to be repeated once or twice at monthly intervals. Healing of the wounds is fairly rapid and the patient is allowed to get out of bed in five or six days. There is usually little or no post-operative pain. On the other hand, where pain has been present before the operation, this often disappears rapidly with the subsidence of the cervical infection, and before the patient leaves the hospital or nursing home the pain elicited by manipulation of the cervix has frequently also disappeared.

After-Results.

For this investigation we have a consecutive series of hospital and private cases which have been brought under special study for this purpose during the year 1929. In attempting to assess the value of treatment it has been necessary to select for analysis out of the large number of patients with cervicitis under our care during this period those in whom this was the solitary lesion. This segregation is necessary because in many cases the cervicitis is merely one feature in the total disease picture, the symptom complex being built up of such conditions as retroflexion, vaginal prolapse, salpingitis, etc., in combination with cervicitis, and in which for purposes of accurate analysis it is often impossible to allocate the exact source of the individual subjective phenomena. At the same time I have included in my figures those cases in which, after operations for prolapse, retroflexion, appendicitis, etc., the persistence of symptoms has been considered to be due to the existence of an untreated cervical infection.

After these allowances we are left with a total of 86 successive cases. Of these, 69 were parous and 17 nulliparous women; of the latter, 9 were married and 8 single. The relatively high proportion of nulliparae in this list is doubtless to be explained by the exclusion, for reasons just stated, of a large number of cases in which cervicitis was combined with other lesions, such as displacements, whose incidence is highest in the married.

The results, as judged after an interval varying from two months to twelve months subsequent to the last treatment, are available in 75 out of the total of 86. To increase the accuracy of the findings the two most important symptoms—namely, leucorrhoea and pain, in regard to each of which precise data could be fairly expected—were segregated for purposes of special investigation. It so happens, however, that a large body of valuable evidence has been obtained in regard to some of the other symptom data—for example, the state of the general health, the menstrual and bladder functions—although these cannot be set out with the same statistical precision.

Leucorrhoea.—In 74 cases positive information is available. In 1 there was no leucorrhoea to begin with. In 44 (60 per cent.) there was complete cure, and in 13 (18 per cent.) improvement in this symptom—that is, in 78 per cent. there was cure or improvement. In 16 (22 per cent.) there was no appreciable abatement, in 2 it was stated to be worse.

Pain.—In 75 patients in regard to whom we have information, 8 had no previous pain. There was complete cure of this symptom in 33 out of the remaining 67 (49 per cent.), whilst there was improvement in 21 (31 per cent.). The total cure or improvement percentage is therefore 80. In 13 (20 per cent.) the pain was unaffected by the operation, whilst in 2 it was stated to be worse.

Menstrual Function.—No special follow-up investigation has been directed to this subject. This is now recognized to have been somewhat unfortunate because the number (20) in regard to whom there is stated to have been a cure of menstrual irregularity or excess, usually both, is so large as to indicate a positive benefit in these respects from the operation. In 5 the condition is put down as unimproved, whilst in 1 there *is stated to have been persisting haemorrhage with only* short dry intervals since the operation four months previously.

Bladder Function.—Although no complete follow-up has been instituted in regard to this condition, in many cure or improvement of frequency or dysuria, or both, is recorded.

General Health.—Marked improvement in general health is the rule in those cases where the other symptoms show abatement. This expresses itself in an increased sense of general well-being, in a loss of such sensations as fatigue, faintness, nausea, etc. These results follow naturally from the cessation of pain and depleting vaginal discharges, to which the removal of a septic focus of toxaemia probably in part also contributes. I have already referred to the significance of this last factor being specially exemplified in those cases in which a progressive rheumatism exhibits a rapid abatement after treatment of the cervix. Two such cases in this series show this well. In one an acute articular rheumatism subsided rapidly after cauterization of the cervix, whilst in another a progressive rheumatoid condition showed signs of arrest after hysterectomy where cauterization had previously failed. This case is especially interesting because a cardiac lesion with commencing decompensation and an associated hypertension both improved markedly after the operation. After an interval of two months the blood pressure had decreased from 200/110 to 140/98, the previous shortness of breath and attacks of faintness and oedema of the ankles had disappeared, and there was a marked general gain in health.

It will be noted that "cure" in terms of leucorrhoea and pain was obtained in 50 to 60 per cent. of the cases. In this connexion it is important to point out that in the great majority of the cases (69 out of 75) the treatment did not extend beyond one application of the cautery, whilst experience shows that in many instances one or two repeat operations are required before the maximum benefit is obtained. This is well seen in the fact that out of 6 patients, who had such recauterization, 5 were "cured." Amongst the 40 to 50 per cent. "uncured" cases it may therefore safely be presumed that a considerable proportion are capable of being further benefited, and that this has not been accomplished is due to a variety of factors, the chief being, on the one hand, the recovery of the cases, and, on the other, the failure of the patients to report at the clinic, and the fact of their condition being discovered only in response to a circular letter requesting them to attend for the purpose of this analysis.

In the series panhysterectomy was carried out on 5 occasions, in 3 by the abdominal and in 2 by the vaginal route. In 2 cases there was cure of the symptoms, in 1 there was marked improvement both locally and generally, whilst in 2 both leucorrhoea and pain persisted and the general health was not appreciably altered.

This question of the persistence of pain in the abdomen and pelvis after the removal of the apparent pelvic source of the trouble constitutes one of the most acute and at the same time most baffling concerns of the surgeon. In some cases it persists after the cervical disease has cleared up, and in such it can only be explained by a perpetuation of the irritation of the sympathetic fibres. In others—as in the two cases I have cited, in which the vaginal discharge and pain persisted after hysterectomy—it is

probably dependent upon a locking up of the sepsis in some of the cellular tissue planes of the pelvis. Cotte[5] of Lyons has claimed to obtain marked relief of pelvic and abdominal pain in otherwise intractable cases from a division of the main trunks of the pelvic sympathetic where they lie in front of the fifth lumbar vertebra, and it may be that with the aid of this procedure we might bring help to some of the distressing cases I have cited. This sympathectomy as described by Cotte I have carried out in one case. It is simple and apparently has no untoward effects on function, and it is therefore specially worthy of consideration in those cases in which it has been decided in any event to open the abdomen—as, for example, for the performance of hysterectomy.

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TRAUMATIC AND OTHER AFFECTIONS OF THE KNEE-JOINT.

BY

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THE knee-joint is more frequently damaged than any other joint in the body. Let us first consider simple uncomplicated traumatic synovitis of the joint, without a lesion of any important named structure. Such synovitis results from simple strains, blows, and kicks on the knee. The synovial membrane and capsule are slightly damaged by a tear or bruise, the site being indicated, perhaps, by local tenderness and pain. A small amount of blood is effused into the joint, but this is soon mixed with an excess of synovial fluid. The history, carefully inquired into, reveals nothing suggestive of a cartilage or other lesion, while the radiogram is negative. Routine examination shows that the joint can be fully extended. It is as well, perhaps, to emphasize the fact that the treatment demanded by this simple type of case must also form a part of the treatment of all forms of traumatic synovitis. Injuries of special structures call for special methods of treatment, and sometimes for postponement of those to be now discussed, but sooner or later these must be adopted before the joint can be restored to its full function.

Every synovitis is associated with two complications—weakness and wasting of the muscles, particularly of the quadriceps group, and a tendency to the formation of adhesions if preventive measures are not adopted. The objects of treatment are three: to get rid of the excess of fluid in the joint, to restore the muscles to their normal condition, and to obtain full movement, including rotation. These objects are best served by commencing active treatment at the earliest possible moment—that is, within twenty-four hours in an average case. This treatment consists of firm elastic pressure about the knee, massage to the knee and thigh, and faradic treatment of the anterior thigh group of muscles. The last is gradually replaced by active exercises. The pressure is best obtained by covering the knee with a thick layer of wool and a firm bandage. A special pad of wool or felt should be placed over the damaged portion of the capsule or ligament. The massage must be skilfully performed, soothing and not painful, and therefore must be gentle to begin with. The faradic treatment has certain great advantages: it can be used at once when the muscles are still suffering from a functional paresis almost amounting to paralysis. It can be graduated so as to cause contraction of the various muscles without at first producing movements of the joint, and it can be applied to every muscle in the group so that none be allowed to slack. The tensor fasciae femoris and the vastus internus should receive special attention. The importance of the muscles in maintaining the stability of the joint and keeping it free from excessive fluid must never be forgotten.

This line of treatment I wish to emphasize particularly, because it is still far too common to meet with cases that have been treated by rest in bed for a month and the application of iodine. The former is unnecessary and the latter worse than useless, since the skin is rendered unfit for massage. After a month of this treatment the joint is often still distended with fluid, while the muscles are markedly wasted and will require prolonged treatment to restore them to their proper size and strength. As often as not the knee has been kept slightly flexed on a pillow, and full extension is impossible until the tissues at the back of the joint have been gradually stretched. Flexion due to this cause is distinguished from that due to mechanical obstruction by the fact that forcible passive extension causes pain at the back of the joint instead of the front. Rest is unnecessary in the milder cases, and even in the more severe walking can usually be indulged in after twenty-four to forty-eight hours. The amount of pain induced by walking should be our guide. We are not dealing now with gross rupture of ligaments. Active movements should be encouraged as soon as the patient can manage them. If walking be indulged in as early as possible, and electrical treatment carried out from the first, the muscles are never allowed to waste, and recovery is rapid. Golf and the more violent games which involve sudden twists and turns must not be allowed till the joint is free from fluid and the muscles are as large and as hard as those of the other leg. Rowing and cycling may be indulged in much earlier, and are useful and safe. Passive movements are hardly required if treatment is efficient from the first. In the nervous patient, and when active treatment has been delayed for any reason, they may be necessary. Gentle measures are usually better than violent.

The results of inefficient or injudicious treatment of a synovitis are chronic fluid, quadriceps insufficiency, adhesions, and occasional pain. The longer the knee remains distended with fluid the greater the laxity of the capsule and its supporting tendons, and the greater the difficulty in getting rid of this waterlogged condition of the joint. The fluid may have disappeared and yet the muscles be in poor condition. This wasting gives rise to a feeling of weakness, difficulty in negotiating stairs, especially descending, while there may be sufficient instability to give rise to symptoms which may easily be mistaken for cartilage trouble. Faradic treatment and exercises must be persevered with for weeks or even months before the muscles are completely restored to full vigour.

Adhesions should be averted by restoration of full movement as early as possible. If present, however, and the injury be fairly recent, perseverance with physiotherapeutic treatment will probably cause them to yield, but if some few weeks or months have elapsed a manipulation under an anaesthetic will be necessary. Gas is unsuitable, ether is preferable, since absolute relaxation is necessary. What are the indications? Limitation of movement (not forgetting rotation), local pain when approaching the limits of motion, or both of these, and sometimes recurrent fluid. The longer the history the more reason for manipulating, and, if this fails, for exploring the joint. It is well known that a common site for local minor adhesions is the region of the internal lateral ligament with limitation of flexion and local pain, and that manipulation in such cases is usually successful. In doubtful cases manipulation should be given a trial before resorting to operation. It is not very uncommon for a patient to complain of occasional pain on certain days or after exercise, for months after an injured knee appears to have been completely restored to normal. Bruising of the articular ends of the bones is the probable explanation of this, in older patients osteo-arthritis will develop in the course of time.

Now let us consider some of the injuries to special structures which may complicate the synovitis. A fairly common injury is *strain of one lateral ligament*, usually the inner. The upper end of this ligament is damaged sometimes as commonly as the lower. Local tenderness and pain on exerting a valgus strain on the knee, with or without some lateral instability, will be present. In the average case seen shortly after the accident, it is worth while applying an outside splint to prevent the slight

abduction of the leg, and a firm pad over the ligament, for a few days, when the patient may be allowed up, provided the inner margin of the heel of his shoe has been wedged. In addition, the usual treatment for the synovitis is carried out from the first. The vastus internus, sartorius, etc., on the inner side will require special attention. The possibility of adhesions must not be forgotten. Be sure that full rotation and flexion are restored. Complete rupture of the lateral ligament and capsule on one side, allowing the joint to be gaped, is best treated by operation and suture, as far as possible, of all the torn structures. Such a rupture can occur without serious damage to the crucials.

The anterior crucial—we need not worry about the posterior to-day—is tight in extension and in extreme internal rotation. It is damaged either by over-extension of the joint or by severe lateral bending, when it yields after one or other lateral ligament has given way and the bending strain continues to operate. In either case the ligaments generally have been badly damaged. If it is not deemed necessary or advisable to suture a lateral ligament, the knee should be put in plaster, in extension, for six weeks. The result of such treatment after a complete dislocation of the joint may be surprisingly good, provided the knee is immobilized early. There is general agreement that it is useless to try and suture a torn crucial. If this ligament is found damaged some weeks or months after injury, constructing a new ligament out of fascia lata (Hey Groves-Alwyn Smith operation[1]) must be considered. Anyway, the condition of the muscles will be a decisive factor in the final result. Sometimes the crucial ligament, instead of tearing, elevates a fragment of bone from the non-articular area in front of the tibial spine; this will be referred to again later. The treatment of this is by operation.

Semilunar Cartilage Lesions.

The internal is far more frequently damaged than the external, probably because a valgum strain is so common. A small amount of lateral mobility in a slightly flexed knee is normal; in many knees, even and perhaps especially so in those who excel in the more violent games, this mobility is more than slight. How does the damage to the semilunar cartilage occur? When the inner side of the knee is forcibly gaped the cartilage is sucked in towards the centre of the joint by atmospheric pressure, and is then more readily caught between the bones. The inner condyle, instead of gliding over it, tears and carries with it a portion, or even the whole, of the cartilage. Twists of the femur on the fixed tibia are blamed by many surgeons for the damage, and no doubt this is correct in most cases, but violent extension, with or without combined rotation, must also be a factor in some. Preliminary damage to the internal lateral ligament, and partial freeing of the cartilage, to which the former is attached, is improbable, in view of the fact that damage to this ligament is certainly not very common in cartilage lesions, and would not explain many of them. On this point I entirely agree with my friend Mr. Bristow.[2] The posterior end of either cartilage may be damaged by abrupt flexion of the joint as well as by a twist.

The actual lesions found at operation vary considerably, but the commonest are, first, the so-called "bucket-handle," where the cartilage, or a strip of it, is freed through the greater part or the whole of its length, but is left attached at its extremities; and, secondly, a freeing of a part or the whole of the anterior extremity. A bucket-handle lesion of the posterior part only is not infrequent, and must be remembered when at operation the visible anterior portion appears to be normal. A double bucket-handle of either cartilage—two free strips attached only at their extremities—may occur, while a lesion of both cartilages in the same knee is occasionally met with. In one patient I removed all four cartilages; in three of these, at any rate, a definite traumatic lesion was present. The history one likes to get is that of a definite trauma resulting in immediate locking of the knee in moderate flexion, unlocking of the joint abruptly—with or without the aid of an anaesthetic—the unlocking being accompanied by a snap or click, and recurrence of this sequence of events on at least one occasion. Unfortunately such a clear history is by no means always obtained. The more indefinite the history the greater the need for caution, it being remembered that in most cases the question of operation depends upon the history alone. The abrupt unlocking of the joint, particularly when accompanied by a snap, is often more convincing than the actual locking. In some the knee simply gives way with or without a click.

The history is apt to be less definite when the external cartilage is at fault. Tenderness may be present after a fairly recent injury, and is localized to the spot where the remaining attachment of the cartilage to the tibia and capsule has been strained. A common spot for this is the margin of the tibia a little to the inner side of the ligamentum patellae, as insisted on by Sir Robert Jones on many occasions. This corresponds to the anterior attachment of the internal semilunar cartilage, which must be strained when a bucket-handle type, for instance, gives rise to locking. If full extension is impossible this must be obtained by manipulation, with or without the aid of an anaesthetic, and then the synovitis should be treated in the routine way. The patient need not be kept in bed. I can confirm the experience of several of my friends that a knee that habitually snaps on flexion and extension is the seat of a lesion of the external cartilage. This is true of children as well as adults. Recurrence of locking due to a damaged cartilage, though the rule, is not inevitable. The cartilage may be nipped without being torn or grossly loosened, so operation should be delayed—provided the knee can be fully extended—till a second locking occurs. Always have radiograms taken to exclude injury of the bones. Nipping of a fat pad may give rise to similar symptoms. If the symptoms have been indefinite, but have recurred from time to time, or fluid has persisted or recurred over a period of a couple of years, the joint should be explored; in some cases operation is justifiable much sooner.

As to the operation, I now prefer the vertical incision for many reasons, one of which is the ease with which a wide exposure of the joint can be obtained, if desired—for example, when an unexpected articular cartilage lesion is discovered—by prolonging the incision upwards beside the patella and into the quadriceps tendon. This enables one to displace outwards the patella, as suggested by Fisher.[3] When it is desired to examine carefully the external cartilage in addition to the inner, it is better to make a second incision on the outer side. The split patella operation is better avoided.

The classical *loose body* is traumatic in origin, and consists of a fragment broken from the joint surface of a bone. The typical symptoms consist of a momentary locking, followed by a varying amount of effusion. The original trauma need not be severe. Such a body, even though not giving rise to much in the way of symptoms, should be removed, in order to avoid the inevitable osteo-arthritic changes; if the joint is already arthritic the changes will be aggravated by the loose body if left in the joint. The body usually consists of bone and articular cartilage, the former dead, the latter living and growing, nourished by the synovial fluid. Sometimes the body contains no bone and gives no shadow in a radiogram. It is often impossible, particularly in an old-standing case, to locate the site from which a loose body has been broken without making a wide exposure of the joint, and this is usually inadvisable and unnecessary.

Damage to the articular cartilage is far more common than is generally considered to be the case. As already stated, bruises of the articular surfaces account for some of the cases of persistent or intermittent pain occurring for long periods after injury. Portions of articular cartilage, with or without a flake of underlying bone, are often separated, completely or incompletely, by violence on the football field in adolescent and adult males. The loose piece may look as if it had been punched out by a cheese taster, the hole having abrupt and only slightly shelving edges. A slipping patella may result in damage to the outer condyle or the deep surface of the patella. The latter bone, if examined during the course of an operation, will not infrequently show a sodden fissured condition of its

artilage, more often on the inner half, with cracks reaching down to the bone.

A not uncommon site for damage is the outer part of the inner condyle, adjacent to the intercondylar notch. This results from external violence, which drives the tibia rearwards, the tibial spine impinging against the margin of the inner condyle, a portion of which is sheared off. Frequently the cartilage is left intact at one spot, so that the fragment remains more or less *in situ*. It is this condition which was described in 1888 by Koenig, who thought it resulted from an inflammatory process, a quiet necrosis, and called it osteo-chondritis dissecans. Most surgeons nowadays are convinced that these cases are purely traumatic. A subsequent trauma may complete the separation, setting the flake free as a loose body. If the flake remains *in situ*, persistent fluid is the chief feature, the true nature of the case being revealed by x rays. The partially detached fragment should be removed and the edges bevelled off. The prognosis is good—far better than might be expected. The exposed margins of the two condyles may be chipped off by a kick or blow. Twice I have seen the posterior end of one condyle flaked off, once by violence which seemed quite inadequate. Sometimes the *spine of the tibia* suffers rather than the femur from a shearing movement between the two bones, one or other tubercle of the spine being cracked off, without much displacement as a rule. The severity of the injury, rather than the small fracture itself, accounts for the somewhat slow recovery in these cases. Only if extension is blocked should the joint be opened.

Another type of injury, grouped as a rule, and quite correctly I think, with fractures of the tibial spine, consists in the elevation of a portion of the non-articular zone in front of the spine. In such cases forcible hyperextension of the joint has resulted in the avulsion of the zone to which the anterior crucial is attached, instead of a tear of the ligament itself. The fragment is elevated in front, hinging on its posterior end. Full extension is usually impossible, probably because the elevated bone fragment impinges on the fat pad. These cases should always be operated upon, the fragment being pegged or sutured down into place. As regards the patella, it is not very uncommon to find a crack or fissured fracture which has been overlooked. It is well to remember, however, that very occasionally the patella ossifies by two centres; this abnormality is bilateral.

Another common type of synovitis is due to a mild and unsuspected *osteo-arthritis* which has been *made to flare up* by a recent trauma. The diagnosis is usually easy, in view of the age of the patient, the absence of any special point in the history beyond the mild trauma, perhaps the presence of physical signs of osteo-arthritis, and, lastly, the changes, slight perhaps but definite, which are seen in the radiograms. It is this type which gains so much from *stable* treatment, for the tone of the muscles is of paramount importance, and yet cannot be regained by exercises without over-using the joint, the one thing which must be avoided at all costs, particularly in the early stages of recovery. Heat in one form or another is also an essential part of the *treatment*; it undoubtedly relieves the pain. Radiograms should always be taken, for loose bodies are, of course, not uncommon in osteo-arthritis, and their removal may be advisable. If giving rise to crises, however mild, they should be removed. If causing no obvious symptoms, it small, it situated at the back of the joint, if the general arthritis is gross, or the patient elderly, they can often be left alone. Each case must be considered on its merits, with the help of good radiograms.

The knee is subject to that curious condition called *chondromatosis*, the chief feature of which is the presence of a number, often a large number, of loose bodies in the joint. These bodies are formed in the synovial membrane, and later become extruded, more or less, into the joint cavity. They consist of nodular masses of cartilage with calcified or ossified centres, and vary greatly in size, many being minute. For the most part they lie in recesses, held together by colourless vascular adhesions, which are really outgrowths from the synovial membrane. In spite of their number and enclosed size, and the fact that they are often known to have been present in the joint for many years, the general osteo-arthritic changes may be surprisingly slight.

Cysts of a semilunar cartilage have been spoken of as a ganglion. Trauma probably plays a part in their production, and certainly aggravates them when present. With rest they may diminish in size, or even disappear, only to enlarge again on resumption of active exercise. The external cartilage is almost invariably the one affected, the cysts occupying its peripheral border and the adjacent tissues. In a typical case a characteristic tense fluctuating swelling is found on the margin of the tibia, overlapping the joint line, and just in front of the external lateral ligament. They may give rise to no symptoms, but many patients experience discomfort or actual pain during and after active use of the knee, sufficient in many to interfere with work or play. In the adolescent without symptoms they may be left alone to see if they will disappear. I have known typical swellings disappear entirely and permanently in two cases. In the young adult, in whom they are usually met with, they generally require removal, and this means the excision of a third or more of the cartilage.

Knee Cases in Childhood

Lastly I want to refer to some of the difficulties met with in the diagnosis of knee cases in childhood. In spite of their many tumbles, serious damage to the knee-joint is surprisingly uncommon in childhood, yet cartilage and other lesions do occur in the young, and perhaps more frequently than is generally believed. Symptoms seem to be less definite than in the adult—complete locking for instance, is excessively uncommon in children. My experience, admittedly small, seems to show that, in childhood, developmental abnormality of a cartilage favours the incidence of symptoms, with or without traumatic lesions; in addition, and that the external cartilage is far more commonly affected—the reverse of what is true in adult life.

Apart from a transient mild synovitis following a simple strain, in childhood there appear to be three main types characterized respectively by chronic or recurrent fluid, clicking in the joint, and recurrent symptoms more or less comparable to those familiar to us in the adult cartilage case. In the adolescent we also meet with "slipping patella" and with damage to the articular end of the femur—the so-called osteo-chondritis dissecans already referred to. I have not met with this latter condition under 14½ years. To take the clicking knee first, a typical example will suffice.

A child of 6 was seen on account of snapping in one knee-joint and slight wasting of the thigh. The snap occurred at about 70 degrees of flexion, and occurred on extension at about the same point. When it snapped something seemed to jump on the outer side of the joint. Trouble with the external cartilage was diagnosed, but in view of the age of the child, and the absence of any fluid, nothing was done. She improved, and for considerable periods the snapping apparently ceased, only to return. Two years after the first examination, in addition to the snapping, the knee was said to have given way on several occasions, and the joint became distended with fluid. Operation showed that the external cartilage only extended from its anterior attachment as far as the external lateral ligament, where it failed away to nothing; the posterior half was entirely absent so far as could be seen through an incision behind the lateral ligament. The anterior half was unusually thick, but not torn or displaced. Its removal was followed by a complete and lasting cure of all symptoms.

It is with the first type, that with chronic swelling and no special features, that difficulties arise in diagnosis. The two other conditions which have to be distinguished from the purely traumatic case are subacute or chronic infective arthritis and tubercle. In both of these a history of trauma at some time or other is common enough. It is when the trauma is remote that the difficulty arises. The appearance of the child and the family history may favour tubercle. Definite heat in the joint is against tubercle, while the presence of fluid is definitely against tubercle except in its later stages with abscess formation, when the correct diagnosis is obvious. The presence of septic foci in the tonsils, the commonest focus from which infection arises, may be an important factor. Briefly, the local conditions typical of each are in pure traumatic or mechanical defect, fluid, in infective arthritis, fluid, pus

some synovial thickening; in tubercle, definite synovial thickening and no fluid.

It is impossible to discuss the treatment of these cases fully, but, when difficulty arises, be on the safe side and rest the joint for a time. When it is impossible to exclude tubercle with certainty, though a diagnosis of another infection is favoured from the local signs and the presence of infective tonsils, arrangements should be made for enucleation of the tonsils without delay, and for removal at the same time of a fragment of synovial membrane through a small incision. Even when the tonsils have been removed this exploration of the joint may occasionally be advisable, but it is more often necessary in older patients when fluid is more likely to result from tuberculous infection, and the diagnosis is more difficult. Microscopic examination of the synovial membrane, and injection of a portion into a guinea-pig, appear to be more reliable tests than examination of fluid withdrawn from the joint, when this is possible.

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CAESAREAN HYSTERECTOMY.

WITH THE REPORT OF A CASE OF PRE-LABOUR SEPTICAEMIA, AND OF CARCINOMA OF THE CERVIX IN LABOUR.*

BY

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ALTHOUGH the indications for this operation are extremely limited the time has come for a reminder of the occasional necessity for its performance. The operation, although not very recent in discovery, is not very ancient: several workers adopted various procedures before it was really brought to public notice by Porro in 1877. Of his 138 cases 77 were fatal—that is, a mortality of 55 per cent. To Sanger and Leopold credit must be given for drawing attention to the fact that hysterectomy is usually unnecessary, and for making the modern Caesarean operation the "comparatively safe" procedure that it is at present. One of the reasons for this communication is to deprecate a certain tendency to radical measures, when milder methods are safer both as immediate and as remote risks.

The following have been suggested by different obstetricians as possible reasons for performing Caesarean hysterectomy:

1. Fibroids, with or without degeneration.
2. Carcinoma.
3. Sterilization.
4. Accidental haemorrhage.
5. Placenta praevia.
6. Rupture of the uterus.
7. Contraction ring dystocia.
8. Bad contraction of uterus after Caesarean section.
9. Neglected shoulder presentation.
10. In the presence of a faulty Caesarean scar.
11. Osteomalacia.
12. Decompensated cardiac disease.
13. In association with section after a ventral fixation.
14. Sepsis.

Fibroids.

It is a golden rule, so far as fibroids are concerned, not to interfere with them if possible in pregnancy, labour, or the puerperium. Sometimes, however, because of acute and unbearable pain, it is necessary to remove uterus and foetus at any time, usually about the sixth month; this, of course, must only be done after very careful thought. If the pain is so severe that something must be done, the alternatives are an endeavour to remove the tumours in the hope that the patient will carry on to full term, and we have carried out this procedure with success on several occasions; if this is impossible, the uterus should be emptied of the foetus; two or three months later myomectomy is done, in the hope that a further and successful pregnancy will occur at some future time. The removal of the foetus, however, is seldom indicated.

When a patient comes under observation at full term, if vaginal delivery appears impossible because either of the possibility of tumours low down causing definite dystocia, or of the number of upper segment tumours which may cause inertia, it may be necessary to perform the Caesarean operation. The question "to leave or not to leave" the uterus is urgent. If we do not remove it another operation will be necessary later, or the tumours may degenerate in the puerperium; if we remove it we are adding to the danger of the operation. Caesarean hysterectomy for fibroids is an operation to be approached with extreme caution; many tumours are infected, and our experience in this class of case has not been pleasant. We prefer to adopt temporary measures, either allowing the woman to deliver herself, or performing a simple lower segment Caesarean operation with or without drainage, with the idea of removing the tumour or tumours at a later date.

Nyhoff[1] reports 19 hysterectomies in 250 Caesarean sections, and to our mind some of these hysterectomies are very deserving of criticism; three were for myoma uteri, but in his lengthy paper, which was very kindly translated from the Dutch for me by Mrs. Van Stockum, he does not give full data.

Anderodias and Loubat[2] reported an interesting case where pregnancy with fibroids was carried to term under great difficulty. At the Caesarean operation stinking liquor amnii was encountered, so hysterectomy was performed. It seems to me that the lower segment operation in this type of case should be perfectly safe without hysterectomy if the upper abdomen is not touched.

Carcinoma of the Uterus.

From a really practical point of view carcinoma of the body of the uterus need not be considered. To my mind the correct treatment of carcinoma of the cervix in the early months is hysterectomy without opening the uterus; if the condition is discovered near viability the cervix should be kept as clean as possible until the child is viable, when a true Caesarean hysterectomy should be done.

Recently at the Rotunda Hospital a woman, aged 28, a 5-para who had had four healthy children, was admitted complaining of a foul-smelling discharge. She appeared ill. The foetus was about 28 weeks, and the foetal heart was audible. On vaginal examination a freely bleeding cauliflower mass was discovered springing from the cervix. The os was about four fingers dilated and the membranes were ruptured. Believing that the haemorrhage which occurs in this type of case when delivered vaginally would kill the patient, Caesarean section was decided on. The uterus was opened, after which it was intended to remove the infant and then the uterus with the placenta *in situ*; but the latter presented; it was speedily removed, after which a live baby, weighing 2 lb. 13 oz., was delivered. The head showed a marked caput succedaneum, caused by the definite disproportion set up by the enormous growth. It was then found that the tumour was of a size larger than a clenched fist, and that it had retracted high over the head, and total hysterectomy was quickly done, for the patient was in a very low state, the pulse rate reaching 130 on occasions. Drainage was effected by gauze in the parametria and a cigarette drain in the cul-de-sac. She recovered from the immediate effects of the operation and has left the hospital. The infant has put on weight and appears likely to live. The pathological report was as follows.

Macroscopically.—The uterus is enlarged, and shows a recent operation wound on its anterior aspect; it corresponds to the post-partum uterus. There is a large cauliflower-like mass springing from the external os; on opening the cavity the uterus is filled of blood clot, but presents no other abnormality. The tumour at the cervix is white in colour; on section it is outlined from the cervical tissue; the proliferation appears to be entirely exophytic.

Microscopically.—Sections show solid columns of rather large cells closely packed together and infiltrating the surrounding tissues. There are no cell nests present, but from the appearance of the cells and their arrangement there can be no doubt that they originated from the squamous epithelium of the portio. A line of cleavage between the malignant process and the cervical tissue is well marked, and is surrounded by a zone of small round-celled infiltration. The cervical tissue towards the uterus shows scattered areas of round-celled infiltration.

When the patient is at or near full term before labour starts Caesarean hysterectomy should be performed. We believe this is the best treatment, although section followed at a later period by the application of radium may certainly be considered; but the application of radium to the cervix before the birth of the child must be approached with caution. Goldstein and Murphy,[3] in a recent com-

* A paper read before the Royal Academy of Medicine in Ireland.

unication, drag special attention to the possibility of great danger for the child after radiation. Among thirty-eight unhealthy or defective children born after post-conception irradiation therapy, sixteen microcephalic idiots were found. Only two of the mothers in these cases received radiation in late pregnancy. The mother in the special case reported was six months pregnant, and received 150 mg. of radium filtered with 1 mm. of brass and 5 mm. of aluminium for twenty-four hours. The history of the microcephalic idiot up to 12 years of age is given. Murphy[4] in another paper concludes, from the examination of 625 pregnancies in women subjected to irradiation, that because of defects in off-spring, the pregnant uterus should never be subjected to radio-therapeutic exposures. This excludes x-radiation for diagnosis.

Sterilization.

Caesarean hysterectomy has been suggested as a means of sterilizing a patient when this is indicated. In the masterly review of this subject given by Muret[5] it is not recommended. In our practice, when we decide that sterilization is necessary, we adopt much simpler means: after doubling the tube it is tied with a silk ligature. Audebert and Fournier[6] recommend hysterectomy, while Nyhoff reports a case of abdominal fistula and hernia from a previous Caesarean operation for which he performed hysterectomy. Many writers suggest sterilization by hysterectomy because of a weak scar. There should be no weak scar; if it is weak, it can be resected; hysterectomy should not be done.

Accidental Haemorrhage.

During the past decade, and even up to recent years, obstetricians still recommended Caesarean hysterectomy for this condition. We believe that such drastic treatment is utterly unnecessary. We have participated in the radical and palliative measures for this disease. We have gone through the mill, starting with Caesarean hysterectomy for concealed haemorrhage; we have assisted at the first Caesarean section without hysterectomy for concealed haemorrhage, and have seen success follow its performance; we have arrived at the far more successful results which follow the simple methods at present in use in the Rotunda, and we are of the absolute and dogmatic opinion that while there may be a minute place for Caesarean section there is no place for Caesarean hysterectomy in the treatment of accidental haemorrhage; the same remark applies with stronger force to placenta praevia.

Toxaemias of Pregnancy, including Eclampsia.

Caesarean section is practically never done at the Rotunda for this complication of pregnancy, and there is therefore no reason for doing Caesarean hysterectomy. Those who advise section suggest that the uterus should be removed in some instances because of its atonic condition; as we have stated, we do not concur in this opinion.

Rupture of the Uterus.

This is one of the true indications for the operation. As is well known, after removing baby and placenta, we practise "plugging the rent" when possible—that is, when the rent is consonant with the possibility of plugging and when the baby is not altogether or nearly entirely in the abdominal cavity. If the baby is completely or nearly completely out of the uterus, we advise its removal by the abdomen, followed by hysterectomy and drainage of the stumpetria by the vagina, in addition to abdominal drainage. This operation must be speedily done, and the subtotal operation is usually sufficient. Among our cases, all of which survived, may be mentioned the last, which occurred in a 10-para. The signs of threatened rupture had not been recognized, and rupture occurred by attrition through the lower portion of the posterior wall. The foetus failed to stop the haemorrhage, so laparotomy was performed, and a quick hysterectomy with drainage was followed by recovery after a somewhat stormy convalescence. The total operation is rarely ever necessary.

Contracted Pelvis Dystocia.

One of Clifford White's cases was selected by this method, but opinion on this subject has been revised in a recent one.[7] If Caesarean section is necessary at all, we cannot see the need for removing the uterus by subsequent hysterectomy in addition. A hysterectomy does relieve the "uterine cramps" and even if infection has occurred, drainage will prevent the occurrence of any serious complication.

Unsatisfactory Contraction of the Uterus after Caesarean Section.

This is mentioned by Nyhoff as an indication, but here again we cannot agree to place this on our list. Hot towels, haemostatic drugs, and pituitrin, in addition to plugging of the uterus, will obviate the necessity for such a radical procedure.

Neglected Shoulder Presentation.

It has been our custom to teach students that if the baby is alive, version can be done, if dead, decapitation; but it must be remembered that in the latter operation great caution must be exercised. Manipulations of too violent a nature will rupture the uterus when the lower segment is very thinned.

What is the procedure when the baby is alive in neglected shoulder presentation? The answer is: If such a state of affairs should arise (and we have never seen it) the lower segment Caesarean operation would be our choice. Is hysterectomy ever indicated in addition? Our answer is to the negative. A neglected shoulder presentation occurred in our practice[8] in which hysterectomy was necessary later because of puerperal sepsis. This might be taken as showing a definite place for Caesarean hysterectomy in the treatment of this condition, but we do not agree. Most cases of neglected shoulder will not require hysterectomy afterwards; therefore, why *do* it at all?

Other indications may be mentioned. Nyhoff, already referred to, had a case of a woman of 42 who had had sixteen confinements. He did Caesarean hysterectomy to avoid recurrence of rupture which had occurred in a previous labour. Surely, if section were indicated, sterilization would have been more simply accomplished by tying the tubes.

Osteomalacia.

For osteomalacia Caesarean hysterectomy has often been done, but several patients who seemed to require hysterectomy were treated simply by removal of the ovaries. Van Velitz had a case where the haemorrhage was severe from the uterus at the time of section that he removed the organ. We do not meet with osteomalacia in Ireland.

Decompensated Cardiac Disease.

If section is indicated for this disease, hysterectomy in addition will lessen the chance of uterine sepsis, and will remove any discomfort or stress associated with the puerperium. Falkner[9] has recently mentioned a very successful case of this kind, and it is certainly most practical.

Occasionally after a badly performed suspension (not one with *posterior angulation* of the uterus) even Watts Morris[10] has reported to the Academy a fatal case in which we believe the patient might have been saved if hysterectomy had been performed in addition to section.

Sepsis.

Sepsis in the uterus before labour may be regarded as a definite indication for Caesarean hysterectomy. It is extremely rare, and a case which recently came under our notice is of such great interest that it is reported in full here. Septic organisms may invade the uterus before the end of labour as I after the rent has been ruptured, or infection already in the vagina may spread to the uterus from a septic cervix, especially with gonococcus as the cause. The uterus may also get infected from vaginal manipulation of any sort, as I have had occasion to point out in the past as the chief offender. Instrumentation of any kind must be viewed with suspicion, and it is a wise rule to be repeated the question was [illegible] examination was [illegible] be discussed.

[illegible] The patient was a woman aged [illegible] Caesarean section [illegible] the infant died [illegible] [illegible] [illegible]

ether, the following data were elicited: promontory not reached, the head pushed to the level of the ischiatic spines. Three bougies were inserted. On June 7th, as labour had not started, the bougies were removed and four fresh ones inserted, but in spite of this, as well as oil and quinine, there was no labour. On June 10th she left the hospital against our wishes. She was normal in every way.

On June 21st she was readmitted, and said she had felt quite well until 9 p.m. on June 20th, when she had a rigor. She had another at 9 a.m. on June 21st, when the temperature was 102° F. On her readmission she appeared ill, and as it was thought possible she had influenza, aspirin was administered every four hours.

On June 22nd, soon after midnight, she had a very severe rigor, which lasted five minutes. Temperature 101.2°, pulse 110, respiration 24; profuse sweating, no oedema. The tongue was clean and there were no chest or abdominal symptoms. Blood was taken for culture, and 20 c.cm. of antistreptococcus serum and 7.5 grains of quinine were administered intramuscularly. No history of vaginal discharge could be elicited. The foetal heart was 165 to 170, but there were no pains or history of labour. About an hour later the membranes ruptured, solid meconium came away, and she complained of sudden abdominal pain. On examination the uterus was tender. Careful interrogation elicited the fact that coitus had taken place on June 12th—that is, five days after the second insertion of bougies. A diagnosis of coitional sepsis along the track of the bougies was made, and in order to save her life and that of the child, who showed danger signs (meconium, quick foetal heart), Caesarean hysterectomy was decided on. At 2.35 a.m. on June 22nd an abdominal incision long enough to allow exteriorization of the uterus from the symphysis upwards was made. The abdominal wall was protected by coverings, and the intestines by large wipes. After the uterus had been delivered outside the abdomen, the infant was delivered alive; the placenta was left *in situ*, the uterus stitched, and a speedy total hysterectomy done. The parametria were drained by the vagina, and a tube was placed in the cul-de-sac and brought out through the lower abdominal incision.

The temperature and pulse were normal from the time of the operation, but the baby developed a streptococcal rash and died on the twenty-fourth day.

Sections from the placental site, which was rather low, showed dense infiltration with inflammatory cells. Here and there oedematous areas and old interstitial haemorrhages were found, especially near the cervix. There were enormous numbers of plasma cells in all the sections. No organisms were found, but there was marked inflammatory reaction. There were no spirochaetes in the placenta. The blood and uterine cultures were negative.

An examination of the husband revealed pus cells in prostatic smears.

This was evidently a case of true infection from coitus along the track of the bougies. It must not be regarded as necessitating the abolition of the bougie method of inducing labour; it should be regarded as a warning not to allow hospital patients to be discharged after bougie failure; if the patient persists in leaving, she should be warned that she will not be readmitted.

The treatment carried out was drastic, but it was life-saving; there was no doubt about the diagnosis, and if heroic measures had not been taken death of both mother and child seemed to be a certain outcome; in fact, in true pre-labour sepsis, where the upper segment becomes involved, the only treatment is Caesarean hysterectomy with thorough drainage.

A curious coincidence was elicited in this case. The husband of the patient had been married before; his wife had died after Caesarean hysterectomy for accidental haemorrhage at the time when this treatment was the most customary.

The notes of the cases reported were taken by my assistants Drs. Taylor and O'Donel Browne; the pathological data were recorded by the pathologist to the hospital, Dr. F. S. Bourke.

It is sometimes customary to give statistics at the conclusion of a paper such as this. As the number in the Rotunda reports is so small we do not propose to enter into this phase of the subject.

Summary and Conclusions.

1. The indications for the performance of Caesarean hysterectomy are given.

2. The place of the operation for fibroids is small, but for carcinoma is very definite. A case of the latter is reported.

3. Sterilization by hysterectomy is seldom indicated, for other simpler methods are preferable.

4. Ante-partum haemorrhage and the toxaemias do not rank as indications at the Rotunda.

5. Rupture of the uterus sometimes demands its performance, but contraction ring dystocia and neglected shoulder presentation are not indications.

6. Sepsis pre-partum sometimes demands this radical procedure. An interesting case of coitional sepsis is described in detail.

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MEASLES IN A MAN OF FIFTY-SEVEN.

BY

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In any country in which measles is more or less constantly prevalent its occurrence in an adult is as rare as its occurrence in childhood is common. The outbreak of measles in the Faroe Islands, recorded by Panum of Copenhagen, showed that adults are as susceptible as children. It was conveyed there in 1846, after an interval of sixty-five years, and 6,000 out of the 7,782 inhabitants were infected. Age was no bar; practically no one escaped who was exposed to it. In this country it occasionally affects young adults, but such cases are not common. The case here briefly narrated of a first attack of measles in a man in his sixth decade is so unusual that it seems worth recording.

On December 24th Mr. X, a married man aged 57, began to be feverish and out of sorts. Catarrhal symptoms, though not particularly noticeable at first, were present. The case was thought to be one of influenzal type. The temperature was slightly raised. On December 27th it fell somewhat, and he seemed rather better; also on the morning of the following day. The attack was thought to be passing off. In the evening of the 28th, however, the temperature rose to 103°, and a rash was noticed. On December 29th the rash was much more extensive, and the temperature 104°. There was also considerable bronchial catarrh. His medical attendant, Dr. Parrett of Thorne, recognized the nature of the disease as soon as he saw the rash. He was naturally surprised and a little anxious, because the patient had for some years been subject to bronchitis in the winter months.

On December 31st, as the temperature was still high, the pulmonary symptoms increasing, the pulse rate going up a little, and as there was also some cyanosis, Dr. Parrett asked me to meet him in consultation. The patient was mentally quite clear and alert. There had been no delirium at any time. The cough was very troublesome, and rhonchi were audible over the lungs, but there was no real dyspnoea. The pulse was 88 and regular. The face was dusky red, slightly cyanosed. The conjunctivae were injected, the tongue was an intense fiery red with white patches here and there. The rash was more marked on the face

neck, and trunk than on the limbs, and consisted of closely packed but discrete crescentic and irregular macules, showing innumerable typical bright red papules, many of which were distinctly petechial. This necessarily produced a considerable variety of colours, and as he was a big man, with a very long and broad back, the total effect of this large mass of brilliant colouring was unusually striking.

Prognosis was difficult. Measles at 57 years of age is quite outside one's experience. It seemed just possible that as this disease gives rise to the more severe bronchial complications in infancy it might also be more severe in this respect in the later years of life, especially in a person already subject to bronchitis. As, however, the pulse was only 82, and there were no signs of serious toxæmia, and as by the eighth day, the fever had probably reached its height, it seemed likely that the next few days would bring a general improvement. The only point of doubt was as to the possible extension of bronchial trouble. Our anxiety about this, however, was unnecessary, for in a few hours he began to improve, and after that continued to make an uninterrupted recovery.

It is interesting to surmise how and where he became infected, and still more how it was he had escaped infection earlier in life. As regards the former point, there was an outbreak of measles in the neighbourhood at the time, and an opportunity of infection seems to have been a journey in a public motor bus, just a fortnight before, to and from a neighbouring town some miles away. There were some children in the bus, but nothing is known as to who they were, or if any of them had the disease. Otherwise he led an unusually secluded life. Although married he had had no children. He lived in a large, rather isolated house, and had very few visitors. Curiously enough, his wife is said to have had measles twice, though whether either of the attacks occurred since marriage was not stated.

Students in taking clinical histories often forget to put down the patient's age, and when told to do so are apt to look upon their teachers as rather unnecessarily meticulous. As a matter of fact, in hearing the history of a case the experienced clinician unconsciously adjusts his thoughts to a certain group of cases directly he hears the patient's age; at any rate, he unconsciously eliminates a considerable number of conditions which he knows are not likely to occur at that particular period of life. Now and again, as in this case, it is the unexpected that happens. When it does, the ordinary clinical values become changed and require rather careful adjustment.

HIGH BLOOD PRESSURE AND CHOLESTERIN.

BY

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Within recent years various attempts have been made to seek in blood chemistry the causal factor for hypertension. Adrenaline and its derivatives, sugar, uric acid, potassium and calcium salts, in abnormal quantities in the blood, each of these substances in turn has been held responsible for the hypertonic contractions of the vessels in cases of high blood pressure. The latest suggestion is that hypercholesterinæmia is responsible for the production of high blood pressure. According to Westphal[1] cholesterin in the blood circulation affects the vessels in such a way as to increase their susceptibility to adrenaline. The latter, of course, gives rise to hypertension. This author found in 4 per cent. of his high blood pressure cases an increase in the cholesterin content of the whole blood.

Thomas[2] injected rabbits with cholesterin and observed an increase in blood pressure. Thilditte,[3] who repeated the experiment, was not able to confirm the findings. While the authorities thus differ as to whether cholesterin actually raises the pressure, greater unanimity exists in regard to cholesterin as a factor in the production of arterial sclerosis. Tregubov[4] fed rabbits with cholesterin, and found, as many others have discovered before him, that arterial lesions did appear as a result of this feeding. Arterial pressure, however, did not rise in these cases. Shapiro[5] also looks upon cholesterin as the chief factor in the production of arteriosclerosis. He believes the increase of cholesterin in the blood is due to the activity of certain glands of internal secretion. Zacharias[6] prepared a kind of vaccine, the purpose of which is to dissolve cholesterin in the blood, and he claims a marked improvement in the condition of his patients as a result of this treatment, the blood pressure becoming low. Ashcroft[7] found an increased cholesterin content in the blood in the great majority of his high blood pressure cases, and he highly recommended rhodan as a solvent of cholesterin in the circulation.

Amidst all the turmoil of conflicting opinion one thing in fact stands out: arteriosclerotic vessels invariably contain deposits of cholesterin and calcium. Our observation is based on actual blood cholesterin content found in hypertonic cases. In our investigation we administered cholesterin to patients, first in the form of food rich in cholesterin content, and subsequently by intramuscular injections, taking the blood pressure reading and determining the cholesterin content of the blood both before and after administration of the substance.

Method of Cholesterin Determination.

On to a fat-free filter-paper disc, pierced in the centre and made to fit a specially constricted test tube containing 5 c.cm. of chloroform, is pipetted 0.25 c.cm. of oxalated blood. The tube is attached to a reflux condenser, and is immersed in a boiling-water bath. After thirty minutes the tube is detached from the condenser and cooled by putting under cold water, chloroform is added to the 5 c.cm. mark. To a similar tube 5 c.cm. of a standard cholesterin solution (8 mg. per 100 c.cm.) is added. To each tube is added 2 c.cm. of acetic anhydride and 1 c.cm. of strong sulphuric acid. The tubes are inverted twice to mix well and allowed to stand in cold water for ten minutes and compared in a Klett colorimeter.

The list of cases printed below gives the blood cholesterin of 11 hypertonic patients under observation at the Liverpool Heart Hospital. Cases with pronounced lesion of the kidneys were excluded, as it is known that these give a hypercholesterinæmia. We do not, however, for a moment suggest that all our cases are of the type of "essential" hypertony. We are definitely of opinion that it is quite impossible to differentiate clinically between "essential" hypertony and hypertony due secondarily to kidney disease for the kidney efficiency tests give only information in regard to failure of the kidney function, and not in regard to the existence or otherwise of disease of the kidney, and the presence or absence of a trace of albumin and occasional casts does not mean much either way. The normal variation of blood cholesterin within normal limits is between 160 and 200. It will be seen that only in one case did the cholesterin blood content exceed 200. At any rate, in all cases the blood cholesterin were found to be increased. It by no means follows that it is the cause of high blood pressure. It is quite possible that a high blood pressure in the liver might produce hypercholesterinæmia.

Blood Cholesterin of 11 Hypertonic Cases under Observation at the Liverpool Heart Hospital.

CASE 1.—C. M., aged 53. Blood pressure 225. Blood cholesterin content 172 mg. per 100 c.cm. of blood.

Clinical Notes.—Evidence of gross cardiac hypertrophy. The QRS complex prolonged. Left ventricular preponderance. Relative aortic and mitral regurgitation. Aortic second sound a very obvious feature of left basal systole.

CASE 2.—A. B., aged 58. Blood pressure 200. Blood cholesterin content 182 mg. per 100 c.cm. of blood.

Clinical Notes.—Typical case of high blood pressure. No evidence of left ventricular enlargement. Electrocardiogram normal.

CASE 3.—F. P., aged 49. Blood pressure [illegible]. Blood cholesterin content 234 mg. per 100 c.cm. of blood.

Clinical Notes.—Wassermann positive. Patient [illegible] of left ventricular preponderance. Electrocardiogram normal.

CASE 4.—R. B., aged 45. Blood pressure 220. Blood cholesterin content 196 mg. per 100 c.cm. of blood.

Clinical Notes.—[illegible] Aortic second sound is gross.

CASE 5.—C. M., aged 61. Blood pressure 225. Blood cholesterin content 250 mg. per 100 c.cm. of blood.

Clinical Notes.—Typical case of [illegible]. Electrocardiogram normal.

CASE 6.—E. A., aged 52. Blood pressure, 165/90; cholesterin blood content, 182 mg. per 100 c.cm. of blood.
Clinical Signs.—Trace of albumin. Left ventricle enlarged; aortic systolic murmur. Electro-cardiogram, apart from left ventricular preponderance, normal.

CASE 7.—R. C., aged 53. Blood pressure, 180/100; cholesterin blood content, 126 mg. per 100 c.cm. of blood.
Clinical Signs.—Accentuation of second aortic sound; left ventricle enlarged. Wassermann reaction strongly positive. Electro-cardiogram showed left ventricular preponderance.

CASE 8.—C. M., aged 59. Blood pressure, 200/60; cholesterin blood content, 164 mg. per 100 c.cm. of blood.
Clinical Signs.—Relative aortic regurgitation; abnormal QRS complex.

CASE 9.—M. S., aged 53. Blood pressure, 170/95; cholesterin blood content, 164 mg. per 100 c.cm. of blood.
Clinical Signs.—Trace of albumin; heart not appreciably enlarged; accentuation of second aortic sound and the mitral second. Electro-cardiogram normal.

CASE 10.—A. C., aged 50. Blood pressure, 200/110; cholesterin blood content, 164 mg. per 100 c.cm. of blood.
Clinical Signs.—Wassermann reaction positive. Second aortic sound accentuated; systolic aortic murmur. QRS complex abnormal.

CASE 11.—B. M. Blood pressure, 240/75; cholesterin blood content, 162 mg. per 100 c.cm. of blood.
Clinical Signs.—Double aortic murmurs. QRS complex abnormal. Wassermann reaction strongly positive. Trace of albumin.

At first we attempted to increase the blood cholesterin by giving the patients about a pound and a half of brain daily. As, however, the brain has many other constituents as well as cholesterin, it was decided to administer actual cholesterin to the patient intramuscularly; 1½ grams of cholesterin was administered in olive oil.

Table showing Amount of Blood Cholesterin Before and After Administration of Actual Cholesterin.

Date and Time.	Systolic Blood Pressure.	Amount of Blood Cholesterin.
CASE B.		
November 13th, 1928.		
Before injection	125	1.6 mg. per c.cm.
Injection, 2.40 p.m.		
3.10 "	130	—
3.30 "	115	—
3.40 "	116	2.14 mg. per c.cm.
4.30 "	120	—
6.30 "	120	2.04 mg. per c.cm.
7.30 "	118	—
8.30 "	116	—
November 14th, 10.0 a.m.	106	1.68 mg. per c.cm.
CASE C.		
November 9th, 1928.		
Before injection	140	1.6 mg. per c.cm.
Injection, 3.0 p.m.		
3.30 "	130	—
4.0 "	130	—
5.0 "	132	2.1 mg. per c.cm.
6.30 "	138	—
7.30 "	136	—
8.30 "	138	1.5 mg. per c.cm.
CASE W.I.		
November 6th, 1928.		
Before injection	105	1.8 mg. per c.cm.
Injection, 2.8 p.m.		
2.17 "	115	—
3.8 "	108	2.4 mg. per c.cm.
3.30 "	120	—
4.0 "	105	—
5.0 "	110	—
6.30 "	114	—
7.30 "	116	—
8.30 "	120	—
November 7th, 10.0 a.m.	120	—
11.30 "	118	—
3.0 p.m.	108	1.7 mg. per c.cm.
November 8th, 11.0 a.m.	112	—
CASE W.		
March 15th, 1929.		
Before injection	128	1.6 mg. per c.cm.
Injection, 2.50 p.m.		
3.30 "	142	—
4.0 "	138	2.2 mg. per c.cm.
4.30 "	135	—
5.0 "	138	—
6.15 "	136	—
6.45 "	130	—
7.15 "	136	—
7.45 "	130	—
March 16th, 2.0 "	124	1.5 mg. per c.cm.

It is clear that cholesterin did not increase the blood pressure, although the blood cholesterin was enormously increased as a result of the injection.

Discussion.

The assertion that cholesterin causes a direct rise of pressure becomes untenable in the light of our observation. An enormous increase in blood cholesterin does not raise the pressure. Cholesterin is supposed to act on the adrenals. In this respect the following experiment in which one of us (I. H.) has taken part is interesting. As is well known, the effect of an intravenous injection of adrenaline in raising the arterial pressure is only a momentary one. A cat was given an injection of adrenaline and the pressure registered. After the systolic pressure had returned to normal, blood was taken from this cat and injected into another. The adrenaline effect was demonstrable again in the second cat, although when the blood was taken from the first animal this effect had already disappeared. This experiment demonstrates conclusively that although a large amount of adrenaline is present in circulation for some time, it is unable to raise the pressure for any length of time, for the simple reason that the organism counteracts any disturbance of the equilibrium in the level of blood pressure. The same thing happens if we attempt to reduce arterial pressure artificially. After venesection, for instance, within a few hours the blood pressure in most cases reaches the same level as before venesection, and we all know how difficult it is to raise the pressure in cases of hypotension.

All these facts go to show that the presence in itself of pressure-raising substances in the blood would never produce chronic hypertonia. High blood pressure is a condition in which, for some unknown reason, it is necessary for the tension to find an equilibrium at an abnormally high level. Luckily for the patients, all attempts on the part of the physician to disturb the new equilibrium usually end in failure.

As long as the real factors which produce high blood pressure are unknown the therapy of this condition will remain the miserable quackery it is to-day. At any rate, cholesterin is unable to solve the mystery of high blood pressure.

The other problem, as to whether cholesterin is the cause of arterio-sclerosis, has not been touched by our observation. There is little doubt that cholesterin is capable in rabbits of producing arterio-sclerosis, but whether this is applicable to man is another question. It is possible that the deposits of cholesterin found in arterio-sclerotic vessels are not the end-results of degeneration but have been caused by hypercholesterinaemia. It has been generally assumed that arterio-sclerosis of the larger vessels does not raise the pressure, but arterio-sclerosis of the small vessels effects an increase in pressure. Cholesterin when affecting the smaller vessels may indirectly raise the pressure. This would mean, of course, that arterio-sclerosis is the primary condition and the rise in pressure the secondary. There is, however, insufficient evidence to support such a hypothesis.

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PASSIVE IMMUNIZATION BY MEANS OF SCARLET FEVER ANTITOXIN.

BY

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AMONG the many difficult problems of fever hospital administration is that of safeguarding the patient admitted with indefinite symptoms against the risk of acquiring infection in hospital.

Three years ago the type of scarlet fever prevalent in this district was of so mild a character that many patients, on admission to hospital, showed only a very slight rash on the body; the temperature was normal; they presented no throat, tongue, or other signs; sometimes there were even traces of a rash. It seemed impossible at first to decide whether these patients were suffering from scarlet fever or not; but from the fact that a few developed the attack in hospital it became evident that at the time of admission the latter were not suffering from the disease.

Experiments were made with many methods of prevention. The Schultz-Charlton test merely corroborated what was usually known—namely, that a bright rash indicated scarlet fever; the Dick test was found to be of little value in the positive cases where the immunity had not had time to develop or where there was susceptibility to the disease. If the Dick test is repeated at the end of a week useful information is obtained, but susceptible patients are meanwhile exposed to infection. Active immunization by means of scarlet fever prophylactic develops too slowly to be of any real value; and barrier isolation, though employed to some purpose, was ineffective in wards where all the patients were not confined to bed.

The production of passive immunity by means of scarlet fever antitoxin was then considered. A small dose was said to give a passive immunity for ten to fourteen days. This period was not considered to be long enough, as "peeling" in many mild cases often does not occur until about the fourth week. If a dose is repeated within ten days there appears to be no danger of anaphylaxis, as sensitization to a foreign protein does not begin until after that period. The risk was lessened by administering only 2½ c.cm. at first.

The following routine method was therefore gradually adopted. All patients with indefinite symptoms received 2½ c.cm. of scarlet fever antitoxin on admission, a second dose of the same amount on the tenth day, and a third dose on the twentieth day. This was all that was necessary as a rule, but some received a fourth dose, and a few a fifth dose at the same intervals.

The doses have recently been increased to 5 c.cm., on the advice of the makers, though the smaller doses appeared to give good results. The number of patients that received treatment was 108; of these, 30 patients received two doses; 56 received three doses; 20 received four doses; and 2 received five doses. When typical desquamation occurred no further injections were given, and patients who showed no sign of desquamation by the fourth week were discharged. For various reasons some were detained for longer periods.

Classification of these 108 cases showed that 34 of them were probably not scarlet fever; of these 34 patients only one developed the disease, though all of them were exposed in the wards during the whole time. This patient was detained in hospital for a certain reason for forty days, but received only three doses of the serum, the last dose being on the twentieth day. Two days after discharge, on the twenty-second day after the last prophylactic dose, there developed a typical attack of scarlet fever. Henceforth all patients without definite signs received a prophylactic dose every tenth day until discharge.

Signs of Serum Reaction.—Signs of serum sickness have been almost entirely absent. Two patients developed a very mild urticarial rash on the thirteenth day after the first dose or the third day after the second dose; one developed a similar rash on the sixth day after the third dose; one had a rise of temperature of two degrees the morning after the third dose, and one had a rise of one degree on the day of injection of the third dose. None of the other cases showed adverse signs of any kind.

The method no doubt requires further testing, but in my application of it during the past three years it appeared to have been very successful, as ward infections have almost disappeared.

THALLIUM ACETATE AS A DEPILATORY IN RINGWORM OF THE SCALP.

BY

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COMPLETE epilation of the scalp is generally considered to be the best and most expeditious form of treatment for ringworm of the scalp. Epilation by *x* rays has for many years been the method employed, and has given very satisfactory results, but it has some drawbacks which cannot be overlooked.

1. If there is any inflammation or pustular condition of the scalp *x* rays are, in my opinion, contraindicated as a depilatory agent. Moreover, in a small number of cases troublesome dermatitis follows their use, although the scalp may appear quite healthy, apart from the tinea, before radiation.

2. X-ray epilation is unsuitable for children under the age of 3, *since they cannot be kept still during the application.*

3. The most serious drawback is the permanent baldness which follows in some cases unless the treatment is given by someone highly skilled at the work.

I have been particularly struck with the variation in the output of *x*-ray tubes from day to day, and since the margin of error is small on either side the exact output of the tube should be carefully checked each day before work is commenced. The use, therefore, of any other method of producing depilation is worth careful consideration.

The depilatory action of thallium acetate has been known for many years. More than a quarter of a century ago Bourand used this drug in his clinic for the treatment of tinea capitis, but he seems to have abandoned it on account of its toxic effects on the patients. Recently its employment for the treatment of ringworm of the head has brought into prominence by A. Buschke, and it is most entirely due to his experiments on animals that the method has been made practical and safe.

The success and advantages of thallium acetate depend entirely on correct dosage. Buschke, after much research and in collaboration with L. Peiser, established the minimal dose for complete epilation of the scalp to be 8 to 9 mg. per kilo of the body weight. One dose is, in the majority of cases, quite effective in producing complete depilation, and can be administered either in sweetened water or mixed with food.

The number of patients treated by me has been 74: of these, 51 were under the age of 4; 9 were aged 4; 3 were aged 5; 7 were aged 6; 3 were aged 7; and 1 was 8 years old.

I have used throughout the preparation made by Kahlbaum of Berlin, who supplies the drug in tablet form containing 1 decigram, 1 centigram, and 1 milligram. I have varied the dose from 8 to 9 mg. per kilo of the body weight, and have found that the cases of failure, to which I shall allude later, were among those to whom I gave 8 mg. All that is required is to convert the weight of the child into kilograms and then multiply by 8, 8.5, or 9 milligrams, according to the dose intended, administering the required number of tablets dissolved in sweetened water or mixed with food.

The result of a single dose of thallium acetate is very striking. On the sixth or seventh day the hairs begin to loosen; by the fifteenth day they are coming out freely; and by the twentieth day depilation is almost complete, except for those fine hairs at the margin of the scalp which, in my experience, never fall out, and the same applies to the eyebrows and eyelashes. I have never administered the drug to an adult, so cannot say what the effect is on the hairs of the face, the pubes, and the axillae, but the experience of other workers seems to be that a dose sufficient to cause depilation of the scalp does not cause the hairs on the above parts to fall out. The infected stumps, as is the case after *x*-ray depilation, do not fall out so readily as the non-infected hairs, and this fact should be carefully borne in mind in the after-treatment. Removal of the affected hairs and stumps is most important in guarding against the reinfection of the new hairs, which appear much earlier than after *x*-ray epilation.

The routine treatment is as follows.

The urine in all cases is examined for albumin and casts; the weight of the child is converted into kilograms, and 8.5 or 9 mg. of thallium acetate per kilo of body weight is given in a little sweetened water or mixed with food. From the first day after the thallium is given the scalp should be washed daily with sp. saponis kalinus, or a 10 per cent. sulphur soap, and a fungicide ointment well

rubbed in. When the hair begins to fall freely Buschke recommends the use of tincture of iodine and a fungicide ointment on alternate days. I have followed this practice carefully in all my cases with great success.

After the eighteenth or twentieth day, when epilation is almost complete, a careful examination of the scalp is made with the ringworm lamp for the detection of infected stumps; these are removed as far as possible with the epilation forceps, and by adhesive strapping. It is advisable to use local treatment for ten or fourteen days after a careful examination with the ultra-violet beam has failed to detect the presence of infected hairs or stumps. If care is not taken to remove the infected hairs as quickly as possible the new hairs are liable to become reinfected, owing to the rapidity with which they appear after depilation.

Of the cases treated, 65 were cured after one dose of thallium acetate. In 10 cases the hairs were infected after the regrowth, and a second dose was necessary; in only one case had a third dose to be given.

Most of my failures occurred among my early cases, and I attribute my non-success to two causes: (1) At first I gave 8 mg. per kilo of body weight; this dose, in the light of my experience, is not sufficient to produce complete depilation, and I now invariably give 8.5 or 9 mg. (2) As the ringworm lamp was not available during the first few months for examination purposes, a number of infected stumps were not detected and removed, with the result that reinfection of the new hairs occurred. Since giving 8.5 or 9 mg. per kilo of body weight and conducting a daily examination for infected stumps with the ultra-violet beam after epilation is apparently complete, my results have been much more satisfactory.

One or two further points in connexion with this treatment are, I think, worth recording. (1) Children with dark hair are more difficult to depilate than those with fair hair; it is therefore advisable to give 9 mg. per kilo to the former class of case. (2) The hairs on the crown fall out less readily than those on the other part of the scalp, so that for ringworm in this situation it is also better to give the full 9 mg. dose.

Toxic Effects.

I have not seen any alarming toxic symptoms in any one of the cases I have treated; this was due partly to the fact that I insist on all patients remaining in bed for forty-eight hours after the thallium acetate has been administered, and partly to the fact that most of my patients were under the age of 4 years, as it is well known that young children are less susceptible to the toxic effects of this drug than older children.

The toxic effects most noticeable were apathy, loss of appetite, and drowsiness during the first two or three days, and pain in the joints, particularly in the lower limbs, appearing from the sixth to the tenth day. All these symptoms gradually disappeared without leaving any ill effects in any of the patients treated. All the children who showed toxic symptoms in any marked degree were more than 4 years old.

Summary.

As the outcome of my clinical investigation the following points might be emphasized:

1. Thallium acetate can be safely used as a depilatory agent where, on account of the age of the patients, æ-ray treatment is contraindicated.

2. Accurate weighing of the patient and correct dosage are most important.

3. The after-treatment is all-important in obtaining satisfactory results; the patients should be kept in bed for forty-eight hours after the initial dose of the drug, and from the first day of treatment the scalp should be washed daily with sp. saponis kalinus, or with 10 per cent. sulphur soap, and a fungicide application be well rubbed in.

4. Careful examination with the ultra-violet beam should be made after depilation is apparently complete, so as to detect any infected stumps which have failed to come out and which would reinfect the new growth of hair.

5. The use of thallium acetate should, as far as possible, be limited to children under the age of 5, owing to its toxic effects on those above that age.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

HAEMATOMETRA WITH HAEMATOSALPINX IN ONE HORN OF A UTERUS BICORNIS UNICOLLIS.

THE rarity of this condition prompts us to record the following case.

The patient, aged 16, was sent to hospital on October 9th, 1929, by Dr. Crawford, for pain and swelling in the perineum.

History.—Menstruation began at 14 years of age; regular cycle of twenty-eight days, lasting five days, loss scanty. Last menstrual period September 10th, 1929. At the onset of menstruation the periods were free from pain, but during the last year there had been dysmenorrhœa of progressive severity. This pain, which started two days before the period, and continued throughout, was referred to the lower abdomen and perineum. On the second day of her last period the patient suddenly fell in a sitting posture, and a few hours later complained of severe pain in the right lower abdomen and perineum, which was worse than before. This pain persisted throughout the following month, making walking painful and sitting difficult; she also suffered from dysuria. At the onset of her next period the pain became so severe that she was sent to hospital.

Examination.—The patient was well developed but anæmic. In the *right iliac region* there was felt a *sausage-shaped swelling*, soft in consistency, irregular in outline, and tender to pressure, but with no rigidity of abdominal parietes. The right vaginal wall was bulged inwards by a globular swelling, which extended from the vaginal orifice upwards into the pelvis, and was definitely cystic. At the vault of the vagina the os externum could be detected, but no true cervix could be felt.

Bimanual Examination.—It was difficult to arrive at any conclusion, owing to the cystic swelling, the size of a large orange, occluding the vagina. As far as could be ascertained, there was a mass in the position of the uterus, continuous above with sausage-shaped mass below with the cystic swelling.

While awaiting operation, the patient suddenly developed acute abdominal pains with vomiting, the lower abdomen became rigid, and the patient took on the aspect of an abdominal crisis.

Operation.—Under general anæsthesia the peritoneal cavity was opened, when there was an escape of a large amount of altered blood. The uterus was enlarged to the size of a three months' pregnancy, and on further examination was found to be bicornuate; the left horn was the size of a normal virgin uterus, with a healthy tube and ovary. The right horn was slightly larger, and merged into a large globular swelling, which had burrowed down, lateral to the right wall of the vagina. The tube on this side was greatly dilated, and altered blood was seen issuing from the fimbriated end. The whole, except the left tube and ovary, was removed in one mass. Great difficulty was experienced in separating the cystic swelling from the deep part of the lateral wall of the vagina and surrounding tissues. The specimen showed the left horn to contain a normal cavity and cervical canal opening into the vagina. On the right side the large cavity, which contained altered blood, appeared to be a greatly distended cervical canal, above which was the enlarged right horn of the uterus with the haematosalpinx.

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DRY FRACTURE OF NECK OF FEMUR.

I WAS particularly interested in Mr. Blundell Bankart's description (*Journal*, January 4th, p. 8) of a case of intracapsular fracture of the neck of the femur, in which he had obtained bony union after injection of blood into the hip-joint. I must admit that I was sceptical of the absolute absence of bleeding between the ends of the fracture and into the hip-joint, especially as I had often noticed an apparent fullness over Scarpa's triangle, and considered that it was due to effusion into the hip-joint. I wish, therefore, to place on record the following case, which showed a dry fracture of the neck of the femur investigated at necropsy.

W. M., aged 81, was admitted to the Radcliffe Infirmary with retention of urine and uræmic symptoms due to senile enlargement of the prostate. His retention was relieved by catheterization, but two days after admission he got out of bed one night and fell, breaking the neck of his femur. He was treated

palliatively by abduction and extension on a Thomas splint. He died five days after the fracture.

Extract from notes of the necropsy made by Dr. A. G. Gibson: "There is considerable bruising with the production of fair-sized blood clot in the muscles above and below the great trochanter. This bruising extends downwards to the distal third of the inner side of the thigh, possibly directed there by the sartorius muscle. The hip-joint was opened and contained no blood clot. A pipette passed to the back of the joint aspirated a few cubic centimetres of synovial fluid very faintly tinged with blood. There is a subcapital fracture of the neck of the femur, but neither surface of the fracture has any blood clot at all formed on it."

This case, with its marked bruising outside the joint, and absence of bleeding in the joint, gives some further definite evidence to encourage the injection of blood into the hip-joints of recent intracapsular fractures advocated by Mr. Blundell Bankart, with a view of obtaining bony union.

I have to thank Mr. Rose-Innes, under whose care this patient was, for permission to publish the case.

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Reports of Societies.

INFLUENCE OF SUNLIGHT AND CLIMATE ON HEALTH.

At a meeting of the Section of Balneology and Climatology of the Royal Society of Medicine, on March 21st, with Dr. KERR PRINGLE in the chair, the influence of sunlight and other climatic factors, especially in the treatment of rheumatic disease, was discussed.

Dr. C. W. BUCKLEY said that the climate which seemed the most delightful was by no means necessarily the best adapted to the human organism. Barometric pressure, temperature, sunlight, rainfall, humidity, and prevailing winds were the chief factors which determined the character of climate. In this country, where grey skies were common, it was not surprising that great importance was attached to the record of hours of sunshine, and the longing of the Englishman in the Tropics for the grey skies of his native land was not always realized. The spells of sunny weather were too brief and broken to permit of acclimatization to the sun's rays in any degree. The results of research into the effects of light, both natural and artificial, were sometimes contradictory and unconvincing. They did not support the idea that natural resistance was increased to any extent by continual exposure to sunlight. The sun, while beneficial to the healthy, might be injurious to those suffering from severe infections, and, even in health, excess might produce undue fatigue. Wind was an important factor, and it had to be remembered that in the open the movement of air was as necessary as in closed rooms. Air movement played an important part in cooling action on the body, even if actually there was no change of air. High humidity was unfavourable, and changes in relative humidity as slight as 1 per cent. caused perceptible changes in the rate of evaporation from the skin. Rainfall was also an important factor. It had long been pointed out that heavy rainfall was an advantage from the point of view of health, clearing the air of impurities and probably rendering it more invigorating by favouring the formation of ozone and diminishing the relative humidity. It was the common experience of many people that they felt more fit for work during and after rain. The effect of these climatic factors was modified by the remarkable adaptability of the human organism. It was more advantageous to train the powers of adaptation to climate in treating rheumatism than to lower those powers by living in a warm climate. Newsholme had recorded that high incidence of rheumatic fever occurred when the mean temperature was high, the rainfall deficient, and the ground water level high. Recently the speaker had been investigating the incidence of rheumatic diseases among miners, who spent one-third of their lives underground, excluded from sunlight, in a warm and highly humid atmosphere. Among 1,496 cases diagnosed as various forms of rheumatism which had been under his care in the period 1926–29 at the Devonshire Hospital, Buxton, 452 were miners: they showed a high incidence of rheumatic fibrositis, but no higher than general outdoor workers exposed to cold and damp, with plenty of light. Miners had a lower incidence of infective arthritis and osteo-arthritis than many other classes of the community. It was a combination of conditions tending to lower the powers of adaptation which caused a high incidence of rheumatism, and not any single climatic factor. Dr. Buckley differed strongly from the popular view that if the climate of these islands were perpetual sunshine and the temperature variation not more than ten degrees the health of the nation would improve. A good case could be made out for the view that the British climate was the best of all possible climates for the average inhabitant of these islands.

Dr. W. P. KENNEDY (Bath) referred to the changing definition of rheumatic diseases. Formerly there were included in this category many conditions which had one by one been eliminated, and what remained was little more than a general ill health. He believed that some perversion of the metabolism produced the first irritation in the fibrous tissue which opened the way to the inroads of bacteria. Professor MEUZOT (Royat) said that many persons with chronic disease were worse on certain days, and it seemed as if the climate was implicated. In last September many cases of sudden death from cerebral haemorrhage or heart failure occurred in one small locality on one particular day. This was believed to have something to do with magnetic changes, and to be connected with the existence of black spots in the sun.

Dr. A. CAWADIAS said that chronic rheumatism was the result not of one but of many factors, external and constitutional. For every new patient these factors varied as to their number, intensity, and mode of combination. Each rheumatic patient had a special "etiological constellation," and in certain patients the climatic factor might be in the constellation as a star of the first magnitude and in others simply as a satellite. In Greece, where there was abundance of sunshine, there was much chronic rheumatism, though perhaps not so much as in Great Britain. To attribute rheumatism only to climate was one of those dogmatic simplifications of etiology for which there was no true foundation: in every patient a combination of factors was concerned. In the treatment of chronic rheumatism abroad he had for many years used the sun; coming to this country, where the sun was not so available, he started, with great scepticism, ultra-violet treatment, and was astonished to find that in his rheumatic patients it gave better results than the sun. He believed the reason to be that while people were accustomed to the luminous radiations, they were not accustomed to the short ultra-violet radiations, and these brought about a "shock" reaction which modified the metabolism.

Dr. GUSTAVE MOXON (Vichy) said that his experience in sending patients up mountains, to altitudes of 8,000 feet or so, was that the danger appeared when they came down again. On returning suddenly from high altitudes to the town they were very liable to catch any infection which was prevalent; their resistance was actually lowered by their stay in the mountains. In many cases they would derive far more benefit from ultra-violet treatment at home than from a stay at a high altitude. Professor FERREYROLLES (La Bourboule) said that patients differed greatly in their resistance to climate, and its effect in rheumatic cases was seemingly contradictory in many instances. The same thing was seen among patients with asthma; some were only well in cold weather, while others could not endure it. Dr. J. CAMPBELL MCCLURE said that excessive exposure to sunlight was harmful. Every autumn he had to treat a number of people for bronchitis and other complaints; these people during the summer had been exposing themselves, in abbreviated garments, to the rays of the sun, coming back with deeply pigmented skins to undergo a period of distinct depression. Rash exposure to the sun would often precipitate an attack among those disposed to bronchitis. Dr. P. G. LEWIS (Folkestone) remarked that in consequence of the fine summer of last year there had been distinctly less illness throughout the

country; sunlight had evidently a distinctly beneficial influence. He had been using ultra-violet radiation for two years, and in no instance had it failed to benefit the patient.

Dr. KERR PRINGLE, from the chair, said that some patients with rheumatism appeared to do better in a bracing climate, and others in a West Country climate. Residents in Harrogate, who ordinarily had a bracing climate, were unwise to go for their holidays to the East Coast, because this meant that they were kept at concert pitch all the year round; they should relax at a western station. A long time ago he was in charge of a home for waifs and strays on the North-East Coast: many of the children, in spite of abundance of sun and fresh air, did not thrive; when, however, they were sent far up the Tyne Valley into the middle of Northumberland they improved greatly.

THE THERAPEUTIC VALUE OF GOLD COMPOUNDS.

A MEETING of the Sections of Dermatology and Medicine of the Royal Society of Medicine, on March 20th, under the chairmanship of Dr. S. ERNEST DORE, was devoted to a discussion of the therapeutic value of gold compounds.

Professor S. L. CUMMINS said that sanocrysin (gold-sodium-thiosulphate), at first unduly vaunted as a cure or rashly condemned as a poison, was now gaining general favour as a useful adjunct to the treatment of tuberculosis. Whether it was to be described as a chemotherapeutic agent or not depended on whether the conception of chemotherapy was limited to that of Ehrlich; but it was undoubtedly a chemical substance with a selective action on tuberculous lesions, and capable of effective use in the treatment of tuberculosis. Its action, like that of other preparations of the heavy metals, appeared to be related to tuberculous foci rather than directly to tubercle bacilli; but the result of its skilled application in suitable cases was a tendency to improvement in regard to temperature, weight, and general condition, accompanied by a decrease in amount of sputum and number of tubercle bacilli excreted, so that sputum often became negative and might dry up altogether for the time being. This improvement appeared to depend upon an amelioration of the focal lesions, and the secondary destruction of many of the tubercle bacilli therein. The success of sanocrysin treatment depended thus upon the power of the patient to make use of the focal action of the gold salt, and it might be assumed that this power depended, in its turn, upon the degree to which the patient had learned to neutralize or to tolerate the toxic substances set free in the circulation through focal hyperaemia, as well as upon his phagocytic and bactericidal efficiency. This implied that the effects of any given dose of sanocrysin could not be uniform, but must necessarily vary according to the phase of tuberculosis in the individual patient. The art of sanocrysin therapy lay in the just appreciation of the patient's condition, and the regulation of dosage accordingly. Within the limits of the dose which could be given to a healthy person without the risk of metallic poisoning, the selection of the appropriate amount for the individual patient depended rather upon the laws which regulated vaccine therapy than on those which were applicable to drugs without a chemotherapeutic action. With the advent of heavy metal therapy in tuberculosis came the need for more scientific methods in the assessment of cases, and it seemed clear that in the near future a great deal of attention would have to be given to this aspect of the question. In the search for characters according to which cases might be evaluated and compared, it would be advisable to turn more and more towards ponderable and measurable changes than to those criteria which depended for their significance upon the individual skill and experience of the physician: among the surest guides were the temperature, the weight, and the amount, character, and bacillary content of the sputum. The great advances now being made in chest radiography, the recent progress in the study of blood changes in tuberculosis, and a better appreciation of the significance of tuberculin sensitivity afforded profitable lines along which future work might be directed in the assessment and comparison of cases before, during, and after treatment.

Dr. A. C. ROXBURGH and Dr. H. CORSI brought forward an account of more than forty cases, chiefly of lupus erythematosus, submitted to treatment with krysolgan or sanocrysin, and the results obtained. The krysolgan (sodium-amino-auro-mercapto-benzol-carbonate, with a gold content of approximately 50 per cent. by weight) was given in doses of 0.0015 to 1.5 grains, equalling 0.1 gram, intravenously. The sanocrysin, with a gold content approximately 40 per cent. by weight, was given in doses of 0.05 to 0.25 gram intravenously—that is, two and a half times the maximum dose of krysolgan and containing about twice the amount of gold. The intervals were one week between the smaller doses, and two weeks between the larger, and the average number of injections in each case was eleven with krysolgan and ten with sanocrysin. No local treatment was given during the injections except calamine lotion. Of the 35 cases of lupus erythematosus treated, 8 were cured temporarily, 6 very much improved; 9 were definitely and 2 slightly improved. There was no change in 5, and 5 patients became worse. Of the 8 "cured" cases 6 relapsed in a few months. The proportion of those improved to those not improved in the two groups was the same—namely, about two to one. Gold injections were also tried in 4 cases of Bazin's disease, with cure in one case, improvement in another, and no change in the remaining two. One case of papulo-necrotic tuberculides was improved, as was a case of erythrocyanosis frigida, and there was no change in a case of pityriasis lichenoides et varioliformis acuta. Toxic reactions, but none of them serious, followed 6 per cent. of the injections. The opinion of the authors of the paper was that there was little to choose between the two drugs. Any difference perhaps was in favour of sanocrysin, because it could be given in larger doses. The drugs were not a cure for lupus erythematosus, but a large proportion of cases improved.

Dr. C. J. MARSHALL said he had been using gold compounds since they were first tried and advocated in Copenhagen, and he had been impressed by the influence which the period of infection had upon the character of the reaction. His own clinical experience coincided with what Professor Cummins had found in his animal experimentation, that the best results ensued when the time elapsing between the onset of the infection and the treatment had allowed of the formation of local lesions. As sanocrysin was at first used on all kinds of tuberculous cases there were some lamentable results. He did not now use the gold compound less than a year from the commencement of the infection. He had not hesitated to give sanocrysin to a patient who was febrile when at rest, and in cases of this kind he had had good results. He was not aware of having been able to cure any tuberculous patient by means of gold compounds; in many patients, however, the symptoms had ceased after courses of treatment. Still, at some time a relapse occurred, more quickly in these cases than after the usual constitutional treatment. It was a fine achievement, however, to render patients fit to undergo constitutional treatment.

Dr. H. W. BARBER, who had treated a large number of cases of lupus erythematosus during the last few years with gold compounds, said that he first used krysolgan, then sanocrysin, and later still solgarnol, which had been reported to be less toxic as well as more efficacious than the other two. Almost always he commenced with very small doses and gradually increased them, but in the case of a resistant patient it might be worth while giving heroic doses. In all cases one must be sure that no lung tuberculosis existed. Some cases of tuberculide had responded well to the injection of gold preparations, but he did not claim to have cured them. He had seen more toxic reactions after sanocrysin than after the other gold compounds. One patient treated with solgarnol had developed a generalized lichenoid rash; that patient was already suffering from pulmonary tuberculosis. This treatment of lupus erythematosus was satisfactory up to a point; after it some of his patients had remained well for two or three years, but many had relapsed.

Dr. J. E. M. WIGLEY had treated twenty-one cases of lupus erythematosus with sanocrysin: none were worse for the treatment, and only one was unaffected by it, but in some the improvement was only temporary. Tests had indicated the presence of gold in the reacting skin. Dr. H. MACCORMAC spoke of the difficulty of determining whether cases of lupus erythematosus were tuberculous or not. There was an inherent difference in the conditions when treating lung lesions as compared with lesions of the skin. In the case of the lung there existed a whole focus surrounded by a tissue which was able to produce a reaction. In the case of the skin lesion, which was largely on the surface, half the possible reacting surface was cut off: that was one reason why there was more difficulty in getting results in these cases from drugs. He was interested in the point made by Professor Cummins that it was necessary to allow the tubercle bacilli to become fixed in the tissues and produce a reaction before the remedy could have effect; it was the same with syphilis. In two or three cases he had used sanocrysin for lupus vulgaris: definite improvement occurred, but not to the same extent as in lupus erythematosus. These compounds were a very valuable part of the dermatologist's treatment, clearing up cases which otherwise had proved very refractory. Dr. W. N. GOLDSMITH said that since 1925 he had treated every case of lupus erythematosus encountered by some gold preparation: gold injections were a great advance in the treatment of this hitherto intractable complaint. Most of his cases had reacted well, and some seemed to have remained cured at the end of three years after the treatment ceased. Though most of the cases of the disease relapsed, they again improved when gold injections were resumed. In consequence of his having learned of unfavourable results following sanocrysin injections, he had largely gone on to the use of krysolgan, triphal, and some of the other gold compounds which were on the market; metallic gold produced no effect. He very seldom gave a larger dose of triphal than 1.5 grams, the actual dose each time being graduated according to the response shown after the previous injection: if there were signs of a temporary reaction he diminished the dose. The compound which had the most rapid effect was triphal, and the only untoward effect was a slight and temporary malaise. At present there was no guidance as to the period during which treatment should be continued so as to prevent a relapse of the lupus erythematosus.

Professor CUMMINS, replying, said that some of the best results he had had from the gold treatment were in resting febrile cases. He had tried to insist that great caution must be observed in the matter of dosage in cases of that kind. If one limited oneself to the Secker technique, that sort of case would not be influenced by the treatment without causing shock. Sometimes these injections had an extraordinary effect on the temperature. The fact that Dr. Goldsmith found that these gold compounds acted better in the absence of a big lesion was interesting, but the speaker thought that in those cases there were microscopic hyperaemias present. Dr. CORSI also replied, mentioning that he had not used the heroic doses indicated by Dr. Barber; he would be somewhat anxious if that were done.

TREATMENT OF NEW GROWTHS OF THE PHARYNX AND LARYNX.

AT a meeting of the Section of Laryngology of the Royal Society of Medicine, on March 7th, Mr. R. R. SIMPSON reported a case of nasopharyngeal fibroma, in which the growth had been removed by diathermy, and exhibited instruments and a specimen.

The patient, a boy aged 16, had complained of nasal obstruction for one month, and an operation was performed after a preliminary high tracheotomy. The diathermy knife was introduced as for the removal of adenoids, but was moved in the reverse direction—namely, from below upwards, cutting slowly. The posterior nasal attachments were severed by the knife introduced intranasally.

Mr. CYRIL HORSFORD doubted whether the larynx was normal, since the right half was in continuous fixation, and there appeared to be a growth above it. Mr. TILLEY remarked that in parts of the country where no radium was available, diathermy provided a similarly bloodless method of treatment of new growths in this position. Mr. W. ROSE recommended diathermy as being the simplest and safest method available at present for dealing with these very difficult tumours. Mr. FITZGERALD POWELL said that Mr. Simpson's method seemed preferable to removal of the growth through the antrum. He had recently had a case of a sessile growth which could not be removed by the antrum, but it disappeared after radium treatment. Mr. MUSGRAVE WOODMAN thought it was very dangerous to use radium for the highly vascular sarcomas because of the subsequent rapid dissemination. Whenever it was possible he deemed it better to remove the tumour by diathermy, employing radium only to prevent recurrence.

Dr. DAN MCKENZIE showed a specimen of papilloma of the larynx, which had been removed from a boy, 8 years of age, by the indirect method. He said that the risk of using cocaine in children has led to the trial of a 5 per cent. solution of stovaine in water, with a few drops of adrenaline, satisfactory anaesthesia being thus obtained. In this case, however, the successful outcome was chiefly due to the exemplary coolness of the patient.

Sir STCLAIR THOMSON thought the use of cocaine in the nose of children was very dangerous unless it was carefully localized; it was less risky in the pharynx. Dr. P. WATSON-WILLIAMS disagreed with this conclusion, since he had found cocaine quite safe for patients under the age of puberty; it should, however, be always used with great caution. Sir JAMES DUNDAS-GRANT concurred as regards the danger of sprayed cocaine in children, and said that it should be applied on cotton-wool. Dr. DAN MCKENZIE mentioned that the worst cases of cocaine poisoning he had seen had been in children and young people; it should not be used without adrenaline.

Mr. ARCHER RYLAND showed a patient, aged 48, with intrinsic carcinoma of the larynx treated by radium. There was a history of hoarseness of gradual onset, which had lasted six months, and the left vocal chord was found to be the seat of a neoplasm with a suspicion of subglottic extension. Microscopical section revealed that it was a typical squamous epithelioma. A window resection of the thyroid ala was performed, and seven needles, each containing 1 mg. of radium element, screened by 5 mm. platinum, were placed upon the deep perichondrium and secured in position. The radium was left in for seven days and a total dose of 1.176 mg. hours was administered. A prophylactic exposure of the tracheal wall was associated with the operation, but the insertion of a tracheotomy tube did not become necessary.

Osteomyelitis of the Cranium.

Dr. DAN MCKENZIE showed skiagrams of a skull after excision of bone for spreading osteomyelitis. The patient was operated on in 1926, and the skiagrams had been taken a month ago in order to determine whether regeneration of bone had occurred. Dr. LOGAN TURNER referred to a case which had been reported by Dr. MacLean of Newcastle, in which the left half of the frontal bone had been removed for spreading osteomyelitis. Three months later there was only a small area of disease, the size of a florin, where the dura mater was exposed; all the rest of the bone had regenerated.

Mr. VLASTO showed a case of chronic osteomyelitis of the frontal sinus and ethmoidal cells in a boy aged 16.

The patient was first seen in April, 1923, seven weeks after an abscess had been opened. On examination a suppurating wound was found in the region of the left frontal sinus, from which granulations were sprouting. Dead bone could be felt with a probe at the bottom of the wound: there was a considerable amount of proptosis, with slight limitation in movement of the left eye. Pus and granulation tissue occupied the left nasal fossa. The patient looked ill, but there were no constitutional signs. A week later the left frontal sinus and ethmoidal region were exposed through the usual incision, revealing extensive disease of the floor of the sinus and of the ethmoidal cells.

In the light of after events it seemed obvious that the operative removal had not been sufficiently radical, and that a mistake had been made in closing the external wound and draining entirely through the nose. After this treatment, however, the proptosis considerably diminished, but pus continued to exude externally through a sinus and into the nose. In the middle of June, 1923, the scar was reopened and more diseased cells and granulation tissue were removed. The possibility of malignancy was considered, but the material reported upon later was purely

inflammatory. The sinus had nearly healed at the beginning of July, but the presence of pus in the nasal fossa rendered it likely that the inflammatory process was not at an end. In November, 1928, the wound was reopened and a diverticulum of the upper and inner frontal sinus was found filled with granulation tissue. More diseased bone was removed, and, for the first time, the external wound was left widely open, being packed with iodoform gauze. For fifteen months afterwards the patient's local condition remained much improved, but there was still some pus in the nose and a very small sinus. Treatment consisted in frequent irrigation of the frontal sinus through the breach in the outer wall of the nasal fossa. In January, 1930, the wound was again reopened and the disease freely removed from outside and from within the nose. The diseased area seemed to be most marked over the partition between the right and left frontal sinuses. The boy's condition at present was a little better than it had been before the last operation.

CAESAREAN HYSTERECTOMY.

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on February 14th, with the president, Professor A. H. DAVIDSON, in the chair. Dr. BETHEL SOLOMONS read a paper on Caesarean hysterectomy, which appears at page 584.

Dr. D. G. MADILL, who opened the subsequent discussion, referred to the relative merits of bougies and the stomach tube. He mentioned that in cases in which he had to induce labour he always used a stomach tube; he had never been unsuccessful when employing this means, though with bougies he had repeatedly failed. Dr. J. S. QUIN reported a case of accidental haemorrhage following the insertion of a stomach tube; there had been absolutely no bleeding at the time the tube was inserted. He regretted that there was no infallible method of inducing labour. Dr. T. M. HEALY thought that Caesarean hysterectomy added nothing to the difficulties of Caesarean section or the time taken by it. As regards the question of craniotomy versus hysterectomy he expressed the belief that the latter was safer and easier than a difficult craniotomy. In some cases of fibroids he preferred to perform Caesarean section and to remove the fibroids at a later period.

Professor D. V. MORRIS said that in coitional sepsis the presence of plasma cells suggested that the condition might have been one of chronic sepsis which had lighted up, apart altogether from the insertion of bougies. He cited the case of a patient who previously had had an operation for backward displacement. She had pains for two hours, but had made very little progress considering she had had six children previously without any difficulty. It was thought that Caesarean hysterectomy was indicated, and this was performed. The whole pelvis was a mass of adhesions, there was marked evidence of oedema of the uterine wall, and sepsis occurred afterwards, though at the time of the operation there did not seem to be any reason whatsoever for sepsis. Dr. N. FALKINER considered that Caesarean hysterectomy was indicated in cases of cardiac decompensation. He had tried it recently, and the case had done particularly well. He thought that by this means the danger of sepsis occurring in the puerperium was obviated. Dr. R. M. CORBET thought it should be employed more frequently in cases of rupture of the uterus. He had seen eighteen cases of this condition, eight of which had been treated by hysterectomy; only one patient had died. If it was possible to make a definite diagnosis of rupture of the uterus before the child was delivered, it might be justifiable in such a case to open the abdomen and perform Caesarean hysterectomy. This, of course, was only possible if the patient was in hospital, or lived close to a hospital, and could be sent there quickly. He had seen a number of patients plugged before hysterectomy, and thought that convalescence was delayed thereby.

Dr. BETHEL SOLOMONS, replying, said he did not like the tube method of inducing labour. He had probably been unfortunate in seeing haemorrhage following its introduction, but he had always thought that it displaced the presenting part and might cause prolapse of the cord. He believed also that the introduction of three or four thin instruments like bougies was safer than the insertion of a bulgy apparatus like a tube. The bougies must not be blamed for the sepsis in the case reported: the husband was blameworthy. He referred to the excellent report just issued by Dame McIlroy from the Royal Free Hospital; there was mention of three deaths having occurred in cases where the tube had been used. Sometimes hysterectomy added to the danger of Caesarean section, although the operation was possibly simpler to perform. The ethical side of the subject appealed to him; he had found it entirely unnecessary to remove the uterus when section was employed in a case where craniotomy might have been indicated. In this class of case the lower segment section operation followed by drainage was uniformly successful. As mentioned in his paper, the ideal treatment for fibroids in pregnancy was to leave them alone; otherwise, myomectomy should be performed.

TOXIC GOITRE.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on February 28th, with the president, Mr. R. ATKINSON STONEY in the chair, Sir WILLIAM I. DE COURCY WHEELER showed an anaesthetic screen for thyroidectomy, and Mr. T. P. DUNHILL of St. Bartholomew's Hospital read a paper on toxic goitre, illustrated by lantern slides.

Mr. Dunhill said that the differences in the manifestations of toxic goitre in different patients were so obvious as to suggest two diseases: the so-called exophthalmic goitre, with staring eyes, pronounced nervous symptoms, and rapid but regular heart rhythm, being most common in early adult life; and the so-called toxic adenoma, rarely associated with exophthalmos, with comparatively mild nervous symptoms but an irregular heart rhythm, occurring on an average two decades later than the onset of exophthalmic goitre. The difference between the groups was probably one of degree only and not of kind. A full range of cases existed, representing every stage between exophthalmic goitre at one end and toxic adenoma at the other; a graded series of cases revealed exophthalmos and nervous symptoms becoming less and less until they almost or entirely disappeared. Corresponding with this the thyroid gland was found to become less smooth and more nodular, until the stage was reached of a gland with a single adenomatous mass. Toxic goitre was therefore one single disease, the manifestations of which differed under varying conditions: these conditions depended upon the following etiological factors. (1) *The stimuli.* There was evidence that normal stimuli could become excessive and therefore abnormal, and that these abnormal stimuli affected the thyroid gland detrimentally. (2) *The gland.* A patient might have a gland which was normal, or a gland which had already become a colloid goitre, or which had passed through stages of hyperplasia and involution and become a nodular goitre, or an otherwise normal gland containing an adenoma. These changes were frequently occurring apart from toxicity, and on to a gland in any one or any combination of these states there might be directed the pathological stimuli which constitute the first factor. (3) *The body cells*—for example, the muscle fibres of the heart, an organ influenced by thyroid secretion to a measurable extent; this factor of the heart before it was affected might also vary within wide limits. Surgical treatment must not be rigidly standardized, and must vary according to the clinical condition when the surgeon's advice was first sought. If the case was primary, no operation was performed in the earlier months. Septic foci were removed, adequate rest was given, and small doses of iodine were administered. If the patient did not improve, an operation was considered. If the disease was of the secondary type, nothing was gained by delay, and an operation should be performed as soon as the patient had been sufficiently prepared. Regarding the extent of operation required, it was essential to remove a sufficient amount of the second lobe. A less extensive operation, even the ligature of an artery, might give surprisingly good temporary results, but these were hardly ever permanent. No one should be induced to operate upon a patient until her assurance had been received that she would permit the completion, in stages, of what might be necessary. In patients who were

very ill, it was wise to tie the vessels at a preliminary operation, and, even then, to remove one lobe first.

The PRESIDENT remarked that, *although Mr. Dunhill* doubted the existence of any basic difference between exophthalmic goitre and toxic adenoma, in Dublin a great number of cases of toxic adenoma were not seen. In Ireland there were not so many cases of goitre associated with toxic symptoms but without exophthalmos as there were in other places. Until comparatively recently, such cases had been considered the property of the physician, and surgeons had not had much opportunity of operating on them. As regards preliminary ligation Plummer had stated that the introduction of iodine treatment had completely done away with the necessity for this. With reference to *x*-ray complications he mentioned a recent case; the patient had had no medical treatment whatsoever, but it had been one of the most difficult cases he had ever operated on, the tissues being matted together. He thought it possible, therefore, that in some cases the physician and radiologist were blamed for the matting of tissues which was not really their fault. Mr. W. PEARSON did not agree as to the rarity of cases of toxic adenoma; Mr. Dunhill had cleared up the pathological obscurity of these cases. Ligation was sometimes extraordinarily good in its results; the speaker had performed this in one case many years ago, and the patient had remained perfectly well ever since. Sir WILLIAM TAYLOR believed that the number of cases of primary toxic goitre seen in Ireland was considerable, but secondary toxic goitre associated with adenomatous changes was more rare. He had never seen a case of primary toxic goitre in which a preliminary ligation had been required, and he had been told by Plummer that when these cases were treated with rest and iodine, preliminary ligation was unnecessary.

Sir WILLIAM WHEELER said that the patient with toxic goitre necessitated co-operation and team work between the physician, surgeon, and biochemist. In Dublin the incidence of the disease was high; the troubled years through which the country had passed, and the mental strain to which individuals had been subjected, accounted probably for the large number of cases. Kocher was the great surgical pioneer of this work, and the speaker had, about twenty-five years ago, spent three months in his clinic. The surgery of Graves's disease was, at that time, practically unknown in these countries. The results in the hands of so great a master were most impressive. Notwithstanding the admirable effects of Lugol's solution, it was sometimes necessary to perform operation in carefully planned stages. In his experience the cases with marked mental disturbance were the gravest of all surgical risks. There were very few contraindications to operation. Patients with mania or with general anasarca should be given the benefit of multiple-stage operations. Cases of diabetes and pregnancy could be operated upon after careful preparation without much increased risk. He only operated on cases in which careful medical treatment had been tried and had failed, but he pleaded for surgical intervention before complications supervened.

Mr. H. MEADE stated that, although he had recently seen numerous cases of toxic adenoma, five years ago he hardly ever encountered a case. He thought that if these cases were really numerous more cases of the primary type would be seen. He had found that previous *x*-ray treatment added time and difficulty to the operation. Dr. R. STURPF believed that deep *x*-ray application could be of great help in diminishing the operative risk, and that the most favourable cases for treatment were those of acute and subacute exophthalmic goitre. He thought the fact that in many cases numerous exposures of superficial *x* rays were given without much effect was responsible for the impression that deep *x* rays were not helpful. Dr. LEONARD ABRAHAMSON considered that Mr. Dunhill's views accorded much more with observed facts than the arbitrary classification propounded by Plummer. In his experience there was a very high incidence of goitre of all types in Ireland, while primary toxic goitre had increased in frequency since the troubled times. Where simple goitre persisted in spite of treatment operation should be advised, since it was quite illogical to defer operation in a case of simple goitre, even where adenomata could not be felt, until toxic symptoms supervened. In the treatment of primary ("exophthalmic") goitre, he stressed the importance of mental rest and quietness.

Mr. D. KENNEDY mentioned a paper which he had written on the safety of operation in cases of toxic goitre. He had no doubt that *x*-ray treatment made operation more difficult, if not more dangerous. Mr. F. J. MORRIN said that in all cases of toxic adenoma he gave iodine as a pre-operative measure. He mentioned a patient who had been treated by *x* rays for many years, and whose neck was now infiltrated to a considerable extent; he did not think an operation scar would have been more disfiguring. He believed that primary *x*-ray treatment rendered operation much more difficult, but he had seen great improvement follow ligation of the superior arteries. He had not been impressed by the use of local anaesthesia; in fact, he thought that in many cases it was very undesirable. The ideal anaesthetic was avertin, but it was essential to give the maximum amount. He asked if Mr Dunhill left the isthmus, and thought that by doing so the post-operative distress was greatly lessened.

Mr. DUNHILL, in reply, said that if rest was made too rigid it could defeat its own end. Co-operation should always exist between the surgeon, physician, and radiologist. *X*-ray treatment did good in many cases, particularly if the patient was young and was treated in an early stage; in some cases it rendered the operation more difficult, but in others it did not. Iodine was particularly useful in cases of secondary toxic goitre. Avertin was good, particularly for young people whose hearts were strong and lungs clear, but it was extremely dangerous in cases of fibrillation with congestive heart failure. He never left the isthmus when operating.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

A CLINICAL meeting of the Aberdeen Medico-Chirurgical Society was held on March 6th, with the president, DR. CHARLES FORBES, in the chair. Mr. F. K. SMITH demonstrated a case of osteitis fibrosa cystica of the right femur in a girl aged 18. Slight injury to the right thigh at the age of 7 had been followed by confinement to bed for a year; some shortening of the right leg had later disappeared. When 10 years old she had again fallen and fractured the thigh; recovery was good and there was no immediate limp, but gradually shortening was noticed, with prominence of the thigh and swelling of the shin. The patient had been admitted to hospital a month previously with pain in the right thigh, and *x*-ray examination showed the presence of typical fibrocystic disease of the neck and nearly the whole shaft of the right femur. The bone was fractured at the junction of the upper and middle thirds. The tibia and fibula of the same side also showed fibrocystic change, but no other bones were affected. The remarkable points in the case were the long duration of the disease, the earlier injuries having been pathological fractures, and the widespread involvement of the shaft of the femur. Mr. Smith also showed a case of syringomyelia of long standing in an engine driver aged 48. The initial symptom, a sense of tingling in the neck, had occurred twenty-five years previously. Three years later the skin of the right forefinger had peeled off like a glove. At the present time the patient complained of pain and stiffness about the right shoulder; his fingers blistered easily, and took long to heal. There was swelling of the right shoulder, forearm, and wrist, with dilated veins on the upper arm. Pain and thermal sensation were lost over the right arm, and the right side of the chest, neck, and face. The Wassermann reaction was negative and the cerebro-spinal fluid normal. The Romberg sign was negative and all reflexes were normal. Ocular examination revealed nothing abnormal and the muscles of the right arm reacted normally to electrical stimulation. The radiograms of the shoulder and wrist were almost typically those of Charcot's disease. The lesion was localized as stretching from the level of the second cervical to the sixth thoracic segment.

Dr. A. GREIG ANDERSON pointed out the salient features in a case of gross myxoedema in a married woman aged 37.

The countenance could almost be described as alabaster with malar flush. The hair was lustreless, the eyebrows scanty, the skin dry and crusty, and the expression vacant. The tongue and lips were thick and the voice hoarse. There was supraclavicular padding, and enlargement of the hands and feet. The patient was lethargic, mentally confused, and had delusions at night. The basal metabolic rate was *minus* 18 per cent., and the cholesterol content of the blood was increased, 228 mg. per cent. There was no albumin in the urine; a fractional test meal showed the presence of a large amount of mucus in the stomach contents. The patient had commenced treatment with thyroid extract.

Dr. A. W. HENDRY brought a case of mediastinal tumour. The illness had commenced on June 1st, 1929, with cough, dyspnoea, and pain in the right chest. On admission to hospital on June 14th, fluid was found in the right pleural cavity. No glands were discovered. X-ray examination showed the presence of a large tumour of the posterior mediastinum. Dyspnoea became more marked and cyanosis supervened with turgidity of the veins of the neck and arms. Deep *x*-ray therapy was commenced with dosage at fortnightly intervals, with amelioration of symptoms and disappearance of the dyspnoea and cyanosis. There were now some enlarged glands in the neck, but the patient felt so well as to wish to return to work.

Dr. GEORGE SWAPP demonstrated a case of carcinomatosis in a woman aged 68. An ulcerative condition of the left breast had existed for thirty years; this had at first been thought to be tuberculous mastitis since there was a strong family history of tuberculosis. In 1928 small nodules had begun to appear round the ulcer and to ulcerate; they had been treated with brilliant green, and healing had followed. The ribs, sternum, scapulae, vertebrae, and pelvis now showed metastatic deposits, and the skin metastases were spreading to the abdominal wall. Secondary deposits were present in the lung and had been treated with deep *x*-ray therapy. Dr. Swapp also outlined the symptomatology and treatment of spasmodic torticollis, and showed a case in a woman, aged 30, who had been cured by operation after treatment by sedatives, alcohol injection, and cervical support had failed. The posterior primary branches of the second, third, fourth, and fifth cervical nerves on the right side had been excised under intratracheal anaesthesia. The indications for operation in such cases were persistence of spasm and severe insomnia, difficulty in deglutition and respiration, and profound mental depression.

FRACTURES INVOLVING THE KNEE-JOINT.

THE Manchester Medical Society held a joint meeting with the Liverpool Medical Institution, on March 5th, at the University of Manchester, when Professor ALBERT RAMSBOTTOM, president of the Medical Society, was in the chair. Mr. R. WATSON JONES (Liverpool) read a paper on the treatment of fractures involving the knee-joint.

Mr. Watson Jones arranged the 160 knee-joint fractures on which his paper was based in three groups: (1) fractures involving the extensor apparatus, where the problem of treatment was to restore full extensor power without impairing flexion movement; (2) fractures involving the weight-bearing areas, where the problem was to restore stability and prevent osteo-arthritis; and (3) fractures producing internal derangement of the joint. The first group included fractures of the patella. The questions whether operation was essential, whether the bone should be sutured or merely the capsule, which suture material should be used, and when movements should be commenced, were answered by showing that perfect results demanded sufficiently firm operative fixation to allow early movement. Catgut, kangaroo tendon, and silver wire were all fragile, and the speaker advocated a suture of twisted braided silk, which was eventually converted into living fibrous tissue, introduced in the form of a square stitch through the bone. This not only prevented separation, but controlled tilting of the fragments on each other. Fascia lata was only used for avulsion of the ligamentum patellae, and was valuable here because the normal attachment of the ilio-tibial band to the tibia was utilized in anchoring the patella. It was notoriously difficult to stitch the vertical fibres of the ligament to a bare area of the patella held upwards by the tension of the quadriceps; the technique described overcame these difficulties and rendered the operation easy. Cases of avulsion of the quadriceps were shown, and the relationship to "myositis ossificans of the quadriceps" discussed. The treatment of displacement of the epiphysis of the tibial tubercle depended on the age of the patient. If the fragment had fused with the upper tibial epiphysis, displacement was limited and non-operative methods adequate; but if it was still free, the marked upward displacement of the small fragment demanded operative treatment.

The second group included linear fractures of the femoral condyles and tibial tuberosities, where treatment was relatively simple, and comminuted compression fractures of the outer tibial tuberosity, where treatment was difficult. This fracture was produced by the splitting action of the outer edge of the outer femoral condyle, brought into contact with the tibial plateau in severe valgus deformity of the knee, so that preliminary rupture of the lateral and crucial ligaments and simultaneous splitting of the outer semilunar cartilage were inevitable. The objective of a stable joint free from arthritis demanded operative treatment, with sufficiently long immobilization for repair of the crucial ligaments; the practice of early movement in this injury was condemned. Cases were shown of totally disorganized knee-joints, reconstructed so that the patients had returned to full work. In an age of reconstructive surgery the temptation to choose the easy path of arthrodesis was to be avoided. The treatment of displacement of the lower femoral epiphysis was illustrated by typical cases, by a case occurring with subperiosteal haemorrhages in scurvy, where the displacement was pathological and not traumatic, and by a case of a day-old baby, where the displacement was a birth injury.

In the last group fractures of the tibial spine and detachment of articular fragments were discussed. The forward displacement of the tibial spine was due to the pull of the crucial ligament, and to the elastic recoil of the outer semilunar cartilage, but operative replacement of the detached fragment after division of the anterior horn of the cartilage was not always required. Illustrative cases were demonstrated. A previously undescribed condition was shown, where the styloid process of the fibula had been displaced into the knee-joint. The fragment had been torn off by a varus strain of the knee, and, with the biceps tendon and lateral ligament still attached, it had been imprisoned between the joint surfaces as they sprang together again. The complication of external popliteal palsy completed a remarkable resemblance to the injury recently discussed in the literature, of displacement of the internal epicondylar epiphysis of the humerus into the subluxated elbow-joint with ulnar palsy.

Cutaneous Anthrax.

Dr. A. E. HODGSON of Liverpool read a paper on cutaneous anthrax, based on the clinical observation of 45 cases which had been treated with anthrax serum and local applications of eusol fomentations, without recourse to excision of the infected area. There were four fatal cases; the patients were infected in or near the anterior triangle of the neck, and died within four to eighty hours after arrival at hospital for treatment. The speaker said that the clinical and bacteriological diagnosis in typical cases was moderately easy, but in others it might be difficult, since the anthrax bacillus might be present in extremely small numbers. Anthrax serum was given daily, intravenously, in doses of 100 c.cm. or more, as the clinical signs might require. In the series the largest total dose was 1,100 c.cm. and the smallest 90 c.cm. Locally, hot eusol fomentations were frequently applied until the inflammation abated. In doubtful cases a small dose, such as 20 c.cm., should be injected intramuscularly, pending definite diagnosis. Swabs from the wound were usually negative in a fortnight or so. The prognosis was good, provided that the treatment was commenced within two, or at the most three, days, except in anterior cervical infection, in which profound toxaemia, with great liability to fatal syncope, and oedema of the glottis rapidly arose.

Post-anaesthetic Vomiting.

Dr. G. F. RAWDON SMITH of Liverpool read a paper on post-anaesthetic vomiting, in which he referred to an investigation of the acid intoxication problem, particularly in regard to disturbances of the pancreatic function. The results of observations made during the past ten years at the Liverpool Hospital for Women in regard to post-anaesthetic sickness were described. It was shown that the particular brand of ether had little or no effect; that modifications of the generally accepted preliminary hypodermic medication were usually disappointing; that the use of carbon dioxide in any quantity was liable to be followed by excessive vomiting; and that insulin and glucose were most valuable in the prevention and treatment of post-anaesthetic toxaemia.

PROGRESS IN STREPTOCOCCAL RESEARCH.

A MEETING of the Pathological Society of Manchester was held on March 12th, when Dr. A. W. DOWNIE read a paper entitled "Recent work on streptococci."

Dr. Downie began by reviewing recent studies of the toxins of haemolytic streptococci, with particular reference to scarlet fever. Before the work of the Dicks the view was held by some observers that scarlet fever was a local streptococcal infection of the throat, and that the general symptoms were due to a diffusible toxin produced by these organisms. This view was not, however, generally accepted until more direct evidence was obtained by experiments on man. A notable advance in the state of our knowledge was made by the Dicks, who produced scarlet fever in human volunteers by swabbing their throats with pure cultures of haemolytic streptococci. They demonstrated also the production of toxins by means of skin tests in susceptible individuals. Further work on the production of antitoxic serums in horses, on the effect of such serums in the treatment of scarlet fever, and on the results of active immunization by injections of toxin, afforded additional support of the view that scarlet fever was primarily a streptococcal infection. While scarlet fever antitoxin had proved to be a valuable therapeutic measure, when used during the acute stage of the disease, the reports of various observers seemed to indicate that it was much less efficacious in the treatment of septic complications. Moreover, the reports published by Kinloch, Smith, Taylor, and others, and the experimental work of Parish and Okell, indicated that antitoxin immunity apparently did not prevent the occurrence of local streptococcal infection. It had been found that toxins apparently similar to those obtained from cultures of scarlatinal streptococci were produced by haemolytic streptococci from other human infections, such as erysipelas, puerperal fever, and cellulitis. While some of the published work would seem to show that the toxins of erysipelas and puerperal fever differed immunologically from those of scarlet fever, the evidence seemed to be in favour of the view that they were identical, and could be neutralized by scarlet fever antitoxin. The difference between the toxigenic properties of scarlatinal organisms and those from other sources would seem to be quantitative rather than qualitative. Recent studies on puerperal sepsis in relation to antitoxic immunity as indicated by the Dick test, however, did not suggest an exact correlation between such immunity and the immunity to streptococcal infection during the puerperium. Further, the cases recorded recently by Burt-White did not indicate that the treatment of puerperal septicaemia by scarlatinal antitoxin yielded highly satisfactory results. In streptococcal infections, other than scarlet fever, it could hardly be expected that the results of treatment with antitoxic serums would be so good as in that disease, because all virulent streptococci of the haemolytic group had not been shown to produce toxin; toxin of the skin-reacting type was not the only means by which streptococci exerted their pathogenic effects. In immunity to haemolytic streptococci there would seem to be two factors to be considered—antitoxic immunity and antibacterial immunity. Dr. Downie described some results of his own experimental work on animals, bearing on these problems and on the nature of immunity to haemolytic streptococci.

Reviews.

ANAESTHESIA AND ANAESTHETICS.

IN their textbook on *Anaesthesia and Anaesthetics*[1] Drs. ROOD and WEBBER adopt the somewhat unconventional plan of incorporating a description and discussion of the problems presented by the physiology of anaesthesia in the fabric of their work, considering each individual problem as it arises in the text, instead of following the general practice and devoting a separate chapter to the whole subject. The method has obvious disadvantages. On the other hand, by presenting the academic aspects of the subject in relation to their practical application it is more likely to engage the student's interest than the highly technical chapter on the physiology of anaesthesia to be found in most textbooks.

The work, which represents the teaching of the school to which the authors belong—University College Hospital—is intended mainly for the non-specialist reader; but even to those who have read many textbooks it offers much valuable information and wise counsel. Indeed, we cannot help thinking that the book would appeal even more to those who have some knowledge of anaesthesia and its technique than to the student confronted with the subject for the first time. Generally speaking, to the latter a more formal textbook is better suited unless he has been very well grounded in the subject by preliminary lectures. Undoubtedly to the student already equipped with some knowledge of anaesthetics the book will prove very useful, for its material is obviously derived from the authors' personal experience and presented in an extremely interesting manner. They hold the balance justly between the old anaesthetics and methods of administration and the new; they do not discard the former because they are no longer fashionable, or laud the latter unless there is good reason.

It is a common error to condemn drugs or methods of administration when the fault lies rather with the anaesthetist who has applied them unsuitably. No one anaesthetic or method is ideal in every case; the best results can be obtained only by those who are skilled in the choice of a suitable anaesthetic, in the method of administration appropriate to each patient, and in the early recognition and treatment of the emergencies that may arise in the course of anaesthesia. This book should help students to attain such a high standard of efficiency; it may be recommended not only to them, but to the general practitioner who in the course of his work gives an occasional anaesthetic. The publishers have done their work well, and both the type and the illustrations are excellent.

HUMAN HELMINTHOLOGY.

A NEW book on *Human Helminthology*,[2] by ERNEST CARROLL FAUST, has recently been published. It contains an account of all species of worms which have been recorded from man, including forms like the extremely rare free-living hair worms (Gordiacea) and the thorny-headed worms (Acanthocephala); and the pathogenicity, symptomatology, diagnosis, prognosis, and therapeusis of each species is dealt with. There are, in addition, chapters on parasitism, the relationship between the parasite and its host, a historical account of the development of helminthology, and a further chapter dealing with the geographical distribution of helminth parasites. The book also contains a brief description of the intermediate and reservoir hosts—arthropod, crustacean, and plant—concerned in the distribution of these worm infections, together with instructions on methods of examining these hosts for parasites. Laboratory methods are very adequately dealt with. The equipment necessary, the collection, preparation, and preservation of material, and the identification and differential

[1] *Anaesthesia and Anaesthetics.* By F. S. Rood, M.B., B.S.Dunelm, and H. S. Webber, B.Chir.Cantab. London: Cassell and Co., Ltd. 1930. (Demy 8vo, pp. xi+292; 56 figures, 4 plates. 15s. net.)

[2] *Human Helminthology.* By Ernest Carroll Faust, Ph.D. London: H. Kimpton. 1930. (6 × 9¼, pp. xxii + 615; 237 figures. 35s. net.)

diagnosis of parasitic worms and their eggs are discussed in great detail. A very useful chapter dealing with scientific nomenclature is added. The book comprises 616 pages and contains 297 illustrations. With the exception of a few photomicrographs the figures are excellent.

In the trematoda the commonly accepted scheme of classification, based as it is largely on the morphology of the adult, is considerably modified, great stress being laid on the importance of the excretory system of the cercariae and adult, and especially of the first-named. Formulas relating to this system in the miracidia and cercariae are included in the definition of some of the suborders and superfamilies, but the characters of the genera dealt with are not defined. Adult worms are referred to as maritae, metacercariae as adolescariae, and the sporocysts and rediae as parthenetic generations. These terms will be new to English students, but they are defined. As the author rightly points out, "the excretory system can be studied satisfactorily only in the living material, and then only in species sufficiently transparent to permit the investigator to observe the various parts of the system in a fluke compressed under a microscope cover-glass." It will therefore be clear that the value of the excretory cells from the classification point of view is very limited, and especially is such the case with medical and veterinary students, who are, for the most part, concerned primarily with the accurate diagnosis of helminthic infections in man and animals. It remains to be seen whether the classification based on the nature of the excretory system is more constant and reliable than that accepted up to the present by other helminthologists. The general description of the trematode worms is admirable, and especially so in the case of the schistosomes. The account of the cestoda is very well done, and contains all that the student requires for the diagnosis of tapeworm infections. Helminthologists will, however, probably not agree with the author's limitation of the genus Dibothriocephalus to species which, in the adult stage, occur in fish, or to the similar restriction of species of the genus Diphyllobothrium, to those adults of which only the larval stages occur in fish. The descriptions of the nematode parasites are very full, clear, and up to date, the hookworms and filariidae being especially well done. At the end of the volume there is a very long and elaborate diagnostic key for the "identification of adult worms and larvae in advanced stages of development." Keys are often very useful, but here the field is so vast and the species so varied that diagnostic characters cannot be satisfactorily embodied in a key.

The author has a wide and a practical knowledge of the subject, and has had considerable experience in teaching. From a student's point of view, however, it is perhaps a little unfortunate that a greater distinction is not made between the commoner and the rarer parasites. Dr. Faust rightly points out that he "has depended on the work of his colleagues for much of the evidence and many of the views expressed"; the same remark applies equally well to many of the illustrations reproduced. Generally speaking, the book is excellent, and can be recommended with confidence to all who wish to take up the study of human helminthology, and to teachers who desire to have a handy book for ready reference.

CLINICAL ATLAS OF BLOOD DISEASES.

IN their vade-mecum for haematologists[3] Drs. A. PINEY and S. WYARD have compressed into less than a hundred pages most of the information needed for the rough diagnosis of blood diseases from blood films; though, of course, haematologists cannot live by dried films alone. The book is intended chiefly for the use of the practitioner, and it may be helpful to those who have time to attend to the clinical pathology of their cases, and who are already familiar with haematological technique; possibly also it may be useful in clinical laboratories. Besides the very concise, perhaps too concise, account of a number of clinical states, some of which cannot really be regarded as blood diseases, the feature of this book is the coloured plates which represent with fair accuracy the appearances of the stained cells met with in the blood of these diseases. The films from which the pictures have been prepared are stated to be all stained by Jenner-Giemsa method; they are, however, not uniformly stained (compare the pictures of polymorphonuclear leucocytes in plates 21, 22, and 24). Plates 14 and 19, showing reticulocytes, are certainly drawn from films which had been stained by some other process. This is unfortunate, and may easily betray into serious error the practitioner who relies on blood films for diagnosis. The eosinophil cell in plate 5 is noted as being stained by Jenner (p. 8), but the picture is not very accurate; the nuclei of Jenner-stained eosinophil cells stain pure methylene blue and have no red or violet tint, and the granules are pinker and coarser. Readers will be grateful for the admirable glossary of haematological terms which so often make a stumbling-block for the inexperienced worker. A regular index would, we think, be more useful than a table of contents. The text is remarkably free from misprints, but we note on page 68 "myeblasts" for myeloblasts. The publishers are to be congratulated upon the production of so comprehensive a book at the moderate price of 12s. 6d.

[3] *Clinical Atlas of Blood Diseases.* By A. Piney, M.D., M.R.C.P., and Stanley Wyard, M.D., M.R.C.P. Churchill's Empire Series. London: J. and A. Churchill. 1930. (5¼ × 8¼, pp. xv + 98; 36 plates. 12s. 6d. net.)

"ANNALS OF MEDICAL HISTORY."[4]

THE concluding instalment of the first volume of the new series of the *Annals of Medical History*, now a bimonthly instead of a quarterly publication, opens with the first William Snow Miller Lecture, given by Professor T. Wingate Todd of Cleveland, in March, 1928, at the University of Wisconsin on "The medieval physician," which pleasantly touches on Salerno and Padua, and on Paracelsus and other men of old time. Dr. Harry Friedenwald contributes a learned and beautifully illustrated account of the manuscript medical works of Isaac Judaeus in the ninth century, and on the diploma of Copilius Pictor or Koppel Mehler, a Jewish graduate of Padua in 1695. The activities of Hieronymus Brunschwig (1450–1533) of Strasbourg, a surgeon much interested in drugs, are detailed by Dr. Alexander Brunschwig of Chicago, who, however, does not confide to the reader whether or no this is a pious tribute to an ancestor. Brunschwig in 1500 described at considerable length how the physicians deserted their patients while the surgeons remained at their own great risk to minister to the victims of the plague in 1473. He was also the author of two works on pharmacology, designed for the instruction of laymen. The origins and significance of the public health movement in the United States are set out with copious notes by Dr. Richard H. Schryock of Washington, and in his twenty-third study of palaeopathology Dr. Roy L. Moodie describes the surgery of pre-Columbian Peru. The cover bears a portrait of Ninian Pinkney (1811–77), a surgeon in the United States Navy, which illustrates the first portion of Captain Pleadwell's dutiful memoir of a predecessor. There are several editorials about societies interested in medical history, and other subjects; the first deals with the fifth annual meeting of the American Association of the History of Medicine, by the secretary, Dr. E. B. Krumbhaar; the third is an abstract of Professor W. H. Welch's address at the Institute of Medical History, which "has been seen but not corrected by" the speaker; and the fifth and last, an interesting account of the "Bibliotheca Osleriana" by the editor. The book reviews, always an attractive feature, are mainly by the editor, Dr. F. R. PACKARD, who must be heartily congratulated on the success of this new series of the *Annals*.

The January number contains eleven articles besides reviews, and an editorial on the inauguration of the Department of History of Medicine of Johns Hopkins University, and the opening of the William H. Welch Medical Library on October 17th last. At this ceremony Professor Karl Sudhoff gave an address, and the editorial appre-

[4] *Annals of Medical History.* New Series, Vol. I, No. 6, November, 1929; and New Series, Vol. II, No. 1, January, 1930. Edited by Frances R. Packard, M.D. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. (Imp. 8vo, November, pp. 615-745, illustrated; January, pp. 134; illustrated. Subscription in Great Britain £2 5s. per volume of six numbers.)

priately contains the sketches of his and Professor Welch's life activities. While in North America Professor Sudhoff also gave addresses at New York, Boston, and Philadelphia, and the first of these, delivered at the Rockefeller Institute for Medical Research, and dealing with three problems of Hippocratic times, including the birthplace of the Father of Medicine, is printed in this number. In a generously illustrated article Dr. Burton Chance of Philadelphia writes on the aphorisms of Hippocrates, and in connexion with the discovery of a previously unknown drawing, Dr. Le Roy Crummer discusses the title-page of Vesalius's *Fabrica*. The career of M. J. B. Orfila (1787–1853) is described by Dr. B. Barker Benson, and the cover carries a portrait of this toxicological pioneer. The frontispiece represents the Reverend Stephen Hales, "the discoverer of blood pressure," and thus rightly illustrates Dr. R. H. Major's historical account of this subject. The state of general and medical science a hundred years ago is set out by Mr. Ivan C. Hall, who quotes freely from Guy's *Pocket Cyclopaedia* of 1829. In a carefully documented article, such as Captain F. L. Pleadwell always supplies, the history of Ninian Pinkney is continued from the previous number of the *Annals*. Sir Humphry Rolleston writes most attractively on Sir Thomas Browne, Dr. E. R. Wiese on Semmelweis, and Dr. E. P. Scarlet contributes a very interesting article on the psychological problems raised by Jean Paul Marat, who is said to have received "an honorary degree of M.D. at St. Andrews" in 1775. The labours and travels of Lazzaro Spallanzani, who, according to the naturalist Charles Bernet, discovered more truths in five years than entire academies have in half a century, are described by Professor Giuseppe Franchini of Bologna.

PHYSICAL SIGNS OF SURGICAL DISEASE.

MR. HAMILTON BAILEY'S *Demonstration of Physical Signs in Clinical Surgery*,[1] which was reviewed in these columns on January 28th, 1922, now appears in an enlarged and revised edition. Once it is granted that there is room for a textbook in which the physical signs of surgical diseases are brought together in a form suitable for easy reference, it can be said that the author has done a useful piece of work very well indeed. His survey is comprehensive, his style lucid, and his choice of illustrations, on the whole, excellent. The test of good illustrations is not merely that they are clearly reproduced; they must serve to emphasize or clarify points in the text. All the illustrations in this book pass the former test, but a few fail to pass the latter. For example, we are moved to ask what useful information is given by a photograph of a finger poised ready to percuss a shin, or of two test tubes held near a leg, or of a stethoscope in contact with the groin? A study of the index reveals the extraordinary extent of eponymic nomenclature; of the tests included no fewer than forty-six are named after their discoverers. The danger of such a nomenclature lies in the fact that often the individual is remembered but the test forgotten or misrepresented. For example, Nélaton, describing the well-known test associated with his name, wrote that if the patient lies upon the side *with the hip flexed to 90 degrees and slightly adducted* the line passing from the anterior superior spine to the most prominent part of the tuber ischii crosses the tip of the trochanter and the centre of the acetabulum. The line was thus used to distinguish between the second and third stages of hip disease. The fact that this simple test has been incorrectly recorded times out of number suggests the need for adopting an anatomico-pathological nomenclature, not necessarily replacing a nomenclature which is purely commemorative, but to be used in connexion with it. These, perhaps, are matters with which the third year student is not deeply concerned, and for him and for the student preparing for clinical examinations in surgery Mr. Hamilton Bailey's book may be recommended as a valuable collection of practically all the recognized signs used in clinical surgery.

[1] *Demonstrations of Physical Signs in Clinical Surgery.* By Hamilton Bailey, F.R.C.S.Eng. Second edition, revised and enlarged. Bristol: J. Wright and Sons, Ltd. London: Simpkin Marshall, Ltd. 1930. (Med. 8vo, pp. xviii + 262; 306 figures. 21s. net.)

NOTES ON BOOKS.

THE second edition of *Common Infections of the Female Urethra and Cervix*,[2] by Mr. FRANK KIDD and Mr. A. M. SIMPSON, shows little alteration from the first edition. As the authors explain, the methods of treatment described in the first edition have stood the test of time. A new chapter has, however, been added, descriptive of a more intensive treatment, which is calculated to hasten a cure, and of several minor improvements in regard to the technique of examination and treatment. This is a very useful little volume for those who are engaged either in the treatment of venereal disease or in gynaecological work. It is written in the most practical spirit and cannot fail to be helpful.

The issue of a second edition of KARSNER'S *Human Pathology*[3] within the short period of two years and a half points to a favourable reception of the book on the part of students and practitioners. In the new edition recent contributions to pathology, in so far as they bear upon the topics within the scope of the book, such as those relating to haemoglobin metabolism, pernicious anaemia, liver function and bile formation, have been included in the revision, but no alteration has been made in the general plan of the work. Recognizing the fundamental importance of pathological anatomy, the author has made that subject the basis of his classification, as in ordinary textbooks on pathological anatomy. His main purpose, however, has been to take a broader view and present the morphological alterations incident to disease in the light of modern views as to their functional significance—to consider pathological anatomy in its relation to the broader functional aspects of disease. This has necessitated a critical discussion of the explanations of disease and the interpretations of its phenomena, often highly theoretical, which are held at the present time. It is in subject-matter of this kind, where judgement and experience are called for in an especial degree, that the student feels the need of guidance and seeks a reliable authority. In this, the distinguishing feature of his work, the author must be considered to have been successful.

Aids to Forensic Medicine and Toxicology,[4] of which the ninth edition was noticed in these columns seven or eight years ago, has now been revised again by Dr. W. G. AITCHISON ROBERTSON of Edinburgh. The object of this little work remains as before—to help medical students in brushing up their knowledge before examination.

The Soya Bean and the New Soya Flour,[5] which has been translated from the Dutch, extols a food still strange to the West though long familiar to the East, particularly to China. In ancient times, it is claimed, this bean was one of the five important seeds ritually sown by the emperor. It is said to contain much fat and protein, to be satisfactory in its supply of vitamins, rich in phosphates, and almost starchless. As a plant the soya bean appears to be exceedingly adaptable, assimilative, drought-resistant, and economical in all its ways. Its cultivation is evidently being rapidly extended in the British colonies and in America. Dr. Berczeller has prepared a new kind of flour from the bean, which is declared to preserve all its nutritive properties with a palatable effect. A list of books on the subject is appended to the essay.

The Rhythms of Life, and other Essays in Science,[6] by Professor FRASER-HARRIS, recalls to mind the author's previous volumes on *Colour Thinking* and *The Sixth Sense*. It contains eighteen essays, many of which have already appeared in various journals; these are short, readable, and written in simple untechnical language, suited to the general reader. They hardly demand serious study, but, being full of information, their perusal in spare moments will impart to the reader many things worth knowing. The following are among the subjects dealt with: Animal electricity and heat, circulations, the eye as camera, prediction in biology, the litany, the sensitiveness of women, ventilation, vital force, the nervous system, the microscope, taste, colour, suspended animation, and lost arts.

[2] *Common Infections of the Female Urethra and Cervix.* By Frank Kidd, M.Ch., F.R.C.S., and A. Malcolm Simpson, M.B., D.P.H. Second edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xii–197; 14 figures, 2 plates. 8s. 6d. net.)

[3] *Human Pathology.* By Howard T. Karsner, M.D. With an introduction by Simon Flexner, M.D. Second edition, revised. London: J. B. Lippincott Company. 1929. (Med. 8vo, pp. x–963; 523 figures, 12 plates. 45s. net.)

[4] *Aids to Forensic Medicine and Toxicology.* By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.Ed. Tenth edition. Students' Aids Series. London: Baillière, Tindall and Cox. 1929. Fcap. 8vo, pp. x–176. 3s. 6d. net.)

[5] *The Soya Bean and the New Soya Flour.* By C. J. Ferrée. Revised translation from the Dutch by C. J. Ferrée and J. T. Tuteur. London: W. Heinemann (Medical Books) Ltd. 1929. (6½ × 8½, pp. xi–79; 14 figures; 6s. net.)

[6] *The Rhythms of Life, and other Essays in Science.* By D. F. Fraser-Harris, M.D., D.Sc., F.R.S.E. London: G. Routledge and Sons, Ltd. 1929. (Cr. 8vo, pp. vii–185. 5s. net.)

diagnosis of parasitic worms and their eggs are discussed in great detail. A very useful chapter dealing with scientific nomenclature is added. The book comprises 616 pages and contains 297 illustrations. With the exception of a few photomicrographs the figures are excellent.

In the trematoda the commonly accepted scheme of classification, based as it is largely on the morphology of the adult, is considerably modified, great stress being laid on the importance of the excretory system of the cercariae and adult, and especially of the first-named. Formulas relating to this system in the miracidia and cercariae are included in the definition of some of the suborders and superfamilies, but the characters of the genera dealt with are not defined. Adult worms are referred to as maritae, metacercariae as adolescariae, and the sporocysts and rediae as parthenetic generations. These terms will be new to English students, but they are defined. As the author rightly points out, "the excretory system can be studied satisfactorily only in the living material, and then only in species sufficiently transparent to permit the investigator to observe the various parts of the system in a fluke compressed under a microscope cover-glass." It will therefore be clear that the value of the excretory cells from the classification point of view is very limited, and especially is such the case with medical and veterinary students, who are, for the most part, concerned primarily with the accurate diagnosis of helminthic infections in man and animals. It remains to be seen whether the classification based on the nature of the excretory system is more constant and reliable than that accepted up to the present by other helminthologists. The general description of the trematode worms is admirable, and especially so in the case of the schistosomes. The account of the cestoda is very well done, and contains all that the student requires for the diagnosis of tapeworm infections. Helminthologists will, however, probably not agree with the author's limitation of the genus Dibothriocephalus to species which, in the adult stage, occur in fish, or to the similar restriction of species of the genus Diphyllobothrium, to those adults of which only the larval stages occur in fish. The descriptions of the nematode parasites are very full, clear, and up to date, the hookworms and filariidae being especially well done. At the end of the volume there is a very long and elaborate diagnostic key for the "identification adult worms and larvae in advanced stages of development." Keys are often very useful, but here the field is so vast and the species so varied that diagnostic characters cannot be satisfactorily embodied in a key.

The author has a wide and a practical knowledge of the subject, and has had considerable experience in teaching. From a student's point of view, however, it is perhaps a little unfortunate that a greater distinction is not made between the commoner and the rarer parasites. Dr. Faust rightly points out that he "has depended on the work of his colleagues for much of the evidence and many of the views expressed"; the same remark applies equally well to many of the illustrations reproduced. Generally speaking, the book is excellent, and can be recommended with confidence to all who wish to take up the study of human helminthology, and to teachers who desire to have a handy book for ready reference.

CLINICAL ATLAS OF BLOOD DISEASES.

In their vade-mecum for haematologists[3] Drs. A. PINEY and S. WYARD have compressed into less than a hundred pages most of the information needed for the rough diagnosis of blood diseases from blood films; though, of course, haematologists cannot live by dried films alone. The book is intended chiefly for the use of the practitioner, and it may be helpful to those who have time to attend to the clinical pathology of their cases, and who are already familiar with haematological technique; possibly also it may be useful in clinical laboratories. Besides the very concise, perhaps too concise, account of a number of clinical states, some of which cannot really be regarded as blood diseases, the feature of this book is the coloured plates which represent with fair accuracy the appearances of the stained cells met with in the blood of these diseases. The films from which the pictures have been prepared are stated to be all stained by Jenner-Giemsa method; they are, however, not uniformly stained (compare the pictures of polymorphonuclear leucocytes in plates 21, 22, and 24). Plates 14 and 19, showing reticulocytes, are certainly drawn from films which had been stained by some other process. This is unfortunate, and may easily betray into serious error the practitioner who relies on blood films for diagnosis. The eosinophil cell in plate 5 is noted as being stained by Jenner (p. 8), but the picture is not very accurate; the nuclei of Jenner-stained eosinophil cells stain pure methylene blue and have no red or violet tint, and the granules are pinker and coarser. Readers will be grateful for the admirable glossary of haematological terms which so often make a stumbling-block for the inexperienced worker. A regular index would, we think, be more useful than a table of contents. The text is remarkably free from misprints, but we note on page 68 "myeblasts" for myeloblasts. The publishers are to be congratulated upon the production of so comprehensive a book at the moderate price of 12s. 6d.

[3] *Clinical Atlas of Blood Diseases.* By A. Piney, M.D., M.R.C.P., and Stanley Wyard, M.D., M.R.C.P. Churchill's Empire Series. London: J. and A. Churchill. 1930. (5¼ × 8¼, pp. xv + 98; 36 plates. 12s. 6d. net.)

"ANNALS OF MEDICAL HISTORY."[4]

THE concluding instalment of the first volume of the new series of the *Annals of Medical History*, now a bimonthly instead of a quarterly publication, opens with the first William Snow Miller Lecture, given by Professor T. Wingate Todd of Cleveland, in March, 1928, at the University of Wisconsin on "The medieval physician," which pleasantly touches on Salerno and Padua, and on Paracelsus and other men of old time. Dr. Harry Friedenwald contributes a learned and beautifully illustrated account of the manuscript medical works of Isaac Judaeus in the ninth century, and on the diploma of Copilius Pictor or Koppel Mehler, a Jewish graduate of Padua in 1695. The activities of Hieronymus Brunschwig (1450–1533) of Strasbourg, a surgeon much interested in drugs, are detailed by Dr. Alexander Brunschwig of Chicago, who, however, does not confide to the reader whether or no this is a pious tribute to an ancestor. Brunschwig in 1500 described at considerable length how the physicians deserted their patients while the surgeons remained at their own great risk to minister to the victims of the plague in 1473. He was also the author of two works on pharmacology, designed for the instruction of laymen. The origins and significance of the public health movement in the United States are set out with copious notes by Dr. Richard H. Schryock of Washington, and in his twenty-third study of palaeopathology Dr. Roy L. Moodie describes the surgery of pre-Columbian Peru. The cover bears a portrait of Ninian Pinkney (1811–77), a surgeon in the United States Navy, which illustrates the first portion of Captain Pleadwell's dutiful memoir of a predecessor. There are several editorials about societies interested in medical history, and other subjects; the first deals with the fifth annual meeting of the American Association of the History of Medicine, by the secretary, Dr. E. B. Krumbhaar; the third is an abstract of Professor W. H. Welch's address at the Institute of Medical History, which "has been seen but not corrected by" the speaker; and the fifth and last, an interesting account of the "Bibliotheca Osleriana" by the editor. The book reviews, always an attractive feature, are mainly by the editor, Dr. F. R. PACKARD, who must be heartily congratulated on the success of this new series of the *Annals*.

The January number contains eleven articles besides reviews, and an editorial on the inauguration of the Department of History of Medicine of Johns Hopkins University, and the opening of the William H. Welch Medical Library on October 17th last. At this ceremony Professor Karl Sudhoff gave an address, and the editorial appre-

[4] *Annals of Medical History.* New Series, Vol. I, No. 6, November, 1929; and New Series, Vol. II, No. 1, January, 1930. Edited by Francis R. Packard, M.D. New York: Paul B. Hoeber, Inc.; London: Baillière, Tindall and Cox. (Imp. 8vo, November, pp. 615-745, illustrated; January, pp. 134; illustrated. Subscription in Great Britain £2 5s. for volume of six numbers.)

priately contains the sketches of his and Professor Welch's life activities. While in North America Professor Sudhoff also gave addresses at New York, Boston, and Philadelphia, and the first of these, delivered at the Rockefeller Institute for Medical Research, and dealing with three problems of Hippocratic times, including the birthplace of the Father of Medicine, is printed in this number. In a generously illustrated article Dr. Burton Chance of Philadelphia writes on the aphorisms of Hippocrates, and in connexion with the discovery of a previously unknown drawing, Dr. Le Roy Crummer discusses the title-page of Vesalius's *Fabrica*. The career of M. J. B. Orfila (1787–1853) is described by Dr. B. Barker Beeson, and the cover carries a portrait of this toxicological pioneer. The frontispiece represents the Reverend Stephen Hales, "the discoverer of blood pressure," and thus rightly illustrates Dr. R. H. Major's historical account of this subject. The state of general and medical science a hundred years ago is set out by Mr. Ivan C. Hall, who quotes freely from Guy's *Pocket Cyclopaedia* of 1829. In a carefully documented article, such as Captain F. L. Pleadwell always supplies, the history of Ninian Pinkney is continued from the previous number of the *Annals*. Sir Humphry Rolleston writes most attractively on Sir Thomas Browne, Dr. E. R. Wiese on Semmelweis, and Dr. E. P. Scarlet contributes a very interesting article on the psychological problems raised by Jean Paul Marat, who is said to have received "an honorary degree of M.D. at St. Andrews" in 1775. The labours and travels of Lazzaro Spallanzani, who, according to the naturalist Charles Bernet, discovered more truths in five years than entire academies have in half a century, are described by Professor Giuseppe Franchini of Bologna.

PHYSICAL SIGNS OF SURGICAL DISEASE.

MR. HAMILTON BAILEY'S *Demonstration of Physical Signs in Clinical Surgery*,[1] which was reviewed in these columns on January 28th, 1928, now appears in an enlarged and revised edition. Once it is granted that there is room for a textbook in which the physical signs of surgical diseases are brought together in a form suitable for easy reference, it can be said that the author has done a useful piece of work very well indeed. His survey is comprehensive, his style lucid, and his choice of illustrations, on the whole, excellent. The test of good illustrations is not merely that they are clearly reproduced; they must serve to emphasize or clarify points in the text. All the illustrations in this book pass the former test, but a few fail to pass the latter. For example, we are moved to ask what useful information is given by a photograph of a finger poised ready to percuss a shin, or of two test tubes held near a leg, or of a stethoscope in contact with the groin? A study of the index reveals the extraordinary extent of eponymic nomenclature; of the tests included no fewer than forty-six are named after their discoverers. The danger of such a nomenclature lies in the fact that often the individual is remembered but the test forgotten or misrepresented. For example, Nélaton, describing the well-known test associated with his name, wrote that if the patient lies upon the side *with the hip flexed to 90 degrees and slightly adducted* the line passing from the anterior superior spine to the most prominent part of the tuber ischii crosses the tip of the trochanter and the centre of the acetabulum. The line was thus used to distinguish between the second and third stages of hip disease. The fact that this simple test has been incorrectly recorded times out of number suggests the need for adopting an anatomico-pathological nomenclature, not necessarily replacing a nomenclature which is purely commemorative, but to be used in connexion with it. These, perhaps, are matters with which the third year student is not deeply concerned, and for him and for the student preparing for clinical examinations in surgery Mr. Hamilton Bailey's book may be recommended as a valuable collection of practically all the recognized signs used in clinical surgery.

[1] *Demonstrations of Physical Signs in Clinical Surgery.* By Hamilton Bailey, F.R.C.S.Eng. Second edition, revised and enlarged. Bristol: J. Wright and Sons, Ltd. London: Simpkin Marshall, Ltd. 1930. (Med. 8vo, pp. xviii + 268; 306 figures. 21s. net.)

NOTES ON BOOKS.

THE second edition of *Common Infections of the Female Urethra and Cervix*,[6] by Mr. FRANK KIDD and Mr. A. M. SIMPSON, shows little alteration from the first edition. As the authors explain, the methods of treatment described in the first edition have stood the test of time. A new chapter has, however, been added, descriptive of a more intensive treatment, which is calculated to hasten a cure, and of several minor improvements in regard to the technique of examination and treatment. This is a very useful little volume for those who are engaged either in the treatment of venereal disease or in gynaecological work. It is written in the most practical spirit and cannot fail to be helpful.

The issue of a second edition of KARSNER'S *Human Pathology*[7] within the short period of two years and a half points to a favourable reception of the book on the part of students and practitioners. In the new edition recent contributions to pathology, in so far as they bear upon the topics within the scope of the book, such as those relating to haemoglobin metabolism, pernicious anaemia, liver function and bile formation, have been included in the revision, but no alteration has been made in the general plan of the work. Recognizing the fundamental importance of pathological anatomy, the author has made that subject the basis of his classification, as in ordinary textbooks on pathological anatomy. His main purpose, however, has been to take a broader view and present the morphological alterations incident to disease in the light of modern views as to their functional significance—to consider pathological anatomy in its relation to the broader functional aspects of disease. This has necessitated a critical discussion of the explanations of disease and the interpretations of its phenomena, often highly theoretical, which are held at the present time. It is in subject-matter of this kind, where judgement and experience are called for in an especial degree, that the student feels the need of guidance and seeks a reliable authority. In this, the distinguishing feature of his work, the author must be considered to have been successful.

Aids to Forensic Medicine and Toxicology,[8] of which the ninth edition was noticed in these columns seven or eight years ago, has now been revised again by Dr. W. G. AITCHISON ROBERTSON of Edinburgh. The object of this little work remains as before—to help medical students in brushing up their knowledge before examination.

The Soya Bean and the New Soya Flour,[9] which has been translated from the Dutch, extols a food still strange to the West though long familiar to the East, particularly to China. In ancient times, it is claimed, this bean was one of the five important seeds ritually sown by the emperor. It is said to contain much fat and protein, to be satisfactory in its supply of vitamins, rich in phosphates, and almost starchless. As a plant the soya bean appears to be exceedingly adaptable, assimilative, drought-resistant, and economical in all its ways. Its cultivation is evidently being rapidly extended in the British colonies and in America. Dr. Berczeller has prepared a new kind of flour from the bean, which is declared to preserve all its nutritive properties with a palatable effect. A list of books on the subject is appended to the essay.

The Rhythms of Life, and other Essays in Science,[10] by Professor FRASER-HARRIS, recalls to mind the author's previous volumes on *Colour Thinking* and *The Sixth Sense*. It contains eighteen essays, many of which have already appeared in various journals; these are short, readable, and written in simple untechnical language, suited to the general reader. They hardly demand serious study, but, being full of information, their perusal in spare moments will impart to the reader many things worth knowing. The following are among the subjects dealt with: Animal electricity and heat, circulations, the eye as camera, prediction in biology, the litany, the sensitiveness of women, ventilation, vital force, the nervous system, the microscope, taste, colour, suspended animation, and lost arts.

[6] *Common Infections of the Female Urethra and Cervix.* By Frank Kidd, M.Ch., F.R.C.S., and A. Malcolm Simpson, M.B., D.P.H. Second edition. Oxford Medical Publications. London: Milford, Oxford University Press. 1929. (Demy 8vo, pp. xii–197; 14 figures, 2 plates. 8s. 6d. net.)

[7] *Human Pathology.* By Howard T. Karsner, M.D. With an introduction by Simon Flexner, M.D. Second edition, revised. London: J. B. Lippincott Company. 1929. (Med. 8vo, pp. x + 980; 433 figures, 19 plates. 45s. net.)

[8] *Aids to Forensic Medicine and Toxicology.* By W. G. Aitchison Robertson, M.D., D.Sc., F.R.C.P.Ed. Tenth edition. Students' Aids Series. London: Baillière, Tindall and Cox. 1929. Fcap 8vo, pp. x + 175. 3s. 6d. net.)

[9] *The Soya Bean and the New Soya Flour.* By C. J. Ferrée. Revised translation from the Dutch by C. J. Ferrée and J. T. Tuszaud. London: W. Heinemann (Medical Books) Ltd. 1929. (6½ × 8½, pp. xi – 73; 14 figures; 6s. net.)

[10] *The Rhythms of Life, and other Essays in Science.* By D. F. Fraser-Harris, M.D., D.Sc., F.R.S.E. London: G. Routledge and Sons, Ltd. 1929. (Cr. 8vo, pp. viii–155. 5s. net.)

MEDICAL RESEARCH COUNCIL.

ANNUAL REPORT, 1928-29.

(*Continued from page 560.*)

II.

EXPERIMENTAL MEDICINE.

SIR THOMAS LEWIS continues to direct the Council's Department of Clinical Research and the Cardiographic Department of University College Hospital Medical School. In particular during the past year observations have been continued upon the peripheral circulation, and an unusual case of the Donath-Landsteiner type, in which the red blood cells exposed to cold *in vitro* became haemolysed on rewarming, has been specially studied. Dr. R. Grant and Dr. D. Jones have just concluded a difficult investigation into the vascular response to injury with especial reference to the chemical aspects of the reaction of the skin. At St. Thomas's Hospital Professor Hugh MacLean and his colleagues have continued their inquiries into the physiology of digestion; and the automatic regulation of gastric acidity is the subject of experiments now in progress. On the surgical side an investigation is proceeding under Mr. B. W. Williams on the treatment of anaerobic infections and the toxaemias of acute intestinal obstruction by means of anti-*welchii* serum. At the London Hospital various aspects of epilepsy have been studied by members of the unit. Dr. Russell Brain has been investigating the causation of the convulsive states, and with other workers he has shown that epileptics vary considerably in their responses to sleep and wakening, and that abnormalities occur in the level of the cholesterol in the blood plasma. Dr. H. D. Kay continues his work upon phosphatase in bones and tissues in various diseases. At St. Bartholomew's Hospital Dr. G. C. Linder and Dr. C. F. Harris have investigated the influence of parathyroid extract, thyroid extract, and calcium salts in cases of tetany after operations on the thyroid gland. Dr. R. Hilton has studied the effects of deep *x*-ray therapy on the lungs, and with Professor F. R. Fraser has made observations of the circulation in heart failure by measuring oxygen utilization in the cerebral circulation in man. At Guy's Hospital Dr. A. C. Hampson and Dr. E. C. Warner have been studying various aspects of pernicious anaemia under the direction of Dr. E. P. Poulton. The work of Professor E. Mellanby and his assistants at Sheffield has mostly been concerned with the relation of diet to infection. It was found that when rats were fed on a diet deficient in vitamin A they nearly always died of septic infection. The effect of vitamin A preparations in a few cases of puerperal septicaemia has been investigated, and it has been shown that a definite increase in resistance is given by intensive vitamin A therapy. (See *British Medical Journal*, October 20th, 1928, p. 691, and June 1st, 1929, p. 984.) The subject of ergotism has been studied at the Field Laboratories, and it has been found possible to prevent the appearance of the usual symptoms and signs by giving certain protective foodstuffs. In the course of the experiments it was observed that ergot has powerful calcifying properties owing to the presence of vitamin D. Mr. Lambert Rogers in Cardiff has been studying periarterial sympathectomy, while in Edinburgh various workers have been studying such subjects as the effects of excessive administration of irradiated ergosterol (Dr. C. P. Stewart) and the response of the heart to digitalis and strophanthin (Dr. A. R. Gilchrist). In the department of surgery experiments are in progress for the study of the pulmonary circulation at all ages in health by means of the "collodion corrosion" method. Dr. A. Rowand, at St. Andrews, is working at the James Mackenzie Institute, and aims at obtaining a complete study of the health of 500 children from birth to school age.

CHILD LIFE.

Work on the causes of neo-natal death, by Dr. J. X. Cruickshank at Glasgow, and on foetal development, by Miss E. Hewer in London, continues; while in Professor Winifred Cullis's department Miss M. Bond and Miss S. Widdows have been working on the composition of milk secreted after the first month of lactation. Work on the metabolism of children at Glasgow has consisted chiefly in studies, by Dr. S. Graham and Dr. N. Morris, on the acid-base equilibrium in various conditions. In Birmingham Dr. Leonard Parsons and other workers have investigated further the biochemistry of coeliac disease and also the effects of variation in the diet of a group of children in the convalescent stage of acute rheumatism. At University College, London, Dr. H. A. Harris continues his studies in growth, and he has shown that cod-liver oil, by virtue of the presence of both vitamins A and D, possesses advantages over irradiated ergosterol in the treatment of rickets. Work has also been carried out on anaemia in infancy by Dr. Helen Mackay and on rheumatism by Dr. Carey F. Coombs at Bristol, and by Dr. R. C. Lightwood in Kensington.

HUMAN NUTRITION.

The work on national dietaries being carried on at Glasgow by Professor E. P. Cathcart has been making progress, and the analysis over a suitable period of the diets in a series of typical households in various towns is proceeding. Dr. J. B. Orr of Aberdeen, with helpers, has continued his work on the relationship of iodine in foodstuffs to the distribution of goitre. The Council has again received a grant from the Empire Marketing Board for investigation into the vitamin content of various Empire food substances. Dr. S. S. Zilva, with assistants, is doing this work at the Lister Institute, and in his studies on the antiscorbutic factor in lemon juice he has found and is investigating the properties of a third and "thermolabile" factor. With Miss M. Soames and Miss E. O. V. Perry he has begun an inquiry into the accuracy of some methods of assay of the vitamins, and the object is to see whether shorter and cheaper methods can be found without loss of accuracy. Professor J. C. Drummond's work on the comparison of the biological method of assay of vitamin A with the colorimetric and spectrographic methods has been completed at University College. Work on vitamin B_1 by Dr. Guha and on vitamin B_2 by Dr. B. T. Narayanan has also been carried out, and it has been shown that "bios" is not identical with any one of the known vitamins of the B group. At Cambridge Dr. L. J. Harris and Dr. T. Moore have studied the effects of giving massive doses of irradiated ergosterol. Evidence has been obtained that the ill effects are due to overdosage with vitamin D itself and not to impurities produced during irradiation. Co-operating with this work Mr. Innes has found that the microscopic changes are the opposite of those found in rickets. At King's College for Women Professor V. H. Mottram, with Miss G. A. Hartwell and Miss W. A. Clifford, has been making trials of the relative values of brown bread and white bread in the diet of rats.

DENTAL DISEASE.

The Dental Board of the United Kingdom makes an important grant towards work in this subject. Dr. E. W. Fish has continued his work on the changes in dentine caused by injury, erosion, or caries. Mrs. M. Mellanby has been working on the relation between the original structure of the periodontal tissues and their liability to infection, and also on the relation between diet and liability to infection under normal and abnormal conditions of structure. She is still supervising the inquiry proceeding at Birmingham into the influence of diet on the development and extension of caries in the teeth of children.

CARDIO-VASCULAR, EXCRETORY, AND NERVOUS SYSTEMS.

In addition to the [illegible] University College, London, Dr. J. C. [illegible] with Dr. F. Ellis, has studied special aspects of the circulatory system.

These two workers made studies of certain of the athletes at the Olympic Games at Amsterdam in 1928, and, with Miss N. Regan, Dr. Bramwell is investigating the cardiac *complications of pregnancy and labour*. At Cambridge Dr. G. Anrep's work on heart muscle has shown that the coronary flow is determined by two factors: the tone of the coronary blood vessels and the duration and relative strength of the cardiac contraction. Professor J. Shaw Dunn has done further work at Manchester on the experimental production of nephritis, and Dr. J. Gray of Aberdeen has continued his study of nephritis by microscopic and experimental methods, and his results tend to confirm Fishberg's contention that primary high blood pressure produces renal arterio-sclerosis. Miss L. M. Pickford, with Professor Verney, is investigating the effect on one part of the kidney of circulatory arrest in the other. Work at Edinburgh by Sir E. Sharpey-Schafer and others has been carried out on nerve regeneration, and a grant made to Sir Charles Sherrington at Oxford was used for special apparatus for the study of mechanical and electrical responses in mammalian reflexes. At the National Hospital for Nervous Diseases, Queen Square, London, Dr. Denny-Brown is making various investigations in clinical neurology, and at the same hospital Dr. E. A. Blake Pritchard is working at the varieties of knee-jerk met with in nervous diseases. Dr. R. S. Allison of Ruthin Castle, Wales, is inquiring into the incidence and distribution of disseminated sclerosis in North Wales with a view to finding predisposing causes in the environment or habits of the persons affected. Work on mental disorders is being conducted at Birmingham, where Dr. F. A. Pickworth is studying the basal metabolism in insane subjects; and at the Maudsley Hospital Dr. F. L. Golla and Miss S. Antonoritch have been studying variations in certain physiological values in normal and abnormal mental states. The tone of the skeletal muscle during intellectual exercise has also been investigated.

Internal Secretions.

Professor V. Korenchevsky, assisted by Mrs. M. Dennison, has continued his studies on the pituitary gland and on the testis. He has shown that the sexual hormones are not confined in the latter organ to the interstitial cells, but are present also in the generative testicular cells. At University College Dr. A. S. Parkes and Mr. G. F. Marrian continue their work on the female sexual glands. Dr. Parkes has found that the presence of the anterior lobe of the pituitary gland is essential for ovulation, and Mr. Marrian, by administering anterior pituitary substance, has been able to restore ovarian activity lost during vitamin B deficiency. Work on the suprarenal glands has been conducted by Dr. E. Noble Chamberlain at Liverpool and Dr. G. P. Crowden at University College, London, and the latter worker has shown that external cold, if it persists for some time, produces exhaustion of the adrenaline store of the suprarenal glands. Dr. G. Scott Williamson's work with Dr. I. H. Pearse on the thyroid gland has led him to believe that there is a close functional and morphological relationship between the thyroid, the thymus, and the lymphatic system, such as has not before been suggested. Work on insulin and diabetes has been continued by Dr. R. D. Lawrence at King's College Hospital, and at Sheffield Dr. G. A. Clark has been investigating the hyperglycaemia produced by the injection of pituitrin.

Tuberculosis, Streptococcal Infections, and Venereal Disease.

Dr. A. Stanley Griffith's experiments with B.C.G. vaccine have shown that a high degree of resistance to tuberculosis can be conferred upon a calf by either inoculation or oral administration of B.C.G. Professor S. L. Cummins at Cardiff has continued his work on laboratory methods for gauging the progress of cases of tuberculosis. With Dr. W. H. Tytler, Mr. E. T. Waters has been attempting to find constituents of the tubercle bacillus which can be recognized by specific reactions in the urine of tuberculous patients with the object of providing a direct test for the presence of active disease. Dr. Tytler's work on the constitution of tuberculin is also regarded as having an important bearing on standardization. Special investigations *are being made into the incidence of bovine tuberculosis* in a special area in Ayrshire, where a group of herds will be examined. Work on the streptococci is proceeding in several quarters. Dr. Leonard Colebrook, with Mr. Burt-White, has investigated puerperal pyrexia, with the unexpected but important result that of all the recognized febrile disturbances of the puerperium only a small percentage is associated with infection by *Streptococcus pyogenes*. Other workers have studied the mechanism of natural recovery from puerperal infection and the causes of puerperal morbidity. Work on venereal diseases supported by the Council is continued at St. Thomas's Hospital by Colonel L. W. Harrison and Dr. T. E. Osmond.

Virus Diseases—Distemper.

The special research proceeding at Hampstead on virus diseases has already been mentioned. The details of the work on canine distemper are elaborated in this section. The method devised for the protective immunization of dogs is now in use on a large scale, and after two inoculations a lasting and solid immunity is obtained. Over 2,000 doses of this distemper vaccine and virus have been distributed, and since last spring the prophylactic has been issued commercially to veterinary practitioners by Messrs. Burroughs Wellcome and Co. Severe reactions, which have occurred in less than 1 per cent. of the many thousands of dogs treated, seem to be due to the condition of certain animals at the time of inoculation. It is therefore strongly stressed that the animals should be in perfect health before immunization is attempted. Work is now proceeding in an effort to obtain an immune serum: Dr. P. P. Laidlaw and Mr. G. W. Dunkin are investigating this problem.

Chemotherapy: Tissue Culture: Cancer.

The chemical members of the Chemotherapy Committee are appointed by the Department of Scientific and Industrial Research, which makes grants for the expenses of the purely chemical part of the work. New chemical compounds of possible therapeutic value have been tested in various centres, and most of them have been found to be inactive. There are, however, some important exceptions: several compounds supplied by Professor R. Robinson have been found to be highly active against bird malaria, while Professor C. Browning has found that some of Professor J. B. Cohen's substances are active trypanocidal agents of a new type. The Council has continued to contribute largely to the maintenance of the Strangeways Laboratory at Cambridge, and has recently provided the laboratory with a new building for the housing of *x*-ray apparatus. Mr. C. H. Waddington has begun to investigate methods of growing the early stages of entire chick embryos *in vitro*, and it has already been possible to obtain from embryos which have been incubated from three to twenty-four hours before explantation nearly normal differentiation of the growing tissues *in vitro* for three to four days. Working on the effects of radiation upon tissue cultures, Miss S. E. Cox has found that, for a given dose of *x* rays, retardation of cell growth was greater with irradiation of greater intensity over a short period of time than when the same dose was given for a longer time with smaller intensity. Work on problems of malignant disease carried on at the National Institute has already been mentioned. In addition to this, Dr. Helen Chambers has continued her experiments at Middlesex Hospital to test the immunity to tumours given by tissue extracts of tumour-bearing and normal animals. It has seemed from preliminary work that there is a reduction in the number of tumours after treatment with tissue extracts of tumour-bearing animals. Mr. W. B. Gabriel, at St. Mark's Hospital, London, has now obtained a systematic record of all cases of cancer of the rectum admitted to the hospital from 1910 to the present time, and this record well illustrates the importance of taking a minimum of five years as a basis for any estimations of cure after radical operation.

RADIUM AND LIGHT THERAPY.

The stock of radium held by the Council on behalf of H.M. Government is supplemented by a further quantity provided by the British Empire Cancer Campaign, and the bulk of this total stock is now employed in a scheme of co-ordinated research into the radium treatment of cancer. The annual report on this work is published separately. Dr. H. A. Colwell at King's College Hospital has, with Dr. E. F. Creed, completed an investigation of the action of primary and secondary α rays, and the β and γ radiations of radium upon red blood corpuscles and haemolysis, complement and agglutinins. Researches into the biological actions of light have included statistical inquiries in populations of mice into the effects of irradiation upon the resistance of the body to a bacterial infection. With Professors Topley and Greenwood, Professor Leonard Hill has been co-operating in such an experiment for several months, and the results will be published as soon as they are available.

VISION AND HEARING.

Work in each of these subjects deals both with the purely physiological aspect and with the special problems of industry and the services. At University College, London, Dr. and Mrs. W. S. Duke-Elder have continued their work on intraocular pressure and the pathology of glaucoma. A detailed chemical and physical study of the vitreous body has been completed. At the request of the Admiralty, all the visual standards now in force in the navy are being reviewed by the Committee on the Physiology of Vision, and a full report, embodying recommendations for the amendment of the existing standards, is in course of preparation. On the industrial side, Mr. H. C. Weston and Mr. S. Adams have made further experiments in the use of special spectacles in very fine processes, and the results recently published show that persons with perfectly normal vision as well as those with visual defects derive much benefit from the use of these spectacles. Problems of localization by hearing have been investigated in different centres; under Mr. F. C. Bartlett at Cambridge, Miss [illegible] investigated [illegible] in binaural [illegible] E. M. Massey has investigated disturbances of auditory after-[illegible] Hilton-Brown localization produced by one-sided and binaural stimulation.

GENERAL PHYSIOLOGY, PATHOLOGY, AND BIOCHEMISTRY.

Work under Professor A. V. Hill at University College, London, has been assisted by grants to several workers. Mr. H. V. Horton's researches tend to confirm the theory that the reversible loss of excitability by an isolated frog's muscle is due to an escape of potassium from the fibres into the interspaces. Mr. and Mrs. Eggleton have studied the diffusion of lactic acid through living muscles, and have also continued their studies of creatine and of the phosphorus compounds concerned in muscular contraction. A grant has been made to Professor J. J. R. Macleod of Aberdeen for work on the formation of glycogen in the muscles of warm-blooded animals and its relation to lactic acid formation. In pathology particular interest is centred round the work on lymphadenoma conducted by a large team at St. Bartholomew's Hospital under the Rose bequest. Experimental studies directed by Dr. M. H. Gordon have consisted in attempts to reproduce the disease with material derived from proved cases. Special endeavour is being made to show whether Hodgkin's disease is or is not an infection by organisms of the family of fungi. An account of the work of Professor W. Bulloch of the London Hospital with Dr. L. H. Lampitt and Mr. T. H. Bushill of the Research Laboratories of Messrs. J. Lyons and Co., upon the preparation of catgut for surgical use, has already been published separately (*British Medical Journal*, November [illegible], 1929, p. 918). The work on enteric carriers by Professors R. Muir and C. Browning at Glasgow has been concluded and the results will soon be published. With Professor H. R. Dean at Cambridge, Dr. R. A. Webb has studied the effects of varying concentrations of sodium chloride upon the serum precipitation reaction, and the use of antitoxin as antigen in this reaction. Dr. L. E. H. Whitby, at the Middlesex Hospital, has been investigating the frequency of *B. welchii* infections of the biliary tract. Under biochemical studies may be mentioned investigations by Dr. C. J. Imrie at Sheffield into the metabolism of creatine, and work by Dr. F. Dickens with Professor C. E. Dodds at Middlesex Hospital, London, which has given a satisfactory method for standardizing the water-soluble oestrus-hormone.

ANAESTHETICS.

At Manchester Professor H. B. Dixon, with Dr. W. E. Higgins, has examined many cylinders of nitrous oxide, and in all the samples tested carbon monoxide was present in amounts varying from 5 to 40 parts per million. Tests of the nitrate used in the manufacture showed that it was of high purity, but that small fragments of wood from the barrels in which it was supplied became mixed with the charge and so adulterated the product.

STATISTICS.

Much of the work under this heading has again consisted in giving statistical help to research workers in other departments. The analysis of the anthropometric data collected for a committee of the Board of Education has been carried to a point that will permit a final report. A special research committee has been appointed by the Council, under the chairmanship of Sir George Newman, to make a thorough study of the outbreaks of minor epidemic illnesses in schools, and the statistical part will be undertaken by the Statistical Committee's staff. Dr. Matthew Young has been collecting data at a large general hospital with the object of finding whether the incidence of some well-defined diseases is higher among people of a particular physical type or bodily conformation than among the general population.

INDUSTRIAL HEALTH.

The Industrial Health Research Board has changed "health" for "fatigue" in its name, for, [illegible] concern the beginning essentially with the special problems long hours of work during the war, the Board now attention mostly directed towards problems other those of fatigue as such. Dr. A. B. Hill's [illegible] incidence of sickness among printers has been concluded, [illegible] and it is shown that printers have a low incidence of sickness except during the first age period of working life (*British Medical Journal*, March 30th, 1929, p. 611). Work on industrial psychology has proceeded at various centres. At Manchester, under Professor T. H. Pear, Mrs. E. M. Henshaw and Miss P. G. Holman have investigated the extent to which the effects of training are transferable from one skilled manual operation to another. Studies of problems in manual repetition work have been continued by several workers, and the results, now published, suggest that complete uniformity of task is less productive than a degree of variety. Mr. H. C. Weston has been testing the value for the health of factory workers of using special window glass which is transparent to ultra-violet rays.

CONCLUSION.

The concluding sections of the report deal with the work of the travelling Fellows appointed by arrangement with the Rockefeller Foundation and with the Dorothy Temple Cross Research Fellowships in Tuberculosis. Reference is also made to the financial support received by the Council from various sources and to certain gifts, including that of a valuable collection of chemical preparations [illegible] by the late Professor J. L. W. Thudichum, "the first research worker to be appointed under the Privy Council

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THE Church of England Zenana Missionary Society, which is celebrating its jubilee during 1930, has issued an appeal for a thank-offering fund of £100,000, to be completed by March 31st. One donation of £20 has been offered conditionally on ninety-nine similar gifts being obtained by the end of this month. The society sent out the first European woman doctor to India—Dr. Fanny Butler—and the work started has now expanded into the conducting of two fully equipped hospitals and twenty-seven dispensaries, as well as a considerable amount of itinerant medical work. Contributions should be sent to the financial secretary of the Society, 19–21, Southampton Street, Fitzroy Square, W.1.

British Medical Journal.

SATURDAY, MARCH 29TH, 1930.

INJURIES OF THE KNEE-JOINT.

THE gross anatomy of the human body is so familiar to all of us that we seldom pause among our daily preoccupations to ponder for a moment on the variety of the mechanical devices through which movement between its various segments is made possible, regulated, and limited. The nature and range of the principal movements of the knee-joint and of the elbow-joint are not very different, but how different the articulating surfaces concerned and the mechanism of regulation! The knee is the largest joint in the body, and although it has to withstand tremendous stresses and shocks, yet it admits of a greater range of flexion and extension than any other joint. So extensive is this movement that at the extreme limit of flexion of the normal joint the chief articular surfaces of the long bones concerned may be said to be almost entirely dislocated from one another.

These things being so, we are quite prepared to accept without question the opening sentence of Mr. H. A. T. Fairbank's paper, which is published in this issue (p. 581), and are not surprised to read that the knee-joint is more often injured than any other [illegible] the human body. In pre-Listerian days, when [illegible] int was sacrosanct as far as surgery was [illegible] the student used to be told of the im- [illegible] the semilunar cartilages, which were sup- [illegible]d by their adaptability and relations to make up for the prima facie mechanical weakness of the joint; but nowadays, like the adult spleen, the vermiform appendix, and the gall-bladder, they rank as superfluities, unearned increments, with which man has been endowed by his ancestors, and Mr. Fairbank has removed three out of the four cartilages of one patient, while it is well known that many men now play football *minus* one or more of the interarticular menisci. The explanation of this discrepancy between theory and practice may, we think, be found to lie in the neglect of some anatomists of past generations to take into account the very important part played by the muscles which control a joint and which through their postural tone exert such a great influence on its efficiency. In no joint is this action more in evidence than in the knee, where muscular atrophy is so often a source of disability, persisting after the original synovitis or other lesion of the joint is healed. Mr. Fairbank does well to insist upon the importance of trying to prevent or at least to cure this muscular wasting by the early persistent and discriminating use of faradism to all the muscles concerned, including the tensor fasciae femoris, until it is permissible to employ that best physiological means of muscle development—namely, volitional contraction. For the thoughtful student of the subject will not forget that muscular atrophy after joint injury is not a *mere* muscular phenomenon, but the outward sign of a neuro-muscular cycle.

Hilton's advocacy of physiological rest, when not intelligently followed, has done a good deal of harm. In nine cases out of ten a sprained ankle or knee is the better for use when properly strapped or bandaged. The chief contraindication for such use is pain thereby evoked, on which subject the patient is entitled to express an opinion. Walking, cycling, and rowing are permissible at a much earlier stage than golf and other ball games which involve exposure of the joint to sudden strains and twists. When from a faulty early treatment or other circumstances synovitis has become chronic and adhesions have formed Mr. Fairbank, with other surgeons, advises examination under deep anaesthesia and the breaking down of any adhesions which may be found to prevent not only flexion and extension, but full normal rotation. Let the surgeon remember that bruising of articular cartilage may be the cause of pain after use which only disappears after weeks or months. All surgeons with much experience of injuries of joints probably have a pretty clear idea of the clinical syndrome which leads them to make a diagnosis of "strain of ligament." Yet it may be questioned whether such a diagnosis rests on any very firm objective basis. It is not easy to form an exact mental picture of the damage done by strain to such an inelastic structure. A ligament may be ruptured, though it more often happens that it is torn away from one or more of its bony attachments, or else the bone itself gives way and a small scale of it is carried away attached to the ligament which is inserted into it. In this connexion it is well to bear in mind that ligaments *in vivo* are not the isolated, sharply defined cords with which the skill of the prosector presents us in museum preparations. The occasions are not many when exploration of the knee-joint becomes necessary on account of serious injury, if lesions of the semilunar cartilages are excluded, but such occasions call for the exercise of the finest judgement based on full experience. Radiography is a *sine qua non* in all doubtful cases, but it is of little positive help if there is no gross injury of bone. It may exclude such injury, but it can tell us nothing of the actual state or relations of fibrous tissues or cartilage. Unfortunately, despite its great range of movement, the knee-joint does not offer itself freely to inspection. It cannot be laid widely open without the infliction of an unjustifiable amount of damage, so that only a small part of it can be inspected at a time. The obvious graver injuries of the knee are bound to attract due notice and care. It is the slighter case of traumatic synovitis which may get the practitioner into trouble if not properly treated at the outset; for if, from lack of accurate diagnosis and early treatment, adhesions are allowed to form and are not broken down by the surgeon, the bonesetter may score a triumphant success and all the really effective part of the surgeon's treatment be ignored to his detriment.

There would seem to be in some people's minds an unconscious mental association between the idea of a damaged knee and of a spirituous solution of iodine. The sight of a knee the skin of which has been hardened and stiffened by the application of tincture or liniment of iodine is still too familiar, and the patient is too often in a position to aver that this irritating fluid has been repeatedly applied under "doctor's orders." In the most emphatic manner possible we second Mr. Fairbank's condemnation of the abuse of this application, which at the best is useless in such cases, and may be mischievous. Here, as indeed throughout his lecture, the advice given is practical and sound, embodying the results of long experience and keen observation. There is much truth still in the saying, often on the lips of a surgeon of the past generation: "Surgery is made up of anatomy and common sense."

THE PUBLIC ASSISTANCE ORDER.

THE Poor Law Order[1] with which we dealt in a leading article three weeks ago (*Journal*, March 8th, p. 453) has now been issued by the Minister of Health, but not without appropriate modifications and accompaniments. Our main criticisms fell under two heads —first, that the Draft Order placed the medical officers in an entirely improper relation with the lay officials of the county council and county borough council and ignored the medical officer of health, and secondly, that, as is now practically admitted, "the administrative picture drawn by the Order could not be reconciled with the line of development of policy which was accepted by Parliament when the Local Government Act, 1929, was passed." In the Order as now made the regulation that "the public assistance officer shall supervise and control in the performance of their duties all officers and servants engaged on Poor Law functions" (including, of course, medical officers) has disappeared, and instead the medical officer of health of the area comes into the picture as the officer "who shall advise the council on public health and other medical questions arising in connexion with the discharge by the council of their Poor Law functions." This is a radical amendment of the greatest importance, and there are a number of minor amendments in the Order all tending in the same direction.

In the Memorandum (Circular 1095) which accompanies the Order the Minister now makes it clear to authorities that the Order is issued for administrative convenience only, and that at a relatively early date it will require considerable modification. The Minister "proposes to discuss modifications with representatives of local authorities as soon as circumstances admit of the work of discussion being effectively done." Further, "the Minister desires that local authorities should be in no doubt as to the lines on which he would earnestly hope that development should take place. He regards the policy of transferring responsibility for the Poor Law to the county and county borough councils as being the first step in the process of breaking up the Poor Law, and particularly as placing the responsibility in question in the hands of authorities who have powers of prevention as well as of relief, especially in regard to the large mass of destitution arising out of sickness or invalidity. The determination of such matters by the authority in every area will inevitably raise administrative questions affecting medical issues of great practical importance. These issues will no doubt receive careful consideration by local authorities, and the desirability of making use of the accumulated knowledge and experience of the medical profession in regard to them will be fully borne in mind by those authorities." This constitutes a warning and advice which will be regarded by the medical profession with much satisfaction.

To emphasize and reinforce the position thus taken up, the Minister, in an appendix to the Memorandum, gives certain extracts from the important General Circular 1000 issued by his predecessor, and, as was suggested in our former article might well be done, he adopts and sets out some extracts from the annual report of the Chief Medical Officer of the Ministry for the year 1928. It is to be hoped that the fullest attention of the members of county and county borough councils and of their public health and public assistance committees will be directed to this appendix. It presents to them a picture of their opportunities and duties which is far from implicit in, if it is not contradictory to, that presented in the Order itself. The appendix embodies the spirit of the future; the Order, in the main, merely states the observances of the past. The position and functions of the medical officer of health are given due prominence. He "will be the chief medical adviser of the authority and its various committees in all matters relating to the co-ordination and general medical administration of the public health services (including all transferred services) provided by the authority under whatever committee they may be administered. . . . He will also be required to supervise, though less directly, all the medical services of the authority. In this duty it is important that he should intervene as little as possible between any medical officer employed for clinical duties and the patient whom that medical officer is treating." Further, the need for continuous consultation between the authority and the medical profession is clearly stated. Section 13 of the Local Government Act makes such consultation statutory in regard to hospital provision and usage. The Minister attaches the greatest importance to the carrying out of this section, and says, "It is imperative that local authorities should establish the most cordial relations with the medical profession in regard to hospitals. It is the confident hope and expectation of the Minister that as procedure under Section 13 becomes established and regular it may lead to wider arrangements for the fullest consultation between the local authority and the medical profession, not merely in regard to institutional accommodation and its use, but also in regard to those numerous developments in the health provision of the people which are implicit in the new organization laid down by the Act."

The intention of the Minister is that the Order and the accompanying Memorandum should be read together. If this is done the resulting impression is likely to be helpful, even stimulating, and the Order itself may do little harm. Our main regret is that the two documents are not bound up together so that it would be impossible for anyone to be in possession of the Order without at the same time having the Memorandum before him.

[1] Statutory Rules and Orders, 1930. No. 185. Price 1s. 5d. net.

JUBILEE OF THE OPHTHALMOLOGICAL SOCIETY.

THE Ophthalmological Society of the United Kingdom celebrates next week the fiftieth year of its existence. It owed its origin to a small band of distinguished ophthalmic surgeons who were in the habit of meeting informally at Moorfields. The inaugural meeting of the society was held in February, 1880, at the house of Sir William Bowman in London, and its first ordinary meeting was held on June 23rd of that year. Sir Thomas Barlow, one of the members of the committee which originated the movement, has undertaken to respond to the toast of the society at the jubilee banquet on April 4th in the Fishmongers' Hall. The first council of the society included many others who had already or who later achieved renown in the world of medicine. George Critchett, Jonathan Hutchinson, Hughlings Jackson, and Henry Swanzy were vice-presidents, Nettleship and Stephen Mackenzie were secretaries, and Gowers, Brudenell Carter, Hulke, Henry Power, and Waren Tay were members of the council. Of the 114 original members of the society eleven still survive. Unfortunately, distance and the physical infirmities of age will prevent most of them from attending the celebrations, but Sir George Berry and Mr. J. B. Lawford have both promised to come, and with Sir Thomas Barlow, will represent the founders. The forty-nine published volumes of the *Transactions* prove how fully the society has borne out the aspirations

of Bowman's inaugural address. Thus in the first volume appears Waren Tay's description of the disease now known as amaurotic family idiocy, and the admirable account of optic neuritis in cerebral lesions by Hughlings Jackson: indeed, every volume contains papers of importance which have contributed to the advance of knowledge. The Bowman Lectureship was instituted in 1885 to commemorate the first president, and the first lecturer was Hughlings Jackson. Many men of great distinction have succeeded him, and this year Sir Arthur Keith will lecture on Friday, April 4th, at 5 p.m., on the genius of Sir William Bowman. In 1912 the question arose of amalgamation with the Royal Society of Medicine, and for some time the fate of the society was in doubt. But it was felt by many that the tradition of good work which had been built up by the society might be lost if its identity were merged in the greater society. The decision taken then has proved a wise one. The society made itself responsible for running an annual congress and agreed to leave the monthly meetings to the Section. That arrangement has resulted in building up a strong Section of Ophthalmology in the Royal Society of Medicine: and the Ophthalmological Society, despite the fact that it has budded out into numerous offshoots, is itself now stronger than ever, and works in complete harmony with the Section. A number of distinguished foreign ophthalmic surgeons are attending next week's congress as guests of the society, and the Royal College of Surgeons is holding a reception on April 3rd. The president of the congress is Mr. Leslie Paton.

"PREVENTIVE MEDICINE."

IT is highly desirable to get a clear idea of the connotation of the words "preventive medicine," especially as they are now being used as the title, or as part of the title, of a number of books or publications. Preventive medicine certainly should not nowadays be regarded as synonymous with public health, though it is still too common to speak of the sphere of the private medical practitioner as that of curative medicine and the sphere of the public health medical officer as that of preventive medicine. Neither spheres nor practitioners can be delimited in this way. Certain other connotations, though each may perhaps be justified in its place, cannot be regarded as any more rational if intended to be definitive or mutually exclusive. Thus, early treatment of disease may be described as preventive medicine. So may prophylactic treatment by vaccines or serums, or other measures, when there has been exposure to infection or when there is immediate liability to such exposure. So may the teaching of personal, domestic, school, workshop, and public hygiene by whatever agency; and so may an even wider inculcation of lines of conduct, prudential or moral, whether by doctors, by religious teachers, or by others. It is better to recognize that there is, in fact, no such entity as preventive medicine, but that there are preventive aspects of medicine. It is probably true that to these aspects not sufficient attention has been given in the teaching of medical students, and that, in consequence, they do not occupy the field to which they are entitled in the mind and work of medical practitioners. Some seven or eight years ago the General Medical Council directed the attention of teachers and examiners to the importance of this matter, and the advice then given, and since powerfully reinforced by the Chief Medical Officer to the Ministry of Health, is no doubt beginning to bear fruit. It may yet be doubted whether textbooks specially devoted to these preventive aspects are really needed. What is wanted is the pervading of the whole teaching with the preventive idea rather than its specific and separate exposition. Among recent publications is an *Outline of Preventive Medicine*,[1] issued in England by the Oxford University Press, but prepared by an editorial committee composed of Drs. F. E. Sondern, C. G. Heyd, and E. H. L. Corwin, under the auspices of the *New York Academy of Medicine*. It is a handy volume, well printed, and with a flexible binding, which medical practitioners and students may find convenient and useful. Yet it definitely suffers from some of the confusions, ambiguities, and difficulties above referred to. It begins with an article on the periodic health examination, and ends with one on self-medication, illegal practice, and drug addiction. In between are a number of chapters dealing seriatim with the different branches of professional work and the various specialties. Some of them are not easily distinguishable from short and somewhat superficial accounts of medical or surgical conditions dealt with more satisfactorily in the usual books on medicine and surgery. In others, though there is generally some attempt to relate them to the title of the work, it is clear that the author has not made up his mind exactly as to the most advantageous method of setting out the preventive aspects of his subject. One of the most successful perhaps, as might be expected, is the article on "Pediatrics." Here the opportunities for prevention are more definitely envisaged. This collection of special articles is not without its value, but, as the editorial committee say in their introduction, "Keeping people well is fundamentally the task of the general practitioner. He is better able to do this than are groups of specialists associated for the purpose, as there are other things that influence health in addition to the physical condition of the body, of which he is more apt to be aware. The general practitioner should school himself to this relatively modern task."

[1] (New York: P. B. Hoeber, Inc.; London: Milford, Oxford University Press. 1929. (22s. 6d. net.)

WINNIPEG MEETING, 1930: SECTION OF OTO-LARYNGOLOGY.

A PRELIMINARY programme has now been drawn up for the Section of Laryngology and Otology at the Annual Meeting of the British Medical Association in Winnipeg at the close of August. The president of this Section is Sir StClair Thomson. A discussion on the early diagnosis of septic infection of the lateral sinus will be opened by Mr. Francis Muecke (London) and Dr. James T. Rogers (Montreal). A discussion on treatment of paranasal sinus suppuration, persisting after operation, will be introduced by Dr. Perry G. Goldsmith (Toronto) and Mr. A. J. Wright (Bristol); and Mr. Lionel Colledge (London) will open a discussion on the diagnosis of cancer of the larynx. The honorary secretaries of the Section (Dr. R. Scott Stevenson, 137, Harley Street, London, W.1, and Professor George W. Fletcher, 215, Medical Arts Building, Winnipeg) will be pleased to receive the names of members prepared to take part in one or more of the discussions, or to contribute papers, preferably dealing with one or other of the subjects chosen. A number of oto-laryngologists have arranged to sail from England on August 8th, and those who have not already arranged their passages are advised to do so as soon as possible. Particulars of the journey to Canada and of various alternative tours can be obtained from the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, W.C.1.

DENTAL SEPSIS AND SYSTEMIC DISEASE.

IN an address to the Odontological Section of the Royal Society of Medicine, on March 24th, Sir William Willcox recalled that seven years ago he had opened a discussion on the same subject—dental sepsis—before the same body. In a brief retrospect, he said that until 1900, when dental sepsis as a powerful etiological factor in systemic disease was first brought to the notice of the medical profession by Dr. William Hunter, it was not generally realized

that dental sepsis was the cause of the other diseases now recognized as being due to it. Indeed, the opposite view appeared to prevail—namely, that diseases of the teeth and gums were rather a result than a cause. The clinical experience of careful observers all over the country during the past seven years had strengthened the view that dental sepsis had far-reaching effects, and might be responsible for many diseases previously thought to have no connexion therewith. As to the mode of action of dental sepsis, Sir William Willcox said that there might be direct local infection of other organs; for example, the tonsils and nasopharynx might be infected by micro-organisms from the diseased periodontal tissues. The second mode of action was by blood-stream infection, giving rise to conditions of toxaemia or even acute septicaemia. The effect on the patient suffering from dental sepsis depended on the nature, rate, and amount of toxic absorption, and also on his immunity to the absorbed products of infection. The virulence of the organisms varied greatly, a fact which illustrated the importance of commencing with very small doses when vaccine treatment was being given. The resistance of a person to a dental infection might be broken down by constant dosing of the blood stream with toxic products from a focus of infection, whereupon a condition of sensitization resulted, and marked bodily reactions might follow comparatively small doses of the toxin. When sensitization existed, the first step in treatment was the removal, if possible, of the focus of infection. An additional measure recently tried with success in some cases under his care at St. Mary's Hospital was the intravenous injection of small quantities (10 c.cm.) of immunized blood every three or four days for about five doses. Afterwards an autogenous vaccine could be tolerated in small and gradually increasing doses at intervals of five to seven days. The immunized blood was obtained by inoculating a healthy donor of suitable blood group with the autogenous vaccine of the patient. Immunity, however, was fickle; a slight cause might transform a condition of apparent health to one of acute illness. Overwork, too great physical exertion, an injudicious dosage with vaccines, and many other causes might break down completely the immunity of a patient. Symbiosis had an important bearing in relation to the effects on the immunity; thus, while a patient suffering from dental sepsis remained in apparent health, some additional toxic factor resulting from an intercurrent infection might cause marked systemic effects. Clinical examination of the teeth and gums was the first step in determining the presence of dental sepsis. Every patient suffering from any illness which resembled that due to systemic effects of dental sepsis should have a radiographic examination of the teeth. Attention had been drawn to the occurrence of secondary infections as the result of direct transference of organisms to the nasopharynx or the alimentary tract. In cases under his care at St. Mary's Hospital it had been found that in about 90 per cent., where dental sepsis had existed for over a year, there was evidence of the presence of similar organisms in the intestinal canal. No doubt the tubular glands of the intestine became infected and carried on the process. Secondary infections might continue the infecting process after the dental sepsis had been removed, and they required treatment, otherwise the systemic effects of the original condition might fail to show improvement. Where dental sepsis was present the offending teeth should be removed, but the condition of the patient called for the utmost care in this procedure. [illegible] 1928. [illegible] it was wise for only one or two [illegible] of the immunity was lost, [illegible] patient being kept in bed under [illegible] teeth to be removed, the [illegible] pyaemia and severe systemic [illegible] observation. Sometimes [illegible] waited for an interval of two or [illegible] action resulted; this occurred [illegible] another extraction was done; the [illegible] three weeks [illegible] in such cases and very few teeth should be removed at a time. He had on several occasions seen a fatal septicaemia and malignant endocarditis follow extraction of infected teeth in a patient in poor health with low immunity. In cases of this type, where extractions were imperative, the patient should be kept in bed until the operative treatment was completed. In elderly people resistance to infection was often low and the power of tissue repair poor. In such cases extractions should only be carried out when really necessary, and the utmost care in procedure was required. He strongly condemned the extraction of teeth without adequate evidence that they were the causal factor. Sir William Willcox ended an interesting and very practical address by summarizing his general conclusions as follows: Dental sepsis is the commonest focus of infection in the body, and must be regarded as one of the principal sources of disease of adult life. By reason of the great advances in medical and dental knowledge it can be diagnosed with accuracy, and a decision as to its causative effect in various diseases can be gauged. The dentist, with whom must rest the final decision as regards extractions, plays a most important part not only in the essential treatment of common prevalent diseases, but in the prevention of the many illnesses that may arise from untreated dental conditions.

HEATING AND VENTILATION IN SCHOOLS AND FACTORIES.

THE Industrial Health Research Board has published the results of an inquiry by Dr. H. M. Vernon and Mr. T. Bedford (assisted by Mr. C. G. Warner) into several new systems of artificial heating and ventilation that have recently been adopted by schools in different parts of the country.[1] Its purpose was to determine how far these systems could be recommended to factories and industrial establishments whose methods were described in two previous reports. The investigations were concerned with under-floor heating and panel heating, and with various degrees of open-air and semi-open-air ventilation. Studies of panel heating in large offices and buildings had indicated that the system was very suitable for factories, because it maintained an almost uniform temperature at all levels. Data, however, were lacking in regard to its physiological effects. The system of under-floor heating has been adopted by only a few elementary schools in this country, but it seemed probable that such a method would increase the comfort and efficiency of workers by raising the temperature at foot level instead of at head level, which had been found to be the effect of most of the systems in general use. Tests were carried out in various types of schools, including those held wholly or partly in the open air. A common criticism of the open-air schools is that in cold weather the children attending them are unable to work as efficiently as those in ordinary heated schools, and, since in these circumstances parents prefer to keep their children at home, there is a marked irregularity in attendance. This objection is sustained by the report which states that pupils in unheated open-air schools worked on an average only half as well in cold weather as those in heated schools, even when provided with extra food and clothing. From a series of experiments designed to ascertain the relation of temperature to manual dexterity it appears that the temperature in schools must not be less than 55° for efficiency in manual work, such as drawing and writing. A survey of three years' absences of 6,312 children attending 26 schools showed that the number was lowest (7.6 per cent.) at ordinary schools with good cross ventilation, and highest (10.2 per cent.) at badly ventilated schools. At unheated open-air schools during a period of very cold weather only half of the children

[1] Medical Research Council. Industrial Health Board. Report No. 58. A Study of Heating and Ventilation in Schools. London: H.M. Stationery Office. 1930. 2s. 6d. net.

were present. It is suggested that a system of under-floor heating would help to solve this problem more economically than any other. A panel system, where heat is radiated from the ceiling, is not considered to be effective for the open-air school, but it is regarded as preferable for most other purposes. Either of these methods can be employed in the semi-open-air school without diminishing the degree of air movement induced by open doors and windows. The advantages of the semi-open-air principle would also be increased by a careful regulation of doors and windows, so as to equalize the cooling power of the air to which the children are exposed. Both methods distribute heat more evenly than hot water pipes or radiators, and the apparatus is more compact. Whether under-floor heating would be suitable for factories is thought to depend partly on the nature of the machinery used and partly on the amount of unoccupied space. In workrooms where most of the floor is exposed, and where the machinery is light there is evidence that such a system would be successful especially if installed in draughty rooms with big doors that were often open to the air. Semi-open-air ventilation is obviously unsuited to many industrial processes.

A MEMORIAL TO LAMARCK.

JEAN BAPTISTE LAMARCK, soldier, biologist, and philosopher, was born in Picardy in 1744, and died in 1829. His remains lie buried in an anonymous grave in Montparnasse cemetery, Paris, but until 1914 his native country had a memorial of him in the house where he was born, the home of his ancestors at Bazentin, a small village of the Somme, not far from Albert. During the war years Bazentin lay within the war zone, and now what was Lamarck's house is but a heap of ruins. The Société Linnéenne du Nord de la France has resolved to raise a fund to be used for the purpose of erecting on the site of the old house a memorial worthy of Lamarck's greatness. This memorial will stand in the middle of a garden in which the plants grown will be the botanical species specially studied by Lamarck or named after him by other botanists. Lamarck belongs not only to his own province and country, but to all countries whose culture has been influenced by his pioneer work; and the Société feels, therefore, that to help it in its project it may call on the members of the great scientific brotherhood throughout the world. It extends its appeal to the scientific societies of the British Isles, and asks that all remittances by cheque or international postal order should be directed to the account of the Société Linnéenne at the Banque de France, succursale d'Amiens (Somme), and ear-marked for the Lamarck Fund. Letters should be sent to M. le Secrétaire Général du Comité Lamarck, 81, rue Lemerchier à Amiens, Somme.

NATIONAL INSTITUTE FOR THE BLIND.

DURING the last fifteen years the National Institute for the Blind has done meritorious work as a co-ordinating centre for the support of numerous local societies throughout the country. The financial aspect of this policy was more recently defined in a unification scheme by which resources derived from one appeal in a specified area were allocated in agreed proportions for local and national purposes. During 1928–29, according to the sixtieth annual report of the institute, collecting agreements increased from 57 to 79, but the effort to secure a wider and more equable distribution of service resulted in a decrease of £7,000 in the annual income. Allocations and grants amounted to £21,739. The general activities of the institute are too familiar to require detailed comment here, but several notable achievements were accomplished during the year. It was an appropriate circumstance that the institute was able to publish a completely revised catalogue of its books in the centenary year of the invention of Braille writing and printing, and to ensure that a Braille edition shall be published as a guide to literature for the blind. Books in this catalogue are supplied to every blind person residing in the British Isles and in the British Empire at a discount of two-thirds of their cost of production. A new series of embossed maps of all countries is in course of preparation. Seventeen periodicals, including a massage journal, are published by the institute; three of these are embossed in Moon type. Not less remarkable was the progress in music. In future blind musicians of every nationality will be able to read and understand a piece of music, wherever published, in modern Braille notation. This uniform system, based largely on that of the institute, was devised by an international congress held in Paris for the purpose last spring. While expressing satisfaction with these alleviatory measures the report emphasizes that the most serious and urgent problem at present is the employment of the blind. A special committee has been appointed to collect data on the subject from all parts of the world. Its chief purpose is to find occupations for blind workers outside those commonly practised, and to place them in industries hitherto ignorant of their qualifications. The committee is co-operating with an appointments board and with the National Institute of Industrial Psychology, which is making a special study of blind workers and of the industrial problems affecting them. It has often been suggested that massage is the ideal profession for the educated blind of both sexes. At the institute's school of massage, medical gymnastics and medical electricity arrangements are made for resident students to lead a normal and communal life in hostels. This department not only provides training but deals with the settlement of students and protects their professional interests.

PSYCHIATRIC PROBLEMS IN GENERAL HOSPITALS.

IN a paper recently published in the *American Journal of Psychiatry*[1] Dr. George W. Henry, senior physician to the Bloomingdale Hospital, New York, illustrates by means of a number of interesting cases the errors that are likely to arise from the neglect of psychiatric consultations in general medical and surgical practice. He cites as an example the case of a young Russian Hebrew who, in the course of an illness of two and a half years' duration, was admitted to ten different hospitals, and treated in seventeen different dispensaries and by six different private physicians. In his search for relief he had been told at different times that he had bronchitis, pulmonary tuberculosis, gastric ulcer, chorea minor, cardiospasm, intestinal obstruction, nephrolithiasis, post-operative adhesions, and an abdominal tumour. Each hospital and physician, unaware of previous observations, undertook the usual diagnostic procedures, and after many examinations and tests arrived invariably at the conclusion that the illness was some form of psychoneurosis. In the meantime, the patient was made incalculably worse by the frequent examinations, discussions, and opinions. He lost 20 lb. in weight and became totally invalided and unwilling to accept any diagnosis but his own. He now insisted that if he was "nervous," it was because physicians had failed in their treatment of his physical illness. In such a case, in Dr. Henry's view, the repeated physical examinations and the many tests for physical disease were not only unnecessary but distinctly harmful. They continually directed the attention of the patient to localized bodily complaints, and caused a serious delay in the application of appropriate treatment. The patient's unusual ability to mislead physicians who lacked psychiatric training was also a complication in that he could at any time find another

[1] Vol. ix, No. 3, p. 431.

doctor who would continue the search for a possible physical disease. On the other hand, if psychiatric knowledge and experience were more generally in the possession of the medical profession, the nature of the illness in a case of this kind would be promptly recognized through its own peculiar manifestations. Dr. Henry complains that even in the best medical schools the teaching of psychiatry is inadequate, some of the classes being conducted under the direction of older physicians and surgeons who obtained their own acquaintance with the subject from a few lectures and demonstrations given at a "hospital for the insane." In these circumstances it is not surprising that among 300 cases studied intensively there was only one history indicating that the writer had a fair grasp of psychiatry. It is, in Dr. Henry's view, futile to relegate this work entirely to specialists, for it is doubtful whether there will ever be a sufficient number of psychiatrists to respond to all the requests for consultations. There is, he believes, no alternative to educating general physicians in the elements of psychiatric methods, and he makes the following recommendations, based on his varied experience with the psychiatric problems in the wards and out-patient clinics of general hospitals. Every general hospital should have a psychopathic department and at least one attending psychiatrist. Except in emergencies no eccentric or neurotic individual should be submitted to an operation or started on a prolonged course of treatment without psychiatric consultation. No medical student should be permitted to graduate without having taken a course in the psychiatric aspect of general hospital practice, and a period of study in a psychopathic hospital should be a part of all hospital internships. In giving psychiatric instruction the emphasis should be placed upon the less obvious disorders which so frequently complicate general medical and surgical practice, while the well-developed psychoneuroses and frank psychoses should be studied chiefly for the purpose of giving perspective. All staff conferences in general hospitals should be attended by the psychiatrist so that there might be a mutual exchange of medical experience and frank discussion of those cases in which there are psychiatric problems.

A NEUROLOGIST'S ROMANCE.

THE name of Dr. E. Feindel of Paris, whose death took place on January 19th, is known to neurologists all over the world, but we doubt if many outside his own country are familiar with the story of his life which is told in a sympathetic obituary notice in the January issue of the *Revue Neurologique*. About thirty-five years ago he was *picked up comatose in a Paris street and taken to* the Hôpital St. Antoine. On recovering consciousness he was found to have right hemiplegia. The late Professor Brissaud, under whose care he was placed, found that though no improvement was likely to take place in the hemiplegia, the intelligence and judgement were intact. The patient turned out to be a well-educated man who had obtained a science degree at Lyons University, and was earning a moderate living as a tutor in Paris. Brissaud encouraged him to write with his left hand, gave him some work in his laboratory, entrusted him with some bibliographical research, and finally persuaded him to qualify as a doctor. Feindel's inaugural thesis on neurofibromatosis[1] was a richly documented work which can still be consulted with profit by those interested in the fascinating subject of von Recklinghausen's disease. Being unable to practise he devoted himself to literary work, and in addition to acquiring the knowledge of several foreign languages, taught himself shorthand and the use of a typewriter. During the whole of his professional life he was closely associated with the *Revue Neurologique*, to which he contributed numerous original articles and summaries of current literature in many languages, as well as being responsible for the excellent table of contents and bibliographic files. He was the author of a series of important articles on gigantism, infantilism, paramyoclonus, and "spondylose rhizomélique." The work on ties and their treatment which he wrote in collaboration with Henry Meige was translated into English by Dr. S. A. Kinnier Wilson in 1907.

[1] *Thèse de Paris*, 1896 97, No. 164.

NATIONAL COUNCIL FOR MENTAL HYGIENE.

THE seventh annual general meeting of the National Council for Mental Hygiene was held at the House of the Medical Society of London on March 21st, under the presidency of Sir MAURICE CRAIG.

Lord SOUTHBOROUGH, the treasurer, in presenting the report and accounts, said that, although still in need of money, the council's finances were in a better condition than in previous years, as there was a bank balance of about £440.

Dr. J. R. LORD, one of the honorary secretaries, gave some account of the council's activities, which, he said, had not *been spectacular, but sound. The work already done through* physicians and officers of the established services for the treatment of mental disorder was fully recognized, and the council existed to co-ordinate all the forces directed to the promotion of mental hygiene. Apart from the insane and the mentally deficient, there were large numbers of people handicapped by minor mental illness; to study the root causes and to help the sufferers was a problem which the council had set itself, through committees and by means of experts. Reports had already been forthcoming which were highly valued. He went on to narrate the steps taken by the council in connexion with the Local Government Act. An open letter had been sent to all local authorities and medical officers of health urging the need for early treatment of mental disorder among the poor, for which opportunities were afforded under the Act, and he had proof that the suggestions of the council had been received most sympathetically. A report on the Mental Treatment Bill had been circulated and had received every consideration from various local authorities. He also referred to the interest of the Mental Health Conference held in the autumn of last year (and fully reported in these columns), and to the forthcoming First International Congress of Mental Hygiene, to be held at Washington next May, which would be attended by Sir Maurice Craig. *Magnificent work had been done in America on the study of* these problems, and the congress would stimulate still more.

The CHAIRMAN spoke in warm praise of the staff of the council, especially the two honorary secretaries, Dr. J. R. Lord and Dr. R. D. Gillespie, the treasurer, Lord Southborough, and the honorary organizer, Dr. Doris Odlum. The report was adopted, and the retiring members of the committee were re-elected.

Dr. DORIS ODLUM reported on the autumn series of lectures on mental hygiene subjects. These lectures, which were of a popular character, had evidently met a real need, and a spring course was now being given.

Some discussion took place on a remark made by Lord Brentford on opening the Conference on Mental Health—namely, that attempted suicide was always the outcome of mental disease. This view was combated by some members at the meeting. Sir MAURICE CRAIG pointed out, however, that "mental disorder" must not be regarded as synonymous with insanity, and Dr. LORD said that all Lord Brentford had done was to point out that the largely increasing number of suicides or suicidal attempts were indicative of failure to take steps to secure early treatment. He thought it was not sufficiently kept in mind that mental hygiene had two divisions —a positive and a negative. It was the positive side of mental hygiene which was often forgotten—namely, the improvement and usefulness of the mind. Negative hygiene was the prevention and cure of mental deterioration. In America positive mental hygiene was carried on in schools by educational methods—some of which might not be approved in this country, as they might be thought to invite a morbidity of outlook.

The meeting closed with a vote of thanks to Sir Maurice Craig for presiding.

PSYCHOLOGY AND THE PRACTICE OF MEDICINE.*

BY

J. CAMPBELL McCLURE, M.D.,

PHYSICIAN TO THE FRENCH HOSPITAL, LONDON, AND TO THE MARGARET STREET HOSPITAL FOR CONSUMPTION.

I HAVE *chosen the subject "Psychology and the practice of medicine" with the intent to show that the medical practitioner is faced every day with problems largely psychological in their nature, and that a greater knowledge of such problems is becoming more and more necessary to him if he is to preserve his place in an advancing world. I would ask you to look upon psychology as the study of personality. The psyche was in earlier days considered to be that part of the mind which was occupied with intellectual and emotional registration and expression, and there is no reason at the moment to dislodge it from that position. Personality grows and expresses itself through intellectual and emotional stimuli and reactions, which may arise from within or from without the person. Such stimuli and reactions are conveyed and expressed through the medium of agencies which we are accustomed to call somatic—such as the organs of special sense, the skin, the neuro-muscular and neuro-secretory systems, and the various nerve centres. The formation and expression of personality depend on a proper response to stimuli of large groups of cell communities more or less in touch with external influences, and also on processes generated and carried out entirely by the higher centres in the brain and their communicating fibres. Therefore, in the study of personality we are faced at once with the fact that a response to stimulation may be altered in some way by faults in any one of the transmitting or registering systems involved.*

A stimulus may fail to register in the brain through a fault in the skin or in one of the more highly specialized sense organs. Again, a stimulus may reach the brain quickly but may fail to produce a reaction either on account of the incapacity of the higher centres to appreciate it, or because some fault in the efferent mechanism prevents its translation into appropriate action.

The normal effect of introducing a pin into the skin is to produce a sensation of pain. This sensation ought to have the effect of causing the person to remove the irritated part of his body from the pin. Again, if the skin of the face is slapped by an alien hand, the usual reaction is a local discomfort and flushing, and a rapid translation of the stimulus into violent muscular action of a retributive character. Here the stimulus has been more complex. The true personality has been attacked and an emotional response is induced, as well as a mere somatic sensation and reflex. Where intellectual power is weak the emotional response will occur with certainty; so that if you slap the face of a person of small intellectual and at least average emotional equipment, you may expect to be severely dealt with. In our comparatively civilized communities, however, such a "normal" reaction is inhibited by training and experience, and if the face of a really well-trained man were slapped in a drawing room, the usual neuro-muscular response would not occur. In all probability the emotional reaction would be registered externally by a generalized pallor, against which the local flushing would stand out strongly, by a clenching of the hands and a general rigidity, the result of the central effort to control that is part of the training of all civilized beings. This control of impulses for the good of a community is one of the most important features in psychology. In anything like completeness it is not inborn; it has to be developed. In personalities that have behind them a reasonable history of racial and familial civilization, the training and development are not very difficult; the response to instruction and to experience is rapid, and memories are readily formed which act as a check when the period of instruction is past. The development of control must be the result of an understanding that we are responsible, in a community's life, not only for our own welfare but also for that of other people. No person's psychology is properly developed unless emotions, and their natural expressions, are controlled within safe social limits, and a sense of duty to other people is properly developed.

Human beings live in an environment that is continually changing, and it is impossible that all can develop adaptive qualities in the same degree. Sense stimuli grow more and more urgent—noise, hurry, the adaptation of the mind to newly invented things, all go to form an environment which is very trying to the psychological make-up of all of us. Some personalities respond to these stresses and changes with little apparent effort; some grow confused and dull; others are so sensitive to the ever-increasing stimuli that their responses seem to get beyond their capacity for control, and they become restless, excitable, and in the end exhausted. Even among those who apparently adapt themselves easily there are many whose capacity for control, although enough to cope with the stimuli of their ordinary life, gives out under strain that is abnormal to them, whether sudden or prolonged, emotional or intellectual.

The preservation of a just balance between emotion and intellect is a psychological necessity if a personality is to develop along the lines of greatest service to itself and to others. The uncontrolled emotional person is no more abnormal, and often not more disturbing to a community, than the cold and over-controlled intellectual who by nature or training appears to have developed a complete immunity to the attack of all emotions. The inhibition of natural emotional reactions can be carried to excess, especially if it is merely active in preventing an obvious response to a stimulus, and not also active in correcting the thought-response, so that the following reaction may be harmless, and even beneficial. The most obvious example of how the control of only external expressions may be of poor service to a personality is met with in the response to sex stimuli. If control is exercised merely to prevent a ready expression of the reaction, sooner or later the personality will develop abnormalities of reaction, especially if the control is induced by fear of personal consequences and not by a true sense of responsibility. On the other hand, if in response to sexual stimuli, control is exercised not only in the direction of repression but to convert the emotions aroused into higher forms of expression, the resulting reactions may be of the most elevating kind. Many of mankind's greatest achievements have been without doubt the result of the harnessing and translation of human passion. Control should be so developed that not only the repression, but the useful development of emotional reactions shall be the result.

Control is difficult to develop in certain instances for two reasons: through inborn faults it may be weak, so that it gives way under a very small strain; it may be considerable and yet be overcome by an excessive response to a specific stimulus. Many people give way through sheer weakness of control to ridiculously small stimuli; others, whose general control is at least up to the average, succumb to emotional appeals which to them are strong enough to be almost irresistible. In the latter class are to be found many of those who become alcoholic. Naturally hypersensitive and shy, regarding too much the opinion and power of others, they use alcohol to dull their sensitiveness, and to remove the principal barrier between themselves and those whom they wish to impress.

In medical practice by far the larger number of patients showing psychological weakness belong to this hypersensitive group, and it is the duty of the practitioner to try to discover how much of the psychological weakness is due to gross somatic causes before he tries to influence such a personality, whether by persuasion or by some more specialized form of psychological treatment. Chronic toxaemia, endocrine disturbance, combined with an inherent metabolic fault, may produce psychological aberrations so profound that the patient may appear to have crossed the border between sanity and insanity. In the treatment of such cases it is necessary to think at first along purely somatic lines. Only if no somatic disturbance is discovered, and organotherapy and drug treatment have failed, must the doctor turn to directly psychological methods

* Abstract of the annual oration delivered before the Hunterian Society of London on March 3rd, 1930.

of treatment. Somatic disorders, secretional, chemical, or toxic, have a profound influence on personality. This is not extraordinary when one realizes that all emotional and intellectual processes depend for their inception and development on a somatic mechanism, and if that mechanism is at fault on its nutritional, afferent, or efferent sides, the intellect and emotions will suffer. Phobias may be due to some psychological trauma, but among my own cases I have found in 70 per cent. a definite somatic fault which seemed to determine the occurrence of these fears, and with whose correction the fears disappeared. The sensation of fear is largely referred to the epigastrium, and accompanied by disturbed cardiac action, and observation has shown that these discomforts are associated with a dilatation of the gastric fundus. This type of gastric dilatation, with varying degrees of paroxysmal tachycardia, and epigastric and left hypochondriac uneasiness, was the somatic fault present in 70 per cent. of my cases of phobia, and it seems possible that the cardio-gastric phenomena associated with fear, if produced by other means, may suggest to the higher centres that the patient is afraid, with the result that he searches unconsciously for a cause, and unfounded fear of crowds, or open spaces, or personal failure ensues.

Children are not born with a highly developed faculty of control or sense of responsibility. They have to acquire our standards of right and wrong carefully, and in many cases with difficulty. A child is apt to put out his hand and take what he wants, having no regard for others, an instinct common to all primitive creatures. His instinctive reaction to fear is to lie, simply for self-protection. Only training and experience teach him that he must not take other people's property, and that lying is a social evil of some magnitude. In the majority of cases such instincts are corrected before the age of 12 or 14, but in a certain number of people a tendency to dishonesty and untruthfulness persists into young adult life, and may die only with the person. If parents and schoolmasters are honest enough to recognize that they themselves have had comparable difficulties, the cure of these tendencies is almost certain. The treatment must, however, be sympathetic and rational. Fear of immediate consequences is only a deterrent; hell-fire and flogging are merely repressive and not really educative agents. The dull or apparently irresponsible youngster may be cured by the correction of a physical defect, such as an error of refraction or an endocrine ill-balance, but the fault may be beyond the reach of such treatment, and yield only to careful training combined with suitable employment. Irritable and inattentive children may settle down to steady work when introduced to a subject which interests them and for which they have an aptitude. Moreover, as they grow in knowledge along one line, they may develop capacity in quite different kinds of work. Co-ordination of the fingers by means of a dumb piano may contribute to the cure of a stammerer; so the development of methods of learning produced by the study of one subject will promote educational success in others.

Those of us who during the war were interested in the re-education of the disabled were astonished to find the psychological improvement that often followed on an entire change of occupation, and how well some ordinary journeymen developed when a chance was given them to become foremen, buyers, or even managers.

Experimental psychology must appeal strongly to all of us who admire the methods of Hunter. I do not think that John Hunter, had he been alive to-day, would have busied himself only with the chemistry of protoplasm or refused to liberate himself from the tyranny of the microscope. Rather do I think that his restless mind would have been much occupied in thinking ahead of proved facts while insisting on proving as much as possible. In psychology experiment is as necessary as in any other field of knowledge, and facts about reaction times, for example, are of the utmost importance in the study of personality. A good observer can separate people into classes by finding out if their reaction times and association rates are average, fast, or slow, thereby establishing whether the relations between the sense organs, the centres, and the neuro-muscular system are normal or not; afterwards, perhaps, he will be able to state with some degree of accuracy whether the three systems are healthy, or where the failure has occurred. From the clinical point of view it is of interest to realize that, once such a classification is made, a capable medical man is able, by appropriate treatment, to raise many from lower to higher classes; but we must remember that to every individual is set a limit to his capacity for improvement, and that trying to improve the unimprovable is a waste of time. Practical psychology, with medical co-operation, could also be used for the grading of young people into classes suitable for different kinds of work, and much unhappiness and poor development, with their attendant train of sickness and incapacity, could be avoided, to the great financial betterment of this country.

To consider, however, that by the study of experimental psychology may be obtained the only means of recognizing and remedying psychological faults, would be as ridiculous as to decry its usefulness. There is still room for the thinker who, beyond his observations, can erect hypotheses on which good work can be done though experimental proof be still wanting. The metaphysician is as necessary as the physicist and the physiologist in the study of psychology. Facts without correlation, discoveries claimed as facts without adequate proof, experiments unchecked by reason, may be as useless and as dangerous as theories unsupported by facts. The way lies between the experimentalist and the speculative thinker. The usefulness of psychology to the medical man lies in his being bound neither to one wheel nor the other, but in his being carried by both to a practice equally useful to him and to those under his care.

There is need to-day for the sensible treatment as well as the differential diagnosis of psychological ailments. According to the diagnosis, so must be the treatment. It is futile to attempt to treat by psycho-analysis a disorder of personality due to an inherent endocrine weakness exaggerated by toxaemia of intestinal origin. Yet beyond the groups of psychoses of directly somatic origin, beyond the faults of character already indicated, there is a group or groups whose explanation is not so easy and whose treatment must be along special lines. I cannot believe, however, that even one-third of these groups contains sufferers from psychological faults that are due to sex repression and complexes named from various interesting characters in Greek mythology, but that they all need special therapy on psychological lines is certain; personality must be corrected in these cases by personality, whatever be the best and safest means to employ. Psychological injuries are as real as surgical injuries. Control, emotions, intellect, may all suffer as the result of some dreadful experience, physical or mental, and while it becomes evident that the balance of endocrine secretion and body chemistry is upset, one becomes impressed with the fact that those disorders are not primary and that some deeper injury has been sustained which has deranged the whole neuro-secretory system.

The study of such cases shows that all kinds of errors in thinking, feeling, and interpretation may occur. Wrong conceptions of life, exaggeration of ordinary sensation of the sense of pain, And misinterpretation of all sensations are among the most disturbing features of their sufferings which are very real. Perhaps the most interesting are those who misinterpret symptoms and attribute to malicious external agencies the effects of their physical disorders. All such derive benefit from overflowing to their medical adviser; and the fact that such conversation does help them indicates one of the most successful lines of treatment, a combination of the confessional and the consulting-room, by which the doctor can obtain information of psychological injuries and repression dating, perhaps, far back into childhood. The patient, having told the story, is frequently in a condition to be receptive of advice and reassurance. This can be done very well in most instances without resort either to complete psycho-analysis or to overt suggestion. In other cases, however, complete psycho-analysis or deliberate suggestion, either in the waking state or in a state of complete or partial hypnosis, seems to be necessary if a real improvement is to take place. In my experience the resort to psycho-analysis or to overt psychotherapy is not as necessary as has been urged by some; a perfectly good abreaction may be induced by ordinary sympathetic treatment by a medical man without pre-

he mud that exists in the unused memory of most of Later, an ordinary quiet but complete explanation that orts of sensations are natural and only harmful if they d shame or fear, or are elevated to a position in life of proportion to their importance, will in most cases he patient on better lines of thought, and remove worry dread. With this improvement will come also an im-ement in the general condition which can be hastened, the psychical difficulties are overcome, by suitable tment along more ordinary lines.

ie avenues by which wrong thinkers can be led back he normal are many. To some, the appeal for fairness thers, for "playing the game" domestically or socially, ough to correct their line of thought; to others, the al to their dread of being ridiculous is a strong in-ive to correction—ridicule is the most powerful weapon se against the Englishman. The removal of the idea they are useless has cured many; this line of treat-t often involves investigation into the patients' capacity inclination, and the training of them in suitable work, er as a hobby or as a means of livelihood. Some are roved by being encouraged to develop some means of ural emotional expression, like music or dancing. To y the emotional appeal and development must be along gious lines. It is not enough, however, to prove that a of thought is incorrect and foolish, to expel a devil and e the room swept and garnished. Successful psycho-apy demands not only the extrusion of wrong ideas, it ands their replacement by right ideas. The patient t not only be convinced that his attitude is wrong, but t be supplied immediately with a chart of right con-. On the hyper-selfish must be urged the need for the sideration and the service of others; on the shrinking t be urged the necessity for courage and the capacity achievement; on the dreamy and apathetic, the virtue ction; on the over-active, the value of relaxation and aming.

ae separation of the psychologically abnormal from the eral run of medical work can be carried to excess. Too h public discussion of the different kinds of neuroses psychoses, as a group of diseases curiously apart from nary ailments, is apt to encourage the development of e very abnormalities among the more unstable part of population. I think that since the death of Charcot e have been fewer hysterical manifestations of a major l in France; there have been fewer cases of the very lition in which that great man's treatment was so matically successful. In our day a great many lazy ple exist who before the advent of psycho-analysis ld have been treated with a little thyroid or some r suitable medicament and ruthlessly told to work out ir salvation in useful occupation, but now suffer from an iferiority complex," and thus demand the sympathy due mysterious psychological fault which requires treatment very special kind. Others would far rather have their stipation treated by a complicated system of dieting electrotherapy, reinforced, perhaps, by a course of hypnotic suggestion, than do what Winnie-the-Pooh "stoutness exercises" before breakfast, and walk miles every morning and afternoon. Some three sand years ago a court official called Naaman objected ngly to being advised to use as a therapeutic agent iver called Jordan, preferring the more magnificent bana and Pharpar, rivers of Damascus." The e psychology persists to-day, and the result is a espread conviction that better results can be obtained extraordinary than by ordinary means, many even ferring to seek advice outside the qualified group nedical practitioners, in the belief that there is a more ient group of healers whose practice is unhampered by much tradition and training. Irregular practitioners e sometimes great successes, and of these successes near much. The cured are only too willing to extol their cleverness in going beyond the poor old plantigrade lical profession, and discovering the virtues of an un-scribed Abana. But do we hear as much about the ures? Fear of the little words "I told you so" deters y from an open confession, and patients merely creep k; a little shamefacedly, to seek the ministrations of a fectly ordinary doctor. There is, however, something to be said in excuse for those who seek the aid of the irregular practitioner. We have been too rigid in the past, adapting ourselves too slowly to new advances in science, and I fear that only by the sedulous cultivation in our practice of sense and sensibility can we live down the reputation for pride and prejudice which we seem to have acquired.

RADIOGRAPHIC THERAPY OF STERILITY.

ADDRESS BY DR. LOBRE.

At a meeting of the London Association of the Medical Women's Federation, held on February 25th at the British Medical Association's House, with Miss FRANCES HUXLEY in the chair, Dr. FRANÇILLON LOBRE delivered an address on the radiographic therapy of sterility.

Dr. Lobre said that whereas the method of tubal insufflation merely showed whether the tubes were or were not permeable, radiographic examination with lipiodol revealed the situation of an obstruction impairing tubal permeability, which was a point of capital importance if reparative surgery was contemplated. The radiographic method also supplied information about the exact position of the uterus and its form; the appearance of the tubal and uterine cavities; and the condition of the mucosa and its reactions to lipiodol. Such examination showed the importance of uterine and tubal spasm in a large number of the cases, and thus afforded valuable indications for the treatment of sterility.

Lipiodol was well tolerated by the tubes. Rubin had described some cases in which the radiographic method was followed by peritoneal reactions, but it was possible that the cases of infection recorded had followed the use of a liquid other than lipiodol. Laparotomies had been performed upon women who had received injections of lipiodol forty-eight hours previously, and no sign of peritoneal inflammation had been encountered. In certain cases where mistakes in technique had permitted injections to be made under too high pressure, small collections of oil had been found in the connective tissues, but no sign of inflammation. It was necessary to keep the pressure under strict control, but with lipiodol the pressure employed might be higher (up to 30 cm. of mercury) than was permissible when air was insufflated (in this case up to 23 cm. of mercury). Gases, being easily compressible, might induce a pressure at the point of resistance higher than that at the point of escape, and it was therefore logical not to exceed an initial pressure of 23 cm. for insufflation, in spite of the fact that a much higher pressure was required to produce experimental tubal rupture.

In collaboration with Dr. Jean Dalsace, Dr. Lobre had examined 230 women for sterility during the last three years. The cases examined were those in which a preliminary examination of the husband had eliminated the male factor, and in which careful clinical examination of the woman had proved negative. Contraindications to radiographic examination were the presence of active lesions, such as those accompanying metritis, salpingitis, appendicitis, or metrorrhagia. The best time for the exploration was during the week following menstruation, from the fourth to the twelfth day. At this period adnexal reactions could be most effectively avoided; moreover, the risk of injecting during pregnancy was eliminated by choosing a time shortly after menstruation had occurred. The patient had to be prepared for the examination with the greatest care. It was necessary to be sure that the cervical orifice was permeable, since radiographic examination was never to be immediately preceded by dilatation of the cervix. The examination itself had to be made with the care and precautions adopted in all minor gynaecological procedures. In order to ascertain whether the tubes were or were not permeable, a second radiogram had to be taken a few hours after the first to discover if the shadow still remained in the tubes, or was disseminated in patches in the abdominal cavity. For the purpose of this second examination the patient remained in the hospital or clinic for a few hours before returning to her home.

The gynaecologist and radiologist had to collaborate in the examination, which was not painful. The only

disagreeable moment for the patient was when the cervix was grasped with the forceps, in order to close it, since the injections had to be made under pressure. The pressure employed was regulated with a manometer, and was *not allowed to exceed 30 cm. of mercury*. By prolonging the pressure sufficiently it was often possible to restore permeability to otherwise impermeable tubes. The examination should be made patiently, and without haste. The passage of lipiodol into the cervix, and then into the tubes, which it entered through the mechanism of the uterine contractions, was followed radioscopically on the screen. To avoid pain, said Dr. Lobre, she was in the habit of giving sodium bromide or benzyl benzoate for two or three days before the examination, and an analgesic suppository was introduced one and a half hours before the examination, which was immediately preceded by swabbing the cervix with a solution of novocain.

The opaque substance used was 40 per cent. lipiodol, rendered more liquid by warming on the water-bath. Many instruments had been devised for injecting lipiodol, that constructed by Dr. Lobre consisting of a cannula of very malleable nickel-plated copper, bearing a tip shaped like an olive, with a terminal orifice, and two large lateral eyelets. *The cannula bore a flattened shoulder, situated* 4½ cm. from the tip, designed to prevent it from passing too deeply into the uterus. At the other end of the sound there was a three-way cock, bearing two threaded tips. The metallic syringe was attached to one of the tips, while upon the other was fitted a sterilized tube containing a piston, attached to which was a manometer.

The patient was placed on the table lying on a draw-sheet, which enabled her to be moved easily. At the end of the table were two movable stirrups, which permitted her to be placed in the gynaecological position. The vagina was irrigated with an iodized injection, and the cervix then exposed by a bivalve speculum. It was swabbed with alcohol, and grasped with the tenaculum, to permit easy introduction of the metal sound. If the cervical os was large, it could be closed with a large forceps, *with the grasp directed backwards; if small*, it could be closed with the aid of one or two bullet forceps. The oil was injected slowly, at a pressure never exceeding 30 cm. Care was taken *not to permit reflux into the* vagina. The speculum was then removed, and the patient pulled into the middle of the table by means of the draw-sheet.

For radiography, the Coolidge or Philips tube was employed, one tube being beneath the table for examining radioscopically with the patient recumbent, and for making radiograms during the examination, a plate being placed on the abdomen. Radiograms were also made of the pelvis, both from the front and from the side. When the course of the tubes was masked by the uterine cavity an oblique exposure was taken. It was thus possible to take anterior or posterior plates without changing the position of the patient. The plates were developed immediately and before the sound was withdrawn. In this way the examination might be repeated, if it was not wholly successful *the first time. It was absolutely necessary to follow on* the fluoroscopic screen the intrauterine course of the injected lipiodol, to observe the filling of the uterus, the successive aspects of the injection, the advance of lipiodol into the tubes, and its entrance into the peritoneal cavity. These details were clearly visible by making use of the Potter-Bucky diaphragm and of a fixed or mobile grill.

Dr. Lobre then proceeded to illustrate on the screen the information which could be supplied by radiographic examination—anomalies of development, and variations in the form and dimensions of the uterine cavity and in the position of the uterus. Examination also showed alterations of the uterine mucosa, polyps, submucous fibromas, tumours, and other conditions which might require curettage, also the sensitiveness of the uterus and the irritability induced by application of severely caustic agents to the mucosa. Lesions of the tubes, *which might escape detection* by clinical examination, could be shown, notably those causing impermeability of the cornu or at the isthmial region. Variations of the length, calibre, and form of the tubes could also be observed. The contractions, which were clearly visible in normal tubes, did not occur in diseased tubes that were distended with lipiodol, which they retained for a very long time. In certain sterile women the tubes were firmly fixed by adhesions, remaining always immobile. There, said Dr. Lobre, were *the lesions, anatomical* and physical, revealed by hysterosalpingography. However highly the method might be perfected it would never constitute a specific treatment for sterility, since some forms were not mechanical in origin. The method confirmed and precisely demonstrated the clinical findings, and likewise supplied data giving rise to new medical and surgical methods of treatment.

For combating uterine or tubal spasm antispasmodic agents, such as belladonna, atropine, benzyl, or the bromides, might be used. Tubal atony might be treated with gynaecological massage or diathermy, which were equally useful in uterine displacements. If the tubes presented undue small calibre, they might first be rendered permeable by injecting them with lipiodol, and their dilatation might then be attempted by repeating insufflation for a sufficient number of times.

Before undertaking operative measures designed to combat sterility, hysterography should be practised. Ligamentopexy, or stomatoplasty, should not be attempted without being assured that the tubes were permeable. If permeability was not present an attempt should be made to restore it. Twenty operations of this kind had been undertaken by Dr. Lobre following advice based on radioscopic findings. Thus far the results had not been satisfactory, and in no case had pregnancy followed surgical treatment. Operation had generally proved to be too late, and had revealed old and already organized lesions. In the future operation must be done earlier, indications must be more clearly defined, and technique must continue to improve. Radiographic examination not only permitted etiological diagnosis, but often sufficed in itself to constitute the treatment of certain forms of sterility. Various statistical records had shown, like those of Dr. Lobre, that pregnancy might be obtained in about 10 per cent. of the cases examined. While this might seem a very modest result, it must be remembered that the method was resorted to when every other method had already failed. Again, the figure of 10 per cent. was a gross figure and included the cases in which the tubes were permanently obliterated. In many cases tubes originally considered impermeable proved capable of receiving injections, provided that the cervix was well drawn down and the pressure continued for a sufficient time. By following the principles described she and her colleagues had obtained 23 pregnancies following 230 injections with lipiodol. In three of these successful cases a second pregnancy had occurred, and in one case a third. There had been only one case of extrauterine pregnancy.

In the discussion that followed, the PRESIDENT pointed out that the method might not be very easy to apply in private practice, where facilities for re-examination after three or four hours might not always be obtainable. Lady BARRETT inquired how it could be ascertained with certainty that no infection of the tubes existed. Was Dr. Lobre confident that forcible injection into the tubes was safe? Dame LOUISE MCILROY said she expected to get more than 10 per cent. of successful results with douching and other methods, including insufflation. It was sometimes difficult to detect pus in the tubes, and if injections were made in the presence of a pyosalpinx trouble was to be expected. A closed tube had possibly been the subject of inflammation at some time. Miss MARTINDALE asked what results had been obtained by Dr. Lobre by means of artificial insemination.

In reply, Dr. LOBRE said that some gynaecologists sent patients to a radiologist, and allowed them to go straight home, but she preferred them to lie in bed for one or two days, and the examination, therefore, must take place either in a hospital or clinic. None of the patients had had a rise of temperature after the injection. She had had no successful cases after artificial insemination. The results after *lipiodol* were possibly better than they appeared to be, because hospital patients did not always report subsequent pregnancies.

Dr. JANE WALKER proposed, and Professor MELLANBY seconded, a vote of thanks to Dr. Lobre for coming to London to give this valuable address.

Ireland.

The Samaritan Hospital for Women, Belfast.

At the annual meeting of the Samaritan Hospital for Women, Belfast, on March 14th, Professor A. Fullerton, M.B., C.M.G., president of the Royal College of Surgeons, Ireland, advocated the institution of paying wards in their Belfast hospitals. The status of patients, he said, had completely changed in recent years. It was unfair to the public and to the medical profession that voluntary service should be given by honorary medical staffs to patients who were able to pay for their maintenance and treatment. The present system led to grave abuse of the hospitals on the one hand and the exploitation of the profession on the other. It seemed anomalous that the resources of their modern hospitals should be reserved for a single class, and that those who contributed to provide that class with free medical and surgical treatment should have to be satisfied with inferior equipment. Surplus funds derived from pay-wards were of great assistance to the finances of a hospital. The Duchess of Abercorn, who presided at the meeting, expressed her agreement. Dr. T. R. Mackenzie submitted the medical report, which recorded that 635 patients had been admitted during the year, and 699 had been treated in the out-patients' department. The surgical staff had at its disposal the largest single supply of radium in Ulster.

Free State Medical Registration Council.

It is understood that Mr. William Doolin, F.R.C.S.I., of Dublin, will be selected to represent the Irish medical profession to fill the vacancy created by the death of Dr. T. R. J. Hayes, F.R.C.S.I., on the Irish Free State Medical Registration Council. Mr. Doolin graduated M.B., B.Ch., B.A.O. at the National University in 1910; and became Fellow of the Royal College of Surgeons, Ireland, two years later. He is surgeon to St. Vincent's Hospital; a past-president of the Leinster Branch of the British Medical Association; a member of the Irish Medical Association; honorary secretary to the Dublin Local Medical Committee; and a member of the Irish Medical Committee. Mr. Doolin is a well-known writer on surgical and educational subjects, and is editor of the *Irish Journal of Medical Science*.

Local Authorities (Officers and Employees) Act, 1926.

The report of the Select Committee of the Dail on the Local Authorities (Officers and Employees) Act, 1926, has been circulated to members of the Dail and Senate. Of the 49 local authorities in the Free State invited to submit their views, 117 sent replies. Twenty-three local authorities out of the 249 in the Free State actually declared their opposition to the principles of the Act, which took out of the hands of the local authorities the right to make appointments. Memorandums were received from, among other bodies, the Irish Medical Committee on behalf of the members in the Free State of the British and Irish Medical Associations, and non-members of both medical bodies. The medical members of Dail Committee were Dr. T. Hennessy, T.D., Irish Medical Secretary, and Dr. C. Ward, T.D. The committee's first recommendation is that the functions assigned to the local Appointments Commissioners should be fulfilled in future by the Civil Service Commissioners, or, in other words, that the Local Appointments Commissioners should disappear. In the event of the foregoing recommendations not being accepted the committee recommends that only a person in the Civil Service shall be eligible for appointment as a Commissioner under the Act. Another recommendation proposes to take out of the hands of the local authority the only power it now possesses in respect of promotion within its service, and to place all such matters under the control of the Commission. It is recommended that regulations prescribing the qualifications for all offices comprised in any particular description, class, or grade of office to which the Act applies shall be laid before each House of the Oireachtas as soon as may be after such regulations have been made. Other recommendations are: that provision should be made for competitive examination by way of written tests for all appointments to the public service other than appointments requiring professional or technical qualifications. That for appointments requiring professional or technical qualifications, examinations should be held by the Local Appointments Commission acting by selection boards appointed for the purpose; that such boards in choosing candidates with a view to appointment should have regard to the post-graduate diplomas or similar distinctions, and the experience of the candidates, the latter qualifications to be ascertained by a practical test. That it should be a statutory instruction to the selection boards that in assessing the relative merits of candidates in regard to the factor of personality, marks should be awarded only in respect of personal appearance and general bearing, and that the maximum number of marks prescribed under that heading should not be greater than is represented by 5 per cent. of the total number of marks obtainable. That with a view to the filling of appointments requiring professional or technical qualifications, rosters of qualified candidates should be framed by the Local Appointments Commissioners as often as the number or expected vacancies justifies, but not oftener than four times a year, based on the procedure outlined as regards examination by selection boards; that each such roster should consist of such number of qualified candidates as is necessary to fill the estimated vacancies in the particular class of appointments occurring within the ensuing period; and that any candidate for inclusion in such roster should be entitled to be informed of his place in the order of merit as determined by the said Commissioners. That every selection board to be set up by the Commissioners for the selection of candidates with a view to any recommendation for appointment under the Act should be constituted with the assistance of the expert advice of the Department of State concerned. That if in any case the Commissioners do not recommend for appointment the candidate placed first in order of merit by the selection board the Commissioners shall inform the selection board as to the reasons for not recommending such candidate for appointment.

Scotland.

Mental Clinics in Scotland.

An address was delivered to the Edinburgh's Women Citizens' Association, on March 18th, by Dr. Hamilton C. Marr, senior commissioner of the Board of Control for Scotland. In considering the treatment of mental patients under the conditions that apply to those in general hospitals Dr. Marr stated that in 1932 tuberculosis was four times more prevalent in asylums than in other hospitals. The sanatorium for tuberculosis at Woodilee Asylum was the first to be established in any asylum. In applying the idea that mental disease was closely associated with physical disease the Glasgow District Board of Control established a reception house for the treatment of mental patients in Glasgow parish passing to the district asylum at Lenzie. In five years about 2,000 patients were treated in this relatively small hospital, which was under the care and supervision of women nurses. It was found unnecessary to hamper the freedom of the patients in any way. Mental observation wards were subsequently established in some of the large cities—for example, in the general Poor Law hospitals at Duke Street and at Stobhill in Glasgow. These experiments had indicated that it was desirable to allow patients who were mentally affected to be treated by ordinary hospital methods, and thus to dispense with the necessity for certification, which constituted legal insanity. It would be an ideal scheme to build four large clinics in the four university cities, with subsidiary small clinics and dispensaries scattered throughout the surrounding areas. A clinic in Paris has been treating nervous and mental affections of this kind for several years. Dr. Marr thought that such a scheme might be financed out of the Government Lunacy Grant for Scotland, which amounted to £115,000 per annum. This sum

was regarded at present as a subsidy to parish authorities, and was largely used not for the benefit of the insane, but for the relief of the rates.

Glasgow Cancer Hospital.

At the thirty-ninth annual meeting of the Glasgow Royal Cancer Hospital, on March 21st, Sir John M. MacLeod, Bt., president of the hospital, who occupied the chair, referred to the rapid development in the medical and surgical treatment of cancer both in Glasgow and elsewhere. Dr. Macfarlane said that the public attitude towards the cancer hospital had changed in recent years; there was a fair assurance that many patients would be greatly improved, if not completely cured. It was largely due to the foresight and wisdom of Sir George Beatson that the hospital had maintained its careful inquiry and investigation into all cases of malignant disease, and that efficient research workers were carrying on their experiments in a well-equipped laboratory. Radium was the best treatment available for inoperable malignant diseases. Dr. R. P. Peacock, director of research at the hospital, referred to its policy of supplying radium to other institutions. He thought that this had been justified by the work of the Radium Commission, which was now developing this policy on a vast scale throughout the country. Radium treatment, he said, was a growing science, and research must go hand in hand with clinical work. Treatment by radium had the advantage over surgical methods in that it exercised a more destructive action on cancer cells than on normal tissues. Research was aiming steadily at a form of treatment which could be called a cure. One of the great objects of research in the meantime was to determine the nature of the selective action which radium therapy had upon malignant tissues. According to the report for the year 479 patients were treated in the hospital, and 26 as out-patients. To assist in the efficient administration of the supply of radium, the Glasgow and West of Scotland Radium Institute has been formed. It occupies a building adjacent to the hospital, in which about twenty beds will shortly be available. A scheme has also been arranged by which radium will be lent to four city hospitals, so that [illegible] institutions in Glasgow will be combining their experience in using radium for the treatment of cancer.

Royal Victoria Hospital Tuberculosis Trust.

At the annual meeting of contributors to the Royal Victoria Hospital for Tuberculosis Trust, held in Edinburgh on March 19th, Sir Ralph Anstruther, president of the Trust, who presided, referred to the research in prevention and treatment that was being done at Southfield Sanatorium, where an early extension of the children's accommodation was contemplated by the Trust. Dr. Haig Ferguson, President of the Royal College of Surgeons, expressed the opinion that tuberculosis would be abolished altogether in the present century. Having commented on the fact that the Trust was beginning to get money for research, Sir Robert Philip said that tuberculosis was a universal disease, which arose from a very simple infection; its development, however, could be arrested. Very serious cases of tuberculosis were exceptional. The present campaign against the disease was successful, and would probably be more successful in another generation. The report for the year ended June 30th, 1929, deals with the activities of the Trust for the care and prevention of tuberculosis throughout Scotland, and with the work of the sanatorium colony at Southfield near Edinburgh. Attention is directed to the importance of observing the occurrence of tuberculosis in the nursery and in the school. The results obtained in the sanatorium have been very satisfactory. An increasing number of applications for the admission of children were received from widely separated areas in Scotland; 50 per cent. of the cases are nursery cases. The report points out that skilled treatment and a process of de-tuberculization may immunize the child in some degree against the further effects of infection; in this way the early infection may become a means of security against tuberculous disease in later life. Attention is drawn to the fact that the falling mortality rate of tuberculosis is one of the striking results of modern methods of treatment. A continued decrease in the mortality of some countries as compared with others is stated to afford a commentary on the effectiveness of concerted measures. Reference is made to the Gracemount farm in supplying certified milk; and to the establishment of a tubercle-free herd of 110 cows that are subjected to rigid six-monthly tuberculin tests. An investigation is being made to ascertain to what extent cattle are liable to human infection, and the channels by which such infection is transmitted. The committee of the Trust appeals for a sum of £600 per annum to be used for research during the next five years.

Edinburgh Royal Maternity Hospital.

At the annual meeting of the Edinburgh Royal Maternity and Simpson Memorial Hospital, held in the City Chambers on March 20th, Lord Provost Whitson, who presided, referred to the amalgamation that was about to take place between the hospital and the Royal Infirmary. The new maternity department of the Royal Infirmary, he said, would not be ready for five or six years. Meanwhile the Maternity Hospital required increased support to prevent encroaching on its reserves. According to the report for the year, 2,351 patients were treated in the hospital, which was a record for any single year since its foundation; there was an increase of 157 over the figure for the previous year. The total number of patients, including those admitted to the hospital and treated in their own homes by nurses from the hospital, was equivalent to 41.6 of the total number of births in greater Edinburgh during 1929. The report points out that the site for the new maternity department of the Royal Infirmary will be one of the best in the city, being in the grounds occupied at present by George Watson's School. The maternity clinic, which will have 120 beds, will retain the name of "The Simpson Memorial."

The Late Miss A. W. Gill.

The death took place at Hove, on March 2nd, of Miss Annie Warren Gill, who was lady superintendent of nurses in the Royal Infirmary, Edinburgh, for eighteen years. It was at this institution that she received her nursing training. In 1900 she served as matron of the Edinburgh South-East of Scotland Hospital in the South African war, and took a party of nurses the following year to South Africa for service in the concentration camps. In 1903 Miss Gill was appointed matron of the Royal Berkshire Hospital at Reading, and four years later became lady superintendent of the Royal Infirmary, Edinburgh, from which [illegible] she retired in 1925. [illegible] many improvements in the nursing department of the Royal Infirmary were made during her tenure of office. During the war she did much work in obtaining and supplying trained nurses for military and naval service, and in raising and organizing a large staff of junior V.A.D. nurses. She was awarded a bar to the Royal Red Cross, which had been presented to her for service in South Africa. She was president of the Scottish Matrons' Association from 1910 to 1925, and was elected president of the College of Nursing in 1927.

England and Wales.

Health and Cleanliness Council.

THE Health and Cleanliness Council, a body whose object is to spread information as to the advantages of cleanliness and other healthy practices by educational and propagandist means, held its fourth annual general meeting at the Hotel Cecil, London, on March 19th, under the chairmanship of Dr. G. F. Buchan. At a luncheon preceding the business meeting, which was attended by many medical officers of health and others, the guest of honour was Professor Louise McIlroy, director of the obstetrical and gynæcological unit, Royal Free Hospital. Whatever might be the truth, said Professor McIlroy, in the statement frequently made that it was impossible to make people clean by Act of Parliament, she was sure people could be made clean by that means. At the bottom of the whole of child welfare work in connexion with maternity and child welfare was the "push" for cleanliness. The slogan of the [illegible]

"Where there's dirt there's danger," was nowhere more apt than in this relation. Antiseptics and disinfectants were all very well, but the ultimate protection must be in the normal physiological state of the person, and one of the principal fortifying factors was cleanliness. Incidentally she begged the council to turn its attention to the fashion which was now ordaining the return of the long skirt, an unhygienic garment whereby the wearer swept up every species of germ and dirt as she went along. Dr. Buchan said that health and cleanliness were indissolubly associated. Sanitation was nothing more than common sense. He pointed out how many things in the evolution of human society began as aesthetic preferences and were presently shown to have health value. The Romans could not have known that the act of bathing would eliminate harmful germs, but they practised it assiduously. The best example of sanitary achievement in this country was the virtual stamping out of typhoid fever; the residuum was almost entirely due to the fact that certain persons with dirty or infected hands manipulated foodstuffs. He wanted to see in every place where food was prepared the slogan "Cleanliness first." As illustrating the value of washing facilities, he mentioned an area of which he had experience, inhabited by four or five thousand families, only one hundred of whom had bathrooms. Was it wonderful that the infectious disease rate in that area and also the proportion of unclean children who had to be dealt with at school were higher than in the case of surrounding areas? He pointed out the importance of cleanliness in connexion with maternity work. Four out of every 1,000 women died in the process of confinement, and two out of the four died of puerperal sepsis, which was really dirt. The report of the council showed a great deal of activity during the year in the way of distribution of literature, exhibition of films, delivery of lectures, and assistance in local health and baby weeks. The council has an encouraging list of members in the shape of local health and education authorities and voluntary associations.

Training School for Nurses: Opening by Prince George.

A new preliminary training school for nurses, presented to University College Hospital, London, by the Rockefeller Foundation, was opened by H.R.H. Prince George on March 19th. The ceremony took place in the medical school library. Sir Herbert Samuelson, chairman of the hospital, in an address of welcome, said that as long ago as 1862 the hospital enlisted the services of refined and educated women to take charge of patients. Attempts to consolidate the nursing service as a whole on a professional basis, however, appeared to be unsuccessful until the experiences of the war brought into being the College of Nursing. With the institution of the College and the General Nursing Council the training and teaching of nurses became standardized to an extent little contemplated by the earliest pioneers. The American ambassador (General Dawes), in seconding the address, spoke of the establishment of the nursing school as another evidence of mutual understanding between the great English-speaking peoples. The gift by the Rockefeller Foundation was a great tribute to the work carried on at University College Hospital, and also a tribute to the nursing profession, one of the noblest avocations of women. Prince George, in reply, referred to developments which had already been possible at University College Hospital through the generosity of the Rockefeller Foundation—a new maternity hospital, new nurses' homes, a new wing in the main hospital, new theatres and laboratories, and important extensions to the medical school. The latest and by no means the least important of these gifts was the new preliminary school for nurses. "I feel we must all acknowledge our debt to the skilled doctor and the trained nurse, and to the hospitals which educate them. Personally, I have a very special reason for paying a tribute to doctors and nurses, for I know that to skilful treatment and devoted nursing the King's recovery from his serious illness is very largely due." The Prince accepted from Miss Darbyshire a silver statuette of a nurse in her first nurse's uniform. The new training school building is one of six floors, and includes an oak panelled dining room, a practice kitchen, a laboratory department, and a demonstration room, the last-named being fitted like a ward. The carefully prepared curriculum includes such subjects as anatomy, physiology, practical nursing, hygiene, first aid, and cookery. Accommodation is provided for two sister tutors, a staff nurse, and twenty students, in addition to quarters for the domestic staff. The period of preliminary training is two months. During the second month the student will visit the hospital daily and engage in ward work, and at the end of the preliminary training, having passed an examination in the theory and practice of nursing, she will be accepted as a probationer in the hospital.

The Northcote Trust at St. Thomas's Hospital.

The report of the Cicely Northcote Trust at St. Thomas's Hospital for the year ending October, 1929, recalls the death this year of Mr. Hugh Stafford Northcote, who founded the trust twenty years ago in memory of his sister Cicely. This is also the first report issued under the almonership of Miss C. Morris, who has recently succeeded Miss Cummins on the latter's retirement from the post. Among the activities of the trust there is a club for the fathers and mothers of St. Thomas's maternity department, which provides classes on housewifery for mothers, addresses by doctors from the hospital, and debates for fathers, social evenings with music and dancing for both, and attendance by voluntary workers for children up to the age of 5. The assistance given to patients in the wards of the hospital varies from advice on how to maintain the home during illness to the provision of a bath chair or surgical boots to a cripple who aspired to become a girl guide, and the successful enlistment of a would-be suicide into a British regiment. The Northcote Trust almoners supervise the financial measures necessary in the distribution of insulin to diabetics when they leave the wards; they provide after-care for cancer patients; and they run a hostel for girls and women from the venereal disease clinic who cannot live at home or have no home to go to. The work of providing these girls with some philosophy of life is admitted to be difficult, but while there are failures there are also said to be many splendid successes. The almoners visited some 9,000 patients in the wards or in their own homes during the year under review; but notwithstanding contributions from the patients and a grant from the Ministry of Health, the admirable work of the trust is hampered by lack of funds. An appeal is made for further donations and subscriptions.

India.

Public Health in Bombay.

THE health history of the Presidency of Bombay shows steady progress to 1929, a record year for low mortality, then a steady decline to previously low standards. Cholera was subsident in 1928, the death rate being 0.36 as compared with 1.35 the previous year, when over 26,000 deaths were recorded. Plague, fevers, and respiratory diseases were more active. A slight decrease in malarial mortality was due to improvement in Sind. Grants for the free distribution of quinine were sanctioned by the Government. From an experiment conducted in selected schools regular quininization of the children is reported to have reduced enlargement of spleen. There was a keen demand for the drug both as a prophylactic and as a curative, but the policy of quininization was expected to be thoroughly revised in 1929 on account of an uncertainty of its potency against malaria. Influenza had the mildest effects since 1926, but deaths registered as due to fevers and respiratory diseases were often caused by the sequels to influenza. The marked variation in the prevalence of phthisis in different cities, and sometimes in different communities of the same city, showed that it is so related to social customs and modes of intercourse that special inquiry is desirable. The death rate for pneumonia in Karachi was the highest in ten years. Plague increased in spite of a larger number of revaccinations. Cobra bites accounted for 35 accidental deaths, the periods of expiration varying from thirty minutes to fifteen hours. An important part of medical

policy in 1928 was the extension of village sites. Healthy sites were selected and laid out in building plots for four villages, and land was acquired for the extension of others. Less satisfactory was the condition of industrial workers. Some factories inspected in the Gujarat district were found to be insanitary; no provision had been made for first aid; there were no crèches; light and ventilation were defective, and drinking water was objectionable. None of the factories inspected by the public health staff had any welfare scheme for its workpeople. Health and baby weeks, however, are reported to be more popular. Magic lanterns and cinemas are extensively employed for propaganda. A more novel form was a drama dialogue on maternity, written in the vernacular, and presented on the stage. In commenting on the improvement in the rate of maternal mortality Dr. Munsiff, Officiating Director of Public Health in Bombay, draws attention in his report to the excellent work that is being done in the maternity homes throughout the Presidency. With the exception of 1914 the birth rate for 1928 was the highest recorded, representing an increase of 25.362 on the previous year, but the increased death rate was more than proportionate. Over 130,000 infants died during the first year of their lives, and 36 per cent. before the end of the first month. More than three-fourths of the total infant mortality was due to respiratory diseases, infantile debility, and premature births. Poverty and ignorance accounted partly for these high rates; contributory causes are considered to be malaria, syphilis, and the practice of soothing infants with opium. The proportion of deaths to births varied inversely according to the number of rooms occupied by the parents. Preventive measures were continued with favourable results. There was a slight decrease in the number of unattended births, and in confinements managed by unskilled women. Over 40,000 visits were made by municipal district nurses. Necessaries and comforts were more generally accepted. The infant milk depots, which provided pure milk daily, have been closed, as their work was being done by the welfare centres.

Research at the Haffkine Institute.

As a result of renewed investigation in plague parasitology during 1928, on the lines recommended by the Plague Expert Committee of the League of Nations, successful transmission experiments were made at the Haffkine Institute with *Xenopsylla cheopis*, *X. astia*, and *X. brasiliensis*, the three species of flea found in Bombay. The last-named species, which forms a large proportion of the rat-flea population in the southern provinces, had not been proved before to be a carrier of plague in India. In each experiment thirty-six fleas—six males and six females of each of the species *Xenopsylla cheopis*, *X. astia*, and *X. brasiliensis*—were kept in a cage with a plague-infected rat. On the death of the animal the surviving fleas were collected, identified, and kept singly in labelled tubes. They were then fed individually for two or more successive days on healthy rats, and the process of feeding was observed under an entomological microscope. There were three successful transmissions. The fleas fed on the rats had been male *X. brasiliensis* in two cases, and female *X. cheopis* in the third. Another method of investigation was employed to demonstrate whether *X. astia* and *X. cheopis* were capable of carrying epizootic plague under optimum conditions. Two flea-proof pits were constructed and proved satisfactory. These experiments furnished results differing considerably from those previously accepted as correct.

The importance of [illegible] 1928 Major Sokhey, I.M.S., acting in the nursery and the Institute during the greater part the sanatorium has that anti-plague inoculation is being ing number of [illegible]ed as a protective measure in almost were received from [illegible]t two million doses of Haffkine's pro- 50 per cent. of the [illegible]buted throughout the continent and points out that six[illegible] months. Since the opening of the tuberculization may [illegible]e million doses have been sent out. against the further [illegible]ture remained the same, but a early infection may be[illegible] discovery that the blood agar tuberculous disease in la[illegible] for the growth of *B. pestis*, the fact that the falling [illegible] with greater certainty con- one of the striking results o[illegible] prepared vaccine. Thirteen A continued decrease in the[illegible]dicated that the agar-grown vaccines of the Farbenindustrie, Hoechst-am-Main, Germany, of the Pasteur Institute, Paris, and of the Lister Institute, London, conferred a lower degree of protection, even when employed in doses recommended for man, than 0.5 c.cm. of Haffkine's prophylactic. Researches in anaemia by Major Sokhey and his assistants revealed that anaemia of sprue and of pregnancy had great resemblance to pernicious anaemia; they believed that the so-called anaemia of pregnancy is not a distinct entity, but merely an aggravated condition of anaemia commonly present in non-pregnant women. All cases of macrocytic anaemia with high colour index were examined to ascertain in what respects sprue and severe anaemias of pregnancy differed from pernicious anaemia, and how the three conditions responded to liver treatment. In an investigation of the anaemia of pregnancy, associated with a special inquiry into maternal mortality during childbirth, serious difficulty in treatment was brought to light; women delayed too long in coming to the institute, and liver extract was too expensive for general use.

The Dufferin Hospital, Rangoon.

The annual report of the Dufferin Hospital, Rangoon, for 1928, which has been recently received, appears in a new form with a considerable increase in the amount of information. The superintendent, Major M. L. Treston, I.M.S., mentions that the gynaecological block of seventy-six beds had not been completed at the time of the report; the gynaecological work was therefore continuing in the Civil General Hospital, Rangoon, as in the past. The ground floor of the old Dufferin Hospital building has now become an out-patients' department, with ante-natal and infant clinics. A new main block for maternity cases was opened in November, 1927, and contains 100 beds; there is also now an isolation block with twenty-four beds.

Correspondence.

RESEARCH IN MEDICINE.

SIR,—As one engaged in clinical research, I welcome the article of Sir Thomas Lewis on clinical research and the difficulties under which it now labours (March 15th, p. 479) as well as your leading article and the statements of the Medical Research Council on the subject. For with the better recognition of the fruitfulness of this field of work will surely come the money necessary for its cultivation. The question is, as I see it, primarily a financial one; when the physician can see his way to gaining in this absorbing branch of medicine a permanent appointment and a salary not too incommensurate with the income he can gain in other fields, there will be no lack of good candidates capable of extending the bounds of scientific medicine.

Possibly many members of the profession do not realize the barriers in the way of clinical research at the present time as the result of the financial position. The Medical Research Council temporarily assists many workers, clinicians among them, with annual grants, but its permanent staff has up to now consisted almost entirely of laboratory workers. There are for research in medicine and the ancillary sciences a moderate number of short-period scholarships of £150 to £300 or perhaps £400 per annum, the larger ones being usually full-time. Those offering more than £400 per annum are rare. Some of the scholarships are available for clinical research, though in practice the great majority are awarded to laboratory workers. They usually go to men who have already a number of years of post-graduate work behind them, and who are, therefore, already men of considerable experience. They may have conditions attached which render it difficult for the holder to get or to keep a footing on the clinical side of any hospital. Without this footing he cannot get control of clinical material, and he is not likely to be able to carry out clinical research. But suppose he is lucky, and possesses a clinical appointment, such as honorary assistant physician, when his scholarship comes to an end he finds it is no stepping-stone to another post appointment. He may, of course, wait month after month

ntil another similar research grant or scholarship is warded him after elaborate application, but there is no ore security of tenure with the second one than with the rst. He knows he will be out of a job again within a w years, however good his work. Hence, after his first ppointment, he will probably be faced with the choice of ther clinical work in practice or research work in a boratory—clinical research is financially a blind alley -day. He may, of course, elect to do clinical research id to earn the whole or most of his livelihood by other rts of work. If so, he must face a constant frittering vay of energy and the unsettledness of divided aims.

The training of clinical research workers is discussed Sir Thomas Lewis. An association for these workers, ch as he suggests, seems a most attractive method of romoting their intellectual as well as other interests by utual contact and criticism. There is one point on which, owever, I feel I must have misunderstood Sir Thomas ewis's meaning. He seems to imply that a training in search renders a man less fitted for diagnosis and for the eatment of patients. If this were so, it would cut the ound from under our feet, for no hospital would appoint "research physician" in such circumstances; moreover, e profession would be the first to proclaim the absolute cessity of putting the patients' welfare first. Coming om such an authority, a suggestion of the sort would turally be extremely serious, and as other may have read e paper in the same sense I much hope Sir Thomas Lewis ll contradict this if it is not his opinion.

I understand he favours strict specialism in the research rker, whereas some individuals, at any rate, would find a definite advantage to maintain a more general contact th medical work and to continue to deal with patients d diseases of many types, instead of restricting themves wholly to the type of case under investigation. One vantage is that a balanced outlook is thus more easily aintained and too narrow views avoided—an advantage th to the patients and to the research; another, that allows the worker better facilities for the selection of ses for investigation instead of rendering him wholly pendent on others for sending him the type of case he quires.

The conflicting claims of the individual patient and of perimental medicine are, of course, obvious; no clinical periment can be pushed to its logical conclusion like a boratory experiment. But the training of the young search worker in his early post-graduate years with his lleagues who intend to undertake private practice should, d I believe would, inculcate in both the same solicitude r the patient which is customary in our profession. In s letter (March 22nd, p. 565) Dr. J. A. Ryle touches on e same question—namely, "How can curative and experiental medicine be divorced (or reconciled)?" I suggest at all of us in clinical medicine are experimenting, but at usually we have not the opportunity of so conducting d controlling our experiments and collating our data at we are able to deduce from them conclusions which ve been experimentally proved. When, for example, the lue of a given remedy is unproven, we are justified in thholding it in certain cases which will serve as controls: ien the value of a given remedy is proved the experimentalist is under the same obligation to his patients his fellow clinicians.

If clinical research is to blossom forth the financial rricades which at present close the road to all but the ry few must be removed and life-work in its service ade possible by the provision of adequately paid posts th security of tenure.—I am, etc.,

ondon, W.C.1, March 24th. H. M. M. MACKAY.

PPLICATION OF GAMMA RADIATION TO DEEP-SEATED TUMOURS.

SIR,—I was much interested to read Professor Joly's ter (March 8th, p. 466) suggesting a travelling bomb the external application of gamma radiation. A achine such as he describes was constructed for me some nths ago. It involves a very pretty mechanical movement, and if Professor Joly would care to see it I shall be very happy to demonstrate it to him at the London Hospital. It was considered by the Radium Commission last January, when the London Hospital applied for the four-gram bomb which has now gone to Westminster, and this was the method of mounting which I had suggested we might adopt.

On physical grounds I am very doubtful whether there is any future for the use of a bomb in radium treatment, but if it were to be of any use there can be no doubt that a travelling bomb would present great advantages in its application.—I am, etc.,

London, W.1, March 23rd. H. S. SOUTTAR.

INDIAN MEDICAL DEGREES.

SIR,—I entered the Indian Medical Service twenty-one years ago, and, having been closely associated with questions of medical policy at the headquarters of the Government of India, I have had good opportunities to observe the rapid growth in numbers and influence of the independent medical profession in India—the offspring, indeed, of the I.M.S. From this standpoint I deeply regret the action of the British General Medical Council in withdrawing recognition of the degrees of the various Indian universities for the purposes of registration. The decision is most inopportune, for it deals what may be a fatal blow at the delicate negotiations between the Government of India, the provincial Governments, and the universities and medical bodies for establishing a statutory All-India Medical Council, the duties of which would include the conduct of any necessary discussions with the British General Medical Council. The latter authority had expressed a desire to be in a position to treat with such a council, and negotiations in India have reached a promising stage. The action now taken in London has enormously increased the difficulty of settling satisfactorily for both countries the question of recognizable medical standards in India. Still worse, it will go far to alienate the good will and loyal co-operation of a rapidly increasing host of Indian medical practitioners, many of them trained in this country. Is it wise to discourage young Indians coming here to complete their medical education, and to encourage the setting up of barriers in a great profession which should be united, irrespective of race or creed, in its ministry for the good of mankind? Nowhere is the need for co-operation on a catholic basis more pronounced than in India. The work is and must be overwhelmingly in Indian hands; and it is satisfactory that the influence for good of the independent profession, trained in Western methods, grows year by year. It is impossible to overestimate the share its members are taking in the reform of obsolete religious and social customs which offer a great barrier to the spread of hygiene and health laws among the people. Details regarding this health and welfare work were given in my address last year to the East India Association (see *Asiatic Review*, July, 1929), and reports of progress continue to reach me.

No doubt the patience of the General Medical Council has been tried by discussions extending over ten years; but the effort should not have been abandoned when prospects of a settlement were a possibility. To close summarily further discussion on a question which not only concerns the Indian medical profession, but also the welfare of 320 millions of our fellow subjects, is, I venture with all respect to submit, a short-sighted negation of the breadth of view and statesmanship which should be exhibited by a body discharging the important statutory responsibilities of the General Medical Council. Unhappily, the issue is altogether wider than that of continuing to place a few Indian names on the British *Register* as eligible to practise in this country. The decision has added fuel to the smouldering fire of race conflict and antagonism which is so liable to break out in India under the stress of nationalistic susceptibilities. By taking a step which means the fanning of these embers the General Medical Council has rendered a great disservice to our fellow-countrymen in India, and not least to those of my own profession, whose task at the present time is none too easy.—I am, etc.,

T. CAREY EVANS,
London, W.1, March 24th. Late Indian Medical Service.

INJECTION TREATMENT OF VARICOSE VEINS.

SIR,—With regard to the article by Mr. Colt (November 9th, 1929, p. 848) and Mr. Hector's letter (December 14th, 1929, p. 1134), I should like to warn them both to verify how much of the pain is actually due to the salicylate. I have given many thousands of these injections, and I have often found the patient so worked up and nervous at the beginning of treatment that, in order to ensure that there shall be no reaction after the first injection, and that the patient will return, I inject only a minute dose, or even nothing at all. I have found several times, on questioning them, that they feel a typical "salicylate cramp," when the vein has been only pricked; it travels far up or down the leg, and, in my opinion, corresponds to the introduction of even a trace of the solution into the walls of the vein. On the other hand, many veins become sclerosed, without a trace of cramp. As regards the fear of blistering and ulceration: for the last five years I have used mostly a 20 per cent. salicylate solution, and find the risk absolutely negligible. The left index finger acquires wonderful skill in locating veins, and if all the solution is inside the vein there will be no ulceration.—I am, etc.,

Melbourne, January 21st. L. P. U. CRIVELLI.

STRUCTURE OF THE ERYTHROCYTE.

SIR,—In his paper on the structure of the human erythrocyte (*Journal*, March 8th, p. 433) Dr. W. E. Cooke claims to have demonstrated the presence of a spongy stroma. It seems to me that he has made the mistake of taking the appearances seen after the use of fixing reagents to indicate the real living structure.

In a paper on the nature of the red blood corpuscle (*Biochemical Journal*, 1924, No. 1, p. 202) I adduced a good deal of evidence that the corpuscle is a fluid droplet. Much of the evidence was already in existence, but I was able to furnish an additional and conclusive proof; it is briefly the following. When the corpuscles are freed from serum and suspended in a normal solution of sodium chloride they assume a spherical shape; and when they are again placed in serum they resume their original discoid form. It is inconceivable that these changes of shape should occur if there were a solid stroma.

I believe that the normal erythrocyte has no structure coarser than the micellae of the colloidal system which constitutes it, and these are, of course, ultra-microscopic.—I am, etc.,

Leeds, March 19th. ALFRED GOUGH, F.R.C.S.

ANAESTHESIA FOR SHORT OPERATIONS.

SIR,—Dr. Fisher Waddy (*Journal*, March 15th, p. 518), quoting Levy's work on adrenaline secretion under light chloroform anaesthesia, is following conclusions which, admirable in the laboratory, are daily disproved by the practical experience of anaesthetists in different places using this form of anaesthesia for minor surgical or obstetrical procedures with perfect safety. Moreover, before explaining any death under light chloroform anaesthesia or analgesia by Levy's adrenaline theory (in the dental case quoted from the lay press no evidence is produced to show that the anaesthesia was "light"), I suggest to Mr. Waddy that he ascertains: (1) the posture of the patient; (2) the preliminary preparation of the patient. (Chloroform associated with a stomach containing a fairly recent meal is not sufficiently regarded as a dangerous combination for "just a whiff"); (3) in dental cases, the absolute lack of obstruction to the airway. (Under chloroform anaesthesia anoxaemia can occur insidiously and dangerously when there is only *slight* obstruction); (4) the preliminary medication of the patient—whether atropine was given or not. It is my opinion that most fatalities under light chloroform anaesthesia can be ultimately ascribed to a fault in one of the first three causes.—I am, etc.,

H. K. ASHWORTH, M.B., Ch.B.,
March 17th. Visiting Anaesthetist, Manchester Royal Infirmary and Dental Hospital.

SIR,—My suggestion (February 22nd, p. 362) that chloroform should be used for such operations as tooth extraction, opening abscesses, etc., has met with considerable adverse criticism, owing partly, perhaps, to a misapprehension. I especially refer to the use of chloroform as an analgesic after inhalation lasting from forty to sixty seconds. My critics refer to the well-known danger of chloroform as an anaesthetic given to the degree of complete loss of consciousness, and this danger would certainly be accentuated by its administration in a semi-upright position. Undoubtedly most of the fatalities from chloroform are due to its narcotic effect on the respiratory and vasomotor centres in the medulla; the upright position, by the effect of gravity on the circulation through the medulla, would increase the danger, and lowering the head or inverting the patient is the most efficacious and rapid form of treatment. In fact, most fatalities are due to an overdose. When chloroform is given in the manner I suggest, as an analgesic, there is no loss of consciousness, no change of colour, no post-anaesthetic vomiting. The patient is able to understand everything that is said and to respond. He is conscious of the extraction of the teeth, but feels no pain.

Although, of course, the analgesic property of chloroform is made use of by nearly every practitioner in his practice of midwifery, I have not heard of any danger accompanying its use as an analgesic in this branch of medicine.—I am, etc.,

Ipswich, March 22nd. HERBERT H. BROWN.

THE RELATION BETWEEN GLANDULAR AND PULMONARY TUBERCULOSIS.

SIR,—In the March number of the *Edinburgh Medical Journal* there is an interesting article by Dr. D. McIver Dunlop, entitled, "The relation between glandular and pulmonary tuberculosis." Dr. Dunlop admits that his percentages are based on a smaller number of cases, but, even so, they are striking, because they do not agree with the commonly accepted figures. He states: "Out of the last 68 cases of pulmonary tuberculosis which have been treated in Southfield Sanatorium Colony 13 have been associated with a history of gross glandular disease, giving a percentage of 18.9." In all cases tubercle bacilli were present in the sputum, and the glandular involvement is unquestionable, only definite scars or gross visible swellings being accepted.

In Newcastle-upon-Tyne, at the end of 1929, there were 626 cases of pulmonary tuberculosis on the dispensary register with tubercle bacilli in the sputum; of these 21, or 3.3 per cent., gave definite evidence of cervical gland involvement. Going back to the period 1913-28, there were 1,227 notifications of involvement of the cervical glands, and of these 70, or 5.7 per cent., developed a lung lesion. In view of the great difference between the figures of the Newcastle cases and those quoted by Dr. Dunlop, I suggest that comparable statistics by other tuberculosis officers would prove very interesting.—I am, etc.,

GEORGE HUBBELL,
Newcastle-upon-Tyne, March 20th. Tuberculosis Medical Officer.

POSITIVE PRESSURE WITHIN PULMONARY CAVITIES.

SIR,—I was much interested in Dr. Vere Pearson's article on the pathogenesis of pulmonary cavities in your issue of March 1st (p. 380).

Coughing would, I think, only produce a positive pressure in a cavity if the following condition is fulfilled: during the expiratory phase of the cough the pressure in the cavity itself must not rise as much as the pressure in the bronchial tree generally; otherwise air cannot be forced into the cavity—it would rather tend to flow out of it. It would therefore be necessary for the cavity to be protected from the general intrathoracic pressure. A wall of fibrous tissue or consolidated lung might perhaps provide a sufficiently effective barrier for this purpose. I do not think that the mechanism described by Dr. Pearson would produce a positive pressure in a thin-walled cavity surrounded by more or less healthy lung tissue. There is, however, another way in which a decidedly positive pressure might be generated in a cavity. During a deep inspiration the

abnormally large volume of air might be sucked into the cavity. If the valvular opening postulated by Dr. Pearson were present this air could not escape, and on resuming normal respiration the pressure in the cavity would be positive both on expiration and on inspiration. In the case described by Dr. Pearson a pressure of 0 and +9 was apparently produced on normal respiration only (since he could not reduce the pressure below this level). If the patient had taken a deep inspiration I think it probable that the pressures on ordinary respiration would have subsequently approximated to the original figures of +4 and +16.—I am, etc.,

Davos-Platz, Switzerland, March 10th. R. L. OSMASTON.

DELINQUENCY IN BACKWARD CHILDREN.

SIR,—The interesting contribution which you published on the above subject (March 15th, p. 490) rather suggests, in its deductions, that actual feeble-mindedness does not contribute a large number to the class of moral defaulters. It appears that delinquents are apt to have an intelligence quotient of 60 to 70 per cent. This I find to be a fairly correct estimate in our Devon cases. There are exceptions at either end of the scale, and these, paradoxically, owe their condition to something of the same cause—namely, loss of interest in their field of enforced attention. The backward child is unable to keep pace with the subject of the lesson, and his mind turns to the easier paths of mischief; conversely, the very quick-witted child outruns the lesson, and requires mental diversion of a more adventurous and intriguing nature. Again, mischief is at hand to give him occupation, and irregularities in social adaptation, rather than a feeble intellect, lead him to delinquency.

I rather think, however, that we must not look only to backwardness and mental defect for the causes of this trouble (that is, delinquency), and we must not omit the strain of puberty (a very important cause, I think), the after-effects of encephalitis lethargica, epilepsy, and hysteria as contributing largely to this troublesome condition. My opinion is that delinquency is not actually *related* to either mental defect or backwardness, though often *associated* with it. If so, we must go further afield than inquiring how many backward children are delinquent, or how many delinquent children are backward. Delinquency appears to me to be a separate "county" whose borders often trespass upon the neighbouring ones of backwardness and mental defect.—I am, etc.,

Exeter, March 20th. CLAUDE A. P. TRUMAN.

ANAESTHETICS IN MIDWIFERY.

SIR,—In a letter in the *Journal* of March 15th (p. 517) Dr. A. M. Claye states, "Undoubtedly the question of expense *is* of the first importance." May I describe a method which, after the initial expense of £7 7s., costs from a fraction of a farthing to threepence, depending on the length of anaesthesia required?

Fit up a "Vernon Harcourt inhaler" and hang it on the bed-rail. Set the indicator at about two notches on the air side for the early part of the second stage and show the patient how to hold the face-piece, explaining that the apparatus only acts when the clicking of the valves can be heard. Tell her to apply the face-piece closely when she knows a pain is coming, and as the pain gets severe to hold her breath, etc., and only "breathe in" when she must, removing the face-piece when the pain has gone. The effect of this is mostly moral support. (The exhaust valve in the face-piece acts by gravity, and will require a small piece of cotton-wool in the valve case to keep it seated when the patient is lying on one side; this no doubt would be remedied by the makers if asked to do so.) Then, as the perineum bulges, ask the patient to keep the face-piece applied continuously. If she is still able to sleep between pains, increase the strength of the vapour during the pain. From now on the richness of the vapour will depend on progress. I aim at gradually increasing the amount of chloroform vapour as the pain gets more intense until the patient is unable to move while the head is being born, and yet is sufficiently conscious to obey instructions. One must remember that, whatever the patient may say or do, she is not responsible, and that a hysterical woman may struggle unless sufficiently deep. Immediately the baby is born the patient falls asleep and wakes, as the placenta is being expressed, with no memory of the actual birth.

The Vernon Harcourt inhaler is an apparatus which gives a *uniform strength of chloroform vapour in air*, easily regulated from pure air to a safe maximum percentage of chloroform vapour. It is a suction apparatus, and only acts when the face-piece is closely applied to the face. For these reasons it lends itself admirably to the self-administration of anaesthetics during normal and difficult labours not requiring instrumental treatment. The patient applies the face-piece closely until she becomes drowsy, when she automatically relaxes the pressure and stops the anaesthetic. Pain wakes her, and she repeats the manœuvre, thus rocking between partial consciousness and artificial sleep. Moreover, as the maximum percentage of chloroform vapour in the air delivered is not dangerous, the nurse can be safely trusted to give a short, deep anaesthetic if required.—I am, etc.,

Waltham Abbey, March 17th. R. H. CARTER, M.R.C.S.

DERMATITIS ARTEFACTA.

SIR.—Dr. Gardiner's case, reported in the *Journal* of February 15th (p. 282), brings back to my mind a similar experience of my own in 1912.

A cook was admitted to a country cottage hospital with a bullous eruption down the right side of her neck. This I decided must be a case of dermatitis herpetiformis. After a stay of three weeks all lesions were healed and the patient returned home. In the summer of 1913 she was readmitted with the same trouble. After a while I decided I would like further advice, and persuaded her to go and see Dr. Sequeira at his out-patients' clinic at the London Hospital. Dr. Sequeira wrote me that the condition was unquestionably artefact, and added that he was unaware of any other dermatosis giving lesions which formed a right angle! He suggested mustard as a possible agent. On her return the patient had more of the usual bullae on the neck. A search was made, and a small packet of mustard powder was found.

The amusing thing in this case was that when the patient went up to London she varied the procedure by buying a mustard plaster and putting this on her right upper arm before going to see Dr. Sequeira. Rather an insult, I felt, to his great knowledge and experience! This patient did not become toward; she tried to brazen it out, and wept tears of rage and mortification when she had to admit it finally. I discharged her, and received a letter from the secretary of the charitable society (who had sent her and paid for her) complaining of my harsh treatment. The success of her former imposture, coupled with the monetary benefits under the National Health Insurance Act of 1913, were the motives for her second visit.—I am, etc.,

Parkstone, Dorset, March 11th. J. CHARSLEY MACKWOOD.

The Services.

AUXILIARY R.A.M.C. FUNDS.

THE annual meeting of the members of the Auxiliary R.A.M.C. Funds will be held at 2.30 p.m. on Friday, April 11th, at 11, Chandos Street, W.1, when the annual report and financial statement for the year ended December 31st, 1929, will be presented and the officers and committee for the current year elected.

DEATHS IN THE SERVICES.

Colonel Henry Kellock McKay, C.B., C.I.E., Bengal Medical Service (ret.), died at Hythe on March 14th, aged 79. He was born at Quebec on December 4th, 1850, the son of the late Major-General J. McKay, was educated at Guy's, and took the M.R.C.S. and L.S.A. in 1873; also the F.R.C.S. and the S.S.C. of Cambridge in 1876. Entering the I.M.S. as surgeon on September 3rd, 1873, he attained the rank of colonel on December 3rd, 1904, and retired on December 3rd, 1909. He served in the Naga Hills campaign on the North-East frontier of India, in 1875, and was mentioned in dispatches in G.G.O. No. 574 of 1875; in the Afghan war of 1878-80 (medal); and in the Mahsud Waziri campaign on the North-West frontier in 1881. He received the C.I.E. in 1899, the C.B. in 1904, and a Good Service Pension in 1909. He married Annie Emma, daughter of Mr. John Ringrose, of the Grange, Cottingham, Hull. She died in 1927, leaving one son.

Medico-Legal.

ALLEGED NEGLIGENCE AT OPERATION.
CROTCH v. MILES.

VERDICT FOR THE DEFENDANT.

An action for damages for injury alleged to have been received during operation was brought by Miss Martha Harriet Gordon Crotch of Vence, near Nice, against Mr. W. Ernest Miles, surgeon, of Park Crescent, N.W., and occupied the Lord Chief Justice and a special jury on March 13th and four following days.

Mr. J. W. Morris and Mr. W. A. Davies, instructed by Messrs. Churchill, Clapham and Co., appeared for the plaintiff, and Mr. Rayner Goddard, K.C., and Mr. H. C. Dickens, instructed by Messrs. Hempsons, on behalf of the Medical Defence Union, for the defendant.

Case for the Plaintiff.

Mr. Morris, in opening, said that the allegation of the plaintiff was that, after an operation on November 27th, 1920, for the removal of a fibroid tumour, Mr. Miles left in her abdomen a pair of forceps, 5 inches long, which was not discovered until an *x*-ray examination revealed its presence eight years later. After the operation in 1920 the plaintiff's life was one of continuous ill health, with a tragic succession of serious illnesses. Soon after operation a swelling appeared near the incision, and in May, 1921, she saw the defendant, who told her not to worry, as the swelling was the result of an injury to the muscles of the abdomen consequent upon the operation. In 1922 she went to India on family business, and was there ill and went into hospital. In 1925 she went to France to engage in a perfumery business, but was again ill, and had to give it up, and in February, 1926, in the South of France, where she had taken an antique shop, she was so ill that she was sent to a clinic at Nice, where an operation was performed for the removal of gall-stones. In August, 1928, still suffering, she consulted a doctor in Nice, and an *x*-ray photograph was taken, revealing the presence of the forceps, which necessitated a third operation. Since then she had suffered no pain.

Miss Crotch, in evidence, said that soon after the operation of 1920 she felt sharp pain in the abdomen. No organ of her body seemed to function properly. Pains of a distressing character made her life a misery. Medical men in India and France examined her without success. In 1922 she had a metallic taste in her mouth as if she were sucking rusty nails. She claimed special damages, amounting to £1,370, including payment for her gall-bladder operation, because she maintained she would not have had gall-stones if she had not been a sick woman by reason of the forceps.

Dr. R. H. E. Stevens testified to having been consulted by the patient on several occasions in 1921-23. She complained of a pain low down in the abdomen and swelling in the middle line, and attacks of nausea and sickness. He attributed it to ventral hernia following the operation.

The evidence of certain medical men, taken on commission in France, was read. Dr. Louis Prat of Nice testified that he operated on the plaintiff in June, 1926, at the Belvedere Clinic, and removed the gall-bladder, which was much diseased. He dealt only with the local condition, and did not explore the abdomen. He noticed a sort of rupture with a swelling or hard mass where the previous operation had been performed. The forceps, as shown in the *x*-ray photograph, was not in the region of his operation, nor did he use forceps of the type which was found. He admitted that nobody counted the instruments or swabs at his operations. His forceps were hinged, not screwed, as were the buried forceps. Dr. D. Maestracci of Vence stated that he examined the plaintiff in September, 1928, when she complained of severe abdominal pains and a persistent metallic taste. He was present when the operation for the removal of the forceps was performed. The forceps, which was removed from the small intestine, was rusty, and had lost all trace of nickel plating. Dr. Henry Fay of Nice, who performed the operation, said that the small intestine had to be cut to remove the forceps, which was coated with matter.

Case for Defendant.

Mr. Goddard raised the legal point that the action was barred by the Statute of Limitations because it was instituted more than six years after the alleged negligence, to which Mr. Morris replied that the plaintiff had displayed no lack of diligence in bringing her action, that the defendant had committed trespass upon the body of the plaintiff by leaving his forceps inside after operation, and that the trespass continued until the forceps was removed. The legal point was postponed until the evidence was completed, it being intimated that the defendant was desirous of giving his explanation.

Mr. Goddard said that one of the vital witnesses for the defence, the theatre sister present at the operation, was dead. It was on her that, in the patient's own interests, the surgeon should rely for the counting of instruments rather than delay the operation.

Mr. Ernest Miles, in evidence, said that although he had performed hundreds of operations since, he still had a slight recollection of this one, because the anaesthetist advised him to complete it as quickly as possible on account of the collapsed state of the patient. He always took the same number of instruments with him for every abdominal operation, unless special instruments were required, and to simplify counting he had them in threes and multiples of three. At the theatre he always counted his instruments out to the sister, and after operation the sister counted the instruments and swabs. If one was short a search would be made; sometimes one was found hidden in a towel. For the surgeon to hunt round for missing instruments or swabs would be to expose the patient to risk by delaying the operation. He had never lost a pair of forceps in the whole of his career. He produced the pair forceps which he was using at the time of this operation. On every pair were the letters "H.S.I." (Holborn Surgical Instrument Company). The forceps found in the plaintiff's body bore only the letter "H," which appeared where the "S" was on each of his instruments. He had never used forceps of the type found in the plaintiff's body for an operation of this kind.

In cross-examination, Mr. Miles stated that he took out a number of Spencer Wells forceps when he went to France at the beginning of the war, and some of them were exchanged for others which he received when the hospital was disbanded. He agreed that the removed forceps were of the type he had used some years ago, before he substituted stainless steel for nickel-plating, but he could not identify this instrument as one of his own. Asked by the Lord Chief Justice whether, if the buried forceps had been used for removing the gall-bladder it could have travelled down to the position in which it was found, he said that he thought so. In his view, judging from the *x*-ray photograph, the instrument was not found in the small intestine; it was in between the coils.

Dr. H. R. Wadd, medical superintendent of the nursing home where the operation was performed, said that he acted as Mr. Miles's assistant on that occasion. The theatre sister was very competent. He added that he had himself seen any number of Spencer Wells forceps for sale in France, and had himself bought some in Bordeaux and Paris four years ago.

Sir Hugh Rigby testified to Mr. Miles's reputation as a careful and skilful surgeon, one of the few who themselves counted their instruments after an operation. Usually a trained nurse attended to this duty.

Sir Thomas Horder said that he had known Mr. Miles for twenty-five years; his methods were those of a careful surgeon. Asked whose duty it was to check the instruments and swabs, Sir Thomas Horder replied that it was the theatre sister's, but he regarded the surgeon as ultimately responsible. Asked what would be his opinion of a surgeon in some country who said that nobody counted the forceps or the swabs, he said that he would not engage such a surgeon to operate on one of his patients. He also said that if forceps was left in the abdomen of a patient he would not expect an external lump to appear unless an abscess formed after a considerable time, and he could not think that a lump the size of a coco-nut, which the plaintiff said appeared in her abdomen in the neighbourhood of the scar two or three months after the operation, could have been caused by the presence of forceps.

Nurse Kingman, who was present at the operation in 1920, testified to the carefulness of the late Sister Brown, who regarded it as a "sacred duty" always to count the instruments. Mr. H. E. G. Boyle, anaesthetist, said that he had learned many years ago from Mr. Miles of his plan of having his instruments in multiples of three, which he thought excellent. Dr. J. S. Burn, who administered the anaesthetic for Mr. Miles, said that he had never known Mr. Miles fail to count his instruments after an operation. He added that he

had seen English-made instruments, surplus army stores, sold in France after the war.

Mr. Goddard, in his speech for Mr. Miles, said that Mr. Miles had evolved a system as near perfection as anything could be to get rid of the human element. During the actual operation it was reasonable and proper that the counting should be done by the sister-in-charge, but that did not free the surgeon from seeing that his instruments were right after the operation. He asked the jury to contrast the care which Mr. Miles had shown with the admitted practice of French surgeons in not counting their instruments.

The Lord Chief Justice: Dr. Prat went further than that: he said, "Nobody counts."

Mr. Morris, in his address to the jury, said that his learned friend had almost appealed to the jury not to find a verdict against someone who was a member of the medical profession. He would have thought, on the contrary, that once one was satisfied that it was at Mr. Miles's operation that the forceps was left it was in the interests of the medical profession itself that there should be a verdict against Mr. Miles.

The Lord Chief Justice's Summing-up.

The Lord Chief Justice, in summing up, addressed the jury for three and a half hours. He begged the jury not to be misled by the appeal for sympathy on behalf of the plaintiff. The task before the jury was a scientific one, and there the play of emotion was not helpful. With regard to the relevance of the evidence as to French practice, Lord Hewart said:

Let us put the matter the other way round. Suppose that the evidence about the operation conducted by Dr. Prat in France was that for years he had been conducting operations with the assistance of a careful method deliberately designed by himself to prevent an error about the number of instruments or swabs; suppose that Dr. Prat had been able to say, "I have designed a system of multiples of three. I count myself, the theatre sister counts, I check the counting of the theatre sister"; suppose that had been the evidence about Dr. Prat's operation, and when it came to Mr. Miles's turn he had to say, "I never count at all, and nobody counts for me; it is not done," how indescribably stronger the case against the defendant would have been. Now the position is reversed. The evidence of care in counting and of method in counting is the evidence of the defendant and the evidence given on his behalf, and it is conceded that in French operations there is no counting by the surgeon or by another. You may think it right to say that the measure of the additional strength that would have been given to the case against Mr. Miles if the position had been reversed is the measure of the assistance which his case derives from the knowledge which you now have that in the French operation there is no counting.

Lord Hewart then drew attention to the important dates in the case. From some accounts of the case one might think there had been only one operation; in fact, there were two, apart from the third operation to remove the forceps after it had been discovered. The first operation was by the defendant in November, 1920, the second by Dr. Prat in June, 1926, for the removal of the gall-bladder, and the third, for the removal of the forceps, by Dr. Fay, in September, 1928. He would put to the jury three questions:

1. Is it established that the forceps was left in the plaintiff's body in the course of the operation performed by the defendant?
2. If so, was that fact due to negligence on the part of the defendant or for which he was responsible?
3. The question of damages, if it arises.

As to damages, in addition to medical fees and expenses incurred, there was a claim for £500 in consequence of the plaintiff having to leave her Paris business on account of ill health, and a further loss on account of her business at Venice; but this related to the period antecedent to, and following on, the operation for gall-stones. The jury, if the question of damages arose, would have to decide whether these losses were attributable to what was done, or omitted, at the operation in 1920. Nobody denied for a moment that if a forceps was left in the body in the course of a surgical operation the patient ought to have a remedy in damages against somebody. But the question was whether the liability of this defendant was made out. It was for the jury to say whether it was established beyond reasonable doubt that this surgical instrument was left in the plaintiff's body in 1920 in circumstances which involved the operating surgeon in personal liability.

Lord Hewart proceeded to read passages from the evidence, especially by Mr. Miles, relating to the responsibility of the theatre sister in regard to the counting of instruments, and by Sir Hugh Rigby.

He (Sir Hugh Rigby) stated that in attendance at the operation are the surgeon, the assistant, the theatre sister, generally two nurses, and the anaesthetist, that the theatre sister is responsible for the instruments and their sterilization, the towels, and the swabs, and that she is very highly trained for this work. Sir Hugh Rigby said: "In our country she is something quite apart. She is specially trained for this duty, and has responsibilities which sisters in other countries are not given because they are not trained. I do not think one person can be responsible for all the details of the operation. The duty of counting instruments or swabs falls, according to the usual practice in this country, upon the theatre sister." Then came this passage, of no little importance in this case: "If the sister finds that she has not the right number she tells me. If I hear nothing I take it that all is correct. It is very seldom that I myself inquire. If I were working in a strange place or did not like the look of the sister"—he explained what he meant by that, that if he did not feel confidence in her—"I might do so." . . . He (Sir Hugh Rigby) went on to say that the standard of care in this matter of enumeration which was set and observed by the defendant was a standard higher than the ordinary, and a standard to which the ordinary surgeon could not be expected to attain."

The jury might think it right to draw a distinction between what was done in the course of an operation and what was done immediately at its close. It might well be that in the actual course of the operation it was not to be expected nor desired that the surgeon should be busying his mind with the counting of instruments or swabs, but that other considerations applied at the close of the operation, and that before the surgeon departed it was reasonable that he should personally satisfy himself that the number was correct, and that there was nothing missing. Mr. Miles said that he did that. Sir Hugh Rigby said that it was not usual, and he himself did not do it. These were material points with regard to the second question he had put to the jury, but that question did not arise unless the jury was satisfied that the forceps was left in the body of the patient in 1920. This was not quite a simple question. He quoted the words of Lord Chief Justice Tindal a hundred years ago, but unimpaired in their effect: "A person entering a learned profession undertakes to bring to the exercise of it a fair, reasonable, and competent degree of skill." Skill must be accompanied by diligence. Was it part of the duty of the surgeon personally to count the instruments and satisfy himself that the number was correct, or was he entitled to say that a skilled theatre sister was present, and that this was her job? She was not his servant; she was one of a team.

Turning to the main question, after reminding the jury that the burden of proof was on the plaintiff, and that it was not for the defendant to prove a negative, Lord Hewart said that, reviewing the evidence, two things leapt to the eye. The first was one to which he had already referred, that while all this detailed evidence was given as to the care habitually taken by Mr. Miles in checking his instruments, no such care was taken on the other side of the Channel. Everybody knew that some French surgeons were men of the highest degree of skill and enterprise. But in France it was not only that the surgeon himself did not perform this duty; nobody performed it. This type of accident was very rare. In more than thirty years' experience of the law he himself had never known a case of the kind. But if there was no counting by the surgeon, or by anybody on his behalf, was it difficult to understand that such a thing might conceivably happen? Lord Hewart explained to the jury the function of the forceps at operation, how it held the bleeding points until the ligature was applied. A row of forceps might be employed for an appreciable time, and when removed, if there was no counting, and especially if the patient was rather stout, the loss of a pair was a thing which might possibly happen.

The second thing which leapt to the eye was the remarkable contrast in the plaintiff's evidence as between the amount of medical testimony relating to 1926 and afterwards and the paucity of such evidence during the period from 1920 to 1926. Lord Hewart recapitulated the plaintiff's story. During the five and a half years between Mr. Miles's operation and that performed by Dr. Prat, when, according to this story, she was going about with this forceps in the lower part of her abdomen, what did she do? In July, 1922, she went to India, returning in April, 1923, and going again to India in October of that year. In 1925 she went to Paris to undertake the starting

or resurrection of a perfumery business, and in January, 1926, left Paris for Cannes, and took a pottery shop at Vence. There she became ill, and an operation for gall-stones was performed at the Anglo-American Clinic at Nice. The forceps was removed in September, 1928. It would have been interesting to know what was said by those who removed it, and whether attention was then pointedly drawn to the fact that it was a screw forceps, and not the sort of forceps which the French surgeons commonly used, although it was stated that thousands of such forceps were used in France during the war.

There is no kind of recollection (said the Lord Chief-Justice) so misleading as controversial recollection, and of all kinds of controversial recollections the least trustworthy are those which are fortified by a feeling of indignation. If any member of the jury has had an illness spread over a considerable period in some form or other, he will find that it is extraordinarily difficult, looking backwards, to be very precise about his symptoms at any particular period, especially if the trouble is of a kind which gives a diffused pain. We have been told that when the gall-bladder is affected a very common accompaniment is a flatulent dyspepsia, capable of causing great pain and discomfort, now here, and now there, a little difficult to locate. How difficult it is for a person who has suffered in that way, looking back over a longish period of years, to say with certainty that his symptoms at such and such a time were these, and not those.

His lordship reviewed the medical evidence, and stressed the long period, including accounts of illnesses in Paris and in India, as to which no medical evidence had been brought. There was, of course, the evidence of Dr. Stevens, relating to 1921–23. Dr. Stevens knew of the plaintiff's operation, and considered that she had ventral hernia, a common sequel to an abdominal operation in a stout subject; he never suggested that it was a case for an *x*-ray examination to see if there was some foreign body left in the abdomen. How came it that nobody who examined the patient in Bombay suggested an *x*-ray photograph? The plaintiff said that the lump was always there, about the size of a small coco-nut. Had any of these medical men suspected the presence of a foreign body would they not have taken steps to make sure? The plaintiff's statement was that the pain continued daily for eight years. Was that an exaggeration? Her expression that she felt as if she were eating rusty nails threw some light on the story, for who knew what it felt like to eat rusty nails? Was it not the sort of picture that would occur to a somewhat imaginative person, in all good faith, looking back after a period of time when she knew that a pair of forceps had actually been discovered? Finally came the operation by Dr. Prat in 1926. The jury might think that when all the surrounding circumstances were considered, together with the actual course of the operation of 1926, the forceps could not have been left in the body in 1920, and must have been the result of the operation five and a half years later at Nice. He then put to the jury the three questions already set out.

Verdict and Judgement.

The jury were absent only ten minutes. They answered in the negative the first question put—namely, "Is it established that the forceps was left in the plaintiff's body in the course of the operation performed by the defendant?"

The Lord Chief Justice thereupon entered judgement for the defendant, with costs.

Obituary.

SIR JOHN FAGAN, F.R.C.S.I.,

Consulting Surgeon, Belfast Royal Hospital and Belfast Hospital for Sick Children.

WE regret to report the death on March 17th of Sir John Fagan, Kt., F.R.C.S.I., at his residence, Craigeaverne, Portarlington, at the age of 86 years, after a long and distinguished career.

John Fagan, who was the eldest son of the late James Fagan of Lismacaffrey, Rathowen, co. Westmeath, was educated at St. Vincent's College, Castleknock, Dublin, and the Catholic University, Dublin; he afterwards studied in London, Paris, and Vienna. He obtained the diplomas L.R.C.S.I. in 1865, the L.R.C.P.I. and the L.M. in 1866, and the F.R.C.S.I. in 1874. He was surgeon to the Royal Hospital, Belfast, for twenty-five years, and was also surgeon to the Belfast Hospital for Sick Children—an institution which he was mainly instrumental in establishing. He acted as consulting surgeon to seven of the most important medical institutions in the North of Ireland, where he had an extensive consultation practice. In 1897 he was appointed Inspector of Reformatory and Industrial Schools. The methods of education and training then in vogue in these schools were completely changed by him, and the system now in operation was begun. The result of this method of training, which came before the public at the recent exhibitions by the Cork and Belfast schools, has called forth the highest encomiums from all interested in primary education. In 1906 Sir John Fagan was appointed medical member of the General Prison Board. He was a Justice of the Peace for co. Antrim and a deputy lieutenant for Queen's County. He received the honour of knighthood in 1910.

DR. WILLIAM HAMILTON ELLIOTT, who died on February 27th, at Castlerock, Londonderry, at the age of 82, received his medical education at the University of Dublin, where he graduated M.B. in 1870, and obtained the diplomas L.R.C.S.I. and L.M. two years later; he proceeded M.D. in 1875. For more than thirty years he was medical officer of the Londonderry (Waterside) and Glendermott districts, retiring in 1907. A colleague writes: One of the most courteous and gentlemanly of men, he was highly esteemed by everyone who came into contact with him, and his relations with his professional brethren were always of a most cordial and friendly nature. He resided latterly at Castlerock. His wife predeceased him several years ago.

DR. WILLIAM G. GORDON died on February 25th at Ballater, Aberdeenshire, where he had been in practice for the last six years. He graduated M.B., Ch.B. at Aberdeen University in 1905. At the beginning of the war, when he had been junior partner for a time in Malvern, Worcestershire, he was commissioned in the R.A.M.C., and served as captain in France and Flanders with that unit till 1917, when he was sent to England as the result of severe concussion and gas poisoning. From these injuries he never recovered. At the end of 1917 he resigned his position as surgeon in charge of Catterick Camp Hospital, and until he resumed practice in 1924 he was in continual bad health. Dr. Gordon, who was very popular in Ballater, is survived by a sister. He was a member of the British Medical Association.

DR. JOHN GREGORY WHITE, so long a leading practitioner in Bournemouth, died at Aspley Guise, Bedfordshire, on February 11th, at the advanced age of 92. He obtained the diploma M.R.C.S. in 1862, and graduated M.B.Ed. two years later. Dr. White settled at Bournemouth early in his career, and for a great many years conducted a very large practice when Bournemouth was developing rapidly and was mainly a select winter resort for invalids. His work was characterized by uniform kindliness and patience, combined with the practical skill in treatment which was the foundation of his reputation. He retired in 1907, and went to live at Aspley Guise, where he had inherited property, being succeeded in his practice by his son. Dr. Gregory White was a man of wide intellectual interests, and acquired a large circle of friends in Bedfordshire, among whom his death is greatly regretted. Twenty-three years having elapsed since Dr. White left Bournemouth, he was not widely known to the present generation; but there are still many among the senior members of the profession, and among the older residents of the locality, who cherish his memory with affection.—H. G. L.

The following well-known foreign medical men have recently died: Professor HERMANN PFEIFFER, professor of general and experimental pathology at Graz; Dr. HANS KNORR, extraordinary professor of orthopaedics and director of the Orthopaedic Institute at Heidelberg; Dr. PAUL SCHROETER, extraordinary professor of ophthalmology at Leipzig, aged 89; and Dr. PINÉGUINE, director of the Institute of Hygiene at Tashkent.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE Army Estimates were discussed by the House of Commons in Committee on March 24th, and on the following day the Estimates for the three Defence Services passed through report. (A report of the debate on the Army Estimates will be published in our next issue.) Debates were arranged for subsequent days on wireless telephony, relations with Russia, and the cotton industry.

The Parliamentary Medical Committee met on March 25th. All the medical members present decided to back a one-clause bill safeguarding the superannuation payments of medical and other Poor Law officers transferred to local authorities of which these officers are members. Dr. Vernon Davies was expected to introduce the bill. At the same sitting the Parliamentary Medical Committee was addressed by Dr. Crowden on medical science and industry, with particular reference to industrial medicine in Germany and America.

In the House of Lords, on March 25th, Earl Russell, for the Government, introduced the Workmen's Compensation (Silicosis) Bill. The bill was read a first time.

Mental Treatment Bill.

COMMITTEE STAGE CONTINUED.

Consideration of the Mental Treatment Bill was resumed in a Standing Committee of the House of Commons on March 20th, when Clause 7 was discussed. This clause enjoins every local authority to appoint a visiting committee of not less than seven members of which at least two shall be women. Mr. GREENWOOD moved that the appointments should be annually. He said this would make statutory what was now the practice under Section 170 of the Lunacy Act. The committee agreed to the amendment. Further amendments, moved by the Minister and accepted by the committee, made the committee set up by the clause into a visiting committee for every institution maintained under the bill by a local authority, and provided that every subcommittee appointed by the visiting committee should include at least one woman.

Clause 7 was then added to the bill.

The committee agreed to Clause 8, which gives power to appoint one medical officer to supervise two or more mental hospitals. Miss LAWRENCE explained that Birmingham had used this power, and desired to have one supervising authority over all its asylums. The clause would allow other authorities to follow Birmingham's example. The bill did not contemplate a combination of local authorities for lunacy purposes or mental deficiency purposes. If the committee desired to modify the provisions for the uniting of local authorities under the Lunacy Act that must be done later in the bill. The present powers of the authorities to combine were untouched by the bill.

Clause 9, dealing with expenses of local authorities, was postponed, and Clause 10, "application to London," was added to the bill, with slight amendments, suggested by Dr. Fremantle.

Clause 11 provides for the reorganization of the Board of Control. Miss LAWRENCE moved to precede it with the words:

"The Board of Control shall consist of the chairman (who shall be a paid commissioner) and not more than four other commissioners, all of whom shall be paid commissioners."

Miss Lawrence said the Royal Commission had a Board of four members—a lay chairman, a legal commissioner, a medical commissioner, and a woman commissioner. The Royal Commission thought the present Board, whose duties carried them over the country so frequently, was not a proper body for dealing with administration. It recommended a very small Board, which would sit continuously in London, with visiting commissioners, called assistant commissioners. They considered the possibility of appointing two additional medical commissioners, but on further consideration rejected that from their recommendations. On these technical matters of organization the opinion of the Royal Commission, given after hearing many witnesses, should not be overruled unless very important considerations could be urged against it.

Dr. FREMANTLE moved that there should be six commissioners besides the chairman, instead of four, as proposed by the Government. He said that, along with Dr. Vernon Davies, he thought that it might be desirable to appoint two medical commissioners, one having experience of institutional administration and the other special scientific qualifications. His present amendment, however, suggested that the two additional commissioners should be a layman and a laywoman. That was not a professional recommendation, but made from the experience of the present Board of Control. The advice of the laymen and laywomen who had served the Board of Control had often been invaluable. A lay commissioner took the same view as the House of Commons, or as the public who wrote to newspapers. These two commissioners should be unpaid. Of the other four commissioners, at least two should be medical, and one should be a medical woman. A woman doctor was required to find out things concerning women patients. He did not believe that the chairman and four commissioners proposed by the Government could do any but exceptional formal and superficial visiting.

Mr. RHYS DAVIES asked for an assurance that the work of the Board of Control could be brought under review by the House of Commons.

Miss LAWRENCE said that as a machine the present Board of Control was bad. There were eleven commissioners. The chairman sat in Whitehall. With him sat one member regularly on a rota, week by week. The other ten were visiting in the provinces. That machine could not function as the guiding body of a great service should function. She did not blame the commissioners, but the machine. The Government desired a machine comparable to the existing machinery of the Ministry of Health—the chief officials engaged mainly in Whitehall, but visiting wherever the case seemed to them to require them, and, assisting them, expert visiting commissioners. Then this department of public health would be on lines resembling the other main departments of public health. To run about the country all day long was not the business of chief officers. There were not to be any amateurs. The commissioners were to be paid, full-time men and women—a chairman and four commissioners. Two were to have legal or medical experience. The woman might be either lay, legal, or medical; so might the fourth commissioner be. The Minister would be a layman, the secretary would be a layman, and the chairman would be a layman.

Captain GUNSTON asked why the Minister should not use the services of those who had given voluntary service on the present Board of Control. Were they not to use the services of Sir Leolin Forestier-Walker and of Miss Pinsent? Additional people of that sort would give the country confidence in the Board.

Mr. GREENWOOD said the Government proposal was a deliberate attempt to get away from the existing Board of Control. That was not a board of company directors, but an administrative machine carrying executive powers. The bill proposed to give an administrative machine, but Dr. Fremantle's amendments would extend amateur bureaucracy with no contractual obligations. It was the Minister's business, in the last resort, to represent the lay mind, and the addition of other commissioners would not get rid of his responsibility as the spokesman of public opinion. He did not see that the liberty of the subject was safeguarded by adding persons who happened to be unpaid. On that the Minister was responsible to Parliament.

Dr. FREMANTLE said local government was all the more efficient because it was unpaid. Unpaid commissioners would give the Board of Control prestige in the public mind, and would help in the work of administration. If Mr. Greenwood would not reconsider the proposal it would be raised in and out of Parliament during the report stage and in the House of Lords.

Mr. GREENWOOD retorted that in the past the existence of unpaid commissioners had not stopped public scandals.

By 19 to 8 the committee decided to retain four as the number of commissioners, in addition to the chairman. On the motion of Miss LAWRENCE the committee inserted words providing that the members of the Board of Control should be called "senior commissioners."

The next subsection of Clause 11 ran:

"Of the members of the Board of Control other than the chairman one at least shall be a legal commissioner, one at least shall be a medical commissioner, and one at least shall be a woman."

Dr. FREMANTLE moved as an amendment that "two at least shall be medical commissioners and one shall be a woman registered medical practitioner." He said this amendment carried out the Royal Commission's report. Very few men could really combine scientific work and administration. The proposal that one of the commissioners should be a woman practitioner was strongly put forward by the Medical Women's Federation and bodies speaking for women doctors, and by some mental welfare societies as well. He did not think it was put forward by the medical superintendents.

Miss LAWRENCE said the Royal Commission had not recommended the appointment of two doctors. It had said that was an alternative course which might be considered. The Government proposed one more commissioner than the Royal Commission recommended, and thought that enough. It left the fourth commissioner unearmarked.

Dr. Fremantle's amendment was negatived, and the committee adjourned.

On March 25th discussion of Clause 11 was continued.

Dr. FREMANTLE moved that all commissioners, and not merely the senior commissioners, on the Board of Control should hold their commissions direct from the King.

Miss LAWRENCE said the amendment struck at the whole plan for reorganization of the Board of Control. The commissioners

in a junior position were to be administrative officers under the Board and servants of the Board.

Dr. VERNON DAVIES said Dr. Fremantle and he were concerned solely from the point of view of heads of mental hospitals, some of them alienists whose names were known throughout the world. Visiting commissioners should be able to meet them on an equal status.

Miss LAWRENCE said it was illogical to say that visiting commissioners of the Board of Control should be of higher status than other inspectors of the Ministry of Health.

Dr. MORRIS-JONES supported the amendment, but Mr. Greenwood repeated the objections urged by Miss Lawrence, and the amendment was rejected by 17 votes to 7.

Miss LAWRENCE moved to omit the provision that a person may be appointed a legal junior commissioner or a medical senior commissioner if he either is qualified to be, or is already, a legal or medical commissioner, as the case may be, and to substitute the words: "No person shall be appointed a legal senior commissioner unless either (1) he is a practising barrister or solicitor of at least five years' standing; or (2) he is a commissioner, other than a senior commissioner, and was, at the date when he was appointed such a commissioner, a practising barrister or solicitor of at least five years' standing; and no person shall be appointed a medical senior commissioner unless he is a registered medical practitioner of at least five years' standing."

Mr. HOPKIN moved, as a further amendment, to substitute "seven" for five years as the qualification for the legal commissioner. He said this was the qualifying term for a borough stipendiary.

Miss LAWRENCE cited statutory precedents for the period of five years, which, she said, had the full approval of the legal profession for the old Lunacy Commissioners and commissioners under the Mental Deficiency Act.

Mr. Hopkin's amendment was defeated by 15 to 9.

Dr. MORRIS-JONES, in moving a similar amendment, said a young man of 26 in medicine was regarded as quite inexperienced, particularly in this branch. It was quite wrong that under the bill he could be appointed a member of the Board of Control.

Miss LAWRENCE said the amendment was frivolous and unreasonable. Five years was the old-established practice. The amendment was rejected.

Dr. VERNON DAVIES moved that the medical qualification should be five years' experience in the practice of psychological medicine. He said that at present, unfortunately, the medical curriculum had very little mental work in it.

Miss LAWRENCE feared the amendment would narrow the field. Some superintendents of hospitals with vast experience would be ruled out by this amendment. No one would dream of appointing a surgeon as a commissioner under the bill.

Dr. VERNON DAVIES offered to alter the wording of his amendment, and pointed out that special qualifications were required under the venereal diseases scheme and other Acts.

Dr. FREMANTLE remarked that there were instances where lunacy commissioners had been appointed who had not the desirable special experience.

Miss LAWRENCE promised that the point would be further considered. Dr. VERNON DAVIES then withdrew his amendment, and the principal amendment concerning qualifications which Miss Lawrence had moved was inserted in the bill.

Miss LAWRENCE then moved to insert: "After the commencement of this Act (1) no further unpaid commissioners shall be appointed; (2) the paid commissioners, other than senior commissioners, shall be appointed, subject to the approval of the Minister, by the Board of Control, and any commissioners so appointed shall be officers of the Board."

Dr. FREMANTLE challenged the proposal to forbid the appointment of unpaid commissioners. Why, he asked, forfeit the services of such persons? The decision which the committee had taken at the previous sitting against unpaid aid only applied to the senior commissioners on the Board of Control.

Miss LAWRENCE said it was a new idea that in any civil service department there should be gifted amateurs not subject to control. She would consult Mr. Greenwood before the report stage to see whether the services of present unpaid commissioners could be continued. She was not now speaking of the "Big Five," but of the officers of the Board.

Dr. FREMANTLE demanded the deletion of the embargo on the further appointment of unpaid commissioners. He said that Miss Lawrence was diminishing the status of the visiting commissioners by calling them officials. Not so could they keep the confidence of the public.

Dr. Fremantle's amendment was negatived. In response to Miss Picton-Turbervilie, Miss Lawrence promised that the bill would be amended on report to ensure that the visiting commissioners should include women.

Discussion followed on the salaries of the commissioners, which the bill enjoins the Minister of Health to fix, with the consent of the Treasury.

Dr. FREMANTLE remarked that judges and members of the Board of Control were the only persons whose salaries were fixed by statute. Miss LAWRENCE said the Minister was fully aware of the necessity of giving adequate and attractive salaries for this important work. The words of the clause were as wide as possible. They were a blank cheque to the Ministry of Health and the Treasury.

Clauses 11, 12, and 13 were then added to the bill.

On Clause 14 ("Transfer of certain powers from the Minister of Health to the Board of Control") Mr. WOMERSLEY moved that any dissatisfied local authority should have power to appeal to the Minister against any action of the Board of Control affecting it. Mr. Womersley said legal authorities doubted whether the Board was in fact responsible to the Minister.

Miss LAWRENCE suggested that the ordinary parliamentary responsibility of the Minister would suffice as a safeguard. The Minister appointed the chairman of the Board, and had power to investigate the files. Local authorities could bring difficulties to his notice. Difficulties could be raised on the Estimates for the Ministry of Health.

Dr. VERNON DAVIES pointed out that one of the transferred powers was to register or refuse to register hospitals which local authorities desired to set up.

Mr. GREENWOOD said the bill was endeavouring to short-circuit procedure and get rid of reduplicated effort. The amendment would complicate it again.

Mr. RHYS DAVIES said that the schedule of the bill increased the powers of the Board of Control, and he feared that the Board would not come under greater public review than in the past.

Mr. GREENWOOD denied that the bill conferred new powers on the Board. The powers which the clause proposed to transfer were minor matters, and the object was to ensure that two sets of people had not to handle the same plans, specifications, and contracts. The committee had sought to bring the Board of Control into closer relations with the Minister, but the amendment would set one against the other.

Mr. Womersley's amendment was rejected by 15 to 9. Clause 14 was added to the bill, and the committee adjourned till March 27th.

The General Medical Council and Indian Medical Degrees.

Mr. BENN, in reply to Mr. Freeman on March 20th, said he was aware that the General Medical Council had withheld recognition of Indian medical degrees. He was in communication with the Government of India on the subject, and could not at the moment make a statement, though he was anxious that a settlement should be reached. On March 24th Mr. BENN, in reply to Dr. Fremantle and Major Pole, said that he was aware that the decision of the General Medical Council would prevent holders of Indian medical degrees gained during the period of non-recognition from practising in this country. The Government of India informed him, on January 6th, that it did not expect to be able to introduce legislation for the establishment of a general medical council in India during the present session of the Indian Legislative Assembly. He had not heard from them since on that point.

Dr. FREMANTLE asked if Mr. Benn was taking steps to ask the Government of India if they would agree provisionally to make arrangements so that Indians who were qualifying for practice during the next six or twelve months might not be finally, and for the rest of their lives, debarred from practice. Mr. BENN replied that those were naturally matters on which he was consulting the Government of India.

Dr. VERNON DAVIES asked if Mr. Benn was aware that the cause of the dispute was the alleged statement that the training of Indian medical men was not considered sufficient. Mr. BENN said that it would not be suitable, in reply to a supplementary question, to deal with the whole question of medical training.

Medical Services in the Colonies.

The House of Commons, in committee, on February 24th, discussed a supplementary vote of £4,250 for salaries and expenses of the Colonial Office. Dr. DRUMMOND SHIELS made a statement on the work of the Development Fund Committee. The fund was set up to provide grants or advances to the Governments of the colonies, protectorates, and mandated territories to aid agriculture and industry. Dr. Shiels said that it would be agreed that the first essential to any development and substantial improvement in a colony, and to its capacity to afford employment to its own people as well as to people in this country was that the people in the colonies should be in a proper physical condition. The Colonial Development Advisory Committee had given considerable attention to proposals which had been put before it for improving the health and conditions of the people in the colonies, and had already reported favourably on more than twenty schemes for that purpose from many parts of the Empire. In Tanganyika Territory money was being provided in connexion with tuberculosis, which was fairly prevalent there. It was hoped that as a result of that work, increased knowledge would be gained

as to how to tackle this serious scourge in Africa, and especially in East Africa. Three venereal disease clinics were being established in Swaziland. In Somaliland steps were being taken, with assistance from the fund, to establish a supply of pure water. There were other water and drainage schemes in connexion with Freetown, Sierra Leone, which had been a very malarious port, and drainage works had been put in hand in St. Lucia and Dominica. A medical training school was being established in Tanganyika for a wide development of native medical assistance, which was a very much needed development in that country. The total cost of the various projects was in the neighbourhood of £170,000, of which £112,000 was being met either by direct grants or loans from the Development Fund. The House would feel that money spent in improving the public health of the colonies was money well spent.

Mr. AMERY said he was glad that those responsible for the conduct of the Colonial Development Fund had regarded the question of health as being within its scope. Nothing in the long run could lead to greater development of trade with the various colonies than anything which strengthened the health and efficiency of the population. Therefore he welcomed the expenditure on medical research and sanitary work, and hoped that it would continue. He wished to draw the attention of Dr. Shiels, who had referred to the sanitary conditions in the West Indies, to the defective state of many of the hospitals there. His attention was repeatedly drawn to them when he was in office, but so long as they were necessarily dependent on the revenue of small, impoverished colonies it was a difficult matter to remedy. The Development Fund could step in in a case of that sort and give assistance in a way in which it was very difficult to get from the Treasury, and when they would not be justified in getting it from local resources in view of the existing depression in the West Indies. If Nyasaland were to be opened up by the new connexion with the sea, it would be well worth while at the same time to relax a little the extreme rigour which limited its medical and sanitary services. Again, anything that could be done to conserve the health of the very fine race of natives in Swaziland merited attention.

Sir E. HILTON YOUNG congratulated the Advisory Committee on taking so wide a view of their functions, particularly as regarded the assistance they were giving to improve health conditions in the tropical colonies, and the far-sighted and enlightened manner in which they were prepared to give the assistance of the best expert advice. That was a clear example of what one might call the unearned increment to be gained from a very small investment of public money. There were some regions on the East Coast of Africa where whole populations were depressed well below the level of vigorous production by an endemic disease called ankylostomiasis. A small investment of money would result in raising the population to a higher level. One could not have a more conspicuous instance of how State expenditure could occasionally do good.

Mr. ORMSBY-GORE asked why the authorities did not employ on the Advisory Committee representatives of modern science. Dr. Shiels had told them that grants were being made for medical research and tuberculosis work in East Africa. Those were very admirable proposals, but he (Mr. Ormsby-Gore) questioned how far the committee, in its personnel as they had heard it, was fully qualified to decide between projects which were of major and of minor importance. He would have felt happier if it were clearly understood that when any project dealing, say, with medical development, was under consideration, either the medical adviser to the Colonial Office, the Secretary of the Medical Research Council, or the head of the London School of Tropical Medicine would be asked to join the Advisory Committee to give the other members full advice as to what was being done elsewhere and the best line to take. Had the committee established any principle or rule for the distribution of money? Did it, when it came to giving money to establish a particular institution, such as the new medical school at Dar-es-Salaam—if it were at Dar-es-Salaam—give, as a principle, what was called "fifty-fifty"? Did it give half the money to establish the new institution on condition that the territory locally found the other half; or was it clear to Colonial Governments that, if they put forward schemes for the consideration of the committee, the committee was prepared to give more than half the money required? He particularly rejoiced that the committee was going into the question of health services, and he hoped that the twenty schemes before it in that connexion would only be the forerunners of many more, because he knew of hundreds of cases in which some of the major requirements before economical development leading to employment here, and ultimate trade and expansion, were being held up by the scourge of tropical diseases, which was being fought gallantly by a small band of men and women. It needed the efforts of research workers in this country and out there, and further support, financial and otherwise, to help people who knew nothing of modern science out of the terrible death rate and sickness which obtained in those countries into a knowledge of how to protect themselves against infection, and how to deal with infection when they had got it.

Dr. SHIELS, replying to the debate, said that in regard to the building of the Zambesi bridge, which was one of the biggest schemes which had been signed, the wording of the contract to ensure the proper housing, medical and sanitary services, and the feeding and proper accommodation of all the workers engaged was at present the subject of negotiation and consideration. He assured Mr. Ormsby-Gore that the Advisory Committee had had the feeling that it was not expert in all services, especially in the health services. On the committee's initiative, a medical advisory committee was now being formed, apart altogether from the Research Committee, and he thought that probably in time it would become one with the Research Committee. That medical committee was being formed in response to the wish of the Advisory Committee to have a broad set of principles on which they could base their medical recommendations. The preparations had gone forward, and the medical committee was on the eve of being set up. With regard to other expert advice also, the Advisory Committee fully realized the importance of the matter.

The vote was agreed to.

Cancer as a Notifiable Disease.

A scheme for the nominal remuneration of medical practitioners for each case of cancer they reported to the local authority was explained to a Local Legislation Committee of the House of Commons, on March 25th, by Dr. R. F. M. PICKEN, medical officer of health for Cardiff. The scheme was included in a bill promoted by the Cardiff Corporation. The corporation asked that it should be lawful "to pay to any medical practitioner for each notification of a case of cancer within the city made, signed, and transmitted by him to the medical officer, a fee of two shillings and sixpence if the case occurs in the private practice of such medical practitioner; and of one shilling if the case occurs in his practice of medical officer of any public body or institution."

Dr. Picken said the corporation had taken a great interest in the incidence of cancer, and had for some time a voluntary system so that some idea might be obtained as to the housing conditions and the mode of life of the different cases. They had done this assuming they had the power under the Act of 1925. This clause was desired to remove any doubts on their rights in this matter.

Captain R. R. HENDERSON, a member of the committee: I suppose this is done mainly for the purpose of collecting statistics?

Dr. PICKEN. It is done mainly with the object of getting into touch with the patients and ascertaining the circumstances of their lives. I am a member of a Departmental Committee of the Ministry of Health, which feels this is one of the ways to discover something about cancer. Dr. Picken explained that no visits would be paid to a patient without the invitation of the practitioner in charge.

Captain HENDERSON: What about the breach of faith between the patient and the medical adviser? Suppose I had the misfortune to develop cancer, it would be most repugnant to myself and my family if, without my permission, I found my medical adviser had given information to the local authority. This is a fee or bribe to a medical practitioner to divulge illnesses from which his patients are suffering.

Dr. PICKEN said this power, if granted, laid no duty on the patient or practitioner. The practitioner was able to look after his own professional position. He did not think the large majority of patients would object to this intimation. Cardiff had been carrying on propaganda regarding the necessity of early treatment for cancer, and that would tend to make the scheme more popular. The clause was the product of a committee appointed by the corporation, consisting of experts and practitioners, entirely medical men. While some diseases had to be notified by law cancer had not. It was not proposed to make cancer compulsorily notifiable, but to give some encouragement to a voluntary system.

After a long consultation the committee decided not to pass the clause.

The Shops (Hours of Employment) Bill.

This bill, which proposes a maximum working week of forty-eight hours, exclusive of meal-times, for shop assistants, was read a second time in the House of Commons, on March 21st, without a division.

Dr. ETHEL BENTHAM said she had been for many years a panel practitioner, and could say the health of shop assistants compared badly with that of people in almost any other trade. They aged early and broke down early compared even with painters and bus conductors. There was a wide-spread idea in the trade that no woman who married after a long period as a shop assistant could have children, and there was some truth in the statement. Shop seats were a fraud and a delusion. There was bad ventilation in shops, and extremely bad lighting in many, particularly in the packing departments.

Mr. WOMERSLEY remarked that boys who were weaklings were put into shops.

Mr. SHORT, Under Secretary for Home Affairs, said the bill affected almost 2,000,000 workers. The Government proposed to set up a representative committee to inquire into the question.

Medical Officers in the Navy and Air Force.

In reply to questions by Dr. Vernon Davies, on March 20th, the following figures regarding medical officers in the Navy and Air Force were given by Mr. AMMON and Mr. MONTAGUE respectively.

Year	Medical Officers in the Royal Navy.			Medical Officers in the Royal Air Force.			
	Total number of medical officers.	Number entered.	Number retired, etc.	Year beginning April 1st	Strength at beginning of year.	Number who joined during the year.	Number who left during the year.
1920	454	24	29	1921	119	32	18
1921	429	12	37	1922	133	45	13
1922	415	34	38	1923	165	29	15
1923	392	14	37	1924	179	27	19
1924	393	33	32	1925	187	22	21
1925	390	29	32	1926	188	21	25
1926	390	30	30	1927	184	29	20
1927	381	37	46	1928	193	17	20
1928	390	45	36	1929	190	17 (*a*)	20 (*a*)
1929	372	19	37				

(*a*) Figures to date (March 19th, 1930).

The total numbers of medical officers in the Navy were those arrived at by the end of each year. Temporary surgeons entered during the war had not been included, and none were now serving.

Small-pox and Vaccination Commission.—Replying to Mr. Freeman, on March 19th, Mr. GREENWOOD said two of the British members of the Small-pox and Vaccination Commission of the League of Nations were officers of the Ministry of Health, and one was an official of the Medical Research Council. He was advised that this Commission, which was appointed in 1925, had had only a nominal existence since August, 1928. The Epidemiological Reports for October and November, 1929, had not been issued under its authority, but under that of the Health Section of the Secretariat of the League of Nations. Consideration of the subject-matter of these reports would seem to fall to the Health Committee of the League.

Medical Members of County and County Borough Councils.—Mr. GREENWOOD said, in reply to Dr. Fremantle on March 20th, that he could not introduce a short indemnifying bill to exempt present sitting medical members of county and county borough councils from their disabilities as from April 1st next. Dr. FREMANTLE pointed out that in rural parts of the country, particularly in Huntingdon, all practising medical practitioners were rendered ineligible for service as members of county councils by the provisions of the Local Government Act, 1929, and that such councils as desired to have medical members were unable to obtain them. Mr. GREENWOOD said only eleven days remained before the new Act came into operation, and local authorities had already made their arrangements. Dr. FREMANTLE replied that a good deal could be done in that time.

The Tuberculosis Service and Mental Hospitals.—Mr. GREENWOOD said, on March 20th, in reply to Dr. Vernon Davies, that any proposals by local authorities for an active liaison between the tuberculosis service and the mental hospitals would receive sympathetic attention.

Disease Attributed to Milk.—Replying to Mr. Wilfrid Whiteley, on March 20th, Mr. GREENWOOD said complete particulars of the number of epidemics of infectious disease attributed to milk were not available. Such information as was available was in the reports of the chief medical officer. In the returns of the Registrar-General no separate figures were given for disease attributed to milk. Replying to Dr. Vernon Davies, Mr. Greenwood stated that imported milk was subject to examination for tubercle under the Imported Milk Regulations, but it was not the practice to examine imported milk products for this purpose. He could not affirm that all these imports were from tuberculin-tested animals.

Inoculation against Diphtheria.—Mr. GREENWOOD told Mr. Freeman, on March 20th, that he was aware that Cardiff City Council proposed to perform the so-called Schick test and inoculate 10,000 healthy children under 10 years of age against diphtheria. Council proposed to perform the so-called Schick test and inoculate period to decide whether they will accept the offer of possible immunization from the disease. One month's notice was not practicable. Permission in writing was obtained before each child was treated.

Silicosis.—Mr. TURNER assured Mr. Hopkin, on March 20th, that he had no reason to think that silicosis was increasing in the anthracite district of South Wales. He hoped preventive measures, such as the compulsory use of water or of a mechanical dust trap while using percussive drills in sandstone or other highly siliceous rock, would check it.

Notes in Brief.

Sir C. Trevelyan told Sir John Ganzoni, on March 20th, that it had been a practice of many years' standing for the chief medical officer of the Board of Education to communicate directly with his colleagues in the school medical service in regard to questions which required their professional opinion.

A petition, signed by 102,816 persons, was presented in the House of Commons, on March 20th, which prayed that experiments upon living animals might be prevented by law.

Universities and Colleges.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

COUNCIL ELECTION.

MONDAY, March 17th, was the last day on which the names of candidates were to be received for the election of Members of the Council, which will take place on July 3rd. Three Members of Council retire in rotation, and the same three, applying for re-election, are the only candidates. They are Mr. Robert Pugh Rowlands, O.B.E. (Guy's), Member 1895, Fellow 1901; Sir Percy Sargent, C.M.G., D.S.O. (St. Thomas's), Member 1898, Fellow 1900; and Mr. Victor Bonney (Middlesex), Member 1896, Fellow 1899.

The constitution of the Council since July, 1929, has been as follows:

President.—Lord Moynihan, K.C.M.G., C.B., Council (1) 1912 (substitute) (2) 1919, President 1926.

Vice-Presidents.—Mr. C. H. Fagge, C. (1) 1921, (2) 1929; and Mr. T. Warren Low, C.B., C. (1) 1915 (substitute), (2) 1917, (3) 1926 (substitute).

Other Members of the Council.—Sir H. J. Waring, C. (1) 1915, (2) 1921, (3) 1929; Sir John Lynn-Thomas, C. (1) [illegible] Ernest W. Hey Groves, C. (1) 1911, (2) 1926; (2) 1927; Mr. F. J. Steward, C. (1) 1920, (2) 19[illegible] Mr. J. Herbert Fisher, C. 1923; Mr. W. (substitute), (2) 1929; Sir Percy Sargent, C. 1923 (substitute); Mr. G. E. Gask, C. 1923; Mr. W. McAdam Eccles, C. (1) 1914, (2) 1924; Mr. Willred Trotter, C. 1924; Sir Charles Gordon-Watson, C. 1924; Mr. A. H. Burgess, C. 1925; Mr. Victor Bonney, C. 1926 (substitute); Mr. G. Grey Turner, C. 1926; Mr. Hugh Lett, C. 1927 (substitute); Mr. Leonard Gamgee, C. 1[illegible] (substitute); Mr. R. G. Hogarth, C. 1928; Mr. R. E. Kelly, C. 1[illegible] Mr. Graham Simpson, C. 1929 (substitute).

The medical schools are represented as follows:

London:	
St. Bartholomew's	4
Guy's	3
London	1
St. Mary's	1
Middlesex	2
St. Thomas's	3
University College	1
Total London	15
Provinces:	
Birmingham	1
Bristol	1
Cardiff	1
Leeds	1
Liverpool	1
Manchester	1
Newcastle	1
Nottingham	1
Sheffield	1
Total Provinces	9
Total Council	24

UNIVERSITY OF OXFORD.

J. W. PUGH, B.M., University College, has been elected to a Fellowship on the Foundation of Dr. John Radcliffe.

UNIVERSITY OF LEEDS.

DR. F. S. FOWWEATHER has been appointed to the readership in clinical chemical pathology which the council has decided to institute.

Mr. B. Keaffreson has been appointed tutor in obstetrics and gynaecology, and Mr. J. J. Thomson as demonstrator in pathology and bacteriology.

UNIVERSITY OF LIVERPOOL.

THE following candidates have been approved at the examinations indicated:

M.CH.ORTH.—M. G. Kini, D. W. L. Parker.

FINAL M.B., CH.B. (*1929 Regulations*).—*Part I:* A. M. Russell.

DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY.—*Part A:* A. J. Galustian, J. M. Grieve, G. W. Phillips, R. Y. Stones, T. M. Tso. *Part B:* A. J. Galustian, J. M. Grieve, M. J. McHugh, G. W. Phillips, R. Y. Stones, T. M. Tso.

D.P.H.—*Part I:* J. H. St. B. Crosby, H. R. Dugdale, H. P. Fowler, J. D. A. Gray, E. Hughes, H. S. Lawrence, J. S. Mather, R. S. R. Menon, J. W. Pickup, W. J. Pierce, J. H. Pottinger, Nora M. Wilson.

DIPLOMA IN TROPICAL MEDICINE.—G. R. Baxter, C. J. Boyd, J. A. K. Brown, A. Cathcart, T. T. M. Chen, Ariel R. S. Deacon, J. H. Dobbie, F. D. Gillespie, S. C. Grant, R. Green, M. L. Gulatee, R. A. Hestlop, B. N. Khanna, D. K. L. Lindsay, J. E. D. Mendis, M. R. Modr, G. B. Mohile, S. Narain, C. J. Poh, L. Sumitra, T. Wilson.

DIPLOMA IN TROPICAL HYGIENE.—R. A. Anderson, C. G. Booker, W. A. Bullen, R. Krishna, C. N. Latham, J. E. McMahon, A. Reid.

UNIVERSITY OF MANCHESTER.

A CONSULTATIVE committee on cancer research, consisting of representatives of the University and of the Manchester Committee on Cancer, including the Christie Hospital and the Radium Institute, has been established. The research work will be conducted in the University laboratories, and will be directed and controlled by the consultative committee. Dr. C. C. Twort, who has been working under the direction of the Manchester Committee on Cancer, has been appointed as director of the department of cancer research.

Mr. John Morley, M.B., Ch.M.Manch., F.R.C.S., has been pointed lecturer in *systematic surgery*.

The following candidates have been approved at the examination licated:

D.P.H.—*Part II*: A. Brown, J. S. Sewell.

UNIVERSITY OF SHEFFIELD.

R. GRAHAM SIMPSON, F.R.C.S., senior surgeon to the Sheffield yal Hospital, has been appointed Professor of Surgery at the iversity of Sheffield, in succession to Professor A. M. Connell, o retires from office on March 31st.

UNIVERSITY OF DUBLIN.

TRINITY COLLEGE.

IE following degrees were conferred on March 19th:

.D.—W. A. Taylor.

.CH.—G. FitzGibbon.

.D., B.CH., B.A.O.—E. F. St. J. Lyburn, F. M. Lyons, P. O'Shea, R. T. O'Shea, F. O. Pilkington, A. Rose, G. F. West, J. Willoughby.

ICENCE IN MEDICINE, SURGERY, AND OBSTETRICS.—R. E. Hemphill.

The following candidates have been approved at the examinations licated:

INAL M.B., PART I.—*Materia Medica and Therapeutics; Medical Jurisprudence and Hygiene; Pathology and Bacteriology*: *J. A. Wallace, L. FitzG. Burton, P. C. Cosgrove, J. B. Fleming, T. M. R. Ahern, N. H. Lesk, H. B. Wright, D. H. S. Boyd, W. A. Hill, H. J. Garland, J. G. Wilson, H. S. Mason, H. St. G. Smith.

PART II.—*Medicine*: W. J. Chapman, S. Levy, F. P. FitzGerald, P. L. O'Neill. *Surgery*: R. E. Hemphill, R. Bowesman, Annie E. Thompson. *Midwifery*: *S. H. Moore, *N. A. Kinnear, D. J. O'Ryan, T. A. Bouchier-Hayes, W. A. Robinson, C. H. Adderley, E. S. Duthie, C. H. Hutchinson, C. M. Elliott, C. Ryan, J. B. Scott, H. W. Dalton.

IPLOMA IN GYNAECOLOGY AND OBSTETRICS.—H. M. Fisher, E. T. Maskabadi, L. Yang, M. H. Rashwan.

* Passed on high marks.

UNIVERSITY OF BELFAST.

IE following candidates have been approved at the examination dicated:

M.B., B.CH., B.A.O.—J. H. Colhoun, Margaret M. Conway, C. E. Emerson, G. R. Garvin, S. B. Hughes, R. J. Huston, W. M'Bride, H. J. M'Elnane, G. F. Magurran, Nora Maybin, Phyllis E. Minford, H. F. Northey, T. H. W. Ritchie, C. V. Stevenson, J. B. Young, Mary C. Young.

SOCIETY OF APOTHECARIES OF LONDON.

IE following candidates have passed in the subjects indicated:

SURGERY.—J. Gordon, T. C. Keble, A. R. Madden, C. J. Nicol, S. E. Paterson, A. Scher, E. M. M. Shaw, C. Skinner, L. J. P. Soromenho.

MEDICINE.—T. Chandrasekharan, H. C. Halse, A. Hamid, E. G. Nair, R. Nandlal, M. S. Rappoport, T. Singh, G. K. Wilsker.

FORENSIC MEDICINE.—K. Graftdyk, H. C. Halse, A. Hamid, B. T. W. Harvey, L. Jacomb, M. S. Rappoport, T. Singh.

MIDWIFERY.—E. A. Freywirth, K. Graftdyk, J. M. L. Love, L. R. C. Rose, Grantley Smith, L. C. H. Sykes.

The diploma of the Society has been granted to Messrs. T. andrasekharan, J. Gordon, K. Graftdyk, H. C. Halse, A. Hamid, . T. W. Harvey, R. Nandlal, M. S. Rappoport, A. Scher, T. Singh, Skinner, L. J. P. Soromenho.

Medical News.

THE Durham County Council at its last meeting passed nanimously a resolution placing on record its sense of high ppreciation of the great public work rendered by Dr. Eustace ill during his service as county medical officer of health, nd expressing the hope that he will have many happy years i his retirement.

THE next evening reception at the Royal Society of Medicine ill be held at 1, Wimpole Street, W.1, on Monday, March 31st, t 8.30 o'clock, when members and their friends will be received i the library by the president and Lady Dawson of Penn. t 9 p.m. the film, "The Heir to Jenghiz Khan," will be hown. Admission will be by ticket only, for which application hould be addressed to the Secretary.

AT a meeting of the Royal Sanitary Institute to be held n the Council Chamber, Plymouth, on April 4th and 5th, iscussions will take place on the reconstruction and re-onditioning of working-class houses, on the purity of milk upply in the West of England, and on port sanitation; the hair will be taken at 6 p.m. On April 11th, at a meeting n the Town Hall, Chatham, at 4.30 p.m., Dr. W. A. Muir, M.O.H. Gillingham, will open a discussion on the adminis-rative control of infectious disease.

THE meeting of the Maternity and Child Welfare Group f the Society of Medical Officers of Health arranged for o-day (Friday, March 28th) has been postponed.

THE Fellowship of Medicine announces that from March 31st o April 5th a special post-graduate course in gastro-enterology ill be held at the Prince of Wales's Hospital, Tottenham, ccupying the whole of each day from 10.30 a.m. to 5.30 p.m. he mornings will be spent in clinical lectures and demon-trations, the afternoons in attending the general hospital ork and clinics, finishing with an hour's special lecture. o further special courses will begin until the end of April, but there are two weeks still remaining of the course in neurology at the West End Hospital for Nervous Diseases and of the course in medicine, surgery, and gynaecology at the Royal Waterloo Hospital, for which tickets at proportionate fees can be obtained. The subjects of the courses in April are: diseases of the throat, nose, and ear at the Central London Throat, Nose and Ear Hospital, from April 28th to May 24th; diseases of infants at the Infants Hospital from April 28th to May 10th; and psychological medicine at the Maudsley Hospital from April 28th to May 30th. Detailed syllabuses of all these courses may be obtained on application to the secretary of the Fellowship, 1, Wimpole Street, W.1.

AN appeal is being made on behalf of a memorial fund to be devoted to the development and extension of the children's department of Guy's Hospital, with which Sir Alfred Fripp was closely associated as a student, surgeon, and governor for over forty years. The fund will be used either for endowing cots, building a new ward, or any like purpose that the governors of Guy's Hospital and Sir Alfred's relatives may decide. Donations may be sent to the honorary secretary, the Sir Alfred Fripp Memorial Fund, 145, Cheapside, London, E.C.2.

AN international league for combating trachoma was founded at the thirteenth International Ophthalmological Congress. The president of the league, Professor Emile de Grósz, and the secretary, Dr. F. Wibaut, were entrusted with the formation of a committee composed of delegates from the various national ophthalmological societies. Up to the end of February forty-nine delegates had been nominated from twenty-six countries. The next meeting of the league will be held on July 26th in Geneva, and the programme will be issued at the close of May.

THE forty-fifth congress of the Balneologischen Gesellschaft will be held at Bad Elster, in Saxony, from April 9th to 13th. Particulars may be obtained from the general secretary, Dr. Max Hirsch, Berlin W.35, Steglitzer Strasse 66.

PROFESSOR LOEPER of Paris has been re-elected president of the Latin Medical Press, with Dr. Albert Delcourt of Brussels as vice-president, Dr. René Beckers as general secretary, and Dr. Jacques Rosenthal as treasurer.

THE twenty-first volume of the *Collected Researches* of the National Physical Laboratory, containing papers on electricity and wireless, has just been published by the Stationery Office (price 22s. 6d. net).

THE city of Vienna has decided to erect a monument to the late Professor Clemens Pirquet; and a street in Hamburg has recently been named after the late dermatologist, Professor Paul Unna.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the *Financial Secretary and Business Manager*.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963,* and *9964* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh)

QUERIES AND ANSWERS.

VISION OF MOTOR DRIVERS.

"SAFETY FIRST" would be glad to know if a man of 66 years of age with perception of light only in the right eye, but with very good vision in the left eye, will be debarred from driving a motor car by the Road Traffic Bill now before Parliament. He has driven a motor car for some years with this disability, and has never had an accident. Apart from the legal aspect, should he be advised to continue as before, or to give up driving a motor car?

TREATMENT OF ASTHMA.

DR. M. R. SONI (Manchester) writes: I would advise "M. E. P." (March 22nd, p. 575) to try hypnotism in the case of his patient who is suffering from bronchial asthma. If asthma cannot be relieved by adrenaline, and if an injection of morphine proves useless, then, in my experience, there is a strong hysterical element in the case, and hypnotism is likely to do good provided the patient can be hypnotized.

QUININE IN NORMAL LABOUR.

DR. H. J. HILDIGE (Pinner) writes: In answer to Dr. Ritchie's letter in the *Journal* of March 1st (p. 414) the following case came under my care this week. The confinement of a multipara, aged about 40, was due on March 4th. Since there was no sign of labour starting on March 20th it was decided to adopt the quinine routine. Accordingly at 11 a.m. half an ounce of castor oil was given, and an enema at 2 p.m. gave a good result. A hot bath immediately followed, a binder was applied, and 10-grain doses of quinine bi-hydrochloride were administered at 3 p.m., 6 p.m., and 9 p.m. Slight pains were felt at 10 p.m.; the membranes ruptured at 10.30 p.m., and the child was born at 2 a.m. in a condition of white asphyxia. After the mouth and air passages had been cleared out and the child had been immersed in a hot bath, it was soon in "full cry." I have used this treatment on two former occasions, I am glad to say without any untoward effects on the baby.

INCOME TAX.

Expense of Medical Reprints.

"X. X." who is a consulting surgeon, paid a sum of £25 out of his own pocket in connexion with the publishing and circulating among his medical acquaintances of reprints of a paper which he had read before a medical society. The inspector of taxes refused to admit the claim to deduct that expenditure for income tax purposes, but the Special Commissioners on appeal upheld the claim. The inspector has given notice that he is taking the case to the High Court. The publication of the paper would bring "X. X.'s" methods and name before practitioners in the neighbourhood, and, as a fact, his income did subsequently increase.

*** The legal position is not free from doubt. The essence of the objection taken (or which would be taken in the High Court) would be that the expenditure was of a "capital" nature and should therefore be disallowed for income tax purposes. (The objection that it represented advertisement, which a medical man is not allowed by the rules of his profession to do, seems to us too superficial to succeed, and apparently did not make much impression on the Special Commissioners who heard the appeal). Capital expenditure has often been a vexed question, but a fairly recent judgement by Lord Sands in the Court of Session—Commissioners of Inland Revenue *and the Granite City* Steamship Company, Ltd.—states the essential principle clearly. He said: "Broadly speaking, outlay is deemed to be capital when it is made for the initiation of a business, for extension of a business, or for a substantial replacement of equipment." Now "X. X." is *to some extent in a dilemma*: Either the paper in question was prepared and published with scientific rather than financial aims, or, if the latter object were in view, then to that extent the aim seems to have been "the extension of" his practice, and the expenditure falls within the "capital" prohibition. *On the other hand*, it is a commonplace that advertisement, in one form or another, plays an increasing part in modern life, and it is difficult to think that the principle invoked and so *stringently* applied in "X. X.'s" case is consistently so applied in dealing with ordinary business—in fact, the point made by the inspector, that advertisement must be ruled out in assessing medical profits in particular, lends colour to that suggestion. The precise stage which the appeal has reached is not yet clear. It is to be presumed that the decision as to whether *the case* will actually be taken to the Court of Session *does not rest with* the individual inspector, but with headquarters at Somerset *House or Edinburgh*. The inspector may possibly be referring merely to the preliminary steps necessary if the case is to be taken further. In those circumstances, and in view of the small amount of tax involved, it might be *advisable at this stage* for "X. X.," or his accountant, to take the matter up direct with headquarters with a view to ascertaining whether the case will really be taken to the Court, and, if so, whether, *as a new* principle—that is, that a medical man is in a special position in this matter—is alleged, the Revenue authorities will undertake to bear the legal costs. A favourable assurance *on the latter* point is unlikely, but some definite result might be arrived at as *the outcome* of taking the matter up with headquarters. *The* point presumably has no very wide application in the profession, and failing a settlement by consent, "X. X." might find it advisable to withdraw his claim rather *than face* the risk of substantial expense.

Replacement of Car.

"KLAXON" bought a car in 1926 for £245, and has received depreciation allowances aggregating to £81 for the period to March 31st, 1929. He *has now* replaced it by a new car costing £450, less £50 allowed in respect of the old car. What allowance should be claimed?

*** (1) Obsolescence allowance in respect of the unexhausted loss on the old car—that is, the amount of the written down value as at March 31st, 1929 (£245–£81=), £154, less £40 *received for it*, net allowance £114, to be treated as an expense *of the practice of the year* to March 31st, 1930. (2) Depreciation allowance for 1930-31, in respect of the new car, £450 at 15 per cent.=£67 10s.

Special Remuneration—Year for which Chargeable.

"E. W." sold his practice on June 30th, 1926, for cash. As a personal matter," having "nothing to do with the sale of the practice," he arranged to give an introduction for six months for which he was to receive £x "in April, 1927." The cheque was given to him on April 8th, 1927. For super-tax purposes that amount is being treated as income for the year ending April 5th, 1927. Is that correct?

*** Yes; the amount is chargeable for income tax purposes for 1926-27 because it was earned in that year and is a practice that year. Possibly "E. W." may have been somewhat misled by the rule applying to other kinds of income, such as dividends and interest, which are chargeable, not according to the period *of accrual*, but according to the date at which such income is receivable.

LETTERS, NOTES, ETC.

ILLUMINATION OF OPERATING THEATRES.

IN a recent issue of *E. T. Z.* (Berlin) H. Hartinges deals at length with the lighting of operating theatres. He points out that the requirements differ considerably from those of ordinary rooms, and that, as a result of experience, the method generally adopted nowadays is that of localized lighting of the operating field without any parasite reflections or shadows. Arc lamps were formerly used for the most part, but these are gradually being displaced by incandescent lamps. Hartinges describes one arrangement which consists of 100-watt lamps, with a reflector consisting of a glass parabolic back with a spherical nickel-plated metal extension. By means of five of such adjustable lamps a powerful light, without shadows, can be thrown on to the operating table. He next describes the Schubert arrangement by which the light of a projector with parabolic silvered glass mirrors is centred on the table by four mirrors. Some shadow difficulties have, however, to be contended with in this method. Descriptions are also given of the Burbier-Benard-Turrettini "Scialytique" and the German "Pantophos" lamp made by Zeiss of Jena. In the former an incandescent lamp of 150-c.p. capacity is located in the centre of a system of thirty-two mirrors, mounted on a cone. While the author considers that the arrangement is free from shadows, the fact that it is suspended by a chain may give rise to oscillations affecting the visibility; moreover, it has a somewhat high heating effect which inconveniences the surgeon and his assistants. In the Pantophos arrangement an opal lamp of 100 or 200 watts is used, this being centred in a deep silvered-glass reflector, practically ellipsoidal in shape. An auxiliary reflector, in the form of a spherical ring, is fixed in front of the lamp, which directs the rays of light back to the main reflector, the result being a powerful light without any shadow-casting.

HOLIDAY ADDRESSES.

THE *London Teachers Association Holiday Register of Addresses* 1930 contains a revised list of apartments, boarding houses, and hotels at home and abroad personally recommended by members of the association within the last four years or re-recommended by them within that period. Particulars are given of *number* of rooms available, distance from sea or station, principal rates, systems, and, in many cases, brief descriptions of *climate*, bathing, and other facilities. There are 234 pages altogether. The *Register* makes little provision, however, for the teacher who wishes to study the educational experiments in Central Europe. There are no references to Prague or to Budapest, and a single hotel address in Vienna seems insufficient when compared with 153 pages of English addresses. Copies may be obtained from the office of the association, 11, Pilgrim Street, E.C.4, at the price of 1s.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at *hospitals* will be found at pages 48, 49, 50, 51, 55, 56, and 57 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 99.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

95. Herpes Zoster and Facial Paralysis.

VIGANONI (*Arch. Ital. di Otol., Rinol. e Laringol.*, January, 30, p. 14), who records an illustrative case, states that, cording to Ramsay Hunt, the action of the virus of herpes ster on the geniculate ganglion of the facial nerve may give e to a herpetic eruption on the external ear; the lesions ay spread to the facial and auditory nerves, causing two ner morbid conditions—namely, paralysis of the facial rve and disturbance of hearing. The triad so formed has en described under the name of "zoster syndrome of the niculate ganglion," or "complete herpes zoster oticus." is complete form may sometimes be replaced by incomete forms, or by associated forms in which neighbouring nglia are affected as well as the geniculate ganglion. The complete forms include herpes zoster of the external ear, rpes zoster with facial paralysis, herpes zoster with disrbance of hearing, and facial paralysis without herpes, but companied by pain only. Viganoni's patient was a woman, ed 42, in whom herpes zoster was associated with facial ralysis without any involvement of the auditory nerve. ie remarkable feature of the case was the appearance of cial paralysis a day before the herpes developed, whereas is more frequent for the paralysis to occur four or five days er the eruption of herpes. Another striking feature in ganoni's case was that after remaining unchanged for six nths in spite of electric treatment, rapid improvement ddenly began, and was followed by complete disappearance the paralysis in twenty-five days.

293. Epidemic Cerebro spinal Meningitis.

E. BONAR (*California and Western Medicine*, November, 29, p. 316) records his observations on 71 cases of epidemic rebro-spinal meningitis treated at the Salt Lake General ospital during 1927, 1928, and the first three months of 1929; per cent. of the cases were in the first decennium, 38 per nt. between 10 and 20, 11 per cent. between 20 and 30, and 5 over 30. Of the total of 44 deaths, 13 occurred within venty-four hours of admission. Omission of such deaths elded a corrected mortality of 23.5 per cent. The average ay of patients who recovered was eighteen days; 30 per nt. of the recovered patients showed one or more complicaons. Two were totally deaf on discharge, while four had paired hearing in one or both ears. Unilateral panphthalmia occurred in two patients, defective vision in one, id strabismus in one. Two patients had cervical adenitis, ne had nearly total paralysis of the right arm, and one itis and arthritis. The average dose of serum was 30 c.cm., hich was repeated according to the severity of the case at ght- to twelve-hour intervals. For the severe cases three jections were given during the first twenty-four hours, welve for the next two or possibly three days, and one daily ntil there was a definite change for the better. The average umber of punctures was eight. Intravenous administration f serum was used only for the severe septicaemic forms. isterna puncture was reserved for those with spinal block r patients desperately ill who showed signs of respiratory avolvement. No ventricular punctures were made.

297. The Heart and Circulation in Pulmonary Emphysema.

I. JAGIC (*Wien. klin. Woch.*, January 2nd, 1930, p. 18) directs ttention to the importance of hepatic congestion as one of he earliest symptoms of cardiac decompensation in pulonary emphysema. The liver is enlarged and tender on ressure and percussion. The patient complains of pain in he hepatic region, frequently attributed to the stomach. Acute hepatic congestion, due to sudden cardiac decompenation, commences frequently with intense pain, simulating holelithiasis, gastric or duodenal ulcer, or even appendicitis. Coincidently, cyanosis occurs, and, not infrequently, a subteric tint is seen in the skin. In the lungs, symptoms of ypostatic catarrh may be found in both lower lobes, and in very many cases of emphysema bronchial asthma (chronic spastic bronchitis) supervenes. Whatever the cause of decompensation, it is important that cardio-tonic treatment should be begun immediately. Caffeine is particularly useful; it acts as a cardiac tonic and relieves the bronchial spasm. Squill is also a most useful remedy. A combination of several drugs is often valuable. Jagic recommends a mixture containing caffeine-sodium benzoate, atropine sulphate, and tincture of lobelia. Digitalis should be reserved for the more severe forms of cardiac failure, in which hepatic congestion is often intense, and assists in the production of oedema and oliguria. In many cases the congestion disappears rapidly after injections of salyrgan, showing that the enlargement of the liver is not due only to circulatory congestion, but also to retention of water. Extensive oedema and oliguria are relieved by "fasting days," combined with "potato cures" and vegetable purées. In many cases of emphysema cardiac failure is progressive and calls for energetic cardio-tonic treatment. The ages of the majority of these patients range from 40 to 50; in addition to emphysema, they have severe cyanosis and other serious symptoms of cardiac failure. Pulmonary arterio-sclerosis is often present, and may render cardio-tonic treatment useless. Breathing exercises, inhalation therapy, hydrotherapy, and carbon dioxide inhalations in pneumatic chambers are useful in those cases in which severe symptoms of cardiac failure are absent.

293. Acute Diffuse Myelitis following Neo-arsphenamine Injections.

IN 1922 the Medical Research Council reported that the most important ill effects which might follow the administration of salvarsan and end fatally were encephalitis haemorrhagica, acute yellow atrophy of the liver, and exfoliative dermatitis and its complications. To these E. SCOTT and H. L. REINHART (*Journ. Lab. and Clin. Med.*, January, 1930, p. 405) add acute myelitis, and report a case which terminated fatally within two weeks of an intravenous injection of 0.9 gram of neoarsphenamine; a similar amount had been injected five days previously. Loss of sensation followed by flaccid paralysis developed from the legs upwards. The post-mortem examination revealed extensive degeneration of the blood vessels, diffuse degeneration of the white and grey substance of the cord from the lumbar to the cervical region, and complete destruction of the ganglion cells of the anterior horns, without any signs of exudation or glial proliferation. The only evidence of syphilis was provided by one positive reaction to a Wassermann test performed before treatment commenced, and a positive cerebro-spinal fluid reaction obtained after the acute cerebro-spinal symptoms had developed. The authors, therefore, eliminate syphilis as a cause, and classify the case as one of those rare fatalities which occasionally follow the injection of arsenobenzol preparations. In addition to the characteristic picture of arsenical poisoning in the cord, other evidence of this poisoning was shown by the destruction of the endothelium of the blood vessels, oedema of the brain and lungs, and a nephrosis. The authors consider that such cases should be classed with haemorrhagic encephalitis as one of the potential causes of death following the intravenous administration of arsphenamine.

Surgery.

299. Spondylitis Deformans.

I. W. NACHLAS (*Arch. of Surg.*, January, 1930, p. 159) defines spondylitis deformans as a chronic progressive stiffening of the spine grafted on a slowly increasing flexion deformity which leaves the back rigid in a stooping position; it frequently extends to involve the costo-vertebral joints, producing a rigid thoracic cage, and sometimes involving the hips and shoulder-joints. It usually occurs in young men in the post-adolescent period, and a case is described in which the patient was so bent that he faced the ground. The wall of his chest was motionless, leaving respiration entirely abdominal, and when lying on his back his fixed spine was still semicircular. Necropsies have shown the spinal rigidity to be due to an almost solid layer of bone surrounding the bodies of the vertebrae. Treatment should consist of the localization of any infectious process, with operative correction when possible. Out of 56 cases under review, foci of infection were found in 45, 26 occurring in the nose and throat, 15 in the mouth, and 23 in the genito-urinary regions; gastro-intestinal disturbances were noted in 4 cases. In each instance the necessary focal treatment was given, but it was found that in no case did lasting improvement follow the removal of foci of infection. Orthopaedic treatment, which consisted of an attempt to straighten the patient by making him lie on his back on a fracture bed or on a Goldthwaite frame, met with some success, one patient gaining 5 inches in height after resting for two hours a day on his back for five months. In some instances head and pelvic traction was necessary, opiates being given during the

stretching periods. When the maximum degree of straightening possible had been obtained a plaster-of-Paris support was made, and the patient was thus able to walk about and in some cases to return to work. As soon as the disease had run its course, which was usually when fusion had occurred, the support could be removed without fear of recurrent deformity. From the results obtained it was concluded that although gross obvious foci of infection should be removed for general hygienic purposes, yet radical operative procedure does not abolish the causative factor of the spondylitis, and corrective orthopaedic procedures offer the only hope of actual improvement.

300. Disinfection with Iodine and Tannin Spirit.

A. A. OZERELIEV (*Zentralbl. f. Chir.*, January 18th, 1930, p. 136) compared the merits of tincture of iodine and of 5 per cent. tannin spirit as disinfectants in 70 cases; in 35 the field of operation was treated with tincture of iodine, and in the other 35 with tannin spirit. In the former group 21, or 60 per cent., of the cultures taken from the field of operation (appendicitis or hernia) proved completely sterile, and in the latter 17, or 42.8 per cent., were sterile. At first glance the results appear to be in favour of tincture of iodine, but it must be taken into consideration that the 1 per cent. solution of sodium hyposulphite used for neutralization also had an inhibitory action on the growth of bacteria, so that the disinfectant action of the two fluids was about the same. Clinical observation, however, was decidedly in favour of tannin spirit. Of those cases in which tincture of iodine was used, 4 developed erythema of the skin, 1 a burn with vesicle formation, and 2 suppuration of the wound; whereas in the cases treated with tannin spirit uneventful healing of the wound ensued without the slightest sign of irritation. Spots left on the linen by tannin spirit can be removed with hot water and soap if so treated within forty-eight hours.

301. Treatment of Trigeminal Neuralgia.

M. DOGLIOTTI (*Med. Journ. and Record*, February 5th, 1930, p. 141) advocates the injection of alcohol into the Gasserian ganglion for the treatment of trigeminal neuralgia. He prefers this method to resection of the nerve root, since it is a much simpler procedure, the results are as good and it is followed less frequently by serious complications. After making the injection a light general anaesthetic is given. A needle of the type used for spinal anaesthesia is introduced about 2 to 2.5 cm. laterally and 1 cm. below the angle of the mouth. It is directed upwards and slightly backwards, so that it passes through the interpalatine fossa and ends at the lower surface of the lateral wing of the sphenoid. It is advisable at this stage, before attempting to enter the foramen ovale, to take an *x*-ray picture of the base of the skull, so as to ascertain the exact position of the needle. This is then passed through the foramen, care being taken not to press the needle farther than 1 to 1½ cm., when it will be in the middle of the Gasserian ganglion. If no blood or cerebro-spinal fluid escapes on removing the stylet, the needle is safely in the ganglion. The injection must be made very slowly (eight to ten minutes) to admit the gradual diffusion of the alcohol into the ganglion and to avoid a sudden invasion in other directions; only 1 to 2 c.cm. of alcohol should be injected. After the injection the needle is withdrawn for 1 cm. and washed with sterile water or saline in order to prevent traces of alcohol escaping and causing transitory motor disturbances of branches of the seventh nerve. The patient awakes with a nearly complete anaesthesia of the trigeminal nerve, and in two hours he is allowed to get up and go home. For five or six days it is necessary to protect the eye with a wet aseptic pack so as to avoid conjunctivitis and keratitis. If less than 2 c.cm. of alcohol is injected only two-thirds to three-fourths of the cells are destroyed; the remaining cells, after an initial paralysis, renew their function sufficiently to maintain the minimum degree of sensibility necessary for the protection of the eye and neurotropism. This method is particularly indicated in those patients who, owing to age or to the existence of arterio-sclerosis, nephritis, or diabetes, could not stand a severe operation.

302. Chronic Non-calculous Cholecystitis.

L. BACARANI (*Arch. di Med.*, December 14th, 1929, p. 1683) refers to all collected by Smithies, which showed that out of 1,000 cases operated upon 47 per cent. were not due to gall-stones. The symptoms of chronic cholecystitis are not unlike those of gall-stones; it is often associated with some septic focus in the tonsils, appendix, or teeth. The author suggests that the reason why such people develop symptoms of cholecystitis is because of some anatomical irregularity in the gall-bladder apparatus. Intervals of good health are quite common in these cases, and there may be typical attacks of pericholecystitis is present, wasting and a toxaemic appearance are common, suggesting malignant disease. Operation in this class of case gives excellent results. In cases of simple cholecystitis without adhesions the pain shifts with movement of the gall-bladder. Other cystitic symptoms may be due to stasis alone consequent on mechanical causes.

303. Paratyphoid C Cholecystitis.

C. ROMITI (*Trans. Roy. Soc. Trop. Med. and Hyg.*, November 1929, p. 25) records a case of cholecystitis in a male native of St. Lucia, aged 19, in which *B. paratyphosus* C was the causative agent of the disease. The case was remarkable for its acute course, the extreme mildness of the symptoms in spite of suppurative pericholecystitis and circumscribed peritonitis, spontaneous elimination of the necrotic gall-bladder into the cystic duct, the absence of gall-stones, and the very favourable post-operative course without formation of gall-stones. The patient also had a gluteal abscess following injections of quinine, in which *B. paratyphosus* C was found.

Therapeutics.

304. The Arsenobenzenes in Syphilis.

M. A. GALLIOT (*Paris Méd.*, January 25th, 1930, p. 83) contrasts the over-optimistic attitude, common at the commencement of the use of arsenobenzene preparations for syphilis, with the present-day tendency to pessimism. Too many authorities are inclined to regard syphilis as a chronic malady requiring long medication, whereas, in Galliot's opinion, it is an acute disease at the outset, and cure may be looked for if sufficient treatment is given at the right time. He adds that time is the only criterion of success, and it cannot be asserted, even yet, that absolute cure has been effected by arsenobenzene preparations, but a succession of cases treated before the war allows a sufficient lapse of time to give a probable indication of the results. Galliot has been able to collect nine such cases treated in the primary or secondary stage between 1911 and 1914 with the old salvarsan in two series of injections, and without treatment since. He finds that in all but two the Wassermann reaction has remained negative, and there have been no clinical signs of recurrence. Of the two resistant cases, in one it was noted that the Wassermann reaction did not become negative till after the second series of injections, a point which the author regards as indicative of either special virulence of the treponema or suitability of the patients' tissues for its multiplication. The amount of salvarsan given in the nine cases ranged from 9 to 5 grams. In two cases a lumbar puncture was performed, and the cerebro-spinal fluid was found to be negative, as well as the serum. Galliot considers that time and re-examination after a prolonged period without treatment are the only means by which the value of present-day preparations can be assessed; he is convinced that syphilis is curable if treated in the acute stage with adequate vigour and for a sufficiently long period.

305. The Therapeutics of Nitrogen Oxide Compounds of Morphine.

M. POLONOVSKI, P. NAYRAC, and J. TIPREZ (*Bull. de l'Acad. de Méd.*, February 4th, 1930, p. 174), who have prepared nitrogen oxide derivatives of morphine corresponding with those they had previously obtained in the case of scopine, amine, state that these compounds, which they term "pseudo-alkaloids," possess in a very general way a physiological action similar to that of the bases from which they are derived, but without having a very great toxicity. The morphine preparation ($C_{17}H_{19}O_4N$), which they term genomorphine, occurs in white crystals which are slightly soluble in water, the solution being neutral to litmus and alkaline to methyl orange; of its salts, the quininate, owing to its great solubility in water, is particularly indicated for therapeutic use. Genomorphine produces the well-known physiological effects of the opiate bases, allaying pain and giving rise to physical lassitude with a sense of well-being. Owing to its diminished toxicity it can be used in larger doses than morphine, 4 cg. of the former producing the sedative effect usually obtained by 1 cg. of the latter. Four cases are cited by the present authors to illustrate its beneficial effects; in two of these there were violent painful crises in jejunal peptic ulceration, chronic cholecystitis respectively, and in both relief was obtained in about half an hour. The other two were cases of post-operative pain. The effects of genomorphine are stated to be equally well marked in mental conditions, such as melancholia and hallucinatory delirium. In contrast with morphine this drug does not give rise to addiction, and the authors have found it useful in the treatment of morphine maniacs. Genomorphine is said to be indicated in those cases in which the toxicity of morphine and the fear of causing addiction have hitherto restricted its use.

306. Intramuscular Ether Injections in Whooping-cough.

LEVY and A. S. FINKELSTEIN (*Arch. of Ped.*, December, 3, p. 762) record their observations on a series of 104 cases whooping-cough treated by intragluteal injections of ether oil; 61 of the patients were males and 43 females, 15 were cured and 89 were white. The ages ranged from 2 months 10 years. To 94 patients was given a dose of 1 c.cm. of ether and 1 c.cm. of oil; 10 had 2 c.cm. of ether and 2 c.cm. oil. Of the 104 children, 75 were improved, 5 showed slight improvement, and 23 derived no benefit from the treatment. No patient, however, developed an abscess or necrosis in the area of injection. The skin was first cleansed with per cent. tincture of iodine; this was washed off with per cent. alcohol, and the injection was then given. The number of injections ranged from four to eleven, each buttock being used alternately.

307. Convalescent Serum Therapy.

H. KELLOGG (*Journ. Amer. Med. Assoc.*, December 21st, 1929, 1827) advocates the extended use of convalescent serum therapy in the pre-paralytic stage of poliomyelitis. Since the serum must reach the cerebro-spinal fluid for curative purposes, the intrathecal route would seem to be the most effective, though its injection into the blood, intramuscularly or intravenously, appears to be as effective except for some delay of the antibodies in reaching the spinal fluid. For prophylactic purposes during an epidemic, experiments on monkeys support the value of its use subcutaneously or intramuscularly, though the difficulty in obtaining serum may limit its application. In studying the value of convalescent serum the chief aim is to obtain a series of treated cases as a real control against a similar series of untreated cases as regards time, the stage of the epidemic, and the clinical type; full details should be recorded about the selection of controls. Experiments with normal serum would be worth while in view of the widespread immunity to the disease indicated by the low attack rate, the possibility that the so-called normal serum of young adults may often carry immune bodies in serviceable amounts, and the difficulty of obtaining an adequate supply of known convalescent serum.

Dermatology.

308. Tryparsamide in Pemphigus.

J. GRINDON (*Arch. Derm. and Syph.*, January, 1930, p. 25) reports several cases of acute pemphigus treated by tryparsamide. The Davis treatment of this condition by intravenous injections of iron cacodylate or sodium arsenate and subcutaneous injections of coagulen having failed in one case, Grindon was led to try tryparsamide, a pentavalent compound derived from atoxyl, on account of its low relative toxicity and its value in raising tissue resistance. In four cases of acute pemphigus success resulted from treatment with tryparsamide and coagulen as a modification of the Davis treatment. The treatment was tried also in two chronic cases; failure followed in one, but success in the other. In three of the four acute cases the improvement was rapid, but it was delayed in the fourth and the lesion did not completely disappear. Treatment consisted of intravenous injections of 2 grams of tryparsamide at weekly intervals, followed by two doses of 1 gram each. The author remarks that although the cases are too few to permit a final decision as regards the value of this modification of the Davis treatment, the results in the acute cases and in one of the chronic cases were certainly gratifying.

309. Treatment of Psoriasis with Ultra-violet Light.

I. JESSEN (*Ugeskrift for Laeger*, January 9th, 1930, p. 35) has treated ten cases of psoriasis with ultra-violet light from a quartz mercury lamp; several of them were very severe cases which had previously been treated unsuccessfully in various other ways. In every instance he completely cured, temporarily at any rate, his patients, some of whom had been treated with light from a carbon arc lamp with disappointing results. He found it necessary to regulate the dosage very carefully, determining in each case the exact dosage capable of provoking a slight erythema, which had completely disappeared the next day. Following this principle, he was able to increase the dosage gradually, and so avoid having to begin again with the small initial dose because an exposure, given while there was still an erythema from the previous exposure, had caused a too violent irritation of the skin. It proved useless to give such weak exposures that even transient erythema was not provoked. It was found necessary to remove the scales and scabs as completely as possible before each exposure. The author considers this treatment more effective than any other, whether the disease is recent or a relapse. In contradistinction to treatment with ointment, it has a remote action; in one case psoriasis of the scalp cleared up completely, although this part of the body had not been directly treated; it also has an after-effect. Unlike thorium-*x* treatment, it is not locally irritating, and, unlike *x*-ray treatment, it is quite harmless. Overdosage may provoke temporary irritation, but never an exacerbation of the disease. Ultra-violet light therapy is cleanly, and helps to mask the diseaas from the outset—a matter of great importance when the face is involved. Later also it has a cosmetic value, giving the patient a sunburnt and healthy appearance. In contradistinction to thorium-*x* treatment, it does not leave markings thereof, and the pigmentation it provokes is quite transitory. The administration is pleasant, and has a beneficial influence on the patient's general condition, nervous patients in particular enjoying the euphoria produced. If the patient possesses a quartz lamp and knows how to use it, this treatment is remarkably cheap, more so than treatment with ointment, which damages underwear and makes much washing necessary. The only objection to this treatment is the time it takes, but since it can always be ambulatory this does not matter so much.

310. Dermatitis caused by Picric Acid.

N. R. JACKSON (*Arch. Derm. and Syph.*, January, 1930, p. 40) reports five cases of dermatitis from picric acid, three following treatment with the solution alone, one the application of the solution and ointment, and one in a case of haemorrhoids in which the ointment alone was used, the applications resulting in an erythematous itching and burning dermatitis. The condition cleared up in a few days under treatment with wet dressings of normal aluminium acetate solution at first, and later with calamine lotion, menthol, and phenol. The author has failed to find references in the literature to picric acid as a cause of dermatitis, although the solution is employed extensively in the treatment of burns and in the preparation of the skin over the field of an operation, while butesin picrate ointment is used as an analgesic and soothing agent. He concludes that the dermatitis only develops in susceptible persons, and, considering how widely picric acid is used, it is probably of relatively rare occurrence.

Obstetrics and Gynaecology.

311. Clinical Features of Increased Folliculin Production.

ACCORDING to B. ZONDEK (*Zentralbl. f. Gynäk.*, January 4th, 1930, p. 1) excess of production of folliculin (the ovarian hormone found in cells and fluid of ripening follicles) can lead to amenorrhoea or to excessive bleeding, or to the one followed by the other. As an example of "polyhormonal amenorrhoea," the case is related of a married woman, aged 29, who, two and a half months after her last menstruation, was found to have bluish coloration of the vagina, a soft somewhat enlarged uterus, turgescent breasts with prominence of Montgomery's glands, and a cystic ovarian tumour. Extrauterine pregnancy was excluded by a negative Zondek-Aschheim reaction in the urine, which nevertheless contained an increased amount of folliculin. Surgical and other investigations showed: (1) that prior to operation the urine contained five times more folliculin than the blood; (2) that the cyst contained 60 c.cm. of clear fluid with 180 mouse-units of folliculin—from ten to twenty times the amount normally present in a follicle. The operation was performed eight and a half hours after commencement of a spontaneous uterine bleeding; curettings removed at the same time showed endometrial hyperplasia with an imperfectly developed pregravid phase. Eight days later the urine was free from folliculin, and normal menstrual cycles followed. From the biochemical tests of the urine a preoperative diagnosis was made of amenorrhoea due to overproduction of the ovarian hormone. The combination of amenorrhoea, hyperplastic and atypical endometrium, and utero-vaginal appearances simulating those of early pregnancy has previously been described in association with lutein cysts of the ovary. Zondek refers to excessive uterine bleeding in association with overproduction of folliculin as "polyhormonal bleeding," and thus agrees with the view expressed by Schröder and others concerning the etiology of "metropathia haemorrhagica." In such cases Zondek has found in the urine comparatively large amounts of folliculin, and in a persisting enlarged ovarian follicle three to five times the normal amount of folliculin. After such a follicle has been excised a normal menstrual cycle has been regained,

and in five instances Zondek has found the same to occur after deliberate rupture of the enlarged follicle during bimanual examination under general anaesthesia. According to Zondek the climacteric is characterized by three stages, usually successive: (1) increased folliculin production with soft enlarged uterus, and either bleeding or amenorrhoea; (2) diminished folliculin production with small hard uterus and pronounced vasomotor phenomena; and (3) the presence of increased amounts of prolan in the urine. In the third stage prolan A—that hormone from the anterior lobe of the hypophysis which induces ripening of the ovarian follicle—appears to excess in the urine, either because it cannot be utilized in the ovaries, or because these exercise an inhibiting action on the hypophysis.

312. Electro-coagulation in Chronic Cervicitis.

G. C. MOENCH and A. SCHULMAN (*Med. Journ. and Record*, February 5th, 1930, p. 131) maintain that attention to the underlying histopathology is essential in the treatment of chronic cervicitis, and that each diseased cervix presents an individual problem. A narrow external os with an inflammatory lesion behind it cannot be treated in the same manner as a hypertrophic, lacerated, and everted cervix. Owing to the disadvantages of the passive hyperaemia method of treatment the authors have reverted to cauterization, and prefer diathermy to the actual cautery. They use the Liebel Florscheim machine, a metal bivalve speculum being utilized as the inactive terminal and an aluminium needle or loop in a *vulcanite handle* as the active electrode, the point being passed up to the internal os. Cysts, if present, are punctured. For the erosion proper a spark-gap of 2 mm. is used and the whole area is coagulated. It is difficult to fix a *definite rule* for dosage and depth, which vary in different cases, but the authors have obtained the best results with a current of 500 to 600 *milliamperes*. Diathermy is practically painless, but in nervous women, or where a large area is to be *coagulated*, cocaine may be inserted into the vaginal canal. Of 200 cases treated by this method the results in only 100 are reported, these having been observed long enough to warrant conclusions being drawn. Of these, 83 patients have been cured, 13 have improved, and 4 have not improved. The following advantages are claimed for electro-coagulation over the cautery. It produces less heat in the vagina, and is more easily controlled; the risk of injury to the soft parts surrounding the vagina is less, and there is no odour of burning flesh as in cauterization; the resulting slough separates more easily, and the tendency to haemorrhage and stenosis is less. Electro-coagulation is also considered to be superior to surgery in that no inelastic scar is formed which might cause dystocia in future pregnancies.

313. Treatment of Chronic Adnexal Inflammation.

IN the treatment of chronic adnexal inflammation A. W. BAUER and H. LEHFELDT (*Zentralbl. f. Gynäk.*, December 14th, 1929, p. 3404) recommend rest in bed, vapour baths, the insertion of vaginal tampons of ichthyol or *iodine*, the application of leeches to the abdomen, and the oral administration of calomel. In twelve cases they have given injections of prolan (the preparation recommended by Zondek and Aschheim as containing in concentrated form the anterior hypophyseal hormone), for which the effect of inducing local hyperaemia in the pelvis has been claimed. In contrast with Zondek and Aschheim they found that prolan injections led to no more than a normal excess of the rectal or vaginal over the axillary temperature. Although the inhibition of prolan was followed by slight local and [illegible] reactions, the authors are not satisfied that [illegible] in the treatment of these cases.

Pathology of Precan[illegible] the B[illegible]

302. [illegible] should be [illegible] U BACCARANI [illegible] liest manifestations [illegible] to the figure [illegible] neoplasia [illegible] of 1,000 cases [illegible] within [illegible] with the view expressed [illegible] the etiology of "metro-gall-stones. The [illegible] the etiology Zondek has found in [illegible] cases Zondek has found [illegible] unlike those of gal[illegible] amounts of folliculin, and [illegible] septic focus in the [illegible] follicle three to five times [illegible] suggests that the [illegible] but follicle has [illegible] of cholecystitis is [illegible] After such a follicle has [illegible] in the gall-bladder [illegible] regained, [illegible] quite common in these [illegible] cycle has [illegible] of [illegible] attacks of colic. If [illegible] ria. In [illegible] astitis [illegible] 628 C

mazoplasia the breast is merely active when it should be at rest, and not in a precancerous state. Two diseases of the mammary gland that are definitely associated with the process of carcinoma are Schimmelbusch's disease and Paget's disease of the nipple. In the former the sequence of events is as follows. First, there is a desquamative cystiphorous epithelial hyperplasia; this is followed by a supervention of epithelial neoplasia that is definitely benign. Upon this second state supervenes an epithelial neoplasia with all morphological appearances of malignancy, and then comes the definite establishment of carcinoma. These processes are definitely attached to three decades of years—namely, the late twenties to the early fifties; the third stage occurs at the end of the second decade or at the beginning of the third. Paget's disease of the nipple affords distinct evidence of a preliminary epithelial neoplasia within either the ducts alone, or in terminal ducts and acini, *before* carcinoma appears. The morphological appearance of epithelial neoplasia may never be definite enough to enable a dogmatic statement to be made, and the determination of the danger must be based upon experience. An activity of growth in other tissues in contact with epithelial neoplasia is to be noted. For example, enormous localized hyperplasia of the elastica frequently occurs round only those terminal ducts and acini which contain the neoplasia from which the epithelial cells have invaded, and this would add a definite indication of the dangerous state of the enclosed epithelial neoplasia.

315. Toxin Formation by Bacterium enteritidis Gaertner.

A. MEYN (*Zentralbl. f. Bakt.*, January 7th, 1930, p. 163), working with seven strains of *Bact. enteritidis*, isolated from three months to five years previously, found that filtrates of two-day broth cultures were non-toxic to mice injected intraperitoneally in a dose of 0.5 c.cm., but that filtrates of fourteen-day and twenty-eight-day cultures proved fatal in one to two days. The lethal dose of the four-week filtrates varied with different strains, but was generally of the order of 0.05 to 0.25 c.cm. The toxicity of these filtrates was not diminished by steaming for half an hour. Using whole broth cultures, it was found that twenty ten minutes to destroy the bacteria, it was 0.05 to 0.25 c.cm. cultures were fatal in a dose of about 0.5 c.cm. The toxicity of the killed organisms did not appear to be greater in cultures incubated for fourteen days than it was in those incubated for only two days. Working with agar cultures that had been steamed for two, fourteen, minutes, it was found that the fatal dose of the 5 c.cm. and twenty-eight-day cultures was about 0.1 to 0.5 c.cm. agar cultures were washed off with saline, and the suspensions allowed to remain at room temperature, the lethal dose of filtrates after two days was about 0.5 c.cm., and after fourteen and twenty-eight days about 0.25 c.cm. From these results, two-day whole broth cultures, killed by heat, produced [illegible] while filtrates of the same cultures were non-toxic, the author concludes that the toxic substances must come from the bacterial bodies; with increasing length of incubation they are liberated by autolysis, and pass into the medium. Autolysis likewise is invoked to explain the rapid acquirement of toxicity of filtrates of saline suspensions of agar cultures. The author found that the toxicity of Gaertner cultures and filtrates was manifest only on parenteral injection. Given by a catheter directly into the stomach in a dose of 1 c.cm., none of the products proved toxic; even a whole agar slope, corresponding to between twenty and one hundred parenteral lethal doses, did not prove fatal. The author concludes that the toxins of Gaertner's bacillus are derived from disintegration of the bacterial bodies, that they are heat-stable, and that they are harmless when ingested by the mouth. This last conclusion is of importance in connexion with the etiology of food poisoning.

316. The Thyroid and Lipoid Content of the Blood.

S. SAKURAI (*Japanese Journ. Exper. Med.*, December 10th, 1929, p. 449) has found that if rabbits are bled to the extent of 5 c.cm. four times a day, at two-hourly intervals, there is a slight decrease in the amount of lecithin and total fatty acid content of the blood; if the same amount of blood is withdrawn once a day every second or third day for twenty-three days there is no change in the lecithin and fatty acid content of the blood. Parenteral injection of rabbits with 0.5 gram per kilo of body weight of ox thyroid emulsion causes a decrease of the amount of lecithin and fatty acid in the blood. Thyroidectomy in rabbits causes an increase of lecithin and to a less degree also of the total fatty acid content of the blood; the parenteral injection of ox thyroid emulsion into thyroidectomized rabbits temporarily inhibits the increase of total fatty acids, but has no apparent influence on the amount of lecithin. The author believes that functionally the thyroid gland is connected with the fat and lipoid metabolism of the body.

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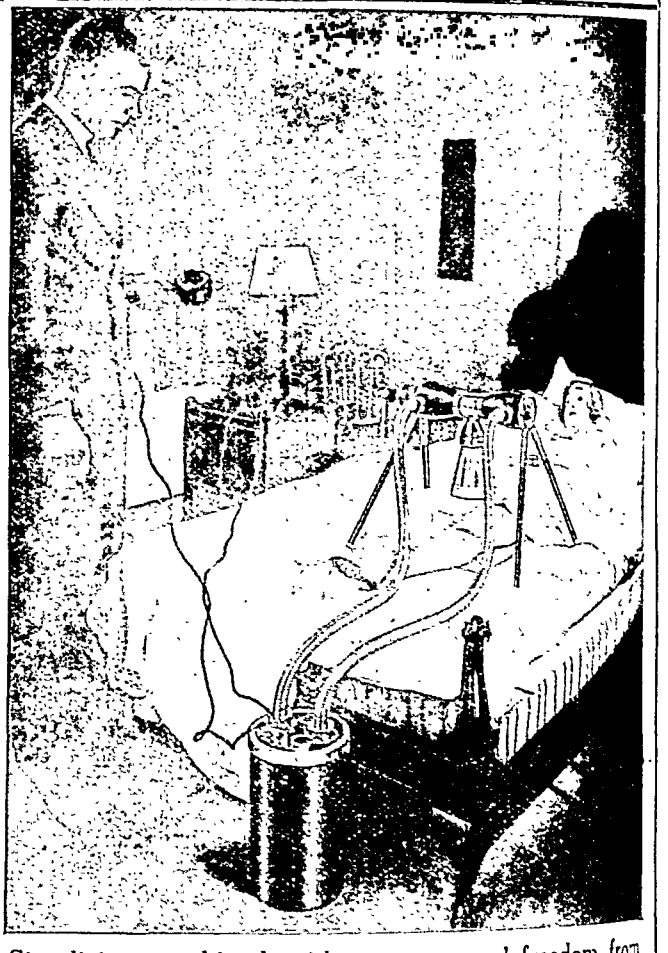
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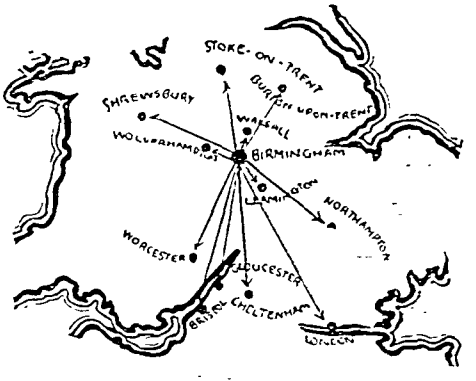
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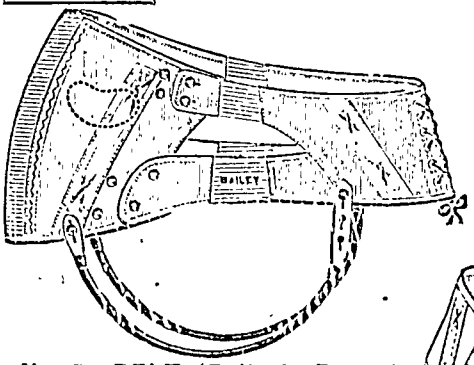
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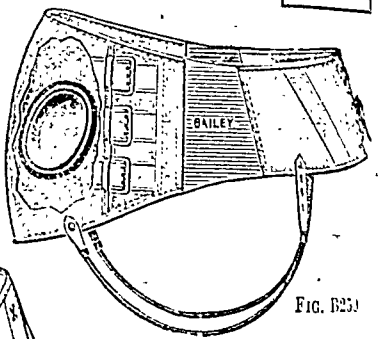
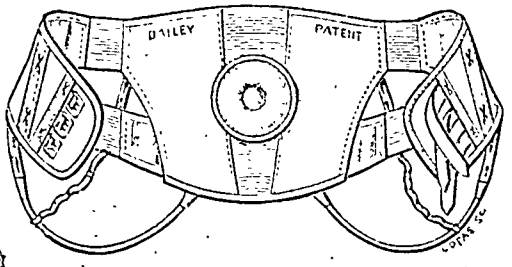


FIG. B251
(Showing Interior of Cup)
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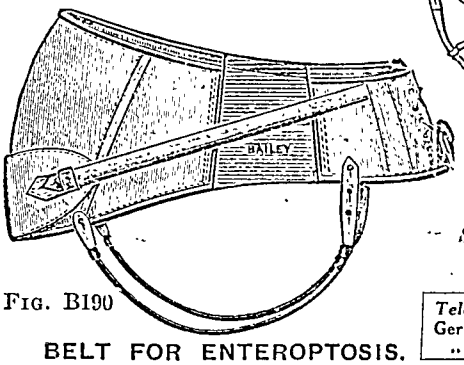


FIG. B190
BELT FOR ENTEROPTOSIS.

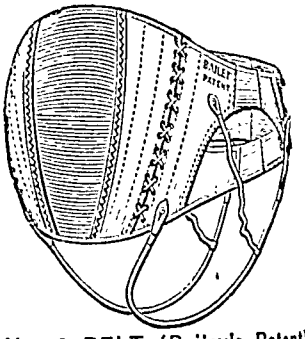
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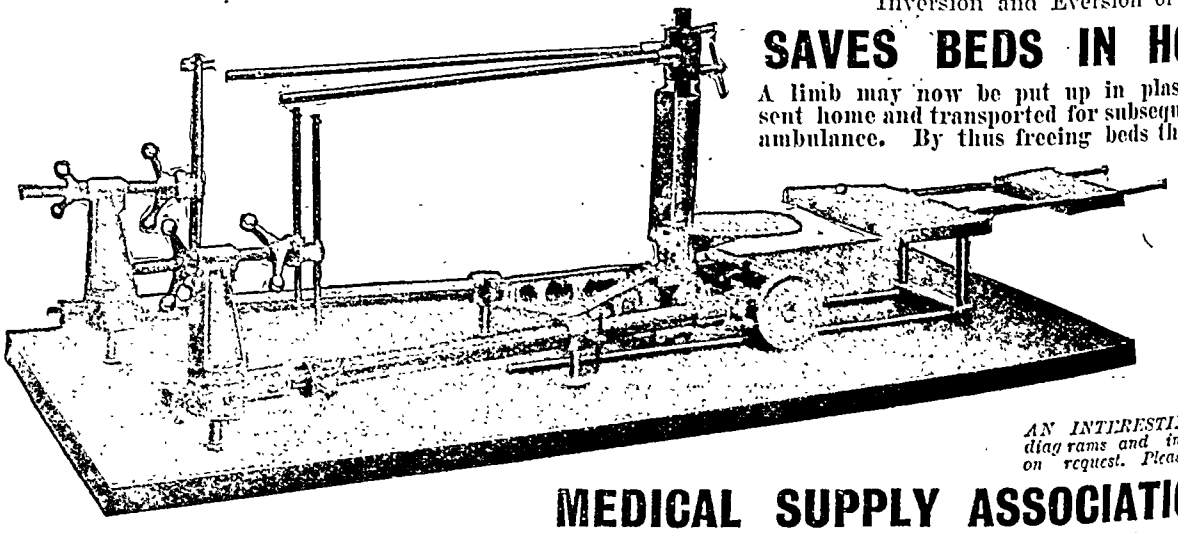
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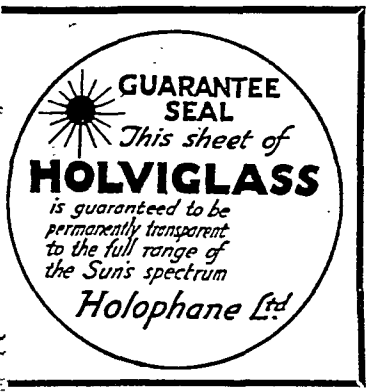
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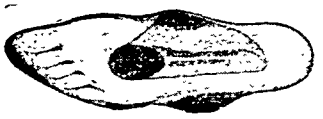
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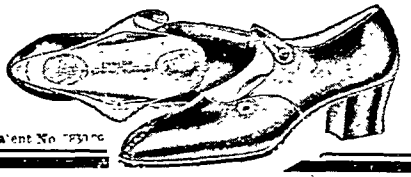
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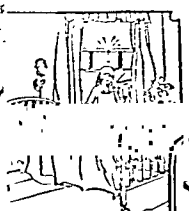
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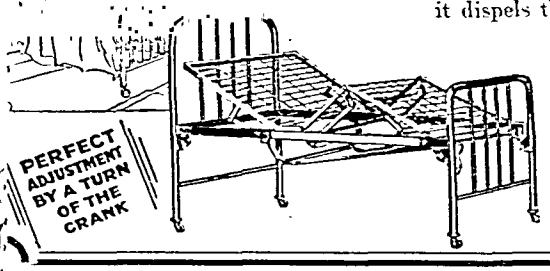
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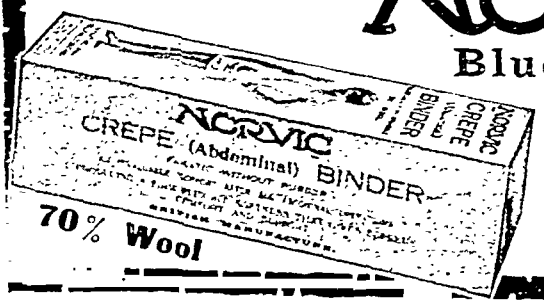
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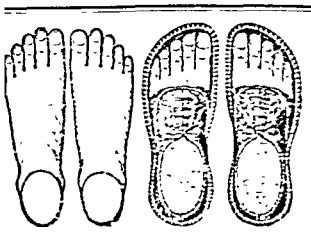
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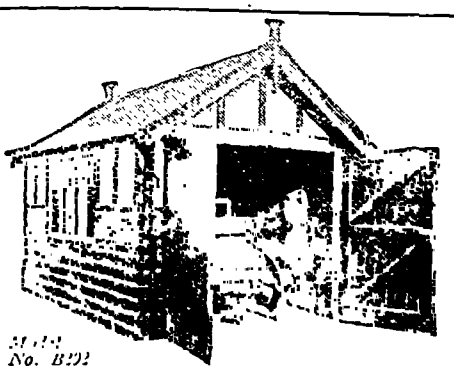
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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.

Medical Superintendent: Dr. MCCLINTOCK.

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REST, CARE, or SUPERVISION. Large house and beautiful garden of nearly 2 acres; own produce; grass, soil. Car, etc. Special care in Chronic Patients.—Dunsfold, Surrey, Midhurst.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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Telephone: *Teignmouth* 289.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.
Tel.: 64117. *For terms etc., apply to the Medical Superintendent*

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.

FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—
Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

CHISWICK HOUSE
A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds.

Fees are from 10 guineas a week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2342

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements. Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent cases.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CURE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W.R. main line, Midland and L. M. & S. Railway Stations, Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Visitors. Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to ARTHUR TOWNSEND, M.D., Resident Physician.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch at Colwyn Bay, is for the treatment of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may be seen in Manchester by appointment.
Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a beautiful country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: 40030 Ecclesfield. Resident Physician: G. E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietress. Tel.: 109 Tamworth.
Licensee: Dr. LOWSON.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time pecially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, lasseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial unlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except lental and Infectious Diseases. The fees are inclusive.

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A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch. Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.

Full particulars from the MEDICAL SUPERINTENDENT. *Telephone:* Hatch End 368.

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Telegrams: "SCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. enty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor isements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. y and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. pel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting ologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

elegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0828.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses. Conveniently situated four miles from Charing Cross. Easy of access from all parts. Six acres of ground, highly situated, facing Finsbury Park. Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the MEDICAL SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffer- from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. parate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside nch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and riage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis rts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

President: LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.

Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.

PHYSICIAN SUPERINTENDENT: J. G. PORTER PHILLIPS, M.D., F.R.C.P. Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the early tment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINEAS EKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the most lern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.

For further particulars apply to the PHYSICIAN SUPERINTENDENT.

THE OLD MANOR-SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

ensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

ustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

YARROW HOME and HOSPITAL
FOR CHILDREN
BROADSTAIRS.

For the Early & Preventive Treatment of Disease & Convalescence after Illness.

The Hospital is intended for the children of Members of the Institution of Civil Engineers, the children of architects, artists, authors, clergymen, members of the medical, legal, and other professions, members of scientific societies, officers of the Navy, Army, and Royal Air Force, officers of the Merchant Navy, schoolmasters and university professors.

Accommodation is provided for 50 Boys between the ages of 4 and 12 years, and 50 Girls between the ages of 4 and 14 years. In special cases the age limits may be raised to 14 for Boys, and 16 for Girls.

Fee 21/- per week, or as may be arranged, and travelling expenses.

Particulars can be obtained from the Secretary:—

116, Victoria Street, Westminster, LONDON, S. W. 1.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

Telegrams: "SMEDLEY'S, MATLOCK." *'Phone:* No. 17.

For Prospectus and full information please write MANAGER, M.J.

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G. C. R. HARBINSON, M.B., B.Ch., B.A.O. (R.U.I.),
R. MACLELLAND, M.D., C.M.(Edin.).

MATLOCK

NORTHWOODS, Winterbourne, Bristol.

Telephone and Telegrams: Winterbourne 18.

This beautiful mansion in fifty acres of secluded grounds was built specially for the TREATMENT OF MENTAL ILLNESS. Certified patients of both sexes. Thorough clinical, bacteriological, and pathological examinations. Separate bedrooms. Private suites. Indoor and outdoor amusements. Wireless and other concerts. Occupational therapy. Physical drill. Private golf course. Garden and dairy produce from farm on the estate. Reasonable terms. A few voluntary boarders are received in the Medical Superintendent's house.

For further particulars and prospectus, apply to JOSEPH CATES, M.D.

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FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—

F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

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For the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS or MENTAL breakdown. Voluntary Boarders received. Psycho-therapy in suitable cases if desired. Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.

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CLAPTON, LONDON, E.5.

Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

STRETTON HOUSE,
Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS
THE HARE NURSING HOME

As founded and established by the late FRANCIS HARE, for 20 years Med. Supt. of the Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL AILMENTS, etc.

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders. Voluntary Boarders received in the Home. Large Mansion on outskirts of Bath, with 8 acres of grounds (see *Medical Directory*, pp. 213, 214).

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A Hall this beautifully situated country mansion is devoted entirely to the Residential Treatment of the above maladies. The treatment is carried out on the most modern principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. Carver, M.D., D.P.M. Fees moderate. Further particulars from the Central Office, 40, M. Marsham Street, London, S.W.1. In cases of urgency 'phone NUNEATON 72.

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Private Establishment for CHILDREN and YOUNG PEOPLE, delicate or predisposed to Tuberculosis, Pleurisy, Convalescents, etc. Near Davos, Switzerland. Terms £5 5s. p.w.—Apply to the Physician in charge Dr. BERNARD HUDSON, The Victoria, Platz, Grisons, Switzerland.

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PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards. Voluntary BOARDERS can now be admitted.—Apply to the Mgr. Secretary.

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Medical Director: David Lawson, M.D., F.R.S.E.

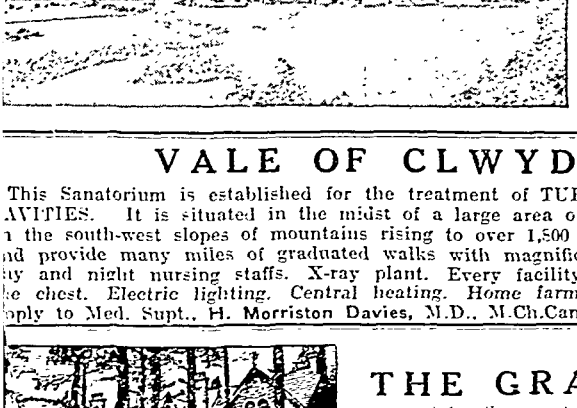
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Full day and night Nursing Staff.

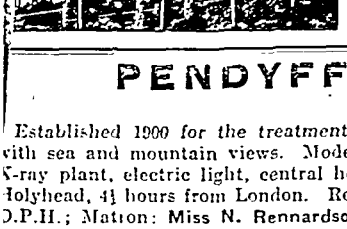
Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.

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Telephone: 41 WITCOMBE. *Telegrams*: "HOFFMAN, BIRDLIP."

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Scotland's most modern Curative Electric Installation is at

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UNIVERSITY OF DURHAM COLLEGE OF MEDICINE,
NEWCASTLE-UPON-TYNE.

The Degrees in Medicine, Surgery, Hygiene, and Dentistry, the Diploma in Public Health, the Diploma in Psychiatry, and the Licence in Dental Surgery of the University of Durham are open to men and women.

The SUMMER SESSION, 1930, will be commenced on MONDAY, APRIL 7th.

Students can complete, at the University of Durham College of Medicine, Newcastle-upon-Tyne, the entire course of professional study required for the above degrees, diplomas, and licence; also for the Examinations of the Royal Colleges of Physicians and Surgeons and other Examining Bodies.

Hospital practice is carried out at the Royal Victoria Infirmary, a general hospital containing more than 550 beds, and there are facilities for the study of the various special subjects. General and Special Post-Graduate Courses are held.

Practical Midwifery can be studied at the Princess Mary Maternity Hospital, which contains 90 beds, with an annual indoor and outdoor attendance on 3,000 cases. Lectures are given on Psychological Medicine in the College of Medicine, and clinical instruction at the Mental Hospital, Newcastle. Special Courses of Instruction in Outdoor Sanitary Practice and in the Hospital for Infectious Diseases are given by the City Medical Officer of Health.

Particulars may be obtained from the DEAN of the College.

ROYAL COLLEGE of PHYSICIANS of EDINBURGH
ROYAL COLLEGE of SURGEONS of EDINBURGH
ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QU[ALIFICATION] L.R.C.S.E., and L.[R.F.P.S.G.] [DIPL]OMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1930-31, Curriculum etc., may be had on application to Mr. DAVID THOMSON, 49, George Square, Edinburgh, or to Mr. WALTER HURST, 242, St. Vincent Street, Glasgow, Inspectors and Treasurers at Edinburgh and Glasgow respectively.

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EXAMINER IN MIDWIFERY.

Candidates must be Teachers at a [illegible] nized Medical School.

Applications to be received by [illegible] 1930.

FRANK HAYDEN, Secretary.
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Charing Cross Hospital Medical School

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With which is affiliated The Royal Westminster Ophthalmic Hospital.

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Two Scholarships, value £120, are awarded annually for final studies for students of Oxford and Cambridge. Scholarships are also awarded in Anatomy and Physiology to students studying for the London M.B. In addition there are several Exhibitions awarded annually, particulars of which may be obtained from the Dean. Examinations for these Scholarships are held in August and March each year.

Fees 38 guineas per annum.

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STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays at Miss BEHNKE'S house on the Chilterns.

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Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5 for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Doctors attending Post-Graduate Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

ST. MARY'S HOSPITAL MEDICAL SCHOOL, W.2.

(University of London.)

The SUMMER SESSION will begin on Tuesday, April 29th, 1930.

The Medical School provides courses in Preliminary Intermediate, and Final Subjects, and Students can join at once after matriculation.

SITUATION.—Between a large population, providing clinical material, and one of the best residential districts, thus enabling students to live in close proximity to their work.

CLINICAL UNITS IN MEDICINE AND SURGERY.—Certain members of the Medical and Surgical staff devote their whole time to teaching and research.

NEARLY 1,000 beds available for teaching; additional clinical material being provided by affiliation to an Infirmary and other Institutions.

ENTRANCE and RESEARCH SCHOLARSHIPS to the value of £1,400 are awarded annually.

APPOINTMENTS, varying in value up to £750 per annum, open to students after qualification.

For further particulars and illustrated prospectus, apply to the School Secretary.

C. M. WILSON (*M.C.*), M.D., F.R.C.P.,
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CITY OF LONDON MATERNITY HOSPITAL,

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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

University of Glasgow.

FACULTY OF MEDICINE.

Forms of application for permission to commence the study of MEDICINE in October, 1930, may now be obtained from the undersigned. These forms should be returned by applicants from foreign countries not later than June 16th, and by applicants from Home and British Dominions Overseas not later than September 15th.

ROBT. BROUGH,
March, 1930. Registrar.

University of Alberta.

Applications are invited for the position of ASSISTANT PROFESSOR OF BIOCHEMISTRY in the University of Alberta, at an initial salary of 2,700 dollars per annum, beginning *September 1st, 1930. Candidate will give age,* qualifications, and references, and submit a photograph and reprints of articles published.

Applications should be in the hands of the Secretary of the Board of Governors, University of Alberta, Edmonton, Canada, by May 15th.

R. C. WALLACE,
March 24th, 1930. President.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION.—*Full Pre*paratory Classes with DEMONSTRATIONS commence 8 weeks prior to each Exam. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

Refraction and the Ordering of GLASSES

taught by Practising Ophthalmic Surgeon in London. £8 8s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

Shanghai Municipal Council.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT PATHOLOGIST.

An Assistant Pathologist is required in the Public Health Department of the Shanghai Municipal Council.

Candidates, preferably unmarried, should not be more than 30 years of age, and must hold qualifications in Medicine and Surgery of University standard: a D.P.H. and D.T.M. & H., though not essential, are desirable. Salary, Taels 650 per mensem, or Taels 700 per mensem if holding a D.P.H., under three years' agreement.

The agreement is renewable, in the event of satisfactory services, at a triennial increase of Taels 100 per mensem up to Taels 1,000 or Taels 1,050 per mensem if holding a D.P.H.

The Chief Pathologist, provided he holds the D.P.H., is eligible for the higher appointments of Deputy Commissioner and Commissioner of Public Health, the present maximum pay for which is Taels 1,350 and Taels 2,000 per mensem respectively.

First-class passage is given with half pay during voyage.

Eight months' leave is given on full pay, with first-class passage, after every period of five years' service in Shanghai.

Free medical attendance is provided, and there is participation in the benefits of a Superannuation Fund.

A Tael at the present rate of exchange equals about 1/11. Exchange is, however, subject to fluctuation.

Particulars of the appointment, and full details as to the benefits enjoyed by Municipal employees under their Terms of Service, may be obtained from Council's Agents.

Applications, in candidates' own handwriting, with full information as to their qualifications and experience, etc., accompanied by at least three recent testimonials, and endorsed "Assistant Pathologist" on the cover, should be forwarded to JOHN POOK & Co., Agent for the Municipal Council of Shanghai, 68, Fenchurch Street, London, E.C.3.

March, 1930.

Derbyshire County Council.

BRETBY HALL ORTHOPÆDIC HOSPITAL, near BURTON-ON-TRENT. (147 Beds.)

ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Assistant Medical Officer at the above Institution, at a salary, at the rate of £150 per annum, with board, residence, and laundry. The appointment will be for a period of six months in the first instance, and for a further period of six months at the option of the Council. The officer appointed will work under the direction of the Medical Superintendent. Preference will be given to candidates who have held resident hospital appointments and who are competent Anæsthetists. Orthopædic experience is not essential, but will be considered an additional qualification.

Applications, stating age, qualifications, and experience, together with copies of not more than three recent testimonials, should be addressed to the undersigned not later than April 7th.

New County Offices, St. Mary's Gate, Derby. W. M. ASH, County Medical Officer.

March 15th, 1930.

County Council of the Isle of Ely.

APPOINTMENT OF SCHOOL DENTIST.

The Education Committee of the above Council require a School *Dentist to commence duties* at an early date. Salary £500 per annum. Candidates must be able to drive a motor van (equipped as a dental clinic). Further particulars can be obtained on application to the undersigned. Applications, giving details of qualifications, experience, etc., together with copies of not more than three recent testimonials, must be sent so as to reach the undersigned by first post on April 12th.

Education Offices, March. E. J. P. OSBORNE, Director of Education.

Manchester Ear Hospital,

Grosvenor Square, All Saints'.

NON-RESIDENT HOUSE SURGEON required. Salary at the rate of £150 per annum, with partial board. Appointment for six months. Applications, with copies of four recent testimonials, to be forwarded not later than April 12th to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester.

County Borough of Southampton.

RESIDENT MEDICAL SUPERINTENDENT SOUTHAMPTON BOROUGH HOSPITAL.

The Corporation invite applications from qualified Medical Practitioners for the post of Resident Superintendent Medical Officer of their General Hospital.

Salary £600 per annum, rising by annual increments of £50 to a maximum of £700 per annum, with board-residence.

The gentleman appointed will be required during the pleasure of the Council, and his appointment will be subject to determination by two months' notice on either side. He will be required to carry out all duties in connection with a General Hospital, the treatment of patients, and generally to take charge of and supervise the Institution under the direction of the Medical Officer of Health.

The Local Government and Other Officers' Superannuation Act, 1922, will be applicable to the appointment, and contributions to the Superannuation Fund will be deducted from the salary. The selected candidate will be required to pass a satisfactory medical examination.

Form of application may be obtained from the Medical Officer of Health, Municipal Offices, Southampton.

Applications on the prescribed form, endorsed "Resident Medical Superintendent," stating age, qualifications, experience, etc., together with copies of not more than three recent testimonials, must be delivered at the Town Clerk's Office, Municipal Offices, Southampton, not later than before April 12th.

R. RONALD H. MORRIS,
March 24th, 1930. Town Clerk.

County Borough of Barnsley.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Council of the County Borough of Barnsley invite applications for the appointment of Assistant Medical Officer of Health and Assistant School Medical Officer at a commencing salary of £500 per annum.

Candidates must be registered Medical Practitioners of at least three years' standing, and should have had experience in the work of a school medical inspection and routine work in child welfare. The possession of the D.P.H. and experience in ante-natal work, in the treatment of errors of refraction and in orthopædics will be considered additional qualifications.

The candidate appointed must devote his whole time to the duties of the office, and will not be allowed to engage in private or consulting practice, and will work under the supervision of the Medical Officer of Health who is also School Medical Officer.

Applications upon the prescribed form, which may be obtained from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), must be delivered to me on or before April 8th, endorsed "Medical Officer of Health."

The appointment will be determinable by three months' notice on either side.

A. D. MASON,
Town Clerk's Office, Town Clerk.
Barnsley.
March 17th, 1930.

The Board of Control (Lunacy and Mental Deficiency)

invite applications for the post of FOURTH MEDICAL OFFICER (male or female) at RAMPTON STATE INSTITUTION FOR MENTAL DEFECTIVES, RETFORD, NOTTS. Salary £400, rising by annual increments of £20 to £500. A London living bonus is also allowed; present value £147 10s. Emoluments: salary of £400 is £147 10s. Emoluments: free furnished quarters and laundry for wife and service are provided on payment of a small cost.

Candidates must be registered Medical Practitioners, unmarried or widowed, and must *form to the Civil Service* Commissioners. Post is pensionable under Civil Service Superannuation Acts.

Forms of application, with further particulars, can be obtained from the Secretary, Board of Control, Caxton House West, Tothill Street, London, S.W.1, and must be filled in and returned to him not later than Tuesday, April 24th.

Royal Victoria and West Hants Hospital,

HOSPITAL, BOURNEMOUTH.
(POOLE ROAD BRANCH.)

HOUSE SURGEON (male, British subject) required to commence duty immediately. Salary £120 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Acts. Applications, stating place of birth, age, and copies of three testimonials, to be sent to the undersigned. Women and married men ineligible.

GORDON M. SAUL,

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the appointment RESIDENT ANÆSTHETIST. Candidates must be duly qualified Medical Practitioners. The post is tenable for one year from May 1st. Preference will be given to former Students of the London (R.F.H.) School of Medicine for Women.

Intending candidates should submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before April 8th.

REGINALD GARRATT, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified Medical Women for the post of CASUALTY OFFICER. Previous experience as Hospital resident essential. Salary £150 per annum. Intending candidates should submit applications, stating ages, and accompanied by copies of three recent testimonials, to the undersigned before April 8th. The appointment is tenable for six months from May 1st.

REGINALD R. GARRATT, Secretary.

St. Mary's Hospital for Women
AND CHILDREN,
Plaistow, E.13.

Applications are invited for the post of ASSISTANT RESIDENT MEDICAL OFFICER (vacant May 1st), male or female. The appointment is for six months; board-residence provided. Salary at the rate of £120 per annum (£5 extra allowed for personal laundry). The duties are mainly medical. Personal canvassing not desired. Applications, with copies of three recent testimonials, to be sent to the undersigned not later than April 3rd.

A. ERNEST WILKES, Secretary.

St. Mary's Hospital for Women
AND CHILDREN,
Plaistow, E.13.

Applications are invited for the post of CLINICAL ASSISTANT in the Medical Out-patients' Department, with access to the Wards. The appointment is for six months. Attendance Friday afternoons at 2 o'clock. Tea provided. Applications, with copies of three recent testimonials, to be sent to the undersigned as soon as possible.

A. ERNEST WILKES, Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of RESIDENT MEDICAL OFFICER. The appointment will be for a period of six months at a salary of £175 per annum, and will date as from April 16th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

London Temperance Hospital,
Hampstead Road, N.W.1.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for a period of six months at a salary of £100 per annum, and will date as from April 15th. Preference will be given to those who have held resident posts.

Candidates must submit applications, stating qualifications, age, etc., with copies of not more than three testimonials, by Thursday, April 3rd, addressed to the Secretary.

The Hartlepools Hospital.
(100 Beds.)

Required, HOUSE SURGEON, salary £150 per annum, and HOUSE PHYSICIAN, £120. Board, residence, and laundry. Must be fully qualified and registered.

Applications, accompanied by copies of not more than three recent testimonials, to reach the undersigned by April 5th

P. NEVILLE HART, Secretary.

Royal Surrey County Hospital,
GUILDFORD. (180 Beds.)

Wanted at once, HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications, stating essential particulars, with copies of testimonials, to be sent to the General Superintendent.

ROYAL AIR FORCE MEDICAL SERVICE.

VACANCIES EXIST FOR MEDICAL OFFICERS IN THE ROYAL AIR FORCE.

CONDITIONS OF APPOINTMENT.

Candidates will be selected after interview by a selection board without competitive examination. They must be of pure European descent. They must be British subjects, the sons of British subjects, and registered under the Medical Act.

Selected candidates will be appointed to Short Service Commissions for 3 years extendable to 5, and those under 28 years of age at the time of entry will be eligible for subsequent selection to Permanent Commissions, should they be desirous of remaining in the Service.

Resident Hospital appointments held since qualifying will, under certain conditions, qualify candidates for antedate of Commission; the age on entry to qualify for a Permanent Commission, if necessary, being increased by a period equal to the "antedate."

Excellent opportunities exist for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, Ophthalmology, and other special branches, adequate provision being made for permanent officers to attend Post-Graduate Courses of Study.

OUTFIT ALLOWANCE.

An officer who has not previously held a Commission in H.M. Forces will receive an outfit allowance of £70 on joining.

PAY, ALLOWANCES, PROMOTION, ETC.

The following table shows the Current Rates of Pay per annum for the various ranks:—

In addition to pay, Officers receive quarters, rations, and attendance, or are given cash Allowances in lieu as shown in the table.

Married Officers who have attained the age of 30 years receive either Married Quarters or Allowances at the Married Rates.

Service.	Rank.	Pay.	Allowances (Home rates).	
			Married.	Single.
On Entry	Flying Officer	£411	—	£127
After 2 years on promotion to	Flight Lieutenant ,,	£447	£229	£127
Rising by increments after 2 and 4 years to	,, ,, ... ,,	£574	£229	£127
After 10 years' total service on promotion to	Squadron Leader ,,	£784	£259	£161
Rising by increments after 2, 4, 6, 8 and 10 years to	,, ,, ... ,,	£876	£259	£161
By selection to	Wing Commander ,,	£911	£259	£161
Rising by increments after 2 and 4 years to	,, ,, ... ,,	£1,055	£259	£161
By selection to	Group Captain ,,	£1,201	£313	£251
By selection to	Air Commodore ,,	£1,372	£365	£365
By selection to	Air Vice-Marshal ,,	£1,735	£450	£450

Rates of Allowances abroad are fixed in relation to costs in the particular country.

The rates of pay of the R.A.F. Medical Branch are fixed on an inclusive basis, and the fact that specialist pay and charge pay are not payable as separate emoluments was taken into account when the rates were fixed.

GRATUITIES.

Short Service Officers who complete their full period of service on the Active List may be granted gratuity as follows on transfer to the Reserve:—

After 3 completed years £250
After 5 completed years £700

Permanent Officers who are allowed to retire voluntarily before qualifying for retired pay may be granted gratuity as follows:—

After 10 but less than 15 years' commissioned service £1,500
After 15 or more than 15 years' commissioned service £2,500

RETIRED PAY.

The current rates of service retired pay range from £470 a year, normally earned after 25 years' service, to £949 10s., the maximum for which an Air Force Marshal is eligible (at current rates).

Rates of retired pay are subject to alteration upwards or downwards within certain limits according to fluctuations in the cost of living.

Full particulars as to the conditions of service are contained in Air Ministry Pamphlet 25, a copy of which, together with form of application, can be obtained on application to THE SECRETARY, Air Ministry (D.M.S.), Adastral House, Kingsway, London, W.C.2.

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.
JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN.

Candidates must be qualified and registered under the Medical Acts.

The appointment is for 12 months.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than April 11th.

Duties will commence on May 1st.

WALTER BANKS,
March 24th, 1930. Supt. & Secretary.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the following posts (male):

HOUSE SURGEON to the Special Departments, vacant April 10th. Salary £150 per annum, with board, residence, and laundry. Duties mainly in the Ophthalmic, and Ear, Nose, and Throat Departments.

CASUALTY HOUSE SURGEON, now vacant. Salary £130 per annum, with board, residence, and laundry.

Both appointments will be for six months in the first instance, terminable by one month's notice on either side.

Applications should be sent to the undersigned.

R. J. CARLESS,
March 25th, 1930. House Governor.

Stockton and Thornaby Hospital,
STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £150, with residence, board, and laundry. Candidates for the above post must be doubly qualified and unmarried, and are required to commence duties on or about May 1st. Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me by Tuesday, April 8th.

W. COCKBURN, Supt. & Sec.

Royal Northern Hospital,
Holloway Road, N.7.

PATHOLOGICAL DEPARTMENT.

Applications are invited for the following posts, vacant on May 31st, for which candidates must possess a registered British qualification and be engaged wholly in pathological work.

PATHOLOGIST. Salary £750 per annum.

ASSISTANT PATHOLOGIST. Salary £500 per annum.

In addition to these salaries the Pathologist and Assistant Pathologist appointed will be entitled to a proportion of the fees for private work done in the Department. Private practice is permissible.

Particulars with regard to the hours of attendance, duties and submission of testimonials, etc., may be obtained from the undersigned, to whom application should be made not later than April 12th.

GILBERT G. PANTER, Secretary.

Manchester Royal Infirmary.

HOUSE SURGEON (male)—Aural, Gynæcological, and Ophthalmic Departments.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which will become vacant on May 15th.

Applicants must be registered and hold a Medical and Surgical qualification. The appointment is for six months (three months as Senior and three months as Junior), subject to the provisions of the By-laws as to notice, etc.

Salary at the rate of £50 per annum, with board, residence, and allowance for laundry.

Applications, stating age, to be addressed to the Chairman of the Medical Board not later than April 11th.

By Order,
FRANK G. HAZELL,
March 24th, 1930. Gen. Supt. & Sec.

Lewis Hospital, Stornoway.

An experienced SURGEON SUPERINTENDENT is required for the above Institution, to take up duties on May 16th next. Knowledge of X-ray and Light Treatment essential. Salary and travelling allowance, excluding private consultation fees, etc., £1,050. Applications, with twelve copies of testimonials, to be lodged with the Honorary Secretary on or before April 5th. Conditions of appointment can be obtained from the Secretary.

London Jewish Hospital.

Applications, which should be sent to the Secretary on or before April 11th, accompanied by copies of three recent testimonials, are invited for the post of MEDICAL REGISTRAR AND OUT-PATIENT ASSISTANT.

The holder, who must possess a registered qualification, will be required to attend the out patient Department on five afternoons a week (Monday to Friday) to assist the Out-patient Physicians. Honorarium at the rate of £150 per annum, and the appointment is for six months.

London Jewish Hospital,
Stepney Green, E.1.
(General Hospital—108 Beds.)

CLINICAL ASSISTANT required in the Physical Treatments and Actino-therapeutic Departments.

Applications to the Secretary, from whom particulars can be obtained.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications from duly qualified Medical Men for the post of JUNIOR HOUSE PHYSICIAN at the SANATORIUM at FRIMLEY. The appointment is for six months, dating from June 1st. In the event of a vacancy the Junior House Physician at the expiration of his term of office will be expected to apply for and, if appointed, to hold the post of Senior House Physician. The honorarium is at the rate of £100 per annum, with free board and lodging.

Applications, with copies of testimonials, must reach the undersigned not later than Wednesday, April 16th.

Brompton, S.W.3 FREDERICK WOOD,
March 29th, 1930. Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, April 12th.

The appointment is for six months commencing on May 1st, with an honorarium of £50.

Brompton, S.W.3. FREDERICK WOOD,
March 29th, 1930. Secretary.

Borough of Ilford.

PART-TIME APPOINTMENT OF ASSISTANT MEDICAL OFFICER FOR INFANT WELFARE CENTRES.

The Corporation invites applications from duly registered Medical Practitioners for attendance at certain Infant Welfare Centres in the Borough under the superintendence of the Medical Officer of Health for the Borough, on three afternoons per week at present, but for two additional sessions in the near future, at a fee of £1 11s. 6d. per session.

Forms of application and particulars as to times of attendance may be obtained from the undersigned, and must be received not later than Friday, April 4th.

Town Hall, ADAM PARTINGTON,
Ilford. Town Clerk.
March 21st, 1930.

Hove Hospital (Carr-Burton
MEMORIAL), Sackville Road, HOVE.

A RESIDENT MEDICAL OFFICER (male) is required, who must be unmarried and under 40 years of age. The Hospital contains 24 beds.

The appointment affords excellent opportunity for Surgical experience and for acquiring knowledge of Radium treatment.

Salary £150 per annum, with board, apartments, and laundry.

Candidates should state when they could take over the duties.

Expenses not exceeding one guinea will be paid to any applicant invited to attend for interview.

Applications must be sent in by April 12th, addressed to the General Secretary, 113, Queen's Road, Brighton.

Royal Infirmary, Blackburn.
(240 Beds. Five Residents.)

FOURTH HOUSE SURGEON (male) to commence duties Easter, required at a salary of £130 per annum, rising to £150 and £200, with board, residence, laundry, etc.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Secretary.

This Institution is recognized for the Surgical Practice required for the F.R.C.S. Final examination.

Royal South Hants and
SOUTHAMPTON HOSPITAL.

CASUALTY OFFICER, male, unmarried, required, to commence duties April 1st. Six months' engagement. Salary £130 to £160 per annum, according to qualifications, with rooms, board, and laundry.

Applications, stating age, to be sent to the undersigned, together with copies of testimonials, limited to five, as soon as possible.

Salford Royal Hospital.
(265 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on the 31st instant:—

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the Primary Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board.
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
March 24th, 1930.

The Hospital for Epilepsy and
PARALYSIS, Maida Vale, W.9

A RESIDENT MEDICAL OFFICER required May 1st.

HOUSE PHYSICIAN required May 1st.

Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials, should reach me by April 4th.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary & General Supt.

North Riding Infirmary,
MIDDLESBROUGH.
(General Hospital—150 Beds.)

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary at the rate of £200 per annum. Also THIRD HOUSE SURGEON. Salary at the rate of £125 per annum.

Appointments will be for a period of six months (which may be extended by mutual consent), with board, residence, and laundry.

Candidates (male) should send applications with copies of three testimonials, forthwith to the undersigned, and state age, nationality, and how soon they could take up duties.

CHARLES POSTGATE,
Secretary-Superintendent.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF ASSISTANT DENTAL SURGEON.

Notice is hereby given that Three Assistant Dental Surgeons to this Hospital will be appointed at a Committee of Governors to be held on Thursday, May 8th, at 11 o'clock in the forenoon.

Candidates must hold a registrable British Medical qualification as well as a registrable British Dental qualification.

Candidates must lodge twelve copies of their applications and testimonials with the undersigned on or before Wednesday, April 23rd.

THOMAS HAYES,
March 29th, 1930. Clerk to the Governors.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £125 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, experience, and accompanied by three testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

The Royal Liverpool Children's
HOSPITAL.

There will be a vacancy on April 1st next for One RESIDENT HOUSE SURGEON (preferably Orthopædic) at the CITY HOSPITAL, Myrtle Street. The appointment will be for a period of six months. Salary at the rate of £60 per annum.

Applications, with copies of testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH** *(contd.)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BERKSHIRE COUNTY COUNCIL. *(Assistant Tuberculosis Officer and General Medical Assistant.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.) (Workmen's Medical Scheme.)*	CHESHIRE EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**POOR LAW.**	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	LEWISHAM HOSPITAL. *(Assistant Medical Officer.)*	GLASGOW EDUCATION AUTHORITY. *(Male Assistant Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.1.
March 26th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Manfield Orthopædic Hospital,
NORTHAMPTON. (128 Beds.)

The Board of Management invite applications for the post of RESIDENT MEDICAL OFFICER. Salary £200 to £250 per annum, according to experience, together with board, residence, and laundry.

Applicants must be duly qualified, registered, and unmarried. Previous Hospital experience essential and a knowledge of Orthopædics desirable.

Applications, stating age, qualifications, and experience, with copies of three recent testimonials, to be sent to the undersigned not later than Friday, April 4th.

H. G. LEWIS, Secretary-Supt.

Peterborough and District
MEMORIAL HOSPITAL. (154 Beds.)

Applications are invited from fully qualified Male Practitioners for the post of RESIDENT HOUSE PHYSICIAN.

The appointment will be for a period of six months, commencing April 1st. Salary £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent immediately to the undersigned—

FRANK A. C. TAYLOR, Secretary Superintendent.

The London Lock Hospital,
91, Dean Street, W.

The Board of Management invite applications for the post of FIRST HOUSE SURGEON and SECOND HOUSE SURGEON at the Male Lock Hospital. Candidates must be doubly qualified and duly registered. The salary attached to both appointments is at the rate of £200 per annum, with furnished rooms, full board, and laundry. The appointments are for six months. Duties to commence April 5th. Applications, enclosing copies (only) of three recent testimonials, to be sent to the undersigned at the Male Lock Hospital, 91, Dean Street, W., on or before March 31st.

By Order of the Board,
HY. J. EASON, Secretary.
March 6th, 1930.

St. Andrew's Hospital,
Dollis Hill, London, N.W.2.

RESIDENT MEDICAL OFFICERS.

The posts of SENIOR and JUNIOR R.M.O. vacant on May 1st (male British) Candidates must possess registered Medical and Surgical qualifications of the United Kingdom. Applications by letter, with copies of three recent testimonials and a certificate of ability to administer anæsthetics, should be sent not later than April 5th to the Administrator.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, Tadworth Court, Tadworth, Surrey, on April 22th. Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on Monday, March 31st, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £12 12s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, April 2nd, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary at the Hospital.

By Order of the Board of Management,
JAMES McKAY, Secretary.
March, 1930.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.

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ASSISTANCIES.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant, male, single, young, £350 a year, all found, and car provided, in industrial Practice near Newcastle-on-Tyne. Usual bond.—Add., No. 2109, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, for Country Practice within 40 miles of London. Salary £300 p.a., all found. Partnership can be arranged without premium. Some *experience essential.—Address, No.* 2107, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for Country Practice in Midlands. Experience necessary. Able to drive car and dispense. Partnership if suitable. Full particulars, age, experience, salary required.—No. 2127, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, young, single, for general Practice, Newcastle-upon-Tyne. Salary £250 p.a., all found. — Address, No. 1984, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (married or single). Able to do Refractions or otherwise. Well experienced in Hospital and general practice. £7 weekly (indoor). Usual bond. Send photo.—Address, No. 2116, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Male Assistant, *indoor, for General Practice.* Suit recently qualified man. Send photograph and essential particulars.—Address, No. 2222, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Outdoor Assistant (male, not Irish), Colliery Practice, South Wales. Work light. £400 p.a., rising to £450 if suitable. — Address, No. 2223, B.M.A. House, Tavistock Square, W.C.1.

Public Health Service.— D.P.H.—County Borough M.O.H. receives a single PUPIL.—Address, No. 2103, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, male, in good Practice, large industrial town near Manchester. Car provided. Panel 1,000. Good prospects for the right man. Previous experience not essential. Must be of good [illegible], all found.—Address, 1985, B.M.A. House,

Wanted. — Outdoor Assistant, married. Branch Practice, near London. £450 and house. Motor cyclist preferred.—Address, No. 2231, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, Midlands, gentleman with view. Panel 1,950, and private. £2,400 per annum. Good house, with garage and garden, available. No men of colour or Jews. State full particulars.—Add., No. 2125, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistantship, panel and private, by M.B.(Edin.), 1921, 30, married, ex H.S., 7 years' Hospital and Practice in Colonies. Own car. View Partnership if in Scotland. Capital. Free now. Interview.—Address, No. 2134, B.M.A. House, Tavistock Square, W.C.1.

Wanted by Lady, M.R.C.S., L.R.C.P., post as ASSISTANT. 15 months' experience general practice near London; qualified Dispenser; V.A.D. Hospital experience. Moderate salary. — Address, No. 2106, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Junior Indoor Assistant, S. Wales, mixed Practice. Suit recently qualified man. Protestant. Must be sober. Usual bond. State age, etc. Scotsman preferred.—Address, No. 1915, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship with view early Partnership, by M.B., Ch.B. (Glasgow), Scotch, male, single, Protestant, aged 30; 2½ yrs.' G.P. and Cottage Hospital. Country preferred. Limited capital available.—No. 2133, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship, with view *Partnership, pay ex receipts,* by L.R.C.P. & S.I., L.M. (1924), age 30, married. Experienced panel, private, anæsthetics, and mids. Own car. London or Home Counties pref. —No. 2131, B.M.A. House, Tavistock Sq., W.C.1.

Assistant wanted, a man as Junior to Partners, in an Industrial Practice in University City. Minimum £300 p.a., indoor. No dispensing nor bookkeeping. Ex resident preferred, and a standard of careful work expected. Cyclist.—Address, No. 2113, B.M.A. House, Tavistock Square, W.C.1.

Assistantship wanted by M.B., B.Ch., B.A.O., woman, 30, single. 5½ years' experience private and panel practice. Cyclist. Excellent references. — Address, No. 2132, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Locums required by Woman Doctor. Experienced in private and panel practice; dispensing. Drive car. — Address, No. 2130, B.M.A. House, Tavistock Square, W.C.1.

Glasgow Graduate (1927) desires outdoor ASSISTANTSHIP. Has held Hospital appointments and is meanwhile temporary Assistant in West of England. Conscientious, reliable, well recommended. Interview if desired. Enquiries welcomed.—Add., No. 1959, B.M.A. House, Tavistock Sq., W.C.1.

General Practitioner, 10 years' experience London and country, age 36, requires ASSISTANTSHIP, LOCUM, or PART-TIME WORK, preferably in London.—Address, No. 2129, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B.Ed., wishes out-door ASSISTANCY (perm.) seeing first-class Practice with scope for Medicine. Single, set 25, ht. 5′ 10″, married, exper. (at present in charge), tests. Good anæsthetist (ex H.S.). Has car.—No. 2126, B.M.A. House, Tavistock Sq., W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted by M.R.C.S., D.P.H., age 44, Colonial M.O.H. large city, TEMPORARY WORK, administrative or otherwise. Institution, Hospital, or Health work preferred. Free now.—Address, "Dr. H. W. L." 63, Belsize Park, Hampstead, N.W.3.

Wanted on or about April 28th, a qualified LADY DISPENSER and BOOKKEEPER (indoors) for a large mixed and panel Practice.—Dr. COLMER, Yeovil.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper Dispensers. Secretary - Dispensers, Nurse - Dispensers, [illegible] ire, or 'phone BUREAU [illegible] luct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858. The DISPENSERS' BUREAU, 15, Lindsay House, 17 Shaftesbury Avenue, London, W.C.2.

Doctor offers Part Time to medical man; experienced. Terms moderate. —Address, No. 2123, B.M.A. House, Tavistock Square, W.C.1.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive readers. —BOTSFORD, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

Lady Dispenser - Bookkeeper (Apothecaries' Hall certificate), six years' experience, excellent references, seeks post with Doctor or Institution. Would do locum work this summer. Free now.—Address, No. 2124, B.M.A. House, Tavistock Square, W.C.1.

Lady (young) desires post with Doctor or Dentist, as RECEPTIONIST-NURSE-ATTENDANT. Experience, quick, refined, adaptable.—Write Box 785, 8, Serle Street, W.C.2.

Post as Receptionist required by young lady, to Doctor or Dentist. Knowledge of bookkeeping. London.—Joyce Wilson, 8, Airlie Gardens, Kensington, W.8.

Surrey Local Medical and Panel COMMITTEES.

A Medical Man required to act as SECRETARY to the above. Applications should be forwarded to Dr. J. E. BATES, 55, Murray Road, Wimbledon, S.W.19, not later than April 7th.

Typewriting.—Expert undertakes *Theses, Testimonials,* etc. Numerous letters of appreciation from Doctors.—Tel. Primrose Hill 0805, or write BRADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

EXPERIENCED MEDICAL MAN, having already undertaken scientific literary work, wanted by important German Publishing House, to work on the ENGLISH EDITION of a POPULAR SCIENTIFIC MEDICAL REFERENCE WORK.

It will be required to translate from the German and adapt to English requirements.—Write to A. Z. 867, c/o. RUDOLF MOSSE, Ltd., 125/130, Strand, London, W.C.2.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—dispensers (capable of undertaking returns), clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

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Wanted in West-End Practice, experienced Doctor for WEEK-ENDS and REGULAR LOCUM WORK.—Address, No. 2221, B.M.A. House, Tavistock Square, W.C.1.

A General Medical Practitioner (retired, and life abstainer) is willing to undertake LOCUM TENENS WORK. If duties are light, charge 5 guineas. Full particulars and references given. — Address, No. 2234, B.M.A. House, Tavistock Square, W.C.1.

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PARTNERSHIPS.

Wanted by M.C., M.A., M.B., D.L.O., age 3.., at present in general practice in Scotland, holding hospital appointment in Oto-laryngology, PARTNERSHIP or PRACTICE in Midlands or South. Good-class district with scope. Yielding £830-£1,200.—Address No. 2220, B.M.A. House, Tavistock Square, W.C.1.

Wanted by well experienced M.R.C.S., aged 28, PARTNERSHIP in mixed Practice, ex H.S. and H.P., 1½ years' G.P., energetic, and well received. Payment part down, remainder out of receipts.—Address, No. 2101, B.M.A. House, Tavistock Sq., W.C.1.

A Partner is urgently required in a partnership in Hospital town in South-West Coast. Receipts £5,000 p.a. Panel 1,500 share for disposal. Easy terms to young and energetic man able to start almost at once. Full particulars on application.—Address, No. 2118, B.M.A. House, Tavistock Square, W.C.

Death Vacancy. — Yorkshire, W.R.—*To be sold immediately*, HALF SHARE in a PARTNERSHIP, with surgeries attached. Practice (largely colliery and private) over £3,200 p.a. Panel over 2,000. If desired suitable residence (new), with private surgery and garage, could be purchased.—Address, No. 955, B.M.A. House, Tavistock Square, W.C.1.

Lancs.—Partnership in old-established Practice of £3,000 yearly. Panel 5,000. Nice freehold house for partner. Price for 2 5th share £1,800, and for house £1,200, part deferred. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester. — Partnership in excellent mixed Practice. Average cash receipts £5,816. Panel 3,375. Good house available, 3 bedrooms. Rent 22s. 10d. weekly. Premium—1 3rd share—1½ years' purchase, part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Partnership in Panel and Private Practice. Average cash receipts £2,000. Panel 1,700. Premium 1-3 share—£1,500. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership.—In good-class county town within easy reach of Liverpool, a suitable Partner (experienced and must be married) can acquire 1/3rd share (producing over £1,000 p.a.) in an old-established sound mixed-class Practice. Panel about 3,000. Appts. worth about £700. Beautifully decorated house (with garden) available at rental. Premium 2 years' purchase, part by arrangement.—Address, No. 2114, B.M.A. House, Tavistock Square, W.C.1.

Partnership required at an early date in good-class Practice, income of share about £1,500, within easy reach of London, by M.B., B.S., M.R.C.S., L.R.C.P., with six years' extensive experience. Interested particularly in Medicine and Midwifery.—Add., No. 2135, B.M.A. House, Tavistock Sq., W.C.1.

Required.—Partnership or PRACTICE, £1,000 up, South or South-West County or London, by experienced Graduate in late forties, robust, energetic, married, having necessary capital.—Address, No. 2235, B.M.A. House, Tavistock Square, W.C.1.

Third Share old-established Practice, near Leeds, for Sale. 1½ years' purchase. Average receipts £3,226. Excellent house, tennis lawn.—Apply, 2493, REYNOLDS & BRANSON, Ltd., Medical Transfer Agents, 15, Briggate, Leeds.

PRACTICES.

Wanted at about the end of 1930, old-established small PRIVATE ASYLUM. Must be solid concern of long standing and in good repute. Small overhead expenses essential. Preferably East or South of England. Write in strictest confidence, giving fullest details in first instance, particularly with regard to price, expenses, and profits over last five years. Fancy prices will only waste time of experienced would-be purchaser.—Address, No. 114, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice, with good panel, in East Ham, Manor Park, Forest Gate, or Ilford, or some neighbouring district. Advertiser has ample capital for cash transaction. Give details in replying.—Address, No. 2105, B.M.A. House, Tavistock Square, W.C.1.

Wanted, before end April, PRACTICE in North-West England, earning £2,000—£2,500, large panel. Suitable for two friends. Capital available.—Address, No. 2057, B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.D., general PRACTICE about £1,000 p.a. Educational facilities essential. Ample capital.—Address, No. 2224, B.M.A. House, Tavistock Square, W.C.1.

Wanted May 1st, Country PRACTICE, preferably within 5 miles fair-sized town. Income about £1,000—£1,200. Fair panel. Good house, garage and garden to rent essential.—Address, No. 2121, B.M.A. House, Tavistock Square, W.C.1.

Wanted, by energetic and experienced young man (married), a middle and working-class PRACTICE, with good panel and plenty of scope.—Address, No. 2122, B.M.A. House, Tavistock Square, W.C.1.

Cheshire Town, near Manchester.—Old-estab. PRACTICE. Average cash receipts £838. Panel 800. Good house, 2 reception, 6 bedrooms. Garage and good garden. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Death Vacancy.—Lancs Town.—Nice house, garden, garage, on lease £90. Receipts over £1,200. Excellent scope. Good introduction. Price £1,500, or near offer, part by instalments. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

For Sale, in a large Lancashire Town, an old-established PRACTICE, with a panel of about 2,300. Average receipts for the last three years about £2,500. This Practice is capable of further development. Vendor desirous of retiring. Introduction given. Price one and a half years' purchase. — Address, No. 2112, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

For Disposal, Kent, 14 miles from London.—Middle-class PRACTICE, with scope. Panel 1,500. Income £1,000. House to rent £70 per annum. Surgery attached. — Address, No. 1822, B.M.A. House, Tavistock Square, W.C.1.

For Disposal. — The private RADIOLOGICAL PRACTICE and X-RAY APPARATUS of the late Dr. Maurice R. J. Hayes of Dublin.—Apply, A. O'HAGAN & SON, 9, Harcourt Street, Dublin.

For immediate Sale.—Old-established mixed PRACTICE, Somerset. Retiring practitioner prepared to introduce, and to continue some work for the present. Easy terms. English-man, accustomed to good society essential.—No. 2226, B.M.A. House, Tavistock Square, W.C.1.

For Disposal through illness, a small mixed PRACTICE in Sheffield. Panel 1,000, could be worked up. House and surgery attached.—Address, No. 2225, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Old-established PRACTICE near London. Gross £1,800, with scope. Panel 600. 1½ years'. Charming house and grounds. Attractive proposition. Period of introduction arranged.—Address, No. 2111, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Cash and Panel PRACTICE, London, E. Panel 2,2.., increasing. Average receipts about £..50 p.a. Easily worked. Good scope. Rent £1 per week. Low expenses. Premium £..0.—Address No. 2120, B.M.A. House, Tavistock Square, W.C.1.

Hants. — For Sale, semi-rural PRACTICE. About £1,150 p.a. Panel 250. In a very beautiful district within easy reach of the sea. Excellent modern house, with garden, tennis lawn, electric light, and gas. Freehold £2,100. Premium 1½ years.—Address, No. 2104, B.M.A. House, Tavistock Sq., W.C.1.

Herefordshire.—For Sale, owing to death.—Important old-estab. Country Doctor's PRACTICE (surgical and medical). Income about £2000 a year, easily increased. No opposition. Price £1,250. — GREENLANDS, Business Consultants, Hereford.

London, N.W.—£950 for PRACTICE yielding £900, for quick sale. Charming self-contained flat, with garden. Suit bachelor or couple. Rent £78, with share of rates. Garage. — Address, No. 1963, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town, near Coast. — Old-estab. PRACTICE. Average cash receipts £2,000. Panel 2,150. Good house, 2 reception, 5 bedrooms. Rent £20 p.a. on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town. — Excellent non-panel PRACTICE, owner going South. Nice house, good position, £60. Receipts £1,200, last year £1,500. Price £200 or £5-part deferred. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Lady Doctor's Practice in Lancs Town, near Manchester. — Suitable for two. Cash receipts £1,200. Panel 1,550. Good house, 4 bedrooms, rent £60 p.a. Good introduction.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, E.—Well-established Cash and Panel PRACTICE; panel about 700. Suit lady or gent. Average receipts last two years over £700 p.a. More in previous years. Excellent scope. Fine manor house on long lease, garden, rent £55 p.a. Premium 1½ years' purchase on last three years' average approximately. Address, No. 2119, B.M.A. House, Tavistock Square, W.C.1.

Manchester. — Industrial PRACTICE. Average cash receipts £1,050. Panel 1,525. Good scope. Small house, 2 bedrooms. Rent £39 p.a., clear. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Middle-class Practice in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice for Sale in Perthshire. — Apply to J. GARDNER & SON, 32, Forrest Road, Edinburgh.

Medical Practice, capable of development; vacant through death of Dr. William Gordon Gordon of Ballater.—Parties. may be had from Miss I. GORDON, Tomfhrelecadan, Braemar.

Manchester. — Old-estab. Practice. Cash receipts 1929, £940. Panel 780. House, 2 reception, 5 bedrooms. Garage. Rent £70 p.a. Scope for increase. Premium 1½rd years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nursing Home for Disposal, Borders of Kent, principally Nerve and Mental cases—16 patients, ample staff accommodation. Imposing mansion, in excellent repair, elec. light, central heating, secluded grounds, garage. Lease 41 years. Goodwill optional. — Address, No. 2227, B.M.A. House, Tavistock Square, W.C.1.

North-West Coast. — Old-estab. mixed PRACTICE. Cash receipts 1929, £1,129. Panel 580. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice—1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

N.W. England. — Practice, £1,150 average 3 years, including panel 580. Scope. Good house, let, or sell £2,000. Premium 1½ years'.—Address, No. 2115, B.M.A. House, Tavistock Square, W.C.1.

North Wales. — Industrial district. Receipts over £800 p.a., mainly panel and monthly contracts. Scope for increase. Small hosp. House to rent. Compact and easily worked. Prem. £1,000. Easy payments arranged. —No. 2117, B.M.A. House, Tavistock Sq., W.C.1.

Practice for Sale in Lancashire town. Income from private and panel 1,300. Number on panel 1,450. Good house £1,500, on which a liberal mortgage could be arranged. Practice well known to us and can be well recommended. —Apply in first instance to HOUGH, HOLLASON & Co., Ltd., Manchester.

Practitioner, anticipating retiring this year, please communicate with Advertiser without delay. PRACTICE £1,200 p.a. req. (small panel) in London or suburbs Strictly confid. Advertiser ordered change of locality.—No. 2110, B.M.A. House, Tavistock Square W.C.1.

Sound Practice for disposal, Manchester district. Six months' introduction offered.—For terms and particulars, apply KNOTT & CASTLE, Solicitors, 3, Norfolk Street, Manchester.

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Wanted by retired Medical Man and his wife, a comfortable HOME, with private sitting room, in a private medical practitioner's house.—Reply, giving full particulars, to Dr. A. WILSON, care Midland Bank, 125, Church Road, Hove, Sussex.

Consulting Room in Weymouth Street to be LET at low rent of £140 per annum, including attendance and use of waiting room; or £150 per annum, furnished; ground floor. No outlay required.
Sole Agents: FOLKARD & HAYWARD, 115, Baker Street, W.1.

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Estate Agents, Auctioneers, and Surveyors,
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A commodious modern Bungalow, 10 good light rooms, grounds 1/2 acre, electric light, central heating, etc., very suitable for a Doctor, occupying prominent corner position in pleasant populous district 12 miles N.E. of London. No resident practitioner. Extensive building programme rapidly progressing, and a large Practice should be made very quickly. Freehold available for £100 cash and balance on mortgage. Cost over £2,000 originally.—Write Owner, R. T. MORGAN, 129, Minories, E.C.3.

Consulting Room, first floor, adjoining Harley Street. Vacant after Easter. Residence if required. Good service.—Address, No. 2230, B.M.A. House, Tavistock Square, W.C.1.

Consulting Rooms to be Let. Harley Street and District. Whole or part time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

For Sale.—Charmingly situated HOUSE on gravel soil, with extensive view and delightful garden, 220 feet above sea level. On ground floor—hall, drawing room, dining room, bedroom with its own bathroom, kitchen, larder, scullery, serving annexe between dining room and kitchen. Two other rooms until recently used as consulting and waiting rooms. On first floor—bedroom, with dressing and bathroom. Two other bedrooms. Constant hot water supply, labour saving, and standing on 3/4 acre of land. Garage. Price 3,000 guineas. —Apply, "O. M. R.," Box 786, "Mercury" Office, Hertford, Herts.

Growing residential suburb.— Freehold CORNER HOUSE, 4 bed., 3 recep., garage, garden, gas, electricity. Suit Doctor. £1,350.—Address, No. 2219, B.M.A. House, Tavistock Square, W.C.1.

Gloucester Place, Portman Sq.— Good Lock-up GARAGE for one car to be LET. — Agents: FOLKARD & HAYWARD, F.A.I., 115, Baker Street, W.1.

London, S.W.—Living Accommodation, with use of furnished waiting and consulting rooms and plate. Suitable for lady Doctor desiring evening surgeries. English or Scotch.—Address, No. 2102, B.M.A. House, Tavistock Square, W.C.1.

Private Suite, overlooking de- lightful grounds, offered for Delicate or Mental PATIENT, in large, exceptionally well appointed Home of Trained Nurse. Medical references. Garage.—Address, No. 2229, B.M.A. House, Tavistock Square, W.C.1.

St. John's Wood.—Excellent HOUSE for Sale. Very good position. Suit Doctor. Opening.—Address, No. 2128, B.M.A. House, Tavistock Square, W.C.1.

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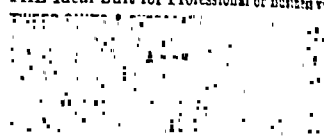
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Consulting Furniture and Instruments for general Practice with full details.—Address, No. 2232, B.M.A. House, Tavistock Square, W.C.1.

Doctor's widow has Instruments for Sale, cheap. Complete Ecraseur case, sterilizer, etc.—Address, No. 1951, B.M.A. House, Tavistock Square, W.C.1.

Hanovia Quartz Sun Lamp, complete, for sale. 100 volt D.C. Has been used for two applications, therefore as good as new. Cost £38. What offers?—Address, No. 2108, B.M.A. House, Tavistock Square, W.C.1.

Rough Rhyming Notes on "TREATMENT AND APHORISMS"—a long-felt want—a snappy book on treatment—a handy book. Best value. Published at 2/6. Sold at Baillière's and at Faber & Fabers, Russell Sq., London; Fannins, Dublin; James Thin, South Bridge, and Brices, Edin. By J. O'K. MURPHY, M.D.

X-Ray Outfit for Sale complete, excellent condition, formerly in connection with ringworm. No reasonable offer refused. May be inspected at 128, High Street, Eltham.

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APPOINTMENTS.—Contd.

Preston and County of Lancaster ROYAL INFIRMARY.

APPOINTMENT OF PATHOLOGIST.

Applications are invited for the post of athologist (whole-time) to take charge of the ew Pathological and Bacteriological Laboratory ecently erected.

The salary and emoluments will be guaranteed o be not less than £1,000 per annum.

The duties consist of carrying out the work f the Hospital, Pathological and Bacteriological ork for the Corporation of Preston, and such ther work as may be sent to the Department y other Local Authorities and bodies and edical Practitioners.

Full particulars of the remuneration, conitions and duties, may be obtained from the ndersigned.

Applicants should forward *twenty copies* of heir applications and testimonials to the ndersigned not later than April 17th.

Royal Infirmary, JOHN GIBSON,
Preston. Supt. & Secretary.
March 24th, 1930.

Medical Officer of Health and of the MATERNITY AND CHILD WELFARE WORK, HOSPITAL ATTENDANT, and also SCHOOL MEDICAL OFFICER.

Wanted, One FULL-TIME OFFICER for the bove for the whole URBAN DISTRICT OF OWLEY REGIS, STAFFORDSHIRE. Canassing prohibited. Salary rate of £900 per nnum, including travelling expenses. Qualificaions in accordance with the requirements of he Acts of Parliament and the Regulations of he Ministry of Health and the Board of ducation. Form containing particulars will e supplied on receipt of a stamped *addressed* nvelope. (A Deputy Lady Medical Officer is mployed). Area of district 3,828 acres. Estiated population 43,500.

Applications to be in my hands by April 14th.
erk, Urban District Council of Rowley Regis, ouncil House, Old Hill, Staffordshire.

Queen Mary's Hospital for the EAST END, E.15.
Telephone: Maryland 2616.

Applications are invited from fully qualified nd registered Medical Men for the combined ost of HOUSE ANÆSTHETIST and HOUSE PHYSICIAN. Salary at the rate of £120 per *annum*.

The Hospital contains 213 Beds, including 46 Maternity Beds and other Special Depts.

Candidates, who must have held previous Resident appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Thursday, April 3rd.

RAPHAEL JACKSON (Mayor).
Secretary

Beckett Hospital and Dispensary, BARNSLEY. (146 Beds.)

CASUALTY OFFICER required, to take charge of Injuries and Fractures. Capability to perform emergency operations a recommendation. Salary £250 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the undersigned as early as possible.

ARTHUR L. BOURNE,
March 25th, 1930. Secretary Supt.

Redlands Hospital for Women, GLASGOW.

Required, Two Medical Women for the posts of HOUSE SURGEON and HOUSE OBSTETRICIAN, for six months from May 1st. Salary at rate of £50 per annum. Applications with copies of three testimonials, to be sent by April 5th to JANET F. STIRT, Medical Sec.

Metropolitan Hospital, Kingsland Road, E.8.

There are vacancies for the following:
(a) SENIOR HOUSE PHYSICIAN;
(b) SENIOR HOUSE SURGEON;
(c) JUNIOR HOUSE PHYSICIAN;
(d) JUNIOR HOUSE SURGEON;
(e) Two CASUALTY OFFICERS.
Males. Salary £100 per annum.

Appointments in the first place will be for a period of *six months* dating from May 1st.

Candidates must possess a registered Medical and Surgical qualification of the United *Kingdom*.

Applications, with copies of three recent testimonials, and a certificate of ability to administer anæsthetics, should be sent to the undersigned not later than first post on Monday, April 14th.

Two Members of the Resident staff are candidates for the two *Senior* appointments.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

Doncaster Royal Infirmary. (185 Beds.)

HONORARY PHYSICIAN AND PATHOLOGIST.

Applications are invited for the newly created post of Hon. Physician and Pathologist to the above Hospital.

The appointment offers unique opportunity in a rapidly growing and densely populated area. The gentleman appointed will be required to be in Consulting Medical Practice and reside in the district.

He must hold the degree of M.D. or be a Fellow or Member of the Royal College of Physicians, and be competent to undertake all Bacteriological and Pathological work of the Hospital. The Laboratory will be allowed to be used for private and other work.

Applications, with full particulars and copies of testimonials, to be received by the undersigned on April 10th.

J. LAWRENCE MEARS,
Secretary Supt.

Bristol Homœopathic Hospital. (Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER, at a salary of from £120 to £150 per annum according to experience, with board, laundry, residence in the Hospital, etc., provided.

Good Surgical and general experience. A good *opportunity for a man reading for higher* surgical examination.

Candidates must be registered under the Medical Acts, and produce testimonials of good personal character and ability.

Applications should be forwarded with three *copies* of recent testimonials, addressed to the undersigned, stating the earliest date they could commence duties, if appointed.

H. HUNTER (Lt.-Colonel), Secretary.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the post of HOUSE SURGEON. The appointment will be for six months, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £150 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned as soon as possible.

W. H. HEAD,
Secretary-Superintendent.

Charing Cross Hospital.

ASSISTANT PHYSICIAN.

The Council invite applications for the post of Assistant Physician (male).

Candidates, who must be Members of the Royal College of Physicians of London, must send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, March 31st.

Charing Cross PHILIP INMAN,
Hospital, W.C.2. House Governor.

Manchester Babies' Hospital, BURNAGE LANE, LEVENSHULME.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from May 1st. Salary at the rate of £50 per annum, with Laundry.

*Applications, together with copies of testi*monials, should be sent to the undersigned and marked "J.R.M.O.," by Monday, April 7th.

ANGELA LOPEZ, Secretary.

Western Ophthalmic Hospital, Marylebone Road, N.W.1.

OPENING OF NEW BUILDING.

Applications are invited for the posts of SENIOR RESIDENT HOUSE SURGEON and JUNIOR NON-RESIDENT HOUSE SURGEON. The salaries are at the rate of £150 per annum and £100 per annum respectively, and the appointments are for six months.

Selected candidates will be required to take up duty on May 1st.

Applications should state whether candidates are applying for either post, and should be accompanied by copies of not less than three testimonials, and should reach me by April 10th.

Marylebone Rd., H. W. BURLEIGH,
London, N.W.1. Hon. Secretary.
March 24th, 1930.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the following posts:

HOUSE SURGEON to the Special Departments (Ear, Nose, and Throat, and Ophthalmic).
CASUALTY OFFICER AND HOUSE SURGEON (with charge of 25 beds).

Salary for both posts £120 per annum, with board, residence, and laundry.

Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than first post on Tuesday, April 1st.

FRANK INCH,
March 21st, 1930. House Gov. & Sec.

Walsall General Hospital.

The Committee invite applications from *men* for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The *Hospital contains 100 beds* and is *equipped in all Special Departments.*

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than the first post Thursday, April 3rd.

WALTER FRANCOMBE,
March 19th, 1930. Secretary.

Doncaster Royal Infirmary. (185 Beds.)

HONORARY EAR, NOSE, AND THROAT SURGEON.

Applications are invited for the above post. Candidates must either be a F.R.C.S. of one of the Colleges or hold the D.L.O. *degree.*

Applications, stating full particulars, with copies of three testimonials, must be received not later than April 10th.

J. LAWRENCE MEARS,
Secretary-Supt.

Durham County Hospital.

The post of *JUNIOR HOUSE SURGEON will* be vacant on April 30th. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of *beds* 75. Salary £120 per annum with *board and lodging.* Applications, with copies only of testimonials, to be sent to the undersigned by April 16th.

79, Saddler Street, WM. B. WILSON,
Durham. Secretary.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be *male*, unmarried, and of British nationality.

Applications, with three testimonials, must be sent in not later than April 11th, addressed to the undersigned.

GERALD A. KENYON,
Act. Secretary.

Doncaster Royal Infirmary.

HON. ANÆSTHETISTS (Two).

Applications are invited for the above posts. Attendance on three mornings or afternoons per week as desired by the Hon. Surgeons. Applications, stating full particulars, must reach the undersigned by April 10th.

J. LAWRENCE MEARS,
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Royal Chest Hospital,
City Road, E.C.1.
(Royal Northern Group of Hospitals.)

Applications are invited for the following posts, vacant on May 1st:

RESIDENT MEDICAL OFFICER. The appointment is for six months, when re-election is required. Salary at the rate of £150 per annum, with board, residence, and laundry.

HOUSE PHYSICIAN. The appointment is for six months. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent on or before April 2nd to the undersigned from whom forms of application, rules, and further particulars can be obtained.

GILBERT G. PANTER, Secretary.
Royal Northern Hospital, N.7.

The District Infirmary,
ASHTON-UNDER-LYNE.
(General Hospital—200 Beds, mainly Surgical.)

Wanted, for May 1st, RESIDENT SURGICAL OFFICER (male).

Salary at the rate of £200 per annum, with board, residence, and laundry. Previous experience essential. Six months' appointment in first instance.

The Resident Staff consists of a Resident Surgical Officer and Three House Surgeons.

Applications, with testimonials, to be sent not later than April 11th to the undersigned.

FRANK OLIVER,
March 24th, 1930. Gen. Supt. & Sec.

Lincoln County Hospital.

Wanted, a JUNIOR HOUSE SURGEON (male, unmarried). Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

Lincoln. ARTHUR MOORE,
March 17th, 1930. Secretary-Supt.

Hertford County Hospital.

Applications are invited for the post of RESIDENT SURGICAL OFFICER. Salary £250 per annum, with board, residence, and laundry.

For preference candidates should hold the Fellowship of the Royal College of Surgeons.

The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than Tuesday, April 1st.

PERCY G. BROOKS, Secretary.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing Monday, April 14th. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, April 9th. Selected candidates will be invited for an interview Saturday, April 12th.

Dundee Royal Infirmary.

Two ASSISTANT VISITING MEDICAL OFFICERS in the Medical Department required. Full particulars of duties, etc., may be obtained from the Medical Superintendent, with whom applications, with 20 copies of three testimonials, must be lodged not later than Saturday, April 19th.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

The following Resident posts will be vacant on May 1st next;

SENIOR HOUSE PHYSICIAN, SENIOR HOUSE SURGEON, and SPECIAL HOUSE SURGEON. Salaries at the rate of £120 per annum.

JUNIOR HOUSE PHYSICIAN and Two JUNIOR HOUSE SURGEONS. Salaries at the rate of £90 per annum.

Board, residence, and laundry.

Appointment held for six months, but holders are eligible for re-appointment for a further term.

Candidates (male) must be fully qualified and registered, and applications (on the prescribed form), together with copies of three recent testimonials, should be sent to me on or before the first post on Monday March 31st next.

FREDK. W. DREWETT,
March 10th, 1930. Director.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY PHYSICIAN.

Candidates must be Graduates in Medicine of a recognized British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, must be sent in by the first post on Monday, March 31st next.

(One of the present Honorary Assistant Physicians is an applicant for the post.)

FREDK. W. DREWETT,
March 10th, 1930. Director.

Lady Chichester Hospital, Hove.
(For Early Nervous Breakdowns.)
(50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty on April 18th, with board, lodging, and laundry, and an honorarium at the rate of £50 per annum.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton.

Westminster Hospital,
Broad Sanctuary, S.W.1.

There is a vacancy in the office of HONORARY ADMINISTRATOR OF ANÆSTHETICS. Candidates must be fully qualified and registered Medical Practitioners, solely engaged in the administration of anæsthetics.

Applications, with 15 copies of each of three testimonials, should be sent in to the undersigned not later than Saturday, April 5th.

By Order of the House Committee,
CHARLES M. POWER, Secretary.

Royal United Hospital, Bath.

Wanted at once, a HOUSE SURGEON. Salary £150 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three recent testimonials, must be addressed to the undersigned.

GERALD A. KENYON,
February 28th, 1930. Asst. Secretary.

The Royal Dental Hospital of
LONDON, 32, Leicester Square, W.C.2.

There is a vacancy for an HONORARY ASSISTANT ANÆSTHETIST, who will be required to attend on Friday afternoons from 3 p.m. until the work of the session is finished. Forty copies of applications, accompanied by three testimonials, stating age and experience, should be sent in not later than April 18th, to the Secretary.

Down Mental Hospital,
DOWNPATRICK.

ASSISTANT MEDICAL OFFICER.

The Committee of Management of above Hospital, at its meeting on April 19th, will consider applications for vacant post of Junior Assistant Medical Officer. Salary £300 per annum, rising by annual increments of £25 to £400 per annum, and with allowances of furnished apartments, rations, laundry, fuel, light, and attendance, valued for pensionable purposes at £130 per annum. A deduction of 5 per cent. will be made from the salary and value of allowances under the Asylums Officers Superannuation Act, 1909.

Candidates must be unmarried, and not more than 32 years of age, except that a deduction may be made for time served in the Army or Navy during the Great War.

Form of application, giving further particulars, may be obtained from the Resident Medical Superintendent until April 11th.

Manchester Victoria Memorial
JEWISH HOSPITAL,
CHEETHAM, MANCHESTER.
(General Hospital and Recognized Training School.)

Applications are invited for the post of HONORARY RADIOLOGIST. Applicant to be registered Medical Practitioner, with Diploma of Medical Radiology and Electrology, to take full charge of X-ray and Sunlight Departments, equipped with one 10 K.V.A. Valve Rectified Set, one Treatment Set, and Sunlight Equipment.

Applications to state days and hours at which attendance could be made at the Hospital (not less than one attendance weekly). Sister Radiographer in attendance. Applications to be addressed to the undersigned not later than April 5th.

FRED BARNES, Supt. & Secretary.

Paddington Green Children's
HOSPITAL (Incorporated),
London, W.2.

HOUSE PHYSICIAN.
HOUSE SURGEON.

These appointments will become vacant on May 1st. Gentlemen (unmarried) are invited to send in their applications, with copies of three testimonials, to the undersigned not later than the first post on Friday, April 11th. Salary of each at the rate of £150 per annum, with board and residence. Candidates who have held a responsible resident Hospital appointment are preferred. The appointments are for a period of six months.

JAMES A. HAMLIN, Secretary.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION,
GLOUCESTER. (153 Beds.)

Applications are invited for a FIRST HOUSE SURGEON (male). Salary £135 per annum, with board, residence, and laundry.

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be received by the undersigned not later than first post on Wednesday, April 2nd. The appointed candidate will be required to enter upon his duties on Thursday, April 10th.

F. J. SYMONS,
Secretary.
March 20th, 1930.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

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W. J. HICKS, *Secretary.*

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Trained Nurses for Mental and Nervous Cases can be had immediately.

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Princess Louise Kensington

HOSPITAL FOR CHILDREN,
North Kensington. (42 Beds.)

HOUSE PHYSICIAN (woman) required for six months from May 1st. The House Physician's salary is at the rate of £75 a year; should she during the period of her residence be appointed Senior Resident (of two), the salary would be at the rate of £160 a year, with board, residence, and laundry in each case.

Applications, together with copies of three testimonials, must be submitted on a form to be obtained from the Secretary, Princess Louise Kensington Hospital for Children, St. Quintin Avenue, W.10. Applications must reach the Secretary not later than Saturday, April 19th.

ESTABLISHED 1868.

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1. NEAR KING'S CROSS.—Well-estab. Cash and Panel PRACTICE. Receipts last year £646, including panel. Surgery and living accommodation £150, long lease. Premium moderate. Suit lady or gent.
2. LONDON, E.—Well-established Cash and Panel PRACTICE. Receipts average £850 p.a., including panel 715. Large corner house, long lease, rent £100 p.a. Premium £1,250. Vendor going into country.
3. LONDON, S.W.—Very old-established PRACTICE. Receipts average £1,060 p.a., includ. panel. Large prominent house, rent £136 p.a. 10 yrs. lease. Vendor selling through age. Urgent sale. Reasonable offer consid.
4. YORKS.—Large Town.—HALF SHARE of a well-established Practice. Total receipts last year £1,823, good panel. Rent of house £89. Premium £1,200. Sport of all kinds.
5. LONDON, E. (20 mins. Liverpool Street).—Excellent opportunity to acquire Cash PRACTICE on very favourable terms. Receipts last 12 months £1,293, all cash. Premium £1,700, payable £650 down, balance in 2½ to 3 years.
6. LONDON, E.—Urgent sale, Vendor having obtained appointment. — Cash and panel PRACTICE. Receipts last 12 months £840, including panel of 600. Rent of surgery £50. Premium £600.
7. LANCS.—Well-established non-panel PRACTICE. Receipts average £1,500 a year, including appointments. Nice house, 4 bed rooms, etc., rent 30/- per week. Premium £1,200, cash if possible.
8. LONDON, S.E.—Well-established Cash and Panel PRACTICE. Receipts £1,000 a year. Rent of house £104, part let off. Vendor having obtained appointment will accept £1,250, payable £500 down.
9. LONDON, S.E. (15 mins. Charing Cross).—Cash and Panel PRACTICE in densely populated district. Receipts about £1,400 a year, panel 750. House, rent £78. Premium £2,000, cash preferred.

No charge to purchasers or for enquiries.

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3. WEST COUNTRY.—SEAPORT TOWN (Residential District). — Well-estab. upper and middle-class non-disp. PRACTICE. Receipts average £1,435 p.a. Panel 353 and considerable scope if desired. Good fees and house.
4. LANCASHIRE (Large Town).—Non-dispensing, non-panel, largely Surgical PRACTICE. Estab. nearly 4 yrs. Receipts aver. £1,179 p.a. and unlimited scope. Good house, etc.
5. MIDLANDS.—Panel and private PRACTICE. Estab. 5 years. Receipts £700, panel 456, both increasing. Appointments worth about £70 p.a. House to rent. Garage, etc.
6. WEST COUNTRY. — PLEASANT COUNTRY TOWN (10 MILES FROM THE SEA).—Agricultural and middle-class PRACTICE. Estab. 2½ years. Receipts £500 p.a. and increasing. Panel and appointments. Good house to rent or for sale. Low prem. for quick sale.
7. WEST MIDLANDS.—Well-estab. PRACTICE in Market Town and Agricultural District. Receipts £1,572. Panel 500. Appointments worth £118. Good house, garage, garden, and all conveniences.
8. YORKSHIRE.—Large County Borough.—Well-estab. working and middle class PRACTICE. Receipts over £1,500 p.a.; steadily increasing. Panel about 1,700. Good house to rent.

FINANCIAL ASSISTANCE afforded to approved applicants for the purchase of Practices or Partnerships on very reasonable terms. Full particulars on application.

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Kent.—Over £1,100 p.a. Panel 430. Appts. over £400. Opposition slight. Little midwifery. Fees 3/6 to 7/6. Good house, 6 beds., garden, etc.—No. 8636.

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Surrey. — £1,000—£1,100 p.a., within reach of Town. Panel 500, increasing. Fees 3/6 to 7/6. Large attractive house, 8 bed., etc., to rent, others available.—No. 8592.

Channel Isles.—Nearly £400 p.a. increasing. No panel. Fees 3/- to 7/6. Med. extra. Good house in residential district. Excellent schools.—No. 8570.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8634.

London, S.E. — About £1,500 p.a., increasing. Non-panel PRACTICE. 2/5 share for disposal for £650 cash. Choice of houses.—No. 8632.

Cornwall. — Unopposed County. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

London, S.E. — About £1,000 p.a. Cash PRACTICE. Panel 350. Lock-up premises at £2 p.a. Low premium. —No. 8627.

Leicestershire. — Country Practice over £750 p.a. Panel over 1,000. Fees 2/6—7/6. House, 4 bed., etc. Rent £70. Large garden.—No. 8626.

London, S.E. — Residential. — Over £600 p.a. Panel 400. Appointments £20 p.a. Visits 3/6—10/6. House, 5 bed., etc.—No. 8621.

Northern Suburb. — Middle-class PRACTICE. About £1,350 p.a. Mids. 2—5 gns. Visits 3/6 to 10/6. Panel over 700. Good house, with large garden to rent.—No. 8625.

London, S.E. — About £2,600 p.a. Very few mids. Panel over 3,800. Nine-roomed house to rent.—No. 8620.

Lancs Town.—About £2,000 p.a. Mids. 2—4 gns. Visits 2/6 up. Panel over 2,100. Prem. £2,833, £750 down. House, 5 beds., etc., to let.—No. 8618.

Liverpool. — 1/3 share of over £4,000 p.a. Old-estab. Appts. £100 p.a. Panel about 4,700. Mids. 3—5 gns. Visits 3/6—5/-. House, 4 bed., etc.—No. 8616.

Eastern Counties. — Country.— About £1,600 p.a. The whole or 1/2 share with early succession. Panel and appts. over £900 p.a., fees 2/6—10/6. Mids 2—5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Home Counties.—Country Practice. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 250. Mids. 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,200 p.a. Surgical soap. Panel 1,500. Appts. £220 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250.—No. 8605.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Panel £100 p.a. Appts. £150 p.a. Fees 5/- to 21/-. No mids. Good house and garage.—No. 8627.

Derbyshire Town.—Share worth £250 p.a. Non-panel PRACTICE. Appts. £500 p.a. Visits 5/- to 21/-. Mids. 5—6 gns. Scope for surgery. Alternative accom.—No. 8539.

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1 SURREY. — Partnership in Practice over £3,600 p.a. in first-rate residential country district. Semi-detached house (6 bedrooms) for sale. Premium one-third share 2 years' purchase.

2 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

3 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

4 YORKSHIRE (W.R.). — Partnership in Practice over £3,200 p.a. between Leeds and Bradford. Panel 2,100. Good house (4 bedrooms), with garden and paddock, for sale. Premium one-third share 1¾ years' purchase.

5 DURHAM. — Partnership in increasing Practice over £4,800 p.a. in seaport town. Panel 2,500. Suitable house (or rooms) could be obtained. One-fourth share at first at 1¼ years' purchase.

6 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West Coast. Panel 290. House (5 bedrooms), with good garden, for sale or rent. Premium £1,500.

7 X-RAY & ELECTRO-THERAPEUTICS. —Wanted, well-qualified ASSISTANT, with Junior Hospital appointment (Teaching Hospital preferred), for old-established West End Practice in London. Exceptionally good prospects.

8 MIDLANDS.—Practice in picturesque and growing village. Receipts 1929, £900. Pleasant and convenient house, with small garden, etc., to rent. Sport.

9 DEATH VACANCY.—ESSEX.—Practice averaging £1,850 p.a. (£850 from panel and appointments) in small country town. Excellently situated house (7 bedrooms), with electric light and gas, for sale.

10 LONDON, W. — Partnership (with succession) in good-class non-dispensing Practice of £1,750 p.a. No panel. One-half share at first at 2 years' purchase. Partner must be well qualified.

11 W. OF ENGLAND. — Ophthalmic Practice over £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,000.

12 SOUTH COAST. — Practice about £1,350 p.a., in favourite watering-place. Panel 1,370. Large well-situated house to rent. Great scope. Premium £1,850.

13 HOME COUNTY.—Practice doing about £800 p.a. in growing country district under 25 miles from London. Panel 530. Exceptionally attractive house (8 bedrooms), in 2½ acres grounds, to rent. Premium £1,200.

14 EASTERN COUNTIES. — Easily worked Country PRACTICE of over £1,400 p.a. in very pretty part. Panel 750. Well-built house (5 bedrooms). Electric light and main drainage. Garage and garden. For sale. Schools. Premium £2,000.

15 SOUTH AFRICA.—Old-established PRACTICE of over £1,800 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200.

16 LONDON, E.—Cash and Panel Practice of about £830 p.a. (£320 from panel). Well-situated house (3 bedrooms) to rent. Considerable scope. Premium £1,250.

17 SOUTH COAST. — Small Practice in fashionable Health Resort. Earnings 1929, £550. Very good house (6 bedrooms), with large garage and garden, for sale.

18 EASTERN COUNTIES. — Country PRACTICE of £855 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

19 LONDON, N.W.—Practice (carried on by Medical Woman) doing £200 p.a. in main thoroughfare. Panel about 80. Shop-fronted premises, with flat above, to rent. Good scope. Premium £350, to include furnishings and fittings of surgery and furnishings of flat.

20 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

21 WEST OF ENGLAND.—Good-class Family PRACTICE of between £1,000—£1,100 p.a. in centre of important City. Panel 1,100. Good freehold house (6 bedrooms), with garden, for sale. Considerable scope. Premium £1,000.

22 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

23 SURREY.—Partnership in steadily increasing Practice in delightful residential town. Receipts 1929, £2,600. Panel over 900. Very nice detached house (4 bedrooms), with garage, etc., to rent. Hospital. Scope for increase. Premium 1/3 share £1,600.

24 LONDON, S.W.—Practice of nearly £800 p.a. in suburb easy distance of Charing Cross. Panel 830. House for sale or rent. Ample scope. Premium £1,180.

25 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (3 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

26 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750.

27 SOUTH MIDLANDS. — Practice about £450 p.a. in industrial district, close to first-rate town. Panel 100. Nice house (5 bedrooms), with garage, to rent. Considerable scope. Premium £550.

28 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

29 LEICESTERSHIRE. — Country Practice over £720 p.a. (about one-half from panel). Easy distance of good town. Detached house to rent. Premium 1½ years' purchase.

30 YORKSHIRE (W.R.).—Country Practice of £1,300 p.a. (about £400 from panel), close to first-rate town. Good house (5 bedrooms) to be sold. Golf and hunting. Premium —house and Practice—£5,000.

31 YORKSHIRE.—Seaside Town.—PARTNERSHIP in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

32 LONDON, N.W.—Practice of £868 p.a. in thickly populated suburban district within 5 miles of Marble Arch. Panel 480. House to be sold or let. Premium £900.

33 HOME COUNTY.—Country Practice £750 p.a. (over £550 from panel and appointments). Suitable house available. Premium £950.

34 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

35 LONDON, N.—Good middle-class Practice of £1,600 p.a. in first-rate residential district. Panel 800. Very attractive well-built house (8 bed and dressing rooms) and beautiful garden for sale. Premium 1½ years' purchase.

36 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

37 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium 1½ years' pur.

38 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

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40 N.W. COAST.—Steadily increasing PRACTICE (held by a Medical Woman) in popular watering-place. Receipts last year £950 (including panel £230). Ground floor flat to let. Premium £1,050.

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45 EAST ANGLIA.—Partnership in Practice about £3,600 in growing country district near Coast. Panel about 2,500. Small house (5 bedrooms) to rent. One-third share at 2 years' purchase. Preliminary assistantship. Applicant should be young and married or about to be.

46 WEST MIDLANDS. — Practice of £1,440 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

47 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

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58 SOUTH COAST.—Partnership in Practice about £3,250 p.a. in favourite watering-place. Panel 2,300. Large well situated house (6 bedrooms) to rent. Premium one-third share 2 years' purchase.

59 LANCASHIRE. — Practice about £4,000 (net) in first-rate Town. Panel 2,600. House to rent or purchase. Premium £4,750, to include book debts, etc., or half share for £2,800.

60 SOUTH OF ENGLAND.—Seaport Town. PRACTICE of between £750 and £800, including appointments over £225 p.a., and panel nearly 900. Good house (6 bedrooms) to be sold or let. Premium 1½ years' purchase.

61 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase.

62 NORTH OF ENGLAND.—Practice about £600 p.a. in Inland Spa. Panel over 500. Well-situated house (6 bedrooms) to rent. Premium £1,000.

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12. SOUTH-WEST OF ENGLAND.—Old-established and increasing PRACTICE in pretty district 5 miles from Hospital town and within 10 miles of the sea. Income last year £1,489, including Union, etc. (£105) and panel of 780. Railway station near. Detached house (professional rooms, 2 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Rent on lease £45 p.a. Premium £2,100.
13. LONDON.—EASTERN SUBURB.—Old-established good middle-class PRACTICE averaging about £1,350 p.a. Panel of 715. Fees 3/6 upwards. Not much midwifery. Exceptionally nice house, with large garden, tennis court, etc. Contains 10 rooms, in addition to bathroom, etc., and professional rooms. Two garages. Rent on lease £120 p.a. (upper part well let off). Premium £2,000.
14. WITHIN FIFTY MILES OF LONDON.—In a pretty residential [illegible] ract, a well established PRACTICE averaging over £700 p.a., [illegible]ding panel of 538, and appts. worth about £60. Visits p.a., [illegible] 21/-, medicine extra. Midwifery discouraged. Railway situated in place. Very good house (3 reception, 5 bedrooms, etc.), [illegible] Nice garden, tennis court. Garage. Electric light. Price for £800 p.a. 3,000. Premium £1,050. Exceptionally good educational London. Part [illegible] boys.
15. [illegible]VERSITY CITY (WEST).—Good-class old-established non-[illegible] in 2½ acres [illegible]ACTICE worth last year £1,274, including select panel of about 350. Visits up to 21/-. Very little midwifery. Good house in best part of City, overlooking park, with ample accommodation. Vendor's freehold, but will be let on lease. Premium only £1,200.
16. CAMBS.—Old-established Country PRACTICE, averaging for the past three years over £1,200 p.a. Panel of 870. Visits 5/- upwards, medicine extra. About 30 cases of midwifery from 2 to 3 gns. A [illegible] house, with 2 reception, 6 bedrooms, etc., and garden. Rent on lease £80 p.a. Premium £1,800.
17. PARTNERSHIP.—In a most desirable outlying residential [illegible] a suitable Partner (University Graduate, experienced, 30 to 35 years of age and married preferred) can acquire a share (producing at first about £1,200 p.a., but larger might be considered, with further shares up to a third at arranged intervals) in an old-established good mixed-class Practice, averaging over £10,000 p.a. Very good house, with ample accommodation, garden, etc., on rental. Premium 2 years' purchase. Short preliminary assistantship essential.
18. LONDON, S.W.—Very old-established chiefly middle-class PRACTICE, rapidly increasing and offering still further scope. Gross cash receipts for the immediate past twelve months approximately £5,000. Panel of about 1,500; could be much increased. Fees from 2/6 to 21/-. Two houses available, on rental. Very suitable for two friends in partnership. Premium 1½ years' purchase.
19. SOUTH-WEST OF ENGLAND.—GOOD HOSPITAL TOWN.—A one half share in an old-established mixed-class PRACTICE is offered owing to the retirement of the Junior Partner. Gross cash receipts average £2,300 p.a., including good appts. Small panel. Low expenses. Commodious house, with garden and garage, rent £70 p.a. Premium 2 years' purchase. Vendor on staff of Hospital, and scope for surgery.
20. YORKS.—LARGE TOWN.—Very old-established middle and working class PRACTICE, offering exceptional scope for increase. Income for last year £1,500, including panel of over 1,700. Visits 4/6 to 5/-. Conveniently situated house, with 2 reception, 4 bedrooms, etc. Rent on lease £56 p.a. Premium £2,250.
21. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea—A half share in a very old-established and rapidly increasing mixed general Practice. Average cash receipts for last 3 years £[illegible], last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Premium £2,300. Cottage Hospital, and good scope for major surgery.
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23. HOME COUNTY.—Near Sea.—Old-established unopposed Country PRACTICE in pretty district. Receipts last financial year £1,115, including union, etc., £55, and panel 400. Railway station near, good h[illegible] acre, but more can be had if w[illegible] 6 bedrooms, etc. Water laid on a[illegible] ce, freehold, £1,650. Premium £[illegible] l sport.
24. [illegible] residential district, near good t[illegible] ience with) in an old-established good mixed-class Practice, averaging for the past three years £1,54[illegible] and offering good scope. Panel of nearly 1,000. Fees 3/6 to 21 Choice of two houses at rentals of £100 and £50 p.a. Sport of all kinds. Premium 2 years' purchase.
25. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A [illegible] third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, on rental. Premium £2,250.
26. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/- Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
27. MANCHESTER DISTRICT. — Old-established middle and working class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house with 6 rooms in addition to professional rooms. Large garden. Price freehold, £850. Moderate premium accepted.
28. SOUTH AFRICA.—HEALTH RESORT (Inland Spa).—Old established increasing PRACTICE (held over 20 years) on a main line of rail and in a healthy pleasant township much frequented by visitors in the Season. Cash receipts average over £1,750 p.a., including several appts. One opponent. Price for house £1,250, to include furniture, instruments, and motor car (original cost £2,000), and for goodwill £1,250, part by instalments. Efficient introduction. A knowledge of Hydrology would be a big asset.
29. YORKS.—PROSPEROUS LARGE TOWN.—Well-established [illegible] PRACTICE, averaging nearly £1,600 p.a., *including panel of* 1,47[illegible] Fees 3/- upwards. Not m[illegible]midwifery. Low expenses. Very [illegible] situated double-fronted hou[illegible] 4 bedrooms, etc., and [illegible] professional accommodatio[illegible]hold £1,50 (£1,000 on mortgage). F
30. KENT.—Old-established C[illegible] and within 5 miles of the [illegible] and increasing. Visits 5[illegible] worth about £60 p.a. Co[illegible] Nice garden. Price for f[illegible]

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APRIL 5TH, 1930.

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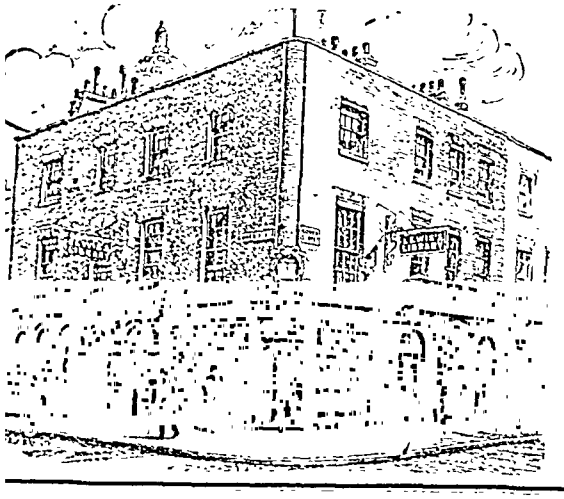
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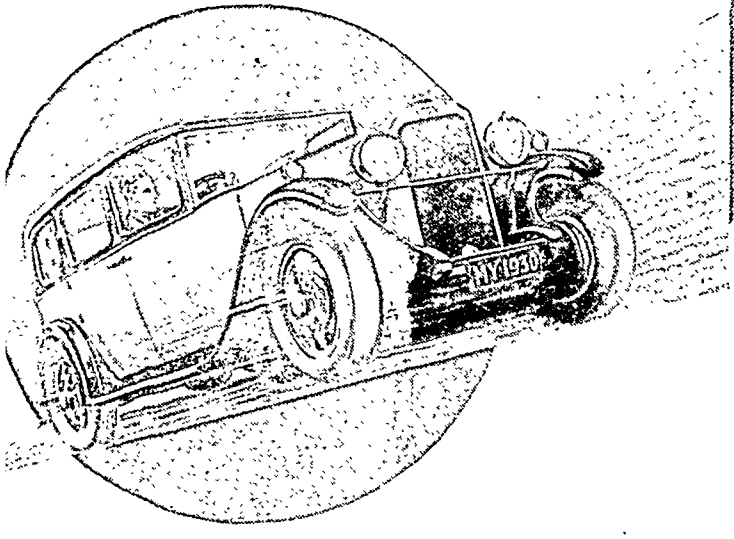
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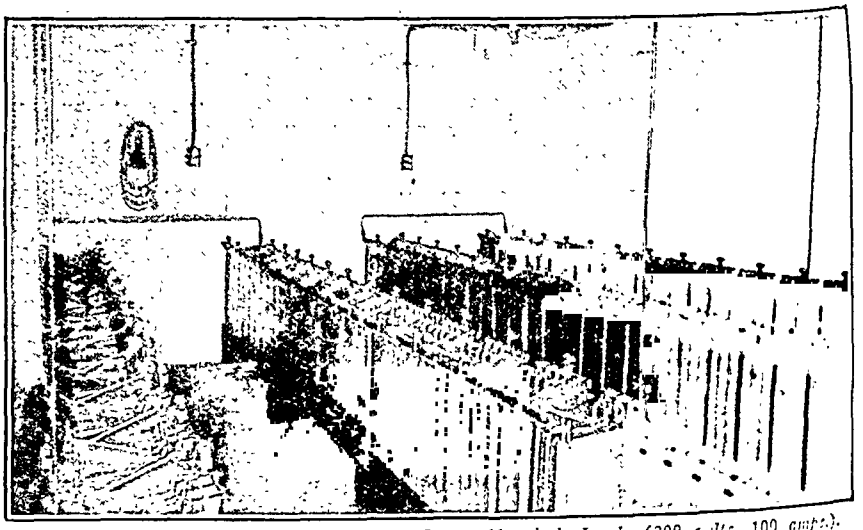
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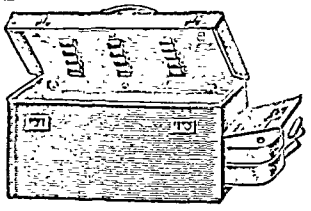
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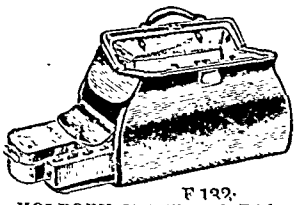
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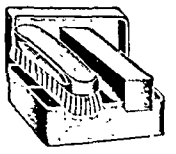
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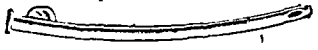


F 132. HOLBORN OBSTETRIC BAG, best black or brown cowhide, 18 × 8 × 11, with washable lining, mahogany rack, and 6 bottles, **84 -**

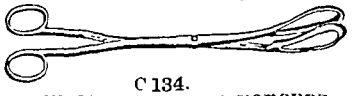


F 147. ASEPTIC METAL BOX, nickel-plated, containing a tablet of Calvert's Medical Soap and Nail Brush, **4 6**

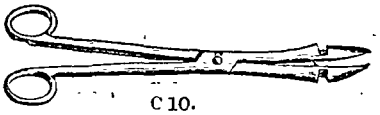
G 100. STERILIZER, 16 × 4 × 3, with lamp and stand, fitting Bag F 132, 133, 134, **37 6**



C 77. FEMALE CATHETER, oval, silver, **6/-**; plated, **3 9**

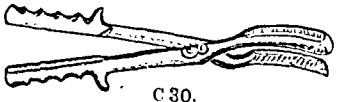


C 134. GREENHALGH'S OVUM FORCEPS, N.P., **7 6**; chrome, **9 6**; stainless steel, hand-forged, **21 -**

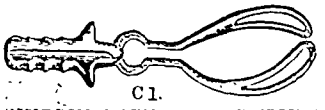


C 10. SIMPSON PERFORATOR, N.P., **8 6**; chrome, **11 -**; stainless steel, hand-forged, **20 -**

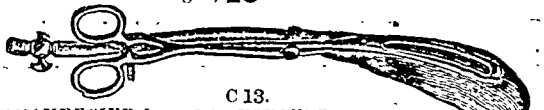
Items C 1, 3, 10, 13, 15, 30, 35, 134, are foreign.



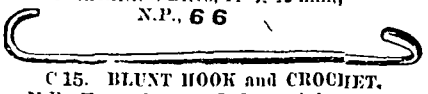
C 30. SIMPSON CRANIOTOMY FORCEPS, N.P., **20 -**; chrome, **25/-**; stainless steel, hand-forged, **35/-**



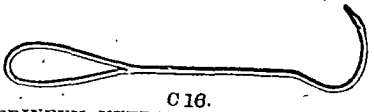
C 1. SIMPSON-BARNES or ANDERSON'S FORCEPS, N.P., **20 -**; chrome, **25 -**; stainless steel, hand-forged, **50 -**



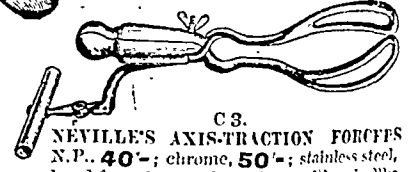
C 13. CHAMPETIER de RIBE'S FORCEPS, N.P., **8 6**; chrome, **11/-**; stainless steel, hand-forged, **21 -**. De RIBE'S DILATING BAG, 3 sizes, **10 -** each.



C 25. FRITSCH'S INTRA-UTERINE TUBE, 3 sizes, N.P., **4 6**. BOZEMANN'S Ditto, 14" × 12 mm., N.P., **6 6**

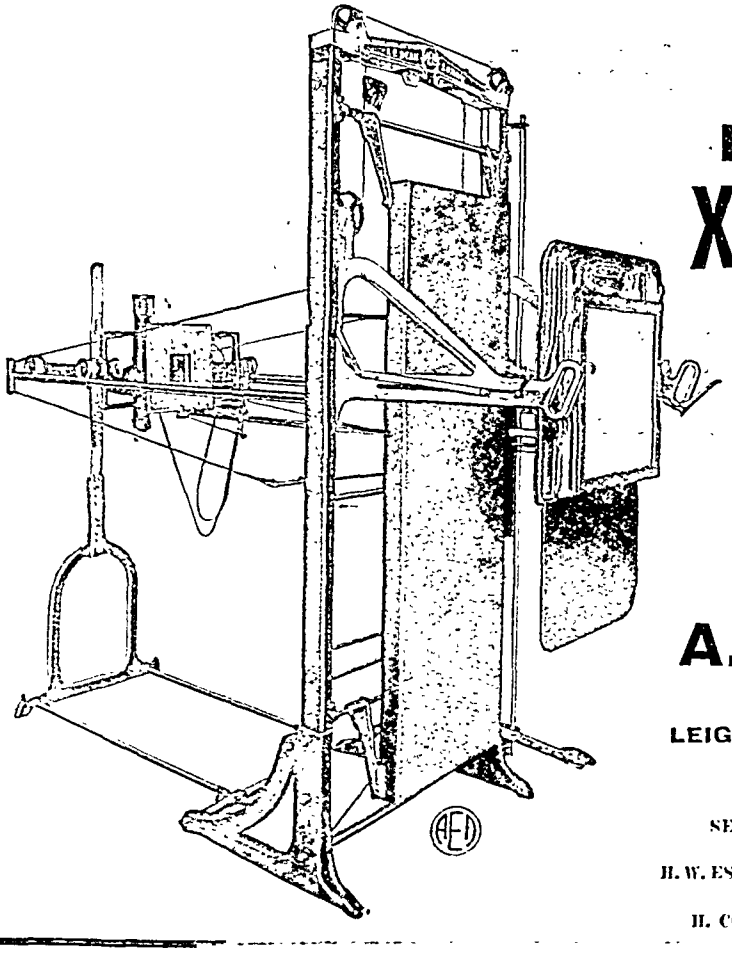


C 16. PERINEUM NEEDLE, Queen Charlotte Hospital pattern, N.P., **5.3**; stainless steel, **8 -**



C 3. NEVILLE'S AXIS-TRACTION FORCEPS N.P., **40 -**; chrome, **50 -**; stainless steel, hand-forged, **87.6**. Ditto, with grip like Cl. **46 6**, **57 6**, **95/-** respectively.

C 15. BLUNT HOOK and CROCHET, N.P., **5 -**; chrome, **6 6**; stainless steel, hand-forged, **9 -**



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X-RAY DIASCOPE
WITH TWO-METRE ATTACHMENT

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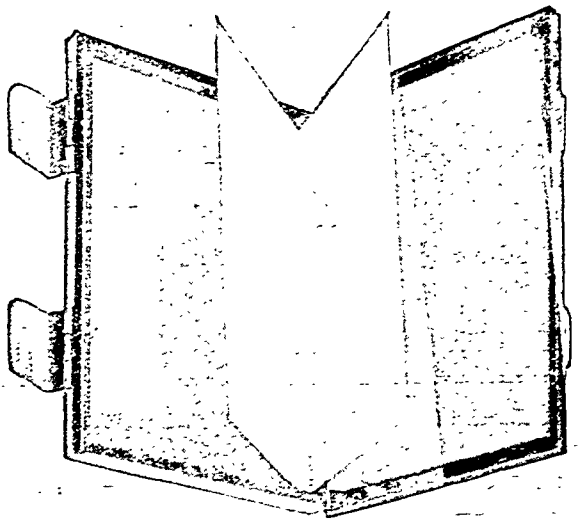
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In jars 1/6 & 2/11.

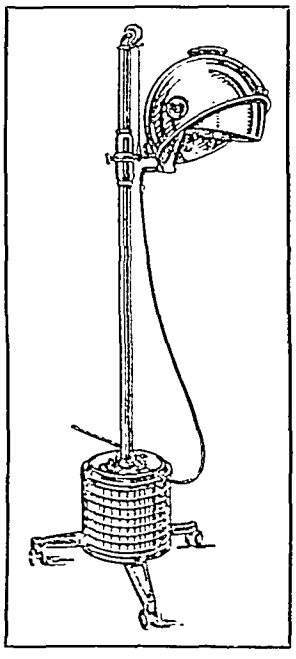
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THE GREAT FRUIT REMEDY

A jar will be supplied free to all men in the medical profession on application to

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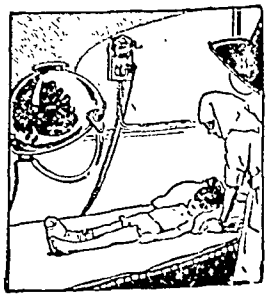
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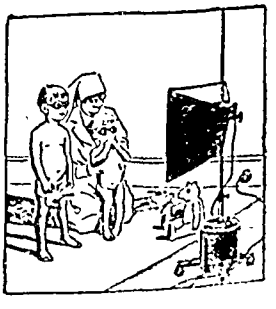
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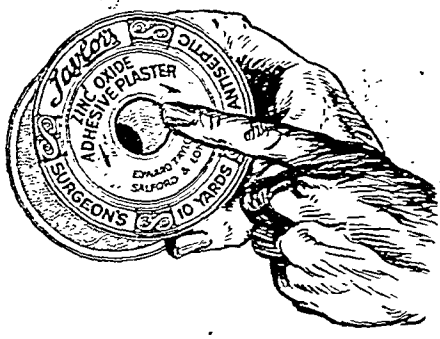




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Kalzana has been used with good results in all forms of skin diseases caused by disturbances of calcium metabolism.

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Calcium lactate + Sodium lactate

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(*Kalzana counteracts the formation of inflammatory infiltrations in the epidermis.*)

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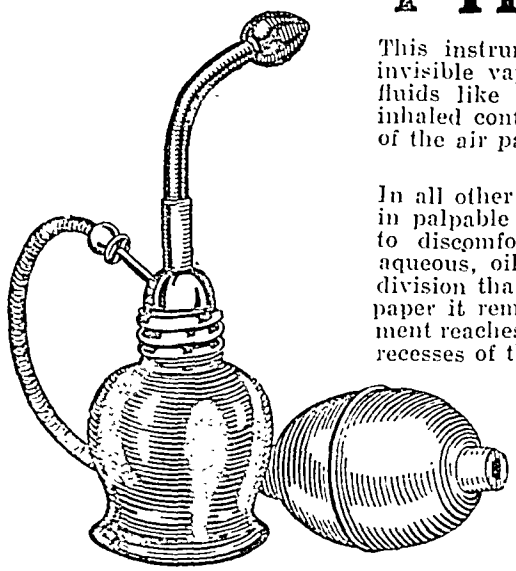
Increased irritability of the nervous system

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Skin Diseases

The Treatment of Pulmonary Affections by Inhalation.

THE AËRISER



This instrument converts liquids into a voluminous but almost invisible vapour, or, in the words of the "LANCET," it "renders fluids like smoke," and thus enables medicated vapours to be inhaled continuously without injury to the delicate mucous lining of the air passages.

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OBTAINABLE THROUGH ALL BRANCHES OF
The Boots Chemists

Liver Extract (BOOTS)

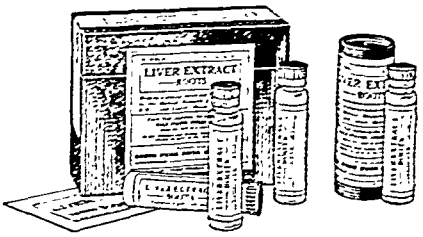
A HIGHLY concentrated EXTRACT OF FRESH LIVER specially prepared for the treatment of PERNICIOUS ANÆMIA. Liver Extract (Boots) is made by a process tested and proved efficient by the Medical Research Council.

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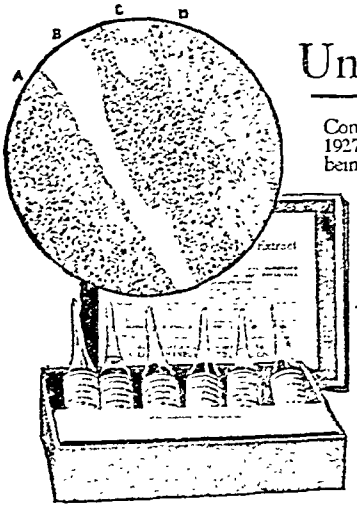
SINGLE VIAL 3/-
BOX OF TEN 30/-



Trade **'PITIBULIN'** Mark

Denotes

Unvarying Pituitary Extract



Conforming to the requirements of the Therapeutic Substances Regulations, 1927, 'Pitibulin' is prepared according to the official standards, its activity being now expressed in terms of the accepted unit.

As heretofore, 'Pitibulin' maintains the stringently high criteria of therapeutic efficiency, safety in use and stability, self-imposed by its manufacturers—qualities which have given it its high place in the esteem of physicians.

'Pitibulin' retains its reputation as the Pituitary Extract which can be relied on in emergency.

Micro-photograph of section of Pituitary showing

(A) pars anterior (C) pars intermedia (posterior lobe)
(B) inter-glandular cleft (D) pars nervosa (posterior lobe)

'Pitibulin' is supplied in Ampoules containing 2.5, 5, and 10 units.

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Telephone: Bishopsgate 3201 (ten lines) *Telegrams:* Greenburys, Edo. London.

Irritable Bowel

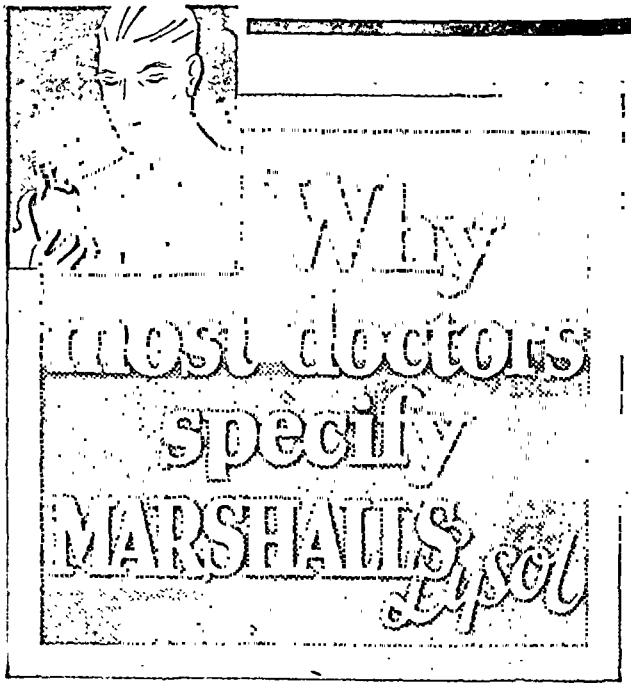
Nujol is of great assistance in the treatment of chronic irritable bowel. Unlike cathartics, whose action is stimulating to the muscles or irritating to the lining of the intestines causing excessive secretion of mucus, Nujol acts merely as a gentle lubricant and solvent of impacted fecal matter. Though it absorbs intestinal toxins to a high degree, it cannot, itself, be absorbed. Consequently, toxemia is prevented, peristalsis is at a natural rate, and the stool is normal and properly formed.

Nujol

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Marshall's Lysol really is an efficient and reliable antiseptic and is absolutely harmless when used as directed, but must never be used undiluted.

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Gibbs new Denture Tablet is for cleaning Dental Plates, Bridgework (both gold and vulcanite) and artificial teeth. It gives a high polish, removes stains, makes plate or teeth sterile and antiseptic without in any way injuring the softest gold or the finest vulcanite or platinum. The formula has been submitted to and approved by important members of the Medical Profession.

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More certain in its action than the old-fashioned poultice.

The healing action of Regetherm Antiphlogistic Poultice is governed by its ability to prolong and maintain an even degree of heat over a lengthy period. Moreover, the ingredients are so balanced that this action does not set up any counter-irritation, but allays pain, ensures an even circulation through the congested areas, and thus induces natural and pain-free rest.

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PRICE 2/- PER 1-lb. TIN

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DENTAL CREAM
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Write TO-DAY for free professional samples, literature, etc., to—

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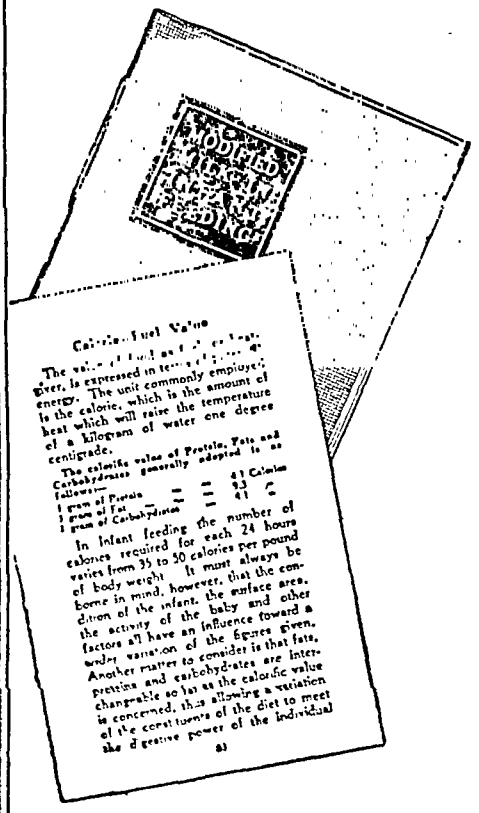
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The purpose of Kolynos Dental Cream is to clean the teeth and soft tissues of the oral cavity thoroughly, thus producing Sanitation of the Mouth. In accomplishing this Kolynos does not interfere with the normal reaction of the saliva.

KOLYNOS DENTURE POWDER

An entirely new preparation for effectively cleaning artificial teeth. Can be used on the most delicate dental plate with complete safety and satisfaction.

Antiseptic. *Convenient in use.*



In the case of hand-reared infants the early use of fresh cow's milk modified by

Mellin's Food

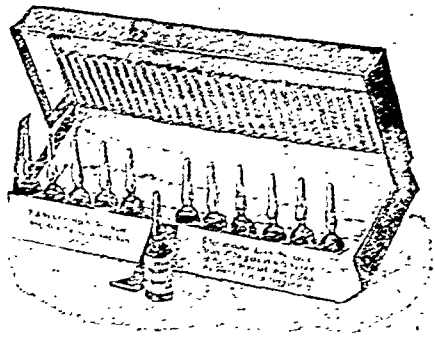
will minimise risks and simplify the question of feeding.

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The pamphlet "Modified Milk in Infant Feeding" will be forwarded with samples, post free, upon application to:—

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(Posterior Lobe)
EXTRACT
B. D. H.



In the practice of endocrinology standardisation is of fundamental importance. Experience in the use of pituitary extracts proves that evaluation of the chief constituents is essential not only for success but also for safety.

Pituitary Extract B.D.H. is made to conform with the standard of activity laid down by the Therapeutic Substances Act; further, every batch of the extract is doubly tested and standardised in the B.D.H. physiological laboratories before issue to the medical profession—for its effect in the contraction of uterine muscle and for its pressor action.

Physicians, therefore, can always rely upon Pituitary Extract B.D.H. for uniform potency.

Literature and prices on request

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Pit. Ext. 73.

Toxæmias of Pregnancy

Biochemistry and Endocrinology prove beyond dispute that pregnant women are weakened in their defences against general disease and septic invasions.

A lowered resistance, often accentuated by the modified shock of parturition, makes PUERPERAL SEPSIS only too simple a matter in many cases, in spite of faultless obstetric technique.

The toxæmias of pregnancy have been investigated and illuminated extensively in the past ten years by the patient research of many brilliant observers, who are all emphatic in representing the importance of intestinal toxæmia in the puerperal picture. Their conclusions point to the necessity of providing

A Safe Intestinal Bactericide

to promote the well-being of mother and child by limitation of putrefactive changes in the bowel during the later months of gestation, and until the post-puerperal period is passed.

Such a product is now available in the form of Dimol, the effect of which can be readily estimated by the gradual disappearance from the urine of the toxins—tyramine, indican, skatol, etc.

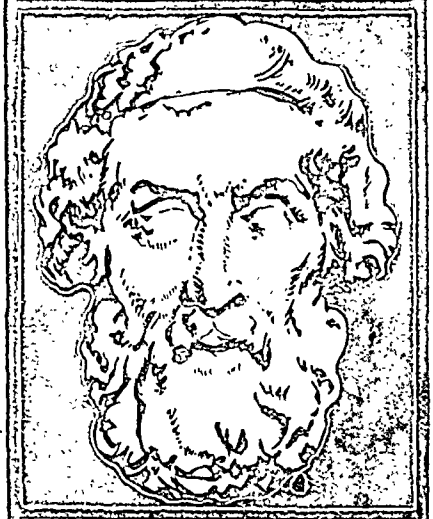
The Obstetrician who wishes to push his investigations into the fascinating subject of the influence of intestinal toxæmia upon intra-uterine life is now furnished with a powerful weapon of research.

The efficiency of Dimol in the treatment of many other intestinal conditions of bacterial origin is conclusively told in the interesting clinical reports which, together with a brochure dealing with the pathological significance of the intestinal toxæmias, will be sent to any physician on application to the

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For establishing a natural daily evacuation of the bowels "Cristolax" offers a desirable form of treatment in every respect. It is not habit-forming and obviates the need of purgatives, which often produce harmful results.

Under the use of "Cristolax" tone is given to the digestive process, inspissation of the fæces prevented and a healthy condition of the bowel maintained. Further, no leakage of oil occurs from the rectum, as usually happens when liquid or semi-liquid forms of paraffin are used.

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BRAND
MALT EXTRACT WITH PARAFFIN
Lubricant-Laxative-Nutrient-Digestive

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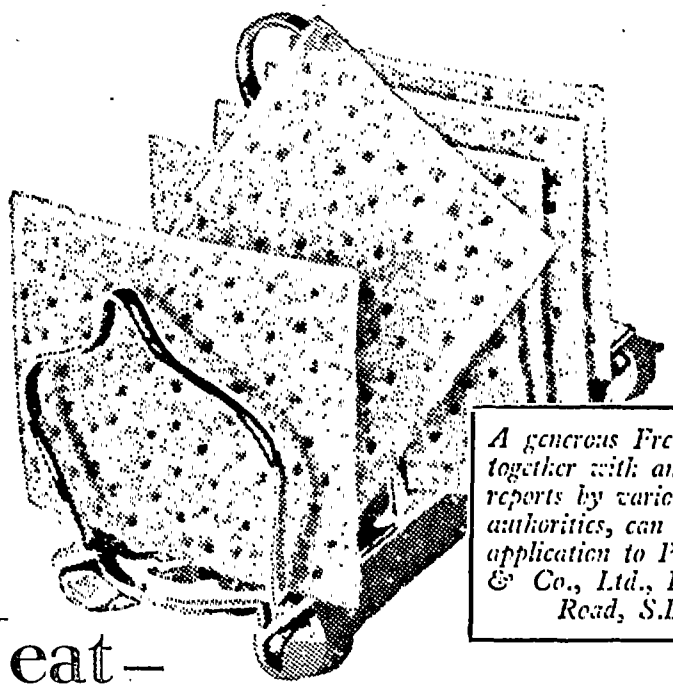
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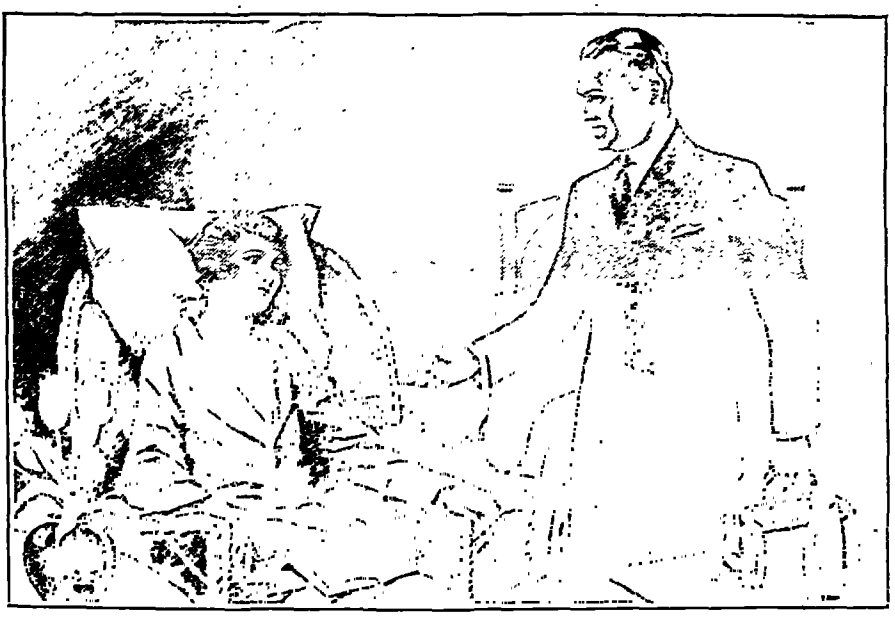
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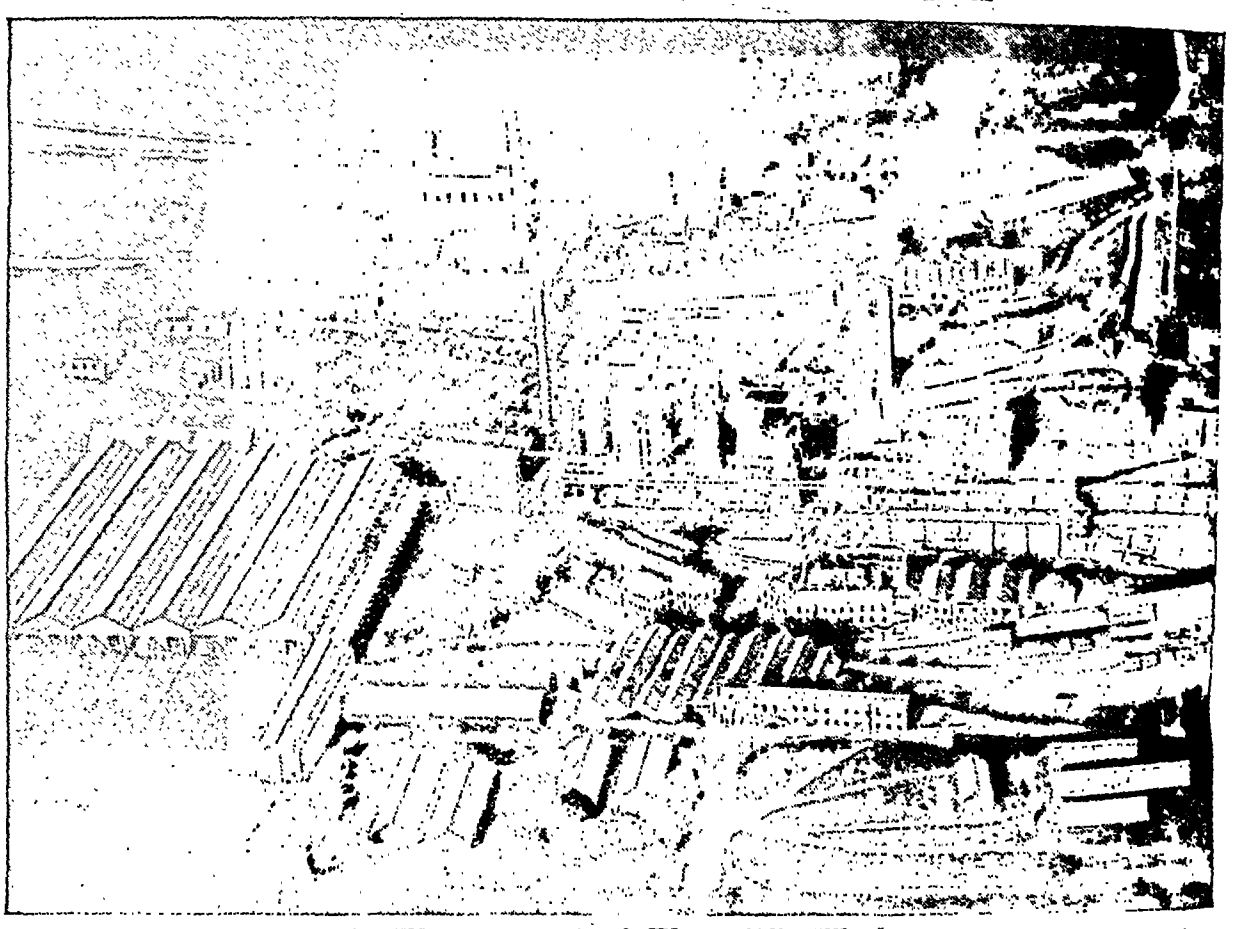
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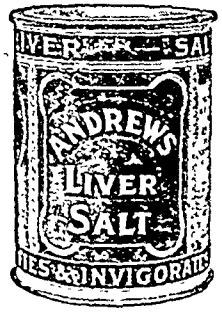
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An Address on STERILITY IN WOMAN.*

BY

W. BLAIR BELL, B.S., M.D.Lond., F.R.C.S.Eng., F.A.C.S.,

PRESIDENT, BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS; PROFESSOR OF OBSTETRICS AND GYNAECOLOGY IN THE UNIVERSITY, AND OBSTETRICAL AND GYNAECOLOGICAL SURGEON, ROYAL INFIRMARY, LIVERPOOL.

In any study of sterility in the human race we should try to discover what is the trend: is sterility more common to-day than it was, say, fifty years ago? This must be a matter of sociological and national importance in some of its aspects as they are related to conditions of environment. Moreover, we must consider the effect of sterility on the health, character, and outlook of the individual woman, both in respect of her own personality and in relation to the circle in which she lives. We know, indeed, the influence of a happy family life on those immediately concerned, and we fully realize the importance of it to the nation at large. So it is that, properly considered, the question of sterility becomes a large and weighty issue.

In a remarkably short space of time, certainly not more than forty years in this country—indeed, it is only 130 years since Malthus's book on the limitation of population was first published—the control of childbirth has become common enough to vitiate statistics in regard to sterility, fertility, and fecundity, especially in relation to the upper classes. It would be impossible to-day to collect figures as accurate in regard to sterility and fecundity as those set out in the following table, which illustrates the fertility of women as estimated by Matthews Duncan from data given in the registers of Glasgow and Edinburgh in 1855.

TABLE I.—*Influence of age on the fertility of married women. Showing the percentage bearing a child within two years of marriage.* (*4,500 marriages.*)

Age when married.	Percentage bearing child within two years.
16	12.9
17	30.0
18	46.4
19	57.8
20–24	90.51
25–29	75.8
30–34	62.9
35–39	40.9
40–44	15.4
45–49	4.3

Matthews Duncan points out that these figures are not absolutely correct, for dead children are not reckoned in the records from which they were obtained. Still, he regards them as indicative of fecundity at different ages at that date. As a matter of interest my house-surgeon, Mr. Jeffcoate, obtained for me the figures shown in Table II, from the histories of more than 1,000 consecutive married women attending a gynaecological out-patient clinic.

TABLE II.—*Fecundity in relation to the age of 1,000 consecutive married women attending a gynaecological out-patient clinic. Showing percentage bearing a child within two years of marriage.*

Age when married.	Percentage bearing child within two years.
16	86.7
17	85.2
18	90.9
19	90.4
20–24	83.1
25–29	71.9
30–34	62.5
35–39	52.0
40–44	29.0
45–49	0

These figures show no resemblance to those of Matthews Duncan so far as the younger women—16 to 20 years of age—are concerned. The reason seems to be that the figures collected from an out-patient gynaecological clinic are concerned with a group of women who for the most part are parous: indeed, 56 per cent. pre-ented themselves for the relief of obstetric injuries. In this class of woman contraceptive measures do not appear to be widely practised, and if we wish to discover the influence of contraceptive measures we must study the Registrar-General's figures concerning the general birth rate.

According to the latest official statistics it appears that the birth rate per 1,000 of the population has fallen from 32.3 in the eighties, and 29.4 in the nineties of last century, to 16.3 in 1929, for England and Wales generally, and to 15.9 for London. The gap between the birth rate and the death rate is, it seems, being rapidly closed. In the last forty years, which is the period of birth control, the birth rate has dropped to one-half of the previous level. Moreover, in the Registrar-General's Decennial Supplement (1921), under the section on "Occupational Fertility," it is stated that in Class I—the highest grade—the fertility rate per 1,000 married males under 55 years of age is nearly half that of Class V (unskilled workers). Since the wives are included and births alone are taken into account, the term "fecundity rate" would be better than "fertility rate." No account has been, or could be, taken as to the exact influence of contraception, but it must be clear that this factor has been concerned in the upper classes, otherwise their low fecundity rate is inexplicable. Such a state of class sterility could not occur naturally.

According to Matthews Duncan the Glasgow and Edinburgh registers indicated that 15 per cent. of all marriages were sterile.

DEFINITION OF STERILITY.

The definition of the term "sterility" has never been satisfactorily determined. Matthews Duncan wrote: "Sterility is generally considered to imply the condition of a woman who, under ordinary favourable circumstances for reproduction, does not bring forth a living and viable child. But the term is used with many other meanings. . . ."

Quite recently, in a discussion at the Royal Society of Medicine, there was a difference of opinion on the matter. Some held that the term should indicate failure to conceive, while others maintained, as apparently did Matthews Duncan, that abortion should be included. For myself, I think it is more exact to hold to the original meaning of the word, which was jejune, empty, or barren; so it is from this point of view I shall review the subject, and therefore shall not discuss abortion. It is necessary to add that sterility may be primary or secondary—that is, after previous fecundity—and that it may be absolute or permanent, or temporary and curable.

CAUSES OF STERILITY.

In the first place it may be said that it is unscientific, and often inhumane, to subject a woman whose only complaint is sterility to what may be tiresome, if not painful, investigations, and perhaps to operations, until the condition of the husband has been established. It should be definitely understood that before anything is done to a woman the husband must be examined. In a considerable percentage of cases the male partner is found to be either impotent or temporarily or permanently sterile from absence or abnormality of the spermatozoa. According to Matthews Duncan, Gross placed the number of sterile husbands at 17 per cent., while modern writers[1] have estimated the figure at 20 per cent. in unfruitful marriages.

Apart from active contraceptive measures, which some believe may lead to subsequent sterility, and which I shall not consider further, sterility in women is due to congenital or acquired lesions in the generative organs, or to some disordered physiological state, and somewhat rarely to toxicological factors.

Congenital Lesions.

These consist of (*a*) atresiae, which are often amenable to operative procedures; (*b*) malformations, which may or may not be remediable by surgical intervention; and (*c*) underdevelopment or absence of essential organs—the latter producing, of course, absolute and permanent sterility, whereas slight underdevelopment may be curable if treated soon after puberty.

*Delivered before the Nottingham Medico-Chirurgical Society on February 12th, 1930, with lantern illustrations.

The recognition of the stenoses of congenital origin that may occur in the vagina and cervix is not difficult, and the treatment is well defined. The subsequent result in regard to conception depends chiefly on whether the uterus and tubes have been permanently damaged by the back-pressure of retained menstrual secretions. So also in regard to malformations: some of these, especially conical and hypertrophied cervices, can readily be corrected by simple surgical procedures, and sterility may be relieved. Underdevelopment (hypoplasia) of the genitalia I shall consider later, for it is, strictly speaking, the result of disordered function.

Acquired Lesions.

On these some stress must be laid, for there is none, apart from those which are the result of eradicative procedures, that cannot in favourable circumstances be remedied. The lesions fall into three groups—anatomical, neoplastic, and infective derangements. They may act directly by preventing the spermatozoa from reaching the cavum, or indirectly by causing dysparenuia, and so by interfering with coitus.

1. *Anatomical Derangements.*

Retroversion of the Uterus.—Whatever other symptoms may be caused by backward displacements of the uterus, there can be no two opinions as to the frequency with which sterility is caused by retroversion. The usual explanation, and it seems a sound one, is that the spermatozoa are unable to reach the cervical canal, for the external os may so point forwards as to lie in close apposition to the anterior vaginal wall and be occluded by it. If the position of the uterus be corrected conception may follow almost immediately. Undoubtedly many women have become pregnant with the uterus in the retroverted position, and it is not unlikely that in a certain number of these there has subsequently been a retroverted gravid uterus, though in some the malposition may have been spontaneously rectified. The whole picture, however, lends support to the view that married women, in whom no other cause is found for sterility, should have the position of the uterus corrected by operation. In a number of cases of "puerperal retroversion" there is some streptococcal infection binding down the uterus, tubes, and ovaries, and frequently the tubes are occluded by adhesions only. This is one of the causes of so-called "one-child sterility." When these adhesions are separated and the uterus is fixed in the normal position with the tubes and ovaries suspended the patient is no longer sterile.

Prolapsed ovaries may be associated with retroversion of the uterus; but it is not at all uncommon to find a prolapsed and tender ovary without any other lesion, and this may cause severe dysparenuia, and, as a consequence, sterility. In a married woman such a condition always demands treatment.

Trauma, for the most part operative, may result in the disappearance of essential parts of the generative organs, or in their mutilation to so great an extent as to prevent conception. I have always been a strong advocate of conservative measures in operations on the female genitalia; and by this I mean that while all permanent lesions causing symptoms should be removed, or otherwise dealt with, the surgeon should be careful never to remove unnecessarily or to interfere with the function of healthy structures. That, of course, should be the guiding principle in all operative procedures, but in no other part of the body is it more important that there should be strict adherence thereto than in the genital organs of a woman, whose whole life may be clouded, and perhaps her mentality affected, by too drastic procedures.

Further, the danger of rendering a young woman sterile by an imperfect operation must be mentioned. In the performance of posterior colporrhaphy, for example, a "sump" should always be left in the natural position of the posterior fornix in which the semen can collect. A circular amputation of the cervix obliterating the fornices may cause sterility.

It is necessary to call attention also to the possible danger of *curettage* for sterility. There is no need for this procedure, even though dilatation of the cervix be performed. On at least three occasions I have found occluded tubes after curettage had been performed, and it appeared probable that the occlusion had followed a slight streptococcal infection of the uterus after curettage; but, of course, one cannot be absolutely sure of this. Nevertheless, if there was pre-existing tubal occlusion, why was curettage performed?

Under this heading I must mention the danger of producing sterility in young women when *x* rays or radium are applied for menorrhagia. Valuable as radium is in certain cases, the greatest care is required in its use; so it is better to give small, and if necessary repeated, doses rather than large doses. There are, however, comparatively few cases in which this type of treatment is really indicated in young women.

2. *Neoplasms.*

Neoplasms of the body and cervix of the uterus may or may not cause sterility; much depends on the position of, and the secretions from, the tumour. The treatment of malignant tumours cannot be viewed from the standpoint of sterility, even in young women, but innocent new growths require careful consideration, fibromyomata especially. Usually fibromyomata require treatment, and their presence becomes known because of associated symptoms, such as haemorrhage, requiring relief. Nevertheless, in women under or in "the thirties" the surgical treatment applied must, when possible, take into consideration the practicability of preserving a functional organ. Innumerable cases are on record of subsequent conception in these circumstances. This statement applies equally to the removal of ovarian innocent tumours. I can recall patients from whom I have enucleated fairly large bilateral cysts or have excised endometriomata from the ovaries who have subsequently borne children.

3. *Infections.*

It is always dangerous to give figures which are based on numbers too small and are applied to conditions in regard to which associated factors are of a very variable nature. Still, it appears probable that about 40 per cent. of all cases of sterility in women are due to this cause. Fortunately we have enough clinical experience and pathological knowledge on which to establish our methods of relief in a certain percentage of these patients.

We know that the local lesions caused by the gonococcus are far more enduring and serious, so far as sterility is concerned, than those due to the streptococcus; and these are the two commonest organisms responsible for failure to conceive. The vagina of the adult, covered as it is with squamous epithelium, is rarely seriously enough infected to give rise to contraceptive discharges. The cervix, on the other hand, may be deeply infected by the gonococcus, which finds a harbour in the racemose glands, and, even though it may soon perish, such damage as it has caused is difficult to cure. There may be a copious semi-purulent discharge, and this may alter the normal acidity of the vaginal secretions—which should contain not more than 0.5 per cent. of lactic acid—and render it inhospitable to the spermatozoa. This perhaps is infrequent; still, the cervix may be a focus of infection which should always receive attention before conservative operations are performed on tubes occluded by inflammation, to which I shall now refer, just mentioning in passing that the endometrium usually escapes serious lesions, owing, probably, to the monthly regeneration that takes place.

Tubal Occlusion.

Occlusion of the Fallopian tubes is a causal lesion—long recognized in the more serious forms—of sterility. The condition has come into prominence in the last few years owing to the recognition of the minor lesions of infection with obstruction by means of the so-called "patency test" of Rubin. It is well known that the tubes may be occluded, and the patient thereby rendered absolutely sterile, without physical signs or symptoms, or even a history indicative of the state of the tubes. This has been so in 35 per cent. of the cases of sterility without

apparent cause under my care in the Liverpool Royal Infirmary which have been submitted to the patency test during the last few years. There have been eighty-two *in all of such cases.* Hunner and Wharton[10] state that in 30 to 45 per cent. of all cases of sterility the tubes are occluded. In these cases there has usually been appendicitis with pelvic invasion, or a mild gonorrhoeal infection; more rarely there has been puerperal or other streptococcal involvement. In all cases, therefore, in which the husband is found to be normal it is advisable to test the patency of the tubes before any other step is taken, unless some well-defined pathological condition is present which of itself necessitates laparotomy.

The method employed is comparatively simple, and there is really no necessity to use the expensive and rather complicated pieces of apparatus introduced at first. I became acquainted with this procedure when I was in America in 1921; but I have myself always pumped air slowly into the uterus with a rubber double-ball syringe and tube connected with a sphygmomanometer through the metal uterine catheter employed by Rubin. The air is filtered through wool plugs placed in the glass T-shaped manometric junction tube. It is important, of course, that there should be no leakage; consequently I test the apparatus prior to use on an artificial rubber uterus.

Experience enables one accurately to gauge the amount of air injected. Originally CO_2 was used instead of air, and no doubt this gas is more rapidly absorbed from the peritoneal cavity than is air. If an unnecessarily large quantity of air is pumped into the uterus and on through the tubes, for twenty-four hours there may be a certain amount of discomfort with pain in the neighbourhood of the right scapula, due to the downward displacement of the liver by the air which collects under the diaphragm and gives the diagnostic feature of patency of the tubes on *x*-ray examination of the abdomen. Radiographic observation, however, is often an unnecessary refinement, for anyone experienced in the method is usually able to tell by the way the manometric needle falls after reaching about 80 mm. Hg of pressure that the air is passing into the peritoneal cavity. Moreover, it can be heard whistling through the abdominal ostia of the tubes if a stethoscope is placed on either side of the hypogastrium. The uterine catheter, which is fitted with a rubber or metal obturator, is held firmly in the cervix gripped on either side by volsella forceps, otherwise the air will escape. If there is any doubt the cervix can be submerged in saline solution and any escape of air noted. I have never found this necessary. The free perforated end of the catheter should not extend more than 1½ inches into the cavity of the uterus. If the first test is not positive, a second test should be made shortly afterwards, for occasionally there is spasm of the isthmial portion of the tube which produces temporary occlusion.

In cases of doubt, and in those in which it is important to define the site of obstruction, it is advisable to test also with lipiodol, 6 to 8 c.cm. of which are injected with a syringe attached to the uterine catheter into the uterus. A subsequent *x*-ray examination gives a clear picture of the result. It may here be added that one of these methods of testing the patency of the tubes should always be practised about three weeks subsequently to conservative operations; such as salpingostomy, performed to relieve occluded tubes. We have in them a method of testing the perfection or otherwise of our operative procedures.

There is one other interesting point in regard to patency testing with air or CO_2, and it is this: somewhat rarely a woman previously sterile conceives after tubal inflation alone. Apparently in such circumstances there has been slight "glueing" or adhesion of the tubes, and this is broken down by air pressure. It is important to test the tubes, however, with a pressure not greater than 200 mm. Hg lest rupture from over-inflation be brought about. A few instances of collapse of the patient after inflation have been reported. I have not seen this accident.

When the abdominal ostia are patent the region of obstruction may be identified by an air inflation method I published in 1917.[2] After the peritoneal cavity has been opened the abdominal ostia are brought into view and the nozzle of a syringe filled with air is passed into each in turn. A small quantity of air is very slowly expelled from the syringe into the lumina of the tubes, and it is noted whether it passes on into the uterus or is held up at the isthmus or in the interstitial portion. If air passes into the uterus, it can be heard "popping" through the cervix, or if the uterus be nipped between the finger and thumb the air can be felt gurgling out of the cavity. In exceptional cases coloured fluid may be injected and identified by the coloration of a vaginal swab.

Having used and described this method of transtubal inflation some years before Rubin introduced his method of transcervical insufflation, it seems that I must have had a mental air-pocket, otherwise it is difficult to understand why I did not also try transuterine inflation.

Operations for Tubal Occlusion.

Of the operations designed to restore functional integrity in regard to conception little need be said. The only procedures generally practised are freeing the tube when buried in adhesions, and salpingostomy. As already stated, the result of the operation should always be tested by insufflation subsequently. In my own cases of salpingostomy, not many it is true, I have been able to demonstrate by this means that patency has been restored in 62 per cent.; but this is by no means a guarantee that pregnancy will follow. The percentage of cases in which this desirable eventuality supervenes is small. Still conception, previously impossible, does sometimes follow, and the knowledge of the possibility has a beneficial effect on the mind of a woman who has given up hope.

It seems that tubes infected by the gonococcus, which damages the mucosa much more seriously than other organisms, except that of tuberculosis, may be made patent, yet are still inhospitable to the ovum on its descent to the uterus, or to the spermatozoa in their ascent to meet the ovum. Consequently, it is after operations performed for occlusion due to the streptococcus and *B. coli* that one expects to see, and in fact, I think, does most often see, subsequent conception.

The recent interest in occluded tubes has brought to light what may be described as congenital imperforation of the tubes, usually in the isthmus. Here one may find a tortuous cord that has no lumen. In such cases, and also when the tube is occluded in this region or at the cornu of the uterus as the result of infection, it is necessary to excise the affected portion and to implant the healthy ampulla in the uterus. I have also performed this operation successfully in the case of a tube attached to a uterine horn that was imperforate.

Sometimes, however, it is impossible to save either tube. It has therefore been suggested by Estes[8] and Tuffier[12] that in some of these cases the ovary attached to its normal vascular supply, or a graft of the ovary, should be implanted in the uterus in such a manner as to allow the surface of the ovary to project into the cavity. I have performed such operations about ten times without immediate or remote harm to the patient, indeed with considerable improvement in her general condition. Tuffier,[12] on the other hand, has reported some accidents after these procedures. In some of my few cases it is too soon to give up hope, but, so far, in none has pregnancy ensued. This, I think, is about the limit to which we can hope to go in surgical conservation of the function of conception.

Physiological Derangements.

I have repeatedly emphasized the fact that the individual metabolism of a woman is her reproductive metabolism, and that the whole group of ductless glands is concerned in its regulation, and may therefore be regarded as forming a genital system. So it comes about that during the period of individual growth before puberty the strain of menstruation and pregnancy is withheld. From this we can draw the very general and obvious conclusions: (1) Those chemical substances which are required by the growing girl are the same as those required by the foetus. (2) Menstruation is a process whereby the substances utilized by the foetus and in excess of the requirements

of the non-pregnant woman are excreted periodically. Menstruation is a constitutional disturbance as well as a local one, and doubtless some of the excretion occurs through the ordinary channels.

It is well known that a woman can conceive without having recently menstruated, and that menstruation may occur without the dehiscence of a ripe follicle, and, indeed, that the uterine periodic activity can be maintained by the ovarian interstitial cells alone.[3] It is, however, quite obvious that conception cannot take place unless there be follicular ripening and rupture. The absence of ripe follicles in an ovary may be regarded as a state of hypoplasia which may require careful investigation, for it is due to failure of function in some part of the genital system.

In many of the lower animals—for example, the rabbit—rupture of the ripe follicle occurs only on the mechanical stimulation of coitus, and possibly during what is known as "doe-jumping," when pseudo-pregnancy may follow.[3] It may be noted that for sterility in cattle veterinary surgeons sometimes practise manual rupture of cystic corpora lutea. In women we have long recognized persistence of the follicle with cystic formation not only as a cause of sterility but also of menorrhagia, and this condition is extraordinarily difficult to treat from the point of view of sterility. It seems that sometimes the failure to rupture is due to a dense tunica albuginea, which prevents the ripening follicle from rotating to the surface, but there can be little doubt, I think, in view of the correlation of function between the follicular and corpora-lutea secretions, that there is often failure of some normal physiological process in these circumstances, for we know that before puberty follicles may ripen and undergo atresia or cystic formation. Further, we know that the pituitary and the thyroid are as closely related to genital functional integrity as are the ovaries themselves, and that in many cases of congenital or acquired genital hypoplasia the functional activity of the pituitary or thyroid is at fault. Thyroid and anterior lobe (pituitary) extracts may be administered in these circumstances, but it is always extremely difficult to know, if pregnancy supervenes, whether the result can be attributed to the treatment, since so many complex factors are concerned.

I shall not discuss those abnormal conditions in the endocrine system, such as cortical hyperplasia of the suprarenal, which produce masculinity in women, with amenorrhœa and sterility. This and other related questions concerning the "genital system of ductless glands" are dealt with in my book *The Sex Complex*, to which reference may be made for a further consideration of them. It is sufficient here to record that insufficiency of the secretions of the pituitary and thyroid leads to amenorrhœa and sterility. It will be noted that all constitutional disturbances which produce sterility also produce amenorrhœa, or scanty and infrequent menstruation, partly because enough of the chemical materials required by the fœtus are not available, and this deficiency affects menstruation as well as conception.

Furthermore, experimental investigations have taught us that one of the chief chemical substances required is calcium,[4] [5] [6] and that just as a hen deprived of calcareous material in its diet ceases to lay eggs, so in similar circumstances may a woman be sterile. This is not difficult to understand when we take into consideration the strain there may be on the calcium metabolism of the mother during pregnancy and also in lactation, when, as we can readily appreciate, menstruation is normally absent. Needless to say, there are many subsidiary articles of diet and vitamins—such as D, which is believed to control the calcium-phosphorus balance—that are necessary. I purposely omit consideration of vitamin E, for though insufficiency of this substance causes infertility in male animals, sterility is not so produced in females, but early abortion follows.[7] [8] But while some chemical substances seem essential, there can be no doubt that perfect health and a full mixed diet alone should be the standard at which every woman who wishes to conceive should aim. Most harm may follow "fads" in the matter of diet. The mixed food of the ordinary citizen contains all [illegible] necessary.

Occupational and Toxicological Factors.

There seem to be no actual figures that serve to show whether occupation *per se*—apart from age of marriage, environment, and so on—has a definite influence on fertility and fecundity. Still, we do know that in those industries in which chronic lead poisoning used to be common sterility was produced in men and, to a less extent, in women. So, also, chronic alcoholism may produce sterility, and therefore occupations in which women find an opportunity for drinking may show a reduced fecundity rate.

Psychical Factors.

Civilized woman, with her "educated" outlook on sex questions, can hardly be considered an ideal female mammal from the breeding point of view. This is not directly her own fault; circumstances of over-population and environmental disharmonies have led to the suppression of natural sexual manifestations, and have fostered abnormal variations in the exploitation of sexual desire. Such widespread deviations from the strict physiological path as now exist must in time have some effect on actual fertility and fecundity. It need hardly be said that the more natural men and women are in their manner of living and loving the greater will be their power of reproducing their species. In primitive man, no doubt, as with the rest of the mammals in the wild state, and with the birds, the coquetry of courtship was the immediate prelude to mating and almost inevitable conception. It is certain that love-making stimulates the sexual functions, so the ability of some men to arouse desire in, and to fertilize, a woman who is sterile with another partner may be the whole story of what we call "incompatibility," or "selective sterility." No one can accurately foretell what will happen in the future; it is, indeed, difficult to say how much right or wrong there is in the growing assumption by Man of the prerogatives of Nature, and perhaps, after all, I should not tread on such slippery ground.

SUMMARY.

1. No woman should be subjected to unpleasant examinations or treatment for sterility *per se*, until her husband has been proved fertile. A considerable percentage of men are temporarily or permanently sterile.

2. Statistics concerning sterility in women generally are inevitably vitiated by the widespread adoption of contraceptive measures.

3. There is no evidence that women are more infertile now than they were fifty years ago.

4. Some congenital anomalies of the genital tract are amenable to treatment.

5. Of the acquired lesions causing sterility infections of the Fallopian tubes are the most prominent. Recent methods of investigation and of surgical treatment afford the hope that in some cases relief may be effected.

6. Conservation of function, when possible, should always be attempted in operations on the female genitalia.

7. Physiological derangements of the metabolism and the regulators thereof, and dietetic factors, are becoming well understood, and this may soon lead to improvements in treatment.

8. Psychical factors doubtless are responsible for both voluntary and involuntary sterility. The influence of these factors has not yet been fully investigated by scientific methods.

9. Good health, a natural mode of life, and a normal psychological outlook, in the absence of physical defects and lesions, are the concomitants of natural reproduction.

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A STUDY OF PSITTACOSIS.

BY

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WE describe below 27 cases of psittacosis that have come to our notice during the last few months. Of this number, 18 occurred in the London area, and the parrots associated with the remaining 9 cases were purchased from bird-shops in London. The majority of the cases have been seen by one or other of us, and several have been observed throughout the greater part of their illness in the wards of the London Hospital. Of the 27 patients 5 died. Three of these deaths, however, occurred in one virulent family epidemic, involving five people.

Prior to the present epidemic of 1929–30 psittacosis was almost unknown in this country except for a few sporadic cases. It has, however, been recognized as a disease, and the association with parrots noted, for fifty years. Its rarity in recent times has tended to cause it to be forgotten, and this fact, coupled with an uncertain bacteriology, resulted in a sceptical attitude in the diagnosis of the cases that occurred early in the recent epidemic. In fact, many of these were not unnaturally thought to be atypical typhoid, or influenzal pneumonia, and it was only through a letter inserted by one of us in the medical press that many of the cases came to our knowledge.

The history of psittacosis constitutes an instructive epidemiological study, and has helped in the appreciation of many features of the present epidemic.

EPIDEMIOLOGY.

In 1880 Ritter[1] described a small epidemic in Ulster, Switzerland. Seven persons were affected, of whom four lived in the house, one came daily, and the remaining two came to clean or repair bird-cages. The owner of the house was a bird collector, and parrots and other exotic birds had arrived a few weeks previously from Hamburg, and also from Vienna. Some of the birds died, and the remainder were killed as suspect. Three of the seven patients died.

Small outbreaks were observed by Ost[2] in Berne (1882), and Wagner[3] in Leipzig (1882 and 1886). The Leipzig outbreaks are of great interest, for although some of the cases were caused by sick parrots, three cases in one household were apparently due to a sick dog bought from the parrot shop. The dog died.

The first extensive outbreak occurred in Paris in 1891–92. There were 50 cases, with 16 deaths in the first year. Smaller outbreaks occurred in the next few years. The Paris epidemic was investigated by several workers: Dujardin-Beaumetz,[4] Dubief,[4] Nocard,[5] Siéard,[5] Gilbert and Fournier,[6 7 8] etc. M. Dujardin-Beaumetz[4] made the first report to the Council of Hygiene. Two Frenchmen, Dubois and Marion, brought a consignment of parrots from Buenos Aires to Havre. Of 500 birds, 300 died on the voyage. The two men fell ill, and the surviving parrots were distributed. All the subsequent cases except three could be definitely traced to contact with this batch of parrots. It is a matter of historical interest, however, that Dujardin-Beaumetz, in his first report, suggested that this was merely coincidence, and that they were dealing with an epidemic of influenza, and not a new illness imported into the country by parrots. In January, 1893, Dubief[4] described two small epidemics originating from such parrots in different quarters of Paris, and Dujardin-Beaumetz was so impressed by the evidence that he asked leave to withdraw his original opinion, and to state, "I think, on the contrary, that the return of these epidemics and their identical course permit me to affirm that there is a relation of cause and effect."

One of the house epidemics studied by Dr. Dubief is sufficiently interesting to report. It bears a close resemblance to one of the London house epidemics studied by us.

"At 31 de la rue de Vaugirard there exists a family pension kept by M. and Mme M. On January 31st Mme M. is taken ill with severe typhoid-like symptoms. On February 8th there occurred a very intense pulmonary congestion, and after having been through a very bad period she is to-day completely cured. But her husband, aged 62, falls ill on February 2nd with signs of infection; he is seized with pneumonia on the 8th, and dies on February 9th in the evening. The maid falls ill on February 2nd, and after having shown critical symptoms she recovers. The seamstress, aged 55, who worked in the apartment, is taken ill with signs of influenza on February 1st and dies with symptoms of pneumonia four days later. Finally, the porter of the house, aged 61, is taken ill on February 4th; he presents symptoms of prostration and depression, and in spite of a slight improvement on February 15th he dies on the 20th with symptoms of pneumonia. Thus, of 5 persons attacked, 3 died.

"The following particulars were ascertained. On January 26th, 1893, M. and Mme M. bought a parrot from a travelling tradesman; this bird was ill at the time of purchase, and it died on January 25th. It was thrown in the dustbin, and the porter was ordered to clean the cage. All the persons subsequently ill had been in contact with the sick parrot, and more particularly Mme M., who had fed the parrot from her mouth; the porter had cleaned the cage, which was very dirty from the severe diarrhœa which the parrot had in its last moments of life."

In 1896 Gilbert and Fournier[7] described further epidemics, and concluded that they were dealing with "a specific microbic illness, which may appear frequently among parrots, and which can be transmitted to man with great ease." Siéard[5] in 1897 described a family epidemic that occurred at Vassy, and Nicolle[9] in 1898 described a similar epidemic in Bernay. The cause of the latter epidemic was a sick parrot which was sent from Paris, and which died a few days after its arrival. In a review in 1926 Gilbert and Fournier[8] conclude that "the transmission of psittacosis to man is no longer in doubt: it occurs more easily when the animals are the receivers of particular care, especially coddling and mouth-to-beak feeding."

Following upon the Paris epidemics, outbreaks also occurred in Italy, and the Rome correspondent of the *Lancet*[10] in 1897 quotes a manifesto of the Civic Ufficio d'Igiene, in which it is stated that "two parrots, recently arrived in Genoa, by the steamship *Manilla*, set up two 'focolai' (centres of infection) of the aforesaid disease, and this has caused a number of victims." It is reported that there were 14 cases, 8 of them fatal. This was followed by further outbreaks at Florence, and later at Udine.

In 1899 Leichtenstern[11] reported further epidemics in Germany, especially in Cologne. He quotes Haedke's observation of a small outbreak in Stettin in 1896, where four members of a well-to-do household were infected from a sick Amazon parrot. There were several outbreaks in Cologne in 1898. The first occurred in a perfectly conducted hygienic household in Quirinstrasse, consisting of mother and father, six daughters, and two sons. Of these ten people only the youngest daughter, aged 14, escaped infection. Four of the nine patients died. The sick parrot was a green Amazon from Brazil. The bird died. A similar type of parrot, also recently imported, caused an outbreak among another Cologne family of the name of Laurenzi. Eight people were taken ill, but only one died. A further outbreak occurred in Bismarckstrasse, there being five cases and one death. This house epidemic was attributed to two recently imported grey parrots. The Krefeld epidemic of 1899 (11 cases in a hotel) is of interest in that the birds concerned were sick popinjays and finches.

In 1904 Vickery and Richardson[12] reported a small family epidemic of psittacosis in America. McClintock[13] (1917) records an epidemic in Wilkes-Barre, Pennsylvania, which originated in the basement of a large department store. Many of the parrots were ill when they arrived at the store and a large number died a few days later; many of the parrots were sold. A careful analysis was made of the clerks located near the parrots.

"In about ten days the sick list of the store employees began to grow. At about the same time many peculiar cases of illness appeared in the practices of physicians in Wilkes-Barre and the surrounding towns. The patients usually gave a clear history

of contact with the sick parrots, either at the store or at home. . . . Some people touched the parrots, but in the majority of instances the inspiration of the air of this zone was the common factor. . . . There were a number of human cases in which the disease in its epidemic form must have been contracted from sick parrots, after the birds had been taken to the homes."

In this country Beddoes[14] described two cases, aunt and niece, that occurred in 1914. A sailor relative brought home a sick parrot from his ship. Several of the sailors were unwell, and one was taken to hospital at Liverpool with supposed typhoid. In 1924 Gulland[15] reported two cases in this country, and in 1927 Stolkind[16] recorded a further two cases. In July, 1929, Thomson[17] investigated a small outbreak of four cases occurring in Birmingham. It is of great interest to note that psittacosis in the summer of 1929 occurred in epidemic form in the Argentine. This suggests that the mode of transit of the parrots from the Argentine to Europe is not necessarily responsible for the initiation of the disease, but rather for its spread among the birds.

Weekly Bulletin No. 48 of the Health Section of the League of Nations, dated November 28th, 1929, states that according to unofficial information received from the Argentine there was an outbreak of psittacosis in October, and cases of this disease were reported from various parts of the country. The epidemic is said to have begun at Cordova, among a theatrical company possessing a parrot which was suffering from the disease.

The Epidemiological Record of the League of Nations, December 5th, 1929, states:

"Argentine medical journals contain some details concerning the epidemic of psittacosis which broke out in that country at the end of the summer. During July and August the town of Cordova reported many cases. Psittacosis was only diagnosed a considerable time after it had made its appearance, when the source of the contagion was traced to a disease of parrots. A few days after the epidemic started at Cordova there was another outbreak at Alta Gracia, a watering place 35 kilometres from Cordova. Another epidemic was noticed in the town of Tucuman, also situated in the interior of the Argentine where the Andes rise. This town is directly connected by rail with Cordova. Lastly, cases have been recorded at Buenos Aires. Altogether several hundreds of cases—all connected with sick parrots—have been recorded in the Argentine. Accordingly this seems to be the largest epidemic of psittacosis hitherto known. A committee of inquiry has been appointed by the Tucuman Council of Health, and another inquiry is being carried out by the Argentine Medical Association."

During the last few months epidemics of psittacosis have occurred in the United States of America, in many parts of Europe, and in this country. Thomson[17] of Birmingham has studied a fresh series of cases, and we have investigated 27 cases, of which 18 occurred in London. Most of these cases have been caused by recently imported green Amazon parrots, and it would thus appear that the pandemic among parrots in South America is largely responsible for the subsequent European outbreaks.

LONDON HOSPITAL SERIES.

GROUP A. (Walworth, London.)

In this group five people were affected, of whom Mr. and Mrs. M. lived in the house, Mr. B. came to work there every day, and Mrs. O'N. and Mrs. S. visited.

The place was a public-house, and on November 8th a green Amazon parrot was bought from a hawker over the counter. The bird sickened and died on December 8th, when it was replaced by another parrot, which was bought in similar fashion, and which died on December 22nd. The parrot was petted and fed by Mr. and Mrs. M., in the latter case from mouth to beak.

Mrs. M. was taken ill on December 21st, and her husband on the following day. The next to fall ill (December 23rd) was the potman, Mr. B. His degree of contact with the birds is not definitely known, except that he handled both the birds after their death. Mrs. O'N. began to feel unwell at the beginning of January (? 4th). She handled the dead parrot on December 22nd. Mrs. S. fell ill on January 12th. Apparently she had never touched the birds or fed them, but had stood sometimes by their cage. However, it would appear that she was not taken ill until twenty-one days after the death of the second parrot, a period much longer than the usual incubation period. She had nursed Mrs. M. throughout her illness, and had, from alleged sentimental reasons, used the same handkerchief as Mrs. M. We are inclined to regard her as a case of infection from one person to another. The other four cases were apparently directly infected from the parrots. The three women were sisters.

Of the five patients the potman, Mr. B., an alcoholic individual, succumbed after a brief illness; the remaining four were all seriously ill, with danger to life, but eventually recovered.

CASE 1.

E. M., *female, aged 45.* This patient was taken ill with general malaise on December 21st, 1929. She continued thus until December 25th, when she developed a painful dry cough and a pain in the right side. On examination she was found to have an impaired percussion note and crepitations at the right base. The temperature was 102° F., with slight increase in pulse and respirations. About this time the patient suffered from photophobia and deafness. Within the next few days the pulmonary signs and symptoms increased in intensity, the temperature being maintained at about 104° F., the pulse becoming rapid, feeble, and irregular, and the respirations increasing to as much as 60 a minute. The physical signs were those of a broncho-pneumonia. The patient became very somnolent, collapsed, and cyanosed, and cardiac stimulants and oxygen were used. She remained in this precarious condition for about a week, and then began to show slight improvement. On the eighteenth day of the illness the temperature began to fall slowly (lysis), but the lung signs did not clear up for several days after this. At the height of the illness blood cultures were sterile, and the blood count showed a leucopenia. Agglutinations to typhoid, paratyphoid A and B, and *B. aertrycke* were negative. Convalescence was slow and tedious.

CASE 2.

R. M., male, aged 54, fell ill about December 22nd, 1929, but was not seen by a doctor until December 25th. He then had high fever, with persistent cough, but no signs in the lungs. The next day the temperature was 104° F., and dullness and moist sounds were present at the right base. The patient was semi-comatose and delirious, with outbreaks of restlessness and noisiness. Constipation and distension of the abdomen were marked features. The high temperature was maintained for about ten days, after which it gradually fell to normal, and the lung condition resolved. At the end of the first week of the illness the patient developed very obstinate hiccup, which persisted for some days. Convalescence was slow and tedious.

CASE 3.

J. O'N., female, aged 49, began to feel unwell on January 4th without having any very definite symptoms. She developed a slight cough after a few days, and took to bed on January 11th. She then complained of severe frontal headache, weakness, cough with slight sputum, sore throat, and photophobia. She became restless and feverish at night, and was unable to sleep. Constipation was troublesome. The patient was not seen by a doctor until January 16th, when her temperature was 101.5° F., her pulse rate 92, and respiration rate 25. Headache was now very severe, a dry cough had become worse, and there were a few crepitations at the base of the right lung. When visited on January 18th the patient lay quietly in bed with all the blinds drawn, as she could not bear the light. She complained bitterly of her headache, which was not relieved by analgesics. It was stated that she had periods of delirium. The lung signs were the same as on January 16th. The spleen was not palpable. The temperature had fallen to 100° F. that morning, but the next day the patient had a rigor and the temperature rose to 105° F. It persisted at this level, with only slight morning remissions, for another week, after which it fell by lysis. The respirations and pulse were never markedly raised. On January 21st there were numerous moist sounds at the base of both lungs and extending up to the scapula. There was slight dyspnœa and some cyanosis. The patient occasionally lapsed into a muttering delirium. On January 31st the temperature was normal, although the patient still seemed slightly incoherent, and as though she did not fully realize what she was doing. On February 2nd there was a relapse, the temperature rising to 102° F., following upon a rigor. This apparently was associated with a thrombosis of the right femoral vein. The next day the temperature was subnormal. The patient then gradually improved, and on February 11th was convalescent, although the leg was still swollen. Agglutination tests for typhoid, paratyphoid A and B, and *B. aertrycke* were negative during the second week.

CASE 4.

M. S., female, aged 56, was taken ill on January 12th with general malaise and weakness. On the second day a severe headache and backache developed. Her temperature was 104° F., her respiration rate 24, and her pulse rate 98. On January 14th the

patient was very confused and complained of vague abdominal pain, chiefly in the iliac regions. Apart from some distension of the abdomen there were no definite physical signs at this time. The next day the confusion and collapse increased, and there were periods of delirium. On one occasion she jumped out of bed and rang a bell, afterwards stating that she had no reason for doing so. The patient was very restless at night, and could not sleep. The headaches persisted in spite of numerous analgesics. A troublesome dry cough developed. Constipation and anorexia were well marked. Photophobia was present. On January 19th (seventh day of illness) she was admitted very ill to the London Hospital. She lay in a semi-comatose condition, without taking any interest in her surroundings, even when aroused. Her cheeks were flushed and her tongue dry and furred. There were some moist sounds at the base of the right lung. The abdomen was distended, and the spleen was not palpable. Her temperature was 103° F., her pulse rate 92, and respiration rate 24. She remained in this state for about a week, the delirium and troublesome dry cough being prominent features. The moist sounds at the base of the right lung increased, and on January 27th the percussion note was impaired and an area of tubular breathing was present at the angle of the right scapula. At this time (fifteenth day of illness) the temperature was falling by lysis, and on January 28th it became subnormal, persisting at this level until the patient's discharge, two weeks later. During the first week of the afebrile state the patient's general condition was precarious, but subsequently there was gradual recovery. Moist sounds were present in the lung for about ten days after the temperature had fallen. Agglutination tests on January 20th were negative for typhoid, paratyphoid A and B, and *B. acertrycke*, and blood cultures were sterile. The urine contained a trace of albumin, leucocytes, and epithelial cells, and gave cultures of *B. coli* and *B. proteus*. A blood count on the eighth day showed: erythrocytes 4,700,000 per c.mm.; haemoglobin 64 per cent.; colour index 0.65; leucocytes 5,760, polymorphs 81 per cent., eosinophils 0.5 per cent., small lymphocytes 12 per cent., large lymphocytes 1 per cent., large hyaline cells 5.5 per cent.

CASE 5.

F. P. B., male, aged 53, began to feel unwell on December 23rd, but continued at his work until the 28th, when he complained of very severe headache and aching in all his limbs. He was admitted to an institution on December 30th with a temperature of 102° F., a pulse rate of 88, and a respiration rate of 24. He then had a slight cough, and a few moist sounds were noted in the lungs. Insomnia and marked constipation were other symptoms at this time. The headache persisted and the cough became more troublesome. On January 6th fine crepitations were present all over the right lung. On January 8th there appeared signs of broncho-pneumonia at the bases of both lungs. It was specially noted that, in spite of a persistently high temperature, the pulse had remained relatively slow, 80–100. The respirations, too, were only 24. A large, bright haemorrhage now occurred from the rectum. During the next few days the patient became worse, the respirations and pulse increasing. He died on January 11th. Necropsy showed lobar pneumonia of the whole of the left lung and right lower lobe, and it was thought that the patient died from influenzal pneumonia and heart failure. The case was subsequently traced as one of this group of five cases, and it would appear from the records and charts that it was much more probably a case of psittacosis with marked involvement of the lungs, as usually occurs in fatal cases of this disease.

Group B. (Barking, London.)

In this group five people were affected—two sisters, two brothers, and the mother, all belonging to one family. Apart from one of the sisters, who was married, they all lived in the same house. It is interesting to note that, whereas all these people were previously in good health, two remaining members of the family, brother and sister, suffering from phthisis and living in the same house, gave no evidence of infection with psittacosis. Two other sisters, however, also escaped infection.

J. R. bought a green Amazon parrot from a hawker in Spitalfields Market on January 10th. Although showing no gross signs of illness, it fell off its perch dead on January 21st. The patients at first considered that they had had no intimate contact with the bird, but it subsequently appeared that, except for the married sister, they had in all probability put their fingers inside the cage and stroked the parrot's head.

L. R. fell ill on January 23rd, E. R. on January 25th, J. R. on January 27th, El. R. on February 1st, and E. S. on February 6th. The first four cases appear to be direct infection from the parrot, but the last case, that of the married sister, is much more probably an example of *person-to-person* infection. She saw the parrot on only one occasion, January 12th—that is, twenty-five days before the beginning of her illness. She came to live with the R. family from February 1st, in order to nurse her mother, but she had called on the other ill patients and sat by their bed in the house for some days previous to this. The severity of the infection in this ill-fated family was very great, pulmonary complications being a marked feature. Only two survived—the married sister, E. S., and one brother, J. R.

CASE 1.

L. R., female, aged 30, was taken ill on January 23rd. She awoke in the morning feeling unwell, and at 7.45, on taking a cup of tea to her mother, she suddenly fainted on the bed. After a few minutes she recovered consciousness, and returned to her own bed feeling ill and very weak. For the next few days the patient suffered from very severe headaches, photophobia, insomnia, nausea, and a dry troublesome cough. On January 26th the patient vomited twice, and on the 28th she was admitted to the London Hospital, all the symptoms having persisted.

On admission her temperature was 102° F., her pulse rate 120, and respiration rate 36. She was cyanosed and had sordes on the lips. Numerous rhonchi were scattered throughout the lungs, and crepitant rales were present at both apices. There was no dullness on percussion. The tongue was dry and coated, and the abdomen distended. The spleen was not palpable. There were no objective changes in the central nervous system.

The headache gradually diminished in intensity, but the cough became more troublesome, sputum still being absent. There was no marked constipation or diarrhoea. On January 30th dullness and diminished breath sounds, with moist sounds, were noted at the base of the left lung. The cyanosis had increased. During the last few days the patient had become very lethargic, and she was now semi-conscious. The dyspnoea and cyanosis had increased. On February 2nd she became unconscious, and after some hours in this state died. The day before death her temperature was 102° F., pulse rate 108, and respiration rate 60.

Agglutination tests for typhoid, paratyphoid A and B, and *B. acertrycke* were all negative (January 31st), and blood cultures were sterile. The urine and faeces gave cultures of *B. coli*. A blood count on January 30th showed: erythrocytes 5,160,000 per c.mm.; haemoglobin 83 per cent.; colour index 0.82; leucocytes 10,040, polymorphs 93 per cent., small lymphocytes 4.5 per cent., large lymphocytes 1.5 per cent., large hyaline cells 1 per cent.

CASE 2.

E. R., male, aged 18, awoke on the morning of January 25th with a slight headache. He did not have any breakfast, but went to work. During the morning the headache became very much worse. It was mainly situated in the parietal region, but spread across the top of the head. He was unable to continue at work, and at 2 p.m. took to his bed, complaining of the headache, weakness, and vague pains all over the body. During the next few days the headache became worse, constipation was troublesome, and a worrying dry cough developed. On January 28th he was admitted to hospital. He was obviously very ill, but there was no mental cloudiness at this time. The temperature was 102.5° F., the pulse rate 120, and the respiration rate 36. There was no marked photophobia. Sonorous rhonchi were present at the bases of both lungs. The abdomen was not markedly distended, and the spleen was not palpable. The heart was apparently normal, and no abnormalities were found on examination of the central nervous system.

On January 29th there was considerable epistaxis, which recurred frequently during the next few days. At this time he began to expectorate some muco-purulent sputum, and increased respirations were very evident. He became very restless at night, and the next day had periods of delirium and disorientation. On January 30th he was definitely cyanosed and somewhat collapsed. Dullness and bronchial breathing were present at the inferior angle of the right scapula, with intense whispering pectoriloquy and crepitant rales. The patient gradually became semi-conscious, with periods of restlessness and excitement, during which he was restrained with difficulty from leaving his bed. On February 3rd he was very collapsed and stuporous. There was no response to questions, although he made a slight attempt to put out his tongue on being asked to do so. There were definite signs of consolidation at the base of the right lung—marked dullness and bronchial breathing. There were a few moist sounds at the left base, and numerous rhonchi scattered throughout the rest of the lungs. He was still having attacks of severe epistaxis. On February 5th his condition was even worse; he was almost unconscious, except for intermittent periods of violent excitement. The signs in the lungs were the same. The patient fell more and more deeply into coma, and died on February 9th.

On January 28th and February 5th agglutination tests were negative for typhoid, paratyphoid A and B, and *B. acertrycke*; blood cultures were sterile. A blood count on January 30th showed: erythrocytes 5,100,000 per c.mm.; haemoglobin 90 per cent.; colour index 0.89; leucocytes 7,120 per c.mm., polymorphs

71 per cent., small lymphocytes 18 per cent., large lymphocytes 3 per cent., large hyaline cells 8 per cent. Another blood count on February 5th was very similar, the leucocyte count being 6,520 per c.mm.

CASE 3.

J. R., male, aged 27, fell ill on January 27th, with throbbing frontal headache, which persisted with severe exacerbations, especially at night. He retired early to bed that day, and, although he got up the next morning, he returned to bed at midday. That evening he felt very sick and retched for several hours. On January 30th he was admitted to hospital with a temperature of 101° F., a pulse rate of 94, and respiration rate of 24. The temperature remained high for three days, and then fell within twenty-four hours to normal (February 3rd). The only complaint during the illness was the headache. There was no cough, although the lungs showed transient impaired note and diminished breath sounds at the right base, with a few scattered rhonchi. There was no marked abdominal distension, and the spleen was never palpable. There was no photophobia. Although the patient was usually quite clear mentally, he seemed slightly delirious at intervals. On February 2nd he had a profuse epistaxis. The next day he felt much better, and had a fairly rapid convalescence.

Blood cultures on January 30th were sterile. Agglutination tests on February 5th were negative for typhoid, paratyphoid A and B, and *B. aertrycke*. The faeces gave cultures of *B. coli*. A blood count on January 30th showed: erythrocytes 5,000,000 per c.mm.; haemoglobin 80 per cent.; colour index 0.8; leucocytes 7,000 per c.mm., polymorphs 70 per cent., small lymphocytes 17.5 per cent., large lymphocytes 5 per cent., large hyaline cells 7.5 per cent.

CASE 4.

El. R., female, aged 52, fell ill on February 1st, with headache and malaise. That day she had an attack of shivering, especially along the spine. This lasted for about one hour, and disappeared when she was well covered in bed. On February 2nd her temperature was 102° F., her pulse rate 100, and respiration rate 24. She developed a slight dry cough on this day, but there were no physical signs in the lungs. Photophobia was present. The bowels were constipated. On February 4th the patient was still quite clear mentally and not very ill. The cough had persisted, and there were several moist sounds at the base of the left lung. Her headache became worse during the evening, and she described it as throbbing and sore as if someone had been beating or scraping the top of the head. The headache was greatly aggravated by coughing.

During the next two days she complained of profuse sweating, and stated that the headaches made her light-headed. She found herself talking nonsense on awaking. On the morning of February 5th she vomited, and on February 6th she was admitted to the London Hospital. She was now bringing up much muco-purulent sputum and the photophobia was well marked, the blinds being drawn by request. The headache was not a prominent feature at the time. The lips were somewhat cyanosed, and sordes were present round their margins. The throat was red, and there was a yellowish exudate on the soft palate; slight conjunctivitis was present. The tongue was dry and furred, and the abdomen was distended. The spleen was not palpable. Crepitations were present at the base of both lungs, and rhonchi were scattered throughout. The heart sounds were normal, and there were no abnormal objective signs in the nervous system. On the day of admission her temperature was 104° F., pulse rate 94, and respiration rate 26.

On February 7th there were periods of slight delirium. There was a patch of bronchial breathing near the angle of the right scapula. On February 9th there was still much muco-purulent sputum, and the percussion note at the left base was dull. During the next few days respirations increased to 40 or 50; the patient became much worse, falling into a semi-stuporous condition. On February 13th 30 c.cm. of cerebro-spinal fluid were obtained under pressure, and 40 c.cm. of convalescent serum were injected intramuscularly. The patient died that day.

At the end of the first week blood cultures were sterile, and agglutination tests were negative to typhoid, paratyphoid A and B, and *B. aertrycke*. The urine and faeces gave cultures of *B. coli*. A report on a swab from the throat showed: Vincent's angina organisms, pneumococci, streptococci, and sarcinae. Blood count: erythrocytes 5,000,000 per c.mm.; haemoglobin 75 per cent.; colour index 0.73; leucocytes 3,360 per c.mm., polymorphs 75 per cent., small lymphocytes 16 per cent., large lymphocytes 5.5 per cent., large hyaline cells 3.5 per cent.

CASE 5.

E. S., female, aged 28. fell ill, on February 6th, with violent generalized headaches, sore throat, weakness, and slight cough with some muco-purulent sputum. The next day photophobia developed, and she stated that distant objects appeared double when seen in the light. The headaches continued to be very severe, and the patient became somnolent during the day and restless at night. She was admitted to hospital on February 9th, the third day of the illness; her temperature was 102° F., pulse rate 124, and respiration rate 40.

Although somewhat lethargic the patient's intellect was apparently quite clear. There was some cyanosis and respiratory distress. The cough was very persistent and troublesome, and there was some grey muco-purulent sputum. The tongue was dry and furred, and the throat was infected. The abdomen was distended, and the spleen was not palpable. The percussion note was slightly impaired over the right middle lobe, and moist sounds were heard over this area, extending anteriorly to the level of the second rib. The patient was eight months pregnant.

The next day the patient had two shivering attacks, one at 3 a.m. and the other at 8 p.m. The throat was very troublesome, but though it was congested there was no obvious exudation. On February 11th there was a further rigor in the early morning, and the photophobia necessitated an eye-shade.

Examination on February 12th showed extension of the lung infection to the base of the right lung, where there were numerous moist sounds. The headaches and sore throat persisted, but the photophobia gradually diminished. At 3 a.m. on February 16th there was a further rigor. Examination that day showed a patch of dullness and tubular breathing at the vertebral border of the right scapula. This area became more extensive the next day, and on February 18th the right base gave a dull percussion note, with tubular breathing, moist sounds, whispering pectoriloquy, and oegophony. The patient's general condition, however, was on the whole better. She stated that throughout her illness she had great difficulty in keeping awake, but on falling asleep she found that she began talking to herself and muttering. The respirations remained high, the pulse rapid, and the temperature of a swinging variety. The lung signs began to clear up on February 20th, when the temperature reached normal after an irregular fall. Convalescence was normal. Blood cultures, and agglutination tests for typhoid, paratyphoid A and B, and *B. aertrycke*, were negative at the end of the first week. The urine was sterile, but the faeces gave cultures of *B. coli*. The sputum contained pneumococci, streptococci, and *Micrococcus catarrhalis*. A swab from the throat gave cultures of *Micrococcus catarrhalis*, with a few pneumococci and streptococci.

GROUP C. (Barking, London.)

This was a small group consisting of husband and wife, Mr. and Mrs. S., who lived in a public-house. The parrot, a green Amazon, was bought over the counter, during the latter part of October, from a hawker, who had obtained it from the docks. The parrot was ill for about one month with diarrhoea, sneezing, loss of appetite, and wasting, and on December 12th, after an attack of convulsions, it fell off its perch and died. Both patients fell ill about November 21st, and both recovered after being severely ill. The association with a sick parrot did not come to the knowledge of the physician in charge until the period of convalescence.

CASE 1.

A. S., male, aged 32, fell ill on November 21st, when he felt somewhat "shivery and out of sorts." The next day he had a severe frontal headache which persisted, slight sore throat, and vomiting. On November 25th there was slight epistaxis, and the day after this the patient experienced severe cramp in the legs. The appetite throughout had been very poor. Constipation was obstinate, there having been no action of the bowels for a week.

On November 28th the temperature was 101° F., pulse rate 100, respiration rate 28. The patient looked ill and collapsed, his general appearance simulating a typhoid state. The tongue was dry and furred; the throat was injected, and there were patches of yellowish membrane on the palate. A few small rose-coloured spots were scattered over the chest. There was no dullness on percussion of the chest, but auscultation revealed crepitations at the right base and a few rhonchi at the left base. At this time there developed a slight cough with mucoid expectoration; no rusty sputum. Examination of the heart revealed nothing abnormal. The abdomen was somewhat distended, but the spleen was not palpable. A quarter volume of albumin was present in the urine. The patient's condition did not improve during the next week, the temperature swinging from 101° to 104° F., the pulse rate being relatively slow, between 82 and 112, and the respiration rate ranging from 24 to 30.

On December 3rd examination of the chest showed slight dullness, diminished breath sounds and medium crepitations at the right base, and signs of bronchitis at the left base. From December 5th to 8th the condition of the patient gradually improved, and on December 8th the temperature fell by lysis, and remained normal. At that time the abnormal signs in the chest had disappeared. The albumin in the urine gradually diminished to a faint trace. The patient made an uninterrupted recovery.

On January 1st and 8th blood cultures, and agglutination tests to typhoid, paratyphoid A and B, *B. aertrycke*, and *B. enteritidis*, were all negative.

CASE 2.

M. S., female, aged 27, felt ill about November 22nd, complaining of headache, cough, nausea, constipation, and occasional vomiting. She took her own temperature on several occasions, and once it was as high as 102° F. When seen by her private doctor on November 27th she complained of severe frontal headache, weakness, aching of body and limbs, and inability to lift her head from the pillow on account of giddiness. Her temperature was 103° F., pulse rate 110, and respiration rate 24. The patient was obviously very ill, and lay in bed in a collapsed stuporous state. The tongue was dry and furred, and the fauces red and inflamed. No abnormal physical signs were discovered in the lungs at this time; the heart and abdomen were normal; the liver and spleen were not palpable. Examination of the nervous system was negative.

The patient remained in this condition for a period of six days; the cough became very troublesome, the headache continued, and fever ranged between 101° and 103° F. On the morning of the seventh day, however, the temperature was 100.8° F.; the patient felt better and had less headache; she had slept better during the night, and the aching of the limbs was not so intense. On the evening of this day the temperature remained the same, but the patient maintained improvement. On the morning of the eighth day she complained of some pain over the right lower chest, and on examination a few crepitations were heard in the lower lobe of the right lung. The patient continued to make progress quickly during the next few days, until on the eleventh day her temperature ranged about 98.4° F. and her pulse rate was 90. *The fever abated by lysis. The physical signs in the lung persisted for about seven days after they were first discovered. The patient remained in bed for eighteen days, and convalescence was uneventful.*

In the second week of the illness blood cultures, and agglutination tests to typhoid, paratyphoid A and B, and *B. aertrycke*, were all negative.

GROUP D. (Oxford and London.)

This group consisted of five people staying in a country house in the Chilterns. Three other members of the household, although in contact with the parrot, escaped infection. A green Amazon parrot arrived at the house on December 21st, having been purchased from a London shop; the bird was never well, and died on December 30th.

Mrs. M. fell ill on January 5th, M. W. (cook) on January 7th, G. F. (a friend) and X. M. (a nephew) on the 10th, and A. B. (gardener) on about January 10th or 12th. Mrs. M., G. F., and A. B. were definitely known to have handled the parrot, the latter only after its death. M. W. had at least been near the bird on several occasions during life, but X. M. apparently merely sat in a room from which the dead parrot had been removed two hours previously. One of the patients returned to London before she fell ill, and her case is described in some detail below. We only refer briefly to the remaining four cases, as they have already been described in the *British Medical Journal* by Dr. Mary Radford.[19] All the patients recovered after being very ill.

CASE 1.

A. F., female, aged 49, returned home from the Chilterns on January 3rd, and was quite well until January 11th, when she suddenly began to feel very cold and to shiver. The shivering lasted twenty-four hours, and at the same time she experienced a very severe general headache, which persisted for a week, and then gradually got better. Her temperature was found to be 102° F., pulse rate 90, and respiration rate 26. There was no photophobia or epistaxis. A troublesome cough was present from the first, the patient feeling somewhat stifled and experiencing a sense of constriction behind the upper part of the sternum.

On January 16th there were signs of congestion at the base of the left lung. The next day there were numerous crepitations extending up to the angle of the scapula. The patient had been very constipated throughout, and the abdomen was distended. The spleen was never palpable, and there were no red spots. The patient became very restless at night, with intermittent delirium and insomnia.

On January 23rd the right lung became involved, and crepitations and patchy dullness were present at both bases. The patient's general condition, however, was beginning to show signs of improvement. Some nasal catarrh was present. On January 25th the patient further improved, though patchy dullness and crepitations were still present at both bases. The temperature was beginning to fall. Throughout the illness the respirations were not raised, and the pulse was relatively slow. On January 29th the temperature was normal, but the signs in the lungs did not disappear until February 15th. Convalescence was slow.

Agglutination tests for typhoid, paratyphoid A and B, and *B. aertrycke* were negative on January 23rd and 28th.

CASE 2.

Mrs. M., aged 50, fell ill on January 5th, and recovered after a characteristic illness of three weeks' duration. Negative agglutinations.

CASE 3.

M. W., female, aged 65, fell ill on January 7th. This patient, cook in the household, had the usual symptoms and signs, and eventually recovered. Negative agglutinations.

CASE 4.

X. M., nephew, aged 45, fell ill on January 9th or 10th, and began convalescence after sixteen days. There was a partial agglutination to typhoid (1 in 32) in this case, but this may be explained by inoculation with T.A.B. in 1916.

CASE 5.

A. B., gardener, aged 56, fell ill about January 12th, and recovered after a few weeks' characteristic illness. *A temporary relapse occurred during convalescence.* Agglutination tests (including *B. abortus*) were all negative.

GROUP E. (Hampstead, London.)

A green Amazon parrot was bought from a large London shop on October 23rd, 1929. From the first the bird had diarrhœa and its feathers were not properly "set." The parrot was taken back to the shop after the patients became ill. The two people affected had both been in contact with the parrot one cleaning out the cage. The first patient, a doctor, fell ill on November 19th and died on December 10th. The second patient, his maid, was less severely affected, falling ill on November 26th and recovering after a few weeks.

CASE 1.

D. L. T., male, aged 60, was taken ill on November 19th with sudden onset of general malaise, aching all over, and "feeling as if I had a temperature." Next day his symptoms were worse, he felt feverish and his temperature was 101° F. He complained of severe headache, and said he thought he had influenza, but was surprised that he had no catarrhal symptoms or signs.

On November 27th his temperature was 102.5° F., pulse rate 85, and respiration rate 25. His tongue was furred; he was mentally very depressed, and complained of severe headache. No abnormal physical signs were detected in the heart, lungs, abdomen, or nervous system. The urine was clear. A blood count on November 29th showed: leucocytes 6,750 per c.mm., polymorphs 72 per cent., lymphocytes 26 per cent., transitional cells 1 per cent., eosinophils 1 per cent. The agglutination reaction was negative for typhoid and paratyphoid A and B.

On November 30th he was admitted as an in-patient to the London Hospital. He was then slightly dyspnœic; there was also a little blood-stained discharge from the nose; he was drowsy, but quite rational, and still complained of severe headache. There were no abnormal physical signs detected in the lungs. Blood examination showed: erythrocytes 4,900,000 per c.mm.; haemoglobin 80 per cent., colour index, 0.81; leucocytes 10,220 per c.mm.; polynuclear neutrophils 66.5 per cent., eosinophils 2.5 per cent., small lymphocytes 17.5 per cent., large lymphocytes 7.5 per cent., large hyaline cells 6 per cent. There was slight anisocytosis.

On December 2nd he had retention of urine, but complained of no real pain referred to bladder or perineum. He was catheterized, and 32 ounces of urine were withdrawn. It was examined and reported on as follows: "Acid; albumin a cloud; no reduction with Fehling; deposit contains leucocytes and epithelial cells; cultures yield *Staphylococcus albus*." Nothing abnormal was detected in the nasal and accessory sinuses, but there was a good deal of inflammation of the nasal mucous membrane.

On December 5th he was not so well; more drowsy, greater dyspnœa, and more severe frontal headache. His temperature was 104.5° F., pulse rate 112, and respiration rate 44. The respiratory movements were rapid and shallow. Heart sounds were clear; coarse crepitations were audible for the first time over the lower lobe of the right lung; no rhonchi were heard. The percussion note was not impaired, and the breath sounds were vesicular. The abdomen was slightly distended, there was no tenderness or rigidity; the liver and spleen were not palpable. Rose-coloured spots were visible on the lower chest, and these disappeared on pressure.

Agglutination tests were negative for typhoid, paratyphoid A and B., *B. aertrycke*, *B. enteritidis*, *Micrococcus melitensis*, and *B. abortus*.

The next day his temperature was 102° F., his pulse rate 108, and respiration rate 40. In the morning he seemed fairly well; he was reading his newspaper and talked quite rationally. The sputum was definitely rusty, dyspnœa greater, and there were more definite signs in the lungs. The percussion note over the lower and middle lobes of the right lung was impaired; coarse crepitations and pleural friction sounds were audible over the same area. Three rose-coloured spots were still visible on the upper abdomen and chest.

X-ray examination of the chest gave the following information: "No obvious dullness on the screen; rather poor and diminished movement of the right diaphragm, possibly slight dullness, suggestive of a possible pleurisy, over right lower chest: No evidence of effusion."

On December 7th the sputum was blood-stained, the skin dry and hot, and he had greater dyspnoea. In the evening his condition was much worse; he took no notice of anyone around him. His temperature was 104.5° F., pulse rate 120, and respiration rate 56. Report on the urine: deep amber in colour; albumin 1/4; blood and sugar absent. The heart sounds were good. The signs of consolidation in the right lung were more marked.

On December 8th his temperature was 102° F., pulse rate 118, and respiration rate 50. The previous evening he had had a tepid sponging, after which he seemed more rational and had a fairly good night. During the morning he took more interest in people around him, and asked for his drinks, etc. He was very dyspnoeic: his skin was hot and dry, and his tongue furred and getting dry. For the first time he had urinary incontinence. The heart sounds were good and the blood pressure was 120/60 mm. The middle and lower lobes of the right lung showed typical signs of consolidation; the percussion note was dull, breath sounds were tubular, and no adventitious sounds were audible. Now also a few coarse crepitations were audible over the lower lobe of the left lung. Towards the evening he had a good deal of abdominal distension, which was relieved slightly by a small enema, rectal tube, and injection of pituitrin.

The next day his temperature was 103° F., pulse rate 110, and respiration rate 54. He had slept fairly well during the night, but still had urinary incontinence. There was now slight oedema of the feet and ankles. The physical signs in the lungs were very much the same as on the previous day. The abdomen was still distended, but no hepatic or splenic enlargement could be detected. His blood pressure was 110/65 mm. He was fairly comfortable during the evening and slept well in the early part of the night. At 4.30 a.m. the breathing altered; it became "very rapid and heavy." His pulse failed, and he died at 4.50 a.m. on December 10th.

CASE 2.

V. R., female, aged 39, was a maid employed in the house of D. L. T. She complained of general malaise about a week after the beginning of D. L. T.'s illness. She was admitted to the St. Marylebone Hospital on December 1st, 1929, having suffered from malaise, headache, and vertigo from November 26th.

Three days before admission she developed a cough without sputum, and complained of sweating. She felt weak and hot, and had a slight headache. On admission she appeared very drowsy and collapsed, her condition simulating a typhoidal state, and suggesting the preliminary diagnosis of typhoid. The tongue was moist and furred. The abdomen was slightly distended, and the liver and spleen were not palpable. Numerous coarse rales and rhonchi were heard at the base of the right lung. The cardio-vascular and nervous systems were normal. The urine showed no abnormal constituents.

On December 6th the patient had a brief epistaxis. On December 10th there were still numerous crepitations at the base of the right lung, but the general condition was beginning to improve. Throughout the illness she tended to be very constipated. The cough persisted for about ten days, but there was only slight frothy sputum, which was never rusty. Respirations throughout were usually 20, and were never above 28. The pulse was rather slow relative to the temperature. The latter was maintained at 101° to 103° F., and fell by lysis. Convalescence was slow and tedious. Agglutination tests during the second week of the illness were negative to typhoid, paratyphoid A and B, *B. aertrycke*, and *B. enteritidis*.

GROUP F. (Leatherhead, Surrey.)

This group consisted of two people, one C. L., who kept a large aviary as a hobby, and the other his gardener, S. R., who looked after the birds. In the early part of September, 1929, C. L. purchased from a London store five birds—2 small blue macaws, 1 green Amazon parrot, and 2 yellow-green Amazon parrots. The last two birds fell ill in December, one about December 8th and the other about December 17th. Both birds were in the same cage, but were separated a few days after the first became ill. The latter bird died after some days' illness, and the remaining one succumbed about two weeks later. The parrot that first fell ill was not well from the start, but appeared to recover after a week or so, although the gardener was of the opinion that it was never quite healthy. During the period of acute illness the parrots suffered from diarrhoea, swollen eyes, ruffled feathers, loss of appetite, and inertia.

C. L. fell ill on December [illegible] and S. R. a few days later. Both fed the birds, but the parrots were not taken from their cage, and there was no [illegible] beak feeding. Both these patients recovered, and their illness was only moderately severe, although quite typical. These cases are of special interest in that the parrots were in this country at least three months before becoming really ill and infecting man. The dealer stated that they were in England for three months before purchase, thus making the total period since importation six months.

CASE 1.

C. L., male, aged 70, became unwell on December 17th. He was unduly tired, and slightly nauseated, but went to town as usual on that day and on the next two days. On December 19th he came home early from business because he felt faint and ill, and vomited. On December 20th and 21st he felt very unwell and nauseated, was drowsy, and slept a good deal. When seen on December 22nd he looked ill and thin, his tongue was furred, and he complained very much of nausea, headache, and a feeling of lassitude. He had a slight cough, but stated that this was not unusual; there was some thick muco-purulent expectoration. His temperature was 102° F., and his pulse 80, regular, and very soft, the systolic blood pressure being only 125 mm. Hg, and the respirations were 25. On examination of his chest the breath sounds at the right base behind were a little weaker than on the opposite side, and there were a few coarse crepitations. The abdomen was soft and normal, no enlargement of the spleen or liver could be detected, and no spots or skin eruption were seen.

On December 26th his temperature fell by lysis, and remained normal for four days, after which there was a slight recrudescence of his symptoms, the temperature again rising to 101° F., when he complained of a little pain in the right lower axillary region, but no physical sign could be discovered in his chest to account for this. Two days later the temperature again became normal, after which he entered upon convalescence.

Agglutination tests on January 2nd were negative for typhoid, paratyphoid A and B, *B. aertrycke*, and *B. enteritidis*.

CASE 2.

S. R., male, aged 48, felt unwell on December 18th, but had no definite symptoms. On December 20th he began to shiver, and thought he was about to have another attack of malaria, from which he had suffered since the war. He vomited several times and sweated. A profuse epistaxis occurred on December 21st, and lasted on and off for a few days. His temperature was 102.2° F., pulse rate 100, respiration rate 26. He was given large doses of quinine. The vomiting and shivering persisted for a few days. The quinine appeared to be without effect, the temperature remaining high. It was noticed that the pulse was relatively slow.

After the first week the patient was still feeling very ill, and complained of severe headaches. Delirium was present at night. The quinine was discontinued. At the end of the first week a slight, dry, irritating cough developed. On December 28th crepitations were present at the base of both lungs, and the next day the patient was removed to hospital. Constipation had been troublesome throughout the illness.

On examination in hospital, on December 31st, the patient appeared dull and lethargic. He responded intelligently to questions, but only after an appreciable latent period. His temperature was 102° F., pulse rate 88, respiration rate 24. His pulse was regular, and of moderate volume and tension. His tongue was coated and his abdomen distended. The spleen was not palpable. The lung signs had almost disappeared, and there was nothing abnormal in the heart or nervous system. In the evening of December 31st six red spots were seen on the chest and abdomen, a few more appeared on the back the next day, but they all disappeared within five days. The spots were about 2 to 4 mm. in diameter, the centre of them being slightly raised and papular. They faded on pressure, but on rubbing the finger across repeatedly they became more prominent, and were seen to be surrounded by a white halo, with a further thin red line bounding this like a planet.

On January 22nd the patient was still dull and apathetic. Slight cough had persisted; headache was diminishing; the abdomen was still distended. The next day the temperature began to fall by lysis, and on January 5th the patient was greatly improved, being quite bright and intelligent, and responded rapidly to questions in a manner that contrasted markedly with his former condition. He made a slow but uninterrupted recovery.

On January 3rd agglutination tests were negative to paratyphoid A and B, *B. aertrycke*, and *B. enteritidis*, but gave a partial agglutination to typhoid (1 in 64). This was probably due to the T.A.B. inoculations that the patient had received during the war. Blood cultures were negative.

CASE G. (London, W.).

This case is of very great interest in that the history of the parrot is known from the time it was caught in its native habitat, and because the evidence strongly favours the view that the bird was a carrier of the disease after

eight months' residence in this country. The parrot was a grey one, caught fourteen months previously on the Gold Coast of Africa. The bird was ill when caught, and took some weeks to recover. It was subsequently apparently quite well, and was brought to England by the owner in May, 1929. While in this country the parrot showed no signs of illness, except for transient attacks of mild diarrhoea, which were attributed to periods of injudicious feeding.

The patient was one day playfully protruding her tongue at the parrot, when the latter caught the tongue in its beak and held it tight for some seconds. The tongue was sore some days after this, but the patient became really ill ten days after this incident, and ran the course of a classical case of psittacosis. She eventually recovered after a very severe illness.

It is interesting to note that the parrot had been petted and played with by several members of the household for some time. It would thus appear that the contact in the case of carrier parrots must be of a much more intimate nature to transmit infection to man than is the case with recently imported sick birds.

Description of Illness.

L. S., female, aged 44, felt unwell on January 19th and complained of pains all over the body. She tried to relieve "the aching in every limb" by using liniment. The next day she remained in bed, with a very severe headache. She felt very weak, and sweated profusely and shivered at intervals. During the next few days her condition gradually became worse. Drowsiness and photophobia were present.

On January 22nd her doctor found the temperature to be 102° F., respiration normal, and pulse rate only slightly raised. On January 26th a dry cough developed, and a few moist sounds were found at the bases of both lungs. About that time two rose spots appeared on the abdomen, and persisted for a few days. Constipation was troublesome.

The tongue had been painful and sore from the first, but on January 28th the lips began to swell. This classical sign persisted for about four days, and then gradually disappeared. She was admitted to hospital on January 30th in a very collapsed condition. Her temperature was 103° F., pulse rate 100, and respiration rate 28. The patient lay quietly in bed, with eyes closed, pallid countenance, and well-marked peribuccal oedema. Moist sounds were present at the base of the right lung. The abdomen was distended, and the spleen was not palpable. During the next few days the hard, dry cough became very troublesome, and paroxysms of coughing left her very exhausted. On February 3rd she was very drowsy and collapsed, and it was doubtful whether she recognized people at the bedside.

On February 5th the temperature fell by lysis to subnormal. For some days after this the patient's condition showed no improvement, and the moist sounds were still present at the base of the right lung. From about February 10th she gradually improved, and on February 20th was sitting up in bed, talking cheerfully, although far from strong. The patient had no recollection of the greater part of her illness.

Agglutination tests on the eleventh day of the illness were negative to typhoid, paratyphoid A and B, and *B. aertrycke*. A blood count on that day showed: erythrocytes 4,600,000 per c.mm.; haemoglobin 63 per cent.; colour index 0.7; leucocytes 6,800 per c.mm.; polymorphs 77.5 per cent., eosinophils 0.5 per cent., small lymphocytes 11.5 per cent., large lymphocytes 2 per cent., large hyalines 8 per cent., transitional neutrophils 0.5 per cent.

CASE H. (Edmonton, London.)

This case is of interest in that the parrot was a grey African one. It was purchased from a shop in Camden Town on December 24th. It was never well, and, being suspected by the people themselves as the cause of the illness, was taken back to the shop on January 14th. The patient was taken ill about January 4th. She was the only person in the house who looked after the parrot, feeding it and cleaning the cage. There was no mouth-to-beak feeding. The patient recovered after a severe illness.

Description of Illness.

M. S., female, aged 52, was taken really ill on January 11th, but for about a week previous to this she felt unwell. On January 11th she began to shiver uncontrollably. In spite of sitting near the fire, hot drinks, hot-water bottles, and taking to bed, she remained shivering for twenty-four hours. She had a very severe generalized headache, pains all over the body, anorexia, and vague abdominal pains. She had no epistaxis. The bowels were kept open by a daily enema. A troublesome cough with copious purulent grey sputum was present from the first. The sputum was never rusty.

On January 15th some moist crepitations and dullness were present in the left posterior axilla and upper lobe. The temperature ranged from 101° to 103° F., with slight morning remissions. The respiration rate was about 28, rarely above 32, and the pulse rate was about 100. About this time the patient became drowsy and reluctant to open her eyes. On January 22nd the patient looked ill, weak, and collapsed. Her speech was quite lucid, but it was obviously an effort for her to talk or to move. The cheeks were flushed, and herpes was present on the lips. There was no marked respiratory distress. The respiration rate was 30, the pulse rate 100, and the temperature 101° F. The pulse was feeble, easily compressed, and of dicrotic character. There was a systolic murmur at the mitral area. There was no marked dullness, but some crepitations were still present in the left lung. The abdomen was slightly distended, and the spleen was not palpable.

Agglutination tests on January 22nd were completely negative to typhoid, paratyphoid A, and *B. aertrycke*, but gave a slight partial reaction to paratyphoid B (1 in 64).

CASE J. (South Woodford, London.)

In this case the parrot was a green Amazon, purchased on November 27th from a hawker, who obtained the bird from a sailor at the docks. In the first week of December the bird was obviously ill, with ruffled feathers, diarrhoea, and frothing at the beak; it died on December 12th. The patient looked after the bird, and was himself taken ill on December 17th. He eventually recovered after a severe illness.

Description of Illness.

On December 17th A. D., male, aged 60, began to "feel queer," and after a few days of gradually increasing lassitude and chilliness took to bed. Frontal headache, which began gradually, soon became severe. On December 21st he complained of a "woolly" feeling in the ears. He had a severe continuous frontal headache, and in addition lancinating neuralgic pain over the top of the cranium, with superficial tenderness. The morning temperature was 101.4° F. and evening temperature 101.8° F. The tongue was thickly furred, and there were a few "pinhead" ulcers on the floor of the mouth, with slight general injection of the fauces. On examination nothing abnormal could be detected in the chest or abdomen, the spleen was not palpable. Examination of the central nervous system was normal.

During the following ten days his temperature rose gradually, the morning and evening temperatures showing little difference. The highest temperature recorded was 103.4° F. on the fourteenth day of his illness. The headache was very persistent. There was slight mental wandering, but a marked feature was apathy and somnolence. He was easily roused, but dozed off again at once.

On January 1st (fifteenth day of illness) a slight cough appeared, and during the next two days a very small quantity of blood-stained sputum was expectorated. Fine crepitations were heard at the base of the right lung. On January 2nd a papular rash, very like measles in appearance, appeared over the extensor surfaces of both elbows and knees, and over the sacrum. This rash caused no inconvenience, and disappeared in a few days. The chest signs and symptoms had all gone by January 4th, and from this date the temperature fell by lysis and became normal on January 8th (twenty-third day of illness). With the fall in temperature the patient's condition rapidly improved, the somnolence disappeared, and on January 15th he was dressed and able to walk downstairs. Throughout his illness the bowels acted each *morning* after a dose of magnesia. The pulse rate was never more than 100.

Agglutination tests on December 31st were negative to typhoid, paratyphoid A and B, *B. aertrycke*, and *B. enteritidis*.

CASE K. (Basingstoke.)

A green Amazon parrot was bought from a London store on November 2nd. It was, however, soon seen to be ill, and was returned on November 26th, dying a few days later. The owner at first used gloves when handling the bird for fear of being bitten. Towards the end the gloves were discarded, and the patient was known to have stroked the parrot's breast, etc. He was taken ill on December 6th, and recovered after a very severe illness, at one stage of which it appeared that he would die.

Description of Illness.

C. B., male, aged 50, was taken ill on December 6th, with general malaise and pains in the limbs suggestive of influenza. Within the next few days he developed a very severe headache, which prevented sleep, and an annoying dry cough. He vomited on two occasions. The stools were not abnormal. When seen on December 18th his temperature was 103° F., pulse rate 100,

and respiration rate 42. His mind was quite clear. He had some red spots on his abdomen not unlike those that occur in typhoid fever. He had the physical signs of broncho-pneumonia. Agglutination tests at this time were all negative. For many days the patient was so ill that there was little hope of his recovery. After twenty-one days the temperature fell by lysis, and was normal on the twenty-fifth day of the illness. During convalescence thrombosis of the right femoral vein occurred with resulting oedema of the leg. This has gradually improved.

CASE L. (Willesborough, Kent.)

A green Amazon parrot was bought from a large London store about the beginning of December. It was ill from the start, and died on January 12th. The patient was taken ill on December 23rd, and eventually recovered from a very severe illness, during which he nearly died. He was known to have touched the bird and cleaned the cage.

Description of Illness.

T. H., male, aged 45, was taken ill on December 23rd, with headache and general malaise. On December 26th he was seen by his doctor, and found to have a temperature of 104° F., pulse rate 90, and respiration rate 26. He was then complaining of severe headache and backache. His throat was red and his tongue coated, but there were no other physical signs. The next day the patient became rather restless, and was troubled by constipation and abdominal distension. On December 29th S.U.P. 36 was given without any appreciable result. On the following day the patient was rather delirious, twitching and plucking at the bedclothes. A dry cough developed, and a few scattered sibilant rhonchi could now be heard in the lungs. The next day (eighth day) a semi-stuporose condition was marked, with intermittent complaints of a severe headache. A further injection of S.U.P. 36 produced no improvement. On January 4th some crepitations were present at the base of both lungs. The abdomen was still markedly distended. The spleen was never palpable. In spite of the paucity of physical signs in the lungs and the absence of any marked pulmonary symptoms the respirations were raised to 35 or 40 during the second week of the illness. On January 10th the temperature began to fall by lysis, and the patient gradually recovered from what was a very severe illness.

Agglutination tests to typhoid and paratyphoid A and B were negative on the eleventh and sixteenth days of the illness.

CASE M. (Norfolk.)

This case is of interest in that the birds apparently responsible were budgerigars. They were bought in a London shop, and arrived at the patient's house on January 11th, 1930. The next morning both birds seemed in good health, but at 12.30 o'clock one of them was found dead in the cage. The dead bird was handled by the patient, and put away for some days. She then again handled the dead bird in packing it for its dispatch to the London shop where it was bought. The body is said to have been examined by a veterinary surgeon, who said it had died from "inflammation of the bowels from cold." The patient fell ill on January 26th, and recovered after three weeks' illness.

Description of Illness.

E. P., female, aged 52, first felt ill on January 26th, when she complained of very severe headache and "sore scalp." On February 5th her husband noticed that she was short of breath while lying in bed; she got up the next morning and went about her duties, but she felt very ill, and was unable to stand at her work. On February 7th she was first seen by her doctor. Her temperature was 104° F., and pulse rate 96. She complained of intense frontal headache, pain in the back, and cough, but had no obvious dyspnoea. The tongue was dry and furred. There was slight diarrhoea. A few rhonchi and crepitations were audible over the right lower lobe. There was slight albuminuria, but no haematuria.

On February 9th she had a definite epistaxis. She then complained of headache, cough, and abdominal distension. Agglutination tests were negative for typhoid and paratyphoid A and B. Blood films showed nothing abnormal. A catheter specimen of urine showed only a cloud of albumin and no deposit.

On February 12th the patient was seen in consultation. On this day her temperature was 103.8° F., pulse rate 106, and respiration rate 28. She was pale in colour and mentally quite rational, though at times she had been delirious. The tongue was dry and covered with a brown fur. The heart was clear. The percussion note was impaired: breath sounds were vesicular, and crepitations were audible over the middle and lower lobes of the right lung. The abdomen showed no distension, and the liver and spleen were not palpable. No rose-coloured spots were visible. Agglutination tests were negative for typhoid, paratyphoid A and B, and *B. aertrycke*.

A blood count showed red cells 4,000,000 per c.mm.; haemoglobin 80 per cent.; colour index 1.0; there was no apparent increase in the total white cell count; polymorphs 75 per cent., lymphocytes 23 per cent., eosinophils 1 per cent., transitional cells 1 per cent.

On February 18th the patient was much better, and her temperature had come down to normal.

CASE N. (London.)

This is not one of our 27 cases in which there has been definite association with parrots or budgerigars. No contact with any bird could be traced in this case, but the clinical picture closely resembled that of psittacosis. Although we believe the etiological association with sick parrots to be definitely established with regard to human psittacosis, we nevertheless consider that this case may prove of some interest. Leichtenstern described similar cases, sometimes several in one household, occurring in Cologne in 1898 at the same time as the psittacosis epidemic.

Description of Illness.

G. C., aged 35, fell ill on January 24th with general malaise, aching in all her limbs, severe headache, and excessive perspiration. The temperature on the first day of the illness was 103.5° F., pulse rate 84, and respiration rate 26. On January 26th she complained of abdominal pain and vomited a few times. A surgical opinion was sought, but it was decided that there was no definite evidence of an acute abdominal lesion. A slight dry cough was present, and a few crepitations were heard at the right base. The temperature remained between 103° and 104° F. during the first week, with very slight morning remissions, the pulse was relatively slow (80), and respirations were not raised. At the end of the week there were signs of consolidation at the right base, respirations began to increase, but there was no sputum. During the second week the patient was drowsy and collapsed. The temperature remained high, with occasional remissions to 101° F., the respirations varied between 28 and 40 to the minute, the pulse remaining slow. When seen on February 6th the patient appeared to be in a typhoid state with muttering delirium. The lung signs were beginning to clear. There had been diarrhoea during the last few days. At the beginning of the third week the temperature began to fall by lysis, and the general condition appeared to improve. On February 12th, however, the patient was still very ill, collapsed, and completely apathetic. Moist sounds were heard at the base of the right lung. She gradually improved during the next week, the temperature, pulse, and respirations remaining normal. On February 20th she had a relapse, the temperature beginning to rise, and the patient becoming again mentally dull with nocturnal delirium. A trace of albumin was present in an alkaline urine. After a week the temperature began to fall again by lysis.

Agglutination tests were negative to typhoid and paratyphoid A and B in the second week of the illness, and these were repeated on February 12th (also with *B. aertrycke*), with similar negative results.

CLINICAL FEATURES.

(a) IN PREVIOUS EPIDEMICS.

Ritter[1] (1880) described his cases as "pneumotyphus." The onset was like that of an acute fever, with great exhaustion of the nervous system, high fever, and enlarged spleen. Bronchitis developed in the second week, and progressed to lobular pneumonia. Epistaxis and herpes occurred in some cases; meteorism, constipation, and fall of temperature by lysis were other features. One patient had roseola. He thought that the incubation period was nine to fourteen days, and that the disease was not contagious from man to man. When the patient recovered, convalescence occurred in the third or fourth week.

Dubief[4] (1892) gave an account of the clinical picture in the Paris epidemics.

"Its onset is insidious, simulating typhoid fever or influenza. The initial shivering, so characteristic of sharp, straightforward pneumonia, does not occur except when a late pneumonia sets in as a complication. The real characteristic of this severe infectious malady is the complete prostration in which the sick people are plunged. After a varying period of a typhoidal state there usually appeared a pneumonia, with or without an initial shivering—a pneumonia which often causes the death of the patient. Swelling of the lips may occur where there has been mouth-to-beak feeding."

In 1906, reviewing the past epidemics, Gilbert and Fournier[8] wrote as follows:

"It is in the nature of a general infective malady, allied to typhoid, in the course of which severe pulmonary complications show themselves. The inoculation period is eight or nine days. Then the signs of invasion commence, analogous to those of typhoid: malaise, collapse, anorexia, intense headache, epistaxis,

nausea, vomiting, slight diarrhœa, shivering; quinsy, stomatitis with false membrane, and peribuccal œdema have sometimes been noticed. In four or five days or less the temperature reaches 39°, 40°, or 41° C., and maintains itself at this level throughout the illness without pronounced morning recurrences. Great thirst, nausea, and vomiting are present, sometimes incessant; intestinal troubles are often almost absent. The abdomen is somewhat distended, and constipation obstinate. The urine is febrile. The patient is collapsed, often without stupor, but often, on the contrary, with profound prostration, accompanied by delirium. The nervous troubles are most pronounced with the appearance of pulmonary complications: general bronchitis with congestion of the bases, pneumonia, broncho-pneumonia, with or without pleurisy. These features are almost constant, and by their severity and gravity dominate the clinical picture. In fact, it is often to the pulmonary complications and their effect on the heart and circulation that death is due. In the latter case, after a recrudescence of the fever (41° C. or more) and some nervous phenomena (hallucinations, carphology, muscular contractions), the patient is seized with extreme dyspnœa, and falls into a terminal coma. Death usually occurs in the second or third week. When recovery is going to take place the symptoms decline in severity after eight or ten days, and convalescence sets in. In four or five days the temperature has returned to normal, but the convalescence is always lengthy. Benign and attenuated forms have been noted, especially in children and young adults, with recovery in a week or so. If one excludes the benign forms the prognosis is always serious. Death follows in a third of the cases. Middle and especially old age, and organic lesions, such as chronic heart disease, nephritis, obesity, and diabetes, are the principal bad factors in the prognosis. The diagnosis of psittacosis would often prove difficult without etiological information and the epidemiological character of the illness. Transmission from man to man has been cited by Dujardin-Beaumetz, Dubief, and Nicolle, but this is much more rare than transmission from parrot to man."

Of the Pennsylvania epidemic (1917) McClintock[12] writes:

"These cases were variously diagnosed as influenza, pneumonia, and very often as typhoid fever. But in all an element of uncertainty was strong. Many of the symptoms of one or all of these diseases were present, but the grouping and degree of intensity of the different symptoms differed from those of any disease so far observed in this community. Although certain cases fitted exactly the accepted symptom-grouping of this disease as a whole, the clinical picture in this epidemic varied more than in those previously described, and the mortality was distinctly lower, not above 5 per cent.

"In this epidemic the incubation period appeared to be about ten days. The duration of the disease varied from one to four weeks. Three groups of cases were easily differentiated. In all three a terrific headache was a common symptom; this was associated with a most profound prostration. The pulse rate was not often above 100. The temperature curves were often irregular; most frequently they simulated those of typhoid fever. The leucocytes when counted were nearly normal in number, and all Widal tests taken were negative. The majority of cases resembled either influenza, with rhinitis, conjunctivitis, and cough; pneumonia with a high sustained fever, but a nearly normal pulse rate; or typhoid fever, both with and without a splenic tumour, and without rose spots. Some showed a combination of well-marked symptoms, involving the entire respiratory and gastro-intestinal tracts. In all cases there appeared to be some involvement, however slight, of the upper respiratory tract, the lungs, and the gastro-intestinal tract. A peculiar odour, resembling that observed in typhoid, pervaded the surroundings of these patients. The lung signs were very baffling, exhibiting scattered areas of dullness, often wandering, with moist rales, and frequently without any abnormality in the breath sounds. The lung signs rarely balanced one another, rarely were they typically pneumonic."

In Beddoes's[14] cases the symptoms were those of pneumonia, with, however, very marked prostration. The expectoration was slight, and not coloured by blood pigments.

In Gulland's[15] cases lung involvement was a marked feature, although the cough was slight and sputum negligible. In the first case the illness started with a sudden pain in the side, and in the second case with a rigor. From the latter case 10 oz. of clear sterile fluid was withdrawn from the pleural cavity. The temperature rose in step fashion and fell by lysis. A depressed mental state was present in both cases.

Stolkind's[16] second case was fatal, and at necropsy pneumonia of the right lung and lower half of the left lung was found.

In Thomson's[17] cases (first series) the development of an enlarged, painful parotid gland occurred in one patient. Of his four cases, two were fatal.

(b) PRESENT SERIES.

The symptomatology and physical signs in our series of cases corresponded closely with the classical description of Gilbert and Fournier.[4] In many respects there was a marked resemblance to typhoid fever, but pulmonary involvement of varying degree occurred in every case. The illness usually lasted two to three weeks, during which time the patient's condition was often critical.

Incubation Period.

In eight cases the incubation period could be determined with some degree of certainty. It varied between eight and thirteen days. This is in agreement with the observations of Ritter,[1] 1880 (nine to fourteen days), Dubief,[3] 1893 (nine days), Gilbert and Fournier,[4] 1896 (eight to nine days), and McClintock[12] of Pennsylvania, 1917 (seven to twelve days).

Onset.

The onset was sudden in most cases, the patient taking to bed within a few hours of the initial symptoms. In a few instances, however, a mild degree of malaise occurred for some days, during which time the patient continued with his normal occupation.

The initial symptoms were usually headache and malaise. These were often associated with, or soon followed by, shivering, generalized pains in all the limbs, backache, abdominal pain, anorexia, nausea, vomiting, sore throat, sweating, and epistaxis. Conjunctivitis occurred but rarely. The headache was usually very severe, and was not ameliorated to any extent by analgesics. It was most commonly situated in the frontal region, but was sometimes parietal, occipital, or generalized. One patient described her headache as "throbbing and sore, as if someone were beating or scraping the top of my head." Increasing in severity during the first few days, the headache persisted for about ten days and then tended to disappear.

The shivering attacks or rigors were not constant in their time of onset. Sometimes they occurred as an initial or early symptom, whereas in other cases they coincided with the beginning of pulmonary involvement (as described by Dubief). In one case rigors occurred on the fourth, fifth, and tenth days. Although sometimes slight and of short duration in other cases they were very severe and lasted for twenty-four hours.

Sore throats were not infrequent, the fauces and soft palate being red and sometimes covered by a yellowish exudate. In only one case was the classical sign of peribuccal œdema observed, and that occurred in a patient who was actually bitten on the tongue by a parrot. Sordes of the lips and herpes labialis were present in some cases.

Epistaxis occurred in six cases, usually within the first few days, and was often profuse. In one case it started on the fourth day and recurred every day in large amounts until the ninth day.

Rose spots were observed in five cases, usually appearing about the end of the first week. Their characteristics are given with the detailed description of the cases.

Respiratory System.

The lungs were involved in all cases. A cough developed usually towards the end of the first week, although in some cases it was an initial symptom, and in others it did not appear before the second week. Usually the cough was a dry one, but in several of the cases particularly those of Group B, there was a considerable quantity of muco-purulent sputum. In only one case was there typical rusty sputum, and that occurred in the late stages of a fatal case. The cough was often troublesome and intractable, paroxysms of coughing shaking the whole body, aggravating the headache, preventing sleep and leaving the patient very exhausted.

In spite of pulmonary symptoms and signs the respirations were usually not markedly quickened, although in fatal cases, and in some that recovered, respirations were raised to 40 or more a minute.

The signs in the lungs were variable. As a rule they began with a few moist sounds at one or both bases. In some cases there were, in addition, rhonchi scattered

throughout the lungs. The crepitations usually appeared about the sixth to tenth day, and gradually increased in number. During the second week a patch of consolidation not infrequently developed near the angle of one scapula. In some cases this area appeared to spread so as to involve the whole of one lower lobe, or other small areas of consolidation might be present at the bases of both lungs. The physical signs were occasionally those of a wandering pneumonia. In many cases the signs did not progress beyond the presence of moist sounds, and in two cases the pulmonary signs and symptoms were of the slightest. In one fatal case there was a slightly turbid pleural effusion and in another a pleural rub was heard. The crepitations at the bases of the lungs often persisted for several days after the temperature was normal. Cyanosis was present in those cases where the lungs were extremely involved, especially in the fatal cases.

Nervous System.

Photophobia was noted in several cases as an early symptom, one of the patients stating that she saw double when looking at objects in bright light. Some of the patients insisted on the blinds being drawn, and others wore eyeshades. A typhoid-like state developed towards the end of the first week. The patients usually lay quite still in bed in a collapsed immobile condition. They were often very sleepy after the first few days, finding difficulty in keeping their eyes open; later they became stuporose and even semi-conscious, some of the fatal cases falling into deep coma. They appeared to be quite oblivious to their surroundings, often failed to recognize their friends, were roused with varying degrees of difficulty, and soon lapsed into their previous state. Alternating with periods of somnolence there sometimes occurred phases of great excitement and restlessness. One patient became very aggressive and struggled to get out bed. Another, in a nursing home, actually left her bed and rang the bell without knowing why she did so. Delirium was common, and worse at night. Two patients complained that they unsuccessfully tried to keep awake because if they fell asleep for a few minutes they awoke muttering nonsense. Disorientation of time and place frequently occurred.

Examination was greatly resented by some, whereas others were completely uninterested in what was happening. The patients often remained in a collapsed and stuporose condition for several days after the temperature had fallen to normal. An interesting feature was the complete failure of many of the patients to remember the greater part of their illness.

Gastro-intestinal Symptoms.

Anorexia and nausea were frequent early symptoms. In some cases vomiting was present, and although usually occurring but once or twice, was sometimes incessant. Initial abdominal pain occurred in a few cases, the doctor in two instances considering the possibility of appendicitis.

Constipation was present, and troublesome, in the majority of the cases, the abdomen being very distended. Meteorism was relieved by turpentine enemata and the passage of flatus. In a few cases diarrhoea occurred at some period during the illness, but only for a few days. There were no signs of intestinal haemorrhage or of perforation. The spleen was not palpable in any of our cases.

Cardio-vascular System.

In the majority of cases the rate of the pulse was markedly slow in relation to the temperature. Thus with a temperature of 103° F. the pulse was often less than 100. In those with extensive involvement of the lungs and in all fatal cases the pulse became rapid and feeble. There were no signs of importance in the heart, although a systolic murmur might be present in the apical region. In two cases thrombosis of the femoral vein occurred during convalescence.

Pyrexia.

The temperature was generally very high (about 103° F.) from the outset. There was usually no definite evidence of a step-ladder rise as in typhoid. The temperature was maintained at a high level for about two weeks, when it usually fell by lysis. In many cases there was hardly any remission of temperature during the mornings, but in others the pyrexia was of the swinging variety with morning remissions.

In the convalescence period the temperature was often subnormal (97° F.). In the fatal cases the temperature tended to remain high throughout. Convalescence was often slow and tedious. In a few cases there were definite relapses similar to those occurring in typhoid fever.

Diagnosis.

A typhoid-like illness, with pulmonary involvement and negative agglutinations, is very suggestive of psittacosis, especially if there is a clear history of association with a sick parrot.

Prognosis.

The mortality in this series was approximately 20 per cent. The ages of those that died were 60, 53, 52, 30, and 18. One of the chief factors in the prognosis appears to be the extent of pulmonary involvement and associated secondary infection. In all the fatal cases there was much respiratory distress, cyanosis, and profound toxaemia. These features were especially marked in the Barking group B, where 3 out of 5 died.

Mode of Infection.

Of our 27 cases, 25 were apparently caused by green Amazon parrots from South America. In 23 cases the birds were very recently imported, and were more or less ill from the start. In two cases the parrot concerned had been in the country for a few months.

Of the two grey African parrots, one was recently imported and was obviously sick. The other had been in this country for eight months, was apparently in good health, and must be regarded as a carrier of the disease. In this case the contact necessary for transmission of the disease had to be most intimate—biting of the patient's tongue. In those cases where the bird was itself obviously ill, contact was often of the slightest, and in one case, where the patient merely sat in the room from which the dead bird had recently been removed, it would seem that the infecting agent had been disseminated throughout the room.

Man-to-Man Infection.

We consider this the probable mode of infection in two of our cases. Dujardin-Beaumetz[4] (1892) and Nicolle[7] (1898) gave some evidence of man-to-man infection, the latter citing the case of a nurse. Banti and others,[9] in describing the Florence epidemic of 1894–95, state: "As for contagion, direct carrying from person to person, there were incontestable if rare examples." Leichtenstern[11] describes a definite case in Cologne (1898) where the patient had been in contact with the parrot at another house, and the nurse, who apparently contracted the disease from the patient, had never been in the same house as the parrot. Other cases (for example, medical attendant) have come to our knowledge but are not in our series of cases. Man-to-man infection must be regarded as a rare but possible mode of contracting psittacosis.

BACTERIOLOGY AND SEROLOGY.

Ritter[1] (1880) reports that some of the parrots concerned in the epidemic died and the remainder were killed. All the birds were examined after death by Professor Eberth with negative findings.

In 1883 Wolff[22] examined the bodies of twelve grey parrots from the Guinea Coast with a view to explaining the immense mortality in parrots brought thence to Germany, and found micrococci in great numbers. Eberth[23] had similar findings with a grey parrot.

In 1892 Nocard[4] isolated a bacillus (*B. psittacosis*) from a parrot. It is of interest to note that Nocard was unable to secure any of the birds that caused the Paris epidemic. He writes:

"In spite of my efforts I have not been able to procure, dead or alive, one of the many sick parrots imported by Dubois and Marion, and I do not know that others have been more fortunate; at least no one has published clinical observations or the results

of a complete and methodical necropsy on a single one of these parrots. I have been able, however, to make some interesting researches, thanks to the kindness of M. Besançon, who has been good enough to put at my disposal a large packet of wings belonging to parrots that died on the voyage from Buenos Aires to Havre. . . . Before throwing the corpses into the sea Marion deprived them of their wings, which he carefully packed after having dried them."

Nocard examined them four months after this, and obtained from the marrow in pure culture an organism he described as follows:

"A short bacterium, rather thick, with rounded extremities, both acrobic and anaerobic, extremely motile; the bacterium develops rapidly over the greater part of the media, solid or liquid, used in microbiology, provided that the reaction of the medium is neutral or slightly alkaline; it is Gram-negative, does not liquefy gelatin, does not ferment lactose, does not coagulate milk. It is pathogenic for the pigeon, fowl, mouse, rabbit, and guinea-pig."

In 1896 Gilbert and Fournier[2] secured a parrot that had died of diarrhoea, and obtained Nocard's bacillus from the spleen, bone marrow, and intestine. In the case of M. and Mme X, who died of psittacosis, Gilbert and Fournier examined the sputum, and also the blood obtained by pricking the finger. The sputum contained pneumococci and streptococci, but not Nocard's bacillus. Blood culture was sterile. Blood culture (from the vein) in two other cases was also negative. In one of these cases pleural fluid and splenic puncture three days before death also gave sterile cultures. Blood from the heart of this patient (at necropsy) yielded a bacillus identical with that of Nocard. Gilbert and Fournier state that the bacillus of Nocard resembles that of Eberth, but it is clearly distinguished by the appearance of the culture on gelatin and on potato, and especially by its extreme virulence to laboratory animals, which are killed in twenty-four to forty-eight hours. Parrots may die ten to twelve hours after subcutaneous injection of two drops of broth culture. In *La Presse Médicale*, however, Gilbert and Fournier[4] wrote as follows:

"The morphology and biological properties of Nocard's bacillus enable us to suggest that this micro-organism is no other than a *coli* bacillus normally inhabiting the intestine of parrots and acquiring under unknown influences pathological properties. We have found in the intestines of normal parrots special varieties of para-*coli* bacilli, some of which approximate in character to the bacillus of Nocard."

They also noted that typhoid serum produced small agglutinations with Nocard's bacillus, but to a very much less degree than with typhoid bacillus. The serum of two patients, ill with psittacosis, did not produce any agglutination with *B. psittacosis* obtained from the parrots, or from the heart's blood of another fatal case (previously recorded). The patients were only in the fifth day of their illness.

In 1897 Sicard[3] examined two parrots that were the cause of a small epidemic, and had died. In the case of one of these birds he obtained *B. psittacosis* from the heart's blood and bone marrow, but it is interesting to note that he was unable to obtain the bacillus either from the blood or from the organs of the second parrot. He was equally unsuccessful with some small exotic birds that had been in contact with the parrots and that had died. As regards man, Sicard[3] had negative results from "the numerous and frequently repeated cultures made at the height of the fever and in the convalescent period, from the blood of the arm vein, from the spleen, from the lung, or from the urine and faeces of the very ill patients taken into hospital."

Sicard[3] also investigated the power of agglutination in man.

"The serum of the hospital patient was examined during the development of the illness, on the fifth day of the illness, then every second day, and during the convalescent period every four days. The serum of the other four patients was only taken twice, once during the period of the illness and once during convalescence. The suspected serum behaved towards *B. psittacosis* in the same manner as that of normal people, or of patients with other illnesses. There was produced under the influence of any human serum a physiological agglutination of this bacillus. This agglutination always exists at 1 in 5, is able to continue at 1 in 10, and in some cases at 1 in 20, and presents slight variations according to the culture employed. Those of M. Nocard and our own always appeared to agglutinate a little more than those of MM. Gilbert and Fournier. This agglutination, which occurs with a serum kept for some time, is often defective with fresh serum, and is then replaced totally, or in part, by a transformation into granules, without complete bacteriolysis."

Sicard[3] then investigated the bactericidal properties of the suspected serum with negative results.

"Tested with fourteen human serums, precipitation of bacilli occurred at the bottom of the tube. Microscopic examination showed numerous masses, often in long and flexible chains. The vitality of the bacilli was preserved, as well as their virulence, as was shown after twenty-four hours in agar by inoculation into mice. From the preventive point of view we have equally been unable to establish a difference of action between the suspected serum and other serums, which were injected into mice and sparrows twenty-four hours before their inoculation to *B. psittacosis*."

Nicolle[5] in 1898 reports as follows:

"We have not been able, in spite of all our efforts, to isolate the pathogenic microbe from the different products which have been sent us: blood of three patients, faeces of two, sputum of one. The necropsy of the parrot also gave negative results. In the case of one patient, attacked with a fatal form of the disease, the serum taken on the eighth day agglutinated *B. psittacosis* 1 in 50 and on the ninth day (when the patient was dying) the agglutinating power reached 1 in 60. The same serum has twice shown activity of 1 in 30 to typhoid bacilli, but no action on *B. coli*. The patient had never had typhoid fever.

"In the case of a second patient, severely attacked, but who recovered, the serum taken on the sixth day was without action on Nocard's bacillus, typhoid bacillus, and *Bacillus coli*; on the eleventh day it agglutinated *B. psittacosis* 1 in 10, but remained inactive towards the two other microbes. The blood of a third mild case examined on the sixth day, had no agglutinating power. Parrot's serum, obtained on the fifteenth day after its recovery, also gave negative results."

Gilbert and Fournier,[4] reviewing the situation in 1905, state:

"M. Nicolle has shown that the serum diagnosis of psittacosis is possible, the agglutinating power being relatively raised in one of his cases (1 in 50, 1 in 60) and feeble in another (1 in 10). But the agglutinating power is often wanting (Gilbert and Fournier, Sicard). . . . Do there exist other forms of psittacosis or other infective maladies of parrots transmissible to man and not having the bacillus of Nocard as pathogenic agent? This is quite possible. The bacillus of Nocard could not in some cases be recovered from the bodies of parrots which had apparently been the focus of spread of small limited epidemics; but these facts are still badly defined clinically and bacteriologically; it suffices to note them."

In 1904 Vickery and Richardson[12] recorded that the serum of their patients was negative to typhoid and paratyphoid bacilli, and to a streptococcus recovered from the spleen of the parrot. Apart from the latter, which they regarded as a contamination, all cultures from the organs of the dead parrot were negative. No bacteriological or serological findings are reported in the cases of Beddoes (1914), Gulland (1924), or Stolkind (1927).

In 1917, when studying an epidemic in Pennsylvania, McClintock[13] found a variety of organisms, and suggested a pleomorphic nature of *B. psittacosis*. In 1920 Marrian Perry[14] obtained *B. psittacosis* from a grey touracon that had died, and by absorption and agglutination tests found that *B. psittacosis* was identical with *B. aertrycke* of the "Mutton" type. He quotes Bainbridge who came to a similar conclusion.

Thomson[15] (1929) records serological and bacteriological findings in one of his cases. The Widal test was positive to paratyphoid B 1 in 1,000. In the course of the illness the right parotid gland became swollen and painful, and a small quantity of blood-stained fluid was aspirated from it and culture media inoculated. Cultures gave a bacillus which was first Gram-positive, but after forty-eight hours' growth *in vitro* became completely Gram-negative. Thomson observes that the bacteriological report, "although it does not conform in every detail with some of the published accounts of *B. psittacosis*, nevertheless shows that it belongs to the same group of organisms, individual strains of which

are known to vary considerably in their behaviour in the laboratory." Thomson, however, does not regard the identity of the bacillus as established.

In view of the classical conceptions of the etiology of psittacosis, we approached our first case from the point of view of obtaining positive agglutination tests with *B. psittacosis*, and perhaps isolating the bacillus. Our results were completely negative, even after necropsy. This appeared to throw doubt on the diagnosis and to induce a sceptical attitude as to the question of parrot infection. A close study of all the available literature, however, brought out several important points: (1) There was the strongest circumstantial evidence in favour of parrots being the cause of psittacosis. (2) Several able investigators, Sicard[3] among others, had failed to obtain any evidence of positive agglutinations with typhoid, paratyphoid, and psittacosis bacilli in undoubted cases of the disease. The titre of agglutination in some of the Paris cases was of such an order as to have little or no significance. (3) Throughout half a century the alleged causative organism, *B. psittacosis*, had been isolated from a human being in only one case, and that at necropsy. This was done by Gilbert and Fournier,[6 7 8] who, when reviewing the whole subject at a later date (1906), themselves began to doubt its etiological significance. (4) The classical clinical descriptions corresponded so closely with our first case and the second member of this group (whom we had subsequently visited) that the diagnosis of psittacosis seemed without doubt.

It was in an endeavour to fit all these facts together that we conceived of the possible virus origin of the disease, and we were fortunate in securing the collaboration of Dr. S. P. Bedson and Dr. G. T. Western in investigating this point. Many of the results of the experimental investigations have already been published,[25] and we shall therefore not describe them in this paper. In brief, it may be stated that a filterable virus was isolated from parrots which had died of psittacosis and which had been responsible for cases of the disease in man. Further, citrated blood from human cases, although apparently sterile when tested culturally, produced the disease in every instance when inoculated into budgerigars. It has been seen from the detailed notes of our cases that negative blood cultures and negative agglutinations have been found in nearly all of them. It is true that the close similarity between many of the clinical features of psittacosis and those of typhoid fever might by analogy suggest a bacillary origin for the former, but a consideration of this question opens up a very wide field of inquiry. The London Hospital investigations offer strong evidence in favour of the virus origin of psittacosis, although this does not exclude the possibility of secondary infection with other organisms.

PATHOLOGICAL REPORTS BY PROFESSOR H. M. TURNBULL.

GROUP E, CASE 1.

Summary of Findings.—Thrombosis of pulmonary arteries. Haemorrhagic pneumonia. Septicaemia. Slight muco-purulent bronchitis. Diffluent, red septic spleen; iron pigment in spleen. Parenchymatous degeneration and post-mortem staining of myocardium, liver, and kidneys. Oedema of kidneys. Iron pigmentation of coeliac gland. Proteolysis and lipolysis of very adipose pancreas. Great central softening of suprarenal bodies. Emphysema of lungs; quiescent tuberculosis; pinhead fibro-caseous nodule in apex of upper lobe of right lung; pinhead calcareous nodule in lymphatic gland of tracheal bifurcation. Eight pigment calculi (largest 1.4 by 0.7 by 0.7 cm.) in gall-bladder. Foramen ovale closed. Moderate general atheroma. Numerous chylecysts in submucosa of jejunum; Peyer's patches small and inconspicuous. Fibrous obliteration of terminal 1.5 cm. of 11 cm. appendix. Sessile polyp (0.25 cm. diameter) in transverse colon. A few small (largest 0.15 cm.) internal haemorrhoids. Stout, grey-haired, well-developed man. Examination of brain not permitted.

Weights: Body, 82 kilograms (length 1.68 metres); liver, 1,417.5 grams; heart, 326 grams; kidneys, 290.6 grams; spleen, 177.2 grams; pancreas, 126.2 grams; suprarenal bodies, 11.2 grams.

Macroscopic Examination.

The necropsy was performed by Dr. A. B. Bratton. The body had not been placed in the freezing chambers, and there was moderate post-mo throughout. A portion of friable striated and 1 cm. in diameter, lay free in the pulmonary artery in the hilum of the upper lobe of the right lung; a fragment of similar clot, 2.5 cm. long and 0.7 cm. in diameter, lay in the pulmonary artery to the upper lobe of the left lung. There was no ante-mortem thrombus in the large veins of the neck, chest, and abdomen; incision of the limbs was purposely avoided, but the content of the subclavian and femoral veins was expressed and consisted of fluid blood. The most striking abnormality was the condition of the lungs. There was no free fluid in the pleural sacs. The lungs were voluminous and showed the characteristic appearances of hypertrophic emphysema. A thin layer of fibrin covered the lower part of the upper lobe of the left lung, and a layer of fibrin containing numerous red clots lay on the anterior surface of the lower lobe. The lower third to one-half of the outer surface of the upper lobe of the left lung, from a little below the apex to the tip of the lingula, was swollen and dark purple. It felt boggy and gave slight crepitation. The cut surface was deep red, and very slightly granular; blood and a few bubbles of air were alone expressed. On the cut surface of the rest of the upper lobe of the left lung were a few small areas of similar appearance, and yellow slime was expressed from some bronchi. The anterior surface of the lower lobe of the left lung was depressed and dark red, while the angle between the anterior and diaphragmatic surfaces was replaced by a thin, flabby, airless fringe. On section a smooth, deep red, largely airless zone (0.5 cm. deep) lay under the depression, and the fringe had a similar appearance. On pressure, yellow slime escaped from some of the bronchi in the depressed area, and in the remainder of the left lower lobe. Yellow slime was expressed from some bronchi in the right middle lobe. The lower lobe of the right lung resembled externally the lower part of the left upper lobe, being swollen and dark purple. The upper part felt less solid than the lower, and crepitated. The cut surface of the whole lobe was deep red. The upper part was very slightly granular, the lower part was more homogeneous and more granular, but the granulation was not conspicuous. The cut surface recalled that of the haemiolytic streptococcal pneumonia which was associated with influenza in 1918. Yellow slime was expressed from bronchi in the antero-inferior angle alone. A portion was removed from the posterior part of this lobe for bacteriological examination by Dr. G. T. Western. The abnormalities in other organs have been indicated in the summary. No evidence of inflammation could be detected in the intestines.

Microscopic Examination.

Portions were removed for microscopic examination from the swollen lower border and lingula of the upper lobe of the left lung, the upper and lower parts of the swollen lower lobe of the right lung, the collapsed zone beneath the pleura of the anterior surface of the lower lobe of the left lung, the spleen, the pancreas, and the pigmented coeliac gland.

The Lungs.—In the *upper part of the lower lobe of the right lung* all the vessels are greatly engorged. The walls of the bronchioles are intensely injected and are infiltrated with large mononuclear leucocytes, histiocytes, large and small lymphocytes, and a few neutrophil leucocytes. The lumen of one contains red corpuscles, a few desquamated epithelial cells, neutrophil leucocytes, and large mononuclear leucocytes. The others have an empty lumen, and have lost their epithelium. The respiratory bronchioles, alveolar passages, and infundibula almost all contain inflammatory exudate, but seldom appear completely filled by it. The few that are empty are dilated. Most contain neutrophil and large mononuclear leucocytes, red corpuscles, and desquamated epithelium. Some contain also a little bubbly coagulated albumin or a few threads of fibrin. In one area red corpuscles are very numerous, and here fibrinous and serous exudate are much more abundant, while leucocytes are relatively scanty. Changes in the epithelial lining of the affected air spaces are conspicuous. The epithelial cells are greatly enlarged, and have an abundant spongy basophil cytoplasm; the nuclear membrane, close net of chromatin threads, and large nodes are brightly stained. Several show karyokinetic figures. Small heaps of large cubical and rounded epithelial cells frequently lie upon the muscular wall of the respiratory bronchioles, while ribbons of large spindle cells lie upon or close to alveolar walls. Other epithelial cells have been desquamated and are rounded. The pleura is swollen by oedema and contains some haemorrhages.

In the *lingula of the upper lobe of the left lung* the infiltration of the walls of the bronchioles is greater and contains

more numerous neutrophil leucocytes. In *some* a deep zone of neutrophil and large mononuclear leucocytes raises the epithelial lining as a continuous sheet, in others the raised sheet is broken, and leucocytes have reached the lumen. The centres of the lumina are usually empty or nearly empty; one contains coagulated serum and a few leucocytes. The respiratory bronchioles, alveolar passages, and infundibula contain an infiltrate which in general resembles that in the previous section. The cellular infiltrate is, however, more abundant, filling and distending the spaces, and bubbly coagulated exudate is more frequent. The pulmonary arteries are greatly engorged, but are not thrombosed.

In the *posterior part of the lower border of the upper lobe of the left lung* a large bronchiole has great haemorrhage in its wall, the epithelium consists of a layer of flattened cells, the centre of the lumen is occupied by air, and the periphery by leucocytes, red corpuscles, necrosed cells, coagulated albumin, and a few filaments of fibrin. The respiratory bronchioles and alveolar passages contain an exudate similar to that in the infundibula, but many are greatly distended by air, the exudate being confined to the periphery of the lumen. The exudate is more abundant than in previous sections and distends the air spaces more. It consists mostly of coagulated albumin, but in places of fibrin. Red corpuscles are very numerous. They are more numerous in the fibrinous than in the serous exudate; groups of alveoli are crammed with red corpuscles. The cells seen in previous sections are present, but they form a relatively insignificant part of the exudate. Further, most of them are very degenerate, or are completely necrosed and represented by cytoplasmic spheres; some well-stained neutrophil leucocytes are, however, always present.

Hyaline thrombi are frequent in the engorged capillaries of the alveolar walls. Hyaline thrombus also lines or fills several small pulmonary arteries. Some larger pulmonary arteries show a peripheral layer of degenerate leucocytes; a few are filled with white thrombus. The pleura is congested, slightly infiltrated, and covered by a layer of fibrin.

In the *lower part of the lower lobe of the right lung* there are still respiratory bronchioles and alveolar passages distended by air, and occasional groups of alveoli which contain little or no exudate. The condition is very similar to that in the previous section, but fibrin containing many red corpuscles is now the predominant form of exudate, many alveoli are filled with red corpuscles, most of the alveolar capillaries contain hyaline thrombus, hyaline thrombus fills a great number of the smaller pulmonary arteries, and many large pulmonary arteries are occluded by white or mixed thrombus. Large bronchioles are lined by one or two layers of flattened spindle epithelial cells, and are filled with fibrin, ghosts of necrosed cells, a few red corpuscles, and scattered neutrophil leucocytes. There is great oedema of the pleura.

In the *anterior surface of the lower lobe of the left lung* there is a subpleural zone of collapse, which contains a few emphysematous areas. Beneath this there are small areas of collapse in a general emphysema. The tissue throughout is intensely engorged. In the subpleural zone there is an area in which the collapsed alveoli contain a few red cells and leucocytes, while a respiratory bronchiole shows a few leucocytes beneath its epithelium, and a few leucocytes and red corpuscles in the periphery of its lumen. The feature of this section is the presence within bronchioles and respiratory bronchioles of desquamated epithelium, a few large mononuclear and neutrophil leucocytes, and masses of bacteria. The bacteria are Gram-positive, and in less number negative, streptococci and staphylococci, and Gram-positive, long, stout bacilli. In the other portions of the lungs no organisms were found in sections stained with dilute carbol-fuchsin or by the Weigert-Gram method with neutral red.

The spleen was so diffluent at necropsy that the tissue in the microscopic sections is split into small fragments. It is impossible to differentiate the capillary veins from the pulp strands. The organ is engorged and infiltrated. Neutrophil leucocytes are numerous, but the feature of the infiltration is the great number of large mononuclear cells with deeply basophil cytoplasm (Unna-Pappenheim stain) and conspicuous nodes and nucleoli. Some of these cells have the clock-face nucleus of plasma cells, others contain karyokinetic figures. There is much haemosiderin, chiefly within cells. No micro-organisms were found in a section stained with dilute carbol-fuchsin.

The pancreas is very adipose. There is very extensive digestion of the glandular tissue and islands, and *much* lipolysis of the adjacent adipose tissue. The ducts contain digested desquamated epithelium, and sometimes also a little mucous coagulum. There is no cellular infiltration.

The coeliac gland shows areas in the adenoid tissue in which the walls of vessels have undergone great hyaline collagenous swelling, recent necrosis in the centres of many cortical nodules, and great sinus-catarrh. Most of the desquamated cells in the sinuses are large and necrosed. Many contain fine granules of a brown pigment that does not give an iron reaction, others contain large grains of haemosiderin. The sinuses also contain red corpuscles and numerous extracellular isotropic particles of brown-yellow haemosiderin, of which most are large, and fusiform or spherical.

Remarks.

The changes found at necropsy were those of a general infection, or bacteriaemia, associated with a peculiar inflammation of the lungs. No bacteria were found microscopically except numerous streptococci, staphylococci, and Gram-positive bacilli within bronchioles in one section of the lung.

The naked-eye and microscopic examinations showed that this bronchitis very rarely affected the portions of lung involved in the pneumonia. There can be no doubt that it was a terminal and independent muco-purulent bronchitis. The peculiar inflammation of the lung involved bronchioles, but it had not the appearance of a pneumonia secondary to bronchitis—that is to say, a broncho-pneumonia. The descriptions of the portions of lung examined microscopically have been set in the order of apparently progressive stages in the inflammation. Briefly, an intense engorgement, proliferation and desquamation of epithelium, leucocytic infiltration, and slight haemorrhage were followed by increasing haemorrhage, abundant serous and later fibrinous exudate, progressive degeneration and death of the earlier infiltrating cells, and an increasing thrombosis of capillaries, and small and large pulmonary arteries. The extent of the thrombosis in the severest expression, apparently the last stage, of the inflammation was most remarkable.

The portions of thrombi found in the pulmonary arteries in the hila of the upper lobes of the right and left lung had doubtless been formed within pulmonary arteries; no thrombosis was found in large veins of the systemic circulation.

The amount of haemosiderin in the spleen, and particularly in the coeliac gland, gave evidence of much destruction of haemoglobin, but laked red corpuscles were not seen. The characteristic of the inflammation of the spleen was the infiltration with large cells of lymphoblastic type.

The digestion of the pancreas, like the central softening of the suprarenal bodies, was doubtless due to autolysis in a severely infected cadaver that had not been placed in the freezing chambers. The preservation of the tissues in general, however, was shown by the micro-scope to be good, and much better than was expected from the appearance at necropsy.

GROUP B. CASES 1, 2, AND 4.

The microscopic examination of the material from these three cases has not yet been made. The necropsies were in general closely similar to that of Group E, Case 1. Terminal heart failure was shown by congestion and oedema of the liver and kidneys, and in Case 1 by oedema of the legs. Septicaemia was indicated by parenchymatous degeneration of the myocardium, liver, and kidneys, and by increased cellularity of the pulp of the spleen. The severest changes were in the lungs. A new feature was found by Dr. W. W. Woods in Case 2 in the form of focal areas of degeneration, haemorrhage, and rupture in the rectus abdominis muscle; and in Case 4 Dr. A. B. Bratton found focal haemorrhages in the rectus abdominis and the gluteus maximus.

Lungs.—The changes in the lungs were most advanced in Case 1. In the left lung the lower lobe and lower third of the upper lobe were conspicuously swollen and purple, while the remainder of the upper lobe was slightly swollen. The lower half of the lower lobe and the lingula of the upper lobe felt like liver, and on section showed an even, finely granular, pink cut surface. On pressure, very abundant frothy fluid exuded from the bronchioles. Excised portions just sank in water. Similar changes will be referred to as red hepatization. The remainder of the left lung felt boggy, with focal areas of firmer consistence.

When freshly cut the surface was very moist, or ran with water, showed slight speckles of aeration in a few small areas and faint granulation in larger patches, but for the most part appeared homogeneous, somewhat gelatinous, and grey or pink. On pressure a great deal of frothy fluid and a considerable quantity of blood exuded. Excised portions floated in water. This change will be referred to as partial infiltration and oedema. In the right lung the posterior two-thirds of the upper lobe and the postero-superior three-quarters of the lower lobe were swollen, and occupied by red hepatization. Between the hepatization in the lower lobe and the visceral pleura was a zone of lung which showed a few small speckled areas of aeration, but was for the most part airless, smooth, red, and collapsed. The remainder of the right lung showed chronic vesicular emphysema. Occasionally there was a little grey mucus in the frothy fluid which exuded from the bronchioles. The pulmonary arteries in the lower lobe of the left lung at a little distance from the hilum contained red thrombus.

In Case 2 the anterior fifth of the left upper lobe, the right middle lobe, and the anterior quarter of the right upper lobe showed vesicular distension and great interstitial emphysema. The lower fringe of the left lower lobe was partly speckled by aeration, partly collapsed, and congested. The lower quarter of the left lower lobe felt shotty, and on section showed pinhead nodules of peribronchiolitic consolidation in an injected, collapsed ground. The remainder of both lungs was swollen and occupied by partial infiltration and oedema. The scattered granular areas in this partial infiltration measured in diameter about 0.7 cm. in the upper and lower lobes of the left lung, and 1 cm. in the upper lobe of the right lung; in the lower lobe of the right lung was an area of red hepatization 3 cm. in diameter. The frothy fluid which exuded from the bronchioles was everywhere slightly clouded; in the upper lobe of the right lung it contained grey mucus, in the lower lobe of the right lung it contained yellow muco-pus. The mucosa of the bronchi and trachea was covered with blood-stained, slightly purulent mucus. One or two pulmonary arteries in the lower lobe of the left lung contained red thrombus near their terminations.

In Case 4 there was red hepatization in the apex, and in the lower border of the left upper lobe to within 5 cm. of the tip of the lingula; and there was partial infiltration and oedema in the remainder of the posterior two-thirds of the left upper lobe. Red hepatization occupied also the posterior third of the middle lobe of the right lung. Congestion and collapse affected a few lobules in the lingula, and a subpleural zone in the lower part of the posterior border of the lower lobe of each lung. The remainder of the lungs showed chronic vesicular emphysema. Milky mucus came from the bronchioles in the collapsed lobules in the lingula, and grey mucus from some of the bronchioles in the area of hepatization in the right middle lobe, the collapsed area in the left lower lobe, and the aerated portions of both lungs. The mucosa of the bronchi and trachea was covered with frothy mucus flecked with pus.

The largest amount of pleural effusion was an ounce in Case 2. A thin layer of fibrin lay upon the upper lobe of the left lung in Cases 1 and 4, and on the diaphragmatic surface of the left lung and on the outer surface of the upper lobe of the right lung in Case 2. In all three cases there were petechiae in other parts of the visceral pleura.

The changes in the lungs were thus to the naked eye closely similar to those in Group E, Case 1. There was, however, more evidence of broncho-pneumonia, especially in Case 2. Thus, there was an area of collapse, peribronchial consolidation, and muco-purulent bronchitis in the lower part of the lower lobe of the right lung in Case 2, and there were areas of collapse in all three cases. In all lungs many bronchioles contained mucus, and in Cases 2 and 4 some contained muco-pus. In Cases 2 and 4 there was muco-purulent bronchitis and tracheitis. In Group E, Case 1 the microscope showed two distinct changes in the lungs: (1) a peculiar haemorrhagic vesicular pneumonia, complicated by pulmonary thrombosis and free from bacteria; and (2) a muco-purulent bronchitis in which bacteria were numerous and which was occasionally associated with resorption collapse. The naked-eye appearances of the later three cases suggest a combination of similar pneumonia with more advanced broncho-pneumonia.

The bronchial glands were anthracotic and very oedematous; in Case 2 areas that were not anthracotic were engorged and infiltrated.

The spleen in Case 1 weighed 198.5 grams, felt soft, and had a moist cut surface in which the Malpighian bodies and trabeculae appeared swollen and blurred in a pink pulp. In Case 2 it weighed 311.8 grams, felt soft, and had a moist cut surface in which a swollen, deep red, soft pulp obscured the Malpighian bodies and trabeculae. In Case 4 it weighed 262.3 grams, was flabby, and had a cut surface in which an abundant soft, purplish-red pulp obscured the Malpighian bodies and trabeculae.

Muscle.—In Case 2 there were in the right and left *rectus abdominis* irregular areas in which the muscle was somewhat waxy, very pale, and yellowish-pink. They were most numerous in the upper and lower ends of the recti, and the largest area measured 2 by 2 by 0.8 cm. There were thin layers of blood between these areas and the posterior sheath. Near the upper end of the left rectus was a ragged tear, 0.5 cm. long. The other abdominal muscles, the pectoral muscles, and the muscles of the right thigh showed no abnormality. In Case 4 there were haemorrhages into the right and left rectus abdominis: the largest measured 11 by 1 cm. and occupied the lower end of the left rectus and its sheath. There was a group of haemorrhages in an area of 4 cm. diameter in the right and in the left gluteus maximus.

Alimentary Tract.—The stomach in Cases 2 and 4 was congested, and there was in each case an area of slight haemorrhage into the mucosa of the body. There was slight patchy congestion of the small and large intestine in Cases 2 and 4. In Case 1 the mucosa was congested and covered by prune-juice blood, and there were haemorrhages into the valvulae conniventes, in the jejunum for two and a half feet beginning five feet below the duodeno-jejunal flexure. In this case the ascending and transverse colons were distended by gas. The congestion and slight mucosal haemorrhages were probably the result of heart failure. There was no evidence of enteritis. The intestinal lymphoid follicles and the mesenteric glands were not inflamed. The small intestines contained yellow chyme, and the large intestines a little yellow, or olive green (Case 2), semi-fluid faeces.

The brains and cords showed congestion and oedema. There were ring-haemorrhages in the brain and cord of Case 4, and in the cord of Case 2.

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THE ETIOLOGY OF PELLAGRA.

BY

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PROFESSOR WILSON'S note on the etiology of pellagra,[1] published in the *British Medical Journal* early this year, tends to give a wrong impression of some recent researches in connexion with that disease. Wilson's theory of pellagra is that it follows diets in which the biological value of the proteins consumed daily falls below the value of 40 to 45 grams of meat protein, a theory developed as the result of a series of observations made in Egypt during the war.[2] At that time Goldberger and his colleagues of the U.S. Public Health Service had begun the long and eventually satisfactory investigation in the course of which they showed the non-communicability of pellagra, its clear association with faulty diet, and the methods, simple from a scientific point of view, required for its prevention; and their work was already lending fresh point to old theories of the dietary origin of the disease.

Wilson has shown that a number of diets on which pellagra developed contained only proteins of low biological value. The values of the different proteins are taken from Thomas's tables,[3] Thomas having defined biological value as the number of parts of body nitrogen replacable by 100 parts of the nitrogen of the foodstuff. His method consisted in remaining for a few days on a nitrogen-free diet until his nitrogen output fell to a low figure, taken to represent only endogenous metabolism, and then testing the power of various proteins, fed as additions to the nitrogen-free diet, to replace the nitrogen lost in tissue destruction.

Thomas's values, gained from experiments on himself, have not been exactly confirmed, either for man or the lower animals. Martin and Robison[4] have pointed out how difficult it is for those using Thomas's method to avoid fallacies; for example, it is uncertain whether Thomas, previous to conducting his tests, always remained long enough on a nitrogen-free diet for his output of nitrogen to fall to a minimum and represent only endogenous metabolism. These observers attempted with great care to discover in themselves the biological value of the proteins contained in milk and whole wheat. Using Thomas's formula for their calculations, their values for whole wheat (35 per cent. C. J. M. and 31 per cent. R. R.) agree fairly well with that of Thomas (39.50 per cent.), but in the case of milk the difference was very large (51 per cent. C. J. M. and 100 per cent. Thomas). The later workers at first found that with milk nitrogenous equilibrium could not be attained until over 11 grams of milk nitrogen were taken (to replace about 2 grams of body nitrogen), thus giving a very low biological value (about 20 per cent.), but when the energy content of the diet was raised far above normal, nitrogenous equilibrium was attained at a lower level of nitrogen intake. Martin and Robison's paper gives many illustrations of the difficulties underlying determinations of this kind, and their results show the unwisdom of accepting Thomas's figures as absolute. It is remarkable that while he recorded the biological value of milk protein as 100 per cent., he recorded also large negative balances with "Frauenmilch"—cow's milk with extra sugar and cream.

Thomas's results are of interest in connexion with pellagra in that he assigned a low value to maize (29 per cent.), which fits with the earlier observation of Kossel and Kutcher,[5] and Osborne and Harris,[6] that zein, the principal protein of maize, is deficient in lysin and tryptophane respectively. McCollum,[7] using Thomas's method and working with pigs, found that zein could cover 73 per cent. of the animals' nitrogen expenditure. Similar experiments were made on rats by Mitchell,[8] who gave maize a value of 72 per cent., but found it inferior to milk and muscle.

Later, McCollum[9] and his co-workers, taking the growth of rats as index of the biological value of a protein, assigned maize a very low position in the scale relative to beef muscle and wheat. With the pig as the experimental animal Hart and McCollum[10] found the growth value of the proteins of the wheat, maize, and oat kernels roughly equal. These growth experiments are difficult to interpret in that they are complicated by then unrecognized vitamin deficiencies.

It will be seen that it is unwise for the pellagra investigator to place implicit trust in current estimations of biological value. Actually the clinical evidence available at the moment tends to minimize the importance of protein deficiency in pellagra.

In 1920 Voegtlin, Neill, and Hunter[11] showed that remarkable improvement could be produced in pellagrins by the administration of a 95 per cent. alcoholic extract of ox liver in daily doses equal to 1 kilo of fresh liver. The extract was practically free from amino-nitrogen. A few years later a series of observations of a somewhat similar nature led Goldberger[12] to change his earlier view of the causation of pellagra, which coincided with Wilson's. Pellagra being a recurrent disease, it was observed that in certain asylums and institutions in the Southern United States a constant proportion of inmates tended to fall victims year by year, and it was found possible by Goldberger and his associates to study the pellagra preventive effect of alterations in the diets of certain groups.

They discovered that a liberal allowance of casein previously purified by repeated washings in acidulated water (Thomas gives casein the biological value of 70 per cent.) had no effect in preventing the recurrence of the systematic lesions of pellagra, though it had some effect in curing and preventing the characteristic dermatitis. Having at about this time accidentally noted that yeast was effective in treating and averting black-tongue in dogs (I can find no reference in Goldberger's work to the statement, put forward by Wilson, that yeast is operative only in the early stages of black-tongue, while lean meat will cure advanced cases) Goldberger began successfully to use it as a pellagra preventive and in the treatment of developed cases. The yeast used by him was a proprietary preparation—"Yeast Vitamin Harris Powder," which is a dried acidulated watery extract prepared "according to a somewhat modified Osborne-Wakeman technique," and containing very little protein nitrogen.[13]

The success of this yeast preparation (in doses of 15 grams per day) in preventing and treating pellagra led Goldberger to postulate a non-protein P.P. (pellagra preventive) dietary factor in yeast and in other foodstuffs possessing similar preventive properties. These foodstuffs were found to be mostly those containing animal protein, tomato juice being an exception.

Recently Professor Tscherkes, of the Department of Nutritional Research in Russia, has obtained results in the treatment of pellagra, not yet fully recorded, which confirm some of Goldberger's observations. In 1929 a severe outbreak of pellagra occurred in the Ukraine, the drought of 1927 and 1928 having destroyed all crops except maize. A daily allowance of 1.5 litres of milk, 200 grams of meat, or 45 grams of yeast, was found to clear up symptoms in five to six weeks.

Black-tongue in dogs, which owes its name to superficial areas of necrosis on the tongue, appears to have a geographical distribution in the United States similar to that of pellagra, which it resembles in involving a disturbance of the alimentary tract—stomatitis and diarrhoea. It can be produced experimentally in dogs by diets similar to those associated with pellagra in man and cured or prevented by foods containing abundance of the P.P. factor. Doubt has been thrown on the parallelism of experimental black-tongue and pellagra by the production in dogs by Underhill and Mendel[14] of an apparently identical condition which does not respond to treatment with yeast. Underhill and Mendel's syndrome is curable by butter (found useless against pellagra and Goldberger's black-tongue) and by crystallized carotene, which has since been shown to be closely allied to, or a possible precursor of, vitamin A.[15] Since the basal diets used in their experiments were lacking in this vitamin, it is possible that Underhill and Mendel's syndrome had its origin in vitamin A deficiency.

In 1926 Goldberger and Lillie[16] observed failure of growth and a pellagra-like condition in the albino rat when highly purified diets devoid of the P.P. factor were fed. This pellagra-like condition, whose most striking feature is a symmetrical dermatitis, was subsequently produced in other laboratories (Chick and Roscoe,[17] etc.). The external appearances of this condition resemble human pellagra, though the appearance of the lesions does not seem to be accelerated by exposure to strong light. Diarrhoea is not usual in the rat. Findlay[18] has recorded stomatitis. The factor in whose absence rats fail to grow and often develop symmetrical dermatitis is called in this country vitamin B_2 (in the United States vitamin G). It has generally been supposed to be identical with Goldberger's P.P. (pellagra preventive) factor.

Later Aykroyd and Roscoe[19] showed that the distribution of vitamin B_2 (rat factor) was roughly similar to that of Goldberger's P.P. factor and to the black-tongue preventive factor.

Comparison of the Effects of Various Foodstuffs on Vitamin B_2 Deficiency in Rats, on Pellagra in Man, and on Black-tongue in Dogs.

Material.	Rat Vitamin B_2.	Man P.P. factor.	Dog Black-tongue preventive factor.
Maize endosperm	Very poor	Associated with pellagra in U.S.A. and Italy	—
Wheat flour	Very poor	Associated with pellagra in U.S.A.	Used in basal diet to produce the disease.
Whole maize	Poor; 50% less than normal growth	Traditionally associated with pellagra	No preventive action, used in basal diet to produce the disease.
Whole wheat	Poor, but better than maize	—	65% in diet delayed onset of the disease; no protection.
Peas	30-40% needed for good growth ("Clipper" peas)	30-35% (168 gram daily), incomplete protection (Virginian cowpea)	58%; slight protection, 73%; almost complete protection (Virginian cowpea)
Wheat germ	15-30% good growth	30%; protection almost complete	31%; protection almost complete.
Fresh milk	5-10% milk solids, good growth	20% solids (1,200 g. buttermilk daily) protected	250-300 c.cm skim milk daily protected.
Lean meat	7-10% (dry wt.) good growth	13% (dry wt. 50 g. daily) protected	11% (dry weight) protected.
Dried yeast	1-3% good growth	7% (30 g. daily) protected	5% protected.
Liver	1-2% (dry wt.) ox liver, good growth	Alcoholic extract of ox liver effective in treatment	11% dried pork liver protected.
Dried egg yolk	7-15% good growth	—	17% protected.

The results for pellagra and black-tongue are taken from the work of Goldberger, Voegtlin, and others. Estimations of both the P.P. factor and the black-tongue preventive factor are approximate, since in few cases was any attempt made to discover the minimum necessary for protection. The amounts given in all cases are expressed as the percentage of the dry weight of the diet. Goldberger's clinical experiments on pellagra prevention were carried out in institutions under very carefully regulated conditions. Apart from the test foods the diet offered to the potential pellagrins was kept very constant throughout the investigation.

In the series of experiments from which the results in the table are drawn, over 60 per cent. of control rats on a basal diet, free from vitamin B_2 but otherwise complete, developed pellagra-like symptoms. The rat, however, does not develop these symptoms on diets similar to those which are associated with pellagra in man and experimental black-tongue in dogs, and is, indeed, able to perform some growth and remain free from obvious symptoms on such diets. Only a very highly purified food mixture will induce rat "pellagra," and at present the appearance of symptoms is somewhat intermittent. Experiments on rats cannot therefore prove pellagra to be a deficiency disease, but the fact that the rat's needs for vitamin B_2, set, perhaps, on a low scale, are satisfied by various foodstuffs in their order of potency as regards the P.P. (pellagra preventive) factor and the black-tongue preventing factor, is suggestive of the identity of the three factors.

The relatively high vitamin B_2 value of one sample of whole maize employed in our experiments (another sample of maize gave a lower value) is used by Wilson to calculate the vitamin B_2 value of various human diets. Calculation on this basis gives all diets containing much whole maize a fairly high vitamin B_2 value. It is not legitimate, however, to argue, as Wilson does, that because a diet containing 65 per cent. of maize endosperm gives subnormal growth, a diet containing 100 per cent. will produce normal growth. Maize endosperm should be reckoned a negligible source of vitamin B_2.

It is dangerous to put confidence in calculations either of the biological value of the proteins of a human dietary from Thomas's figures, or of its vitamin B_2 value from such observations on rats as now exist. Thomas's values need confirmation, and the distribution of the rat factor is not completely known. Human dietaries are rarely described with exactitude—for example, it may make a considerable difference whether the term "meat" includes offal, or whether it represents sheep, ox, or horse muscle. So far vitamin B_2 has been found most abundantly in foods containing animal protein—that is, eggs, milk, meat, liver, etc.—of high "biological value." Human dietaries are therefore liable to coincide roughly as regards their vitamin B_2 value and the biological value of their proteins. Many diets associated with pellagra, as Wilson says, are low in both respects.

The vitamin (as against the protein) deficiency theory of pellagra rests on the proved possibility of preventing and curing the disease with non-protein substances. The failure of casein to give complete protection against the disease in man and the production in the rat of pellagra-like symptoms on a diet containing this "good" protein, point in the same direction.

It remains to be seen whether the distribution of vitamin B_2 in foodstuffs when known more completely will explain the epidemiology of pellagra in man. Maize was found poor in vitamin B_2 (relative to other foodstuffs), and most pellagra is associated with a high consumption of maize. The equally low vitamin B_2 content of white wheat flour fits in with various observations in the United States of the occurrence of pellagra in districts where wheat was the principal cereal in use. On the other hand, it raises the question why pellagra does not occur elsewhere in ill-nourished populations on a wheat flour staple—for example, in Newfoundland or Labrador, or the East End of London. Complete acceptance of the vitamin hypothesis involves an explanation, in terms of that hypothesis, of the non-occurrence of pellagra in millet-eating countries and its very rare occurrence on rice. Experiments are being carried on to elucidate these points.

While the whole question is still open, the evidence at the moment seems decidedly against the theory of amino-acid deficiency. Investigation of the distribution and properties of vitamin B_2 seems a promising line of attack, though at present it would be premature to regard vitamin B_2 deficiency and pellagra as synonymous.

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THE INJECTION TREATMENT OF HYDROCELE.

BY

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IN 1903 J. C. Luke of Ocilla, Georgia, U.S.A., reported several cures of hydrocele by iodine and carbolic acid injections, and claimed almost uniform success.[1] Nine years later H. Morestin[2] introduced his treatment of vaginal hydrocele by injection of carbolic acid after removing some of the fluid. At first Morestin withdrew about one-third of the fluid and injected 1 c.cm. of a mixture of equal parts of carbolic acid, glycerin, and alcohol. He found that there was no pain, although there was a considerable reaction within the following few days, the scrotum swelling to a considerable size. After a few days all the oedema subsided and the vaginal swelling gradually diminished, and at the end of a few weeks the hydrocele had completely disappeared. As his experience increased Morestin became bolder, and evacuated more of the contents of the hydrocele, until finally[3] he left only a small quantity of fluid in the sac, and injected 1, 2, 3, or even 4 c.cm. of his modifying fluid. In 1912 S. Mallanah described a vaccine treatment for hydrocele in the *British Medical Journal*.[4] The vaccine was injected into the sac.

Soubeyran[5] states that Monod, in treating this condition, injected 1 gram of alcohol 40 per cent. diluted in equal quantity of water without evacuating any fluid. Dimmricher and Polaillon used 1 c.cm. of a 10 per cent. solution of zinc chloride; this also was injected into the sac without withdrawal of fluid. These two procedures were frequently followed by recurrences. Into the sac, previously emptied, all sorts of fluid, from milk to port wine, have been injected.[5]

The satisfactory treatment of a large number of varicose veins by the injection method has induced me, like Pybus,[6] to attempt a modified injection treatment for hydrocele.

Rationale.

A hydrocele is a closed sac lined by endothelium, and containing fluid which has a certain amount of fibrinogen in it. Hydrocele fluid, however, seldom clots, because it is not in relation with damaged tissue. In injecting varicose veins the results are obtained by causing gross surgical injury to the endothelium, which is mesoblastic in origin, and which reverts to its connective tissue type; the vein consequently becomes lined by fibroblasts and damaged endothelium, on which is deposited a very firm thrombus. If the entire endothelium of a hydrocele could be damaged, thus causing an outpouring of fibrin ferment, theoretically the fluid ought to clot and the sac to be obliterated. This was what was aimed at in the old days, when strong iodine was injected into the emptied sac. The trouble in those days was that there was no certainty of destroying the entire endothelium; this was probably because the sac was not distended with the irritant, which therefore did not reach into all the nooks and crannies. In addition, a small amount of hydrocele fluid still remained in the sac; this was probably coagulated, and absorbed a certain amount of the iodine, thus rendering it inert. If the sac were completely distended with irritant for several minutes and then emptied again, the whole of the lining endothelium in every nook and cranny would be destroyed.

I was rather chary of using quinine, because I had come across one or two patients with marked quinine idiosyncrasy, and was afraid that, if the sac were completely distended with quinine urethane solution, in a case of idiosyncrasy too much might be absorbed. I therefore decided to try injecting 25 per cent. sodium chloride into the sac, distending it completely, but with the intention of letting it out after a few minutes so as to avoid any severe caustic effect. The clinical details of two of these cases are as follows.

A patient who had had a hydrocele of about one pint for seven years, and had been tapped many times, was anxious to get rid of it, as it worried him because it was heavy. He was considered a bad operative risk on account of an old injury to his chest, which limited his expansion. I explained what I should like to do as an experiment; he agreed, and in November, 1923, I aspirated his hydrocele through a large needle such as is used for injecting bismuth emulsion, and then filled the sac with 25 per cent. sodium chloride, distending it completely. Great pain followed in the scrotum and testicle, extending to the inner side of the thigh and groin, and passing up into the kidney region. I held the solution in for five to ten minutes to make sure that the whole of the endothelium of the sac was destroyed, and then tried to let it out; it would not come, and I suspected at once that a large slough would develop. A bigger trocar and cannula was tried, but with no result. I attributed the fact that the fluid would not flow out to the retention in the sac of some of the hydrocele fluid; the strong sodium chloride had caused outpouring of the tissue juice from the damaged endothelium so that the diluted hydrocele fluid had clotted, and, although it was not a thick clot, it was firm enough not to flow out through the trocar and cannula. At the end of a week half the scrotum became gangrenous and sloughed off, and he had fungous testis. When the slough separated (including all the tunica vaginalis) the wound granulated over in three or four weeks, and the hydrocele was completely cured. The resultant scar is not nearly so noticeable as one would have expected; he is highly satisfied with the result, as he does not have to carry about an enormous hydrocele.

Another man came to see me about the same time. He had had a hydrocele for some months, and it was getting large, so I took him into hospital. Under a local anaesthetic I made an incision in the skin a quarter of an inch long, and inserted a very large trocar and cannula; I withdrew the trocar, and in its place inserted a soft rubber catheter which fitted the cannula exactly. The fluid was allowed to escape, and the sac was washed out with normal saline. The first washing came away coloured yellow, showing that the sac had not been completely emptied of hydrocele fluid. After two or three washings the sac was distended through the catheter with 25 per cent. sodium chloride with 1 per cent. novocain. The patient felt a little pain, but not nearly so much as the first man; it was similarly referred to the scrotum and testicle, the inner side of the thigh and groin, and extended up to the kidney region. I pinched the catheter and left the fluid in for five or ten minutes, when it flowed out quite easily through the catheter; the tunica was washed out with normal saline solution two or three times, and was emptied as completely as possible. The trocar and cannula were then pulled out, one stitch being inserted into the small incision, and the patient was sent back to bed. He complained of some pain, so was given 1/12 grain of heroin. The next morning he was up and helping in the wards; he had no pain, and was discharged; at the present day it would be impossible to tell on which side he had the hydrocele.

I then read of Morestin's method of treatment, and tried it on three patients about nine months ago. In two cases I evacuated two-thirds of the contents of the sac (about the size of a closed fist) and injected 2 c.cm. of Morestin's fluid. With one patient the result was eminently satisfactory; with the other I was very disappointed. I saw the latter man about a month after the injection, and the hydrocele was larger than it had ever been. He walked into my consulting room about a fortnight ago and asked me to look at his scrotum. The hydrocele had completely disappeared.

In the case of the third patient I evacuated about half the contents and injected about 4 c.cm. of Morestin's fluid. With this patient also I was grievously disappointed at the time, but, after seeing the sequel in the second patient, I went to call on him, and, to my delight, found that his hydrocele was cured.

As modified by Soubeyran, Morestin's technique is as follows.

A hypodermic syringe and small trocar are all the instruments required. It is unnecessary to use local anaesthesia or to shave the scrotum. The place of puncture is painted with tincture of iodine of double strength. The patient is recumbent. The operator makes certain of the position of the testicle, and punctures below and outside if the gland is behind; if it is in front he inserts the trocar from behind.

1. The trocar is sharply plunged into the cavity, and the point can immediately be felt free therein.

2. The hypodermic needle is then inserted a little above the trocar and up to the shoulder of the needle. Its mobility in the sac must be demonstrated by turning it in all directions.

3. The trocar is withdrawn and the hydrocele fluid allowed to flow out slowly and almost entirely. It is a good thing to leave a small quantity in the sac to prevent the action of the carbolic acid from being too caustic.

4. As soon as the cavity is sufficiently evacuated, the trocar is withdrawn and by means of the syringe 2, 3, or 4 c.cm. of Morestin's fluid is injected. It is necessary to make the insertion very slowly, drop by drop, turning the point of the

needle in all directions so as to mix the liquid injected with that in the hydrocele.

5. The hypodermic needle is withdrawn and the scrotum is kneaded, so as to ensure the fluid reaching all parts of the sac. The puncture holes are then dressed with collodion.

No suspensory bandage is necessary, and the patient can get up if he wishes. After the injection he may feel slight pain in the testicular region radiating up the cord, but in a large number of cases there is no pain at all. At the end of a few hours the scrotum swells, becomes heavy and oedematous, and some liquid re-forms, but this is all reabsorbed. Soubeyran claims that at the end of four or five days regression begins, and is complete in two or three weeks.

It is also claimed that this injection of Morestin's fluid is quite safe for use in congenital hydroceles in children, but that iodine in these cases would be very dangerous on account of the risk of penetration into the peritoneum through the open mouth of the sac.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

UNSUSPECTED TRICHINOSIS.

THE following case seems to be worth recording, if only on account of the rarity of this disease in England.

On March 6th one of us (E. H.) was called to see a young woman, aged 27, who complained of having a swollen face; this had come on overnight, and she only remembered having had a cold a few days previously. On examination oedema of the face was noticed, and particularly oedema of the eyelids. On the next day the oedema increased, and was specially intense over the maxillae. The temperature was 99.2° F. As an infection of the antra was suspected, Dr. Vitenson washed out both, with negative results. Examination of the urine, which had a peculiar deep red colour, was also negative. On the following day the temperature rose to 102° F., and the patient complained of pains all over; there was headache and pain on moving the eyes. The exhibition of salicylates gave no relief.

On March 9th the temperature rose to 102.3° F., and the pains increased in severity; moving the patient caused her to scream with pain. Chewing, opening of the mouth, and yawning were extremely painful. The biceps, deltoid, masseter, and temporal muscles were extremely sensitive to the touch; the joints, however, were not affected. The knee-jerks were slightly diminished. On the 10th and 11th the same picture was present, but, in addition, the neck muscles began to hurt, and the abdominal muscles were tender.

A provisional diagnosis of trichinosis was made reluctantly, but the subsequent blood count verified it. On March 12th the count was: polymorphonuclears 43 per cent.; lymphocytes 24 per cent.; mononuclears 9 per cent.; and eosinophils 24 per cent. On the next day the eosinophils had risen to 25 per cent.; there was hoarseness and slight difficulty in deglutition. A specimen of faeces was examined, but nothing abnormal was found. On March 14th and 15th the patient complained of severe pain in the girdle area and hiccup. There was throughout the illness obstinate constipation, with insomnia and depression. Treatment with 5-grain doses of thymol three times daily was started, and during the next few days the illness began to abate. The temperature on the 18th went down to normal: there was slight itching of the soles of the feet and palms of the hands, and severe itching of the nose. On March 21st eosinophils had risen to 40 per cent., and the blood status on March 23rd was as follows: leucocytes 13,000; polymorphonuclears 39 per cent.; lymphocytes 18 per cent.; hyalines 3 per cent.; and eosinophils 40 per cent.

On going into the history of this case we were able to discover that a few weeks previously the patient had eaten a piece of raw bacon on bread, not wanting to make a fire and fry it. That we think was the probable source of infection.

We are recording this case here, although the patient has not quite recovered and our investigations are not completed, because we think it quite possible that other cases of this disease may occur, and are occurring at present in London. It is very likely that they are being mistaken for rheumatism, as trichinosis is practically unknown in this country. It is agreed that this disease almost invariably appears in epidemic form, and we are wondering whether there will be further cases. We also would like to suggest a tightening up of meat inspection, since it is extremely easy to overlook trichinosis if no microscopical examination of the meat is made. It is true that the frying of the bacon makes the trichinae innocuous, but there is need to warn the public against eating raw bacon in any circumstances, since trichinosis is an extremely distressing disease and may assume epidemic character if precautions are not taken.

E. HERZBERG.
London, W.1. I. VITENSON.

Reports of Societies.

COLIFORM INFECTIONS OF THE GENITO-URINARY TRACT.

AT the meeting of the Medical Society of London, on March 24th, with Mr. DONALD ARMOUR in the chair, Sir THOMAS HORDER opened a discussion on coliform infections of the genito-urinary tract, dealing particularly with their clinical aspects.

Sir Thomas Horder remarked that before beginning to study this disease certain associated pathological conditions must be borne in mind or a broad view be taken of the pathogenesis. The mechanism of infection must be considered if the cases were to be dealt with on a right basis. The avenue of infection of the urinary tract was dubious. Although proof was extremely difficult, there was no reason *a priori* against the view that in an acute case the urinary tract had been invaded from the blood stream. Those concerned were generally content, however, to regard the infection as not haematogenous, but entirely local. The evidence of occasional positive blood culture did not take one very far. The lymphatic route was equally difficult to prove, and almost impossible to disprove. The proximity of the colon to the renal pelvis, and perhaps the special tendency of the right kidney to infection, were highly suggestive, but nothing more. An ascending route was postulated when there were urethral or bladder infections of an obvious kind, generally associated with prostatic enlargement, stricture, neoplasm, or calculus; it was possible that this route was followed in some cases, for which the term "primary" was used. It did not follow that because there was no evidence of interaction going on in the bladder the route of invasion of the renal pelvis was not the ascending one. The female urethra was very short, and the disease was more common in women than in men. But the argument at all points was difficult. He had seen what appeared to be a well-marked case of direct infection from wife to husband during the honeymoon, and more than once had seen what seemed to be direct infection from husband to wife. In all these questions it had to be borne in mind that the renal pelvis was by far the most susceptible part of the urinary tract. It did not necessarily follow that when the form of onset suggested a pyelitic origin the organism was not present in other parts of the tract at the same or an earlier period. He had wondered whether in some cases the prostate was the organ or tissue through which the infection reached the tract. Very acute cases occasionally occurred in young adults in which the initial symptoms were urgent dysuria, strangury it might be, and with no clinical suggestion of pyelitis. Quite certainly the prostate was not infrequently the source of reinfection in cases which had for a time been quiescent.

The frequent association of disease in the alimentary tract with urinary infection was universally accepted, and perhaps occasionally overstressed, but that was a less serious error than to overlook it. The alimentary tract might show merely an associated coliform infection, but

that again was difficult to prove. When, as was generally the case, the coliform organism obtained from the urine was not, as judged by standard bacteriological features, pathogenic, it was extremely difficult or impossible to say to what extent, if at all, the intestine was also in a condition of sub-infection. Unfortunately, clinicians suffered from the lack of standardization in bacteriological work upon the faeces; there appeared to be some criteria of pathogenicity quite commonly used which the more academic bacteriologist did not attempt. Until there was some standardization in the methods of bacteriological examination of the stools it would be necessary to wait before the question could be settled as to whether or not there was an associated colonic infection. For the present the cruder and no doubt more fallacious tests must be employed, such as the character of the stools judged by the naked eye, and the patient's symptoms, such as flatulence and abdominal pain. The existence of any organic lesion in the alimentary tract might, if unrecognized, result in a urinary infection drifting on for an indefinite time. Extraordinary instances were known where the adjustment of some mechanical disability, connected perhaps with the appendix, effected a remarkable change. Constipation or colonic stasis must be borne in mind as a factor. It was such a common trouble that by the law of averages many patients suffering from coliform infection of the urinary tract must be constipated, but it did not follow that the treatment of the constipation by drastic methods would help them. Some definite cases of urinary infection arose after a few days of looseness of the bowels or actual diarrhoea; these were instances of bowel infection eventually complicated by urinary infection. The adjustment of minor disabilities connected with the alimentary tract, such as piles, contributed to the relief of these cases. He had seen the radical treatment of anal fissure followed promptly by a greater improvement in the urinary infection than he had been able to get by routine treatment.

In diagnosis there were not many points at issue. Familiarity with the disease and realization of its frequency and subtlety abolished surprise at its vagaries. It occurred at all ages, even in infants at the breast, ranging in degree of intensity from an unexplained pyrexia to strangury. Haematuria might be its one striking expression, and some complication, like epididymitis, rather than the main infection, might bring the patient under observation. The disease might masquerade as recurrent influenza. It was not sound to conclude that when the urine was full of bacilli inflammation was not present; how was it that in some of these instances of bacilluria pyrexia might be quite marked? It was rather a quibble whether or not in these cases of bacilluria there was or was not a true inflammatory reaction. What he visualized in this disease was every transition in intensity between a mere bacillary invasion of the tract and the most severe form of infection leading, as it might, to pyelonephritis. It was important, in considering treatment, to enlarge the diagnosis in the individual case as fully as possible, not merely with a view to ascertaining the symptoms and signs of the infection, but the patient's "constitution," his habit of body and mind, and daily routine. At what time in the treatment of the case should an investigation more complete than the ordinary clinical examination be made? Some made the instrumental investigation straight away, but this might be a disservice to the patient. If a full clinical examination seemed to exculpate the kidneys from gross lesion, and there was nothing to suggest vesicular or prostatic disease, and radioscopic examination was negative, he was satisfied to proceed on certain lines until faced with failure of adequate response to the general scheme of treatment.

The planning of a definite scheme of treatment must take account of the patient's habits—questions of exposure, prolonged effort, inadequate rest, irregularity of meals; he had an impression that the disease was quite common amongst doctors. He did not think it was of service to introduce strong purges; rather should one consider what had been the patient's habit in this respect, and proceed slowly rather than drastically. How to change the intestinal flora, and the results if and when this was done, were questions no one was able to answer—except the agencies which advertised various panaceas for the purpose. For some years he had held that diet was an important factor in treatment of some of these cases. He reduced the protein content considerably, allowing butcher's meat not more than three times a week, and rigidly excluding eggs, and especially raw milk. He confessed that at present this part of the regime was only empirical, but he felt sure that the results had been good. It was difficult to get mothers to believe that a child suffering from this disease could exist without milk, and the initial loss of weight following the prohibition seemed to confirm their fears. It seemed to be a matter of the casein residue very largely, because whey, buttermilk, cream, and even junket did not appear to have the deleterious effect of milk. Two remedies seemed to stand out prominently—namely, simple alkalis in the acute febrile stages, and the hexamine group in the subacute and chronic stages. Vaccine treatment should be given a thorough trial in any case which after the first two or three weeks did not respond to these general measures together with urinary antiseptics. Finally there was the question whether a direct attack should be made on the mucous membrane of the urinary tract by chemical agents designed to kill the organism, in the hope that they would prove harmless to the tissues. Bladder lavage for purely local infection was of service, but irrigation of the pelvis of the kidney was less to be recommended. Surgery of the more drastic kind—operations on the kidney—had, he supposed, been quite abandoned since the nature of these cases was realized.

MR. KENNETH WALKER said that the ascending route of infection had been amply demonstrated, though some arguments used in favour of it were obviously fallacious; for example, frequency of micturition might be as much a symptom of infected pelvis as of infected bladder. The argument which had been used in favour of lymphatic, as against vascular infection, had been the negative results obtained from blood cultures. Some had tried to get over that difficulty by suggesting that infection by the blood stream was an intermittent phenomenon, but he did not think this could explain the almost consistently negative cultures. It had to be remembered that the coliform bacillus probably did not exist free in the plasma, but rather within the polymorphonuclears, and recent research had shown that if methods were employed for concentrating the leucocytes, positive blood cultures were, generally speaking, more likely to be obtained. In the breaking down of polymorphonuclears also bacteriolysins were very likely to be liberated which destroyed the organism and defeated efforts to cultivate it. There was no doubt that the gastro-intestinal tract was the usual source of infection. That the bowel was a source of infection was proved by the additional fact that if the urine were cultivated anaerobically in a very large number of cases, in addition to *B. coli*, the *Streptococcus faecalis* was obtained. But another fact was still more significant—namely, that if cascara was given to a patient presumably recovered from a urinary infection, *B. coli* immediately returned to the urine; cascara had even been used by Dr. Embleton as a provocative test of cure. As for predisposing causes, the mere arrival of the bacillus in large quantities in the kidney was not sufficient so to act; time after time it had been shown experimentally that large numbers of *B. coli* might be taken into the blood stream without the kidney developing pyelitis or pyelonephritis. Although there were such gaps in the knowledge of the pathology of this condition, fortunately the morbid anatomy was better established. Mr. Walker concluded by saying that there was far too much armchair speculation about *B. coli* infections, and a great deal of work had still to be done to fill in gaps in knowledge.

MR. H. PHILBRICK NELSON reported some experiments on rabbits with a view to ascertaining the route of infection. Out of fourteen rabbits infected, five showed the occurrence of what corresponded exactly to the ascending type. It was through the urethral mucosa and not through the bladder that the organisms entered the lymphatics. He exhibited a number of slides bearing out the results of his

experiments. Mr. J. P. LOCKHART-MUMMERY said that in a number of cases he had tried to discover any source of infection in the large intestine. Piles were very common, but he did not believe that there could be an infection from the large bowel without some breach of surface, and in most cases in which definite lesions had been found these had been fistulae. Another outstanding source of coliform infection was diverticulitis; he did not think he had ever seen a case of diverticulitis which was not accompanied by quite marked coliform infection of the urinary tract. With regard to the method by which the infection occurred, whether by the lymphatics, the blood stream, or direct ascent, he thought that all three methods existed. Dr. T. JOEKES said that treatment by the bacteriophage of d'Herelle had given very good results in some cases, though it had failed in others. It had been possible to isolate very virulent and potent bacteriophage, and he had seen, after twenty-four or forty-eight hours' interval following upon subcutaneous injection, a number of cases in which infections of long standing had cleared up. Injections must not be given too often, because in that event there might be produced an antibacteriophage. The bacteriophage would not work in an acid medium.

Sir THOMAS HORDER, in reply, said that the bacteriophage method, although based upon work done originally by Dr. Twort in this country, had become commercialized in France, so that English visitors in the Riviera who had any of these infections were immediately seized upon and subjected to treatment by this latest method of bacteriophage therapy. He was very pleased to learn that one British pathologist had ventured into this field. Another method of antigen therapy was that introduced by Besredka in the treatment of sub-infections of the alimentary tract—namely, application of the antigen directly to the tissue most susceptible—in the case of the alimentary tract to the mucous membrane of the intestine. Thus in France again the oral method of applying this vaccine therapy had become, for certain diseases, quite fashionable. He wondered whether anyone had been sufficiently adventurous to employ the coliform antigen directly either in the bladder or other parts of the urinary tract. If all that the French claimed for Besredka's method—or even only a portion of it—was true, it might be worth exploring.

SYPHILITIC AORTITIS.

AT a meeting of the Section of Medicine of the Royal Society of Medicine, on March 25th, with the president, Dr. R. A. YOUNG, in the chair, and at which Lord Dawson of Penn, president of the Society, was also present, a discussion on syphilitic aortitis was opened by Dr. ERICH LESCHKE of Berlin.

Dr. Leschke began by urging the need for revision in treatment of the condition. It had often been stated that salvarsan increased vascular syphilis, but this was not true. In Berlin the number of cases of syphilitic aortitis found at post-mortem examination had increased more than threefold during the past few years, but this increase had begun before salvarsan came into general use. At least 18 per cent. of his own cases had never received salvarsan treatment at all. Aortitis was much commoner in men than in women; it might give rise to diffuse dilatation and aneurysm, to aortic regurgitation, or to coronary stenosis. Regurgitation occurred in nearly two-thirds of his cases, and in some cases, as was to be expected, the syphilitic lesion was grafted on a lesion from another cause. Coronary stenosis with angina pectoris occurred in 15 per cent. of his cases, and was often associated with myocarditis. Early diagnosis of aneurysm could only be made by using radiography and the Wassermann reaction as a routine: even so, aneurysms of the concavity of the arch often escaped diagnosis. Treatment should be specific at every stage, without reference to heart failure; salvarsan, iodides, and bismuth could be used. The patient should have a course of twelve injections of neosalvarsan annually. The danger lay in shortening the treatment; intermittent treatment of one injection monthly could be given for years. He had found that the symptoms improved and the condition became stationary under treatment; difficulty in breathing was often relieved, and the pain of angina lessened. He had many cases which were doing well fifty years after infection.

Dr. J. COWAN suggested that the increase in the incidence of syphilitic aortitis might be more apparent than real; accurate diagnosis of the condition was of recent origin, and might account for the increase. It was difficult to treat these cases early because so often the aorta was grossly affected before advice was sought. He raised the question whether intensive treatment was permissible for patients suffering from severe cardio-vascular disease. Intensive measures were valuable for the healthy adult with a primary lesion, but in cases with marked cardio-vascular degeneration milder treatment given over a long period might give better results. Any line of treatment which led to deterioration of the general health was harmful to the patient. In conclusion, he would emphasize the importance of rest for these cases, especially during treatment.

Dr. J. PARKINSON said that diffuse dilatation of the aorta was often due to atheroma alone. The age incidence of syphilitic aortitis was in middle life, but it was impossible to find a patient too old to have aortic dilatation or incompetence due to syphilis. Early diagnosis of aneurysm could be made by radiography. He showed some interesting slides which illustrated the gradual development of aneurysm in the ascending and descending aorta, and the arch.

Dr. T. F. COTTON said that the incidence of late tertiary cases bore a close relation to untreated primary cases. It was hard to assert that cardio-vascular syphilis was on the decline; primary conditions were being more thoroughly treated at the present time, but the results were not yet being found among the late cases. He had taken fifty-five patients who had never received salvarsan treatment, and had given them a course of novarsenobillon once a year for five years; over the same period they had received mercury by mouth or as inunctions. A group of fifty-five control cases had not been given novarsenobillon; there had been no striking difference in the symptoms or signs of the two groups. At the end of five years a quarter of the treated and a third of the untreated cases were dead. At the end of ten years from the beginning of treatment the following table gave his results:

	Treated.	Untreated.
Living	21 (38%)	6 (8%)
Dead	18 (32%)	52 (67%)
Missing...	16 (30%)	19 (25%)
Total	55	77

These figures suggested that the prognosis was not so hopeless as hitherto supposed, and that treatment arrested progressive changes and prolonged life.

Dr. E. STOLKIND agreed that salvarsan had nothing to do with the increased incidence of aortic syphilis, but that improved diagnosis had made an apparent increase. He urged that syphilis of the central nervous system should never be treated by malarial infection if the patient's heart was also affected. Similarly, lumbar puncture should be avoided if possible, especially in cases of aneurysm. He remarked on the fact that syphilis of the cardio-vascular system did not cause fever. He had found digitalis and strophanthin valuable in combination with specific treatment.

Dr. D. E. BEDFORD said that it was important to diagnose syphilitic aortitis early, before aortic incompetence developed; the fact that only one-quarter of Professor Leschke's cases had incompetence showed how excellent must have been his diagnosis.

Dr. T. J. HOSKIN said that he had seen two deaths following intensive arsenical treatment. He pointed out that if all the missing cases in Dr. Cotton's series were dead the conclusions would be considerably altered, but that it was probably fairer to accept half as living.

Dr. A. P. CAWADIAS asked whether it was certain that the increase of these cases was not attributable to the use of salvarsan. Most of those he had seen had received vigorous salvarsan treatment in the past. Bismuth was extremely helpful; its action was slower than that of

arsenic, but it stimulated the immunity processes of the body.

The CHAIRMAN asked whether the transition from aortitis to aortic regurgitation was slow or sudden. In a few cases which he had had opportunity to observe it had seemed to be somewhat sudden.

Professor LESCHKE, in replying, said that the increase in incidence of the condition was real rather than apparent, as post-mortem examinations showed. "Intensive" treatment implied not that any individual dose was large, but that thorough treatment was continued over a long period. Rest was certainly most important for these patients, and should be enjoyed, if possible, in the open air. Malarial treatment should only be used where the myocardium was in good condition; he did not approve of it where aortitis was present. The incidence of syphilitic heart conditions was probably higher in Germany owing to the small proportion of rheumatic cases found there. He had seen no deaths from salvarsan; injections should be made slowly, drop by drop. Regurgitation could certainly arise quite suddenly; in other cases the transition was rather slow. Bismuth was useful with salvarsan, and better results were obtained with intravenous iodine in addition.

EXPERIENCES IN INTRACRANIAL SURGERY.

AT a clinical meeting of the Cardiff Medical Society, held at the Royal Infirmary, on March 11th, with the president, Dr. OWEN LL. RHYS, in the chair, Mr. LAMBERT ROGERS of the surgical unit of the Infirmary described some recent experiences in intracranial surgery.

Mr. Lambert Rogers first reported a case of middle meningeal haemorrhage with atypical clinical features, which had occurred in a farmer, aged 35, who was admitted to hospital in a very restless condition of semi-consciousness, following a blow on the head. Intracranial tension was kept reduced by four-hourly rectal injections of 30 per cent. magnesium sulphate. There was no lucid interval followed by coma, but three days after admission right monoplegia developed and soon progressed to hemiplegia. The systolic blood pressure was only 90 mm. Hg. An osteoplastic flap was turned down over the left motor area, and 82 grams of extradural clot was removed. It was found that a linear fracture of the parietal and squamous bones had torn the anterior branches of the meningeal vessels. The bone flap was replaced and the patient made a complete recovery. Mr. Rogers commented upon the comparative rarity of middle meningeal haemorrhages presenting the textbook clinical picture, and suggested that the atypical features in this case might have been due to brain shrinkage because of the rectal injections. He showed another case following injury; a boy, aged 3, received a blow in the suboccipital region, resulting in fracture. An abscess the size of a small orange developed in the right occipital lobe, but the child completely recovered after the evacuation of 20 c.cm. of staphylococcal pus. Mr. Rogers commented on the desirability of treating surgically in the first place all compound fractures of the skull. Another boy, aged 12, exhibited the signs and symptoms of a right cerebellar lesion, but although the first stage of a suboccipital exploration was performed, tapping of the posterior horn of the right lateral ventricle only gave vent to a few drops of a dark fluid, which contained protein but no cells. Subsequent ventricular estimation had shown the presence of internal hydrocephalus affecting the left ventricle and causing collapse of the posterior horn on the right side. Stereoscopic radiography had indicated an opacity due to a growth in the neighbourhood of the tentorium, which it was proposed to examine through the osteoplastic flap in the occipital region. Mr. Rogers also discussed a case of chronic subarachnoid haematocele, with left abducens palsy and failing vision in a miner, aged 23. The duration of symptoms had been only four weeks, but four dioptres of papilloedema were present, and the vision was reduced to counting fingers at a short distance from the eyes. A brain tumour was suspected, but when, under local anaesthesia, the left frontal and temporal regions had been explored and the left lateral ventricle tapped to reduce tension, only an encapsulated mass of yellow blood clot was removed. Complete recovery followed. Three months before the operation the miner had received a blow over the occipital region.

Other Clinical Cases.

Professor A. W. SHEEN showed a case illustrating the value of splenectomy for purpura. A woman, aged 22, who had shown the usual symptoms and signs, including profuse ten-day menstrual periods, had been treated by dilatation and curetting, the introduction of radium into the uterus, ultra-violet rays, and prolonged administration of iron and other drugs. Her anaemia decreased, but otherwise her condition remained unaffected. After splenectomy remarkable improvement followed; her periods became normal, her colour returned, and she was able to resume her occupation. The tendency to haemorrhage had entirely disappeared, and the platelet count was nearly normal. Other cases presented by Professor Sheen were multiple osteomata in a man, aged 49, and his son, aged 16, and a case of extensive rodent ulcer of the forehead and scalp in a man, aged 54; this had been treated by *x* rays and diathermy, and subsequently by removal of the ulcer, followed by the covering of the denuded area by a pedicled scalp flap.

Mr. ROBERT COOKE showed a case of perineal fistula, which had existed for nearly forty years in a man, aged 60, as a sequel to gonorrhoeal stricture. After much previous treatment had failed, suprapubic opening and prolonged bladder irrigation had been followed by excision of the fistulous tract and its associated length of strictured urethra. Four months later the fistula had closed, the largest sound passed with ease, and all the symptoms had disappeared. Mr. Cooke remarked that excision was not often necessary for gonorrhoeal stricture, but this case illustrated the value of the mode of treatment described when dilatation and urethrotomy had failed. He also showed a case of a boy, aged 14, with double tuberculous epididymitis, tuberculous urethral stricture, and periurethral abscess, in which the bacillus had been identified. He commented on the rarity of this form of stricture, and added that the abscess had healed after being opened and the stricture had been dilated.

SAFE ADMINISTRATION OF ANAESTHETICS.

ON March 24th, before the Royal Scottish Society of Arts, Mr. WILLIAM FULDE of the Heriot-Watt College, Edinburgh, described an apparatus which had taken several years to perfect, and which, in the course of its evolution, had been tested by anaesthetists under hospital conditions from time to time. It was said to enable anaesthetics of different character to be administered under conditions making for complete safety in control. Mr. Fulde showed that he was able, by means of a compact and robustly constructed device, to supply to a patient ether (intertracheal or by vapour mask), nitrous oxide and oxygen, or ethylene (or other gaseous anaesthetic) with carbon dioxide. A single control enabled the ether percentage to be regulated within wide limits, and allowed any required mixture of chloroform and ether to be obtained. A wide range of volumetric supply necessitated by modern requirements had been studied by the designer, who had rendered it possible to supply between 5 and 40 litres a minute, the quantity of mixture actually passing to the patient at any moment being automatically indicated by a simple flow-gauge. The base of the apparatus is a hot-water chamber introduced to heat the air current both before and after that current had taken up the anaesthetic. The water in the hot-water chamber might, in the event of a lengthy operation, be kept at the desired temperature by means of a low-power morganite electric heating element, which could be placed under the chamber. The air current was supplied in any convenient way, as, for example, by a small motor blower, a foot bellows, or from a compressed-air cylinder. Despite the wide volumetric range, care had been taken that the supply to the patient was delivered at a uniform rate. In this way the risk of a pulsating delivery was obviated, and there was complete immunity from the even more serious danger of liquid anaesthetic being carried across. In contrast with older types, this new form was very compact, the whole of it being carried in an averaged-sized attaché-case.

Reviews.

BIOCHEMISTRY.

BIOCHEMISTRY has grown up under the benevolent patronage of medicine. The chief preoccupation of its teachers has been the training of medical students. The majority of biochemical textbooks have, accordingly, been designed to serve medical curricula, and it may be asserted that there are many more textbooks of biochemistry than are necessary to the healthy progress of medical teaching. Particularly is this the case in respect of practical laboratory manuals. In spite, however, of our reluctance to welcome another such, *A Course in Practical Biochemistry*,[1] by Professors CAMERON and WHITE, cannot be passed over without a word of praise. This book seems to us one of the most satisfactory laboratory courses which have yet been published. It covers the usual ground of digestion, blood, and urine, but does so in an attractive and efficient manner which should commend it to many. It forms a valuable laboratory companion to the theoretical *Textbook of Biochemistry* recently published by the senior author.

In Professor R. A. GORTNER'S *Outlines of Biochemistry*[2] we have a book of a different and more ambitious character. Biochemistry has been growing up to ideas of independence. It has been feeling strongly that it is more than a branch of pathology or of applied chemistry. It has a faith of its own—that vital phenomena are open to description in the language of chemistry and of physical chemistry. It has a technique of its own for the pursuit of this faith. Incidentally it has a mission—to urge upon the biologist the value of chemical theory and practice, and upon the chemist the peculiar requirements of the biological point of view. This it believes it can accomplish best from a position of independence. If this is biochemistry then we may say that, at last, we have a textbook of biochemistry. The need has been urgent. Professor Gortner's book presents, as no other single book has done, a measure of the contribution of organic and of physical chemistry to the problems of vital processes. He makes no attempt to distinguish between plant and animal, far less between man and other species. It is the book of biological chemistry. In saying this, we do not overlook a certain lack of balance in the book. The amount of space devoted to the problem of colloidal behaviour seems to be out of proportion to the contribution which present theories of the colloidal state have made, or are likely to make, to the understanding of vital phenomena and their control. It would, however, be surprising if a book did not reflect the special interest of its author, and the discussion of the colloidal state is so admirable in itself that we are inclined to forgive its encroachment upon space which might otherwise have been given to other subjects. The general biological outlook of the book has permitted the assembly of a great deal of valuable material not elsewhere collected in one place. The author exercises wise discretion in the presentation of theories and in the balancing of conflicting views. The text is liberally annotated with references to the original literature. This book may be strongly recommended to students in all branches of pure or applied biochemistry.

LOCAL ANAESTHESIA.

DR. R. E. FARR in his book *Practical Local Anæsthesia and its Surgical Technic*,[3] covers a field far wider than the title of the volume would suggest, for besides giving the technique of local anaesthesia he devotes much space to descriptions of surgical instruments, operating tables, and the lighting of the theatre, and even to the technique of operations—all matters which would more appropriately be included in a work on operative surgery. He is an enthusiast, and therefore inclined when advocating direct infiltration anaesthesia to overlook the advantages of other methods. Thus he seems to have practically no use for general anaesthesia, except in those rare cases where from faulty technique in the application of local anaesthetic methods the operation could not be completed without the help of some general anaesthetic. Nor is he impressed with regional anaesthesia—though he confesses that it is the ideal. The technique of regional anaesthesia is difficult and many punctures are required; the time taken in preparing the patient for operation is therefore prolonged unduly; moreover, heavy preliminary narcotization to ensure comparative insensibility is very necessary, and in many cases supplementary general anaesthesia is required. Intraspinal anaesthesia falls under the general ban, though sacral anaesthesia escapes.

Dr. Farr advocates direct infiltration as being quicker in application than other methods and more under the control of the surgeon. He regards heavy preliminary narcotization with morphine, hyoscine, scopolamine, etc., as being dangerous, though he allows small doses of morphine or heroin to quieten the nervous system and so lighten the ordeal of the patient. The anaesthetic he prefers is novocain in moderate strength (0.25 to 1 per cent.) combined with adrenaline (2 to 5 drops of 1 in 1,000 solution to each c.cm. of novocain solution used). In his opinion the surgeon should himself direct the anaesthesia, but he approves the employment of an individual he calls a "psycho-anaesthetist"—a sort of surgical Pooh-Bah, whose duties include, among others, soothing the patient, superintending the transportation of the patient to and from the theatre, recording the blood pressure, pulse, and respiration, and instructing the patient in the avoidance of straining, grunting, and coughing during the operation. In addition, this individual should be well trained in the administration of general anaesthesia (should this be required), and should help in adjusting the operating table to meet the requirements of the patient and the surgeon.

The author's descriptions are well given, and, on the whole, the volume is satisfactory, even if we cannot agree with everything he says. The publisher has done his work well, and the illustrations are excellent.

DIET, NUTRITION, AND EFFICIENCY.

THE experiments described by Mr. H. H. G. HOLCK in *Diet and Efficiency*[4] represent not only a most laborious and painstaking piece of work, but also a very considerable feat of endurance. He set himself the problem of determining, by objective tests, whether the general dietetic principles of Fletcher did, or did not, make for increased health and well-being. He adopted four dietary measures: (1) eat only when actually hungry; (2) stop when satisfied; (3) chew especially well; (4) as far as possible, try to secure foods for which there is a craving, and omit those to which there is an antagonism. The whole experiment, including the necessary control periods, lasted from 1922 to 1928. The objective tests adopted entailed the following observations: (1) food and water intake, and eating time; (2) number of defaecations; (3) sleeping hours; (4) estimations of total phenols, uric acid, total nitrogen, phosphorus, inorganic sulphates, and acidity of urine; (5) blood pressure, pulse rate, and temperature; (6) ergograph tests; (7) typewriting, arithmetical, and chess problem tests. There is no doubt that thorough and long-continued records of data of this type are very useful from many points of view. With regard to the immediate object of the experiment—the testing of the value or otherwise of "Fletcherization"—all that can be said is that the regime, in this instance, appeared to be productive of no good, while, since ergograph tests indicated a fall of muscular efficiency, it may have done a little harm. This is the impression gathered from reading the text: we could wish that the writer had expressed his own conclusions in a more definite manner.

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[1] *A Course in Practical Biochemistry.* By A. T. Cameron, D.Sc.Ed., F.I.C., F.R.S.C., and Frank D. White, A.R.T.C., Ph.D.Ed., F.I.C. Churchill's Empire Series. London: J. and A. Churchill. 1930. (5½ × 8¼, pp. x + 222; 23 figures. 8s. 6d.)

[2] *Outlines of Biochemistry.* By Ross Aitken Gortner. New York: J. Wiley and Sons, Inc.; London: Chapman and Hall, Ltd. 1929. (Med. 8vo, pp. xv + 793; 133 figures. 30s. net.)

[3] *Practical Local Anæsthesia and its Surgical Technic.* By Robert Emmett Farr, M.D., F.A.C.S. Second edition, thoroughly revised. London: H. Kimpton. 1930. (Sup. roy. 8vo, pp. xxiii + 611; 268 figures, 36 plates. 42s. net.)

[4] *Diet and Efficiency.* By Harold H. G. Holck. The University of Chicago Monographs in Medicine. Chicago, Illinois: University of Chicago Press; London: Cambridge University Press. 1929. (Med. 8vo, pp. ix + 72; illustrated. 4s. 6d. net.)

Dr. ROSEWARNE'S book, *The Science of Nutrition Simplified*,[1] is an excellent one of its kind. So much discussion of dietetics, on such very unsound lines, is put before the public, both by the newspaper press and by individuals, that any sensible survey of the subject is welcome, which, while being comprehensible to the layman, is yet confined in its scope to established scientific fact. It is unfortunate that food lends itself so readily to commercial exploitation, for it is undoubtedly the influence of the patent food manufacturers that keeps dietetics in a wrong focus constantly before the eyes of the public. Only when most people have a sound elementary knowledge of nutrition will food fads cease to flourish; to such books as this we can look to provide the necessary public education.

MINOR SURGERY.

DR. FREDERICK CHRISTOPHER, the author of *Minor Surgery*,[2] suggests that there cannot be too much instruction on this subject, for its scope is wide, its practice cannot be confined to specialists, and its skilled application demands of the practitioner a general knowledge of surgical diagnosis and the ability to differentiate the major from the minor surgical conditions. Professor A. B. KANAVEL, who contributes an introduction, makes the further point that only too often carelessness and incompetence turn minor into major surgery. In the course of his hospital work the student has little chance of acquiring a sense of proportion; he spends so much of his time watching the major surgical procedures that almost inevitably he overlooks the fact that the surgical practice of most practitioners lies in the treatment of abscesses, fractures, and so forth, and in the performance of such operations as circumcision and the removal of sebaceous cysts. In *Minor Surgery* are included the conditions that may be met in everyday surgical practice; Dr. Christopher presents a clear exposition of the injuries, infections, and deformities of different regions of the body, and gives useful and precise directions for their relief and cure. The final chapter is in effect a homily, addressed to the resident house-officer, on how to deport himself, especially in his relations with patients, the nursing staff, and his chiefs. Dr. Christopher has produced a book which should prove useful alike to the house-surgeon and to the private practitioner.

NOTES ON BOOKS.

THOSE who tackle the problem of the after-care and employment of the consumptive will read with sympathy and interest the story of the varying fortunes of the Spero Firewood Factory as told by Dr. BARDSWELL in his *Work Centres for the Tuberculous*.[3] Though not a vast undertaking, this factory is a definite, and in some respects a successful, attempt to find a solution of the problem. A piece of sociological research such as this, involving a capital expenditure of less than £5,000, whose results are judged by stern realities, and which has been conceived and carried out on clear common-sense lines unobscured by a haze of sentimentality and press publicity, is a most valuable endeavour. It is from work of this sort that the solution, if there is one, will come. *The T.B. Patient's Guide*,[4] an excellent little book, whose title explains its object, may with advantage be mentioned in the same company. Dr. BLACKMORE has not worked as the tuberculosis officer for Woolwich for so long without realizing the doubts and difficulties of his patients. His answers to them are kindly and wise.

The *Textbook of Zoology*,[5] by H. G. WELLS and A. M. DAVIES, rewritten by J. T. CUNNINGHAM, has again been extensively revised for the seventh edition by Mr. LEIGH-SHARPE, who has contributed chapters on the cockroach and on the modes of animal life. This edition contains some new diagrams, and the type has been reset.

The edition of *The South and East African Year Book and Guide*[10] for 1930 includes a bibliography of recent books relating to these territories. As already noted, the various sections contain much information, which has been brought up to date. There are 64 pages of maps in colour.

The fifty-fourth volume of the *Transactions of the American Gynecological Society*[11] contains the papers and discussions of the scientific sessions of the fifty-fourth annual meeting of the society, held in May, 1929. The text is illustrated by reproductions from photographs.

The issue of the *Medical Register* for 1930 reveals that 1,410 names were added last year. New registrations numbered 731 in England, 389 in Scotland, 133 in Ireland, and 157 in the colonies and abroad. This total is 246 less than the corresponding figure for 1928. Membership of the medical profession was 54,870 at the end of 1929, an increase of 534. The number of names removed from the *Register* during the year was 920, compared with 1,038 the previous year. Of these 851 were removed on evidence of death, 64 for failure to comply with the inquiries of the registrar as to cessation of practice or change of address, and 5 were struck off under the disciplinary powers conferred by the Medical Act.

The number of dentists appearing upon the *Dentists Register* for 1930 is 14,381, of whom 6,825, or 47.46 per cent., are registered with medical, surgical, or dental qualifications. This compares with 6,824, or 47.43 per cent., so registered in the previous year out of a total of 14,383. Of the 273 British registrations that were added to the *Register* during 1929, 248 were registered with qualifications, and 25 under the Dentists Act of 1921, increases of 9 and 3 respectively. The number restored under the Acts of 1878 and 1921 was 292, and the number removed under these Acts and on account of death was 573. As formerly the *Register* contains a local address list.

The *Medical and Dental Students Register*, issued by the General Medical Council, shows that the number of medical students registered in 1929 was 1,502, which is 140 more than in the previous year. Scottish registrations numbered 626, an increase of 49; English registrations 630, an increase of 86; and there were 246 Irish registrations, 5 more than in 1928. Dental students, registered in 1929, numbered 293, an increase of 42 on the previous year.

[1] *The Science of Nutrition Simplified*. By D. D. Rosewarne, M.R.C.S.Eng., L.R.C.P.Lond. London: H. Kimpton. 1929. (5¼ × 7¾, pp. viii + 314; 7 figures. 6s. 6d. net.)

[2] *Minor Surgery*. By Frederick Christopher, M.D., F.A.C.S., With a foreword by Allen B. Kanavel, M.D., F.A.C.S. Philadelphia and London: W. B. Saunders Company. 1929. (6 × 9¼, pp. 684; 465 figures. 36s. net.)

[3] *Work Centres for the Tuberculous*. By Noel Dean Bardswell, M.V.O., M.D., F.R.C.P., F.R.S.Ed. London: J. Bale, Sons and Danielsson, Ltd. 1930. (Cr. 8vo, pp. 64; 2 plates. 3s. 6d. net.)

[4] *The T.B. Patient's Guide*. By Frederick J. C. Blackmore, M.R.C.S.Eng., L.R.C.P.Lond. London: Cassell and Co., Ltd. 1930. (4 × 6½, pp. 76; 1s. 6d. net.)

[5] *Textbook of Zoology*. By H. G. Wells, B.Sc., F.Z.S., F.C.P., and A. M. Davies, D.Sc. Revised and rewritten by J. T. Cunningham, M.A., and W. H. Leigh-Sharpe, M.Sc.Lond. Seventh edition. London: W. B. Clive, University Tutorial Press, Ltd. 1929. (Cr 8vo, pp. viii + 509; 227 figures. 8s. 6d.)

[10] *The South and East African Year Book and Guide*. Edited annually by A. Samler Brown, F.R.Met.S., and G. Gordon Brown, F.R.G.S. Thirty-sixth edition. London: Sampson Low, Marston and Co., Ltd. 1930. (Cr. 8vo, pp. lv + 912; illustrated. 2s. 6d.)

[11] *Transactions of the American Gynecological Society*. Edited by Floyd E. Keene, M.D. Vol. 54. St. Louis: C. V. Mosby Company. 1930. (6 × 9¼, pp. li + 284; illustrated.)

PREPARATIONS AND APPLIANCES.

MR. FREDERICK ROQUES, M.Ch., F.R.C.S. (London, W.1), writes: The well-known ligature holder which was designed by Mr. Victor Bonney to be worn on a rubber wristlet possesses two disadvantages, which are probably apparent to all those who use this ingenious instrument. When it becomes old the caps are liable to fall off, whereas when new there is often difficulty in removing them, especially with the gloved hand, and more especially if the gloves are wet.



At my suggestion, Mr. W. Biffen, instrument curator at the Middlesex Hospital, has made for me an improved model of the ligature holder. Each cap of the new model possesses a milled edge with an upright pin which fits into a slot on the barrel of the ligature holder. The slot is grooved twice at right angles. The pins on the new model are longer than those on the old model. The cap slides inside the barrel, thus making slots and pins always visible. Both the former disadvantages are overcome, for the milled edge makes the cap easy to remove, while the long upright pin and the two-way groove make the cap secure.

I have been using the improved model for some months. It is in every way satisfactory, overcoming the disadvantages of the original model, which, if trifling, are at times trying to the patience. The knife at the back of the original barrel, which is really functionless, I have had removed. The appliance can be obtained from the Medical Supply Association, Gray's Inn Road, W.C.1.

British Medical Journal.

SATURDAY, APRIL 5TH, 1930.

SCHOOL ATHLETICS.

THE discussion at the Hunterian Society of London, on March 24th, at which school medical officers and others gave their experiences of the effects of athleticism on growing boys, must have shaken a little the faith of those members of the audience who had hitherto embraced school games as a vital part of their social creed. Dr. Lempriere, medical officer of Haileybury, who opened the discussion, was able to boast that death was a rare result of school athletics, and even then was usually accidental. There were possible abuses of the system; a boy might indulge intemperately in sport, with resulting lassitude, loss of weight, and deterioration of work. Ill effects from exercise, as a general rule, followed some slight disability such as a cold, chill, or influenza. But he was able to make the triumphant assertion that if games and sports were well managed they did little damage. Dr. Simey, medical officer of Rugby, was not able to endorse this view; he said that the competition at present encouraged as part of the athletic system in our schools put a nervous strain on the boys and added materially to the difficulties of the doctor. He reminded his hearers that the word athlete was derived from the Greek ἆθλος, meaning a "contest," and the corresponding adjective, besides meaning "struggling," could be used for "wretched" and "miserable" in a moral sense. This atmosphere of struggle did much to vitiate the good effect of school games; they were played for their own sake, with undue attention to style, instead of for the sake of the body and mind. As a result, boys with artistic tendencies had no opportunity to develop their tastes, and boys with an aptitude for sport became stale. He agreed with Dr. Lempriere about the desirability of introducing a "non-compulsory changing" day in the school week. Dr. Helen Boyle doubted whether the cult of athleticism was producing better citizens. She emphasized the difference between succeeding generations, and the need for continual reconstruction of education to suit new needs. Games should teach something, if only how to be a fool without looking one; at present they certainly served a purpose in preparing children for the conflicts of later life.

There can be no doubt that the existing system does interfere with the development of many children who are out of the ordinary. A child may be extremely energetic, and yet detest organized games, and much may be urged against taking such a child from an imaginative game of his own invention, in which he is exercising both body and mind, in order to compel him to join in a sport which he loathes. There is a danger that he will retaliate by a sullen boredom and avoidance of exertion, which robs the exercise of its whole value. We are far from suggesting that the introverted child should be encouraged in his flight from reality; but it is at least open to question whether compulsion is the most desirable or only method of getting him to take part in those organized games which to a child of his temperament are perhaps the best preparation for a normal adult life. Dr. Helen Boyle herself admitted to being the non-athletic member of an athletic family, so that her remark carried weight when she urged that a dislike for games was not necessarily a sign of depravity. Health and athleticism, she pointed out, are by no means synonymous; work in an ill-ventilated room, and without opportunities for exercise, was a severe test of health, and it was not necessarily the athlete who survived it best. *Quot homines, tot sententiae.* Mr. H. M. Abrahams, the international athlete, so far from deprecating over-organization of games, would have every boy instructed individually in the mysteries of style, so that in later years he might develop into a seasoned player. But competition, he agreed, was an evil; too much emphasis was placed on success in games and too little on the effort which should be put into them irrespective of results. The use of the stop-watch and tape measure should be allowed to lapse, and those games encouraged which called for the co-operation of as many individuals as possible. Boys should apply themselves to a mastery of games in the same way as they were made to apply their minds to work. Recreation, in the view of Mr. Abrahams, is clearly a serious business. His brother, Dr. Adolphe Abrahams, spoke of the condition often described as "strained heart," and denounced it as a myth. A schoolboy's heart, he said, was as elastic as his stomach. But undoubtedly schoolboy athletes passed through a period of deterioration, or stagnation, from which they seldom recovered—often because they were told they had "strained hearts." A determined enough boy would pass through this stage, and become a successful performer later, but few had the necessary courage. Compulsory exercise he considered to be an invention of the devil; boys should only be taught to run, since running was the foundation of all games. Group Captain Martin Flack was not concerned with organized games, with stunted development of potential genius, or with running. In his view the boy should be taught to breathe properly, and more especially to use his lower ribs in the process. If, in addition, he performed such exercises as developed his abdominal muscles he was in a position to overcome the heavy disabilities of the upright posture. In man the main supply of blood was below the pump; the heart was not sufficient to pump the blood adequately round the upright body. Those games were valuable which gave the greatest amount of contortional activity, provided they were not played for too long at a stretch. In adolescence the vasomotor system was unstable, and doctors making physical examinations should allow for this fact. The position of affairs in France, according to Dr. Gustave Monod, was the exact opposite of that in England; the masters implored the pupils to refrain from dangerous sports such as running or jumping, since they were legally responsible for any injuries received by the boys in their charge.

Out of such diverse opinions it is hard to draw a conclusion. Is it possible that the individual is the best judge of his own exercise requirements? The energetic boy is not readily deterred from exertion, and the more placid type has possibly less need of exercise. We accept the behaviour of animals as natural, and believe them to fulfil their exercise requirements; it is at least conceivable that the intelligence of the human child is sufficient to inform him when it is necessary for him to run, and when he will profit by leisure.

EDUCATION OFFICERS AND SCHOOL MEDICAL OFFICERS.

DIFFERENCES of opinion, even serious disputes, have been known to occur between the principal officers of local authorities with regard to their respective spheres of action and of responsibility. Such disputes are not unknown even in other large offices with a number of important departments. They usually arise from a clash of personalities, and are continually being avoided by the exercise of tact and a wise acceptance of daily facts and practice. Yet from time to time in this way some question of principle or of essential practical importance is raised, and has to be faced, however reluctantly. During the years 1927 and 1928 the British Medical Association had to undertake a long correspondence with the Ministry of Health in order to safeguard the status of medical officers of health in relation to the clerks of county councils and town councils. This whole correspondence was reported to the Council on July 23rd, 1928, and the last letter from the Ministry, given the interpretations placed upon it in the final letter from the Association, appeared to afford as reasonable a solution of the fundamental difficulty as could be found. Lately, however, some directors of education have raised claims with regard to their position in relation to school medical officers which, if persisted in, will be strenuously resisted by the medical profession. Such resistance, if it becomes necessary, will be made not merely to uphold the dignity of the school medical officer, but in the interest of the efficiency of the service for which he is so largely responsible.

The importance of the position of the chief education officer of an authority is fully recognized. He must be chiefly responsible for co-ordinating the work undertaken by his department and for advising upon all its educational aspects; but the School Medical Service has other relationships also, in regard to public health in general, which must not be lost sight of. As we pointed out in an annotation on December 7th last (p. 1070), in certain areas attempts have been made to bring the work of the school medical officer under the control of the local director of education, and to deny him direct access to the local and central educational authorities. Further, in a circular issued by the Association of Education Committees (though not necessarily in this expressing the official opinion of the executive committee of that body) it is stated that the "school medical officer is the servant of the education committee. . . He takes his instructions from their chief executive officer and reports through him to the education committee." More recently still, these local directors have gone so far as to take exception to the action of the Chief Medical Officer of the Board of Education in communicating, otherwise than through them, with his colleagues of the School Medical Service in the local areas and asking them to send him reports on a medical matter affecting the efficiency of the service and the health of the people. This crescendo of claims is becoming too serious for toleration. To begin with, the school medical officer is not, in the ordinary sense, the servant of the education committee at all. He is the servant of the public, and has direct responsibility not merely to the local education authority but also to the Board of Education, if not to the Ministry of Health as well. In pursuance of this responsibility he has imposed on him the duty of reporting directly to the local education authority and to the Board, and this involves of necessity the right of uninterrupted and uncensored communication with both of these bodies. Official correspondence of the local educational authority as such with the Board should, no doubt, be conducted by the clerk to the authority or by the local secretary for education, as the case may be; but free communication and consultation between the school medical officer of any locality and the Chief Medical Officer of the Board (just as between any local technical principal officers and the chief technical advisers of a central department) is essential both for the advancement of knowledge and for the efficiency of the service.

As the President of the Board of Education said in a recent answer in the House of Commons, "It has been a practice of many years' standing for the Chief Medical Officer to communicate directly with his colleagues in the School Medical Service in regard to questions on which their professional opinion is desired." Is it to be understood that directors of education are now demanding that this shall not be done at all, or only by their leave? We hope that no more will be heard of any attempt to interfere with the position of any school medical officer in regard to the matters to which we have referred. Happily it is possible for efficient officers to be good colleagues.

DAWSON WILLIAMS MEMORIAL PRIZE.

At a recent meeting of the trustees it was resolved that the first award of the Dawson Williams Memorial Prize be made to F. J. Poynton, M.D., F.R.C.P., senior physician to the Hospital for Sick Children, Great Ormond Street, for his work on behalf of rheumatic children, particularly with regard to the establishment of special "rheumatic centres." It will be remembered that the establishment of this prize was due to a desire to commemorate the work of the late Sir Dawson Williams, for thirty years editor of the *British Medical Journal*, and in view of his special interest in paediatrics it was resolved that the interest accruing from the funds collected should be devoted to a prize in connexion with that subject, to be awarded every two years, or at longer intervals, in the discretion of the trustees, who are the presidents for the time being of the Royal College of Physicians of London, the Royal College of Surgeons of England, the British Medical Association, the Royal Society of Medicine, the Section of Diseases of Children of the Royal Society of Medicine, and the editor of the *British Medical Journal*. The Dawson Williams Memorial Prize is open to any registered medical practitioner in the British Empire, and takes the form of a cheque for fifty guineas. It is hoped that the presentation of the prize to Dr. Poynton may be made by the President of the British Medical Association during the Annual Meeting at Winnipeg in August next.

CANINE DISTEMPER.

THE *Field* Distemper Research Committee, under the chairmanship of Sir Charles Martin, has just issued a supplementary report to that dated November, 1929, which we discussed in our issue of January 11th (p. 78). The present report is mainly devoted to an analysis of the various failures that have been observed since preventive measures were tried on a large scale. The preventive treatment consists of two inoculations; the first of a dose of *vaccine*, the second, given about a week later, of a dose of fresh *virus*. When the strengths of the two inoculations are properly balanced, no more than a slight febrile reaction should, as a rule, follow the dose of virus. In

some cases this reaction has been excessive. The committee considers that the vaccines have not been below standard, but, as a precaution, the manufacturers propose to employ even more stringent tests in future. Some failures have been due to reduction of the time interval; others to faulty technique. While, however, the method cannot be blamed for these there remain a few cases of failure for which the reason has not yet been discovered. The committee suggests that probably there will always be some exceptional cases of undesirably severe reaction to the virus even under the best conditions. In some cases injection of the vaccine-virus has not been followed by immunity, and such failure the committee attributes to the use of ineffective virus. It has recently been shown that some preparations of virus have diminished in potency by the time they have reached the veterinary practitioner; and it is proposed to try to prevent the recurrence of such defect by applying additional tests to all batches of virus issued in future. Some of the other cases of reputed failure have been shown to be due to diseases in no way connected with distemper; and in a few cases abscesses have developed at the site of inoculation. There is no reason, however, to doubt the success of the procedure in general, and the great majority of the 22,000 doses already issued have produced successful results in the animals treated. It is undoubtedly a practical method, though attended with obvious difficulties. The greatest are those inherent in the organization of production on a very large scale and the distribution and standardization of vaccine and virus. These difficulties are being overcome, and the introduction of more stringent tests by the commercial manufacturers (The Wellcome Laboratories) should do much to remove the very occasional issue of batches of virus (and perhaps of vaccine also) that are not absolutely up to standard.

CONTROL OF CONCEPTION.

BIRTH control is an important question, but not the all-important question which some of its advocates appear to assume. With a few notable exceptions the books and pamphlets written about it are characterized by a lack of clear thinking, are biased in judgement, being written under emotional influence rather than in accordance with scientific thought, and are, in fact, of the nature of propaganda rather than research. There are signs, however, of some improvement. It is beginning to be recognized that the medical problem involved is quite separate from those moral, economic, social, or even eugenic, problems which must form the major considerations in the controversy, and about which the medical profession can speak with no special authority. It is being acknowledged, too, that the medical problem itself is a relatively narrow one, and may perhaps be defined by three questions: Are there any effective means of controlling conception? Can it be truly said of any such measures that they produce no harmful effects? Along what lines may one look for new contraceptive methods having more desirable qualities and fewer defects than those used at present? These are clearly matters for research, and not for rhetorical or even dogmatic assertion. An attractive little pamphlet has recently been published by the Birth Control Movement Information Centre,[1] which gives in small compass an interesting history of the movement. While the ostensible purpose of the pamphlet is to be fair and unbiased, it becomes evident from page 24 onwards that its chief aim is to further a movement against departmental action taken by the Ministry of Health with regard to the teaching of contraceptive methods at recognized maternity and infant welfare centres. There are weighty reasons, political, administrative, and medical, for not using these particular centres for organized instruction in contraceptive methods. But the Ministry has always permitted the medical officers of such centres to refer women to private practitioners or hospitals, where they may obtain technical instruction, in cases where the avoidance of pregnancy seems desirable on medical grounds. The Ministry, moreover, is watching with interest the work of those relatively few so-called birth control clinics which have been established under voluntary auspices and are being conducted according to proper methods. One of these is the clinic working under the auspices of the Cambridge Women's Welfare Association. An extremely valuable volume entitled *Birth Control on Trial*[2] has just been published in connexion with the work of that association. It is a report by Mrs. L. S. Florence on the first three hundred cases dealt with at the clinic, whose subsequent histories have, with much care and as completely as possible, been followed up. This investigation and report deserve the adjectives which the author gives them, "dispassionate and honest," and the praise which Sir Humphry Rolleston gives the book in a foreword as "a model example of how the data should be obtained and marshalled." The book should be read by all interested in this subject. It would not be fair to quote its figures apart from the careful analysis to which Mrs. Florence submits them; it may be said at once, however, that they show a large proportion of failures, and falsify a large number of confident and wild statements that have been made by less competent and scientific observers. This report does not, of course, pretend to answer the questions in medical research that have been indicated above; though a serious attempt to answer them is being made by the Birth Control Investigation Committee, which, since its formation in 1927, has been engaged in a dispassionate study of the medical aspects of contraception. In effect Mrs. Florence's report is a powerful plea for such unprejudiced investigation. It may be held to establish two negative conclusions: that there is no contraceptive method which can be properly claimed as practically effective in the great majority of cases, and that there is not yet forthcoming any proof that the use of reasonable contraceptive methods produces results which are harmful in a considerable number of cases. It remains the duty of the medical profession to investigate these matters seriously and scientifically, and of clinics to keep full records of their cases and to follow up their results over an extended period of time, and then to publish them with the same care and in the same spirit as is shown in Mrs. Florence's book.

THE NEW FRENCH CANCER INSTITUTE AT VILLEJUIF.

ON March 17th M. Doumergue, President of the French Republic, opened the laboratories of the new Cancer Institute at Villejuif, a suburb a few miles south of Paris, laying the foundation stone of a hospital which is to be attached to this institute, and is to contain 150 beds. Some of the many steps which since the war have led up to this event may be briefly mentioned. In 1921 the Municipal Council of the Seine authorized Professor Gustave Roussy to start a small cancer service with out-patient facilities and a few hospital beds at the general infirmary of the Paul-Brousse Hospital at Villejuif. Between 1922 and 1925 several cancer centres were established in the chief provincial towns throughout France, but the lines on which these centres were organized were not altogether identical with those followed by Professor Roussy, who has described his guiding principles as the discovery of early cases, and the classification of the

[1] *The Birth Control Movement in England.* Foreword by Edith How-Martyn. London: J. Bale, Sons and Danielsson, Ltd. 1930. (5×7, pp. 31. 6d. net.)

[2] *Birth Control on Trial.* By Lella Secor Florence. With a foreword by Sir Humphry Rolleston, Bart., G.C.V.O., and an introductory note by F. H. H. Marshall, Sc.D., F.R.S. London: G. Allen and Unwin, Ltd. 1930. (Cr. 8vo, pp. 160. 5s. net.)

patients in various stages, supplemented by close co-operation between the Departmental and Communal public health services on the one hand, and general practitioners on the other. In the suburbs of Paris and in the three Departments, Seine-et-Oise, Seine-et-Marne, and du Loiret, he has organized a network, the threads of which are of three distinct patterns. These threads, which he describes as three successive *échelons* of growing importance, are: (1) free anticancer dispensaries, which are limited to the poor, and which are concerned with the discovery of early cases and the classification of the patients; (2) subcentres, which exist in certain towns provided with hospitals, and which deal with the classification and treatment of the patient; (3) the chief centre in Villejuif. The institute at Villejuif is provided with six groups of laboratories, the subjects of pathological anatomy, experimental medicine, physical and biological chemistry, tissue culture with cyto-biology, serology with bacteriology, and microphotography with cinematography being under the direction of specialists composing Professor Roussy's team. Work in these laboratories has proceeded during the past three months, the patients providing the observation material being provisionally accommodated in the old Paul-Brousse Hospital. It is Professor Roussy's intention to keep his hospital beds for patients undergoing treatment by operation or radiation, and not to clog these beds up with incurable cases which should, he considers, be distributed in different hospitals so as to avoid alarming the public. While the architecture of the institute has been largely inspired by Professor Roussy and his French colleagues, most of its equipment has been provided by Germany in the form of reparations in kind, under the terms of the Treaty of Versailles, to a value of about 2½ million francs. The institute is financed by the local authorities and the State; its close association with the Faculty of Medicine gives it a cachet and places it under a valuable scientific guardianship. The inauguration of Professor Roussy's institute was followed by a meeting of the International Cancer Union, which had its origin at Amsterdam in 1922. The second meeting was held in London in 1928. This, the third meeting, was attended by representatives of Great Britain, France, Germany, and numerous other countries.

PROGRESS OF CREMATION.

ON April 2nd the Cremation Society of England decided to shorten its name by omitting the last two words. Most of the influences that discourage the adoption of cremation in this country have been mentioned in previous references to the subject in these columns. The active opposition and prejudice against this method of disposing of the dead, its restriction to the well-to-do, the wide-spread apathy, the stringent legal requirements, and the popular notion that cremation is an expensive business have been matters of recent inquiry by the council of the society. In spite of these obstacles the movement continues to progress. The society reports that 4,353 cremations were carried out in Great Britain during 1929. This represents an increase of 25 per cent. over the figure of the previous year. More significant is the fact that there was a general increase throughout the country, especially in the smaller crematoriums. Cremations at Leicester increased by 103 per cent. Two crematoriums were opened, in Edinburgh and in Guernsey; others are being completed at Brighton and Nottingham; and additional facilities are contemplated by the municipal authorities of Leeds and Glasgow. Much of this growing national sentiment, which has led the society to abbreviate its title, has arisen spontaneously from personal conviction. Economic pressure, however, is likely to be a more potent force in removing the more obvious disabilities. Burial accommodation is rapidly diminishing in many parts of the country, particularly in populous districts. The council states that there is ample evidence that local authorities are being compelled to consider the provision of crematoriums to solve this problem. At the Health Congress last autumn the question of preparing more effective propaganda was discussed with the Central Council for Health Education, to which the society is affiliated, and posters have been designed for display during health weeks and similar occasions. Renewed representations were made to the Home Office by the Federation of Cremation Authorities for amendment of the statutory regulations, and the hope is expressed that the Ministry of Health will consider this year the advantages of cremation to the State. New offices have been acquired by the society at 23, Nottingham Place, W.1.

WILLIAM HENRY WELCH.

THE eightieth birthday of Professor William Henry Welch will be celebrated in Washington on Tuesday next, April 8th, and a broadcast of the ceremonies will be relayed from the London Regional Station at 5 p.m. In 1224, when the bequest of a rich American, Johns Hopkins, led to the foundation of a new university in Baltimore, Dr. Welch was chosen first professor of pathology. Mainly through the genius and enthusiasm of Welch, Osler, and Halsted, the new medical school rapidly rose to the first rank, and for more than a generation it has been the goal of advanced students and research workers from all parts of the world. Dr. Welch, who was later director of the School of Hygiene at Johns Hopkins University, and is now professor of medical history there, has lived to see the educational ideals for which he fought universally adopted. On the same day as the ceremonies in America, an address, with lantern illustrations, on Professor Welch's life and work, will be given at 4 p.m. at the London School of Hygiene and Tropical Medicine, Keppel Street (Gower Street), W.C., by the director, Sir Andrew Balfour. A cordial invitation is extended to all who are interested.

INTERNATIONAL SOCIETY OF ORTHOPAEDIC SURGERY.

THE first congress of the International Society of Orthopaedic Surgery will be held in Paris, under the presidency of Sir Robert Jones, from October 2nd to 4th next. The subjects chosen for discussion at the congress are: (1) The treatment of congenital dislocation of the hip after the age of 15 years: on this subject America, Germany, Great Britain, and Italy have been asked to supply speakers. (2) The treatment of injuries in the region of the wrist joint, which will be discussed by representatives of France, Holland, and Sweden. The officers of this society are: President, Sir Robert Jones; vice-presidents, Professor Vittorio Putti of Bologna and Dr. H. Gocht of Berlin; secretary-general, Dr. Delchet of Brussels; and treasurer, Professor A. Maffei of Brussels. The secretary of the first congress is Dr. Albert Mouchet of Paris.

WE regret to announce the death, on March 29th, of Dr. John Yule Mackay, principal and formerly professor of anatomy, University College, Dundee, and for the past twenty-eight years representative of the University of St. Andrews on the General Medical Council.

SIR GEORGE NEWMAN, Chief Medical Officer to the Ministry of Health, will give four lectures on "How England learned to control disease," at Gresham College, Basinghall Street, E.C.2, on April 8th, 9th, 10th, and 11th, at 6 p.m. Admission is free.

LORD BALFOUR AND THE PROGRESS OF MEDICINE.

BY

SIR WALTER FLETCHER, K.B.E., C.B., F.R.S.,

SECRETARY OF THE MEDICAL RESEARCH COUNCIL.

THE public tributes lately paid to Lord Balfour as a political leader and as a great servant of the State have inevitably left in relative shadow the services he gave throughout his long life to the promotion of education within the country and to the advancement of knowledge by research. These are not forgotten, and that they should now be passing relatively unacclaimed is in itself but a measure of the great range over which his private interests and public work extended. It is only the passage of time that can bring into sight the true proportions and relative values of all he did. It is not very daring even now to prophesy that as contemporary views of party history are adjusted and fade, as records now confidential become known, the future generations will find cause to believe that of all the services Lord Balfour gave to England none have a higher claim on their gratitude or contributed more to their welfare than his unswerving faith in the value of education and of knowledge, and the practical expression he found means of giving to it.

No English statesman of modern times, with the possible exception of Lord Haldane, has ever had the same grasp as Lord Balfour of the methods by which natural knowledge is enlarged and more detailed information of the growing points in its chief branches. He had quite exceptional opportunities given to him by birth, by his political career, by his almost unique position in society, and by his high skill in argument, whether public or private, of aiding any great cause he had at heart. His political life, party warfare, the irregular claims and opportunities for constructive legislation, and, nearer the end, the great tasks laid upon him during and after the war, all these kept him from giving with any continuity and completeness the service he was always eager to give to the progress of knowledge and to its more effective use for the general good. Nevertheless, in uncountable ways he used his powers at every opportunity to serve education and research, to deal a stroke for them at this point, to remove an impediment at that. Only as time passes can it be seen how great in sum has been his achievement within those fields.

The debt that medicine in particular owes to Lord Balfour is certainly hardly measurable now, but it may assuredly be said that no great statesman can be named in modern history as having done it greater service. The benefits we owe to him are both general and particular. In general, medicine has drawn increasing strength, like every other field of learning, from the services Lord Balfour gave to education in the country as a whole. This is not the place in which to speak of those. We may well remember, however, that our still youthful system of modern universities, including, of course, their medical schools, in England, Wales, and Ireland, almost all of it framed within the present generation, rests largely upon the efforts of Lord Haldane, with indispensable aid from Lord Balfour, and that no chapter in recent political history is more creditable than that in which those two men carried forward this great work in spite of party antagonism and behind its set scenery. The national system of public secondary education, the soundness of which is the condition of health for any national university system, this, of course, was the work again, more conspicuously and directly, of Balfour, aided by that great public servant Sir Robert Morant.

Lord Balfour's specific services to the progress of medicine as such, and outside this general sphere of education, have been thrown into shadow, even more than his services to physical science, by the glamour of his personal and political gifts. J. Bale, Sons and Movement in with Lord Rayleigh kept him in easy h of physical science that he followed with such personal interest, and he played a leading part in the foundation of the National Physical Laboratory during the Premiership of his uncle, Lord Salisbury. Many of his public utterances and writings, of which the brilliant address he gave as President of the British Association at Cambridge in 1904 is a good example, made the educated public well aware of his informed sympathy with the progress of physical science, and the fascination it had for him in its relation to philosophic thought. But he had an even closer family tie with the biological world. His brother Francis, for whom the chair of animal morphology was especially created at Cambridge, where the beauty of his short life and great work are still a living tradition, may be called the founder of comparative embryology. It was in tribute to Lord Balfour and his family, many years after his brother's untimely death in the Alps, that the Balfour chair of genetics at Cambridge, first held by Bateson, was endowed. He followed the progress of biology at all its chief points of active growth with at least the same eagerness and enjoyment as he drew from the developments of physical science. There was certainly no aspect of biology which had a stronger appeal for him than that of its bearing upon the hopes of human progress and upon the immediate merciful work of the medical profession. At every period of his life he showed his friendship for the progress of medicine and the medical sciences; and the friendship, active and sustained, of a man with his gifts and opportunities could not have failed, and did not fail, in spite of his manifold preoccupations of other kinds, to bring aid of far-extending value to the causes that "medicine" represents.

During most of his life he had no time to give public service in this direction except by occasional speeches on behalf of institutions or societies. His speeches, however, had an educative value of exceptional kind. His were not the deliverances of the prominent public man giving patronage to science in a speech framed for him upon the occasion. They were speeches made *ex tempore* from the briefest possible notes, that showed personal knowledge of the essential problems in view and of the methods being used to solve them. A good example may be found in his speeches, beginning more than a quarter of a century ago, that were made on behalf of the Imperial Cancer Research Fund. His knowledge and clear vision allowed him not only to understand the point of view of the scientific workers but to explain it to the public at large and to the laymen whose support was necessary. His aid then must be counted as contributing greatly to the enlightened spirit in which so much valuable work for that Fund has been done for many years in the face of a good deal of pessimism from the profession and much clamour for quick results from an impatient public. Looking back now with our present knowledge, we can see that Lord Balfour was then taking the true vision and giving wise counsel, and not a word that he said in those early years appears now to be out of place or unjustified. So it was in his speeches on behalf of many other interests, whether upon tuberculosis during the early years of the century, when public attention was focused upon it and sanatorium treatment was being actively developed, or upon eugenics, or upon bacteriology, that he had seen born as a science, or upon the importance of the study of tropical medicine for the Empire. Above all, and at every point, he threw his influence steadily into the movements, whether public or private, that made towards the better encouragement of scientific research in this country. He did much behind the scenes, and he spoke upon this matter publicly and often. Nowadays it is becoming not uncommon for public men to understand the value of research and to work for its aid. But thirty years ago or more there was no Minister of the Crown who would or could have said, as he did in 1898:

"I have all my life been an ardent believer in a cause which is often laughed at—the cause of the endowment of research. In that cause I most firmly believe, and I think there is no branch of knowledge in which it may find a more useful field of application than in that of advancing medical knowledge. It is wonderful to think how the public are prepared to pay, and in my opinion rightly prepared to pay, for the services of those whose clerical genius, whose power of absorbing all that is practically useful

in the knowledge of their day, whose bedside genius—if I may so describe it—demands, and ought to have the fullest recognition—it is wonderful, I say, how the public are prepared to pay for that kind of genius, but apparently put aside with indifference the not less essential kind of genius which deals with the progress of knowledge and the furtherance of invention. This is not selfishness; I think it is latent imagination. The work of the medical practitioner is seen at once; its value can be immediately appreciated; but he who spends his life in the pursuit of the secrets of Nature, working in his laboratory, may very often receive no public recognition at all during his life, except from that restricted circle of experts who alone, after all, are capable of forming any valuable estimate as to its merits,"

and it was just before he became Prime Minister four years later that he said:

"I do not believe any man who looks round the equipment of our universities, of our medical schools, and other places of education, can honestly say in his heart that we have done enough to equip research with all the costly armoury which research must have in these modern days. We lag behind—we, the richest country in the world, lag behind Germany, France, Switzerland, Italy. Is it not disgraceful? Are we too poor, or are we too stupid? Do we lack the imagination required to show what these apparently remote and abstract studies do for the happiness of mankind?"

and he went on to say:

"It is the result of my unfortunate profession that I am constantly engaged in discussions and in conflicts which at the worst have a party significance, and at the best have but a national significance. The cause I plead now is not the cause of a party nor the cause of a nation—it is the cause of mankind at large. Every discovery which is made in the laboratory in Germany, France, or Italy is the possession, not of those countries, but of the whole world. Let us not be backward in this great international competition, which surely may be said, in some way, to balance that more costly and destructive competition in armaments and, it may be, in commerce."

Inasmuch as his "unfortunate profession" prevented him through most of his long life from giving more than his powerful words and great influence to promote medical advance, we must count it a very happy stroke of fate that brought him at the age of 71, after his long political life and his later services in making war and making peace, to be Lord President of the Privy Council, and in that office to be responsible to Parliament and in the Cabinet for the greater part of the State aid now given for the support of scientific research. It would not be hard to guess, and indeed I have heard him declare himself, that no part of all his public work, immense as its range had been, had brought him so much matter for personal interest or had seemed to him to be of more importance. In each of the two research Departments falling directly under him—the Department of Scientific and Industrial Research and the Medical Research Council—his active personal interest from that beginning, now ten years ago, is passing into legend. On the very day after he assumed office, a tall gentleman called unexpectedly at the not very obvious offices of the Medical Research Council in Buckingham Street and announced himself as Mr. Balfour. He had called, he said, to see "whether there was anything he could do to help." The Council had worked previously under some six or seven Ministers, variously eminent, but none, I think, had ever made himself aware of the geographical position of the office. In like manner he paid, as Minister, repeated personal visits to the sister Department. Need explanation be offered for the affectionate devotion his courtesy and simplicity won from all his subordinates?

In 1922 he resigned with the Coalition Government and assumed private life. In 1924 Mr. Edward Wood, now Lord Irwin, resigned the chairmanship of the Medical Research Council on his appointment to be Viceroy of India. The appointment to the vacancy on the Council fell to Lord Curzon. He desired a representative of the Council to seek the opinion of Lord Balfour, who indicated that he himself would be willing to join the Council and become chairman, if Lord Curzon could not see his way to a better appointment. Never, we may suppose, was an appointment more confidently made, and never, certainly, was any so welcome to the Council he joined. From that time, and for nearly five years, until his health failed, he regularly attended meetings of the Council and gave the most ready sympathy and eager help to their work at all times and in every way open to him. Upon Lord Curzon's death in 1924 Lord Balfour joined Mr. Baldwin's Ministry and again became Lord President of the Council. As is now well known, he made the Medical Research Council aware that he so much enjoyed seeing their work at first hand that, unless the point were raised by others, he was prepared himself to connive at a situation in which he remained chairman of a body that was advisory to himself as Minister to the Crown. He continued to serve the work of medical research in both capacities until the Ministry fell last summer, and he resigned his chairmanship of the Council on the ground of ill health shortly afterwards.

Lord Balfour's knowledge of the research work done on behalf of the two research organizations under him had made him increasingly aware before 1924 that some better machinery was needed for bringing the results of investigation, when attained, into more effective application in human affairs, and that this machinery must include more effective modes of consultation between separate administrative Departments or Services on the one hand and the men with first-hand scientific knowledge on the other. When Mr. Baldwin announced in Parliament after Lord Curzon's death that Lord Balfour was to succeed as Lord President, he said that he was to be entrusted with the special task of improving the machinery for bringing the results of scientific work into their proper relation to statecraft. Almost immediately after his appointment in 1924 Lord Balfour, who, as Prime Minister a quarter of a century before, had established the Committee of Imperial Defence, proceeded to set up a closely analogous machinery for civilian affairs as the Committee of Civil Research. Under this committee, as under its military counterpart, there sprang up progressively a number of subcommittees, each constituted with a single eye to the promotion of some special object, for the gaining of which scientific knowledge and administrative art must go hand in hand. All these subcommittees reported confidentially to the Cabinet, and not a tithe of the work which has been done is familiar at present to the public. It is now increasingly apparent as the facts have become known that no single agency did more to save the country in the war than the timely work of the Committee of Imperial Defence. It is not a rash speculation to guess that the next generation will realize that no single agency may have done more to save and develop the Empire than Lord Balfour's Committee of Civil Research—if we may assume that its realities, unlike its name, are to be retained in what has been re-christened by his present successors the Economic Advisory Council. If the records could lie open it would now be seen what effective work Lord Balfour had done at the extreme end of his long life for the advancement of science and for the enrichment of its powers to help the country. In no branch of science has this been more evident than in the biological sciences, and especially in those medical sciences serving the well-being of human life and industry in tropical parts of the Empire.

To Lord Balfour himself we can hardly apply more fitting words now than those which he used himself of Lord Salisbury when paying his obituary tribute in the House of Commons: "It is impossible to form a full and fair judgement of the policy of any statesman until his career be run and until the secret documents, by which alone he can be judged, become common property. . . . It is not until the controversies in which we have been engaged have lost all living interest and have become the property of the student in history that our children will be able to judge how great and how beneficent was the part he played in the history of this country." It will be in large part due to his own efforts for education if our children come to see, and more clearly than our own generation has seen, that place which natural knowledge should take in the right guidance of the State, and in proportion as they learn that lesson they will pay tribute to Lord Balfour's life and work.

PREGNANCY DIAGNOSIS STATION.

REPORT ON FIRST YEAR'S WORKING.

BY

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Introduction.

A LITTLE more than a year ago my colleague Dr. B. P. Wiesner convinced me that for several reasons it was desirable to examine on a large scale the pregnancy diagnosis test of Zondek and Aschheim. Out of this suggestion emerged the Pregnancy Diagnosis Station, the conduct of which has very largely been in hands of Dr. E. M. Robertson, working under the supervision of Dr. Wiesner.

The station, attached to the Animal Breeding Research Department, was opened a year ago. At that time a certain amount of work had been done on the accuracy and applicability of the Aschheim and Zondek reaction (A.Z.R.), but this work was almost entirely restricted to experimental material, and to cases selected in various respects. At the station, however, the test had to be applied under routine conditions and on unselected cases. It was intended that, should the results prove favourable, the work of the station would continue so as to make its services available for hospitals and practitioners. It is obvious to everybody who knows the technique of the test that it has to be carried out at some selected centre where the keeping of animals on a sufficient scale is possible; it cannot be carried out anywhere and everywhere.

The station has had to deal with a considerable number of specimens sent in for diagnosis from hospitals and doctors in all parts of Great Britain and Ireland. It cannot yet be decided what actual percentage of the cases was diagnosed correctly, since the findings of the station have to be controlled by clinical diagnosis performed by the doctor, and such control information has to be communicated to the station by him. In many cases this confirmation has not yet been received, and so a full account cannot be given. However, this report at the end of the first year may fulfil a double purpose by conveying an impression of the preliminary results, and by explaining certain limits of the test as well as sources of misunderstanding.

The Test.

Aschheim and Zondek have fully described their technique, and more recently Allen and Dickens published a full account of the test. The method of carrying out the test at the Pregnancy Diagnosis Station corresponds almost exactly to the Aschheim and Zondek technique, except that naked-eye detection of blood points in the ovaries is relied upon entirely, and the third pituitary reaction of Zondek and Aschheim is neglected. Microscopic examination is not found necessary, because a minimum positive reaction produces an easily recognized blood point formation. If, however, the blood points are small and sunk in the ovary, and at the same time corpora lutea formation is marked, the blood points may be distinguished by holding the ovary up to the light, when they appear darker than the densest of the corpora lutea. Some investigators when in doubt press the ovary in glycerin between two cover-slips and examine under a lens. For this test, as the results show, the naked-eye technique is not less accurate than the microscopic. By abandoning microscopic examination the whole procedure is made simple and rapid. However, if there is any doubt as to the presence of blood points, a fresh specimen of urine is obtained, where possible, and the test is repeated.

In order that no mistakes may arise during the handling of specimens, and that the recording be as accurate as possible, a special record book is used. Each sample on arrival at the station is at once filtered into a numbered bottle, and any particulars regarding the specimen are entered in the record book, opposite the corresponding number. For each entry in the book there are two pages. The first of these is so printed and perforated that from it are available two numbered labels, one for the urine container and one for the mouse cage; a record card for filing; a "result" letter; a "follow-up" letter; and an injection record card. All entries are duplicated on to the second page, which remains in the book. As soon as the results become available the "result" letter is sent off to the "sender"—at the latest within six days of the arrival of the specimen (the test actually takes about 100 hours). In an attempt to supply a result in very urgent cases, certain experiments have led to the adoption of an emergency test. It was found that by using larger doses of urine a result could be obtained within sixty hours. In cases of great urgency such a procedure is adopted, but a control test with the standard method is also carried out. If the emergency test turns out to be positive, then a positive result is returned at once; a negative result, however, is withheld until the second test is completed. Such a modification had been suggested by the originators of the test.

The station requires that two ounces of fresh morning urine, in a sterile container strong enough to withstand the dangers of transport, be sent along with a few notes on the case, giving the name, age, parity, date of the last menstrual period, menstrual history, history of any severe constitutional disturbances, and also such information as will supply a reason for sending the urine within twenty-eight days of the last menstrual period.

Limitations and "Errors."

It has been found that in about 1 per cent. of cases the sample of urine kills the experimental animals, and so no result is forthcoming. In these cases, where possible, second and third specimens are tested, generally without success. The cause of death of the mice seems to be different for different specimens of urine. The prevention of bacterial action or the elimination of toxic elements has not been practised in the station, because, so far, no simple method for doing so has been devised. There is not, so far, a sufficiency of clinical detail or of data from the examination of such urines to allow of an opinion being formed as to the nature of the toxicity. It is hoped that before long a solution to this problem will eliminate one source of weakness in the test.

On account of the nature of the organization of the station, errors arising from the human element are reduced to a minimum and can be neglected. Two factors which must contribute to the error are (1) unsuitable conditions of the urine—for example, dilution; if not a morning specimen the urine may be insufficiently concentrated to give a positive result; this is unusual; (2) lack of complete and accurate control of results.

It must be pointed out that as far as the station is concerned the control is entirely in the hands of the "sender" of the specimens, and for the following reasons cannot be as reliable as it would be were the test carried out on a purely experimental basis: (1) the doctor has to depend on the uninitiated patient for many clinical details, information about, and description of, abortions, etc.; (2) microscopical examination of pathological specimens is not always possible. For an adequate control both these items are necessary in many cases.

The Results.

In all, 840 cases have been dealt with from the inception of the station up to the end of January, 1930. In 10 cases the urine was insufficient in amount, or lost in transit, and therefore no test was possible. Thus 830 tests have been carried out, but in 24 cases "no result" had to be returned on account of the toxicity of the urine causing the death of the test animals. Of 805 cases diagnosed at the station the report only deals with the 460 about which control information has so far been received. It is obvious that of necessity such information is generally some months in arrears, hence the comparatively small number of controlled cases.

Diagnosed at the station as:		
Positive	...	286
Negative	...	174
These have been controlled thus:		
Correct	...	446
Incorrect	...	14

It is at once seen that with the 14 (so-called) cases of incorrect diagnosis the results show an error of 3.04 per cent. However, this figure, having been influenced by various factors, only represents an apparent error, and so provides a misleading impression of the value of the test

In order to judge this value correctly it is necessary to discuss certain limitations of the test and to analyse the factors which have adversely affected the results.

Examination of Results.

As this biological test for pregnancy is of recent origin and quite unique, it is natural that some time must elapse before practitioners become familiar with it and with the principles involved, and thus realize the importance of sending case-notes to the station. Only scanty—if any—notes have been received, and the classification and analysis of cases has frequently been difficult. However, an examination of the results has been attempted. A short discussion of the basis of the test will make for a clearer understanding of these results.

It will be remembered that the A.Z.R. is based on the occurrence in the urine of large amounts of at least one gonadotrope hormone which normally (that is, outside pregnancy) is only found in the anterior lobe of the hypophysis. During pregnancy it is apparently produced by, and certainly found in, the placenta: and in associated conditions, such as *hydatidiforma* mole, it is also produced in large quantities. The presence of large amounts of this substance in the urine is therefore not necessarily a sign of the presence of a foetus. However, its production in large amounts, in conditions unassociated with pregnancy, is apparently rare. Thus the term "pregnancy" is used, in communications from the station, qualified by the words "does exist" or "does not exist," according to whether the test shows a positive or negative result. Of course, one could refuse with some justification the term "pregnancy" in certain cases if one defines pregnancy as the time during which an ovum is actually developing in the maternal organism. A positive A.Z.R. is a sign that the body contains at the time highly active sources of those hormones, such as the placenta or its derivatives, or some other abnormally active tissue. The test has been proved to show a positive reaction in cases of retained adherent fractions of the placenta, incomplete abortion, hydatidiform mole, and chorion epithelioma. The test is also positive for a few days after normal parturition and complete abortion. On the other hand, the presence of an inactive (dead) placenta is not associated with the production of this hormone, and so the presence of a dead foetus and placenta does not lead to a positive result.

The distribution of positive and negative results among the 14 so-called incorrect diagnoses was as follows:

No.	A.Z.R.	Doctor.
13	−	+
1	+	−

Details of these cases are seen below in tabular form.

No.	Test	Dr.	Details.	Remarks.
5	−	+	Six months' amenorrhœa. Abdomen 3 months pregnant. *No P.V. Doctor*	? Dead ovum.
10	−	+	62 [illegible]	Dead ovum.
12	−	+	Macerated foetus delivered at 12 hours after urine taken	Dead ovum.
13	−	+	Same as 12	
2	−	+	No details	
11	−	+	No details	
14	−	+	No details	
8	−	+	60 days after L.M.P.	
9	−	+	36 days after L.M.P.	
6	−	+	45 days' amenorrhœa. Miscarried 1 month later	? Deficiency causing miscarriage.
7	−	+	41 days after L.M.P. 2 years ago had 1 ovary removed and both tubes excluded. Abortion 15 days after time of test	? Deficiency causing abortion.
3	−	−	Lactating. Baby 8 months. Repeated 2 months later. Positive	Lactating. ? Pregnancy came later.
4	−	+	43 days after L.M.P. Repeated 3 months later. Positive	
1	−	−	No menstrual irregularity. Breasts active. Young girl. Repeated 3 weeks later. Negative	? Endocrine disturbance.

The above table reveals that 5, 10, 12, and 13 were cases in which, at the time of taking the urine, the foetus was dead and the pregnancy ended.

Cases 2, 11, and 14 cannot be discussed, as no details of the histories were supplied.

Apparently the results given in Cases 8 and 9 were incorrect, but here again details of the subsequent course of each case are lacking, and so the station is left in doubt. Case 1 seems to have been mis-diagnosed, as the doctor attending the case says that there was no possibility of an abortion having taken place between the time of test 1 and test 2. It is to be noted that Case 1 is the only one where a positive result was questioned.

Cases 6 and 7 are associated with premature interruption of pregnancy some short time after the test was found negative. Recent findings show that the pregnant state and the maintenance thereof is necessarily associated with a great production of the hormones mentioned above, and it follows that if the production is insufficient then the pregnancy comes to an end. This seems to be exemplified in Cases 6 and 7, the negative result meaning that there is not sufficient hormone in the urine to affect the mouse ovary, and this deficiency in the maternal organism is such that pregnancy cannot go on. Thus abortion is precipitated.

It seems obvious from the details of the table that, of the 14 cases labelled incorrect, at least 4 cases (5, 10, 12, and 13) were so designated by the "sender" through a misunderstanding of the test. These cases were probably correctly diagnosed in so far as the test detects the presence of active products of conception. This means that the apparent percentage error of 3.04 is reduced to a real error of 2.2 per cent., and, were details available of Cases 2, 8, 11, and 14 this figure might be still further reduced.

Special Analyses.

The average age of pregnancy diagnosed was 69 days: 78 cases were within sixty days of the last menstrual period, and of these 2 were within nineteen days of the last menstrual period, and 2 within eight days of the first lapsed menstrual period. In 6 cases the history was more definite, and of these 5 were within forty days, and 1 within twenty-eight days of the last coitus. It was also known in these cases that menstruation had been regular up to the time of that coitus.

In order that an idea may be formed as to the type of case in which the Aschheim and Zondek test is sought notes on a few cases are given.

Correct Negative Diagnosis.

(C. 4.) Married, aged 34; diminution of menses but no actual cessation. ? Two months pregnant or menopause.

(C. 5.) Unmarried; forty-seven days since last menstrual period; patient stout, breasts enlarged, uterus retroverted, cervix soft, some morning sickness. ? Pregnancy or menopause.

(G. 2.) Married; forty-seven days since last menstrual period; last baby six months ago.

(I. Z. 6.) Single, aged 22; sixty-two days since last menstrual period.

(I. Z. 9.) Married, aged 33; operation for ruptured ovarian cyst, uterus large. ? Pregnant.

(I. D. 4.) Married, aged 36; one hundred and ten days since last menstrual period; 3-para; patient very nervous and convinced she is pregnant; has had several slight "shows."

(3. F. 2.) Married, aged 42; one hundred and five days since last menstrual period; 2-para; breasts enlarged; patient very stout and no fundus felt. ? Menopause or pregnancy.

(4. E. 8.) Married, aged 44; fifty-three days since last menstrual period; 1-para; menstrual history previously regular. Patient contains a fibroid which might require surgical treatment.

(4. H. 8.) Married, aged 46; seventy days since last menstrual period; 5-para; uterus enlarged by one or more fibroids, one part resembles the pregnant uterus in softness and size.

(6. K.) Married; some sickness for three to four months; vomiting in the pelvis; said she felt foetal movements; no amenorrhœa. A.Z.R. negative, and abdomen opened and tuberculous ovary found.

Correct Positive Results.

(I. 9.) Single, aged 22; sixty-two days since last menstrual period; patient becoming stout; question of pregnancy difficult to settle.

(I. E. 1.) Married; seventy-seven days since last menstrual period; 2-para. Lost child five months ago. Is vomiting frequently and losing weight.

(1. F. 0.) Married; forty-one days since last menstrual period; 3-para; sickness with enlargement of the breasts; not to be relied upon as patient wishes to become pregnant.

(2. E. 4.) Married, aged 25; fifty-six days since last menstrual period; 1-para. ? Retroverted gravid uterus.

(2. F. 7.) Married; sixty days since last menstrual period; has chronic salpingo-oöphoritis; doctor thinks pregnancy unlikely.

(2. I. 6.) Married, aged 40; seventy days since last menstrual period; 2-para; uterus abnormally enlarged. ? Fibroids or fibroids and pregnancy.

(3. E.) Married; fifty days since last menstrual period; severe phthisis.

(3. E. 2.) Married, aged 24; seventy-four days since last menstrual period; very severe vomiting. ? Hyperemesis.

(5. C. 4.) Regular menstruation up to the time of operation for haemorrhoids; since operation (three months) had amenorrhoea. ? Pregnancy.

(5. I. 1.) Single; fifty-six days since last menstrual period; had previously long period of amenorrhoea—up to ten weeks.

The test shows an error of 2.2 per cent. It has been suggested that this figure is not exceeded in the ordinary run of practice with the usual clinical methods. That may be so, but from the type of case sent for diagnosis it is fairly obvious that the station deals with cases which normally form the small percentage not easily diagnosed by purely clinical methods.

The biological importance of the test was obvious from the beginning, and it was for the station to show whether it could be applied on a practical basis, and at the same time maintain sufficiency and accuracy. Experience in working the station for one year shows that the test is quite capable of practical application under suitably organized conditions, and it is hoped that the report demonstrates that the test, if so applied, is a valuable diagnostic aid.

Conclusion.

The work of the station will be continued. During this first experimental year the fees were kept as low as possible, but it was found that the expenses were not covered, and a deficit was incurred. It has now been decided, therefore, that the fees will have to be increased as from March 7th. For private practitioners the fee will now be 10s. for each diagnosis; for hospitals and infirmaries 3s. It is hoped that the expenses will thus be covered and that a further increase will be avoided.

England and Wales.

Birmingham General Hospital.

THE 150th anniversary of the opening of the General Hospital, Birmingham, which occurred last year, was commemorated by a special service in the chapel, and subsequently by a choral service in the cathedral church of St. Philip. At the anniversary dinner in October members of the medical staff were the guests of the senior physician and senior surgeon. In the report for 1929 the executive board expresses the hope that it may be possible to start building the new hospitals centre at an early date. The scheme was outlined in the *British Medical Journal* of February 8th (p. 255). Co-operation with the Queen's Hospital has been strengthened by the interchange of liaison officers between the medical committees of the two institutions. The wards and casualty departments in course of erection on St. Mary's site are expected to be ready for occupation in the autumn. This extension has reduced the annual income of the hospital by over £2,000. As a result of a broadcast appeal in the early part of the year 600 mg. of radium were purchased by the hospital, which has now over thirty beds available for the radium treatment of cancer. Progress may [illegible] this department was recognized by the National Radium Commission in selecting the General Hospital as a centre for treatment and research. The experiment of receiving paying patients is reported to have been entirely successful. In-patients during the year numbered 7,057, an increase of 407. Out-patients increased from 55,005 to [illegible]. In the social service department 134 children were helped in various ways. A convalescent home had been opened for children under 3 years of age; a record the forty-[illegible] a "follow-up" le[illegible]

fourth annual report of the Jaffray Branch Hospital, 368 patients were treated in 1929, 65 less than in the previous year. The number of beds is now sixty-five, which includes four cots.

Council Hospital Accommodation in London.

Under the Local Government Act there have passed under the direction of the Central Public Health Committee of the London County Council eleven fever hospitals (6,771 beds) hitherto directed by the Metropolitan Asylums Board; three "river hospitals" at Dartford (1,898 beds) for fever and small-pox; one hospital for ophthalmia neonatorum, marasmus, and zymotic enteritis (60 beds); two institutions for venereal diseases (103 beds); nine institutions for tuberculosis (2,057 beds); two for sane epileptics (705 beds); and five for children (1,992 beds). In addition, thirty Poor Law hospitals and infirmaries (17,022 beds), hitherto directed by boards of guardians, have come under the committee's control. To the Mental Hospitals Committee there have been transferred from the Metropolitan Asylums Board five hospitals or colonies (10,387 beds). In addition to the provision made for the treatment of sick persons in what have hitherto been known as Poor Law Hospitals, there is accommodation for sick persons in institutions which provide also for the able-bodied poor. The Central Public Health Committee finds the questions involved in the separation of the able-bodied poor from the sick, especially in view of the varying degrees of sickness, very difficult of settlement. It is thought desirable that two types of hospital should be recognized, one for the acute sick (including patients under continuous medical or surgical treatment, maternity patients, and mental patients), and the other for the chronic sick (including patients under institutional treatment because they are suffering from some chronic disease, and also aged and infirm persons requiring medical and nursing attention). Careful consideration has led to the belief that the present accommodation for the acute sick may be inadequate for future needs. In the institutions which now come under the Council's control there is what is described as a heterogeneous mass of chronic sick and aged and infirm persons, and it is not easy to define the degree of infirmity or disability in this group which places a person technically among the "sick." There can be no clear line of demarcation between the healthy aged and the infirm aged, the one gradually passing into the other; although the borderline case may not be technically "sick," it requires as much medical and nursing care as many serious maladies. The committee feels that there can be no doubt that a hospital standard of care and attention should be applied to all persons suffering from chronic disease and also to the aged and infirm. It is therefore proposed to allocate twelve institutions comprising 9,661 beds, for the chronic sick—namely, the Fulham, Hammersmith, Kensington, Holborn, St. Pancras, Shoreditch, City of London, Hackney, Stepney, Camberwell, Greenwich, and Lambeth institutions. The accommodation controlled by the Central Public Health Committee and that controlled by the Central Public Assistance Committee here overlap. A certain amount of accommodation for "healthy" cases remains in hospitals under the direction of the former, and for chronic sick cases in institutions under the direction of the latter, but it is stated that time will be necessary for reorganization and re-classification, and that the present allocation must be regarded as provisional only.

Royal Free Hospital.

At the annual court of governors of the Royal Free Hospital, on March 25th, under the chairmanship of Lord Riddell, the American Ambassador paid a tribute to the humanitarian work of the hospital. Its policy, he said, considered the actual needs of every person requiring treatment, whatever his status or race. He also referred to the service the hospital had rendered to Americans in London. Most of the matters discussed in the 102nd annual report have already been mentioned in these columns. The foundation stone of the Eastman dental clinic was laid by the Prince of Wales last April, and the building is expected to be ready in May. Arrangements

for its equipment are being made by Dr. Burkhart, director of the Rochester Dental Dispensary. Sir Albert Levy's gift of £50,000 has enabled the committee to proceed with the construction of the lower and ground floors of the Queen Mary wing, designed to rehouse the maternity department; this is the first part of the central extensions for which a sum of £5,000 was allocated by the trustees of the King Edward's Hospital Fund, and the council of the London School of Medicine for Women is assisting to raise the balance required to complete the building. Plans were prepared for erecting a home for nurses and for improving the facilities for the treatment of venereal disease (female). During the year 120 patients were treated by radium; this department is now supplied with radon free of cost by the radon centre at Middlesex Hospital. The hope is expressed that its radiotherapy equipment will shortly be supplemented by a deep x-ray apparatus. Nursing efficiency was well maintained; 27 nurses completed three years' training and gained the hospital certificate. In the medical and surgical departments the number of in-patients increased from 5,238 to 5,439. Despite the decrease in the number of out-patients from 19,847 to 18,754, which was caused partly by a revision in the scale of charges, there was additional income from this source of almost £900. This decrease has also relieved the congestion in special departments. Including casualty and maternity cases the total number of patients treated in the course of the year was 53,165. The financial position, however, continues to be grave. Although the previous year's deficit was reduced to £7,538, the committee estimates that the heavy debt already incurred by the hospital will be increased by about £8,000 during the current year. An urgent appeal is made for new annual subscribers.

Scotland.

Clark Hospital Bequests.

THE trustees of the late Mr. Edward Clark, printer in Edinburgh, have announced a list of residuary grants to hospitals and similar institutions as follows: £30,000 towards the completion and equipment of the new hospital for crippled children, at present under construction at Fairmilehead, Edinburgh; £15,000 for the endowment of an Edward Clark chair of child life and health in the University of Edinburgh; £8,000 to the Edinburgh Royal Maternity and Simpson Memorial Hospital; £5,000 to the Royal Infirmary of Edinburgh (in addition to a legacy of £10,000 already paid); £4,000 to the King Edward's Hospital Fund (London); £3,000 each to the National Hospital for the Paralysed and Epileptic, London, and to the Royal Edinburgh Hospital for Sick Children; £2,000 to Leith Hospital; and £1,000 each to the Deaconess Hospital, Edinburgh, the Edinburgh Dental Hospital, the Hospice, Edinburgh, and the Royal Edinburgh Hospital for Incurables.

Glasgow Hospital for Sick Children.

At the annual meeting of the Glasgow Royal Hospital for Sick Children on March 10th, Lord Provost Kelly, who presided, referred to the modern facilities the hospital possessed, both for treatment and for medical instruction. Dr. John F. Fergus, president of the Royal Faculty of Physicians and Surgeons, who also paid a tribute to the hospital, mentioned the valuable work it had done in the treatment of rickets, and supported the appeal that is being made for a research fund of £20,000 for further investigation of diseases of infancy and childhood.

Larbert Institution for Mental Defectives.

At the sixty-ninth annual meeting of subscribers to the Royal Scottish Institution, Larbert, the medical superintendent, Dr. Clarkson, said that the average daily number of patients—namely, 559—was the largest recorded in the history of the institution. The death rate was 0.8 per cent. of the patients under treatment; this was the lowest rate in forty years. Children's work had realized over £1,000. The villas in course of erection under the colony scheme were expected to be ready for occupation at the end of the present year. Dr. Clarkson referred to the early work of the institution, which had begun in 1860 with the opening of a small school in Edinburgh. When it was transferred to Larbert there were 9 children; to-day there were 560, and provision was being made for 250 more. The colony scheme, according to the report, consists of five large villas, each of which will accommodate 50 patients. The villas are divided into two groups—three for males and two for females—and these groups are separated by an administrative block. Helpless patients will be accommodated in another block, which will also provide room for a hospital and laboratories. Workshops will be built when funds are available.

Edinburgh Dental Hospital.

At the thirty-eighth annual meeting of the Incorporated Edinburgh Dental Hospital and School, on March 27th, under the presidency of Dr. William Guy, dean of the school, Treasurer Harvey said that only about a third of the children whose teeth were considered defective by the Edinburgh education authority took advantage of the school dental service. The Dental Hospital should be more widely recognized as providing an important health service to the community. According to the report for the year there was an income of £5,361, which included £2,217 from students' fees and £2,658 from dental appliances, etc. Over 23,000 operations were performed.

Correspondence.

THE POSSIBLE OCCURRENCE OF TULARAEMIA IN BRITAIN.

SIR,—The identification of tularaemia in Russia and Norway makes it quite likely that the infection is also present in some form in this country. The admirable review published in the Monthly Epidemiological Report of the Health Section of the League of Nations gives a full account of the Russian outbreaks, in which human beings were infected from water-rats which they were hunting for the sake of their skins. The Russian observers also found that the infection was widespread among water-rats in places where no examples of human disease had been identified. Our native water-rat is the same species (*Arvicola amphibius*) as occurs in Russia, and it would be of much interest to know whether they are also infected. If they are, transmission to man seems unlikely, for close contact with water-rats must be very exceptional; it does, however, occasionally occur—for example, in boys. It appears, too, from the last number of the *Journal of the American Medical Association* (March 8th, p. 721) that tularaemia may occur in sheep. One way and another, therefore, one suspects that the disease may only need looking for in this country to be found. Obscure cases of general illness and fever, generally with glandular enlargement and often with pustules or ulcers on the hands, etc., should be viewed with suspicion, especially in country people. The clinical course of laboratory infections was described by Professors Ledingham and Fraser in the *Quarterly Journal of Medicine* in 1924 (vol. xvii, p. 365) —I am, etc.,

London, W.C.1, March 25th. A. E. BOYCOTT.

THROAT INFECTIONS AND PUERPERAL SEPSIS.

SIR,—In his carefully planned investigation reported in the *Journal* (March 22nd, p. 533) Mr. W. W. King presents strong evidence for his view that in hospital practice "spraying" from the throat of streptococcal carriers is an important means of infection. His work, taken in conjunction with that of Armstrong[1] and others, is especially important in its implication that, this being the common method of the spread of hospital sepsis, an aseptic routine otherwise rigid must fail unless it is combined with the wearing of masks both by those attending at labour and by those in attendance during the puerperium. At the same time it is important to note that Mr. King's observations on hospital contagion do not necessarily imply, as he seems to infer, that in domestic midwifery or even

[1] *St. Bartholomew's Hospital Reports*, 1928, vol. lxii, p. 169.

in hospital practice the streptococci associated with the common epidemic throat infections constitute an important risk. As it seems to me, the value of his work extends only so far as it suggests that the streptococcus from an infected puerperal patient is signally prone to attach itself to the throat of those in attendance and in this way to be sprayed on to succeeding cases. In none of the cases quoted by him is there evidence that the throat carriers were the primary factors—that is, the originators of the first case. There is no evidence against the view that in each instance the carriers were in reality transmitting a puerperal streptococcus picked up directly or mediately from an infected hospital case. In this connexion it is important to recall that in sub-epidemic puerperal infection patients may be infected without exhibiting any fever. In Cases 2 and 3 of Mr. King's series this was actually so. From such patients streptococci virulent for other cases may conceivably reach the throat of the attendant, who would then erroneously seem to be the primary agent in a subsequent infection. Similarly Mr. King's observations may be advanced to support the view that in domestic midwifery the attendant may transmit streptococci of a like nature.

But the most important evidence against the view that haphazard epidemic throat infections are a potent factor in the community generally is much less subtle, and it argues equally strongly against the significance of endogenous infection. It is obtained from the experience of the outdoor and indoor practices of such institutions in London as the East End Maternity Hospital and Guy's Hospital. Dr. W. H. F. Oxley, in his recent paper in this *Journal* (February 15th, p. 275), which constitutes one of the most important contributions to this subject published within recent times, has shown that, where no special precautions are taken against "spraying" from the throat or to eliminate focal sepsis, the death rate from sepsis can yet be virtually abolished. A death rate from all causes of 12 in 17,525 unselected normal and abnormal cases, equivalent to 0.68 per 1,000, proves this conclusively. *The death rate in this large practice from all causes is less than half that from puerperal sepsis alone throughout the community generally.* Similarly, Mr. F. G. Gibberd (*Guy's Hospital Reports*, 1928) has shown that in Guy's Hospital during 1928 there were 1,782 successive cases, normal and abnormal, with one death from accidental haemorrhage and no mortality from sepsis.

Such data cannot be emphasized too often or too strongly, because they demonstrate that other factors are negligible compared with sound midwifery based on adequate antenatal care and proper management at labour. Further, they show that, where the hospital environment is kept free from puerperal infection by the elimination of the "emergency" or mismanaged case, which constitutes the ordinary septic case in midwifery practice, such factors as throat conveyance and endogenous infection are relatively insignificant. Conversely, hospitals which admit "emergency" cases among their clean cases assume a very grave responsibility. For some years, on the basis of their records, I have been urging that these mixed hospitals, which comprise the majority of our large central institutions, constitute a serious danger to the community, and I have given reasons for the belief that the only satisfactory solution of the problem is to segregate the "emergency" cases in special buildings, and preferably in separate hospitals provided for the purpose. Meanwhile, in our efforts, under present conditions, to battle with the extremely difficult and elusive problem of contagion, I believe Mr. King's paper is valuable in urging the importance of taking precautions against one, perhaps the chief, of the risks associated therewith, both in hospital and in domestic practice.

I would further direct attention to the statement in Mr. King's paper that an

> "analysis of the type of labour which preceded the onset of puerperal fever in the cases admitted to the Jessop Hospital in 1929 shows the surprising fact that those which had spontaneous labours had the highest rate [46.5 per cent.] of haemolytic streptococcal infections, while 'failed forceps' cases, *in which there is* usually the maximum amount of manipulation and trauma, were only infected by haemolytic streptococci in 12.5 per cent. of the cases admitted."

What the author means to imply by this statement is not clear, but it is liable to lead to an unwarranted and dangerous inference. The high rate in the spontaneous cases is natural in that they were presumably sent to hospital because of sepsis, and it is notorious that notification and segregation apply chiefly to the severest cases. In the "failed forceps" cases, on the other hand, the admission is presumably dictated primarily by the obstetric difficulty. It is the experience of all hospitals that these are peculiarly liable to suffer from severe sepsis, and the fact that in Mr. King's series only 1 in 8 so suffered is, though gratifying, hardly a reason for comparing them with cases of quite a different order.—I am, etc.,

Edinburgh, March 24th. JAMES YOUNG.

SIR,—I am much interested in the article by Mr. W. W. King on throat infections as a factor in puerperal fever, and in support of the views expressed therein I would like to quote our experience in this hospital.

Mrs. R. was confined normally on January 19th. On January 21st she developed a temperature of 102.6° F. All the members of the staff wore gloves and gowns, and all lacerations are always repaired within six to eight hours of confinement, and a cusol gauze pack is inserted in the vagina. A cervical swab was examined, and *Streptococcus pyogenes haemolyticus* was isolated.

Mrs. M. was confined on January 24th. She was in a very run-down condition, and low forceps were applied. On January 26th she developed a rise of temperature.

Mrs. B. was confined normally on January 29th, and on January 31st she developed a rise of temperature; the same day Mrs. N. was confined normally, and her temperature rose on February 11th.

We had intensified our aseptic and antiseptic precautions, and I could not understand this sequence of temperatures, and consulted with Dr. Leith Murray of Liverpool, who then suggested having the throats of the entire staff swabbed. This was done, and one nurse was found to harbour the *Strep. pyogenes haemolyticus*. She was isolated from the wards, and, as an additional precaution, it was arranged that all members of the staff should wear masks during confinements and swabbings.

The result was striking. No further case of rise of temperature occurred.—I am, etc.,

A. S. GARDEN, M.D., L.M.
Obstetrician in Charge, Southport Maternity Hospital.

March 24th.

INDIAN MEDICAL DEGREES.

SIR,—In your issue of March 29th you publish a letter from Sir Thomas Carey Evans on Indian medical degrees. In it he truly observes that the medical profession in India is the offspring of the I.M.S. Every officer, past and present, of the Service, in the hope and confident belief that its offspring will be even more illustrious than its parent, will regret the recent decision of the General Medical Council of Great Britain, and will be ready, in a parental capacity, to take on his shoulders a just share of any blame which may be attributed to the medical profession in India for that decision. It is quite another matter, however, to anticipate with the writer of the letter that the inevitable result will be disaster to "the welfare of 320 millions of our fellow subjects." The decision of the G.M.C. affects only a small percentage of the medical profession in India—for example, a few of the graduates of only four universities—who may wish to settle in practice in Great Britain or one of the Colonies, or to gain further experience by attending post-graduate courses of instruction in Great Britain. There are nine university examining bodies with affiliated medical colleges in India, and the degrees conferred by only four were recognized. The great mass of the medical profession in India is composed not of graduates, but of licentiates trained in Governmental medical schools. These are completely outside the range of vision of the General Medical Council of Great Britain. It is inconceivable that the graduates of the five unrecognized universities, and the more numerous licentiates of the medical schools, will cease or curtail their efforts in the cause of humanity because the decision of the G.M.C. has temporarily placed all graduates of Indian universities on an equal footing in the British Empire outside India.

Sir T. C. Evans rightly stresses the good work done by the medical practitioners in India in the past; in this

respect they will not be influenced by any action of the General Medical Council of Great Britain. They realize perfectly that the function of the G.M.C. is to protect the British public, and that recent action has been taken solely in the fulfilment of this function. It is unfortunate that the practically world-wide attention paid to the standard of medical education since the great war has coincided with the increasing Indianization of the medical services in India. In certain quarters this has given rise to the impression that there is a cause and effect relation. A slight acquaintance with the course of medical education will reveal the absurdity of this impression. In India I have no hesitation in asserting that the criticisms made by the G.M.C. are made without racial bias, and would have applied with equal force to pre-war conditions in the medical colleges. Racial questions naturally exist in India, and racial prejudice is not confined to Indians. It has assumed a rather more prominent position than it deserves owing to the noisy extremists of both sides. Between these two extremes is a body of level-headed individuals, both Indians and British, working together solely in the interest of India. Among them racial prejudice tends to disappear. They will realize that the General Medical Council of Great Britain in executing its duty to the general public of the Empire cannot be deflected therefrom through fear of any possible indirect political effect in India. They also can utilize the decision of the G.M.C. for the benefit of India.

Sir Norman Walker, after his recent visit, issued a very valuable report, which has deservedly received the widest attention in India. He also recommended a temporary extension of the period of recognition of the four university degrees. Speaking for Madras, I can say that every recommendation he made that could be carried out provincially was acted on. The period of recognition was again temporarily extended. The facilities for teaching now are certainly no worse, but probably better than they were under recognition. The main defect lies, therefore, in the arrangements for routine inspection of the medical colleges. The G.M.C. suggested as a remedy the establishment of a General Medical Council for India, and as a stopgap the appointment of an Educational Commissioner. The proposal for the establishment of an All-India Medical Council did not originate with the G.M.C. of Great Britain; it has been pressed by many men in India for some years, because the standard of medical education in India cannot depend on an outside body; it must be based on a strong General Medical Council in India. If the action of the G.M.C. of Great Britain assists in the realization of this aim that body will have earned the gratitude of every Indian and Britisher who has at heart the welfare of India. —I am, etc.,

F. H. G. HUTCHINSON,
Major-General I.M.S.

Bedford, March 31st.

RESEARCH IN MEDICINE.

SIR,—Although we must feel grateful for the frank opinions expressed by Sir Thomas Lewis in the *Journal* of March 15th (p. 479), those who, although engaged in clinical teaching and practice, have tried through their clinical work and observations to advance the methods of curing diseased *individuals cannot absolutely agree*: (*a*) that "the fertility of the method of observation greatly declines by a process of exhaustion"; (*b*) that the preoccupation of a practising physician is "mainly diagnostic"; (*c*) that the chief goal of the clinician is "to place a label correctly."

(*a*) The opinion that the method of observation—that is, the method of Hippocrates—has given what it had to give, and is no longer of great use, has been expressed in various periods of the history of medicine. It was expressed for the first time by a group of Greek physicians of the fourth century B.C.—the Rationalists, immediate successors of Hippocrates—later by Galen, and nearer to our days by Claude Bernard and the German physiological school of the second quarter of the nineteenth century. Not only has the Hippocratic method of observation survived these attacks, but it has developed more and more, and no other method can be applied for the most important part in *medical research—that is, for the study of the action of* therapeutic agents on the diseased individuals.

(*b*) Diagnosis is far from being the only object in medicine; in fact the word "medicine," and more precisely the Greek word *ἰατρική*, means "all that belongs to *cure*." Our main goal, therefore, is treatment, and diagnosis from a medical point of view can only be considered as part of treatment. Since the days of the first Greek physicians—the physicians of the school of Croton of the sixth century B.C.—diagnosis, prognosis, and treatment have constituted the holy trinity of medicine.

(*c*) Although we hear very often the reproach that we are mainly concerned with "placing a label on a patient," this is far from being the case. If we except certain physicians of the late eighteenth century, like Sauvages and Pinel, and also some physicians of the anatomical school of Vienna of the early nineteenth century, the object of the physician has always been to diagnose and cure *individuals* and not diseases. Diseases were introduced by the physicians of Cnidos of the fifth century B.C. as a means of classification of morbid phenomena. We need this classification for our study of the morbid phenomena. We study "diseases," we classify our research with the labels of "diseases," but we diagnose and treat individuals. It is true that the splitting of internal medicine into narrow specialties such as "diseases" of the heart, of the digestive system, of the nervous system, of the thorax, has given rise to the erroneous idea that we try to diagnose and treat "diseases"; but this division of medicine into narrow specialties has only been a temporary error in the history of medicine. It is disappearing in our day, and the contemporary internist does not run after fictitious and non-existent diseases, but, as in the days of Hippocrates, he tries to understand, to diagnose, and to treat the diseased individual as a whole.—I am, etc.,

A. P. CAWADIAS.

London, W 1, March 25th.

SIR,—I was very greatly interested in Sir Thomas Lewis's paper, and will try to emulate his frankness. I entirely agree that much that is published on clinical medicine is valueless, but I do not agree that all would be well if we were to use the "exact methods" which Sir Thomas employs. Clinical questions are too complex and have too many sides to permit their being truly expressed by such a simple formula as is required by exact science. It is often the case that one or two points which only deal with a fraction of a complicated problem are worked out carefully and painfully, leaving great gaps unexplored to be bridged over usually by arbitrary assumptions when conclusions in regard to the whole problem are drawn. The danger of too close attention to detail is always that one may be unable to see the wood for the trees. The circus theory is plausible enough if one considers excitation waves and nothing else, but as soon as an attempt is made to fit in this theory to the broad clinical features of fibrillation it becomes an absurdity. I have been acquainted with volumes full of charts and tables which were valueless, and I have known a column of printed matter in a popular journal adding a new fact to our knowledge. It established itself as a fact because it fitted in with all the other facts known on this particular subject. Mackenzie was a successful exponent of this method.

I do not blame our editors for the present state of affairs. A German journal for heart disease includes among its editors two very eminent physiologists, but nobody can suggest that its standard is higher than that of our great weekly journals. A professional editor is a specialist at his job, and above all he is an unbiased person, but the type of research worker who is strongly prejudiced in favour of a particular method, and whose suspicions are so pronounced as to permit him to trust neither the past nor the present generation of clinicians, is the last man to judge other people's work.

The present position is not satisfactory. Would a separation of the research from the consulting physician improve matters? The research physician will have all cases which interest him, and he will return them to the consulting physician as soon as they become "routine" cases; presumably the results of the special investigation will be

available. What function is left for the consulting physician? The research physician will have the most knowledge and the greatest facilities for the type of disease he is investigating; why should he not take complete charge of this type of case? It takes a long time to "arrive" scientifically; proper facilities for work are necessary, and the position of the research physician will have to be reasonably secure to be of use. How are we to recognize the *budding research genius?* We can easily imagine the level which a profession will reach when all that is left to the practising physician is the exploitation of the discoveries of the research physician for commercial gain. *Sir Thomas Lewis* was a very successful researcher while he was a consulting physician, and his subsequent career only proves that a research physician with a passion for exact methods is compelled to turn himself into a physiologist.

The problem of material remains. The provision of general wards for internal medicine is really no longer a tenable proposition, for internal medicine is ready to be divided up into four or five branches. We ought to aim at creating as large departments as possible in each branch, even if this entails the combination of several hospitals in one unit. The department must not be split up into several units, but it ought to have only one head. A department of heart disease containing three to five hundred beds in which all London cardiologists would work together under a definite direction, with proper laboratory facilities, would doubtless accomplish a great deal. *Divorce the practice of medicine from research* and it will become even more empirical than it is at present. The only way to raise the standard of our profession is to make research the sole qualification for all appointments.—I am, etc.,

Liverpool, March 21st. I. HARRIS.

RELATION BETWEEN GLANDULAR AND PULMONARY TUBERCULOSIS.

SIR,—In your issue of March 29th Dr. George Hurrell asks for statistics bearing on the relation between cervical glandular and pulmonary tuberculosis. Perhaps some figures from the post-mortem room of a children's hospital may be of interest.

Among 107 fatal cases of pulmonary and thoracic gland tuberculosis in children under 12 years of age examined post mortem in the Royal Edinburgh Hospital for Sick Children, 35 (32.7 per cent.) showed tuberculous lesions (exclusive of acute miliary tubercles) macroscopically detectable in the cervical glands. In 14 of these the supraclavicular glands, alone of the cervical group, were affected, and they were in close relation to, and were probably infected from, grossly enlarged glands in the thorax. In most of these 14 cases the enlargement of the supraclavicular glands was sufficiently great to be obvious on *clinical examination.* In the other 21 cases the upper cervical glands were affected alone or in combination with the inferior group. In several cases evidence of tuberculous infection was found only in the tonsillar gland on one or both sides. In 2 of the 21 cases there was advanced caseation with considerable enlargement. In the other 19 the enlargement was so slight that it was unlikely that "gross glandular disease" would have been diagnosed during life: the glands showed only small caseous foci, which, to judge by appearances, were of much more recent origin than the disease in the chest. As 18 of these 21 cases had gross open tuberculosis in the lungs, it seems probable that the efforal gland infection was secondary to the pulextremely difficurred by way of the tonsils, from in- f believe Mr. King ng there. Only one case had been tance of taking precious cervical lymphadenitis. of the risks associated gross visible swellings" (Dr. domestic practice. were present in about 15 per I would further direct id not indicate anything like Mr. King's paper that an c d involvement. At the alysis of the type of labour w clearly that in only al fever in the cases admitte ination warrant the s the surprising fact that th infection may have the highest rate [46.5 per ce tions, while 'failed forceps' was this the most maximum amount of manipu cts. d by haemolytic streptococci i

Among a further series of 11 fatal cases in which the cervical glands were grossly caseous, only one showed any tuberculous lesions (apart from acute miliary tubercles) within the thorax. These took the form of small scattered subacute foci in the lungs (which probably could not have been detected during life), without involvement of thoracic glands.—I am, etc.,

Edinburgh, March 30th. A. R. MACGREGOR, *Pathologist, Royal Edinburgh Hospital for Sick Children.*

SIR,—Dr. George Hurrell suggests that statistics on this important point would prove interesting. In the *British Medical Journal* of February 25th, 1922, Mr. W. J. Fanning and I published some particulars in regard to 3,220 patients admitted to Kelling Sanatorium between the years 1905 and 1919. Of that number 4 per cent. had previously suffered from glandular abscesses. This number agrees closely with Dr. Hurrell's findings as published in his letter to your *Journal* of March 29th (p. 618). But I am bound to add that in our communication I went on to say that "our strong impression is that this understates the frequency of this association." At the time I had in my mind more than one case of acute pulmonary tuberculosis which had immediately followed treatment of glandular enlargement by operation or by tuberculin, and which was too severe for removal to a sanatorium.—I am, etc.,

Norwich, March 31st. F. W. BURTON-FANNING.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—Permit me to make a few comments on the matter at issue between Drs. W. Arnott Dickson and E. Weatherhead—namely, the subcutaneous tuberculin test. Dr. Weatherhead (March 15th, p. 516) advocates this as "the only tuberculin test which is now commonly held to have any real diagnostic value." I am not sure that this view is commonly held; but I certainly hold it. Dr. Dickson (March 22nd, p. 567) does not avail himself of this test at all, because of the supposed "risk of a dangerous focal reaction." But Dr. Weatherhead's statement, as I understand it, was only to the effect that giving test doses to patients whose mouth temperature runs as high as 99.2° F. involves some risk. I do not give test doses to patients when their temperature on the day for injection, or the preceding day, has exceeded 99°; and I have found no dangerous focal reactions resulting.

I have used the subcutaneous tuberculin test as the deciding factor in diagnosis in 764 doubtful cases, spread fairly evenly over the time from January, 1913, to the present. These included cases of haemoptysis, pleurisy with non-purulent effusion, fibrosis, etc., in which the sputum, if any, did not contain tubercle bacilli. My method is to give old tuberculin human (T) 0.0002 c.cm. for the first dose, and, if no reaction results, to double the dose each time up to six doses, before pronouncing the result negative. In 454 of the 764 cases (almost 60 per cent.) a positive reaction was obtained. In these cases the patient was informed that the test showed that it was worth while having a course of treatment extending over at least six months. The great bulk of those who took this advice got quite well. In 34 of these 454 cases tubercle bacilli were subsequently found in the sputum. The 310 patients in whose cases the test gave a negative result were assured that they were not suffering from tuberculosis. It is a great comfort to the patient and his friends when one can give such an assurance: the elimination of 40 per cent. of doubtful *afebrile* cases is also exceedingly useful from an administrative point of view.

It is very important to know whether such an assurance is well founded. In 6 of the 310 negative cases tubercle bacilli have subsequently been found in the sputum: a reasonable inference is that a negative result does not indicate that the patient is immune to tuberculosis for life, but only that he was not suffering from tuberculosis at the time of the test. In three cases, however, the interval between the last of the negative test doses and the finding of tubercle bacilli in the sputum was less than six months.

Even if we regard these three cases as instances of failure of the test for practical purposes, the percentage of failures is rather less than 1 per cent.; which is very small compared with the percentage of failures of other specific tests which are highly thought of, such as the Wassermann test for syphilitic conditions. If Dr. Dickson would use the subcutaneous tuberculin test, I believe he would find, as I have, that not all cases of pleurisy with non-purulent effusion are tuberculous.—I am, etc.,

Belfast, March 24th. JOHN R. GILLESPIE.

SIR,—I should like to thank Dr. Arnott Dickson, whose lecture on the diagnosis and treatment of pulmonary tuberculosis appeared in your issue of March 1st, for his masterly exposition of his subject, which many other busy practitioners like myself must be grateful for. There are, however, two points barely touched upon which, if enlarged upon by the lecturer, would, I imagine, be of great interest.

The first is wrapped up in his decision, "I shall say nothing about tuberculin treatment, which is not being used to any extent in pulmonary tuberculosis." I would like to ask, "Why not?" As a general practitioner, fated to meet with every phase of pulmonary tuberculosis from the suspect to the last-stage consumptive, and conscious of the responsibility that attaches to a medical practitioner in a British colony on foreign soil, I have not been able to keep my head so resolutely turned away from the promise held out by some men of high standing—namely, M. Spahlinger of Geneva, Dr. Camac Wilkinson of London, and Dr. Crofton of Dublin—that salvation may be found in an appreciable number of cases from the administration of tuberculin, as one gathers from Dr. Dickson's lecture the majority of the profession have apparently been able to do. There is a world war being waged against tuberculosis, but it would seem that, in spite of the positive evidence of the value of tuberculin treatment in certain cases, such as those above referred to, there are many "conscientious objectors" to its use among general practitioners. I would therefore ask, as a general practitioner, if Dr. Dickson cannot give a less non-committal verdict than is tacitly conveyed in the words quoted from his lecture, by answering the direct question, "Why not?"

The second point on which a little more practical detail would assuredly be appreciated, again on the question of treatment, is dismissed with the bare mention, "the enormously important psychical factor." Presumably the psychical factor is most systematically exploited in those institutions in which occupational treatment is routine. It would help the general practitioner considerably to know what incentive to transcend the bacillary stigma the author advocates for those patients who for one reason or another are unable to embark on institutional treatment.—I am, etc.,

Nice, March 12th. F. A. HOBT.

PREDESTINATION IN DISEASE.

SIR,—I have read with interest Dr. Langdon Brown's lecture entitled "Predestination in disease" (*Journal*, March 22nd, p. 525). With regard to his remarks on pernicious anaemia and subacute combined degeneration, however, there are some points to which many will take exception.

In the first place, Castle's work is misquoted. To state that "he concluded that this acid digest stimulated the patient's liver to produce something which prevented the breakdown of red corpuscles" is incorrect, as reference to his published work will show.[1] Secondly, the conception of subacute combined degeneration as of "toxic" origin has yet to be proved. Like pernicious anaemia,[2] it is much more likely to be a deficiency disease.[3] Dr. Langdon Brown states: "Once degeneration of the cord has occurred, treatment by liver is, of course, unable to restore it, but in the earlier stages, when there are only toxic symptoms and before structural changes have occurred, this remedy is of decided benefit." Such a statement gives an erroneous impression. Actually the duration of the disease before treatment was commenced in our seventeen improved cases varied from three months to two years, the average period being 13.7 months; ten of the patients were bed-ridden, while the remaining seven had such great difficulty in walking that they were confined to the house. These facts, in association with the definite physical signs analysed elsewhere, scarcely suggest that only "toxic symptoms" and no "structural changes" had occurred.

Thirdly, upon what grounds does Dr. Langdon Brown make the statement that "most neurologists would not accept the diagnosis in some of the cases reported there [Newcastle] by Ungley and Suzman"? The evidence upon which the diagnosis of these cases was based has been fully analysed, and cannot be repeated here. It is enough to say that it has been accepted by foremost neurologists and published in *Brain*.[3] Lastly, in view of Castle's findings and of the fact that HCl has apparently no effect on either blood or cord symptoms, and does not affect the response to liver,[3 4] it is difficult to see how its administration to relatives of cases of pernicious anaemia is going to be of any help in preventing the disease. Even digestion with HCl and commercial pepsin seems incapable of forming the specific factor from meat protein, although normal gastric juice has this property, as Castle[4] has shown.—I am, etc.,

Newcastle-upon-Tyne, March 25th. CHARLES C. UNGLEY.

[1] Castle, W. B.: *Journ. Clin. Invest.*, 1928, 6, 2; *Proc. Roy. Soc. Med.*, 1929, 22, 1213; *British Medical Journal*, 1929, i, 1120; *Amer. Journ. Med. Sci.*, 1929, 178, 781, and 764.
[2] Whipple, G. H.: *Journ. Amer. Med. Assoc.*, 1928, 91, 863. West, R.: *Ann. Int. Med.*, 1929, 3, 122; also Minot, and others.
[3] Ungley, C. C., and Suzman, M. M.: *Brain*, 1929, 52, 271; Ungley, C. C.: *Newcastle Med. Journ.*, October, 1929.

NON-ABSORBENT COTTON-WOOL COCAINIZATION.

SIR,—In my remarks on the anaesthetization of the larynx with a 20 per cent. solution of cocaine, at the recent meeting of the Section of Laryngology, I insisted on a detail which is not mentioned in the report of the proceedings (March 29th, p. 593). Though in a general way the difference between absorbent and non-absorbent cotton-wool seems very trivial, it is one of great importance when strong solutions of dangerous drugs are employed. I urge most strongly that the swabs used for applying solutions of cocaine or its congeners should be made of non-absorbent—non-defatted—cotton-wool instead of absorbent. It is easy to realize that we want a solution on the surface of the swab, where it touches the mucous membrane, and not in the interstices, where it is not required, and from which the excess of the solution can be squeezed out into the lumen of the cavity. This is from one point of view mere waste, and from another a source of dangerous intoxication. The simplest experiment with the two kinds of cotton-wool makes this quite evident.—I am, etc.,

London, W., April 1st. JAMES DUNDAS-GRANT.

PERCAIN AS A SURFACE ANAESTHETIC.

SIR,—Messrs. Norman C. Lake and C. Jennings Marshall in their most interesting paper, "Clinical experiences with percain" (March 15th, p. 488), refer only briefly and with little enthusiasm to its effect as a surface anaesthetic.

Apart from stating that in a dilution of 1 in 1,500 for the urethral mucosa they have not found percain as effective as the cocaine chloretone combination (concentration not stated), the authors do not touch the question of its use as a surface anaesthetic. In my opinion this constitutes one of its chief merits, and the only one from the rhino-laryngologist's point of view. I am aware that extreme caution is necessary in introducing toxic substances into the urethra, but would suggest that the great dilution (1 in 1,500) of percain used hardly constitutes a fair test. I understand that a 2 to 4 per cent. novocain solution is often employed for this purpose. Assuming that percain is twenty times as toxic as novocain, the corresponding solutions would be 1 in 1,000 to 1 in 700, which is the strength recommended by the makers. Mr. J. Llewellyn Davies informs me that in his experience the 1 in 1,000 percain solution gives sufficient anaesthesia of the urethra and bladder to enable him to apply diathermy to papillomata of the bladder through an operating cystoscope.

Through the courtesy of the Clayton Aniline Company I was supplied with a quantity of percain about three

[4] Myers, G. H., and Richardson, W.: *Journ. Amer. Med. Assoc.*, 1926, 87, 923.

months ago in order to test its efficiency when applied to the mucous membrane, particularly that of the nose. I had 1 per cent. and 2 per cent. solutions of percain made up according to the directions supplied; to each 50 c.cm. of the solution was added 1/2 c.cm. adrenaline (1 in 1,000). These solutions I have used in both my hospital and private practice in place of the 5 per cent. and 10 per cent. cocaine hydrochloride solutions. I applied the percain by means of ribbon gauze or cotton-wool tampons, which were just wet but not dripping. In all cases I have achieved satisfactory anaesthesia. The operations have included partial resections of turbinals, removal of polypi, ethmoidal curettages, and intranasal drainage of the maxillary antrum. The patient in each case assured me that he felt no pain, but occasionally was aware that I was touching something inside his nose. In the more extensive intranasal procedures I applied a tampon of 10 per cent. percain to the mucous membrane in the immediate vicinity of the spheno-palatine ganglion for five minutes. Clinically it is not easy to judge depth of surface anaesthesia, but my impression is that percain is adequate. It seems to act in less time than does cocaine, and to give more prolonged anaesthesia.

Three of my patients complained of faintness immediately after the percain was applied, but, curiously enough, all three were adults. This faintness was never accompanied by excessive pallor, slowness of pulse, or shallow breathing. After giving a stimulant drink I was able to proceed without interruption in each case. The time that elapsed between the application of the percain and the faintness was too short for a sufficient quantity of this drug to be absorbed. The psychological factor in these cases I believe might with fairness be held responsible. I have had no untoward effects in children. The makers suggest that mucous membrane is not permeable to this drug, although profoundly affected by it; and that percain does not reach the general circulation when applied to the membrane. The quantity of percain used in rhino-laryngology is not likely to reach the toxic threshold (0.01 gram per kilogram body weight), and if the above claim is correct it would provide an added safeguard.

If one may be permitted to draw conclusions after so short a trial I would say:

1. That percain procures surface anaesthesia in mucous membrane; and that of all the drugs for which a similar claim has been made, apart from cocaine, it is the only one that does this satisfactorily.

2. That with certain refinements of technique—possibly the use of stronger concentrations—it is not unlikely that percain will oust cocaine from rhino-laryngological practice.

3. That caution is to be exercised in using it, in view of its admitted toxicity (twice that of cocaine), although in rhino-laryngology the quantities used are not likely to exceed 20 per cent. of the stated toxic dose.

It is not my intention to minimize the advantages that percain employed in local infiltration has over other local anaesthetics, but to emphasize what I believe to be of much greater and far-reaching importance—namely, its value as an effective cocaine substitute.—I am, etc.,

London, W.1, March 18th. O. POPPER.

MARGARET MACDOWALL.

SIR,—I desire to join Sir Maurice Craig in his appreciation of the late Miss Margaret Macdowall. I have known her from the time she started her school at Ealing, and it has been my privilege to pay regular visits to her since she moved to Burgess Hill. She was not only the recognized leader amongst those who have devoted their lives to the practical training of mental defectives, but she trained a band of disciples to follow in her footsteps, and many of the leading teachers in this country at the present day owe their enthusiasm and knowledge to her personality and teaching. Her methods were primarily based upon the principles formulated many years ago by Séguin, and introduced into this country by the late Dr. Shuttleworth, of whom she was almost a lifelong friend. She was, however, no slavish adherent to any system, but devised many valuable practical methods of her own. The keynote of her success was her close study and intimate knowledge of the special aptitudes and disabilities of each pupil committed to her charge, and her unremitting and patient attention to their individual needs. I have never met a teacher who knew more about her pupils than did Miss Macdowall, nor one who was capable of bringing more patient and sympathetic understanding to bear in developing them to the utmost limit of their capabilities. All that she did was done wholeheartedly, unselfishly, and unobtrusively. There will be many who will miss her kindly sympathy, and her death is a serious loss to the cause to which she had devoted her life.

She was the author of a small but most useful practical guide to training methods. This has now been out of print for some time, and I am very glad to hear that the publication of another edition is contemplated. It would form a very fitting memorial of her work.—I am, etc.,

London, W., March 25th. A. F. TREDGOLD.

"A SCOT IN WALES, 1600-1620."

SIR,—In reference to Miss Hall's account of Alexander Reid (March 22nd, p. 558) we should not forget the active part he took in the question as to the possibility of excising the spleen, and his own successful operation on a dog, probably the first excision in this country—which settled the matter.

Like his fellow countryman, Peter Lowe, he had studied everywhere, and in London he rose to be the chief teacher of surgery at the time of Woodall and Cooke. His lectures and treatises seem to me a great advance on most of his predecessors.—I am, etc.,

Clifton, March 25th. G. PARKER.

HENRY HICKMAN MEMORIAL.

SIR,—The Henry Hill Hickman Memorial Committee has to report that the total sum received amounts to £256 10s. 6d., and that the appeal is now closed.

Hickman's family grave and tombstone have been restored and renewed, and a tablet engraved by Mr. Eric Gill is to be unveiled in Bromfield Parish Church, Ludlow, by Sir StClair Thomson, M.D., F.R.C.S., late President of the Royal Society of Medicine, on April 5th next, at 2.45 p.m. This will be followed by a dedication by the Right Rev. the Lord Bishop of Hereford.

The balance of this fund will be devoted to establishing and endowing a medal for research and original work of merit in connexion with anaesthesia. Further particulars, including the names of the trustees appointed, will be published later.

The committee desires to express its cordial thanks to the numerous colleges, faculties, learned societies, and individuals who have so readily supported this appeal.—We are, etc.,

DAWSON OF PENN.
STCLAIR THOMSON.
V. WARREN LOW, *Hon. Treasurer.*
CECIL HUGHES, *Hon. Secretary.*

London, March 29th.

*** The list of contributors to the fund is as follows:

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Dr. H. Charles, Sir G. Lenthal Cheatle, Dr. R. J. Clausen, Dr. F. W. Cock, Dr. S. W. Coffin, Mr. F. Coleman, M.C., Dr. C. Corfield, Miss E. Courtauld, M.D., Dr. H. P. Crampton, Mr. A. W. Cuff, F.R.C.S.
Mr. W. Dall, Dr. A. S. Daly, Lord Dawson of Penn, Dr. E. V. Dunkley.
Dr. W. J. Essery, Dr. F. T. Evans.
Mr. H. A. T. Fairbank, F.R.C.S., Dr. H. P. Fairlie, Dr. H. W. Featherstone, Mrs. Fitton, Dr. A. C. Flemming.
Dr. E. W. Gandy, Dr. H. B. Gardner, Dr. A. G. Gibson, Mr. Richard Gill, F.R.C.S., Dr. T. S. Good, Mr. E. L. Pearce Gould, F.R.C.S.
Dr. C. F. Hadfield, Dr. J. K. Hasler, Dr. C. L. Hewer, General T. E. Hickman, Dr. C. W. M. Hope, Dr. Maynard Horne, Dr. Cecil Hughes.
Dr. A. E. W. Idris.
Miss E. M. Joyce, Prebendary F. Wayland Joyce, Dr. S. Johnston.
Dr. T. P. C. Kirkpatrick.
Mr. T. P. Legg, F.R.C.S., Dr. A. Livingstone, Mr. C. E. Lloyd, Miss E. M. Lloyd, Dr. F. W. Longhurst, Dr. C. J. Loosely, Dr. W. A. Low, Mr. V. Warren Low, F.R.C.S.
Dr. W. J. McCardie, Dr. N. McDonald, Dr. I. W. Magill, Dr. A. W. Matthew, Dr. Z. Mennell, Mr. and Mrs. Moriarty, Dr. G. I. Moriarty.
Mr. G. Northcroft, The Bishop of Norwich.
Mr. C. Max Page, F.R.C.S., Dr. G. R. Phillips, Dr. H. R. Phillips, Dr. M. Phillips, Dr. K. B. Pinson, Dr. H. Pinto-Leite, Dr. E. Playfair, The Earl of Plymouth, Dr. L. Powell, Mr. F. L. Pradier.
Dr. H. A. Richards, Dr. A. White Robertson, Sir Humphry Rolleston, Bt., Mrs. Rotton, Dr. E. S. Rowbotham, Dr. J. F. Ryan.
Sir Percy Sargent, F.R.C.S., Mr. C. Schelling, Sir F. E. Shipway, M.D., Dr. J. H. Shirley, Mr. H. F. Shuker, Mr. H. H. Shuker, Mrs. Sievers, F. W. Sievers, Esq., R. F. Sievers, Esq., Dr. Harold Sington, Miss Skeather, Dr. H. R. Spencer, Dr. W. Stobie, The Rev. H. Summerhayes, Mr. John Sumner.
Dr. Edward Tate, Dr. L. K. Thomas, Miss Blanche Thompson and Collections, Mr. C. A. Thompson, Miss E. A. Thompson, Mr. F. H. Thompson, Mr. G. Hickman Thompson, Miss Isabel Thompson, Sir StClair Thomson, M.D., F.R.C.S., Sir J. W. Thomson-Walker, F.R.C.S., Dr. J. F. Trowby, Mr. Wilfred Trotter, F.R.C.S.
Dr. E. W. Ainley Walker, Dr. Henry S. Wellcome, Sir William Wheeler, Mr. A. J. Wright, F.R.C.S.

Obituary.

DR. JOHN DIXON died, on March 31st, at his home in Jamaica Road, Bermondsey, at the great age of 98. He came of a long-lived Yorkshire family, and, so far from being bedridden, was able to attend, with obvious relish, the Buckston Browne annual dinner of Fellows and Members of the Royal College of Surgeons of England last November. He was born at Hessle, in the West Riding, and after apprenticeship to a country surgeon entered Guy's Hospital in 1851, graduating M.D. at St. Andrews University in 1854, in which year he also obtained the diplomas of M.R.C.S.Eng. and L.S.A. He was admitted a licentiate of the Royal College of Physicians in 1861. For many years he had a large practice in South London, and combined with this the work of medical officer of health for Bermondsey, surgeon to the Surrey Dispensary, Poor Law district medical officer, public vaccinator, and certifying factory surgeon. He was also honorary surgeon to the 10th Surrey Volunteers from 1859 to 1869, was appointed a Justice of the Peace for the County of London in 1901, and became Master of the Loriners' Company in 1911. Dr. Dixon is believed to have been the oldest Freemason in the country, if not in the world, having been initiated in the Mount Lebanon Lodge as long ago as January, 1856. He was installed Master in 1860, the centenary year of that Lodge, and again half a century later. During his seventy-four years of active connexion with the craft Dr. Dixon held many high offices. Entering the Royal Arch Degree in 1857, he was a founder of the Mount Lebanon and Caveac Chapters, Past Assistant Grand Director of Ceremonies of England, and Past Grand Standard Bearer of England. He was also a founder and first Master of the Southwark Mark Lodge, and was installed again in 1926, when he was made Past Grand Senior Overseer of England. John Dixon was born in the year that the British Medical Association was founded. He joined it in 1874 and remained a member until his retirement from active practice. Up to his last illness he was a heavy cigar smoker and enjoyed dining out. He always spoke of Bermondsey as a very healthy district, and boasted that he had never been laid up by ill health.

DR. PEVERELL SMYTHE HICHENS, who died at Guernsey on March 29th, at the age of 59, received his medical education at St. Thomas's Hospital, and graduated M.B., B.Ch. Oxon., in 1895, proceeding M.D. in 1903. He obtained the diplomas M.R.C.S., L.R.C.P., in 1896, became M.R.C.P. in 1899, and was elected F.R.C.P. in 1911. After holding the posts of house-physician to St. Thomas's Hospital and assistant resident medical officer at the Hospital for Consumption and Diseases of the Chest, Brompton, he practised at Northampton and was appointed physician and later consulting physician to the Northampton General Hospital; he was also consulting physician to the Northants Sanatorium. He contributed to our columns in 1903 an article on the sanatorium treatment of pulmonary tuberculosis, with special reference to the Nordrach methods, and subsequently published reports of clinical cases. He held a commission as lieutenant-colonel R.A.M.C.T.A.; during the war he served in France at the casualty clearing station of the 1st South Midland Division, and subsequently at the 35th General Hospital. He removed to Guernsey about six years ago, and was a member of the Guernsey and Alderney Division of the British Medical Association.

The following well-known foreign medical men have *recently died*: *Dr. SCORITCHENKO-AMBODIE*, the oldest professor in the academy of military medicine at Leningrad; *Dr. AMILCARE BIETTI*, director of the ophthalmological clinic at *Bologna*, aged 60; and *Dr. DOMINGO CABRED*, a psychiatrist of Buenos Aires.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

A MEETING of the subscribers of the Naval Medical Compassionate Fund will be held at 3.30 p.m. on April 24th at the Medical Department of the Navy, Queen Anne's Chambers, Tothill Street, Westminster, S.W.1, to elect six directors of the Fund.

DEATHS IN THE SERVICES.

Fleet Surgeon William Redmond, R.N. (ret.), died at Vancouver, on February 15th, at the great age of 80. He was educated at Trinity College, Dublin, and at the Richmond Hospital in that city, and took the L.R.C.S.Ed. in 1860, and later the L.R.C.P.Lond., after which he entered the Navy. He attained the rank of fleet surgeon on August 8th, 1881, nearly half a century ago.

Surgeon Captain Oswald Rees, R.N. (ret.), died at Abbotsbury, Dorset, on February 12th. He was educated at Glasgow, where he graduated as M.B. and C.M. in 1889, and as M.D. in 1894. After filling the posts of resident assistant of Glasgow Western Infirmary, and of senior resident officer of Macclesfield General Infirmary, he entered the Navy. He attained the rank of surgeon commander on May 15th, 1909, and retired, with an honorary step as surgeon captain, on April 12th, 1920. He then went into practice at Abbotsbury, where he was medical officer and public vaccinator of the Abbotsbury district of Weymouth Union and of the Long Bredy district of Dorchester Union. In 1923 he became a member of the county council for the Abbotsbury Division and a member of the general purposes health and housing committees. He also rendered great service on the Dorsetshire Insurance Committee, but, owing to ill health, had to resign last year. From 1925 to 1926 he was chairman of the West Dorset Division of the British Medical Association. In 1897 he had served as surgeon of H.M.S. *Jackdaw* on the River Niger, and received the Sir Gilbert Blane medal for his journal; in 1901–4 he was staff surgeon at Simon-town Royal Naval Hospital, and received the South African medal for his services in the war; in 1905–7 he was secretary of the Admiralty Committee on Deep Diving, and received the thanks of the Admiralty for experimental work carried out in connexion with this committee. In 1908–9 he served as staff surgeon of H.M.S. *Fox*, employed in blockading the Warsangli coast of Somaliland; and in 1909–10 in suppression of traffic in firearms across the Persian Gulf, during which time four dhows were captured; in April and May, 1909, he formed one of the party landed for the occupation of Bushire and the protection of the Residency; the officers and men so employed received the thanks of the Foreign Office for the occupation of Bushire, and of the Colonial Office for service in Somaliland.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE Army and Air Force Annual Bill and the Coal Mines Bill have been before the House of Commons this week. On March 30th the House discussed maternity and child welfare, and the status of pharmacists under the Poor Law, besides other subjects. On Friday the Unemployment Insurance Bill was down for second reading.

In the House of Lords the Workmen's Compensation (Silicosis) Bill was due to be read a second time on April 3rd.

The Budget will be opened in the House of Commons on April 14th, and the House will adjourn for Easter from April 17th to April 29th.

It is understood that when the report stage of the Mental Treatment Bill is taken in the House of Commons Conservative medical members of Parliament will concentrate on an attempt to remove the prohibition against unpaid members of the Board of Control and to secure the provision of medical assessors for applications respecting actions against medical men under the Lunacy Acts.

The text of the Housing (No. 2) Bill was issued this week. This is Mr. Greenwood's bill to accelerate slum clearance and the reconditioning of districts which are lapsing into slums. It does not apply to Scotland, which is to be dealt with by a separate bill. Another bill is promised on town-planning.

Conferring this week with Labour members of Parliament who sit in the Committee on the Road Traffic Bill, Mr. Morrison indicated that the support for the proposed insurance contribution in aid of hospitals in which motor casualties are treated was so great that he was constrained to accept this amendment and to strengthen it.

On March 31st Dr. Vernon Davies presented a bill to amend the Poor Law Officers Superannuation Act, 1896, and it was read a first time.

Mental Treatment Bill.

COMMITTEE STAGE CONTINUED.

A warning that the committee stage of the Mental Treatment Bill ought to close on April 1st was given, on March 27th, by Mr. GREENWOOD, who told the committee that if progress was further delayed he would have difficulty in finding Parliamentary time for the concluding stages of the bill. During the same sitting Mr. Greenwood gave notice of an important amendment dealing with the civil and criminal liability of medical men. This will be moved during the report stage.

The committee commenced its sitting on March 27th by approving Clause 15 of the bill, dealing with the power of the Board of Control to make rules, and with the laying of these rules before Parliament. Mr. Greenwood gave an assurance that these rules would be placed in the hands of local authorities before they were *put into operation*.

Clause 16 of the bill runs as follows:

(1) The principal Act and Section sixty-three of the Mental Deficiency Act, 1913, shall have effect and, subject as provided in this Section, be deemed always to have had effect, as if the following Section were substituted for Section three hundred and thirty of the principal Act:

> "(1) Where a person has presented a petition for a reception order, or signed or carried out, or done any act with a view to signing or carrying out, an order purporting to be a reception order or any report or certificate purporting to be a report or certificate under this Act, or has done anything in pursuance of this Act, he shall not be liable to any civil or criminal proceedings whether on the ground of want of jurisdiction or on any other ground unless he has acted in bad faith or without reasonable care.
>
> "(2) If any proceedings are taken against any person for presenting any such petition or for signing or carrying out, or doing any act with a view to signing or carrying out, any such order, report, or certificate, as mentioned in Subsection (1) of this section or doing anything in pursuance of this Act, such proceedings shall, on application to the High Court, be stayed on such terms as to costs and otherwise as the Court may think fit, unless the Court is satisfied that there is substantial ground for alleging that such act was done in bad faith or without reasonable care."

(2) This Section shall not affect any civil or criminal proceeding pending at the commencement of this Act.

In moving to add "application or recommendation" after "any report," Mr. Greenwood said these words would cover the new procedure under the bi[illegible] in the case of voluntary boarders and [illegible] in respect of minors. The committee agreed to the amendment.

Dr. MORRIS-JONES moved to substitute for the words "without reasonable care" the words "negligently and without reasonable and probable cause. Provided that in the case of a trial with a jury the question of reasonable or probable cause shall be determined by the judge."

Mr. GREENWOOD said three amendments were before the committee with the same object of giving fair protection to the medical profession against unfair and vexatious actions. It was important this should be done. The Royal Commission had considered the matter at great length, and two distinguished lawyers, Lord Macmillan and Sir William Jowett, had drafted the wording which was incorporated in the bill. Mr. Greenwood added that subsequently he saw representatives of the British Medical Association. He could not agree to their claim for absolute privilege, but had said he was prepared to go a little further if that could be done properly. He thought Dr. Morris-Jones's amendment did not achieve its object. Nor could he accept an amendment in the names of Sir Boyd Merriman and Dr. Fremantle. This amendment proposed to omit the section of Clause 16 dealing with the power of the High Court to stay proceedings, in order to substitute the words:

> "(*a*) The person taking such proceedings shall apply to the High Court for leave to proceed therein after service of the writ and before taking any further step in the said proceedings. *Fourteen days'* notice of such application shall be given to every other party to the said proceedings. Upon hearing such application the Court shall refuse leave to proceed and shall stay the said proceedings on such terms as to costs and otherwise as the Court thinks fit, unless the Court is satisfied that there is substantial ground for alleging that such act was done in bad faith or without reasonable care;
>
> "(*b*) Where the person taking such proceedings shall have taken any further step therein after service of the writ and without having obtained leave to appeal upon an application for leave to proceed as required by subparagraph (*a*) of this Subsection or where the said person has taken no further step therein after service of the writ, and failed to make such application for leave to proceed within a reasonable time from the date of service of the writ, the High Court shall, on the application of any other party to the said proceedings, stay the said proceedings on such terms as to costs and otherwise as the Court thinks fit."

Mr. Greenwood said he would prefer a later amendment. (See proposed addition at end of subsection commencing: "(3) For the purpose of determining," etc.) He added that he had prepared a new form of words giving the sense of this last amendment, and was prepared to move it as an alternative.

Dr. MORRIS-JONES then withdrew his amendment, and Dr. FREMANTLE moved the amendment set out above, commencing "(*a*) The person taking such proceedings . . ." He said the amendment was supported by Sir Boyd Merriman, who wished it to be read in conjunction with a subsequent amendment to add, at the end of the subsection, the words:

> "(3) For the purpose of determining any question under the preceding subsection the Court may, at its discretion, sit with one or more assessors nominated by the Lord Chancellor from a panel of names recommended by the President of the British Medical Association."

Dr. Fremantle went on to say that under Section 330 of the Lunacy Act a medical man who signed a certificate might be challenged by a patient, or relative, or other interested person, but it was provided that "he shall not be liable to any civil or any criminal proceedings if he has acted in good faith, and with reasonable care." The difficulty had been the interpretation of the law. In the Hume-Spry case Lord Justice Banks held, as the result of reading the section, that "if there was any scintilla of evidence to go before the jury in respect of the claim, then the claim could not be withheld from the jury." That meant that the safeguard in the section was no safeguard. It was impossible to say that there would not be some scintilla of evidence enabling the case to go before a jury. On the other hand, a case in December of last year was decided against the doctors by the Master in Chambers, not on the ground that he was not satisfied of their good faith, but that he was not satisfied that they had shown evidence of reasonable care. The judgement was reversed on appeal, and the remarks of Lord Justice Scrutton were very much to the point. He emphasized the importance of protecting those who, at the invitation of Parliament, fulfil a duty in the interests of the community as well as of the patient. They had had a series of cases in recent years showing the risks to which doctors were exposed by actions alleging that they had certified improperly, either dishonestly or without due care. It was common knowledge that the result of these cases had been that many doctors would not certify at all. They would not run the risk of undertaking the duty Parliament put upon them. The Royal Commission said the medical man was not compelled to certify, that he did it as a public service, and that if he had to run the risk of being mulcted in damages, even up to £30,000, it was not worth while, for the sake of the few guineas or few shillings of the certification fee, to run the risk and subject himself to the worry. The Royal Commission was concerned at the growing reluctance of practitioners to grant certificates, and was satisfied that further protection should be given them, otherwise a breakdown of the system was inevitable. That, Dr. Fremantle said, was the position confronting the committee. The Minister had said he could not grant the original claim of the

British Medical Association for complete privilege. The Association, recognizing that, had put itself in the hands of Mr. Stuart Bevan, K.C., and the result was the amendment which Dr. Fremantle had moved. That amendment detailed procedure to be adopted before anyone could prosecute a medical man or bring a case against him on the grounds that he had not acted in good faith or with reasonable care. The person bringing the charge had, first of all, to prove a prima facie case. That person had to go to the High Court and make out his case, and the Court had to say whether or not it was a prima facie case.

The CHAIRMAN OF THE COMMITTEE (Mr. Cecil Wilson) here intervened to point out that Mr. Greenwood had circulated a manuscript amendment of Subsection 2 of Section 1 of Clause 16 (the subsection commencing "If any proceedings are taken against any person for presenting any such petition") in order to substitute a new subsection, which would run:

"(2) No proceedings, civil or criminal, shall be brought against any person in any Court in respect of any such matter as is mentioned in the last preceding subsection, without the leave of the High Court, and leave shall not be given unless the Court is satisfied that there is substantial ground for the contention that the person against whom it is sought to bring the proceedings has acted in bad faith or without reasonable care.

"(3) Notice of any application under the last preceding subsection shall be given to the person against whom it is sought to bring the proceedings, and that person shall be entitled to be heard against the application.

"(4) Where on an application under this section, leave is given to bring any proceedings and the proceedings are commenced within four weeks after the date on which leave was so given, the proceedings shall for the purpose of the Public Authorities Protection Act, 1893, be deemed to have been commenced on the date on which notice of the application was given to the person against whom the proceedings are to be brought."

The Chairman said this amendment would have to be moved in the report stage.

Dr. FREMANTLE proceeded to deal with the further amendment which he proposed to add at the end of the subsection. He said it was to enable the Court, at its discretion, to sit with an assessor, either a medical man or a lawyer, who would be nominated by the Lord Chancellor from a panel recommended by the President of the British Medical Association. That would give greater confidence to the medical profession. There was nothing mandatory about the amendment. The Court "may, at its discretion, sit with one or more assessors." The assessors were not to be hole-and-corner medical men.

Mr. GREENWOOD remarked that he believed it to be part of Dr. Fremantle's case that there was a precedent in the case of nautical assessors. He denied the analogy. The request now was for medical assessors to deal with a case between a layman and a professional person. They were to be recommended by the British Medical Association, and the appointment of lawyers would be still more offensive to the Court than the appointment of medical assessors. The point at issue in the cases would be whether a doctor had acted in good faith and with reasonable care. The Lord Chancellor held that the procedure proposed by Dr. Fremantle ought not to be adopted.

Dr. VERNON DAVIES said the sole object of Dr. Fremantle's amendment was to aid the administration of the Act by giving better protection to doctors, whose constant and willing co-operation was needed. Cases occurred where insane persons could talk rationally for two hours at a time, and five or ten years later a clever barrister could easily make a prima facie claim for such a case, and would secure leave to bring an action. The doctor would then have to pay for his own defence.

Mr. ALFRED SMITH: The British Medical Association would pay.

Dr. DAVIES: No, they are not able to pay. He maintained that a judge in chambers or in the High Court might not be able to give certain evidence its proper medical significance, and would be aided if he could ask the advice of an independent medical man at his side. There was an analogy in the administration of the Workmen's Compensation Act, where the county court judge had a medical assessor sitting with him. The legal mind and the medical mind were trained differently, and it was difficult for them to understand each other's view.

Mr. SOMERVILLE HASTINGS said there was great value in having a medical assessor sitting with the judge in many difficult medico-legal cases. On the other hand, it would be a mistake to limit the assessors to a panel of names recommended by the President of the British Medical Association, or to bring that Association into the matter at all. That Association represented the most reactionary and commercial section of the profession. Discretion should be left to the Lord Chancellor or to the President of the Royal College of Physicians.

Miss LAWRENCE asked the committee to vote against the proposed nomination of assessors on the question whether there was a case to put before a jury. To those who thought the Government proposed to give too much protection to doctors she said there was danger of frivolous and even insane complaints. The Government was accepting in substance the first amendment proposed by Dr. Fremantle, but could not accept his words for minor drafting reasons. She asked Dr. Fremantle to withdraw his amendment, leaving the Government amendment to come up on report, when members would be free to propose further improvements in it.

Dr. FREMANTLE agreed to this suggestion. Dr. Fremantle's amendment was then withdrawn, and he moved his further amendment authorizing the employment of assessors. He agreed that there was something in Mr. Hastings's contention that recommendation by the President of the British Medical Association was open to question. The Association was the most representative body of practitioners, but the authoritative body representing the profession was the General Medical Council, while in the scientific world the representative bodies were the Royal College of Physicians and the Royal College of Surgeons. It might be well to have recommendations from several bodies.

Dr. VERNON DAVIES moved to omit from the amendment the words providing that the recommendations should be by the President of the British Medical Association.

The committee agreed to this, but rejected the main proposal for the appointment of assessors by 18 to 9.

On the question that Clause 16 stand part of the bill, Mr. KINLEY said the whole desire of the discussion had been to safeguard the medical man. The patient ought to be protected by a refusal to give any indemnity to the medical man.

Dr. MORRIS-JONES said there was no act which a medical man regarded more seriously than that of certifying a patient as insane. Medical men asked for the protection of the conscientious practitioner.

Dr. DAVIES supported this, and the clause was added to the bill.

Clause 17, dealing with the issue of emergency orders for rate-aided persons, was added to the bill. Mr. GREENWOOD explained that under the present law a rate-aided patient, in an emergency, had to be removed to the workhouse, whereas a private patient could be taken to a mental hospital. The clause would allow a rate-aided patient to go direct to a mental hospital.

The clause was added to the bill, and after an appeal by the Minister for the committee to finish its work at the next sitting the debate was adjourned.

The committee continued its discussion of the bill on April 1st.

On Clause 18, dealing with rate-aided patients, Mr. GREENWOOD reminded the committee that the main provisions of the Act would not come into force till January 1st, 1931. He proposed that Clauses 18 and 19 should come into force immediately on the passing of the Act. Clauses 18 and 19 were then added to the bill with this amendment and other minor changes.

On Clause 20 the committee accepted an amendment from Miss LAWRENCE to substitute "voluntary patient" for "voluntary boarder" in any local Act. Dr. MORRIS-JONES proposed to omit the word "lunatic" from the Lunacy Acts, with a view to substituting "mental patient" or "person of unsound mind." The clause proposes to substitute, in these Acts, "mental hospital" for "asylum" and "rate-aided" for "pauper." Mr. GREENWOOD said that to get rid of "lunatic" would be more difficult. If the committee felt strongly about it he would propose to add that the word "lunatic," except in the context "criminal lunatic" or in regard to insane persons escaped outside England, should cease to be used under the Lunacy Acts or in Ministry of Health administration, "person of unsound mind" being substituted in regard to any person of, or alleged to be of, unsound mind. He pointed out that "mental patient" might not cover a person of unsound mind not under treatment. Dr. MORRIS-JONES withdrew his amendment in favour of that proposed by the Minister. Dr. VERNON DAVIES approved the amendment, but Dr. FREMANTLE thought the exceptional retention of the word "lunatic" would add a complication to the law and set up a distinctive classification. The committee then accepted the Minister's amendment, and Clause 20 was added to the bill with that alteration.

The committee accepted, on behalf of Miss LAWRENCE, a revised definition of the words "person in charge." This is now declared to be "in relation to a person received or about to be received under this or any local Act as a voluntary or temporary patient (not being a person received, or about to be received, as a single patient) the medical superintendent or other person in charge of the institution, hospital, home, or place into which he is, or is about to be, so received, and in relation to a person so received, or about to be so received as a single patient, the person into whose charge he is, or is about to be, so received."

On Mr. GREENWOOD'S motion the committee deleted the subsection which extended "local authority" to include the Lancashire Mental Hospitals Board, the West Riding Mental Hospitals Board, and the Staffs Mental Hospitals Board. He gave a firm assurance that before any rules affecting these bodies were made by the Board of Control he would take into consultation not only the hospitals boards but the county boroughs concerned.

Clause 21 was added to the bill. Clause 22 states: "This Act shall not apply to Scotland or Northern Ireland." Miss LAWRENCE explained that the legislation on the subject in Scotland was different and more advanced. The United Kingdom Parliament could not legislate on this subject for Northern Ireland. This clause was added to the bill, and the committee approved the

financial provisions of the bill. Mr. GREENWOOD said local authorities would not be precluded from coming to the Government at the end of the first block-grant period for a revision of that grant on the ground of additional expenditure under the bill. Much of the expenditure would not be new, but the result of a new way of performing old duties.

Mr. ANGELL moved that notwithstanding anything contained in the West Riding of Yorkshire Asylums Act, 1912, any of the powers and duties conferred or imposed by this Act upon a local authority might, after consultation with the West Riding of Yorkshire Mental Hospitals Board, and with the approval of the Board of Control, be exercised and performed by the council of any county borough in the West Riding of Yorkshire. He said that under the 1912 Act the exercise of such powers by the boroughs was excluded. The county boroughs provided such treatment now, and were well qualified to exercise such powers. If they were not given them formally the object of the bill would be defeated, that object being to dissociate the treatment of mental illness from the stigma of lunacy.

Mr. GREENWOOD said this controversy was acute in the West Riding, and he advised the committee to leave it alone. Certain county boroughs felt that the influence of the West Riding County Council was too strong on the West Riding Mental Hospitals Board, but their proper course was to attempt to secure an amendment of the local Act setting up that Board, not to spatchcock an amendment into this bill. The bill would now allow the practical needs of the situation to be met by the Minister making rules and bringing the parties concerned into consultation.

The proposed new clause was rejected without a division.

Mr. GREENWOOD accepted the intention of an amendment from Dr. Fremantle to provide for the annual audit of the accounts of each licensed house, and proposed a new form of words for this purpose, which the committee accepted.

Dr. VERNON DAVIES had an amendment to propose that in the form of recommendation for temporary treatment the certifying practitioner should fill in a declaration stating the grounds on which he had formed his conclusions.

While accepting the spirit of this, Mr. GREENWOOD suggested a new form which would put the classification of grounds of opinion into a footnote to the schedule, instructing the signatory to distinguish between facts based on his own observation and statements of fact based upon communications made to him by others.

Dr. FREMANTLE remarked that, in preparing certificates, the profession tended to be "fluffy" in language. It was a good thing to have to state facts.

The committee added the footnote proposed by Mr. Greenwood, and the forms of recommendation for temporary treatment were added to the bill with slight amendments.

Discussion of the other schedules was postponed till April 3rd.

Patients Received and Discharged by the Board of Control.

Mr. GREENWOOD, on March 27th, gave Mr. Kinley the following figures concerning patients received and discharged by the Board of Control.

	Admissions (excluding Transfers).	Discharges (excluding Transfers).
1920	22,325	10,505
1921	22,709	10,925
1922	23,087	11,024
1923	23,012	10,768
1924	21,251	11,499
1925	21,751	10,934
1926	21,900	10,731
1927	21,878	10,709
1928	22,352	10,649
1929	22,024	10,726

The Board had no similar figures regarding patients received into institutions under the Mental Deficiency Act. The average annual number of certified patients discharged as "recovered" from institutions under the Lunacy Acts during the years 1920–29 was 7,119. Similar figures were not available under the Mental Deficiency Act. A certain number of patients were discharged, but could not be discharged as "recovered."

Small-pox.

In reply to Mr. Groves, on March 27th, Mr. GREENWOOD stated that he was unaware that in many parts of London pressure had been exercised by employers of labour to get their employees vaccinated, in several instances at the request of the local medical officer of health. He knew medical officers of health advised the vaccination or revaccination of persons who had been in contact with small-pox, and he would not be justified in interfering with the discretion of medical officers of health in this matter. During 1929 twenty-three deaths were registered in England and Wales in which the words "vaccination," "vaccinia," or "post-vaccinal encephalitis" appeared in the certificate. In one case of these the certificate stated that these conditions were a contributory cause of death. The ages of the [illegible] ranged from 46 months to 16 years. Fourteen other [illegible] within four weeks of vaccination, but in at least nine [illegible] fatal issue.

Replying, on March 27th, to Mr. Freeman, Mr. GREENWOOD said he had seen a circular letter sent by the medical officer of health for Bethnal Green to medical practitioners there, asking them, when notifying cases of chicken-pox, to indicate whether the patient has been vaccinated or not, in order to facilitate inquiries into the prevalence of small-pox in the borough. His department had not suggested sending the circular, nor did he know to what extent other medical officers had taken the same course. Mr. FREEMAN suggested that vaccinated cases of chicken-pox were automatically diagnosed as chicken-pox, while unvaccinated cases might be rediagnosed as small-pox. Mr. GREENWOOD said he was unaware of this, and had no authority to direct, as Mr. Freeman suggested, that cases of small-pox should be diagnosed entirely on the symptoms and not on the presence or absence of vaccination marks. This was a matter for the medical practitioner in attendance.

Medical Officers in the Army.

In a written reply to Mr. Vernon Davies on March 26th, Mr. SHAW gave particulars concerning medical officers in the Army as under.

Table showing the total number of Regular Officers, Royal Army Medical Corps, serving in the Army by years from 1923 inclusive, together with the number who joined and the number who left the Service each year.

Year.	Strength on January 1st.	Joined.	Retired, Resigned, or Died.
1923	889	11	89
1924	911	12	55
1925	870	9	47
1926	832	13	52
1927	793	25	38
1928	780	28	54
1929	754	28	32

Grants to Voluntary Societies for the Welfare of the Blind.—In reply to Mr. C. Williams, on March 20th, Mr. GREENWOOD said the grants payable to voluntary societies for the welfare of the blind during the current financial year had already been paid in the majority of cases. It [illegible] grants would be paid before March 31st. [illegible] Iceland-Thoyte, Mr. Greenwood said he was unable [illegible] likely to be experienced by voluntary associations owing to the change effected by the Local Government Act. These associations had received a year's Exchequer grant during the present year, and would receive a full year's contribution from the local authorities during the coming and succeeding years. He saw no reason to reconsider the scheme under Section 102 (1) of the Act. Replying to a suggestion that many county councils and voluntary associations considered they would lose six months' grant, he said he had done his best to explain that this was really not so.

Slum Clearance.—Mr. GREENWOOD said, on March 20th, in reply to Major Nathan, that he hoped to introduce the bill dealing with slum clearance at an early date. Meanwhile, he was holding up approval of schemes for rehousing only when the law did not permit him to give permission to local authorities. He had approved schemes which did not conflict with the law.

Royal Veterinary College.—Mr. NOEL BUXTON stated, in reply to Captain Crookshank on March 20th, that the Development Commissioners had recommended, and the Treasury had approved, subject to conditions, a grant not exceeding £100,000, on a pound for pound basis, to the governors of the Royal Veterinary College for reconstruction of the college on the present site.

Proposed Abolition of Speed Limit for Private Motor Cars.—On March 21st the committee of the House of Commons which is considering the Road Traffic Bill approved the proposal of that bill to abolish the speed limit for private motor cars. An amendment by Dr. Salter to make the legal limit thirty-five miles an hour was negatived without a division.

Milk Supplied to School Children.—Sir C. TREVELYAN told Dr. Marion Phillips, on March 27th, that he was aware of the proved value of milk in the diet of children, and an increasing number of children received milk at school, either under schemes organized by the teachers through the National Milk Publicity Council or under arrangements made with the local education authority. In Birmingham over 3,250,000 bottles of milk were supplied to school children in 1928, representing a daily average of over 15,000 children. In Leeds more than half the school children received milk under arrangements made by local authorities.

Notes in Brief.

Mr. Greenwood, on March 27th, stated that it was not the practice at English ports to require a certificate that imports of oleo oil and oleo stearine, used in margarine, were derived from animals free from disease. This certificate was necessary in Scottish ports, and the difference was now under consideration with a view to action.

A petition for abolishing the death penalty, signed by 83,531 British subjects and various local bodies, has been presented in the House of Commons by Commander Kenworthy.

Sir C. Trevelyan told Miss Lee, on March 27th that the recommendations of the report of the Mental Deficiency Committee involved important legislative changes. He was not yet in a position to indicate the attitude of the Government towards that report.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE University College Committee has re-elected Viscount Chelmsford and Sir John Rose Bradford, F.R.C.P., as its chairman and vice-chairman respectively for 1930-31.

UNIVERSITY OF LEEDS.

THE following candidates have been approved at the examinations indicated:

M.D.—H. G. Garland (with distinction) R. Marinkovitch, J. M. Robson.
CH.M.—L. N. Pyrah.
FINAL M.B., CH.B.—*Part I:* J. E. Atwell, P. E. Allison, E. L. Brittain, J. M. P. Clark, J. L. Coleman, J. Fielding, J. J. Fry, R. A. Hall, G. P. Holderness, J. M. Holmes, G. Hyman, A. G. James, D. A. James, G. Marquis, H. Mattison, B. S. Platt, M. R. Potter, S. Rosenbloom, J. G. Ross, N. Ross, J. Schofield, B. Schroeder, P. Science, C. K. Shain, J. Shapiro, J. Shernovitch, P. Staub. *Part II (Old Regulations):* G. Hirst, Eugenie C. Illingworth. *Part III (Old Regulations):* W. H. Craven, Eugenie C. Illingworth, S. Rosenberg, L. Seaton, W. P. Stuart (second class honours), S. Thompson. *Parts II and III (New Regulations):* Bessie Brown (second-class honours), W. R. Everatt, J. F. Galpine, R. G. S. Meadley.
D.P.H.—G. M. D. Lobban.

The following scholarship and prizes have been awarded:

Infirmary Scholarship and Littlewood Prize: H. S. Shacksmith. Scattergood Prize: M. Ellis. Hardwick Prize: L. Seaton. Edward Ward Memorial Prize: L. Seaton. Foyle Prize: G. P. Butler.

UNIVERSITY OF DUBLIN.

SCHOOL OF PHYSIC, TRINITY COLLEGE.

Post-Graduate Course.

ARRANGEMENTS are being made for a three weeks' post-graduate course, on the same lines as in former years, to be held from September 15th to October 4th. A limited number of members of the class can be accommodated in the College rooms or, in the case of women, at Trinity Hall.

CONJOINT BOARD IN SCOTLAND.

THE following have been admitted Diplomates in Public Health:

A. A. Hamilton, S. S. Mirza, C. W. Clayson, H. C. Mehta, W. A. McE. Stewart, J. L. Chisholm, D. A. Fraser.

The following candidates have passed Part I:

G. H. H. Maxwell, W. D. Bertram, E. L. *Godfrey*, R. H. Dawson, Margaret B. McLaren, Dorothy D. W. Brander, Anna M. M. Kerr, T. P. Anmal, Winnifred N. Henderson, Jessie E. M. Munro, J. A. Burgess, A. D. Gorman.

Medical News.

A BANQUET will be held at the Mansion House, London, on April 8th, with H.R.H. the Duke of York presiding, in aid of the fund which the Right Hon. Sir Leslie Wilson is raising to meet the cost of alterations and extensions in the Hospital for Tropical Diseases, Gordon Street, Endsleigh Gardens, W.C. The medical superintendent, Dr. W. E. *Cooke*, has just returned from his five months' tour of Malay, India, and Ceylon.

A NEW health centre, erected and equipped by the Willesden Urban District Council at Harrow Road, Stonebridge, N.W., will be opened at 2.30 p.m. on Tuesday next, April 8th, by the Minister of Health, the Right Hon. Arthur Greenwood, M.P.

PROFESSOR MURDOCH of Brussels will give a lecture at 6 p.m. on May 8th at the British Institute of Radiology, 32, Welbeck Street, on recent advances in radium therapy, with special reference to the measurement of dosage. All medical practitioners interested will be welcome.

A SHORT course of lectures on functional nervous disorders for practitioners and medical students will be given at the Tavistock Square Clinic for Functional Nervous Disorders, 51, Tavistock Square, London, W.C.1, from May 19th to 31st inclusive. The fee for the course is £2 2s. for practitioners and 10s. 6d. for students.

A TWO weeks' post-graduate course in cardiology will be held at the Liverpool and District Hospital for Diseases of the Heart from April 29th to May 12th. Lectures will be given on various aspects of heart disease, and there will be clinical and cardiographic demonstrations. The fee for the course is one guinea, and its membership is limited to twenty. Further information may be obtained from Miss Lewis, Liverpool and District Hospital for Diseases of the Heart, Oxford Street, Liverpool.

THE Fellowship of Medicine announces that there will be an all-day post-graduate course at the Central London Throat, Nose and Ear Hospital, Gray's Inn Road, from April 28th to May 24th, including demonstrations, operations, and lectures.

A two weeks' course in diseases of infants will be held at the Infants Hospital, Vincent Square, from April 22th to May 11th, for medical officers of welfare centres and others interested, the number being limited to fifteen. Each afternoon from 2 o'clock onwards there will be demonstrations and special lectures, and during the course visits will be paid to the United Dairies Pasteurizing Plant, and to the Venereal Disease Centre, Thavies Inn, for syphilitic infants. A course in psychological medicine will be held at the Maudsley Hospital, Denmark Hill, from April 28th to May 30th, consisting of special lectures every afternoon and clinical instruction. In preparation for the M.R.C.P. examination there will be a course of lectures from May 13th to July 4th, on Tuesday and Friday evenings at 8.30 p.m., at the Medical Society lecture room; in addition, there will be two ophthalmic demonstrations. Syllabuses for these courses may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE honorary secretary of the Beit Memorial Fellowships for Medical Research announces in our advertisement pages that an election for Junior Fellows will take place in July next. The successful candidates will be required to begin work in October. The Junior Fellowships are of the annual value of £400, and the usual term is for three years. Full information and forms of application may be obtained from Sir James K. Fowler, M.D., 35, Clarges Street, London, W.1.

IN connexion with the first International Congress of Microbiology which is to be held in Paris from July 26th to 25th, an itinerary with list of prices may be obtained from Thomas Cook and Son, Ltd., Berkeley Street, W.1, or from any of their branches. The proposed arrangements have been made in consultation with the National Committee for Great Britain and Ireland of the International Society for Microbiology, of which the secretary is Dr. R. St. John-Brooks, Lister Institute, Chelsea Bridge Road, S.W.1.

THE tenth congress of the International Society of Urology will be held at Madrid from April 7th to 12th, under the presidency of Professor Leonardo de la Peña. The *Transactions*, which contain abstracts of the papers in English, French, and Italian, have already been sent to members of the society.

THE Flemish Congress of Natural Sciences and Medicine will be held at Antwerp from April 25th to 28th. Further information can be obtained from the secretary, Dr. P. De Maeyer, Rue Guimard 15, Ghent.

THE Memorandum on British Patent Law Reform, which was compiled by a joint committee representing the Association of British Chemical Manufacturers, the Chemical Society, the Institute of Chemistry, and the Institute of Chemical Engineers, and submitted to the Board of Trade Patents Committee, has now been published, and copies may be obtained (price 1s.) from the Association of British Chemical Manufacturers, 166, Piccadilly, London, W.1. The committee includes in its Memorandum the details of a scheme to be administered by some department of State, for the dedication to the British public of medical patents. A similar scheme has been approved by the Council of the British Medical Association, and is being reported to the Representative Body.

THE International Labour Office has issued from 12, Victoria Street, S.W.1, seven further brochures in the series Occupation and Health. The subjects dealt with are No. 177, blood changes due to occupation; No. 178, clothing or garment trade; No. 179, cork and linoleum industry; No. 180, cotton industry; No. 181, cyanogen and its compounds; No. 182, cerium; and No. 183, coal tar. With brochure No. 183 the subjects coming under the letter "C" are complete, and can therefore be bound.

An official communication has been received, as we go to press, from the Radium Commission reporting on the progress of the national organization which it is engaged in setting up. In pursuance of its policy of concentrating national radium at a limited number of centres where there are medical schools with complete clinical courses, twelve "National Radium Centres" have been nominated as follows: Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle, and Sheffield; Aberdeen, Dundee, Edinburgh, and Glasgow; Cardiff. London has been treated as a separate problem, in view of its position as the metropolis of the whole country, and steps have been taken to organize two centres to carry out special work of general and national importance. One centre is at the Westminster Hospital, and the other, for the development of post-graduate teaching in radium therapy, is at the London Radium Institute and the Mount Vernon Hospital, Northwood, which are being reorganized as a joint teaching centre, styled the "Mount Vernon and Radium Institute." In all, some seventeen grams of radium have so far been ordered and provisionally allocated to national centres. The full text of the Radium Commission's statement will appear in our next issue.

THE KING has confirmed the appointment of Dr. G. Cecil Strathairn, Director of Health, to be a nominated official member of the Legislative Council of the Colony of Cyprus.

DURING 1928 more than fifty lectures on malaria, illustrated with lantern slides, were delivered in the Chinese schools and clubs in Perak and other towns in Malaya, about 10,000 people attending them. Audiences were recruited by an attendant perambulating the towns with a handbell. The importance of the crusade is illustrated by the fact that, out of 34,153 deaths in the Federated Malay States in 1925, no fewer than 14,377 were registered as being due to fever.

THE Grand Prix of the Société des Gens de Lettres has been awarded this year to a medical man, Dr. Pierre Dominique Jacques Lucchini, who writes under the name of Pierre Dominique.

PROFESSOR SEMASCHKO of Moscow has resigned his post of commissioner of public health.

THE Académie des Sciences has decided to recommend the Institut de France to award the Osiris prize of 200,000 francs to Professor Gley, who holds the chair of physiology at the Collège de France.

DR. MORAX, ophthalmologist to the Hôpital Lariboisière, has been elected a member of the Académie de Médecine in the surgical section.

DURING the academic year 1928–29, 1,069 diplomas of doctor in medicine were conferred by the various French faculties.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL, Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

SUPPLY OF PRESSURE APPLICATORS IN THE FINSEN LIGHT TREATMENT.

"J. B." writes: I should be glad to learn where it is possible to obtain pressure applicators for circulating water, such as are used in the Finsen light treatment. I have applied to one or two electrical firms, but they apparently wish to sell the whole Finsen-Reyn apparatus, and just at present I want applicators only.

TREATMENT OF ASTHMA.

"A. V." writes to suggest that "M. E. P." (March 22nd, p. 575) should try the mercury vapour lamp at 2 ft., beginning with two minutes and leading up to six minutes for twelve applications, and repeating the treatment after a month's rest.

ENLARGED PROSTATE AND PROSTATECTOMY.

"H. W." writes: I have to record one case where inunction and massage of the prostate per rectum with a neutral petroleum unguent of iodine greatly relieved the frequency of micturition; the stream of urine passed is much fuller, indicating that the iodine is having a local effect. Since we often see glandular and indurated masses disappear with massage and iodine in other situations, can we not hope by this or other methods to avoid operative intervention, in some cases at least? I should be glad to have an expression of opinion with regard to the permanent effect of remedies other than surgical treatment, which has its limitations. I note in the *Journal* of March 15th (p. 494) that reference is made to static electricity as a method of reducing the hypertrophy and symptoms.

LETTERS, NOTES, ETC.

EARLY DIAGNOSIS OF TUBERCULOSIS.

DR. W. M. CROFTON (University College, Dublin) writes: The making of an early diagnosis in tuberculous disease is indeed of first importance. But eliciting of physical signs in a lung, however delicate, is not making an early diagnosis; it is making a diagnosis of well-established disease, and this diagnosis is only confirmed by the finding of tubercle bacilli. At this stage of the disease apparently there is complete scepticism about the capacity to cure it by the methods at present in use. Wingfield writes: "When c[illegible] ressed to the extent of being clinically [illegible] be eventually almost universally fatal. [illegible] most universal opinion among tuberculosis experts, as elicited by Gordon Tippett. No one can make an early diagnosis. No one can say a case is cured, for so many cases apparently cured break down again. There is therefore no sound criterion of cure. Everybody connected with the disease is in a hopeless state of mind about it. Moreover, they are so pursued by ancient bogies that the only test, the subcutaneous tuberculin test, which has been proved to be reliable by hundreds of thousands of post-mortems in cattle, must not be used, since it is dangerous in human beings. The way general and focal reactions after tuberculin inoculation are spoken of and written about one would think they were uniformly fatal, instead of being manifestations of the immunizing process which leaves the patient on a higher plane of resistance to the tubercle bacillus than before such a reaction had occurred. There are, then, two kinds of opinion about the test: (1) that of those who do not believe in its absolute diagnostic value, and (2) that of those who believe in its diagnostic value, but think it too dangerous to use in human beings. The first class had better consult their veterinary brethren and ascertain its almost complete reliability, and the second ought to follow the work of those who use tuberculin in their treatment of the disease, and so get rid of this absurd phobia, which is holding up so seriously our control of the disease. Apart from it, there is no reliable test for either the early diagnosis of the disease or the cure of it.

MEASLES IN LATER LIFE.

DR. R. BALFOUR GRAHAM (Leven, Fife) writes: With reference to the case of measles at the age of 57, described by Professor A. J. Hall in the *Journal* of March 29th (p. 586), might I record a more remarkable one in point of age in a spinster, aged 76? Had it not been that there was measles about, and that the day-attendant of the old lady had a case of measles in her own house (from which source, perhaps, came the infection), I should have doubted my diagnosis, but to make sure I asked Dr. J. M. Johnstone of Leven to see the case, and he at once confirmed it. There was nothing very remarkable about the course of the illness, the symptoms of which resembled pretty much those in Professor Hall's case, the only noteworthy point being that my patient made a complete and speedy recovery after about ten days' illness. She is not sure if she has ever had measles before, but a second attack is not uncommon in my experience.

DR. N. DOUGLAS MACKAY (Aberfeldy) records two cases of measles which occurred in his practice some years ago. The first, a woman aged 74, was infected during a local epidemic. Beyond a mild bronchial catarrh, too slight to be dignified with the name of complication, the attack ran a normal course, and the patient made a perfect recovery. The second case, in a woman aged 78, was sporadic so far as this district was concerned, and the only channel by which infection could have reached the patient was a daughter who, two weeks or so before the commencement of the attack, had returned home from visiting in a house where several children were down with measles. This was the only possible source that could be traced, and it was noteworthy that the daughter, a middle-aged woman, did not herself develop the complaint. Here, again, the disease ran a normal uncomplicated course, and ended in the perfect recovery of the patient. Both these old women were of the healthy, robust type, and each survived her unusual experience for several years.

DR. J. H. DREW (Weston-super-Mare) writes: It may be of interest to state that I have seen in the last few years three cases of measles in women aged 64, 68, and 55 respectively. The patient aged 64 was infected from a great-nephew, whom she had been nursing—eighteen days from rash to rash. She had a very profuse eruption, and ran a temperature of over 105° F. for four days, with severe bronchitis. The woman aged 68 was infected from children in the house, apparently from casual contact on the stairs; here again the attack was severe. The last case, in a woman of 55, occurred a few weeks ago, and was of a milder type, the temperature not exceeding 103.5°, and the bronchitis being slight.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 49, 50, 52, 53, 56, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *107*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

317. The Heart and Athletic Strain.

F. DEUTSCH (*Wien. klin. Woch.*, January 9th, 1930, p. 51) defines the "athlete's heart" as a condition of permanent cardiac enlargement following overstrain. The condition may be due to dilatation secondary to myocardial weakness, and be associated with hypertrophy. Transient enlargement is believed to follow severe physical exertion inmost cases immediately, but usually, within twenty-four hours after the strain has ceased, the heart becomes smaller than before. The degree of reduction varies greatly, and depends more upon the condition of the general circulation than upon the heart itself. Muscular exercise by flooding the skeletal muscles with blood diminishes the volume of blood in the spleen and liver, and lowers the peripheral blood pressure. After exercise the muscular capillaries contract and blood returns to the abdominal viscera, while metabolic activity is increased; sometimes the transient cardiac reduction gives place to actual enlargement, but this condition is not necessarily the "athlete's heart," although chronic cardiac dilatation due to diminished pulmonary capacity may be so described. As a means of predicting which type of heart will become enlarged under physical strain Deutsch recommends the following method. The size of the heart is determined by percussion and orthodiagrammatic measurements, and its weight is calculated. The weight of the heart increases with age, and one object of physical training is to increase the thoracic circumference. The size of the heart is largely dependent on these factors, and less on the body weight. Small hearts are frequently found in very tall subjects and in highly trained athletes without any diminution of efficiency, but as a rule heart weight is proportional to body weight. In the estimation, time is an important factor, for a fully trained athlete's heart, examined shortly after a strenuous effort, may vary considerably in size in a short period. Two or three days should elapse between the last strenuous exercise and the examination. Repeated control examinations of athletes at various times show that during the entire sport season the heart may be enlarged, returning to normal size when training ceases. If cardiac enlargement persists, "athlete's heart" may be suspected. Definite pathological signs are unusual, but auscultation may reveal an accentuated pulmonary second sound or a ringing aortic second sound. Systolic bruits are absent, and there is no evidence of myocardial weakness. A normal athlete's pulse is remarkably slow, a rate of 56 being common and indicating a healthy circulation, able to withstand strenuous exercise. Hypotension is also favourable, since hypertension may be due to "athlete's heart," though not pathognomonic. As a preliminary to entry on athletic contests Deutsch determines pulse acceleration after exertion, the candidate flexing the knees fully ten times a minute, or marking time at the rate of two steps a second. The rate then should not be higher than 100 or 120 beats a minute. Two or three minutes after the test the tachycardia should have subsided: if it persists, the heart is unfit for severe exercise. After these exercises an untrained person should not have a rise of more than 40 mm., and one who is trained not more than 10 mm. of mercury. In both cases the blood pressure should return to normal in less than three minutes. After exercise there should be little or no decrease in the lung capacity, and after strenuous exertion only transient diminution; in heart lesions it is frequently greatly reduced. Chest expansion affords a simple method of measuring pulmonary capacity.

318. Primary Meningitis and Meningo-encephalitis in Mumps.

R. J. WEISSENBACH, G. BASCH, and MARIANNE BASCH (*Ann. de Méd.*, January, 1930, p. 5) point out that the virus of mumps can attack other organs before being localized in the parotid gland and in the absence of any glandular involvement. Among these extraglandular localizations of the initial septicaemia and the clinical manifestations are meningitis and meningo-encephalitis. Two cases of such conditions are recorded in detail. One was of a purely meningeal type and primary, the parotitis becoming manifest on the fourth day of the illness. The other was also primary, the mumps appearing on the third day; it was of the meningo-encephalitic type, a right hemiplegia developing with transitory aphasia and neuralgia of the trigeminal nerve. These primary meningeal attacks are divided into two groups—those followed by and those not followed by mumps. In the meningeal type the glandular involvement is relatively early; it is often unilateral, always of a slight nature, and of short duration. In the second type the virus acts in a manner similar to that of epidemic encephalitis and attacks the bulbo-protuberantial nuclei or even more differentiated regions of the hemispheres; very occasionally the attack resembles coma or apoplexy. Short notes on cases illustrating each type are given. The authors consider that in a meningitis occurring in full health, after eliminating the more frequent forms, a diagnosis of meningitis due to a parotitis virus should be entertained. A most careful examination should be made of the parotid, submaxillary, and sublingual regions, and of the opening of Stenon's duct. The cerebro-spinal fluid affords the best diagnostic evidence; it reveals a clear, sterile, non-xanthochromic fluid containing a marked mononuclear lymphocytosis, a low albumin and chloride content, but an almost normal sugar figure, and absence of fibrin. The meningites under consideration must be differentiated from the tuberculous, syphilitic, and meningococcal forms, epidemic encephalitis and Heine-Medin's disease. The prognosis is particularly favourable; sequels are exceptionally rare, and, if present, last only a few weeks.

319. Vincent's Angina and Fuso-spirochaetal Pulmonary Disease.

THERE is considerable evidence that the anaerobic organisms present in Vincent's angina may under certain conditions initiate a severe or even fatal pulmonary infection. Though these infections generally occur as a complication of the angina, they are occasionally primary. D. T. SMITH (*Journ. Amer. Med. Assoc.*, January 4th, 1930, p. 23) cites several such cases from the literature, and reports three personal ones. Two of these were primary infections of the pharynx with subsequent extension into the lungs. The third was primary in the lungs and began four days after contact with a case of Vincent's angina. The sputum in the last case was thick, green, purulent, odourless, and resembled tuberculous sputum, though at no time were tubercle bacilli demonstrated either by smear or guinea-pig inoculation. Both the large and the small types of the fusiform bacilli were isolated. The spirochaetes were predominantly of the *Spirochaeta vincenti* type, with small numbers of *Treponema microdentium*. Smith states that Vincent's angina is a relatively common and widespread disease, and that pulmonary complications due to these fuso-spirochaetal organisms are by no means infrequent. The complicating pulmonary lesions, often confused with tuberculosis, may take the form of pulmonary gangrene and abscess, ulceration of the bronchi, lobar pneumonia, broncho-pneumonia, and empyema. Many patients recover spontaneously, but in some the condition ends fatally. It is advisable to treat all cases in which the organisms can be demonstrated in the sputum with either neo-arsphenamine or sulpharsphenamine. To obtain the best results the diagnosis should be made and the arsenic given before any appreciable destruction of lung tissue occurs. In all the three present cases recovery was prompt after the administration of sulpharsphenamine.

320. Chronic Morphine Poisoning.

K. MORINAKA (*National Medical Journal of China*, December, 1929, p. 764) describes a prolonged investigation of chronic morphine intoxication in opium smokers. Men smokers are ten times more numerous than women smokers, and the incidence of symptoms of poisoning is greatest between the ages of 31 and 40. Of the reasons given for starting the habit sickness ranks highest, and among the causes of ill health digestive disturbances are nearly twice as frequent as other diseases, respiratory troubles coming second. Opium is resorted to as a remedy for abdominal pain, diarrhœa, and vomiting, particularly in the country districts where medical advice is not available. The author gives a series of tables showing the results of an investigation into the degree of gastric acidity during a period of abstinence, as compared with a period under the influence of morphine. It appears that the secretory function is generally normal while the patient is under the influence of morphine, but is markedly increased when the drug is withheld, and this increase cannot be effectively controlled by atropine. Radiographs of a test meal are reproduced indicating that the stomach is in a state of hypertension with strong and repeated peristalsis during the abstinent period, while the basal metabolism increases by 60 per cent. The excretion of phosphoric acid and organic phosphorus is markedly raised during abstinence.

321. Intestinal Complications of Undulant Fever.

W. A. GRIFFIN (*New Eng. Journ. Med.*, February 13th, 1930, p. 324) records a case of chronic fever in a boy, aged 12, in whom all the laboratory tests, except for undulant fever, were negative. He showed definite signs of intestinal ulceration, which improved markedly in two months on intensive helio-therapy, with the administration of tomato juice and cod-liver oil, and accompanying the improvement the patient became symptom-free. There was a history of three weeks' fever in 1926, recurring in 1928 with marked anorexia and complaint of a full feeling while eating. There was no diarrhoea. Tests for typhoid, malaria, and tuberculosis were negative, and the diagnosis of undulant fever was based upon agglutination tests, the organism being later cultured from the blood. *X*-ray films following a barium meal revealed from the sixth to the eighth hour a very marked filling defect in the caecum and to a less extent of the ascending colon, especially at the hepatic flexure, and the general irritability of the bowel was shown by the twenty-four-hour film, when there was practically no barium left. After two months' treatment the filling defects had almost disappeared, and the general intestinal irritability had largely subsided. While it is not claimed that in all cases of undulant fever there are ulcerations in the intestines, the fact is significant that this patient immediately improved with the disappearance of all symptoms upon treatment directed to the intestines; the author considers that the case affords a possible explanation of the symptoms of undulant fever.

322. The Association of Diabetes and Tuberculosis.

J. LEITNER (*Zeit. f. Tuberculose*, February, 1930, p. 30) discusses 12 cases of diabetes occurring among 3,500 cases of phthisis. Diabetes is apparently usually the primary disease, which, by lowering the general resistance, increases susceptibility to tubercle. The conditions influence each other unfavourably; the lowered vitality of the diabetic and his restricted diet, combined with the anorexia of the phthisical, made recovery difficult. Tuberculosis in diabetes causes few symptoms and signs: the initial rise in temperature is marked by the diabetic temperature, the sputum is scanty and contains few bacilli, and auscultation reveals little; consequently the systematic *x*-ray examination of the chests of diabetic patients is strongly advocated. Of the author's 12 cases, in 8 the diabetes was definitely primary, and in 3 both conditions were discovered simultaneously; all tended to cavity formation, most had family histories relating to one or the other, and the age incidence was between 38 and 63. No patients died in the sanatorium, but some left with a very bad prognosis. Until recently only conservative measures had been employed; lately good results are reported as following the use of insulin. Leitner adds, however, that this should be given only when really required, and then be begun cautiously; in many cases dieting does all that is necessary. When the metabolic condition improves, the lung condition should be tackled, preferably by pneumothorax; as the pulmonary disease grows less the carbohydrate tolerance will rise. The author has lately used a new sugar substitute, s onon, which is a product of the reduction of glucose and fructose; it has a pleasant sweet taste and high calorie content, and is said to cause neither glycaemia nor glycosuria.

323. Nephritis with Hypochloraemia.

C. ACHARD (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, January 27th, 1930, p. 27) reports a case of acute nephritis in a woman, aged 37, who had had rigors, abdominal pain, frequency and pain on micturition, and, later, acute suppression. Examination of the urine had shown 2 grams of albumin per litre and an abundance of blood. This was her fourth attack in twenty months. During the first forty-eight hours in hospital she had vomiting and sweating attacks, passed 100 c.cm. of urine with 5.37 grams of urea per litre, had 2 grams per litre of blood urea, and her temperature dropped from 102° to 93°. She was cupped and given lactose drinks and injections of hypertonic glucose serum. Three days later she passed 300 c.cm. of urine containing 8.10 grams of urea per litre; her vomit (560 c.cm.) contained 7.3 grams of urea and 2.10 grams of sodium chloride per litre. The blood urea rose to 3.24 grams; the alkaline reserve figure was 34.7 grams and the serum chloride figure 2.59 grams. The urine acidity figure was 5.7. She was given 20 grams of sodium chloride by the mouth, and 7 grams by injection in 500 c.cm. of hypertonic solution; 27 grams were given daily on three consecutive days, followed by 12 grams on the next three days. The amount of urine increased, the urea content decreased abruptly, the blood urea diminished slowly, and the serum chloride increased gradually to above the normal level. Treatment was then remitted for nine days. The blood urea increased a little, while the serum chloride diminished slightly. The patient then received 5 grams of sodium chloride daily, and five days later had 0.38 gram of blood urea, 3.63 grams of serum chloride, and 61.1 grams of alkaline reserve. She was discharged, improved, after further treatment for six weeks, with instructions to remain on a diet low in protein and moderately salted.

Surgery.

324. Treatment of Adenitis by Diathermy.

P. RAVAUT and Mlle LANDOWSKI (*Bull. Soc. Française de Derm. et de Syph.*, December, 1929, p. 1248), encouraged by the good results obtained in the treatment of actinomycosis and keloid acne by the diathermo-coagulant drain, have employed this method in numerous cases of chronic suppurating glands, some with and some without sinuses. When the glands were multiple, deep, and the patient sensitive, anaesthesia by ethyl chloride was used; the authors hardly ever employ local anaesthesia because the saline infiltration of the tissues modifies the conduction of the electric current and may harmfully widen the limits of the coagulating action. They generally operate without an anaesthetic; the pain is occasionally acute, but it only lasts a few seconds. If the abscess is enclosed the softest point is chosen, the needle attached to the apparatus is inserted so that the centre of the collection is reached, and the current is turned on. As a destructive action is desired they begin with a weak current, which is progressively increased if necessary. The cavity quickly swells up and bulges at the surface; a zone of white coagulation appears round the needle on the skin which increases while the contents of the gland are raised to boiling point. The needle is then briskly withdrawn. In small lesions one insertion only is made, but in extensive cases several attacks may be necessary. Sinuses are treated in the same way. During the following days there occurs a copious discharge; in about ten days the scab is detached, carrying with it skin and coagulated gland tissue, so that a wound is formed lined by gland and dead cellular tissue. Healing is said to be surprisingly rapid; the scars are small and continue to diminish. The authors state that for several years they have had excellent results with this treatment of numerous cases of tuberculous glands of the neck and axilla, and notes are given of successes obtained in other parts of the body.

325. Enterocystoma.

RUTH E. MILLAR and G. ROBERTSON (*Brit. Journ. of Surg.*, January, 1930, p. 373) describe a case of enterocystoma occurring in a girl, aged 8, who four years previously had begun to suffer from pain in the right iliac fossa and epigastrium with severe periodical attacks of vomiting, the vomit being frequently bile-stained. The intervals between the attacks became gradually lessened to a fortnight in duration. O[illegible] laparotomy was performed, [illegible] the caecum, an elongated to[illegible] the long axis of the intestine. It exhibited peristalsis, was intestinal in appearance, and constricted near the middle, both ends being blind, with the lower overlying a normal appendix. The cyst was unilocular and contained two ounces of transparent mucoid fluid; for two-thirds of its length it was connected by a mesentery to the true mesentery of the ileo-caecal angle without any intestinal pedicle existing between them. The growth belonged to the rarest type of enterocystomata, and was probably vitelline in origin, as most of them appear to be. Considerable hypertrophy of the muscle coat existed, and had been progressive over a period of four years. The authors regard this as an explanation of the increasing severity of the attacks, it being conceivable that temporary strong peristalsis of the normal intestine might be shared by the cystoma as an isolated closed segment, the nerve supply of which was similar to, and connected with, that of the normal intestine. After removal the cyst showed active peristalsis even when lying on a cold specimen tray, and the application of warm moist gauze pads excited vigorous contractions, which only ceased after a lapse of two hours. The case is reported because of the rarity of enterocystomata, and as being the least common type of these tumours.

326. Complete Torsion of the Gall-bladder.

G. KETTNER (*Zentralbl. f. Chir.*, March 8th, 1930, p. 339) records an illustrative case, and has collected 17 others from the literature, including 12 mentioned in Fischer's work and more reported by Mathieu, Marinacci, Grunert, and Therstappen respectively. It is easy to understand how such a pendulous organ as the gall-bladder can readily undergo torsion owing to a sudden pressure exerted on it by the diaphragm, the intestine, or some violent movement. In all

cases, including the present one, the patients were elderly women with little fat, flaccid abdominal walls, and enteroptosis—in short, of a constitution which allowed the greatest possible movement to the abdominal contents. When the angle of torsion exceeds 90 degrees the cystic artery becomes occluded and gangrene of the gall-bladder ensues, followed by perforation and peritonitis unless operation is performed in time. Treatment consists in cholecystectomy, which is almost always successful. Kettner's patient was a woman, aged 53, in whom a diagnosis of intestinal volvulus was made and laparotomy performed on the first day of disease. The gall-bladder, which was found to have undergone a torsion of over 180 degrees, was excised, and recovery was uneventful. The walls of the gall-bladder were thickened and studded with haemorrhages, the mucous membrane was necrotic, and several bilirubin calculi were found.

327. Volkmann's Ischaemic Contracture.

L. DURANTE (*Arch. Ital. di Chir.*, February, 1930, p. 429) describes a typical case of Volkmann's ischaemic contracture with concomitant median-ulnar neuritic irritation. The syndrome developed on the tenth day after an incised wound of the bend of the right elbow, involving rupture of the radial and ulnar arteries at their point of origin and the formation of a large pulsating haematoma compressing the forearm. Ligature of the brachial artery on the fiftieth day after the wound cured the haematoma, but the simultaneous excision of the two fibrous bridges between the ends of the ruptured arteries, which interfered with the vascular sympathetic supply, was not followed by any modification of the syndrome. Excision of the perineural sheath of the median and ulnar nerves at the lower third of the forearm was performed four months after the wound, and was followed by the rapid disappearance of all the sensory and trophic symptoms. Almost complete extension of the fingers became possible, even with the hand in extension on the forearm; there was, in fact, an almost complete recovery from Volkmann's syndrome. The author discusses the literature relating to this condition, and concludes that there is evidence for the occurrence with it of a sympathetic neuritis. Presumably, the excision of the perineural sheath tried by Durante in his case, in view of its being indicated in causalgia, is followed by better results when it is performed at the earliest opportunity.

328. Indications for Phrenicectomy.

J. A. MOORE (*Arch. of Surg.*, February, 1930, p. 175), in reviewing 63 cases of pulmonary disease treated by phrenicectomy, states that this treatment was successful in 75 per cent. of cases in which the anatomical result (paralysis and rise of the diaphragm) increased the compression obtained by thoracoplasty; it also increased the amount of relaxation of the lung produced by intercostal neurectomy, and the degree of collapse in artificial pneumothorax. Since phrenicectomy produces only partial rest and relaxation of a diseased lung, paralysis of the hemidiaphragm must be considered as a complement to other methods of treatment. It is frequently useful in the treatment of pulmonary tuberculosis as a complementary procedure to extrapleural thoracoplasty, to the Schede method of thoracoplasty, and to artificial pneumothorax. Phrenicectomy is used as an independent procedure in the treatment of tuberculosis, being indicated in an acute progressive caseous type of tuberculosis when pneumothorax is prevented by adhesions, in chronic types of disease, in early cases of unilateral tuberculosis, in basal tuberculosis, and also for the relief of specific symptoms without the expectation of a cure. Phrenicectomy is also employed in cases of bronchiectasis, in subacute and chronic pulmonary abscess, as a prophylaxis against the development of bronchiectasis after an unresolved pneumonia, in cases of hydatid disease of the lung, for diaphragmatic hernia, to aid in filling in the defect in the wall of the chest after the removal of malignant neoplasms, and in stab or gunshot wounds. Of the 63 cases under review, temporary phrenic nerve interruption by crushing the phrenic nerve and the accessory nerve was performed in 9 cases, the radical phrenicectomy of Goetze in 26 cases, and evulsion or exeresis of Felix in 28 cases. Paralysis of the diaphragm was obtained in 58 cases, and was indeterminate in 5. There was no operative death.

329. Remote Results of Pyloric Resection for Peptic Ulcer.

K. NELLEN (*Deut. Zeit. f. Chir.*, February, 1930, p. 164) records the results of resection of the pyloric antrum (Billroth I and II) for gastric or duodenal ulcer which had been performed in the surgical department of the municipal hospital at Altona during the period 1920–26. Of 43 cases in which the operation had been performed two or more years previously, 36 (84 per cent.) could be regarded as cured, while 7 (16 per cent.) still suffered from more or less severe symptoms. In the great majority of cases the general condition was essentially improved. The individual's power to gain his livelihood was also in most cases restored. In almost all the cases there was reduction of free hydrochloric acid to zero, essential diminution of the total acidity, decided diminution of the gastric movements, and accelerated evacuation of the contents of the stomach. The seven cases which were not cured consisted of constipation (1 case), neurasthenia (2 cases), pulmonary and intestinal tuberculosis (1 case), and suspected recurrence of peptic ulcer (3 cases). It has not, however, yet been possible to verify these diagnoses by necropsy. After subtracting the cases with neurasthenic symptoms, and accidental diseases which could not be attributed to the operation, the proportion of failures was reduced to 6 per cent., a figure which agrees with that of other writers and shows a superiority of resection to other methods. Resection of the pyloric antrum by removal of the ulcer not only prevents the later risks of haemorrhage, perforation, and malignant degeneration, but also produces a chemical and mechanical condition of the stomach which essentially reduces the risk of a relapse.

Therapeutics.

330. Adonidine as a Cardiac Diuretic.

A. SHEDROW (*Journ. Med. Assoc. of South Africa*, February 8th, 1930, p. 75) has made a series of clinical tests of the glucoside adonidine, which is the active principle of *Adonis vernalis*. He has administered this substance to patients between the ages of 65 and 82 suffering from all degrees of cardiac insufficiency due to various causes. The optimum dose was found to be 5 mg.; if this produced no effect, subsequent doses were also useless. The predominant action of adonidine was upon the secretion of urine, the output rapidly rising from 250 c.cm. to 3,000–4,500 c.cm.; this increased secretion continued until the oedema had disappeared. No effect on the urinary secretion was obtained in patients without oedema, nor upon oedemas of renal or hepatic origin. While it is claimed that the drug increases the contractility and excitability of the myocardium, adonidine has no influence upon conductivity; in this way it differs from digitalis, which otherwise possesses similar therapeutic properties. Adonidine has a wider use than novasurol or salyrgan, since the latter are mercurial preparations and may be dangerous if there is much renal or hepatic damage. The indications for the use of this drug are: (1) all cases of heart failure accompanied by oedema, the fluid intake being reduced to one litre daily; (2) to prolong the diuretic effect of digitalis when the latter drug has produced an initial improvement; and (3) when digitalis is without effect or is contraindicated. The administration of adonidine is inadvisable when cardiac failure has advanced to its terminal stages.

331. Treatment of Mumps with the Serum of Convalescents.

P. IVERSEN (*Ugeskrift for Laeger*, February 13th, 1930, p. 187) observed an epidemic of mumps in the winter of 1922–23 in the infectious division of a military hospital. As it soon became evident that the incidence of orchitis was very high, he administered the serum of convalescents to a certain number of the patients in the hope that this complication of mumps would be reduced in frequency. The Danish State Serum Institute prepared a mixed serum from convalescents, from the tenth to the twenty-second day of the disease, nearly all of them having been afebrile for about a week. In order that changes in the character of the epidemic as it proceeded should not vitiate the conclusions drawn from this experiment, only alternate patients were thus treated, every other patient being given an intramuscular injection of 40 c.cm. of the serum. In uncomplicated cases the patients were kept in bed for ten days after the fall of the temperature to normal. The patients who already suffered from orchitis on admission to hospital received no serum, and were classed in a group by themselves. Altogether 293 patients were admitted to hospital. Of the 76 admitted without orchitis before this treatment was started (Group I) 24, or 32 per cent., developed orchitis, which in three cases was bilateral. Group II included the 56 patients admitted to hospital after the adoption of this treatment, but not given it. Group III included the 56 patients given the serum. In Group II there were 16 patients (29 per cent.) who developed orchitis, which was bilateral in 3 cases. In Group III there were 11 patients (20 per cent.) who developed orchitis, which was bilateral in one case. Of the 15 patients in Group IV who had not been treated in bed from the outset and who were already suffering from orchitis on admission to hospital, and who received no serum, as many as 6 had bilateral orchitis. On the other hand, among the 51 patients who developed orchitis

344. Anaesthesia during Labour in Private Practice.

H. SELLHEIM (*Med. Welt*, March 1st, 1930, p. 288) reports replies received from eight leading German gynaecologists who were asked to state their opinions as regards relieving pain during labour in private practice. One could recommend no suitable method, since all, including twilight sleep and regional anaesthesia, required constant medical supervision. No one favoured and five definitely rejected twilight sleep, whether by scopolamine-morphine or the newer methods, such as pernocton, since the presence of a doctor was necessary the whole time. Such long anaesthesia, it was added, is generally unnecessary, and most gynaecologists confine themselves to treating any very severe pain about the end of dilatation and beginning of expulsion, and to ensuring more or less complete anaesthesia for the birth of the head and any episiotomy that may be necessary. Morphine in the earlier stage is advocated by three gynaecologists. One gives as a routine a mixture containing chloral hydrate and morphine hydrochloride, and finds that it hastens rather than hinders the birth; for the passage of the head he prefers chloroform to ether. Two give morphine hypodermically, followed by chloroform, for the birth of the head; one employs a mixture containing scopolamine and pantopon, of which a third may be given at the beginning of the second stage and the rest for the delivery of the head. Two recommend injection of the neighbourhood of the pudendal nerve with a solution of novocain and adrenaline; this lasts two or three hours, does not delay labour, and the technique is said to be easily learned.

Pathology.

345. Frequency of Weil's Disease in Holland.

W. SCHÜFFNER (*Arch. f. Hyg.*, January, 1930, p. 249) reports on 47 cases of Weil's disease diagnosed in the Institute for Tropical Hygiene at Amsterdam between October, 1924, and July, 1929; of these, 11 proved fatal. As regards the mode of infection, 21 of the patients had, five to twelve days before the onset of the disease, either by mishap or with intent to commit suicide, fallen into more or less dirty water, of which they had swallowed and inhaled a good deal. Seven patients were active swimmers, and developed the disease during the bathing season; 5 were sailors, or men engaged in cleaning animal intestines under water; one was a laboratory worker; and the remaining 13 gave no history indicative of the mode of infection. Jaundice developed in 37 patients. The diagnosis was made twelve times by cultivation of *Leptospira icterohaemorrhagiae* from the blood, organs, or urine. Except in fatal cases, blood cultures were positive only before the development of jaundice; positive cultures from the urine appear to have been uncommon. In 35 cases the diagnosis was made by serological tests. The diagnostic titre, for agglutination and lysis, was taken as 1 in 1,000; only two serums reacted in as low a dilution as 1 in 2,500; the remainder had very much higher titres. The author concludes that with the exception of Sumatra, and perhaps Japan, there is no country other than Holland in which so many sporadic, bacteriologically attested cases of Weil's disease have occurred. Whether the canal system is responsible for increasing the chance of infection the author does not decide, but he brings evidence to suggest that infection occurs not by contact with the normal water leptospira, *L. biflexa*, which has assumed virulence in the tissues, but by contact with water that has been contaminated with infective rat's urine.

346. The Ability of Formolized Vaccine to give rise to Allergy.

BUSSEL and MAYZNER (*C. R. Soc. de Biologie*, February 14th, 1930, p. 411) added formol to vaccinia vaccine and incubated the mixture for six weeks at 37° C. For testing its antigenic properties at the end of this time four infants were chosen who had not previously been vaccinated against small-pox. Two of the infants were injected subcutaneously with three doses of 0.5 c.cm. at three-day intervals; the other two were injected intracutaneously with three doses of 0.1 c.cm. at the same intervals. Four weeks after the last injection all the infants were inoculated with living vaccine by the scratch method, and pustules developed at the end of three days. In those infants previously injected subcutaneously the pustules were transformed in two or three days into crusts, but in those infants previously injected intracutaneously the pustules reached a diameter of 2 cm., and were surrounded by congestion and infiltration; the temperature rose to 102° and remained elevated for three days; after this time the pustules became covered with voluminous crusts and the local inflammation subsided. Since the treatment with formolized vaccine led to an accelerated reaction on the subsequent inoculation of living vaccine, the authors concluded that it had given rise to allergy, and therefore must have preserved its antigenic properties. To test this conclusion they made a series of intradermal inoculations with 0.1 c.cm. of formolized vaccine, diluted 1 in 50 to 1 in 200, on subjects some of whom had previously been vaccinated in the ordinary way with living vaccine. Altogether 53 vaccinated and 45 non-vaccinated subjects were tested. The reactions were studied after twenty-four and forty-eight hours, after which time they progressively diminished. In the children previously vaccinated a pink coloration developed at the site of inoculation, usually attended by the formation of a pustule containing turbid fluid. In the non-vaccinated group there was merely a slight congestion. The authors consider that this method may be of value in determining the degree of immunity possessed by a previously vaccinated subject.

347. Dogs as Leptospira Carriers.

W. KOUWENAAR and J. W. WOLFF (*Nederl. Tijdschr. v. Geneesk.*, January 25th, 1930, p. 376), who publish a preliminary paper on the occurrence of leptospirae in the kidneys of normal dogs, state that it has long been known that leptospirae may occur in dogs. Almost simultaneously with the first appearance of communications on the leptospirae in Weil's disease in men and rats, cases were recorded by German observers in dogs which had died with symptoms of acute jaundice. Since then various investigations have been published on the occurrence of leptospirae in dogs, and it has recently been shown that leptospirae have been found in dogs' kidneys in two clinically different conditions—namely, the Stuttgart dog-plague (canine typhus of Lukes) and infectious jaundice (Okell, Dalling, Pugh). Kouwenaar and Wolff examined 106 healthy dogs for the presence of leptospirae. In 94 their sex and age were noted, 53 being males and 41 females, and their ages ranged from under 1 year to 4 years and over. None of these animals showed at necropsy any naked-eye evidence of disease, particularly jaundice or oedema. The urine was examined in 56 cases, and dark field preparations were always negative. Cultures of liver emulsion in all the animals were also examined without a single positive result. Both kidneys of the 106 dogs were then examined, and though the dark field preparations were always negative, culture of kidney tissue in Vervoort's medium was positive in 6 cases. The strains of leptospira so isolated were not completely identical with the leptospira of Weil's disease. In addition to only a feeble virulence for guinea-pigs, there appeared to be also no serological affinity between the strains from dogs and those from Weil's disease. The object of the present authors has been to draw attention to the occurrence of leptospirae in clinically healthy dogs in a district where relatively numerous cases of human leptospirosis had occurred. The result of further investigations will be published later.

348. Gram-negative Cocci in the Female Genital Tract.

T. CUIZZA (*Ann. di Ostet. e Ginecol.*, February 28th, 1930, p. 158), in common with other observers, has found that Gram-negative cocci other than the gonococcus are sometimes, though infrequently, found in the female genital tract; he alludes to the diagnostic errors, of medico-legal as well as of clinical importance, which may result from confusion of such organisms with Neisser's bacterium. Examining the cervico-vaginal secretion in 65 gynaecological patients, of whom 51 suffered from acute or chronic cervico-vaginal or pelvic inflammation, he found Gram-negative cocci differing from the gonococcus in 6; cultural growth was necessary to establish definitely the fact that these were not gonococci. An organism was grown in pure culture in three cases, and in each had somewhat different morphological and biological characters, which are set forth in detail. In four cases the organism had a diplococcal arrangement. DAVANZO (*Ann. Ital. Ginecol.*, IV, 1929) has isolated from the flora of the cavity of the myomatous uterus two types of Gram-negative diplococci not identical with the gonococcus.

349. The Blood Picture in Varicella.

A. SALVADEI (*La Clinica Pediatrica*, November, 1929, p. 1050) examined the blood in 16 cases of chicken-pox, 5 of which were complicated by pertussis, during the first twenty-four hours of the disease. The ages of the patients ranged from 3 to 5 years. The results were as follows. Both in the pure cases and in those complicated by whooping-cough the eruption of varicella on its first appearance confers an almost specific modification on the blood picture—namely, absolute leucopenia, neutropenia, and relative lymphocytosis, which are almost constantly associated with an increase of the basophils and a diminution of the acidophils.

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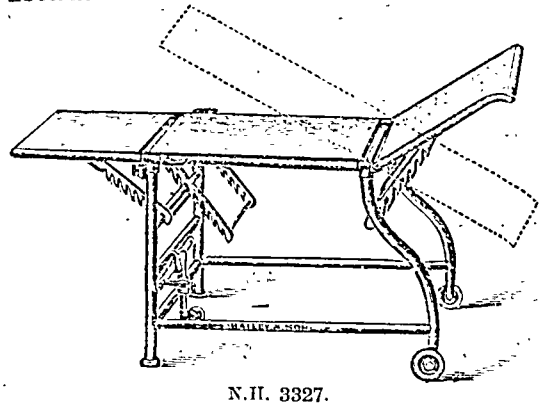
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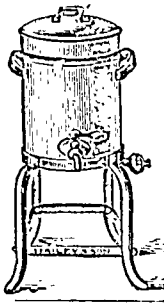
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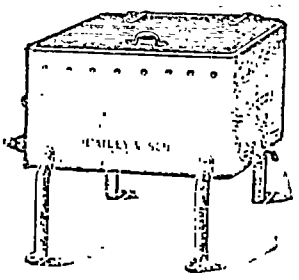


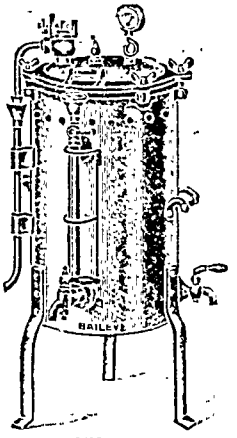
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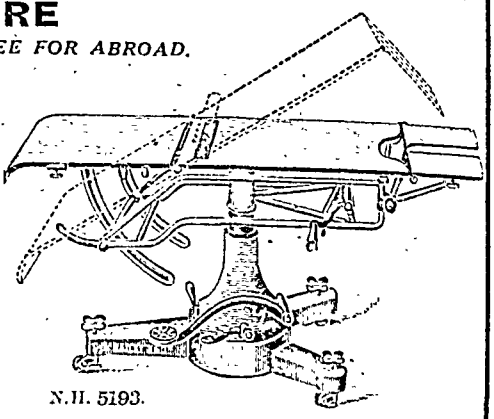
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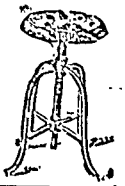
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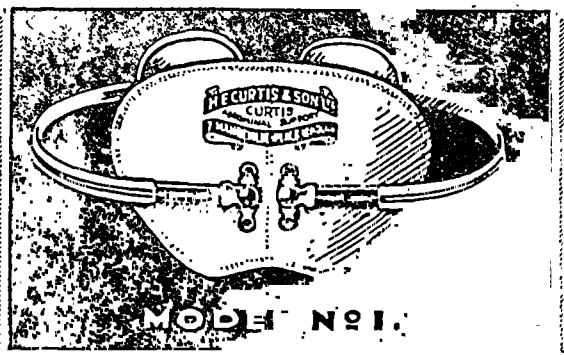
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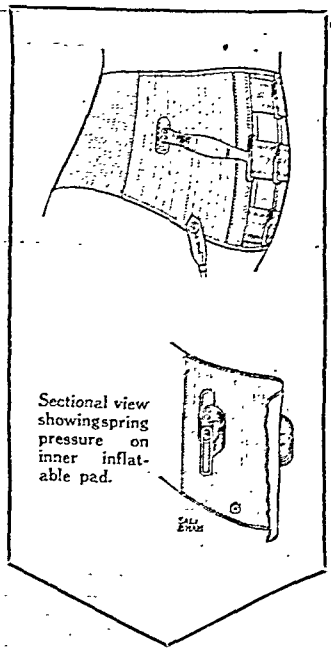
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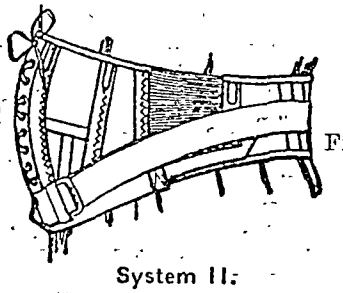
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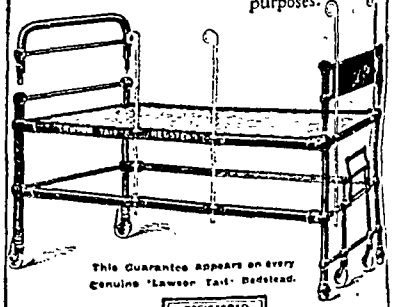
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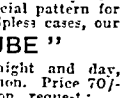
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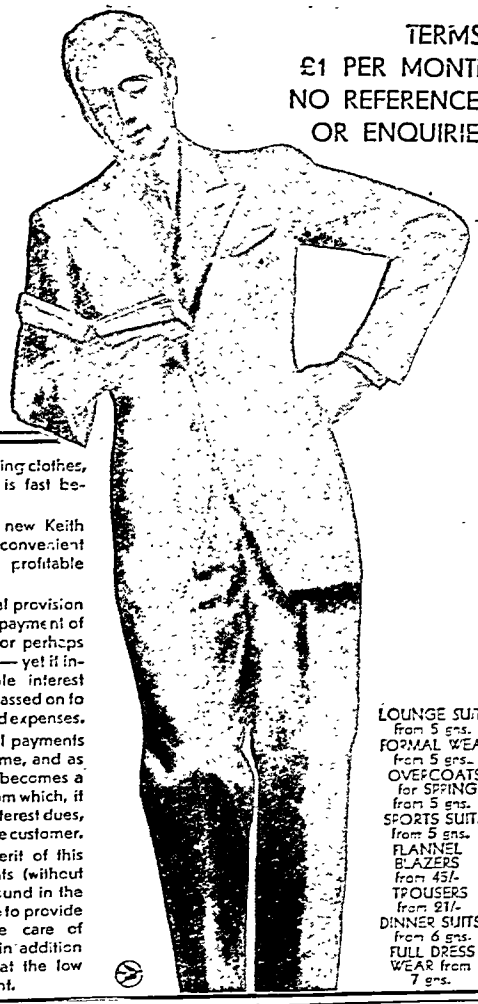


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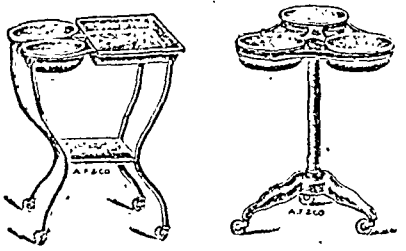
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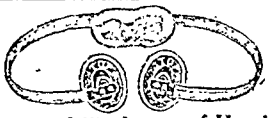
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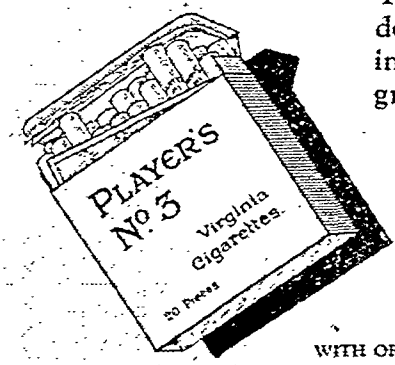
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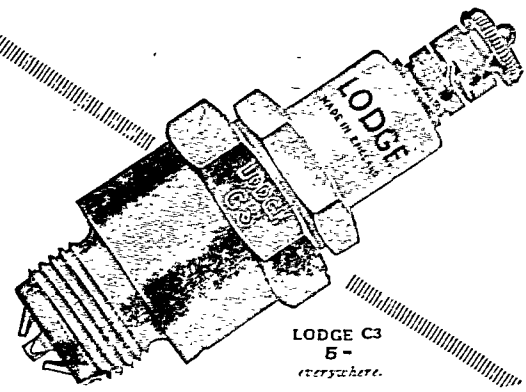
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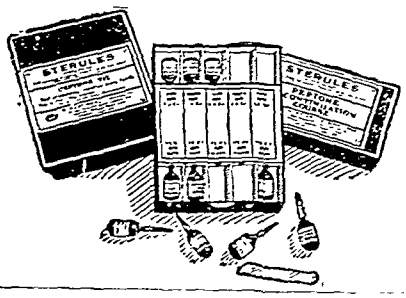
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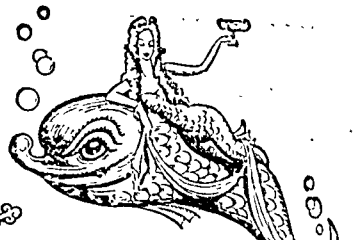
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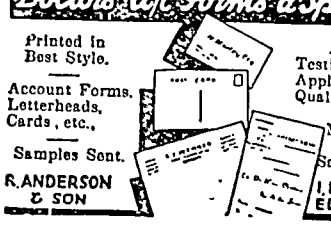
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A Woman Doctor's well-run PRIVATE HOUSE, where intensive treatment is provided for Ladies and Girls suffering from Nervous and Functional Disorder. A special feature is made of Occupational Therapy. High situation, overlooking Clifton Downs. Large gardens. Terms from £5 5s. a week.

Apply, ELIZABETH CASSON, M.D., D.P.M.

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

BAILBROOK HOUSE, BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorder

Voluntary Boarders received in the Villa. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, 1919 2134).

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KINGSDOWN HOUSE

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For the CARE and TREATMENT of NERVOUS and MENTAL DISORDERS in BOTH SEXES.

Separate accommodation for Voluntary Boarders of the Female Sex. Applications received at the above or at 17, Belmont, Bath, by—

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FUNCTIONAL NERVOUS DISORDERS.

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RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent:*

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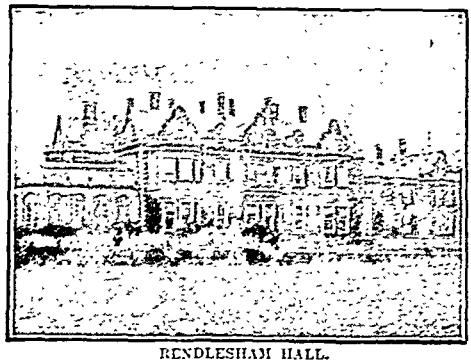
Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated Booklet, giving particulars as to terms, etc., can be had on application to the

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Telegrams and Telephone: Wickham Market 16. (*Toll Call from London.*)



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To those desiring to be near London—

The Mansion, Beckenham Park, Beckenham, as carried on for the last twenty years, is available. Booklet and particulars from the Resident Medical Superintendent.

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ALCOHOLISM, DRUG HABIT, NEURASTHENIA, etc.

BAY MOUNT, PAIGNTON.

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A comfortable, private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line, 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The treatment is the outcome of many years' experience, and besides removing all craving for drink or drugs, it has a tonic action on the system and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. Hogg, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

ALCOHOLISM

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At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the *most modern scientific* principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. Carver, M.D., D.P.M. Fees moderate. Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1. In cases of urgency 'phone NUNEATON 241.

THE LAWN, LINCOLN.

A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent, Dr. MARY R. BARKAS, M.D., D.P.M.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

STRETTON HOUSE,

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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. *Bracing Hill country. See Medical Directory,* p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

CLARENCE LODGE,

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Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

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ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt of The *Norwood* Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent). *Phone:* Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Boarders. Large Mansion with 12 acres of ground. (*See Medical Directory,* p. 2190.) Apply J. H. EARLE, M.D., Resident Physician. Telephone: Streatham 2430.

GARTH HILL HOUSE

NORTH QUEENSFERRY, near EDINBURGH.

A SMALL PRIVATE HOME FOR TREATMENT OF NEURASTHENIC CASES.

Magnificent situation overlooking Firth of Forth. Stress laid on re-education of will and intelligent re-adaptation to environment.

For particulars apply ARTHUR J. BROCK, M.D., Medical Superintendent. *Telephone:* Inverkeithing 179.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone:* 2703.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis-courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.

FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

Dr. E M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

Tel.: 64117. *For terms, etc., apply to the Medical Superintendent*

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.

Telephone: *Teignmouth* 289.

The MAUDSLEY HOSPITAL
DENMARK HILL, S.E.5.

Telephone: RODNEY 4841—2.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.

IN-PATIENTS: (*a*) 164 beds (both sexes) in wards or separate rooms. (*b*) 13 private rooms (for ladies) with special sitting room, garden, and dietary.

Terms:

(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**

(*b*) **£6 6s. a week.**

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For terms, etc., apply to—
M.D., Resident Supt.
7 Barnwood

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan Dee, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary Patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 109 Tamworth

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply The Secretary,

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acr[illegible] nd Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements other Concerts. Occupational Therapy. Physical Drill, and Dancing Classes. X-ray and Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Se[illegible] rt James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0222.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.
Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

LINFORD SANATORIUM,

RINGWOOD, NEW FOREST, HANTS.

Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch.(Cantab.).

NORDRACH-UPON-MENDIP SANATORIUM

FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams:* Nordrach, Blagdon. *Telephone:* Blagdon 23.

CENTRAL LONDON THROAT, NOSE & EAR HOSPITAL,

GRAY'S INN ROAD, LONDON, W.C.1.

SPECIAL INTENSIVE COURSE

Including Operative Surgery, Peroral Endoscopy, and Pathology & Bacteriology Classes will be given from **28th April to 24th May, 1930.**

★ The Course is particularly suitable for D.L.O. Students, and for those in general practice who wish to obtain an increased knowledge of the Speciality.

Full Syllabus of the Intensive Course and of the routine Post-Graduate work can be obtained from the Dean.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1930.

The POST-GRADUATE COURSES to be held this year will comprise:

(1) A GENERAL PRACTITIONERS' COURSE from August 11th to September 6th.
(2) A GENERAL SURGICAL COURSE from August 11th to September 6th.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 14th to August 9th. Fee £10 10s.

In addition to the above, the following *Special Courses* have been arranged:

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 15th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham, Ligertwood, and Paterson. May 5th. 12 Meetings, thrice weekly. Fee: £5 5s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY (including Radiology).—Surgical Staff of Royal Infirmary. Fee: £4 4s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This Class will meet twice weekly at the Ear and Throat Dispensary, Cambridge Street. Fee: £4 4s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

PATHOLOGY OF THE NERVOUS SYSTEM.—Drs. F. E. Reynolds and James K. Slater. Minimum number 6. Fee: £3 3s.
EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s.
VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
MEDICAL CHEMISTRY.—Dr. C. P. Stewart. Fee: £4 4s.
X-RAY PHYSICS AND ELECTRO-TECHNICS.—Mr. C. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

Society of Apothecaries of LONDON.

EXAMINER IN MIDWIFERY.

Candidates must be Teachers at a recognized Medical School.
Applications to be received by April 30th, 1930.

Water Lane, Queen Victoria St., London, E.C.4.
FRANK HAYDON, Secretary.

Society of Apothecaries of LONDON.

BIO-PHYSICAL ASSISTANTS EXAMINATION.

The first Examination for Part I will take place on Monday, June 23rd, and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

STAMMER, HESITATION, DISORDERS OF THE SPEECH.

CONSULT—
Mr. E. J. MIALL,
39, WELBECK STREET, W.1.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS commence 8 weeks prior to each Exam. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

Doctors attending Post-Graduate Courses in London,

requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

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SKILLED COACHING, GUIDANCE, and ADVICE from Specialist Tutors, in conformity with the Regulations of the various Universities.
Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Based on ... principles."—"Thoroughly physiological principles."—"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, &c. Sole address of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5 for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

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You can prepare for any of these qualifications by postal study at home. We specialize in Post-graduate tuition. Clinical and practical courses in any subject. Attendance at Hospital practice arranged.

THE SECRETARY,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square,
London, W.1. Telephone: LANGHAM 1165.

Sir,—Please send me a copy of your "Guide to Medical Examinations" by return

Name.....

Address.....

Examination in which interested.....

ROYAL COLLEGE of PHYSICIANS of EDINBURGH
ROYAL COLLEGE of SURGEONS of EDINBURGH
ROYAL FACULTY of PHYSICIANS and SURGEONS of GLASGOW.

COPIES OF REGULATIONS for the TRIPLE QUALIFICATION (L.R.C.P.E., L.R.C.S.E., and L.R.F.P. & S.G.), and the DIPLOMA IN PUBLIC HEALTH, containing Dates of Professional Examinations for the year 1930-31, Curriculum etc, may be had on application to Mr. DAVID THOMSON, 49, George Square, Edinburgh, or to Mr. WALTER HURST, 242, St. Vincent Street, Glasgow, Inspectors and Treasurers at Edinburgh and Glasgow respectively.

AUTOMOBILE ENGINEERING TRAINING COLLEGE,

CHELSEA, LONDON, S.W.3.
(Day and Residential.)

Founded specially to TRAIN BOYS of good education for the Automobile Industry. The curriculum combines an essentially practical modern works' experience with training in administration. Appointments for qualified Students. Candidates will be accepted for Probationary Term commencing April 24th. Syllabus from ASSISTANT REGISTRAR.

University of Alberta.

Applications are invited for the position of ASSISTANT PROFESSOR OF BIOCHEMISTRY in the University of Alberta, at an initial salary of 2,700 dollars per annum, beginning September 1st, 1930. Candidate will give age, qualifications, and references, and submit a photograph and reprints of articles published.

Applications should be in the hands of the Secretary of the Board of Governors, University of Alberta, Edmonton, Canada, by May 15th.

R. C. WALLACE,
President.

March 24th, 1930.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF BACTERIOLOGY, tenable at University College Hospital Medical School. Salary £1,200 a year.

Applications (12 copies) must be received not later than first post on May 15th, 1930, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

MARLBOROUGH COLLEGE,
Near MACCLESFIELD,
Specialises in
CAREERS FOR GIRLS.
List and Prospectus from Principal.
Special Terms to Medical Men.

Aden Settlement,
ADEN, ARABIA.

The Executive Committee of the Aden Settlement invite applications for the post of MEDICAL OFFICER OF HEALTH. Applicants must possess a Diploma in Public Health or its equivalent, and preference will be given to *holders of the Diploma in Tropical Medicine* with Eastern experience. The salary will be Rs.800 per mensem (approximately £60 at the current rate of exchange), rising by annual increments of Rs.50 per mensem to Rs.1,200 per mensem, plus a car allowance of Rs.150 and a *free unfurnished bungalow* with water. The person appointed will be subject to the general control of the Executive Committee, but will work under the technical supervision of the Civil Administrative Medical Officer, Aden, who is a member of the Committee.

The appointment will be made on a two years' initial contract, subject to a probationary period of six months, with four months' leave on full pay on termination of initial contract, if re-engaged, or two months if not re-engaged. Free passage (first-class by British India Steamer or its equivalent) to and from Aden will be provided plus reasonable travelling expenses to port of embarkation.

Applications, with photograph (to be returned), stating age, nationality, and previous experience, with copies of testimonials (which will not be returned), should be sent without delay to the Chairman of the Executive Committee, Aden Settlement, Aden.

D. S. JOHNSTON (Major, R.E.),
Chairman, Aden Settlement.

Aden, March 14th, 1930.

Gresham College.

Four Lectures on "*How England Learned to Control Disease*" will be delivered by Sir GEORGE NEWMAN, K.C.B., M.D., D.C.L., LL.D., on the 8th, 9th, 10th, and 11th April, 1930, at Gresham College, Basinghall Street, E.C.2. Each Lecture will commence at 6 o'clock. Admission free.

County Borough of Rochdale.

ASSISTANT MATERNITY AND CHILD WELFARE MEDICAL OFFICER (Lady).

The Health Committee invite applications for the appointment of Assistant Medical Officer for Maternity and Child Welfare.

Candidates must be fully qualified Medical Practitioners, with post-graduate experience in *Maternity and Child Welfare* work, and in the treatment of Venereal Diseases in Women. The officer appointed will be required to devote the whole of her time to the duties of the office, which include attendance at the Ante-Natal, Maternity and Child Welfare, and Venereal Disease Clinics, and the Infants' and Children's Hospital. Also the inspection of and lectures to midwives, or any other Public Health duties assigned by the Medical Officer of Health, under whose direction and supervision such officer will act.

Salary at the rate of £600 per annum.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Rochdale, and when completed should be returned, with copies of three recent testimonials, so as to be delivered at this office not later than *Thursday, April 17th*. Envelopes must be endorsed "Medical Officer."

Town Hall, WM. HENRY HICKSON,
Rochdale. Town Clerk.
March 28th, 1930.

County Borough of Huddersfield.

PUBLIC HEALTH DEPARTMENT.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation of Huddersfield invite applications from registered Medical Practitioners for the above appointment.

Candidates should be ladies who are particularly interested in the welfare of mothers and infants, and who are prepared to work wholeheartedly in an intensive scheme for the protection of their health.

Forms of application are not provided.

Candidates should set out their qualifications and experience, and furnish three recent testimonials, and/or two references.

The salary will be at the rate of £500 for the first year, and thereafter at the rate of £600 per annum.

Applications should be addressed to S. G. MOORE, M.D., M.R.C.P., D.P.H., Medical Officer of Health, so as to reach him not later than April 15th.

Town Hall, J. HENRY FIELD,
Huddersfield. Town Clerk.
March 27th, 1930.

Borough of Folkestone.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the position of Assistant Medical Officer of Health and Port Medical Officer, at a salary of £600 per annum.

The gentleman appointed must possess the qualifications prescribed by the Sanitary Officers Order, 1926, and will be required to devote the whole of his time to the duties of the office. He will also be required to assist in the duties of Medical Inspection of Aliens.

The post is designated under the Local Government and Other Officers Superannuation Act, 1922, and the appointment will be made subject to medical examination.

Applications, stating age, qualifications and experience, accompanied by not more than three recent testimonials, and endorsed "Assistant Medical Officer of Health," should be addressed to me and delivered at my office not later than April 23rd.

There is no special form of application.

Town Clerk's Office, C. F. NICHOLSON,
Folkestone. Town Clerk.
March 31st, 1930.

City of Edinburgh.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Corporation of Edinburgh invite applications from duly qualified persons for the appointment of Medical Officer of Health for the City.

Salary £1,500 per annum, rising by a maximum of £1,750 per annum.

A Memorandum specifying the terms of appointment, and outlining the duties to be performed, may be obtained on application to the subscriber.

Applications, stating age, qualifications, and full particulars of present and past experience, should be lodged with the subscriber not later than April 25th.

City Chambers, A. GRIERSON, S.S.C.,
Edinburgh. Town Clerk.
March 28th, 1930.

Worcestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER.

The above-mentioned Council invite applications for the post of Assistant County Medical Officer.

Applicants must be registered Medical Practitioners between the ages of 25 and 45, and must possess the Diploma in Public Health.

The duties will include work under the Council's Maternity and Child Welfare Scheme, the medical examination of Elementary and Secondary School Children, and such other Public Health duties as the County Council may direct.

The officer appointed will work under the supervision of the County Medical Officer, and will be required to reside in the district assigned to him or her by the County Council, and to devote the whole of his or her time to the work.

The salary will be £600 per annum, with actual travelling expenses in accordance with the County Council's Scale. The candidate appointed will be required to join the Council's Scheme under the Local Government and Other Officers Superannuation Act, 1922.

The engagement will be subject to three months' notice on either side.

Applications (on forms to be obtained from the County Medical Officer, 29, Foregate Street, Worcester), accompanied by not more than three recent testimonials, must be received by 12 noon on Wednesday, April 23rd, addressed to the County Medical Officer, 29, Foregate St., Worcester.

Canvassing disqualifies, and neither the names of the Members of the County Council nor of the Committee will be supplied.

Shirehall, Worcester. (W.85) — C. H. BIRD, Clerk of the County Council.

West Suffolk County Council.

ASSISTANT COUNTY MEDICAL OFFICER AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited for the above whole-time appointment, which includes duties in School Medical Inspection, Maternity and Child Welfare, Tuberculosis, Venereal Diseases, etc., work. Salary £600 per annum if with three years' post-graduate experience; if with less than three years' post-graduate experience £500 for the first year, to be raised to £600 after one year of satisfactory service, plus travelling allowance. Particulars of appointment and forms of application may be obtained from the undersigned, by whom applications, accompanied by copies of not more than three recent testimonials, must be received not later than April 19th. Canvassing in any form, direct or indirect, will disqualify.

Shire Hall, Bury St. Edmunds, April 4th, 1930. — L. G. H. MUNSEY, Clerk of the County Council.

County Borough of Sunderland.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

Applications are invited from fully qualified men and women for the position of Assistant Medical Officer for Maternity and Child Welfare.

Applicants must be registered Medical Practitioners, have had at least three years' experience in Public Health work since qualification, be able to show special experience in Ultra-violet Irradiation treatment, and hold a Diploma in Public Health.

Salary £600 per annum.

The appointment is subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical test as required by the Council for the purpose of that Act.

Applications, stating age, qualifications, and experience in Maternity and Child Welfare work, together with not more than three recent testimonials, should be delivered to the undersigned not later than Monday, April 21st, endorsed "Medical Officer."

Canvassing, directly or indirectly, until after the first selection of candidates, will disqualify.

Town Hall, Sunderland. March 31st, 1930. — H. CRAVEN, Town Clerk.

Burton-on-Trent General INFIRMARY.

HOUSE SURGEON.

The Committee require the services of a duly qualified Second Resident House Surgeon (male).

Salary £150, with board, residence, and laundry.

Duties to commence on May 1st.

Applications, with copies of testimonials, to be sent to the undersigned not later than April 12th.

The Infirmary, Burton-on-Trent. — E. W. THORNLEY, Secretary.

County Council of Durham.

ASSISTANT MEDICAL OFFICER FOR PUBLIC MEDICAL SERVICES.

Applications are invited from registered Medical Practitioners, with experience in private practice, and in Poor Law Institutional and District Medical work, for the post of Assistant Medical Officer for the General Medical Services of the Council.

The scale of salary is £800 per annum, rising by biennial increments of £50 to £1,000 per annum, with travelling expenses and subsistence allowances in addition.

The officer appointed will be required to devote his whole time to the duties of the office under the control and supervision of the County Medical Officer of Health, and to reside in the City of Durham or other approved centre.

The principal duties of the post will be concerned with the Medical Services transferred to the County Council under the Local Government Act, 1929, but the officer will also be required to undertake such other Public Health duties as may be allocated to him.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical examination as required by the Council for the purposes of the Act, and the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary; and the appointment will be terminable by three months' notice on either side.

Applications, stating age, qualifications, and experience, and accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer for Medical Services," must be received by the County Medical Officer, Shire Hall, Durham, not later than April 16th.

Shire Hall, Durham. March 31st, 1930. — HAROLD JEVONS, Clerk of the County Council.

County Borough of Barnsley.

APPOINTMENT OF EAR, NOSE, AND THROAT SPECIALIST.

The Hospitals Committee invite applications for the appointment, subject to the confirmation of the Council, of an Ear, Nose, and Throat Specialist for work in connection with their Isolation Hospitals and School Medical Service at an inclusive salary of £175 per year.

The gentleman appointed will work under the general direction of the Medical Officer of Health, and his duties will consist, as regards the Isolation Hospitals, in (i) routine visits twice weekly, (ii) the performance of any necessary operations, with the exception of tracheotomy, (iii) emergency visits, as required.

As regards the School Medical Service, the duties will be to attend at the School Clinic one hour per week and to treat and advise cases of disease.

Applications, stating experience, etc., should be forwarded before April 12th, to the Medical Officer of Health, 18, Regent Street, Barnsley.

Town Clerk's Office, Barnsley. *March 29th, 1930.* — A. D. MASON, Town Clerk.

Borough of Torquay.

DENTIST.

Applications are invited from persons holding the L.D.S. qualification for the position of Dental Surgeon.

The person appointed will be required to examine and treat the teeth of children attending the elementary schools of the Borough, and the Torquay Grammar School; and also such other cases as may be sent by the Medical Officer from the mothers and children attending the Maternity and Child Welfare Centres.

Salary £500 per annum. The appointment, which will be subject to one month's notice either side, is a full-time one, and private practice will not be allowed.

Application form may be obtained from the Education Secretary, Town Hall, Torquay, by forwarding stamped addressed foolscap envelope.

North Lonsdale Hospital, BARROW-IN-FURNESS.

Applications for HOUSE SURGEONS are invited from fully qualified male Practitioners experienced in the administration of Anæsthetics. Salary £175 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary as soon as possible.

Isle of Man Mental Hospital.

ASSISTANT MEDICAL OFFICER required. Salary £300 per annum, with the usual emoluments. Applications, with full particulars and copies of testimonials, to be forwarded to the Medical Superintendent.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the following posts:

(a) HOUSE PHYSICIAN;
(b) HOUSE SURGEON (No. 2).

Each appointment is tenable for a period of six months, but is terminable at any time by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence, and laundry.

Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned, as soon as possible.

W. H. HEAD, Secretary-Supt.

Royal Eye Hospital, St. George's Circus, Southwark, S.E.1.

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital. The appointment is in the first instance for a period of six months, with board and residence as from June 1st.

Salaries: House Surgeon at the rate of £150 per annum; Assistant Surgeon at £100 per annum.

Candidates must be registered Practitioners.

Applications, with copies of three recent testimonials, should be sent to the Secretary at the Hospital not later than Monday, May 5th.

F. E. D'ALTON, Secretary.

Merthyr General Hospital, MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

County Mental Hospital, STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £600, rising by £25 per annum to £700; £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £130 per annum will be charged for furnished quarters, board, laundry, and attendance.

Appointment subject to conditions of Asylum Officers Superannuation Act, 1909.

Applications, stating age, qualifications, etc., and enclosing copies of recent testimonials, to be addressed to the Medical Superintendent.

Stockport Infirmary.

HOUSE PHYSICIAN (male).

Applications are invited for the position of House Physician (male). Salary £175 and board residence.

The Infirmary has 130 beds and large out-patient side, with Specialist Departments.

Applications, stating age, University, qualifications, and experience, with copies of three recent testimonials, should reach the undersigned not later than April 22nd.

Duties to commence May 1st.

EDWIN J. PEARCE, Secretary-Supt.

Beckett Hospital and Dispensary, BARNSLEY. (146 Beds.)

CASUALTY OFFICER required, to take charge of Injuries and Fractures. Capability to perform emergency operations a recommendation. Salary £250 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications and experience (Ophthalmology desirable), accompanied by testimonials, should be sent to the undersigned as early as possible.

ARTHUR L. BOURNE, Secretary-Supt.

March 25th, 1930.

Royal South Hants and SOUTHAMPTON HOSPITAL.

CASUALTY OFFICER, male, unmarried, required, to commence duties April 1st. Six months' engagement. Salary £150 to £175 per annum, according to qualifications, with rooms, board, and laundry.

Applications, stating age, to be sent to the undersigned, together with copies of testimonials. Limited to five, as soon as possible.

HY. TRUSSON, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.).*	**PUBLIC HEALTH** *(contd.).*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	BERKSHIRE COUNTY COUNCIL. *(Assistant Tuberculosis Officer and General Medical Assistant.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 155, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.
April 2nd, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-patient Department as well as in the Wards, and one of the selected candidates will also be appointed Assistant to the Tuberculosis Officer for the local Tuberculosis Dispensary at the Hospital.

Applications, with copies of testimonials, must reach the undersigned not later than Saturday, April 12th.

The appointment is for six months commencing on May 1st, with an honorarium of £50.

Brompton, S.W.3. FREDERICK WOOD,
March 29th, 1930. Secretary.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Down Mental Hospital,
DOWNPATRICK.

ASSISTANT MEDICAL OFFICER.

The Committee of Management of above Hospital, at its meeting on April 19th, will consider applications for vacant post of Junior Assistant Medical Officer. Salary £300 per annum, rising by annual increments of £25 to £400 per annum, and with allowances of furnished apartments, rations, laundry, fuel, light, and attendance, valued for pensionable purposes at £130 per annum. A deduction of 3 per cent. will be made from the salary and value of allowances under the Asylums Officers Superannuation Act, 1909.

Candidates must be unmarried, and not more than 32 years of age, except that a deduction may be made for time served in the Army or Navy during the Great War.

Form of application, giving further particulars, may be obtained from the Resident Medical Superintendent until April 11th.

Hospital for Consumption and
DISEASES OF THE CHEST,
Brompton, S.W.3.

The Committee of Management invite applications from duly qualified Medical Men for the post of JUNIOR HOUSE PHYSICIAN at the SANATORIUM at FRIMLEY. The appointment is for six months, dating from June 1st. In the event of a vacancy the Junior House Physician at the expiration of his term of office will be expected to apply for and, if appointed, to hold the post of Senior House Physician. The honorarium is at the rate of £100 per annum, with free board and lodging.

Applications, with copies of testimonials, must reach the undersigned not later than Wednesday, April 16th.

Brompton, S.W.3 FREDERICK WOOD,
March 29th, 1930. Secretary.

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male) Salary £150 per annum.
JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN.

Candidates must be qualified and registered under the Medical Acts.

The appointment is for 12 months.

Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials, to be sent to the undersigned not later than April 11th.

Duties will commence on May 1st.

WALTER BANKS,
March 24th, 1930. Supt. & Secretary.

Dundee Royal Infirmary.

Two ASSISTANT VISITING MEDICAL OFFICERS in the Medical Department required.

Full particulars of duties, etc., may be obtained from the Medical Superintendent, with whom applications, with 20 copies of three testimonials, must be lodged not later than Saturday, April 19th.

ASSISTANCIES.

Wanted. — Outdoor permanent ASSISTANT at a Branch Practice in South Durham; must be energetic, keen, and abstainer. Motor cycle supplied, or allowance given for using own car. Salary commencing £250, all found (board and furnished rooms at surgery). Usual bond to sign.—Address, No. 2303, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Keen, energetic, male ASSISTANT for private and panel Practice, North-East Coast. Commencing salary £250 outdoor, all found. Pleasant residential district. Good Anæsthetist preferred. Cycle for town, car for country. Usual bond. Cottage Hospital.—Address, No. 2377, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Salaries £300—£500 p.a. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Experienced Assistant, outdoor, in Industrial Practice in South Yorkshire City. Preferably married with no family. Live at Branch Surgery. Free rooms, gas, light, and coal. State essential parties.—No. 2315, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, S. Wales, fringe of Anthracite district, healthy country. Suit recently qualified man. Protestant. Must be sober. Usual bond. Comfortable home. Able to drive car. State age, nationality, and other essential particulars.—No. 2386, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant, single, male, for panel and private Practice in Lancashire. Salary £400 per annum. Usual bond. Must be sober. State age. — Address, No. 2330, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (married or single). Able to do Refractions or otherwise well experienced in Hospital and general practice. £7 weekly (indoor). Usual bond. Send photo.—Address, No. 2335, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, for a Colliery Practice in Glamorganshire. Would suit recently qualified man. Salary £360 a year, with rooms and attendance. — Address, No. 2371, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Junior Indoor Assistant. Suit recently qualified man. South Wales General Practice. Must be sober. Usual bond. Give age, height, religion, etc.—Address, No. 2388, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, salary £300 indoor, or £400 and house, in Midlands. Excellent prospects.—Address, No. 2375, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Lady Assistants and LOCUMS for General Practices, Lanes District. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—Outdoor Male Assistant, experienced, for private, panel, and industrial Practice in Swansea. Abstainer. Salary £400 and half midwifery fees. Usual bond. State full particulars. — Address, No. 2397, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Competent Man or Woman ASSISTANT, conscientious, and careful in details; own car; for experience in good Practice; outdoor; N. of England; early in May.—Address, No. 2322, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, single, abstainer, Protestant, in S. Wales. Salary £300 p.a., with rooms, attendance, fire, and light. Full particulars and references.—Address, No. 2387, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, single, energetic, for panel and private Practice, Newcastle-on-Tyne. Salary £400.—Address, stating full particulars, No. 2376, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship or Assistantship with view to Partnership, L.M., Ch.B. Scope for Ophthalmology desirable. Hospital and general practice experience. State salary. Young, energetic.—Address, No. 2327, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, male Assistant, single, indoor, mixed Practice. Salary £250, all found, commission on mids.—Address, No. 2317, B.M.A. House, Tavistock Sq., W.C.1.

Wanted by M.B., M.R.C.P., ASSIST. with view in non-dispensing Practice in North-West England or South Scotland. Capital available. Interview. — Address, No. 2372, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view to Partnership, by M.R.C.S., L.D.S., L.R.C.P., ex H.S., H.P., Surgical Registrar and Registrar to Ear and Throat Dept. large Hosp. Exp. in Mental work, Anæs., and Aural Surgery. Age 28, abstainer; at present holding Senior Lectureship, Sch. of Med. Has done 12 mths. G.P. —No. 2401, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, an Assistantship by M.B., B.Ch., aged 28 years, single; three years' experience of general practice; ex House Surgeon; motorist; well received. Interview.—Address, No. 2336, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted to develop new branch Cash Surgery in promising district, 14 miles from Piccadilly. £350 and commission. Partnership after 12 months at 2 years' purchase on easy terms. Primary deposit of £250 required, to be afterwards deducted from purchase price. Rooms available behind surgery.

Address, No. 2312, B.M.A. House, Tavistock Square, W.C.1.

A young Assistant, single, wanted for Colliery Practice in County Durham. Young Scotsman with idea of eventually settling down to this type of work preferred. Usual bond required. Must be energetic, abstemious, and conscientious. Live in.—Addl., No. 2319, B.M.A. House, Tavistock Sq., W.C.1.

An experienced married man, now disengaged, would ASSIST busy Practitioner in London at moderate fee, indoor; or would do country Assistancy, or temporary work, at five guineas. — Address, No. 2389, B.M.A. House, Tavistock Square, W.C.1.

Experienced Edin. Graduate, aged 33, ex H.S., is now free to accept ASSISTANTSHIP, preferably with view to partnership, or would accept Locum or part-time work for moderate remuneration. — Address, No. 2373, B.M.A. House, Tavistock Square, W.C.1.

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Wanted for service in Kenya COLONY by Manufacturing concern, a MEDICAL OFFICER. Applicants should be between 28 and 34, and preference will be given to single men. Other qualifications required are a sound general training and experience, good personality, keenness, and energy. Specialised knowledge of Tropical Medicine is not essential.

A good salary is offered, and the man appointed will receive a first-class passage to and from Kenya, together with a free house, electric light, etc. Six months' leave on full pay will be granted at the conclusion of each three years of service in the Colony.

Standard application forms may be obtained by writing in the first instance to the Secretary, Magadi Soda Co., Ltd., Imperial Chemical House, Millbank, S.W.1.

Wanted, a Resident Woman MEDICAL OFFICER for a HYDROPATHIC HOTEL at an Inland Spa. The post requires a high professional capacity combined with tact and dignity. Age about 40. Salary £240, with board and residence, and prospect of share of fees. — Address, No. 2304, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Lady Dispenser-Bookkeeper, experienced in general practice. Good references essential. State age.—Write to Drs. FAGGE & FURNESS, Melton Mowbray.

Wanted by Woman M.B., Ch.B., D.P.H., TEMPORARY WORK—Health work or General Practice Assistantship or Locum. Thoroughly experienced, own car, free April 17th.—Address, No. 2332, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0959), Secretary, 7, Westbourne Park Road, W.2.

A middle-aged Doctor (with twenty years' experience of good-class Seaside Practice and some Dietetic experience fitting him for work at a Spa) desires EMPLOYMENT of any sort. 5 guineas a week.—Address, No. 2328, B.M.A. House, Tavistock Square, W.C.1.

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Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary - Dispensers, Nurse - Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858. THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

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For Sale, in a large Lancashire Town, an old-established PRACTICE, with a panel of about 2,300. Average receipts for the last three years about £2,500. This Practice is capable of further development. Vendor desirous of retiring. Introduction given. Price one and a half years' purchase. — Address, No 2112, B.M.A. House, Tavistock Square, W.C.1.

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Good opportunity for Doctor in growing neighbourhood in large City in the West. HOUSE, with three reception rooms and kitchen, 4 bedrooms, nice gardens and room for garage. Standing 230 feet above sea-level on main road. Nearest Doctor about half mile away: large population within this radius. Two good Nursing Homes within few yards.—Address, No. 2349, B.M.A. House, Tavistock Square, W.C.1.

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Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (particulars on application). Write for price list of Tablets and Government Surplus articles.
Showroom: 97, Swinderby Road, Wembley.

For Sale.—Complete X-Ray INSTALLATION, 230 volts D.C., comprising 16in. coil and interrupter, couch, Potter-Bucky diaphragm, screening stand, viewing desks, screens, and cassettes. Also Electro-therapeutic Apparatus. Seen in Edinburgh. Full details on application. — Address, No. 2374, B.M.A. House, Tavistock Square, W.C.1.

Handsome Pair of £4 4s. square polished Ash TENNIS STANDARDS, complete with heavy ground plates, powerful fixing screws, and solid brass net-winder. Accept 47/6. Also full regulation size heavy Waterproof Net, with steel headline, 17/6. Both perfect condition, never used. Approval willingly against post-dated cheque.—GILYARD, Darley St., Bradford.

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14 h.p. Armstrong Siddeley folding head COUPE, only run under 6,000 miles. Same guarantee given with it as for a new car. List price £425.—NOW £135. Most reasonable deferred terms arranged. — CONNAUGHT, 31/36, Davies Street, Berkeley Square, London, W.1. (Next to Claridges' Hotel.) Mayfair 5048.

APPOINTMENTS.—Contd.

Royal Aberdeen Hospital for SICK CHILDREN.

Wanted, Two HOUSE PHYSICIANS and Two HOUSE SURGEONS (male or female), to commence duties on May 1st. Candidates are requested to call on or communicate with Senior Members of the Hon. Medical Staff. Applications, accompanied by one copy of testimonials, to be lodged on or before Friday, April 18th, with Mr. A. S. R. BRUCE, 12, Dee Street, Aberdeen.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £150, with residence, board, and laundry. Candidates for the above post must be duly qualified and unmarried, and are required to commence duties on or about May 1st. Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.1.

There will be a vacancy on May 1st for a HOUSE SURGEON (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Application, with copies of testimonials, should be forwarded not later than Wednesday morning, April 16th, to the Secretary at the above address, from whom further particulars can be obtained.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, April 17th.

GEORGE WATTS, Secretary-Supt.

Queen Charlotte's Maternity HOSPITAL, Marylebone Road, N.W.1.

RESIDENT ANÆSTHETIST required to commence duty as soon as possible. Applicants must be registered. Appointment for six months. Salary at the rate of £80 per annum, with board, residence, and washing allowance (4/- weekly).

Copies (not originals) of not more than three testimonials will be received by the Secretary up to April 14th.

ARTHUR WATTS, Secretary.

The Northern Infirmary, INVERNESS.

Wanted immediately for the new Infirmary, HOUSE PHYSICIAN, fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before April 15th next to Mr. ROBERT GRIEF, J.P., Secretary to the Institution, 20, Church Street, Inverness.

King Edward Memorial Hospital, Ealing, W.13.

Applications are invited for the following appointments:

One SENIOR HOUSE SURGEON (male).
Salary £150 per annum.
One JUNIOR HOUSE SURGEON (male).
Salary £100 per annum.
With board, residence, etc.

Appointments are for six months in first instance.

Applications, stating age, qualifications, etc., should be made at once to the Secretary Supt.

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointment from April 15th.

HOUSE SURGEON. Salary £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by April 12th.

A. B. LEANEY, House Governor.

April 1st, 1930.

The St. Helens Hospital, LANCASHIRE.

Wanted, a fully qualified man as RESIDENT MEDICAL OFFICER, to commence duties at once. Salary £250 per annum, together with board and laundry.

Apply, with three recent testimonials, to the Secretary, The St. Helens Hospital, St. Helens.

Kilmarnock Infirmary.

Wanted, Two HOUSE SURGEONS. Salary at the rate of £100 per annum, with board and accommodation. Apply at once to the Secretary.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

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Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Metropolitan Hospital,
Kingsland Road, E.8.

There are vacancies for the following:
(a) SENIOR HOUSE PHYSICIAN;
(b) SENIOR HOUSE SURGEON;
(c) JUNIOR HOUSE PHYSICIAN;
(d) JUNIOR HOUSE SURGEON;
(e) Two CASUALTY OFFICERS.
Males. Salary £100 per annum.

Appointments in the first place will be for a period of six months dating from May 1st.

Candidates must possess a registered Medical and Surgical qualification of the United Kingdom.

Applications, with copies of three recent testimonials, and a certificate of ability to administer anæsthetics, should be sent to the undersigned not later than first post on Monday, April 14th.

Two Members of the Resident staff are candidates for the two Senior appointments.

HERBERT F. RUTHERFORD,
Secretary & House Governor.

The Children's Hospital,
BIRMINGHAM. (250 Beds.)

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post.

Candidates must be qualified and registered and have held previous resident appointments at a Hospital.

The salary is at the rate of £175 per annum, with board, residence, and laundry.

The appointment is tenable for one year, and the officer is eligible for re-election for a second year.

Duties to commence on July 1st.

Applications, with certificate of registration and not more than three testimonials, should be addressed to the undersigned on or before May 2nd.

HAROLD F. SHRIMPTON,
March 28th, 1930. *House Governor.*

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the appointment of RESIDENT ANÆSTHETIST. Candidates must be duly qualified Medical Practitioners. The post is tenable for one year from May 1st.

Preference will be given to former Students of the *London (R.F.H.) School of Medicine for Women.*

Intending candidates should submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned on or before April 8th.

REGINALD GARRATT, *Secretary.*

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited from duly qualified Medical Women for the post of CASUALTY OFFICER. Previous experience as Hospital Resident essential. Salary £150 per annum. Intending candidates should submit applications, stating age, and accompanied by copies of three recent testimonials, to the undersigned before April 8th. The appointment is tenable for six months from May 1st.

REGINALD R. GARRATT, Secretary.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing Monday, April 14th. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, April 9th. Selected candidates will be invited for an interview Saturday, April 12th

St. John's Hospital, Lewisham,
S.E.13.

There is a vacancy for a RESIDENT MALE CASUALTY OFFICER to take duty for a period of six months beginning on May 1st next. Remuneration £160 p.a. Applications, with copies of testimonials, should reach the Secretary of the Hospital not later than Monday, April 14th.

The Salvation Army,
THE MOTHERS' HOSPITAL,
Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of RESIDENT ANÆSTHETIST (with some pathological duties), vacant May 1st. Salary £80 per annum, with board, residence, and laundry. Candidates should have had previous experience in Anæsthetics and Pathology. She would be expected to call on members of the Honorary Staff, a list of whom can be obtained on application to the Secretary. Applications, with testimonials, must be sent to the Secretary on or before April 14th.

EDGAR DIBDEN, *Secretary.*

Queen's Hospital, Birmingham.
(A General Hospital and Medical School.)

There are vacancies in the following Resident posts. Salary at the rate of £70 p.a. together with board, apartments, and laundry.

HOUSE PHYSICIAN.
RESIDENT ANÆSTHETIST.
HOUSE PHYSICIAN at the Nerve Hospital *(associated with Queen's Hospital).*
CASUALTY HOUSE SURGEON.

Full particulars may be obtained from the undersigned, to whom applications, accompanied by three testimonials, should be sent at once.

G. HURFORD,
March 27th, 1930. *House Governor.*

The Hospital for Women,
Soho Square, W.1.

Applications from fully qualified men and women are invited for the post of RESIDENT MEDICAL OFFICER for a period of six months commencing May 1st next. The salary is at the rate of £100 per annum, with board, residence, and laundry. Applications and testimonials *must reach the undersigned, from whom further information* can be obtained, by Friday, *April 18th.*

J. P. HEMING, *Secretary.*

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be *male,* unmarried, and of British nationality.

Applications, with three testimonials, must be sent in not later than April 11th, addressed to the *undersigned.*

GERALD V. KENYON,
Asst. Secretary.

Royal United Hospital, Bath.

Wanted as soon as possible, a HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Salaries £150 and £100 per annum respectively.

The appointments will be for not less than *six months,* and candidates must be male, unmarried, and of British nationality.

Applications together with three recent testimonials should be addressed to the undersigned.

GERALD A. KENYON, *Acting Secretary.*

Bristol Royal Infirmary.

Applications are invited for the post of HOUSE PHYSICIAN to Dr. A. T. Todd. Salary at the rate of £60 per annum, with board, apartments, and laundry. Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Tiverton Hospital, Devonshire.
(36 Beds.)

HOUSE SURGEON required immediately. Salary at the rate of £100 per annum, with board, residence, and washing. Six months' appointment.

Applications to be sent, with copies of three recent testimonials, to the Hon. Sec., C. H. DEERE, 36, Fore Street, Tiverton.

Princess Louise Kensington
HOSPITAL FOR CHILDREN,
North Kensington. (42 Beds.)

HOUSE PHYSICIAN (woman) required for six months from May 1st. The House Physician's salary is at the rate of £75 a year; should she during the period of her residence be appointed Senior Resident (of two), the salary would be at the rate of £100 a year, with board, residence, and laundry in each case.

Applications, together with copies of three testimonials, must be submitted on a form to be obtained from the Secretary, Princess Louise Kensington Hospital for Children, St. Quintin Avenue, W.10. Applications must reach the Secretary not later than Saturday, April 19th.

Royal Hampshire County
HOSPITAL, WINCHESTER.

HONORARY ANÆSTHETIST.

Applications are invited for the post of HONORARY ANÆSTHETIST.

Candidates must be Fellows or Members of one of the Royal Colleges of Great Britain or Ireland, or a Graduate in Medicine of one of the Universities of Great Britain or Ireland, and must be duly registered.

Applications, stating age, with testimonials, limited to three in number, should reach the undersigned not later than April 5th.

Winchester. HERBERT MASLEN,
March 26th, 1930. *Secretary.*

Bolingbroke Hospital,
Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE SURGEON (male) required. The appointment is for six months, commencing on May 1st next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before April 14th.

W. S. RANDOLPH BISS, *Secretary Supt.*

The Glasgow Eye Infirmary.

The Directors invite applications from registered Medical Practitioners for the post of RESIDENT ASSISTANT HOUSE SURGEON. Salary £75 per annum, with apartments and board. The post will be vacant at the end of April.

Applications, with copies testimonials, should be lodged with the undersigned by Mr. [illegible]
171, West Regent St., W.M. H. MOORE, M.D.,
Glasgow, C.2. *Secretary.*
March 25th, 1930.

Applications are invited for the
post of RESIDENT MEDICAL OFFICER, for a term of one year at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains 160 beds, is one of the largest Provincial Hospitals in Scotland, and affords exceptional opportunities of gaining experience in all branches of the profession. Salary £100 per annum.

Applications, which must be received [illegible] should be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, and [illegible] not later than April 14th.

Walsall General Hospital.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates [illegible] must be registered under the Medical Acts and must produce three recent testimonials.

The appointment will be for a year in [illegible].

The Hospital contains 160 beds and is equipped with all Special Departments.

Applications, stating age, qualifications, and [illegible] must be received by the undersigned not later than the first post Thursday, April 10th.

WALTER FRANCOMBE,
March 26th, 1930. *Secretary.*

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me by Tuesday, April 8th.

W. COCKBURN, Supt. & Sec.

Preston and County of Lancaster
ROYAL INFIRMARY.

APPOINTMENT OF PATHOLOGIST.

Applications are invited for the post of Pathologist (whole-time) to take charge of the new Pathological and Bacteriological Laboratory recently erected.

The salary and emoluments will be guaranteed to be not less than £1,000 per annum.

The duties consist of carrying out the work of the Hospital, Pathological and Bacteriological work for the Corporation of Preston, and such other work as may be sent to the Department by other Local Authorities and bodies and Medical Practitioners.

Full particulars of the remuneration, conditions and duties, may be obtained from the undersigned.

Applicants should forward twenty copies of their applications and testimonials to the undersigned not later than April 17th.

Royal Infirmary, Preston. JOHN GIBSON, Supt. & Secretary.

March 24th, 1930.

Doncaster Royal Infirmary.
(185 Beds.)

HONORARY PHYSICIAN AND PATHOLOGIST.

Applications are invited for the newly created post of Hon. Physician and Pathologist to the above Hospital.

The appointment offers unique opportunity in a rapidly growing and densely populated area. The gentleman appointed will be required to be in Consulting Medical Practice and reside in the district.

He must hold the degree of M.D. or be a Fellow or Member of the Royal College of Physicians, and be competent to undertake all Bacteriological and Pathological work of the Hospital. The Laboratory will be allowed to be used for private and other work.

Applications, with full particulars and copies of testimonials, to be received by the under signed on April 10th.

J. LAWRENCE MEARS, Secretary Supt.

Doncaster Royal Infirmary.
(185 Beds.)

HONORARY EAR, NOSE, AND THROAT SURGEON.

Applications are invited for the above post. Candidates must either be a F.R.C.S. of one of the Colleges or hold the D.L.O. degree.

Applications, stating full particulars, with copies of three testimonials, must be received not later than April 10th.

J. LAWRENCE MEARS, Secretary-Supt.

Doncaster Royal Infirmary.

HON. ANÆSTHETISTS (Two).

Applications are invited for the above posts. Attendance on three mornings or afternoons per week as desired by the Hon. Surgeons. Applications, stating full particulars, must reach the undersigned by April 10th.

J. LAWRENCE MEARS, Secretary-Supt.

Durham County Hospital.

The post of JUNIOR HOUSE SURGEON will be vacant on April 30th. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of beds 75. Salary £120 per annum, with board and lodging. Applications, with copies only of testimonials, to be sent to the undersigned by April 16th.

79, Saddler Street, Durham. WM. R. WILSON, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

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(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent, 19, Nottingham Place, London, W.1. Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

THE
NEW MENTAL NURSES CO-OPERATION,
139, Edgware Road, Marble Arch, W.

Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the Supt.

Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6105 Padd.

Royal Northern Hospital,
Holloway Road, N.7.

PATHOLOGICAL DEPARTMENT.

Applications are invited for the following posts, vacant on May 31st, for which candidates must possess a registered British qualification and be engaged wholly in pathological work.

PATHOLOGIST. Salary £750 per annum.

ASSISTANT PATHOLOGIST. Salary £500 per annum.

In addition to these salaries the Pathologist and Assistant Pathologist appointed will be entitled to a proportion of the fees for private work done in the Department. Private practice is permissible.

Particulars with regard to the hours of attendance, duties and submission of testimonials, etc., may be obtained from the undersigned, to whom application should be made not later than April 12th.

GILBERT G. PANTER, Secretary.

Western Ophthalmic Hospital,
Marylebone Road, N.W.1.

OPENING OF NEW BUILDING.

Applications are invited for the posts of SENIOR RESIDENT HOUSE SURGEON and JUNIOR NON-RESIDENT HOUSE SURGEON. The salaries are at the rate of £150 per annum and £100 per annum respectively, and the appointments are for six months.

Selected candidates will be required to take up duty on May 1st.

Applications should state whether candidates are applying for either post, and should be accompanied by copies of not less than three testimonials, and should reach me by April 10th.

Marylebone Rd., London, N.W.1. H. W. BURLEIGH, Hon. Secretary.

March 24th, 1930.

London Jewish Hospital.

Applications, which should be sent to the Secretary on or before April 11th, accompanied by copies of three recent testimonials, are invited for the post of MEDICAL REGISTRAR AND OUT-PATIENT ASSISTANT.

The holder, who must possess a registered qualification, will be required to attend the Out-patient Department on five afternoons a week (Monday to Friday) to assist the Out-patient Physicians. Honorarium at the rate of £150 per annum, and the appointment is for six months.

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After Office House: EPSOM 9142.

Terms post free on application.

Berks. — About £1,000 p.a. Panel 200. Visits 3/6 to 10/6 and 21/-. Midwifery discouraged, scope. Good house, 3 beds., etc. Rent £75. Premium £1,000.—No. 8635.

Kent.—Over £1,100 p.a. Panel 460. Appts. over £400. Opposition slight. Little midwifery. Fees 3/6 to 7/6. Good house, 6 beds., garden, etc.—No. 8655.

S. Wales. — Colliery Practice £2,600 p.a. Panel 2,445. Contract work about £1,200 p.a. Worked from Surgery. House available.—No. 8610.

Surrey. — £1,000—£1,100 p.a., within reach of Town. Panel 500, increasing. Fees 3/6 to 7/6. Large attractive house, 8 bed., etc., to rent, others available.—No. 8593.

Channel Isles.—Nearly £400 p.a. increasing. No panel. Fees 3/- to 7/6. Med. extra. Good house in residential district. Excellent schools.—No. 8570.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8654.

London, S.E. — About £1,500 p.a., increasing. Non-panel PRACTICE. 2/3 share for disposal for £800 cash. Choice of houses.—No. 8652.

Cornwall. — Unopposed County. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids 2–6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 5 beds., etc., to let.—No. 8629.

London, S.E. — About £1,000 p.a. Cash PRACTICE. Panel 350. Lock-up premises at £2 p.w. Low premium.—No. 8627.

Leicestershire. — Country PRACTICE over £700 p.a. Panel over 1,000. Fees 2/6—7/6. House, 4 bed., etc. Rent £70. Large garden.—No. 8626.

London, S.E. — Residential. — Over £600 p.a. Panel 400. Appointments £20 p.a. Visits 3/6—10/6. House, 5 bed., etc.—No. 8621.

Northern Suburb. — Middle-class PRACTICE. About £1,350 p.a. Mids. 2—5 gns. Visits 3/6 to 10/6. Panel over 700. Good house, with large garden to rent.—No. 8625.

London, S.E. — About £2,000 p.a. Very few mids. Panel over 3,000. Nine-roomed house to rent.—No. 8620.

Lancs Town.—About £2,000 p.a. Mids. 2—4 gns. Visits 2/6 up. Panel over 2,100. Prem. £2,883, £750 down. House, 5 beds., etc., to let.—No. 8618.

Eastern Counties. — Country. — About £1,800 p.a. The whole or 1/2 share with early succession. Panel and appts over £900 p.a., fees 2/6—10/6. Mids 2–5 gns. House, 5 beds, etc., good garden, tennis, etc., to rent.—No. 8614.

Home Counties.—Country PRACTICE. About £500 p.a., increasing annually. Visits 2/6—5/-. Panel 250. Mids 2 gns., discouraged.—No. 8587.

Cornwall. — 1/3 share of £4,000 p.a. Surgical scope. Panel 1,500. Appts. £280 p.a. Fees from 3/6. Mids. 2 gns. Choice of houses. Premium £2,250.—No. 8577.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Panel £100 p.a. Appt. £150 p.a. Fees 5/- to 21/-. No mids. Good house and garage.—No. 8576.

Derbyshire Town.—Share worth £800 p.a. Non-panel PRACTICE. Appts £500 p.a. Visits 5/- to 21/-. Mids. 5–6 gns. Scope for surgery. Alternative accom.—No. 8569.

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SURREY.—Country Town PRACTICE. Suitable house available to rent on lease. Receipts £700. Panel 500. Fees 2/6 up. Premium £1,200. Alternative smaller accommodation available.

BUCKS.—PARTNERSHIP.—Country Town Practice. Receipts £4,100 (approx.). Panel 1,100. Fees 2/6 up. 1/4 share at 1½ years' purchase after preliminary Assistantship. Terms considered to suitable applicant.

NORFOLK.—Cathedral City PARTNERSHIP in good-class non-panel G.P. Receipts over £4,400 per annum. 1/4 share now offered with view to larger share at one year's purchase. Suitable to a Physician, young, and preferably single.

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8. SOUTH COAST.—Popular Watering-place and Residential Town.—Old-established non-panel non-dispensing PRACTICE, held over 20 years by present Incumbent. Cash receipts last year over £2,000. Visits 5/- to 10/6. Midwifery 10 gns. upwards. Choice of several houses. Premium £2,900, or near offer, part by instalments.
9. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, *producing £2,500 p.a., including panel of 1,804, and* appts. worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
10. YORKS.—PARTNERSHIP.—A one-third share, with increase later, is offered in a sound and increasing middle and working-class Practice, situated in prosperous district close to two good towns. Average gross cash receipts for past three years £3,226 (last year £3,354). Panel of 2,100, and appts. worth over £130. Good house, with 2 reception, 4 bedrooms, etc. Large garden and paddock. Garage. Price £1,900. Premium for share 1¾ years' purchase.
11. SOUTH OF ENGLAND.—*LARGE SEAPORT TOWN.—Old-established* mixed general PRACTICE. Average income nearly £1,900. Panel of 2,500. Fees 2/6 to 7/-. No mids. No Assistant kept. Well-situated house, with goo[illegible] on lease £120. Prem. £3,300.
12. WITHIN 40 [illegible] a thriving Riverside and Hospital town [illegible] *established mixed-class and in-*creasing PRAC[illegible] last year, including panel of 1,600 to 1,700. House contains professional accommodation, 2 reception, 4 bedrooms, bathroom, etc. Small garden and garage. Rent on lease £60 p.a. Premium £3,650, to include good book debts of £500, drugs, etc., and consulting room and surgery furniture.
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17. SOUTH-WEST OF ENGLAND.—Old-established and increasing PRACTICE in pretty district 5 miles from Hospital town and within 10 miles of the sea. Income last year £1,489, including Clubs, etc. (£105) and panel of 780. Railway station near. Detached house (professional rooms, 2 reception, 5 bedrooms, bathroom, etc.). Garage. Rent on lease £45 p.a. Premium £2,100.
18. LONDON.—EASTERN SUBURB.—Old-established good, middle-class PRACTICE averaging about £1,350 p.a. *Panel of 715. Fees 5/-* upwards. Not much midwifery. Exceptionally nice house, with large garden, tennis court, etc. Contains 10 rooms, in addition to bathroom, etc., and professional rooms. Two garages. Rent on lease £120 p.a. (upper part well let off). Premium £2,000.
19. *WITHIN FIFTY MILES OF LONDON.*—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 538, and appts. worth about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Elec. light. Price for freehold £3,000. Premium £1,050. Exceptionally good educational facilities for boys.
20. LARGE UNIVERSITY CITY (WEST).—Good-class old-established non-dispensing PRACTICE worth last year £1,274, including select panel of about 350. Visits up to 21/-. Very little midwifery. Good house in best part of City, overlooking park, with ample accommodation. Vendor's freehold, but will be let on lease. Premium only £1,200.
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24. YORKS.—LARGE TOWN.—Very old-established middle and working-class PRACTICE, offering exceptional scope for increase. Income last year £1,500, including panel of over 1,700. Visits 4/6 to 5/-. Conveniently situated house, with 2 reception, 4 bedrooms, etc. Rent on lease £56 p.a. Premium £2,250.
25. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea—A half share in very old-established and rapidly increasing mixed general Practice. Average cash receipts last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds [illegible] freehold £1,900, £1,200 on [illegible] and good scope for major [illegible] residential district, near [illegible] ence with) in an old-established [illegible] for the past three years £1,[illegible] and offering good scope. Panel of nearly 1,000. Fees 3/6 to 21/-. *Choice of two houses at rentals of £100 and £50 p.a.* Sport of all kinds. Premium 2 years' purchase.
26. [illegible]
27. SOUTH-WEST OF [illegible] COAST TOWN.—A [illegible] having good surgery third share in an [illegible] Panel of 1,800. Fees scope. Gross cash [illegible] able house available on rental. *Premium £2,250.*
28. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1½ years' purchase.
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Advertisements and Communications for our issue of April 19th: see Notice on page 2 (Advts.).

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British Medical Journal.

APRIL 12TH, 1930.

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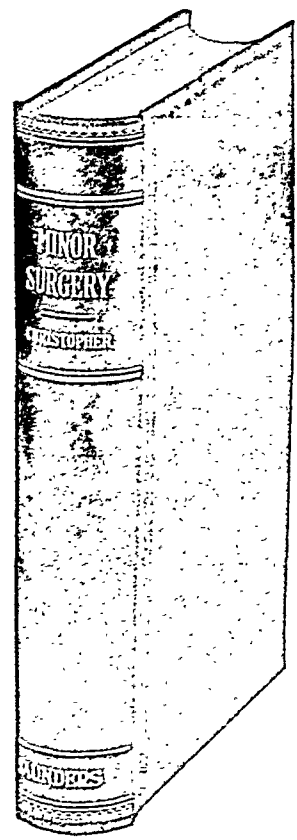
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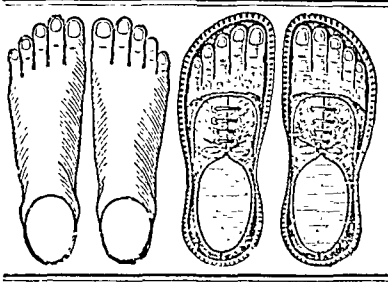
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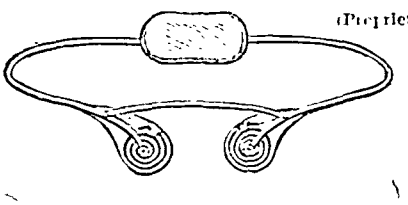
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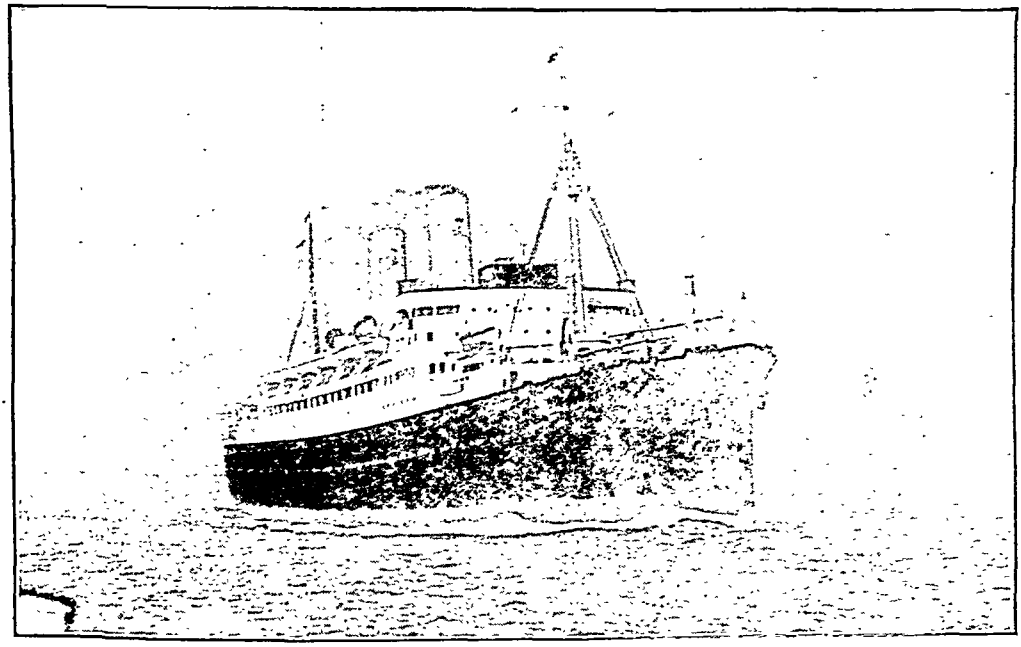
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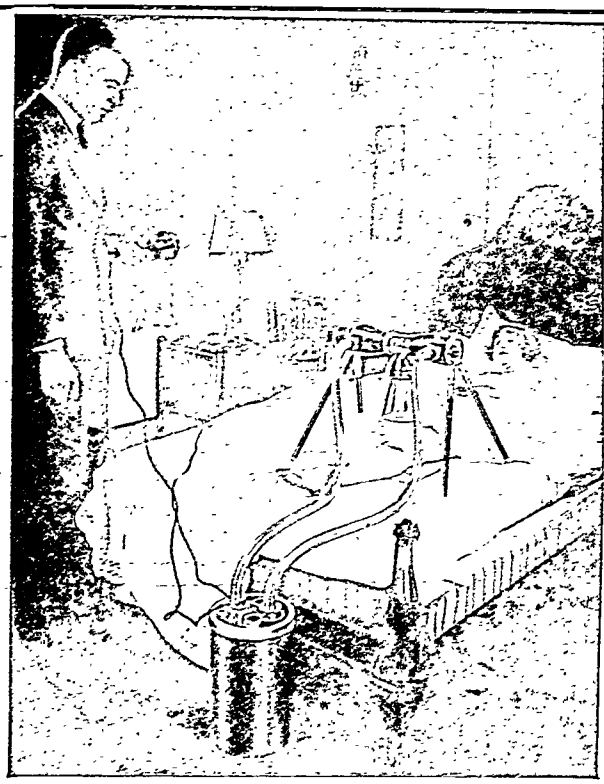
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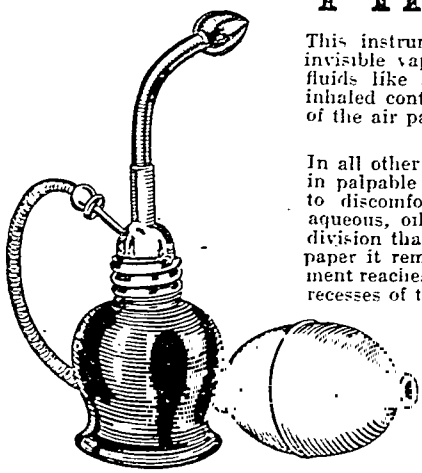
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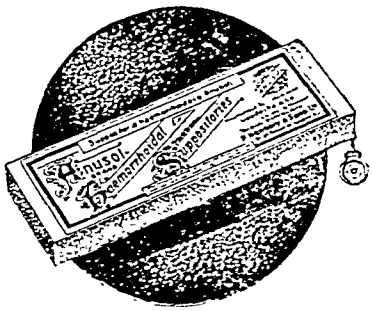
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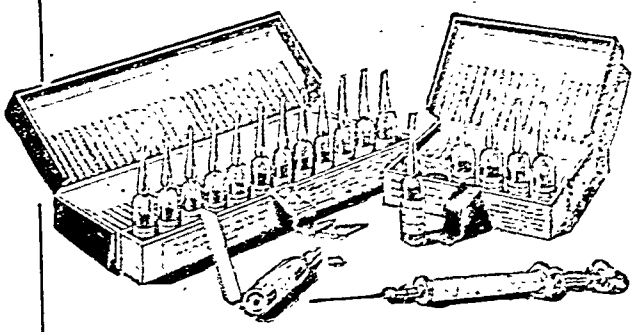
DUNCAN, FLOCKHART & CO.

EDINBURGH and LONDON

104, Holyrood Road. 155, Farringdon Road, E.C.1.

In the Treatment of

Chronic Rheumatism



It has been estimated that approximately 14 per cent. of the total industrial invalidity is due to rheumatic disease, and, further, that chronic rheumatism accounts for more than four-fifths of this figure ("*Lancet*," March 22nd, 1930, p. 607).

The proven value of Contramine—the well-known chemo-therapeutic product—in the treatment of chronic rheumatism is, therefore, of considerable significance. The result of Contramine therapy is distinctly to reduce the incidence of chronic rheumatism, and this drug is recommended now in all the chronic forms of the disease whether of gonococcal origin or not.

Contramine is supplied in ampoules containing a solution ready for intramuscular injection.

CONTRAMINE

Literature on request

THE BRITISH DRUG HOUSES LTD. LONDON N-1

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Regesan

CREAM OF MAGNESIA with LIQUID PARAFFIN

(Contains 30% Liquid Paraffin).

A stable well-balanced combination containing 30% Liquid Paraffin held in suspension in a finely divided state. Its consistency is such that the tendency to leak exhibited by Liquid Paraffin is eliminated.

Regesan Cream of Magnesia with Liquid Paraffin provides suitable treatment for all digestive troubles with which constipation and hæmorrhoids are associated. It is certainly the ideal laxative during pregnancy and lactation, and most suitable for infants and children.

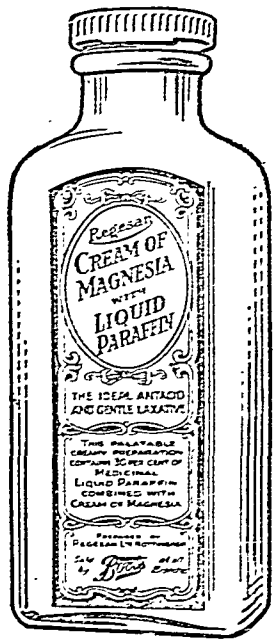
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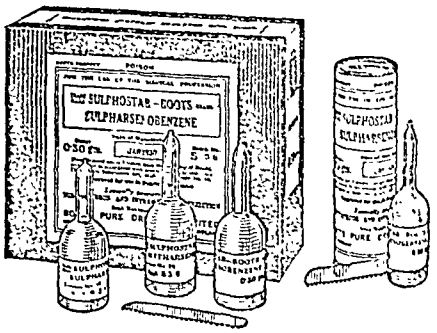
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Supplied in single ampoules or in boxes of ten ampoules.



In the Treatment of
Diseases of the Urinary Tract

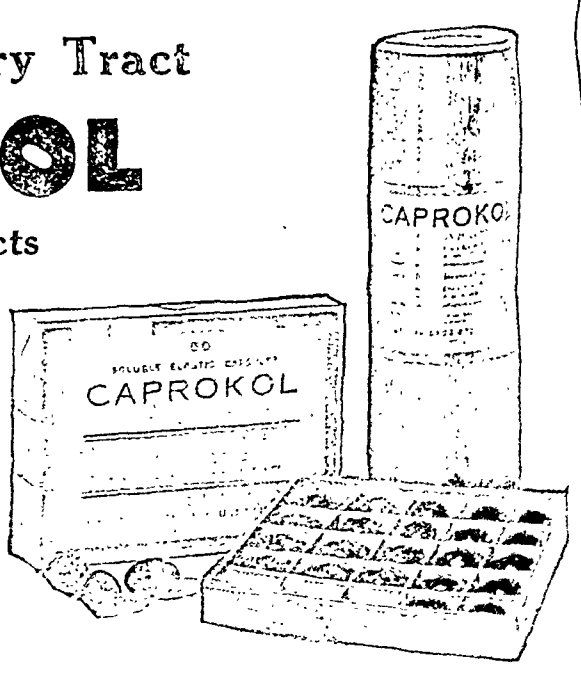
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Finally Caprokol, by reason of its bactericidal action, renders the urinary tract sterile.



Capsules for Adults *Solution for Children*

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The Original Preparation
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The Safest Local Anæsthetic for all Surgical Cases.

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Does not contain Cocaine, and does not come under the Dangerous Drugs Act.

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FOR HYPODERMIC, INTRAMUSCULAR AND INTRAVENOUS USE AND FOR INHALATION

AMYL NITRITE STERULES are used in Angina Pectoris, and threatened fainting and collapse, with success.

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ALIMENTARY TOXÆMIAS

IN our last advertisement, the subject of Alimentary Toxæmia was briefly discussed, and intestinal disinfection by means of Kerol Capsules was held to be the first line of treatment.

The reason for this may be stated as follows:—None of the ordinary so-called intestinal antiseptics, such as Salol and Beta Naphthol, are found experimentally to exert any disinfection of the contents of the bowel.

On the other hand, the high boiling hydroxyl compounds of the coal tar series are potent germicides, and, being unabsorbed, are non-toxic. They can therefore be administered freely without harm, and are found to prevent the multiplication of the toxæmic intestinal bacteria and to reduce them considerably.

The active principle of Kerol is a complex mixture of these compounds. The administration of two 3-minim capsules thrice daily after meals has been repeatedly shown to reduce the coli content of the stools of individuals taking them by 99 per cent.

For intestinal disinfection, use KEROL CAPSULES (keratin-coated); they contain 3 minims of Kerol. One to three capsules may be given three or four times a day after meals.

Please send for Literature and Samples, which will be sent free to any member of the Medical Profession.

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100 Ravens Lane
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Kerol Capsules

K2

ANTISEPTIC CREAM
(Hewlett's).



An emollient healing cream for BLEPHARITIS, ACNE, ECZEMA, and all abrasions and irritation of the Skin.

Its soothing and healing properties are most marked.

In enamelled collapsible tubes, 18s. doz., or 1-oz. pots, labelled only "The ointment to be used as directed," 10s. 6d. doz.

In bulk, 5-oz., 10-oz., 22-oz., 40-oz., 4½ lb. & 7½ lb. pots, 5s. 6d. lb.

Introduced and Prepared only by

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(Care should be taken to prevent confusion as to use in each instance)

	Box of	
ACID NUCLEINIC (*hypod. and intram.*) *for promoting leucocytosis in acute fevers, pneumonia, etc.* ... 5%, 1 c.c.	10	5 6
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BAYER PRODUCTS LTD. BAYER LONDON

The standard product for controlling fits in epileptic conditions.

In small doses (¼ gr. tablets), the spasmolytic effect of 'Luminal' is of advantage in

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pertussis
migraine
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and eclampsia

'Luminal' is put up in tablets of ¼, ½, 1, 1½, 3 and 5 gr. each, in various quantities. It is also supplied in powder form.

To ensure full therapeutic action always insist upon our product

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SAVORY & MOORE'S SOLUGA

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The Analysis of SOLUGA (Dry) shows:

Blood-forming Hormones (extract of calf's liver and red bone marrow	6%
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Nerve-forming substance (extract of the central nerve system)	2%
Glucose	50%
Galactose	5%
Albumins of high biological value (tryptophane, etc.)	20%
Citrate of Iron	0.4%
Compounds of Calcium, Magnesia, and Silicon	2.7%
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Full particulars and literature sent on application post free.

Supplied in sealed airtight tins. Price 3/- per tin.

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YOU have many patients in whom coffee-drinking is a habit so consuming and so ingrained that prohibiting it is in the nature of a major operation on the patient's nervous system. Without coffee, their appetite may be diminished, and the temptation to take a cup or two may be well-nigh irresistible.

But now there is a pleasant, sure way to protect your patients from an overdose of caffein without prohibiting coffee . . . good coffee . . . rich coffee . . . satisfying coffee—and that way is to prescribe H.A.G. COFFEE.

And that you may satisfy yourself how fully the effects of caffein have been minimized in H.A.G. Coffee, make the night-test. Send the coupon below for a liberal sample of H.A.G. Coffee. When it arrives, give it this convincing test: drink your first cup of it at night. It won't keep you awake. Next morning you'll know, from actual experience, that patients can enjoy H.A.G. Coffee without fear of caffein effect.

A perfect blend of finest coffees

H.A.G. Coffee is all coffee—nothing but coffee—a delightful blend of the choicest Central and South American coffees. The decaffeinization process takes place before the coffee beans are roasted, leaving undisturbed the spicy flavour, the fragrant aroma—everything that makes coffee "the beloved beverage."

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Your grocer stocks H.A.G. Coffee—ground or in the bean and in vacuum tins that preserve its freshness and its fragrance. Or send the coupon below for a liberal sample tin of H.A.G. Coffee. With it we shall be pleased to send a copy of "Some observations of the Action of Caffeine," a more complete discussion of H.A.G. Coffee. Send the coupon now.

H.A.G.

GENUINE-DELICIOUS

COFFEE

WITH THE EFFECTS OF CAFFEIN

H.A.G. COFFEE COMPANY,
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Please send me free of charge a liberal sample of H.A.G. Coffee—also the booklet "Some Observations of the Action of Caffeine."

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THESE ESSENCES STIMULATE WITHOUT THE SLIGHTEST STRAIN ON THE DIGESTIVE ORGANS

IN any dangerous illness a condition often arises which makes the taking of solid nourishment impossible. The need then for a form of food which can be absorbed rapidly, without effort, is imperative!

Scores of leading practitioners today find Brand's Essences an ideal preparation in crises of this kind. Out of hundreds of doctors interviewed within the last few months, 99 per cent. said they recommended this product.

Palatable, easy to take, the delicious jelly can be assimilated without the slightest strain on the digestive organs.

For Brand's Essences are powerful exciters of the gastric juices. Hidden in them are those very elements of meat which rouse the secretions of the stomach to digestive action instantly.

And no substance which could hinder quick assimilation is added. They are simply the pure essence of the finest fresh meat — *conserved in its natural form* without the addition of any colouring, flavouring, or gelatine.

So rapidly can these Essences be absorbed that in states of exhaustion they stimulate and restore vitality almost immediately.

During recovery from illness, they are invaluable in rousing appetite and preparing the patient for more solid diet.

BRAND'S ESSENCES

(Made only from the finest English Beef, Chicken and Mutton)

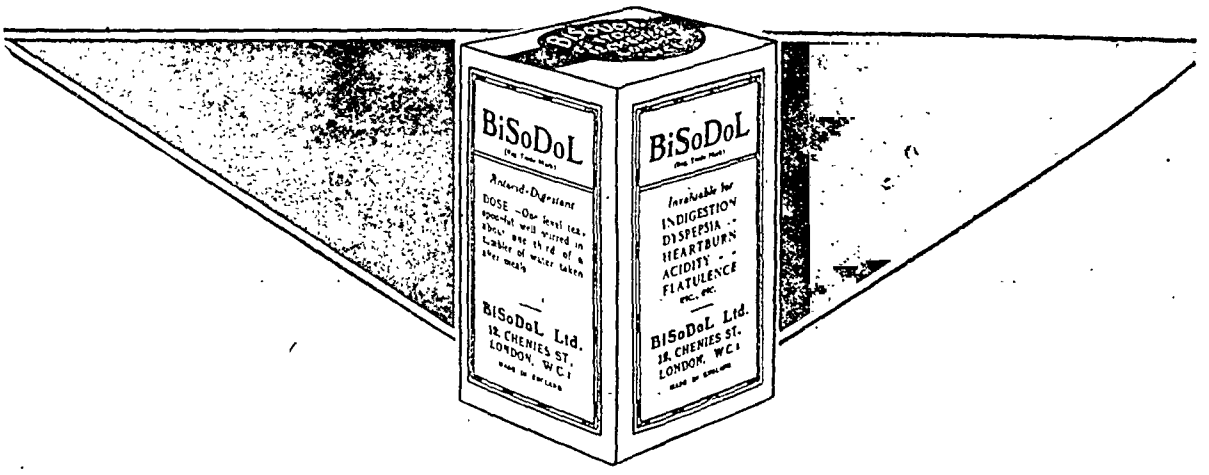


Brand's Essences are subjected to meticulous laboratory tests to ensure the highest possible standard of quality and purity.

On receipt of a professional card, samples of the Essences will be sent you at once. They are prepared under ideal hygienic conditions, under scientific control, and their purity and proved advantages in illness have made them famous for a century. Brand's Essences are obtainable at chemists and stores throughout the world in tins and glasses. Write Dept. F.2, Brand & Co. Ltd., Mayfair Works, Vauxhall, S.W.8.

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DENTISTS	92%
NURSING HOMES	78%
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The utility of BiSoDol as an antacid in hyperchlorhydria, gastritis, gastric and duodenal ulcer, has been abundantly demonstrated. It has also been given with marked success for the control of cyclic vomiting and the morning sickness of pregnancy.

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Samples will be gladly sent to Physicians on request.

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NATURALLY RICH IN VITAMIN "D"



DEMINERALISED PASTURES

The nutritional value of a milk is intimately dependent on the diet of the cow. Any deficiencies in the diet are reflected in the quality of the milk.

It is now universally acknowledged that of the various factors of nutrition, mineral salts play the most important role. Lime and phosphate deficiencies, which are widely prevalent in many milk producing countries, result in milks poor in these minerals, and in gradual deterioration of the stock which has to be made good by the constant influx of new blood from the herds of this country.

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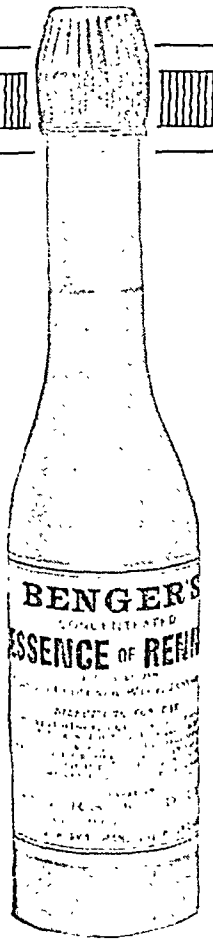
Milk used in the preparation of Cow & Gate is produced from the rich pastures of Somerset and Dorset where cattle are healthy and sturdy, and have never displayed those symptoms of mineral deficiency which result in "osteophagia" or wanderings to "salt licks" so often met with overseas.

The improved Cow & Gate Roller process carried out in modern hygienic factories, ensures the retention of the calcium and phosphorus salts of the original milk and preserves the balance of natural vitamins required for their assimilation by the infant. For this reason it is unnecessary to add synthetic Vitamin 'D' to Cow & Gate products.

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COW & GATE LTD. Cow & Gate Milk Food GUILDFORD SURREY

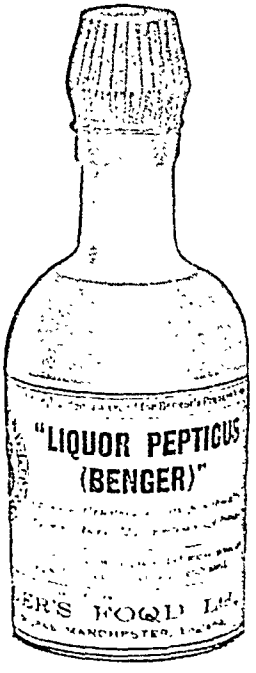
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Originally prepared at the request of a prominent physician, this highly concentrated essence is of especial value in Infant and Invalid Feeding. As it is concentrated it is much quicker in its effect than most other preparations of Rennet. Whey prepared with Benger's Essence of Rennet is of the greatest value in the treatment of diarrhœa, vomiting, etc.; it can be employed with confidence and will yield good results. Junket can be made more quickly and at a lower cost by using Benger's Essence of Rennet than by any other method.

In 1/- and 1/9 bottles.
Larger sizes for hospitals, etc., use.



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"A digestive agent of extraordinary power."
Sir William Roberts, M.D., F.R.S.

Benger's Liquor Pepticus, is a concentrated and highly active fluid pepsin in acid solution which acts particularly upon meat, eggs and other proteid foods.

The best results from the use of Liquor Pepticus are obtained when it is prescribed alone. Should the prescriber wish to combine medicaments of a tonic nature, it will be recollected that those which are free from astringency and alkalinity should be selected.

In 4, 8 and 16-oz. bottles.
Prices: 3/6, 6/6 and 12/6.

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M.140

BENGER'S Food

REGD. TRADE MARK



(*Aesculapius*)

BRONCHIAL ASTHMA AND HAY FEVER.

It has been proved that the rapid onset of action of Adrenalin and the prolonged action of Ephedrine usefully supplement each other in the treatment of bronchial asthma and hay fever.

EPHRESOL.

A Nasal Spray containing
Ephedrine Hydrochlor. 2%
Adrenalin 1 in 10,000

This combination is of value when used locally by means of inhalation from a suitable atomiser in cases of bronchial asthma and hay fever.

Issued in 1 oz. bottles, 3/6 each.

Prepared at

Evans' Biological Institute,

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EVANS SONS LESCHER & WEBB LTD.

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In the Treatment of the Affections

of the

Upper Respiratory Tract

correction of the internal systemic abnormalities is aided by local applications. By supplying continuous, moist heat over a considerable period, together with the osmotic, antiseptic and synergistic action of its components

Antiphlogistine

when applied to the affected area, increases the blood and lymph circulation, promotes the comfort of the patient and aids in the restoration of normal function.

Antiphlogistine does not supplant other forms of therapy but, rather, should be coördinated with them.

Write for sample and literature, quoted from standard sources.

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(Inc. U.S.A. Liability Ltd.)

London, E.3.

THE "ALLENBURYS" MAGNESIA

A Reliable Antacid and Gentle Aperient

Pure magnesium hydrate diffused in water in a form to exert its maximum therapeutic action.

More powerful effect in correcting acidity than ordinary fluid magnesia without evolution of carbonic acid gas.

In Bottles

For Prescribing: 8 oz. & 16 oz. For Dispensing: 80 oz.

THE "ALLENBURYS" MAGNESIA with PARAFFIN

Pure magnesium hydrate with "Chrismol," Liquid Paraffin, in the form of a fine, stable and palatable emulsion.

Combines the antacid and laxative properties of its ingredients and provides a valuable means of treating constipation associated with hyperacidity.

Suitable for people of all ages.

In bottles

For Prescribing: 8 oz. & 16 oz. For Dispensing: 80 oz.

Allen & Hanburys Ltd., London, E.2

Telephone: 3201 Bishopsgate (10 lines) Telegrams: "Greenburys Edo London"

The Milk ..... that gives a Perfectly Balanced food for infants

Libby's Evaporated Milk has balanced richness—it is rich in all the food substances of milk and scientifically prepared in such a form that this natural richness is readily assimilable for the building of bone and muscle. The kind of richness in Libby's Milk is the richness that promotes the health of the infant. It will actually ensure better teeth, firmer bones, stronger bodies, and therefore much better health. Sterilization protects Libby's Milk from all contamination up to the very moment it is used. Homogenization breaks up and emulsifies the large fat globules into tiny particles as in human milk.



The whole day's feeding can be prepared at once and will keep fresh and sweet.

Libby's Evaporated Milk

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£1,000 *will be paid to any Hospital or other public charity if it can be proved that the claims made for Libby's Milk are not in accordance with scientific facts.*

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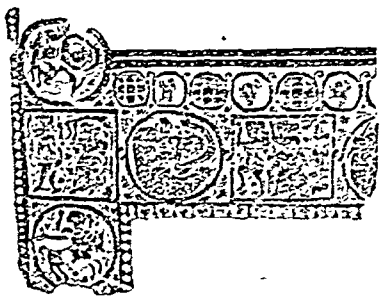
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A Lecture
ON
THE RELATION OF DIET TO HEALTH AND DISEASE.
*SOME RECENT INVESTIGATIONS.**

BY

EDWARD MELLANBY, M.A., M.D.CAMB., F.R.C.P., F.R.S.,

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THERE is but little doubt that some of the most important contributions to medicine in the last few years have come through the study of dietetics and nutrition. Advances in knowledge of these subjects have affected, or ought to have affected, the health of all mankind. I propose, therefore, as one whose lot it has been to be intimately connected with investigations on this subject, to relate something of the work that has been carried out in recent years. The limited time at my disposal only allows of a cursory glance at a few of the problems, but nevertheless I propose to draw attention not only to points which, from a practical aspect, may be regarded as settled, but also to results which suggest that there are other pathological conditions in which it is probable that dietetics will be found to play a dominant part.

What I want to do in this lecture is to give evidence which shows that diet, in addition to supplying material for growth and maintenance of the body and the necessary energy for the performance of its work, also contains two groups of substances—one which tends to produce pathological changes and ill health, and the other which helps the body to protect itself, not only against these toxic factors, but also against other disease-producing agents such as micro-organisms.

I do not propose to discuss the energy-bearing constituents of diet—namely, proteins, fats, and carbohydrates. It is, of course, necessary that the amount of food eaten must contain a certain minimum of energy according to the work performed and heat lost by the individual. It is also true that these energy-bearing substances must include a minimum of biologically available protein both for growth and for maintenance. These are truisms which will always hold, whatever revolutionary discoveries may be made in the future in dietetics.

The history of the relation of food to disease was initiated by two discoveries. One was the work of Eijkman, who proved in 1897[1] that beri-beri was due to the absence from the diet of a substance found in many foods, but especially in the germ of cereals, and known later as the anti-beri-beri, or the antineuritic, vitamin, usually described at the present time as vitamin B_1. The other was the discovery of Holst and Frölich in 1907[2] that fresh foods, especially fruits and vegetables, contained a substance in whose absence from the diet the disease known as scurvy developed. This substance is now known as the anti-scorbutic vitamin, or vitamin C. Both these discoveries—the one which led to the establishment of the etiology of beri-beri, and the other to the etiology of scurvy—have been of great practical significance in themselves, but, for the moment, what I wish to emphasize is that they led to a new angle of thought—namely, that dietetic constituents, present maybe in infinitesimal amounts, are essential to the maintenance of health. Indeed, they led to investigations which ultimately made it clear that many of the commoner diseases of civilized man had a dietetic factor as a basis.

Neither beri-beri nor scurvy is a disease which is commonly found in Africa or Europe. Both are diseases associated with types of restricted diets uncommon in these continents—the one depending upon the consumption of an unbalanced diet of manufactured cereals treated in such a way as to lose the germ and the pericarp of the grain, and the other upon the absence of fresh food, especially of fresh fruit and vegetables. I have, it is true, seen a certain amount of scurvy since coming to Africa, especially in the natives associated with the gold-mining industry, but these cases were few in number, and I think that the medical officers in charge have the disease under control.

As regards beri-beri, I do not think there is much danger of this becoming a practical problem of any magnitude in Africa so long as the staple diet of the natives is whole unprepared maize, although, as I shall explain later, it seems to me likely that this form of dietary may lead to ill health because of certain toxic actions of cereals whose effects can be, and probably often are, prevented by other food constituents.

In order to supply evidence that foods commonly eaten by mankind include both protective and harmful elements, I propose to refer to three practical problems: (1) the condition of the bones and teeth—the susceptibility of the former to rickets and the latter to caries; (2) degenerative changes in the central nervous system; (3) the liability of human beings to infection of the lungs, ears, nasal sinuses, genito-urinary tract, etc. Speaking as an investigator, it is probably superfluous for me to say that the results I shall describe, even when I relate them to disease in human beings, are the outcome of animal experiments. Only by means of such experiments is it possible to track down step by step and ultimately isolate the agent responsible for the phenomenon under investigation. When the results of animal experimentation become clear, it is then possible to test the beneficial effects as deduced on human beings.

DIETETIC FACTORS RESPONSIBLE FOR WELL CALCIFIED AND DEFECTIVELY CALCIFIED BONES AND TEETH.

Work of the last twelve years has cleared up to a surprising degree the factors responsible for well and badly calcified bones and teeth. It may be well to observe, however, that although the practical problem is so far advanced that there is now no excuse for the appearance of rickets or dental hypoplasia in any normal child, there is practically no knowledge as to the intimate mode of action of the specific dietary constituents on the bones and teeth.

By far the most important factor producing well calcified bones and teeth is vitamin D. It seems not unreasonable to say that, no matter what the constituents of the diet—assuming, of course, that they are natural foods—a sufficiency of vitamin D will ensure perfect calcification of bones and teeth. Of course, since these tissues are largely made up of calcium phosphate, it is necessary that there should be some calcium and phosphorus in the food, but the amount can be surprisingly low and yet with an abundance of vitamin D, they will be retained in the body and incorporated in the tissues. On the other hand, if the vitamin D intake is very deficient and the body is not exposed to sunlight, however much calcium and phosphorus there is in the diet, defectively calcified teeth and bones will result. There are occasions, however, when the influence of the calcium and phosphorus intake is of greater importance—for instance when the vitamin D intake is moderate but insufficient in amount. The best example of this is seen when the main dietetic constituent carrying vitamin D is butter, a food containing an irregular but usually comparatively small amount of the vitamin. In this circumstance the addition of calcium salts, either as carbonate or phosphate, results in great improvement of bones and teeth. It would be expected from this statement that the calcifying properties of whole milk would be greater than those of the butter which can be prepared from it. This is certainly the case, partly because a little of the vitamin D is left behind in the separated milk and also because most of the calcium of the milk remains after the separation of the butter.

The relation of vitamin D and calcium and phosphorus intake on calcification can be briefly summarized as follows: (1) When the vitamin D intake is high and the calcium and phosphorus intake low, perfect calcification of bones and teeth will ensue. (2) When the vitamin D intake is moderate, increasing the calcium and phosphorus intake will improve the calcification of bones and teeth. (3) When the vitamin D intake is very low, however high the calcium and phosphorus intake, imperfect calcification of bones and

* Given to the Kenya Branch of the British Medical Association at Nairobi, August 23rd, 1929.

are printed in various black letter types and dated about 1587. They are The Treasure of Pore Men; The Booke of Seynge of Waters; the Myrrour or Glasse of Helth; The Widdowes Treasure; Directions for Health both Naturall and Artificiall, by William Vaughiam; and a Booke of the Properties of Herbes, which is called an Herbal. The Treasure of Pore Men and the Widdowes Treasure give advice in treating various ailments, on cooking, fruit preserving, etc., much as the modern *Enquire Within* does. The Booke of Seynge of Waters deals entirely with urine and its appearances and their significance in diagnosis. It is very like a printed form of the Henry VII manuscript, and with the same illustrations. The Herbal is the only known copy of this tract. It is black letter, and has a small, crude, two by one inch wood engraving on the title-page of the heads of two men, labelled Amos and Job, and on the last page a circular cut of St. John the Baptist. There is no date to it, and no mention of its author. The Myrrour or Glasse of Helth necessary and needful for every person to loke in that will keep their body from the sekeness of the Pestylence, is astrological, and is by Thomas Moulton, Doctoure of Dyvynytie, of the Order of Friars of St. Augustine. It shows the borderland between mediaeval astrology and modern medicine, and one page especially attracts attention. We all know that Shakespeare derived part of his account of Cleopatra on her barge word for word from Plutarch. For his seven ages he evidently put in his own words the astrological lore on the subject.

A book which will appeal to the general reader is one by John Parkinson, apothecary and "herbarist" (1629). Parkinson was apothecary to James I, and later Charles I gave him the grandiose title of "Botanicus Regius Primarius." In it he described one thousand plants, and illustrates seven hundred of them, in what is said to be "the first book which separately described and figured the subjects of the floral garden." The short title of the book is "Paradisi in sole, Paradisus Terrestris"; its long title runs on: "or a garden of all sorts of pleasant flowers which our English ayre will permitt to be noursed up, with a kitchen garden of all manner of herbes; rootes, and fruites, for meate or sause, used with us, and an orchard of all sorte of fruit-bearing trees and shrubbes fit for our land, together with the right ordering, planting and preserving of them and their uses and virtues." It requires but a small knowledge of Latin to see that part of the short title is a pun on Parkinson's name—"The Earthly Paradise of Park-in-sun." The late Mrs. Juliana Horatia Ewing was, she said, "so bewitched by the quaint charm of the book" that she wrote a story with the title of *Mary's Meadow* (1884), proposing in it the "Game of the Earthly Paradise," which was to beautify hedges and bare places by planting wild flowers. The book led to the formation of a Parkinson Society with similar objects. *Mary's Meadow* tells of a family of children who had adopted the objects of the society, and as a story of children's ways can be read with delight to-day.

Another old book (1596) of special local interest, because it is the first medical book written by a Manchester practitioner, is one by Thomas Cogan (1545–1607), an Oxford graduate in arts and physicke. He was in 1575 appointed high master to the Manchester Grammar School, but he was also allowed to practise as a physician in the town, probably because of the poor stipend attached to his scholastic duties. He died in 1607, leaving behind him "the character of an able physician, a Latinist, a good neighbour and an honest man."

The book is called "The Haven of Health," and its fuller title-page (they were very explanatory in the early days of printing) says that it was "chiefly made for the comfort of students and consequently for all those that have a care of their health. Amplified upon five words by Hippocrates —Labour, meat, drink, sleep, and Venus." In it he gives advice on how to keep well, with much information about the values of various foods, and referring pointedly to those peculiar to Lancashire, which differed from his Oxonian dietary. His advice is fortified by many quotations from the Bible and previous writers. He was a well-to-do man, and left 4d. apiece to every boy in the school at the time of his death.

England and Wales.

The London County Council and Post-Graduate Medical Education.

A REPORT was laid before the London County Council at its meeting on May 27th with regard to the "scheme of post-graduate medical education centred in London," as recommended by the committee appointed by the late Minister of Health (see *British Medical Journal*, April 19th, p. 745). It is pointed out that the Council's hospital in Ducane Road, Hammersmith, in association with which it is proposed to construct the new medical school, was the subject of consideration by the Council a year ago, when certain proposals for additional accommodation for the acute sick and for the nursing staff were held in abeyance pending the issue of the Post-Graduate Committee's report. The conversion of the Hammersmith Hospital for the purpose of the proposed British Post-Graduate Hospital and Medical School would involve arrangements for the provision elsewhere than at that hospital of the additional accommodation, urgently needed in West London, for the acute sick. The London County Council is also left in some doubt regarding the finance of the proposals. The estimate of maintenance cost of patients given in the report of the Post-Graduate Committee indicates that an annual upkeep cost of about £250 per bed per year is contemplated, as against the present cost of about £137. It further appears that whereas the Government's financial liability is definite, that of the Council would be undefined. The Central Public Health Committee of the Council feels strongly that, while the Council should co-operate with the Government in the scheme, and should appoint representatives, on the invitation of the Minister, to serve on the committee to be set up for proceeding with the necessary action in the planning and construction of the medical school, it should not be committed to the principles of the scheme until it has had a full opportunity of considering the result of the deliberations of this committee. The Finance Committee also is unwilling to accept an undefined liability, and states that it has learned with surprise that at an interview with the secretary to the Ministry it was assumed that the Council's acceptance of the Minister's invitation to appoint representatives to the committee would involve acceptance beforehand of the basis of the partnership. It is held that it should be open to the committee, if it thought fit after exploring the finances of the scheme, to propose a redistribution of the financial responsibilities contemplated by the Government when it undertook to give to the scheme financial support.

Medical Women's Federation.

The thirteenth annual meeting of the Medical Women's Federation was held on May 8th, at the Medical Institute, Newcastle-on-Tyne. The annual report showed progress in the work of various departments. In presenting the financial statement the honorary treasurer stated that the loan funds continued to be of great assistance to young practitioners. At the meeting of the council in the College of Medicine on the following day, Miss Louisa Martindale, M.D., was elected president in succession to Dr. Catherine Chisholm. Among the subjects discussed at the meeting was the position of married medical women on the Birmingham Hospital staff, and the proposal to exclude them from continuing hospital work after marriage. The hope was expressed that the governors would reconsider the resolution. Permission was given to the London Association to publish the conclusions of its Menstruation Committee, which has completed an investigation of 6,000 cases. A new association was reported to have been formed by the medical women in Oxford and surrounding district. At a dinner given to the members of the Federation by the North-Eastern Association Dr. Ethel Williams, president of the local association, remarked that the Federation had increased its membership from about 400 to 1,314 since it held its first meeting in the provinces in 1919. She thanked the past presidents, four of whom were present, for the work the Federation had done on behalf of medical women. Replying to the toast

of "The Medical Women's Federation and President-elect," Miss Martindale gave an interesting account of the origin and work of the Cancer Research Committee of the London Association, which had culminated in the establishment of the Marie Curie Hospital for the treatment of cancer by radium. She emphasized the importance of team work in medicine, and outlined the scheme under which research is carried out in the new hospital. In commenting on the value of the Federation to its members Miss Martindale said that through its representatives on the Medical Women's International Association the Federation was a link with the medical women in over forty other countries. The dinner was followed by a reception in Armstrong College.

Leicester Royal Infirmary.

The contention that voluntary contributions from motor owners are not commensurate with the costs incurred by voluntary hospitals in the treatment of motor and traffic accidents is supported by the governors of the Leicester Royal Infirmary and Children's Hospital in the 157th annual report for 1929. During the year 1,373 persons, injured in traffic accidents, were treated by the infirmary, and 326 were admitted to the wards. The approximate cost of treatment in the hospital is stated to have increased from £1,831 to £3,266. The governors express the hope that the Road Traffic Bill, now before Parliament, will incorporate a clause providing for the adequate compensation of hospitals by insurance companies accepting third party risks. (This clause, which proposes a payment up to £25 for the treatment of each person, has been retained by the House of Lords. A report of the discussion was published in the *British Medical Journal* of April 26th, p. 802.) The general work of the infirmary continues to develop in all departments. Towards the end of the year the reconstructed central wing, which contains 105 beds, was opened by the Duchess of Rutland. This wing will relieve the acute pressure on the temporary accommodation, which has been taxed by an increase in the number of in-patients from 7,380 to 7,447. Valuable assistance in dealing with this problem was given by the various convalescent homes which co-operate with the infirmary in the treatment of patients both before and during convalescence. More than a thousand patients were transferred to those homes during the year by arrangement with the St. John Ambulance Association. By taking full advantage of these facilities a waiting list of 400 patients is expected to be gradually reduced. Two new operating theatres were opened at the beginning of the year. Over £4,500 has been expended in the purchase of radium, and further purchases are contemplated when funds permit. The total expenditure for the year was £86,364. Subscriptions and donations increased by small amounts, and generous benefactions were received for the endowment of cots and beds. The financial statement, which shows a deficit of £764, is regarded as satisfactory.

Society for Relief of Widows and Orphans of Medical Men.

The annual general meeting of this society was held on May 21st, with Mr. V. Warren Low, C.B., F.R.C.S., president, in the chair. It was reported that £5,252 had been distributed during 1929 among the widows and orphans in receipt of grants, and the invested funds of the society now amount to £140,700. Membership is open to any registered medical practitioner who at the time of his election is resident within a twenty-mile radius of Charing Cross. Membership is, however, retained, provided the by-laws are complied with when the member moves anywhere outside this area. Relief is only granted to the widows and orphans of deceased members. The annual subscription is very small compared with the benefits that may be derived. The annual subscription is £2 2s. for a member who at the time of his election is not over 40; £3 3s. if between 40 and 50, and £4 4s. if over 50 years of age. The great advantages that may be gained for a member's widow or orphans are illustrated by the following figures: during 1929 four widows died; one had been on the funds since 1904 and received in grants £2,200—her husband had paid in subscriptions £31 10s.; another came on the funds in 1918 and received £750; another who came on the funds in 1915 received £1,050; and the last widow who died came on the funds in 1925 and received grants amounting to £300. The directors would like to bring to the notice of the newly qualified and also the newly married members of the profession this society, which is one of the oldest of its kind, having been founded in 1788 and incorporated by Royal Charter in 1864. All particulars and application forms for membership may be obtained from the secretary at the offices, 11, Chandos Street, Cavendish Square, W.1.

Middlesex Hospital Club.

The Middlesex Hospital Club, which is composed of old students of the medical school, held its annual meeting last week. The club was founded many years ago with the idea of arranging a periodical reunion. An annual subscription is paid by the members with a view to building up a fund which can be used to relieve old Middlesex men in distressed circumstances or to assist in any scheme for the benefit of the hospital or medical school. From time to time large contributions have been made to the hospital funds, notably in times of crisis, and at the beginning of the first appeal for rebuilding a substantial sum was voted to the reconstruction fund. At the last annual meeting a further sum of £250 was voted on condition that the hospital board agreed to allot space in one of the basements for a squash racquets court for the resident officers. Most of the members of the club have held house appointments and realize how important it is for some provision to be made for the resident staff to get active exercise. House-physicians and house-surgeons are often unable to leave the hospital premises for several days on end. The board has gladly accepted the gift and agreed to the conversion of the space chosen for this purpose, the cost being met by a contribution from the club. The rebuilding of the hospital has now reached a critical stage. The next step will be to demolish the condemned east wing and cross-piece preparatory to their re-erection. The splendid new west wing gives some idea of what the completed building will be like. A final effort is necessary in order to ensure the completion of the scheme.

Ireland.

Reports of the Rotunda Hospital.

THE reports of the Rotunda Hospital for the year ended October 31st, 1929, deal with 2,382 patients treated in the wards of the hospital, of whom 2,034 were delivered, and with 2,045, of whom 1,805 were delivered, attended in their own homes. The results of the year's work are set out in a series of thirty-seven tables, from which the following facts of outstanding interest are taken. Among the 2,034 women delivered in hospital, 521 had albuminuria, nearly 28 per cent. There were no maternal deaths in this series, but 60 of the infants were stillborn. Nine of the women had eclampsia, and of these one died. In all the cases the routine Rotunda treatment was persisted in, except that glucose was given in quantity both under the breast and by the bowel. Accidental haemorrhage occurred in 43 cases, of which 2 were fatal. The patients grouped under this heading included 25 who were toxaemic, 5 or 6 of these having recurrent toxaemia, and 18 with true accidental haemorrhage. No deaths occurred among 13 patients with placenta praevia, but only 2 of the infants were born alive, both at term. The treatment in 108 cases of disproportion was as follows: forceps delivery in 27, version and delivery in 7, Caesarean section in 35, and destructive operation in 5; the remaining 34 went on to spontaneous delivery. Marked uterine inertia occurred in 37 cases; one of these cases was treated by Caesarean hysterectomy, two by Caesarean section, and nearly all the others were delivered by forceps. Three spontaneous births occurred in this series. Caesarean operations were performed in 18 women for the first time, this series including two cases in which Caesarean hysterectomy was performed, and in 18 other patients Caesarean section was repeated. There was no mortality with Caesarean section. Forceps were applied in 138 cases, a rate of 6.7 per cent.; there were

seven stillborn babies in this series, but no maternal deaths. In commenting on these figures the Master suggests that though every effort should be made to keep down the number of forceps deliveries, this caution must not be carried to excess, for if it is babies will be allowed to die *in utero*. Labour was induced in 116 cases, in 57—all successful—by the oil-quinine method. Bougies were used in 44 cases, with 3 failures, puncture of the membrane in 10 cases with 1 failure, and seat-angle tests in 19 cases. The morbidity rate according to the B.M.A. standard was 2.5 per cent.; it has never before been below 3, but the Master is inclined to the view that with the large number of difficult cases referred to the hospital without any antenatal care this level cannot be sustained. During the year 10 deaths took place in the hospital and 2 in the extern department, and as the total deliveries in both departments amounted to 3,839 the percentage mortality was 0.31.

Handy-women as Midwives.

At the annual meeting of the Irish Nurses' Union the following resolution was passed: "That, in view of the very grave consequences which have lately occurred in maternity cases, where unqualified women were acting in the capacity of midwife, we call upon all supervising authorities to take action against the so-called handy-woman." Dr. T. Hennessy, Irish Medical Secretary, said that the employment of handy-women was causing justifiable indignation among the nursing profession. Doctors should never act with unqualified midwives, for in doing so they were endangering the life of the patient, for whose benefit the midwifery laws had been framed. It occasionally happened that a doctor worked with an untrained nurse because the trained nurse available was unfriendly to him. He thought that doctors and nurses were equally responsible for the position complained of. If the nurses did not report such cases he did not know who was to do it. Qualified nurses who did not report matters of this kind were as much offenders as the handy-women. The qualified nurse who was also a midwife, and who attended a midwifery case after an infectious case, was also an offender, and should be made amenable to the law. Dr. Bethel Solomons, Master of the Rotunda Hospital, expressed surprise that his views had been sought about the handy-woman, who, he thought, had long ago died the death she deserved. He would certainly do all in his power to prevent anyone working with handy-women, especially at a time when so many nurses were looking for work. He was warmly in favour of a scheme for the inspection and registration of nursing homes—general and maternity.

Modern Science.

In a recent public address Dr. Robert Davitt of Jervis Street Hospital said that modern medicine dawned about the beginning of the sixteenth century, mainly as the result of the pioneer anatomical work of Leonardo da Vinci and Andreas Vesalius. From that time there had been a steady advance of the greatest importance in linking up modern medicine with the special sciences. The physician was as much a specialist as the surgeon or the radiologist, or the specialist in this or that region of the body, but his field was wider and more varied and difficult than that of his colleagues if it was tilled to its fullest and not merely used for superficial grazing. Physiologists had brought chemistry more and more to their aid, with the result that a new subscience had been found—namely, biochemistry, or the chemistry of living tissues. *X* rays had added greatly to their knowledge of many conditions; the physicist had come to their aid with the introduction of the electro-cardiograph, an electrical apparatus which had proved of immense value in the study of diseases of the heart, and had enabled important advances to be made in many other directions. Diabetes could now be controlled, and often cured, by insulin; pernicious anaemia, until lately considered invariably fatal, was now amenable to treatment by liver feeding; syphilis, which used to outrival leprosy in its hideous effects, could now be cured completely if the patient saw a practitioner in time; leprosy itself was gradually being brought under therapeutic control; cancer still reared its ugly head undaunted, but tuberculosis, though still active, had lost ground greatly during the last half-century, and would lose, it was hoped, still more in the future. Dealing with preventive medicine, Dr. Davitt said that it had a great many achievements to its credit, as was shown by the enormous decrease in the number of epidemics. Twenty-five years ago it was not uncommon to find an average of ten to fifteen cases of typhoid in any Dublin hospital at any given time. Now it was rare to have more than one or two in the year. Recent advances in knowledge had resulted in more detailed investigation of the different ills that flesh was heir to, and, consequently, in a big addition to the diagnostic armamentarium of the up-to-date clinical hospital. It followed that the cost of properly equipping a hospital was far greater than it used to be, a fact of which the public were perhaps unaware. It might be asked if the modern trend of medicine had been of great benefit to the patient, or if it had militated in any way against him. Over-specialization in the branches of any one pursuit often tended to result in disarticulation of the whole. In the big foreign cities, with their heavily endowed hospitals and medical schools, specialization was carried out to such a degree that, as far as the patient was concerned, it might be a disadvantage. A man entered the ward of the hospital; he was promptly examined by the cardiologist; then the gastro-enterologist took him in hand; then the neurologist examined his nervous system, the laryngologist his nose and throat, and so on. At the end of a week or so there was a sheaf of reports on his chart, but the unfortunate man had nobody attending him whom he really could call his doctor. In Dublin they were undoubtedly behind some other cities in clinical research work, owing chiefly to lack of facilities caused by shortage of money, but it could safely be said that more consideration was paid to the human side of the relation between patient and doctor than in most other countries. At the same time, said Dr. Davitt, the Dublin hospitals had been brought up to date, and would, he hoped, continue to keep so. If they could make use of modern methods and equipment, and at the same time maintain their old tradition of looking on the patient as a human being, Dublin would have every reason to be proud of its hospitals. Dr. Henry Stokes, in proposing a vote of thanks, said that many cases in hospital required five, six, or seven departments to investigate them, and as all of these departments required to be paid there was not money enough to go round. Nevertheless medical and surgical science in Dublin was holding its own. There was no doubt that in the long run the bedside physician was the man whom the patient liked best.

Scotland.

Royal Victoria Hospital Tuberculosis Trust.

ATTENTION is drawn in the annual report of the Royal Victoria Hospital Tuberculosis Trust for the year ending June 30th, 1929, to the continued increase in applications for the admission of children to the Southfield Sanatorium Colony. The number of children in residence continues to rise far above the proportion which was intended in the original scheme, and throughout the year under review the nursery population constituted 50 per cent. of the whole. This growing demand, and the hopefulness of the clinical outlook in childhood, have led the committee to consider the extension of facilities for the treatment of tuberculosis at this early stage, particularly in view of the fact that it is possible by skilled treatment and a process of detuberculinization to immunize the child in some degree against further infection. It is hoped that by extending still further the field of observation at the Sanatorium Colony proof may be obtained of the validity of the principle of anticipatory detuberculinization. Reference is made in the report to the favourable progress of the general campaign against tuberculosis. In Scotland not only has the decrease in mortality due to this cause continued, but in recent times there has been an acceleration in its rate, and this decline has been notably greater than that attributable to all other causes. Various lines of research work have been undertaken or continued during the year under review. In collaboration with the bacteriological laboratory

of the University of Edinburgh, and the research laboratory of the Royal College of Physicians, an attempt has been made in the laboratory at Southfield to standardize tuberculin satisfactorily. The method has now been perfected, and it is being used regularly for standardizing the tuberculins prepared at the laboratory of the Royal College of Physicians for distribution throughout the country. Attention has also been directed to the blood changes in tuberculosis. The sedimentation test has been widely applied, but although in some cases satisfactory information was obtained, in others the evidence proved to be faulty and even misleading. The value of the differential leucocyte count seemed to be definite, and repeated examinations are recommended in order to assist prognosis and to guide treatment. Certain new alleged remedies for tuberculosis have also been tested. The experience of the Southfield Colony and the various tuberculosis institutions linked with the Trust has indicated that the supposed immunity conferred by glandular tuberculosis is accidental or even fanciful. An investigation is in progress to determine the degree to which cattle may be infected with tuberculosis by man, and the channels and character of the resulting infection. An appeal is made in the report for a more generous support of the research work of the Tuberculosis Trust; the committee believes that immense progress could be made if, for the next five years, it could receive an additional sum of £600 annually for this purpose. The Colony is, moreover, an educational centre for undergraduates, post-graduates, and nurses. There is close co-operation between the Tuberculosis Trust and the National Association for the Prevention of Tuberculosis as regards educating the lay public. One of the four medical commissioners, Dr. Harley Williams, appointed by the National Association, has been working entirely in Scotland, lecturing with cinematograph films and lantern slides. Nearly 400 meetings have been held, and his work has been particularly valuable in the Highlands and Islands, where he has been able to tour by motor car through otherwise inaccessible regions. The Tuberculosis Trust gives help in cases of economic difficulty associated with tuberculosis, and an appeal is made for further financial support in this connexion.

Astley Ainslie Institution.

The Lord High Commissioner to the General Assembly, Mr. James Brown, M.P., on May 22nd performed the opening ceremony of the extended Astley Ainslie Institution at Grange Loan, Edinburgh. Mr. Andrew Henderson, chairman of the governors, presided, and said that the institution had been founded and endowed through a bequest by Mr. David Ainslie of Costerton in 1900. He had left directions that the residue of his estate should be allowed to accumulate for fifteen years; the sum available had amounted to close upon £1,000,000. The institution was intended for the relief of convalescents from the Royal Infirmary of Edinburgh; the name Astley referred to Mr. Ainslie's nephew and heir, John Astley Ainslie, who had predeceased him. The governors had decided that the institution should deal with patients suffering from curable conditions, who had definitely passed the crisis of their illness, and who might reasonably be expected to regain normal health. The work of the institution would also include scientific investigation of the processes involved in the gradual restoration of health, which constituted convalescence. It was an interesting fact that the site formed at one time a part of the boroughmuir on which had stood the ancient chapel of St. Roque. Victims of the plague were isolated there in the sixteenth century. Its buildings also included the property of Millbank, formerly the home of James Syme, in the drawing room of which Joseph Lister was married to Syme's daughter in 1856. The chairman said that this room would be preserved in its original state. At the present time 120 patients were in residence, but the completed institution would provide for the accommodation of 150 patients. The grounds extended to about thirty-one acres, and embraced four mansion houses as well as a small private golf course. In addition to these old mansion houses which have been reconditioned as hospital blocks and an administrative department, two large pavilions of one story on a butterfly plan with wide verandahs for open-air treatment have been erected. The new buildings also include a kitchen department, nurses' home, and scientific department. The Lord High Commissioner was presented with a key for the purpose of opening the new scientific department; before doing so he remarked that the institution was well equipped in every way. He was glad to know that research work was being undertaken, and he hoped that from such a well-equipped institution much important information would be obtained. He hoped that similar institutions would be established in other parts of the country.

Commissioner's Visits to Edinburgh Hospitals.

In accordance with the annual practice, the Lord High Commissioner, accompanied by Mrs. Brown, paid ceremonial visits to the various medical and other institutions in Edinburgh. On May 21st a visit was paid to the Royal Infirmary, when prizes were presented to the nurses who had been successful in recent competitions. The party subsequently paid an hour's visit to one medical and two surgical wards and chatted with the patients and nurses. A visit was also paid to Newington House, the home of the Scottish National Institute for blinded sailors and soldiers. Here the Commissioner was received by the Rev. Thomas Burns, chairman of the board of management, and praised the courage of the men in overcoming the disabilities that had been caused by wounds or disease. He also congratulated them upon the neatness of the work they had learned to do in basket making, mat making, boot repairing, and leather work. A visit was also paid to the neighbouring home for blind women. At the Edinburgh Foot Clinic, where Their Graces were received by Bailie Peter Given, the Commissioner remarked that the work done was of such importance that it should be classed along with all other medical work.

Correspondence.

BRUCELLA ABORTUS INFECTION.

SIR,—In view of the attention now being directed to undulant fever I should like to record a case I have been attending for the past six weeks.

The patient, a lady of 60, is athletic, and has always enjoyed excellent health. She has lived in this country, except when she visited Baghdad in 1922, Zululand in 1925, and California in 1922. She first consulted me on April 3rd, giving a history of vertigo, nausea, and furred tongue since March 22nd, with a chill on March 26th while yacht sailing on a cold day. She complained of sleeplessness, lassitude, headache, and pain over the liver region. The tongue was thickly furred, and the liver was enlarged; there was some tenderness over the appendix region, and stiffness of the neck. The temperature was 102° F. and the pulse rate 80. The heart and lungs were normal. The urine contained a small amount of albumin. The patient had a good deal of flatulence, and her bowels were loose, with unpleasant motions about twice daily.

From this date treatment was symptomatic, with a moderately light diet, a daily bath, and gentle massage for the liver and neck. On April 10th, as the condition did not improve, a sample of blood was sent to the Virol Research Laboratories for investigation of the agglutination reaction against typhoid, paratyphoid, and *Br. abortus*, and they reported as follows: "The blood serum tested macroscopically for agglutination is negative to *B. typhosus* (both H and O), *B. paratyphosus* A, *B. paratyphosus* B, *B. paratyphosus* C, each in a dilution of 1 in 50 upwards. The serum, however, gives marked agglutination of *Br. abortus* and *Br. melitensis*, the titre against the former being 1 in 3,200, and against *Br. melitensis* 1 in 1,600. The case is almost certainly one of *Br. abortus* infection."

As the liver had diminished in size, massage was stopped, as well as all medicines, and salol grs. v was now given three times daily. On April 20th the patient was still taking her daily bath, and the sweating, which was rather a marked feature at the beginning of the illness, was less. The bowels were still open about twice daily, but the motions were less offensive. There was slight tenderness over the gall-bladder; the spleen was now easily felt; the pulse missed beats occasionally, but its rate was still not higher than 80 per minute.

On April 26th the patient's general condition was exceedingly good. The pulse was still slow; the tongue was only slightly furred and moist; the patient's appetite was good, but she complained of flatulence; otherwise she had no symptoms of indigestion. On May 7th a further sample of blood was examined,

and reported on as follows: "Serum agglutinates *Br. abortus* 1 in 5,000 and *Br. melitensis* 1 in 2,500 (Oxford standard emulsions)."

On May 14th the temperature was again rather higher. The patient had been sweating, had had "internal shiverings," and was more wakeful at night. The tongue was again more furred, and the patient had a nasty taste in the mouth. There was no tenderness in the abdomen, except over the gall-bladder; the spleen was still palpable; the lungs were normal; the pulse rate was 80 and missing beats.

No conclusion has been reached as to how the infection was conveyed. The patient lives in the country in ideal conditions. She does not drink raw milk, but comes in contact to some extent with animals on her home farm, where there are three cows only, and these give a negative reaction to the agglutination test for Bang's bacillus. There are seven pigs, six sows, and one boar, and their young. One only has been tested, and this gives a positive agglutination with Bang's bacillus. On three neighbouring farms there have recently been abortions among the cattle. Further epidemiological inquiries are being made.—I am, etc.,

Cowes, May 18th. ARTHUR E. HAY.

STERILITY IN WOMAN.

SIR,—Perhaps Mr. Kenneth Walker would have understood my attitude towards the routine examination of semen in cases where the wife seeks advice on account of sterility if I had expressed myself more clearly. My attitude is somewhat that of Mr. Leith Murray, who writes (May 24th, p. 978) that, though it is a scientific and humane step, he has ceased to insist on it, though endeavouring to do it in private cases. Mr. Kenneth Walker condemns my attitute as retrograde, implying, I take it, that the routine examination of the semen is an advance in medicine, though it would be hard to define how medicine is advanced by a method of examination which has no practical beneficial results whatever except this, that in those cases where examination of the wife discloses no reason for the sterility she is spared the inconvenience of a dilatation of the cervix (though Mr. Walker, for some reason, would include a curetting). I do not deny, of course, that an advance has been made in the sense that we now know that in about 20 per cent. of cases the man is at fault; but the utilization of this advance by insisting on the application of the test in all cases indiscriminately may be scientific (in the narrow sense of the word), but it generally useless and may be harmful. The course I advocate is briefly as follows: that in all cases with a pelvic lesion, especially acute anteflexion and dysmenorrhoea, treatment should be advised; in cases where no abnormal physical signs can be found the wife should be told that a dilatation may increase the possibilities of conception taking place, but that a complete examination should include a test of the husband's fertility, and that the test can be carried out if they wish it. It is not humane or useful, even if it is scientific, to destroy hope or to risk humilation of some "poor over-sensitive" husband by insisting on the examination in all cases.—I am, etc.,

Leicester, May 24th. T. C. CLARE.

BIRTH CONTROL AND THE MEDICAL PROFESSION.

SIR,—In a recent debate in the House of Commons on maternity and child welfare, Dr. Vernon Davies, the Conservative member for Roxton, is quoted in the *Times* as having made the remarkable statement that "all competent medical authority was overwhelmingly opposed to birth control. . . . He quoted the authority of gynaecologists and obstetric physicians. . . . They were the people competent to judge and, almost without exception, they held that birth control was detrimental to the woman and to the child."

Such pronouncements are bound unduly to influence public opinion when made by a member of the medical profession. This being so, it is surely time that members of the medical profession should cease to make such rash statements, and should weigh this matter from a scientific standpoint unbiased by any personal, ethical, or sociological considerations. The public is obviously dependent upon doctors for guidance in the hygienic aspects of this question, and any public utterances emanating from doctors should be supported by reliable statistics based on scientific investigation.

It would be interesting to know on what authoritative information Dr. Davies is able to make his statements, and also the names of the gynaecologists and obstetric physicians who supplied it, since there is every indication that the leading members of this branch of the profession have been unable to convince themselves that any harm results from the proper use of contraceptives. Moreover, statistics based on the work of various birth control clinics, some of which have now been running for a period of nine years, go to prove that, provided reputable contraceptive measures are used, and used properly, in appropriate cases, no pathological results ensue.

On the other hand, there is undoubted evidence that unsuitable methods wrongly or carelessly applied, without previous medical examination, may cause considerable physical damage. This is surely another excellent reason why the medical profession should be willing to shoulder its responsibilities in this matter.—I am, etc.,

Crediton, Devon, May 25th. MARGARET C. N. JACKSON.

TREATMENT OF MAMMARY CANCER BY RADIATION.

SIR,—In his letter in the *Journal* of May 24th (p. 975) Dr. Douglas Webster honours me by devoting considerable space to controverting the views I have expressed as to the possible value of secondary radiation. The matter is of academic interest only, at any rate at present, and I think it would be a pity if your readers got the idea that there is any serious difference of opinion among radiologists as to the value of radiation in breast cancer. I should therefore like to emphasize the points on which I find that Dr. Webster and myself are in agreement.

I said in my letter of May 17th (p. 926) that my experience did not coincide with that of Sir Lenthal Cheatle, to the effect that only those forms of mammary carcinoma with a great tendency to metastasis are locally affected by *x* rays. I said that in the majority of cases regression occurs, and I find that in Dr. Webster's view this is so.

I am in agreement with Dr. Webster in his advocacy of pre- and post-operative radiation, which I am certain reduces the percentage of recurrences. I entirely concur with his views as regards the risk of trauma in a growth which is not being forthwith removed. As I said, it has been this fear which has kept me from injecting substances for secondary radiation into breast tumours, and I am interested to hear that Dr. Webster has seen rapid metastasis after treatment by buried radium needles. I feel sure that if radium needles are to be so used they should at least be combined with suitable external irradiation, and that the cases should be followed up, just as they are after operation.

While on this subject of trauma, I feel that I must say once more what I have been preaching for years—that specimens removed from a breast for microscopical examination should, whenever possible, be taken out by the diathermic knife. Modern improvements in apparatus make this an easy matter. If the electric knife is not used, then *x*-raying beforehand is all the more necessary as a safeguard.—I am, etc.

London, W.1, May 24th. F. HERNAMAN-JOHNSON.

ANAESTHETICS FOR SHORT OPERATIONS.

SIR,—As an onlooker, living in the Antipodes, I have been interested in the correspondence on anaesthetics for short operations. Most of the views expressed I think need qualification. Thus, chloroform is suitable as a means to open ether anaesthesia, but during its administration the patient's head and shoulders must be well raised—that is, he must be in a sitting or in a semi-recumbent position. During induction the chloroform mask should never be brought directly in contact with the patient's face. It should be held at least an inch from the face, and then very gradually be brought nearer.

The idea that the recumbent position is the correct one to adopt during induction is incorrect. Every general anaesthetic, even chloroform, causes cerebral congestion during induction, and this is exactly what the anaesthetist desires to avoid. Cerebral congestion leads to cerebral excitement and stimulation, and thus to struggling, the effect of which is to throw an extra strain on the heart. The result may be collapse and even death, not necessarily at the time of induction, but later on during the operation, owing to the strain thrown upon the heart in the early stages.

Some correspondents advocate somnoform as against open or semi-open ethyl chloride. Open ethyl chloride, properly administered, is one of the safest of all general anaesthetics. We use practically nothing else at the Eye and Ear Hospital, Melbourne, for short operations and for induction to open ether. Closed ethyl chloride is in a different category, and may bring on a stage of semi-collapse and cold sweat. In other words, ethyl chloride, like every other general inhalation anaesthetic, requires a free supply of air during induction. The oxygen cylinder is unnecessary, the surrounding air is enough. Somnoform, which is mainly ethyl chloride, with the addition of methyl chloride and ethyl bromide, when used by either the semi-open or closed method, is not so apt to produce these signs of depression. But somnoform is not so pleasant an anaesthetic as properly administered ethyl chloride. In fact, no closed method of administration is as pleasant as an open one. Somnoform is the chief anaesthetic used at the Melbourne Dental Hospital, except for children, to whom open ethyl chloride is given.

One of the most pleasant of all methods is chloroform induction to a patient sitting comfortably in an armchair. The lungs have free play, and there is no embarrassment of the heart by a loaded stomach or by an enlarged liver, or by the abdominal organs pressing up against the diaphragm. Nitrous oxide, and nitrous oxide and oxygen, have many advantages, but they are largely overrated. By means of open ether, using the absolute minimum of anaesthetic and the maximum of air, better results may be obtained for both the patient and the surgeon than by nitrous oxide and oxygen. The same remark applies to ethylene. This is a most overrated anaesthetic. It is not pleasant to take; it causes a more marked feeling of congestion in the brain than does chloroform, nitrous oxide and oxygen, somnoform, or ethyl chloride; it is more apt than nitrous oxide to bring on nausea; it is liable to cause an explosion. Endotracheal anaesthesia, too, is overrated; the argument that it prevents the admittance of blood to the lungs is incorrect. The opposite is the case if *deep* endotracheal anaesthesia is used, for there is a distinct tendency for blood to pass into the lungs by *conductivity* down the outside of the catheter, the return current not preventing this from happening. An anaesthetist should always try to retain the swallowing reflex during operations upon the mouth; the best means of doing this is not by endotracheal, but by nasopharyngeal or pharyngeal anaesthesia. A considerable number of lung complications, and laryngeal irritation and even ulceration, have followed endotracheal anaesthesia; such complications would never have occurred under properly administered nasopharyngeal or pharyngeal anaesthesia, or even under ordinary inhalation methods.—I am, etc.,

Melbourne, April 14th R. W. HORNABROOK.

VASOSTOMY IN GONORRHOEAL ARTHRITIS.

SIR,—One swallow does not make a summer, but the dramatic result obtained tempts me to put my solitary experience on record.

A man, aged 25, incurred infection on April 6th, 1929. Purulent urethral discharge was noticed on April 20th, and the patient attended a clinic for venereal diseases on the following day. The right knee-joint became painful and swollen on April 30th, soon after the development of a right orchitis. On May 4th I met him hobbling homewards with a stick. That evening he had a temperature of 101.4° F., with a copious purulent urethritis and a diffuse painful enlargement of the right knee-joint.

What was the prognosis? Four to six months at considerable expense appeared not unlikely. A communication by Mr. J. F. Peart on vasostomy recurred to my mind. Mr. Peart saw the patient on May 6th; two days later he opened the right vas and injected 10 *c.cm. of a 20 per cent.* solution of argyrol. On May 12th the left vas was opened and injected. No irrigation or other treatment was carried out after the date of the first vasostomy, but by May 22nd all discharge had completely ceased, the knee-joint was comfortable, and the swelling negligible, but there was some pain and swelling in the second toe of the left foot. Three graduated doses of detoxicated gonococcal vaccine were injected at weekly intervals. After the second injection all joint swellings completely disappeared. Prostatic massage produced some threads in the urine, but *no gonococci* were detected. After a brief holiday the patient resumed his work in the second week in June, after provocative meals and the free consumption of alcoholic beverages had failed to produce any untoward symptoms. A year later there has been no recurrence, and the urine is perfectly clear.—I am, etc.,

Edgware, Middlesex, May 22nd. GERALD MORIARTY.

SCHOOL ANTHROPOMETRY.

SIR,—The review in your issue of May 17th (p. 909) of Franzen's *Physical Measures of Growth and Nutrition* does not commend itself to all who have been associated with school hygiene in England. Instead of damning with faint praise, your reviewer should have been able to appreciate the value of biometric methods, which by much labour can sometimes extract grains of truth obtainable by no other means. This publication of the American Child Health Association is perhaps one of the clearest examples of the application of these methods to school hygiene. It exemplifies the establishing of a reliable control on the value of some of the mass of observations whose assessment hitherto has tended more to platitudinous writings than accurate analysis.—I am, etc.,

Edinburgh, May 26th. JAMES KERR.

AN OBSCURE EXANTHEM.

SIR,—I was interested in the letter headed "An obscure exanthem," by Drs. Cantor and Shulman, in your issue of May 24th (p. 976), and should like to know if any of their cases showed enlargement of the posterior occipital glands. I have recently had a case—a girl aged 12—in which the symptoms and physical signs were identical with those described, except that the pain was cervical rather than lumbar, and there was enlargement of the posterior occipital glands. Although the child is now otherwise well, and it is five weeks since the onset of the disease, the pain and glandular enlargement still persist.—I am, etc.,

Teddington, May 25th. J. O. GELDARD, M.B., B.S.

Medico-Legal.

HERBALIST SENTENCED FOR MANSLAUGHTER.

REX *v.* MASSEY.

A HERBALIST, John James Massey, was tried at Manchester Assizes on May 21st and 22nd before Mr. Justice MacKinnon on an indictment charging him with manslaughter. The prosecution alleged that in his treatment of Mrs. Annie Neal of Oldham, who was suffering from cancer of the breast, he had been criminally negligent. The prisoner was found guilty and sentenced to fifteen months' imprisonment.

Case for the Prosecution

According to the prosecution Massey had been for many years a cotton spinner before going into business at Oldham as a herbalist; he possessed no medical qualifications whatever. In September last the deceased woman felt a small lump about the size of a marble in her right breast; it appeared to be just under the skin and could be moved about. After a talk with her sister-in-law she showed the lump to the prisoner at his shop, asking if he could do anything for it. The prisoner said that he could cure it in a few days; he gave her some ointment and advised her to massage the part every day. Mrs. Neal paid him 2s. 6d., took away the ointment, and was told to call again in the following week. She did so, and went on for many weeks paying him about the same sum for each supply of ointment. In January she was getting anxious, and the

prisoner told her that the lump was a tumour which he could cure; he said he was satisfied with the progress she was making. Notwithstanding a large haemorrhage from the breast in the middle of January, the prisoner went on attending her, apparently quite unimpressed with the gravity of her condition. He continued the treatment with massage and ointment until February 27th, when Mrs. Neal, feeling ill with what she called "windy spasms," sent for Dr. Henry Mathers of Oldham, and she was seen also on the following day by Dr. Mathers's partner, Dr. Shaw, when it was obvious to both medical men that her condition was very serious indeed. They were told that someone else was treating her breast and that they need not concern themselves with it, whereupon they declined to accept responsibility for her treatment. Two days later the prisoner was informed by Mr. Neal that two doctors had seen his wife's breast and had said it was septic. Massey denied that it was septic, saying, "It is doing champion." Three days later, however, he called in another person, unregistered in this country, but known as Dr. Mellor, who said, "There is only one cure for that, and that is the knife." He advised Mrs. Neal to go to Dr. Marcus Mamourian of Ashton, who, when he saw the woman's condition, sent her home and told her to see her own doctor. She was then sent to hospital and died on March 25th, death being due to blood poisoning and cancer of the breast.

The prosecution asked the jury to say that Massey rashly and negligently undertook the treatment, that he was incompetent, and that not only did he discourage the family from sending for their own medical adviser, but his persistent massage of a cancerous growth must have had the worst possible effect.

Dr. R. P. Parker, superintendent medical officer of Oldham Municipal Hospital, said that from the moment of her arrival in hospital Mrs. Neal's was a hopeless case. The treatment described as being given by Massey was very bad; it had aggravated a disease which might have been diagnosed early and cured by proper treatment.

Drs. H. Mellor Fort, M. Mamourian, G. H. Shaw, and Frank Radcliffe gave confirmatory evidence to the effect that if Mrs. Neal's condition had been recognized and she had been operated on in September she would have had a very good chance of cure. Dr. Mamourian said that when he examined her before she was taken to hospital he found the worst cancer of the breast he had ever seen, and her condition was hopeless.

Mr. S. E. Mellin, public analyst for Oldham, said that he had analysed 11 boxes of ointment, 2 plasters, and 9 bottles of liquid handed to him by the police. They were of an everyday character and non-poisonous, with the exception of one exhibit—a small box of ointment—which on analysis was found to contain 34.4 per cent. of salicylic acid.

Summing-up and Sentence.

In the course of his charge to the jury, which occupied fifty-five minutes, Mr. Justice MacKinnon said that according to his knowledge Massey might have done his best, but that was not the standard to apply, because if a person set up to do something which required skill of a certain degree, it must be implied that he had that degree of skill and exercised it properly.

The jury, after an absence of twenty-seven minutes, found the prisoner guilty.

In passing sentence the judge said that Massey had been found guilty on overwhelming evidence; that without the slightest equipment, education, or training, he had set out to practise what was the most difficult of all sciences, and one which most concerned the health and happiness of his fellow creatures. The jury's verdict meant that beyond a doubt Massey had hastened the sufferer's death.

An application that the sentence should be served in the second division was refused.

CANCER TREATMENT: UNQUALIFIED PRACTITIONER SUED BY PATIENT.

BURRELL *v.* EVANS.

IN the King's Bench Division, before Mr. Justice Charles and a common jury, the hearing opened on May 14th, and continued for eight days, of a case in which Mrs. Amelia Burrell, aged 47, of St. John's Wood, sought to recover damages from Mr. David Rees Evans, an unqualified practitioner, of Ashburn Place, S.W., for personal injuries which, she alleged, she had suffered through his negligence.

The case of the plaintiff was that the defendant represented and thereby warranted to her that he could permanently cure her of cancer in three months, that by his treatment, which was herbal, he had permanently cured many persons suffering from cancer, and that he was qualified and competent to cure her. The representations were partly oral, and partly contained in a booklet and in a pamphlet reprinted from *Light*, and the plaintiff alleged them to have been false to the defendant's knowledge, or made recklessly, not caring whether they were true or false; further, that the defendant was negligent by wrongfully treating her when he was an unqualified practitioner by applying caustic fluid to her body, and, by his advice, preventing her from consulting a qualified practitioner.

The defendant admitted that he was medically unqualified, but said that the plaintiff was aware of this. He denied that he warranted his cure, or represented that he had permanently cured many persons suffering from cancer. He also denied all the other allegations, and said that the plaintiff had failed to undergo the entire treatment. He had acted in complete good faith, he believed the statements he had made, he was not negligent, and the plaintiff had not suffered injury from his treatment.

Case for the Plaintiff.

Mr. H. S. Simmons, for the plaintiff, said that in September, 1928, she discovered that she was suffering from cancer of the breast. She received a circular from the defendant, advertising that he was in a position to cure cancer. It was headed, "The Cardigan Cancer Treatment. . . . Administrator, D. Rees Evans," and stated:

"The Evans Cardigan Cancer Treatment was discovered by my late father and uncle (Messrs. Daniel and John Evans of Cardigan) 30 years ago. Since its discovery, and in the years 1906–13 it resulted in the invasion of Cardigan by cancer patients from all parts far and near. It was universally reported on by the press at that time, but owing to my war service, also the demise of my father in 1912, also my uncle in 1919, this treatment had become dormant until my release from the Army in 1919. Since that time I have exhausted volumes of paper (also my patience) in appealing to recognized research institutions to hold an impartial inquiry into the results of this treatment—results covering hundreds of cures effected 30 years to the present time. . . ."

There were appended "Testimonials and sworn statements from a few cured cases, 1897–1927." The plaintiff called upon the defendant, who, she said, looked at her breast, told her it was cancer, and that he could cure her in three months. The fee agreed upon was two guineas a week, but no money had been demanded or paid. His "treatment" consisted in taking a brush out of his pocket, dipping it in a fluid, and painting her breast; a lettuce leaf was then applied under a piece of gauze. The pain was intense, but the plaintiff persisted in the treatment until December, 1928, when she declared that the agony of the treatment was almost more than flesh and blood could bear, and she left off treatment, eventually seeing a qualified practitioner, and on his advice went to the Cancer Hospital, where radium was applied, with partial success. Counsel alleged that the result of the plaintiff's treatment was that she now suffered from partial paralysis. In October, while she was undergoing Mr. Evans's treatment, a request having been made by defendant to a London newspaper to publish something about the treatment, and the newspaper replying that it would do so on a favourable report from two competent medical men, two medical men called on the defendant and saw plaintiff and another lady under treatment, but they reported that the treatment was ineffectual, and no commendation appeared in the newspaper.

Mrs. Burrell, in evidence, said that the defendant when he examined her asked no questions, but spoke of himself as penalized by the medical profession, saying also that he was for four years at Liverpool University, but did not take his examination, because his qualification as a medical man would have meant that his cancer formula would have had to be surrendered to the profession, which he did not desire. She agreed, on cross-examination, that he had not been mercenary with regard to fees. He was negligent in the sense that he increased her cancer by some irritant.

Mr. Jocelyn Swan, senior surgeon at the Cancer Hospital, said that he was one of two medical men who attended at the defendant's house when Mrs. Burrell and another lady were receiving treatment. He asked to be shown the formula, but this was refused. Mr. Evans saying that it was lodged in the name of his wife and another person in case anything happened to him. His treatment was to paint a localized area with a brown fluid. Two months later Mr. Swan again saw the plaintiff, who in the meantime had undergone a change for the worse, and on his direction, and on the understanding that she gave up defendant's treatment, she was admitted to the Cancer Hospital: she was not at that time in a condition for treatment, but three months later she was again admitted, and radium was applied, with some local improvement. He added that Mr. Evans did not clean out the surface of the ulcers before painting, nor, apparently, did he sterilize the brush. In reply to Mr. Beyfus, counsel for the defendant, Mr. Swan said he thought that operation could cure cancer; radium had given good results, but the time was too short to say whether or not they were lasting. Caustic treatment, which was what the

defendant applied, was of no value in cancer of the breast. With regard to certain of Mr. Evans's cases in which the disease, it was claimed, had been completely arrested, the witness pointed out that there was no definite evidence that they were originally cancer. He agreed that he was impressed by the defendant's good faith, and that he gave him and his colleague every facility for examining the cases.

The attention of the witness was drawn to an article in the *British Medical Journal* of November 16th, 1929 (p. 911), entitled "The radium problem: statement by the Radium Commission." Mr. Swan said that the article was published as a warning against the use of radium in the hands of people who had not scientific training.

Dr. Stanley Wyard, assistant physician at the Cancer Hospital, said that he went with Mr. Swan to the defendant's house in October, 1923, and there saw the defendant treat two patients, one of whom was the plaintiff. Mr. Evans merely painted the surface of the breast with a brownish fluid, placed a lettuce leaf over the painted part, and covered it with lint. The defendant showed him photographs of patients who were said to have been cured by the Evans treatment. Some of the photographs were faded, and it was difficult to tell what the condition was, but so far as he could judge the diseases were not of a cancerous nature. He agreed with Mr. Swan that at that time the plaintiff's was an operable case, but on a second examination, in December, her general condition was distinctly worse, and she was not then operable. In cross-examination he admitted that he was a little cynical about claims for cancer treatment, receiving as he did four or five such claims every month. He was a member of the committee set up by the Ministry of Health to investigate the cause and treatment of cancer. Mr. Evans appeared before that committee, which was unanimously of opinion that no case had been made out and that no further investigation was desirable.

Professor W. S. Lazarus-Barlow, for over twenty years director of cancer research at Middlesex Hospital, said that he had examined the plaintiff and agreed with two other medical witnesses that she was now inoperable. He testified that Mr. Evans appeared before the Cancer Committee of the Ministry of Health, of which he was chairman, with documents and photographs of cases which he wished the committee to investigate. The medical officers of health in the towns where the patients lived were written to, but in the majority of cases the patients were dead or untraceable. In two or three instances where definite information was obtained it was not of such a character as to lead one to suspect that the suggested cure had taken place.

Dr. J. F. Berry of Wigan gave evidence as to the alleged cure by the defendant of a man who was said to have suffered from cancer of the tongue for two years; the man was a patient of his, and the disease from which he suffered was not cancer; it was a non-malignant tumour.

A succession of witnesses, the names of several of whom the press were asked not to mention, then gave evidence. One woman said that after a successful operation at hospital she was treated by defendant for a small spot on the chest, which, he said, in a few months would be as large as a crown. She paid £40 for his treatment. She could not say whether he cured her of anything; she still had a good deal of pain. A reference to the case was in the defendant's pamphlet, certifying that she was "enjoying splendid health," but she said that she did not write this—in fact, she could not write—nor did she dictate it, or agree to its publication. A man, a railway worker in Liverpool, said that he was treated for a lump in the cheek. Defendant told him that his fee was £12, but he abated £3 of this as he was an ex-soldier. Two letters appeared in the defendant's pamphlet purporting to be testimonials from this witness, and the witness said that the letters were prepared by the defendant himself and he signed them. Another witness, a Liverpool butcher, said that he was treated for a lump in the tonsil; he did not write the printed testimonial, but he signed it after glancing at it. The judge pointed out that the testimonial contained vital misstatements. It began boldly: "For years I have been suffering from septic throat, and two years ago eating and drinking had become nigh impossible." It also stated that he had since been examined by a medical man. Witness said that he was afterwards seen by an Italian, who was said to be a doctor, while the defendant stood outside.

Professor Lazarus-Barlow, recalled, gave evidence as to defendant's formula, which in the meantime had been handed in. He recognized the majority of the roots mentioned, many of which were old wives' remedies. His view was that the lotions would not constitute a cure for cancer.

Case for the Defendant

Mr. Beyfus, in opening the defence, said that the main issue was the charge of fraud: whether the defendant honestly believed he could effect cures, or whether he was a fraudulent quack. If the verdict of the jury could induce the medical profession to give up its prejudice against unqualified men, break down the barriers of professional etiquette, and at length obtain a real investigation of the defendant's claim, then, indeed, this would be a test case in the interests of humanity.

The defendant, giving evidence on his own behalf, said that his age was 38. His father and uncle treated patients for growths, malignant and otherwise, at Cardigan, and he had assisted them since he was 15 years of age until their deaths. Afterwards he practised alone, first in Swansea and Cardiff, then in Liverpool, and in 1927 he came to London. For the last ten years he had been trying to get his treatment investigated by the medical profession, and in 1923 he appeared before the Cancer Committee of the Ministry of Health and produced documentary evidence, but he never heard again from the committee. He was asked to send his booklet to the plaintiff, and she came to see him, but he never guaranteed a cure. Against his instructions, she removed the dressings and left the treatment incomplete.

In cross-examination, he denied that he had ever told the defendant that he had attended at Liverpool University. He described his experiences as a lad at Cardigan, where as many as 200 patients were treated in a day. His father and he treated the patients in the "surgery," and his uncle visited people in their own homes. He was in Swansea for about six months, but could not get a practice there. He did fairly well in Liverpool. With regard to his formula, this was left to him and to his sisters by his father and uncle; he had deposited the written formula in a bank. Had he felt that the Cancer Committee intended an honest investigation, he would have given up his formula, but he declined in open court to say what the formula was. His formula was his living, which was precarious. He denied that there was any irritant in the lotion. Mr. Evans was closely questioned by Mr. Simmons and by the judge on his printed testimonials. His lordship pointed out similarities and even identities in the phrasing of the different letters. He said that one patient had asked him to write out a testimonial and bring it to her for approval. Asked what was the maximum fee he charged to patients, he said that it was generally £6 a week, which was reduced to poorer patients. He put in a letter received from the Ministry of Health in 1924:

"I am desired by Mr. Wheatley [then Minister] to return the letter about the alleged cure of cancer. The correspondence has been referred to the Cancer Committee of this department for consideration. This committee consider it essential that they should be furnished with information on one or two points: (1) the composition and method of preparation of the fluid; (2) authentic records of cases in which the fluid has been successful in cure; (3) evidence that the fluid is going to do more good than the treatment usually employed and that it will do no harm."

His Lordship: A very reasonable and proper letter.

The defendant's wife said that she assisted her husband, having learned how to apply the treatment by watching him continually. She was cross-examined as to her own and her husband's bank books, and after putting certain questions to the witness, his lordship said that it seemed clear that, since this action commenced, the defendant had been unloading his banking account and putting every penny into his wife's.

Dr. J. E. Bolton said that he had been in practice for twenty-eight years, and was now practising at Yeovil. He had no special knowledge of cancer, and cases which he diagnosed as cancer he sent to specialists. He had known the defendant for two and a half years, and had seen him treat cases. In one case he was satisfied that he had effected a cure. In his view the ferments used in this treatment travelled down the side of the tumour and cut off the blood supply, with the result that the dead foreign body was eventually expelled. His opinion was that the defendant was a truthful man, although he agreed that there were inaccuracies in his pamphlet.

Mr. H. Swaffer, a journalist, said that he wrote the article in *Light* which was reprinted in the defendant's pamphlet. His desire was to get an investigation of the defendant's treatment. He made long inquiries to check his statements. He had himself made no special study of cancer. He took one doctor to see Mr. Evans's treatment; the doctor made no criticism, but said that he would like to see the case again in three years. The defendant showed him, at least thirty photographs of growths. Asked how he could tell from photographs whether the growths were malignant, Mr. Swaffer replied that they looked malignant, there were statements on the back of the photographs, and the cases could not all have been wrongly diagnosed. He agreed that in the interests of humanity it would be well if Mr. Evans would give up his formula, but what he wanted was an investigation.

About eight patients or friends of patients of Mr. Rees Evans were then examined on behalf of the defence. It was again asked that their names should not be published. One woman stated that she first consulted Mr. Evans in September, 1926; previously she had been attended by qualified medical men, who had put her on diet. She went to him as a cancer case.

She suffered from acute attacks of pain in the breast, and there was always a nagging pain. There was also a lump which increased in size. After Mr. Evans's treatment a scab formed, which eventually fell away. The treatment lasted about six months, and there was now complete healing; she had no pain, and she could do things she had never been able to do before.

Another woman, from Kingsbury, stated that she consulted her doctor for a lump in the left breast. He advised her to see a specialist, who sent her to St. Mary's Hospital, where he performed an operation on the glands and inserted two radium tubes, which were there for two days. She was afterwards sent to Mount Vernon. The effect of the radium treatment was to cause severe pain, which continued after the radium was removed, and she was again received as an in-patient at St. Mary's. Radium was again inserted, and left in for six days. Eventually she left hospital and continued treatment under her own doctor. Again, later on, she returned for treatment, and twenty-one radium needles were inserted. She was finally discharged in November, 1929. On January 8th, 1930, she began treatment under Mr. Evans. At that time she could not eat, could hardly sleep, and was shaken up in every way. The pain she suffered under Mr. Evans's treatment was incomparably less severe than that which she suffered under the radium. She was still continuing treatment under Mr. Evans. The lumps had decreased in size; the first scab that came away weighed six ounces. In her general health she was now very well, and had practically no pain. Mr. Simmons asked this witness only one question: "Would you have any objection to Mr. Swan or Professor Lazarus-Barlow examining you?" to which the witness replied, "Yes, I think I would." The judge said that there was no medical evidence as to the exact condition of this woman before she went for treatment.

Another witness stated that she had suffered from cancer of the breast and had been treated by three medical men. One breast was removed two years before she consulted Mr. Evans. She started treatment under him, on account of great swelling and pain, in May, 1928, and continued for fourteen weeks. At the end of treatment she was quite well. A lump had entirely disappeared, and she was better now than she had been for four years.

Another witness, a man, said that an ulcer on his tongue had cleared up as a result of the treatment. He agreed to be examined in court by Dr. Wyard, who afterwards reported to his lordship that there remained a scar on the tongue in the centre of which was a small warty growth, and there was another warty growth elsewhere. There was no evidence that it was a case of cancer or ever had been.

Another woman, from Cheshire, stated that she consulted a cancer specialist at the Northern Hospital, Liverpool, but afterwards placed herself under Mr. Evans. Treatment began in September, 1923, and continued for four months, at the end of which the lump came away, and her general health greatly improved; she had increased two or three stones in weight. Not being a good scholar, she got Mr. Evans to write a testimonial, but she told him what to say.

Another patient, a man from Warrington, stated that he had been treated for a stomach condition. He had undergone a short-circuiting operation, but this proved unsuccessful, and he was treated by Mr. Evans, the treatment continuing for one year and eight months. He was given medicine at the rate of one pint a week. He had been considerably better since that operation, though he still suffered from periodical vomiting. Another witness stated that his mother was treated for a growth in the cheek by defendant's father in 1907, when she was 70; the growth was removed, and she lived to be 84, dying from another cause. Another woman, from Hove, stated that she underwent two operations as a cancer patient, and as the trouble recurred she consulted Mr. Evans in 1928, and he treated her by painting the affected part with lotion, the treatment lasting nineteen weeks. She paid nine guineas a week—six guineas for treatment and three guineas for board and attendance—and she regarded it as very reasonable, considering the care and attention she received.

The Judge's Summing Up.

After counsel had made their closing speeches, which occupied almost an entire day, Mr. Justice Charles proceeded to sum up. He said that the gravity of the case could hardly be exaggerated, for the plaintiff, who was suffering from cancer of the breast, was, at the time she underwent Evans's treatment, operable, and might have been among the 80 per cent. of such cases which, according to Mr. Swan, were cured by operation. She became inoperable after three months' treatment. It appeared from the plaintiff's evidence that he did not treat her with the fluid made up from his formula, but that he applied Venice turpentine—in effect, a method of burning away with a caustic.

His lordship described the defendant's booklet, *The Cardigan Cancer Cure*, as "sodden with misstatements." It contained many testimonials written, not by the persons who said they had received benefit from the treatment, but by a man who apparently went round collecting them on behalf of Mr. Evans. In one instance Mr. Evans had admitted in the witness-box that a growth was not malignant, and yet in his booklet, in describing that case, he called it a malignant growth of stomach and bowel. It was not necessary that everything in the booklet should be untrue for the jury to find that there was fraud. If there were statements which were patent misrepresentations—in some cases inventions—to the knowledge of Mr. Evans, it was open to the jury to find that the giving of that book to induce this woman to undergo treatment was fraudulent misrepresentation.

Turning to the evidence of Mr. Swaffer, the judge said:

"How any responsible journalist can write such wicked misleading nonsense as that, when dealing with so terrible a thing as cancer, I cannot conceive. He sees photographs of 'malignant growths.' He was asked how he knew that they were malignant growths. There was no more diagnosis than from a photograph. He said that Mr. Evans showed him cancers in a bottle. I asked him myself, 'Do you know anything whatever about cancer or how to recognize it?' and his answer was, 'No; I know nothing.'"

Mr. Swaffer had gone on to make an unwarrantable, discreditable, unfounded attack on the great hospitals of this nation. He had said that little was done in hospitals except to perform operations which only delayed inevitable death.

"You heard the question I asked him, and you observed his silence. We now know that in breast cancer 80 per cent. of operations are completely and entirely successful. Mr. Swaffer would divert people from hospitals, if he could, to Mr. Rees Evans, and Mr. Rees Evans, by the republication of his paper, endeavoured to do the same. . . . Dealing with a matter so appallingly serious as cancer, I say deliberately that the writer of that article [the article in *Light*], who says he is a well-known investigator of facts, but who has investigated not a single fact, who has put a mass of hearsay into the paper, with undesirable and improper comments about hospitals, is a menace to the community of sufferers from this terrible disease."

Mr. Evans had said that he was running his cure bona fide. After reading his book, the jury might have some doubts about that. But assuming that he was practising bona fide, and his formula was beneficial and even curative, that did not excuse him for making this long series of misrepresentations in the book.

Passing to the question of negligence, his lordship said that a man who took money to treat people held himself out with a certain qualification and competence to administer the treatment. If he possessed no skill and no knowledge, then he was professing to do something which he could not do. One question was whether he ever used this formula at all in the case of Mrs. Burrell. She and two other witnesses had spoken of being painted with a thick, mahogany-coloured, viscous fluid, and that was not like the liquid in the formula. The defendant had treated Mrs. Burrell by burning, one of the oldest and most cruel methods of getting away the growth. Mrs. Burrell had said that the agony was almost indescribable, and the result was partly to paralyse her. Instead of effecting a permanent cure it left the patient much worse than when the treatment was started. If the jury believed that the treatment was negligent—so negligent, indeed, that had Mrs. Burrell died under it, he might have found himself in the criminal dock charged with manslaughter—they would find accordingly.

Discussing finally the question of damages, his lordship said that it was no part of his province to suggest a sum. No damages could compensate the plaintiff for what she had suffered, for had she stuck to her doctor and not been lured away she might have been operated on and have been saved from becoming a hopeless cancer patient. The jury must do their best in assessing damages. The figure must not be a ridiculous one, but it should be substantial, and the jury must disregard the fact that the defendant had denuded his banking account in favour of his wife.

Disagreement of the Jury.

His lordship left four questions to the jury:

1. Did the defendant make fraudulent misrepresentations to induce, and did he induce, the plaintiff to enter into a contract for treatment by him?
2. Did the defendant warrant to cure her permanently in three months, and was the warranty broken?
3. Was the defendant negligent in his treatment of the plaintiff?
4. Damages.

The jury were absent for more than two hours, and on their return they intimated that they were unable to agree upon answers to the first and third questions, and in regard to the second, they were of opinion that the defendant did not warrant to cure the plaintiff in three months.

Mr. Justice Charles said that this amounted to a disagreement, which was an unfortunate result of the trial. He discharged the jury, and exempted them from further service for seven years.

Judgment for Defendant Ordered.

Following the answers of the jury, an application was made on May 27th on behalf of the defendant, Mr. Evans, that judgement be entered for him in the action on the ground that he had succeeded on the issue of the warranty.

Mr. Justice Charles said that although the matters in dispute were separated in the questions put to the jury, the action was a whole. He therefore refused the application, and ordered Mr. Evans to pay the costs of it.

Universities and Colleges.

UNIVERSITY OF OXFORD.

SIR ARTHUR KEITH will be among the recipients of the honorary degree of Doctor of Science, to be conferred in the Sheldonian Theatre on June 25th.

UNIVERSITY OF LONDON.

THE Dunn Exhibitions in Anatomy and Physiology for 1930 have been awarded to A. Birnbaum, an internal student of the London Hospital Medical College.

UNIVERSITY OF MANCHESTER.

THE jubilee of the Manchester University and the eightieth anniversary of its foundation as Owens College was celebrated last week.

After a commemoration service in Manchester Cathedral, at which the Archbishop of York preached the sermon, a congregation of the University was held in the Free Trade Hall on May 23rd, when the Chancellor, Lord Crawford of Balcarres, delivered an address.

A number of honorary degrees were conferred, including that of LL.D. bestowed upon the American Ambassador, General Dawes; the Earl of Derby; Mr. Philip Snowden, Chancellor of the Exchequer; Miss Sara Margery Fry, Principal of Somerville College, Oxford; and Mr. A. H. Worthington, chairman of the council of the University. The honorary degree of D.Sc. was conferred upon Professor J. Lorrain Smith, F.R.S., who retired from the Chair of Pathology in Manchester University in 1912, on his appointment as Professor of Pathology in the University of Edinburgh.

UNIVERSITY OF WALES.

THE University of Wales announces in our advertisement pages that the following scholarships will be awarded in the session 1930-31, provided suitable candidates are forthcoming: Cecil Plosser Research Scholarship (value £250), for research in the department of tuberculosis; the Mrs. John Nixon Scholarship (value £150), for research in the department of medicine and medical pathology; the Lord Merthyr Scholarship (value £200), for research in the department of surgery; and the Ewen Maclean Research Scholarship (value £150), for research in the department of obstetrics and gynaecology. Particulars of the award of the scholarships and forms of application may be obtained from the Registrar, University Registry, Cathays Park, Cardiff.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—E. C. Dymond, R. F. T. Finn, E. A. Freywirth, H. G. Hind, J. H. Johnston, E. Lethem, A. Liberis, J. Ross.
MEDICINE.—G. P. Charles, A. R. Edwards, J. D. B. Games, J. Ross, E. M. M. Shaw, W. H. Willis.
FORENSIC MEDICINE.—A. Buch, G. T. W. Cashell, T. C. Keble, E. H. W. Lyle, C. G. Nicol, J. Ross, C. M. Smith, A. L. Thomas, W. H. Willis.
MIDWIFERY.—G. T. W. Cashell, Y. Haig, J. Ross, A. L. Thomas, W. H. Willis.

The diploma of the Society has been granted to Messrs. A. R. Edwards, J. H. Johnston, A. Liberis, and J. Ross.

BRITISH COLLEGE OF OBSTETRICIANS AND GYNAECOLOGISTS.

AT the annual general meeting of the British College of Obstetricians and Gynaecologists, held in London on May 20th, with the president (Professor W. Blair Bell) in the chair, the result of the election of the council was announced.

At the first meeting of the new council, held in the afternoon of the same day, the officers were elected and the casual vacancies created by these elections were filled. Dame Louise McIlroy (London) was co-opted for the special purpose of representing women Fellows and Members.

The officers and the full council are now as follows:

President: W. Blair Bell.
Vice-Presidents: John S. Fairbairn, John M. Munro Kerr.
Honorary Treasurer: Eardley L. Holland.
Honorary Secretary: Wm. Fletcher Shaw.

Council.

London.—H. Russell Andrews, T. Watts Eden, J. S. Fairbairn, Dame Louise McIlroy (Fellows); [illegible]
England and Wales (exclusive of London).—[illegible] Sir Ewen J. Maclean, H. Leith Murray, Miles [illegible] Whitehouse (Fellows), E. Farquhar Murray, J. Eric Stacey (Members).
Scotland.—R. W. Johnstone, J. M. Munro Kerr (Fellows); E. A. Lennie, W. P. T. Hamilton (Members).
Ireland.—C. H. Lowry, Bethel Solomons (Fellows); T. M. Healy (Member).

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has commenced the committee stage of the Finance Bill this week, and has also discussed unemployment and Indian affairs. The Education Bill, which proposes to raise the school-leaving age to 15, was down for second reading, on May 29th, in the Commons, and the Coal Mines Bill for third reading in the Lords on the previous day.

The Parliamentary Medical Committee has arranged to visit the Red Cross rheumatic clinic at Regent's Park on June 2nd, and to hear an address from Sir Walter Fletcher on June 3rd about medical research.

On behalf of the Public Health Advisory Committee of the Labour party, Dr. Ethel Bentham and Mr. Somerville Hastings saw Mr. Greenwood on May 21st in order to make representations in favour of the regulation of the sale and advertisement of patent medicines. The deputation gave instances of the evils resulting from the unregulated sale of secret remedies, such as the effect in preventing persons from seeking proper treatment, the waste of money, and the danger to health, particularly from prolonged use of these remedies. The Minister was very sympathetic in his reply. He could not promise legislation during the present session, but there is understood to be a possibility that a private member's bill may be introduced dealing with only one aspect of the question in order to focus public opinion. If introduced this bill will be prepared in concert with the British Medical Association.

Milk for School Children in Scotland.

The Education (Scotland) Bill came up for third reading in the House of Commons on May 23rd. Dr. ELLIOT, who had introduced the bill, remarked that it had been read a second time without debate. Scotland, he said, had previously attached much importance to the training of the mind and not enough to the training of the body. The bill proposed to enable education authorities in Scotland to incur expenditure in supplying milk to the children attending the schools within their areas. The annual report of the Scottish Department of Health showed that only one-third of the school population received systematic medical inspection in the school year, and that seven and a half minutes was spent on each child. That cursory investigation showed that 2.4 per cent. of the children examined were suffering from anaemia and 2.5 per cent. from tuberculosis in one form or another. These figures had induced him to introduce the bill. Of these children, 22 per cent. suffered from unhealthy glands. Dr. Elliot pointed out that the bill had been amended in committee to provide that the milk supplied should be certified milk, or, failing that, the best grade available in the area. Bovine tuberculosis was understood to cause the death of 3,000 children yearly in this country. Its prevalence in the herds caused reluctance of doctors to prescribe milk and of the public to consume what was the finest food for the young of the human race. The difficulty of the provision was that only 101 herds in Scotland were licensed for the sale of tubercle-free milk, although Scotland had more than 450,000 milch cows. The bill did not differentiate between necessitous and other children, because experiments had shown that the average child in Scotland suffered from a lack of certain vital constituents. Without milk the child could not take full advantage of the foods with which it was supplied at home.

Mr. JOHNSTON (Under-Secretary of State for Scotland) said the object of the bill was desired by all the large education authorities in Scotland. Glasgow had intimated that its scheme was ready. The bill was an optional one. He pointed out that in schools where a milk ration was given the absences fell almost to nothing.

Mr. W. R. SMITH moved the rejection of the bill. He said that at present an education authority could supply what was lacking to a child which, through physical ill health or otherwise, was unable to benefit by the education which was given. The tests at present being made were with Grade A (tuberculin-tested) milk, which in some cases was pasteurized in addition. Mr. JOHNSTON intervened to say that tests in Lanarkshire were conducted with pasteurized and tuberculin-tested milk, half supplies of each. Mr. SMITH remarked that in many districts of Scotland it would be impossible to get a large enough supply even of pasteurized milk. To allow education authorities to supply children with milk which might contain tuberculosis germs would put into the hospitals thousands of cases of tuberculosis. When the bill was in committee Mr. Johnston had declared that every year 2,000 or 3,000 surgical tuberculous cases entered Scottish hospitals, and these cases were directly traceable to the poisoned milk supply. Officials of the Department of Health said the bill could not be worked by many authorities if certified or pasteurized milk had to be supplied.

Mr. BOOTHBY pointed out that schemes for the supply of milk had to be approved both by the Department of Education and

the Department of Health for Scotland. He held that the low consumption of milk in Glasgow, Edinburgh, and Dundee was responsible for the high tuberculosis rates in those cities.

Mr. MACQUISTEN thought the large local authorities would insist on the milk being certified. He wished that the bill provided for the supply of oatmeal as well as of milk—not cooked porridge, but brose, or raw oatmeal, which was the natural accompaniment of milk.

The motion for rejection was then negatived and the bill read a third time.

Mr. BUXTON, replying to Mr. Hastings on May 26th, said the total number of animals on premises on which cases of tuberculosis were reported, under the Tuberculosis Order, 1925, during 1929 was 621,396. Of these, 241,252 animals were examined by veterinary inspectors, and 15,732 animals were condemned and slaughtered, representing 2.8 per cent. of the total number of animals on the premises, or 6.5 per cent. of the total number examined. The remainder were not necessarily entirely free from tuberculosis, but presented no symptoms to bring them within the scope of the Tuberculosis Order on compulsory slaughter.

Indian Medical Degrees.

Mr. WEDGWOOD BENN, Secretary of State for India, speaking in the debate on the India Office vote in committee of supply of the House of Commons on May 26th, referred to Indian medical degrees. He said that the General Medical Council, after considerable discussion—the point had been raised many times in recent years—decided that unless an officer, called the Commissioner of Medical Qualifications and Standards, was appointed—Colonel Needham had been designated for the post—to appraise, so to speak, the standard of the medical education given in the various Indian medical colleges, the Council would be unable to continue to recognize Indian medical degrees. Owing to circumstances which he need not describe, that appointment was never completed, and the General Medical Council felt compelled to withdraw its recognition of Indian medical degrees. That was a most unfortunate thing, both for Indians and for the British. The problem was urgent, and was being urgently studied by the Government in the hope that by the creation of some all-Indian medical organization an authority might be formed which, manned and staffed in India, might be able to give those guarantees which the General Medical Council considered requisite. That something should be arranged at the earliest possible moment was in the interests of both India and this country alike.

National Health Insurance.

Mr. GREENWOOD stated, on May 22nd, in reply to Mr. Rhys Davies, that a proposal was under consideration to have a separate scheme to cover insured persons falling out of the national health and pensions insurance scheme by reason of continuous unemployment.

Sir Kingsley Wood was informed by Mr. GREENWOOD, on May 22nd, that he had not yet received a deputation from the central board of the Co-operative Union, complaining of the prohibition of payment of co-operative dividends on national health insurance prescriptions, but he hoped to receive one shortly.

Anthrax.—In reply to Mr. Dukes, on May 22nd, Mr. SHORT said that the six fatal cases of anthrax in the Liverpool, Runcorn, and Warrington districts were all reported to the Factory Department and carefully examined. The seriousness of some cases might have been aggravated by delay in recognizing the disease, but treatment was given without delay in every case as soon as it was recognized to be anthrax. To secure recognition of anthrax without delay, the Factory Department had issued for exhibition at work-places a large placard indicating symptoms, the precautions to be taken, and the urgency of medical examination in suspected cases. A small card on the same lines was being prepared for the workman to keep by him and to show to any doctor or hospital authorities to indicate that his employment involved risk of anthrax. Further special steps had been taken in the tanning industry, in which five of the above cases occurred. The senior medical inspector recently addressed a circular to hospitals in tannery districts drawing attention to risks among persons handling hides and the importance of being on the look out for possible cases among patients. In a Home Office circular to tannery occupiers the importance of prompt diagnosis and treatment was specially mentioned, and they were urged to review their arrangements for securing this and getting into touch with local hospitals. Mr. Greenwood did not think the appointment of a committee of inquiry would be likely to carry matters further, but the subject would continue to receive close attention, and he would be glad to hear of any particular suggestions.

Anthracosis.—Mr. SHORT told Dr. J. H. Williams, on May 22nd, that he had not published reports of cases of anthracosis. A list of persons alleged to have suffered from the disease was not available at the Home Office. Investigation of the effects of coal dust on the lungs had been referred to the Expert Committee on the Industrial Pulmonary Diseases, set up by the Medical Research Council. It had yet to be established that anthracosis was the cause of disablement. Meanwhile it was impossible to bring it within the Workmen's Compensation Act. He was advised that there was some evidence of special changes in the lungs due to conditions in the anthracite coalfield, but further investigation was necessary.

Vaccination and Small-pox.—Mr. GREENWOOD informed Mr. Groves, on the same day, that, from 1919 to 1928 inclusive, the counties in England and Wales with the lowest and highest percentage of primary vaccinations to births were Leicestershire and Anglesey respectively. The total number of cases of small-pox notified during the same ten years per 1,000 of the average population was 0.63 in Leicestershire (including the county borough of Leicester) and 0.02 in Anglesey.

Public Vaccinators' Fees.—Mr. GREENWOOD told Mr. Groves, on May 26th, that on March 31st last, the latest date for which complete particulars were available, 28 public vaccinators had contracts which provided for payment by salary, and 4,293 had contracts which provided for payment by fees.

The New Board of Control.—Mr. GREENWOOD stated, in reply to Mr. Winterton on May 22nd, that of the five Senior Commissioners who were to compose the Board of Control under the terms of the Mental Treatment Bill one would be a woman. It would be necessary for the two medical Senior Commissioners to possess primarily qualifications for advising upon the treatment of mental disorders. He could not promise that one of the medical Commissioners would be a woman.

Bracebridge Mental Hospital.—Mr. GREENWOOD told Colonel Heneage, on May 22nd, that the proposals for the alterations and improvements to the Bracebridge Mental Hospital required the consideration of the Ministry of Health and of the Electricity Commissioners. He would try to ensure an early decision.

Slaughterhouses in England and Wales.—In a reply to Mr. Freeman, on May 22nd, Mr. GREENWOOD said there were in England and Wales 250 slaughterhouses owned by local authorities and 16,000 private slaughterhouses. The number of local authorities who had in force, on May 13th, 1930, a by-law based on Clause 9 (*b*) of the Model Series was 358.

Mental Hygiene Congress.—Mr. GREENWOOD, on May 26th, told Mr. Mander that the British Government was represented at the recent International Congress on Mental Hygiene at Washington by Sir Hubert Bond, a medical Commissioner of the Board of Control. Sir Hubert Bond had not returned to this country, and no report had been received.

Sterilization of the Unfit.—On May 26th Mr. GREENWOOD informed Mr. Mander that he had received a communication from the Wolverhampton Town Council on the question of the sterilization of the unfit. He considered that a full inquiry must necessarily precede any action, but he could not undertake to initiate such an inquiry at the present moment.

Notes in Brief.

The increase of the population of England and Wales between mid-1927 and mid-1929 is estimated at 317,000.

Mr. Greenwood said, in reply to Major Salmon, that he had received complaints of inconvenience suffered by residents in Hanwell from odours emanating from the sewage disposal works in the vicinity. The town council had applied for sanction to a loan for the improvement of the works, and an inquiry had been held by his inspector, on whose report appropriate steps would be considered.

Mr. Greenwood informed Mr. Harris, on May 22nd, that he knew of no cases where damage to eyesight had been caused by electric signs employing the infra-red ray.

Mr. Adamson has appointed Sir William Whyte, clerk to the late Middle Ward District Committee of Lanarkshire, to be chairman of the Scottish Advisory Committee on Rivers Pollution Prevention, in room of the late Sir John Findlay.

The Services.

DEATHS IN THE SERVICES.

Colonel Maurice Knox, R.A.M.C. (ret.), died at Littlehampton on April 20th, aged 84. He was born on January 24th, 1846, was educated in Dublin, in the medical school of the R.C.S.I., and took the L.R.C.S.I. and L.K.Q.C.P. in 1869. Entering the army as assistant surgeon on March 31st, 1868, he reached the rank of brigade surgeon lieutenant-colonel on May 2nd, 1894, and retired on June 2nd, 1897. He was re-employed at Aldershot during the South African war, and was granted the rank of colonel for his services, on October 18th, 1902. He served in the Afghan war of 1878-79, was mentioned in dispatches, and received the medal. During the old regimental days he served in the 70th Foot, now the 2nd East Surrey Regiment.

Colonel Claude Kyd Morgan, C.B., C.M.G., late R.A.M.C., died on February 17th, aged 58. He was born at Inverkeilor, Montrose, on December 2nd, 1871, and was educated at Aberdeen, where he graduated as M.B. and C.M. in 1893. Entering the R.A.M.C. as surgeon lieutenant on July 28th,

1834, he became lieutenant-colonel in the long war promotion list of March 1st, 1915, and colonel on December 26th, 1917, retiring on September 22nd, 1920. While a captain, he served on plague duty in Poona city in 1899–1900, and received the thanks of the Government for his services. He served as an A.D.M.S. during the war of 1914–18, was mentioned in dispatches in the *London Gazette* of February 17th, 1915, June 22nd, 1915, January 1st, 1916, and May 29th, 1917, and received the C.M.G. in 1916, and the C.B. on June 3rd, 1919.

Lieut.-Colonel Henry Grier, R.A.M.C. (ret.), died at Guildford on April 29th, aged 75. He was born on August 29th, 1854, was educated at Queen's College, Cork, and the Carmichael School, Dublin, and took the L.R.F.P.S.Glas. in 1875, and subsequently the M.K.Q.C.P. in 1882. Entering the army as surgeon on February 3rd, 1878, he became lieutenant-colonel after twenty years' service, went on half-pay on November 20th, 1903, and retired on February 20th, 1908. He served in the South African war in 1899–1901, in charge of a general hospital with the local rank of colonel, was mentioned in dispatches in the *London Gazette* of April 18th, 1901, and received the Queen's medal with two clasps. He received the Albert medal, second class, in 1881, for heroic zeal and humanity in risking his life in an operation upon an officer (*London Gazette*, January 14th, 1881).

Obituary.

FRANK RICHARDSON BLAXALL, M.D., D.P.H.,

Bacteriologist, Government Lymph Establishment.

MEDICAL officers of health and others engaged in small-pox control will learn with regret of the death, in his 64th year after a brief illness from pneumococcal septicaemia, on May 24th, of Dr. F. R. Blaxall, a medical officer of the Ministry of Health and for twenty-three years the director of the Government Lymph Establishment.

Frank Richardson Blaxall was born on November 8th, 1866, and from University College School went to study medicine at University College Hospital. He obtained the M.R.C.S. and L.R.C.P. diplomas in 1888, and graduated M.B. of the University of London in the same year with honours in medicine, proceeding M.D. in 1890, and obtaining the Cambridge D.P.H. in 1893. After holding a number of house appointments and acting as assistant superintendent of St. Pancras Infirmary he became lecturer in bacteriology at Westminster Hospital Medical School, where he was associated with Dr. Macfadyen in important researches on "thermophilic bacteria" and on the bacteria of rheumatoid arthritis. It was not until 1896, however, that Blaxall began his life-work on anti-small-pox vaccine. In that year he collaborated with Dr. Monckton Copeman, then on the staff of the Local Government Board, in a research into the influence of "Glycerin on the Vitality of Micro-Organisms, especially of Variolous and Vaccinious Material." Before this time glycerin had been used abroad as a diluent of vaccine pulp, but its bactericidal properties had not been investigated. The results of these investigations are found expressed in the Vaccination Act of 1898, which prescribed the use of glycerinated calf lymph for public vaccination. This marked a great advance, and made way for the abolition of arm-to-arm vaccination, previously practised. Blaxall shortly afterwards joined the staff of the Local Government Board on appointment as bacteriologist to the National Vaccine Establishment, Lamb's Conduit Street, the precursor of the Government Lymph Establishment at Hendon, and for thirty-two years he was responsible for the preparation and issue of Government lymph.

Blaxall was ever improving his technique, and from the laboratory there proceeded year by year a series of papers and reports by him and his fellow workers, on the scientific aspect of lymph production; these papers included reports on research work in connexion with glycerinated calf lymph, equino variola, the cold storage of lymph, the use of oil of cloves in the preparation of lymph, and other reports to the Local Government Board and the Ministry of Health. Blaxall combined great skill and knowledge with a high sense of duty and a pleasant spirit of comradeship; in constant touch with workers in the same field abroad he was repeatedly consulted by distinguished medical men visiting this country. Indeed, his laboratory became a place of pilgrimage for colonial and foreign medical officers interested in vaccine production; he was responsible, at the request of various Governments, for the training of many of these officers, and the great majority of the directors of vaccination institutes in the British possessions are men who learned their work at Hendon under him. He served as a member of the Small-pox and Vaccination Commission appointed by the Health Committee of the League of Nations, and was a member of the Departmental Committee on Vaccination, where his long experience and highly specialized knowledge were greatly valued.

Dr. A. E. COPE, honorary secretary and treasurer of the Association of Public Vaccinators, sends the following tribute:

Every public vaccinator in England and Wales will feel the death of Dr. F. R. Blaxall as a personal loss. Although few of us, it may be, met him face to face, we always felt the impress of his personality in the promptitude with which our requisitions for lymph were met, the certainty and confidence with which we used what he supplied to us, and the courtesy and consideration which were manifest in all his communications with us. It is a boast of the Government Lymph Establishment that from the very commencement every day's demands for lymph have been issued on that day, and many a public vaccinator has recollections of times when an urgent request for lymph by telegram or telephone has brought the needed supply by first post, even at times by special messenger. The control of an establishment which, for example in the last year for which figures are published, issued nearly three-quarters of a million separate tubes of lymph, from nearly 500 calves, with a case success of close upon 98 per cent., demanded scientific and technical attainments of the highest order and administrative ability of no mean character; and when we think that this high standard of achievement had been maintained uninterruptedly for over thirty years, even through times of special epidemic stress, and through the dislocations consequent upon the great war, we can form some idea of the calibre of the man who made this task his life's work.

Self-effacing, he shrank from publicity, and was ever ready to pay his tribute to the loyalty and devotion of colleagues and staff. During the last few years we had met more frequently on the Vaccination Committee of the Ministry of Health, where his counsel was invaluable, and his criticism shrewd and informed. He was ever ready to help those of us who were engaged as teachers of vaccination, and my last visit to him was to ask him about some photographs of the establishment and its work, which had been prepared for the Wembley Exhibition and copies of which I was anxious to have for demonstration purposes. We talked about the possibility of his writing some little manual of animal vaccination embodying the results of his own experience and research. Unfortunately he has not been spared to give us what he, perhaps better than any other, could have done.

Dr. Blaxall's own contributions to medical literature, apart from official reports, have been few. One would be glad to think that he had left papers which might be collected and published as a permanent memorial of his association with the Government Lymph Establishment. Perhaps Dr. S. Monckton Copeman, through whom he was introduced to his special work, or his colleague Dr. Fremlin, associated with him for over thirty years, may be able to help in that direction. Meanwhile it is for us to pay our tribute of respect and admiration to the memory of one who was a faithful servant of the State, a fine-spirited professional colleague, and a loyal friend.

ALEXANDER HARPER, M.D.,

Consulting Surgeon to the Princess Alice Memorial Hospital, Eastbourne.

DR. ALEXANDER HARPER of Eastbourne died at his residence in Arlington Road on May 9th. He had practised in Eastbourne upwards of forty years, and was held in high regard by his professional brethren, and was much esteemed by his patients and the residents generally.

Born at Windsor sixty-nine years ago, Alexander Harper was the son of James Peddie Harper, M.D., of Windsor and London. He was educated at the University of

Durham and at St. Bartholomew's Hospital. He obtained the M.R.C.S.Eng. diploma in 1884, graduated M.B. of the University of Durham in 1884, and proceeded M.D. in 1887. He was formerly house-surgeon at the West London Hospital, resident medical officer, North-West London Hospital, and house-physician at the Victoria Hospital for Children, Chelsea. Before retiring from practice, about eighteen months ago, owing to failing health, Dr. Harper had had an active and useful career. He will be especially remembered for his valued services in connexion with the Eastbourne Provident Medical Association, of which he was the founder, and was chairman up to the time of his death. The association proved so successful in the town that it was copied in many other towns and also abroad. For many years he served on the honorary medical staff of the Princess Alice Memorial Hospital, and later was one of the consulting surgeons. During the war he rendered much-appreciated work in connexion with the Urmston Red Cross Hospital, and he also undertook many of the duties of medical men who went to the war; and for the medical services which he rendered to the many Belgian refugees resident in Eastbourne he was awarded the Medaille du Roi Albert.

Dr. Harper took great interest in the work of the British Medical Association. After serving for some years as a member of the Executive Committee of the Eastbourne Division he was elected chairman of the Division in 1914. He leaves a widow and two daughters.

Dr. ROBERT ROBERTSON, a well-known practitioner in Edinburgh, died at his residence in that city on May 18th. After graduating M.B., C.M. at Edinburgh in 1888, he obtained the B.Sc. degree in public health in the following year, being one of the first who availed themselves of this newly instituted qualification; he was a fellow student of the late Professor Ritchie, who subsequently became the first professor of bacteriology in the University. His association with Professor Ritchie was largely responsible for the special interest which he took in vaccine treatment during the later years of his life. After graduation, Dr. Robertson began general practice in the Stockbridge district of Edinburgh, residing in Royal Circus. During a considerable part of the next thirty-four years he was a member of the Edinburgh Town Council, and on the Public Health Committee his valuable service and advice moulded to a considerable extent the developments of health services in the city. Towards the year 1920 he became greatly interested in the possibilities of the use of vaccines in treatment, and he contributed numerous articles to medical periodicals dealing with this subject. An account of the treatment of neurasthenia by vaccine was published in the *Edinburgh Medical Journal*, and a description of vaccine therapy in gynaecology and obstetrics appeared in the *Transactions of the Edinburgh Obstetrical Society*; he contributed also to the *Practitioner* some two years later an article on the method of using tuberculin. About this time the strenuous work of his large practice began to prove too much for an ailment of the heart from which he suffered, and he was obliged to restrict his energies. During the eight years before his death he had devoted himself largely to vaccine treatment, after removing his practice to Melville Street. Dr. Robertson is survived by a widow, one daughter, and two sons, of whom one is a medical practitioner in Kenya Colony; he is also survived by his mother, who is still alive at the age of 104.

Dr. LOUIS FOURNIER, physician to the Cochin Hospital, Paris, who was chiefly responsible for the introduction of the bismuth treatment of syphilis about ten years ago, has died, aged 62. Other reported deaths of medical practitioners abroad include Dr. BETTENCOURT of the Pasteur Institute of Lisbon; Dr. GIORGIO RATTONE, professor of general pathology at Parma; and Dr. KARL URBAN, director of the Vienna branch of the medical publishing firm of Urban and Schwarzenberg, who was created doctor *honoris causa* by the Vienna medical faculty some years ago.

Medical News.

SIR ROBERT ARMSTRONG-JONES will deliver the fifth Macalister Lecture before the London Clinical Society at the London Temperance Hospital on Tuesday, June 24th, at 9 p.m. The subject of this year's lecture is "The evolution of the human mind." All medical practitioners are cordially invited to be present, and may bring friends (ladies or gentlemen).

LORD LAMINGTON, President of the Research Defence Society, will preside at the annual meeting of the society to be held at 11, Chandos Street, W.1, on Tuesday, June 3rd, at 3.15 p.m. The fourth Stephen Paget Memorial Lecture, on "Diet and dental disease: what we have learned from animal experiments," will be given by Mrs. Mellanby.

THE annual meeting of the governors of Epsom College will be held at the office, 49, Bedford Square, W.C.1, on Friday, June 27th, at 4 p.m., when the result of the voting for pensioners and foundation scholars will be announced.

THE Mental After-Care Association will hold its jubilee meeting on Monday, June 2nd, at Drapers' Hall, Throgmorton Street, E.C., under the presidency of H.R.H. Prince George. The other speakers will include Lord Wakefield and Sir Maurice Craig.

A MEETING of the Society for the Study of Inebriety will be held at 11, Chandos Street, W.1, on Tuesday, July 8th, at 4 p.m. Dr. E. F. Willis, medical superintendent of Rendlesham Hall, Suffolk, will open a discussion on delirium tremens, its causation, prevention, and treatment.

THERE will be a discussion on asthma at a special meeting of the Medical Advisory Committee of the Asthma Research Council on Thursday, June 5th, at 3.30 p.m., at 37, Russell Square, W.C.1. Those desiring to take part are requested to give notice to the Council.

THE Department of Research in Animal Genetics, University of Edinburgh, will be opened on Monday, June 30th, at noon, by Sir Edward Sharpey Schafer.

THE St. Cyres Lecture for 1930 on the fibroses of the heart will be delivered by Dr. John Cowan at the National Hospital for Diseases of the Heart, Westmoreland Street, W.1, on Wednesday, June 4th, at 5 p.m. Members of the medical profession are invited to attend.

THE Fellowship of Medicine announces that special lectures in preparation for the M.R.C.P. examination will be given on Monday, June 2nd, at the Royal Westminster Ophthalmic Hospital, Broad Street, by Mr. C. L. Gimlett, at 4.30 p.m., on general medical ophthalmology; on Tuesday, June 3rd, at the Medical Society's lecture room, 11, Chandos Street, Cavendish Square, at 8.30 p.m., by Sir William Willcox, on some points in connexion with the toxic effects of lead, arsenic, morphine, and cocaine, etc.; and on Friday, June 6th, in the same lecture room, at 8.30 p.m., by Dr. H. E. Archer, on the fractional test meal as an aid to diagnosis. A free demonstration will be given by Dr. S. E. Dore on Monday, June 2nd, at 6 p.m., at St. John's Hospital, Leicester Square. The subjects of special courses in June are: gynaecology, at the Chelsea Hospital for Women from June 16th to 28th (some mornings and some afternoons); dermatology, at the Blackfriars Skin Hospital from June 16th to 28th (every afternoon); medicine and surgery at the Prince of Wales's Hospital, Tottenham, from June 16th to 28th; and proctology at St. Mark's Hospital, June 30th to July 5th, these last two being all-day courses. Fees are payable to the secretary of the Fellowship, 1, Wimpole Street, W.1, from whom all syllabuses and tickets of admission are obtainable.

THE Bakerian Lecture of the Royal Society was delivered on May 29th by Professor Robert Robinson, F.R.S., who took for his subject the molecular structure of strychnine and brucine. He suggested a formula which could be used to interpret in a satisfactory manner all the chemical aspects of strychnine.

MESSRS. J. AND A. CHURCHILL announce for early publication new books entitled *Tropical Medicine*, by Sir Leonard Rogers and Major-General J. W. D. Megaw; *The Hair: its Care, Diseases, and Treatment*, by Dr. W. J. O'Donovan; and *Surgical Emergencies in General Practice*, by Messrs. W. H. C. Romanis and P. H. Mitchiner.

WE have received the first issue of *Revista Espanola de Tuberculosis*, a journal published bi-monthly at Madrid under the editorship of Dr. J. Valdés Lambea, and containing original articles, abstracts from current literature, and reviews dealing with tuberculosis.

THE second International Congress for Experimental Cell Research will be held at Amsterdam from August 4th to 9th. Further information can be obtained from Professor Rhods Erdmann, Nassauische Strasse 17, Berlin-Wilmersdorf.

THE Royal College of Physicians of London will be closed on Saturday, June 7th, and Monday, June 9th.

SIR JAMES DUNDAS GRANT has been elected an honorary member of the Inter-State Post-Graduate Medical Association of North America.

THE branches of the Society of Medical Officers of Health have unanimously nominated Professor Harold Kerr, medical officer of health for the city of Newcastle-upon-Tyne, for election as president of the society for the session 1930–31. Dr. Kerr will take office in October.

THE freedom of the city of Chester has been conferred upon Dr. George Harrison. The same honour had been bestowed upon his great-grandfather and grandfather as well as upon two of his uncles.

AN Order, to come into force on July 1st, 1930, has been issued by the Home Secretary for securing the welfare of employees in factories and workshops engaged in the liming and tanning of raw hides and skins and in processes incidental to these operations. Occupiers are required to provide and keep in good condition protective clothing of suitable design and material as described in the schedule attached to the Order. Such clothing must ensure that a worker in any particular process is effectively protected from wet and damp. Adequate arrangements must be made for drying clothes, and separate accommodation provided for protective clothing as well as for garments put off during working hours. Toilet facilities must include a sufficient supply of clean towels, soap, and warm water. In the absence of other suitable arrangements a heated messroom, separated from other accommodation, must be provided for the use of employees remaining on the premises during the meal intervals; and means must be available for warming food and for boiling water. In regard to first-aid treatment, the occupier must observe the requirements laid down for factories in Section 29 (1) of the Workmen's Compensation Act, 1923; and he must arrange for a bi-weekly inspection of the fingers of workers who use solutions containing chromates or salts of chromium with free acid. He must also see that the official cautionary notices referring to the effects of chrome on the skin and to anthrax are kept posted up in the works. First-aid boxes must be equipped with a supply of impermeable waterproof plaster.

THE tenth Congress of the German Pharmacological Society will be held at Königsberg from September 4th to the 7th, when the following subjects will be discussed: problems of inflammation, introduced by Starkenstein of Prague; pharmacological problems of febrile diseases, introduced by Freund of Münster; allergy, introduced by Storm van Leeuwen of Leyden; and problems of the reticulo-endothelial system, introduced by Schulemann of Elberfeld. Further information can be obtained from Professor W. Lipschitz, Pharmakologisches Institut, Weigertstrasse 3, Frankfurt-am-Main.

THE ninety-first Congress of the Society of German Natural Philosophers and Physicians will be held at Königsberg from September 7th to the 11th, when all departments of medicine will be represented. Further information can be obtained from the general secretary, Dr. Wiegand, Ostmessehaus, Hansaring, Königsberg.

THE twenty-third Voyage d'Études Médicales will take place in the first fortnight of September under the direction of Professors Maurice Villaret of Paris, Santenoise of Nancy, and Paul Blum of Strasbourg. Visits will be paid to health resorts in Alsace, the Jura, and the Vosges.

DURING the present Exhibition of International Hygiene at Dresden, one day, June 1st, will be devoted to social hygiene, and addresses will be delivered by well-known authorities on child welfare, the care of cripples, tuberculosis, syphilis, and alcoholism.

IN order to stimulate interest in the fund being raised to provide Birmingham with a new hospital centre a business citizen has offered a gift of £100,000 provided that the list of subscriptions to be published on June 6th totals £350,000. It is estimated that the cost of the scheme in the next five years will be £1,250,000.

A FOLDER giving particulars of yachting cruises by the s.y. *Killarney* to the Scottish firths and fjords has been issued by Coast Lines Ltd., and may be obtained from all recognized tourist agencies.

DR. ERNST GRASSER, professor of surgery at Erlangen, has been made an honorary member of the German Urological Society of Berlin, and Professor Victor Klingmüller of Kiel an honorary member of the Cuban Dermatological Society.

DR. J. F. E. BRIDGER is relinquishing the post of director of medical and sanitary services of Ceylon on his retirement from the Colonial Medical Service on July 5th next.

DR. RUDOLF HÖBER, the physiologist, has been appointed rector of the Christian Albrechts University at Kiel.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9351, 9352, 9353, and 9354* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62571 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

EFFECTS OF PROLONGED ADMINISTRATION OF LIQUID PARAFFIN.

"M. H." writes: A woman, aged 53, has been taking paraffinum liq. (1 oz. at bedtime) for three years for chronic constipation. Before commencing this her weight had been stationary for years, but she has since gained 1 to 1½ lb. each month. Although she feels fit, she is disturbed about the increase of weight, and she holds the paraffin responsible. The only other change in her habits during this period is the dropping of tennis, which she played twice weekly in summer, but not energetically. There is no evidence of glandular disturbance, and no treatment for the increased fat (which is generally distributed) has been given. I cannot conceive the possibility of the paraffin being responsible, unless through improved digestion following the marked improvement of the constipation, but should be glad to know if there is any evidence which would tend to convict the paraffin.

*** *This contrasts with the question of "P. C. P." in the Journal* of March 8th (p. 478), when the suggestion was made that such prolonged administration might inhibit growth.

MUSCULAR SPASMS IN STUMP AFTER AMPUTATION.

DR. R. O. C. THOMSON (Hucknall, Notts) asks for suggestions for the treatment of a man, aged 40, with an amputation through the thigh, the result of a gunshot wound during the war. He writes: The patient has attacks of spasmodic contraction of the rectus femoris, with twitching of the stump and spasms of pain. These attacks come on at varying intervals—sometimes weekly, sometimes after an interval of two or three months, and they last a varying number of hours. When the attack is at its worst, he has to hold the stump firmly to control its movement. I have tried morphine hypodermically; this eases the pain slightly, but does not produce sleep, and it leaves him feeling very ill and dizzy. Omnopon has the same effect. Allonal, luminal, and sedobrol (70 grains of bromide in four hours) have no effect. The after-effects of opium and morphine are too severe to justify its use.

SPECIFIC GRAVITY OF FAECES.

"M.B." (Hants) writes: Can anyone give me information as to the significance of the specific gravity of faeces? In a healthy child of 5 the motions occasionally sink like a stone in water; at other times they float normally. No medicines are being given, and the colour of the stools varies little, whether they float or sink.

NOISES IN THE HEAD.

"M. R." writes: A married woman, thirty-two years ago, after influenza, began to complain of noises in her head, chiefly musical, and sixteen years ago underwent a series of operations to drain infected nasal sinuses. She is now a mental wreck, owing to the increase in these head noises, describing them as being like machinery, hammering, train rushing through tunnel, screeching, etc. Three aural surgeons offer no further alleviation. I would be grateful for any suggestion as to treatment which might mitigate the intensity of her condition and so save her reason.

FLEA INFESTATION.

DR. K. M. ANDREW (Parkstone) writes: In a house similar to that described by "Pulex" (May 10th, p. 852) we entirely got rid of fleas by fumigating with paraform, which is, I think, more certain than spraying. After closing all windows, and hanging

a thick blanket over each fireplace, nine to twelve tablets of paraform should be placed on a tin lid over a spirit stove in each room. All bedding should be well exposed, and inside doors be left open; the spirit lamps are then lighted, and the house is locked up for an hour. The windows should then be opened, and the house may be comfortably lived in an hour later. The process may need to be repeated two or three times at intervals of three days or more.

INCOME TAX.

Upkeep of Medical Books.

"G. M. K." has in the past been allowed £7 per annum for "upkeep of medical books and instruments." He has now claimed £21, and has been asked by the inspector of taxes for an assurance that "it contains nothing in respect of additions of any description." What legal grounds are there for claiming that the cost of purchasing new books and instruments is allowable if incurred to keep the medical books and instruments up to date?

*** There is no judicial decision dealing directly with the point, though in 1926, in the case of Daphne *v.* Shaw, the High Court held that "depreciation allowance" could not be claimed on professional books. But it is a settled principle that a capital asset used for professional or business purposes can be maintained in reasonable working order at the expense of revenue, though improvements must be charged to capital account—that is, paid for out of taxed income. It is admittedly difficult to apply this rule to professional books and instruments. New editions or supplements bringing reference books already owned up to date are clearly allowable, as also the cost of professional journals, etc., and we are definitely of opinion that the cost of a book would be allowable if purchased to bring the library up to date, even though it was by a different author from that of the book already owned. On the other hand, the cost of the enlargement of the library by the purchase of more exhaustive treatises or those on additional subjects would not be allowable for income tax purposes.

Debenture Transactions.

"H. H." was one of the debenture holders on behalf of whom an action was taken to the House of Lords alleging that the purchase of the debentures was induced by misleading statements of the directors. The case was settled on the basis that each debenture holder received one-third the face value of his debentures. Should that amount be assessed to income tax?

*** The transaction appears to us to have been throughout of a "capital" nature, and we know of no grounds on which the amounts paid—practically in reduction of the original capital cost—can be assessed to income tax.

Allowance for Use of Own Premises.

"J. H. G." owns the house in which he lives and practises. Its value for income tax purposes is assessed at "£135" gross and "£88 15s." net. [The latter figure should perhaps be £108 15s.] He is allowed to deduct one-half of the rental value as applicable to professional purposes. On which amount should he base the deduction?

*** The correct basis is one-half of the *net* assessment, in which case, of course, that part of the annual expenditure on repairs, decorations, etc., which applies to the professional portion of the premises should also be deducted. The inspector of taxes may perhaps be prepared to allow one-half the £135 on condition that nothing is claimed for repairs, etc., but the former basis is more satisfactory as a rule.

Car Depreciation.

"A. C. R." sold a car in 1927, for which full obsolescence relief was given, and "more than wiped out the 1928–29 profits." Depreciation is therefore claimed for the first time as for the financial year 1929–30. On what capital value should it be based?

*** On the value as at January 1st, 1930; in accordance with a long-standing practice, which has judicial support, the rate of depreciation should be applied to the value as written down at the end of the last account year before the financial year for which the claim is made. "A. C. R." had, however, a claim—on the facts stated—to have the depreciation for 1928–29 calculated and carried forward for allowance against the first available year's profit. Strictly, such a claim should be made when the return is made for assessment, and it may be that the inspector of taxes will now refuse it as out of date. In that case nothing can be done at present, but the matter will be rectified when the next obsolescence claim is made in respect of that portion of the original cost not covered by depreciation allowances given and the amount for which the car is sold.

Use of Car: Appointment.

"T. G. B." uses his car for attending patients, though the Government department for which he acts would pay for the visits if he thought it worth while making claims. The car is used largely for private purposes. Can he claim any allowance for the use of his car?

*** The statutory rule provides for the allowance of expenses incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." It seems impossible to convince the taxing authority of a Government department that the use of the car is "necessary" if the regulations contemplate some other means of transport, or would enable the taxpayer to obtain a grant for the expense. The expense of new books would, we consider, be allowable to the extent necessary to maintain up to date such a reference library as is reasonably required to carry out the duties.

LETTERS, NOTES, ETC.

MATERNITY AND CHILD WELFARE IN HUNGARY.

THE Stephania National Association for the Protection of Mothers and Infants functions in Hungary. As a compliment, perhaps, to this country the managing director, Mr. Louis Keller, has published his last annual report in what may be described as broken English. In Hungary, it appears, "the situation of the protection of mothers and infants is the most disadvantageous among all kinds of social work." Whereas in Western countries the visiting nurse may be sure that the advices given will be kept by the mother, in Hungary "house dogs will be set on her, and she will need the painful work of certain mouths to obtain the first result. . . . Additional efforts will be necessary to convict mothers from the good influences of cleanliness, fresh air, and of the sun." However, Mr. Keller hopes that by "sistematical work and constant, further progeress" will be reached. As the Stephania Association only began its work in 1921 it is hardly to be expected that its activities should have had much effect, as yet, on infant mortality rates. But Mr. Keller produces figures to show a difference in rate to the advantage of territories in which dispensaries have been established; and "plaids for an incerase of their number." He notes, however, that "opinions are audible that we are too poor for spend so much money for the protection of mothers and infants"; and, setting aside the "charitative duty," proceeds to analyse this proposition from the economical point of view. Pathetically estimating the value of a Hungarian baby at only one-twentieth the value of an infant in Amerika, he shows that the death of one baby represents a damage "expressed in money of 500 pengös in average." Taking into consideration the diseases prevented by the protection of mothers and infants, and the control obtained in tuberculosis, syphilis, and alcoholism, Mr. Keller estimates the value of the work to the community at 750 pengös, as opposed to the 500 pengös (of which the State contributes half) spent on each infant. In fact, in his opinion, the protection of mothers and infants "refunds the expenditures spent for, and gives a profit of 50 per cent." To complete the work, however, "we hawe to create, in accordance with the necessities arisen, and with the possibilities given, the half closed and closed institutes for the protection of mothers and infants in all places." These cryptic institutes suggest that, as with our own social reformers, the limit of expenditure in Hungary has not yet been reached. The report then sets forth the methods of administration and propaganda, in which our own method of including a "yearly one festival for the propaganda of the ideals" seems to be followed. We note, however, that there is a "sollicitor's office," which intervenes at divorce court, for aliment for children, for legitimation, and in other affairs. The organization is provided, also, with a home for mothers, a central laboratory, a central dispensary, a central milk kitchen, and a State nursing boarding school. As it also provides "sommer holydays for children" and "quartz treatment," it would appear that Hungary has gone some way in the direction of the late Professor Wynne's ideal of reducing voluntary societies from three hundred to three. Considering the extent of ground covered by the activities of the Stephania National Association, we think that Mr. Keller is too modest in pleading the low cultural level of his country. We wish him and his country every success in their efforts, so that even the house dog may give a friendly greeting to the nurse.

MEDICAL GOLF.

THE summer meeting of the Shropshire Medical Golf Association was held at Church Stretton on Sunday, May 25th, by courtesy of the committee of the Church Stretton Golf Club. The competition results were as follows:

Shropshire Medical Challenge Bowl.—Dr. T. R. Elliott and Dr. K. M. Rodger, 71; Dr. J. Lavelle, 73; Mr. A. D. Haydon, Dr. Clarke, and Dr. J. C. Davis, 75; and Dr. A. J. Ireland, 79.

Foursomes v. Bogey also resulted in a tie: Drs. J. A. Ireland and T. R. Elliott, and Mr. A. Lavelle and Dr. Harker—1 down.

The next meeting of the association was fixed for the second Sunday in October at the Wrekin Golf Club.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 35, 36, 37, 38, 39, 40, 41, 44, and 45 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 42 and 43.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 243.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

439. Meningitis due to B. enteritidis.

F. B. LYNCH and S. A. SHELBURNE (*Amer. Journ. Med. Sci.*, March, 1930, p. 411) record a fatal case of *B. enteritidis* meningitis in a female infant aged 12 months, and have collected 15 other cases from the literature, 4 of which occurred in Germany, 3 in Italy, 2 in Austria, 2 in Britain, 2 in France, 1 in Syria, and 1 in the United States. The ages of the patients ranged from 11 days to 25 years. The cerebrospinal fluid was purulent in 10 instances, clear in 4, and in one its nature was not reported. Blood cultures were positive in all cases in which they were made, except in the case of the present authors. The duration of the meningeal symptoms in the fatal cases ranged from one to fifteen days, most of the deaths occurring within the first week. All the children under the age of 1 year died, and all the eight cases which came to necropsy had purulent meningitis, while five patients had enteritis and one pyelitis.

490. Prophylaxis of Scarlet Fever.

F. M. MEADER (*Journ. Amer. Med. Assoc., March 1st, 1930*, p. 622) treated 450 contacts with scarlet fever by injection of 7.5 c.cm. each of the pooled serum from donors who had had scarlet fever within a year or a little earlier. The serum was given to the contacts within six months from the time it was drawn. The subsequent history of the contacts who had been injected showed that 2.9 per cent. developed scarlet fever, as compared with 12.8 per cent. in a similar group of contacts who did not receive the serum. The immunity did not last longer than three or four weeks. Meader regards the method as particularly valuable for young children who have been recently exposed to scarlet fever, and also for the infirm. It was found useful in checking outbreaks of scarlet fever in hospitals and other institutions.

491. Non-gonorrhoeal Urethritis.

A. KRISTJANSEN (*Ugeskrift for Laeger*, March 20th, 1930, p. 276) warns against labelling cases of urethritis as gonorrhoeal merely on the strength of the clinical picture, however typical this may seem, and even when such complications as conjunctivitis and arthritis appear. In the past a negative bacteriological examination in such cases has too often been discounted, but the complement fixation *test may be decisive. The author records a small epidemic* which began with a girl, aged 16, suffering from a vaginal discharge stated to have existed for two years. She was treated in hospital with irrigations for a couple of months, chronic gonorrhoea being diagnosed, although gonococci could not be found. A man infected by her developed a urethritis which lasted three months, but was followed by no complications, and microscopical examinations failed to reveal gonococci in the discharge. In another contact admitted to hospital for gonorrhoea and gonorrhoeal ophthalmia, the last coitus had been in the first half of December, 1928. On January 12th, 1929, he noticed a yellow discharge from the urethra, and on January 20th had sore throat, fever, and a purulent discharge from the conjunctivae associated with photophobia. He also complained of pain, tenderness, and oedema in the left knee-joint, left fifth metatarso-phalangeal joint, and the right first metatarso-phalangeal joint. Erosions, partly confluent, on the soft palate and the inside of the right cheek were covered by a yellow pseudo-membrane. Under large doses of salicylates the articular manifestations disappeared in six weeks, but for a considerable time the temperature remained slightly raised in the evening. The ocular symptoms diminished after a few days' treatment with a 10 per cent. solution of argyrol, and they had disappeared completely and without leaving any permanent injuries when the patient was discharged. The urethral discharge was examined microscopically twelve times, and the conjunctival discharge eight times, without gonococci being found; nor were they recovered from cultures on ascites agar. Five complement fixation tests for gonococci performed at different stages of the infection were completely negative, as was also the Wassermann test.

492. A. CASTELLANI (*Urol. and Cut. Rev.*, March, 1930, p. 147), who records three illustrative cases, states that non-gonorrhoeal urethritis, though not of frequent occurrence, is not so exceedingly rare as some authorities suppose. The following three groups are described: (1) those of traumatic *origin; (2) those of protozoal and metazoal origin; and (3)* those of mycotic origin. Traumatic urethritis is exceedingly rare, but is occasionally found in soldiers and porters doing long marches day after day. As regards the second group, several of these are doubtful, while the flagellates and some of the other protozoa found are probably not the true causative agent. Mycotic urethritis, which is the most important from the practical point of view, may be classified etiologically according to the botanical position of the fungi observed, or clinically according to the colour of the discharge, into three subgroups: (1) urethritis with black discharge, which is usually associated with yeast-like fungi (monilia, cryptococcus, saccharomyces); (2) urethritis mostly associated with the presence of cladosporium, aspergillus, and penicillium; and (3) urethritis associated with red pigment-producing yeast-like fungi together with red pigment-producing cocci. All the protozoa and fungi found in non-gonorrhoeal urethritis in the male have also been found in vaginitis and vulvo-vaginitis, so that it is not improbable that these infections may be transmitted by sexual intercourse.

493. Tularemia in Norway.

T. TRJÖTTA (*Nordisk Medicinsk Tidskrift*, March 22nd, 1930, *p. 177) observes that though about 800 cases of tularemia* have been diagnosed in America up to September, 1929, this disease has escaped detection hitherto in Europe, with the exceptions of Norway and Russia. He is, however, convinced that it exists in every country where the carriers of this disease—the tick, the fly, and the hare—are to be found. He has already diagnosed, clinically and serologically, 11 cases in Norway, and several other cases, which he has not hitherto been able to examine serologically, have been notified to him. His first three patients had been shooting hares in the country. The fourth was a kitchen-maid who, with five other maids, had dressed 130 hares. The fifth patient was one of these other maids. The next five patients were employed in a shop selling game. The eleventh and last patient was a housewife, who dressed a hare on January 21st, 1930, and who, in the evening of January 23rd, noticed a tender lump under her left arm; next morning there was a red spot on the back of her left thumb. She suffered from attacks of shivering, lost her appetite, and felt feverish. She was admitted to hospital on February 20th, and an abscess as large as a tangerine orange in the left axilla was evacuated. In addition to the five cases [illegible] there were several other members [illegible] o had previously presented similar [illegible] ran a lighter course in the game dealers than in the game hunters; and this may have been so because the latter, when gutting hares, are in contact with the virus in a comparatively fresh state. Game dealers, on the other hand, are liable to be infected with the virus, which has become attenuated by the low temperature under which game is conveyed to a town. The author has not yet seen a case of tularemia conveyed by rats, as observed in Russia. He knows of no other prophylactic measure than that of the wearing of rubber gloves when hares are handled. As for the treatment of these cases, he passes on the recommendation that swollen lymphatic glands should never be incised before they have softened completely and the pus is close to the surface; incision of a hard lymphatic gland may prolong the disease.

Surgery.

494. Congenital Dislocation of the Wrists.

A. CSERNY-PECHANY (*Zentralbl. f. Chir.*, March 29th, 1930, p. 774), who records two illustrative cases, one in a woman aged 47, and the other in a girl aged 18, remarks that the questions of the etiology and treatment of Madelung's disease (congenital dislocation of the wrists) are by no means settled. As a general rule the condition is bilateral, like congenital malformations of the forearm, such an absence of the radius, hypoplasia of the ulna, congenital dislocation of the radius, and constitutional lesions of the epiphyseal cartilages (Perthes's disease, Köhler's disease, and Schlatter's disease). Madelung's disease has been variously attributed to familial predisposition (Siegrist, Melchior, and Reich), rickets or late rickets (Brandes, Bassini), or trauma. In the present author's first case there was evidence of rickets, but not in the second. Neither showed any familial predisposition. Both, however, suffered from irregular menstruation, indicating a disordered ovarian function, with which the disease

is probably connected. Another argument in favour of this view is the fact that the disease occurs in the great majority of cases at puberty or just before. In the literature at his disposal the author has been able to find examples only in the female sex. *Reich has published a genealogical tree* in which the bilateral deformity was found in female members of the family in three generations. In further support of an etiological connexion between ovarian function and Madelung's disease is the well-known effect of ovarian function on the growth of bones, as shown by the sudden increase in height at puberty. Lastly, it has long been known that osteomalacia can be cured by oöphorectomy. On the strength of these considerations the present author tried subcutaneous injections of ovarian extract, with the result that the disease was arrested in one case and decided improvement took place in the other.

495. Embolectomy of Left External Iliac Artery.

E. DAHL-IVERSEN (*Lyon Chir.*, January–February, 1930, p. 39), points out that whereas embolectomy of the pulmonary artery is an unusual operation, owing to the difficulty of diagnosis and the probability of the sudden death of the patient, embolectomy of the arteries of the limbs is fairly common and gives a good chance of recovery if performed early. A case is reported of a woman, aged 53, admitted to hospital with phlebitis. She had great pain and a feeling of heaviness in the right leg; there was also tenderness and infiltration along the veins in the lower part of the thigh. Two days later phlebitis started over the left internal malleolus; this was followed in four days by violent pain in the left leg, which was pale and cold from below the knee, particularly in the foot and lower part of the calf. Movement was not possible in the toes, and the leg could not be raised. Examination of the artery disclosed the absence of pulsation in the foot and in the lower part of the leg, but a feeble pulsation could be felt in the upper part of Scarpa's triangle. After careful consideration a diagnosis was made of an embolus in the femoral artery, and immediate operation was ordered. A femoral arteriotomy was performed by an incision in Scarpa's triangle; the fascia was divided, the muscle drawn outwards, and the vessel, which was found to be without pulse or blood, was exposed. The artery was opened after temporary ligature, and the embolus, which was 12 cm. long, was removed. The incision was then closed by paraffin sutures, the instruments and swabs being soaked in a citrate solution. There was no haemorrhage from the line of suture, and pulsation in the artery was immediately seen. The skin incision was then closed, and pulsation in the foot was restored, the limb regaining its normal colour. Examination of the embolus showed it to be cylindrical in shape and composed of a typical thrombus; it had evidently been formed in a vein from which it had become detached and had passed through a patent foramen ovale. The patient made a good recovery after the operation.

496. Treatment of Glandular Epitheliomata.

S. LABORDE, R. HUGUENIN, and F. AMAN-JEAN (*Bull. de l'Assoc. Française pour l'Etude du Cancer*, January, 1930, p. 15) quote two cases as illustrating that glandular epitheliomata respond to radium treatment in the same way as *do true epitheliomata of the skin. The first case* was a woman of 51, operated on in 1924 for cancer of the breast with glandular involvement; there was no post-operative radium treatment. Four years later ulceration developed, the area being as large as the palm of the hand when the patient was seen in 1929. Histologically the condition was undoubtedly a glandular epithelioma. Radium treatment was given, the technique and dose being analogous to those used in the treatment of epitheliomata of the skin. Complete cicatrization from the periphery inwards was effected in several weeks, and the area remained healed. The second patient was a woman, aged 52, who had intestinal haemorrhage and trouble in defaecation for two years. On examination the whole anal canal was invaded by growth. The anal margin was covered by a vegetating ulceration stretching 4 to 5 cm. each side of the anal orifice. The tumour was fixed and inoperable, and was found to be a cylindrical epithelioma, definitely glandular in type. Treatment with radium was given both internally and externally; after eight days the haemorrhage ceased and there was progressive cicatrization of the skin, although the growth remained. Three months later a metastatic nodule in the perineum required further treatment. By this time complete cicatrization of the ulcerated area had occurred. The authors remark that it would be reasonable to suppose that cancer cells which have migrated from the primitive tumour to develop in a different tissue retain their initial radio-sensibility or radio-resistance. As the authors indicate, development in a tissue which is not the natural habitat of the tumour apparently modifies the reaction to radium emanations.

Therapeutics.

497. The Use of Bacteriophage Filtrates.

WHILE agreeing that bacteriophage therapy is by no means a panacea, and that its applicability should not be exaggerated, T. B. RICE (*Amer. Journ. Med. Sci.*, March, 1930, p. 345) reports 300 cases of suppurative conditions treated by the local application of bacteriophage filtrates, and concludes that this method of treatment has a definite value; it is uncertain how the reagent acts, apart from increasing phagocytosis and liquefaction. He thinks that stock preparations are apparently as good generally as those specially prepared. The dosage does not seem to be important provided that enough of the filtrate is used to give good contact as a wet dressing. No bad results were observed, and no evidence was obtained of the development of resistant strains which were more pathogenic than the original one. Rice thinks that strong antiseptics are contraindicated during bacteriophage therapy, but he has no definite evidence that they would have altered his results. Of 66 cases of boils and carbuncles so treated, excellent results followed in 55, moderately good in 5, failure in 5, and one case was untraced. At least four of the failures were explainable, since the organism concerned—a staphylococcus in two cases and a resistant staphylococcus in the other two—was not susceptible to the bacteriophage strains at the author's disposal. Excellent results were obtained in 24 out of 27 cases of abscess, the bacteriophage being injected into the cavity, or passed through a catheter into deep lesions. Particularly good results were obtained by injecting the filtrate suspended in a 1 per cent. agar jelly, when the cavity permitted this preparation to leak out easily. Other conditions which responded satisfactorily were: staphylococcal cellulitis and purulent arthritis, appendix abscess, faecal and urinary fistulae, cystitis, infected wounds, bedsores, perineal lacerations, and pustular acne. The presence of dead bone caused the treatment to fail. The preparation employed for the most part was a mixture of various filtrates representing several cultures of the staphylococcus and *B. coli*, with the same number of the homologous bacteriophage strains.

498. Benzo-meta-cresol in Intestinal Infestations.

A. SCHWARTZ, A. AZAM, and M. YOVANOVITCH (*Presse Méd.*, April 9th, 1930, p. 485) point out that, though many anti-parasitic medicaments, such as the cresols, are powerful parasiticides and germicides, yet considerable danger attends their use owing to their toxicity. After numerous experiments with various combinations of thymol and cresol in order to find one which retained the efficacy of these drugs with a lessened toxicity, these workers finally discovered two substances, cinnamic and benzoic combinations with cresol—namely, cinnamo-cresol and benzo-meta-cresol (cresentyl); the second compound is strongly advocated. This drug is prepared by the action, aided by heat, of benzoyl chloride on strictly pure meta-cresol. The product thus obtained is washed with a dilute solution of soda, and purified by several crystallizations in alcohol at 90° C. Chemically pure benzo-meta-cresol is a white, crystalline substance, melting at 54°, insoluble in water, but soluble in alcohol, ether, benzine, chloroform, and *fatty acids*. Its toxicity is *nil*, and it is well tolerated by children as well as by adults. The action of this medicament is most remarkable and constant in tricocephalosis and intestinal amoebiasis, and also in lambliasis if there is no infestation of the gall-bladder; it is also an excellent intestinal antiseptic. Its anti-oxyuric action is not so marked. The usual daily dose is 4 to 5 grams for adults and 2 to 3 grams for children, given *fasting in the morning for four or five days* in fractional doses of 1 to 1.5 grams every half-hour. Three or four such series at intervals of six days generally suffice to rid the system of the parasites. As an intestinal disinfectant, the daily adult dose is 2 to 3 grams (in fractions of 1 to 1.5 grams), in children the dose is 1 to 2 grams according to age, and in infants 0.5 to 1 gram. These doses should be given half an hour before each meal for eight to ten days; several such courses at intervals of a week are advised.

499. Congo Red as a Haemostatic.

SINCE experiments on animals have shown that injections of neutral dye solutions altered the blood coagulation time, J. BECKER (*Münch. med. Woch.*, March 7th, 1930, p. 396) tried the effect of intravenous injections of 10 c.cm. of a 1 per cent. solution of chemically inactive Congo red in a number of cases of recent haemorrhage due to various causes. The coagulation time, estimated at intervals after the injection, was diminished and the number of platelets was increased. Becker therefore considers that Congo red may be of definite value as a haemostatic.

Neurology and Psychology.

500. Psychical Factors in Organic Nervous Disease.

MANY nervous patients are encountered who present no objective findings to account for their complaints, and are designated and treated as non-organic, functional, hysterical, etc. Many of these return after varying periods with undoubted evidences of organic nervous disease, which can be readily correlated with the original complaints. From their clinical experience with some of these cases, A. M. RABINER and M. KESCHNER (*Journ. Neurol. and Psychopath.*, April, 1930, p. 311) suggest that the evolution of some organic nervous diseases may occur in two phases: an early psychical phase, and a later organic one. The transition between these two phases may be almost imperceptible, being only detected after prolonged observation by the same observers; and during this transition there may occur structural changes in the nervous system resulting from disturbances of function during the first or non-organic stage. Not only may structure affect function, but also function may influence structure. The increase in the size of cells of hypertrophied muscles and hyperfunctioning glands, the physiological development of nerve tracts shown by Kappers to exist during increased activity, and the effect of hypofunction or afunction on morphology as illustrated in retrograde degeneration are cited in support of this assertion. Moreover, Cassirer has stated that every dysfunction, whether due to a disturbance in the afferent or efferent path, or in the processes supposed to exist between them, leads to an anatomical change in the structure of the nerve cell. Modern researches seem to point to abnormal lipoid metabolism as a genetic factor in the production of degenerative lesions in the central nervous system; and the hypothesis is advanced that psychical factors may, through the sympathetic nervous system, affect lipoid metabolism and so bring about structural changes in the central nervous system at the basis of the organic clinical pictures. Three cases are cited in which the patients, following psychical trauma, developed motor disorders that did not conform to any known organic nervous disease. Later there appeared signs of organic nervous disease, undoubtedly due to structural changes in the nervous system.

501. Acute Ascending Paralysis of Landry.

ACCORDING to C. F. READ, T. E. CONLEY, and H. H. CONLEY (*Journ. Amer. Med. Assoc.*, February 22nd, 1930, p. 557), opinions vary considerably concerning the pathology of Landry's syndrome (ascending paralysis of predominantly motor type), and there is considerable doubt, during life at least, about its pathogenesis and the anatomical regions involved. It would seem impossible to designate before death how and to what extent the lower motor neuron is involved or what cord changes are taking place, especially in the absence of an epidemic of poliomyelitis. A case is reported in a man aged 23, the typical age for this affection, which was unrelated to any other disease except an indefinite gastro-intestinal disturbance (in the absence of any epidemic); it ran a classic course of progressive, flaccid paralysis without sensory manifestations. It presented the unusual feature of continuous manual artificial respiration being required for over four days, with final bulbar death. In this patient the onset was marked by pain in the abdomen, obstinate constipation, and abdominal distension, together with weakness and dyspnoea; these symptoms had developed in the order named during thirty-six hours. Cyanosis ensued and artificial respiration was instituted. Neurological examination revealed apparent bulbar palsy, only slight movement of the soft palate and uvula, with protrusion of the tongue to the labial margin, difficult swallowing, and a whispering voice. The pupils, and the third, fifth, and seventh cranial nerves, were normal. There was paralysis of the phrenic and intercostal nerves. The arms, hands, and fingers could be moved weakly, and the tendon reflexes were absent. There were no signs of atrophy. The lower extremities showed a complete flaccid paralysis with entire absence of tendon reflexes. The corneal and plantar were the only superficial reflexes obtained. Sensation for position, touch, and pin-prick was unimpaired, and there was no complaint of pain at rest or when the limbs were manipulated. Retention of urine was present, with slight stiffness of the neck and a bilateral Kernig sign. The patient died of cardio-respiratory failure on the seventh day. On microscopical examination the cord showed throughout perivascular infiltrations, especially in the grey matter. The infiltrating cells were mainly lymphocytes, with plasma cells and polyblasts. The blood vessels were also greatly engorged; in many places very large haemorrhages were present. The ganglion cells were swollen and showed chromatolysis and neurophagia. There was proliferation of the glia cells in both the grey and white matter, and in many instances nodules were formed, especially in the medulla. These changes, though prominent in the medulla, were not as marked as in the cord. The meninges were but slightly involved; the roots were infiltrated by haematogenous elements, the perineural spaces being especially involved.

502. Basal Metabolism and Emotional States.

G. W. HENRY (*Journ. Nerv. and Mental Dis.*, December, 1929, p. 593) remarks that during the past twenty-five years considerable evidence has been accumulated which indicates that a personality disorder is really a psycho-biological reaction, and that the biochemical component is constant though not readily demonstrable. The relation between highly painful emotions and the adrenaline-sugar content of the blood has long been known; and in the acute psychotic disorders accompanied by intensely painful emotions there is a tendency towards hyperglycaemia and a definite retardation of the gastro-intestinal motor functions. There seems to be an increased calcium and phosphorus content of the blood in manic conditions, while there is a relative decrease of these substances in tense, agitated, depressed states. Localized pallor or flushing associated with different emotional conditions is commonly noted, and cold perspiration and cyanosis of dependent parts are recognized as a frequent accompaniment of acute schizophrenic disorders. With regard to basal metabolism studies, there are still no definite conclusions concerning the variations in the relative amount of energy consumed in the maintenance of automatic functions and body heat in personality disorders. Henry records the result of a study of the basal metabolism in emotional states, in which most of the patients tested were in an acute phase of mental disease but were able to co-operate in the requirements of the tests. The following conclusions seem justified from this study. A definite relationship exists between basal metabolic processes and emotional states regardless of the type of personality disorder. Elated, over-active, and talkative states are accompanied by accelerated basal metabolism, while in depressed, under-active, and under-talkative conditions it is retarded. Apprehensive, tense, and agitated states usually imply an accelerated basal metabolic rate, but this may be counteracted in cases of intense depression. A retarded rate is present in apathetic states, but the retardation is not as great as in depressed conditions. Some of the apparent variation in the metabolic rate may be due to the different emotional states of the tested subject. The rate may be altered to a pathological degree with no other apparent factor than an unusually intense emotional state, and therefore the interpretation of the rate in any given case requires consideration of the prevailing emotional state of the individual tested.

Obstetrics and Gynaecology.

503. Uterine Fibromyoma.

F. W. LYNCH (*Journ. Amer. Med. Assoc.*, January 18th, 1930, p. 156) discusses uterine fibromyoma, basing his observations on a series of 683 cases. All tumours larger than 1 cm. in diameter were included in the compilation, and any fibroid mass was classified as large which, together with the uterus, exceeded the size of a four months' pregnancy, growths of this extent being too bulky for treatment with radium. Using this criterion 394 cases were classified as large, and 289 as small. The age of the patient has an important bearing on the choice between surgery, radium, and x-ray treatment. Examination of the past histories of the patients disclosed the fact that they had previously undergone an exceptional number of surgical operations on the genital tract and elsewhere in the body, and it would seem that women in whom uterine fibroids develop have had for some time uterine and thyroid tissue of less than the average normal degree of healthiness. Haemorrhage was the main symptom in only one-third of the cases, but it was present in 85 per cent. of all submucous growths, though not confined to these only. The large tumours grew rapidly as a rule, and appeared to give rise to symptoms earlier. The incidence of sterility in women with fibroids is 23.3 per cent., and may be due to congenital causes rather than to the presence of the tumour; the incidence of malignancy was 4.6 per cent., there being 32 cases in the series of 683. Lynch concludes that each method of treatment has its merits, and all have their limitations; fibroids which cause symptoms may be treated with a comparatively low mortality. It appears that in an abnormally high percentage of these cases the pelvic structures generally are in an unhealthy state. Even though most of the patients had never resided in goitre belts there was a striking frequency of goitre in the series, and this is held to warrant a belief that a relationship exists between

goitre and fibroids. Diabetes was present in eight cases, a complication which has led the author to hesitate before operating, however much the condition may have been improved by insulin.

504. Rectal Examinations in Labour.

R. T. LAVAKE (*Minnesota Med.*, February, 1930, p. 110) supports the view that rectal examinations during labour are less productive of post-partum rise of temperature than vaginal examinations. The work of Kronig, confirmed by Whitridge Williams, and later by Hjalmar Bergholm, indicates that the vagina of every pregnant woman who has not been examined can be considered aseptic unless gonococci are present. Thus, with good pre-natal care, every woman should begin labour with an aseptic vagina. The author believes that rectal examinations employed during labour instead of vaginal ones will maintain this aseptic state. He quotes comparative figures by Jegge: of 500 cases rectally examined, pyrexia developed in 6 per cent., while of 500 cases vaginally examined, pyrexia ensued in 11 per cent. Other figures quoted are those of Guggisberg, who cites 4,642 cases examined vaginally with 0.12 per cent. deaths from sepsis, and 17.5 per cent. febrile cases (temperature of 99.5°); this compares with 3,010 cases examined rectally with no deaths from sepsis and 11 per cent. febrile cases. LaVake maintains that each year's experience has added to his own conviction that in all types of situations and conditions the rectal examination is potentially the safer. In addition, he emphasizes the fact that the use of this examination among educated people reassures the patient and her family that all possible sources of infection are being avoided. He finds that the greatest potential danger resident in the rectal examination is the possibility of overlooking what has been called the concealed second stage of labour. The cervix may be completely dilated, although the rectal examination gives the impression of incomplete dilatation. When this possibilty is borne in mind, however, any doubt can be confirmed by an aseptic vaginal examination.

505. Thymus and Pituitary Extracts in Labour.

J. JARCHO (*Amer. Journ. Obstet. and Gynecol.*, January, 1930, p. 81) records briefly his views on the uses of thymophysin (a mixture of thymus and pituitary extracts) in labour. He reports the conclusions of such European workers as Temesváry, Jahreiss, and Graf among others, who agree as to the great value of thymophysin in labour, especially in the first two stages whenever the uterine pains are weak. These pains are rendered more rhythmic and more powerful than with pituitary extract alone; their action lasts longer and they shorten labour considerably. The action of thymophysin continues through the third stage, preventing the development of secondary uterine inertia and hastening expulsion of the placenta. Haynes has used thymophysin successfully in 31 out of 34 cases of primary and secondary uterine inertia. Jarcho reports his own results in 18 cases; the uterine contractions were rendered more rhythmic and more powerful, the pains continued longer, cervical dilatation was aided, and the first stage was shortened. He agrees that the potency of thymophysin persists through the third stage, the placenta being expelled usually in from fifteen to twenty minutes with no excessive haemorrhage. On examining the blood of mother and child no change was found in the platelets, the red and white cells, or in the coagulation time. In cases where the blood pressure was not already high there was often a temporary rise of 5 to 20 mm. of mercury, followed by a fall. In no instance was there any ill effect to mother or child. Temesváry, it is added, now uses thymophysin in normal labours, and by so doing claims to shorten labour by five to ten hours. Jarcho gives 0.5 c.cm. intramuscularly, followed by a second similar dose, or even one of 1 c.cm., if the first injection proves ineffective.

Pathology.

506. Changes in Humoral Immunity during Experimental Pneumococcal Infection.

E. E. TERRELL (*Journ. Exper. Med.*, March, 1930, p. 425) infected dogs and cats with virulent Type I or II pneumococci, the organisms being injected intrapleurally or intraperitoneally, or by intrabronchial insufflation. Blood was withdrawn before the animal was infected, and on each day subsequently; blood cultures and plate counts were taken in most cases, and the serum was tested for its opsonic and its pneumococcidal promoting properties, using the methods described by Robertson and Sia. It was found that with an overwhelming infection, accompanied by early blood invasion, there is a rapid decrease in the concentration of humoral immune bodies; these disappear entirely by the time of death. In non-fatal cases of severe generalized infection the same early diminution of humoral antibodies occurs, but the concentration of immune bodies begins to rise with the onset of recovery about the fourth day. These immune bodies are acquired as the result of infection. The diminution in the normal antibodies during the stage of infection appears to be due to their combination with the soluble specific substance formed by the pneumococci. When infection is confined to the lungs and pleura, the concentration of antibodies often remains about normal throughout the disease, and the animal may die of the local disease with a negative blood culture. According to the author, these results suggest that, after infection of the dog or cat with pneumococci, the chief function of the natural anti-pneumococcal substances in the blood is to prevent or limit blood invasion. When the infection is localized to the lungs, these circulating antibodies appear to have little effect either in preventing the spread of the process locally, or in determining the outcome of the disease.

507. Scarlet Fever Dick Toxin.

R. LOPATIZKI (*Jahrb. f. Kinderheilk.*, January, 1930, p. 241), as the result of experiments on rabbits and observations on children, comes to the following conclusions. The Dick toxin consists almost exclusively of exogenous bacterial toxins which pass over nearly completely into the surrounding nutrient medium and produce the Dick reaction. In addition to these toxins there is a very insignificant amount of endogenous toxin present which is firmly attached to the bodies of the bacteria, passes over on maceration into the solution, and in exceptional cases, such as very susceptible individuals, or possibly those with a special diathesis, may produce a very weak Dick reaction. On immunizing rabbits with the bodies of scarlatinal streptococci grown on plain agar and blood broth, and then carefully washed free from all free toxin, serums were obtained which did not produce a Dick reaction. Ehrlich's multiple law is applicable to Dick toxin, which is a toxin *sui generis*, possessing a vasomotor character, and in many respects subject to the laws of true toxins.

508. The Sedimentation Rate during the Climacteric.

O. BACH (*Ugeskrift for Laeger*, March 27th, 1930, p. 305) has investigated the sedimentation rate of the erythrocytes in 73 women between the ages of 40 and 60 in attendance at the Silkeborg hydropathic establishment in Denmark, but not suffering from any ailments other than those commonly associated with the climacteric. The rate was 11 mm. or less in 33 cases, 11 to 20 mm. in 24 cases, and more than 20 mm. in 16 cases; it was thus above the normal in 54 per cent. of all the cases. Bach is therefore inclined to regard the climacteric as a condition which in itself may affect the sedimentation rate to such an extent as to diminish its diagnostic value in relation to ailments other than those of the climacteric. The technique he adopted was that elaborated by Westergren, the readings being taken after an hour.

509. Vaccination of Monkeys against Poliomyelitis.

C. P. RHOADS (*Journ. Exper. Med.*, January, 1930, p. 1) inoculated four *Macacus rhesus* monkeys with 16 c.cm. of a 5 per cent. suspension in saline of glycerolated spinal cord of a mixed poliomyelitis strain. The inoculum was given intradermally into several sites, evenly spaced blebs about 0.5 cm. in diameter being produced. No symptoms of poliomyelitis occurred during the succeeding month. The serum of the animals was then tested for its power to neutralize the virus. A mixture of serum and virus was injected intracerebrally into a normal monkey, while a control monkey was injected with a mixture of normal serum and virus. The results showed that the serum of each of the four vaccinated monkeys was able to neutralize the virus, whereas the normal serum was unable to do so. The four vaccinated monkeys were then inoculated by the cisternal route with about five lethal doses of virus filtrate, a normal monkey being used as a control. One of the vaccinated monkeys died of intercurrent disease. Of the remaining three, two developed no symptoms of disease, while the third developed typical poliomyelitis but recovered. The control monkey died of poliomyelitis in six days. The author concludes from this small series of tests that it is possible by the use of a single large dose of active virus, distributed over a number of sites, to produce an active immunity to poliomyelitis in monkeys. It is of importance that the inoculum should be introduced at a single sitting; if it is distributed over a number of days—that is, if repeated small intradermal injections are given—the animals develop preparalytic symptoms, and may actually succumb from typical paralysis.

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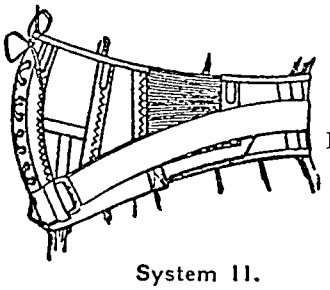
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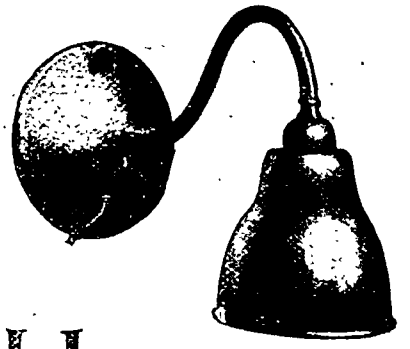
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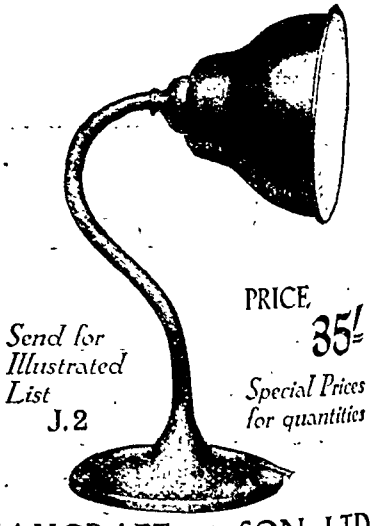
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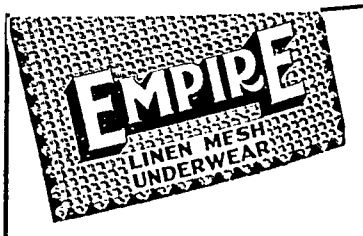


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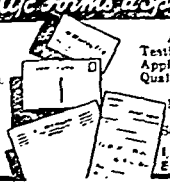


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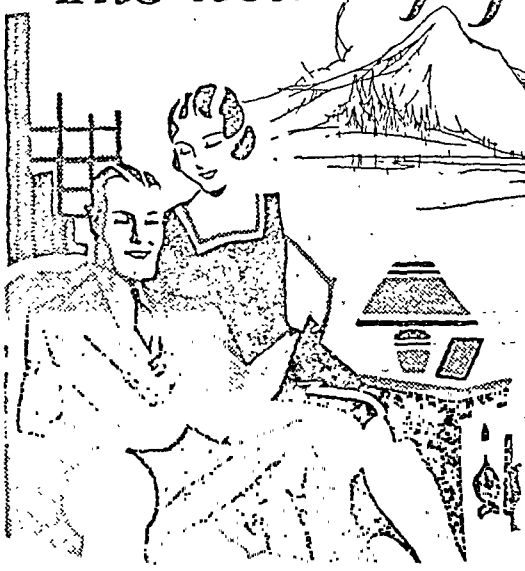
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200 rooms fitted with hot and cold water. 50 suites with private baths and telephones. Hard Tennis Courts and Putting Greens. Garage 100 cars.

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Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.
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Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
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RENDLESHAM HALL

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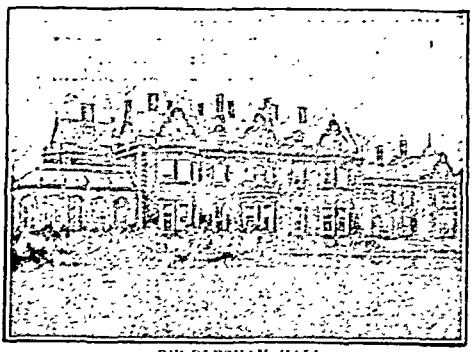
Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

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A comfortable, private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line, 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The treatment is the outcome of many years' experience, and besides removing all craving for drink or drugs, it has a tonic action on the system and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

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Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms, Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. . Telephone: 16 RICKMANSWORTH.

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DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E Carver, M.D., D.P.M. Fees moderate.

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In cases of urgency 'phone NUNEATON 241.

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Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

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A first class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

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850 feet above sea-level.

STONYCREST NURSING HOME.

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For MEDICAL, SURGICAL AND CONVALESCENT CASES.

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For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W HORTON, M.D Nat. Tel. 130.

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OTHER DRUG HABITS, AND TROPICAL AILMENTS.

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

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Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent).

'Phone: Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

THE LAWN, LINCOLN.

A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,

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CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Boarders. Large Mansion with 12 acres of ground (See *Medical Directory*, p. 2190.) Apply J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 2420.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.

FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY *Telephone*: Shardlow 16.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

Tel.: 64117. *For terms etc., apply to the Medical Superintendent.*

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.

Telephone: *Teignmouth* 289.

The MAUDSLEY HOSPITAL
DENMARK HILL, S.E.5.

Telephone: RODNEY 4841—2.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
IN-PATIENTS: (*a*) 164 beds (both sexes) in wards or separate rooms. (*b*) 15 private rooms (for ladies) with special sitting rooms, garden, and dietary.

Terms:

(*a*) **£5 a week**, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.
(*b*) **£6 6s. a week.**

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2542. *Telephone*: Exeter 2542.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

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The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

The climate is mild and the neighbourhood beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

OXHEY GROVE,

HATCH END, MIDDLESEX.

A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch.
Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.

Full particulars from the MEDICAL SUPERINTENDENT. *Telephone:* Hatch End 368.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. *Operating Theatre, Dental Surgery, and Ophthalmic Dept.* Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH *standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.*

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

NORTHWOODS, Winterbourne, Bristol.

Telephone and Telegrams: Winterbourne 18.

This beautiful mansion in fifty acres of secluded grounds was built specially for the TREATMENT OF MENTAL ILLNESS. Certified patients of both sexes. Thorough clinical, bacteriological, and pathological examinations. Separate bedrooms. Private suites. Indoor and outdoor amusements. Wireless and other concerts. Occupational therapy. Physical drill. Private golf course. Garden and dairy produce from farm on the estate. Reasonable terms. A few voluntary boarders are received in the Medical Superintendent's house.

For further particulars and prospectus, apply to JOSEPH CATES, M.D.

GARTH HILL HOUSE

NORTH QUEENSFERRY, *near* EDINBURGH.

A SMALL PRIVATE HOME FOR TREATMENT OF NEURASTHENIC CASES.

Magnificent situation overlooking Firth of Forth. Stress laid on re-education of will and intelligent re-adaptation to environment.

For particulars apply ARTHUR J. BECCE, M.D., Medical Superintendent.
Telephone: Inverkeithing 179.

TOR-NA-DEE SANATORIUM
MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: **David Lawson, M.D., F.R.S.E.**

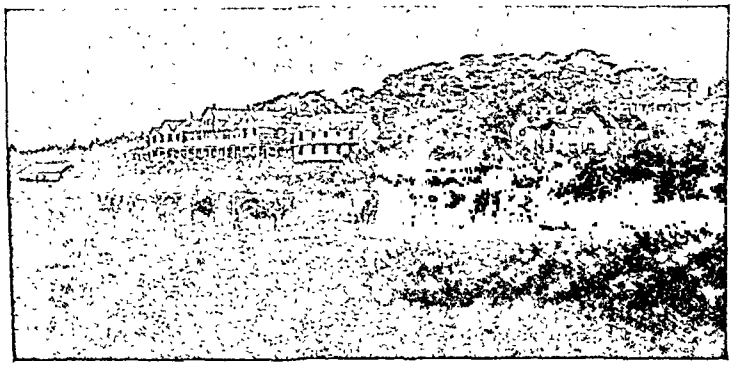
FULLY EQUIPPED WITH **EVERY MODERN APPLIANCE** FOR THE DIAGNOSIS AND **TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.**

Physician Superintendent J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

MUNDESLEY SANATORIUM



Specially built for the treatment of Tuberculosis. Spacious public rooms recently completed in a new central building. Aspect S.S.W., on a carefully chosen site. Pure, bracing air. High sunshine record. Heliotherapy. Arc-light treatment. One mile from the coast. Electric light throughout. X-ray installation. Full day and night Nursing Staff. Wireless (head phones) throughout.

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L. WHITTAKER SHARP, M.B.(Camb.).
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Apply, Mr. D. C. FORD, Secretary,
The Sanatorium, Mundesley, Norfolk.

LINFORD SANATORIUM,
RINGWOOD, NEW FOREST, HANTS.

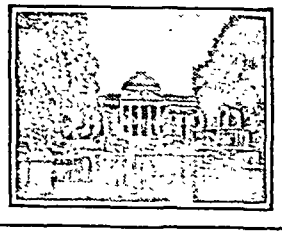
Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch.(Cantab.).

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FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. **Fees 4, 5, and 6 guineas per week.**

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach-upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23



THE WORLD SPA WIESBADEN

Germany's greatest Medical Baths. Notable performances in the Kurhaus and State Theatres.
WORLD FAMOUS THERMAL SALT SPRINGS at 150°. Cure: gout, rheumatism, nervous and metabolic diseases, diseases of the respiratory and digestive organs, curative diet. Station of Rhine steamers at Wiesbaden-Biebrich.

Salts and Pastilles for export.

GOOD ACCOMMODATION AT MODERATE PRICES.

Hotel lists (8,000 beds) from the Municipal Information Office and Travel Bureaux

WILDBAD—
in the Black Forest

Germany—1,400 to 2,500 feet above sea-level.

CURATIVE SPRINGS 93-99° F.

for hundreds of years have proved beneficial for gout, rheumatism, sciatica, nerve troubles, etc. Rejuvenation; all modern curative methods, Sport, Mountain Railway, Beautiful woods. 23,000 guests.

Information from the "Badeverwaltung" or "Kurverein."

EXCELLENT TROUT FISHING.

SWISS SPAS.

BADEN.

On the main line Zurich-Basle and Zurich-Berne. The hot springs of Baden were already known to the Romans. 17 radio-active wells at a temperature of 113.4°F. They contain sulphur and sodium chloride. The baths are obtainable in the hotels themselves. Treatments: *warm baths, shower baths, massage, electric baths, inhalation,* drinking cure, diagnostic-therapeutic institute, mechanotherapy. Recommended for metabolic diseases, rheumatism, gout, sciatica, diseases of the muscles, bones, and joints, retarded convalescence after injuries and operations.
Season: April 1st to November 1st.
For information apply to: Spa Director, Baden, Switzerland.

LOÈCHE-LES-BAINS.

One hour by electric railway from Loèche (main station on the Simplon route). Mild alpine climate. The baths were already known to the Gauls and Romans. The radio-active springs contain chiefly sulphate of lime. Two swimming pools. Every hotel has its own bathing installation. Treatments: warm baths, douche-massage, injections, air and sun baths. Recommended for: gout, rheumatism, sciatica, anæmia, post-operational conditions, convalescence, gynæcological diseases, circulatory disturbances, skin diseases.
Season: May to October.
For information apply to: Hotel Association, Loèche-les-Bains, Switzerland.

PASSUGG.

Near Chur. Situated on a picturesque plateau. Mild sub-alpine climate. Vast forests.
Treatments: The Ulricus spring (alcaline-muriatic), Belvedra spring (chalybeate), Fortunatus spring (alcaline-muriatic with iodine), Helen spring (mildly alcaline and acid), Theopul spring. All varieties of accessory treatment. Dietetic treatment. Indications: Diseases of the digestive organs, diseases of the liver and bile ducts, kidney and bladder diseases, diseases of nutrition and metabolic diseases, especially diabetes, arterio-sclerosis, diseases of the blood and tropical diseases.
Season: May to October.
For information apply to: Spa Director, Passugg, Switzerland.

RHEINFELDEN.

10 miles from Basle, on the railway line Zürich-Basle. Famous for its vigorous brine, containing 31% salt, and for its "Kaiserquelle" spring, a highly diuretic calcium and boric acid well, and for its "Magdalena" spring, containing sulphates of calcium, sodium, and magnesium. 8 bath establishments with up-to-date installations. Treatments: brine baths, carbonic acid brine baths, drinking, mud-packs, "Mutterlauge" packs, inhalation, massage, gymnastics, all varieties of electric treatment, dietetic treatment. Recommended for: gout, rheumatism, arthritis, women's diseases, sterility, obesity, children's diseases, arterial hypertension, diseases of the heart, affections of muscles, bones, and joints, convalescence.
Any information and detailed booklet gladly supplied by: Enquiry Office, Rheinfelden, Switzerland.

SCHINZNACH.

Railway connections: Basle-Brugg-Zurich, and Berne-Brugg-Zürich. The hot springs of Schinznach were in use in Roman times and belong to the strongest radio-active sulphur wells on the Continent. Newly equipped, comfortable baths and inhalation rooms. Treatments: baths, drinking, sulphur-mud and sulphur-water packs, irrigations, inhalatorium, massage, X-rays. Recommended for: gout, rheumatism, affections of bones and joints, non-tuberculous catarrhs of the air passages, arterio-sclerosis, diseases of the skin, diseases of women, children's diseases.
Season: May to October.
For information apply to: Spa Director, Schinznach Bad, Switzerland.

TARASP-SCHULS-VULPERA.

The chief spa of the Lower Engadine. Glauber salts wells. The advantage of this spa lies in the combination of the curative properties of the waters with the alpine air and sun.
10 mineral springs of various composition. Up-to-date equipment for drinking and baths, air and sun baths, swimming baths, Zander-hall, X-ray institute, diet. Recommended for: affections of the digestive organs, metabolic ailments, nervous troubles, affections of the organs of circulation, of the organs of respiration, of the genito-urinary system, malaria.
Information supplied by: General Manager, Kurhaus Tarasp.

For information and the booklet "Swiss Spas and their Mineral Springs" (sent gratis), please apply to the Office of the Swiss Federal Railways, 11b, Regent Street, London, S.W.1.

BROOKE HOUSE,
CLAPTON, LONDON, E.5.
Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

GRAMPIAN SANATORIUM,
KINGUSSIE, INVERNESS-SHIRE.

Specially built for the Open-air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 850 ft. above sea-level. Sheltered situation in pine wood. Graduated walks. Electric light throughout building and in shelters. Central heating. Fully equipped X-ray Plant. Inoculation Treatment available for patients—24 beds. Trained Nurse on duty all night. Terms £4 6s. 8d. to £6 6s. *inclusive per* Med. Supt.—FELIX SAYE, M.D.
For particulars apply to the Secretary.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone*: 2708.

Grove House, All Stretton,
Church Stretton, Shropshire.

A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

Home for Invalids requiring
REST, CARE, or SUPERVISION. Large house and beautiful garden of nearly 2 acres; own produce, gravel soil. Car, etc. Special care to Chronic Patients.—"Duncroft," Staines, Middlesex.

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 33, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times"
"Thoroughly physiological principles."—"Lancet"
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 33 of Miss BEHNKE, 33, Earl's Court Sq., S.W.5.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIDDEN, the Secretary.

F.R.C.S.(Edin.).

CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS will commence shortly. CORRESPONDENCE COURSE for Sept. and later Exams. should begin now.—H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinb'h.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
Chemistry, Physics, and Biology Labs.
MANCHESTER TUTORIAL COLLEGE,
327, Oxford Road, Manchester.

Doctors attending Post-Graduate
Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

B.P.A. Diploma of the Society
OF APOTHECARIES.—Classes are now being formed at the LONDON LIGHT AND ELECTRICAL CLINIC for the 1st and 2nd parts. Intending students please apply, Secretary, London Light and Electrical Clinic, Ranelagh Road, S.W.1.

LONDON HOMOEOPATHIC HOSPITAL
(Incorporated by Royal Charter),
GREAT ORMOND STREET, W.C.1.

Post-Graduate Summer Course, 1930.

Friday, June 20th, 5 p.m. Dr. C. E. WHEELER, Hoeksman-Gillespie Lecturer. *The Principles of Homœopathy.*

Friday, June 27th, 5 p.m. Dr. WILLIAM BOERICKE, Registrar-Tutor. *Methods relating to the Selection of the Homœopathic Remedy.*

Friday, July 4th, 5 p.m. Dr. JOHN WEIR, C.V.O., Compton Burnett Lecturer. *The Principles involved in Homœopathic Prescribing.*

Friday, July 11th, 5 p.m. *A series of Clinical Cases, showing Results of Homœopathic Prescribing.*

PAID CLINICAL CLERKSHIPS.

To enable Doctors desirous of studying Homœopathy for three months at the London Homœopathic Hospital—out-patient Clinics, Lectures, etc.—a limited number of paid Clinical Clerkships, value £25, are available.
Apply the DEAN, Educational Committee.

The Glasgow Royal Cancer
HOSPITAL,
132, Hill Street, Garnethill, GLASGOW.

A Short Post-Graduate Course on the THEORY AND PRACTICE OF RADIUM THERAPY will be held at the above Institution during the months of June and July. Graduates wishing to take the Course are requested to write to the Radium Officer at the Hospital for further particulars. The fee for the Course will be Three Guineas.

H. MUIR LAWSON, C.A.,
Secretary.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1930.

The POST-GRADUATE COURSES to be held this year will comprise:

(1) A GENERAL PRACTITIONERS' COURSE from August 11th to September 6th.

(2) A GENERAL SURGICAL COURSE from August 11th to September 6th.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 14th to August 9th. Fee £10 10s.

In addition to the above, the following *Special Courses* have been arranged:

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 13th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham, Ligertwood, and Paterson. May 5th. 12 Meetings, thrice weekly. Fee: £5 5s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY (including Radiology).—Surgical Staff of Royal Infirmary. Fee: £4 4s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This Class will meet twice weekly at the Ear and Throat Dispensary, Cambridge [Street. Fee: £4 4s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

PATHOLOGY OF THE NERVOUS SYSTEM.—Drs. F. E. Reynolds and James K. Slater. Minimum number 6. Fee: £3 3s.
EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s. VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
MEDICAL CHEMISTRY.—Dr. C. P. Stewart. Fee: £4 4s.
X-RAY PHYSICS AND ELECTRO-TECHNICS.—Mr. C. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1930.

A. A **General Medical and Surgical Course** from August 18th to September 12th.
Fee £10 10s. or £6 6s. for first or second fortnight.

B. **Clinical Assistantships** in General and Special Hospitals.

Syllabuses and any other information may be had on application to the **Secretary, Post-Graduate Medical Association, The University, Glasgow.**

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

MEDICAL CORRESPONDENCE COLLEGE

19, WELBECK ST., LONDON, W.1. Tel: Welbeck 8901.

PROVIDES HIGHLY SUCCESSFUL ORAL AND POSTAL COACHING FOR ALL MEDICAL EXAMINATIONS.

Special Preparations for all Surgical Qualifications.

F.R.C.S.ENGLAND. (Primary & Final.) CH.M.EDINBURGH.
M.C.CANTAB.
F.R.C.S.EDINBURGH. M.S.LONDON.

And all other Surgical Degrees and Diplomas.

¶ The remarkable success of Students of the Medical Correspondence College at the higher Surgical Examinations is specially noteworthy.

¶ Both at the Primary and Final F.R.C.S. England the majority of our Students are successful at the first attempt, and Candidates who have failed at these Examinations on several previous occasions get through without difficulty after going through our courses.

¶ The Surgical Tutors of the College all hold either the M.S.Lond. or F.R.C.S.England, or both, and are highly experienced teachers.

¶ The Postal Courses are thoroughly clear, concise, and up to date, and the test questions are carefully selected from those set at previous Examinations, so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time, and much unnecessary reading is saved.

VALUABLE BOOK

"How to Pass the F.R.C.S.," free on application to the Secretary.

INSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. The Lectures will be given in the Lecture Room of the Bacteriological Department, [illegible], on THURSDAY AFTERNOONS at 5 p.m., as under:—

	SUBJECT.
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

NATIONAL HOSPITAL FOR DISEASES OF THE HEART, Westmoreland Street, W.1.

THE ST. CYRES LECTURE

For the year 1930 will be delivered at the above Hospital on

Wednesday, June 4th, at 5 p.m.

By JOHN COWAN, Esq., M.D., D.Sc. Subject: "The Fibroses of the Heart."

Members of the Medical Profession are cordially invited.

Society of Apothecaries of LONDON.

BIO-PHYSICAL ASSISTANTS EXAMINATION.

The first Examination for Part I will take place on Monday, June 23rd, and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

Society of Apothecaries of LONDON.

MASTERY OF MIDWIFERY EXAMINATION.

The next Examination will take place on Monday, November 17th, 1930, and following days. For regulations apply to—
FRANK HAYDON, Secretary.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE

From Specialist Tutors, in conformity with the Regulations of the various Universities.

Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

F.R.C.S. (Edin.).

A TUTORIAL CLASS, with Museum Demonstrations, for the next Examination will commence shortly. Correspondence tuition if desired.—FRED GRAHAM, M.D., F.R.C.S.(Edin.), Surgeons' Hall, Edinburgh

EPSOM COLLEGE.

(Established in 1855 as a Public School, with a Royal Medical Foundation.)

NOTICE is hereby given that the ANNUAL GENERAL MEETING OF GOVERNORS will be held at the Office, 49, Bedford Square, W.C., on Friday, June 27th, at 4 p.m., when the result of the Voting for Pensioners and Foundation Scholars will be announced.

In accordance with the provisions of the Acts of Parliament, two members of the Council will retire at this Meeting. It will be proposed that the following be re-elected for a further period of three years: Dr. Charles Buttar, Mr. J. S. Colman, Dr. Raymond Crawfurd, Sir Henry Dixon Kimber, Bart., Dr. Henry Robinson, J.P., Sir Squire Sprigge, M.D., Dr. Septimus Sunderland, Mr. P. Leslie Waterhouse, and Mr. George E. Waugh, and that Brigadier-General George T. Mair, C.M.G., D.S.O., be elected to fill a vacancy.

The Council will propose (*a*) that Sir Frederic G. Hallett, Colonel Norman C. King, and Mr. P. D. Leake be re-appointed Auditors for the ensuing year; (*b*) that Lord Dawson of Penn, G.C.V.O., Sir Milsom Rees, K.C.V.O., and Mr. T. Hollis Walker, K.C., be elected Vice-Presidents of the College; and (*c*) that various amendments be made in the By-laws, particulars of which can be obtained at the office.

All voting papers must be returned to the office by the night of Saturday, June 21st, at latest, or the votes will be lost.

By Order of the Council,
49, Bedford Sq., J. BERNARD LAMB,
W.C.1. May 26th, 1930. Secretary.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals

An INTENSIVE REFRESHER COURSE will be held from June 16th to 28th. Lectures, demonstrations, and clinicques in the various general and special departments.

The number is limited to 25.

Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

MARLBOROUGH COLLEGE,

Near MACCLESFIELD,
Specialises in
CAREERS FOR GIRLS.
List and Prospectus from Principal.
Special Terms to Medical Men.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical [illegible], for next Exam., will commence [illegible] at any time.
[illegible] HAWKEN, F.R.C.S.,

Panel Committee for the County of LONDON.

ORGANISING AND ASSISTANT MEDICAL SECRETARY.

The Committee invites applications from registered Medical Practitioners for the appointment of Organising and Assistant Medical Secretary. The duties will consist of visiting and advising practitioners on the panel in the area, organising local medical associations, and assisting the Medical Secretary, giving his whole time to the duties.

Salary £600 per annum, with an allowance of £104 per annum for expenses. The appointment will be in the first instance for one year, subject to six months' notice on either side.

Applications, stating age and experience, should be sent to the Medical Secretary, London Panel Committee, 17, Russell Square, W.C.1, not later than June 16th.

C. L. BATTESON,
Medical Secretary.

County Borough of Smethwick.

PART-TIME LADY MEDICAL OFFICER.

The services of a Lady Medical Officer are required for one half-day weekly in connection with the extension of the Council's Maternity and Child Welfare Scheme. The person appointed will have clinical charge of one Infant Welfare Centre, and remuneration will be at the rate of 1½ guineas per session. Applications, accompanied by copies of recent testimonials, should be delivered to the undersigned not later than Thursday, June 12th, and should state age, whether married or single, qualifications, and experience in diseases of children, etc.

"The Uplands," Hales Lane, Smethwick. HUGH PAUL, M.D., Medical Officer of Health.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.
(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (*Lond.*).
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.),	1901-29 (9 Gold Medallists during 1913-29)	319
M.S.(Lond.),	1901-29 (including 4 Gold Medallists)	21
M.B.,B.S.(Lond.),	*Final* 1905-29 (Completed Exam.)	257
F.R.C.S.(Eng.),	*Primary* (1905-29) *Final*	154 149
M.R.C.P.(Lond.),	1914-29	168
D.P.H.	(Various) 1905-29 *(Completed Exam.)*	286
F.R.C.S.(Edin.),	1918-29	43
M.R.C.S.,L.R.C.P.	*Final* 1910-29 (Completed Exam.)	433
M.D.(Dur.)	(Practitioners) 1905-29	37
M.D.	Various. By Thesis. Numerous successes.	

Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.

M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. *Suggestions for the higher Medical Examinations*. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of *Tutors*, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6315.)

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. *Full particulars* to be obtained from Mr. J. E. PERVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

Prifysgol Cymru.

UNIVERSITY OF WALES

The following Scholarships will be awarded by the University of Wales in the session 1930-1931, provided suitable candidates are forthcoming.

The CECIL PROSSER RESEARCH SCHOLARSHIP of the value of £250 for research in the Department of Tuberculosis.

The Mrs. JOHN NIXON SCHOLARSHIP of the value of £150 for research in the Department of Medicine and Medical Pathology.

The LORD MERTHYR RESEARCH SCHOLARSHIP of the value of £200 for research in the Department of Surgery.

The EWEN MACLEAN RESEARCH SCHOLARSHIP of the value of £150 for research in the Department of Obstetrics and Gynæcology.

Particulars of the award of the Scholarships and forms of application may be obtained from the Registrar, University Registry, Cathays Park, Cardiff.

St. Paul's Eye Hospital, LIVERPOOL.

HOUSE SURGEON required. Duties to start July 1st, six months' appointment. Salary £120 per annum, board, residence, etc. Applications, with copies of testimonials, should be sent to the Secretary at the Hospital on or before June 16th.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,
LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES *sent out for private cases.*

TAUNTON SCHOOL,

TAUNTON.

A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

SCHOOLS for BOYS and GIRLS.

TUTORS FOR ALL EXAMS.

Messrs. J. & J. PATON, having an up-to-date knowledge of the BEST SCHOOLS and TUTORS in this Country and on the Continent, will be pleased to AID PARENTS in their choice by sending (free of charge) *prospectuses and* TRUSTWORTHY INFORMATION AND ADVICE.

The age of the pupil, district preferred, and rough idea of fees should be given.

J. & J. PATON, Educational Agents, 143, Cannon St., *London*, E.C.4. *Tel.*: *Mansion House* 5053.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

County Borough of Rochdale.

ASSISTANT MEDICAL OFFICER OF HEALTH AND CLINICAL TUBERCULOSIS OFFICER.

The Health Committee invite applications for the appointment of Assistant Medical Officer of Health and Clinical Tuberculosis Officer at salary of £700 per annum.

Candidates must be registered Medical Practitioners, and must be qualified to hold an appointment as Tuberculosis Officer and Venereal Diseases Officer, in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, and must also possess the Diploma of Public Health.

The successful candidate will be required to devote the whole of his time to the duties of the office, which include attendance at the Tuberculosis and Venereal Diseases Clinics, also Bacteriological Laboratory work, or any other Public Health duties assigned by the Medical Officer of Health, under whose direction and supervision such officer will act.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Rochdale, to whom all applications should be returned, endorsed "Assistant Medical Officer of Health," so as to be delivered not later than the first post on Tuesday, June 10th.

Town Hall, Rochdale. WM. HENRY HICKSON, Town Clerk.
May 19th, 1930.

WEST AFRICAN MEDICAL STAFF.

Vacancies at present exist for MEDICAL OFFICERS in the WEST AFRICAN MEDICAL STAFF.

Qualifications. Candidates must be British subjects of European parentage and under 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held Hospital or Public Health appointments, or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose, and throat, venereal diseases, etc.

Salary. £660 per annum, rising by annual increments of £30 per annum to £720 per annum, and then, on confirmation, £720 per annum, rising by annual increments of £40 to £960 per annum, together with a seniority allowance (payable only in West Africa) at the rate of £72 per annum. After three years' service on £960, the salary may be raised to the scale of £1,000 per annum, rising by annual increments of £50 to £1,150 per annum, together with a seniority allowance at the rate of £100 per annum.

Quarters. Free quarters are provided or an allowance is given in lieu.

Outfit Allowance. An outfit allowance of £60 is granted on first appointment.

Passages. Free first-class passages are provided for the officer only both on first appointment and when proceeding on or returning from leave. A married officer will, in certain circumstances, be granted half the cost of his wife's passages to and from West Africa.

Terms of Appointment. The appointments are pensionable, subject to a probationary period of three years in the first instance.

Tour of Service. The normal tour of service in West Africa is approximately 18 months, though vacation leave may be granted by the Governor after 12 months, and is followed by leave at the rate of one week for each completed month of residential service, plus the time necessarily spent in the voyages to and from England.

Course of Instruction in Tropical Medicine. Selected candidates will normally be required to attend a course of instruction in Tropical Medicine and Hygiene before proceeding overseas.

Duties. Though Medical Officers are appointed in the first instance for general service, there are good opportunities for work in special branches of medicine and surgery and for research.

Further particulars and forms of application may be obtained, on application in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Southern Rhodesia Medical SERVICE.

Three ASSISTANT AND RELIEVING GOVERNMENT MEDICAL OFFICERS are required for the Southern Rhodesia Medical Service. Salary £500 per annum, rising by £25 per annum to £650 per annum, with private practice.

Preference will be given to holders of Public Health or Tropical Medicine certificates.

Applications, with full particulars of qualifications, age, past appointments held, etc., with copies of references, should be addressed to the Official Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, from whom copies of conditions of appointment to the Southern Rhodesia Medical Service can be obtained.

City of Plymouth.

RESIDENT MEDICAL SUPERINTENDENT.

Applications are invited from duly qualified and registered Medical Practitioners for the post of Resident Medical Superintendent of the Plymouth City Hospital.

The salary will be at the rate of £1,000 per year, with food, quarters, lighting, heating, and washing. No canvassing for this appointment is permitted, and any canvassing will disqualify the applicant. The appointment will be terminable by three months' notice on either side.

Applicants must be holders of the F.R.C.S., or the Degree of a Master of Surgery in a University of the United Kingdom. The appointment is whole-time, and private practice is not permitted. The person appointed will be an Assistant Medical Officer in the Public Health Department, and will be on the staff of the Medical Officer of Health, who is the General Medical Superintendent of the Corporation Hospitals.

Applications will be considered only on the forms of application which will be provided. A form of application, together with further details relating to the appointment, can be obtained from the undersigned, on the receipt by him of a request for this, accompanied by a stamped and addressed envelope. Forms of application, duly completed, together with copies of not more than three recent testimonials, must be returned to the undersigned not later than June 5th.

Town Hall, Stonehouse, Plymouth. May 8th, 1930.
A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., etc., Medical Officer of Health.

City of Plymouth.

DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Men for the post of whole-time Deputy Medical Officer of Health to the City of Plymouth.

Applicants must possess a Diploma in Public Health or a qualification in State Medicine.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum, and the appointment will be terminable by three months' notice on either side.

The person appointed will be required to act for the Medical Officer of Health in his absence, and generally to help him in the Public Health work of the City, and in the various Sub-departments of the Public Health Department. He will act under the general supervision and direction of the Medical Officer of Health, and carry out any duties delegated to him from time to time.

Forms of application will not be provided.

Candidates for this appointment should state their age and give an account of their professional qualifications and experience in all branches of Public Health work.

Canvassing will disqualify the applicant.

Applications must be received by the undersigned on or before Thursday, June 5th, and envelopes must be endorsed "Deputy Medical Officer of Health."

Town Hall, Stonehouse, Plymouth. May 8th, 1930.
A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., Medical Officer of Health, City and Port of Plymouth.

Dorset County Hospital.

APPOINTMENT OF HOUSE SURGEON.

The Committee of Management are open to receive applications for the position of House Surgeon, to take up his duties on or about June 20th.

Every candidate for the office of House Surgeon must be unmarried and possess a registered qualification to practise Medicine and Surgery from some recognized Body in Great Britain or Ireland. Salary £120 per annum, with board and lodging. The appointment is for a period of not less than six months. All applications, accompanied by three recent copies of testimonials, should be sent to the Secretary, Dorset County Hospital, on or before June 9th.

Candidates must be of British nationality.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

PARK HOSPITAL, DAVYHULME, near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of a Junior Resident Medical Officer at the above Hospital. Candidates should be unmarried. The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for re-appointment for a further period of six months at the end of that period.

The salary is at the rate of £200 per annum, together with the usual residential allowances.

The Hospital comprises 500 beds.

Applications, accompanied by copies of not more than [illegible] should be addressed to [illegible] Officer, Public Assistance [illegible] Department, County Offices, Preston, not later than June 14th.

County Offices, Preston. May, 1930.
GEORGE ETHERTON, Clerk of the County Council.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

Applications are invited from registered Medical Practitioners (male) for the post of Assistant Medical Officer to work under these Schemes. Salary £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.

The salary will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.

Candidates must possess a Diploma in Public Health, and experience in Refraction work will be considered an important additional qualification.

Applications should be received on or before Wednesday, June 11th, by the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.

HOUSE SURGEON to Gynæcological, Aural, and Skin Departments. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before June 9th.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
May 25th, 1930.

Woking and District Victoria Hospital.
(General Hospital, 50 Beds.)

Female RESIDENT MEDICAL OFFICER (unmarried) required for July 1st. Applicants must be doubly qualified and registered. Salary £100 per annum, with board, residence, and laundry.

Appointment for six months, and renewable for further six months.

Applications, stating age, etc., and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained. They must be received on or before June 14th.

Personal canvassing not allowed.

R. MANNING DRIVER,
Woking & District Victoria Hospital. Hon. Sec.

The London Female Lock Hospital,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by June 16th, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing August 1st.

By Order of the Board,
HY. J. EASON, Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

King Edward VII Hospital,
WINDSOR. (181 Beds.)

HOUSE SURGEON required for six months from date of appointment. Applicants must be *fully qualified and registered. Salary at the* rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than June 10th

ARTHUR E. CHURCHER,
Secretary.

Margate and District New General Hospital.
(60 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) to commence duties on *June 20th* next. *Twelve* months' engagement (renewable).

Salary £125 per annum, with board and laundry.

Applications, accompanied by copies of testimonials, should be sent to the Secretary, Margate Cottage Hospital, as early as possible.

The Queen's Hospital for Children,
Hackney Road, London, E.2.

RESIDENT MEDICAL OFFICER required on July 31st.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, Two Casualty Officers, Two House Physicians, and One House Surgeon.

Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital, and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before June 30th.

T. GLENTON-KERR,
May 26th, 1930. Secretary.
Telephone: Bishopsgate 6305 and 2534.

Cheltenham General and Eye Hospitals.

The Board of Management invite applications for the post of HOUSE SURGEON (male, unmarried) at the Eye, Ear, Throat, and Nose Branch.

Candidates must be fully qualified.

Experience in this particular class of work desirable.

Salary £200 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, to be sent in sealed envelopes, marked "House Surgeon—Eye," to the undersigned not later than June 7th.

J. CUMMING SMITH, F.C.I.S.,
General Hospital, Secretary.
Cheltenham. May 26th, 1930.

Wigan Infirmary.
(180 Beds.)

Wanted, July 1st, for six months, a THIRD HOUSE SURGEON (male). Salary £150 per annum, with board, apartments, and washing. Doubly registered. Candidates may be requested to remain to take appointments of Second House Surgeon and Senior House Surgeon, each for a period of six months, subject to satisfactory service.

Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, should reach the undersigned as soon as possible

A. STANLEY BRUNT,
May 15th, 1930. Gen. Supt. & Sec.

Walsall General Hospital,
WALSALL.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post Tuesday, June 10th.

WALTER FRANCOMBE, Secretary.

Worcester General Infirmary,
WORCESTER.

A JUNIOR RESIDENT MEDICAL OFFICER is required to commence duties on July 1st. Salary at the rate of £120 per annum, including board, residence, and laundry.

Applications, together with copies of three testimonials, to be forwarded to the undersigned not later than Friday, June 13th.

PERCY N. GLASS,
General Secretary.

Victoria Hospital, Blackpool.
(132 Beds.)

HOUSE SURGEON (Junior, male), six months. Salary £150 per annum, with residence, board, and washing.

Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Wilson Cottage Hospital,
MITCHAM.

Applications are desired for the posts of HON. CONSULTING PHYSICIAN and HON. CONSULTING SURGEON to the Nose and Throat Dept.

Further particulars can be obtained from the Hon. Registrar.

Peterborough and District Memorial Hospital.
(154 Beds.)

Applications are invited from fully qualified *male Practitioners for the post of* RESIDENT HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

Applications are also invited from fully qualified male Practitioners for the post of RESIDENT HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry.

Both appointments will be for a minimum *period of six months.*

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent to the undersigned.

FRANK A. C. TAYLOR,
Secretary-Superintendent.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the *post of HOUSE SURGEON and CASUALTY* OFFICER (male).

Duties to commence as soon as possible.

The duties include charge of four beds devoted to complicated Midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for *six months* and is renewable, and the salary for the second six *months* will be at the rate of £175 per annum.

Applications, accompanied by not more than three *recent* testimonials, to be sent to the *undersigned.*

Dated this 26th day of May, 1930.

ARTHUR H. LIMB, Secretary.

Ingham Infirmary,
SOUTH SHIELDS.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per *annum respectively,* with residence, board, and washing. No out-visiting. Candidates must hold *registered* qualifications in Medicine and Surgery. The appointment will be terminable by *one month's notice.* Applications, stating age and accompanied by *copies* (which will *not* be returned) of recent testimonials, to be sent to the undersigned, *from* whom further particulars may be obtained.

JOHN POTTER, Secretary

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, *Nose,* and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
April 7th, 1930. House Governor.

General Infirmary, Pontefract.

Wanted, RESIDENT MEDICAL OFFICER (male and unmarried), £150 p.a. Appointment for six months.

Preference given to men who have held previous resident Hospital appointment.

Application, with testimonials, to Secretary.
45, Ropergate, HERBERT HOLMES.
Pontefract.

The Mental Hospital, Berrywood,
near NORTHAMPTON.

LOCUM TENENS MEDICAL OFFICER (male) wanted for *about* 14 weeks, *beginning* June 11th. Salary £7 7s. *per week,* together with *residence,* board, and laundry. Applications, stating age, qualifications, nationality, and *copies of recent testimonials,* to be forwarded to the Medical Superintendent.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, residence, and laundry. To have charge of Out-patients, administer Anæsthetics, and assist Honorary *Physician.*

Applications, with *copies of recent* testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male). Qualified. A knowledge of Eye work is desirable. Salary £200, with board, lodgings, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

The Royal Infirmary, SUNDERLAND.

APPOINTMENT OF HONORARY PHYSICIAN.

The Board of Management invites applications for the appointment of an Honorary Physician. Candidates for the office shall be a Doctor in Medicine of some British or Irish University or a Fellow or Member of a Royal College of Physicians, and be registered according to the Medical Act.

The Hospital has 291 beds (including 29 pay beds) and the usual special departments. The person appointed will be required to practise as a Consulting Physician and not as a General Practitioner.

The Board of Management is prepared to guarantee the selected candidate, for a period of five years, an income from this and other public appointments, of £500 per annum.

Copy of rules may be obtained from the undersigned, by whom all applications, stating age, and giving full particulars of qualifications and experience, must be received by not later than June 28th.

Canvassing will be considered a disqualification, but candidates shall be at liberty to send to each member of the Board of Management copies of their applications and testimonials.

S. C. FRYERS,
House Governor and Secretary.

The Royal Infirmary, SUNDERLAND. (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

National Hospital, Queen Sq., W.C.1.

JUNIOR REGISTRAR.

Applications are invited for the post of *Junior Registrar*, who will be required to attend the Hospital each afternoon in the Out-patient Department. The salary is £200 a year. Applications, with recent testimonials, should reach the undersigned, from whom any further particulars may be obtained, on or before Saturday, June 7th.

GODFREY H. HAMILTON, Secretary.

National Hospital, Queen Sq., W.C.1.

ASSISTANT PHYSICIAN.

The Board of Management invite applications for the post of Assistant Physician.

Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent on or before June 7th.

Applicants must be Members or Fellows of the Royal College of Physicians.

GODFREY H. HAMILTON, Secretary.

St. Thomas's Hospital.

Applications are invited for—

(1) The appointment of a PHYSICIAN to the Hospital.

(2) The appointment of a PHYSICIAN in charge of Out-patients.

These appointments date from September 1st.

Candidates must be Fellows or Members of the Royal College of Physicians of London.

Applications, giving full academic career, with copies of testimonials, must be sent in to the Secretary and Clerk to the Governors on or before June 10th.

St. Thomas's Hospital.

VACANCY.

The appointment of an ASSISTANT DENTAL SURGEON, to date from July 1st. Candidates must be Fellows or Members of the Royal College of Surgeons of England and Licentiates in Dental Surgery.

Applications, with copies of testimonials, must be sent in on or before June 10th to the Secretary and Clerk to the Governors.

Edinburgh Hospital for Women AND CHILDREN, Whitehouse Loan, EDINBURGH. (50 Beds.)

Applications are invited from qualified Medical Women for the posts of SENIOR HOUSE SURGEON and HOUSE PHYSICIAN at the above Hospital. The appointments are for six months from July 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before June 9th.

West London Hospital, Hammersmith, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON and RESIDENT ASSISTANT CASUALTY OFFICER for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, June 13th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, June 27th, at 4 p.m., and the House Committee meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Royal Edinburgh Hospital for SICK CHILDREN.

MATRON.

Fully trained Nurse holding General and Children's Certificates wanted for the Royal Edinburgh Hospital for Sick Children (132 cots), to enter on her duties on September 1st. She will have the superintendence of the Nursing and Domestic Staff, and the entire charge of the household arrangements, with the help of an Assistant Matron and a Home Sister. She will also be in charge of the Convalescent Home at Gullane (24 cots) with the help of a Sister in charge. Salary £200. Twelve copies of applications, with four recent testimonials, to be lodged on or before June 21st with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh.

Royal Manchester Children's HOSPITAL.

The Board of Governors invite applications for the post of ASSISTANT SURGEON. To attend two days per week, at present Friday and Saturday, at the Out-patients' Department, Gartside Street, Manchester, and take charge of six beds at the Hospital, Pendlebury, and in addition to do urgency work and holiday duties at the Out-patients' Department and Hospital.

Candidates must be Fellows of the Royal College of Surgeons, England. Honorarium £50 per annum.

Applications, with copies of not more than six testimonials, to be addressed not later than June 7th to the Secretary, from whom further particulars of the duties of the office may be obtained. Canvassing not allowed.

By Order,
W. M. HUMPHRY,
May 17th, 1930. Secretary.

Bolingbroke Hospital (120 Beds), Wandsworth Common, S.W.11

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

The appointment is for twelve months from July 1st next.

Salary £200 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before June 12th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Northampton General Hospital.

There is a vacancy immediately for an ASSISTANT HOUSE SURGEON, male, British nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidate will be appointed for the period ending September 30th, and will be eligible for re-election for a further period of six months.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than first post on June 4th.

H. ST. JOHN WOOD,
May 19th, 1930. Secretary-Supt.

Elsie Inglis Memorial Maternity HOSPITAL, Spring Gardens, EDINBURGH. (60 Beds.)

Applications are invited from qualified Medical Women for the posts (2) of HOUSE SURGEON for above Hospital. The appointments are for six months from July 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before June 9th.

Ethel Hedley Hospital CRIPPLED

An active Surgical Centre, with 50 beds, serving the Counties of Westmorland, Cumberland, and North Lancashire, with attendance at After-care Clinics in these areas.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Candidate (female) must be fully qualified and registered, and have held a previous resident appointment. The appointment is for six months commencing July 1st, with extension to one year. Salary at the rate of £150 per annum. Applications, with copies of three recent testimonials, should be submitted not later than June 7th, to the Medical Director, Ethel Hedley Hospital, Calgarth Park, Windermere.

West Herts Hospital, HEMEL HEMPSTEAD. (24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital

Manchester Northern Hospital FOR WOMEN AND CHILDREN, Park Place, Cheetham Hill Road, MANCHESTER.

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON, both duly qualified, who are to commence duties on July 1st.

Senior House Surgeon, salary £150 per annum, with board and residence; Junior House Surgeon, salary £100 per annum, with board only.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than 12 noon. on June 2nd.

Jessop Hospital (Firth Auxiliary) NORTON, SHEFFIELD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female), and should be addressed at once to the undersigned at the Jessop Hospital for Women, Sheffield.

The appointment will be for one year, with a salary at the rate of £175 per annum, plus board, residence, and laundry. Previous obstetrical experience is desirable.

This Hospital contains 46 beds for the treatment of Puerperal Sepsis, and for ante-natal and gynæcological cases. 23 beds are set apart for Puerperal Sepsis.

H. B. SHELSWELL, Secretary.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Required at the SOUTH WALES SANATORIUM, TALGARTH, BRECONSHIRE (300 beds for Pulmonary cases), ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250 per annum, plus maintenance. The appointment is limited to a period of one year.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than Tuesday, June 3rd.

Memorial Offices, Westgate Street, Cardiff.
Dr. D. A. POWELL, Principal Medical Officer.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY SURGICAL REGISTRAR (honorarium of £100 per annum).

Candidates must be Graduates in Medicine of a British University, or a Fellow or Member of the Royal College of Surgeons.

Applications, accompanied by three recent testimonials, to be sent on or before Wednesday, June 4th next, to—

J. C. BURDETT, Director.
May 16th, 1930.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

City and County of Kingston-upon-Hull.

APPOINTMENT OF TUBERCULOSIS OFFICER.

The Corporation invite applications for the post of Clinical Tuberculosis Officer at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum. The age of candidates is not to exceed 40 years.

Candidates should either have held a previous appointment as Tuberculosis Officer with the approval of the Ministry of Health, or should, subsequent to qualification—

(1) Have had at least three years' experience in the practice of their profession;

(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by General Medical or Surgical cases; and

(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

The gentleman appointed will rank as a Senior Assistant Medical Officer of Health, and will work under the general administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than June 14th.

N.B.—This advertisement is again being issued owing to the withdrawal of the candidate appointed in April on account of his accepting subsequently another post.

W. M. FRAZER,
Medical Officer of Health.

Health Dept.,
Guildhall,
Hull. May, 1930.

City and County of Bristol.

CHIEF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT PORT MEDICAL OFFICER.

The Corporation of Bristol invite applications for the post of Chief Assistant Medical Officer of Health and Assistant Port Medical Officer.

The gentleman appointed must possess the Diploma in Public Health or a similar qualification in State Medicine. He will be required to devote the whole of his time to his duties and will not be allowed to engage in private practice. He will work under the direction of the Medical Officer of Health in the City Health Department and in the Port, and also in the Inspection of Aliens if appointed to do so by the Ministry of Health. The appointment will be subject to one month's notice on either side and to the provisions of the Local Government and Other Officers Superannuation Act, 1922, for which purpose the candidate will be required to pass a medical examination.

Salary will be £800, rising to £1,000 per annum by annual increments of £100.

Applications must be made on a prescribed form, which may be obtained from the undersigned, and must be delivered at the Council House, Bristol, not later than Friday, June 13th. Envelopes should be endorsed "Assistant M.O.H."

Canvassing of Members of the Council, either directly or indirectly, will disqualify.

JOSIAH GREEN,
Town Clerk.

The Council House,
Bristol.
May 25th, 1930.

Royal Northern Hospital,

Holloway, London, N.

Applications are invited for the post of HOUSE SURGEON. The appointment is for nine months (six months as House Surgeon and three months as Casualty Officer) from July 15th. Salary at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by June 7th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER,
Secretary.

The Willesden General Hospital

(Incorporated), N.W.10.
(106 Beds.)

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited for the above appointment. Candidates must be duly registered under the Medical Acts, and unmarried.

Salary at the rate of £100 per annum.

Detailed applications, with copies of testimonials, to be sent as soon as possible to the undersigned

R. J. HEARNE,
Secretary.

April 19th, 1930.

Kent Education Committee.

SCHOOL MEDICAL SERVICE.

SCHOOL MEDICAL INSPECTOR (Woman).

The Kent Education Committee invite applications for the appointment of a permanent School Medical Inspector, to act under the supervision of the School Medical Officer. The duties will consist mainly of work in connection with secondary and private schools, together with some elementary school work and such other duties as may be allotted to the officer. The appointment is open to women doctors only.

The selected candidate will be required to devote the whole of her time to the duties of the office.

The salary offered is at the rate of £600 per annum, rising by £12 10s. increments to £650 per annum, together with travelling and subsistence allowances.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and will be terminable by three months' notice on either side. The successful candidate will be required to pass a medical examination as to physical fitness.

Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to the undersigned not later than June 14th.

No official form of application will be issued, and canvassing will be considered a disqualification.

ALFRED GREENWOOD, M.D.,
School Medical Officer.

Sessions House,
Maidstone.
May 5th, 1930.

Borough of St. Marylebone.

ASSISTANT MEDICAL OFFICER AND PUBLIC VACCINATOR (Male).

Applications are invited from duly qualified and registered Medical Practitioners for the position of a Whole-time Assistant Medical Officer of Health and Public Vaccinator (male). The salary will be £800 per annum, rising by annual increments of £50 to £1,000 per annum. The person appointed will be required to act as Public Vaccinator, to conduct the Diphtheria Immunization Clinic, to assist the Medical Officer of Health in carrying out measures for the prevention of disease, and generally to act as Deputy Medical Officer of Health and as Deputy to the Tuberculosis Officer as and when required. Applicants, who must not be more than 40 years of age, must possess a recognized qualification in Public Health.

Application forms, together with particulars of the conditions of the appointment, may be had on application to the Medical Officer of Health, and such application forms, together with copies of three recent testimonials, should be sent to the Town Clerk, Town Hall, St. Marylebone, W.1., endorsed "Assistant Medical Officer of Health," not later than 12 noon on June 14th.

Altrincham General Hospital,

CHESHIRE.

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry, also JUNIOR HOUSE SURGEON at the rate of £120 per annum, with board, residence, and laundry.

The appointments are for six months in the first instance.

Applications, stating age and experience, together with copies of recent testimonials, to be sent in not later than Monday, June 9th, to—

Mr. WILLIAM MOODY,
Secretary.

31, Market St.,
Altrincham, Cheshire

Queen's Hospital for Children,

Hackney Road, London, E.2.

HOUSE PHYSICIAN required on June 30th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in with not more than four testimonials, on or before June 9th.

T. GLENTON-KERR,
Secretary.

May 12th, 1930.

Queen's Hospital for Children,

Hackney Road, London, E.2.

CASUALTY OFFICER required on July 1st. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before June 9th.

T. GLENTON-KERR,
Secretary.

May 12th, 1930.

Royal Free Hospital,

Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:

HOUSE SURGEON to the Senior Surgeon and to the Surgeon in Charge of the Ear, Nose, and Throat Beds.

SECOND HOUSE SURGEON (male), with care of 30 Surgical Beds and 9 Orthopaedic Beds.

THIRD HOUSE SURGEON.

FIRST HOUSE PHYSICIAN.

HOUSE PHYSICIAN to the Children's Department.

GYNÆCOLOGICAL HOUSE SURGEON.

OBSTETRIC HOUSE SURGEON.

Duties of the above to commence July 1st.

ASSISTANT ANÆSTHETIST.

SECOND HOUSE PHYSICIAN.

DISTRICT OBSTETRIC ASSISTANT. Salary £100 per annum.

CASUALTY OFFICER (male). Salary £150 per annum.

Duties of these posts to commence August 1st.

For all appointments except Second House Surgeon preference is given to applications from former Students of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be duly qualified registered Medical Practitioners and must submit applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before May 31st.

REGINALD R. GARRATT, Secretary.

Royal Free Hospital and London (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN.

Applications are invited for the following appointment, vacant on July 1st:

RESIDENT ASSISTANT PATHOLOGIST. £150, with residence in the Hospital.

Applications, accompanied by copies of not more than three testimonials and the names of not more than two persons to whom reference can be made, should reach one of the undersigned, from whom further particulars may be obtained, by the first post on Friday, June 13th. Nine copies of all documents must be furnished.

REGINALD R. GARRATT, Secretary,
Royal Free Hospital, W.C.1.

LOUIE M. BROOKS, Warden & Sec.,
London (R.F.H.) School of Medicine
for Women, W.C.1.

May 26th, 1930.

Royal Free Hospital,

Gray's Inn Road, W.C.1.

Applications are invited for the appointment of ASSISTANT MEDICAL OFFICER in the Female V.D. Clinic. Intending candidates should submit applications, stating age and experience, with copies of three recent testimonials, to the undersigned on or before June 14th.

The appointment is tenable for five months in the first instance; hours of duty to be arranged. Salary at the rate of £350 per annum. Duties to commence August 1st.

REGINALD R. GARRATT,
Secretary.

General Hospital, Nottingham.

(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at once at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, with an intimation as to when they can commence duty if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

Clifton Dispensary,

DOWRY SQUARE, BRISTOL.

A RESIDENT MEDICAL OFFICER (male) will be required on September 29th. Salary £300 per annum, with partially furnished house, free of rates and taxes, and with lighting and coal.

Applications, stating age and qualifications, with testimonials, should be sent to Colonel P. STRICKLAND, Honorary Secretary, Clifton Dispensary, 13, Dowry Square, Bristol, on or before June 30th.

East Suffolk and Ipswich HOSPITAL.

(265 Beds—7 Residents.)

Wanted end of June, HOUSE SURGEON (male, British). Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

ARTHUR GRIFFITHS,
Secretary.

The Hospital,
Ipswich.

All Saints' Hospital (for Genito-Urinary Diseases).

In-patient Dept.: 91, Finchley Road, N.W.8.
Out-patient Dept. and Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required on July 1st, for period of nine months. Salary at the rate of £150 per annum. Duty as under:

Three months as Assistant House Surgeon (non-resident); three months as Junior House Surgeon (non-resident); and three months as Resident Senior House Surgeon, with board and laundry. The duties of the Assistant and Junior House Surgeons consist of attendance at the Out-patient Department every weekday afternoon and three evenings weekly. Promotion at the end of each three months is subject to the approval of the Board of Management.

Applications, stating age, experience, qualifications, and enclosing copies of recent testimonials, should reach me not later than June 11th.

D. H. EADE, Secretary.

Queen Charlotte's Maternity Hospital, Marylebone Road, N.W.1.

MEDICAL OFFICER FOR ANTE-NATAL DEPT.

The Committee of Management invite applications for the appointment of a Third Medical Officer for the Ante-Natal Department. Candidates (male or female) must be Graduates in Medicine of a University of the United Kingdom, or (a) Fellows or Members of the Royal College of Physicians of London, or (b) Fellows or Members of the Royal College of Surgeons of England. Duties to be taken up as soon as possible. Applications should be sent by June 16th to the undersigned, from whom further particulars may be obtained.

ARTHUR WATTS, Secretary.

South Devon and East Cornwall Hospital, Plymouth. (240 Beds.)

HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months and subject to renewal. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by June 14th.

Duties to commence July 1st.

ARTHUR R. CASH,
May 26th, 1930. Gen. Supt. & Sec.

Royal Infirmary, Blackburn. (240 Beds—Five Residents.)

FOURTH HOUSE SURGEON (male) required at a salary of £150 per annum, rising to £250, with board, residence, laundry, etc.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Secretary.

This Institution is recognized for the Surgical practice required for the F.R.C.S. Final Examination.

Great Yarmouth General Hospital. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two Resident posts)

Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £125 per annum, with board residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

The Royal Liverpool Children's Hospital, Myrtle Street, Liverpool.

A vacancy has occurred for one RESIDENT HOUSE SURGEON (work mainly Orthopaedic) at the CITY BRANCH, Myrtle Street. The appointment will be for a period ending September 30th. Salary at the rate of £60 per annum.

Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool.

Birkenhead & Wirral Children's Hospital, Woodchurch Road, Birkenhead.

HOUSE SURGEON (Second). The Board invite applications for the post of Second House Surgeon (female), for a period of six months from July 1st. Honorarium at the rate of £75 per annum, with board, residence, and laundry. Applications, together with copies of testimonials, should be addressed to the Secretary at the Hospital, not later than June 6th.

County Borough of Brighton.

SENIOR ASSISTANT (RESIDENT) MEDICAL OFFICER.

The Public Assistance Committee of the above-named County Borough requires the services of a Senior Assistant (Resident) Medical Officer at their Poor Law Infirmary.

Candidates must be single men under the age of 35 years.

The appointment is for one year only, but the person appointed will be eligible for further appointment from year to year.

The Infirmary (which has a Consulting staff) is divided into Medical, Surgical, Gynaecological, Obstetrical, etc., Sections; there are also X-ray, Electro-therapeutic, and Massage Departments.

The person appointed must be duly registered and in possession of the qualifications required by the Minister of Health. Experience in the management and routine work of a Hospital is essential. He will be required to devote the whole of his time to the service of the Committee and to act as Deputy to the Medical Officer both at the Poor Law Institution and Warren Farm Schools, which are situate about *two miles from the Infirmary and containing* approximately 250 children; he will also carry out such other duties as may be assigned to him by the Medical Officer.

Salary £375 per annum, with residential allowances.

Application for the appointment, giving age, qualifications, etc., accompanied by copies of not more than three recent testimonials and a description of the diplomas, certificates of degrees, licences, and other instruments held by the candidate, must be sent to me not later than Tuesday, June 10th, by 10 o'clock in the forenoon.

Further particulars of the appointment may be obtained on application to the Medical Officer of the Infirmary.

By Order,
Public Assistance Offices, HORACE WEBB,
Princes Street, Public Assistance
Brighton. Officer.
May 26th, 1930.

County Borough of Middlesbrough.

RESIDENT MEDICAL OFFICER.

Applications are invited for a Male Assistant Resident Medical Officer for the Fever Hospital, who will also be required to assist the Medical Officer of the Port of Middlesbrough and undertake such other duties as may be required under the direction of the Medical Officer of Health. Preference will be given to candidates with a Diploma in Public Health and a knowledge of the work of a Port Sanitary Authority.

Salary £450 per annum, with board, residence, laundry, etc.

Applications, stating age, qualifications, experience, and when able to take up duties, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Saturday, June 14th.

Municipal Buildings, PRESTON KITCHEN,
Middlesbrough Town Clerk.
May 27th, 1930.

Kent County Mental Hospital, Maidstone.

ASSISTANT MEDICAL OFFICER (male) required. Salary £300, rising to £400 per annum, with an additional allowance of £50 per annum for the Diploma in Psychological Medicine, together with emoluments consisting of furnished apartments, board, and laundry.

The appointment is pensionable under the provisions of the Asylums Officers Superannuation Act, for which purpose the emoluments are valued at £209 per annum.

Candidates must be fully qualified, single, and not more than 30 years of age.

Applications, giving full particulars, with copies of three recent testimonials, and endorsed "A.M.O.," on envelope, should be sent to the Medical Superintendent of the Hospital at an early date.

King Edward VII Hospital, Rivelin, Sheffield.

SURGICAL TUBERCULOSIS (130 Beds.)

HOUSE SURGEON required immediately. Six months' appointment, with possibility extension for a further six months. Honorarium £75 per annum, with board, residence, and laundry. Preference will be given to candidates with experience in the administration of anæsthetics.

Applications, with testimonials, to be sent to C. LEE PATTISON, Medical Superintendent.

House Surgeon, male, wanted

immediately for HUNTINGDON HOSPITAL. Salary £125 per annum and laundry. Testimonials, etc., to Dr. GROVE, County Hospital, Huntingdon.

City of Liverpool.

PUBLIC ASSISTANCE COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Committee invite applications for the appointment of a Resident Assistant Medical Officer (male) at the SMITHDOWN ROAD INSTITUTION, Liverpool, at a salary after the rate of £200 per annum, together with the usual residential allowances.

Candidates must be single, fully qualified, and registered.

The appointment will be for a period of one year in the first instance, subject to extension for a further period not exceeding twelve months, at the option of the Committee.

Applications, stating age, qualifications, etc., with copies of three testimonials, to be received by the undersigned not later than Wednesday, June 4th.

Public Assistance Office, WALTER MOON,
Brougham Terrace, Town Clerk.
Liverpool. May 26th, 1930.

County Borough of Preston.

SHAROE GREEN HOSPITAL, FULWOOD.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £104 per annum, with board, lodging, etc. Candidates must be duly qualified and registered under the Medical Acts.

The appointment is for six months. Duties include work in any wards of the Hospital as required, and also in the Sharoe Green Maternity Home adjoining.

Applications, endorsed "Junior Medical Officer," should be made by letter, accompanied by copies of three testimonials of recent date, and should reach me on or before noon on Thursday, June 12th.

Town Hall, ALFRED HOWARTH,
Preston. Town Clerk.
May 26th, 1930.

Freemasons Hospital and Nursing Home, 237, Fulham Road, Chelsea, S.W.3.

The post of RESIDENT MEDICAL OFFICER (male) will be vacant on July 1st. Salary at the rate of £250 per annum, with board, residence, and laundry. The appointment is for six months. Candidates must be registered and must have held Resident appointments at a General Hospital.

The Institution (48 beds) is for paying patients of both sexes of moderate means unable to afford ordinary nursing home treatment, etc.

Applications, stating full particulars, to be sent on or before June 10th next to the Honorary Secretaries, from whom further information may be obtained.

Romford Urban District Council.

ANTE-NATAL CLINIC.

Applications are invited for the post of MEDICAL OFFICER (part-time) to the Ante-natal Clinic from persons who have had previous experience. Salary one and a half guineas per session.

Applications, together with copies of three recent testimonials, to be sent on or before June 14th to the undersigned, from whom further particulars may be obtained.

Council Offices, CHARLES T. KING,
Romford. Clerk to the Council.

Victoria Central Hospital, Wallasey.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry. Candidates chosen would be appointed for six months. Duties include Dispensary, Out-patients, and some Home Visiting.

Applications, with copies of recent testimonials, to be sent to the Secretary not later than June 9th.

The Crossley Maternity Hospital, Ancoats, Manchester.

Applications are invited from Medical Women for the post of HALF-TIME RESIDENT OFFICER. Vacancy July 1st. Salary £50 per annum, with board, residence, and laundry. Also panel of about 40 patients. Appointment for six months.

Applications, with testimonials, to be sent to the Superintendent.

London Skin Hospital (Inc.), 40, Fitzroy Square, W.1.

HONORARY PHYSICIAN required for above Hospital. Apply Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	LLANELLY BOROUGH. *(Assistant Medical Officer of Health and Assistant School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH**	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

By Order of the Council.

May 28th, 1930. ALFRED COX, Medical Secretary.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON and CASUALTY OFFICER.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three), to be sent to the undersigned not later than June 6th.

WALTER BANKS,
May 26th, 1930. Supt. & Secretary.

Children's Hospital, Sheffield.

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery Street), vacant July 1st. Salary £100 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of three recent testimonials, to the undersigned.

The successful candidate will be eligible for general posts when vacant.

T. H. G. GARTLAND, Secretary.

Ear and Throat Hospital,
Edmund Street, BIRMINGHAM.

HOUSE SURGEON wanted, with clinical experience, and also in administering Anæsthetics. Salary at the rate of £150 per annum, with board and residence. Duties to commence July 1st. Appointment for three months to September 30th, when one of the other Senior House Surgeon appointments will be vacant.

Applications and testimonials to be forwarded on or before June 11th to the undersigned.

S. G. GREW,
May, 1930. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 2nd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, June 4th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
May, 1930. Secretary.

The London Lock Hospital.
(Founded 1746.)
91, Dean Street, W.1.

HONORARY SURGEON TO OUT-PATIENTS.

Candidates for this Hon. Staff appointment are requested to send in their applications, with not more than three copies of testimonials, to the Secretary, at 283, Harrow Road, W.9, not later than June 2nd.

Candidates must be Fellows of the Royal College of Surgeons (England). The election, which is by ballot of the Governors, will be duly announced to the candidates. No personal canvassing of the Board or Medical Staff permitted. The Laws relating to the appointment can be obtained from the Secretary.

By Order of the Board,
HY. J. EASON,
May, 1930. Secretary.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION,
GLOUCESTER. (153 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN (male) and SECOND HOUSE SURGEON (male). Salaries £125 and £100 per annum respectively, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointments are for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate to the post of Second House Surgeon will be required to enter upon his duties at once, and the House Physician will be required to enter upon his duties on June 8th.

F. J. SYMONS.
May 8th, 1930 Secretary.

Seamen's Hospital Society,
GREENWICH.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials to be sent in by June 16th to the undersigned.

R. E. V. BAX, Secretary.

Seamen's Hospital Society,
GREENWICH.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by June 16th to the undersigned.

R. E. V. BAX, Secretary.

ASSISTANCIES.

Wanted. — Indoor Assistant, male, single, young, keen, for private and panel Practice in pleasant country district, near University City, South Yorkshire. Would suit recently qualified man. Comfortable home. Able to drive car. Usual bond. Protestant. Salary £250. Particulars as to age, testimonials, etc.—Address, No. 3601, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Young male Assistant, British, panel and private Practice; ex H.S. preferred. £250 indoor, or £400 outdoor. Usual bond. Essential particulars and testimonials (copies).—Address, No. 3428, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—An Assistant in a Colliery Practice in South Wales. Terms, £375 per annum, with furnished rooms, attendance, etc.—Address, giving age, references, etc., to No. 3619, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced, indoor, male ASSISTANT, under 30, Protestant, English or Scot. Private and panel Practice. Clean town. Prospects. Salary from £300 p.a. Photo. — Address, No. 3642, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — British Graduate for ASSISTANTSHIP, with possibility Partnership, for private Practice in the FEDERATED MALAY STATES. Must be active and healthy, age about 30. Salary about £1,000 and allowances. —No. 3609, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Junior Assistant, male, by Partners in private and panel Practice, Yorks, W.R. English or Scot. Salary £400, outdoor. Usual bond. State age and full particulars. — Address, No. 3643, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, young, recently qualified, outdoor, salary £300 per annum, in Panel and Industrial Practice, three mile radius. Dispenser kept. — Address, No. 3611, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Assistant (outdoor), male, unmarried, for panel and private Practice in Midland town; abstainer pref.; cyclist. Salary £390 and furnished rooms and attendance. Petrol allowance if own car.—No. 3631, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Country and Town Practices, with and without view. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Assistant male, in a Colliery Practice, South Wales. Salary £250 per annum. Indoor. State age. Good opportunity for anæsthetics, etc. at local hospital. —Address, No. 3650, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistantship, by M.B., B.Ch. (1924), ex H.S. and H.P., Post-Graduate midwifery. Private and panel experience. Used sole charge.—Add., No. 3626, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, indoor, Home County Country Practice. Salary £300 per annum.—Address, with photo., No. 3605, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Outdoor Male Assistant, in a large general Practice in the West of England. Commencing salary £400 per annum. —Address, stating experience and age, No. 3731, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted immediately (male, indoor). Salary £300 p.a. Energetic and keen. Good town and ample facilities for sport. Work light during summer months. Separate car. Usual bond. Photograph if possible.—No. 3622, B.M.A. House, Tavistock Square, W.C.1.

Assistantship required by M.R.C.S., L.R.C.P. (male, aged 33), ex R.M.O. and H.P. Experience in private and panel practice. Can drive car.—Address, No. 3632, B.M.A. House, Tavistock Square, W.C.1.

Scots Graduate (1927) desires ASSISTANTSHIP (outdoor). Has held Hospital appointments and is meanwhile a Temporary Assistant. Conscientious and reliable, well recommended. Free by arrangement. Enquiries welcomed.—Address, No. 3515, B.M.A. House, Tavistock Square, W.C.1.

Required in Warwickshire for Partnership Practice, Lady Doctor ASSISTANT, for 4 to 5 months from July 22nd. —Address, No. 3625, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted, a qualified Doctor to act as RESIDENT MEDICAL OFFICER AND DISPENSER at the WESTERN DISPENSARY, 38, Rochester Row, Westminster, S.W.1. Duties light. Honorarium £150 per annum, with furnished rooms, light, coal, and attendance. Application by letter, with testimonials, to be made to the Secretary.

Wanted.—Three Medical Officers, fully qualified, August, for the Whaling Ventures to the Sub-Antarctic of the Whalers "SARAGOSSA," "SALVESTRIA," and "SOURABAYA."—Apply, CHR. SALVESEN & Co., Leith.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

A Doctor is required to take CHARGE of a Hospital connected with the UNITED METHODIST MISSION IN CHINA. —For particulars apply to Rev. C. STEDEFORD, 13, Silverbirch Road, Erdington, Birmingham.

A well-educated young lady, aged 25, with good Secretarial training, is desirous of obtaining a POST with Professional man. Good speeds.—Address, No. 3608, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

M.B. (male, æt. 33) available at short notice for occasional SURGERIES, or whole days, or regular part-time. Own car. 20 miles radius of London. Experienced panel and private.—Telephone: Palmers Green 1939; or Add., No. 3639, B.M.A. House, Tavistock Square, W.C.1.

Medical Secretaryship, [illegible] or similar post wanted [illegible] ged 28. Public school, [illegible] ofessional testimonials. Exper. G.P. Li erary and ethnological tastes. Some shorthand, typewriting, car-driving.—No. 3647, B.M.A. House, Tavistock Square, W.C.1.

Part-time Work or light full-time ASSISTANTSHIP, any locality, pref. N. London, wanted by M.R.C.S., L.R.C.P. (1926). Experience private and panel. Excellent testimonials.—Address, No. 3648, B.M.A. House, Tavistock Square, W.C.1.

The Matron of the Lancaster Gate NURSES' CO-OPERATION, 49, Porchester Road, wishes to recommend her late SECRETARY (certificated nurse) for Doctor's or private house. Shorthand, typing. Thoroughly conscientious and interested in work.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

LOCUMS.

Wanted. — Lady to act as LOCUM ASSISTANT, month of August (Yorkshire). Work light, no responsibility. Five guineas per week, indoor.—Address, No. 3614, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Reliable and experienced Practitioners (male and female) for LOCUM ENGAGEMENTS. State full particulars. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted by M.A.Cantab., M.R.C.S., LOCUM in seaside or country Practice, Aug. or Sept. Hospitality self and wife, 2 gns. weekly. Cyclist, drive car. Excellent refs. —Address, No. 3628, B.M.A. House, Tavistock Square, W.C.1.

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Locum Tenens.—Experienced Practitioner desires WORK; long or short periods. No midwifery. Very reasonable fees.—Address, No. 3633, B.M.A. House, Tavistock Square, W.C.1.

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Locum work wanted by Edinburgh Graduate in return for hospitality for self and wife and expenses. Had own practice. Pleasant surroundings. Has own car. Free after June. — Address, No. 3730, B.M.A. House, Tavistock Square, W.C.1.

Practitioner offers Residence in nice flat (South Kensington) at low rental to Medical Man (single) who is willing to act as DEPUTY on certain evenings. Services quite nominal. —Address, 3732, B.M.A. House, Tavistock Square, W.C.1.

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PARTNERSHIPS.

Wanted by experienced Gynæcologist and Obstetrician, M.D., F.R.C.S. Ed., now practising British Dominion, PARTNERSHIP or PRACTICE in English Country or Seaside Town, with Hospital facilities.—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, W.1.

Wanted. — An opening in good general Practice, West End of London, MINOR SHARE OR ASSISTANTSHIP, with view ultimately to succession. Applicant, aged 30, is well qualified and experienced, has good connections and the necessary capital. — Address, No. 3638, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Partner in a mixed panel and private Practice in favourite resort on South-West Coast. One-third share for sale at 2 years' purchase. Average receipts for past four years £2,400. House available.—No. 3607, B.M.A. House, Tavistock Sq., W.C.1.

Additional Partner wanted for seaside-country Practice (East). Opportunities surgery. Share offered, £1,150 increasing. Excellent house. Some capital essential. Preliminary short assistantship.—Address, No. 3620, B.M.A. House Tavistock Square, W.C.1.

A Share in an unopposed Country PRACTICE of £1,700 in the South can be arranged for now—for September—with succession in 2 or 3 years.—Address, No. 3612, B.M.A. House, Tavistock Sq., W.C.1.

Cambridge and St. Thomas' man desires PARTNERSHIP in S.W. England or Channel Isles yielding £700—£1,200 p.a. Ex-H.S. Exp. G.P. Aged 30, married, keen on anæsthetics and electrotherapy. Reliable, energetic, well received. Preliminary assistantship if desired.—No. 3629, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town, near Manchester.—PARTNERSHIP in old-estab. Practice. Cash receipts over £2,400 p.a. Panel 2,000. Scope for surgery. Good house, 3 reception, 5 bedrooms. Garage and garden. Rent £65 p.a. Premium—1/2 share—£1,500.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancashire Town.—Partnership one third share for Sale in Practice, cash receipts averaging £2,850 p.a. Panel 1,900. Price required, 1½ years' purchase. Scope for surgery.—Address, No. 3623, B.M.A. House, Tavistock Square, W.C.1.

Manchester. — Partnership in excellent old-estab. mixed Practice. Aver. cash receipts £5,816. Panel 3,375. Good house available, 3 bedrooms. Rent £60 p.a. Premium—1/3rd share—1½ years' purchase; part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership wanted in early 1931 in Southern England, preferably North Devon or Cornwall, by experienced Practitioner, aged 55. Share worth £500—£600; in country. House to rent. — Address, No. 3559, B.M.A. House, Tavistock Square, W.C.1.

Partnership in Surgical Practice desired by F.R.C.S., with opportunity in near future of Surgical Hospital appointment. Capital available.—Address, No. 3636, B.M.A. House, Tavistock Square, W.C.1.

Scotch Graduate (1923), woman, good experience G.P., desires LOCUM Free now. London district preferred, not essential. — Address, No. 3613, B.M.A. House, Tavistock Square, W.C.1.

Sussex. — Seaside Town.—Third SHARE of a very old-established PRACTICE, held 29 years by Vendor, now wanting help through age. Receipts £2,000 p.a., panel 1,000. Premium for third share £1,400.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

PRACTICES.

Wanted immediately. — Unopposed Country PRACTICE in South, West, or Midlands. Income £1,000 upwards. Good house, garage and garden essential. Hunting district preferred.—Address, No. 3539, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice in London N., N.W., or S.W. Income £1,500—£2,000 p.a. Panel 1,500 upwards. Good house. Ample capital immediately available.—Address, No. 3640. B.M.A. House, Tavistock Square, W.C.1.

Wanted by M.B., Ch.M., PRACTICE or PARTNERSHIP in suburb or country town, preferably with C ttage Hospital. Long teaching hospital experience. Some capital. Free almost immediately.—Address, No. 3627. B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Good-class PRACTICE or PARTNERSHIP SUCCESSION. £1,500 up. Hospital and general experience. Ample capital.—Address, No. 3617, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—Mixed PRACTICE £1,000 p.a. with good panel. Good locality. House with garden and garage. Promising Nucleus considered. Capital available.—Address, No. 3733, B.M.A. House, Tavistock Square, W.C.1.

Bucks.—Old-established Practice. Receipts now about £430 p.a., including panel 345. Has done more. Nice house available, rent £175. Premium moderate. Good scope.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Cheshire Country Town, near Manchester. PRACTICE averaging £700 p.a. Panel 500. Beautiful district. Excellent modern house (freehold), 2 reception, 4 bedrooms. Tennis court, surgery, etc., separate. Premium — Practice and house — £2,000.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Cheshire.—Old-established Prac- TICE Cash returns £1,700. Small panel, capable of expansion. PARTNER required at 2 years' purchase. Suitable for young married man. House and garage for sale or to let.—No. 3602, B.M.A. House, Tavistock Sq., W.C.1.

Death Vacancy.—Lancs Town.—Old-estab. PRACTICE. Cash receipts £1,567. Panel 1,900. Suitable house to rent.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Sale. — Old-established PRACTICE in industrial town near Manchester. Panel 2,9 0. Receipts average £2,500. Easily worked. Good house to sell or lease. Prem. 1½ years, half by instalments.—Address, No 3649. B.M.A House, Tavistock Square, W.C.1.

Dental Surgery (unfurn.), with small NUCLEUS, to let. Doctor's house. —"P. E.," 5, Great Marlborough Street, Regent Street, W.1. No agents.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2

MEDICAL PRACTICE FOR SALE.

For Sale, desirable old-established PRACTICE in Clyde Coast Town. Present owner going abroad. First-class panel and private Practice. Capital required to purchase house and Practice about £4,000. Enquirers are required to state qualifications, and give Banker's references. Address, "Practice," WM. PORTEOUS & Co., Advertising Agents, Glasgow.

For Sale. — Large general PRACTICE in West Riding city. About £3,000 p.a. Large panel. Good house (small garden and garage) on long lease. Premium 1½ years' purchase. Further particulars on application.—No. 3621, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Well-established Prac- TICE in South of Scotland. Panel 1,000. Receipts £1,700/£1,800. Vendor desirous of retiring. Price 1½ years' purchase. Excellent house, built for a Doctor, is for sale along with the Practice.—Address, No. 3604, B.M.A. House, Tavistock Square, W.C.1.

Lady Doctor's Practice, Liver- POOL.—Cash receipts £400. Much scope. Excellent flat to rent on lease. Good introduction. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town, near Manchester.—Mixed-class PRACTICE, producing £2,500 p.a. Panel 1,900. Two good houses available. Suit two friends in partnership. Premium 1½ years' purchase. Half share, view to succession, considered. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town.—Small well-estab- lished PRACTICE. Good house, rent £25 on lease. Average receipts £350, great scope for increase. Panel over 100, increasing. Price £400.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

London, N. (near Islington).—Old-established Cash and Panel PRACTICE. Receipts £1,300 p.a., panel 2,000. Eight-roomed house, rent £80, long lease. Premium just over 2 years' purchase. — Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London, E.—Cash and Panel PRACTICE, easily worked. Average receipts about £475 p.a. Ample scope. Long lease. Low expenses. Rent almost recovered by sub-letting. Accom. available. Premium £1,100 or near offer. —No. 3646. B.M.A. House Tavistock Sq., W.C.1.

Manchester.—Middle-class Prac- TICE in first rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Old-established PRACTICE. Cash receipts 1929, £940. Panel 830. House, 2 reception, 5 bedrooms. Garage. Rent £70 p.a. Scope for increase. Premium £1,000 for quick sale. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester (residential).—Old- established. Nice corner house, large gardens, lawn, garage, rent £120. Receipts £2,000, good scope. Panel over 1,500. Price 2 years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Midlands.—Practice for Sale in large town. Income over £600 p.a. Panel 700. Much scope. Good house, 3 bedrooms. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice wanted in London, N.W. or W. preferred. Doing £1,500—£1,600 per annum. Panel round 2,000.—Address, No. 3630, B.M.A. House Tavistock Square, W.C.1.

Old-established Practice for Sale, in West Riding Town. Average receipts for the past three years over £1,000 (including panel £170). Purchase price of freehold £1,060. Premium £1,500. — Apply, 252, REYNOLDS & BRANSON, Ltd., Medical Transfer Agents, 13, Briggate, Leeds.

South Devon. — Owing to ill health an opportunity occurs to acquire a well-established PRACTICE offering considerable scope in a favourite seaside resort. Gross receipts £1,000, including panel income of about £500. Convenient house can be rented on lease. Excellent sport and schools. Premium £1,500. Accountant's figures and further information can be obtained from Mr. C. S. MOORES, Incorporated Accountant, 15, Bedford Circus, Exeter.

Sheffield. — Quick Disposal (illness), established mixed PRACTICE, capable development, nr. Univ. Producing £1,600 gross p.a. incl. panel (approx. 1,000). House and surgery specially built, can be leased or pur. Garage facilities. —No. 3645, B.M.A. House, Tavistock Sq., W.C.1.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

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Detached double-fronted HOUSE, consisting of five bedrooms, bathroom, w.c., lounge hall, drawing, dining, and telephone rooms, large hall, surgery, and waiting room, good kitchen, pantry, scullery, wash-cellar; two garages. Was Doctor's house for many years. Excellent position, thickly populated district, most pleasant part of Manchester.—Add., No. 3637, B.M.A. House, Tavistock Square, W.C.1.

First floor Consulting Room to LET, adjoining Harley St. Good service, name plate on door, residential suite of rooms if desired.—Address, No. 3109, B.M.A. House, Tavistock Square, W.C.1.

For Sale. — Key Corner House. New Estate, North Harrow. Already large estate developing rapidly. Eminent suitable professional man, Doctor, Dentist, etc., as none in neighbourhood. Main road, 3 minutes station. Four bed., 2 reception, separate kitchen and scullery. Usual offices. Ample accommodation garage. Well-laid gardens. £1,400 freehold; mortgage can be arranged.—Address, No. 3644, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Exceptionally fine HOUSE with good connection as high-class NERVE HOME. Accommodate ten patients. Lease 40 years, ground rent £10. Price, with valuable fittings and fixtures, £5,500.—Address, No. 3641, B.M.A. House, Tavistock Square, W.C.1.

Just off Portland Place.—CONSULTING ROOM to Let, half-time, with plate. Also House to Let (partly furnished) for fifteen months. Very suitable for Doctor requiring temporary accommodation.—Address, No. 3634, B.M.A. House, Tavistock Square, W.C.1.

Nursing Home.—Near large manufacturing County Borough (S.W. Lancs). Freehold. Ideal secluded situation. Well equipped; central heating; garage; garden and orchard. Possession on completion. £2,500.—Address, No. 3635, B.M.A. House, Tavistock Square, W.C.1.

Part-time or Full-time CONSULTING ROOM to Let.—Devonshire Street. Modern house, exceptionally well appointed. Use of waiting room. At entrance, door-plate.—Address, No. 3624, B.M.A. House, Tavistock Square, W.C.1.

Queen Anne Street, W.1.— Only £90 a year secures PART-TIME USE of fine ground floor CONSULTING ROOM, with use on door, attendance, and every convenience.—Address, No. 3417. B.M.A. House, Tavistock Square, W.C.1.

Queen Anne Street.—An excep- tionally fine MAISONETTE, with Consulting Room, will shortly become vacant. Every convenience. Low rent.—Address, No. 3510, B.M.A. House, Tavistock Square, W.C.1.

Welbeck St.—One or Two BEDROOMS to Let, or Bedroom and Sitting Room if desired. Part-time use of Consulting Room can be arranged.—Address, No. 3016, B.M.A. House, Tavistock Square, W.C.1.

To Medical Specialists. — Owing to death an unusual opportunity offers of acquiring one of the most successful and largest high-class private Licensed MENTAL HOMES, with valuable freehold grounds, about a century, with extensive freehold grounds and specially designed buildings for both Ladies and Gentlemen. Would suit one active Partner or Medical Syndicate. Large net income.—Add., No. 3416, B.M.A. House, Tavistock Sq., W.C.1.

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BEAUTIFUL BUTTERMERE. *"The Secret Valley"* (Titus Wilson's Kendal, 2/-). VICTORIA FAMILY HOTEL, £4/4s.; A.A., R.A.C. Electric light, running water in bedrooms; Indian chef. Cockermouth 'bus brings advance luggage.

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Assist you to avail yourself of special facilities provided for the Medical Profession relating to Income Tax. For further particulars write or call.—C. G. C. KILNER, 17, George St., Baker St., W.1. ('Phone: Welbeck 2012).

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Executor's Sale.—£150. 1928 FABRIC SALOON BUICK, 23 h.p. Small mileage. — Apply, Sir THOMAS GIMLETTE, K.C.B., "Hazeldean," Ladbroke Road, Epsom, Surrey.

For Sale as a going concern (market town in the Midlands), well-established, prosperous GENERAL NURSING HOME (registered), 15 beds., 10 permanent patients, admirable house (freehold), nearly two acres of grounds. Owner retiring owing to ill health. A genuine opportunity. Arrangements for purchase can be made. — Address, No. 3605, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Microscope and Case. Reichert ⅓ in. and ⅛ in. objectives, eyepieces (× 6) and (× 10), Abbé condenser and iris. 11 guineas.—Write, TURNER, 7, Uplands Road, Stroud Green, or to be seen, 40, Savile Row, between 5 and 6 p.m.

"Hooper" 3-seater Coupé, with dickey seat, on 20 h.p. ROLLS-ROYCE chassis; privately owned; passed by Messrs. Rolls-Royce; excellent condition throughout. Price £750.—On view, HOOPER & Co. (Coachbuilders), Ltd., Motor-body Builders to H.M. the King, 54, St. James's Street, Piccadilly, S.W.1.

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1929, 14/45 h.p., Talbot Coach-BUILT SALOON, with division, Triplex glass throughout. Only used 3,000 miles during three months' hire. Built for £600. Now only £375.—Apply, CONNAUGHT, 34/36, Davies St., Berkeley Square, London, W.1. Mayfair 5048.

APPOINTMENTS.—Contd.

Lindsey County Council and SCUNTHORPE AND FRODINGHAM URBAN DISTRICT COUNCIL.

MEDICAL OFFICER OF HEALTH AND ASSISTANT COUNTY MEDICAL OFFICER.

Applications are invited from duly qualified and registered male Medical Practitioners, holding the Diploma in Public Health or its equivalent, for the above-mentioned whole-time joint appointment. Candidates must not exceed 40 years of age. The joint salary covering both appointments will be at the rate of £800 per annum, with £100 per annum for the maintenance of a motor car to be provided by the officer.

As regards the Urban District Council, the appointment will be held in accordance with the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and, as regards the County Council, the appointment will be made in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930.

The officer will be required to carry out such duties as may from time to time be required of him as Assistant County Medical Officer. Such duties will be discharged under the general supervision of the Medical Officer of Health for the County and may include (inter alia) the following:

(a) School Medical Inspection.
(b) Treatment of Tuberculosis.
(c) Treatment of Venereal Diseases.
(d) Certification of Mental Defectives.
(e) Medical Superintendent of Brumby Isolation Hospital (Infectious Disease and Tuberculosis.

Applications, endorsed "Medical Officer," on the prescribed form, together with copies of not more than three recent testimonials, must be received by the Clerk of the Urban District Council, Council Offices, Scunthorpe, not later than June 10th.

Canvassing in any form will be a disqualification.

J. F. AULD,
Clerk to the Urban District Council,
Scunthorpe.
ERIC W. SCORER,
Clerk of the County Council, Lincoln.
May 27th, 1930.

General Infirmary, Salisbury.
(General Hospital—151 Beds.)

Two HOUSE SURGEONS (male) required to commence duty at the end of June and the beginning of July.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

The Weir Hospital,
Grove Road, Balham, S.W.12.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required. Candidates must be fully qualified and duly registered. Salary £150 per annum, with board, residence, and laundry. Application, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

North Riding Mental Hospital, YORK.

LOCUM TENENS MEDICAL OFFICER required for July and August. Salary £7 7s. a week.

Applications, stating age and full particulars of qualifications and experience, and enclosing recent testimonials, to be addressed the Medical Superintendent.

Bucks County Council,
BUCKINGHAM BOROUGH COUNCIL,
BLETCHLEY URBAN DISTRICT COUNCIL.

ASSISTANT COUNTY MEDICAL OFFICER AND MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified Medical Men with experience in Public Health duties, holding a Diploma of Public Health, for the following joint appointment:

(a) MEDICAL OFFICER OF HEALTH for the Borough of Buckingham and the Urban District of Bletchley.
(b) ASSISTANT COUNTY MEDICAL OFFICER to act as School Medical Inspector and Infant Welfare Officer for the following districts: Buckingham Borough, the Urban Districts of Bletchley, Linslade, Wolverton and Newport Pagnell, and the Rural Districts of Buckingham, Winslow, Wing and Newport Pagnell.

Salary £700 per annum, rising, subject to satisfactory service, by annual increments of £25 to £800 per annum.

Travelling expenses will be paid on the County Council scale, but a portion of the salary will be subject to superannuation deduction at 5 per cent.

Applicants should not be over 45 years of age, and will be required to pass a medical examination as to physical fitness, and the final appointment will be subject thereto.

The appointment is subject to the approval of the Ministry of Health and to the particulars and conditions of appointment set out on the form of application, which can be obtained from the Clerk of the County Council, County Hall, Aylesbury.

Office accommodation and the necessary clerical assistance will be provided.

Applications on the prescribed form, accompanied by copies of not more than three recent testimonials, which will not be returned, should be addressed to the Clerk of the Bucks County Council, and delivered at the County Hall, Aylesbury, not later than 10 a.m. on Monday, June 16th, marked "Medical Officer."

GUY R. CROUCH,
Clerk of the County Council.
PHILIP WOOD,
Town Clerk, Buckingham.
F. E. CAPPER,
Clerk of the Bletchley Urban District Council.
County Hall, Aylesbury. May 26th, 1930.

St. Peter's Hospital for Stone, ETC.,
Henrietta Street, Covent Garden, W.C.2.

CLINICAL ASSISTANTS are required by the following members of the Honorary Staff, who attend the Out-patient Department as indicated:

Mr. Swift Joly	Mondays 2 to 5 p.m.
Mr. Clifford Morson	Saturdays 2 to 7 p.m.
Mr. Barrington	Tuesdays 2 to 5 p.m. Thursdays 3 to 7 p.m.
Mr. Ogier Ward	Wednesdays 3 to 6 p.m. Fridays 2 to 5 p.m. (Women and Children)
Mr. Alban Andrews	Mondays 5 to 7 p.m. Fridays 5 to 7 p.m

Appointments are made for six months from July 1st, 1930, a fee of five guineas being payable to the Hospital.

Applications will be received by the undersigned up to the first post on Wednesday, June 11th, 1930.

BEECHEY ROGERS, Secretary.

Hospital for Women at Leeds.

HOUSE SURGEON wanted, duties to commence immediately. Appointment to terminate on October 31st. Salary at the rate of £50 per annum, with board, quarters, and laundry. Applications, with copies of three testimonials, should be sent to the Secretary, Hospital for Women, Coventry Place, Leeds.

S. CECIL HILL,
May 5th, 1930. Secretary.

St. Thomas's Hospital.

VACANCY.

The appointment of an ASSISTANT MEDICAL OFFICER in the Venereal Department. Salary £450 per annum.

Applications, with copies of testimonials, to be sent to Lt.-Col. A. P. B. IRWIN, Secretary and Clerk to the Governors, not later than noon, Friday, June 6th.

St. Thomas's Hospital.

VACANCY.

There is a vacancy in the post of ASSISTANT PATHOLOGIST in the Venereal Department, to date from July 1st next. Salary £350 per annum.

Applications, with full academic career, can be forwarded to Lt.-Col. A. P. B. IRWIN, Secretary and Clerk to the Governors, on or before June 6th.

St. James' Hospital.

Applications are invited from members of the Medical Profession for the filling of a vacancy in the staff of HOUSE PHYSICIANS AND SURGEONS at the above Hospital.

Applicants must be fully qualified and registered. The Hospital is one of 1,126 beds, with special departments for Radiology, Pathology, Midwifery, and Diseases of Children. There are, in addition, 320 beds in separate Mental Wards. The staff consists of a Medical Superintendent, a Resident Medical Staff of six, a Pathologist, a Radiologist, and Visiting Physicians and Surgeons.

The successful applicant will be required to act as House Physician and Surgeon under the Medical Superintendent and the Visiting Staff, and to perform such other duties as the Medical Superintendent may direct. The term of appointment is limited to two years.

Salary £200 per annum, with board, apartments, and attendance.

Applications, stating qualifications, and giving particulars of present and prior occupations, together with copies of three recent testimonials, must be received by me not later than 10 a.m. on Wednesday, June 11th, endorsed "House Physician and Surgeon."

Invited candidates will receive due notice to attend.

H. FIELDHOUSE,
44, South Parade, Public Assistance Officer.
Leeds.
May 22nd, 1930.

Royal London Ophthalmic HOSPITAL

(Moorfields, Eye Hospital),
City Road, E.C.1.

HONORARY ASSISTANT PHYSICIAN.

Applications are invited for the office of Assistant Physician to the above Hospital. Candidates must be Fellows or Members of the Royal College of Physicians of London.

Canvassing is not permitted. Candidates are requested to send applications, with copies of testimonials, to the members of the Committee of Management and the acting Medical and Surgical Staff, whose names and addresses can be obtained on application to the Secretary.

Applications, stating age, with copies of not more than three testimonials, must be received by the undersigned not later than June 12th.

By Order,
A. J. M. TARRANT, Secretary.

Queen Mary's Hospital for the EAST END, Stratford, E.15.

Telephone: Maryland 2516.

Applications are invited from fully qualified and registered Medical Men for the following posts:

One HOUSE PHYSICIAN. Salary £120 p.a.
Two HOUSE SURGEONS. Salary £120 p.a.
One OBSTETRIC HOUSE SURGEON. Salary £120 p.a.
One HOUSE PHYSICIAN and RESIDENT ANÆSTHETIST. Salary £120 p.a.
One HOUSE PHYSICIAN and CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 216 beds, including 46 Maternity beds and other Special Departments.

Candidates, who should have previously held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Tuesday, June 3rd.

RAPHAEL JACKSON (Major),
Secretary.

Miller General Hospital, Greenwich Road, S.E.10.

Applications are invited for the following posts:

HOUSE PHYSICIAN (male); HOUSE SURGEON (male). Salary in each case at the rate of £125 per annum, with board, residence, and laundry.

OUT-PATIENT OFFICER (male), who is required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1, Tuesdays 9 to 5. Salary £150 per annum, and lunch.

The appointments are for six months from July 1st next. Candidates must be unmarried. There are five Resident officers. The selected candidates will be required to attend a meeting of the Medical Council on Friday, June 6th.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

May 5th, 1930.

Newcastle-upon-Tyne Eye HOSPITAL.

Wanted, immediately, JUNIOR HOUSE SURGEON, non-resident. Salary £150 per annum, lunch provided. Apply, stating age, qualifications, and Ophthalmic experience, with copies of testimonials, to the Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIANO, LONDON."

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MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night

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Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary*

ST. LUKE'S HOSPITAL

FOR MENTAL DISORDERS.

Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. Phone: Leeds 26165.

THE
NEW MENTAL NURSES CO-OPERATION,

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Specially trained Nurses for Mental and Nerve cases. (All Nurses are insured under the Employers Liability Act, 1906.) Apply the Supt.

Telegrams: "Psyconurse, Padd., Lond." *Telephone:* No. 6105 Padd.

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This Agency (the oldest in the Kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS, AUDITS, and VALUATIONS, and the SUPPLY of LOCUMS and ASSISTANTS.

No Charge to Purchasers. All Business receives Mr. NEEDES' personal attention.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES.

(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months. Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties from June 6th.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON. The salary attached to the appointment (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of testimonials, should be addressed to the undersigned forthwith.

Board Room, JNO. W. BARNES, F.C.I.S.,
May 14th, 1930. Gen. Supt. & Sec.

King's College Hospital.

The Committee of Management invite applications for the post of JUNIOR UROLOGICAL SURGEON. Applications, with copies of three testimonials, should be sent before June 16th to the House Governor, King's College Hospital, Denmark Hill, S.E.5, from whom particulars of the duties may be obtained.

The Sheffield Royal Hospital

RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £80 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

THE OLDEST AND LEADING MEDICAL AGENT

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Telephone: TEMPLE BAR 9011.
After Office Hours: EPSOM 9142.

Terms post free on application.

Scotland, South.—About £1,100 p.a. Panel 400. Non-dispensing. Fees 2/6 to 2 gns. Prem. £1,000 on terms. House, 5 bed., 2 recep., surgery, etc.—No. 2573.

Essex Suburb.—Near Country.—1 2 share of £2,500. Great scope. Panel about 1,550. Suit man or woman. House or flat.—No. 8619.

S. Devon Resort. — About £1,000 p.a. Panel 1,045. Fees 2/6 up. 4 bed., 2 recep., surg., etc., on lease.—No. 2571.

Notts.—Country.—Over £1,000 p.a. Panel 592. Mids. from 42/-. Visits mostly 5 - up. 5 bed., 3 recep., etc. Large garden, tennis, etc.—No. 8570.

Dorset.—Death Vacancy.—Unopposed. Nearly £1,100. Panel 670. Mids. 2 to 5 gns. Good house, 7 bed., etc., to let with option.—No. 8569.

Essex Suburb.—£1,150 p.a. Non-panel, but ample scope. Fees 5/- up. House and garden on lease.—No. 8552.

S. W. County.—Near Sea.—Share worth £700, ample scope. Very little midw. Visits 5/- to 2 gns. Choice of houses. Ample scope.—No. 8566.

Hants. — Semi-rural. — Nearly £1,000 p.a. Small panel. Fees 5/6 to 15/-. House, 2/3 recep., 5/6 bed., large garden.—No. 8553.

Electrical & X-ray.—London, W. —£1,500 £2,000. Fees 21/- up. House in good locality on lease. Low prem.—No. 8665.

Death Vacancy. — Harrogate.—Now over £700 p.a. Panel over 500. Very little midwifery. Average visits 5/-. Good house, 5 bed., etc.—No. 8554.

Yorks.—Country.—About £1,000, increasing. Panel nearly £400. Visits 5/- to 12/6. Mids. 3 gns. up. House, 3 recep., 3 bed., garden, etc., £50 on lease.—No. 8560.

Kent Town. — Woman's Practice. £250 p.a. Small panel. 20 mids. p.a. House 4 beds., etc., garden, etc., to rent.—No. 8659.

London, S.W. — £2,000 p.a. Non-panel. 12 mids., 5 gns. up. Visits 5/-, mostly, and up to 10/6 or over. Large house and garden to rent.—No. 8655.

Cambs.—Over £800.—Old-estab. unopposed. Panel 475. Appts. £99. Fees 3/6 to 7/6. Large house, 5 bed., and garden, at low rent.—No. 8654.

S. Wales. — Death Vacancy. — £700 p.a., largely colliery. Panel 700. Small house, low rent or price. Premium £500 or near.—No. 8651.

Lancs Town.—£2,500 p.a. Panel 1,200. Ins. £120. Two houses available, with 5 bed., etc. Good opportunity for two friends.—No. 8645.

Berks. — About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or more. No mids., ample scope. Small house, with surgery.—No. 8541.

S. W. County. — Seaside Resort. About £600 p.a. Panel about 600. Fees 3/6 to 5/6, and up. Good house, 2 recep., 5 bed., garden, garage, etc., to rent.—No. 8532.

Northants Country. — Partner or Assistantship with early view. 1/2 share of £1,200 p.a. Panel over 550. Unusual scope and ultimate succession. Single man preferred.—No. 8622.

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

SPECIAL NOTICE

FINANCIAL ASSISTANCE to enable purchasers to obtain Practices and Partnerships can be afforded to approved applicants. Full particulars on application to Mr. Percival Turner.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London.

Oxford Street, W.1.

Telephone: Mayfair {1782 1789

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 SOUTH AFRICA.—Old-established PRACTICE of over £1,800 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200.

2 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Choice of two houses. Premium two-fifths share 1½ years' purchase.

3 DEATH VACANCY. — NORTH DEVON. —PRACTICE about £700 p.a. in beautiful country district. Panel about 400. Fishing, hunting, shooting. House for sale.

4 CORNWALL. — Partnership in Country Practice about £2,000 p.a., near the coast. Panel 1,200. House (5 bedrooms), with beautiful garden, to rent. Excellent schools. Premium one-half share £1,400.

5 FIRST-RATE RESIDENTIAL TOWN within easy reach of London.—PARTNERSHIP in non-panel, non-dispensing Practice. Very little midwifery. House (5 bedrooms) to rent. Share worth over £2,700 p.a. at 2 years' purchase. Partner must be well qualified, preferably Oxford, Cambridge, or London.

6 SOUTH MIDLANDS.—Country Practice of just over £1,000 p.a. in hunting centre. Panel 700. Good house, with modern sanitation, excellent garden and paddock, to rent. Premium £1,500, to include drugs and fittings.

7 KENT.—Country Practice £1,260 p.a. in beautifully situated village. Panel about 400. Detached residence (5 bedrooms), garage, garden, and field, for sale. Premium 1½ years' purchase.

8 N.W. COAST.—Practice in small Seaside Town. Receipts average £946 (including £350 from panel). Small compact house (4 bedrooms), with nice garden, for sale. Sport. Premium—Practice and house—£2,000.

9 WEST HAM. — Practice (carried on by Medical Woman) of about £540 p.a., including small panel. No midwifery. House to rent. Premium 1½ years' purchase.

10 LONDON, S.W. — Partnership in mixed Practice over £900 p.a., close to West End. Panel 700. Premium for guaranteed share of £500 p.a. £750. Suit one with speciality or West End connection.

11 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

12 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

13 EAST COAST.—Partnership in good-class non-dispensing Practice of £3,400 in small select Seaside Resort. Practically no panel. Very great scope. Premium one-half share 2 years' purchase.

14 KENT. — Partnership in Practice of well over £2,000 p.a. in beautiful country district. Panel about 2,000. Detached modern house (4 bed. and dressing rooms) for sale. Premium one-half share 2 years' purchase.

15 MEDITERRANEAN RESORT.—PARTNERSHIP in good-class non-dispensing Practice of between £1,300/£1,400 p.a. Suitable flat to rent. Premium one-half share £960, with succession to whole Practice later.

16 LONDON, S.W. — Good-class non-panel PRACTICE in pleasant residential outlying suburb. Receipts formerly about £1,500 p.a. House in good position. Premium based on results.

17 NORTH MIDLANDS. — Country Practice about £1,000 in old-fashioned village, easy reach of County Town. Panel nearly 600. House (6 bed. and dressing rooms), with garage, garden, and orchard, for sale. All kinds of sport. Premium 1½ years' purchase.

18 LONDON, N.W. — Steadily increasing PRACTICE easy distance of Marble Arch. Receipts 1929, £422. Panel 550. House, with 3 bedrooms, for sale. Great scope. Premium £650.

19 DEATH VACANCY.—HARROGATE.—Receipts about £600 p.a. Panel over 500. Well-situated house (6 bedrooms) to rent.

20 LONDON, N.—Sound easily worked PRACTICE in residential district. Receipts average £2,590 p.a., including small select panel. Good corner house (5 bed and dressing rooms), with garden, for sale. Small Hospital. Premium £3,000.

21 SOUTH WALES. — Steadily increasing PRACTICE in good Town, with beautiful surrounding country. Receipts last 12 months £750. Panel 700. Centrally situated house (6 bedrooms) for sale. Scope for increase.

22 SOUTH OF ENGLAND.—Practice worth £500 p.a. in a coast town. Detached house (6 bed and dressing rooms) to rent. Premium £500.

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Practices and Partnerships for Disposal (continued).

23 HOME COUNTIES.—Increasing Country PRACTICE within 30 miles of London. Receipts average over £870 p.a. Panel 499. Detached house (5 bedrooms), garage, and good garden, to rent. Premium 1½ years' purchase.

24 DEATH VACANCY. — DORSET. — Country PRACTICE nearly £1,100 p.a. Panel about 670. House (8 bed and dressing rooms), garden, garage, etc., to rent.

25 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms), garden and garage, for sale. Premium 1½ years' purchase.

26 X-RAY PRACTICE in large Town in the S.W. Receipts average £950 p.a. Vendor on Staff of Hospital. Premium £900.

27 LONDON, E. — Cash and Panel Practice (held by Medical Woman) in densely populated area. Receipts £360 p.a. Panel 290. Small house. Rent £50. Prem. £450.

28 ESSEX. — Non-panel Practice averaging over £1,400 p.a. in populous suburban district. Detached double-fronted house, with good garden, etc., for sale. Scope for increase. Premium £2,000.

29 DEATH VACANCY.—BIRMINGHAM.—PRACTICE averaging £750 p.a. Panel 520. Charming house (4 bed and dressing rooms), garage and nice garden, for sale.

30 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium.

31 NOTTINGHAMSHIRE. — Country PRACTICE averaging £1,070 p.a. Panel 700. Good house (6 bedrooms), garage, and 1½ acres ground, to rent. Great scope. Premium 1½ years' purchase.

32 KENT. — Partnership in Practice about £4,000 p.a. in good residential district. Panel about 1,100. House (6 bedrooms), with nice garden, for sale. Scope for surgery. Premium for a 5/24ths share 2 years' purchase.

33 SOUTH OF ENGLAND. — Partnership in non-dispensing Practice £3,600 p.a., in attractive watering-place. Panel about 1,200. Great scope. One-fourth share now and up to one-half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

34 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,080. House (5 bedrooms), with electric light, for sale. Premium 1½ years' purchase.

35 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house for sale. Scope. Premium 1½ years' purchase.

36 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £775.

37 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

38 LONDON, E.—Practice of £1,269 p.a. in populous suburban area. Panel 1,480. Small house (3 bedrooms). Premium, to include lease of house, £2,100.

39 ITALY. — Season Practice in famous City. Average receipts last 4 seasons £522. Up-to-date Hospital. Premium £563.

40 LONDON, E.—Cash and Panel Practice of about £850 p.a. (£310 from panel). Well-situated house (3 bedrooms) to rent. Considerable scope. Premium £1,000.

41 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

42 BIRMINGHAM.—Practice over £1,200 p.a. in residential suburb. Small panel. Particularly nice house to rent on lease. Premium 1½ years' purchase.

43 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 320. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

44 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

45 MIDLANDS.—Partnership in Practice over £6,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

46 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

47 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

48 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

49 SOUTH OF ENGLAND. — Practice averaging £750 p.a. in first-rate country town. Panel 937. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

50 GLOUCESTERSHIRE.—Practice averaging £1,300 p.a. in an industrial village. Panel 1,169. House (5 beds.) for sale. Beautiful surrounding country. Prem. £1,250.

51 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

52 SOUTH COAST. — Practice worth about £500 p.a. in favourite health resort. No panel or night work. Excellent semi-detached house (4/5 bedrooms) for sale. Scope. Premium £400.

53 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale. Premium £1,050.

54 KENT AND SURREY BORDERS.—PRACTICE about £200 p.a. in growing and pleasant residential district. Choice of residence for sale. Good scope. Premium £1,200.

55 EASTERN COUNTIES. — Partnership in Country Practice of £1,200 p.a. Panel 755. Partner should be able to give anæsthetics. Premium one-half share 2 years' par.

56 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

57 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. Panel 500. House (5 bedrooms) for sale. Good scope. Premium £1,500.

58 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

59 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

60 SCOTLAND. — Practice nearly £1,000 p.a. in small seaport town on South-West Coast. Panel about 400. House (5 bedrooms), with good garden, for sale or rent. Premium £1,000.

61 EASTERN COUNTIES. — Country PRACTICE of £835 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

"MEDICAL PARTNERSHIPS, TRANSFERS AND ASSISTANTSHIPS" (BARNARD & STOCKER). *Post free* 12/6.

All Communications to be addressed to Mr. A. V. STOREY, General Manager.

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(ESTABLISHED BY J. A. REASIDE IN 1893)

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LONDON, S.W.—NUCLEUS G.P., may be run as a Lock-up. Situated within short distance of West End. Receipts approx. £500 p.a. Panel about 500. Alternative accommodation available. Premium £750 or cash offer.

YORKSHIRE.—Middle and working-class G.P. Medium-sized house to rent or purchase. Fees 3/- up. Appointments. Receipts average £2,000 p.a. approx. Panel 793, increasing. Premium 1½ years' purchase or near offer. Part down, balance by arrangement.

SOUTH COAST. — NUCLEUS non-panel Practice in favourite seaside resort. Freehold house available. Receipts £500. Premium—house and Practice—£1,850.

LONDON, S.E.—PARTNERSHIP in growing middle and working-class G.P. Suitable house available to rent. Good fees. Earnings (approx.) £5,000. Premium for 1/3 share, £3,500 or near offer.

LONDON, S.W.—Old-established middle-class G.P. Corner house, with accommodation, to rent at £115 p.a., on lease. Panel 360. Receipts £1,060. Premium 1½ years' purchase or near offer. Scope.

SOMERSET. — Small PRACTICE situated in delightful country near Taunton. Receipts nearly £800. Panel 500. Long Partnership introduction would be entertained, or Assistantship with view. Premium open to offer.

LANCS. — Good-class non-panel G.P., situated in residential district. Receipts over £1,500 (average £1,179). Suitable house available to rent or for sale. Scope for Surgery, especially Eyes and E. N. and T. work. Suitable for a F.R.C.S. Premium £1,200 cash.

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LONDON, N.W.—NUCLEUS middle and working-class PRACTICE. House to rent. Receipts £250. Panel 155 (recently started—scope). Premium £350 or near offer.

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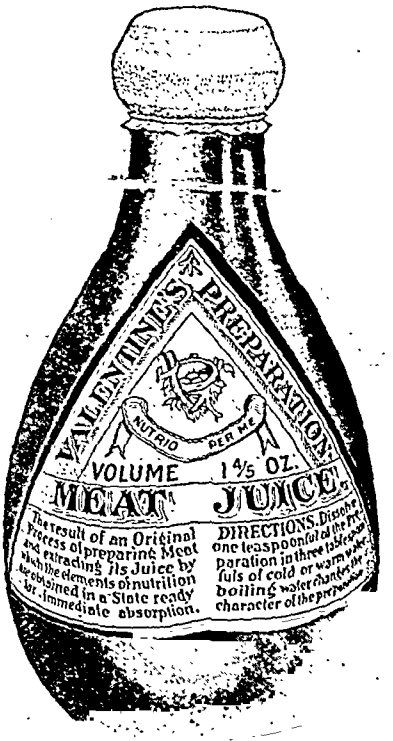
1. WEST OF ENGLAND.—(Within 100 miles of London).—PLEASANT TOWN.—*Old-established* mixed general PRACTICE. Average income for last 2 years about £1,250, including panel of 1,200. Fees 2/6 to 6/-, and a few at 10/6. Little midwifery. Excellent house, recently redecorated, with ample accommodation. Garden. Garage. *Good* sport and schools. Premium for Practice and house £4,500.
2. NORTH LONDON.—Old-established good middle class PRACTICE, held by Vendor 25 years. Gross cash receipts for immediate past twelve months £2,811. Selected panel of about 250. Fees from 5/- upwards. Mids. from 7 gns. (only few cases). Very good corner house, non-basement, with 3 *reception*, 5 bedrooms, etc. Price for leasehold £1,600. Premium only £3,000.
3. LONDON, S.W.—Within easy reach of Charing Cross.—Good middle-class non-panel PRACTICE, averaging over £2,000 p.a. Fees 2/6 to 10/6. Mids. 3 to 10 gns. (about 12 cases). Suitable house, with 2 reception, 5 bedrooms, etc. Garden. Rent on lease £65 p.a. Premium £3,000.
4. SOUTH-WEST OF SCOTLAND.—COAST TOWN.—Old-established, non-dispensing, good mixed PRACTICE. Income for the last year £1,100, including panel of 400 and increasing. Fees 2/6 to 2 gns. Good house, with 2 reception, 5 bedrooms, etc., rent on lease £42 p.a., or could be bought for £1,300. Premium £1,000.
5. BIRMINGHAM SUBURB. — Well-established and rapidly increasing mainly working-class PRACTICE, producing for last year £765. Panel of 860. Visits 2/6 to 7/6, practically all cash. Little midwifery. Suitable small house (on lease 77 years). Price £600. Premium £1,050.
6. SOUTH DEVON.—COUNTRY PRACTICE, steadily increasing, and situated in very pleasant agricultural district, within easy reach of coast. Gross cash receipts for past 12 months £2,326. Panel produces, with mileage, about £420. Fees 5/6 to 21/-. Only about 20 cases of midwifery from 2 to 5 gns. Suitable house, in main street, with 2 reception, 5 bedrooms, etc. Garden. Garage. Rent on lease £50 p.a. Good sport. Premium £2,800.
7. SOMERSET.—Attractive Town, within easy reach of coast.—Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
8. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000).—Old-established mixed-class PRACTICE, averaging at present £500 p.a., but offering exceptional *scope*. Panel of about 430 and 2 small appts. Visits 5/6 to 5/-. Practically no midwifery. Very attractive residence, on main road and near the sea, with professional rooms, 2 reception, 4 bedrooms, bathroom, etc. Pretty garden. Garage. Rent on lease £100 p.a. Premium 1½ years' purchase.
9. WITHIN TEN MILES OF GLASGOW. — Prosperous old-established good middle and better-class PRACTICE, producing an average of nearly £2,950 p.a., including panel of 2,300 and appts worth £500. Fees 2/6 to 21/-, medicine extra. Mid. from 2 gns. upwards. Very good detached house, with 3 reception, 5 bedrooms, etc. Garden. Garage. Can be purchased, or other residence secured. Premium 1½ years' purchase, £1,500 down, and balance as arranged.
10. PARTNERSHIP.—MIDLANDS.—COUNTY TOWN.—TWO ONE-FIFTH SHARES (suitable two friends or will be sold separately) are offered in a very old-established good mixed Practice owing to the retirement of the senior of two partners. Gross cash receipts for immediate past 12 months over £5,900, including panel of 3,400. Fees from 4/-. Not much midwifery. Good house, with 2 reception, 6 bedrooms, etc. Rent on lease £75 p.a. Premium for share two years' purchase.
11. SOMERSET COAST.—*In a small but increasing and delightful seaside resort*, the five-twelfths share of a very old-established PRACTICE, producing last financial year £1,600, but offering exceptional scope. Panel brings in £480 and appointments. Visits 5/- to 4 guineas. Mid. 4 to 6 gns.; only about 12 cases yearly. Choice of 2 suitable houses (price, freehold, £950), with gardens. Electric light and gas. Premium 2 years' purchase.
12. SOUTH-WEST COAST.—*VERY FAVOURITE RESORT.—Old-established* good middle-class non-panel PRACTICE, held by Vendor (who is retiring) over 20 years. Receipts average £1,142. Fees 5/- to 10/6 and upwards. Mids. 5 to 15 gns. (about 12 cases). House is an exceptionally good one, in perfect order, with ample accommodation, central heating, electric light. Good garden. Garage. Price for freehold £3,250. Premium 1½ years' purchase.
13. CORNISH RIVIERA.—Old-established good mixed PRACTICE in exceptionally attractive village which is steadily increasing. Receipts for last 12 months £1,300, including panel of over 400. Visits 5/- to 21/-. Excellent house, facing due south, with 6 bedrooms, etc. Good garden. Rent on lease £56 p.a. Premium £1,800.
14. YORKS (NORTH RIDING).—In a small pleasant market town, with pretty and prosperous surrounding country, very old-established mixed-class PRACTICE averaging £1,247 p.a., including appts. worth £80 and panel producing last year £356. Visits 3/6 to 25/-. One opponent. Good house, facing south (3 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Electric light. Vendor's freehold. Price £1,550 (£1,000 on mortgage), or would let for few years at £80 p.a. Premium £1,500. Educational and social amenities.
15. SOUTH YORKS.—GOOD TOWN. — Old-established *good* middle-class PRACTICE, producing for last twelve months nearly £4,500. Small selected panel of 400. Fees 5/- to 10/-. Mid. 2 to 10 gns. (only about 50 cases yearly). Suitable house, with 3 reception, 6 bedrooms, etc., and professional rooms. Electric light. *Good* garden. Garage for 3 cars. Rent on lease £160 p.a. Excellent schools, sport, etc. Premium £5,700.
16. KENT.—Pleasant Seaside and residential Town (pop. 17,000).—Old-estab. non-dispensing middle and working-class PRACTICE, averaging for the past 3 years over £1,650 p.a. including transferable appt. worth about £200 and panel of 500. Visits 3/6 to 10/6. House contains 8 rooms, kitchen, bathroom, etc. Garden. Garage. Price *freehold* £1,500, but might be rented. Premium £1,500.
17. LINCS.—Very old-estab. easily worked Village PRACTICE, averaging £1,335 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.
18. MANCHESTER.—PRACTICE is situated in a growing district offering very large scope. Income about £1,700 p.a., including panel producing £430. Fees 3/6 upwards. Excellent detached house, well situated, with 3 reception, 5 bedrooms, etc., all in good order. Price £1,600. Premium 1½ years' purchase.
19. HANTS.—COUNTRY PRACTICE.—Very old-established, situated in most attractive district near Sussex Border. Receipts average over £800 p.a. Panel of 480. Detached house in half an acre of garden, 2 reception, 5 bedrooms, etc. Rent £55 p.a. Hunting, golf, etc., and first-class schools within reach. Premium £1,500.
20. LONDON, SOUTH-WEST.—Very old-established non-residential PRACTICE, averaging about £4,000 p.a. Panel of 1,500, but large *scope* for more. Fees 2/6 upwards. Suitable house or flat can easily be obtained to meet purchaser's requirements. Rent of surgery on long lease £100 p.a. Premium 1½ years' purchase.
21. YORKS.—In a clean and thriving manufacturing town, an *old-established* Homœopathic and partly Allopathic PRACTICE, held about 50 years by Vendor who is retiring. Cash receipts for the past three years average £2,400 p.a. Patients middle and better-class. Midwifery refused. Good house available, rent £100 p.a. Premium only one year's purchase, part down and balance by arrangement.
22. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, producing £2,500 p.a., including panel of 1,804, and appts. worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
23. CHESHIRE.—Industrial Town within easy reach of Manchester.—Well-established PRACTICE *producing £2,600* p.a., with panel of 2,870. *Fees 2/6 to 3/6, medicine extra. Good house, with ample* accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
24. SOUTH OF ENGLAND.—LARGE SEAPORT TOWN.—Old-established mixed general PRACTICE. Average income nearly £1,900. Panel of 2,500. Fees 2/6 to 7/-. No mids. No Assistant kept. Well-situated house, with good accommodation. Rent on lease £120. Prem. £3,300.
25. WITHIN 40 MILES OF LONDON.—In a thriving Riverside and Hospital town (pop. over 40,000).—Old-established mixed-class and increasing PRACTICE worth over £2,300 last year, including panel of 1,600 to 1,700. House contains professional accommodation, 2 reception, 4 bedrooms, bathroom, etc. Small garden and garage. Rent on lease £60 p.a. *Premium* £3,650, to include good book debts of £500, drugs, etc., and consulting room and surgery furniture.
26. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £904 p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (3/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, bathroom, etc.). Large garden and garage. Water laid on and gas plant installed. Rent £50 p.a. Premium £1,400. Excellent sport.
27. PARTNERSHIP.—WEST MIDLANDS.—The Third share (with increase to half in 4 years and eventual succession if desired) is offered in very old-established mixed-class Practice in small town, largely residential, in midst of agricultural district of exceptional beauty. Cash receipts average £2 367 p.a., including panel of 1,624. Opposition not strong. Expenses light. Choice of two houses (small) which can be bought for £500 or £700. Premium 2 years' purchase.
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29. WITHIN FIFTY MILES OF LONDON.—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 338, and appts. worth about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Elec. light. Price for freehold £3,000. Premium £1,050. Exceptionally good educational facilities for boys.

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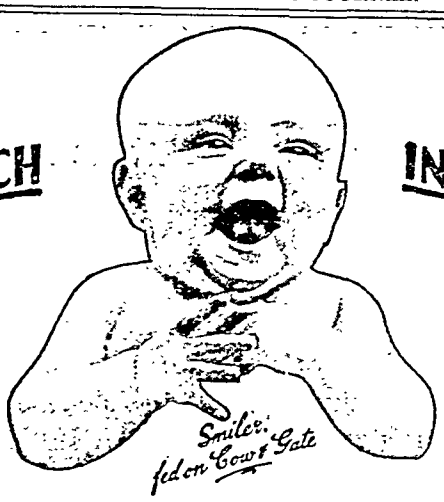
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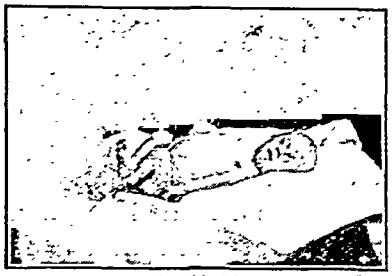
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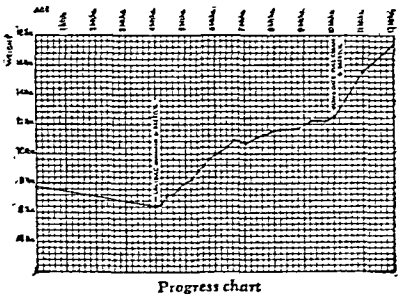
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Progress chart



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British Medical Journal.

JUNE 7TH, 1930.

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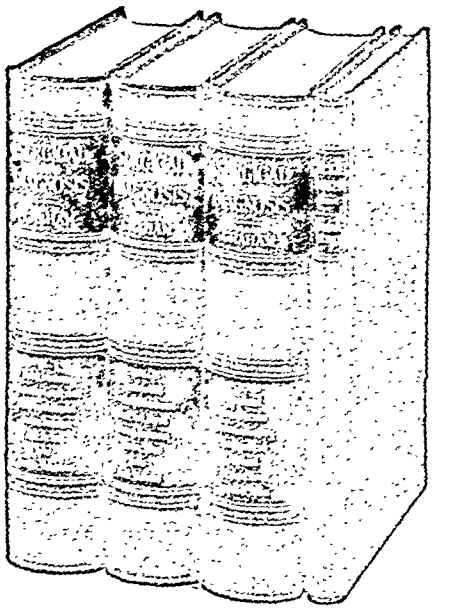
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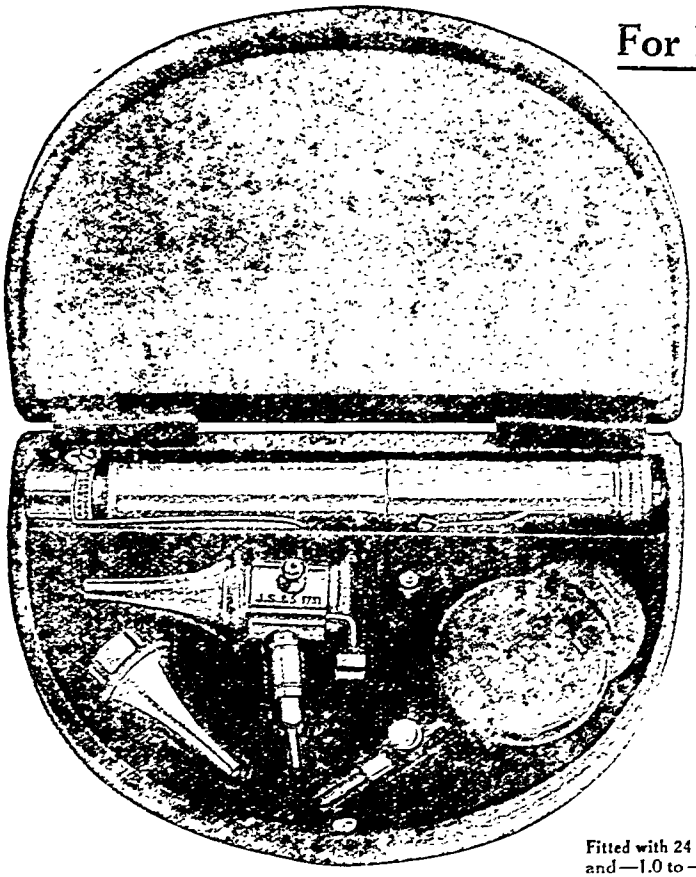
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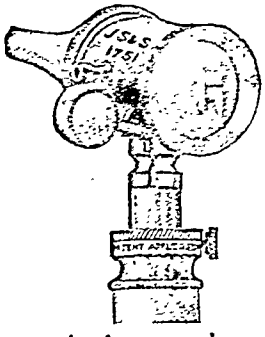
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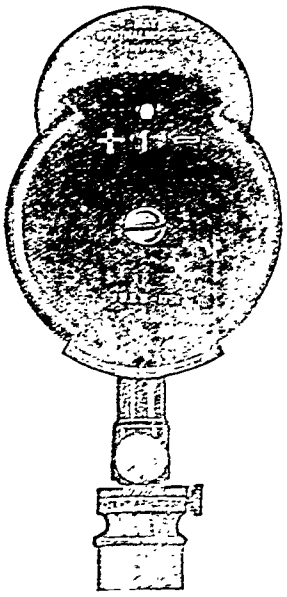
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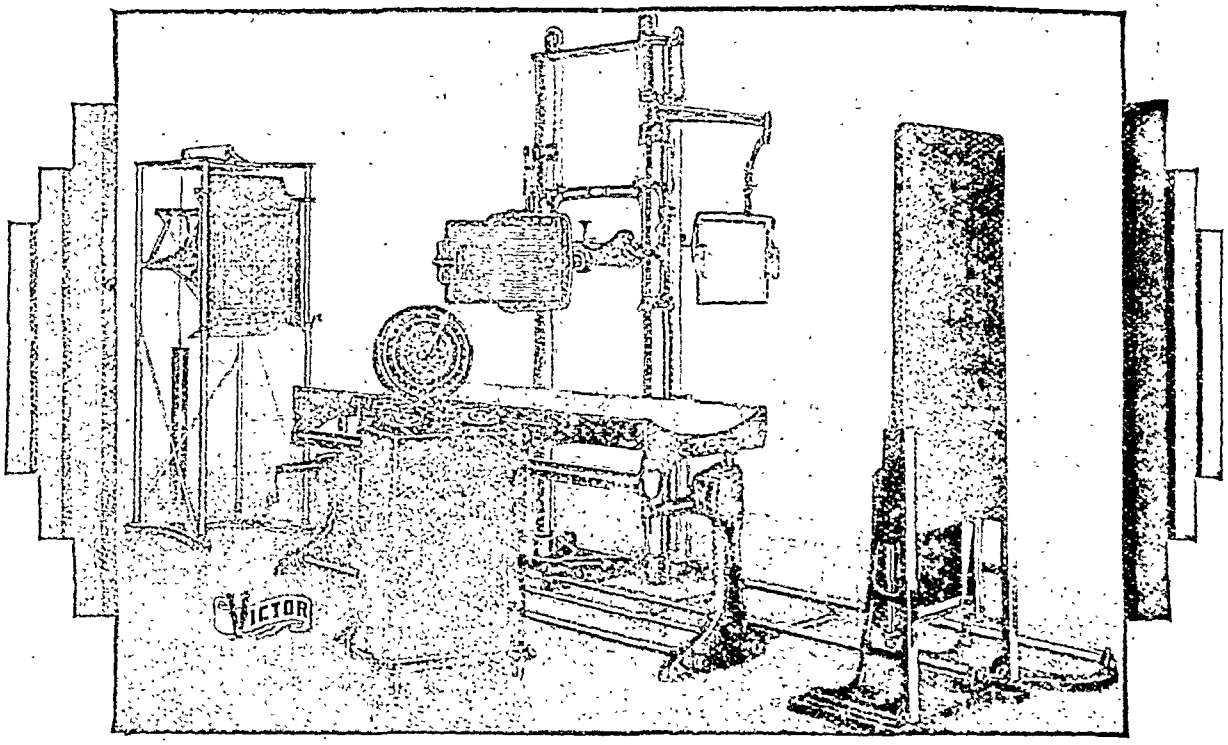
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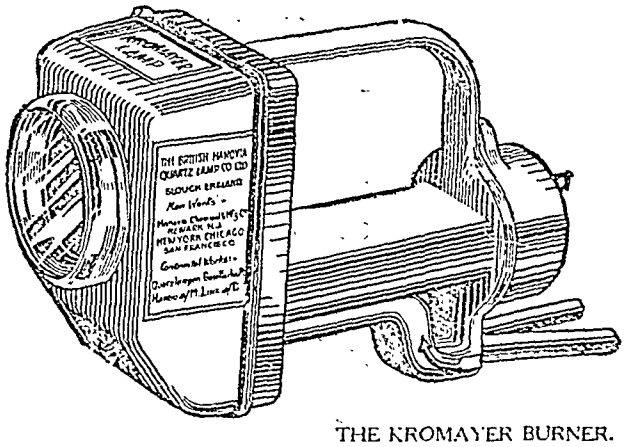
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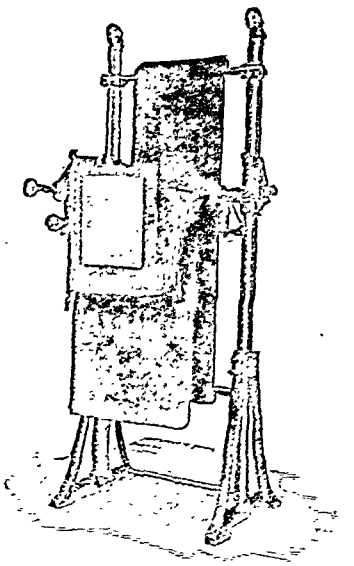
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118, New Street, BIRMINGHAM.
27, King Street, MANCHESTER.
37, Jameson Street, HULL.
271, High Street, EXETER.
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59, Northumberland Street, NEWCASTLE.
206, Sauchiehall Street, GLASGOW.
111, Princes Street, EDINBURGH.
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N. AND W.

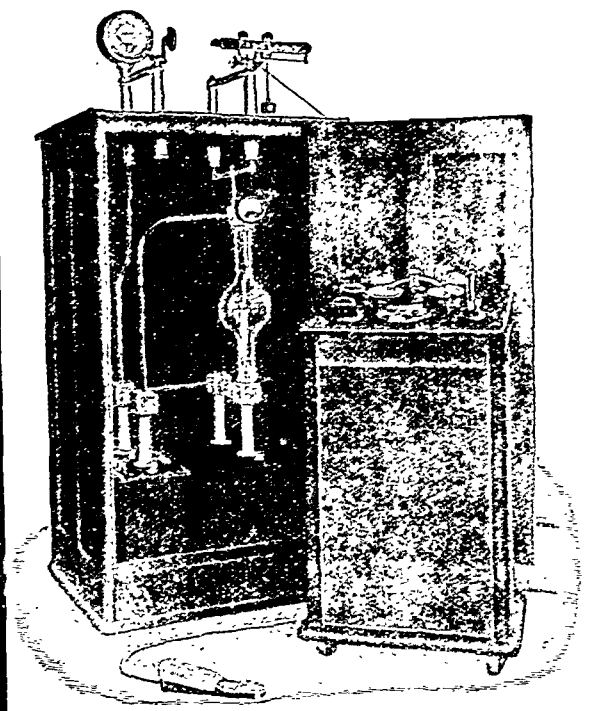
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Upright Screening Stand,
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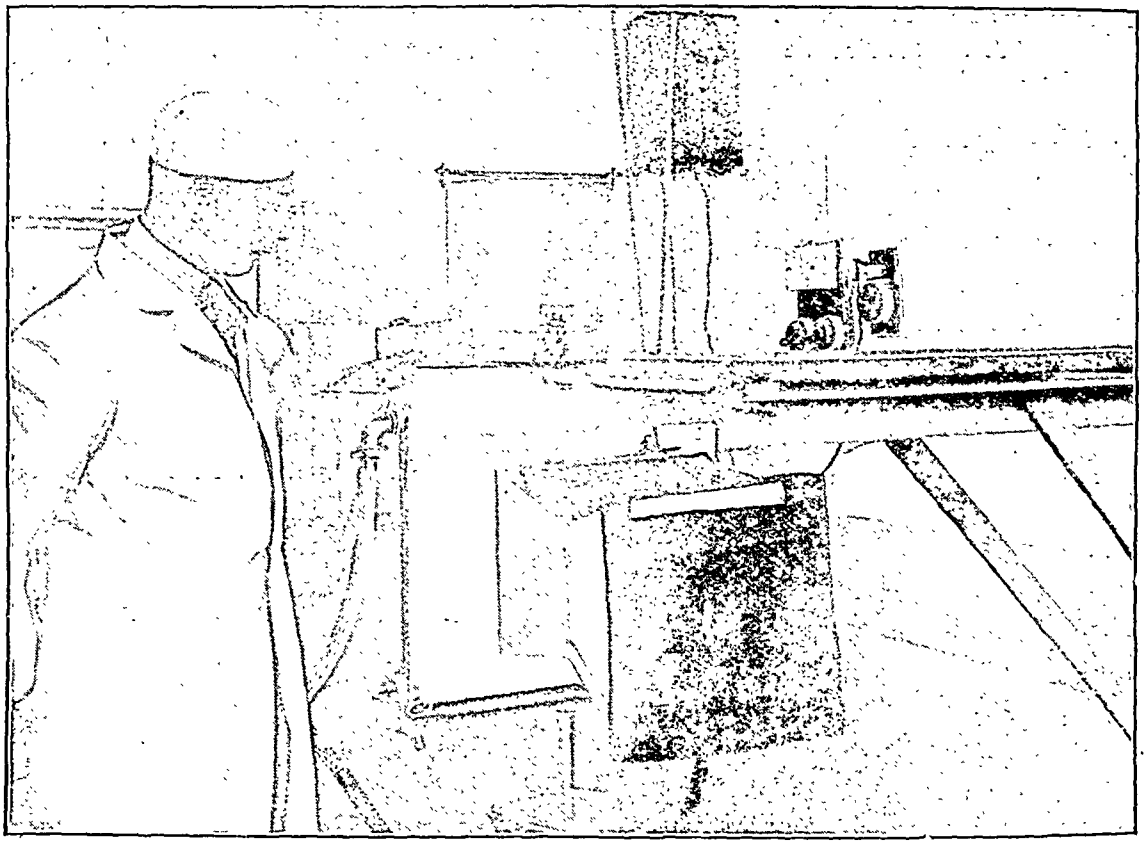
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MICKLEFIELD IRRADIATED MILK



Treating the Milk.

By this process—

(1) VITAMIN A AND NATURAL FLAVOUR ARE PRESERVED.

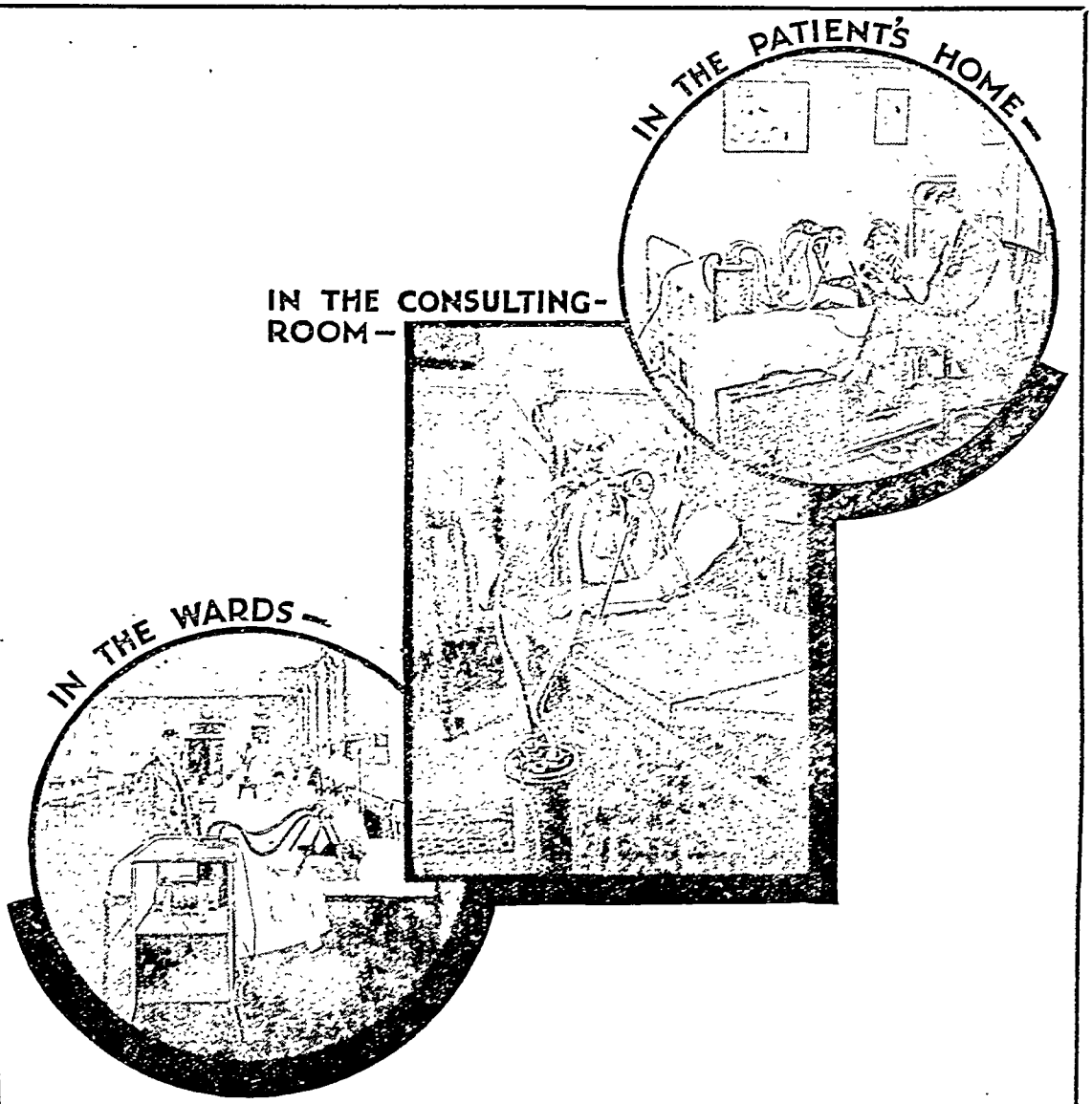
(2) VITAMIN D CONTENT IS INCREASED 1,800 PER CENT., OR TEN TIMES THAT OF ANY OTHER IRRADIATED MILK.

One pint equivalent in Vitamin D to 600 drops or 12 grammes of average Cod-Liver Oil.

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Write to J. O. HICKMAN, MICKLEFIELD GREEN, RICKMANSWORTH.



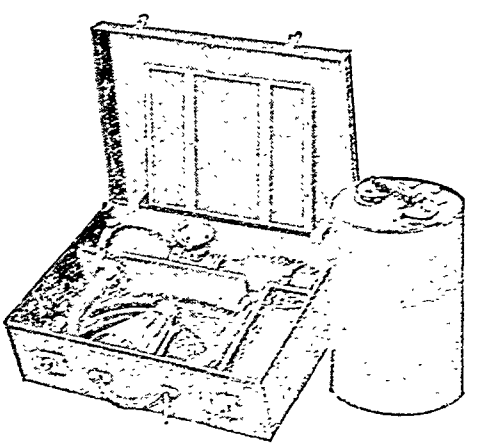
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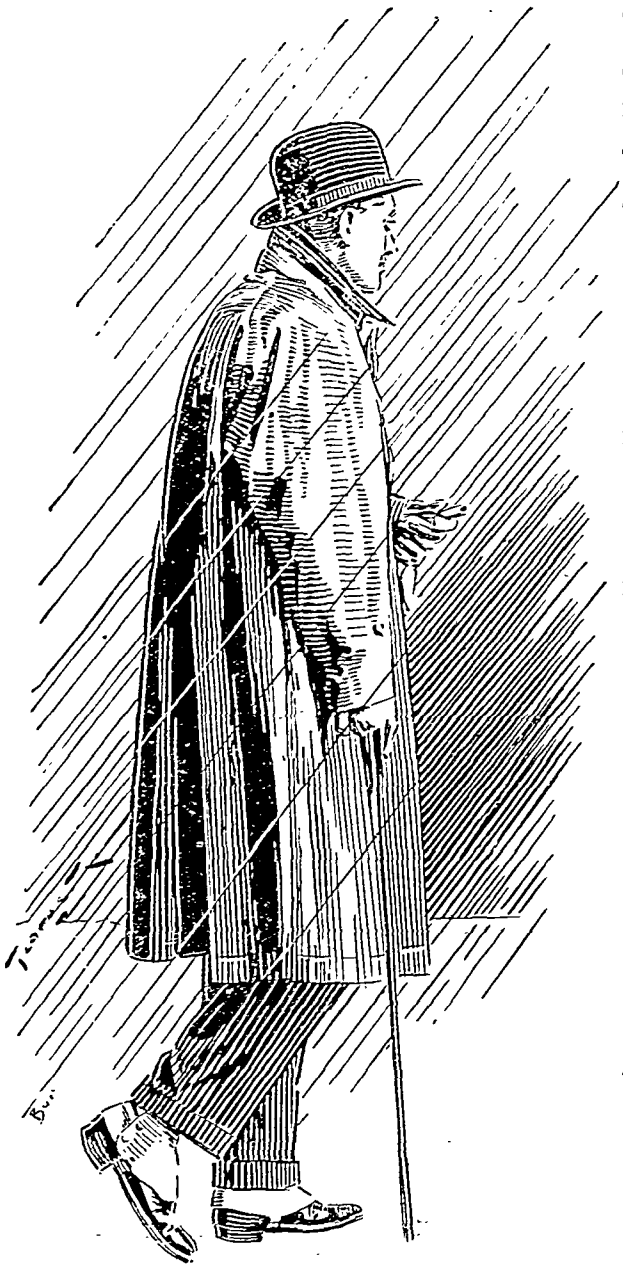
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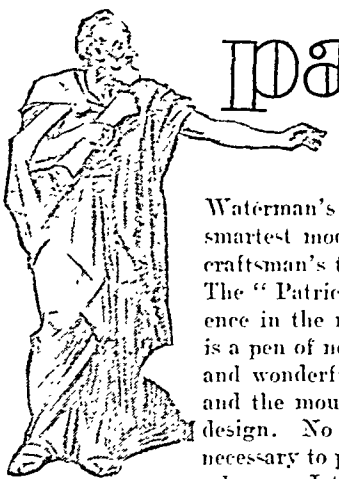
You can use this letter how you like.

Yours very truly,
(Sgd.) JAMES BOON,
L.R.C.P., L.R.C.S.Ed.

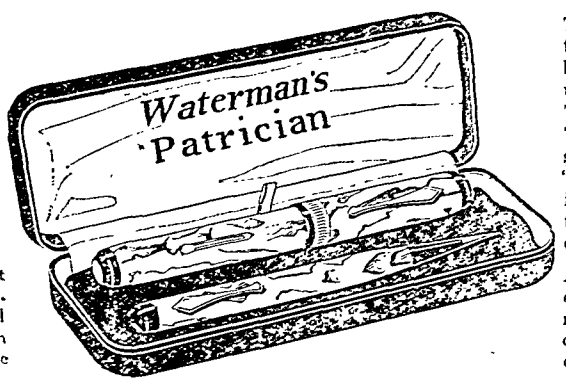
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Writing Set in Onyx. Pen & Pencil to match. In attractive case
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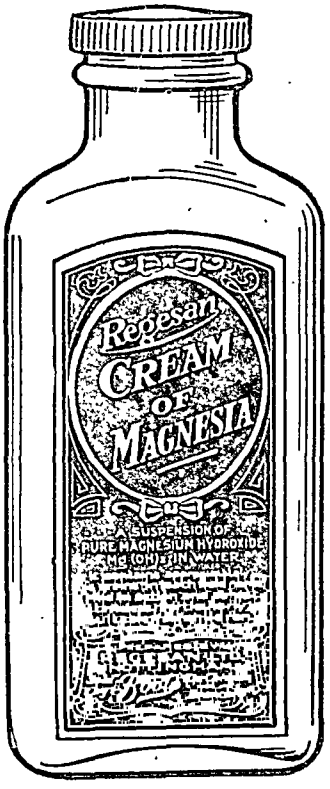
The "Patrician" is a gift that will be welcomed for its beauty and appreciated for its utility. Its price is 42 -. There is a Waterman's "Patrician" Pencil at a guinea to match every "Patrician" Pen. Also Writing Sets, with Pen and Pencil to match, at 63 -, in attractive cases for presentation.

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An Oriental creation of black and pearly-white reflections
42/-

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A pure, finely divided Magnesium Hydroxide ($Mg(OH)_2$) suspended in water. A simple antacid and valuable laxative. Digestive troubles and gastric conditions indicating the necessity of a corrective of this type quickly respond to treatment with Regesan Cream of Magnesia.
It does not gripe nor cause discomfort, and is mild in action.

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STIMULATING, RAPIDLY ABSORBED, THESE ESSENCES RESTORE VITALITY WHEN SOLID NOURISHMENT IS IMPOSSIBLE

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RECENT investigation amongst members of the medical profession reveals that 99 *out of every* 100 interviewed recommend Brand's Essences.

Containing those essential elements of meat which excite the gastric secretions and make digestion easier, Brand's Essences provide an immediate stimulant when vitality is low and the body too weak to absorb solid food.

No effort is required to assimilate them, for they consist only of the pure juices of the finest fresh meats conserved in their natural form, without the addition of any preservatives, colouring matter or gelatine.

The delicious jelly is invaluable in dangerous illness whenever a patient is in need of food which can be absorbed without the slightest strain on the digestive organs. And in convalescence, Brand's Essences promote appetite—help to win back the desire for solid, strength-building diet and so hasten recovery.

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BRAND'S ESSENCES

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Sugarless Fruit

PASTILLES

A pastille with a delightful fruit flavour yet entirely free from sugar. It is specially designed for diabetics and others on a restricted carbohydrate régime and can be eaten freely without harmful effect.

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Acetyl-salicylic acid possesses a notable disadvantage. Physicians have proved that it cannot be tolerated by patients suffering with a delicate stomach. Consequently, the value of this medicament in the wide field in which it is indicated is very seriously reduced.

"Alasil" completely overcomes this objection. By combining calcium acetyl-salicylate with "Alocol," unfavourable secondary action upon the stomach is prevented. This beneficial influence is undoubtedly due to the presence of "Alocol" (Colloidal Hydroxide of Aluminium), which preparation has brilliantly stood the test of practice in the treatment of hyperacidity and other ill conditions of the gastric tract. "Alasil" is therefore a triumph over acetyl-salicylic acid. It enables higher doses to be administered and maintains the patient's system under its influence for a greater length of time. Analgesic, Antipyretic and Sedative, "Alasil" is indicated in all cases where acetyl-salicylic acid has been used heretofore.

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It is now established that the objectionable sequelae often following ether anaesthesia are caused by toxic impurities in the ether employed—*"The purer the ether the better the anaesthesia."*

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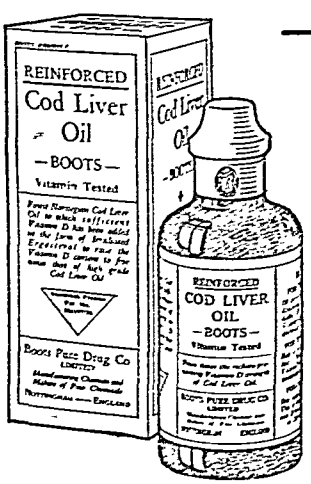
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WHOLESALE AND EXPORT DEPARTMENT.
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Telephone: Nottingham 45501.
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REINFORCED COD LIVER OIL —BOOTS



THE therapeutic value of Cod Liver Oil is fully appreciated by the Medical Profession. It is recognised for its specific action (due to its high content of Vitamins A and D) in rickets, affections of the chest, and diseases arising out of malnutrition. Boots Reinforced Cod Liver Oil is a biologically controlled preparation containing five times the amount of Vitamin D in addition to the normal amount of Vitamin A. The advantage of a concentrated oil needing only a fifth of the usual dose will be particularly valuable. Four fluid ounces of Reinforced Cod Liver Oil —Boots, contain the same amount of Vitamin D as one pint of the finest Norwegian oil.

In 4-oz. bottles, 2/6.



Peptonised Beef Jelly (BENGER)

and

Peptonised Chicken Jelly (BENGER)

These can be served either in their jelly state with a few biscuits, or dissolved in hot water in "beef-tea" form, making a valuable restorative readily assimilated by weak digestions.

Containing much of the flesh-forming elements of the meat in soluble form, these peptonised preparations are superior in effect to ordinary essences or extracts. Added to soups they considerably increase the nutrient value.

In hermetically sealed glass jars, 2/- and 3/- each.

NOTE.—Benger's Peptonised Beef Jelly and Chicken Jelly are entirely free from preservatives.

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M.144

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REGD. TRADE MARK.

For the Elderly Patient

Constipation may be the border line between good and ill health. Aperients and cathartics are harmful in these cases, but 'Petrolagar' will provide complete elimination with the ease and comfort so essential to the well-being of senile cases.

Prescribe 'Petrolagar' Brand Paraffin Emulsion for your elderly patients. *Suggest that they take it in milk.*

Petrolagar Laboratories, Limited,
Braydon Road, London N.16

Petrolagar

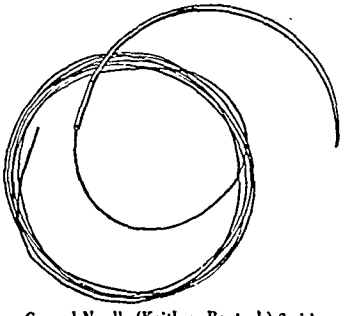


Most suitable for elderly people.

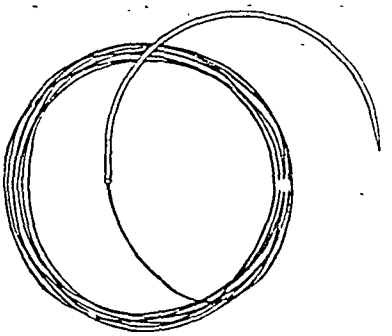
London Hospital Eyeless Needles

WITH L.H. CATGUT

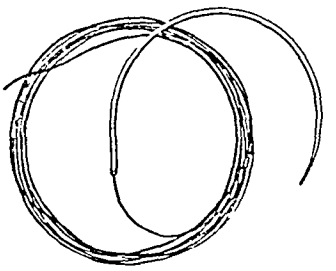
The London Hospital Eyeless Needles have been specially designed to avoid the doubling of the suture necessary in using needles with pierced eyes. They are fitted with tubular ends into which the sutures are firmly fixed, thus enabling the needles to be used with single strands. These needles are finely ground, sharp pointed and packed sterile in tubes for immediate use. Special precautions are taken to avoid any rusting of the needle after it has been packed.



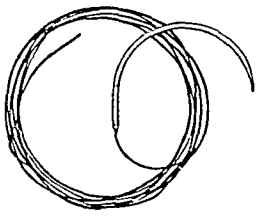
Curved Needle (Keith or Bantock) 3 side cutting edge. Sizes 3/0, 2,0. 0, 1, 2, 3. In boxes of 3 tubes, **4/6**



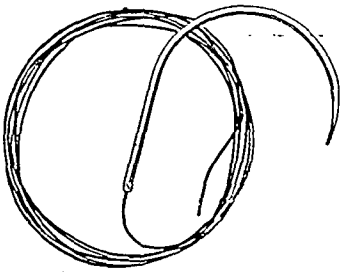
Curved Mayo Robson Stomach Needle. Sizes 4/0, 3/0, 2/0, 0, 1, 2, 3. In boxes of 3 tubes, **4/6**



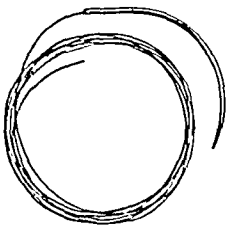
Moyniham's Model. In 3-tube box, **4/6**



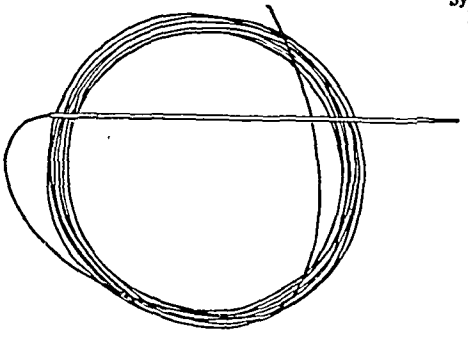
Ordinary Curved Intestinal Needle. Size 0. In boxes of 3 tubes, **4/6** In boxes of 3 cachets, **4/-**



Symond's Round-Bodied Model. In boxes of 3 tubes, **4/6**

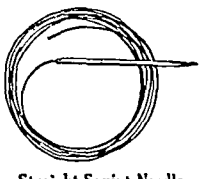


Curved Ophthalmic Needle (also for plastic work). Size 6/0. In boxes of 3 tubes, **4/6**

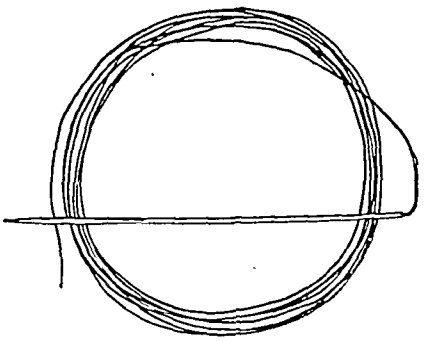


Straight Stomach 'ntestinal Needle. Sizes 4/0, 3/0, 2/0, 0, 1, 2, 3, 4

In boxes of 3 tubes with single needles, **4/6**
" 12 " " **16/-**
" 3 " 2 needles **7/6**
" 12 " " **25/-**



Straight Squint Needle (Green model), ⅜ in. Size 6/0.
In boxes of 3 tubes, **4/6**
" 12 " **16/-**



Straight Needle (Keith or Bantock). 2 in., 3-side cutting edge. Sizes 2/0, 0, 1, 2, 3.
In boxes of 3 tubes, **4/6** In boxes of 12 tubes, **16/-**

London Hospital Eyeless Needles are obtainable from

Allen & Hanburys Ltd. 48 Wigmore Street London W.1.

and all leading Surgical Equipment Houses.

Metatone

A Palatable Vitamin B Reconstructive Tonic

HARDLY a day of a physician's life is passed without one, or more, of his patients requiring a tonic. Metatone is a general tonic particularly suitable for such occasions. In the treatment of general debility, during convalescence, in neurasthenia, anæmia and rickets, after surgical operations and during pregnancy and the period of lactation, Metatone may confidently be prescribed for its reconstructive, restorative and tonic properties.

Metatone is an agreeable fluid combination of vitamin B, nucleinic acid and glycerophosphates, containing in each fluid ounce:—

Vitamin B Extract	10 grains
Nucleinic Acid	2 grains
Calcium Glycerophosphate	4 grains
Potassium Glycerophosphate ...	4 grains
Manganese Glycerophosphate ...	1 2 grain
Sodium Glycerophosphate	2 grains
Strychnine Glycerophosphate ...	1 25 grain

The adult dose of Metatone is one to two teaspoonfuls, three or four times daily, usually after meals.

Supplied in bottles of 8, 16 and 80 fluid ounces.

PARKE, DAVIS & COMPANY,
50, Beak Street, London, W.1.
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LABORATORIES: HOUNSLOW, MIDDLESEX.

A

PHYSIOLOGICAL TREATMENT OF CONSTIPATION



COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS

which strengthens the glandular secretions of the organ.

BILIARY EXTRACT

which regulates the secretion of the bile.

AGAR-AGAR

which rehydrates the contents of the intestines.

LACTIC FERMENTS

anti-microbian and anti-poisonous action.

IN TABLET FORM.

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In the treatment of streptococcal conditions Vaccines provide the surest means of reaching deep-seated organs which are inaccessible to antiseptics. Some practitioners, however, are deterred from using Vaccines owing to fear of reactions, but this objection may be overcome by employing Detoxicated Streptococcal Vaccine (Genatosan). In the preparation of this vaccine all the toxic elements of the germ are removed; as a result it is given in both acute and chronic cases without harmful reactions and produces a high degree of immunity.

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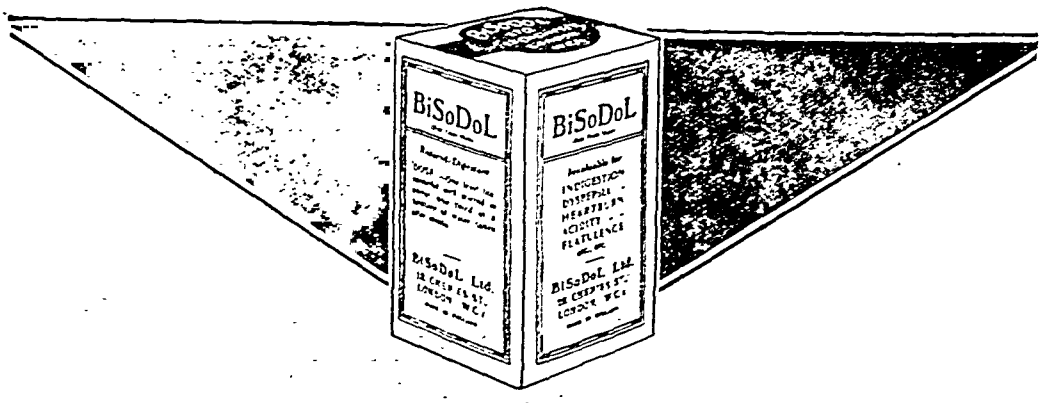
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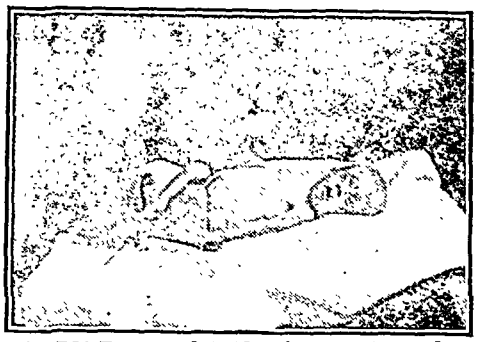
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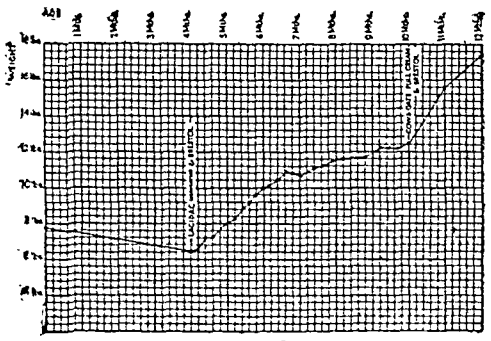
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Progress chart



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in relationship to
Vitamin B Deficiency

By "Pathologist"

In our recent work on intestinal stasis, we had noted that not only were the caecum and colon affected by the absence of B vitamin in the diet, but so also were the other portions of the digestive tract, especially the stomach itself. It was, therefore, decided to recapitulate our work, paying special attention to the gastric region of the digestive tract.

Five rats were placed on a diet consisting of rice starch, butter, mineral salt mixture and casein. This diet consisted of a sufficient quantity of protein, carbohydrate, fat and salt mixture, as well as a sufficient quantity of A vitamin. Orange juice was also given for its C vitamin content, and thus the diet was only deficient in B vitamin. Five control rats were fed on a similar diet, except that Bemax was added to supply the B vitamin.

The test was started on March 17th, and after the first month the deficiency rats were going down hill, and 2 per cent. of yeast extract was given, which was just sufficient to prevent the animals from dying, but it did not prevent them from losing weight. On July 11th Bemax rats and the non-Bemax rats were killed. The animals were killed by chloroform, and immediately on cessation of life the abdominal cavity was opened. In the non-Bemax rats peristalsis was found to be absent, but could be stimulated by a sharp tap of the forceps to the caecum; this wave of peristalsis was very sluggish and soon came to a complete stop. In the Bemax rats waves of active peristalsis were seen without any artificial stimulation. The stomachs of the non-Bemax rats were found to be greatly distended, full of food, and placed low in the abdomen.

Figs 1 and 1a are reproductions of actual photographs, and a comparison of these shows the marked difference in size of the "Non-Bemax" and "Bemax" stomachs. The stomachs of the five deficiency fed animals were similarly distended, the distension taking place almost entirely in the cardiac end of the organ. This was noted in all our experiments.

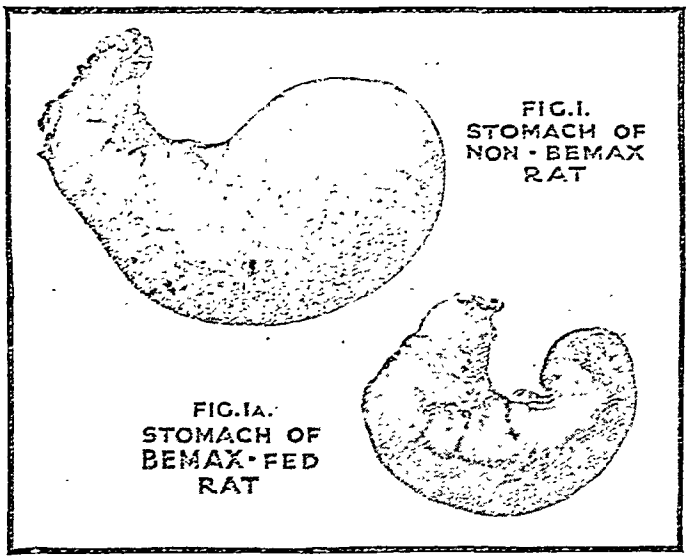


FIG. 1. STOMACH OF NON-BEMAX RAT

FIG. 1A. STOMACH OF BEMAX-FED RAT

These experiments indicate that the conditions described are undoubtedly brought about by a deficiency of vitamin B in the diet.

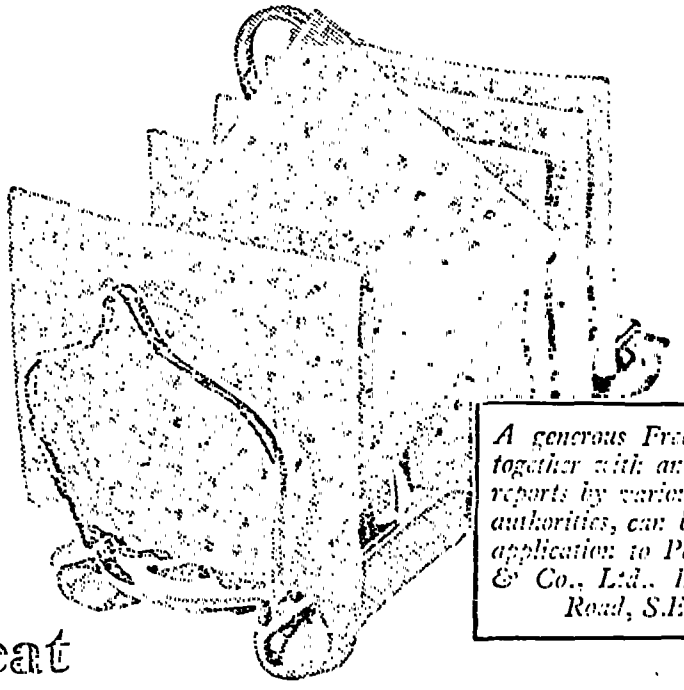
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The *Lancet*, in its report on June 11th, 1927, vouched for Vita-Weat in the following terms: "It will be noted that the caloric value is high." (The *Lancet's* own calculation was 1,846 per lb.) "It has a pleasant texture and flavour . . . . It is undoubtedly a valuable foodstuff, more particularly in respect of its content of Vitamin B."

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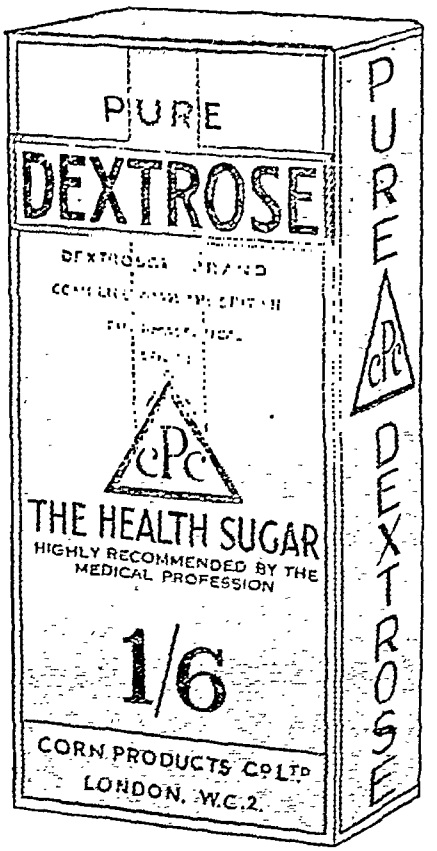
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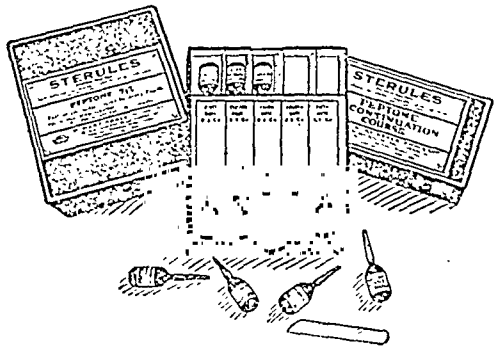
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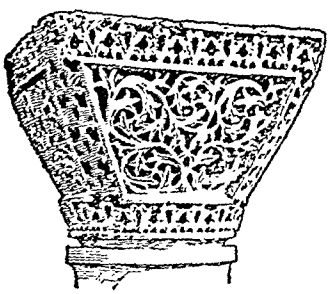


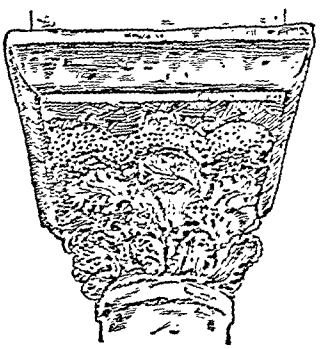
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A Lecture
ON
JAMES MACKENZIE AND HIS MESSAGE.*

BY
JOHN HAY, M.D., F.R.C.P.,
PROFESSOR OF MEDICINE, UNIVERSITY OF LIVERPOOL.

SIR JAMES MACKENZIE stands out as one of the master minds in medicine: a man who, in the future, will find his place with leaders such as Sydenham, Stokes, Graves, Addison, and Bright. As Sir Thomas Lewis has pointed out, in the *British Medical Journal* of March 15th, James Mackenzie rightly belongs to a distinguished group of men, experimental clinicians—men of Mackenzie's own kidney—Ferrier, Horsley, and Head. He died in January, 1925, and it is now possible, after a lapse of five years, to gauge in some measure, and with some prospect of success, the mark he made on the medicine of his day.

James Mackenzie is the finest example in our time of a general practitioner who by force of character, exceptional intellect, and unremitting industry rose from the ranks of the profession to become an outstanding authority in medicine, with a reputation which is world-wide. The story of his life has been told by Dr. McNair Wilson in a book entitled *The Beloved Physician*, and it is with pleasure that I fully acknowledge my great indebtedness for the vivid and arresting picture he has given us. But, fascinating and illuminating as it undoubtedly is, I feel that his biography hardly does justice to the memory of the man he called master. I would like to convey the impression left on my mind by Mackenzie and at the same time to stress what I believe to have been his message to the profession as a whole, and to the general practitioner in particular—a message which is apt to be missed if one becomes too much interested in the controversial side of his activities.

Born at Scone in 1853, of sturdy Highland farming stock, James Mackenzie was one of a family of seven. These were lean years for farmers, and the Mackenzie family was much straitened. Money was scarce, rents were high, but the hard school of adversity is an environment which makes rather than mars character. His brother, William Warrender Mackenzie, now Lord Amulree, is a most distinguished lawyer, and when he was raised to the peerage the *Times* referred to him as "the greatest living expert on industrial arbitration and conciliation." Another brother, Robert, went into the ministry, he was a man of great literary ability.

James attended the village school, and later the Academy of Perth, where he and his brothers received what every Scots lad of that time received—a sound education: although, if one may judge from his own criticism, he did not entirely approve of the manner in which ability was assessed. So far as I know, he did not distinguish himself in any way. He was not gifted with a retentive memory, nor had he an "index mind," and school honours fall, as a rule, to those who remember rather than to those who think. His was a brain that developed slowly.

For some reason he became fascinated with the idea of being a pharmaceutical chemist; or was it that he was bored with school life, and the chemist's shop was a means of escape? At any rate, at the age of 15 he became a chemist's apprentice at a salary of £5 per annum. He soon realized that he had accepted a mode of life that was monotonous and full of drudgery, but in the five years of his apprenticeship he must have learned a great deal about human nature as he viewed it across the counter—for example, the pathetic belief of the ordinary man in the value of drugs, and the implicit faith of the general public in a "bottle." He came into daily contact with the practitioners of Perth, and there can be no doubt that this period was an admirable training for any man who was to engage later in the profession of medicine.

His apprenticeship at an end, he refused a tempting offer of partnership from his employer—a fine tribute to his character and efficiency—but his mind was now set on becoming a doctor. Before embarking on his university career in Edinburgh he went to Glasgow and worked as a chemist for a year; there, in his leisure, he read for the entrance examination.

At Edinburgh he worked with determination, but it was not until he entered the wards at the Royal Infirmary that he realized that he had come to grips with the real thing. He had left the physiological laboratories and dissecting room behind him, and was at last in direct contact with the sick human being. Here he found scope for his ability, and gained two medals, which must have done something to restore his belief in himself. In 1878 he graduated, and four years later received the degree of Doctor of Medicine.

A medical man who was Mackenzie's junior at Edinburgh and remembers him well once described him to me as a "gaunt, gauche, determined, ambitious youth, who worked like a nigger." I know little about his early career except that after graduation he held a resident house appointment in the Royal Infirmary, Edinburgh, and he told me he was then offered the position of demonstrator in pathology in the university. Of this great opportunity he was unable to take advantage. Financial reasons made it imperative that he should enter general practice. Accordingly he declined the tempting offer, which was accepted by his friend Sims Woodhead, who ultimately became professor of pathology at Cambridge.

GENERAL PRACTICE AT BURNLEY.

In 1879 began the second phase of his life. He left Scotland and became assistant in an old-established practice in Burnley, where he lived and worked for twenty-eight years.

Plunged into practice Mackenzie was at once brought face to face with the same problems with which we have all had to deal. It was not long before he recognized that in the majority of his patients in the earlier phases of illness a full and satisfactory diagnosis was impossible. He had to admit that frequently he did not understand the mechanism of many symptoms and signs, and, what was of more importance, he realized that he could not with confidence assess their significance. A man complained of irregular action of the heart, and asked whether it was a serious matter and should he continue with his occupation. A woman would ask if she was justified in marrying and bearing children. An insurance company required information as to the expectation of life in a man in whom a cardiac bruit was present. Mackenzie had to admit that he was unable to give the required information, and, what was more, no one else could. How did he begin? He did what most of us would have done, and bought books, in the belief that in them he would find the help he needed. But in vain.

An outstanding characteristic of Mackenzie was the fearless honesty with which he defined the limits of his own knowledge. He respected facts not authority. He never hesitated to confess when his knowledge ended and surmise and guesswork began, and he had an uncanny power of defining this limit.

"I put to myself the question: Do I understand the meaning of one single sign or symptom in all its aspects—for example, the mechanism of its production, or the bearing of its cause upon the patient's future health? In this way I was brought to a realization of the fact that I did not understand the full meaning and significance of a single symptom."

He found, for example, that he did not understand the mechanism of such symptoms and signs as pain, the sense of exhaustion, shortness of breath, cardiac irregularity, cardiac murmurs—conditions met with every hour among his patients. Nor was he able to speak with any confidence concerning them in terms of prognosis. He fully understood neither their origin nor their import, and it was not long before he grasped the fact that his fellow practitioners were in no sense better informed. Accordingly he set before himself the task of investigating the nature of the symptoms and signs which he had met with commonly in the course of his practice.

"I had thus placed before me two definite objects at which to aim: (1) understanding of the mechanism of symptoms, and (2) understanding of their prognostic significance. When at this date, forty years after, I look back upon my work I can recognize that it was this simple resolution and these definite aims which guided me to such success as I have achieved."

*The first James Mackenzie Memorial Lecture, delivered at the Institute for Clinical Research, St. Andrews, April 8th, 1930.

He had, therefore, within a few years of starting in practice, clearly defined his aim. He saw that the only way to attain the information he sought was to observe each patient over a number of years and to note how far those presenting certain symptoms or physical signs tolerated illness and the stress of life. This meant years of careful clinical observation and the keeping of detailed records with recurrent analysis of his findings.

It was soon obvious to Mackenzie that it was not possible to do more than focus his attention on a small group of symptoms and wait and see what the future revealed. Certain tragic happenings early on in his practice caused him to interest himself more particularly in the cardio-vascular system, and the early evidences of cardiac failure in pregnant women. Again, the significance and meaning of pain fascinated and intrigued him from the very first, and to this he devoted much time and thought. One of his first publications was a paper on "The study of sensory symptoms associated with visceral disease," which appeared in the *Manchester Medical Chronicle*. Having clearly defined his problem he set out to solve it.

Here, then, is the quest of his life—to understand the mechanism and prognostic significance of symptoms. How did he, "amid the distractions of the life of a busy general practitioner," succeed in reaching his goal? He did it by method and concentration, and still more by pondering constantly on the problems he was investigating; they were ever present in his mind. It meant a careful system of note-taking and routine revision of his findings. Each day he devoted a short time to reading, revision, and thought. At one stage he found the early morning most suitable, before the work of the day began. Later, when I knew him, it was from 9 to 10 on alternate mornings, and during that time he refused to be disturbed. His Sunday afternoons were a kind of field day. Patients in whom he was especially interested would turn in, tracings were taken, records completed. Later, when he was famous, physicians from all over the world would be found at that Sunday clinic in Burnley.

As an all-round general practitioner and a capable surgeon he operated on his own patients—those whose symptoms he had himself watched and noted, often for years. He supervised the period of pregnancy, and carefully studied the response of damaged hearts to the strain of child-bearing. This was his material, his opportunity, similar to that at the disposal of every general practitioner.

The larger number of his patients were cotton operatives, bluff jannock Lancashire folk, who express their likes and dislikes with equal frankness. Mackenzie's downrightness, his bluntness and unselfishness, appealed to them; they trusted him implicitly.

In such a practice there is no time wasted by unnecessary talking. A tap on the door and straight into the sick-room, and within a few minutes Mackenzie had noted the points that mattered, the result of treatment, any change in the heart rate, or temperature; and often a record of the heart's action was made while the thermometer was warming up. No unnecessary fuss, no hot air. Down to essentials all the time.

For a little over a quarter of a century he worked in Burnley, undoubtedly the most important and momentous years of his life. To aid him in the investigation of the cardiac irregularities he first modified the Dudgeon sphygmograph in such a way that he was able to record the venous pulsations simultaneously with the arterial, and finally, with the help of Shaw of Padiham (a genius of a watchmaker), he invented the ink polygraph—a portable machine which enabled him to take long records, doing away with the necessity for varnishing. The greater part of his heart work was, however, carried out with the simpler instrument—the Dudgeon—and the small strips of smoked paper.

In 1902 he published the results of his investigations in a book entitled *The Study of the Pulse*, and from that moment his reputation was made. It was a new landmark in cardiology. A German translation followed, and both on the Continent and in America intense interest was aroused. It was my good fortune to be asked by the editor of the *Liverpool Medico-Chirurgical Journal* to review the book, and I remember how absorbed I became as I mastered chapter after chapter, and realized that it opened a new field for work and investigation. I was, moreover, profoundly impressed by the fact that this important contribution to medicine was made by a man immersed in a large general practice—immersed, but not submerged. A vivid demonstration of what can be done by one who is prepared to take advantage of his opportunities—the opportunities which only a general practice could offer, the material for which lay ready to his hand. In those days the reviews in our *Liverpool Journal* were signed, and a year or two later, when Mackenzie and Professor Wenckebach came over to the Royal Infirmary to visit Dr. James Barr's wards, Mackenzie towered above me, and his first words were: "Are you the John Hay who wrote the review of my book in the *Liverpool Journal?*" I bashfully admitted that I was, and wondered what was coming next, and was more than relieved when he said: "I don't mind telling you that you were one of the few men who had taken the trouble to read my book before they reviewed it." That meeting was the beginning of a friendship which was broken only by Mackenzie's death.

Fame was then in the offing. Honours and distinctions were yet to come, but I believe those were the happiest days of his life. He knew in his bones that his work was good, and that at last his views were finding acceptance all over the world. It is interesting to recall that in 1906 Dr. Arthur F. Hurst wrote:

> "Of all English physicians, the best known and most frequently quoted in Germany is probably Dr. Mackenzie of Burnley, a prophet who has hardly met in his own country with the recognition which he deserves."

However, distinguished men like Osler, Keith, Wenckebach, physicians, anatomists, physiologists, and others, were finding their way to Bank Parade, impressed by the importance of Mackenzie's work, and desirous of meeting the man himself. His reputation had reached far, and his opinion was sought by medical men and their patients, not only from Great Britain, but also from Canada, America, Germany, and France.

It might be thought that a man who accomplished so much professionally would find little time for other interests; far from it. Mackenzie was a first-class golfer, a good chess player, quite useful with a billiard cue, and a no mean hand at cards. He had soon learned that, in a life such as his, concentration was an essential feature if he were to accomplish anything, and this faculty he cultivated. No one better "filled the unforgiving minute with sixty seconds' worth of distance run." He was thus able to make the most of every half-hour devoted to his special work. He was at one with Robert Louis Stevenson, who wrote:

> "Contend my soul for moments and for hours,
> Each is with service pregnant, each reclaimed
> Is like a Kingdom conquered, where to reign."

Mackenzie was blessed, or cursed, certainly dominated, by a restless and inquiring mind. By nature a fighter (it was written in his face) he was most "tenacious of any position taken up until the evidence against it was conclusive." Then he frankly conceded the ground, and from his new position began yet again to probe into the unknown. Lord Moynihan would have said that Mackenzie "dwelt in a land of ever-advancing frontiers."

He was not at his best addressing a large audience. His training had not led to his being a good popular exponent, and he was sometimes accused of want of lucidity. This was due in part to the fact that he failed to realize that his audience did not understand the assured basis on which he built up his exposition. He took their knowledge for granted, and sometimes he did not succeed in holding the attention of the meeting. Professor Wardrop Griffith has brought to my memory the first gathering of the Association of British Physicians, when Mackenzie spoke on his tracings, and, like Scrooge, made "a perfect Laocoön of himself," wreathed in some kilometres of polygrams.

He was best by far in an informal discussion with a few sympathetic and like-minded men, where his premisses were accepted and his downrightness was not misunderstood. In such an environment his enthusiasm was

contagious. I should like to have been one of the small group of men on the liner bound for Canada, in 1906, for the meeting of the British Medical Association—a circle including Ashby of Manchester, Clifford Allbutt, Sims Woodhead, and other distinguished men. With them Mackenzie discussed the whole question of heart-block, and opened his mind on the subjects which held his attention. On his return I remember his childlike delight at the enthusiastic reception accorded to him in Toronto, a delight not so much in his personal triumph as in the recognition and acceptance accorded to his views.

That was in 1906. Two years later, at the age of 55, he had a severe attack of angina pectoris lasting two hours. This was the first manifestation of the dread disease which slowly encroached on his physical reserves, and which, fifteen years later, caused his death. One might mention here, for it is of some medical interest, that his brother, the distinguished clergyman and author, died from angina at the age of 64, and angina also caused the death of a sister.

MACKENZIE'S LIFE IN LONDON.

After twenty-six years of general practice in Burnley Mackenzie decided to move to London. It was admittedly a bold step for a man of 54, but he was eager to enter the medical life of the metropolis and there to expound more fully the views he held. Accordingly, in 1907, he took his courage in both hands and to London he went. The result was a phenomenal success, and is, I believe, without parallel in the history of Harley Street.

For the first year, as was to be expected, his practice was negligible, but his leisure enabled him to finish and publish a comprehensive and liberally illustrated textbook on *Diseases of the Heart*, with which everyone is familiar. It had a remarkable reception, rapidly ran into a second edition, was translated into German, French, and Italian, and was directly responsible for a welcome increase in his consulting work. From then onwards he experienced no further financial troubles.

In London he met with much kindness, and it was not very long before he was on the staff of the Mount Vernon Hospital, and that of the West London, and some years later he was offered, and accepted, a position on the full staff of the great and renowned London Hospital, where he was placed in charge of a fully equipped heart department and appointed lecturer in cardiac research. During the eleven years in which he practised in London he gathered round him men of the calibre of Thomas Lewis, Cushing, Parkinson, Cotton, Windle, Price, and others—all keenly interested in cardiology, and to this group he was a source of inspiration. Essentially a kindly soul, he made friends both in and out of the profession. His life was full of many interests, and his private work overwhelming. But nevertheless he managed to publish books and write numerous papers. He lived at Northwood in Middlesex, and in order to have some leisure for thought he made it a rule to keep Sundays free from all professional engagements, a rule which was only rarely broken.

Then came the great war, and he was swept into the maelstrom. He was asked by the Government to help in organizing one branch of the medical service. It was manifest to all that the medical men of the country had failed to differentiate between organic and functional disease of the heart, and they were unable to assess the extent of cardiac disability, when present. In fact, they did not possess sufficient knowledge to separate the fit from the unfit. There was no one in Great Britain better equipped to give advice in such a problem than Mackenzie. It was the old question which he had spent his life in solving.

If Mackenzie had been asked for some test by which to gauge how far the medical profession of the country had grasped his teaching, how far they had understood the significance of "the response to effort" as an index of the efficiency of the heart, he could not have devised anything more searching than the war. Thousands and thousands of fit men were being rejected all over the country, and the military hospitals both at home and in France were becoming hopelessly congested with cases of so-called heart disease—the beds they occupied being urgently needed for more serious conditions. In desperation the War Office appealed to Mackenzie for help. This he gave ungrudgingly. In collaboration with Sir Thomas Lewis he organized a scheme which was effectual, and must have saved this country some millions of money and rendered efficient thousands of men. Incidentally, it did much to spread among the members of our profession a more accurate knowledge of the diseases and disorders of the heart.

During his residence in London he was the recipient of many honours. He delivered the Oliver-Sharpey and the Schorstein Lectures, and in 1914 the George Alexander Gibson Memorial Lecture in Edinburgh. He was elected Fellow of the Royal Society in 1915, and in the same year he received the honour of knighthood. These and other honours came to him and gladdened his heart. He had good friends in plenty, a life full of interest, of patients more than enough, a delightful home in the country, everything to make a man happy and contented, and he was successful as the world judges success. But there was something lacking; there was a seed of restlessness and dissatisfaction in the mind of this man of more than 60 years. He became more and more aware that the life he was leading in London was a hindrance rather than a help to the working out of the ideas which were ever present in his mind. Conscious of the need for the investigation of the earlier stages of disease, the subjective manifestations of disordered function, he realized that he must be free of his consulting practice and the distractions of life in London. He yearned to be off again on the old quest. At an age when most men are beginning to think of retiring gradually and restricting their activities, this old warrior, conscious of advancing heart disease, is full of plans for a fresh adventure.

ST. ANDREWS.

In 1918 he said farewell to Harley Street, and, at the age of 65, began a new phase of activity in St. Andrews. In this city, small if judged by its population, but great in renown and graced by an ancient and honoured University with a notable School of Medicine, it was not long before Mackenzie had gathered round him all the local practitioners, infected them with his own enthusiasm, and founded an institute. He formulated a scheme for the investigation and prevention of the diseases that are common among the people, a scheme to stir up and encourage research into the earliest manifestations of disease, and he began to organize on a large scale work similar to that which he had carried out alone in his practice at Burnley.

The keynote of his renewed enthusiasm is to be found in *The Future of Medicine*, published in the following year. In this book Mackenzie reviews the present and indicates the lines along which future advance in medicine should proceed.

The methods of the past fifty years have resulted in a great advance in knowledge concerning disease, notably that phase of disease characterized by physical signs—in other words, the later and terminal phase. Our knowledge, on the other hand, of the first and second stages, the predisposing and the early stages, is admittedly most incomplete. These are the stages of symptoms rather than physical signs, and the methods of investigation applicable to the later phases of disease are not wholly applicable to the analysis and elucidation of subjective symptoms. Mackenzie held firmly that this important and relatively unexplored field of research can only be satisfactorily investigated by those in general practice. It is they, and they only, who are in close touch with the patients during the earlier phases.

Unfortunately the education of the medical student is faulty, in that it does not prepare him for dealing intelligently with the clinical material comprising the larger proportion of his practice. He is taught for the most part on patients in whom disease is fully developed, and it is on such patients that he is examined in his final. In short, he is not educated to make full use of his opportunities.

It is a book worth reading, and if at times his presentation of the problem is a little distorted, who can deny that there is much truth in the indictment?

For four years he worked hard here in St. Andrews, organizing the work of the Institute and training his

colleagues in methods of research. Gradually his liability to anginal attacks increased and he had reluctantly to return to the warmer climate of the South of England, physically infirm, but mentally alert, his brain active and critical. In November, 1924, he wrote to me:

"For the last year I have been able to do no work, but it has been the most profitable year in my life, for I have sought for an explanation of the various phenomena met with in clinical medicine. I have been carefully going over physiology textbooks and testing the explanations, and I have got a new outlook on physiological problems."

Nearing his end but, as ever, seeking after the truth, testing the explanations and finding a new outlook. "So with the throttling hands of death at strife, ground he at grammar." On January 26th, 1925, he died in a prolonged attack of angina pectoris.

MACKENZIE'S ACHIEVEMENT.

One may ask, What has Mackenzie accomplished for medicine? Can it be gauged? So much of what he fought for is now accepted and taken for granted. It is, however, beyond question that Medicine has been placed on a different and higher plane by his work and teaching. At a time when the growing tendency is to worship the machine, and when the wonderful technique of the laboratory has become an obsession, Mackenzie has brought back to us a sense of proportion. He invented machines and utilized laboratories, but he never allowed them to blind him to the essentials of clinical medicine. To Mackenzie the bedside of a patient is the place for a physician. He knew only too well that clinical acumen tends to be lessened by a too great reliance on instrumental and laboratory methods. The obsession of the instrument is prone to make us indifferent to the significance of symptoms and unfamiliar with the "face of disease."

Before Mackenzie, our knowledge of irregular action of the heart was chaotic. He analysed the arrhythmias, separated the dangerous from the innocent, defined and distinguished them, and produced order in the place of chaos. From this chaos he dug out auricular fibrillation and rationalized digitalis therapy. This in itself is worthy of a monument.

He blew the old theory of "back pressure" into thin air, though it is true that one still hears of it occasionally from the mouths of those blind to the facts and deaf to the truth. But what is of still greater importance, he taught the real significance of cardiac failure and how to recognize its earliest manifestations, for it is cardiac failure that a doctor fears and must foresee. He proved that the response of the heart to effort, the area of cardiac reserve, is the true touchstone by which to estimate the gravity of murmurs and irregularities, a fact which is still far from finding general recognition.

He spent his life investigating the mechanism of pain, and this study found its final expression in the masterly volume on angina. Important and valuable as are his contributions to the study of visceral pain and cardiovascular disease, he would, I know, have said that they were only *examples* of the method of research which he preached in season and out of season—a method of research applicable to every branch of medicine. His message was a call to the study of symptoms, for better and more intelligent investigation of the patient; he believed in the intensive study of the patient at the bedside, and he held that future progress in medicine depended largely on those who will study the symptomatology of the early phases of disease. It was this belief that in the end led to his dramatic decision to give up his lucrative practice in London and start the Institute at St. Andrews.

There is a certain type of clinical research which from its very nature must inevitably be carried out on patients in the pre-institutional stage—in fact, on patients who are only beginning to feel ill. Such material is in the hands of the general practitioner alone. It is not to be found in the wards of a general hospital, and is not satisfactorily studied in an out-patient department. This pre-institutional research, if it is to yield a full harvest, must be correlated with the type of intensive investigation which is most fittingly carried out in hospitals and associated with laboratories. In other words, the general practitioner must become one of the team; his position frankly recognized and his co-operation welcomed.

You have shown here in your Institute for Clinical Research how this theory can be put into practice. The full realization of your hopes is, I believe, to be found in close co-operation with the School of Medicine here in your great University, and in a lively co-ordination of your clinical activities with the research work carried out in the hospitals of Edinburgh and Dundee. In the complete scheme of clinical research your work is pre-institutional and complementary to that more fittingly carried out in the hospital and laboratory.

The life-history of disease must be followed up and recorded from the first moment of discomfort, the earliest malaise, right on to the post-mortem room. In any such comprehensive scheme work of the type done here in St. Andrews is essential, and to disregard such work will only result in a one-sided and unbalanced conception of disease.

In the realm of Medicine, as in the world of Art, no one can achieve anything of moment whose mind is dominated by greed or who measures success by dividends. Fortunately for our profession, there are many restless eager minds in every branch who are not satisfied to work merely in order to make a living, or for the fun of the thing, or for the pleasure associated with work well done. Such minds find the keenest satisfaction in tackling one or other of the problems which they encounter in their work—problems of prognosis, problems of symptomatology. These men are investigators by nature; they have inquiring minds, they yearn to become, in some real sense, of service to their generation. Unfortunately, many of them are obsessed by the idea that research is the perquisite of those on the staffs of our hospitals, or workers in laboratories, and soon, in the rough and tumble of building up a practice, their earlier enthusiasm fades, and their vision is dimmed. They are entitled to recognition, a recognition which carries with it financial backing and professional status.

To such men the story of Mackenzie's life comes as an inspiration and a stimulus. He is the great example of what can be done and accomplished, not in spite of the burdens of general practice, but in virtue of the very opportunities afforded by such a practice. Let any young practitioner early in his career interest himself in some problem of symptomatology, ponder over it, become familiar with the literature, define as well as he can the limits of knowledge, rid his mind of all that is not fact in relation to it; then collect from the material of his practice those cases which bear on this problem, follow those patients through the years, and I am confident that he will not only add to our knowledge of medicine, but that he will also find in such work both pleasure and an abiding delight.

THE OCCIPITO-POSTERIOR CASE:

*ITS DIAGNOSIS AND MANAGEMENT.**

BY

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THE frequency with which the occipito-posterior case causes difficulty and anxiety in labour is acknowledged by all who engage in midwifery practice. Its importance in this respect is reflected also in the formidable contribution which it makes to what may be called the casualty work of a large maternity hospital. A review of the emergency admissions to the Edinburgh Royal Maternity Hospital over a period of three years shows that approximately one-sixth of the total number have been cases of this kind—a high proportion when the wide variety of obstetrical conditions which may necessitate hospitalization is considered. The extent of dystocia which this complication may produce was illustrated, further, in the discussion on unsuccessful forceps cases[1] at the Annual Meeting of the British Medical Association in 1928, in which it emerged that the cause of failure in almost one-third of 553 such cases was a posterior position of the vertex.

* An address delivered to the North Northumberland Division of the British Medical Association, Berwick-on-Tweed, February 11th, 1930.

A study of the hospital records of a large series of occipito-posterior cases, referred for admission for the most part late in labour, suggests that they may be classed in two groups: first, those in which diagnosis has been at fault and difficulty wrongly attributed, for example, to a contraction of the pelvis which does not exist; and, secondly, those in which the malposition has been recognized, but nevertheless has proved a serious obstacle to delivery. Without comparing statistically these two groups, it may be claimed that the former so outnumbers the latter that certain preliminary and perhaps rather elementary remarks on the subject of diagnosis may be permitted before proceeding to a consideration of the management of this abnormality.

Diagnosis Before Onset of Labour.

The ante-natal diagnosis of an occipito-posterior position by abdominal examination should be a matter of reasonable certainty in most cases, unless obesity or rigidity of the abdominal wall or excess of liquor amnii constitutes an unfavourable condition. Inspection of the abdomen usually shows an absence of the normal uniform anterior convexity, the rounded arch of the back being replaced by the irregular ventral surface of the child, so that a flattening or irregularity of contour of the anterior abdominal wall is produced. Foetal movement may be observed over an unduly wide area of the abdomen, and often on both sides of the middle line.

On palpation the back is difficult to locate, and the irregularity of the small parts is felt more prominently than usual and over a wider area than normal. The head frequently lies in an attitude of imperfect flexion, so that larger diameters than normal are in relation to the pelvic brim. The result of such deflexion is that the head tends to occupy a higher level than usual, and it frequently remains freely mobile after the time that engagement should normally have occurred. Such delayed fixation of the head should always suggest the probability either of contraction of the pelvis or of a malposition of the head; if the pelvic measurements are normal a posterior position of the vertex is without question the most likely explanation.

On auscultation, the foetal heart beat is heard far round in the flank and less clearly than usual; if, however, deflexion is pronounced, it may also be noted in the opposite lower quadrant of the abdomen in front—an important finding which will be referred to later.

On vaginal examination the case with which the anterior fontanelle is felt is recognized as a classical sign of a posterior position of the occiput. On the other hand, after labour has been in progress for some time the vault of the skull may be so obscured by caput formation that the differentiation of sutures and fontanelles may be difficult or impossible. Even so, the frontal suture, and therefore the sinciput, can usually be identified in the following way: If two fingers are placed, one on each frontal bone, it will be found that these bones can be moved each on the other at the frontal suture, whereas, as the result of moulding, such mobility cannot be elicited at any other suture line in the vault. The frontal suture can be palpated only if the position is posterior, and therefore, if the bones on either side of a suture can be moved one on another, that suture is necessarily the frontal suture and the position must be posterior. While this sign is a useful aid in diagnosis, the exact position which the head occupies may be determined more easily and more precisely by the introduction under anaesthesia of as much of the hand as is necessary to palpate the ear. This is the diagnostic feature on which reliance may most confidently be placed; and it is one of which advantage should invariably be taken as a preliminary to the application of forceps where any doubt exists as to the position of the head.

If forceps have already been applied without an exact knowledge of the position of the head, it should be suspected that the occiput is posterior if difficulty is experienced in approximating the handles of the instrument, if more than moderate traction is required to move the head, if the forceps tend to slip, or if the perineum appears to be stretched by the handles or lower parts of the blades of the forceps rather than by the advancing head. In such circumstances the forceps should be withdrawn at once and the position of the head determined with certainty, and if necessary corrected before the instrument is reapplied.

Treatment Before Onset of Labour.

The statistics of the ante-natal department of the Edinburgh Royal Maternity Hospital show that in rather more than 80 per cent. of cases a posterior position may be converted into an anterior by the use of pads, as described by Bust of Dundee.[2] It is true that pads are not successful after engagement of the head has occurred; on the other hand, their ineffectiveness in such cases is of less account, since engagement implies, as a rule, a satisfactory degree of flexion, and therefore the probability of spontaneous forward rotation of the occiput during labour. The type of case in which pads are most useful, and at the same time very generally successful, is that in which there is delay in engagement of the head—for example, during the last week of pregnancy in a primigravida. Such delay signifies relative extension of the head and augurs the possibility of early rupture of the membranes, slow dilatation of the cervix, and a long, difficult labour, terminating possibly in a persistent occipito-posterior: it is the avoidance of such difficulties by ante-natal correction of the malposition that has made the employment of pads such a useful addition to our treatment of the occipito-posterior case. While the pads are in place the patient should be encouraged, when resting, to lie semi-prone on the side opposite to that occupied by the child's back, so that the action of gravity may supplement that of the pads in bringing the back and head round to the front.

Treatment After the Onset of Labour.

It is very generally true that the extent of difficulty in labour which a posterior position may cause is commensurate with the amount of deflexion of the head. In the majority of cases flexion is satisfactory, so that the head engages normally, the membranes remain intact until towards the end of the first stage, the occiput first reaches the pelvic floor and rotates spontaneously to the front: in other words, the course of labour is affected only to the extent that the long internal rotation of the occiput increases by an hour or so the duration of the second stage. In such cases, therefore, the management of labour differs from that in primary anterior position only in two minor respects: In the first place, the longer duration of the second stage necessitates the exercise of more patience than usual, and a careful watch must be kept for such signs of maternal or foetal distress as may call for relief. In the second place, the patient is instructed to lie on the *same* side as that occupied by the back of the child: in this way the occiput is forced down towards the pelvic floor so that it becomes the leading part and rotates to the front.

It will be observed that posture in occipito-posterior cases differs according to whether the head is free or not: if the head is free the object of posture is primarily to favour rotation of the back and indirectly that of the head: the patient lies, therefore, on that side opposite to the back of the child—for example, on her left side if the position is right occipito-posterior. If, however, the head is engaged, an attempt is made to encourage indirectly the forward rotation of the occiput by placing the patient on that side which will promote the advance of the occiput towards the pelvic floor—that is, on the same side as that occupied by the back of the child. It is sometimes recommended that efforts should be made to increase flexion by direct pressure on the sinciput with the fingers in the vagina: such manipulations, however, have the disadvantage that they are difficult and, to be effective, must be carried out over such a long period that there is considerable risk of introducing infection.

In a minority of cases, comprising possibly 15 per cent., flexion of the head is imperfect to the extent that the course of labour is influenced adversely, and in proportion, as a rule, to the amount of deflexion which is present. Such lack of flexion may, in the first place, arrest or delay the head at the pelvic brim, or, at a later stage, may result in the occiput remaining obliquely posterior or rotating backwards into the hollow of the sacrum.

Arrest at Pelvic Brim.

Although delay at the pelvic inlet is not uncommon, it is only in a small proportion of cases, unless a pelvic contraction coexists, that progress is seriously impeded at this level. When this occurs manual rotation of the head should be carried out. No attempt, however, should be made immediately thereafter to complete the delivery with forceps. With the patient anaesthetized the temptation to apply forceps "tentatively" is hard to overcome, but while the head is still free it is difficult to obtain a secure and safe forceps application; moreover, with rare exceptions, the cervix in such cases is still incompletely dilated, so that to follow up correction of the malposition at this stage by the immediate application of forceps necessarily commits the attendant to a formidable operation which may end in failure or disaster. In this type of case, accordingly, after the head and body have been rotated, no further immediate intervention is advisable, nor in most cases is it necessary, for, in contrast to the previous delay, progress is, as a rule, gratifying and sometimes dramatic.

Arrest on Pelvic Floor.

Posterior rotation of the occiput into the hollow of the sacrum almost invariably causes an impasse which Nature cannot overcome, and when it occurs an attempt should be made to relieve the obstruction as soon as its nature is recognized.

The manœuvre of manual rotation, first described by Smellie nearly two hundred years ago,[3] is now so familiar that it is unnecessary to do more than summarize briefly the more important points in its technique: (1) The patient is placed preferably in the lithotomy or crossbed position. (2) That hand is employed which can most conveniently grasp and rotate the head—for example, the left hand in a right occipito-posterior position, and vice versa. (3) Before rotation is attempted the head should be dislodged upwards a little and flexed, so that it may turn more easily. (4) An attempt should be made simultaneously to rotate the body by external manipulations or by passing two fingers of the hand in the vagina beyond the head and on to the anterior shoulder of the child. (5) To maintain the head in the corrected position the right blade of the forceps may usefully be introduced first, instead of, as is usual, the left, in cases in which the head, after rotation, tends to slip back into the posterior position.

In exceptional cases the head may be so firmly embedded in the tissues of the pelvic floor that manual rotation fails. In this event an attempt may be made to effect rotation of the head with forceps, the instrument thereafter being reapplied and delivery completed; alternatively the head may be extracted face to pubes. The former of these methods is advocated by many, but to be achieved successfully and safely demands a high degree of manipulative skill, and most writers insist that this operation should be attempted only by the expert. In less skilled hands a deliberate delivery face to pubes is probably attended by less danger of serious injury to the soft parts and to the child. In such cases extraction is materially facilitated and the extent of soft tissue injury controlled by an oblique perineotomy on one or on both sides.

It will be conceded, I think, that the uneasiness with which one contemplates the occipito-posterior case in general has its origin in the difficulty which a persistent occipito-posterior may cause. This is illustrated in the following table, which refers to patients delivered in the Edinburgh Royal Maternity Hospital.

TABLE I.—*Analysis of 770 Cases of Dystocia due to the Occipito-Posterior Position.*

	Termination.	
	Spontaneous Forward Rotation.	Failure to Rotate.
Maternal mortality	Nil	2.0 per cent.
Foetal mortality...	2.7 per cent.	22.3 ,,
Puerperal morbidity	6.5 ,,	22.3 ,,

It is further true that mal-rotation is not seldom the culminating embarrassment in a labour which from its commencement has been tedious and difficult, and it should be emphasized again that the primary cause of such difficulty is imperfect flexion of the head. It is important, therefore, to attempt to assess, as far as is practicable and at as early a stage as possible, the degree to which flexion is satisfactory or otherwise, for in this way the case in which mal-rotation of the occiput is likely to occur may often be recognized in advance. Deficient flexion may occasionally be suspected before engagement occurs by noting that the occipital and sincipital prominences are equally pronounced and at the same level at the pelvic brim, while vaginal examination may reveal descent of the sinciput in advance of the occiput with caput formation far forward at the vertex. These signs, however, are difficult to recognize and interpret unless the conditions are favourable and the attendant is experienced in abdominal and vaginal examination. More precise and reliable premonitory evidence is available at an early stage in about 80 per cent. of those cases in which anterior rotation of the occiput fails to occur. This consists in the presence of one or more of three phenomena, each of which is directly due to the relative extension of the head. An analysis[1] based on 750 occipito-posterior cases treated in the Edinburgh Royal Maternity Hospital showed that:

1. In cases in which the membranes ruptured prematurely the occiput remained posterior in 74 per cent., while spontaneous forward rotation occurred in only 26 per cent.

2. In cases in which there was delay in the engagement of the head the occiput remained posterior in 77 per cent., rotating forwards in only 23 per cent.

3. In a third group the foetal heart was heard not only in the flank, but also in the opposite lower quadrant of the abdomen in front, pointing to an attitude of deflexion with throwing forward of the chest towards the mother's anterior abdominal wall; in 76 per cent. of these cases assistance was required because of non-rotation or mal-rotation, the occiput going forward in only 24 per cent. Where the groups overlapped, so that two or more of these signs were present together, the occiput remained posterior in rather more than 80 per cent. On the other hand, the normal mechanism was observed to occur in rather more than 90 per cent. of the cases in which the head engaged normally and the membranes remained intact till towards the end of the first stage of labour.

TABLE II.—*Analysis of 750 Occipito-Posterior Cases delivered in Edinburgh Royal Maternity Hospital.*

	No. of Cases in which Noted.	Termination.	
		Mal-rotation or Non-rotation.	Spontaneous Forward Rotation.
Early rupture of membranes ...	197	145 (74%)	52 (26%)
Delayed engagement of head ...	139	107 (77%)	32 (23%)
Foetal heart also anterior	103	78 (76%)	25 (24%)
Normal engagement and rupture of membranes at or near full dilatation of os	332	33 (10%)	299 (90%)

Summary.

The practical bearing of these observations on the treatment of the occipito-posterior case may be summarized as follows:

1. Delayed engagement of the head, especially in the last week of pregnancy in a primigravida, implies relative extension, which may interfere with descent and ultimately produce mal-rotation of the occiput. The value of Buist's pads consists in the fact that it is precisely in this type of case which is potentially troublesome that they are most frequently successful.

2. Where the head engages normally and the membranes remain intact till towards the end of the first stage a satisfactory degree of flexion may be inferred, and it is probable that the occiput will rotate forward spontaneously if given time. In this group, which comprises the majority of occipito-posterior cases, conservatism may confidently be practised.

3. In the majority of persistent occipito-posterior cases there are clear indications at an early stage of labour that this complication is likely to occur. It would appear reasonable, therefore, where such warning signs exist, to anticipate the difficulty associated with backward rotation by correction of the mal-position at or near the commencement of the second stage of labour—that is, before the head becomes firmly embedded in the tissues of the pelvic floor. Such intervention is called for in not more than approximately 10 per cent. of all occipito-posterior cases, and is warranted only when a diagnosis of faulty flexion can be made with certainty. In these, however, the avoidance of needless suffering and of the difficulties and dangers incident to the management of the impacted mal-rotated head seems to justify a departure from the policy of conservatism otherwise so generally applicable.

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GLANDULAR FEVER.

BY

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WHEN glandular fever develops in its characteristic clinical form it is easily recognized by its epidemic character, its tendency to affect children and young adults, its sudden onset, persistent fever, mild constitutional disturbance, swelling of the lymphatic glands and spleen, and lymphocytosis. In any case of persistent fever, therefore, especially when there is enlargement of lymphatic glands, the possibility of glandular fever needs to be borne in mind.

The disease may present considerable difficulties in diagnosis when it appears sporadically, as it did at the beginning of the present epidemic, and these difficulties are accentuated by the varied clinical forms which the disease may take. In fact, cases of glandular fever may differ so much from the usual form of the disease that they have been described as infectious mononucleosis and benign lymphoblastosis, while others have been regarded as examples of lymphocytic reaction to acute local infections, chiefly of the upper respiratory tract. Longcope,[1] for instance, in reporting ten cases of the disease in 1922, was of the opinion that there was no proof of the identity of glandular fever and infectious mononucleosis. Tidy and Daniel,[2] on the other hand, maintained the identity of these several conditions, and in a critical review Tidy[3] came to the conclusion that there was no evidence of sepsis as a cause of lymphocytosis. By his observations of the disease Tidy has done much to establish it as a clinical entity, and a monograph recently published by Glanzmann[4] supports his view.

In the present epidemic we have seen twelve cases of glandular fever, and through the courtesy of our colleagues we have notes of several others. Although the main facts of glandular fever are adequately described in current textbooks, and have lately been concisely put together by Dr. Tidy,[3] we have been impressed by the difficulties which may be experienced in making a diagnosis in the absence of a differential blood count, and particularly with the similarity to paratyphoid infections which some cases show.

Description of an Illustrative Case.

A female, aged 38 (patient seen with Dr. F. B. Hobbs). The onset was sudden on March 25th, with aching pains in the head, neck, and back, symptoms of slight respiratory catarrh, and, in general, the sensation of having an attack of influenza. She felt feverish on and off for four days, but the temperature was not taken until March 29th, when it was found to be 102° F., and she took to bed. The temperature chart, which begins on the fifth day of the disease, shows the long-continued fever and its somewhat irregular course until the seventeenth day, after which it shows the characteristic morning remission and evening rise (Chart 1). The pains disappeared after a few days in bed, and, apart from profuse sweating at night and a slight feeling of malaise with the evening rise of temperature, the patient felt remarkably well during the rest of the illness. A papular rash like that of typhoid fever appeared on the trunk on the tenth day, and continued to appear for four or five days. The tongue was coated. There was slight constipation and abdominal distension. The pulse rate was 82 to 92. A Widal reaction on the fourteenth day was negative. Enlargement of the cervical glands was noted on the fourteenth day, and the possibility of glandular fever was first suggested. A blood count made on the following day showed an absolute lymphocytosis.

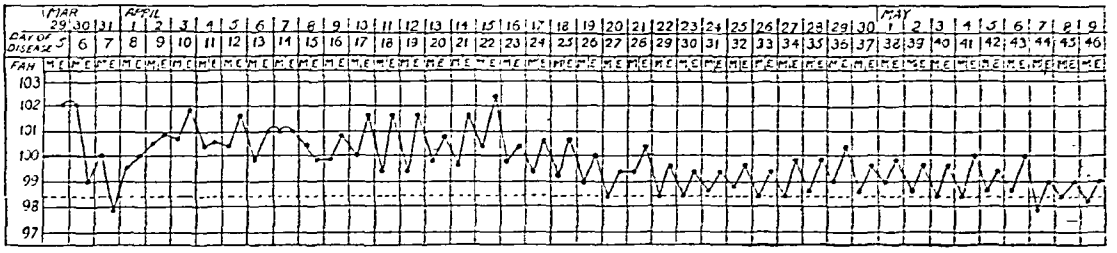


CHART 1.

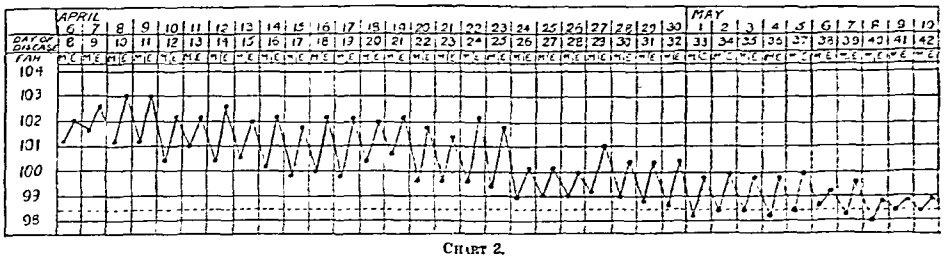


CHART 2.

Discussion.

This case illustrates many of the main features of the disease in our experience of the present epidemic.

The disease appears as an acute infection with a sudden onset, but with relatively slight constitutional disturbance. The regular morning remissions of temperature are well shown in Chart 2 (the case of a girl, aged 15, seen with

Dr. A. J. Williamson). A fall of temperature towards the end of the second week with a subsequent rise about the eighteenth day has been observed in three cases; this fall of temperature requires notice, because it may give the impression of recovery, which is falsified by the subsequent rise of temperature and renewed swelling of the glands (Chart 3, the case of a girl, aged 19, seen with Dr. R. J. Knight). The pulse has been somewhat slow in relation to the fever; its frequency is 84 to 96, and it remains much the same in spite of the marked variations of morning and evening temperature. Thus in one case the pulse frequency was 88, with a temperature of 103.8° F.; it is a little sudden in its rise, full, and easily compressible, and these features persist during at least the early stages of convalescence, when the temperature has returned to normal. The respiration rate is 20 to 24. There is a little upper respiratory tract catarrh and an occasional rhonchus in some cases. There is a little over-action of the heart, a blurring of its sounds, and a slight increase of its size as determined by percussion. The urine often contains a trace of albumin.

The glandular enlargement generally appears early in the disease, but in some of our cases it has not occurred until late, or it has been so slight as to escape notice; thus in 6 cases no glandular enlargement was noted until the tenth, fourteenth (2 cases), seventeenth, eighteenth, and nineteenth day of the disease. The cervical lymphatic glands are most frequently enlarged, those on the left side more than those on the right, and quite characteristically a single circular, rather than oval, gland in the left

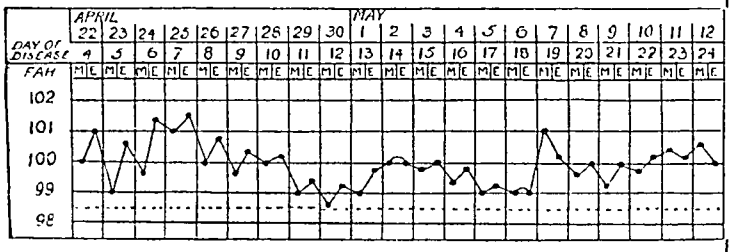


CHART 3.

posterior triangle behind the sterno-mastoid in about the middle of its length. The lymph gland enlargement may be very general, or only single groups of superficial glands may be affected. The glands are discrete, firm, and elastic; they are not painful, but some of the swollen glands are tender on pressure; they somewhat resemble lymphadenoma to feel, but are less tense. The pain in the neck may indicate affection of the deep cervical glands; an irritating or paroxysmal cough may indicate pressure on the bronchi by swollen glands. It was interesting that in one case the diagnosis of enlargement of the mediastinal glands had been made simply on the physical signs of slight increase of the paravertebral dullness and slight obstruction to the right bronchus at a time when the diagnosis of glandular fever had not occurred. Enlarged mesenteric glands have not been palpable, but the abdominal distention has suggested their involvement in some cases.

There is no typical rash in glandular fever. Various rashes are described. In one of our cases a macular rash appeared for twenty-four hours on the fourth day; in two cases there was an urticarial rash; in five cases we have seen a papular rash of which the spots closely resemble those of typhoid fever. These spots differ from rose spots in being somewhat darker in colour and more easily palpable; they have been seen to appear as early as the fourth day and as late as the fourteenth; they may be widely scattered as in typhoid, and three or four spots on the face and a few on the upper arms and thighs and one or two below the knees have been seen in three cases; they are chiefly distributed over the trunk, and more on the front than on the back; they leave a tiny brown stain, which is present for a few days after the papular rash has disappeared.

The enlargement of the spleen is inconspicuous. At best it is easily felt a fingerbreadth below the costal margin on inspiration, in other cases it is hardly palpable, or its enlargement may only be made out by percussion. The liver may be slightly enlarged.

The blood picture is the most characteristic feature of the disease. In our cases the highest white cell count was 22,400, of which 14,400 were mononuclear cells. This was the only case with an increase of polymorphonuclear cells (8,000). The mononuclear increase in this epidemic has been in the form of lymphocytic increase, but in other cases we have seen there has been a striking increase in a variety of immature forms resembling large mononuclear cells with a big, rather pale nucleus, oval, circular, or slightly reniform, and a large amount of pale protoplasm surrounding it, in which are a few azure granules. The polymorphonuclear cells have been normal in numbers, or reduced to 2,600, 2,900, 3,100, and in one case to 1,200. The red blood corpuscles and haemoglobin are normal.

Differential Diagnosis.

It is obvious, from the foregoing description of cases we have seen in the present epidemic, that the difficulty of distinguishing glandular fever from the enteric group of infections may be considerable. The points of similarity shown by some cases are the persistent fever with few physical signs, the relatively slow pulse frequency in proportion to the temperature and the character of the pulse itself, the furred tongue, abdominal distension and tendency to constipation, the enlargement of the spleen, and papular eruption; occasionally epistaxis and respiratory catarrh increase the similarity of the two diseases. Though the onset of the enteric group of infections is typically insidious it is sometimes sudden, especially in paratyphoid fever. The onset of glandular fever with headache, slight shivering, giddiness, and malaise closely resembles paratyphoid fever with sudden onset. The course of the two diseases may also be alike. Thus, though the characteristic temperature of glandular fever seems to be remittent, we have one chart in which it was continuous during the second week; a remittent type of fever is, of course, characteristic of typhoid and paratyphoid fever during defervescence.

The chief points in which glandular fever differs from enteric infections are the lack of constitutional disturbance in glandular fever (apart from the malaise at its onset and the malaise accompanying the evening rise of temperature), the enlargement of the superficial lymph glands, the tendency to sweats, and the lymphocytosis. The negative points are the negative Widal reaction and blood culture.

No one of these diagnostic criteria has absolute value, for, though we have not seen a case of glandular fever in which there is no glandular enlargement, it would seem from the experience of others that this may possibly occur. In some of the cases of glandular fever reported by Tidy and Daniel[2] there was no absolute lymphocytosis at some stage of the disease; and, on the other hand, it is known that infections of the enteric group do not always give a positive Widal reaction as usually performed. When, in addition to this, it is realized that some authors[3] doubt the presence of a rash in glandular fever it may be open to question whether the cases with a roseolar eruption which we have described as glandular fever really belong to that clinical entity. While hesitating to make a dogmatic assertion on this matter, we think that there is good reason to include our cases under the name of glandular fever because of the glandular swelling and absolute lymphocytosis. The other common conditions in which lymphocytosis occur—namely, leukaemia, whooping-cough, undulant fever, and some forms of tuberculosis and syphilis—have been excluded in our cases. Lastly, the presence of roseolar eruption has previously been described in glandular fever; Longcope gives a record of one case; Glanzmann reports another case observed by Königsberger, and also one seen by himself.

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THE ASSOCIATION BETWEEN GALL-BLADDER LESIONS AND HEPATITIS IN THE HUMAN SUBJECT.*

BY

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(*With Special Plate.*)

SINCE E. A. Graham published his paper entitled "Hepatitis, a constant accompaniment of cholecystitis" in *Surgery, Gynecology, and Obstetrics*, in 1918, articles have been written by others corroborating his contention.

The present investigation was begun about three years ago to determine, if possible, the extent of the hepatitis, the type, and the route by which the liver becomes affected. My method has been much the same as that used by others—namely, to obtain segments of liver at operation and to subject them to microscopic and bacteriological scrutiny—but I think my investigation has this advantage over any other within my knowledge, that sections have always been taken from both lobes of the liver, in the case of the right lobe at a distance of at least 1 inch from the gall-bladder fossa, so that the whole liver should not be judged from the condition of that part of it in the immediate neighbourhood of an inflamed gall-bladder.

The method employed to obtain the liver sections was as follows: A triangular piece with a base of about half an inch and sides rather longer was taken from the anterior edge of the right lobe under strictly aseptic precautions and placed in a sterile tube; the sides of the gap were brought together by one or more mattress sutures of fine catgut and tied with just sufficient tension to stop bleeding. A similar proceeding was conducted on the left side. In most of the cases the gall-bladder was sent for examination, care being taken to prevent bile coming in contact with the exterior. In many cases the cystic gland was also separately removed. A fresh set of instruments was used for each proceeding, each specimen being placed in a separate sterile tube; all were sent immediately to the laboratory for culture and later for histological examination. There was never any difficulty in arresting haemorrhage, and the procedure did not seem to disturb the progress of the patients in the least.

There are 50 cases in this series, but for various reasons it has been possible to get a complete histological report of only 34. Of the 34 cases the gall-bladder was pathological in 20 and normal in 14. These 14 cases were regarded as controls, and were operated on for the following conditions: 1 for subacute appendicitis, 2 for chronic appendicitis, 2 for visceroptosis, 4 for duodenal ulcer, 3 for jejunal ulcer, 1 for gastric ulcer, and 1 for a condition needing laparotomy.

THE EVIDENCE OF HEPATITIS: ITS CHARACTER AND EXTENT.

Investigation into the state of the liver was made in three ways: (1) macroscopic—at operation; (2) microscopic; (3) certain liver tests were made before operation and the results placed side by side with those furnished by examination of the liver sections.

Macroscopic Evidence.

There is ample evidence of hepatitis in that part of the liver in contact with an inflamed gall-bladder, but when one attempts to assess the condition of the liver as a whole from naked-eye appearances I think one is on very uncertain ground. In acute infections of the gall-bladder and other organs, such as the appendix, one gets the impression that the liver is large, soft, and succulent, as though it were oedematous, and the rounded edge of the liver lends support; it is difficult to prove, because if oedema is present it is not of sufficient intensity to show in the sections. As regards the more numerous chronic cases I came to mistrust macroscopic observations concerned with thickness and enlargement as evidence of hepatitis, for in many cases these disagreed with microscopic conclusions. In fact, only the latter give reliable evidence; moreover, the information obtained by this simple procedure may be of considerable value in certain cases in connexion with their subsequent progress, when taken in conjunction with liver tests.

Microscopic Evidence.

Under the microscope these cases of hepatitis show round-celled infiltration in the portal tracts and between the liver lobules (Figs. 1 and 2). Fatty infiltration is common, and occasionally degenerative changes suggesting necrosis are seen. The portal tracts often show fibrosis. Polymorphs can be seen in some of the sections, but for the most part the cellular infiltration is caused by lymphocytes. Figure 3 shows a section of normal liver from a case of so-called visceroptosis; the difference between this and Figures 1 and 2 is very noticeable. Two further points are very evident in these sections: (1) the appearances are always of the same character, but differ in degree in different cases; (2) in any one case these characteristics are always the same in degree and kind in the two lobes of the liver; in fact, they are widespread.

As regards the gall-bladder, there is lymphocytic infiltration in most of the coats, sometimes polymorphs, and, as a rule, fibrosis replacing in many cases the muscular coat in part. Strawberry gall-bladders I have referred to as pathological rather than instances of cholecystitis, since the evidence of inflammation is sometimes exceedingly scanty. An analysis of the 34 cases is given in Table I.

TABLE I.

Hepatitis.	State of Gall-bladder. Normal.	Pathological.
None	3	1
Slight	5	7
Moderate	5	2
Marked	1	10
	14	20

There was hepatitis in 30; in 4 the liver sections were normal. Of these 4 cases one had a pathological gall-bladder in which there were no stones, but moderate fibrosis with round cells here and there. The other 3 had normal gall-bladders; one was a case of chronic appendicitis, another of jejunal ulcer, and a third of visceroptosis. At the other end of the table we find 11 cases showing marked hepatitis; there were 10 with pathological gall-bladders, and one was normal; this was a case of duodenal ulcer in which the degree of hepatitis was quite well marked. In the groups showing slight or moderate hepatitis there are 9 cases with a pathological gall-bladder, and 10 in which the gall-bladder was normal—practically an equal number in each class. The most striking features of this table are, I think, the preponderance of pathological gall-bladders in the group with marked hepatitis, and the prevalence of hepatitis whether the gall-bladder is diseased or not.

Of the exact relation of the round-celled infiltration to the structures in the liver, I am uncertain whether it begins in connexion with the bile ducts, lymphatics, or blood vessels; obviously it must be one or more of the three. It seems to me that as a general rule the area near the blood vessels is less involved by round cells, and I think the same may be said of the larger bile ducts. The smaller bile ducts, however, appear to be very definitely placed in close relation to the areas of maximum infiltration, and it is difficult to escape the conclusion that they are in some way concerned; in fact, the condition seems to be a pericholangitis of the smaller bile ducts at the periphery of the lobules in the first place (see Fig. 4). I think a careful examination of the sections shows that the lumen of the bile ducts is free from epithelial debris or other sign of inflammation, and the walls too, though they appear to be pressed against one another, do not show any inflammatory change. It is not easy to be sure of this, because in many sections the ducts are to a great extent obscured by the round cells; but in the clearer parts of the fields it seems to be as just stated. The infiltration surrounding the smaller bile ducts appears to be quite sufficient in many

* An Arris and Gale Lecture, delivered on February 21st, 1930.

places to produce pressure and obstruction; the significance of this will be discussed after reviewing the results obtained with the liver tests.

If it is true that the bile ducts are not actually inflamed, it seems likely that the lymphatics are the real centre of the infiltration and that they run in close relation to the small bile ducts at the periphery of the lobules, and that it is in virtue of this close relationship that the bile ducts are seemingly so much concerned in the infiltration. Practically nothing is known of the lymphatics in the liver: it is therefore only possible to speculate about the position they occupy; but if we compare the lymphatic arrangements in the spleen and lymph glands we find a marked similarity of general plan of structure. In these the reticulo-endothelial tissue sifts out what is not acceptable to the blood, and by means of masses of round cells—in reality the same thing as the solitary glands of the intestine—such foreign matter as bacteria is rendered harmless, and a great proliferation of round cells may occur in and around these masses during the performance of this task. It is therefore suggested as a reasonable inference from what is seen in my sections showing hepatitis that the Kupffer cells, the reticulo-endothelial tissue of the liver, extract harmful material from the blood and pass it out to lymphatics lying alongside the hepatic cells and small bile ducts; thence it is carried to larger lymphatics in the portal sheaths where these abut on the periphery of the liver lobules. If this explanation is correct the masses of round cells seen in my cases of hepatitis may be a reactive proliferation of lymph follicles normally lying diffusely scattered through the liver in a similar though not so well-defined arrangement as that of the lymphatic glands and spleen. In Hodgkin's disease such lymphatic collections become very apparent in the liver.

My series does not provide sufficient material from which to form conclusions as to the route by which the liver and gall-bladder became infected. There are, however, interesting bits of evidence. For example, in one case the liver showed the usual round-celled infiltration, and from both lobes a few colonies of a coliform bacillus were grown; the appendix showed signs of a recent inflammation, and from it was grown a similar coliform bacillus. The patient was a boy of 15, who had recently had an attack of undoubted clinical acute appendicitis, which was subsiding. This would appear to be infection of the liver from the appendix, more especially as the organism, which was identical from the two sources, was not the usual *B. coli*, so that coincident infection of the liver from some other source does not seem a reasonable assumption. There is every reason, too, to suppose that the organisms had been carried in the portal blood. I profoundly mistrust any theory which seeks to explain infection by the lymphatics if it involves the supposition of retrograde flow in the absence of obstruction to the normal forward movement; and so far as the liver is concerned all the lymph normally flows out of it and none whatever into it.

Another case suggests infection of the gall-bladder via the hepatic artery.

This patient was a woman, aged 28, who, until she had an attack of acute tonsillitis, had enjoyed good health. During this attack she was seized with sudden severe pain in the epigastrium, which radiated to the back; there was tenderness over the gall-bladder region; but there was no jaundice. She had several attacks of typical biliary colic later; no indigestion was present in the intervals. At the operation, which was performed two years after the initial attack of pain, she was found to have a thick-walled gall-bladder, shrunken and recently inflamed, which contained a single mixed cholesterin stone. Under the microscope the gall-bladder showed extensive lymphatic infiltration of its wall, the muscles replaced to a large extent by fibrous tissue, and in places large collections of leucocytes. The liver sections showed slight lymphocytic infiltration.

It is reasonable to suppose that the reaction in the liver which we are calling hepatitis results from infection carried by the hepatic artery or the portal vein. As I shall show presently it is unusual to be able to grow organisms from the liver sections; this may be explained partly by the phagocytic activity of the Kupffer cells rapidly weakening and destroying the bacteria, partly by the probability that the noxious material is often toxin and not bacteria, and partly by the surgical habit of delaying operation on acute gall-bladder conditions as a general rule, so permitting time for the lessening of bacterial virulence.

I have already stated that hepatitis is commonly present in many intra-abdominal lesions; it is not quite clear why it should be more marked in patients with pathological gall-bladders than in others. I think that it is, and there are several possible explanations.

1. It may be that the greater degree of hepatitis is primary, and an associated alteration of biliary secretion, in the presence of some metabolic change—as, for example, increased cholesterol in the blood—favours the deposition of aseptic stones, which subsequently, in one way or another, induce cholecystitis and attendant mixed stones.

2. The blood from the gall-bladder is poured into the portal vein close to the liver, whereas that from the appendix, for example, has to travel some distance in a fairly sluggish stream with some 10,000 leucocytes to the cubic centimetre (there may be many more in an acute attack), where there would be opportunity for bacterial virulence to be diminished before the liver is reached.

3. The size of the gall-bladder as compared with the appendix would presumably mean more noxious material entering the liver during a state of inflammation.

These explanations are contingent on infection entering the liver by the portal vein.

4. The hepatic artery may be the portal of entry, the site of infection being a distant focus, and a selective affinity determining the intensity of the attack falling on the gall-bladder as is now generally held. This receives support from the experimental side, but I doubt if we are reproducing human etiological conditions by massive intravenous injection of organisms. Moreover, the supposition would be that the gall-bladder so infected produced the hepatitis; but the degree of pathological change in the gall-bladder does not seem to be the only determining factor in the degree of hepatitis, for examination of 21 cases shows that in 11 a marked degree of cholecystitis and hepatitis coincided, whereas in 10 no such similarity of pathological change was observed—in about half the gall-bladder was grossly changed and the liver little affected, while in the other half the liver showed marked hepatitis and the gall-bladder only a slight degree of inflammation (Figs. 5 and 6). This suggests that sometimes, at any rate, hepatitis is primary.

5. Infection might pass into the liver up the bile ducts; but as the larger bile ducts certainly, and I think also the smaller ones, show no evidence in the lumen or wall of infection it does not seem probable that this is the route by which infection enters and becomes effective, apart from those cases which present partial or complete obstruction of the common duct.

In 32 cases the condition of the pancreas was noted. It is easier to assess the state of this organ by palpation, I think, than in the case of the liver. In 20 patients, 12 of whom had pathological gall-bladders; the pancreas was normal. In 12 others it was decidedly hard, the hardness in most cases being confined to the head; in one of these the hardness was associated with a strawberry gall-bladder, in 2 with very slight cholecystitis, in 2 others with acute cholecystitis, and in 7 with definite chronic cholecystitis; of these 6 were cases of stone in the common duct. It seems probable from recent work on pancreatitis that cases associated with stone in the common duct receive the infection directly up the duct of Wirsung. If we subtract the common duct cases in my series there are 6 left showing pancreatitis out of 24 cases with pathological gall-bladders, exactly 25 per cent., and although the degree of pancreatitis, estimated by palpation, does not tally case by case exactly with the degree of hepatitis estimated by microscopic examination, yet there is a close parallelism. The blood supply to the head of the pancreas comes via the gastro-duodenal artery from the hepatic, which makes this coincidence of hepatitis and pancreatitis an interesting one, and possibly suggests that at least in 25 per cent. of cases infection of the liver arrives by the hepatic artery. Of course this is pure speculation stimulated by the figures and observations recorded above, but it suggests lines on which further investigation might prove profitable.

BACTERIOLOGY OF THE LIVER, BILE, AND GALL-BLADDER WALL.

The results are shown in Table II.

TABLE II.—*Result of Cultures from the Gall-bladder Wall, Bile, and Liver Sections.*

State of Gall-bladder.	Gall-bladder Wall.	Bile.	Liver.
Pathological	Negative	Negative	B. welchii
,,	,,	,,	Negative
,,	,,	,,	,,
,,	B. coli	B. coli	—
,,	Negative	Negative	Negative
,,	Streptococcus	B. coli	,,
,,	Staphylococcus	Negative	,,
,,	Negative	,,	,,
,,	,,	Staphylococcus	,,
,,	,,	Negative	,,
,,	,,	,,	,,
,,	,,	,,	,,
,,	Staphylococcus	B. coli and staphylococcus	B. coli and staphylococcus
,,	Negative	B. coli	—
Normal	—	—	Negative
Pathological	—	—	,,
Normal	—	—	,,
Pathological	B. coli	B. coli	—
Normal	—	—	Negative
,,	—	—	,,
Pathological	B. coli	B. coli	,,
,,	Negative	Negative	Staphylococcus and diphtheroid
,,	Negative	B. coli	—
Normal	—	—	Streptococcus (virulent)
Pathological	Negative	B. coli	Staphylococcus
Normal	—	—	Negative
,,	—	—	Staphylococcus and B. welchii
,,	—	—	Negative
,,	—	—	Coliform bacillus
Pathological	Negative	Negative	—
,,	B. coli, staphylococcus and diphtheroid	B. coli	—
Normal	—	—	Negative
,,	—	—	,,

The outstanding features of this table are: (1) The large number of negative results in all the material examined. (2) In the few cases where the findings were positive the liver sections and bile showed the same organisms only once—a case in which *B. coli* and staphylococcus were cultured from both sources. (3) When positive results were obtained the organisms in the majority of cases were those which normally grow in the intestines.

The simultaneous presence of *B. coli* in the bile and gall-bladder wall in several cases suggests infection of the latter from the bile, for in five out of eight cases of acute cholecystitis *B. coli* were cultured from both, whereas in only four out of thirteen chronic cases were cultures of this organism obtained. There is a strong suggestion here that the infecting organism is *B. coli*, and that it readily dies out; whether it gains access to the bile and the gall-bladder from the liver or up the common duct cannot be decided. The infrequency of positive cultures from the liver suggests the latter route; and further, that if hepatitis is related to cholecystitis in a primary capacity it is so by virtue of inefficiency of the bile to hold its constituents in solution, thereby facilitating the formation of gall-stones and ultimately cholecystitis. But there is the possibility that, although the liver rapidly destroys the virility of the organisms, yet in the presence of inefficient liver cells (shown by liver tests, as we shall see later) active organisms are allowed to go through these cells instead of being rejected by them and passed into the lymphatics.

On several occasions cultures were made from the cystic gland in cases of pathological gall-bladder; only twice did any organism grow—once a staphylococcus and once a streptococcus which conformed to the type described by A. L. Wilkie. This was a case of acute cholecystitis with a stone impacted in the neck of the gall-bladder. In another case in which a man was operated on for a subacute attack of cholecystitis with stones, the cystic gland was about the size of a moderate-sized broad bean. No growth was obtained either from it or from the gall-bladder, although one would think that a gland of this size examined during the actual attack would be an ideal one from which to culture an organism.

The marked pathological changes found in the liver and gall-bladder, combined with the number of negative bacteriological findings, suggest a readiness for the infecting organisms to die out, or it may be that we are apt to place too strong an emphasis on the infection theory of gall-bladder disease. It seems reasonable to infer from these results that it is unlikely that the gall-bladder can be a chronic focus of *bacterial* infection for more distant parts, as the organisms disappear very quickly after they have stimulated the gall-bladder into an inflammatory state.

The media used for culture purposes were: (1) glucose agar—deep tubes; (2) surface smears on blood agar (heated); (3) deep tubes of agar containing 0.1 per cent. sodium sulphide—giving anaerobic conditions.

CERTAIN LIVER TESTS IN RELATION TO HEPATITIS.

For this part of my subject I chose the van den Bergh test, because it is generally considered to give reasonably accurate information about bilirubin and the processes involved in its production, etc., and the laevulose test because it has been well recommended by some and thoroughly condemned by others, and it seemed a good opportunity to find out, if possible, which opinion was justified.

Van den Bergh Test.

The results of this test depend on the quality and quantity of bilirubin in the blood. In obstructive jaundice there is a prompt direct reaction; in haemolytic jaundice a positive indirect reaction only; and in toxic jaundice a biphasic result—that is, a positive indirect and also usually a delayed direct.

There was only one case of clinical jaundice at the time of operation included in my series, as I did not feel justified in taking sections in this type of case as a rule; this case gave a prompt direct reaction. There were three which gave a delayed direct and positive indirect reaction; two of these were common duct cases without clinical jaundice. All the other positive results were of the indirect kind and of varied degree. I have attempted to give the results of the test side by side with the degree of hepatitis as shown by the microscope. For this purpose I have put into one class the cases showing marked or moderate (that is, definite) hepatitis, and into another those showing slight hepatitis or normal liver (see Table III). From this table it will be seen that in the first group the reaction is definitely more pronounced.

TABLE III.

Hepatitis Marked or Moderate.		Hepatitis Slight or Nil.	
Condition of Gall-bladder.	Van den Bergh Test.	Condition of Gall-bladder.	Van den Bergh Test.
Pathological ...	D.N.; I.N.	Pathological ...	D.N.; I.N.
,,	D.N.; I.P.(s)	,, ...	D.N.; I.P.(s)
Control case ...	D.N.; I.P.(s)	,, ...	D.N.; I.P.(s)
Pathological ...	D.N.; I.P.	,, ...	D.N.; I.P.(vs)
,, ...	D.N.; I.P.	Control case ...	D.N.; I.N.
,, ...	D.N.; I.N.	,, ,, ...	D.N.; I.P.(s)
,, ...	D.N.; I.P.	,, ,, ...	D.N.; I.P.(vs)
,, ...	D.N.; I.N.	,, ,, ...	D.N.; I.N.
,, ...	D.P.; I.P.	,, ,, ...	D.P.(s); I.P.
,, ...	D.N.; I.N.	,, ,, ...	D.N.; I.P.(s)
,, ...	D.N.; I.P.		
,, ...	D.P.; I.P.		

D.N. = Direct van den Bergh, negative. D.P. = Direct van den Bergh, positive. I.N. = Indirect van den Bergh, negative. I.P. = Indirect van den Bergh, positive. (s) = Slight reaction. (vs) = Very slight reaction.

It is a little difficult to interpret these results, but there are some significant features. In describing the microscopic sections I have already said that one gets the impression that some of the smaller bile ducts are compressed: this is supported by the delayed direct reaction seen in three of

the cases. Moreover, in some of the sections the liver cells show bile staining, and there are appearances of the same kind as those seen in cases of toxic jaundice. These features suggest that the increase of bilirubin in the blood is due to interference with the polygonal cells, sometimes by poisoning, sometimes by damming back of the bile in the smaller bile ducts, and sometimes by both. The increase of bilirubin shown constitutes latent jaundice. In the few cases in which the fragility of the red cells was examined it was found to be normal; this strengthens the view that the jaundice is due to something in the liver and not to haemolysis.

Laevulose Test.

The basis of this test is that laevulose given to a normal person does not increase the blood sugar, whereas when the liver is functioning deficiently there is a characteristic increase in blood sugar. The dose of laevulose is given on an empty stomach, and the blood sugar estimated half-hourly for two hours.

I have divided the cases into two classes (Table IV) as in the van den Bergh test. In Tables V and VI, dealing

TABLE IV.

Hepatitis Marked or Moderate.		Hepatitis Slight or Nil.	
Condition of Gall-bladder.	Laevulose Test (Liver Function).	Condition of Gall-bladder.	Laevulose Test (Liver Function).
Pathological ...	Deficient	Pathological ...	Not deficient.
,, ...	Deficient	,, ...	Not deficient.
Control case ...	Deficient	,, ...	Deficient.
Pathological ...	Deficient	,, ...	Deficient.
,, ...	Deficient	Control case ..	Not deficient.
,, ...	Deficient	,, ,, ...	Not deficient.
,, ..	Deficient	,, ,, ...	Not deficient.
,, ...	Deficient	,, ,, ...	Deficient.
,, ..	Deficient	,, ,, ...	Not deficient.
,, ..	Not deficient	,, ,, ...	Not deficient.

TABLE V.—*Cases in which Hepatitis was Marked or Moderate.*

Type of Case.	Van den Bergh Test.	Laevulose Test (Liver Function).
Pathological gall-bladder ...	D.N.; I.P. (s)	Deficient.
Pathological gall-bladder ..	D.N.; I.P.	Deficient.
Control	D.N.; I.P. (s)	Deficient.
Pathological gall-bladder ..	D.N.; I.P.	Deficient.
Pathological gall-bladder ...	D.N.; I.P.	Deficient.
Pathological gall-bladder ...	D.N.; I.N.	Deficient.
Pathological common duct ...	D.P.; I.P.	Deficient.
Pathological gall-bladder ...	D.N.; I.N.	Not deficient.
Pathological common duct ...	D.P.; I.P.	Deficient.
Pathological common duct ...	D.N.; I.P.	Deficient.

See Table III for explanation of letters in Tables V and VI.

TABLE VI.—*Cases in which Hepatitis was Slight or Nil.*

Type of Case.	Van den Bergh Test.	Laevulose Test (Liver Function).
Pathological gall-bladder	D.N.; I.N.	Not deficient.
Pathological gall-bladder	D.N.; I.P. (s)	Not deficient.
Pathological gall-bladder	D.N.; I.P. (s)	Deficient.
Pathological gall-bladder	D.N.; I.P. (vs)	Probably deficient.
Control...	D.N.; I.N.	Not deficient.
Control...	D.N.; I.P. (vs)	Not deficient.
Control	D.N.; I.P. (vs)	Not deficient.
Control...	D.N.; I.N.	Deficient.
Control...	D.P. (s); I.P.	Not deficient (haemochromatosis)
Control...	D.N.; I.P. (vs)	Not deficient.

respectively with cases in which hepatitis was marked or moderate and others in which it was slight or *nil*, the results of both tests are placed side by side. One case, which was thought to be an instance of haemochromatosis, should be omitted. It will be observed that there is a close parallelism between the results given by the two tests; on the whole the state of the liver is shown more accurately by the laevulose test. This came rather as a surprise. I do not wish to stress these findings unduly, because the number of cases is small. So far as I know neither of these tests has been checked by microscopic liver examinations prior to this series, and it may be that the condemnation which the laevulose test has suffered is due, not so much to it being an unreliable test of the state of the liver, as to the fact that a result which indicates hepatic deficiency does not necessarily receive clinical support. This may be because our present knowledge of what is going on in the liver purely from clinical observation is depressingly deficient, and not because the laevulose test is at fault.

I feel that some explanation is due for presenting so few cases; I would point out that it is extremely difficult for a single investigator to produce a large series; the work involved is very time-consuming, and it is not always easy to get the necessary collaboration at the time the material comes to hand; moreover, the patient has to be considered primarily, and in many cases I did not feel justified in prolonging the operation beyond the period that was absolutely essential, nor in subjecting the jaundiced patients to a possible risk of oozing from the cut liver, and so on. However, every series adds to the total contribution to this subject, and a sufficient number of cases have been reported, I think, to warrant the conclusion that *hepatitis is associated in some way with cholecystitis*, and also with many other intra-abdominal lesions. In regard to the existence and type of the hepatitis, my findings agree very closely with those of Graham; on the other hand, the bacteriology of my series differs from his in degree rather than in kind; on both these points they are quite different from what A. L. Wilkie describes.

The correlation of functional tests of the liver with microscopic examinations has opened up a new field so far as I am aware; with such a few cases at one's disposal any explanation of the observed phenomena must to a large extent be speculative. Nevertheless, the results seem sufficiently interesting and uniform on the whole to make it worth while extending this method of research.

I should like to thank Dr. A. L. Taylor and Miss Hickman, who did the microscopic part of this work; Professor McLeod and Miss Wheatley, who are responsible for the bacteriology; and Dr. Fowweather, who determined the liver function tests. Without their help it would have been impossible for me to have obtained the reliable laboratory information so essential to this kind of investigation.

CARCINOGENIC SUBSTANCES AND THEIR FLUORESCENCE SPECTRA.

BY

E. L. KENNAWAY AND I. HIEGER.

(Cancer Hospital Research Institute, London.)

(*With Special Plate.*)

THE results described here are the latest obtained in an investigation of the carcinogenic action of coal tar. It has been known for many years that cancer could be produced by certain industrial products (gas-works tar, shale oil) which had been exposed to high temperatures, and this process of formation of carcinogenic materials has been extended in the laboratory of the Cancer Hospital Research Institute by heating a variety of substances (acetylene, isoprene, cholesterol; human skin, muscle, and hair; yeast) of which every one yielded products which caused cancer when applied to mice. An attempt was then made to obtain cancer-producing substances at body temperature by reactions which might resemble more closely those occurring in the tissues, when cancer develops naturally, than do changes in a red-hot tube at 700° to 900°.

Schroeter[1] in 1920 described a mixture of high-boiling compounds formed when aluminium chloride acted upon tetralin (commercial tetrahydronaphthalene) at 30° to 40° C. We found that this material was carcinogenic; one of the earliest experiments with it yielded 8 cancers *and 3 papillomas from 20 mice in* 256 days. This mixture of high-boiling compounds will be referred to as "Schroeter" for the sake of brevity. In some preparations

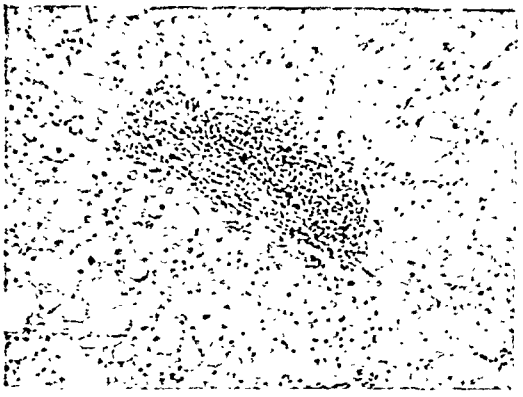


FIG. 1.—Section of right lobe of liver, showing round-celled infiltration surrounding many apparently normal bile ducts.

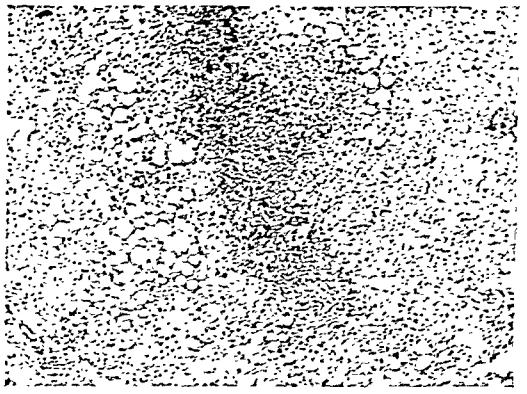


FIG. 2.—Section of left lobe from the same case as Fig. 1. Same appearances with well-marked fatty infiltration.

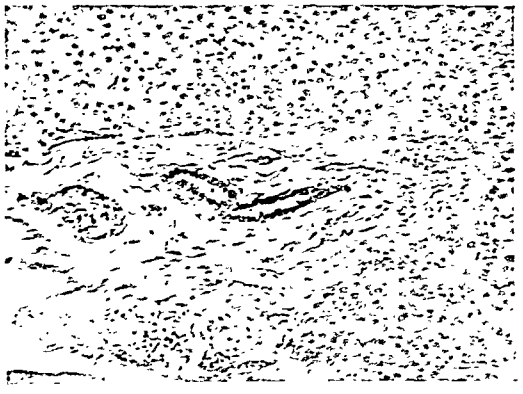


FIG. 3.—Section of normal liver.

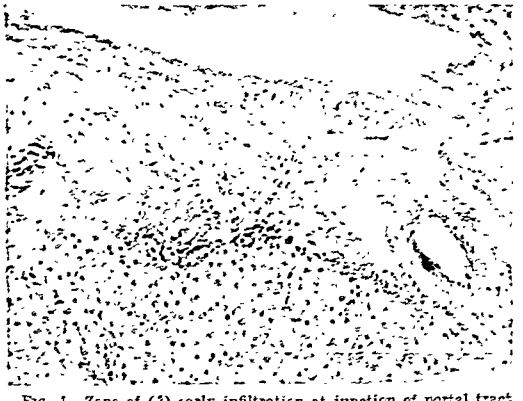


FIG. 4.—*Zone of (?) early infiltration at junction of portal tract and liver lobules.*

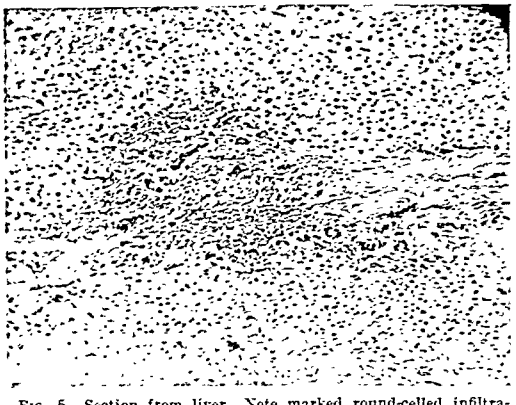


FIG. 5.—Section from liver. Note marked round-celled infiltration around a number of small bile ducts, some of which seem to be compressed.

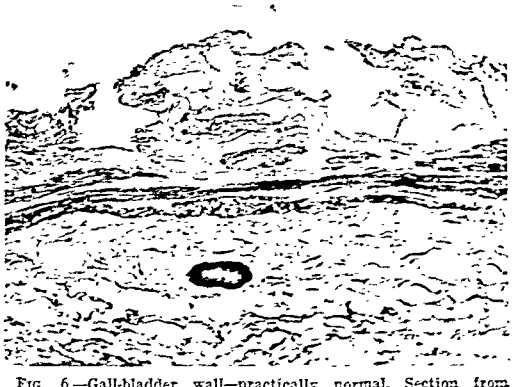


FIG. 6.—Gall-bladder wall—practically normal. Section from same case as Fig. 5.

E. L. KENNAWAY AND I. HIEGER: CARCINOGENIC SUBSTANCES AND THEIR FLUORESCENCE SPECTRA.



FIG. 1.—Mouse painted with 3'-methyl-1.2,5.6 dibenzanthracene. 205th day.



FIG. 2.—Papilloma. Mouse painted with 3'-methyl-1.2,5.6 dibenzanthracene. 189th day.



FIG. 3.—Epithelioma. Mouse painted with 1.2,7.8 dibenzanthracene. 223rd day.

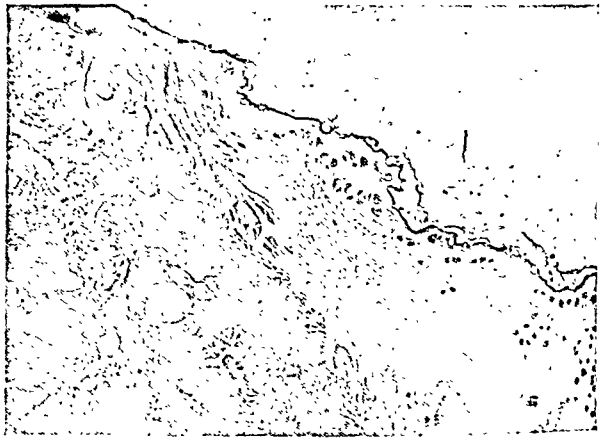
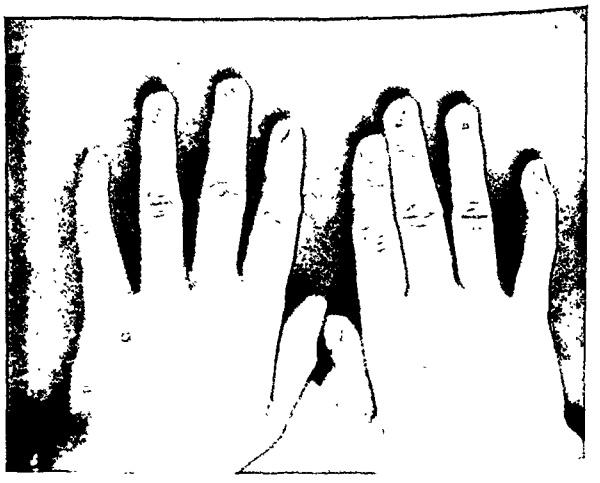


FIG. 4.—Epithelioma. Mouse painted with 1.2,7.8 dibenzanthracene. 252nd day.

A. H. G. JOHNS: PATENT BRANCHIAL CLEFT.



F. A. E. SILCOCK: CONGENITAL DYSTROPHY OF THE NAILS.



the rather higher temperatures (60° to 70°) used by Schroeter in his subsequent work were employed. Inactive material may be obtained if the aluminium chloride is in too low a concentration, or acts for too short a time. When these negative results are excluded the total yield of tumours from all the experiments with "Schroeter" which gave any tumours at all has been 118 cancers and 30 papillomas in 496 mice. Our later observations indicate that the carcinogenic agent may not be produced in *effective amount* at body temperature, but is increased to the concentration required to cause cancer in the skin of a mouse by the heating necessary to distil off the unaltered tetralin. Hence the original object of these experiments—namely, to produce an active carcinogenic agent at body temperature—may not have been attained, but the developments of this work described below have diverted our investigations for a time in other directions.

Tetrahydronaphthalene is not fluorescent, but the carcinogenic material obtained from it by the action of aluminium chloride shows a blue-violet fluorescence, which becomes very intense in a beam of ultra-violet light. If this fluorescent light is passed through a spectroscope on to a photographic plate a spectrum is obtained consisting of three bands of wave-lengths approximately 4,000, 4,180, and 4,400 A.U.; the bands are sharply defined on the short wave-length side and grade less abruptly into the background on the long wave-length side. The 3,680 A.U. mercury line is used as a fixed wave-length for comparison. A large number of pure hydrocarbons and other substances were then examined by the same methods in the hope of finding one which showed the spectrum of "Schroeter." No identical spectrum has as yet been found. However, one compound—namely, 1.2-benzanthracene—gives three bands which resemble those of "Schroeter" very closely, both in character and in position relative to one another, but in absolute position they lie nearer to the invisible region. Some reasons, which need not be set forth here, suggested that an addition to the benzanthracene molecule might produce the desired shift of the fluorescent spectrum towards the visible, and, possibly, the development of carcinogenic properties also. These additions may take various forms, such as:

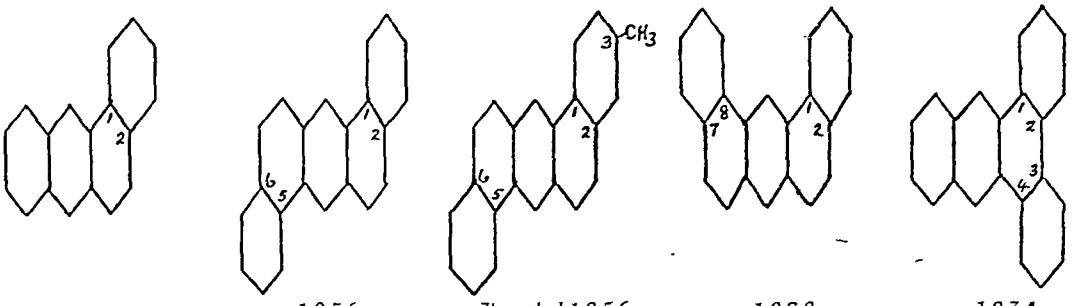
1. The attachment to the hydrocarbon nucleus of side chains, which may be aliphatic (for example, the methyl group) or aromatic (for example, the phenyl or benzyl groups). A number of such compounds—namely, the 3-methyl-, 6-phenyl-, 9:10-diphenyl-, and 10-benzyl-benzanthracenes—have been synthesized in this laboratory for the first time by Dr. J. W. Cook, who will describe his methods in the *Journal of the Chemical Society*. Most of these compounds show a shift of the spectrum towards that of "Schroeter," but to not more than one-half of the desired extent. No one of them has as yet produced tumours in mice, but some of them have been under test for a very short time only.

2. The condensation of fresh benzene rings with the benzanthracene nucleus, which itself consists of four such rings. Four such five-ringed hydrocarbons—namely, the 1.2.7.8, the 1.2,5.6, the 3'-methyl-1.2,5.6, and the 1.2,3.4 *dibenzanthracenes*—were prepared in a fairly pure state and applied in benzene solution to mice, and the fluorescence spectra were examined. The 1.2.7.8 and both 1.2,5.6 compounds gave spectra of the "Schroeter" type, but with subdivision of one band; and the whole spectrum lies about [illegible] those of benzanthracene and of "Schroeter." The 1.2,3.4 compound, which may be regarded as differing from the two others in that it is a 9.10 substituted phenanthrene, gives a spectrum of quite different type. The graphic formulae of the compounds are shown below.

Each of these four compounds was applied to ten mice; at the date of writing the experiment has lasted 285 days. The 1.2,3.4 series died out early, leaving one mouse only on the 133rd day, so that no comparison of this compound with the others is possible at present. A second series is under observation. One of the three survivors of the 1.2,5.6 series bears two well-developed papillomas.* Four mice in the 3'-methyl-1.2,5.6 series have produced papillomas. (Figs. 1 and 2.) In the 1.2,7.8 series, the first tumour appeared on the 169th day, when six of the ten mice were still alive; the animal was killed on the 223rd day and the tumour was found to be clearly malignant, showing invasion of muscle over a wide area. (Fig. 3.) Another mouse showed a papilloma on the 222nd day; the tumour grew rapidly, and when the mouse was killed a month later showed obvious invasion of muscle. (Fig. 4.) The last two survivors of the series, each bearing a tumour, were killed on the 278th day; both tumours were found to be malignant. Thus the ten mice painted with 1.2,7.8 dibenzanthracene yielded 4 cancers. The pre-cancerous period is longer than it is in mice painted with a good carcinogenic tar. Our experiments with the dibenzanthracenes will be repeated with larger series of mice and purer samples of the compounds. All such experiments require repetition with very pure material; those who have most experience of hydrocarbons will be the least ready to assert that any sample is quite pure. We have applied a large number of hydrocarbons (naphthalene, α–α–dinaphthyl, β–β–dinaphthyl, α–phenyl naphthalene, cyclohexane, cyclohexene, dodecahydrotriphenylene, acenaphthene, fluorene, anthracene, β-methyl anthracene, octhracene, phenanthrene, retene, truxene, naphthacene, tetrahydronaphthacene, chrysene, and others) to mice with negative results, and we have many other compounds now under test. Hence there are many controls upon the results obtained with the dibenzanthracenes. In the experiments of Twort and Fulton[2] chrysene produced 5 cancers and 10 papillomas in, apparently, several hundreds of mice (the exact number is not stated). The fluorescence spectrum of chrysene is very similar to that of benzanthracene in character, but in position is displaced considerably towards the region of shorter wave-length—that is, away from the "Schroeter" bands.

Apparently neither benzanthracene nor any of its derivatives has been found, and perhaps has not been sought for, in coal tar, and we are at present examining tar, and the products of the action of aluminium chloride upon tetralin, for such compounds. It is quite possible that there are, among the many compounds still undiscovered in coal tar, derivatives of benzanthracene which are far more powerfully carcinogenic than any known substances.

The "Schroeter" bands at 4,000, 4,180, and 4,400 are shown most distinctly by the aluminium-chlori[illegible] tetralin, but they have been found also in the [illegible] spectra of the following carcinogenic materi[illegible]



*One of the tumours borne by the mouse in the [illegible] found to be an epithelioma.

TABLE I.

1. Gas-works tar.
2. Creosote oil.
3. Green oil.
4. Anthracene oil.
5. Pitch distillate.

(2–5: derivatives of gas-works tar.)

6. Heated Californian petroleum.
7. Acetylene tar.
8. Yeast tar.
9. Muscle tar.
10. Cholesterol tar.
11. Hair tar.

If acetylene tar (No. 7) is saturated with chlorine, (*a*) the "Schroeter" bands are shifted about half-way towards the benzanthracene position, and (*b*) the carcinogenic power of the tar is very much lessened. In two comparable series of 70 mice the chlorinated tar produced 4 cancers and 4 papillomas, and the unchlorinated tar 21 cancers and 5 papillomas.

The following substances gave a diffuse spectrum covering very roughly the 4,000–4,400 region without differentiation into bands.

TABLE II.

1. Shale (blue) oil.
2. Pitch.
3. Gas-works tar (a sample made at 600°).
4. Spindle oil.
5. Refined lubricating oil.
6. Blast furnace tar.
7. Unheated Californian petroleum.

Of these, 1, 2, 3, and 4 are carcinogenic, and 5, 6, and 7 are not. The Californian petroleum, when heated to 880°, yields a strongly carcinogenic material (No. 6 in Table I). It is possible that in some or all of these cases the spectrum is confused by the presence of a number of fluorescent compounds.

The following materials gave the same spectrum as those in Table I, but have not produced cancer.

TABLE III.

1. Tetroyl propionic acid mother liquor.
2. Undistilled aluminium-chloride-treated tetralin.
3. Benzyl oleate (technical).
4. Oleic acid (technical).

Two possible explanations of this discrepancy may be suggested—namely (1) that the spectrum is given both by carcinogenic compounds and by allied compounds which are not carcinogenic, and (2) that the fluorescence test is a very much more delicate one than is the production of cancer in mice. Thus some hydrocarbons are fluorescent at dilutions of 1 in 200,000,000. One would not expect such solutions to affect the skin of a mouse. Twort has recorded papillomata in mice painted with oleic acid. Possibly heating of the oil in the process of manufacture is responsible for this effect.

Finally, to complete the list of exceptions, we must record one cancer produced by a non-fluorescent substance. One epithelioma occurred in 30 mice painted with commercial tetralin; we then painted 100 mice with pure tetralin, but obtained no more tumours.

The very frequent recurrence in cancer-producing agents of the fluorescent spectrum described suggests the possibility of the use of it for the preliminary examination of materials, such as lubricating oils, suspected of carcinogenic effect. The test on mice is, of course, necessary for conclusive proof.

All the spectroscopic work described here was carried out by I. Hieger under grants from the British Empire Cancer Campaign. We are indebted to Dr. E. de Barry Barnett for many specimens of pure hydrocarbons used for spectroscopic comparison, and to Dr. Alfred Piney for the accompanying photomicrographs.

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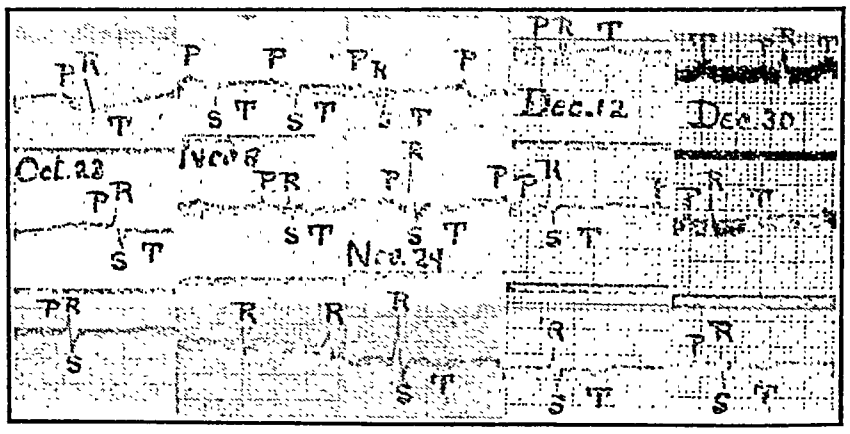
A CASE OF DIPHTHERIAL ACUTE MYOCARDITIS STUDIED BY MEANS OF THE PORTABLE ELECTRO-CARDIOGRAPH.

BY

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In their paper in the *British Medical Journal* of January 18th, 1930, Dr. J. Strickland Goodall and Dr. T. Jenner Hoskin summarize the chief use of the electro-cardiograph as (1) diagnosis or cardio-analysis; (2) estimation of progress under treatment. The electro-cardiograms of the patient who is the subject of this short article were valuable, first, in establishing the diagnosis of acute myocarditis at a time when such could only be inferred from her symptoms in the absence of abnormal physical signs, and secondly, in giving a clear estimation of the condition of the myocardium as it became more severely affected, and then as it made a gradual but steady recovery from the acute inflammation.



The patient was a girl, aged 11, who was removed from the sanatorium of a boarding-school within the Brighton area, and was first electro-cardiographed on October 23rd, 1929, when I first saw her at the Brighton Borough Sanatorium in consultation with Dr. Graham-Bonnalie and Dr. C. Fraser Brockington, the resident medical officer. She was then in the twelfth day of diphtheria, and that morning had developed vomiting with precordial pain. So far as the circulatory system was concerned the only abnormality objectively was a low blood pressure (68/40 mm. of mercury). The cardiac borders and sounds were normal, and there was no interruption of rhythm. An electro-cardiogram, however, which was taken by the Cambridge portable instrument, gave us proof of myocardial affection. All the complexes, auricular and ventricular alike, were of low voltage. The QRS waves were slurred, as well as stunted. The T wave in Leads I and II was shallow and inverted, while in Lead III the T was unidentifiable. The P waves, although small, were identifiable in all three leads, and the P-R interval was within normal limits. The heart's rate was 96.

She was electro-cardiographed again on November 8th, when she gave a record which is the most interesting of all. At that time there was clear evidence of an affected myocardium, the heart being dilated and rapid, with a canter rhythm; the blood pressure was still abnormally low, and particularly the pulse pressure; but as this is one of a series of cases in which Dr. Brockington has made a careful study of the changes of the blood pressure, which he intends to publish, I do not propose to go further into that matter. The electro-cardiogram showed the myocarditis of the left ventricle to be so great that the patient had a right-sided preponderance. The initial ventricular complexes were so low in voltage that they measured a mere 2 mm., but the initial complex in Lead I was an S and in Lead III an R, showing that for the time being the right ventricle was the predominating chamber. The T waves were much as before—in Leads I and II a very shallow inversion, and in Lead III hardly, if at all, identifiable.

On November 29th the electro-cardiogram had again changed. In Lead I the initial ventricular complex was a minute bizarre wave of the type met with in Lead III in a proportion of healthy subjects, but, in contrast to the previous record it contained both R and S elements. The T wave in that lead remained shallow and inverted. There was great alteration in the ventricular complexes in Leads II and III. Voltage had increased from 2 mm. to 11 mm., and there was a definite inverted T wave of ordinary type.

Further changes were noted in the electro-cardiogram of December 12th. In Lead I the small bizarre initial ventricular

complex did not descend at all below the iso-electrical level, being entirely of R type, and for the first time the T wave was easily identified as positive in character. In Lead II the T wave was less steeply inverted, while in Lead III it remained much the same.

On December 30th in Lead I there was a frank upward R wave of a voltage of 4 mm., but a wave which was slurred in its downward stroke; the T wave was still erect but its voltage had doubled. In Lead II for the first time the T wave was positive; but the T wave in Lead III remained inverted, and the curve in that lead was practically identical with that of eighteen days previously.

The patient made a clinical recovery, and a few days later left for Cornwall.

PROLAPSE OF THE RECTUM IN CHILDREN.

BY

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ONE cannot attend a children's hospital without being struck by the large number of children who suffer from prolapse of the rectum. No definite treatment is prescribed, and yet apparently these patients cease to return after some time; presumably there has been a spontaneous cure. On referring to the usual textbooks on this subject one finds first the instruction "remove the cause," and yet how seldom one finds a cause.

Etiology.

Constipation is blamed, and with it the straining at stool that is required to expel the solid motion. Diarrhoea has its advocates, on account of the irritation it produces. For a similar reason, worms, polyps, adenomata, and piles are responsible according to others; these, by producing a feeling of fullness in the rectum, would certainly tend to provoke a constant desire to defaecate. An invisible fissure and a symptomless pruritus are often blamed. When a possible cause cannot be found in the anal region recourse is made to some other part; a tight foreskin, a balanitis, or a pin-hole meatus is carefully looked for. Eventually it is said that the real cause is that there is a deficiency of fat in the ischio-rectal fossa, so that the rectum has lost its natural support. On this assumption the condition is similar to that obtained when the perinephric fat is diminished, so that as an analogy we might speak of the condition as a "movable or floating rectum."

The last so-called cause is probably the least likely of all. A close examination of a few of the cases will soon demonstrate that a prolapsus ani is not a prolapse of the anus, but at first of the mucous membrane through the anus. In the early cases the muscle wall of the rectum bears its normal relation to the ischio-rectal fat. Two definite changes exist in the average case: first, the anus is patulous—the examining finger can enter with ease and is not gripped by the sphincter as in a healthy case; and secondly, the mucous membrane has apparently lost its close grip upon the muscle wall, and instead of adhering is carried down with the motion.

Treatment.

As regards treatment, one first looks for a possible cause, and this in the majority of cases is non-existent. Many of the patients are fine, rosy-cheeked, sturdy children; they have regular bowels, have lost no fat recently, and are free from worms, polyps, etc. Having treated the mythical cause, something must be done for the child while he is actually at stool. In some cases the motion is passed in the squatting position, or on the side, and between times the buttocks are held together with strapping. Judging from the fact that patients thus treated stop attending eventually, we must conclude that this method is satisfactory and that in time a cure does result from it; but during that time considerable pain and discomfort must be endured.

I have written this short note with the object of advocating treatment by the injection of absolute alcohol. I have adopted this method in about fifty cases, and cure has followed in all of them. In nine cases out of ten this result has been brought about by one injection; in resistant cases a second injection has invariably been effective. The treatment is not new, but is, I think, insufficiently appreciated; the technique is so simple and the result so good that it is worth trying. The injection of the alcohol stimulates the anus to contract and at the same time produces a fibrosis and adhesion between mucous membrane and muscle.

The procedure is as follows: Without any previous treatment to the bowel the patient is given a general anaesthetic and placed in the lithotomy position. The surgeon places his left index finger in the rectum, and using a 1 c.cm. glass syringe with a fine Record needle, 1½ inches long, he passes the needle through the muco-cutaneous junction along the interval between the mucous membrane and the muscle coat. The injection is made as the needle is withdrawn. Four injections are given at one sitting—in front, at the back, and at each side—the total amount of alcohol used being 1 c.cm.—in other words, 1/4 c.cm. at each of the four points. The operation can be completed in five minutes. The buttocks are then strapped for one day, and the bowels are opened in twenty-four to thirty-six hours. The advantages of this method are that the condition is cured immediately in 90 per cent. of the cases at one sitting, and although the discomfort is greater for twenty-four hours, there is not the summation of pain that the child would otherwise suffer.

In conclusion, prolapse of the rectum is a common and distressing complaint, spontaneously curable in most cases, but reacting readily to a simple minor operation which will save weeks and months of discomfort. A modified technique has been very successful in adults, using novocain instead of a general anaesthetic for the operation itself, and giving some 40 per cent. antipyrin to diminish after-pain.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

PATENT BRANCHIAL CLEFT.

(With Special Plate.)

THE case of W. R. C., aged 24 years, presenting a certain feature of interest, appears worth reporting.

This man presented himself with a sinus situated 1 inch above the sternal insertion of the right sterno-mastoid muscle and at its anterior border, which discharged a clear fluid. At the orifice were situated three minute hairs. On injection of the "sinus" with iodoform emulsion the patient complained of sickly sensations in his throat, when examination of the fauces revealed the emulsion lying in the right supra-tonsillar fossa. *X*-ray photographs confirmed the extent of the fistula. In the photographs there appear vague shadows at the level of the disc between the 5th and 6th cervical bodies, suggesting lateral prolongations from the main fistula. It has been impossible to confirm these.

It is significant that the man first became aware of his condition following a right-sided quinsy, when the "pimple" commenced to discharge what was then a yellow fluid.

ANTHONY H. G. JOHNS, M.A., M.B., B.Ch.,
Penzance. F.R.C.S.Ed.

CONGENITAL DYSTROPHY OF THE NAILS.

(With Special Plate.)

As congenital dystrophy of the nails is comparatively uncommon I thought the following case should be placed on record.

A healthy girl, aged 16 years, was sent to see me with reference to the condition of her finger-nails. Her occupation was that of a domestic, and she said the condition had been present as long as she could remember, but recently the nails worried her by their look and interfered with her work. On examination there was a distinct horny ridge in the mid-line of the dorsum on the nail plates of the middle two digits of both hands, as well as a similar condition of the index finger of the left hand. At the bases of the affected nails the peri-unguinal tissue was raised, but there was no sign of any tenderness. From

this thickened tissue at the nail roots a hard horny ridge extended, which latter tapered towards the ends of the affected fingers.

There was no other congenital abnormality to be found on the rest of the patient except a tendency to a similar condition of the nails of both great toes, though in the latter it was not so well shown.

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AN EMERGENCY OPERATION UNDER DIFFICULTIES.

LATE one dark night I was called to see a man in a bunk-house. Candle-light revealed on a bunk a very prostrate young man, aged 19, who was violently sick at frequent intervals. He admitted that he had been constipated for two days, and had experienced abdominal pains in severe spasms, and constant vomiting for a few hours. An examination of the patient led to the conclusion that here was a case of acute obstruction of the bowels. The exact site of the obstruction was not clearly defined, but pain, and tenderness over the internal opening of the left inguinal canal, suggested Richter's hernia as a possibility.

An immediate operation was imperative. The nearest hospital was sixty miles away—a full day's journey for a good horseman, over a trackless waste. One cannot ride with acute obstruction of the bowels. A hasty survey of existing premises was made. The local storekeeper lent his office, the cook washed the office floor, and lent a table scrubbed for the occasion from the cookhouse. Several local ladies sacrificed sheets and aprons in order to extemporize dressings, which were placed in enamel basins. The cook roasted the dressings in his oven, while on the stove in a pudding basin he boiled the necessary instruments. An operating team had to be constructed. To the schoolmaster fell the task of administering the anaesthetic, and a motor mechanic, who had once driven an ambulance and therefore held high qualifications, was the chief assistant. The navvy-boss was posted as instrument clerk. The carpenter claimed a right to be present as he had provided the lighting arrangements—namely, two paraffin lamps abstracted from the local gospel hall and suspended from the office ceiling. Surely the conditions for abdominal section were ideal!

Through a left paracentral incision a very small hernia of the anterior wall of the small intestine into the left internal inguinal ring was reduced. The strangulated portion of gut was viable, and was returned to the abdominal cavity and the wound sutured. Recovery of the patient was uninterrupted. The old cook's voice punctuated the stages of the operation. His remarks were addressed to the assistant storekeeper, who had charge of liquid refreshments: "'E's started; what about a little one?" "'E's hinside 'im; what about a little one?" and so forth.

One cannot claim that there is no mental strain attached to opening an abdomen under such conditions, and, at the same time, keeping an eye on so many untrained people, yet the kind co-operation of a community saved the life of a man. This little history may be of some service to those who at some time or other may be confronted with a similar emergency in an Empire outpost.

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AORTIC ANEURYSM SIMULATING ASTHMA.

IN the following case of aortic aneurysm the symptoms simulated those of asthma, and the true diagnosis was established post mortem.

E. W., aged 43, carman by occupation, was admitted to the West Middlesex Hospital on September 28th, 1929, complaining of cough, which was worse at night. He had had this symptom for two weeks, but otherwise felt well.

His temperature on admission was 98.4° F., pulse rate 108, and respiration rate 28; both his cheeks were flushed. Rales and rhonchi were audible over both lungs, but there were no areas of dullness to percussion in the chest. The apex beat was in the fifth space, 3.5 inches from the mid-line. The heart sounds were clear, the second aortic sound being somewhat ringing. Under treatment the pulse rate and respiration rate fell, and the chest became clearer.

On October 10th the patient's voice became very hoarse, and he had attacks of acute dyspnoea. The air entry at the left base was poor. A week later he was slightly cyanosed, and had typical asthmatic attacks with prolonged expiration. Adrenaline and atropine gave some relief, but following the administration of half a grain of ephedrine twice a day by mouth the improvement was still greater, and the patient became less cyanosed. On October 26th his condition became worse, and he had marked difficulty with both inspiration and expiration. No drug seemed to give much relief. Next day he was worse, the difficulty being almost entirely inspiratory and laryngeal in type. Laryngoscopy showed the cords moving evenly and freely, with no oedema. Death took place on October 28th.

Post-mortem Examination.—The body was that of a well-built man of middle age. Nothing abnormal was found in the abdomen. The larynx, trachea, heart, and lungs were removed *en bloc*. The larynx was normal, and there was no oedema of the cords. The trachea was normal until within 2.5 cm. above the bifurcation, where a rounded bleb of mucous membrane 0.5 cm. in diameter projected into the passage. On opening this bleb it was found to communicate with a small hole 2 mm. in diameter between two rings of the trachea. The lungs showed small healed scars at the apices, otherwise they were normal. The heart muscle was well developed, of normal colour throughout, and there was no valvular disease. The aorta showed marked atheroma of the ascending portion and of the arch, but the descending aorta was quite clear. On the posterior wall of the first part were three holes, the smallest about 1.5 cm. above the valves and 0.5 cm. in diameter, and the largest 4 cm. above the valves and 0.75 cm. in diameter. The third was between these two. The two smaller openings were only a few millimetres deep, but on opening the largest a cavity about 5 cm. by 3 cm. was revealed. The main part of this cavity was slightly to the left of the mid-line, and it was continuous with the hole in the trachea. Its walls were thickened and covered with old blood clot. Within this was more recent clot.

Reviewing the history in the light of these findings, it appears probable that the coughing with the bronchitis caused the aneurysm to increase in size and to press on the anterior pulmonary plexus, particularly the left. This produced bronchial spasm, simulating asthma, which was partially relieved by atropine, adrenaline, and ephedrine. Then further increase in size took place and relief was not obtained. Finally rupture through the wall of the trachea occurred, with consequent obstruction and asphyxiation.

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Reports of Societies.

WORK OF THE ROTUNDA HOSPITAL.

A MEETING of the Section of Obstetrics of the Royal Academy of Medicine in Ireland was held on May 2nd, with the president, Professor A. H. DAVIDSON, in the chair. Dr. BETHEL SOLOMONS, Master of the Rotunda Lying-in Hospital, read the clinical report of this institution for the year 1928–29.

Dr. Bethel Solomons stated that 2,382 women had been admitted to the hospital, of whom 2,034 were delivered: 1,805 women had been confined in the extern department, and 2 had died. There had been 10 deaths in the intern maternity, so that altogether, in 3,839 cases, the mortality percentage was 0.31. The morbidity rate was the lowest in the history of the hospital, and, according to the British Medical Association standard, was 2.8 per cent.; the chance of sustaining such an extremely low level was slight, for complicated cases were continually being admitted from all parts of the country. Dr. Solomons commented on the difficulty in persuading women to attend the pre-natal department; he suggested that it might be necessary to withdraw maternity benefit, or to try some other drastic procedure, in order to persuade women that pre-natal care might save them from serious illness. The medical practitioners of the city should meet, with a view to starting propaganda, or to persuade the Government or the city authorities to act. It was noteworthy that in the majority of the serious cases dealt with in the Rotunda there had been no pre-natal care. The various statistics were considered. Although there were 9 cases of eclampsia with only 1 death, Dr. Solomons stressed the point that statistics of eclampsia in the present day could not be compared with those of the past, for most of the severe

eclampsisms nowadays would have been eclamptics. There were 554 cases of albuminuria in the hospital during the year. No death had occurred from placenta praevia, but 2 in 43 cases of accidental haemorrhage proved fatal. The lower segment Caesarean section was the favoured route; 3 cases of vaginal delivery after previous section were reported. In 34 Caesarean sections there was no mortality. Underpinning of the cord controlled haemorrhage on three occasions. Notes of the cases in the paediatric ward, and of the pathological and x-ray departments, were read. On the gynaecological side of the hospital, 654 operations had been performed, of which 105 had been for sterility. The speaker expressed his belief in the value of trachelorrhaphy and partial amputation of the cervix; when properly conducted good results ensued, and there was no trouble about conception, pregnancy, or labour. He had had to remove the cervix on four occasions where posterior division of the cervix had been performed elsewhere; this operation was a more frequent cause of sterility than a cure for it.

The PRESIDENT said that during the year under review the morbidity in the Rotunda Hospital had been brought to a level which had never been reached before, and the mortality also was extremely low. He thought some other method of treating cases of placenta praevia should be tried, since, although the maternal result was good, the infant mortality was very high. The fact that only one puerperal intrauterine douche had been given in the year was very satisfactory; the reduction in the morbidity rate seemed to indicate that in previous years too many intrauterine douches had been used. He thought that in many cases erosions could be treated palliatively, and it seemed to him a bad thing to amputate a cervix if the patient could be cured by any other means. He believed that amputation of the cervix must do harm, and often interfered with the normal course of labour afterwards.

Dr. GIBBON FITZGIBBON expressed satisfaction that conservative treatment was still being continued in cases of accidental haemorrhage, and that plugging had not been adopted. He did not think that patients could be classified into cases of toxaemic haemorrhage and cases of true haemorrhage merely by the presence of albuminuria, since some albuminuric patients would have a true accidental haemorrhage which would not be of a toxaemic nature. In the cases of accidental haemorrhage only six patients were primiparae: this fact, he thought, supported his view that accidental haemorrhage was often due to nephritis. Only two of the six primiparae could really be classed as cases of accidental haemorrhage. He felt that the time had come when it might be stated in the report that plugging was not indicated as a treatment in accidental haemorrhage, and preferably should be excluded. The use of quinine and oil for inducing labour was quite safe, but once labour had started the administration should be stopped and pituitrin be given. The use of quinine and oil for stimulating activity was excellent, but not for increasing activity. He thought tube induction was more physiological in its action than the use of bougies. Rupture of the membranes for induction of labour was excellent if used in the right type of case.

Dr. D. G. MADILL said the percentage of albuminuria was high, but these were cases which had not been seen before labour; this showed the importance of trying to persuade patients to attend out-patient departments. The morbidity rate for the year was one which had never before been touched. He thought subtotal hysterectomy was better than hysterectomy, and said he was not in favour of complete hysterectomy if it was possible to remedy the cervix from below, and then perform a subtotal hysterectomy. Dr. T. M. HEALY referred to the fact that Dr. Solomons had praised the use of saline in cases of accidental haemorrhage, but had said no deaths should occur. He personally thought that, in hospital, cases would always occur in which no resuscitation methods would be of value. He thought Dr. Solomons was particularly to be congratulated on the morbidity rate, and the low mortality in cases of section. The results in placenta praevia were, he thought, extraordinarily good. Dr. J. S. QUIN considered that cases in which inertia occurred late in labour with the head on the perineum could hardly be classified as true inertia. He thought that if the maternity benefit given by insurance companies was increased by 5s. to patients who attended pre-natal dispensaries, it would encourage patients to come for treatment, and would save the insurance companies by diminishing the number of cases of preventable illness.

Dr. R. TOTTENHAM asked if the treatment for eclampsia in the Rotunda Hospital was still that which had been employed by Dr. Tweedy, or if it had been modified in any way. He thought statistics were kept more carefully in the Rotunda Hospital than in most places outside Dublin. He asked if pelvic measurements were taken, and, if so, if much reliance was placed on them. Professor D. V. MORRIS said that the question of the toxaemias associated with nephritic lesions in pregnancy was of very vital importance. He would welcome the appearance of some propaganda which would enable doctors to bring directly to those concerned the dangers which women ran by negligence in these matters.

Dr. KERRY REDDIN had found that many patients were afraid to go to hospital out-patient departments because they did not like being examined by large classes of students. He thought some simple propaganda in the way of papers which could be easily read by these patients would be helpful. Dr. R. M. CORBET, referring to cases of ruptured uterus, said he thought the question was not one of plugging or operation, but of when the diagnosis of rupture was reached. If the diagnosis was made when the patient was undelivered, he thought laparotomy was required. In a great many cases, however, this was not possible, as the diagnosis was only made after the patient was delivered, and then the obvious thing to do was to plug the rent. In a number of these cases the plug did not stop the bleeding, because it was already stopped by the contraction of the uterine muscle; in cases where the bleeding continued the vessels were torn outside the uterine muscle, and therefore plugging would not stop the bleeding.

Dr. SOLOMONS, in reply, said he believed in Caesarean section for the primigravida with a central placenta praevia, provided that the patient was near to term; the same applied to the multipara, where there had been but little manipulation. He had given up plugging the vagina for accidental haemorrhage. He divided accidental haemorrhage into the true or traumatic, and the toxaemic; the latter was always accompanied by albuminuria and other toxaemic symptoms. He regarded the submammary method as the best for giving saline injections. In performing version for placenta praevia he preferred the combined method rather than trying external version first. He had found great difficulty each year in classifying certain cases as eclamptic or not. He had had no trouble with the oil-quinine method of inducing labour. Uterine inertia was always the bane of the obstetrician. Morphine was given as a routine in this class of case, and oxytocic drugs were only occasionally used. Intrathecal stovaine had a very small field of usefulness. He dissociated himself entirely from the Delmas procedure. Nowadays he classified as disproportion any case where there was a misfit between infant and pelvis; he still used the Skutsch pelvimeter, or x-ray pelvimetry if it seemed that the knowledge thus acquired could be of assistance. In ordinary rupture of the uterus plugging the rent was satisfactory in some cases, but the patient must be watched for different signs of internal haemorrhage, when laparotomy must be performed; in other cases immediate hysterectomy was necessary. Dr. Solomons based his opinion as to cancer following erosion of the cervix on his own experience, on the excellent work of Bailey, and on the opinion of various gynaecologists in different parts of the world.

THE TOXAEMIAS OF PREGNANCY.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine, on May 16th, with the president, Dr. ARTHUR GILES, in the chair, Dr. G. W. THEOBALD read a paper which suggested a new conception of the toxaemias of pregnancy.

Dr. Theobald submitted evidence that eclampsia could neither be attributed to a placental toxin nor to any functional or organic renal defects. He claimed that the albuminuria so often associated with pregnancy and labour

was caused by pressure or traction affecting one or both renal veins. He believed that the toxaemias were originated by toxins absorbed from the intestinal canal and prevented from detoxication by a breakdown in the defences of the body. The toxins absorbed were in excess of the normal because of the intestinal stasis brought about by the bulk of the uterus. Uterine enlargement prevented also the proper absorption and assimilation of food and of those substances needed by the liver for the defence of the body. The liver had to function not only for the mother, but also for the foetus. There was considerable evidence that the ionized calcium in the blood was the most important element used by the liver in its detoxicating functions. The foetus required large supplies of calcium during the last four months of pregnancy; its requirements, combined with the other demands for this element, resulted in diminution of calcium in the blood, and allowed the liver to become damaged. There was interference with the metabolism of meat if the liver was injured, and thus there was an increase of guanidine, which was an antagonist of calcium and lowered the blood sugar figure. The toxaemias of pregnancy were, in fact, merely different expressions of a damaged liver. Dr. Theobald then summarized various experiments on dogs; feeding them on a lean meat and water diet had caused parenchymatous degeneration of the kidneys, especially affecting the convoluted tubules. In the liver there was severe degeneration of all types, including recent and hyaline thrombi of the veins and capillaries, cellular necrosis, and haemorrhage in the periphery of the tubules. These changes occurred more rapidly if pregnancy was present. Such dieting, moreover, brought about foetal death if it was started at the beginning of pregnancy, and Dr. Theobald suggested that human abortion might be similarly referable to incomplete diet. It was necessary, therefore, to ensure that the food of a pregnant woman contained a relatively low protein content, but was rich in calcium, iron, and iodine, and was well supplied with vitamins. It was also necessary to prevent intestinal stasis, preferably by suitable diet, but also, when required, by the administration of liquid paraffin.

Endometrioma.

Dr. F. J. HECTOR read a short communication on a case of endometrioma, which occurred in an unmarried woman aged 26.

In September, 1921, she had complained of dysmenorrhoea, and the uterus was found to be fixed in a retroverted position. At an operation adhesions were found, especially on the left side; left salpingo-oöphorectomy was performed with ventrofixation. In the next year subtotal hysterectomy became necessary; there was a hard mass in the base of the left broad ligament, in which the left ureter was found to be kinked and occluded. The left kidney was cystic, and the uterus showed a condition of polypoid endometritis. In November, 1926, a polypus as large as an almond was removed from the left vaginal vault. In June, 1929, fleshy polypi were excised from the cervix and the left vaginal vault; they consisted of endometrial tissue embedded in a fibrous stroma. In January, 1930, the patient complained of irregular vaginal haemorrhage, with pain in the left thigh and on micturition. An indurated plaque was felt in the left vaginal fornix, and radium treatment had been recommended.

PELLAGRA.

At the meeting of the Royal Society of Tropical Medicine and Hygiene, on May 15th, with Dr. G. CARMICHAEL LOW in the chair, two papers were presented on pellagra.

Dr. HORACE M. SHELLEY reported some observations he had made on this infection in Nyasaland, where it was endemic, particularly in the central prison at Zomba; cases also occurred, though less frequently, at the central lunatic asylum, and the disease was found sporadically over practically the whole country. The difference in incidence between the prison and the asylum was possibly explained by the fact that in the former institution as many as ten or twelve inmates shared one cell, whereas in the asylum usually not more than one or two individuals occupied one compartment. Diet did not appear to be of any great etiological importance, and the possibility of the cause being a microbic infection or an intoxication still remained. The supporters of the theory that the condition was due to a diet which lacked certain vital principles such as vitamin B 2, the pellagra-preventing factor, had been constantly changing their view as to which particular principle, by being absent from the diet, produced the disease. The characteristic erythema was probably trophic in origin. It had a potential maximum distribution, the exact extent of the area involved depending upon the amount of irritation to which it was subjected. The disease could be conveniently divided into acute pellagra, which was fatal in a few days, and chronic pellagra, characterized by repeated exacerbations. Types of the chronic disease were the subthyroid, the gastro-intestinal, the paralytic, and the mental; patients belonging to the last group suffered from delusional or manic-depressive insanity, and occasionally from acute mania. There was no definitely specific treatment, but the administration of thyroid gland tablets was of great benefit in certain cases, and should be tried as a routine measure.

Dr. WILLIAM SUSMAN followed with an account of the morbid anatomy and histology of pellagra. His investigation was based on six cases, of which two were of the subacute variety and four were chronic. The thyroid gland was found to be abnormal in every case, and in only one was the characteristic proliferation, pigmentation, and fibrosis absent. In all cases the thyroid lesion was without doubt the oldest, but in none was there sufficient evidence to warrant a conclusion that the process was an inflammatory one of the ordinary type. It was quite evident that the thyroid lesion was the primary one, and it was justifiable to suppose that the thyroid disorganized the action of the adrenal, and, in time, the action of the liver and pancreatic islets. As regards the etiology, the experimental injection of a minute anaerobic organism which he had isolated from the blood of several pellagrins had produced lesions in rats similar to those in the human subject. The lesions did not suggest the presence of a virulent organism; a toxin was more likely, but this might be the product of some organism. The thyroid function could, however, be disturbed by various causes, although he doubted whether dietetic influences alone could produce such profound changes as seen in pellagrins. However, if to a dietetic factor was added the action of an organism, possibly a fairly common organism, the possibility was much strengthened.

In the course of discussion, Dr. H. S. STANNUS suggested that the term "deficiency disease" for pellagra was but a half-truth; the condition might rather be a sort of intoxication due to an ill-balanced diet. Dr. W. R. AYKROYD said that it should never be forgotten that pellagra was, in 95 per cent. of the cases, a maize-eater's disease. Maize contained but little vitamin B 2, but not less than some other staple foodstuffs. He agreed with Dr. Stannus that lack of balance in the food might possibly be an explanation of this interesting disease. Dr. G. W. M. FINDLAY pointed out that a considerable number of epidemics of pellagra had been definitely cleared up by changes in diet—for example, among Armenian refugees, among Turkish prisoners of war in Cairo, and more recently in the Ukraine. The alterations observed in the thyroid gland might also be due to dietetic changes. Dr. J. BARCROFT ANDERSON suggested that it was not maize with the germ which was at fault, but maize deprived of the germ, which possibly contained a toxin which ordinarily the germ neutralized. Dr. P. H. MANSON-BAHR referred to outbreaks which occurred among prisoners of war. He had always been struck by the clinical resemblance of symptoms of pellagra to those of glandular deficiency. He also pointed out the fallacy underlying many early returns of pellagra. If the statistics relating to prisoners of war were taken, it would appear that pellagra suddenly broke out in epidemic form about 1918, but that was not really the case, for the disease existed before that, and was generally diagnosed under the name of some cutaneous malady.

Dr. SHELLEY, in the course of his reply, pointed out that pellagra occurred even when no maize was eaten. The Lancashire County Asylum at Winwick had 23 cases of pellagra in 1918. The patients showed all the typical lesions, including the dermatitis, and the outbreak came at a time when the asylum inmates were better fed, clothed, and housed than ever before.

UTERINE HAEMORRHAGE WITH OVARIAN HYPERTROPHY.

AT a meeting of the North of England Obstetrical and Gynaecological Society on April 11th, with the president, Mr. J. W. BURNS, in the chair, Mr. ALFRED GOUGH (Leeds) described two cases of excessive uterine haemorrhage associated with enlarged ovaries in young women.

Mr. Gough said that in one case the patient, aged 22, had suffered from menorrhagia and metrorrhagia for two years; the haemorrhage continued in spite of curetting. An operation was performed in which the right ovary was removed and half of the left was resected, the excessive loss of blood had been improved. In the other case the patient, aged 23, gave an identical history, though the losses had only been excessive for seven months. In each instance the removed ovary was between three and four times the normal weight; the organ was of a succulent consistence, showing histologically increase of the stroma with numerous small cysts. Mr. Gough said there were few references to this condition, which he considered was rare, but similar observations had been made by Blair Bell, Whitehouse, Wilfred Shaw, Cotte, and Fekete.

Mr. ERIC STACEY (Sheffield) thought this condition of hypertrophy of the ovary with cystic formation associated with excessive losses in young women was very common indeed; he had operated on many cases in which by partial resection he had reduced the bulk of the ovaries, and cured the patient. In his opinion the condition was associated with most of the causes of pelvic congestion, whether physical or psychological. Mr. A. A. GEMMELL (Liverpool) thought this was true of some cases, but that many young women suffered from menorrhagia, in which the cause was excessive function of the thyroid; these would be cured by x-ray applications to that organ. Others, however, had similar symptoms due to hypothyroidism, and were improved by daily thyroid therapy for some months. Dr. HUNTER (Manchester) considered that the giving of calcium chloride intravenously, with the addition of parathyroid extract, would generally prevent operation in these cases.

Spinal Anaesthesia in Midwifery.

Dr. HUNTER (Manchester) read a short note on the value of spinal anaesthesia in cases of difficult midwifery. He thought the scope of its use was limited, but one advantage was the greater relaxation of the birth passage without interference with the uterine contractions; chest complications seemed to be fewer, and there was easier breathing than under general anaesthesia, which facilitated the operative manœuvre. In fact, its greatest advantage was that with spinal anaesthesia the prognosis was better in cases where an otherwise healthy patient had had a temporary acute anaesthetic bronchitis, as a result of one or several previous and badly administered anaesthetics. He advocated it, therefore, in cases of failed forceps, and quoted two cases. He had employed it in three cases in which a dry, prolonged labour, with a rigid, undilated cervix, had terminated in delivery completed by cervical hysterotomy and the application of forceps. He had also used it in cases of heart disease.

Dr. BURNS read a similar communication on the value of spinal anaesthesia in cases of Caesarean section; he considered that its scope in midwifery was limited to this operation. He had found that its use led to a diminution in the amount of blood lost, with no increased risk to the mother and child, and a more speedy recovery of the patient, without chest complications.

Congenital Recto-vulval Fistula.

Dr. A. M. CLAYE (Leeds) described a case of congenital recto-vulval fistula, in which multiple fibroids, impacted in the pelvis, obstructed the progress of a full-time labour. The patient's menstrual history had been normal, and there had been no discomfort during gestation. Dr. Claye had delivered her by Caesarean section, followed by subtotal hysterectomy; a living child had been born, and both it and the mother had done well. He had found in the literature two cases only in which a patient had become pregnant with this abnormality. Dr. BURNS said that in 1929 he had reported a similar case; the patient, who had had three children, was unaware of the presence of this abnormality. Mr. W. GOUGH (Leeds) added that he had seen a similar case.

THE PHYSICAL AND MENTAL ASPECTS OF THE JEW.

THE Jewish Health Organization of Great Britain held a "symposium" on May 25th, at the Conway Hall, Red Lion Square, when the subject was the physical and mental aspects of the Jew. Sir HUMPHRY ROLLESTON, who presided over an audience so large that an adjournment had to be made to a larger hall, said that the discussion must be of wide interest because it dealt with a race of extraordinary intellectual ability, which had attained unrivalled success in art and science, in culture, and also in finance. One interesting point was that the Jewish race had retained in a most marked degree certain physical and mental characteristics.

Professor M. GINSBERG, dealing with racial characteristics, said that special difficulties as regards Jewish anthropology were race prejudice, the complexity of the facts, and comparative ignorance of the laws of heredity. Prejudice showed itself in two ways. On the one hand, there were Jews who, in order to substantiate their general belief in the importance of assimilation, tried to make out that there was no such thing as a Jewish race; hence they stressed the approximation of physical characteristics of the Jews to those of the peoples among whom they lived. On the other hand, there was prejudice, from the point of view of ardent Jewish nationalists, who maintained that the Jewish race was pure. Neither of these positions could be maintained. Professor Ginsberg confined himself to some remarks on stature, head form, pigmentation, and nose form. He had collated such information as existed with regard to the stature of Jews in different parts of the world; the mean stature appeared to be 162 cm., which was slightly less than the average. There were, however, certain approximations between the stature of Jews and that of their hosts. It was generally recognized that stature was in the main determined by heredity, but undoubtedly it was also capable of being affected by environmental changes. It was conceivable that the low stature found in Poland and Russia was not a racial trait, but was due to the conditions under which the people lived. Most Jews in different parts of the world were undoubtedly broad-headed, though not to such a degree as the Caucasians or the Armenians. In this respect also there was an approximation to the peoples among whom they lived. The hooked nose was not really common among Jews; it was only found in about 14 per cent. of the Jews in Poland, and in other countries to an even smaller extent. It was probably much more common among Armenians and the Alpine populations of Central Europe.

Dr. L. ISSERLIS of the London School of Hygiene and Tropical Medicine presented some Jewish vital statistics. The Jewish population of the world, he said, so far as could be computed, constituted 0.75 per cent. of the total population. By a numerical accident, this represented almost exactly the proportion of Jews to the population of Great Britain. For Europe as a whole the figure was 2 per cent. If some figures relating to the Jewish population fifty years ago were to be accepted, the annual rate of increase in the Jewish population during the last half-century had averaged 1.8 per cent. on the population for the preceding year. He was unwilling, however, to accept these figures, though he believed that the Jews had increased markedly at a greater rate than the rest of the population. Time and place appeared to have parallel effects on the Jewish and non-Jewish sex and age ratios.

Dr. W. M. FELDMAN dealt with the question whether there were any theoretical grounds for expecting diseases to have a different incidence or mortality rate or to run a different course among Jews. He reminded the audience of certain fallacies which must be guarded against; it was wrong, for example, to assign a racial reason for any observed differences until all environmental factors had been exhausted. With regard to infectious diseases, Jews availed themselves of preventive measures and sought medical advice sooner than did Gentiles. There were from 25 to 50 per cent. more deaf-mutes among Jews than among Gentiles, possibly owing to the fact that consanguineous marriages were three times as common in Jewry. The most common single cause of blindness was ophthalmia neonatorum; this was certainly not more frequent among

Jews, but myopia was commoner, and since diabetes occurred more often in Jews it was reasonable to suppose that the incidence in them of diabetic glaucoma was greater, but this view was not accepted by all observers. Syphilis was not very common among Jews, and alcoholism, with the diseases caused by it, was conspicuous by its absence. Arterio-sclerosis was probably more common, on account of the greater pace at which Jews lived, as well as their liability to greater mental strain. Retinitis pigmentosa was said to be frequent, and at one time was regarded as exclusive to Jews. The alleged greater frequency of haemophilia among Jews might be more apparent than real, since the condition was more likely to be detected among the children at circumcision. Cancer, taking the condition as affecting all organs, was neither more nor less common than among Gentiles of the same age distribution. Uterine cancer, however, was certainly less often met with, and mammary cancer was very rare. On the other hand, gastro-intestinal cancer was perhaps more frequent. Dr. Feldman believed that cancer of the uterus and of the breast was a protest by those organs against being thwarted in their natural physiological functions, as a result, sometimes, of the practice of contraception or of absence of breast-feeding. Of the metabolic disorders, there was no doubt that diabetes was found often among Jews; in his private practice, mainly Jewish, he encountered this condition at frequent intervals; in his hospital practice, mainly Gentile, it was much more rare. The disease was, however, less severe in Jews, owing to their habit of seeking medical advice early.

Dr. E. MILLER discussed the Jewish mind in health and disease. Some investigators in the field of psychology, he said, had gone so far as to declare that the Jewish people had a specific temperamental quality. There was this to be said, that the Jew thought verbally, and the non-Jew pictorially. In the case of Jewish children verbal expression and imitation of the linguistic habits of the adult seemed to come more easily and earlier. Musical ability was also pronounced among Jews, perhaps because music was allied to the world of enumeration and mathematics, in which they also excelled. As regards mental disorders, Jews were prone to suffer from pure hysteria and anxiety hysteria, but psychasthenia and other forms of introversion were very rarely met with. For every twenty cases of hysteria in one form or another he encountered not more than two or three of psychasthenia. He had noticed the frequency of metabolic disturbances associated with psychoneurosis in Jewish patients. As to varieties of insanity, when Jews suffered from manic-depressive insanity the depressive phase dominated the picture. In dementia praecox there was no special characteristic in Jewish patients except the absence, or relative absence, of mystical ideas from their hallucinations. He felt that the history and vicissitudes of the people must have told on the Jewish constitution, but at the same time he failed to find marked evidence of a tendency to neurosis. Among 3,000 cases of war neurosis he came upon actually only seven among Jews.

Dr. D. N. NABARRO said that he did not think the actual make-up of the Jew, apart from the nervous system, differed from the make-up of any other race, but possibly the anatomical make-up of the nervous system might have something to do with the production or causation of certain diseases, such as diabetes and the various neuroses to which Dr. Miller had referred.

In the course of some further questions and discussion, Dr. ADOLPHE ABRAHAMS remarked that what struck any observer of the Jew was his extraordinary adaptability; if he happened to live in a country which had certain diseases peculiar to itself, he forthwith adapted himself to those diseases. But there were some diseases which, if not restricted to Jews, were found much more frequently among them, and these were often unusual and rarely seen conditions. If a medical man put together the diseases he could not diagnose, he would find a greater percentage of them in Jews than in non-Jews. Diseases extraordinarily common among Jews were those of the sympathetic nervous system. Disturbance of the endocrines was frequent, especially in Jewesses, and conditions like urticaria, asthma, and so on, were often encountered.

Reviews.

CLINICAL ASPECTS OF CHEMICAL PATHOLOGY.

DR. G. A. HARRISON'S *Chemical Methods in Clinical Medicine*[1] is in some ways a unique work. There are a good many textbooks of biochemistry; even more which deal with practical physiological chemistry; but Dr. Harrison has contrived to take something from each side of the subject, and to weld the parts into a coherent and most interesting whole. It is clear that he draws from a wide practical experience; any laboratory worker will at once recognize the "snags" he describes as old acquaintances, and his methods of circumventing them as sound and practical.

So far as technical methods are concerned, the book is a fairly complete laboratory manual for the chemical pathologist. All the routine methods he is likely to require are described, and in addition, there are to be found directions for dealing with many of the odd things that turn up unexpectedly, and which, while too rare to be regarded as matters of routine, may easily prove baffling and troublesome to one who feels that he is expected to provide information for a clinical staff whose ideas about his problems, methods, and difficulties are rather hazy. For example, the occurrence of Bence-Jones protein in the urine is very rare, and the pathology of the condition is so obscure that it has little theoretical importance. On both counts a chemical pathologist might be excused for missing it; yet if he did so he would certainly be inclined to criticize himself. Dr. Harrison not only describes the usual tests for the substance, but points out their difficulties, why the substance may be overlooked, and the precise precautions to take to avoid such a happening. Blended with the exposition of practical matters there is some very sound discussion of the theoretical aspect of the subject. The author goes pretty fully into the theoretical basis of the various tests, and points out their limitations. He rightly lays great emphasis on the fact that the findings of the chemical pathologist can be used to full advantage only when viewed beside those of the clinician, and we feel sure that he also implies that the former should be taken fully into the clinician's confidence. The book should be of great use to three classes of people: first, to the chemical pathologist; secondly, to the clinician who wishes to get the full value out of laboratory tests, and, incidentally, to understand something of his colleague's problems and difficulties; and thirdly, to the senior student or to the houseman working for one of the higher degrees. It is becoming increasingly important for candidates that they should have an intelligent interest in laboratory methods, and be themselves able to undertake the simpler manipulations entailed; this book should help them considerably in these directions.

That a fuller understanding and a better co-operation between clinician and pathologist is desirable has long been plain. At present much effort is wasted in performing tests whose results are not properly interpreted, and it sometimes happens that the pathologist is set impossible tasks simply because the clinician has inadequate knowledge of the possibilities and limitations of pathological technique. Dr. Harrison's book should be studied by both parties.

JAUNDICE.

IN the Syndromes of Jaundice[2] Dr. P.-A. CARRIÉ of Paris, while showing how much the French school has done in unravelling the knotty problems of this subject, is broad-minded in his appreciation of the work done by authors of other nationalities, German and English speaking. He pays a high compliment to the work of Dr. A. R. Rich of Baltimore, and gives not only full credit but a superfluous accent to Dr. J. W. McNée. Although in recent years

[1] *Chemical Methods in Clinical Medicine.* By G. A. Harrison, M.D., B.Ch.Cantab., etc. Churchill's Empire Series. London: J. and A. Churchill. 1930. (6 × 10, pp. vii + 534; 64 figures. 18s.)

[2] *Les syndromes ictériques.* Par P.-A. Carrié, Médecin des Hôpitaux de Paris. Bibliothèque des Grands Syndromes. Paris: G. Doin et Cie. 1930. (6¼ × 9½, pp. 452. 85 fr.)

the theory of jaundice has undergone most radical changes, Dr. Carrié dutifully and gracefully stands up for the men of old time, and shows that many of the modern conceptions are in reality old. Thus in 1857 Gubler considered that in haemolytic jaundice a pigment—haemaphein—other than, though allied to, bilirubin was formed; and in this century Hijmans van den Bergh has shown the difference between the blood bilirubin in obstructive and that in haemolytic jaundice. After a full discussion of the site of manufacture of bilirubin, in which the experiments of F. C. Mann of the Mayo Clinic and their repetition with a divergent deduction therefrom by Melchior, Rosenthal, and Licht are considered, the question whether or not the liver cells play any part other than excretory in the formation of bile is left open. In like manner the origin of the bile acids, cholesterol, and urobilin is dealt with in separate sections.

The forms or syndromes of jaundice described are the mechanical or obstructive, infective, toxic, jaundice in certain hepatic and biliary diseases, such as gall-stones, cholangitis, and cirrhosis; the haemolytic form, familial cholaemia, and jaundice in the newly born. Familial cholaemia (described by Gilbert, who thought it was due to chronic inflammation of the intrahepatic bile ducts caused by intestinal infection) has attracted little attention since familial haemolytic jaundice has become generally recognized. Dr. Carrié, however, fully accepts it as distinct from familial haemolytic jaundice, though he states that it is rare, if not exceptional, and ascribes it to congenital insufficiency of the hepatic cells and not to intrahepatic cholangitis. The fragility and other changes of the red cells characteristic of familial haemolytic jaundice are absent in familial cholaemia, and thus justify the view that the two are two separate conditions.

Clearly written, this monograph provides a good account of the problems of jaundice.

CLINICAL OPHTHALMOLOGY.

THERE are many excellent textbooks and handbooks of the diseases of the eye. Commonly these begin as the personal record of some diligent investigator, but for the most part the very success of such a work determines the impersonal character of the book, and there is a tendency to suppress personal opinion and observation in favour of a more averaged or generalized statement. This becomes increasingly evident with each successive edition of a popular work. The standard representation of the clinical characters of any set of bodily diseases leaves room for the occasional presentation of a more personal outlook. A little book of this order is that on the *Affections of the Eye in General Practice*,[1] by Mr. R. LINDSAY REA. In the space of some 150 pages the author contrives to give a lively and satisfactory presentation of some of the commoner diseases of the eye, freely illuminated by references to personal experiences. Quite the most interesting of the chapters is that on the hygiene of the eyes; in this the author ranges in a few pages over the whole of a life, from the pre-natal state to senility. There is a note on the growth of the eyes of the unborn child and the possibility of their being injured by maternal disease or interference with the progress of the gestation. Thence the author touches on the risks of birth, the trials of infancy, the propriety of school work, and the necessity for the periodic examination of the eyes during school life. Note is made of the risks of industry and their prevention, the causes of fatigue in student life, the onset of presbyopia, and the degenerative changes of age. Mr. Lindsay Rea maintains that the cinemas cannot be blamed for producing defects of eyesight; they are rather to be praised for revealing them; a large proportion of children admit that they cannot read the subtitles on the screen as well as their parents and others can. No one should be permitted to sit close to the screen, because there the flicker is observed at its worst, and this produces extreme fatigue of the eyes. The book is well illustrated with both black-and-white and coloured pictures, many of which have been drawn by the author.

[1] *Affections of the Eye in General Practice.* By R. Lindsay Rea, B.Sc., M.D., M.Ch., F.R.C.S. London: H. K. Lewis and Co., Ltd. 1930. (Demy 8vo, pp. xvi + 156; 33 figures, 7 plates. 10s. 6d. net.)

The usefulness of the *Manual of Diseases of the Eye*,[4] by MAY and WORTH, is evident from the fact that it has now attained a sixth edition, and of these editions many have been reprinted several times. The book is a good straightforward presentation of the facts of the diseases and disorders of the eye. It is tersely yet clearly written, and well illustrated. In this new edition the whole matter has been revised without making any radical change, except at one place. A new and short chapter on the slit-lamp and corneal microscope has been written by Mr. Harrison Butler, who in eight pages contrives to give a presentation of the basis of this most interesting form of investigation, which is calculated to grip the attention of the student. The book is certain to attract and satisfy many students and practitioners.

STROGANOFF'S TREATMENT OF ECLAMPSIA.

THE appearance in English of Professor STROGANOFF'S own account of his *Improved Prophylactic Method in the Treatment of Eclampsia*[5] will be welcomed by all who are engaged in the practice of midwifery, and we owe a debt to Dr. Haig Ferguson for having introduced this book to the English-speaking people.

After a preliminary survey of the various methods that have from time to time been used in the treatment of eclampsia, Professor Stroganoff gives a short outline of the history and progress of his own particular method, and then in a new section considers the pathogenesis of eclampsia so far as it has any bearing on the treatment which he adopts. Without entering on a long discussion as to the precise origin of the toxin, he assumes that eclampsia is due primarily to the circulation in the body of some *poison (probably of placental origin) which causes* vaso-constriction in the various organs—notably in the liver, kidneys, and brain. Added to this he postulates a greatly increased excitability of the nervous system, and in his view this is at least an equally important factor in bringing about the vaso-constriction. The lesions that are found post mortem in the kidney, liver, and brain he regards as secondary to the vaso-constriction, brought about by the circulating toxin and by the increased excitability of the nervous system. He points out that during and shortly after a fit asphyxia is a most important factor in causing further cellular injury—in this way eclampsia is looked upon as resulting in a vicious circle, each succeeding fit tending not only to weaken the patient, but predisposing to another. To break this vicious circle is the object of his treatment, and he believes this is best done by devoting attention to the hyperexcitability of the nervous system.

Professor Stroganoff's scheme of treatment is fully set out, and for this reason alone the book is valuable, since so much confusion has hitherto existed as to the precise details which he employs, and it has been his contention that the details are of the greatest importance. Broadly speaking his method consists of (1) removal of all irritation, (2) depressing the excitability of the nervous system with chloroform, morphine, and chloral, (3) assisted delivery in the second stage of labour whenever possible. He insists on the futility of hard-and-fast rules for the treatment of a disease where so great differences in severity and attendant circumstances are found, but nevertheless he attempts to give various "rules" for the treatment of milder cases. In very severe cases he is emphatic in his denial of any dogma, and is ready at all times to make use of auxiliary methods of treatment. Thus he finds room for venesection, and even, on rare occasions, for Caesarean section. Professor Stroganoff has found it impossible to prepare a fixed scheme for severe cases, and repeatedly points out that such cases must be treated not by rule, but on their merits.

A study of this book brings home to us, in a way that no summary is able, the importance of attention to detail in the "improved prophylactic method," and it shows that for its successful application the constant attention

[4] *A Manual of Diseases of the Eye.* By Charles H. May, M.D., and Claud Worth, F.R.C.S.Eng. Sixth edition. London: Baillière, Tindall and Cox. 1930. (5½ × 8, pp. viii + 475; 337 figures. 15s. net.)

[5] *The Improved Prophylactic Method in the Treatment of Eclampsia.* By Professor W. Stroganoff. Third edition, thoroughly revised and completed. First English edition. Edinburgh: E. and S. Livingstone. 1930. (Demy 8vo, pp. viii + 154. 10s. 6d. net.)

of the doctor is necessary. The "Stroganoff treatment" of eclampsia is a term that is used throughout the world, but this book—the first full account in English—will do much to dispel misconceptions about what this term implies. It is so well written, and so remarkably free from dogmatic statements, that it will almost certainly result in an increased application of Professor Stroganoff's principles among English-speaking obstetricians.

MALE SEXUAL DISORDERS.

SOMEWHERE on the border between uro-genital surgery, neurology, and psychopathology, and encroaching on all of them, is a region littered with disorders of the sexual function which have sometimes a psychological basis, sometimes an organic basis, sometimes both. It is a debatable ground which neither the urological surgeon, nor the neurologist, nor the psychopathologist has ventured to explore thoroughly, perhaps from fear of being regarded by the others as an intruder. Mr. KENNETH WALKER, being a urologist with psychological leanings, has taken the bold course of mapping out this region, and in *Male Disorders of Sex*[6] he presents his discoveries about primary and secondary impotence, homosexuality, masturbation, pollutions, coitus interruptus, priapism, continence, and sterility, to the non-expert practitioner and student. The word "discoveries" is used advisedly. Mr. Walker is intimately acquainted with the literature of what is called "sexology"; but the conclusions in the work under review are derived almost entirely from his own observations and experience.

The statement that the problems considered in this little book have been neglected because they overlap bordering specialties represents only part of the truth. The reason that would be favoured by many modern psychologists—namely, that the problems are neglected simply because they are sexual, and therefore subject to repression—is equally inadequate. Sexual problems which fall clearly within the province of the neurologist or the urological surgeon are given due weight both in the student's curriculum and in medical literature; those that fall within the province of the psycho-analyst stand in no serious danger of being overlooked. The real explanation, as Mr. Walker himself suggests, is that these borderline disorders of sex are regarded by most practitioners as being among the minor ailments. They do not kill, and only very rarely are they associated with killing diseases. It should be realized, however, that the doctor's estimate of what constitutes a minor malady and the patient's may differ considerably. In our medical schools students learn a great deal about, for example, appendicitis, and little or nothing about impotence. It is inevitable, therefore, that in the student's scale of values appendicitis should rank very high and impotence nowhere. But if a candid patient were asked which of these conditions he would rather suffer from there can be little doubt what his answer would be. The student is father of the practitioner, but the values he carries from hospital rarely survive the daily testing of general practice. The rare tumours and pretty cases, the gastrectomies and the Wertheims, recede in importance, and he has to face problems which in the course of his hospital training he might have been excused for believing to be non-existent. Among these problems those which form the subject of Mr. Walker's book will loom large or small in the practice according to the practitioner's own attitude towards them. Patients do not talk easily about disorders in their sexual life, even to the best-informed and most understanding physician. The physician who lacks the requisite sympathy and the knowledge may well conclude from the fact that none of his patients seem to mention them that these disorders are among the rarest that afflict mankind. From a study of *Male Disorders of Sex* at least these two truths emerge: that psychogenetic or quasi-psychogenetic disorders of sex cause a great amount of preventable suffering; and that their treatment presents problems which are as much worthy of the physician's attention as any of the problems of medicine.

[6] *Male Disorders of Sex.* By Kenneth M. Walker, F.R.C.S. London: J. Cape. 1930. (Cr. 8vo, pp. 121; 1 figure. 5s. net.)

In writing a small book on a large subject the author must of necessity limit his field, and Mr. Walker has wisely chosen the strictly practical problems involved in the diagnosis and treatment of the most common disorders of sexual function. Thus he devotes four chapters to impotence, two chapters to sterility, and one each to homosexuality, masturbation, pollutions, priapism, and continence, but only a few words incidentally to sadism and masochism, which, as fully developed clinical entities, come more within the province of the alienist than of the general physician. Throughout the book, moreover, he writes with wisdom and candour about everyday sexual problems—for example, abstinence, promiscuity, sexual excess, homosexuality—which are at least as much the concern of the moral philosopher and the sociologist as they are of the physician. In his observations on these matters he will satisfy neither those who by temperament object to any discussion on sexual problems at all, nor the growing number of persons who are so busy in discussing sex frankly that they can have but little time left for anything else. He takes not so much a *via media* between extreme emotional attitudes as an entirely new way in which the end is reached by the difficult and relatively unpopular expedient of clear thinking. The style of the book is admirable: clear and unobtrusively epigrammatic.

CLASSIFICATION OF BACTERIA.

FOR many years there has been felt a need for a standard classification of bacteria, and the third edition of *Bergey's Manual of Determinative Bacteriology*[7] continues a work which meets this need very satisfactorily. The manual is prefaced by an account of the history of its subject, commencing at 1786 and closing with notes on the basis of classification which have been adopted by the Society of American Bacteriologists in 1919. It is on the system given by that body that Bergey's book is founded. In a code are laid down the points which should govern the nomenclature of organisms, and some recommendations for the avoidance of certain undesirable features in the naming of new bacteria. It is suggested that the manual may be used for the identification of organisms by reference to their morphology, cultural characters, and other diagnostic points, and the matter is arranged with this object in view.

One of the important changes in this edition is the separation of the typhoid and dysentery groups of bacilli; the latter come under the genus Shigella Castellani and Chalmers, and the former make the genus Eberthella. It is likely that other regroupings may be called for as work progresses, and the co-operation of bacteriologists in supplying further data is invited. In discussing the habitat of the *Alkaligenes abortus* (the some-time *Brucella abortus*) no mention is made of its causing disease in man, as has frequently been reported during recent years. The close resemblance to, and perhaps identity with, the *A. melitensis* is commented on. The subject-matter of such a book as this is ever on the increase, and in this edition over 200 additional organisms are described. The excellent index helps to make the manual an authoritative guide.

NOTES ON BOOKS.

THE enormous output of medical monographs, systems, handbooks, digests, treatises, and essays from the mid-European universities and hospitals of late years makes the task of the selective reviewer very hard. Off the well-known track is a series of monographs, edited by Professor Schwalbe, bearing the comprehensive title Diagnostic and Therapeutic Errors in General Medicine and How to Avoid Them. The volume devoted to metabolic disorders[8] is written by Professor S. ISAAC of the Jewish Hospital at Frankfort-on-the-Main. It conforms to the conventional type in being a paper-backed monograph of 150 pages, complete in itself, and well printed

[7] *Bergey's Manual of Determinative Bacteriology.* By David H. Bergey, assisted by a Committee of the Society of American Bacteriologists. Third edition. London: Baillière, Tindall and Cox. 1930. (6 × 9½, pp. xvii + 589. 27s. net.)

[8] *Diagnostische und therapeutische Irrtümer und deren Vermeidung, Innere Medizin. Erstes Heft: Krankheiten des Stoffwechsels.* Von Professor Dr. S. Isaac. Zweite, vollkommen neu bearbeitete Auflage. Leipzig: G. Thieme. 1929. (6½ × 9¾, pp. 150; 12 figures. M. 10.)

and indexed. With the reappearance of obesity and diabetes mellitus on a large scale in the richer parts of Central Europe, Professor Isaac has had large resources and material to draw upon, but though the bulk of the monograph is given over to diabetes mellitus it includes no information about this disorder that is not already accessible in works written in the English language. The diagnostic pitfalls in diabetes mellitus are laboriously and minutely explored along the familiar lines; the usual large and complicated dietetic tables, with a good deal derived from Noorden, appear in full. There is a bright little chapter on prophylaxis, with special reference to family incidence and the association between diabetes mellitus and other metabolic maladies, such as cholelithiasis, and the "prediabetic life" is briefly considered. The other sections of the book seem disproportionately short, but a concise and useful review of obesity is presented, and clear consideration is given to exogenous and endogenous fat disturbances. Most of the latter admit of endocrinopathic classification, and the author deals with the thyroid, gonads, and pituitary very fully, and with the pineal, thymus, and adrenal less fully. "Cerebral" adiposity is a new term, and is here given to that type of obesity well known in this country as a sequel to encephalitis lethargica. The other maladies discussed are gout, diabetes insipidus, and the rarer urinary excretion disorders.

A second edition of the small handbook entitled *Varicose Veins, Hæmorrhoids, Varicocele, Hydrocele, and their Treatment by Injection*,[9] by Dr. R. THORNHILL, has now appeared. The new matter includes a list of warnings at the end of each section against various dangerous proceedings and possible omissions in the investigation and treatment of a case.

Mr. R. A. FISHER'S *Statistical Methods for Research Workers*,[10] which is intended to be of assistance, especially to the biologist, in applying statistical tests to numerical data, was noticed in these columns on the appearance of a second edition. A third and revised edition has now been published, in which two sections have been added to the chapter on the principles of statistical estimation.

A description of present-day contraceptive technique appears in the revised and enlarged edition of *Parenthood: Design or Accident*[11] by MICHAEL FIELDING. The first edition was the subject of editorial comment in our issue of August 4th, 1923 (p. 218). The chapter on methods has been completely rewritten, and now includes discussions of the relative efficiency of the chief varieties of mechanical pessaries and of the effervescing and non-effervescing chemical pessaries. In a chapter on methods still under investigation the author deals with the production of revocable sterility by means of Gräfenberg's ring, *x* rays, and other physical agents, spermatoxins, and sex hormones. Two appendixes have been added, one on the work of the birth control clinics, the other giving the addresses of, and hours of attendance at, a number of birth control clinics throughout the country. The author is a medical man writing under a pseudonym.

Of the making of books on massage there is no end. The fifth edition of NISSEN'S *Practical Massage and Corrective Exercises*[12] is a reminder of this fact. Each excellent director of a school, be it Swedish or Japanese, feels it his duty to instruct the public, and does so. This book goes somewhat beyond mere massage, for the author discusses the pathology of some deformities in a controversial manner. Among other remedies for congestion of the brain "breech beating" is recommended. But in anæmia of the brain the case is altered: here we are to practise "back percussion." The distinction is a nice one, and we quote it as an indication of the fine discrimination of the author, and leave it at that.

In *Orthodontics*,[13] the subject of the twelfth volume of Outlines of Dental Science, Mr. A. G. WILSON gives in short compass a description of the devices and appliances used for guiding the normal development of teeth, arresting developmental abnormalities, and correcting malocclusion of the teeth and associated parts. The work, we think, might have been improved by the inclusion of a longer chapter on the etiology of malocclusion, for the recognition of the basic factor in nearly all cases of dental arch deformity—namely, failure of maxillary growth—must be of prime importance in indicating the lines of treatment. Mr. Wilson has written a valuable book on the mechanical aspects of orthodontics.

In view of the growing popularity of camping and caravanning nowadays a pamphlet by Mr. J. HARRIS STONE, entitled *Caravan and Camp Cooking Recipes*,[14] will doubtless be welcomed by many who seek improved health in the open air. Useful hints are given for the preparation of palatable meals as economically as possible.

[9] *Varicose Veins, Hæmorrhoids, Varicocele, Hydrocele, and their Treatment by Injection*. With foreword by Lord Moynihan, Ch.B. With foreword by , F.R.C.S. Second edition. Minor Monograph Series. London: Baillière, Tindall, and Cox. 1930. (Cr. 8vo, pp. xiv+112. 5s. net.)

[10] *Statistical Methods for Research Workers*. By R. A. Fisher, Sc.D., F.R.S. Third edition, revised and enlarged. Biological Monographs and Manuals. Edinburgh and London: Oliver and Boyd. 1930. (5½×9, pp. xiii+283; 12 figures. 15s. net.)

[11] *Parenthood: Design or Accident?* By Michael Fielding. Revised and enlarged edition. London: Noel Douglas. 1930. (Foolscap 8vo, pp. 168; illustrated. Paper cover, 2s.; cloth, 3s. 6d. net.)

[12] *Practical Massage and Corrective Exercises*. By Hartvig Nissen. Fifth edition, revised and enlarged. Philadelphia: F. A. Davis Company. 1929. (Demy 8vo, pp. 271; 71 figures. 2.50 dollars net.)

[13] *Orthodontics*. By A. G. Wilson, L.D.S. R.F.P.S.Glas. Outlines of Dental Science, Vol. xii. Edinburgh: E. and S. Livingstone. (Cr. 8vo, pp. xi+168; 95 figures; 8s. 6d. net.)

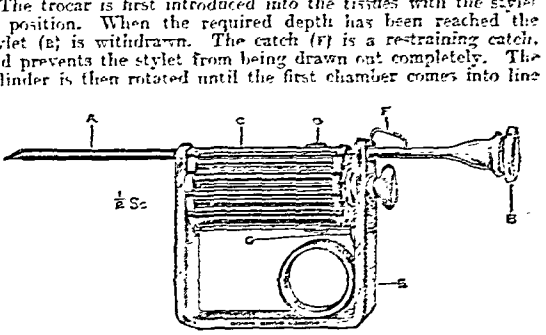
[14] *Caravan and Camp Cooking Recipes*. By J. Harris Stone, M.A. London: The Caravan Club of Great Britain and Ireland, 23, Charing Cross Road. 1930. (Demy 8vo, pp. 24. 4d.)

PREPARATIONS AND APPLIANCES.

A RADIUM NEEDLE INTRODUCER.

MR. R. BROOKE, M.S., F.R.C.S. (Worthing), has designed an improved apparatus for inserting radium needles. He writes: The instrument consists of a hollow trocar (A) with a bevelled needle point, and slotted on its upper surface: in it passes a stylet (B C). A revolving cylinder, measuring 1⅝ inches in length, contains twelve chambers, each slotted on its outer surface and designed for the reception of the radium needles. Each chamber is loaded with a threaded needle before use; the threads are drawn out of the slots on the outer surface and passed beneath the small metal flange (D), which anchors them until they are required. The handle by which the instrument is held is indicated by (E).

The trocar is first introduced into the tissues with the stylet in position. When the required depth has been reached the stylet (B) is withdrawn. The catch (F) is a restraining catch, and prevents the stylet from being drawn out completely. The cylinder is then rotated until the first chamber comes into line



with the trocar; this point is automatically regulated by a ball catch (G). The stylet is next pushed home, and the threaded needle is forced through the trocar into the tissues, the thread lying in turn in the slot on the upper surface of the chamber and in the slot of the trocar. The stylet is then withdrawn, and the cylinder is again turned until the next chamber is engaged, when a second needle is introduced; or the trocar may first be withdrawn and re-introduced at a fresh spot.

The special value of this instrument lies in the fact that it saves the time wasted during the operation in the threading of needles and in their introduction with forceps by the surgeon into the trocar each time. The needles are all threaded by the sister before the operation, and the chambers are loaded. The appliance can be obtained from Messrs. Down Bros., Ltd., St. Thomas's Street, S.E.1.

POWDERED ERGOT IN CAPSULES.

Recent researches[1] carried out in the Pharmacological Laboratory of the Pharmaceutical Society have shown that the stability of liquid ergot preparations is very unsatisfactory, and that liquid extract of ergot, when made by a satisfactory process and stored in ice, lost half its pharmacological activity in ten weeks. On the other hand, it was shown that defatted powdered ergot was stable as regards its pharmacological activity. These results have led Messrs. Stafford Allen and Sons to put on the market, under the name "erbolin," a preparation of powdered ergot in capsules. The drug has been standardized biologically by the Pharmaceutical Society, and each capsule of erbolin contains the equivalent of 0.5 mg. of ergotoxine phosphate. This corresponds to the alkaloidal content of 1 c.cm. of fluid extract of ergot (*U.S.P.*) of full potency. The unreliability of the official preparations of ergot in this country has caused the drug to fall into disfavour, which probably is unmerited, and this simple preparation deserves a careful clinical trial.

[1] *British Medical Journal*, 1930, i, 771.

KING EDWARD'S HOSPITAL FUND FOR LONDON.

ANNUAL MEETING.

THE Prince of Wales, who presided over the annual meeting of the King Edward Hospital Fund for London at St. James's Palace on May 27th, read a message from the King expressing pleasure that, as a result of the Thank-offering Fund and of the gifts received from Sir Otto Beit and Mr. Roger Parr, the King's Fund possessed a large supply of radium for loan to hospitals within its area. This enabled a wider distribution to be made of the radium at the disposal of the National Radium Commission.

Before reviewing the principal items of the annual report for 1929, the Prince announced that, since the end of the year, the capital account had been augmented by a legacy of £90,000 from the late Lord Revelstoke, and that an anonymous donor had given £24,500 in the form of securities. The two outstanding events of the year, he said, were the Thank-offering Fund for the King's recovery and the purchase of radium for loan to hospitals. The sum received from the Thank-offering Fund was £257,000, which included the magnificent gift of £105,000 from "Audax." As an instance of the lasting effect of this example, an anonymous donor had recently offered to sign a seven-year agreement, on the same lines as "Audax," for £10,500. Great advance had been made during the last eighteen months in providing hospitals all over the country with radium. In addition to the supply of radium owned by individual hospitals, an amount valued at £350,000 would be controlled by the Fund and by the National Radium Commission. At the disposal of the Fund there was a quantity of 10 grams, which would be loaned to hospitals in London, while those outside London would be supplied by the National Radium Commission, which possessed an even larger amount. Both bodies had agreed to work in consultation when desirable, and their scientific records would be in the same form.

Referring to the establishment of the London Voluntary Hospitals Committee, appointed to co-operate with the London County Council, the Prince remarked that a really good hospital service must combine in due proportion the qualities of efficiency, flexibility, organization, and freedom. Its essence consisted in a number of individual doctors treating a number of individual patients—one of the most intimate personal and human relationships that existed outside family life. It must provide for the advance of medical science, and allow scope for both individual genius and organized team work. It was important that the spirit of the voluntary hospitals, to which £2,700,000 was contributed annually in London alone, should be preserved, and should continue to permeate the whole medical service.

Accounts for 1929.

The amount for distribution in 1929 was maintained at £250,000, made up of dividends and voluntary gifts. This sum, however, left nothing over for the special pensions grants, but a legacy of £29,000, received since the end of the year, will enable the Fund to pay these grants without affecting the ordinary distribution, and also to set aside a further sum to meet the additional liabilities undertaken by the Fund in promising the special grants for seven years. The actual liability in 1929 was £13,734. An increase has been made to the special pension reserve, bringing it up to £45,000. Included in the accounts is the first of the seven annual instalments of the gift of £105,000 from "Audax," and the gifts of £50,000 from Sir Otto Beit and £10,000 from Mr. Roger Parr, for the purchase of radium. Legacies received in each of the last two years amounted £68,000. The total receipts of the King's Fund for 1929 were £535,435.

Reports of Subcommittees.

The principal event recorded in an interim report presented by the Right Hon. J. H. Whitley, chairman of the Voluntary Hospitals (Parliamentary) Committee, was the establishment of the representative committee of the voluntary hospitals, appointed for the purposes of the Local Government Act. The report also referred to the claim of hospitals to payment for road accident cases. In this connexion the Fund is working with the British Hospitals Association.

The Earl of Donoughmore, chairman of the Management Committee, presented a report on a pay-bed insurance scheme for the professional and middle classes. The Fund is not responsible for this scheme, but the Management Committee, on behalf of the Fund, has conveyed to its sponsor, Sir Alan Anderson, an expression of sympathy and of hope for its success. The Pay Beds Committee reported that in twelve months the number of pay beds had increased from 1,005 at eighty hospitals to 1,154 at eighty-eight, and further hospital extensions including beds of this kind had since been completed and opened. A section of this report dealt with insurance schemes to enable members of the professional and middle classes to provide beforehand for the cost of maintenance and treatment in a pay bed in the event of severe illness or operations. A satisfactory report was submitted of the work of the Propaganda Committee, which is arranging exhibitions, in aid of the King's Fund and hospitals, of photographs taken by members of the Royal Family.

The Fund and Voluntary Hospitals.

The report again draws attention to the need of subscriptions and donations, legacies being unreliable sources of income. It points out that the more the King's Fund receives the more it can distribute, and the greater will be its influence in maintaining the financial stability of the hospitals in London.

BIRTHDAY HONOURS.

THE Honours List, issued on June 3rd, on the occasion of His Majesty's birthday, includes the names of the following members of the medical profession.

K.C.B. (Military).

Surgeon Vice-Admiral ARTHUR GASKELL, C.B., O.B.E., F.R.C.S., D.P.H., K.H.S.

Air Vice-Marshal DAVID MUNRO, C.B., C.I.E., M.B., Ch.B., F.R.C.S.Ed., Royal Air Force (ret.).

K.C.B. (Civil).

Colonel WILLIAM COATES, C.B., C.B.E., F.R.C.S., V.D., T.D., D.L., Territorial Army (ret.).

Knights Bachelors.

NORMAN GODFREY BENNETT, M.A., M.B., B.Ch., M.R.C.S., L.D.S., President of the British Dental Association.

HAROLD DELF GILLIES, C.B.E., F.R.C.S., Major R.A.M.C.(ret.), Chief Plastic Surgeon to the Ministry of Pensions. For valuable services in the treatment of facial disfigurement.

Professor LEONARD ERSKINE HILL, M.B., F.R.S., Hon. A.R.I.B.A., Director, Department of Applied Physiology, National Institute of Medical Research.

THOMAS EUSTACE HILL, O.B.E., M.A., M.B., C.M., D.Hy., B.Sc., lately Medical Officer of Health for the County of Durham.

Khan Bahadur BEHRAMJI HORMASJI NANAVATI, C.I.E., F.R.C.S.Ed., Bombay.

JOHN RANDALL PHILLIPS, O.B.E., M.B., President of the Legislative Council, Barbados.

C.M.G.

Major GERALD JOSEPH KEANE, D.S.O., M.D., Director of Medical and Sanitary Services, Uganda Protectorate.

HERBERT CHAVASSE SQUIRES, M.D., Director, Khartum Civil Hospital.

C.I.E.

Major-General GODFREY TATE, I.M.S., Surgeon General to the Government of Bengal.

Lieut.-Colonel WILLIAM JACKSON POWELL, I.M.S., Inspector-General of Prisons, Central Provinces.

Lieut.-Colonel HUGH REGINALD DUTTON, I.M.S., lately Principal, Prince of Wales's Medical College, Patna, and Superintendent of the Patna Medical College Hospital, Bihar and Orissa.

C.B.E. (Military).

Wing Commander HAROLD EDWARD WHITTINGHAM, M.B., Ch.B., F.R.F.P.S., M.R.C.P.Ed., D.P.H., D.T.M. and H., Royal Air Force.

M.V.O. (Fourth Class).

CLIFFORD VINEY BRAIMBRIDGE, F.R.C.S.Ed., Medical Officer, East African Medical Service.

O.B.E. (Military).

Major JOHN HARE, M.D., F.R.F.P.S., R.A.M.C.

O.B.E. (Civil).

JOHN RHODES DICKSON, M.B., Deputy Surgeon General and Medical Inspector of Health, Colony of Trinidad and Tobago.

Miss ALEXANDRINA MATILDA MACPHAIL, L.R.C.P. and S.Ed., L.R.F.P.S., Superintendent, Rainy Hospital, Madras.

Major and Brevet Lieut.-Colonel WILLIAM CLAYTON SMALES, D.S.O., R.A.M.C., lately Medical Officer of Health, Gibraltar.

Hon. O.B.E. (Civil).

ABDUL AL, Medical Officer, Hebron. For services during the disturbances in Palestine in August, 1929.

SULEIMAN SALEEM, Medical Officer, Jerusalem District. For services during the disturbances in Palestine in August, 1929.

Kaisar-i-Hind Medal (First Class).

Miss ELEANOR ISABEL DODSON, M.D., L.S.A., in charge of the Church Missionary Society Zenana Hospital, Multan, Punjab.

Miss ALICE LUCRETIA ERNST, M.D.Philadelphia, U.S.A., in charge of the Ackerman Hoyt Memorial Hospital at Jhansi, United Provinces.

JOHN EDWARD SANDILANDS, *M.C.*, M.D., D.P.H., late Health Officer, Bombay Municipality, Bombay.

HASSAN SUHRAWARDY, O.B.E., M.D., F.R.C.S., D.P.H., Chief Medical Officer, Eastern Bengal Railway, Bengal.

British Medical Journal.

SATURDAY, JUNE 7TH, 1930.

THE WORK OF THE ASSOCIATION.

In the introductory paragraphs of the Proposals for a General Medical Service,[1] which are the outstanding feature of the Annual Report of Council now before the Divisions and Branches of the British Medical Association, it is stated that "the Association is a body representing the great majority of doctors in this country and in the British Empire," and again, that the scheme itself is "in accordance with the beliefs and traditions of the medical profession, and would have its whole-hearted support." This is no modest claim, but as it is implicit in all the medico-political and ethical work of the Association members may properly inquire from time to time to what extent and in what manner it is justified. In doing so they must remember that the Association is not responsible for the creation of the problems for which it seeks to offer a practicable solution. The form of these is determined at the moment by the recent increase in the pressure of public demands upon the resources of the medical profession and the radical change in the structure and outlook of the profession as a whole. Social development rather than professional bias must determine the environment of medical practice, and specialization and sectionalization, conducive to efficiency only so long as the results of research are pooled and the several sections are prepared to accept the immediate sacrifice involved in pursuit of a common policy, not only increase the importance of securing an effective agreement upon every disputed issue but render it incalculably more difficult to do so. The production of an acceptable policy involves far more than a mere counting of heads and nice gauging of the preponderance of opinion on any point at any given moment. It is in the light of these general considerations that the work of the British Medical Association should be judged, and the current report published in the *Supplement* on April 19th and 26th provides material on which a judgement may be founded.

A very large part of the report is devoted to two comprehensive statements of policy: the Proposals for a General Medical Service, and the revised Hospital Policy. Each of these statements is the outcome of many years of work; each embodies proposals affecting at some point the conditions of practice of every section of the profession; and each is a reply to definite demands already made by the community, which in accepting the Local Government Act has placed itself in a position to make its demands increasingly effective. The Hospital Policy is the result of over ten years' unremitting effort to secure the agreement of those most closely concerned, first on the principles to be applied to the solution of hospital problems, and later about the manner of their application in circumstances continually modified by successive changes of public policy in connexion with institutional services. Throughout this period no attempt has been made to take advantage of majority decisions on any disputed point. The only object has been to attain agreement first among the hospital staffs as a whole, irrespective of their membership of the British Medical Association, and later throughout the profession. The verdict of the Representative Body of the Association in July will show whether it can be claimed that the year which has inaugurated a new era in hospital service by the transfer of the Poor Law institutions will also be distinguished by the effective organization of the profession to meet the needs of the new position. The evolution of the Proposals for a General Medical Service is of no less interest. Two years ago the demand of the Representative Body for an investigation of encroachments into private practice was the expression of a desire to protect the interests of one section of the profession. The resulting survey demonstrated the growing pressure of public calls on every branch of the profession and the impossibility of adequately meeting those calls without general agreement of the whole body as to the part to be played by each section, and without agreement by each section to accept full responsibility in the sphere of practice thus allotted to it. The report on encroachments, primarily therefore a matter of domestic politics, both showed the need and cleared the way for the constructive proposals now put forward. Here again there is no new principle at issue, though new expedients have been found for giving effect to settled policy. The central idea of the extension of medical benefit to the dependants of insured persons was accepted by insurance practitioners in 1925, and in the same year their decision was endorsed by the Representative Body. The other items of the programme have also been separately agreed from time to time as occasion has arisen. What is new is the confident assurance to the public that the profession as a whole is prepared to accept responsibility for a comprehensive service to which each section will contribute according to an ordered plan. Such an assertion may not be justified, but it is difficult to believe that professional self-determination can be achieved except on this basis.

Two more sections of the report are addressed primarily to the public. The statement on the use of anaesthetics in midwifery, being the Association's response to a public demand for an authoritative statement of professional opinion on a point on which the public conscience is troubled at the moment, illustrates another aspect of the Association's obligations. The report on tests for motor drivers is an attempt to discharge a responsibility expressly accepted by the Representative Body last year by defining the practicable limits of professional assistance in determining standards of fitness for driving motor vehicles. The manner of its production shows that the Association can at short notice concentrate on such a problem expert opinion from every branch of the profession qualified to contribute to its solution. The successful intervention in connexion with the draft Poor Law Order shows the utility of the Association's machinery for ensuring that the position of the profession is not prejudiced by departmental oversights. The progress of the Mental Treatment Bill marks a victory of organized professional opinion in obtaining an improvement, considered impracticable by the Royal Commission, in the facilities for the treatment of mental disease, and at the same time securing a substantial increase in the protection afforded to the individual practitioner carrying out his duties under the Lunacy Act. The report on collective investigation shows a successful application of the Association's machinery to the provision of means of pooling the results of individual and sectional experience for the advancement of science. Two other items deserve special notice. The failure of the negotiations for the new salaries scale for public health officers is a temporary setback, attributable indeed to a failure of representative machinery,

[1] *Supplement, British Medical Journal*, April 26th, 1930, pp. 165–182.

but not on the part of the Association. The appeal to strength as opposed to reason comes from the dissenting authorities, and the decision to ignore their defection is significant of the Council's confidence in the new scale as a reasonable settlement, generally acceptable to the profession, of points on which divided opinions have prevailed too long. The memorandum on patent law illustrates the need for securing ample time for discussion by anticipation of the difficulties requiring settlement. The urgent demand for a new formulation of professional policy on this matter comes from the section of the community most hampered by the defects of the existing law, and it seems clear that the generally accepted medical tradition is calculated to embarrass their efforts to adapt the system to modern conditions. It is noteworthy that the main difficulty in deciding upon an adequate modification of the traditional opinion lies in reconciling opinions within the medical group most directly concerned. Unfortunately, the Association was called upon to give its evidence to the Committee on Patent Law before these differences had finally been composed, and the resulting situation shows how hard it is to secure effective agreement at short notice.

These examples of the scope and method of the Association's work require far more detailed consideration than is possible within the compass of a short review, but the points touched on are in themselves sufficient to suggest the nature of the Association's claim upon the profession. For better or for worse it is at present the one recognized means for making professional opinion effective in national life. Through it the medical profession can consciously order and direct, not indeed the main stream of social development, but its own contribution to that development, adjusting itself with the minimum of waste and friction to the changed conditions of modern life. Rationalization of this quality is to be feared only by those who think to escape facts by ignoring them, and it is such rationalization that the British Medical Association puts within the reach of the profession.

THE OCCIPITO-POSTERIOR CASE.

EVERY department of medical practice has its skeleton in the cupboard—that is to say, a type of case whose unwelcome features are apt to intrude themselves at unpropitious moments and with obstinate frequency. To most young practitioners of midwifery the occipito-posterior case, discussed in our columns this week by Dr. Douglas Miller, displays most of the characteristics of the family skeleton. It even worried the great clinical master of midwifery Smellie, and he describes how the discovery of a new method of dealing with it "gave him great joy" and "opened his eyes to a new field of improvement." This new discovery (1749) was the method of instrumental rotation by forceps applied to the head in the pelvic cavity. Dr. Miller is wrong in saying that Smellie practised manual rotation; Smellie describes rotation as being done with forceps; they were short forceps, because the first cases in which he used the method occurred before the date at which the pelvic curve was added to the instrument.

The aim of midwifery to-day is to prevent difficulties, if that be possible, and if not, to foresee and prepare to meet them. The unpardonable fault is to be taken unawares by an obstetric difficulty which might have been anticipated. The careful descriptions of the methods of diagnosis in Dr. Miller's article are therefore very welcome, but it cannot be gainsaid that the diagnosis of an occipito-posterior case before labour calls for a high degree of skill and experience, only to be attained by constant practice in methods of abdominal examination. In all probability a considerable proportion will continue to escape recognition before labour, but no opportunity should be lost of trying out the useful method of rectification before labour introduced by Buist.

For the practitioner of midwifery, patience stands easily first of the cardinal virtues; and never is it more needed than in dealing with the occipito-posterior case. Careful, unhurried attention must be freely given; and, undisturbed by the slipping away of the hours, attention must be concentrated, not upon the clock, but upon the patient's progress and her general condition. Waiting may be long, but it must not be too long; and here enters that quality of clinical judgement which no teacher can impart to his pupils. Smellie, who possessed this quality in high degree, was accustomed to wait long hours, when "pains were still weak, and the gossips uneasy," giving his patient "caudle, bread, and broth." To the modern equivalents of these invalid delicacies we now add scopolamine and morphine, or maybe some other narcotic of which Smellie knew nothing. Fortunately patience and watchfulness will be rewarded by spontaneous rotation in a large majority of cases.

In a series of 750 cases taken from the Edinburgh Maternity Hospital Dr. Miller[1] found that spontaneous rotation occurred in 63 per cent. of them; most writers on the subject have put the proportion much higher than this. After forward rotation had occurred, Dr. Miller found that 90 per cent. delivered themselves, the remainder requiring only a low forceps operation. Forward rotation is accompanied by descent of the head, which can be followed by easily observed and well-known signs. An occipito-posterior case may accordingly be carried through without a single internal examination having been made, if forward rotation occurs. It appears that little can be done to assist spontaneous forward rotation, and Dr. Miller's suggestion with regard to posture in the second stage is unconvincing; effective uterine action is probably the most important factor in bringing it about. When forward rotation does not occur spontaneously the aspect of the case is profoundly changed. In the series of 750 cases already referred to, those in which spontaneous rotation did not occur were attended by a maternal mortality of 2.0 per cent. and a foetal mortality of 27.3 per cent.; those, on the other hand, which did rotate spontaneously showed no maternal mortality at all, and a foetal mortality of only 2.7 per cent. Even when by backward rotation into the sacral hollow an occipito-posterior has become a "face to pubes" case, spontaneous delivery is not uncommon in a multipara with a strongly acting uterus and plenty of pelvic space. In all other circumstances "face to pubes" cases are marked out for operative delivery.

The unrotated cases—that is, those in which the head remains in the oblique diameter—call for the exercise of a close discriminative judgement in the choice of the right moment to intervene. As long as the head continues to descend, however slowly, forward rotation may be hopefully awaited. Even when progress has become definitely arrested, an hour or two's sleep, induced by morphine, may be followed by a complete change in the character of the uterine action, which will lead to rapid progress and a normal termination. When the "gossips are uneasy" it is often difficult for the practitioner to convince them that patience, and still more patience, will give the best results; and unless he is sure of himself, and of the wisdom of his advice, he will often be driven into a

[1] *Transactions* of the Edinburgh Obstetrical Society, vol. 47, p. 77.

course of action from which his own better judgement recoils. Although the practice of midwifery calls for a high standard of technical knowledge and manipulative dexterity, it calls even more for calm judgement and for that blend of prudence with audacity which marks out the man of character. A series of occipito-posterior cases in private practice furnishes a salutary exercise in the development of character, which, painful as it may be at the moment, will never be forgotten.

With the exception of the method of manual rectification, which Smellie was not acquainted with, we have now no method of delivery in occipito-posterior cases which he did not practise. Some he treated by version, others he rotated with his short forceps, others he delivered face to pubes; in some of the latter he pulled out the forehead and face first by traction in a backward direction, delivering the head eventually as an anterior chin. The modern method of episiotomy he did not practise, but he was careful to dilate the ostium vaginae (he called it the os externum) digitally before attempting to rotate with his forceps. Probably many an episiotomy might be avoided nowadays if a little time were devoted to this simple manœuvre. Potter, who has done so much to popularize the method of delivery by version in the United States, owed a great deal of his success to careful preparatory dilatation of the vaginal canal; in a picturesque American phrase he called it " ironing out " the vagina. It is after all but an extension of a method commonly employed by Smellie.

The modern obstetric forceps is an unsuitable instrument for rotating an occipito-posterior head, and attention is now rightly concentrated upon the manual method of which Dr. Miller gives a clear description. It is a procedure which the vast majority of medical students have only seen performed upon the obstetric " dummy." As in the case of all surgical operations, the first step in learning it is to attempt to perform it; yet a very young practitioner may be called upon to perform it at any moment in the early days of entering upon practice, and his imperfect acquaintance with the method may result in loss of valuable life. The occipito-posterior case is only one instance among many in which inadequate training in midwifery may lead to serious disaster. The provision of greatly increased clinical facilities for training students is still the most urgent obstetric problem of the moment. Our national schemes for a maternity service will inevitably break down if founded upon the insecure base of deficient practical training.

THE BIRTHDAY HONOURS.

THE list of honours conferred by the King on the occasion of His Majesty's sixty-fifth birthday includes the names of a number of medical men whose valuable work in varied capacities is well known to the profession. Surgeon Vice-Admiral Arthur Gaskell, Medical Director-General, R.N., Air Vice-Marshal David Munro, until lately Director of Medical Services, R.A.F., and Mr. William Coates of Manchester, who has identified himself with the Territorial Medical Service, are deservedly promoted K.C.B. The honour of knighthood to be conferred on Professor Leonard Hill, Dr. Eustace Hill, Mr. Harold Gillies, and Mr. Norman Bennett, recognizes distinguished work in pure and applied physiology, in hygiene and public health administration, in plastic surgery during the war and after, and in the science and practice of dental surgery. Dr. John R. Phillips, president of the Barbados Legislative Council, and Dr. B. H. Nanavati, formerly honorary surgeon to the Viceroy of India, receive the same honour. Professor J. Arthur Thomson of Aberdeen, though not a member of the medical profession, has long been concerned in medical education, and his knighthood, like the C.H. conferred on Miss Margaret McMillan for her pioneer work in founding school clinics and nursery schools, will be welcomed by our readers. The full list of medical Birthday Honours will be found at page 1058, and to all the recipients we offer congratulations.

THE BRITISH DENTAL ASSOCIATION'S JUBILEE.

THE fiftieth annual meeting of the British Dental Association took place last week in London under the presidency of Mr. Norman Bennett. The meetings were highly successful (save for the fact that a motor-car accident prevented the Minister of Health from delivering the inaugural address), and there was a good attendance of members and well-sustained discussion. A fund aiming at £20,000 was launched during the meeting with the object of obtaining larger headquarters than the premises in Russell Square, which the association during the ten years of its occupancy has quite outgrown. The membership is now just over 4,000, having doubled itself within eighteen years. Many Dominion and Colonial representatives attended the meeting, and opportunity was taken for conference on the promotion of closer union between the dental associations of the Empire. One of the most instructive of the discussions related to dental education, in which British and American methods were compared. It was opened by Mr. M. H. Garvin of Winnipeg, president of the Canadian Dental Association, who described the conditions of dental education in Canada. Mr. Lewin Payne, who has recently visited Canada and the United States to investigate dental education in those countries, gave some interesting impressions. Medicine and dentistry on the other side of the Atlantic are looked upon as two distinct professions, and the Canadian dental schools do not regard dentistry as a definite branch of medicine. The courses of study in Canadian schools Mr. Payne found to be much more closely allied to those in the United States than to the British curriculum. The preliminary science examinations are not the same in America for medical and for dental students, with the result that it is difficult for the dental student afterwards to take a medical degree; indeed, Mr. Payne was told that it might involve a period of not less than nine years for a dental student in America to become medically qualified. Professor W. H. Gilmour, who has also lately visited Canada, pointed out that in America a diploma or degree conferred by a university gave no right to practise in a particular Province or State; that right was granted by the Provincial or State examining board. Academically Professor Gilmour thought that dental education was on sounder lines in Great Britain than in America, by reason of the closer association with medicine and surgery; but technically he found the teaching in America very far superior, although perhaps it was a little over-organized and the students were liable to be " spoon-fed." Colonel T. A. Hunter of New Zealand said that he had always held that the standard for the Dominions should be one fixed by the General Medical Council in this country. For some time that state of affairs did obtain in New Zealand, but later, in addition to the university degree recognized by the General Medical Council, New Zealand had set up another and lower qualification, entitling its holder to practise in that country, but not elsewhere. He thought that that step was now generally regretted. Speakers from New Zealand and other Dominions deplored the lack of post-graduate facilities in Great Britain, with the virtual compulsion upon them to go to the United States. The principal clinical discussion in the meeting took place on a paper by Mr. F. W. Broderick on the differentiation of simple marginal gingivitis for commencing pyorrhoea. Mr. Broderick suggested that early pyorrhoea was really antagonistic to caries, the causative factors of each being opposite. This view was contested by

Mr. F. St. J. Steadman, who said that he could show Mr. Broderick many cases of active caries and active pyorrhoea existing at the same time, and the etiological factors involved were the same—namely, the lodgement of sticky carbohydrate food. The general opinion in the discussion, however, was in favour of Mr. Broderick's contentions. On the social side the meeting was equally a success. The jubilee dinner brought together a large gathering of members and guests at the Hotel Great Central. Among the speakers were Sir Arthur Robinson, Secretary to the Ministry of Health, who mentioned that every year a sum of £3,000,000 of public money was spent on dentistry, the arrangements covering one-third of the population of Great Britain; and Sir Francis Dyke Acland, chairman of the Dental Board, who commented upon the remarkable advance in honour and repute which the profession of dentistry had made of recent years. Finally, mention must be made of the *Jubilee Book*,[1] which has been prepared by the association as a souvenir of the occasion. It contains an illustrated synopsis of the association's history set out in the briefest chronological form. It is possible thereby to trace the beginning and development of many things which are the commonplaces of modern dental experience, such as the growth of the public dental service, the tightening up of legislation, and the raising of the ethical standard. The address of the first president, Sir John Tomes, is reproduced in full. It was delivered at the Dental Hospital, Leicester Square, in 1880, and ended with the words: "We are travellers on a road which leads to professional learning. The Dentists Act [of 1878] is our permanent way, the Medical Council and the medical authorities our locomotion, the dental practitioners must provide stokers and fuel, and our young men will be the passengers."

AN EXHIBITION OF ANATOMICAL ILLUSTRATIONS.

AN extremely interesting and carefully arranged exhibition has been prepared in the Anatomical Department of McGill University, Montreal, on the history of anatomical illustration. The university is fortunate not only in possessing a good medical library of its own, but also in having the Osler Library in the same building. The two together provide a great store of material for exhibitions, of which the present display is an example. A very full catalogue of the exhibits has been printed,[2] with an introductory historical sketch of the subject, in which it is pointed out how the older illustrations of anatomical works, while lacking our modern precision and clarity, were often superior in artistic taste, and, at their best, were hardly inferior in accuracy. The point is well supported by reference to such masterpieces of anatomical drawings as those of Leonardo da Vinci, Dürer (in his *Menschliche Proportion*), the woodcuts in Vesalius (not by Titian, but by one of his pupils, Stephen of Calcar), and the very fine engravings in William Cheselden's *Osteographia*. In the case of Leonardo's work, of course, facsimiles only were available for this exhibition, but the Dürer shown is a first Latin edition (1532). The first and second editions of Vesalius, *De Humani Corporis Fabrica*, are both displayed; between the two libraries there are two copies of each of these, and the Cheselden is the the very sumptuous 1733 edition. Eustachius, Fabricius, Descartes (his *De Homine*, published sixteen years after his death, and containing a "dissected" plate), are amongst those whose works are represented by first editions. An unusually rare and interesting volume displayed is Gautier d'Agoty's *Essai d'anatomie* (1745), bound up with his *Myologie complette* (1745), and *Anatomie de la tête* (1748)—a series of elaborately coloured, but not particularly accurate, anatomical plates. It represents one of the earliest uses of coloured mezzotinting in anatomical illustrations. The method was invented by Le Blon, who taught it to Gautier. The exhibition will be kept open until after the Annual Meeting of the British Medical Association in Winnipeg from August 26th to 29th. It is hoped that those who pass through Montreal on this occasion will find time to visit the Medical Building of McGill University, in which these libraries are housed and this exhibition is on view.

[1] *Jubilee Book of the British Dental Association*. London: J. Bale, Sons and Danielsson, Ltd. 1930.
[2] Exhibition of the History of Anatomical Illustrations. Renouf Publishing Co., McGill College Avenue, Montreal.

THE EXPLOSION HAZARD IN ANAESTHESIA.

A REPORT has lately been issued by a committee of the Council on Physical Therapy of the American Medical Association[1] dealing with the risks of explosion arising in the use of anaesthetics. The danger of fire and explosion associated with ether vapour has long been recognized, but many gaseous mixtures now used—for example, nitrous oxide with ether, or ethylene with oxygen—are still more highly explosive. A case is recorded of a fatal explosion of an ethylene mixture in the air passages of a patient, caused by the use of a cautery, although the apparatus for administering the anaesthetic had actually been taken out of the room. It is stated that such explosions can be caused by the electrical charges produced by friction of rubber apparatus, blankets, etc., and that such electrification can be produced even by dust particles carried in a current of air. The suggestion is made that by maintaining a high relative humidity—about 60 per cent.—in the air of the operating theatre there will be sufficient condensation of moisture on the apparatus to prevent any dangerous electrical charges from accumulating in this way; an additional advantage of a moist atmosphere is that there is less drying and cooling of viscera exposed in the course of the operation. It is, however, an expensive matter to install machinery for keeping the air of the theatre constant as regards temperature and humidity. The committee recommends that rubber should be eliminated as far as possible from the construction of apparatus designed for use with explosive anaesthetic mixtures, flexible metal tubing of specially light pattern being used, and arrangements being made for "earthing" not only the apparatus but even the persons who are liable to come into contact with it. Ether or ethylene should not be used in any operation involving the use of a cautery or diathermy. The fact that explosions are extremely rare in connexion with the administration of anaesthetics is not, it is submitted, due altogether to any conscious efforts made to provide against this risk, but rather to the fortunate circumstance that the conditions under which anaesthetic mixtures will explode are seldom approached in the actual use of these substances: the figures derived from tables of flash-points, etc., are obtained under conditions quite unlike those of the average theatre. Professor Yandell Henderson, reporting on behalf of the committee on anaesthesia accidents of the American Medical Association,[2] makes a series of recommendations which in general correspond with those put forward by the Council on Physical Therapy. As might be expected, he definitely favours the use of modern anaesthetic apparatus, even with ethylene as the anaesthetic, summarizing his view in the statement that an anaesthetic or an apparatus that is liable to occasional explosion, inducing perhaps one death in a hundred thousand or more anaesthesias, is preferable to modes of anaesthesia free from the hazard of explosion but involving a far greater hazard of post-anaesthetic deaths. Modern anaesthetic apparatus, he argues, is the most effective means yet devised for counteracting pulmonary complications, which are the principal causes of post-anaesthetic fatalities; it permits accurate control of the administration of volatile and gaseous anaesthetics, prevention of cyanosis by means of oxygen, prevention of acapnia by rebreathing, rapid induction of anaesthesia with nitrous oxide, rapid termination of anaesthesia, and

[1] *Journ. Amer. Med. Assoc.*, March 29th, 1930, p. 918.
[2] *Ibid.*, May 10th, 1930, p. 1491.

especially hyperventilation and full expansions of the lungs with carbon dioxide. But even if it is true that explosion is statistically the rarest accident of anaesthesia, those who have the responsible task of giving anaesthetics, especially with the more modern and elaborate apparatus, are still faced with the duty of protecting patients against this hazard as they are against the commoner risks of anaesthesia.

"CONTACT" EXAMINATION OF CHILDREN.

THE essay entitled "Tuberculosis in public school children," which has been reprinted from last October's number of the *American Review of Tuberculosis*,[1] marks a distinct advance in the method of "contact" examination of children. The conclusion that the authors draw from their experience is this. No reliance may be placed on the absence of physical signs, and good apparent general health in the child, not even on steady increase in body weight. Definite grades of the disease in its preventable stage can be detected much earlier than was suspected by the use of the tuberculin reaction and the *x* ray. There is no doubt that the incidence of infection and clinical disease differs in different communities and in different countries: in this experience it is to be noted that the schools contained many coloured children, who are more susceptible than the white, and in whom a different type of lesion is found. The numbers, therefore, are probably not the same that would emerge from a similar investigation in other countries. The authors have produced a valuable piece of work by suggesting a routine method for thorough "contact" examination. The intracutaneous tuberculin test is used, which they consider far more sensitive than the Pirquet test, but they do not mention its practical difficulties, such as the need for repetition, and the possible production of severe reactions. Undoubtedly the most interesting and important part of the book is the *x*-ray work. X-ray examination was made of all tuberculin reactors. The improvement in technique of interpretation and of accurate localization of lesions makes stimulating reading. The routine examination suggested is very laborious and very expensive, but it would appear that if "contact" examination and preventive treatment is to be done at all some such system must be adopted, and adopted as a standard. Anything less searching is only a waste of time and money. The schematic classification of pulmonary tuberculosis in childhood and adolescence by Dr. McPhedran with which the essay ends is excellent and will probably appear in all future textbooks on the subject.

THE GORDON MEMORIAL COLLEGE.

IN the deluge of deadly dull reports poured forth throughout the year by countless bodies and institutions, Governmental and otherwise, there occurs from time to time a record of a body whose work thrills by its inspiration. Such is the Gordon Memorial College at Khartum, of which the report for 1928 by the executive committee and trustees, presented at a meeting in London last July, has now been published. Initiated by the late Lord Kitchener thirty years ago as an institution for the education of the youth of the Sudan in a manner suitable to their environment and capacity, the college now has accommodation for between 500 and 600 boys, most of whom are boarders. It is hoped that by the end of the present year the output of boys who have completed the full secondary course will be 120 annually, so that the recent situation, when only 62 boys were available to fill 145 vacancies in Government employment, will not recur. The number of tutors, at present apparently fourteen, is to be increased, and in future all tutors will undergo a year's course of training at the London Day Training College before going out to Khartum. Natives of the Sudan are being employed on the teaching staff, some of them having taken a course of studies at the American University at Beirut. The report describes the progress of the boys in sections for engineering, science, accountancy, clerical work, teaching, and in a kadi's section. In the boarding houses discipline has been maintained efficiently under the prefectorial system. Football, rounders, gymnastics, and scouting are indulged in by the boys, who come of Arab, Sudanese, Muwalad, Berberine, and Abyssinian stock. Instructional workshops are run in connexion with the college; and a large amount of research work is done in sections for bacteriology, tropical diseases, chemistry, entomology, geology, and antiquities. In addition to the activities of the college, progress in education in the Sudan is shown by the rapid growth in number and popularity of the subsidized khalwas or village schools; and there is an increasing demand for elementary vernacular education for girls. The now educated Sudanese demand wives "who can give them the order and cleanliness in their homes which they have been taught to appreciate."

CONGRESS FOR SEX RESEARCH.

A PRELIMINARY programme has now been issued of the second International Congress for Sex Research, to be held in the House of the British Medical Association, Tavistock Square, London, from August 3rd to 8th. The provisional arrangements include an informal reception on the evening of Sunday, August 3rd; a presidential address by Professor F. A. E. Crew on puberty and maturity, on the morning of August 4th; and papers relating to puberty and maturity, the biology of testicular and ovarian function, hormone therapy, sexual psychology and biology, and the biological and therapeutical aspects of the control of human fertility, during the succeeding sessions of the congress. Social functions will include a motor excursion to Down House, a visit to Cambridge, various sight-seeing tours, and receptions and concerts. Members of the congress who wish to present a paper are asked to send a copy of it, together with an abstract, to the Congress Secretary, Department of Animal Genetics, the University, Edinburgh, not later than June 15th; those who have already offered a paper are asked to submit the title to the secretary at once. The maximum length of each paper to be published in the *Proceedings* is 3,000 words. Some account of the arrangements for the congress appeared in the *Journal* of May 10th (p. 874); further arrangements now completed include plans for accommodating members in university hostels and hotels, banking facilities with the branch of the Westminster Bank Ltd. situated in the House of the British Medical Association, and provision through Thomas Cook and Son, Ltd., who have been appointed travelling agents to the congress, for conveying members to their quarters on arrival in London. Particulars of these and other preparations for the congress may be obtained on application to the Congress Secretary.

WE regret to announce the death, on June 1st, of Dr. Robert McKenzie Johnston, consulting surgeon to the ear and throat department of the Royal Infirmary, Edinburgh, and a Past President of the Royal College of Surgeons of Edinburgh. An obituary notice will appear in our next issue.

WE regret to announce the death at Torquay of Dr. H. Cooper Pattin, for many years medical officer of health for the city of Norwich.

A COURSE of instruction in the technique of tissue culture will be given at the Strangeways Research Laboratory from July 1st to 29th. Only a limited number of applicants can be received. Notification from those wishing to take the course should be sent to Dr. H. B. Fell, Strangeways Research Laboratory, Cambridge.

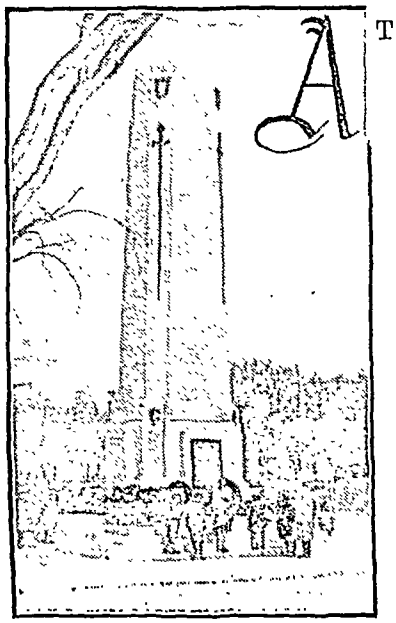
[1] *Tuberculosis in Public School Children.* From the Henry Phipps Institute of the University of Pennsylvania under a grant from the Metropolitan Life Insurance Co. Reprinted from the *American Review of Tuberculosis*, October, 1929.

NINETY-EIGHTH ANNUAL MEETING

of the

British Medical Association,

WINNIPEG, 1930.



THE CENOTAPH, WINNIPEG.

AT the invitation of the Canadian Medical Association the ninety-eighth Annual Meeting of the British Medical Association will be held at Winnipeg this summer, under the presidency of Professor W. Harvey Smith, who will deliver his inaugural address on Tuesday, August 26th. The scientific and clinical business of the meeting is being organized in fourteen Sections, which will hold their sessions on Wednesday, Thursday, and Friday, August 27th, 28th, and 29th, the mornings being given up to discussions and the reading of papers, and the afternoons to demonstrations and special addresses. The names of the Officers of Sections, with provisional programmes of work and other preliminary notes, were published in the *Supplement* of May 10th, and further details of the arrangements will appear in later issues. Members who propose to take part in the meeting should write at once for particulars about the journey to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1.

We publish below the fifth of a series of descriptive and historical notes, written for the occasion.* In this article Dr. D. A. Stewart, superintendent of the Manitoba Sanatorium at Ninette, and president of the Manitoba Historical Society, introduces British visitors to the historic background of the places they will see. Those visiting Canada for the first time, and especially those who make the trip from coast to coast, are apt to be overwhelmed by the immensity of the country; Dr. Stewart's vivid sketch should enable them to form an idea of the way in which the country was settled, and thus add much to their enjoyment of the tour.

AN ADVENTURE ACROSS CANADA IN 1930.

WITH NOTES ON EARLIER ADVENTURES AND ADVENTURERS.

IN the middle of August, 1930, two parties of physicians and surgeons of Great Britain will set out towards Canada upon a voyage of discovery, exploration, and adventure. To all who sail in the *Duchess of Bedford* and the *Duchess of York* are granted herein and hereby in full the rights and privileges King Henry VII bestowed upon John Cabot and his sons in 1497: "Full and free authority, leave and power to sail to all ports, countries, and seas . . . to seek out and discover whatever isles, countries, regions or provinces . . . which before this time hath been unknowen."

As you scan the westward horizon for the hazy blur of landfall—if you can only adjust your glasses to look back 930 years, to a time when England was still Saxon—you may see an open Viking boat, with Leif, son of Eric the Red, nosing in at Labrador and calling it Helluland, the land of flat stones, or at Newfoundland, calling it Markland, the land of trees, or sailing away to Nova Scotia, or still southward to find Vinland, the land of vines and grapes. Or, if you can focus at 433 years ago, you may have a glimpse of bunty little turreted vessels with John Cabot and company touching at the New-found-land which he reported as "Seven hundred leagues west of Ireland" and "the country of the Grand Khan." So the grudging purse of Henry bestowed "Item, to him that found the new isle, ten pounds."

Follow Jacques Cartier.

All the way up the St. Lawrence you will follow in the very wake of the real discoverer of Canada, Jacques Cartier of St. Malo. In 1534 he entered and named Belle Isle Strait, thought (as you probably will also) that the north coast of the gulf was "the land God gave to Cain," discovered the island which became Canada's smallest province, and sailed on a hot day into a bay he called Chaleurs. Next year he adventured on, as you will, up to Quebec and even to Montreal.

Anchored at the mouth of the St. Charles, beside the Indian Stadacona, which became the French Quebec, in the winter of 1535–36, the bold captain, turned perforce to our craft, entered in his log a very vivid description of scurvy, and an account of the first white man's autopsy made in Canada.

"Some lost all strength . . . legs swollen and inflamed, sinews contracted and turned as black as coal . . . legs blotched with purple-coloured blood . . . mouths so tainted that the gums rotted away down to the roots of the teeth, which nearly all fell out. . . . And because the disease was a strange one the Captain had one body opened. . . . And it was discovered that his heart was completely white and shrivelled up . . . his liver was in good condition but his lungs were very black and gangrened . . . his spleen for some two fingerbreadths near the backbone was also slightly affected, as if it had been rubbed on a rough stone."

"There were not three men in good health" [when the Indians suggested hemlock tea]. "In less than eight days a whole tree . . . was used up, and produced such a result that had all the doctors of Louvain and Montpellier been there with all the drugs of Alexandria they could not have done so much in a year as did this tree in eight days. . . . They were cured of *all the diseases they had ever had . . . even the French pox.*"

Historic Quebec.

Four centuries of history—French colonial, British colonial, and Canadian—lie side by side in the city and province of Quebec as in a museum. In narrow streets

* See *British Medical Journal* January 4th, 1930 (p. 32); February 15th (p. 309); March 22nd (p. 555); May 10th (p. 875).

and break-neck lanes, in old houses and ancient customs, in obsolete citadel and city gates, in Wolfe's Cove and the Plains of Abraham, the past lives within the present.

Up the St. Lawrence, from the days of Cartier, Champlain, Frontenac, La Salle, have toiled innumerable canoes with explorers, adventurers, traders, soldiers, priests; and down the St. Lawrence many a returning voyageur, with peltries and, perchance, wounds, and tales of new lakes, rivers, and tribes, and still new lands and vistas to westward.

Almost every homestead, even of to-day, with its scant-roofed, big-chimneyed house of stone, and long wooden barn, was born in adventure. When its roofs were raised and its fields cleared the musket had to keep daily company with the axe and the ploughshare. No wonder that the homes hug the river banks like a struggling village, with narrow ribbons of farms stretching back almost as far as eye can reach. Here life goes on, even in this day of radio, almost as placidly as a century ago.

Three Rivers was an early outpost of trade and defence against Indians. It now fights in the same spirit its infant mortality and tuberculosis death rate. Here, beside huge paper mills, rafts of pulpwood—the food for the mills—float in the same waters with steamers that take the finished product anywhere in the Seven Seas.

The Romance of Montreal.

What city was ever planned and built with the romance of Montreal? What other settlement anywhere was ever founded, the hospital first, and the settlement a kind of afterthought to supply patients for the hospital? That was an age of the seeing of visions and the dreaming of dreams. One pious lady in France had a vision of a hospital in this very nook of the wilderness; another pious lady gave money, devout and chivalrous Maisoneuve lent his sword willingly to the enterprise; and, to the scandal of all practical persons and the chagrin of viceregal Quebec, the visionaries landed in May, 1642, and celebrated mass at a rustic altar festooned with flowers and lighted with fireflies for tapers.

Here stalwart settlers fought Indians and, even worse, the dominance and monopoly of official Quebec. Times have changed, and now Montreal sits at the receipt of custom.

Built on an ample island, backed by a mountain, fronted by a broad river and a fine view of distant hills, with world-famous university and hospitals, the wealthiest and most populous community in the Dominion, a seaport a thousand miles from the sea, Montreal is no mean city. It is almost two cities in one, bilingual, and a paradise for sign painters, for all signs must be painted twice.

Above Montreal, to the Great Lakes, are rapids; the first, which blocked the way to the Orient, called in grim humour, "Lachine." These rapids are canalized only for small craft, but the building of larger canals to bring ocean vessels to Lake Superior and the very heart of the continent is Canada's next big job, though Montreal has doubt about it yet.

Ottawa.

If this were not 1930, but a century earlier, we would travel westward by that wonderful craft the "six-fathom" birch bark canoe, carrying four tons of freight and a crew of ten. At the very last chapel on the edge of the wilderness a century ago, but still to be seen from train window,

> "Soon as the woods on the shore looked dim
> We'd sing at St. Anne's our parting hymn,"

and push up the turbulent Ottawa. At the Chaudière Fall, where there was a big carrying place or "portage," a hamlet of voyageurs and trappers grew up, then a straggling village of lumbermen, Bytown; then, Cinderella-like, a fairy wand touched the place, and, lo! it became Ottawa, the stately capital of Canada.

Besides Parliament Hill and many things else to see, be sure to remember the National Museum, where some fine specimens of prehistoric residents of Canada, especially of the Upper Cretaceous formation of Alberta, are to be found, among them: *Eoceratops canadensis, Styracosaurus albertensis, Brachyceratops dawsoni, Hadrosaur edmontosaurus,* the Cretaceous theropodous dinosaur, gorgosaurus, etc.

Nine Provinces, but Six Canadas.

Ottawa is in Ontario, but as near Quebec as a loop of the river will allow it to be. Before confederation and the forming of the Dominion in 1867 there were two Canadas—Lower Canada or Quebec, and Upper Canada or Ontario. Besides these there were three maritime colonies and the whole west and north, which was little better than a no-man's-land. Now there are nine provinces, and northern territories besides.

In reality there are something like six fairly distinct Canadas. First, the Eastern Maritimes: Nova Scotia, New Brunswick, and Prince Edward Island, chiefly Scotch-English, thoughtful, thorough-going people, with farming, fishing, fruit growing, lumbering, and coal mining as the chief industries—and one of the chief exports, university professors. Next comes Quebec, extending from the Atlantic along the north side of the Ottawa almost as far west as Toronto, its people very largely French, industrious, thrifty, domestic, with farming, lumbering, and paper making as chief industries. Third, Ontario, which extends from near Montreal to near Winnipeg, and from the Great Lakes to James Bay, largely English-Scotch-Irish, central, populous, and dominant among the provinces, with almost all the various industries of soil, water, and rock. Fourth, the three prairie provinces of Manitoba, Saskatchewan, and Alberta, young, optimistic, and progressive, Anglo-Saxon chiefly, but with an increasing mixture of the races of central Europe, largely wheat-growing, but more and more looking northward to resources of furs and mines. Fifth, the Pacific Coast province, British Columbia, with its sea of mountains, its mines, rivers, timber, its fair fruit-filled valleys, and seaports in touch with the Orient. Sixth, the north country from east to west, and bounded to the north by the Arctic, long sealed, but now opening to the magic keys of aeroplane and wireless.

Toronto.

A century ago the new and struggling colony of Lower Canada had many small centres; but little "Muddy York," on the shore of Lake Ontario, outstripped the others, and now, as the fair City of Toronto, dominates the great province of Ontario, the centre for legislation and the chief centre for education, finance, and commerce. With the development of extensive mines in the Ontario hinterland, Toronto has become in the past few years mineral-minded also. Above all else industrious, substantial, church-going, and very sure of herself as the quintessence of Canada—you will find Toronto a fine city of worthy citizens.

Lakes and Great Lakes.

Canada is pre-eminently the land of lakes—lakes small and large, known and unknown, unnumbered and innumerable, but tens of thousands of them, quite likely hundreds of thousands. Aeroplane maps show often hundreds where old maps have none. Not a few among them are really great lakes, but the name "Great Lakes" is always reserved for the familiar half-dozen that maps show like a cluster of fruit hanging on the stem of the St. Lawrence. They are really freshwater inland seas, shared between us and the people of the United States, that give a waterway to the very heart of the continent.

What changes these shores and channels have seen! What differing errands and what varying craft! First the frail bark canoe of silver birch slinking in the shadows of the dark lee shore, filled with eager savages, vermilion-painted, silent, at war.

Then discoverers, explorers, adventurers, priests, first of France, then of Britain also, toiling up the channels all the long June days, with bivouac and guard at night, with trinkets to trade for peltries, writing down in scant journals and Jesuit "relations," and sketching in crude charts this new world unrolling as a scroll before their advance.

Then the traders. We have seen that the canoe route from east to west avoided the lower Great Lakes—the haunts of the Iroquois, implacable enemies of the French—and reached the upper lakes by the strenuous Ottawa and other such turbulent streams. Here, even in the late seventeenth century, French trade dribbled in, and was well established in the early eighteenth. In the later

eighteenth it reached its zenith, but now no longer distinctively French. Indeed, the "North-Westers," who formed in 1783 the loose-jointed North-West Company, with eastern headquarters at Montreal and western at the head of the lakes, was largely made up of McDonalds, McGillivrays, McKenzies, McTavishes, and others of their race for whom the Highlands of Scotland were still uncomfortable since Culloden. These were the "bourgeois," "proprietors," "partners," "traders," "clerks." All the voyageurs and some of the traders were still French Canadian.

The Great Fur Parliament.

The annual meeting was first at Grand Portage, and when that was found to be American territory, after 1802, at Fort William. Here for six weeks met hundreds of men of varied types. Up from the east came the swarthy Montreal brigades, with sweating, singing crews. Their "lake" or "six-fathom" canoes were remarkable craft. Two men could carry them over a portage, yet they carried four tons of merchandise and a crew of ten or twelve. Faster travelling, lighter "express" craft, breasting waves on cape-to-cape "traverses," carried the aristocrats of the trade, the eastern partners. Down from the lonely posts of the far west, even from the Arctic Circle, came the "wintering partners" and traders. Here, in halls hung with portraits and trophies, west met with east in state, with skirl of official pipes, to tell the conditions of trade, unfold new maps, establish new posts, explore new territories, suppress new revolts, circumvent new "oppositions," and especially to challenge the "English" company of adventurers which "traded into Hudson's Bay," as this, the Canadian company, followed the Great Lakes route.

At this great fur trade rendezvous—half-way up for the trading goods, half-way down for the peltries—all was bustle. Bales of blanket cloth and duffel, packages of flintlocks and knives, kegs of gunpowder and rum, must be unloaded from the "six-fathom" "lake" canoes, allocated, retailed, distributed, made into ninety-pound packages for the "four-fathom" "northern" canoes (canots du nord). Packages of peltries from every river in the north, already six months on their way, were sorted and repacked for the returning brigades. Here for six weeks men of all ranks in the trade, "proud North-West bucks," mingled, told their tales of adventure, smoked their pipes, renewed acquaintances, drank fierce toasts with their "regales" of rum, and fought out their feuds. Then the "Northmen" or "Winterers" turned to their far posts and their dusky families, and the "pork eaters" or "comers and goers" to their eastern homes and farms and families, the lords of the trade to Montreal and their club-house on Beaver Hill.

The Romance of To-day.

The day of the birch bark trade canoe is gone, indeed it became much quieter after the rival companies amalgamated in 1821, when the much shorter route by "the Bay" was used and the heavier York boat developed. But the Great Lakes have still their distinctive life and traffic and colour. If the pulse of lake traffic be counted at some such point as the Detroit River, it will be found that the gross tonnage enables our American friends, who share it, to make the kind of superlative statement they are fond of—greater than in any other strait or channel in the world. What will it be when the St. Lawrence channel is opened for sea-going vessels and a Glasgow tramp brings cottons or tweeds or boiler grates right up to Thunder Bay, or a Liverpool freighter sloughs its barnacles while taking on a load of wheat in the Kaministiqua?

The lake traffic is largely bulk traffic, whole loads of wheat or ore, coal or pulpwood; and the predominance of such loads has developed peculiar types of carriers, found nowhere else on lake or sea. Smudges on the sky line gradually take form as low-bellied freighters, dachshunds of navigation, two boats and a half long and half a boat high; long, low-lying craft, mere lines on the water, with quarters fore and quarters aft, and half a mile of deck between, bluff-bowed, with thirty hatches or more, steady-going, deep-voiced, grunting scant greetings as they pass. A few "whalebacks" still may be seen. It is near December when the fleets roll in, ice-clad, take on a cargo of wheat, tie up, and so give storage all winter. In early spring they smash through behind the ice breaker, and a new season has begun.

From the birch canoe of the redman, the "six fathom" of the trader, the *Griffin*, the first sailing vessel of Tonty, built at Kingston and lost—literally lost—in Upper Huron, and which, like the Flying Dutchman, is said still to haunt the lakes, to the floating palaces in which many of you will embark, the whole history and traditions of the craft and sailors of the Great Lakes might take their places very creditably beside those of any of the Seven Seas.

The Middle West.

Of the six different Canadas already indicated it is the Canada of the prairies that has the high honour of being host to the British Medical Association. The adventurers of 1930 enter this region from the "Head of the Lakes," as most of the earlier explorers did, and here and there parallel, or cross, the old canoe routes. At the Lake of the Woods and Minaki you pause beside them. If this meeting of the British Medical Association had been convened either in 1832 or in 1932 you might have chosen to come in along the trails of other adventurers, by the nearer Hudson Bay route. Parts of Manitoba and Saskatchewan, strange to say, are actually nearer to Liverpool than New York is. These advantages of the narrower North Atlantic, the great bay gouging in almost to mid-continent, and the shorter canoe voyages "The Company of Gentleman Adventurers Trading into Hudson's Bay" had over the rival "North-Westers" of Montreal and Fort William.

Manitoba extended to the Hudson Bay and became a maritime province so very recently that even her own people as yet scarcely know that while Shakespeare was still an active playwright, in 1612, two years after Henry Hudson entered the great bay, Thomas Button, with a letter in his pocket from the royal James to the Emperor of Japan, first raised the flag of England on Manitoba soil. Where Manitoba's new seaport, Churchill, is now growing up, Jens Munck from Denmark lost his whole two crews but two men, from scurvy, in the winter of 1619–20, the captain and the two men curing themselves with the first grass of springtime and sailing the smaller craft home.

Prince Rupert got his charter and monopoly in 1670, but for nearly a century the French fleet kept the Company from having quiet possession. About 1739 La Verendrye began his "search for the Western Sea," by the lake route, built his principal Manitoba fort in 1738, explored north-west and south-west almost to the mountains, and opened up a trade which the French maintained until about 1760. Their successors, the Scotch-English-French "North-Westers" from Montreal, using the lake route, were for fifty years the keenest rivals of the "English" Company of the Hudson Bay. Their "opposition" kept some sort of bounds, until the Selkirk settlers, with a sheepskin title to the whole territory by virtue of ten shillings lawful money paid in London, formed a third party. With the eternal triangle, as usual, came mischief. There were laws made and laws broken, intrigue, bloodshed, litigation, and finally, in 1821, amalgamation.

When peace had been thus restored, and when their earlier difficulties had been overcome, the Red River settlers, isolated in the midst of a continent, almost as though on a coral island in mid-Pacific, developed a unique and, in many ways, idyllic life, which the "old timers" who had survived the coming of railways and settlers, immigrants, and "civilization," look back upon with some regrets. In the convention city will be found still some links with the past, among them the gateway of Fort Garry, in which as a youth R. M. Ballantyne pushed a reluctant quill over ledger pages and dreamed romances. At that time two community buffalo hunts each year yielded two harvests of pemmican, dried, shredded, or "beat" meat, preserved in fat in sacks of buffalo skin, with not quite all the hair left on the outside, it is said.

The Epic of Wheat.

In the early eighteen-seventies came an irruption of farmers into the plains; in the eighties Manitoba was pretty well filled up, in the nineties Saskatchewan and Alberta; and since that time settlement has pushed into

the remaining corners, and northward. Rifle and hunting knife gave place to plough and reaper, and the prairies blossomed into wheat.

The great Epic of Wheat has been only partly written: the high hopes of the early settlers; the killing frosts that changed promising crops into black ruins; the conquest of frost by the developing of earlier ripening varieties, and by the changes in temperature when large areas of land were broken; the triumph of "Marquis" wheat; the tragedies of hail and drought and flood; the tragedies of rust; the conquest of rust now almost within sight; the difficulties of transportation becoming better and better solved; the problems of markets and marketing very far from solution still; the dangers of one-crop farming, the spread of weeds, the development of mixed farming, the first tentative trial of wheat along merely the very edge of the forty-ninth parallel, and its spread almost to the Arctic Circle. Great will be the Epic of Wheat when some one is found to write it.

The New North.

A change is coming over the prairies. Manitoba and Saskatchewan have mines and mining in the north, and even lumbering and paper making. Saskatchewan in the south has beds of lignite coal. Alberta has coal of all varieties, natural gas, and oil. In the north can be seen the "last agricultural West" in the Peace River Valley, tar sands and oil along the Mackenzie, and growing herds of more or less domesticated buffalo and reindeer in the sub-Arctics.

The Glory of the Fields.

For visitors and adventurers from the homeland the supreme sight in the prairie provinces is the harvest—the farmer would add "when good." Even from train windows there are miles upon miles of golden grain. Years ago one of the best sights was the groups of stacks, but stacks are now scarcely ever seen. Then the fields of stooks were most attractive, but now they too are passing as harvesting methods change. The early Red River settlers reaped their fields and threshed their grain pretty much with the implements of Boaz and Ruth. Now the fashion is to cut and thresh with one rather cumbersome "combined" machine. But even machinery has not taken all poetry from the waves of shadow and of tossing heads that follow one another across the fields when the prairie breeze bloweth as it listeth.

A Sea of Mountains.

The backbone and "Great Divide" of the Continent, the grey granite, snow-capped Rocky Mountains, are taken as the boundary between Alberta and British Columbia—that is, between the Canada of the prairies and the Canada of the Pacific slope. On the prairie side they rise abruptly. One of the experiences of approaching them thus from the eastward is of snow-caps peeping one by one above the prairie horizon until suddenly the whole sheer wall stands glistening in the morning sun. On the western side, between the Rockies and the coast, several parallel ranges, the Selkirks, Gold Range, Coast Range, and others, stand like the thick-set ridges of a ploughed field, with deep-furrowed valleys between. These outer ranges are on the whole less grim and more green, more pleasing and less awe-inspiring than the cloud-robed Rockies.

Altogether, British Columbia has perhaps a hundred thousand square miles of mountain and valley, dotted with snow-caps, many still virgin peaks. It has miles upon miles, hundreds of miles, of glaciers, great rivers, and countless smaller streams, with rapids and waterfalls innumerable, immense water-power potentialities, a score of lakes that rival Switzerland's best, tens of thousands of green glades and many fertile valleys. In short, here are several various Switzerlands in one, only half explored, and with adventures enough to last the most eager for a hundred years. Fjords almost beyond counting, and as fine as Norway's, run like fingers of green water between blue bluff headlands of mountain and wood. Rivers and shore waters teem with fish. In the wombs of the mountains are copper, silver, gold, lead, and abundant coal. Valleys of deep volcanic ash are covered with orchards that, like Eden, bear every manner of fruit after his kind, irrigated by streams from surrounding glacial fields.

"The Coast."

Especially since the opening of the Panama Canal, through trade, even of prairie wheat, has developed. Vancouver and Victoria are Canada's outposts towards the Orient, thinking Pacifically, as Halifax and St. John, Quebec and Montreal think Atlantically. With a mild and pleasant coast climate, in which English holly grows and English accents and customs flourish—with all her wealth and all her beauty—surely the west coast of Canada must have had a very generous fairy godmother.

It was in 1793, four years after he had followed the great river that bears his name, to the Arctic, that Alexander Mackenzie pushed through with infinite toil from the prairies to the salt waters of the Pacific. Later, in a London drawing room, comparing notes with Captain Vancouver, he found that, one from the land, the other from the sea, they had been within a mere day of meeting in that same west coast inlet.

Some of the adventurers of 1930 will look out from observation cars on the seething waters that bear the names of the great geographer David Thompson, and of bold Simon Fraser—the Thompson and Fraser rivers. You may have pointed out to you some traces still of a mere ledge half-way up the precipice which in the fifties and sixties was the gold seekers' road to the adventurous Cariboo. Even camels, it is said, were tried on this dizzy trail. It was to the Cariboo that Viscount Milton and Doctor Cheadle made their "North-West passage by land" by way of Fort Garry, now Winnipeg.

With all her lure of beauty and of latent wealth as well, is it surprising that Scotsmen should have attempted an early Gretna Green marriage with this gifted heiress, and given her a name she acknowledged gracefully for half a century, New Caledonia? What with a New Caledonia on the west coast, and a Nova Scotia on the east, might not some suspicion arise of a deep, dark plot to make the whole of Canada a new domain for the Scot? Is there not even some suspicion that the plot succeeded?

Down by the Sea.

After the whole tour from east to west and back again, if there is one bit of Canada that could still present fresh charm, and not an anti-climax, even after the Province of the Western Coast, it is the Canada of the Atlantic, the provinces of Nova Scotia, New Brunswick, and Prince Edward Island.

Here some of the earliest settlements were made, by French and British, by Celtic Breton and by Celtic Scot. Indeed, here may have been the very earliest settlement of all, Vinland the Good of Lief Erieson and his followers. Here, around the battlements of Louisbourg, the two races, that later welded to make Canada, clashed again and again in the struggle for mastery. Here is the land of fair Evangeline, and here on many a quiet homestead may still be seen the ox-cart of the habitant, little changed in all the intervening years.

Nova Scotia, it may not be generally known, has a colony in the heart of *Auld Scotia—the parade, indeed*, at Edinburgh Castle. This became Novia Scotian soil many years ago, so that a noble lord might claim a new-land title, without the toils and perils of leaving the old country. The three provinces have in reality many colonies. Wherever in west or south some very big work is being done, Nova Scotians, New Brunswickers, or Prince Edward Islanders are, as likely as not, at the bottom of it. And half the universities of the continent have colonies of "the Maritimes" of Canada in their professorial staffs. The unusual brain and brawn may not unlikely have something to do with an early diet of herring and the shorter catechism. The Maritime people take naturally to education and politics, but sixty years of partnership in the confederation has scarcely accustomed them to be called Canadians. It was down by the sea in Windsor, Nova Scotia, that the peculiar humour of this new continent was born in the works of Judge Haliburton, whose Sam Slick is even supposed to have suggested Sam Weller.

One of the sights of all Canada is the Annapolis Valley at apple-blossom time; another, the fishing schooner *Bluenose* at a racing angle. Still another is the north-west arm of Halifax Harbour; another, the Bras d'Or

Lakes, which may have been the very region of Vinland itself. Another is the sixty-foot tide that rushes up the Bay of Fundy, roars around the base of Blomidon, creates a reversible fall at the mouth of the St. John River, and carries a tidal bore up as far as Moncton.

About the Maritimes much more could be said that would still leave more than all unsaid. Suffice it to say that here the adventurers of 1930 are to have their farewell visit, their last impressions, perhaps their best impressions, their stirrup cup, "Bon voyage!" and "Will ye no come back again?"

D. A. STEWART.

Scotland.

Presentation to the Scottish Committee of the British Medical Association.

DR. G. A. ALLAN, chairman of the Scottish Committee, has presented a mallet and stand for use on the chairman's desk at the Scottish House of the British Medical Association in Edinburgh. The gift is fashioned out of oak taken from the lining of the well shaft of the ancient Bishop's Castle at Glasgow. Dr. Allan, in making the presentation at a recent meeting of the committee, said that during the rebuilding in 1911 of the south-west wing of the Glasgow Royal Infirmary, which is on the site formerly occupied by the castle, the old well was exposed; a shaft was revealed, ten feet deep, which had previously contained spring water, but had been drained and covered in during some earlier alterations. The shaft was lined with black oak, one inch in thickness, and had stout square corner uprights of the same material. The wood was removed, and one of the workmen, thinking it might be of interest, offered a portion of a corner upright to his doctor, Dr. J. G. McCutcheon, also a member of the Scottish Committee, who (said Dr. Allan) in spite of fuel scarcity occasioned by coal and transport strikes and the great war, had preserved it. When the making of a mallet was mooted Dr. McCutcheon generously offered it for the purpose. Dr. Allan gave some account of the history of Glasgow Castle, with which in future the maintenance of order at meetings at Drumsheugh Gardens would thus be linked. The castle was occupied from the thirteenth century until the Reformation by a succession of bishops of Glasgow, who all, no doubt, quenched their thirst with water which had been carried up this old oak shaft. The castle had now vanished, but at one time it was a place of great strength, with battlemented walls and bastion. It was many times besieged in the sixteenth century, but following the Reformation it fell on evil days, and for a period was used as a prison, at one time confining 300 Jacobites. In the middle of the eighteenth century, in spite of repeated protests against the vandalism, permission was given for its stones to be used for the building of an inn in Gallowgate; before the century closed the ground on which the castle had stood, which had reverted to the Crown at the Reformation, was granted to the town for the building of the Royal Infirmary. From time to time during work at the Infirmary relics of the substructure had been revealed, including traces of the drawbridge and moat. The mallet, which is in the form of the old Scottish mason's "mell," bears a silver plate recording the fact of the presentation; on the stand is an inscription stating that the wood was obtained from the lining of the well at Bishop's Castle, Glasgow. On the motion of Dr. Buist, the committee recorded its grateful appreciation of Dr. Allan's gift.

Gibson Memorial Lecture.

The George Alexander Gibson Memorial Lecture was delivered at the Royal College of Physicians of Edinburgh on May 27th and 28th by Emeritus Professor William Sidney Thayer, late of Johns Hopkins University, Baltimore. Dr. R. A. Fleming, vice-president of the College, presided. The lecture consisted of an analysis of about 400 cases of acute endocarditis which had come under the observation of Professor Thayer and his colleagues in the Johns Hopkins Hospital. He pointed out that the chief incidence of rheumatic endocarditis, which was speedily fatal, occurred in the first decade of life. Endocarditis of a rheumatic nature might be caused by organisms of the streptococcal group, but these organisms were not found in numbers at the site of the lesions as in other definitely bacterial cases. It was possible that this type of endocarditis was due to a special sensitiveness of the endocardium, among certain individuals, to toxic products in the circulation. Of the definitely bacterial cases, more than 80 per cent. were due to non-haemolytic streptococci.

Royal College of Physicians of Edinburgh.

As intimated in the *British Medical Journal* of May 17th (p. 932), the Royal College of Physicians will celebrate the two hundred and fiftieth anniversary of its foundation on St. Andrew's Day, 1931. During the seventeenth century there was no proper medical school in Edinburgh, although the Incorporation of Surgeons had been giving anatomical demonstrations to its members and apprentices since its foundation in 1505. Attempts were made at various times under James I, Charles I, and Oliver Cromwell to obtain a charter for the foundation of a College of Physicians to regulate medical practice in the city, but these met with so much opposition from the universities, the surgeon-apothecaries, and others, that every scheme fell through, until in 1681 Dr. Robert Sibbald and some of his friends made a more determined effort. Sibbald tells in his interesting autobiography how the principal physicians in Edinburgh, having been consulted regarding a dispute between the surgeons and the apothecaries, held several meetings, and again proposed the scheme for establishing a college. Soon afterwards James, Duke of York, came to Scotland, accompanied by Sir Charles Scarborough, who promised to assist the Edinburgh physicians by using his influence with the Duke and with King Charles; the influence of the Earl of Perth with the Scottish nobility was also secured in favour of the scheme. Dr. Sibbald was fortunate enough to discover a warrant issued by King James I in 1621 directing the Scottish Parliament to introduce an Act for the establishment of a College of Physicians. This he showed to the Duke of York, who, on recognizing his grandfather's handwriting, said that he would see the business done. He seems to have acted with much vigour, and after some concessions had been made to the surgeons, the town council, the universities, and other opponents, the Duke sent up a draft charter to London, which was returned signed by the King. The next day, as Sibbald says, he turned it into Latin, had it written out on parchment and sealed with the Great Seal on November 29th, 1681, being St. Andrew's Day. He adds plaintively: "It cost a great deal of money to defray the charges of the plea, and for getting it signed at court, and sealed here." The patent was granted to twenty-one original Fellows of the College, whose names are mentioned. The town council followed four years later by appointing three of these Fellows—Sir Robert Sibbald (who by this time had been knighted), Archibald Pitcairne, and James Halket—to be professors of medicine, although there is no evidence that they actually held classes in this subject. The College was an active body from the first, and soon set about the formation of a library, the issue of a pharmacopoeia, and, what was much needed in those days at Edinburgh, the establishment of a public bath. In 1781 the College celebrated its centenary by the inauguration of a hall at the east end of George Street, Edinburgh, of which the foundation stone had been laid in 1775 by the celebrated Dr. William Cullen, then president of the College. The present hall was occupied in 1846. In consequence of legislative changes introduced by the Medical Act of 1858, the provisions of the charter granted by Charles II became obsolete, and the College was invested in its present rights and privileges by a new charter granted in 1861. In 1726 the College of Physicians began to collect subscriptions for building an infirmary for the sick poor, which the Fellows bound themselves to attend without salary, and in 1729 they opened a small hospital of six beds at Robertson's Close. This was the beginning of the Royal Infirmary of Edinburgh, which, at later dates, when the Infirmary moved to new buildings or crises arose in its affairs, received generous donations from the College. The post of physician to the Royal Infirmary has now become a privilege which is open only to Fellows of this College,

and many of them have expressed the opinion that the best method of celebrating the two hundred and fiftieth anniversary would be to contribute a generous donation to the appeal which has been launched by the managers of the Royal Infirmary in connexion with the bicentenary of this institution, referred to in these columns on May 24th (p. 971). There will probably be a banquet or other social function at the College of Physicians on St. Andrew's Day, 1931, but this must necessarily be restricted by the fact that the more important centenary of the charter of 1861 falls to be celebrated within thirty years.

Queen's District Nurses in Scotland.

The wife of the Lord High Commissioner paid a visit on May 25th to the Scottish Branch of the Queen's Institute of District Nursing in Edinburgh. Mrs. George Kerr, joint honorary treasurer of the Scottish branch, who received Her Grace, reminded her that the institute had been founded by Queen Victoria with money collected for her jubilee by the women of Great Britain and Ireland. The aim of the organization was to establish a complete nursing service throughout Scotland. There were now about 800 nurses scattered over the country from Wigtown to Shetland, in the Western Isles, and even in St Kilda. All the nurses had a complete training in maternity, infant welfare, and in the modern schemes of preventive medicine, for the council of the institute deprecated different nurses visiting the homes of the people. Nurses received a special training for six to eleven months in the home of the institute, because they often had to go into homes where the hospital appliances to which they had been accustomed were not available.

Glasgow Royal Hospital for Sick Children.

At the forty-seventh annual meeting of the governors of the Royal Hospital for Sick Children, held recently in Glasgow, Lord Provost Kelly, who presided, referred to the extensions that are being made to the country branch at Drumchapel. These consist of three main wards, two isolation wards, a nurses' home, and administrative departments. All the buildings, with the exception of the nurses' home, are of the bungalow type. A large verandah is attached to each ward, so that the patients will live, as far as possible, in the open air. The extended branch, which will accommodate about eighty patients, is expected to require an additional annual income of £3,000. The chairman also referred to the Children's Tintoil League, which has contributed £2,130 to the funds of the hospital by the sale of its collections from 1926 to 1929. The league is managed by a council, which includes representatives of the hospital and of numerous juvenile organizations in the west and centre of Scotland. Appeals were made by Dr. E. T. Roberts, late medical officer to the Glasgow Education Authority, for an increase in annual subscriptions, and for contributions to the research fund of £20,000 to enable the resources of the hospital to be utilized in the study and prevention of diseases of infancy and childhood. About 20,000 children, he said, under 5 years of age joined the Glasgow schools every year. Of these, 85 per cent. had decayed teeth, 6 per cent. had rickets, 5 per cent. enlarged tonsils, and 2 per cent. had discharging ears. Treatment in these cases was imperative. A research fund would assist the investigation of the causes of these disastrous conditions. In a special plea for this fund the directors refer to a circular, issued by the Scottish Health League, which estimates that the total sickness bill of Scotland is over £60,000,000 per annum. According to the annual report, the number of patients treated during the year in the wards of the hospital numbered 5,359, while the attendances of out-patients at the hospital and dispensary numbered 81,960. All the patients were under 13 years of age. The financial statement for 1929 shews an improvement on that of the previous year.

Edinburgh Royal Infirmary.

The Prince of Wales intends to pay a visit to the Royal Infirmary of Edinburgh on Thursday, June 12th, and to the Murray Home at Gilmerton, recently established for partially disabled soldiers, under the management of this institution. The annual flag day, which was held in aid of the funds of the Infirmary on May 24th, is expected to yield a total of £8,000, which may be exceeded when the returns from neighbouring country towns and districts have been received. The sum collected in the city itself was over £5,000. The endeavours of students, who held a carnival in the Waverley Market, resulted in a total of about £1,800, which is an increase of £500 on the amount raised by them last year.

Chancellor of Edinburgh University.

The election of a chancellor of Edinburgh University in succession to the late Earl of Balfour has resulted in the return of Sir James M. Barrie, Bt., O.M., by a majority of 1,940 votes over Lord Linlithgow. The number of voting papers sent out to graduates of the university was 13,602. Sir James Barrie is a graduate of Edinburgh University, and the impressions and experiences of his student life there are set down in his early book *An Edinburgh Eleven*.

England and Wales.

Winford Orthopaedic Hospital.

PRINCE GEORGE opened, on May 31st, a new orthopaedic hospital near Bristol for children suffering from various crippling diseases, including rheumatic lesions of the heart. Miss Town-end, chairman of the hospital committee, in a brief account of the objects of the new institution, said that, while it would be used mainly for Bristol children, patients from adjacent counties would be received to the limit of the accommodation. The best possible chance of permanent cure would be available for these children, since they would receive without delay the necessary early and continuous treatment. Sixty acres of land had been purchased, and there was thus ample space for enlargement, or for the subsequent erection of "country blocks" by other Bristol hospitals, if this was desired. At a future date, when funds permitted, it was proposed to erect two additional open-air wards, thus bringing the accommodation up to 160. The cost of the site, present buildings, and equipment was estimated at £64,000, of which £10,000 had been received from the funds of the old Orthopaedic Hospital, and £34,000 from donations; it was hoped that the outstanding amount of £20,000 would soon be forthcoming. The cost of maintenance of Bristol children of school age would be borne by the Bristol Education Committee, the Treasury making a grant of half the sum expended; parents would contribute according to their means. During their stay in hospital all the children would thus be able to receive such education as their physical strength allowed. Prince George delivered a short speech, commenting on the advantages offered by the new hospital, which he officially declared to be open. He then visited the wards and received purses on behalf of the building fund. The new Winford Orthopaedic Hospital possesses one large open pavilion divided into two wards, fronted by a broad concrete terrace on to which beds can be wheeled, and having a nurses' day room, kitchen, and bath-rooms attached. Here sixty children can be accommodated at once. There is a treatment block in close proximity to the wards, having operating theatre, plaster room, light room, and *x*-ray room, large hall for remedial exercises, and offices. The three-floor administrative block is capable of easy extension, having kitchens, stores, dining, day, and sitting rooms for matron and staff; rooms for house-surgeon and visiting medical staff; and twenty-nine bedrooms, each fitted with radiator, and with hot and cold water laid on. A large, well-equipped laundry has been fitted with electric washing apparatus. The boiler-house is capable of supplying heat and hot water for the whole institution, and of running the dynamos for electric light and current. There is a well, over 300 feet deep, with ample water supply, a pumping station, and a reservoir.

Housing Conditions in Liverpool.

At a recent meeting of the Royal Statistical Society an account was given by Mr. D. Caradog Jones, M.A., and Mr. Colin G. Clark, B.Sc., of the preliminary results of a scientific survey of present housing conditions among approximately 5,000 working-class families in Liverpool. This survey was stated to form part of a comprehensive survey of social conditions in Merseyside that is being

carried out by the Liverpool University School of Social Science. After describing the general configuration of Liverpool, whose population was estimated to be 873,000 in 1929, the investigators traced briefly the growth of congestion of industry and population in the central areas of the city. In the nineteenth century the rapidly increasing population had spread out into vast dreary deserts of houses with hardly an open space among them. These drab districts have hemmed in the centre of the city to a depth of two or three miles from the pierhead. In St. Anne's ward—"the plague spot of Liverpool"—42 per cent. of all the families visited were living four or more to a house. Every room in many of the larger houses was sublet to a separate family; the rooms were dark, dilapidated, and comfortless, lacking sanitary conveniences, taps, and sinks; and nearly every family had to depend for its cooking on an unsuitable bedroom firegrate. An instance was given of an eight-roomed house in this area with five bedrooms, two parlours, and a kitchen where six families shared a yard, one tap, and a single water closet. In seeking to determine a standard of overcrowding the investigators concluded that while the simple capacity scale of two persons to a room might serve a useful but limited purpose in marking the comparative progress in housing conditions (as used by the Registrar-General) it should no longer be countenanced by any authority, since shocking overcrowding occurred in spite of it. The general standard of family accommodation adopted for the purposes of the survey was equivalent to one room to two adults and one child if under 10 years of age. To guide the application of this standard the following rules were observed: (*a*) a separate bedroom shall be available for each married couple, which may be shared at most with two infants each under 5; (*b*) two adults of the same sex may also share a bedroom with two infants under 5; (*c*) with the exception of husband and wife no two persons of opposite sex who are both over 7 shall occupy the same bedroom; (*d*) not more than three persons over 10, or two persons over and two under 10, shall occupy one bedroom; (*e*) no bedroom shall be occupied by members of more than one family ("family" includes boarding lodgers). According to this standard overcrowding in the wards sampled by the investigators was found to be most frequent in tenements of two and three rooms. Preliminary examination of the problem on an economic basis suggested that varying rates of wages had much less effect than varying dependency and unemployment on the economic conditions of families. It was pointed out that the state of congestion revealed by the survey would have been much worse had it not been for the strenuous efforts shown by the municipal authorities in dealing with the problem. Over 80,000 people were now living in houses erected by the corporation since 1919, and approximately 15,000 had been rehoused in cottages and flats in the inner areas.

Jubilee of the Mental After-Care Association.

The jubilee of the Mental After-Care Association (Church House, Westminster) was celebrated at a meeting held at Drapers' Hall, London, on June 2nd. It is fifty years since the chaplain at a mental hospital, desiring to do something for patients after their discharge, won the sympathetic interest of Lord Shaftesbury and the help of some of the medical superintendents of the day. H.R.H. Prince George presided over a large gathering, and after remarking on the number of persons relieved—2,300 during the last year—said that the association's greatest asset was that it had no connexion with any Government department or local authority, with the result that the patient felt himself entirely free from any official atmosphere. Only lack of funds prevented expansion, but the association was not appealing in any special way for funds to mark its jubilee, only for a wider interest in its work and in the lot of the unfortunate people whom it set out to help. Lord Wakefield of Hythe, the president of the association, said that the work was increasingly successful. The gloom of centuries of superstition and misunderstanding had been responsible for many unsound but depressing conclusions in mental illness, and that gloom was being rapidly dispelled. Mental diseases were yielding all along the line to modern treatment, and the modern attitude was that mental illness was just an illness of a particular kind, and generally capable of both prevention and cure. Sir Maurice Craig, who has lately succeeded Dr. Percy Smith in the chairmanship of the council, said that the convalescent stage was important in all illness, but most important in mental disorder, because of the liability to relapse if re-adaptation to ordinary life was too difficult. He believed that no mental hospital had a convalescent hospital attached, but the association had a number of cottage homes comprising in all more than 200 beds—double the number available three years ago—with fully trained matrons and, in the larger homes, two or three other trained nurses. Another important branch of the work was finding employment for the discharged person; and here he reminded employers who shrank from the idea of taking on an ex-patient from a mental hospital that very many of these people were most sensitive and, once they were well, would render very conscientious and perhaps specially gifted service. Mr. L. G. Brock brought the good wishes of the Board of Control. There was no one in the community, he said, more in need of sympathy, and in general less likely to receive it, than the patient discharged from a mental hospital. This attitude towards the insane and ex-insane proceeded from a deep-seated fear of insanity; it was because of that fear and a desire to disguise its reality that the lunatic for generations had been made a figure of fun. The discharged patient from the asylum, terribly sensitive, nerve-shaken, and frightened, needed all the sympathy and help that could be given him. Mr. Brock said that he yielded to no one in his pride in the civil service, but he realized that there were very definite limits to what the administrative machine could provide. If human sympathy were something which could be obtained by filling up a printed form or making a statutory regulation it would be forthcoming in abundance, but it was because the help given by the association was unofficial that it had its crowning value. The problem of finding employment for persons discharged from mental hospitals was not merely that of finding a job for a man, but of finding a job which was going to give him the best chance of keeping well and of escaping from any relapse. The Mental Treatment Bill, now passing into law, had one provision which marked Parliament's recognition of the importance of the work which the association had done, for local authorities were empowered to subscribe to the funds of associations interested in after-care. The wording was necessarily indefinite, but that provision would never have been inserted had it not been for the work done by the Mental After-Care Association. He hoped that local authorities would take the fullest advantages of their new powers, and the association the fullest advantage of its new opportunities. Dr. Adeline Roberts related a few experiences of individual cases gained as chairman of the Mental Hospitals Committee of the London County Council, and the meeting then came to a conclusion. The report of the council of the association was handed to those present, but the main ground was covered in the speeches. The report mentioned that the association works in direct co-operation with ninety-four mental hospitals, or more than half the institutions in England and Wales, and the ideal is to establish active after-care work in connexion with every mental hospital in the British Isles.

National Institute for the Deaf.

The sixth annual meeting of the National Institute for the Deaf, which took place on May 30th at Church House, Westminster, was addressed by the Right. Hon. Stanley Baldwin, M.P., who, in appealing for public support for the Institute, remarked on the unconscious distinction made by the outside world in its treatment respectively of the blind and of the deaf. The blind, rightly, received every sympathy and consideration, but deafness, partial or complete, somehow failed to stir the imagination, although, said Mr. Baldwin, the isolation of the deaf was not less than the isolation of the blind, and it was not easy to say which was the greater calamity. Lord Charnwood, president of the Institute, said that the Minister of Health, in agreement with the Minister of Education, had decided to make inquiry through an experienced Government official into the conditions of the deaf and the possibility of relief. The matters to which inquiry might well be directed were the causes and

prevention of deafness, the education and training of the deaf in all stages of their career, their position industrially, and the openings for other forms of assistance. He also stated that the Institute had framed a scheme for a secondary school providing for the deaf the advantages which the ordinary secondary schools gave to normal pupils, and, further, it hoped to establish a centre of instruction in lip reading for the training of teachers as well as for the benefit of those who had lost or were losing their hearing. The report of the executive committee, which was submitted to the meeting, tells of much other useful research and ameliorative effort. Regional associations are being formed in various parts of England and in Scotland, with the object of compiling as complete a register as possible of the needy deaf in their areas, and of helping existing agencies or promoting new agencies for their welfare. These associations are working in the closest co-operation with the various local bodies which afford assistance, and whose independence the National Institute is anxious to preserve. The result of one task which the Institute has embarked upon will be, it is hoped, to save the deafened much expense and disappointment. It is compiling a list of dealers in artificial hearing devices who are prepared to give assurances of an adequate trial of any instrument sold by them, and of a fair arrangement as between vendor and purchaser if it does not produce satisfactory results. It may be added that the many-sided work of the Institute is done on an annual income of some £1,750.

Extension of the Homecroft Movement.

Dr. J. W. Scott of Cardiff University College, at a meeting of the National Homecroft Association held at Church House, Dean's Yard, Westminster, on May 22nd, recalled the services the late Dr. George Vivian Poore had rendered to rural housing and hygiene, and made an earnest appeal for further support for the Homecroft Memorial to him. The proposed teaching cottage, where the art of the semi-self-supporting garden home would be taught and Poore's hygienic and agricultural principles demonstrated, was related to the needs of English elementary education at the present moment. The Hadow Report on the education of the adolescent had opened a new prospect before the children, especially of the manual working classes, by proposing to raise the school-leaving age, and by recognizing the need for a break in the curriculum at the age of 11 or 12. But the committee had been careful to point out that no mere programme of "secondary education for all" did justice to their intention. It shone through the lines of the whole report that the desire was for a *different* secondary education. While more education was wanted, the committee was exercised over the question whether for children about to become miners and railway workers and agricultural labourers the subjects in the ordinary secondary school curriculum were the best introduction to the life that lay before them. Dr. Scott urged the adoption of a system, paralleled to a certain extent in Denmark, whereby the pupils in the new schools would spend one week in every three doing the practical work of home-building, under the conditions in which the tenants on the Homecroft Association's land near Cheltenham were now living—namely, in a workman's cottage, with a spare-time food croft attached, the croft being equipped to produce a considerable part of the family's daily food. Poore had everything to teach in connexion with that mode of living. The hope of the Homecroft Association was to erect a cottage to his memory, in which three relays of ten children each could be accommodated, under a teacher who was competent in both domestic science and food gardening, the boys learning the boy's part and the girls the girl's part in the organization of a healthy working-man's home. Town manual workers could live in the country, if they knew how to do it. The ten homecrofting families on the association's estate were now doing it. A memorial teaching cottage, erected beside the cottages and worked, if possible, in conjunction with the school authorities, would complete a concrete picture which would show more closely than anything else how the Hadow committee's ideals for a new kind of secondary education, which would be practical and suited to the direct needs of the less brilliant children, could be realized. Free gifts towards the memorial and share subscriptions for extension of the homecrofts may be sent direct to Dr. J. W. Scott, treasurer of the fund, University College, Cardiff.

Congress of the Royal Sanitary Institute.

The programme has now been issued for the forty-first congress of the Royal Sanitary Institute, which will be held at Margate from June 21st to 28th. Previous announcements about this congress have appeared in the issues of the *Journal* dated December 28th, 1929 (p. 1227), and May 10th, 1930 (p. 881). The business of the congress will be divided into the following six sections: preventive medicine, engineering and architecture, maternity and child welfare (including school hygiene), hygiene of food, hygiene in industry, and veterinary hygiene. Medical officers of health, engineers and surveyors, sanitary inspectors, health visitors, and representatives of sanitary authorities and of national health insurance services, will hold a series of seven conferences, the subjects of which will include maternal mortality, child welfare schemes, psittacosis, the school medical service, the health of industrial workers, slum clearance, inspection of foodstuffs, and town planning. Lord Cornwallis, president of the congress, will deliver his inaugural address on June 23rd at 3 o'clock, and on the same day at 5 p.m. the mayor of Margate will open the health exhibition which is being held in conjunction with the meeting. On June 24th at 8 p.m. Dr. O. Charnock Bradley, principal of the Royal (Dick) Veterinary College, Edinburgh, will deliver a lecture on diseases of domestic animals from the human angle.

India.

The Punjab System of Vaccination.

STEADY improvement is reported in the number of primary and secondary vaccinations in the Punjab during recent years. In his annual report for 1928–29 Lieut.-Colonel C. A. Gill, I.M.S., reports that the figures for 1926–27 showed a considerable increase over the average of the previous three years, while each of the two succeeding years has been characterized by still further progress in this respect. There remain, however, a relatively large number of unprotected adults in the Province, due to the decline of vaccination during the war and the period immediately succeeding it. Moreover, a large number of susceptible individuals have been added to the community by the high birth rate and the low infant death rate of the past three years. Further efforts are therefore necessary if the severity of future small-pox epidemics is to be reduced. A system is in force whereby the work of each vaccinator extends over the area controlled by one police station, but there is still a shortage of vaccinators calculated on this basis. In this respect the headquarters district of Lahore is notably behindhand, but it has to be remembered that the number of police areas in such a town district is based less on the size of its population than on the local prevalence of crime. It is possible, therefore, that in such centres as Lahore one vaccinator can successfully cope with the work in more than one of these areas. Vaccination work is less satisfactory in urban areas, and particularly in the smaller towns; the inhabitants here tend to neglect all precautions until an outbreak of small-pox brings home to them their individual danger. Educational measures are therefore highly desirable, and an indication of the too general ignorance is afforded by a case in which the parents of a student brought an action against the university for not permitting their son to remain in an examination hall when found to be suffering from small-pox.

Cholera in Bihar and Orissa.

A severe epidemic of cholera broke out during 1928 in the province of Bihar and Orissa. According to the public health report of that year it was not unexpected, as the disease had persisted through the winter months in several districts. Notwithstanding elaborate precautions by the Government and health authorities the rate of mortality rose from 1.4 in the previous year to 2.2, representing an increase of 28,000 deaths. Preventive measures in the

province include the maintenance of a permanent staff of ten doctors, who assist local organizations in dealing with epidemic disease. In addition to this special staff the Government maintains a reserve of one hundred vaccinators, who are also allocated to districts. In 1928 thirty doctors and over one hundred vaccinators were employed between April and October in various parts of the province. On the approach of the cholera season reserve supplies of kaolin and disinfectants are issued to civil surgeons. Kaolin, which is in general use, is regarded as an effective remedy; it is also convenient, because it does not deteriorate when stored, and is safely distributable. During 1928 local authorities were provided with cholera vaccine free of charge; over 241,000 doses were issued, compared with 5,000 in 1926. Some difficulty was anticipated in ensuring future supplies for free distribution throughout the province. All these preventive measures supplement the resources of the district boards, whose facilities appear to vary considerably. What seems to be mainly responsible for the serious outbreaks of cholera in the province are the large fairs and melas, which are attended by pilgrims from all parts of India. In June and July, when the Snen Jatra and Rath Jatra are celebrated at Puri, cholera is prevalent in the Orissa districts and in Bengal and Madras. During the celebration of these festivals in 1928 inoculation centres were opened at several railway stations, and six centres under six medical officers were established in the town itself. Over 25,000 pilgrims were inoculated, more than double the number of the previous year. Other melas held in the province were also visited by medical officers, who supervised the general sanitary arrangements and delivered lantern lectures on public health. The organization of lectures has become a regular part of the work of the publicity bureau. Since the Government withdrew its contributions towards the salaries of health officers most of the municipal authorities that employed them have dispensed with their services; only four of the large municipalities had health officers at the date of the report. This policy, which is deprecated by Lieut.-Colonel Phillips, I.M.S., Director of Public Health, is stated to have impaired the accuracy of vital statistics. Sanitary and health inspectors, however hard-working, are not regarded as sufficiently experienced or trained to check epidemic disease without the supervision of qualified officers.

Correspondence.

PREVENTION OF NOISE.

SIR,—Readers of the *British Medical Journal*, and especially those who have taken an interest in the subject of noise, will be pleased to know that a clause dealing with this has now been passed and incorporated in the Edinburgh Corporation Order Confirmation Act, 1930.

The clause is as follows:

34. (1) A noise nuisance shall be liable to be dealt with summarily in the manner provided in Part II of the Public Health (Scotland) Act, 1897, in the same way and to the same effect as in cases under Subsection (6) of Section 16 of that Act, and the Corporation shall have all the powers and duties with reference to a noise nuisance which a local authority has with reference to a nuisance under the said Act.

(2) For the purpose of this section a noise nuisance shall be deemed to exist where any person makes or continues or causes to be made or continued any excessive or unreasonable or unnecessary noise, and where such noise: (*a*) is injurious or dangerous to health, and (*b*) is capable of being prevented or mitigated, having due regard to all the circumstances of the case. Provided that if the noise is occasioned in the course of any trade, business or occupation, it shall be a good defence that the best practicable means of preventing or mitigating it, having regard to the cost, have been adopted.

(3) Nothing contained in this section shall apply to a railway company or their servants exercising statutory powers.

I have to tender my grateful thanks to the British Medical Association and the People's League of Health for the invaluable service they rendered by supporting the suggestion of making noise one of the nuisances liable to be dealt with by the machinery of local authorities, when this was first suggested.—I am, etc.,

Edinburgh, May 29th. THOS. G. NASMYTH.

STERILITY IN WOMAN.

SIR,—I have no wish to prolong this discussion beyond the bounds of usefulness, for I dealt in my previous letter (May 10th, p. 882) very fully with Dr. Leith Murray's remarks on certain details in my address. The matter is, however, of enough importance at the present time both to the lay public and to the profession to warrant some attempt on my part to clear up all matters left in doubt, and to summarize the opinions expressed.

First, everyone is agreed, I think, that there are many constitutional as well as local causes of sterility in woman, and that, with certain rare exceptions, occlusion of the tubes is produced by infections. Secondly, it is accepted that the husband is directly at fault in at least 15 to 20 per cent. of all infertile unions (excluding, I presume, those in which contraception has been practised). Mr. Kenneth Walker and others place the percentage of infertile husbands higher—one-third (33 per cent.) of all sterile marriages. Further, as I said in my last letter, husbands are indirectly, by infecting their wives, held to be responsible for about 40 per cent. of all cases of sterility in women. Clearly these are matters of considerable importance; and as Mr. Walker and I have said, in the face of them there is no social or scientific justification for not *insisting* that the husband shall be examined before tubal inflation or operative measures are practised on his wife. With this view Mr. Clare does not agree, and Dr. Leith Murray is not in more than abstract agreement for reasons he has explained. Further, I suppose we all concede that the hospital patient is entitled to as much consideration as the private patient. Yet Dr. Leith Murray doubts the possibility of testing the husbands of the poorer classes. He has not, however, tried to organize such an investigation. I have done so; and after the discussion on my address at Nottingham in reply to Mr. C. D. Lochrane I went fully into this matter. I am therefore at a loss to understand where Dr. Leith Murray discovered that "he [W. B. B.] now frankly admits that many of his hospital patients *are* so dealt with"—that is to say, that many of my hospital patients are subjected to tubal inflation without their husbands being first examined. I can only think that my statement that we have examined a considerable proportion of the husbands of hospital patients complaining of sterility without obvious cause led Dr. Leith Murray to the inference that in the remainder we practised tubal inflation on the wives. This has not been the case; indeed, it would have been contrary to our declared policy. The principle, therefore, should first be established; then, I am sure, it will be found possible to examine the husbands, in hospital as well as in private practice. We at any rate have encountered no difficulty; nor apparently has Mr. Kenneth Walker.

Thirdly, there is the question of technique. It seems that all are agreed that care must be taken to exclude the possibility of air leakage in the apparatus used. Further, while it is true that in my address, when speaking of radiographic examination, which appears never to be practised after air insufflation by some, I said this is often an unnecessary refinement—that is to say, although I have always had a radiographic examination made, I have *often* felt sure that the tubes were patent. While I stated that anyone experienced in the method is *usually* able to tell when air is passing into the peritoneal cavity, yet, as indicated by the words "often" and "usually," mistakes can be made—for example, with tubal spasm, about which much has been written by Meaker (1924) and others. So most will agree that we should deny no patient, hospital or private, the advantage of every scientific method of control at our disposal. For the inexperienced, as we all must be at first, radiography is, I think, indispensable.

Fourthly, we have to consider the statistical results of tubal inflation. The records of many experienced gynaecologists admittedly exhibit considerable variations; the tubes have been described as being patent in from about 40 to about 70 per cent. of all cases tested. This alone is indicative of the difficulty of finding the proper average percentage; possibly it lies somewhere between 40 and 70 per cent. My own worked out at 65 per cent. Dr. Leith Murray, however, has obtained a unique percentage (95) of patent tubes. I have therefore endeavoured to explore all possible sources

of error that might have led to such a high percentage of positive results. I certainly did not intend to say that all existed. Nevertheless, one small fallacy is clear: as the husbands were not, except in some private cases, examined, we should deduct 20 per cent. from his cases examined; but this does no more than bring his estimate down to 94 per cent. of positive results. The difference between this and my figure (65) may probably be explained, as I have endeavoured to show, if the much less exclusive selection of cases by Dr. Leith Murray be taken into account, together with the possibility that without radiography, a few errors in the estimation of positive results may have occurred. I know that my friend Dr. Leith Murray is as anxious as I am to discover the truth of the wide variations that exist not only between his figures and those of others, but also between those who have obtained a much lower percentage of positive results, as mentioned above.

Lastly, I would refer to the statement of Dr. Leith Murray that the underdeveloped adolescent uterus (often called the "*infantile uterus*" but really the pre-adolescent uterus) can be demonstrated by the passage of a sound. I would point out that in such uteri the *total length* of the cervical and uterine cavities may be normal, and often is. It is the ratio of cervical to uterine length that is important. This cannot accurately be discovered by the ordinary measurements made with the uterine sound, so far as I know. In spite of what Dr. Leith Murray says, I am sure the cochleate uterus may be, and not infrequently is, underdeveloped, as I have described and figured in other communications (*System of Gynaecology*, edited by Eden and Lockyer, 1917, i, 350. *Journ. Obstet. and Gynaecol. of the British Empire*, 1923, xxx, 138). There are, however, considerable differences of opinion as to the frequency of this condition. It seems to be more common in the North of England than elsewhere.

The following conclusions, as they appear to me, in regard to the matters under discussion, may be summarized as follows:

1. Tubal inflation is a valuable diagnostic method in selected cases.

2. This procedure should be controlled by radiography, for this makes for scientific accuracy.

3. The percentage of tubes found to be patent varies considerably. This may be due to the degree of accuracy secured, and to the methods of control practised in regard to the procedure employed, to the selection and variability of cases, and to the inclusion or exclusion of the state of the husband.

4. It is imperative, both for humane and scientific reasons, that the husband be examined.

—I am, etc.,

Liverpool, May 28th. W. BLAIR BELL.

TREATMENT OF ANGINA PECTORIS AND INTERMITTENT CLAUDICATION BY MUSCLE EXTRACT.

SIR,—I was much interested in the preliminary observations of Dr. M. S. Schwartzman (May 10th, p. 855) on this subject. In November last Dr. Szent Györgyi and I (*Journ. Physiol.*, 1929, lxviii, 213) recorded the isolation from muscle and other tissues of a substance which, from its chemical behaviour, we considered identical with adenylic acid. In addition to the several other reactions upon the whole animal that we reported we showed that it was a general arterial dilatant, including the coronary arteries. Subsequent work upon the rabbit's heart has shown that it is a most efficient coronary dilatant. It would be interesting to know if Dr. Schwartzman's extracts contain this substance, as the beneficial results reported by him might arise from increased arterial flow consequent upon the vessel dilatation produced by it. We also reported in our original paper that adenosine, prepared from yeast nucleic acid, had properties identical with those of muscle adenylic acid. Adenosine can be readily obtained in the pure state, and would allow accurate observations to be made upon one of the constituents of impure muscle extract, if it be shown that Dr. Schwartzman's extracts contain adenylic acid.—I am, etc.,

Department of Pathology, Cambridge, May 30th. A. N. DRURY.

DIAGNOSIS OF PLAGUE.

SIR,—It is not usually realized that in persons living in the Tropics acute swellings in different parts of the body may be manifestations of bubonic or septicaemic plague. On account of poverty and peculiar social conditions many of the patients seek advice at a very late stage of the disease, and occasionally they walk up to an out-patient department of a large hospital for the purpose of having what they think to be an abscess opened. A rapid pulse, fever, and constitutional symptoms are ascribed to the absorption of toxins from the abscess.

The unwary surgeon may open such abscesses; he may or may not find pus, and he is surprised that the patient either dies on the operation table or a few hours later in the wards. Such incidents are not uncommon in the Tropics. The swellings form in the neck, armpit, or groin, and when they are incised or punctured no pus is found. There is a certain amount of brownish exudate with necrotic material at the bottom of the swelling. Such cases are a real puzzle to the surgeon. They should not be operated upon, as they invariably prove fatal. The difficulty of diagnosis is increased when cases occur sporadically, and it is interesting to note that at surgical clinics plague cases turn up when one least thinks of them. When the constitutional symptoms are out of all proportion to the amount of toxaemia caused by the swelling, and when this phenomenon is coupled with a dry and furred tongue (so characteristic of all plague cases), plague is to be suspected.

The fact that such cases are missed offers a strong reason for an extensive clinical study of tropical diseases by every person who wishes to practise surgery in the Tropics.—I am, etc.,

J. DURLABH DHRUV,
Surgeon to Jamshedji Jijibhai Hospital, Bombay.

THE FAMILY INCIDENCE OF JUVENILE RHEUMATISM.

SIR,—In the interesting article on juvenile rheumatism by Dr. Gray Hill and Miss Mary Allan (May 24th, p. 949), there is a statement which I think might be qualified. It is pointed out that few of the brothers and sisters of rheumatic patients develop the disease, although living under the same conditions and having the same diet. The factors of housing, damp, clothing, are the same, and do not vary, but although the food on the table may be the same for all, it certainly does not follow that each and every one partakes of it in like proportions. In an article on heart disease in children (*Journal*, 1926, vol. ii, p. 684) I quoted a number of cases, and a reference to Cases 28 and 29 will serve to emphasize my statement. These two sisters disliked milk, were fond of vinegar, and suffered from chorea, while their only other sister drank milk, did not touch vinegar, and was quite healthy.—I am, etc.,

Swansea, May 27th. G. ARBOUR STEPHENS.

SPONTANEOUS SURGICAL EMPHYSEMA.

SIR,—It is certainly remarkable that Dr. F. Bedo Hobbs (May 24th, p. 950) should have seen two cases of the occurrence of surgical emphysema during labour within a week, but the condition is by no means unknown. A considerable number of references are given by Redfern in the *Lancet*, vol. i, 1890, p. 343: no fewer than three new cases are recorded in the *British Medical Journal*, vol. i, 1917; and in the *American Journal of Obstetrics and Gynecology*, vol. ii, 1927. Gordon reports two new cases and reviews 130 previously recorded.—I am, etc.,

Aberdeen, May 28th. BEATRIX B. LAW, M.D.

SIR,—I was interested in the two cases of surgical emphysema associated with labour recorded by Dr. F. Bedo Hobbs in the *British Medical Journal* of May 24th, as on May 4th I had a similar case, but could find no reference to the condition in the literature.

On May 3rd I was called to a cowman's wife, a vigorous girl of 22 in her first labour. It was a somewhat dry labour with a

left occipito-anterior presentation, and the patient worked very hard. Next morning, however, she was exhausted, and I made an easy forceps delivery. By the evening the patient had developed a surgical emphysema of the right side of the neck, with swelling of the right side of the face and a closed eye. This condition disappeared in a few days. The patient had a family history of tuberculosis, but there were no physical signs in her own chest, and the result of sputum examination was negative. On May 5th she developed a severe cough, but this disappeared in a few days.

I am, etc.,

HAROLD D. PICKLES, M.C., M.R.C.S., L.R.C.P.

Westerham, May 24th.

THE OLDEST MEDICAL ACT.

SIR,—Dr. J. A. Nixon twenty-five years ago gave some such name to the legislation of 1421, being led to it by the phrases of Robert Hare's Latin version in his *Archives of Cambridge, 1587*. As Dr. Parry has printed it in your issue of May 24th (p. 960), the legislation does seem rather obscure, but if we take up the *Rotuli Parliamentorum* (vol. iv, p. 158), we find among other *Petitions* presented in or to Parliament this very one beginning: "High and most mighty Prince" down to "convenient punishment." It is endorsed: "Reply to this petition is shown on the roll of this parliament, May 2, ninth year of Hen. V." This, then, was the demand, possibly passed by the Commons, sent up by medical reformers, such as Morstead and his military surgeons, who two years later got the Academy of Medicine started in London with the help of Gilbert Kymer and other physicians.

Now turning for the reply, or enactment, to the Rolls of Parliament for that year, on page 130 we get "The eleventh article, The Ordinance against intermeddlers in Fisik and Surgery." It begins: "Item to take away the mischiefs and dangers . . . be it Ordained by this parliament that the lords of the king's council shall have power from this same parliament to make suitable Ordinances, etc." This is clearly legislation by ordinance and not by statute. It directly omits the prayer in the petition for a "statute perpetually to be straitly used and kept," and gives an ordinance with the authority of Parliament instead. Great discussion has taken place on the difference. A statute was intended to have perpetuity, an ordinance was generally tentative. In 1340 a certain enactment was divided into two parts—one to be a statute for perpetuity and the other to be an ordinance—but both had full authority of Parliament and the King (see *Stubbs Const. Hist.*, vol. ii, pp. 584–586).

Thus I am afraid that the legislation does not constitute a statute law against him who "exerceat practicum in artibus medicinae et chirurgiae nisi prius fuerit approbatus in medicinâ apud universitates et in chirurgiâ apud magistros ejusdem artis." It is much to be wished that search be made for instances in the Patent Rolls of council ordinances against quacks before the great Act of 1511. I have tried to show (*Early History of Surgery*) that even before 1421 they could be sometimes arrested at the suit of the surgical town guilds, but in the country districts there was no check.—I am, etc.,

GEORGE PARKER.

Clifton, May 26th

ASYLUM MEDICAL OFFICERS.

SIR,—I have read with interest the letter by Dr. Power (May 17th, p. 928), from which it would appear that steps have been taken "to consider the status and conditions of service of asylum medical officers." It is indeed refreshing to think that our branch of the profession is receiving at least "consideration." I hope in the long run that we may receive something more tangible. Beyond the fact that the system appears to be under review, I do not find much that is helpful in Dr. Power's letter. The problem will have to be tackled in a different way if anomalies are to be removed and a tolerable state of affairs established.

In the first place I submit that the remuneration of an assistant medical officer is an insult to a professional man; £350 to £450 with emoluments is the average for those below the rank of deputy superintendent, and what are the conditions of service? His life is purely institutional. He lives in many instances within earshot of the patients. He sleeps on the premises. His holidays are a month in the year, and even that period has often to be taken at such time as suits the convenience of his superior officers. When he wants a week-end off he obtains it, not as a right, but as a concession which cannot be repeated too frequently. In the smaller asylums he generally lives by himself. There is little intellectual stimulus and no congenial society. The very people whom he serves—namely, the visiting committee—hardly know of his existence. He has no security of tenure, and he must, if indeed this be considered a disadvantage, take a vow of celibacy.

Of course someone will say that this state of affairs is purely temporary. In a short time the poor assistant will be duly rewarded and become a medical superintendent. We have but to think of the number of assistants and of the number of superintendents and this pleasing vision disappears. Someone else points to the assistant in general practice and tries to show that the asylum medical officer is in a much better position. There is no comparison possible. The assistant in general practice is often quite as well paid as the asylum medical officer, he has usually a definite understanding with his employer, and in two or three years he obtains a practice or a partnership. When he has obtained his practice or partnership, let his income be small or large, he has at least independence and freedom of action, without which no position is worth a straw.

If an inquiry is held into the status of asylum medical officers it must include a comparison of the salaries and conditions of service of all other officials, not only those in the asylums themselves but those employed in any capacity by county councils. It will include, of course, all the hordes of officials who under recent legislation have swooped down like locusts on the land. We hear a great deal about economy in local government administration, but this economy applies only to certain departments. If a list of officers in each county was prepared with their exact emoluments and qualifications it would be very illuminating reading for the general public.

My suggestions for improving the service are as follows:

1. For all entering the service there should be a three years' probationary period at a salary of about £400, with opportunity to obtain the diploma in psychological medicine. This diploma to be essential for the position of a permanent officer.

2. At the end of the probationary period he or she obtains charge of a department at a commencing salary of at least £600, with fixed scale of increments and a free house. The provision of a house some short distance from the main building, no matter whether the officer is married or single, to be obligatory.

3. Absolute responsibility for his or her department to rest on the officer in charge.

4. Abolition of the term "assistant." The officer would hold a position independent of everybody but the visiting committee.

5. The salary and status of the medical superintendent should be improved. He should exercise wide administrative and advisory powers, not only in his own institution but outside as well, with a view to co-ordinated action in dealing with mental diseases. Certain medical superintendents should be ex-officio members of the Board of Control. I consider Dr. Power's statement that administrative and scientific minds are disparate to be entirely wrong; I certainly have not found it so.

6. The establishment of properly equipped central laboratories for one or more counties. I have no faith whatever in the idea of a laboratory for each institution. Work of this kind must be carried out by highly trained experts. Such experts are not easy to find and should be still less easy to pay. They must receive adequate remuneration.

7. Absolute security of tenure for all officers during efficient service; a proper tribunal being set up to investigate all questions where an officer's position and reputation are at stake.

8. The provision of an adequate pension and a compulsory retiring age.

I consider these demands modest in the extreme. If granted in their entirety our position would still be much worse than that of the general practitioner. I have said

nothing of the position of deputy medical superintendent; his salary and status would approximate fairly closely to that of the medical superintendent; these positions would naturally form the goal to which able and energetic men could aspire. Dr. Power says "few men can afford to ignore completely the material side of life"; we can all agree with this. In the long run people are treated as they deserve. If our assistant medical officers are content with their position there is nothing more to be said; if they are not content they should be up and doing, for organized effort is all-powerful. I hope the British Medical Association will take a strong line of action in this matter.—I am, etc.,

May 27th. A.M.O.

SEQUELAE OF BRUCELLA ABORTUS INFECTION IN MAN.

SIR,—If Hardy, who is cited by Drs. E. Roland Williams and A. F. Sladden (May 10th p. 859), had lived among farmers and farm workers he might have been led to modify his statement that serious sequelae to Brucella infections are infrequent. According to Manson-Bahr[1] infection by *Brucella melitensis* is followed by

"such sequelae as abscess, orchitis, mastitis, parotitis, boils, etc. It is prone to give rise to ovarian pains dysmenorrhœa, amenorrhœa, menorrhagia, and to favour abortion and premature labour. In the male intermittent haemorrhages from the urethra are not uncommon. The germ may pass into the *foetus*: children born in such circumstances are weakly. Complications such as splenic and hepatic enlargement, enlargement of the mesenteric and cervical glands, suppuration, phlebitis, chorea, various psychoses, arteritis, endocarditis, melæna, haematuria, etc., are met with occasionally during the long course of this disease. After such a long debilitating illness the susceptibility to tuberculosis is much enhanced."

No one can say that any one or more of these is not to be found as a sequel of *Brucella abortus* infection in man. I have observed many of them in the case of a farmer who gives a history of an illness, always referred to as influenza, which he had five years ago. He is prematurely old and broken; his heart is damaged, and his respiratory passages are clogged with bronchitis and fugitive patches of pulmonary congestion; he has ulcers, phlebitis, extensive venous thrombosis (a common sequel). He suffers from distressing psychoses, and similar psychoses affect at least two members of his family—a fact which goes against the view that the cases are single and isolated. I have not been surprised to find during my residence in the country that cases of Brucella infection are numerous and widespread. How could it be otherwise when over 8 per cent. of mixed samples of milk have been found to contain *Brucella abortus*, and the danger has never been pointed out to those handling and milking cows, or to the milk consumer?

Only too often cases are diagnosed as influenza or a bad cold, the true diagnosis being revealed later by an examination of the blood. Thus the five cases reported in the *British Medical Journal* of May 10th presented such symptoms as flushing of the face with a definite blui-h tinge about the lips, patchy dullness of the lungs, fever and shivering, dark offensive motions, headache, backache, nausea, constipation, and oedema of the lungs. To anyone accustomed to seeing cases of *Brucella abortus* infection the peculiar and characteristic complexion, the state of the venous and digestive systems, and the result of treatment with an effective cholagogue are very informative. I would add that the farmer sternly hides the disease when it is present in his stock.—I am, etc.,

Harrogate, May 16th. R. CUNNINGHAM AFFLECK.

TREATMENT OF TUBERCULOUS KNEES.

SIR,—I was very pleased to read Mr. G. R. Girdlestone's criticism (May 24th, p. 977) on my treatment of tuberculous knees by the cautery. He asserts that my views date from the dark ages of tuberculosis. He is quite right: forty years ago we had to use our own experiences and go by external signs and histories, having none of the modern helps which one might put under a heading "Surgery made easy."

Chronic synovitis cases are very common; I have seen my share, have made the proper deductions, and have cured them without surgical intervention. Tuberculous knees in private practice are few and far between, I am glad to say; I have seen the differences and cannot recall a case in which I have been sorry I have delayed radical treatment. Mr. Girdlestone classes all my cases without reserve as chronic synovitis, which is absurd. He states that cases with both knees affected are rare, but that is no argument that those of my patients were not tuberculous; they do occur.

In my first case of double tuberculous knees the patient's mother died of phthisis; a few years previously her brother had both knees affected and also one finger. His knees were only treated with rest, strapping, blistering, etc.: we had not thought of the cautery then, and eventually I performed a double amputation and also removed his finger—he had already developed mischief in his lung. After amputation his case cleared up, and he became quite well; he married and lived for many years—in fact he died only last year. In the two cases amputated after use of the cautery, the bones were found profoundly affected; as Mr. Girdlestone remarks, the cases were sad, and ought to have been seen earlier in the course of the disease.

Mr. Girdlestone says positively that a tuberculous knee, treated with the cautery, moved after a fortnight, and used in walking about at the end of twelve weeks, will be worse—and he has had no experience of the treatment by cautery of tuberculous knees! What is the value of such an assertion? It is simply an exhibition of bias. I have far more faith in the description before and after treatment of our revered teacher, the late Mr. Jacobson of Guy's, who never failed to express his opinion, complimentary or otherwise.

My whole object in writing a description of my treatment was to prove a great shortening of the process of healing. I maintain that a tuberculous knee is very often primary; in cases where it is secondary treatment by the cautery would be contraindicated.—I am, etc.,

Wallington, May 30th. A. Z. C. CRESSY.

ETIOLOGY OF RHEUMATIC DISEASES.

SIR,—I was greatly interested in Dr. W. S. C. Copeman's article on the modern treatment of rheumatic diseases, in the *Journal* of May 24th (p. 942). In an article in the *Lancet* of May 12th, 1928, I made most of the points he mentioned, but he has not, I think, laid sufficient stress on the importance of assisting the excretory organs to eliminate toxins. I am convinced of the necessity of vaccine treatment, and, in cases where this has been tried and failed, I agree with Dr. Copeman that the failure has been due to the fact that the causal bacteria have not been isolated, or that the administration of the vaccine has been stopped too soon. The very fact that the patient has succumbed to the disease is *ipso facto* a proof of diminished defences against the bacterial invasion, and prolonged stimulation may be required before any antagonous increase in antibodies can be obtained. The more I see of these cases the more I am led to think that there is, in addition to any septic focus, some other necessary factor. A large number of my patients have noted their first symptoms of the onset within a month or two of a normal confinement. Careful search for a focus in the uterine body or cervix has revealed no sign of any infection. It is also well known that rheumatoid periarthritis is a fairly frequent concomitant with the menopause. These two observations lead one to think that some ovarian deficiency may be concerned in the production of the symptoms, and G. Riebold (*Münch. med. Woch.*, January 17th, 1930) has made the same observation. I am awaiting the production of some reliable ovarian extract with considerable hope.—I am, etc.,

London, W.1, June 2nd. L. C. DUNDAS IRVINE.

[1] *Manson's Tropical Diseases*, ninth edition, p. 277.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT has adjourned for the Whitsuntide recess. Before rising, the House of Commons discussed the surtax and income tax clauses of the Finance Bill, and also debated the London Naval Treaty. The Lords' amendments to the Coal Mines Bill were also due for consideration in the Commons.

The Parliamentary Medical Committee visited the Red Cross rheumatism clinic at Regent's Park on June 2nd. The next day the committee met at the House of Commons. Mr. Somerville Hastings, the honorary secretary, reported that the Minister of Health was prepared to receive a deputation from the committee after Whitsuntide to hear its arguments in favour of an advisory council on rheumatic clinics. At the same meeting the committee discussed the propriety of the dummy or test prescriptions which panel doctors are officially requested to send to pharmacists to test whether they are prescribing correctly. The committee decided that its chairman, Dr. Salter, should see the Minister of Health on the subject. A draft amendment was received from the British Medical Association as a suggested addition to the Road Traffic Bill. This ran:

"Where any payment is made by an authorized insurer under a policy issued under this part of this Act in respect of the death of or bodily injury to any person arising out of the use of a motor vehicle on a road, and the person who had so died or been bodily injured has to the knowledge of the authorized insurer received treatment from a registered medical practitioner elsewhere than in a hospital in respect of the fatal or other bodily injury so arising, there shall also be paid by the authorized insurer to such registered medical practitioner his reasonable fee for administering such treatment to an amount not exceeding one guinea for each person so treated."

The Medical Committee was of opinion that the tabling of such an amendment by medical members of Parliament would be undesirable, and it agreed that lay members of Parliament of all parties should be requested to sponsor it.

At the same meeting the Parliamentary Medical Committee was addressed by Sir Walter Fletcher, who spoke on the Medical Research Council and its organization. He pointed out that greater freedom in undertaking research was secured from the position of the Council, which was directly under the Privy Council, with the Lord President of the Council responsible to Parliament for its work.

Mental Treatment Bill.

PROCEEDINGS IN THE HOUSE OF LORDS.

On May 29th the House of Lords considered the amendments made by the House of Commons in the Mental Treatment Bill, a measure which had originated in the Lords. Earl RUSSELL, for the Government, said that most of the changes made by the Commons were purely drafting, and that only two or three deserved special attention.

Viscount BRENTFORD said he still took exception to one provision of the bill. This would for the first time allow voluntary patients to place themselves, without any certificate or reception order, in what used to be called a lunatic asylum. They could be placed there by their relations, again without any certificate. When a man had been sufficiently lacking in volition to place himself as a voluntary patient he could be detained there without being certified by any judicial body. He could even, if he recovered his sanity, or if he became capable of volition, still be kept there for twenty-eight days, although, *ex hypothesi*, quite sane again, and he could also, by order of the representatives of the Board of Control, be kept without any judicial decision for six months. The whole purpose of the bill was to do away with the ordinary certificate, which for a hundred years had been the safeguard of the subject in lunacy proceedings.

The House then agreed to almost all the Commons' amendments after brief explanations by Earl Russell. A slight change was made in the Commons' amendment which provided that:

The Board of Control shall upon the signed request of any person who considers himself to be unjustly detained under such application, recommendation, or order, furnish to him or to his authorized representative free of cost a copy of such application, recommendation, or order.

On the motion of Earl RUSSELL the words "or order" were deleted in both instances where they occurred in this amendment.

Discussion arose on the amendments made by the House of Commons to protect a person against proceedings brought for certification unless there is substantial ground for the contention that he acted in bad faith or without reasonable care. Earl RUSSELL said the changes made by the Commons strengthened the clause to some extent.

Viscount BRENTFORD remarked that the clause now applied not only to the medical profession but to anyone who had taken part in putting a patient into what was called a home. It covered anyone who applied for a reception order or had done any act with a view to signing or securing an order. The protection would apply to the patient's relatives.

Lord DANESFORT asked whether, when a man thought he was injured, there were precedents for compelling him to go to the High Court for leave to bring his action.

Lord DARLING said such a provision was on the Statute Book, and the courts had frequently acted on it. A tiresome class of half-crazed people suffered from an *idée fixe* which led them to bring actions against well-known people. They could be put on a list and not allowed to bring an action against anyone unless they satisfied the proper authority that they had a prima facie case.

Earl RUSSELL said no person with a genuine case would be stopped by this provision from starting proceedings. He pointed out that during the report stage of the bill in the House of Commons not a word had been said in opposition to this provision.

On the next amendment Earl RUSSELL remarked that the bill would not come into operation till January, 1931.

Earl RUSSELL then moved that the Lords agree with the new Clause 17, inserted by the House of Commons, to provide for an audit of the accounts of licensed houses. This clause ran:

(1) The licensees of every licensed house shall cause such accounts to be kept as the Board of Control from time to time prescribe, and the accounts so kept shall be audited once a year in such manner and by such person as the Board direct.

(2) A copy of the accounts and of the report of the auditor thereon shall be sent by the licensees to the Board of Control and the Board may, if they think fit, publish in their report the whole or any part of any such accounts or report, and any information obtained therefrom.

(3) The licensees shall pay to the auditor such fee in respect of the audit as the Board of Control direct.

Earl HALSBURY moved that the Lords disagree with this amendment. He said licensed houses should have proper supervision, but they were private ventures, and what excuse was there for saying that the accounts of a private venture should be examined? The Board of Control might order a very expensive audit, and could publish it in part while suppressing other parts. The clause had not been moved by the Government in the Commons.

Earl RUSSELL said that no concern which was officially allowed to have charge of a certified lunatic could be regarded as a purely private concern. The Government did not desire to deal with licensed houses in this bill, but the clause under discussion was pitchforked in with the support of Conservatives in the House of Commons. Although the Royal Commission had been equally divided on whether licensed houses should continue, it had agreed that if they did continue a power of this kind should exist. The Commission was driven to that conclusion by facts which came to its knowledge during its inquiry. No doubt if Mr. Greenwood had introduced a bill dealing with licensed houses he would have introduced this clause. The House must decide whether it should remain.

Viscount BRENTFORD said he did not know that any accusation was made against licensed houses on account of the amount of the fee or the mode in which they were run. Many were successful and well conducted. What was the advantage in the Government insisting that their accounts, which were private, should be submitted to the Board of Control and be published?

Earl RUSSELL said that in the Commons a statement was made that the services of district auditors would be used for this work, but Mr. Greenwood would agree that the public auditor should only nominally be appointed if it could be shown that a private audit had been carried out effectively. The audit was not proposed because of any question of the fees paid by the patient, but because a case came before the Commission where the superintendent of an important house of this kind was paid partly by commission on the profits, creating a direct conflict between interest and duty. There were also cases where extra articles had been supplied to patients at prices considerably in excess of their cost to the institution. He could not conceive that any portion of the accounts would be published after audit unless a definite public scandal required to be held up to odium and execration. Everyone in the Commons appeared to have agreed to the audit provision, which had been inserted at the instance of Sir Boyd Merriman.

Lord CARSON said he thought the real aim of the amendment was to put an end to licensed houses. It was one more attempt to get everything under the control of Government departments. He remembered defending three doctors who were all prosecuted for having what were called uncertified lunatics in their houses. All of them got off because the people were not lunatics at all. The truth of the matter was that the Board of Control thought the greatest benefit which could ensue to any subject was that he should come under its control. Do not let Parliament, under these pretexts, put an end to private homes, which, from his experience in the courts, he thought to be of great service.

The Lords then disagreed with the amendment by 31 to 17.

Other amendments were accepted, and the bill was returned to the Commons with a statement of the reason why the Lords disagreed with Clause 17.

Psycho-therapeutic Treatment.—Mr. CLYNES stated to Mr. Maunder, on May 29th, that no contribution towards the cost of psycho-therapeutic treatment, as distinct from observation and examination, of juvenile offenders was made from public funds. He knew of no power, under any Act, of the Home Office to make such assistance. In a reply to Mr Mander on the same day, Miss LAWRENCE said concentrated psycho-therapeutic treatment for persons with functional nervous disorders was available in the normal course for suitable cases at many institutions for the treatment of mental disorder, and the Mental Treatment Bill would facilitate further provision on these lines. She was unaware that one clinic in London which dealt with this type of patient had a waiting-list of between two and three hundred persons. In his question Mr. Mander alleged that this treatment could only be given by two or three clinics in the British Isles.

Food Poisoning and Food Preservatives.—Miss LAWRENCE stated, in a reply to Sir Walton Preston on May 29th, that it was the practice of the Ministry of Health to inquire into the causes of all food poisoning outbreaks of special interest, and the practice would continue. Since the Preservatives Regulations came into operation no cases had been reported which could be attributed to the prohibition of the use of preservatives. The boric acid formerly used was ineffective in preventing the development of food poisoning organisms. Asked whether she would inquire of the medical profession whether there was not a large increase of ptomaine poisoning, Miss Lawrence promised she would look into the matter. Miss Lawrence told Colonel Heneage and Sir Charles Cayzer, on May 29th, that there was no reason for prohibiting the importation of condensed machine-skimmed milk *in consequence of the recent death of a child at Grimsby*, which was alleged to be due to eating food made from machine-skimmed *condensed milk. Miss Lawrence said the medical witness at the* inquest on this child stated that it died from gastro-enteritis, which might have been set up by dirty food. Though the child was well nourished, its diet was injudicious. The machine-skimmed milk had been used in making milk puddings, and she had no evidence with regard to it.

Smoke Abatement.—Replying to Captain Peter Macdonald, Miss LAWRENCE said, on May 23th, that 112 local authorities had made by-laws under Section 2 of the Smoke Abatement Act, 1926. It was not thought necessary to require these by-laws to be made. On the same day Miss Lawrence told Mr. Somerville Hastings that it had not yet been found practicable to prepare, under *Section 5 of the same Act, a satisfactory by-law which would not* restrict heating and cooking to a few specified methods. Mr. *Greenwood had not received satisfactory suggestions from any* local authority or other body. Miss Lawrence was further asked by Mr. Somerville Hastings what technical difficulties prevented the Minister of Health from recommending the Ringelmann smoke chart for the purpose of determining when smoke from a factory chimney became a nuisance. Answering this, she said that, while the Ringelmann chart might be useful as a guide, it had not been considered sufficiently precise under everyday conditions of observation for inclusion in a by-law. Mr. Greenwood had reason to think that, in some places in the United States, the emission of smoke other than black might be an offence, as it could be in this country under the Act of 1926. *He did not consider* the issue of a model by-law dealing with other than black smoke *advisable until a satisfactory workable means had been devised* of observing the quality of such smoke. Though efforts had been made, that had not yet been found practicable.

Vivisection Films in Medical Schools.—Replying to Mr. Freeman, on May 29th, Mr. CLYNES said Section 3 of the Cruelty to Animals Act was qualified by a proviso that vivisection experiments might be made for the purpose of illustrating lectures in medical schools, hospitals, colleges, or elsewhere with a view to instruction in physiological knowledge, or knowledge which would be useful in saving life or alleviating suffering, on Certificate C being issued. Therefore he did not consider any action was necessary concerning a film shown publicly at the Professional Nursing, Midwifery, and Public Health Exhibition, which illustrated experiments performed under the authority of such a certificate.

Health of Shop Assistants.—At the meeting of the Select Committee on Shop Hours, on May 28th, Dr. T. H. C. Stephenson, statistical officer of the General Register Office for Births, Marriages, and Deaths, at Somerset House, gave evidence. Speaking of the incidence of illness among shop assistants, particularly in regard to phthisis, he said that sleeping in would certainly contribute towards this disease. There had, however, been a great improvement in this respect. Asked his opinion with regard to the use of alcohol by shopowners and assistants, he said that no occupation suffered from cirrhosis of the liver to the same degree as publicans, barmen, and cellarmen. Cirrhosis of the liver itself, however, did not indicate alcoholism. The committee adjourned until June 18th.

Appeals by Insured Persons to the Minister of Health.—On June 3rd Mr. GREENWOOD informed Mr. Rhys Davies that in 1927–28 there were 55 appeals under Section 90 of the National Health Insurance Act, 1924, to the Minister of Health by insured persons in respect of claims for sickness and disablement benefit, 20 being allowed and 35 disallowed. In 1928–29, out of 57 appeals, 25 were allowed and 32 disallowed; in 1929–30, out of 78 appeals, 22 were allowed and 50 disallowed.

Limitation of Output of Narcotics.—On June 2nd Dr. FREMANTLE asked the Home Secretary if he was taking steps to summon a preliminary conference of countries manufacturing narcotics with a view to limitation of their output, as suggested on behalf of Great Britain at Geneva on May 14th last, and if the Soviet Republic would be invited to participate in such a conference. Mr. SHORT, who replied, said the Home Secretary was not in a position to make any statement on the subject at *present*. Dr. FREMANTLE asked why, in view of the fact that the Foreign Secretary gave a definite promise at Geneva last month, there was this delay, and if the delay would soon be over. Mr. SHORT assured Dr. Fremantle that the question was under consideration.

Customs and Excise Notice.—On June 3rd Mr. SNOWDEN told Colonel Heneage that the Commissioners of Customs and Excise were advised that it was desirable to ensure that the contents of notice No. 37, Sec. 41.831/1929 were effectively brought to the notice of doctors. These were therefore either delivered personally, where this was practicable, or sent by registered post. Particulars of the numbers delivered by post and, in consequence, the cost of registration, could not be ascertained without undue labour.

Notes in Brief.

The Prime Minister states that the date of the introduction of the Factories Bill is still under consideration.

Mr. Clynes hopes to introduce legislation this autumn to amend the Children Act, 1908.

Obituary.

WE regret to announce the death, from angina pectoris, on Good Friday, of Dr. AUGUST SCHAUMBERG, president of the South-West Africa Branch of the British Medical Association. Dr. Schaumberg was 54 years of age, and was the senior practitioner in the South-West. He was born in Bavaria, and was a student at Halle and at Berlin, where he qualified as a dental surgeon as well as graduating in medicine and surgery. He settled in Windhoek in 1908. *During the war he served in the German Army Medical* Service in South-West Africa, and afterwards on the Western Front. In 1920 he returned to Windhoek, and was shortly afterwards appointed railway medical officer. A colleague ("L. H. B.") writes: Dr. Schaumberg was the *typical family doctor—kind, humorous, and sympathetic.* He was liked and respected by all sections of the community. We have lost a friend who always set a good example in his professional life. Dr. Schaumberg leaves a widow, two sons, and a daughter, to whom we offer our *deep sympathy.*

The death took place at his house in Esslemont Road, Edinburgh, on May 26th, of Dr. R. MACDONALD ROBERTSON, who had for many years carried on a large practice at Bruntsfield Place in that city, till his retirement some two years ago. Dr. Robertson graduated M.B., C.M. at Edinburgh in 1884, and proceeded M.D. in 1910. Shortly *after graduation he took up general practice in Edinburgh,* which he conducted for over forty years, being one of the best-known general practitioners in the city. For some years he was surgeon lieutenant to the Edinburgh City Artillery Volunteers, and as a member of the British Medical Association he took a great interest in the work of this organization.

The following well-known foreign medical men have recently died: Professor CHARLES WILLEMS of Liège, member of the Royal Academy of Medicine of Belgium, founder and president of the International Society of Surgery, honorary Fellow of the Royal College of Surgeons of England, and corresponding member of the Académie de Médecine of Paris; Professor CONRAD BIESALSKI of Berlin, an eminent orthopaedic surgeon, aged 61; and Dr. PATRICIO BORDBIO DIAZ, for forty-two years professor of children's diseases at Saragossa, and dean of the faculty of medicine, aged 74; Professor Dr. CARL LEINER, a eminent paediatrist of Vienna, aged 59; Dr. HOLGER MYGIND, for many years chief of the oto-laryngological clinic at the Copenhagen Municipal Hospital, and founder and first president of the Scandinavian Society for Oto-laryngology, aged 75; Professor DOMENICO LO MONACO, director of the Institute of Physiological Chemistry in the University of Rome; and Dr. JONES CARLTON, honorary president of the University of Missouri.

The Services.

HONORARY SURGEONS TO THE KING.

MAJOR-GENERAL H. Enson, C.B., C.M.G., C.B.E., D.S.O., and Lieut.-Colonel (temporary Colonel) G. De la Cour, O.B.E., R.A.M.C., have been appointed Honorary Surgeons to the King; the latter is promoted to the brevet rank of colonel.

I.M.S. DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant, London, on Wednesday, June 18th, at 7.15 p.m. Major-General F. G. H. Hutchinson, C.I.E., has been invited to take the chair. Tickets and all particulars may be obtained from the joint honorary secretary, Sir Thomas Carey Evans, *M.C.* (Major, ret.), 31, Wimpole Street, W.1.

DEATHS IN THE SERVICES.

Colonel Charles John O'Gorman, D.S.O., R.A.M.C. (ret.), of Warriston, Glenageary, died in a nursing home in Dublin on May 11th, aged 57. He was born at Buncraggy, Ennis, County Clare, on July 24th, 1872, the son of the late Thomas O'Gorman, was educated in the Catholic University, Dublin, and took the L.R.C.P. and S.I. in 1894. After filling the post of senior house-surgeon at the Mater Misericordiae Hospital in Dublin he entered the R.A.M.C. as surgeon lieutenant on January 28th, 1893, and is the last officer whose name is contained in Colonel Johnston's Roll of the Army Medical Service. He became lieutenant-colonel in the long war promotion list of March 1st, 1915, colonel on October 10th, 1922, and retired on October 10th, 1926. He served in the South African war of 1899–1902, when he took part in the defence of Kimberley, in operations in Cape Colony, in the Transvaal, and in the Orange River Colony, including the actions at Lindley and at Rhenoster River, was mentioned in dispatches in the *London Gazette* of May 8th, 1900, and April 16th, 1901, and received the Queen's and King's medals, with two clasps to each, and the D.S.O. After the war he was seconded for service with the South African Constabulary, from September 13th, 1902, to January 1st, 1905. During the war of 1914–18 he served in West Africa, India, and France, and was mentioned in dispatches in the *London Gazette* of June 30th, 1916, and March 7th, 1918. After the war he was appointed to the charge of the King George V Military Hospital, Dublin, and held that post up to the time of the treaty establishing the Irish Free State. He married Mary Josephine, daughter of Edward Davis of Clonshanville, Frenchpark, County Roscommon.

Lieut.-Colonel Arthur James Sturmer, Madras Medical Service (ret.), died at Clifton on May 11th, aged 79. He was born on February 1st, 1851, the son of Arthur James Sturmer of the Auditor-General's Office, Calcutta, was educated at Bart's, and took the M.R.C.S. and L.R.C.P.Lond. in 1874. Entering the I.M.S. as surgeon on March 31st, 1875, he became surgeon lieutenant-colonel after twenty years' service, was placed on the selected list for promotion on March 31st, 1901, and retired, with an extra compensation pension, on April 12th, 1905. He served in the Afghan war of 1879–80, and received the medal; and on the North-East Frontier of India in the Chin Hills expedition of 1892–93, gaining the frontier medal with a clasp. For some years before his retirement he held the posts of superintendent of the Government Maternity Hospital, Madras, and professor of midwifery in the Madras Medical College.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

AT a congregation held on May 31st the following medical degrees were conferred:

M.D.—L. S. Fry, L. P. L. Firman-Edwards, R. Hilton, J. V. Fiddian, B. E. Schlesinger.
M.B., B.CHIR.—C. Hill, G. E. Parker, J. E. Semple.
M.B.—J. C. C. Poole.

UNIVERSITY OF LONDON.

APPLICATIONS are invited for the Graham Scholarship in Pathology, value £300 per annum. It was founded under the will of the late Dr. Charles Graham to enable "a young man to continue his pathological researches and at the same time to secure his services to the school of advanced medical studies connected with University College Hospital as a teacher under the direction of the professor of pathology." Full particulars can be obtained from the Academic Registrar, University of London, S.W.7.

The degree of D.Sc. in physiology has been awarded to A. St. G. J. McC. Huggett of St. Thomas's Hospital.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following officers have been elected: President, Mr. Richard Atkinson Stoney; Vice-President, Mr. Frank Chetwoode Crawley; Secretary, Sir F. Conway Dwyer.

Medical News.

SIR EWEN J. MACLEAN, M.D., F.R.C.P., and Mr. ALFRED WILLIAM SHEEN, C.B., M.S., F.R.C.S., have been appointed Deputy Lieutenants for the county of Glamorgan.

THE House and Library of the Royal Society of Medicine will be closed to-day (Saturday, June 7th), and on Monday, June 9th.

THE summer dinner of the Australian and New Zealand Medical Association in England will be held at the Trocadero Restaurant, Piccadilly, on Friday, June 13th, at 7.45 p.m. for 8 p.m., with Mr. T. P. Dunhill in the chair. Sir Neville Howse, V.C., will be present as the official guest of the association. All medical visitors from Australia and New Zealand, whether members of the association or not, are invited to be present. The hon. secretaries are Mr. E. T. C. Milligan and Mr. Philip J. Jory (26, Queen Anne Street, W.1. Langham: 1579).

THE Cavendish Lecture before the West London Medico-Chirurgical Society will be delivered on Tuesday, June 17th, at 8.15 p.m., by Professor de Quervain of Bern, who has chosen as his subject "Cretinism and its relation to thyroid physiology." The lecture will be preceded by a reception at 7.45 p.m.

THE annual meeting of the Poor Law Medical Officers' Association will be held on Thursday, June 12th, at 6 p.m., in the Holborn Restaurant, and will be followed by an informal dinner (morning dress) at 7 p.m. Sir Arthur Newsholme will preside, and Professor Major Greenwood will introduce the subject of post-graduate education for the local government service. Any Poor Law or local government medical officer will be cordially welcomed, and may obtain full particulars from the honorary treasurer, Mr. F. Greenwood, Bank Chambers, High Street, Stoke Newington, N.16.

AN inaugural meeting of the Paddington Medical Society will be held on Tuesday next, June 10th, at the Town Hall, Paddington Green, W.2, at 9 p.m. The acting honorary secretary is Dr. J. Cohen, 23, Westbourne Park Road, W.2.

THE summer meeting of the Section of Laryngology of the Royal Society of Medicine will be held at No. 1, Wimpole Street, on Friday, June 20th, followed by the annual dinner at the Langham Hotel, Portland Place. The guests of the evening will be Dr. Logan Turner, Dr. J. S. Fraser, and Dr. Guthrie. The annual provincial meeting of the Section of Diseases of Children will take place at Norwich on Saturday, June 21st. The Section of Otology will hold its summer meeting at Nottingham on June 27th and 28th, when, in addition to papers, cases, and demonstrations, there will be a discussion on the proceedings of the Committee for the Consideration of Hearing Tests. A dining-car train will leave St. Pancras Station at 11 a.m. on June 27th, reaching Nottingham in time for the meeting at 2 p.m.

THE Fellowship of Medicine announces that the following special lectures in preparation for the M.R.C.P. examination will be given at the Medical Society of London, 11, Chandos Street, Cavendish Square, at 8.30 p.m.; on Tuesday, June 10th, Dr. H. Gardiner-Hill will describe recent work on the ductless glands; and on Friday, June 13th, Professor Hugh MacLean will deal with recent research on gastric physiology and pathology and its bearing on treatment. The subjects of special courses in June are as follows: gynaecology, June 16th to 28th, at the Chelsea Hospital for Women, occupying some mornings and/or some afternoons; dermatology, June 16th to 28th, at the Hospital for Diseases of the Skin, Blackfriars, each afternoon with special demonstrations on the two Tuesdays; medicine, surgery, and the specialties, June 16th to 28th, from 10.30 a.m. to 5.30 p.m., at the Prince of Wales's Hospital, Tottenham; proctology, June 30th to July 5th, at St. Mark's Hospital, City Road, occupying the whole of each day. Detailed syllabuses of all courses can be obtained on application to the secretary of the Fellowship, 1, Wimpole Street, W.1.

IN connexion with the ninth annual scientific session of the American Congress of Physical Therapy a post-graduate course in physical therapy will be held at St. Louis, Missouri, from September 8th to 12th inclusive. Full information may be obtained from the executive secretary, Suite 716, 30 N. Michigan Avenue, Chicago, Illinois.

H.R.H. THE DUKE OF CONNAUGHT, President of St. Thomas's Hospital, will distribute prizes to successful students of the Medical School on Thursday, June 26th, at 3 p.m., in the Governors' Hall. The whole hospital will be open for inspection during the afternoon.

THE summer meeting of the National Veterinary Medical Association will be held at the Royal Veterinary College, Camden Town, London, N.W., to-day (Friday, June 6th), at 2.30 p.m.

UNDER the auspices of the Central Association for Mental Welfare a course will be held in London, from August 30th to September 20th, in methods of teaching defectives collected in occupation centres and institutions, and with special reference to the low-grade types. Lectures will be given on mental deficiency, the study of the child and its development, and the evolution of speech in defectives. Classes will be arranged in occupational handicrafts suitable for young and adult defectives, and in rhythmic training. Visits will be paid to special centres, certified institutions, and occupation centres. The Board of Control has approved the course as being suitable for nurses and attendants in certified institutions and in mental hospitals, and for supervisors of occupation centres. Forms of application and further information may be obtained from the honorary secretary of the association, 24, Buckingham Palace Road, S.W.1.

THE Ministry of Health has issued a tabular summary of information furnished by local authorities in 1929 relating to the salaries and other conditions of service of women who are whole-time officers employed by them as health visitors, school nurses, tuberculosis visitors, and municipal midwives. In a circular letter accompanying the summary, which is addressed to local authorities, the Minister directs attention to the varying practices shown to exist in the employment of women public health officers carrying out similar duties, particularly to the wide variation in the salaries paid to health visitors, and to the lack of uniformity in the arrangements for the payment of their salaries during sick leave. The Minister expresses the opinion that local authorities which still pay inadequate salaries cannot expect to secure or retain the services of women properly qualified to perform the duties of health visitors, and he hopes that all local authorities will consider the desirability of adopting the practice of paying these officers full salary during sick leave.

ON his lecture tour in the United States Dr. Charles Singer is giving, among others, the following: The Hideyo Noguchi Lectures at Johns Hopkins University School of Medicine on "The Transition from Mediaeval to Modern Science"; the twenty-third Mary Scott Newbold Lecture at the College of Physicians, Philadelphia, entitled "Priests of Aesculapius and Sons of Aesculapius"; at the Cleveland Medical Library Association on "Anglo-Saxon Magic and Medicine"; at the Medical Society of the City and County of Denver on Pasteur; and in the Department of Zoology, University of California, two courses on the history of medicine and on historical and philosophical aspects of biology.

THE Organizing Committee of the recent conference on the giving of information on birth control by public health authorities (*British Medical Journal*, April 19th, p. 755) has published a report of the proceedings in pamphlet form. Copies (price 6d., including postage) can be obtained from the Conference Secretary, Parliament Mansions, Westminster, S.W.1.

DR. J. S. TAYLOR, assistant medical officer of health for Manchester, delivered last November at the Manchester College of Technology a lecture entitled "Smoke and health." This has now been published in pamphlet form, price 2d., and may be obtained from the joint committee of the Manchester and District Regional Smoke Abatement Committee and the National Smoke Abatement Society, Civic Buildings, 1, Mount Street, Manchester.

THE issue of *Nature* for May 31st contains the full text, with illustrations, of Professor G. Elliot Smith's Friday evening discourse, delivered at the Royal Institution on March 14th, entitled "New Light on Vision."

THE National Association for the Prevention of Tuberculosis has revised leaflets Nos. 3, 9, and 10, entitled respectively *Milk and Tuberculosis*, *Hints on the Management of Children up to 5 Years of Age*, and *Hints on the Care of Children of School Age*. The price of the leaflets is 1s. a dozen, there being a reduction on larger quantities. They may be obtained from the offices of the National Association, Tavistock House (North), W.C.1.

REBUILDING operations have already been commenced at the London Temperance Hospital. Four additional stories will be added to the out-patients' departments. The pathological and massage departments will be housed in quarters more commensurate with the importance of the work carried on therein. There will also be a new radiological department, lecture room, private wards for paying patients, and new nurses' quarters. The cost of rebuilding will be £15,000, towards which £11,000 is in hand or promised.

DR. FRIEDRICH VON MÜLLER, president of the German Academy and professor of internal medicine at Munich, has been made a doctor *honoris causa* of the medical faculty of Sofia University; and Professor Hacker of Graz, one of Billroth's pupils, has been made an honorary member of the German Society of Surgery.

A REUTER'S telegram announces that the Rockefeller Foundation intends to contribute £100,000 to provide laboratory facilities at Sydney University in the departments of surgery, pathology, bacteriology, and allied subjects.

THE fourth congress of the World League for Sexual Reform will be held in Vienna from September 13th to 20th. Particulars may be obtained from Dr. N. Haire, 127, Harley Street, W.1.

THE French national league against venereal diseases has offered two prizes of the value of 5,000 francs each for the best work on venereology. Three copies of the work, which must be typewritten in French, must be sent to the office of the league, 44, Rue de Lisbonne, Paris, VIIIe, by October 1st.

THE Italian Society of Laryngology, Otology, and Rhinology offers the Bilancioni prize, represented by the interest on 20,000 lire, for the best work on tuberculosis of the larynx, or at least tuberculosis of the organs within the domain of oto-rhino-laryngology. Competitors, who must be members of the society, should send their work to the president, Professor U. Calamida, by August, 1931.

LORD RAYLEIGH, D.Sc., F.R.S., will distribute the prizes at the London Hospital Medical College on Tuesday, June 24th, at 3 o'clock.

AN international tour for medical study to Turkey and Asia Minor will be undertaken by a group of medical practitioners, who will meet on August 20th at Bucarest, where they will visit the hospitals, and then make an excursion to the thermal baths at Sinaia. The journey will be continued via Constanza and the Black Sea to Constantinople, and thence to Angora. Further information can be obtained from Arzliche Auslandsstudienreisen, Biberstrasse 11, Vienna.

THE Prefect of the Seine has decided to give the name of Fernand Widal to a street recently opened in the 13th arrondissement of Paris.

DR. HANS SACHS, professor of immunology at Heidelberg, and Dr. Ernest Meinicke of Hagen, Westphalia, have been awarded the Ludwig-Darmstädter prize with the Paul Ehrlich medal.

PROFESSOR WILLIAM WELCH has been elected an honorary member of the Berlin Medical Society.

PROFESSOR VAQUEZ of Paris has been nominated for the Grand Cross of the Order of the Crown of Rumania.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963*, and *9964* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Medicera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

PREVENTION OF SUNBURN.

DR. IVAN B. MCCANN (Leytonstone) asks for suggestions for the prevention of sunburn when climbing in Switzerland, especially above the snow line, during sunny weather. He wishes to know of the best application for the face, before exposure to the sun, to prevent scorching: "I suppose there is no lotion or pigment which would have a slight darkening effect on fair skin and thus protect it from sunburn, as a dark-complexioned person seems to be protected?"

MIDGE BITES.

"PERPLEXED" asks for information about any really reliable and practical prophylactic against midge bites. His wife is unable to go out of doors in the country in summer-time without suffering from immediate, and sometimes more serious remote, distress from the bite of these pests. They appear to single her out for attack and to have no difficulty in penetrating ordinary female attire.

FLEA INFESTATION.

"E. M." writes: I advise "Pulex" to sprinkle chlorinated lime freely on the floor, and after twenty-four hours have it washed, thus causing the lime to sink into the timber and cracks.

DR. F. S. D. HOGG (Rickmansworth) writes: I have known scrubbing floors and cracks between wainscots and floors with a strong solution of potassium permanganate to be very effective. The permanganate, of course, stains the boards.

TREATMENT OF PRURITUS ANI.

"CERONS" writes: Is a cure yet known for pruritus ani, a troublesome complaint which has now been worrying me for the past thirty years, on and off? I have tried numerous ointments and lotions, but all with no effect. The trouble arises from the semi-fluid discharge from the rectum coming into contact with the perianal skin and causing intolerable itching. A curious circumstance is that it only comes on when I am in bed and asleep, and this perhaps twice or thrice in the night.

INCOME TAX.

Theft of Instruments.

"G. B." explains that he has had the misfortune to lose his cases and instruments by theft. The inspector of taxes states that he cannot allow the full cost of replacement as a professional expense, but offers to allow £10 "as representing the normal annual cost of replacement.

*** We are of opinion that the full amount should be allowed. Apart from the obvious unfairness of refusing such an allowance, the cost of replacement of apparatus is, to the best of our knowledge, always allowed in such circumstances. If the local inspector is unable to allow the amount, we suggest that "G. B." should place the full facts before the Secretary, Inland Revenue, Somerset House, W.C.2, and ask that the allowance may be given to cover the entire cost of replacement—if not as a matter of law, at least as a matter of concession.

Purchase of Apparatus.

"J. G. H. S." asks whether he is entitled to a rebate for the purchase of apparatus used in his practice.

*** Nothing can be claimed for the original outlay for providing the apparatus; that represents capital expenditure. But the amounts expended from time to time on the repair and replacement of the apparatus are admissible.

Residence; Lease of Flat.

"W. P." has come to this country for a period not exceeding six months. He has had no residential relations with the United Kingdom in the past. He is taking over the lease of an unfurnished flat for eight months from midsummer of this year, but will, of course, be leaving before the lease expires—in fact, in October next. Do these circumstances involve him in liability to British income tax as an occasional resident here.

*** It has to be borne in mind that when a person has a residence here which is available for his occupation, normally liability attaches to him as a resident in the United Kingdom. We are not aware of any case on all fours with that quoted above, but a good deal would seem to turn on what is done with the flat during the four months to the end of February, 1931. If "W. P." sublets the flat for that period, so that it becomes unavailable for his own residence, we consider that he would not become liable as a British resident, but the result might very well be otherwise if, during that time, he retains his rights of occupation while the flat is used by his family or friends.

LETTERS, NOTES, ETC.

DANISH TREATMENT OF ITCH.

WE have received the following communication from Dr. W. H. MARTINDALE with reference to the correspondence under the above heading: In Dr. Alexander Cannon's letter (May 24th, p. 985) regarding the making of the polysulphide solution, which is a step in producing the ointment used in this treatment, reference is made to a communication from Dr. T. Douglas Ross in the *Journal* of February 15th (p. 320). Dr. Ross had difficulty in effecting solution, using 1 kilogram of 50 per cent. caustic potash, as originally mentioned by Dr. Cannon on January 25th (p. 143). I have made the solution, and the essence of the matter seems to be that 1 kilogram of 50 per cent. caustic potash solution is not enough for 1 kilogram of sulphur—in fact, I am inclined to think that the 1 kilogram is an error in transcription, because the formula given by Lomholt in the *Lancet* of December 18th, 1920 (p. 1251), distinctly specifies 2 kilograms, and I certainly find that nearly this amount is needed, producing a dark reddish-yellow liquid. A further point arises as to what has been regarded as a 50 per cent. solution of potash. The workers at Copenhagen no doubt used equal weights of potash and water, and this weight/weight solution was used in my preparation. A solution made up of 50 grams of potash with water to 100 c.cm., commonly understood as a 50 per cent. solution within the Empire, would be considerably weaker—only about 33 per cent. weight/weight.

THE BLOOD TRAIL.

DR. JOHN IVES (St. Mary's Hospital, W.2) writes: Shortly after reading Sir John Bland-Sutton's very interesting Ingleby Lecture (*Journal*, May 24th, p. 937) I came across the following, which makes another interesting link in the "Blood Trail." It is taken from Pepys's Diary for November 14th, 1666. "Dr. Croone told me that at a meeting at Gresham College to-night there was a pretty experiment of the blood of one dog let out (till he died) into the body of another on one side, while all his own run out on the other side. The first died upon the place, and the other very well, and likely to do well. This did give occasion to many pretty wishes, as of the blood of a Quaker to be let into an Archbishop, and such like; but, as Dr. Croone says, may, if it takes, be of mighty use to man's health, for the amending of bad blood by borrowing from a better body." Two days later Pepys is told that the dog "is very well, and like to be so as ever": he doubts not "its being found of great use to men." It is interesting to note that it took over two hundred years for this pious prophecy to be fulfilled—with safety.

THE TIMES OF OVULATION AND CONCEPTION.

"T. M. C." calls attention to statements in an article by K. Ogino in the *Zentralblatt für Gynäkologie*, of which an abstract appeared in the *Epitome* of May 10th (para. 434). Our correspondent writes: Ogino states that after the eleventh day *preceding* menstruation conception is impossible, and, on the other hand, that fruitful coitus takes place from the nineteenth to twelfth day *before* menstruation. Is there any general support for this theory among our British gynaecologists? Obviously, the theory has most important bearing upon birth control if true. On the other hand, if incorrect, as I think most physicians would imagine, the idea, if disseminated, may have very unsatisfactory results.

MEDICAL GOLF.

THE annual summer meeting of the Medical Golfing Society was held at Walton Heath on May 29th; more than 100 members competed, and all greatly enjoyed the kind hospitality once more extended to the society by Lord Riddell. The links were in grand condition and the weather was perfect. The various competitions resulted as follows:

Lancet Challenge Cup.—W. Rowley Bristow, after a tie with C. Max Page at 1 down.

Milsom Rees Challenge Cup.—M. G. Mayou, after a tie with J. W. Harrison at 5 down.

Henry Morris Challenge Cup.—A. Don, 3 up.

Veterans' Cup.—A. Don, 3 up; George Dawson, 2 up.

Class 1.—First prize: C. Max Page, after a tie with W. Rowley Bristow at 2 up. *Best last nine holes:* H. C. Apperley, 1 up

Class 2.—First prize: A. Don, 3 up; second prize: George Dawson, 2 up. *Best last nine holes:* J. W. Harrison, 3 up.

Foursomes.—1st, T. J. Kelleher and J. Grace; 2nd, Lindsay Rea and W. McCullagh.

WITH the links in a heavy condition owing to the recent rains, members of the Manchester and District Medical Golfers' Association found low scoring difficult on the Prestbury and Upton course on May 28th, when the annual 18-hole handicap meeting of the association was played. The best net return was 73, at which figure there was a tie between Dr. M. McGregor of Prestwich and Dr. A. B. S. Drysdale of Salford, who were left to make their [illegible] to a play-off to decide the destination of t[illegible] Dr. McGregor eventually won. Dr. A. [illegible] won the Walter gold medal for the best gross score with a round of 78, while the Walter silver medal for the best gross score by those with handicaps of 10 or over was won by Dr. Drysdale, who was round in 83. The leading returns were: Dr. M. McGregor and Dr. A. B. S. Drysdale, 73; Dr. D. G. Macpherson (Newton Heath), 74; Dr. A. Burns (Openshaw), 75; Dr. J. W. Chadwick (Bollington) and Dr. J. M. Cowan (Prestwich), 76; and Dr. H. M. Fort (Oldham), 77. There were nearly 140 competitors.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 74, 75, 76, 77, 78, 79, 82, and 83 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 80 and 81.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 255.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

510. The Clinical Syndrome of Hyperparathyroidism.

FOLLOWING his discovery of an active parathyroid hormone, Collip has summarized the effects of the experimental injection of an excess of this secretion. The essential characteristic is hypercalcaemia, sometimes exceeding 20 mg. per 100 c.cm. of serum. The symptoms are restlessness, respiratory distress, vomiting, diarrhoea, and, later, haematemesis and melaena, collapse, and death. Haematuria is usually present, and, in fatal cases, the kidneys cease to function. During this terminal period the phosphates and non-protein nitrogen of the blood rapidly increase, while the volume, density, and coagulation time of the blood are decreased. Post mortem, haemorrhages into the kidneys and walls of the stomach and small intestine are found. D. P. BARR and H. A. BULGER (*Amer. Journ. Med. Sci.*, April, 1930, p. 449), reporting five cases of hyperparathyroidism, state that the clinical symptoms of this condition are similar to those found experimentally. Hypercalcaemia is the most important diagnostic sign; though noted in a few other diseases, its presence usually indicates increased function of the parathyroid glands. Other symptoms are hypotonia and diminished electrical excitability of muscles, with decalcification of bones, and an abnormal excretion of calcium in the urine. In some cases nephrolithiasis and hypophosphataemia have been observed. Hyperplasia of the parathyroids and clinical evidence of hyperparathyroidism have been found in many cases of generalized bone disease, including rickets, puerperal osteomalacia, multiple myeloma, and carcinomatous metastases in bones. The parathyroid changes appear to be secondary to the osseous ones. While in some cases the increased parathyroid function may possibly be useful, in other cases it is actually harmful by increasing the decalcification of the bones. In generalized osteitis fibrosa cystica (Recklinghausen's disease) the clinical picture of hyperparathyroidism is most frequently encountered; it may possibly be primary, and is unquestionably harmful. In such cases removal of parathyroid tissue has brought about clinical improvement and apparent arrest of the bone disease. Determinations of the calcium and phosphate content of the serum should be made in all cases of generalized bone disease because of their therapeutic indications.

511. Carotinaemia and Diabetes.

IN a previous communication on the phenomenon of xanthosis occurring during the course of diabetes mellitus, I. M. RABINOWITCH (*Arch. Int. Med.*, April, 1930, p. 586) stated that its incidence was not great, and discussed its significance. He suggested that a diet high in vegetable content to which the diabetic patient is subjected, and to which this condition is generally attributed, is not the only factor involved. Its prognostic importance was indicated by the following observations: in the group of patients (diabetic) with the skin pigmentation due to this cause the number of those requiring insulin was high; the incidence of arterio-sclerosis was also high; moreover, hypercholesterolaemia was marked. Other features noted in certain cases were insulin oedema, hyperglycaemia difficult to control with insulin, and a raised renal threshold for sugar. It was suggested that xanthosis occurring during the course of diabetes mellitus was of unfavourable prognosis, and the present investigation was undertaken to test the correctness of this hypothesis. Samples of the blood of 500 diabetic patients were analysed for sugar, cholesterol, bilirubin (van den Bergh test), and carotene. Determinations were attempted of the different degrees of carotinaemia and their incidence, of the relationship possible between the sugar and carotene contents (which was found to be absent), and the possible relationship between the carotene and cholesterol contents; these substances were found to be related. Rabinowitch concludes that for some unknown reason certain diabetic patients apparently retain ingested vegetable pigments to a greater extent than others. The importance of this observation is that such persons usually do not appear to do well clinically, and the majority have a high blood cholesterol content. Though large amounts of carotene may be responsible for high values of plasma cholesterol because of their chemical relationship, this does not appear to be the only cause. In view of this relationship and of the unfavourable prognosis for patients with high cholesterol contents, it is suggested that marked carotinaemia also indicates an unfavourable prognosis. As occurs with cholesterol, there are exceptional cases in which carotene may accumulate rapidly in the blood and yet no downward progress be noted. Since cholesterol and carotene contents of the blood do not always run parallel to each other, two *different* factors are conceivably involved, though both probably operate in the majority of cases.

512 Macrococcal Cerebro-spinal Meningitis.

M. H. WEINBERG (*Journ. Nerv. and Ment. Dis.*, April, 1930, p. 412) reports a case of cerebro-spinal meningitis which presented several interesting clinical and bacteriological features. Though the onset of the disease was characteristic of cerebro-spinal meningitis, the patient was sufficiently ill to justify tuberculous meningitis being suspected, and encephalitis was also considered as a possibility. The high sodium chloride content in the cerebro-spinal fluid was the only consistent indication against tuberculosis. The diagnosis was ultimately settled by the isolation from the blood (on the sixth day of the disease) and from the cerebro-spinal fluid (five days later) of bacteria which have previously been described under the designation of giant cocci. As the patient grew progressively worse, despite the administration of antimeningococcal serum, a cisterna magna puncture was performed; about 15 c.cm. of very turbid fluid was withdrawn, and 10 c.cm. of antimeningococcal serum was given. Rapid recovery followed this procedure. Weinberg considers that the clinical evidence is sufficient to substantiate the giant coccus as the causative agent of the meningitis, and from the prompt recovery after the antimeningococcal serum treatment concludes that these cocci were of the meningococcus type. He believes that a watch for, and repeated examinations for, unusual organisms in this condition are indicated; he emphasizes the point that large quantities of serum are not necessary, and that successful treatment depends more on the ready accessibility of the serum to the disease focus.

513. Coronary Occlusion with Survival.

J. A. EVANS (*Minnesota Med.*, March, 1930, p. 163) remarks that the majority of patients die within a few months of the onset even if they survive the earlier stages of cardiac infarction. He has studied coronary thrombosis in its milder manifestations, and reports his observations on ten patients who have survived this illness; nine of them are still alive more than a year after the attack, and seven of them more than two years. In two instances the patient had experienced at least two occlusions and several attacks of angina pectoris. Survival in such cases is attributable either to the blocking of a small vessel or to the presence of good capillary anastomoses. In seven of the patients Pardee's sign appeared in the electro-cardiogram, this phenomenon being found within a few days, and lasting in some cases as long as two years. Auricular fibrillation, bundle branch block, and notching of the Q R S complexes were also observed. From a study of the history in these cases and the course of the disease the author infers that many patients survive minor occlusions, while rarely there is recovery from an extensive infarction. When death does not immediately follow coronary thrombosis it may occur months later from congestive myocardial failure, with or without further attacks of precordial pain.

Surgery.

514. Formation of True Bone in a Cystostomy Scar.

RELLAND and STAGNARO (*Bull. et. Mém. Soc. Nat. de Chir.*, April 5th, 1930, p. 454) report the case of a man, aged 63, who had had a suprapubic cystostomy performed for a stricture of the urethra. A suprapubic fistula persisted for some months, and was subsequently excised under a local anaesthetic. During the operation a small cylindrical piece of bone was found embedded in the scar and was removed. It was over 2 cm. long, and its hardness was between that of cartilage and bone. After the removal of this plaque of bone the suprapubic wound healed quickly, and the patient left hospital able to pass urine naturally. Cases of bone formation are more common in operations above the umbilicus, but other cases have been reported in chronic suprapubic fistulae following operations on the prostate. It has been noted that ossification occurs most frequently in secondarily infected fistulae, and therefore it is suggested that some form of irritation is a contributing factor to the formation of bone. The bone is usually of small size and the treatment must be

its complete excision with the surrounding tissues; the wound then heals easily and rapidly. The pathology of the condition is interesting as to whether the bone originates from the periosteum of the pubic bone or is in the nature of a myositis ossificans.

515. Mobility of the Caecum.

A. CROTTI (*Amer. Journ. of Obstet. and Gynecol.*, March, 1930, p. 356) remarks that the number of cases of definite chronic appendicitis is small compared with the number of right iliac fossa complaints. It has often been found in cases with a history of "chronic appendicitis" that the appendix is apparently normal at the operation, and the symptoms are unrelieved by its removal. There are, in addition, the unexplained left iliac fossa complaints that imitate the syndrome of the so-called chronic appendix. Crotti believes that the cause of these disturbances can in most cases be traced to developmental errors, mobility of the colon and caecum being congenital. Developmental anomalies result in colonic stasis. With alteration of the normal motility abnormalities of the secretion and absorption functions develop, with consequent putrefaction of the colonic contents and intestinal toxaemia. The pain is said to be due to the constriction of the colon at the brim of the pelvis. Systemic disturbances, such as headaches, neuroses, fatigue, and sallow skin, are quite commonly associated symptoms. An overloaded mobile colon pulls on the kidney, liver, pylorus, and gall-bladder, tending to general ptosis. Moreover, the superior mesenteric artery is put on the stretch by a sagging colon. The author considers that, although medical treatment may be palliative, the only permanent relief of the symptoms is surgical intervention, the colon and caecum being anchored to the split parietal peritoneum. No fatalities or complications occurred in the author's experience. The operation was well tolerated and the results were excellent, without exception.

516. Treatment of Varicose Ulcers.

I. DAINOW (*Ann. de Derm. et de Syph.*, March 30th, 1930, p. 271) reports 18 cases of varicose ulcer treated by injections of acetylcholine with success; 17 were cured in a short period, in no instance more than six weeks. All the patients were treated also with routine local applications, but when compared with cases treated with local applications only the results were not only considerably better but much quicker. The theoretical basis of the treatment depends on the power of the drug to cause vaso-dilatation, especially in the limbs. The drug is injected hypodermically in a 5 per cent. solution, 1 c.cm. being given daily. No ill effects or pain were observed, and there are said to be no contraindications to its use. The author refers briefly to the insulin and sympathectomy treatment of varicose ulcers.

517. Typhoid Empyema.

V. RAPANT (*Med. Klinik*, March 21st, 1930, p. 427), who records an illustrative case, states that while serous or sero-fibrinous pleurisy is one of the relatively frequent complications of typhoid fever, empyema is always a rare event. It is most frequently secondary to a serous or sero-haemorrhagic pleurisy, and only rarely develops as a primary purulent effusion. Rapant's patient was a man, aged 25, who in spite of the most careful clinical examination did not show any evidence of the empyema having been due to pneumonia, broncho-pneumonia, or a pulmonary infarct, nor was there any evidence of its being secondary to inflammatory processes in the ribs, rib cartilages, or typhoid abscess in the liver, spleen, muscles, or elsewhere. Repeated examinations of the duodenal secretion, the contents of the gall-bladder, urine, and stools, failed to show any indication of the patient being a typhoid carrier. Recovery followed drainage of the pleura by Bulau's method.

Therapeutics.

518. Antitoxin in Diphtheria.

V. BIE (*Ugeskrift for Laeger*, January 16th, 1930, p. 55) draws attention to the great differences in the diphtheria mortality and dosage of antitoxin in Denmark and Germany. In the latter country Professor Friedemann of the Rudolf Virchow Hospital in Berlin has recently pointed out that while the diphtheria mortality in this hospital formerly ranged between 4 and 8 per cent., it rose in 1926 to 13.2 per cent., and in 1927 to 16.3 per cent. In 1928 it was 11.6 per cent. The dosage of antitoxin usually given in Germany being comparatively low, the question was raised whether the comparatively high death rate from diphtheria in Germany might not be considerably reduced by the adoption of the system of massive dosage employed since 1920 by Bie at the Blegdam Hospital in Copenhagen, where the mortality from faucial diphtheria has kept uniform between 1 and 2 per cent. since 1920. Bie brings his arguments in favour of large doses of antitoxin up to date by producing statistics for the five-month period September 1st, 1928, to January 31st, 1929, during which an epidemic, of as serious a character as that in Berlin, occurred in Copenhagen. The serum was provided by the State Serum Institute unconcentrated, and containing 0.1 per cent. chinosol. Serum for intramuscular injection contained 700 antitoxin units per cubic centimetre, and that for intravenous injection 800 to 1,600 units. For fear of protein shock the maximum dose for intravenous injection was fixed at 50 c.cm. for adults and 1 c.cm. per kilo body weight for children. If this amount of serum did not contain the required number of antitoxin units, the rest of the serum was given by intramuscular injection. For light cases up to 16,000 units were given, and when light cases were complicated by fetor, coryza, or severe periadenitis the dose was increased to a maximum of 60,000 units. In moderately severe cases the dosage usually ranged from 32,000 to 48,000, this dosage being doubled and, if necessary, repeated the next day when moderately severe cases were complicated by fetor, periadenitis, severe coryza, or a toxaemic appearance. In severe cases the dosage ranged from 80,000 to 100,000 on the patient's admission to hospital, and this dosage was increased by 50 to 100 per cent. if the case was complicated by severe coryza, fetor, periadenitis, etc. If the patient next morning still looked toxaemic, a second injection of 100,000 units was given. In the worst cases admitted a total of 300,000 to 500,000 units was given. In the five-month period under review 1,113 patients were admitted, and there were 23 deaths—a mortality of 2.07 per cent. By the exclusion of the 5 patients who died within twenty-four hours after admission—before which time serum treatment cannot fully exert its beneficial influence—the mortality was reduced to 1.62 per cent. Among the 687 light cases there were no deaths. Among the 315 moderately severe cases there were 3 deaths. Among the 111 severe cases there were 20 deaths. In the same period, but classed in a separate group, there were 46 cases of croup, 9 of which terminated fatally. The total mortality for faucial diphtheria and croup was 2.8 per cent. (1,159 cases, among which were 32 deaths).

519. Treatment of Typhoid Fever by the Bacteriophage.

A. BRETON (*C. R. Soc. de Biologie*, March 28th, 1930, p. 1016) records four cases of severe typhoid fever treated by intravenous injection of a bacteriophage which had been isolated from a typhoid convalescent patient some months previously; 1/400,000 c.cm. added to 10 c.cm. of broth inoculated with the corresponding typhoid bacillus produced complete lysis of this organism. The doses ranged from 0.4 to 2 c.cm. In three cases a rapid and complete recovery was obtained after one to three injections, but the fourth patient died four hours after a single injection of 0.4 c.cm. Each of the injections gave rise within twenty to seventy minutes (1) to more or less violent symptoms of shock lasting for twenty minutes, followed by refreshing sleep; (2) to a rise of temperature persisting for two hours, and followed by a considerable fall lasting on the average twenty-four hours. Convalescence then set in, either at once or a few days after the last injection. Breton considers that cure in his cases was due not to shock but to the specific action of the bacteriophage, since in healthy subjects or patients with a temperature of 104° intravenous injection of the same quantity of broth produces a much less violent shock than that caused by the bacteriophage, and does not bring about a similar fall of temperature. The bacteriophage employed was a very active stock strain.

520. Treatment of Sea-sickness.

ACCORDING to H. SEEL (*Med. Klinik*, April 4th, 1930, p. 514) sea-sickness is caused by disturbance of the semicircular canals and by psychic factors, both acting through stimulation of the vagus. Vagotonic individuals are the most likely to suffer. The therapeutic effects of atropine and hyoscyamine are, he considers, uncertain, possibly because, though they cause peripheral inhibition, they stimulate the vagus centre. Starkenstein experimented, therefore, with a combination of hyoscyamine and scopolamine, since the latter drug inhibits both centrally and peripherally; 1 mg. of these alkaloids administered orally beforehand prevented nausea in rotation experiments. Compounds of the drugs with camphoric acid are less toxic, and produce less dryness of the mouth, than the more generally used sulphates and chlorides. During a somewhat stormy Atlantic passage Seel confirmed the efficacy of this treatment, which, however, is more successful as a prophylactic than as a therapeutic measure. The combination of scopolamine and hyoscyamine is administered in tablet form. In a few very resistant cases, where sickness has already set in, subcutaneous administration is said to be necessary as a temporary measure.

Disease in Childhood.

521. Recovery from Pneumococcal Meningitis.

H. N. STOESSIGER (*Brit. Journ. Child. Dis.*, January–March, 1930, p. 35), who records an illustrative case, remarks that recovery from pneumococcal meningitis is exceedingly rare, the disease in the opinion of some authorities being invariably fatal. Records of individual cases of recovery need careful investigation, as the diagnosis of the nature of an infection causing a purulent cerebro-spinal fluid is sometimes a difficult matter even for the expert. Avirulent cocci may closely resemble the pneumococcus, and the meningococcus may sometimes be mistaken for the pneumococcus. In at least three cases on record the pneumococcus was isolated from the cerebro-spinal fluid and definitely grouped in Groups 1, 3, and 4 respectively. In at least six other instances organisms with the characters of the pneumococcus are reported as having been recovered from the cerebro-spinal fluid. In some of the other cases the cerebro-spinal lesions were indicative of a generalized septic meningitis, and apparently typical pneumococci were seen in the films, but no mention is made of their successful culture. The initial cause of the meningitis varied; some were primary infections, while others followed pneumonia, otitis media, or frontal sinus disease. Treatment in the successful cases consisted in repeated cisternal and lumbar punctures, anti-pneumococcal serum, or intrathecal optochin (ethylhydrocupreine hydrochloride). Stoessiger's patient was a girl, aged 5, in whom the meningitis was secondary to otitis media. Gram-positive diplococci resembling pneumococci were seen in the cerebro-spinal fluid, which was otherwise typical of acute meningitis, but no cultures of the organism were obtained. Rapid recovery took place after two intrathecal and one intravenous injections of 0.5 per cent. mercurochrome solution. Since, however, the organisms seen in films of the cerebro-spinal fluid removed immediately before the injections were given were reported to be degenerate, the beneficial action of the mercurochrome, though apparent, is unproven.

522. Etiology of Infantile Spasmophilia.

H. J. GERSTENBERGER, J. I. HARTMAN, G. R. RUSSELL, and T. S. WILDER (*Journ. Amer. Med. Assoc.*, February 22nd, 1930, p. 523) remark that it has been noted for a long time that practically every spasmophilic infant is rachitic, but that all rachitic infants are by no means spasmophilic; also that the treatment which cures rickets ultimately also cures spasmophilia. The attention of the authors was focused on what they believe to be the logical explanation of the mode of development of infantile spasmophilia by noting the variation in the effectiveness of different antirachitic agents in rachitic infants. It was found that much depended on the kind and degree of rickets—that is, whether spasmophilic symptoms were present or not. If the rachitic infant had spasmophilic symptoms, *x*-ray pictures revealed in practically all cases evidences of past or present healing. In order to evaluate the effectiveness of such previous therapy, and also to know whether patients whose radiograms on admission to hospital showed no dependable signs of healing had or had not been previously thus treated, the regular practice of subjecting rachitic patients with or without spasmophilic symptoms on admission to antirachitic therapy in any form was postponed. Typical clinical and blood serum pictures of spasmophilia were seen to develop in such infants. The development was noted of typical spasmophilia due to interrupted therapy in two rachitic infants who were exposed to sunlight, and due to inadequate therapy in one rachitic infant who received human milk possessing some antirachitic powers. This additional evidence substantiates the theory, previously advanced by the authors, that three factors are essential to the development of infantile spasmophilia: rickets; exposure of the rachitic infant to the influence of the antirachitic in one form or another in a sufficient degree to produce some healing; and interruption of the exposure or inadequacy of the exposure.

523. Tuberculous Infection in Infancy.

J. A. MYERS and L. M. KERNKAMP (*Amer. Review Tuberc.*, April, 1930, p. 423) studied the results of the cutaneous tuberculin test in 532 infants, aged 2 years or under, most of whom were examined as out-patients. The epidermal test was usually employed, it having been shown that the results of the epidermal and intracutaneous tests for the first two or three years of life are nearly parallel. At the first examination 296 gave negative reactions; the remaining 236 were positive, and were followed up as far as possible in order to ascertain the relationship between the history of exposure, physical signs, *x*-ray findings, and the present condition, with a view to prognosis. Of the 236 negative cases there was a history of exposure in 233, and of the 236 positive cases such a history was *definite in 195 and doubtful in 22. There is* reason to believe that some time elapses after bacilli enter the body before sensitiveness to tuberculin becomes manifest. The authors found the tuberculin test, *x*-ray examination, and a history of exposure to be of the greatest diagnostic value, and they believe that when the disease has developed the first step in treatment should be to prevent further exposure. Diet, hygiene, and heliotherapy are useful, but it must be borne in mind that many infants recover without any special treatment. The majority of those affected in infancy were found to be healthy at school age, many of them never having been ill; of 172 who were traced, only six had died of tuberculosis. The authors maintain that, in order to prevent infection and disease, the infants in tuberculous families should be separated from their mothers at birth, and effective pasteurization of milk be ensured.

524. Acute Endocarditis in Infants.

IN view of the comparative rarity of acute endocarditis in infancy, A. LOFFREDO (*La Pediatria*, March 15th, 1930, p. 311) reports two cases. A baby, aged 17 days, was admitted to hospital with gonorrhoeal ophthalmia; whooping-cough ensued, followed by death. During life no signs of cardiac disease were detected, but at the necropsy there was evidence of acute verrucous endocarditis. In the second case a premature weakly baby was admitted suffering from thrush; death was caused by broncho-pneumonia and progressive wasting. A systolic murmur was audible at the apex, and there was slight enlargement of the heart. At the necropsy subacute verrucous endocarditis and mitral stenosis were found. In neither of these patients was the cardiac condition congenital; in the second case the endocarditis was probably septic and secondary to the thrush.

Obstetrics and Gynaecology.

525. Regional Vaccine Therapy in Salpingitis.

A. BASSET and P. POINCLOUX (*Presse Méd.*, March 22nd, 1930, p. 401) discuss the regional application of vaccines in cases of non-tuberculous [illegible] bacterial suspensions being injected in [illegible] which have served as the port of entry [illegible] -organisms, however distant these groups may be from the site of the inflammatory processes. The results obtained in 43 cases of acute and subacute salpingitis have been encouraging, and better than could have been expected from other methods; in only two did operative intervention become necessary. Two essentials for successful treatment are the isolation of the causal organism and the correct selection of the tissue through which it invaded the body. To illustrate the principle of this therapy, three cases of salpingitis are recorded, one due to the gonococcus, one to *B. coli*, and one to a mixed gonococcal and coli-bacillary infection. In the first case, as in all gonorrheal conditions, the urethra was considered to be the port of entry of the pathogenic organisms, and the specific injections were therefore made into the urethral wall, Skene's glands being taken as a guiding point. In the second case the injections were made into the mucosa of the large intestine by means of an anal speculum and a syringe with a long needle such as is used for injecting haemorrhoids. In the third case injections of gonococcal and coli bacillary vaccines were made into their respective ports of entry, the former being first administered. The authors believe that a greater knowledge of pathogenic bacteria and of the sites where they enter the body, together with a perfecting of technique, will lead to still better results.

526. Haemoglobin Reduction in Pregnancy.

A. SCHRUMPF (*Norsk Mag. f. Laegevid.*, March, 1930, p. 311) reviews the literature, and describes the results of 1,500 haemoglobin examinations carried out in the obstetrical department of the Krohgstotten Hospital, Oslo. In more than 75 per cent. the haemoglobin concentration just before delivery was less than the normal as determined by examination of nurses and students, in whom the average concentration was found to be 0.142. During delivery it was reduced from 0.124 ante partum to 0.119 post partum, the reduction being considerably greater in cases with haemorrhage of more than 100 grams. More than 60 per cent. of the tests made before delivery, more than 65 per cent. of post-partum tests, and more than 80 per cent. of the post-partum analyses in cases with haemorrhage showed the haemoglobin-concentration reduced below the normal minimum of 0.130. The reduction of the haemoglobin concentration after delivery seemed to be greater for the ages 16 to 25 years than for the ages 26 to 35, while the reduction seemed to be more distinct for the ages 25 to 35 in cases of post-partum haemorrhage.

Finally, the average haemoglobin concentration ante-partum in cases without haemorrhage was higher than the ante-partum haemoglobin concentration in cases in which haemorrhage subsequently took place, though the difference was very small. Schrumpf is inclined to connect the reduction of haemoglobin during pregnancy and delivery partly to the increase of plasma, but mainly to the transmission of iron to the child. He therefore recommends that women whose haemoglobin concentration is much reduced should be treated with iron before and after delivery, and suggests that the oligosideraemia of breast-fed children during the first six months of life is sometimes the result of the mother's anaemia.

527. Pyelitis in the Puerperium.

G. C. PRATHER and E. G. CRABTREE (*New England Journ. of Med.*, February 20th, 1930, p. 366) consider that the occurrence of pyelitis during the puerperium is more frequent than is generally recognized; they maintain that it should always be considered as a possible cause of puerperal fever. Although not so frequent as the pyelitis of pregnancy, it occurred in about 0.4 per cent. of the deliveries at the Boston Lying-in Hospital during the years 1925–29; it was found that 48 per cent. of these cases were primiparae. Trauma during delivery, which was more frequent in primiparae, appeared to be the most frequent etiological factor. Very few cases gave a history of previous urinary tract infection, but post-partum bladder complications were present in at least 25 per cent. before pyelitis set in. A noteworthy point was that local symptoms might be absent although the pyelitis was responsible for the rise of temperature. The finding of pus in a catheter specimen associated with costo-vertebral tenderness was the most reliable clinical sign in making the differential diagnosis from pelvic sepsis. Cystoscopy had occasionally to be employed in order to establish a diagnosis. The author considers that there is relatively little danger of infecting a normal kidney, even though there is cystitis, if the bladder is washed thoroughly with a mild antiseptic before cystoscopy is performed, and some antiseptic is left in the kidney pelvis. Conservative treatment with the forced injection of fluids up to 150 ounces daily, and one of the urinary antiseptics given by mouth, produced the best results. The after-treatment of these cases is important; the author tries to keep in touch with them for four months. At the expiration of that period he expects them to have a sterile urine if there is no kidney lesion except the pyelitis. The importance of the urine becoming sterile before a succeeding pregnancy is also emphasized.

528. Pregnancy and Labour in Congenital Syphilis.

H. BOAS and T. SODERMANN (*Urol. and Cut. Rev.*, January, 1930, p. 23) record their observations on 39 women, subjects of undoubted congenital syphilis, with a total of 56 pregnancies. Unlike Fruhenholtz and Abramowitz, they did not find that these mothers were more liable to the complications of pregnancy and labour than normal women, apart from the fact that the nephritis of pregnancy appeared to be more frequent than usual. It was as a rule, however, only transient, mild in character, and not likely to recur. The 41 children born were found to be clinically, serologically, or at necropsy free from syphilis; there were two cases of abortion, and 13 children could not be traced.

Pathology.

529. The Physiopathology of Renal Disease.

M. GELERA (*Il Policlinico*, Soz. Med., February 1st, 1930, p. 63) reviews the extensive literature on the chemical changes of the blood in Bright's disease, and comments on twenty-two clinical cases. He classifies them as nephrosis or nephritis as follows. In nephrosis the calcium is diminished, the potassium increased, cholesterin greatly increased, glucose lowered within physiological limits, and the alkaline reserve is very high. In nephritis not accompanied by oedema the calcium is sometimes increased but is otherwise normal or diminished, the potassium is slightly increased, the cholesterin is increased but to a less extent than in nephrosis, the glucose is increased; the alkaline reserve was diminished except in three cases. In nephritis with oedema the calcium is diminished, the potassium increased, the cholesterin is moderately increased, the glucose is not within the normal limits, and the alkaline reserve is high. Thus nephritis showed hypercholesterinaemia, hyperglycaemia, and acidosis, while in nephrosis there was marked hypercholesterinaemia, a normal or lowered glucose figure, and alkalosis. Vascular nephritis with diffuse oedema is excepted because, while these cases present all the symptoms of nephritis, the chemical composition of the blood is similar to that in nephrosis. These results confirm the hypothesis of Pende that the chemical changes in the blood found in cases of nephritis are due to excitation of the sympathetic, and those in nephrosis to excitation of the vagus. The author adds that these results have a practical value in the treatment of renal disease. In nephrosis meat may be allowed because it diminishes the alkalosis, and the kidneys can well eliminate nitrogenous substances. Milk may be allowed in small quantities on account of its sodium chloride, but eggs are prohibited because of the cholesterin they contain. The chlorides of ammonium and calcium are valuable in producing acidosis and at the same time diuresis. Adrenaline and thyroid extract are indicated as stimulants of the sympathetic system. In nephritis meat and eggs must be prohibited, and the diet be mainly vegetarian, with potatoes; alkaline salts are useful. No special remedy can be recommended to reduce the stimulation of the sympathetic.

530. The Etiology of Psittacosis.

E. SACQUÉPÉE and L. FERRABOUC (*Presse Méd.*, April 26th, 1930, p. 569) record a series of experiments which were undertaken to elucidate the uncertain etiology of psittacosis. It was noted that the whole brood from which came a parrot that had apparently infected a certain patient were dead in a few weeks, and three of these birds were used as the test material. The livers, hearts, and lungs were examined, and studies were also made as to the mode of transmission of the infection. Since no micro-organisms, particularly streptococci and bacilli of the typhoid-paratyphoid group, could be isolated, attention was directed to the possible existence of a filterable virus. The experiments led to the conclusion that such a virus does exist; this confirms the findings of Bedson, Western and Levy Simpson, and Pesch. This virus could be transmitted from bird to bird, and was found in the organs and faeces. The authors believe that it is usually transmitted by the faeces, and also possibly by virulent droplets of sputum. The latter was considered as a possible source, since very marked unilateral pulmonary congestion was found in one parrot. The serum of convalescent cases of psittacosis seemed to be capable of slightly attenuating the pathogenic action of the virus, but to possess no curative power.

531. Effect of Vitamin Administration on Experimental Infections.

W. PFANNENSTIEL and B. SCHARLAU (*Münch. med. Woch.*, April 11th, 1930, p. 619) report experiments on pulmonary tuberculosis, and on staphylococcal skin infections in rabbits. As sources of vitamins they used cod-liver oil (A), dried yeast (B), and irradiated ergosterol (D). In pulmonary tuberculosis they found that none of these substances administered alone had a very certain effect, though in some of the animals receiving cod-liver oil the disease ran a less severe course. A combination of vitamins D and B, however, was effective, the infection being less severe, the tubercles more encapsulated, and metastases in other organs less common. In rabbits inoculated subcutaneously with haemolytic staphylococci, vitamins B or A alone had little effect, though recovery was quicker if both were administered. Animals treated with vitamin D showed only small sharply defined abscesses, which healed in fourteen days; the controls required about four weeks. With both yeast and ergosterol (B and D) the effect was especially good, healing occurring often within a week. The administration of calcium, especially in combination with vitamin D, also had a favourable influence. Administration of vitamins B and D was tried in a few cases of human furunculosis with encouraging results.

532. Encephalomyelitis in the Fox.

C. LEVADITI, P. LÉPINE, and J. BAZIN (*C. R. Soc. de Biologie*, January 24th, 1930, p. 136) have met with two cases of encephalomyelitis in foxes. The first animal had been imported from Canada in December, 1928, and began to show symptoms of illness in July, 1929. The second animal was born and bred in France, and became ill in August, 1929, when six months old. Both animals were silver foxes, and both died. Histologically the cortex of the first animal showed encephalitis and perivasculitis; the vessels were surrounded with lymphocytes and mononuclear cells; there was proliferation of the microglia, chromatolysis, and deformation of the cortical neurones; the medulla and cord were free from lesions. In the second animal there was a mononuclear meningitis, and foci of cortical encephalitis without any definite perivasculitis were seen. There were polymorphs in the vessels, perivascular haemorrhages, chromatolysis, and intense vacuolation of the neurones. Experimentally the authors were able to reproduce the disease in a wild fox by intracerebral inoculation with virus received from America. The incubation period lasted seventy-eight days and the illness twelve days, after which the animal died. A necropsy revealed the presence of encephalomyelitis. It would appear, therefore, that the American virus may be virulent for European foxes.



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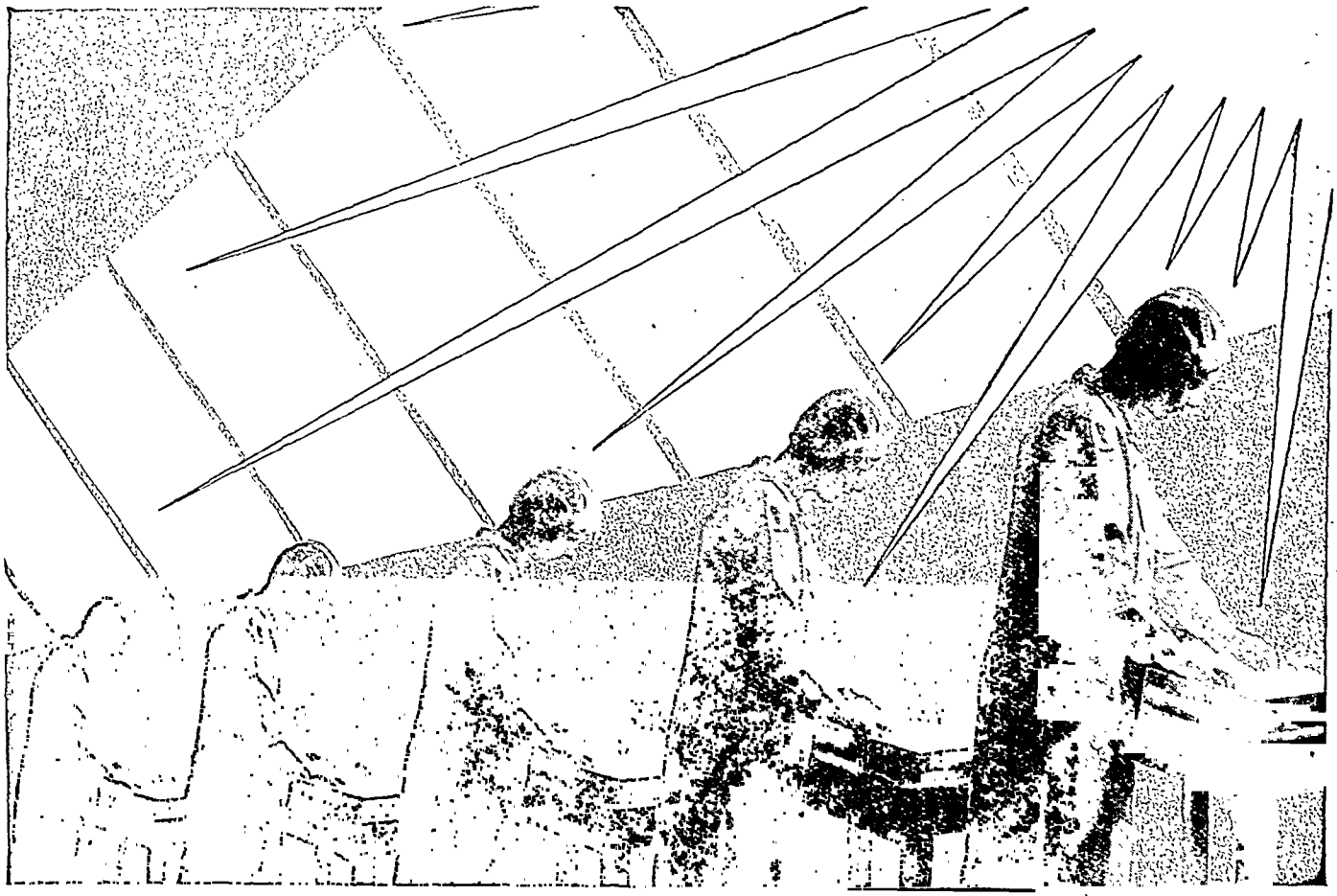
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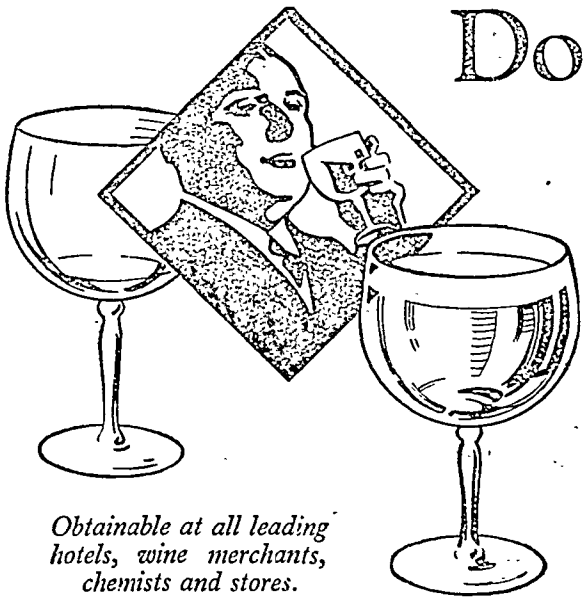
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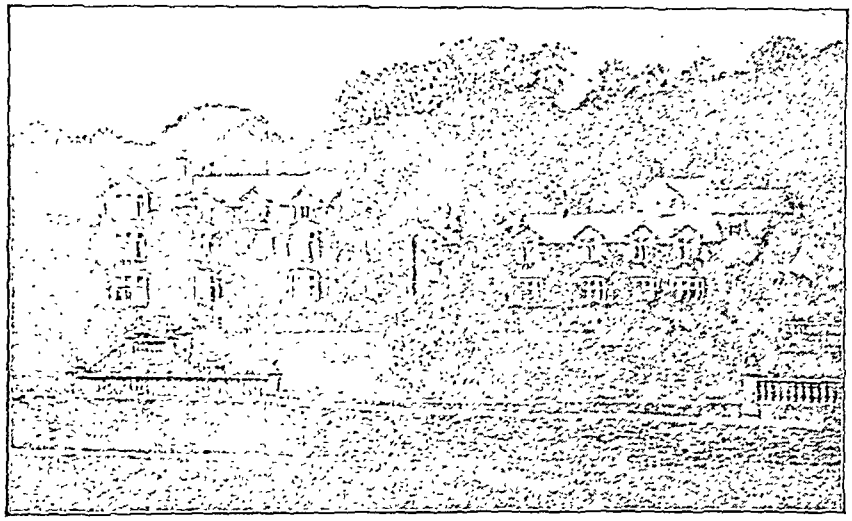
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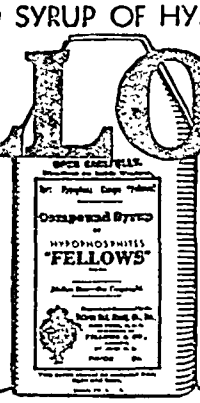
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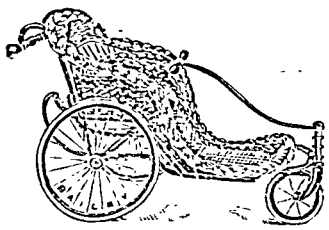
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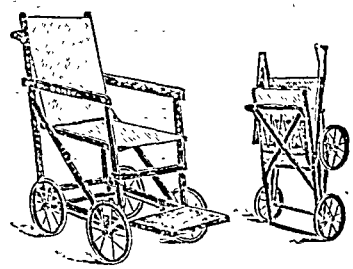
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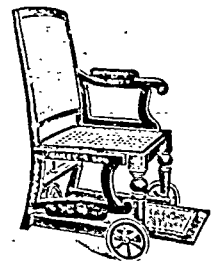
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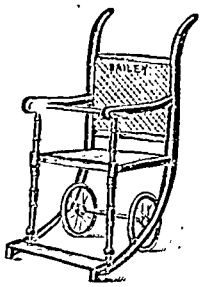
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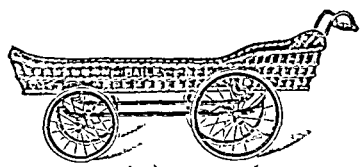
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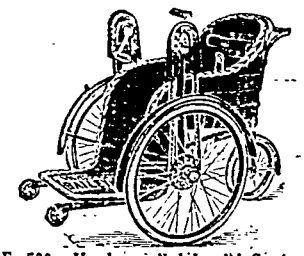


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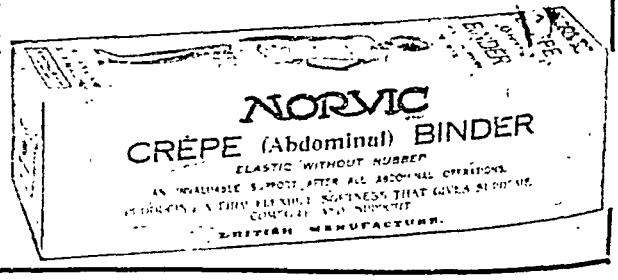
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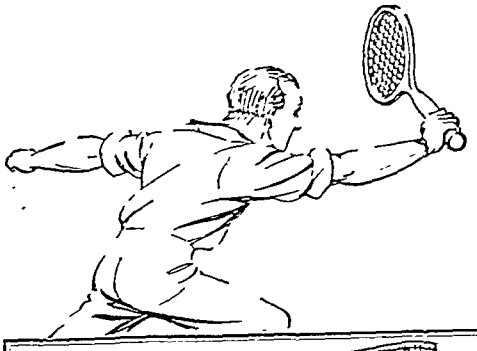
SALTAIR SURGICAL SERVICE

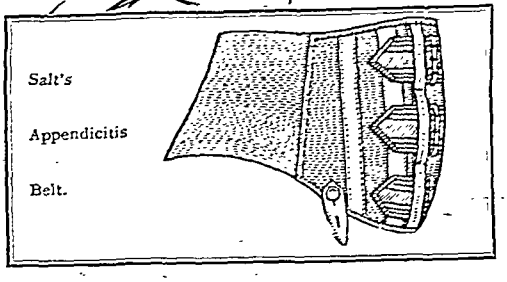
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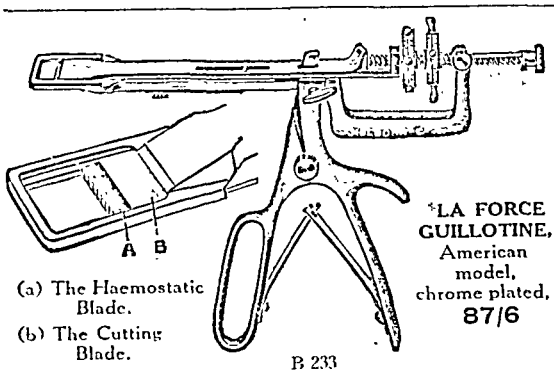
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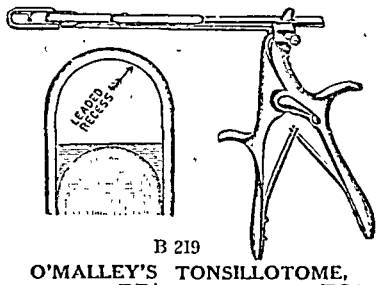
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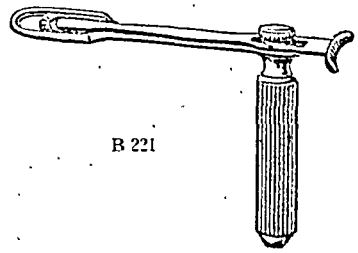
(a) The Haemostatic Blade.
(b) The Cutting Blade.

B 233

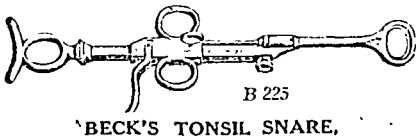
*LA FORCE GUILLOTINE, American model, chrome plated, 87/6



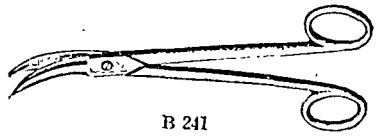
B 219
O'MALLEY'S TONSILLOTOME, 2 sizes, N.P., 55/- each; stainless, 70/-; extra blades, 30/-; stainless, 35/-



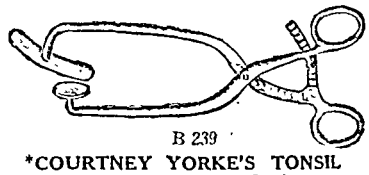
B 221
*HEATH'S GUILLOTINE, reinforced, 3 sizes, N.P., 30/-; chrome, 37/6; stainless steel, 45/-



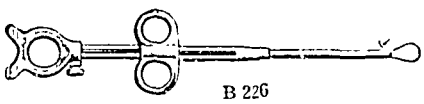
B 225
*BECK'S TONSIL SNARE, with 3 loop and one straight attachment, N.P., 35/-; chrome, 42/6



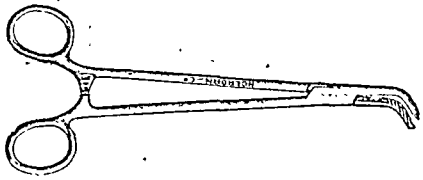
B 241
PRINCE'S TONSIL SCISSORS, stainless steel, 12/6



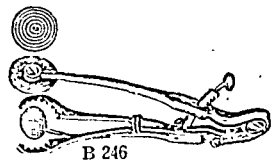
B 239
*COURTNEY YORKE'S TONSIL CLAMP, 18/6



B 226
*EVE'S TONSIL SNARE, N.P., 10/6; heavy model, chrome plated, 14/6. Stainless steel Tonsil Snare Wire, per yard coil, 1/9



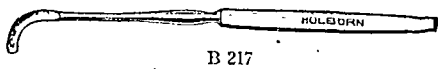
*MacREYNOLD'S TONSIL ARTERY FORCEPS, box joint, N.P., 7/6; stainless, 12/6



B 246
*CORWIN'S TONSIL HAEMOSTAT, N.P., 15/6; stainless steel, 33/6



B 231
*HURD'S TONSIL DISSECTOR and PILLAR RETRACTOR, 4/6; stainless steel, 12/-

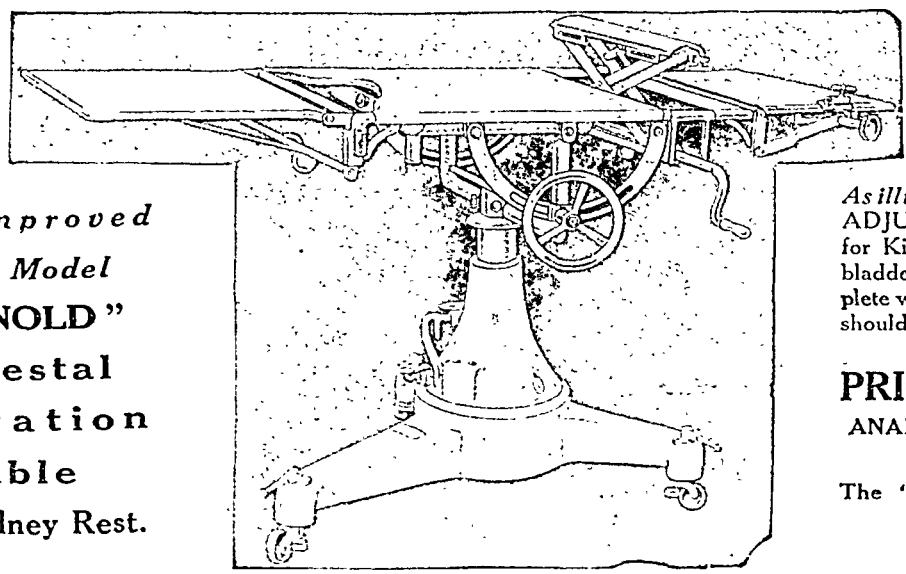


B 217
*KILLIAN'S TONSIL KNIFE, 5/-; stainless steel, 7/6
* FOREIGN.



B 229
*TILLEY'S TONSIL-SEIZING FORCEPS, N.P., 6/-; stainless steel, 15/-

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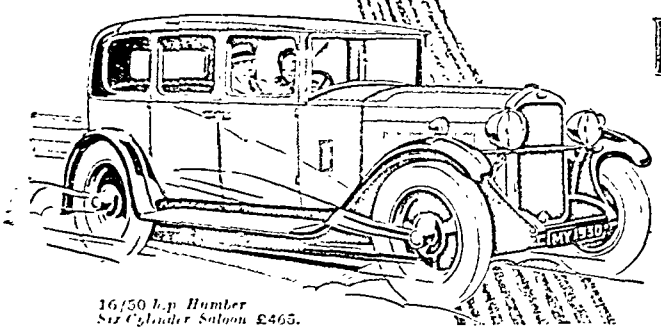
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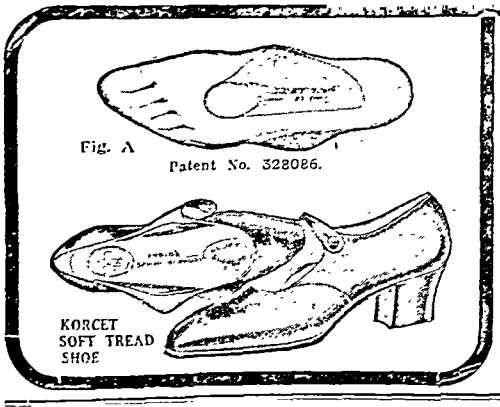


Fig. A

Patent No. 328086.

KORCET SOFT TREAD SHOE

METATARSALGIA

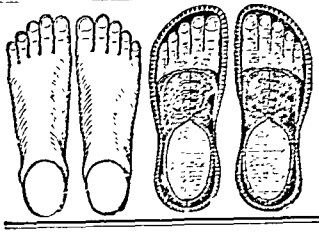
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Note.
FIG. A.—Shows the way in which the foot is supported within the Korcet Shoe.
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Bootmakers (Easy).

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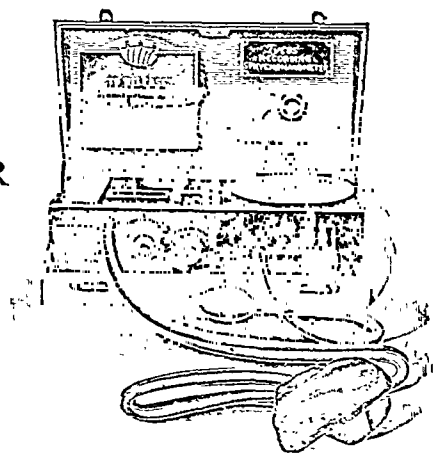
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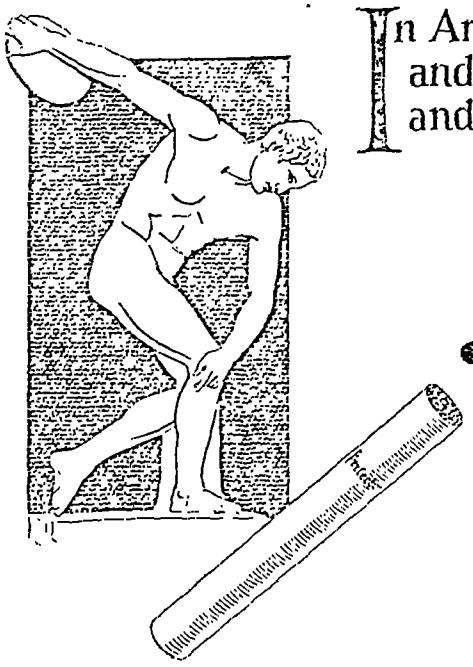
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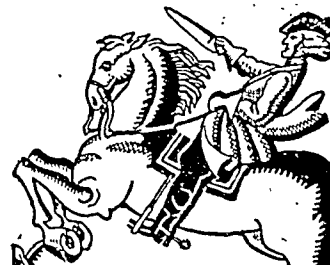
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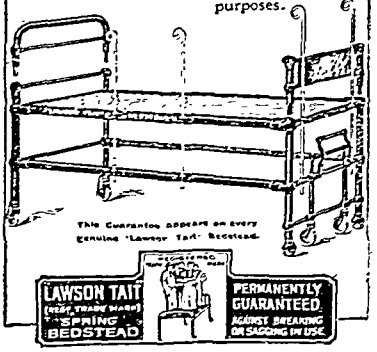
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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.
Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.
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HOME FOR TWELVE MENTAL PATIENTS (LADIES).
Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.
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Telephone: Clissold 1648.
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FOR MENTAL DISORDERS,
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FOR THE UPPER AND MIDDLE-CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.
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'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

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FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—
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A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds.

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A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

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A prospectus and full particulars can be obtained from the Medical Superintendent.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

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CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.
Telephone: 481 GATLEY.

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

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Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
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Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
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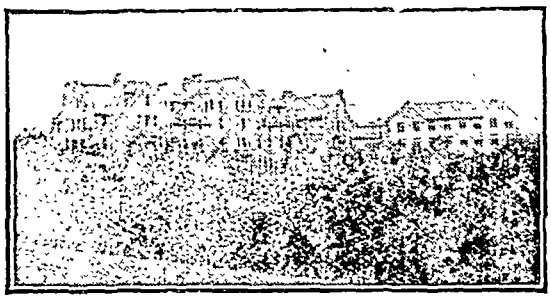
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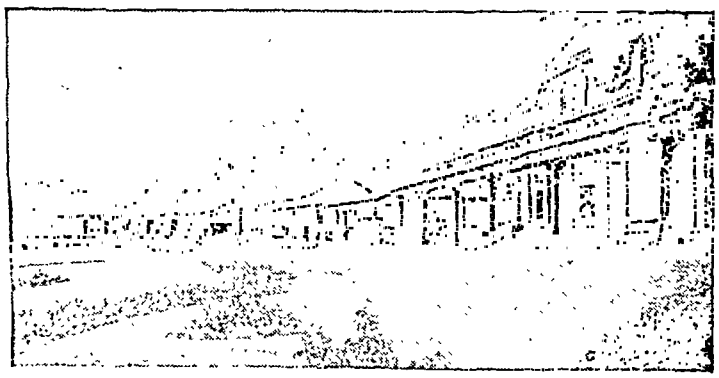
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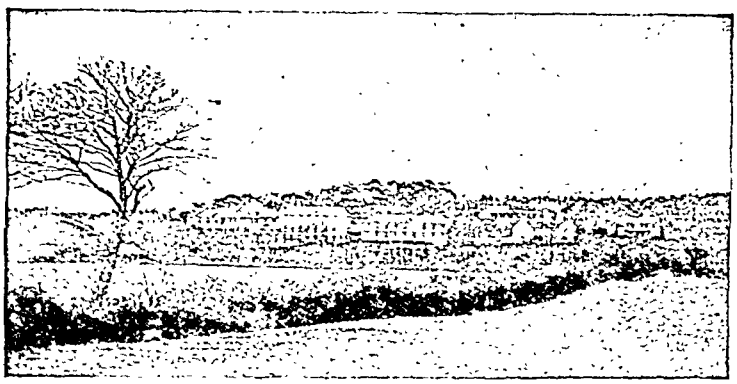
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Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.
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Particulars may be obtained from the House Superintendent, Royal Maternity and Women's Hospital, Rottenrow, Glasgow.

A Course of Instruction in RADIUM THERAPY AND ITS APPLICATIONS will be held at the LONDON HOSPITAL, Whitechapel, on June 17th, 18th, and 19th, starting each day at 10 a.m. Admission to the Course will be free to all qualified Medical Practitioners on presentation of their visiting cards.
Further particulars can be obtained from the Secretary, Radium Department, London Hospital, Whitechapel.

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The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from June 16th to 28th. Lectures, demonstrations, and cliniques in the various general and special departments.
The number is limited to 25.
Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

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F.R.C.S.(Edin.)

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The organization of these Hospitals to form one teaching Institution provides the Medical Student and Medical Practitioner with a field for clinical education and study which is unrivalled in extent in the United Kingdom.

Infectious Diseases are studied in the Local and District Hospitals, and Mental Diseases at the County Mental Hospital, Rainhill.

For information on all matters concerning the curriculum application should be made to the Dean of the Faculty of Medicine, the University of Liverpool.

W. J. DILLING, Dean.

EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1930.

The POST-GRADUATE COURSES to be held this year will comprise:

(1) A GENERAL PRACTITIONERS' COURSE from August 11th to September 6th.
(2) A GENERAL SURGICAL COURSE from August 11th to September 6th.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 14th to August 9th.

In addition to the above, the following *Special Courses* have been arranged: Fee £10 10s.

SUMMER TERM.

[illegible] PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 13th. Fee: £4 4s.
Graham, Ligertwood, and Paterson. May 5th. 12 Meetings, thrice weekly. Fee: £5 5s.
edical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY (including Radiology).—Surgical Staff of Royal Infirmary. Fee: £4 4s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
DISEASES OF EAR, NOSE, AND THROAT.—Dr. Douglas Guthrie. This Class will meet twice weekly at the Ear and Throat Dispensary, Cambridge Street. Fee: £4 4s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

PATHOLOGY OF THE NERVOUS SYSTEM.—Drs. F. E. Reynolds and James K. Slater. Minimum number 6. Fee: £3 3s.
EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s. VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
MEDICAL CHEMISTRY.—Dr. C. P. Stewart. Fee: £4 4s.
X-RAY PHYSICS AND ELECTRO-TECHNICS.—Mr. C. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Further particulars may be had on application to the Hon. Secretary, Post Graduate Courses in Medicine, University New Buildings, Edinburgh.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

INSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of th Institute, on THURSDAY AFTERNOONS at 5 p.m., as under:—

JUNE 12th.	SUBJECT.
Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

POST - GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5 for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £3 3s. for 10 lessons.—Address, No. 123, B.M.A. House, Tavistock Square, W.C.1.

UNIVERSITY OF LONDON.

EXTERNAL EXAMINERSHIPS, 1931.

The Senate announce the following vacant External Examinerships for all Examinations above Matriculation for the year 1931. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.

For the First Examination for Medical Degrees.
CHEMISTRY.

For the Second Examination for Medical Degrees
PHARMACOLOGY.

For Final and Higher Examinations for Medical Degrees.
MEDICINE. SURGERY.

Associate Examiners.

Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it.

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable, on or before Monday, July 7th, 1930. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, South Kensington, S.W.7. EDWIN DELLER, Principal.

June, 1930.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

Royal College of Physicians of London.

The next ordinary PROFESSIONAL EXAMINATION for the MEMBERSHIP will commence on Friday, July 18th, 1930.

Candidates are required to give twenty-one days' notice in writing to the Registrar of the College, to whom all certificates and testimonials required by the By-laws must be sent at the same time.

Candidates who propose to submit published work under the Regulations now in force should apply in writing to the Registrar, *without delay*, for detailed instructions as to the procedure they should follow.

Pall Mall East, S.W.1. RAYMOND CRAWFURD, M.D., Registrar.

Royal College of Physicians of LONDON.

SIR CHARLES MARTIN, C.M.G., F.R.S., will deliver the CROONIAN LECTURES on June 12th, 17th, and 19th, at 5 o'clock, at the College, Pall Mall East, S.W.1.

Subject: "*The Thermal Adjustment of Man to External Conditions, more particularly those pertaining to Warm Climates.*"

Any Member of the Medical Profession admitted on presentation of card.

By Order of the President,
H. M. BARLOW, Bedell & Secretary.

East London Hospital for CHILDREN, Shadwell, E.1

There will be a DEMONSTRATION OF CLINICAL CASES on Wednesday, June 11th, 1930. Tea at 4 p.m.

The Mental Hospital, Berrywood, near NORTHAMPTON.

LOCUM TENENS MEDICAL OFFICER (male) wanted for about 14 weeks, beginning June 11th. Salary £7 7s. per week, together with residence, board, and laundry. Applications, stating age, qualifications, nationality, and names of recent testimonials, to be forwarded to the Medical Superintendent.

CITY OF LONDON MATERNITY HOSPITAL, CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.

PRIVATE WARDS for paying patients.

MATERNITY NURSES sent out for private cases.

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Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1926. Prospectus from Head Master.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

Graham Scholarship in Pathology

The Senate of the UNIVERSITY OF LONDON invite applications for the Graham Scholarship in Pathology, value £300 per annum, in the first instance for two years, founded under the will of the late Dr. CHARLES GRAHAM to enable "a young man to continue his pathological researches and at the same time to secure his services to the School of Advanced Medical Studies connected with University College Hospital as a Teacher under the direction of the Professor of Pathology."

The successful candidate will, if possible, take up the Scholarship as from October 1st, 1930. The Scholarship is in no way restricted to students of Medical Schools of the University. Applications must be made to the undersigned before June 18th, 1930.

Further particulars should be obtained from the Academic Registrar, University of London, South Kensington, S.W.7.

EDWIN DELLER,
The Principal, University of London.

County Borough of Barnsley.

LOCUM TENENS TUBERCULOSIS OFFICER.

The Corporation require the services of a Temporary Tuberculosis Officer for the period July 7th to August 4th. Free quarters will be provided at the Sanatorium, and the selected applicant will act as Medical Superintendent.

His duties will also consist in the conducting of Clinics at the Tuberculosis Dispensary.

The salary will be at the rate of £8 8s. per week.

Applications should be sent as soon as possible to the undersigned.

Town Clerk's Office, Barnsley. (Signed) A. D. MASON, Town Clerk.

June 2nd, 1930.

Great Barr Park Colony, near BIRMINGHAM.

LOCUM TENENS MEDICAL OFFICER required for eight weeks from about July 9th. Salary £6 6s., or with previous experience £7 7s. per week, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be addressed to the Medical Officer.

Great Yarmouth General HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two Resident posts).

Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £125 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

(AMENDED ADVERTISEMENT.)

Lindsey County Council and SCUNTHORPE AND FRODINGHAM URBAN DISTRICT COUNCIL.

MEDICAL OFFICER OF HEALTH AND ASSISTANT COUNTY MEDICAL OFFICER.

Applications are invited from duly qualified and registered male Medical Practitioners, holding the Diploma in Public Health or its equivalent, for the above-mentioned whole-time joint appointment. Candidates must not exceed 40 years age. The joint salary covering both appointments will be at the rate of £800 per annum, with £100 per annum for the maintenance of a motor car to be provided by the officer.

As regards the Urban District Council, the appointment will be held in accordance with the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and, as regards the County Council, the appointment will be made in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930.

The officer will be required to carry out such duties as may from time to time be required of him as Assistant County Medical Officer. Such duties will be discharged under the general supervision of the Medical Officer of Health for the County and may include (inter alia) the following:

(a) School Medical Inspection.
(b) Treatment of Tuberculosis.
(c) Treatment of Venereal Diseases.
(d) Certification of Mental Defectives.
(e) Medical Superintendent of Brumby Isolation Hospital (Infectious Disease and Tuberculosis).

Applications, endorsed "Medical Officer," on the prescribed form, together with copies of not more than three recent testimonials, must be received by the Clerk of the Urban District Council, Council Offices, Scunthorpe, not later than June 13th.

Canvassing in any form will be a disqualification.

J. F. AULD,
Clerk to the Urban District Council, Scunthorpe.
ERIC W. SCORER,
Clerk of the County Council, Lincoln.

May 27th, 1930.

Bristol Homeopathic Hospital.

(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of HOUSE SURGEON at a salary of from £120 to £150 per annum, according to experience, with board, laundry, and residence in the Hospital, etc., provided.

Good Surgical and general experience.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they can commence duties, if appointed.

H. HUNTER (Lt.-Colonel), Secretary.

The Royal Portsmouth Hospital, PORTSMOUTH.

(Five Resident Medical Officers.)

CASUALTY OFFICER, male (qualified), required to commence as soon as possible. Salary at the rate of £100 per annum, with board, etc. Six months' appointment. Eligible on completion of term for appointment to other resident posts.

Applications, stating age, nationality, etc., and copies of three recent testimonials, to be sent to the undersigned, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Newcastle General Hospital, NEWCASTLE-UPON-TYNE.

Applications are invited from registered Medical Practitioners for the appointment of RADIOLOGIST (part-time). The person appointed will be required to take charge of the Electrical and X-ray Department, and to attend at least three or four times a week for probably two hours or more on each occasion. Salary £300 per annum.

Applications, for the consideration in the first place by the Advisory Medical Committee, to be forwarded to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

The Weymouth and District HOSPITAL, WEYMOUTH.

(86 Beds and Cots.)

Wanted, HOUSE SURGEON, at once, fully qualified male (European). Salary £180 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and copies of testimonials, should be sent to the undersigned not later than June 11th.

MORRIS LODGE, Hon. Sec.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank	Service in Rank.	Basic Pay.	Overseas Pay	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office in July, and the selected candidates will be required to join a course of instruction commencing early in August, 1930. Applications should be submitted as soon as possible.

THE MEDICAL AND DENTAL DEFENCE UNION OF SCOTLAND, LIMITED.

Secretaries and Registered Office: Millar, Thomson & Dunlop, C.A., 113, St. Vincent Street, Glasgow.

ANNUAL SUBSCRIPTION £1. ENTRANCE FEE 10/-.

No entrance fee to those joining within 12 months of obtaining qualification. Benefits include defence of claims for alleged negligence in professional work, including indemnity of £2,500 and costs; and advice on professional difficulties.

Particulars and forms of application can be obtained from the Secretaries at the above address.

County Borough of West Ham.

PUBLIC ASSISTANCE COMMITTEE.

CONSULTING OPHTHALMIC SURGEON.

Applications are invited for the appointment of Consulting Ophthalmic Surgeon for one afternoon fortnightly, at a salary of £100 per annum, at the WHIPPS CROSS HOSPITAL, Whipps Cross Road, Leytonstone, E.11.

Applicants must be definitely of consultant rank and must be attached in that capacity to some Special Hospital or to a corresponding Special Department of a General Hospital.

The duties will consist of making visits to the Hospital, there to treat (or advise as to treatment in) such cases as are selected by the Medical Superintendent. The duration of each visit will vary with the number of cases arising. Emergency visits, if any, will be very rare.

The services of the Consultant will be retained for a period of one year in the first instance, and he will be required to provide his own Locum Tenens during holidays and absences.

Applications, with copies of not more than three testimonials, should be made to the undersigned not later than Saturday, June 14th.

CHARLES E. CRANFIELD,
Public Assistance Offices, Town Clerk.
Union Road, Leytonstone, E.11.
May 27th, 1930.

County Borough of Middlesbrough.

RESIDENT MEDICAL OFFICER.

Applications are invited for a Male Assistant Resident Medical Officer for the Fever Hospital, who will also be required to assist the Medical Officer of the Port of Middlesbrough and undertake such other duties as may be required under the direction of the Medical Officer of Health. Preference will be given to candidates with a Diploma in Public Health and a knowledge of the work of a Port Sanitary Authority.

Salary £450 per annum, with board, residence, laundry, etc.

Applications, stating age, qualifications, experience, and when able to take up duties, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Saturday, June 14th.

Municipal Buildings, PRESTON KITCHEN,
Middlesbrough Town Clerk.
May 27th, 1930.

Swansea County Borough.

LADY ASSISTANT MEDICAL OFFICER.

The Swansea Borough Council invite applications from duly qualified and experienced women Medical Practitioners for the post of Assistant Medical Officer to assist with the Medical Services of the Corporation. Special experience in diseases of women (ante-natal and obstetrics) and children, school medical service, and mental deficiency work are desirable qualifications. Salary £600 per annum. Form of application and list of duties can be obtained from Dr THOMAS EVANS, Medical Officer of Health, Public Health Office, Swansea. Applications must be received not later than Thursday, June 26th.

County Borough of Swansea.

ASSISTANT SCHOOL DENTAL SURGEON.

Applications are invited from registered Dental Surgeons for the above appointment. Salary £450 per annum, rising by annual increments of £25 to £550. Applications (on special form to be obtained from the Medical Officer of Health, Public Health Office, Swansea) to be received not later than Thursday, June 26th.

East Suffolk and Ipswich Hospital.

(265 Beds—7 Residents.)

Wanted end of June, HOUSE PHYSICIAN (male, British). Salary at the rate of £120 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, ARTHUR GRIFFITHS,
Ipswich. Secretary.

City and County of Kingston-upon-Hull.

APPOINTMENT OF TUBERCULOSIS OFFICER.

The Corporation invite applications for the post of Clinical Tuberculosis Officer at a commencing salary of £800, rising, subject to satisfactory service, by annual increments of £25 to a maximum of £1,000 per annum. The age of candidates is not to exceed 40 years.

Candidates should either have held a previous appointment as Tuberculosis Officer with the approval of the Ministry of Health, or should, subsequent to qualification—

(1) Have had at least three years' experience in the practice of their profession;
(2) Have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general Medical or Surgical cases; and
(3) Have received special training, for a period of not less than six months, in the diagnosis and treatment of Tuberculosis.

The gentleman appointed will rank as a Senior Assistant Medical Officer of Health, and will work under the general administrative control of the Medical Officer of Health.

As the post is a designated post under the Local Government and Other Officers Superannuation Act, 1922, the successful candidate will be required to undergo a medical examination.

Forms of application, which are obtainable from the undersigned, should be returned so as to be received not later than June 14th.

N.B.—This advertisement is again being issued owing to the withdrawal of the candidate appointed in April on account of his accepting subsequently another post.

Health Dept., W. M. FRAZER,
Guildhall, Medical Officer of Health.
Hull. May, 1930.

Panel Committee for the County of London.

ORGANISING AND ASSISTANT MEDICAL SECRETARY.

The Committee invites applications from registered Medical Practitioners for the appointment of Organising and Assistant Medical Secretary. The duties will consist of visiting and advising practitioners on the panel in the area, organising local medical associations, and assisting the Medical Secretary, giving his whole time to the duties.

Salary £600 per annum, with an allowance of £104 per annum for expenses. The appointment will be in the first instance for one year, subject to six months' notice on either side.

Applications, stating age and experience, should be sent to the Medical Secretary, London Panel Committee, 17, Russell Square, W.C.1, not later than June 16th.

C. L. BATTESON,
Medical Secretary.

Beckett Hospital & Dispensary, BARNSLEY.

The Committee invite applications for the post of HOUSE PHYSICIAN. Applicants must be registered and hold a Medical and Surgical qualification, and preference will be given to applicants who have held a previous Hospital post and having Pathological experience.

Salary £200 per annum, with board, residence, and laundry.

Applications, together with testimonials, should be sent to the undersigned not later than Thursday, June 19th.

ARTHUR L. BOURNE,
May 29th, 1930. Secretary-Supt.

Kent County Council.

Wanted, LOCUM TENENS, with Sanatorium or Hospital experience, for seven weeks commencing July 11th, to act as ASSISTANT MEDICAL OFFICER at the COUNTY SANATORIUM, LENHAM (165 beds).

Salary 8 guineas per week, in addition to board, lodging, and washing.

Apply, stating age and experience—

ALFRED GREENWOOD, M.D.,
Sessions House, County Medical Officer.
Maidstone. May 30th, 1930.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

PARK HOSPITAL, DAVYHULME, near MANCHESTER.

APPOINTMENT OF RESIDENT MEDICAL OFFICERS.

Applications are invited from registered Medical Practitioners (men) for the appointment of—

(a) SENIOR RESIDENT MEDICAL OFFICER, at a salary at the rate of £250 per annum.
(b) SECOND RESIDENT MEDICAL OFFICER, at a salary at the rate of £225 per annum.

Candidates should be unmarried.

The appointments will, in the first instance, be for a period of six months. The successful applicants, however, will be eligible for re-appointment for a further period of six months at the end of that period.

In addition to the salary the Resident Medical Officers will be provided with the usual residential allowances.

The Hospital comprises 500 beds.

Applications, accompanied by copies of not more than three testimonials, should be addressed to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than June 21st. Envelopes should be endorsed "Senior Resident Medical Officer" or "Second Resident Medical Officer."

County Offices, GEORGE ETHERTON,
Preston. Clerk of the County Council.
May 28th, 1930.

City and County of Bristol.

CHIEF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT PORT MEDICAL OFFICER.

The Corporation of Bristol invite applications for the post of Chief Assistant Medical Officer of Health and Assistant Port Medical Officer.

The gentleman appointed must possess the Diploma in Public Health or a similar qualification in State Medicine. He will be required to devote the whole of his time to his duties and will not be allowed to engage in private practice. He will work under the direction of the Medical Officer of Health in the City Health Department and in the Port, and also in the Inspection of Aliens if appointed to do so by the Ministry of Health. The appointment will be subject to one month's notice on either side and to the provisions of the Local Government and Other Officers Superannuation Act, 1922, for which purpose the candidate will be required to pass a medical examination.

Salary will be £800, rising to £1,000 per annum by annual increments of £100.

Applications must be made on a prescribed form, which may be obtained from the undersigned, and must be delivered at the Council House, Bristol, not later than Friday, June 13th. Envelopes should be endorsed "Assistant M.O.H."

Canvassing of Members of the Council, either directly or indirectly, will disqualify.

The Council House, JOSIAH GREEN,
Bristol. Town Clerk.
May 26th, 1930.

North Riding Infirmary, MIDDLESBROUGH.

(General Hospital—150 Beds.)

SENIOR HOUSE SURGEON (male) required to take up duties middle of July, also JUNIOR HOUSE SURGEON to take up duties as early as possible.

Salary of Senior House Surgeon at the rate of £200 per annum and Junior House Surgeon £150 per annum, with board, residence, and laundry. Three residents are employed.

Appointments for not less than six months.

Candidates eligible for higher posts as they become vacant.

Applications, stating age, nationality, and previous experience, with three recent testimonials, should be sent to the undersigned as soon as possible.

CHARLES POSTGATE,
Secretary-Superintendent.

EAST AFRICAN MEDICAL SERVICE.

VACANCIES at present exist for MEDICAL OFFICERS in the EAST AFRICAN MEDICAL SERVICE.

Qualifications.—Candidates must be British subjects of European parentage and under 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held Hospital or Public Health appointments, or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose, and throat, venereal diseases, etc.

Salary.—£600 per annum, rising by annual increments of £30 to £840 per annum, and thence, subject to an efficiency bar, by £40 to £920 per annum.

Quarters.—Free quarters are provided or an allowance is given in lieu.

Passages.—Free first-class passages are provided both on first appointment and when proceeding on or returning from leave. A married officer will be granted an allowance towards the cost of his family's passage once each way in respect of each tour of service.

Terms of Appointment.—The appointments are pensionable subject to a probationary period of two years in the first instance.

Length of Tour of Service.—The normal tour of service is 20 to 30 months, after which leave is granted, with full salary, for 2½ to 3½ days, according to the districts in which the officer has served, for each month of service, plus the period of the voyage to England. If the officer is returning to East Africa for further service, he receives a further similar amount of leave, plus the period of the voyage to East Africa.

Course of Instruction in Tropical Medicine.—Selected candidates will normally be required to undergo a course of instruction in Tropical Medicine and Hygiene before proceeding overseas.

Duties.—Though Medical Officers are appointed in the first instance for general service, there are good opportunities for work in special branches of medicine and surgery and for research.

Further particulars and forms of application may be obtained on application, in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Onderstepoort, South Africa.

THREE RESEARCH FELLOWSHIPS.

Applications are invited for Three Research Fellowships tenable at the ONDERSTEPOORT VETERINARY RESEARCH LABORATORY, PRETORIA. These Fellowships have been established by the Empire Marketing Board in conjunction with the Government of the Union of South Africa.

Candidates will be required in each case to furnish proof that they are familiar with particular aspects of research, namely:

(1) *First Fellowship*, methods of tissue culture and work with filterable viruses;
(2) *Second Fellowship*, bacteriological work and the physiology of animals, especially ruminants;
(3) *Third Fellowship*, methods of extracting toxic substances from plants and determining the nature of such substances.

Selection will be made by a Committee consisting of the President of the Royal Society, the High Commissioner for the Union of South Africa in London, the Chairman of the Research Grants Committee of the Empire Marketing Board, and the Director of the Imperial Bureau of Animal Health.

The Fellowships will be tenable for a period of three years with the possibility of renewal for a further period of two years. Remuneration will normally be at a rate not less than £800 and not more than £1,000 per annum, but special consideration may be given to candidates whose qualifications and other circumstances warrant a higher rate.

Each successful candidate will be provided with a free passage for himself and his family from his place of residence to Pretoria. Duties should commence as early as possible.

During the tenure of the Fellowship the holder will be responsible to the Director of the Onderstepoort Laboratory.

Applications should be addressed to the Secretary, Empire Marketing Board, 2, Queen Anne's Gate Buildings, London, S.W.1 (cables "Empmart, London"), and should be received not later than September 1st, 1930.

Applications should be accompanied by six typed copies each of three testimonials and references to any published work.

Herts County Mental Hospital,

Hill End, ST. ALBANS.

LOCUM TENENS MEDICAL OFFICER required from June 19th to October, 1930. £7 7s. per week, plus board, etc. Apply to the Medical Superintendent.

Fife County Council.

DISTRICT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly registered male Medical Practitioners for the appointment of a District Medical Officer in the County of Fife. Commencing salary £500 (average over 10 years not less than £600 per annum). The duties are whole-time under the direction of the Chief Medical Officer of Health and are mainly those of clinical work. The person appointed will also undertake such other Public Health work as may be required. Conditions of appointment are in the hands of the subscriber. Applications, stating age, qualifications and experience, with copies of not more than three testimonials, to be lodged by June 11th.

County Buildings, Cupar. June 1st, 1930.

J. M. MITCHELL, County Clerk.

City of Sheffield.

Applications are invited from duly qualified Medical Men for the post of ASSISTANT MEDICAL OFFICER at the CITY GENERAL HOSPITAL, Fir Vale, Sheffield.

The Hospital contains 840 beds, and deals with all branches of Medical and Surgical work.

The salary offered is £250 per annum, with full residential allowances, the appointment being for one year.

Applications, stating age, qualifications, and experience, accompanied by copies of three recent testimonials, to be sent to the Medical Superintendent, City General Hospitals, Fir Vale, Sheffield.

Corporation of Greenock.

PUBLIC HEALTH DEPARTMENT.

Applications are invited from Lady Medical Practitioners for the position of LOCUM TENENS for a period of six weeks during August and September.

Duties include clinical work under the maternity and child welfare and venereal diseases schemes of the Corporation.

Remuneration will be at the rate of seven guineas [illegible] board and residence during A[illegible]

Applic[illegible] perience, should be lodged w[illegible] Officer of Health, Terrace [illegible] before Saturday, June 21st.

The Cancer Hospital (Free)

(Incorporated under Royal Charter), Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of PATHOLOGIST to the Hospital.

Experience in Clinical Pathology is essential. Salary £850 per annum.

The appointment is subject to Rules, a copy of which can be obtained from the Secretary.

Applications, accompanied by copies of not more than three recent testimonials, to be sent to the undersigned by not later than Monday, June 23rd.

J. COURTNEY BUCHANAN, Secretary.

The General Hospital,

BIRMINGHAM.

Applications are invited for the following Resident appointments from July 15th.

ANAESTHETISTS (Two). Salary £120 p.a.
HOUSE PHYSICIAN. Salary £70 p.a.
HOUSE SURGEONS (Three). Salary £70 p.a.

Applications, giving full details of qualifications and accompanied by testimonials (if desired), should reach the undersigned by June 16th.

A. H. LEANEY, House Governor.

June 2nd, 1930.

Bristol General Hospital.

HONORARY CLINICAL ASSISTANTS.

The Committee invites applications for these appointments in the various Out-patient Departments at the Hospital. The appointments are for six months commencing July 1st next, and the holders will be eligible for re-election. Candidates must be fully qualified and registered Medical Practitioners, and applications must be forwarded to the undersigned on or before Monday, June 16th, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

The Manor House Hospital,

Golders Green, London. (112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating full particulars, should be sent to the Secretary at the Hospital [illegible]

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON and RESIDENT ASSISTANT CASUALTY OFFICER for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, June 13th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, June 27th, at 4 p.m., and the House Committee meeting at 4.45 p.m. the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Freemasons Hospital and Nursing
HOME, 237, Fulham Road, Chelsea, S.W.3.

The post of RESIDENT MEDICAL OFFICER (male) will be vacant on July 1st. Salary at the rate of £250 per annum, with board, residence, and laundry. The appointment is for six months. Candidates must be registered and must have held Resident appointments at a General Hospital.

The Institution (48 beds) is for paying patients of both sexes of moderate means unable to afford ordinary nursing home treatment, etc.

Applications, stating full particulars, to be sent on or before June 10th next to the Honorary Secretaries, from whom further information may be obtained.

Stockton and Thornaby Hospital,
STOCKTON-ON-TEES.
(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties from June 6th.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the appointment of ASSISTANT MEDICAL OFFICER in the Female V.D. C[illegible] didates should submit [illegible]e and experience, with testimonials, to the undersigned on or before June 14th.

The appointment is tenable for five months in the first instance; hours of duty to be arranged. Salary at the rate of £350 per annum. Duties to commence August 1st.

REGINALD R. GARRATT,
Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the post of RESIDENT ANAESTHETIST to the Gynaecological and Obstetric Unit. Salary £150 per annum. Candidates, who must be fully qualified and experienced, should send applications, stating age, accompanied by copies of three recent testimonials, to the undersigned on or before the 10th inst. The appointment is made for a period of six months, but renewable. Preference will be given to candidates who have held resident posts in the Hospital.

REGINALD R. GARRATT, Secretary.

Seamen's Hospital Society,
GREENWICH.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by June 10th to the undersigned.

R. E. V. BAX, Secretary.

Seamen's Hospital Society.
GREENWICH.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by June 10th to the undersigned.

R. E. V. BAX, Secretary.

Royal Edinburgh Hospital for
SICK CHILDREN.

MATRON.

Fully trained Nurse holding General and Children's Certificates wanted for the Royal Edinburgh Hospital for Sick Children (132 cots), to enter on her duties on September 1st. She will have the superintendence of the Nursing and Domestic Staff, and the entire charge of the household arrangements, with the help of an Assistant Matron and a Home Sister. She will also be in charge of the Convalescent Home at Gullane (24 cots) with the help of a Sister in charge. Salary £200. Twelve copies of applications, with four recent testimonials, to be lodged on or before June 21st with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Altrincham General Hospital,
CHESHIRE.

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry; also JUNIOR HOUSE SURGEON at the rate of £120 per annum, with board, residence, and laundry.

The appointments are for six months in the first instance.

Applications, stating age and experience, together with copies of recent testimonials, to be sent in not later than Monday, June 9th, to—

31, Market St., Altrincham, Cheshire. Mr. WILLIAM MOODY, Secretary.

Romford Urban District Council.

ANTE-NATAL CLINIC.

Applications are invited for the post of MEDICAL OFFICER (part-time) to the Ante-natal Clinic from persons who have had previous experience. Salary one and a half guineas per session.

Applications, together with copies of three recent testimonials, to be sent on or before June 14th to the undersigned, from whom further particulars may be obtained.

Council Offices, Romford. CHARLES T. KING, Clerk to the Council.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
April 7th, 1930. House Governor.

St. Thomas's Hospital.

Applications are invited for—

(1) The appointment of a PHYSICIAN to the Hospital.

(2) The appointment of a PHYSICIAN in charge of Out-patients.

These appointments date from September 1st. Candidates must be Fellows or Members of the Royal College of Physicians of London.

Applications, giving full academic career, with copies of testimonials, must be sent in to the Secretary and Clerk to the Governors on or before June 10th.

St. Thomas's Hospital.

VACANCY.

The appointment of an ASSISTANT DENTAL SURGEON, to date from July 1st. Candidates must be Fellows or Members of the Royal College of Surgeons of England and Licentiates in Dental Surgery.

Applications, with copies of testimonials, must be sent in on or before June 10th to the Secretary and Clerk to the Governors.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male).

Duties to commence as soon as possible.

The duties include charge of four beds devoted to complicated Midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of May, 1930.

ARTHUR H. LIMB, Secretary.

Walsall General Hospital,
WALSALL.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post Tuesday, June 10th.

WALTER FRANCOMBE, Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

National Hospital, Queen Sq., W.C.1.

JUNIOR REGISTRAR.

Applications are invited for the post of Junior Registrar, who will be required to attend the Hospital each afternoon in the Out-patient Department. The salary is £200 a year. Applications, with recent testimonials, should reach the undersigned, from whom any further particulars may be obtained, on or before Saturday, June 7th.

GODFREY H. HAMILTON, Secretary.

National Hospital, Queen Sq., W.C.1.

ASSISTANT PHYSICIAN.

The Board of Management invite applications for the post of Assistant Physician.

Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent on or before June 7th.

Applicants must be Members or Fellows of the Royal College of Physicians.

GODFREY H. HAMILTON, Secretary.

Victoria Hospital, Blackpool.
(132 Beds.)

HOUSE SURGEON (Junior), male or female, six months. Salary £150 per annum, with residence, board, and washing.

Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, residence, and laundry. To have charge of Out-patients, administer Anæsthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male) Qualified. A knowledge of Eye work is desirable. Salary £200, with board, lodgings, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

British Red Cross Society and ORDER OF ST. JOHN OF JERUSALEM.

EAST LANCASHIRE TUBERCULOSIS COLONY, Barrowmore Hall, Great Barrow, near CHESTER.

ASSISTANT MEDICAL OFFICER (male) required.

Commencing salary £275 per annum, rising to £300 per annum after six months' satisfactory service, with residence, board, and laundry. The appointment will be terminable by one month's notice. Preference will be given to candidates with experience in Tuberculosis.

Two previous Assistants have obtained important posts as Tuberculosis Officers in County service.

Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before 9 a.m. on Tuesday, June 17th.

Chesterfield and North Derbyshire Royal Hospital.

(190 Surgical and Medical Beds.)

CASUALTY OFFICER.

Applications are invited from fully qualified men for the above post. The appointment is for six months.

Candidates must have held previous Hospital appointments.

Salary at the rate of £200 per annum, with board, apartments, and laundry. Duties include those of House Surgeon to the Ear, Nose, and Throat Department.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, 12th instant.

G. SUNNUCK,
June 2nd, 1930. Supt. & Secretary.

The Willesden General Hospital, N.W.10.

SURGICAL OUT PATIENTS' DEPT.

Applications are invited for the appointment of CLINICAL ASSISTANT to the Surgical Outpatient Department on Fridays at 2 p.m. The successful applicant will be expected to attend the Hospital regularly and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from July 1st.

Applications should be addressed to the Secretary not later than Monday, June 16th, from whom full particulars of the appointment may be obtained.

R. J. HEARNE,
May 30th, 1930. Secretary.

Royal Infirmary, Blackburn.

(240 Beds—Five Residents.)

RESIDENT HOUSE PHYSICIAN (male) required at a salary of £175 per annum, with board, residence, laundry, etc. In addition to Medical Wards, to be attached to Eye, Ear, Nose, and Throat Department. To commence duties on July 1st.

FOURTH HOUSE SURGEON (male) also required at a salary of £150 per annum, rising to £250, with board, residence, laundry, etc.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Sec.

This Institution is recognized for the Surgical Practice required for the F.R.C.S. Final Examination.

Children's Hospital, Sheffield.

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery St.), vacant July 1st. Salary £100 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of three recent testimonials, to the undersigned.

The successful candidate will be eligible for the next Senior post when vacant.

T. H. G. CARTLAND, Secretary.

Cornelia and East Dorset HOSPITAL, POOLE, DORSET.

(105 Beds.)

The Committee of Management invite applications for ASSISTANTSHIPS in the following Departments:

OPHTHALMIC;
EAR, NOSE AND THROAT;
PATHOLOGICAL.

Applications, together with copies of recent testimonials, should be sent to me by June 17th.

E. S. FOLEY, Secretary.

Derbyshire Royal Infirmary, DERBY.

(General Hospital—346 Beds.)

Applications are invited for the combined post of OPHTHALMIC HOUSE SURGEON AND RESIDENT ANAESTHETIST. Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS,
June 2nd, 1930. Supt. & Secretary.

Derbyshire Royal Infirmary, DERBY.

(General Hospital—346 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three) to be sent to the undersigned.

WALTER BANKS,
June 6th, 1930. Supt. & Secretary.

The Salvation Army, THE MOTHERS' HOSPITAL,

Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the posts of SENIOR AND JUNIOR RESIDENT MEDICAL OFFICERS. The Senior position, which is for twelve months, becomes vacant on August 1st, the salary being £150 per annum, and the Junior post for six months as from July 1st, salary £60 per annum. The salaries are in addition to board, residence, and laundry.

Applications, with testimonials, must be sent to the Secretary on or before June 18th.

EDGAR DIBDEN, Secretary.

South London Hospital for WOMEN,

South Side, Clapham Common, S.W.4.

The Board of Management invite applications from fully qualified Medical Women for the undermentioned appointments:

HOUSE SURGEONS (Two); each for a period of six months from August 1st.

Salary at the rate of £50 per annum, with board, residence, and laundry. Candidates are expected to call on Members of the Hon. Medical Staff (particulars to be obtained from the Secretary) before Monday, June 23rd, by which date applications and copies of testimonials must reach the Secretary at the Hospital.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited from duly qualified candidates for CLINICAL ASSISTANTSHIPS in the Medical, Surgical, and all Special Departments. Intending candidates should submit applications, stating age and qualifications, to the undersigned on or before the 28th inst. Duties to commence August 1st. Preference will be given to former Students of the Hospital.

REGINALD R. GARRATT, Secretary.

Royal South Hants and SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

Required for duty at this Hospital, SENIOR HOUSE SURGEON. £225 per annum, to commence duty July 1st.

ASSISTANT HOUSE SURGEON. £180 per annum, to commence immediately.

Candidates (male or female) should apply to the undersigned, stating age and enclosing copies of testimonials.

HY. TRUSSON, Secretary.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

Richmond, Whitworth and Hardwicke Hospitals, DUBLIN, C.11.

There is a vacancy for an ANAESTHETIST at an honorarium of £100 per annum.

Applications to undersigned before June 10th.

A. W. MACDERMOTT, Registrar.

The Queen's Hospital for CHILDREN, Hackney Road, E.2.

The Committee invite applications for the post of ASSISTANT PHYSICIAN. Attendance required every Wednesday morning at 9.30. Honorarium for travelling expenses. Staff Fund scheme in force.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, should send in their applications, with copies of not more than four testimonials, to the Secretary on or before 21st inst., but inquiry for particulars should be made as soon as possible.

T. GLENTON-KERR, Secretary.

Telephone: Bishopsgate 6305 & 2534.

May 26th, 1930.

Nos. 6 and 6a Buses (Hackney Wick and Kensal Rise) and Bloomsbury Trams pass the door.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on July 1st, for a period of six months. Salary at the rate of £100 per annum, with board, apartments, laundry, etc.

Also a CLINICAL ASSISTANT required in the Ear, Nose, and Throat Department (Outpatient Clinic), to attend on Thursday afternoons at 2 p.m. A fee of 10/6 per clinic will be paid.

Applications for the above appointments to be forwarded to the undersigned on or before June 18th, together with copies of three recent testimonials.

By Order of the Board.

HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Royal Infirmary, Wigan.

(120 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post. Candidates must be qualified and registered and have held previous resident appointments at a Hospital. The salary is at the rate of £250 per annum, with board, residence, and laundry. The appointment is tenable for one year, and the officer is eligible for re-election for a second year. The duties to commence on July 1st. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
June 2nd, 1930. Gen. Supt. & Sec.

Royal Infirmary, Wigan.

(120 Beds.)

Wanted July 1st, for six months, Two HOUSE SURGEONS. Salary £150 per annum, with board, apartments, and washing. Doubly registered.

Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, to reach the undersigned as soon as possible.

A. STANLEY BRUNT,
June 2nd, 1930. Gen. Supt. & Sec.

General Hospital, Nottingham.

(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at once at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, with an intimation as to when they can commence duty if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

General Infirmary, Pontefract.

Wanted, RESIDENT MEDICAL OFFICER (male and unmarried), £150 p.a. Appointment for six months. The Hospital is devoted almost entirely to Surgical cases (60 beds) and offers good experience.

Preference given to men who have held previous resident Hospital appointment.

Application, with testimonials, to Secretary.

45, Rosergate, HERBERT HOLMES.
Pontefract.

Newcastle-upon-Tyne Eye HOSPITAL.

Wanted at once, a RESIDENT HOUSE SURGEON (female). Salary £150 per annum. Preference given to applicant possessing some Ophthalmic experience. Apply, stating age and qualifications, with copies of three recent testimonials.

CHARLES E. V. UPTON, Secretary.

Rhondda Urban District Council.

ASSISTANT MEDICAL OFFICER.

The above Council invite applications from male registered Medical Practitioners to act as Whole-time Assistant Medical Officer of Health and Assistant School Medical Officer, under the direction, supervision, and control of the Council's Medical Officer of Health, at a salary of £500, rising by annual increments of £25 to £700 a year, together with travelling expenses necessarily incurred in the performance of the duties.

Candidates must have had not less than three years' professional experience subsequent to registration, and the possession of a Diploma in Public Health is desirable.

The duties will pertain to both Public Health and School Medical Services, but experience in the work of school clinics, including the examination and certification of defective children, orthopaedic work, X-ray and ultra-violet radiation, and general anaesthesia for dental and throat operations will be considered to be of special importance.

The appointment will be subject to two calendar months' notice on either side and to the approval of the Board of Education. The officer appointed will be required to reside within the Rhondda Urban District and will not be allowed to engage in private practice.

The selected candidate may be required to pass a medical examination, and should the position become a designated post under the Local Government and Other Officers Superannuation Act, 1922, during the tenure of the successful applicant the necessary deductions will be made from the salary.

Applications are to be made on forms obtainable from the Medical Officer of Health, Tydfil House, Llewelyn Street, Pentre, Rhondda, by whom they must be received, endorsed "Assistant Medical Officer," and accompanied by copies of three recent testimonials, not later than Tuesday, June 17th.

The Council Offices, Pentre, Rhondda. June 3rd, 1930.
D. J. JONES, Clerk of the Council.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications from qualified Medical Practitioners for appointment to the position of SECOND ASSISTANT MEDICAL OFFICER in its Public Health Department, for duty, in the first instance, at the SOUTHERN HOSPITAL, DARTFORD, KENT. Candidates must have had at least twelve months' residential experience in a Fever Hospital. The provisional commencing salary is £550 a year, a deduction of £130 a year being made for board, lodging, and laundry. The salary, deductions for board, etc., and the conditions of service are subject to review by the Council. The candidate appointed will be required to reside on the premises, and there is no suitable accommodation for a married man or for women.

Application forms, containing full details, obtainable (stamped addressed foolscap envelope necessary) from the Medical Officer of Health (Staff Division), The County Hall, Westminster Bridge, S.E.1. Forms must be returned by Friday, June 13th. Canvassing disqualifies.

The County Hall, S.E.1.
MONTAGU H. COX, Clerk of the London County Council.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Practitioners for the appointment of LADY ASSISTANT RESIDENT MEDICAL OFFICER at the CEFN MABLY HOSPITAL, MICHAELSTONE-Y-VEDW, near NEWPORT (110 beds for male and female pulmonary cases).

Salary £250 per annum, plus maintenance, the appointment being limited to one year.

Applications, stating age, full qualifications, and experience, together with copies of three recent testimonials, should reach the undersigned not later than June 19th.

Memorial Offices, Westgate Street, Cardiff.
D. A. POWELL, Principal Medical Officer.

Bolingbroke Hospital (120 Beds), Wandsworth Common, S.W.11

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

The appointment is for twelve months from July 1st next.

Salary £200 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before June 12th.

W. S. RANDOLPH BISS, Secretary-Superintendent.

Rhondda Urban District Council.

ASSISTANT DENTAL SURGEON.

The above Council invite applications from persons of either sex, registrable as Dental Surgeons, to fill a vacancy for one Whole-time Assistant Dentist required for the examination and dental treatment of children attending the schools controlled by the Rhondda Education Authority, for giving instruction in hygiene of the teeth, for the dental treatment required in connection with the Council's Welfare Scheme, and for the performance of incidental duties.

The appointment will be subject to the approval of the Board of Education, and the officer appointed will be subject to two calendar months' notice on either side, and will be required to reside within the district, to abstain from private practice, and to act under the direction and control of the Council's Medical Officer.

The selected candidate may be required to pass a medical examination, and should the position become a designated post under the Local Government and Other Officers Superannuation Act, 1922, during the tenure of the successful applicant the necessary deductions will be made from the salary.

The salary offered is £450, rising by annual increments of £25 to £500 a year, expenses by rail or tram necessarily incurred in the performance of the duties being allowed.

Applications are to be made on forms obtainable from the Medical Officer of Health, Tydfil House, Llewelyn Street, Pentre, Rhondda, by whom they must be received, endorsed "Assistant Dental Surgeon," and accompanied by copies of three recent testimonials, not later than Tuesday, June 17th.

The Council Offices, Pentre, Rhondda. June 3rd, 1930.
D. J. JONES, Clerk of the Council.

Rotherham County Borough.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Public Assistance Committee invite applications for the above post at the Hospital, Alma Road, Rotherham.

Salary £150 per annum, together with the usual residential allowances.

Candidates must be single, not exceeding 30 years of age, fully qualified and registered.

Applications, stating age, qualifications, etc., together with copies of three testimonials, to be sent to the Public Assistance Officer, 26, Moorgate Street, Rotherham, not later than June 16th.

Municipal Offices, Rotherham. June 3rd, 1930.
CHAS. L. DES FORGES, Town Clerk.

Peterborough and District MEMORIAL HOSPITAL. (154 Beds.)

TWO RESIDENT HOUSE SURGEONS required.

Applications are invited from fully qualified male Practitioners for above posts.

Salary £135 per annum, with board, residence, and laundry.

Appointments will be for a minimum period of six months.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

FRANK A. C. TAYLOR, Secretary-Superintendent.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE SURGEON, for which appointment preference will be given to a candidate who has held a previous Hospital appointment. Salary £120 per annum, with board, residence, and laundry. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than June 17th.

June 6th, 1930.
FRANK INCH, House Gov. & Secretary.

Darlington General Hospital. (120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, fully qualified, British. Salary £125 per annum, board, residence, etc. Applications, stating experience, with copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

St. Paul's Eye Hospital, LIVERPOOL.

HOUSE SURGEON required. Duties to start July 1st, six months' appointment. Salary £120 per annum, board, residence, etc. Applications, with copies of testimonials, should be sent to the Secretary at the Hospital on or before June 16th.

Borough of Hyde.

MEDICAL OFFICER.

The Town Council of the Borough of Hyde invite applications from duly qualified Medical Practitioners for the position of Medical Officer, to discharge the duties of the following offices:

(1) Medical Officer of Health for the Borough;
(2) Medical Superintendent of the Infectious Diseases Hospitals;
(3) Medical Superintendent of the Tuberculosis Hospital;
(4) School Medical Officer;
(5) Maternity and Child Welfare Medical Officer;
(6) Police Surgeon.

The salary of the Medical Officer will be £800 per annum, rising by annual increments of £50 to £900 per annum, plus £100 car allowance and residence free from rent.

The person appointed will be required to devote the whole of his time to the duties of the said offices. Applications (on forms to be obtained from the Medical Officer), with copies of recent testimonials, endorsed "Medical Officer," must be received by me, at the Town Hall, Hyde, not later than Wednesday, the 25th instant.

Canvassing members of the Council is prohibited, but applicants may send to me twelve copies of application for information of the Subcommittee concerned.

Town Hall, Hyde. June 3rd, 1930.
THOS. BROWNSON, Town Clerk.

Doncaster Royal Infirmary. (185 Beds.)

HONORARY PHYSICIAN AND PATHOLOGIST.

Applications are invited for the newly created post of Hon. Physician and Pathologist to the above Hospital. An honorarium at the rate of £250 per annum, plus 50 per cent. of fees received for public and private work, will be paid.

He must hold the degree of M.D. or be a Fellow or Member of the Royal College of Physicians, and be competent to undertake all Bacteriological and Pathological work of the Hospital.

Applications, with full particulars and copies of testimonials, to be received by the undersigned on June 18th.

J. LAWRENCE MEARS, Secretary-Superintendent.

The Mount Vernon Hospital, NORTHWOOD, MIDDLESEX.

The Council of Management will shortly proceed to the election of a GYNAECOLOGIST. Candidates must be registered Fellows of the Royal College of Surgeons.

Applications, with copies of three testimonials, should be addressed to the undersigned on or before the 16th instant.

Offices: 7, Fitzroy Square, W.1.
WILLIAM J. MORTON, Secretary.

Margate and District New GENERAL HOSPITAL. (80 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male), to commence duties on June 20th next. Twelve months' engagement (renewable).

Salary £125 per annum, with board and laundry.

Applications, accompanied by copies of testimonials, should be sent to the Secretary, Margate Cottage Hospital, as early as possible.

Newark General Hospital. (50 Beds.)

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

Wilson Cottage Hospital, MITCHAM.

Applications are desired for the posts of HON. CONSULTING PHYSICIAN and HON. CONSULTING SURGEON to the Nose and Throat Dept.

Further particulars can be obtained from the Hon. Registrar.

Wanted for the Infirmary, KILMARNOCK, a RESIDENT MEDICAL OFFICER (male), to begin duty at the end of June. Salary at the rate of £140 per annum, with board, etc.

Applications to be lodged immediately with the Secretary, Kilmarnock Infirmary, Ayrshire.

The Macdonald and Middleton MEMORIAL CLINIC requires a THROAT AND EAR SURGEON.—For all particulars apply to the Hon. Secretary, 92, Tavistock Road, W.11.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON *(Workmen's Medical Society)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	LLANELLY BOROUGH. *(Assistant Medical Officer of Health and Assistant School Medical Officer.)*
GILFACH GOCH, GLAMORGAN *(Workmen's Medical Scheme)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN *(Workmen's Medical Scheme)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN *(Workmen's Medical Scheme)*	**PUBLIC HEALTH**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec, Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

By Order of the Council.

June 4th, 1930. ALFRED COX, Medical Secretary.

All Saints' Hospital (for Genito-URINARY DISEASES).
In-patient Dept.: 91, Finchley Road, N.W.8.
Out-patient Dept. and Secretary's Office: 49/55, Vauxhall Bridge Road, S.W.1.

HOUSE SURGEON (male) required on July 1st, for period of nine months. Salary at the rate of £150 per annum. Duty as under:
Three months as Assistant House Surgeon (non-resid[illegible] House Surgeon [illegible] months as Reside[illegible], with board an[illegible] of the Assistant and Junior House Surgeons consist of attendance at the Out-patient Department every weekday afternoon and three evenings weekly. Promotion at the end of each three months is subject to the approval of the Board of Management.
Applications, stating age, experience, qualifications, and enclosing copies of recent testimonials, should reach me not later than June 11th.

D. H. EADE, Secretary.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN (male) and SECOND HOUSE SURGEON (male). Salaries £135 and £100 per annum respectively, with board, residence, and laundry. (Four Resident Medical Officers.)
The appointments are for six months, which may be extended for similar periods by re-election from time to time.
Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate to the post of Second House Surgeon will be required to enter upon his duties at once, and the House Physician will be required to enter upon his duties on June 9th.

F. J. SYMONS.
May 8th, 1930. Secretary.

The Queen's Hospital for CHILDREN,
Hackney Road, London, E.2.

RESIDENT MEDICAL OFFICER required on July 31st.
The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.
The Resident Medical Staff consists of the Resident Medical Officer as above, Two Casualty Officers, Two House Physicians, and One House Surgeon.
Salary (inclusive of panel fees) £200 per annum, with board, residence, and washing. Candidates must have held a responsible Resident appointment at a recognized Hospital, and should apply as soon as possible for forms of application, which must be filled in and returned to the undersigned on or before June 30th.

T. GLENTON-KERR,
May 26th, 1930. Secretary.
Telephone: Bishopsgate 6305 and 2534.

St. Peter's Hospital for Stone, ETC.,
Henrietta Street, Covent Garden, W.C.2.

CLINICAL ASSISTANTS are required by the following members of the Honorary Staff, who attend the Out-patient Department as indicated:

Mr. Swift Joly	Mondays 2 to 5 p.m.
Mr. Clifford Morson	Saturdays 2 to 7 p.m.
Mr. Barrington	Tuesdays 2 to 5 p.m. Thursdays 3 to 7 p.m.
Mr. Ogier Ward	Wednesdays 3 to 6 p.m. Fridays 2 to 5 p.m. (Women and Children)
Mr. Alban Andrews	Mondays 5 to 7 p.m. Fridays 5 to 7 p.m

Appointments are made for six months from July 1st, 1930, a fee of five guineas being payable to the Hospital.
Applications will be received by the undersigned up to the first post on Wednesday, June 11th, 1930.

BEECHEY ROGERS, Secretary.

Woking and District Victoria HOSPITAL.
(General Hospital. 50 Beds.)

Female RESIDENT MEDICAL OFFICER (unmarried) required for July 1st. Applicants must be doubly qualified and registered. Salary £100 per annum, with board, residence, and laundry.
Appointment for six months, and renewable for further six months.
Applications, stating age, etc., and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained. They must be received on or before June 14th.
Personal canvassing not allowed.

R. MANNING DRIVER,
Woking & District Victoria Hospital. Hon. Sec.

The London Female Lock HOSPITAL,
283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by June 23rd, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing August 1st.

By Order of the Board,
HY. J. EASON, Secretary.

The Sheffield Royal Hospital.

RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £80 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

ASSISTANCIES.

Wanted, in October next, ASSISTANTSHIP, with view, preferably out of income, by Conjoint, Bart's. British, Protestant, married. Anxious for permanency. Ex Senior R.M.O., Cas. Officer, and Resident Anaesthetist, 4 years' G.P., private and panel. Capable Obstetrician. Dispensing. — Address, No. 3807, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Indoor Assistant, male, young, keen, and reliable, for private and panel Practice in nice country district, West Riding, within easy reach of three University cities. Able to drive car. Protestant. Comfortable home. Usual bond. Salary £300. State age and full particulars.—No. 3805, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, indoor, in Midland City, all found, car provided, four weeks' holiday p.a. Dispenser kept. Salary £350 p.a. Please send photograph, with testimonials (which will be returned) and full particulars.—Address, No. 3823, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—An Assistant in a Colliery Practice in South Wales. Terms, £375 per annum, with furnished rooms, attendance, etc.—Address, giving age, references, etc., to No. 3828, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant for Country Practice. Must be able to drive car and dispense. A Partnership might be arranged. State age, height, religion, experience, and other essential particulars.—Add., No. 3918, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Indoor Male Assistant in South-West Spa. Panel and Private Practice. Experience preferable, but not essential. Salary £300 p.a. Separate car. Dispenser kept. Photo (returnable), age, height, experience, testimonials. — Address, No. 3917, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Young male Assistant, British, panel and private Practice; ex H.S. preferred. £250 indoor, or £400 outdoor. Usual bond. Essential particulars and testimonials (copies).—Address, No. 3821, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced, indoor, male ASSISTANT, under 30, Protestant, English or Scot. Private and panel Practice. Clean town. Prospects. Salary from £300 p.a. Photo. — Address, No. 3915, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Well-qualified, up-to-date man as ASSISTANT, with view. Abstainer, age 30-35. Some capital essential. Good Obstetrician. Large seaport, Glamorganshire. Third Partner. Takings £3,800 gross.—No 3851, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant, with view to Partnership and Succession. Young, single, energetic, and keen. Scot preferred. Panel and private, S.W. London.—Address, No. 3811, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Country and Town Practices, with and without view. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Woman Assistant, for working-class Practice in London. Scotch preferred. — Address, giving full particulars, No. 3838, B.M.A. House, Tavistock Square, W.C.1.

Assistant required in a good-class Practice in Country Town. Surgical and Gynaecological opening. Hospital facilities. Must be Public School and University man and have Fellowship or English Primary. Partnership later if suitable man. Commencing salary £400. No agents.—Address, No. 3803, B.M.A. House, Tavistock Square, W.C.1.

Assistantship or Hospital Ap- pointment in KENYA COLONY required by Woman Doctor, M.B., Ch.B.Edin.; aged 27. Four years' experience in general practice; Refractions; good Anaesthetist. Nominal salary.—No 3835, B.M.A. House, Tavistock Sq., W.C.1.

Assistant wanted, N.E. London area. Must be energetic, reliable, and recently qualified. Salary to begin £350 per annum, with furnished rooms and attendance. Abstainer preferred. Usual bond. — Address, No 3826, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship, with prospects, wanted by M.B., Ch.B. (2 distinctions), English, age 27, married; ex H.S., ex Casualty Officer; 2½ years' experience panel and general. Good references. — Address, No. 3815, B.M.A. House, Tavistock Square, W.C.1.

Assistant, male, temperate, out- door, for private and panel Practice in Midlands. £400 per annum. Usual bond. State particulars.—Address, No. 3825, B.M.A. House, Tavistock Square, W.C.1.

Assistant, outdoor, lady, Country and Industrial Practice, North Wales, and near Chester. Welsh an advantage.—"MEDICAL," 40, Hamilton Street, Hoole, Chester.

Clinical Assistant required for Private Mental Hospital in London. Resident post. Small salary. Duties light; ample free time for Post-Graduate work or for obtaining the D.P.M.—Further particulars from No. 3920, B.M.A. House, Tavistock Sq., W.C.1.

Indian, M.B., B.S., L.R.C.P., M.R.C.S., desires ASSISTANTSHIP or LOCUM, preferably in London or suburbs. Energetic, young, reliable, abstainer.—Address, No. 3911, B.M.A. House, Tavistock Square, W.C.1.

Indoor Assistant (female) wanted in an industrial district in Lancashire. State essential particulars. No testimonials to be sent. — Address, No. 3820, B.M.A. House, Tavistock Square, W.C.1.

Required in Warwickshire for Partnership Practice, Lady Doctor ASSISTANT, for 4 to 5 months from July 22nd. —Address, No. 3912, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Fully qualified DOCTOR for service in the TROPICS. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passage provided. Candidates must be unmarried. Ladies not eligible. — Address, with copies of testimonials (not returnable), No. 3801, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a qualified Doctor to act as RESIDENT MEDICAL OFFICER AND DISPENSER at the WESTERN DISPENSARY, 38, Rochester Row, Westminster, S.W.1. Duties light. Honorarium £150 per annum, with furnished rooms, light, coal, and attendance. Application by letter, with testimonials, to be made to the Secretary.

Wanted by large industrial undertaking in South London, experienced Lady SHORTHAND TYPIST, with knowledge of medical terms, to assist Medical Officer. Applications, stating age, experience, qualifications, and salary, should be addressed to No. 3812, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Gentleman Com- PANION for youth, 20. Mental case. Must be experienced and educated, age 30-40. —Write Box 2864, SCRIPPS'S ADVERTISING OFFICES, South Molton Street, W.1.

Wanted.—Afternoon Work, and to take Occasional Charge at weekends. E. London, N. or N.E. preferred.—Address, No. 3908, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

A Doctor is required to take CHARGE of a Hospital connected with the UNITED METHODIST MISSION IN CHINA. —For particulars apply to Rev. C. STEDEFORD, 13, Silverbirch Road, Erdington, Birmingham.

Dispenser - Bookkeeper, male (42), desires POST in Yorkshire (West Riding preferred); thoroughly experienced; undeniable references; used good-class practice. —Address, No. 3904, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Lady Secretary seeks RE-ENGAGEMENT—Shorthand, Typing, Bookkeeping, French. Good references.—Miss PAGE, "Littlecote," Linksway, Northwood, Midx.

Orthopaedic Masseuse desires WORK with London Surgeon. Good experience in Hospital and at County Clinics, also in Plaster work, Re-education, and sunlight. Chauffeuse. Excellent references. Fully qualified.—No. 3905, B.M.A. House, Tavistock Square, W.C.1.

Part-time work in London re- quired by experienced Medical Man, six years' G.P., and held Hospital appointments. Now studying for higher degrees. Moderate remuneration. — Address, No. 3902, B.M.A. House, Tavistock Square, W.C.1.

Practitioner offers Residence in nice flat (South Kensington) at low rental to Medical Man (single) who is willing to act as DEPUTY on certain evenings. Services quite nominal.—Address, 3732, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

Young Chartered Masseuse wants WORK with Doctor or in Institution, London or near. Experienced in Medical Electricity, Violet Rays, Remedial Exercises; own batteries. Has had secretarial training. Speaks French.—Add., No. 3837, B.M.A. House, Tavistock Sq., W.C.1

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Wanted.—Locums or ASSISTANTSHIP by Medical Woman. Experienced in private and panel practice. Can drive car.—Address, No. 3906, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Locum Work at seaside or Cornwall. June, July, August. Hospitality wife. £7 weekly. Excellent references. —Address, No. 3907, B.M.A. House, Tavistock Square, W.C.1.

Holiday Exchange. — London Doctor, with very easily run Practice, comfortable house, good situation, would like to CHANGE with Doctor, seaside country, for month this summer. — Address, No. 3919, B.M.A. House, Tavistock Square, W.C.1.

Hospitality Locum wanted during July for Practice in pleasant West London suburb; work light; easy access to West End; time for other pursuits. Terms by arrangement.—Add., No. 3836, B.M.A. House, Tavistock Square, W.C.1.

Locum required in a London Public Health Department for about 2 months during July to October. B.M.A. fees paid. D.P.H. desirable. Work chiefly Infectious Disease and Maternity and Child Welfare. A special form will be sent to selected applicants. Write Box Y 860, WILLINGS, 86, Strand, W.C.2.

Locums and Assistants required, preferably those living within easy distance of Liverpool. — Apply to Messrs. R. SUMNER & CO., LTD., Manufacturing Chemists, 40, Hanover Street, Liverpool.

Locums. — Experienced and reliable Doctor, had own practice, now doing some 10 locums annually, desires further ENGAGEMENTS; 6 gns. p.w. If country, where car and driver available. Good refs.—Address, "MEDICUS," 24, Colville Road, Bayswater, W.

Locum Tenens.—Thoroughly experienced Medical Man, who is in practice in London, would like to do 2–3 weeks' LOCUM in the country or seaside between July 15—Aug. 15. 4 years' hosp. exp., 5 years in private. Loyal, T.T. —No. 3830, B.M.A. House, Tavistock Sq., W.C.1.

Locum wanted from July 10th until Sept. 10th. Scotch Graduate preferred, able to dispense and to cycle, or allowance if own car. Sole charge for six weeks. 40 miles London on east. —Address, No. 3909, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenens.—Practitioner good experience, age 45, desires locum work this year. Preferably with hospitality for self and wife, but not essential. Town or country. Drive car.—Address, No. 3903, B.M.A. House, Tavistock Square, W.C.1.

Scotch Graduate (1923), woman, good experience G.P., desires LOCUM Free now. London district preferred, not essential. — Address, No. 3921, B.M.A. House, Tavistock Square, W.C.1.

Well-qualified Doctor, highest references, married, aged 34, Partner in old-established Practice, own car, desires to do LOCUM in June, July, or Sept. Fee £5 5s. per week, and hospitality for wife.—Address, No. 3815, B.M.A. House, Tavistock Sq., W.C.1.

PARTNERSHIPS.

Far East.—Prospective Partner-SHIP in first-class Practice, suitable for well-qualified Graduate, experienced, keen, ex resident. Enquiries address, No. 3819, B.M.A. House, Tavistock Square, W.C.1.

Lancashire Town.—Partner-SHIP ONE-THIRD SHARE for Sale in Practice, cash receipts averaging £2,650 p.a. Part 1,500. Price required, 1½ years' purchase. Scope for surgery.—Address, No. 3823, B.M.A. House, Tavistock Square, W.C.1.

Manchester. — Partnership in excellent old-estab. mixed Practice. Aver. cash receipts £5,816. Panel 3,375. Good house available, 3 bedrooms. Rent £60 p.a. Premium—1/3rd share—1½ years' purchase, part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Man (elderly) requires PARTNER with view to early succession. Charming London suburb. Suit man with some private means. Receipts £600 p.a. —Address, No. 3839, B.M.A. House, Tavistock Square, W.C.1.

Midlands. — Third Partner wanted end of year owing to retirement. Old-es[tab]lished [Hos]pital [Ap]pointing small market town. [Fe]es 5/- to 21/-. Cottage Hospi[tal] [Edu]cational facilities. House, ample accommodation, rent £25 p.a. Garage. Small garden. One-third share—2 years' purchase. — Address, No. 3827, B.M.A. House, Tavistock Square, W.C.1.

Partner wanted, Scotland.—Ex-ceptionally attractive sea-coast town. About £900 p.a. Premium £1,600. Good-class. Higher degree and able to do surgery would be advantageous. References essential. No agents. —No. 3804, B.M.A. House, Tavistock Sq., W.C.1.

Two Partners, 10 miles Picca-dilly, opening new Branch Cash Surgery, require keen ASSISTANT PARTNER to work it. Deposit £300 required at commencement. For first year, salary £350, plus percentage. Second year, free half share. Two years later 3/4 share. Deposit returned if takings insufficient in first year, and usual bond. Young married man preferred. Accommodation above Surgery, nominal rent first year. Send photo.—No. 3910, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted. — Practice or Partner-SHIP of £1,200 upwards in Country Town in Yorkshire, with Cottage Hospital. East Riding preferred. —Address, No. 3808, B.M.A. House, Tavistock Square, W.C.1.

Bradford.—Old-established, good *middle-class and industrial PRACTICE in* growing district. Panel over 1,800; appts. about £60. Midwifery discouraged. Small expenses. Cash receipts (average last 3 years) £2,734 (certified). Good detached house on lease at £45 per annum. Premium 1½ years' purchase, part deferred. Good introduction.—No. 3809, B.M.A. House, Tavistock Sq., W.C.1.

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For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform free on applic.—4, Adam St., W.C.2.

For Disposal.—X-ray Practice in manufacturing town. Receipts about £1,000. Vendor on Hospital staff. D.M.R.E. essential. — Address, No. 2301, B.M.A. House, Tavistock Square, W.C.1.

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For Sale, desirable old-established PRACTICE in Clyde Coast Town. Present owner going abroad. First-class panel and private Practice. Capital required to purchase house and Practice about £4,000.

Enquirers are required to state qualifications, and give Banker's references.

Address, Practice," WM. PORTEOUS & CO., Advertising Agents, Glasgow.

For Sale, in the best part of East End of London, a Panel and Private PRACTICE. Average receipts for past 3 years £1,200-£1,300. Receipts for 1930 to date £662. Excellent house, central heating, garage, etc. Separate surgery. Must be sold at once as Vendor has obtained a full-time appointment. Cash £2,000. — Address, No. 3817, B.M.A. House, Tavistock Square, W.C.1.

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For Sale.—Well-established Prac-TICE in South of Scotland. Panel 1,000. Receipts £1,700/£1,800. Vendor desirous of retiring. Price 1½ years' purchase. Excellent house, built for a Doctor, is for sale along with the Practice.—Address, No. 3604, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Old-established Prac-TICE in Yorkshire; panel over 2,000; gross takings average over £2,000, increasing; audited figures; no midwifery, but plenty of scope; house on lease, flat above Surgery. *Premium 1½ years', cash.*—Address, No. 3814, B.M.A. House, Tavistock Square, W.C.1.

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Manchester. — Residential Suburb.—Old-estab. PRACTICE. Average cash receipts £1,918. Panel 1,400. Excellent house for sale, 2 reception, 4 bedrooms. Garage and garden.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

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Nucleus (£160), London, S.W. —Main road. Panel over 70; no mid. Scope. Near L.C.C. Estate. Premium £160 (incl. drugs and *furniture worth £50*). Rent or lease (shop, five rooms, etc.) 12 years, £175. Both £250, or offer. — Address, No. 3801, B.M.A. House, Tavistock Square, W.C.1.

Practice wanted in London, N.W. or W. preferred. Doing £1,500—£1,800 *per annum. Panel round 2,000.*—Address, No. 3830, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — A small unfurnished or part furnished SUITE in W.1 neighbourhood, with service and attendance. Efficient telephone essential.—Address, No. 3822, B.M.A. House, Tavistock Square, W.C.1.

Ainsdale, near Southport.—Noted for its health-giving and bracing air.—A Detached HOUSE, ideal for a Nursing or Convalescent Home, facing due South. Three ents., usual domestic offices, 8 bedrooms; large garden. Immediate possession. £1,750.—Messrs. W. F. BEAVAN, 7, Union Court, Liverpool.

Bed and Sitting Room or Bed-Sitting Room, with part-time use of Consulting Room and name-plate on door, close to Harley Street. House preferred for Medical Man.—Address, No. 3824, B.M.A. House, Tavistock Square, W.C.1.

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Consulting Rooms to be Let.—Harley Street and district. Whole and part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

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For Sale.—Edinburgh, West End District.—44, Melville Street, occupied by the late Dr. ROBERTSON. Commodious HOUSE, suitable for Consultant. Electric light and power. Sun-ray installation. Modern garage attached (2 cars). Immediate entry if desired. Assessed rental—house and garage—£170; feu duty £22 10s.—Apply, JOHN N. RAE, S.S.C., 3a, North St., David Street, Edinburgh.

For Sale freehold, South Devon, in growing neighbourhood. — Attractive small country HOUSE, 3 sitting (one 30 ft. long), 4 bed., bath and dressing room, garage, pretty garden; view of sea. Nearest Doctor about 5 miles. Price £1,400.—For particulars, address, No. 3810, B.M.A. House, Tavistock Sq., W.C.1.

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Ideal Doctor's House.--Good opening.—For Sale, freehold, charming HOUSE in own grounds, 3 recep., 6 bed., bath, offices. Sunny; easily run; all conveniences. Tennis court; prolific garden; garage; in all 3 acres or with 1/4 acre only.—COMPTON, Allington, Bridport, Dorset.

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APPOINTMENTS.—Contd.

Glasgow Royal Infirmary.

The Managers invite applications for the undermentioned posts:

(1) From registered Medical Practitioners of *at least five years' standing* for the post of ASSISTANT PHYSICIAN as from October 1st;

(2) *From registered Medical Practitioners of at least three years' standing* for the post of EXTRA SURGEON to Out-patient Department, to commence duties as soon as possible. This post carries with it an honorarium of £200 per annum.

Particulars as to duties, etc., may be obtained from the Superintendent, Royal Infirmary, Castle Street, Glasgow.

No canvassing. Candidates are requested to *lodge with the undersigned*, not later than Thursday, *June 19th*, *fifteen copies of application* and three relative testimonials with each.

R. MORRISON SMITH, C.A.,
Royal Infirmary Office, Secretary &
135, Buchanan Street, Cashier.
Glasgow, C.1.

Manchester Royal Infirmary.

SURGICAL OFFICER TO OUT-PATIENTS.

The Board of Management invite applications from registered Medical Practitioners for the above appointment.

The duties are to assist in the *treatment of Surgical Out-patients* on two mornings per week. The appointment (non-resident) is for a period of one year, but the holder of the office is eligible for re-election on two subsequent occasions for a similar period. Salary £35 per annum.

Candidates must state age, and send twelve copies of their applications and testimonials to the undersigned on or before 9 a.m. on Wednesday, June 18th.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

The Royal Gwent Hospital, NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to *Out-patients and House Physician.*

Salary £135, with board, lodging, and laundry.

Large Out-patient Department. Eligible for promotion. Resident Medical Staff 5.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
June 3rd, 1930. Secretary-Supt.

The Royal Infirmary, Sheffield. (500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON.

The salary attached to the appointment (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of *testimonials*, should be addressed to the undersigned forthwith.

Board Room, JNO. W. BARNES, F.C.I.S.,
May 14th, 1930. Gen. Supt. & Sec.

Oldham Royal Infirmary.

HOUSE SURGEON to Male Wards required. *Appointment tenable until December 31st.* Successful applicant will be eligible for re-appointment. Salary at the rate of £175 per annum, with board, residence, and laundry.

Applications to be submitted forthwith, together with copies of three recent testimonials, to the undersigned.

CHARLES D. DRAKE,
General Superintendent.

Manchester Ear Hospital; *Grosvenor Square, All Saints'.*

NON-RESIDENT HOUSE SURGEON required. Salary at the rate of £150 per annum, with partial board. Appointment for six months.

Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester.

Royal Cornwall Infirmary; TRURO. (84 Beds.)

HOUSE SURGEON (male) required, with experience of X-ray work and Anaesthetics. Salary £170 per annum, rooms, board, and washing.

Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:
HOUSE PHYSICIAN. Salary at the rate of £125 per annum.
HOUSE SURGEON (attached to the Genito-Urinary Department) Salary at the rate of £125 per annum.
HOUSE SURGEON to Gynæcological, Aural, and Skin Departments. Salary at the rate of £125 per annum
CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.
The appointments are for a period of six months, with board and residence.
Candidates must be registered under the Medical Acts.
The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).
Forms of application, which may be obtained from the undersigned, must be delivered on or before June 9th.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
June 2nd, 1930.

The Royal Hospital,
WOLVERHAMPTON.
(Incorporated under Charter.)

CASUALTY OFFICER AND RESIDENT ANÆSTHETIST (male) required. Duties to commence forthwith, and will include Casualty work and administration of Anæsthetics.
The Hospital contains 240 beds, contains the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.
Candidates must be registered under the Medical Acts, and unmarried. The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients. Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided
Applications, with copies of testimonials, to be forwarded to the undersigned
W. H. HARPER,
May 27th, 1930. House Gov. & Sec.

Royal Hampshire County
HOSPITAL, WINCHESTER.
(158 Beds.)

Vacancies will occur on July 1st next for the following officers:
SENIOR RESIDENT MEDICAL OFFICER Salary £200 per annum.
HOUSE PHYSICIAN. Salary £150 per annum
HOUSE SURGEON. Salary £150 per annum.
Board, lodging, and attendance is provided in each instance. Candidates (male), who must be unmarried, must be of British nationality and duly qualified and registered Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned
HERBERT MASLEN, Secretary

Ingham Infirmary,
SOUTH SHIELDS.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per annum respectively, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.
JOHN POTTER, Secretary.

Manchester Babies' Hospital,
Burnage Lane, LEVENSHULME.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER. Appointment is for six months from August 1st. Salary at the rate of £125 per annum, with laundry. Only candidates with previous Hospital experience need apply.
Applications, together with copies of testimonials, should be sent to the undersigned, marked "R.M.O.," by Wednesday, June 25th.
ANGELA LOPEZ, Secretary.

The Royal Infirmary,
SUNDERLAND. (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.
Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.
S. C. FRYERS,
House Governor & Secretary.

Queen's Hospital, Birmingham.

Applications are invited for the following posts:
HOUSE SURGEON to the Gynæcological and Obstetric Department.
OPHTHALMIC HOUSE SURGEON AND RESIDENT ANÆSTHETIST.
HOUSE SURGEON to the Ear, Nose, and Throat Department.
The above are for 7 months from July 1st.
HOUSE PHYSICIAN.
CASUALTY HOUSE SURGEON.
Immediate vacancies for 2 months to July 31st, with eligibility for re-election.
Salary at the rate of £70 per annum, together with board, apartments, and laundry.
Candidates, who must be fully qualified and registered, to send in their applications upon an official form to be obtained from the General Office, together with certificate of registration, and copies of not more than three testimonials, to the undersigned at once.
Birmingham, May 30th, 1930. G. HURFORD, House Governor.

Doncaster Royal Infirmary.
(185 Beds.)

SECOND HOUSE SURGEON (male) required at once. Experience in Anæsthetics essential. Appointment offers opportunity to gain good surgical experience.
THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work.
Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.
Salary, for each post, £150 per annum, with board, residence, and laundry. A New Hospital ready for occupation.
Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Thursday, June 12th.
J. LAWRENCE MEARS,
Secretary-Superintendent.

Hampstead General and North-
WEST LONDON HOSPITAL,
Haverstock Hill, N.W.

APPOINTMENT OF CASUALTY SURGICAL OFFICER.

Applications are invited from unmarried registered Medical Practitioners for the position of Casualty Surgical Officer, now vacant, at the Out-patient Department of the Hospital, Bayham Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.
Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 14th next.

Hampstead General and North-
WEST LONDON HOSPITAL,
Haverstock Hill, N.W.

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried Medical Men for an appointment of House Surgeon, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.
Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 14th next.

Hampstead General and North-
WEST LONDON HOSPITAL,
Haverstock Hill, N.W.

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from unmarried Medical Men for the appointment of House Physician, vacant on July 1st next. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.
Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on June 14th next.

Kettering and District General
HOSPITAL.

Applications are invited for the post of HONORARY PATHOLOGIST AND BACTERIOLOGIST. Candidates are requested to give details of their qualifications and experience.
G. W. JACKSON, Secretary-Supt.

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W. J. HICKS, *Secretary*

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HOUSE SURGEON required immediately. Six months' appointment with possibility extension for a further six months. Salary £150 per annum, with board, residence, and laundry. Preference will be given to candidates with experience in the administration of anæsthetics.
Application, with testimonials, to be sent to C. LEE PATTISON, Medical Superintendent.

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40, Fitzroy Square, W.1.

HONORARY PHYSICIAN required for above Hospital. Apply Secretary.

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YORKS.—PARTNERSHIP in middle and working-class Town Practice. Receipts approx. £3,000 p.a. Panel over 2,000. House to rent. Premium for 1/4 share 2 years' purchase.

NORFOLK (Cathedral City).—PARTNERSHIP in good-class non-panel G.P. Receipts over £4,400 per annum. 1/4 share now offered, with view to larger share, at 2 years' purchase. Suitable to a Physician, young, and preferably single.

LIVERPOOL (near).—Well-established mixed G.P. Modern house available with Branch Surgery. Receipts £2,500. Panel 2,600. Fees 2/6 up. Scope for surgery if desired. Premium 1½ years' purchase.

LONDON, S.W.—NUCLEUS G.P., may be run as a Lock-up. Situated within short distance of West End. Receipts approx. £500 p.a. Panel about 500. Alternative accommodation available. Premium £750 or cash offer.

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SOMERSET.—Country Town PRACTICE. Medium-sized house to rent (or for sale). Receipts (approx.) £600. Panel 500. Prem. 1½ yrs. pur.

LONDON, N.W.—NUCLEUS middle and working-class PRACTICE. House to rent. Receipts £250. Panel 155 (recently started—scope). Premium £350 or near offer.

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LONDON, N.W.—NUCLEUS G.P. in thickly populated middle and working-class locality. Excellent 10-roomed house for sale or rent. Receipts nearly £450. Panel (rapidly increasing) 550. Premium £650. Plenty of scope.

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LONDON, N.—NUCLEUS G.P. situated in residential locality. Excellent scope. Receipts £500. Panel over 100. House for sale or rental. Premium £775.

LONDON, NORTH.—Lock-up SURGERY, with living accommodation if desired, situated in working-class district. Receipts £260 p.a. Panel 170. Premium £300 or near reasonable offer.

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6. YORKSHIRE.—Large County Borough.—Well-estab. working and middle-class PRACTICE. Receipts over £1,500 p.a., and steadily increasing. Panel about 1,700. Good house to rent.
7. DEATH VACANCY.—NORTH WALES COAST.—Good-class. PRACTICE. Estab. 2 years. Receipts £1,200, and increasing. Small panel, not encouraged, but scope. Good modern house to rent or purchase.

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ESSEX SUBURB.—£1,150—£1,200 a year. No panel taken, plenty cases to be had. Very old-established. Vendor retiring. Corner house and nice garden. Rent £70. Premium for goodwill 1½ years' purchase. Personally known and recommended.—No. 8668.

HARROGATE.—DEATH VACANCY.—£600—£700. Panel 500 Good house for sale for £1,000.—No 8664.

YORKSHIRE.—£1,000 a year. Almost unopposed. Old-established. Panel 380. Small house, rent £50. Goodwill £1,400.—No. 8660.

LAKE DISTRICT.—£2,000 a year. Panel 750. Good detached house, garden 1 acre. Rent £60.—No. 8656

LONDON SUBURB, S.W.—£2,000 a year Very old-established. No panel taken. Fees 5/- mostly. Good house, rent £63.—No. 8655

EASTERN COUNTY.—£850 a year. Panel nearly 500. Good house and garden, tennis lawn, etc. Rent £36 Premium for goodwill £1,200. —No. 8654.

DEVONSHIRE.—£1,150 a year. Entirely unopposed for 10 miles. Old-established. Good detached house and extensive grounds, 8 bedrooms All sport. Premium 1½ years' purchase. House for sale. Personally known and recommended.—No. 8675.

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LONDON, N.W.—£700—£750 a year. Panel £500. No midwifery. Large house, let off at £300 a year. Now worked as a Lock-up. Premium 1½ years' purchase.—No. 8652.

LANCASHIRE TOWN.—£2,500 a year. Panel 1,800 Great scope. Two houses available. Suited for two to work together. Premium 1½ years' purchase.—No. 8645.

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SURREY TOWN.—£2,600 p.a. Old-established. Two-fifths share for sale at 2 years' purchase. Panel nearly 1,000. Visiting fees 3/6 to 10/6. House on main road. 2 Surgeries, 3 bedrooms, bath, etc. Fair garden. Rent £80. Good schools.—No. 8629.

NORTHANTS.—Average £1,200, last year £1,500. Country PRACTICE with scope. Half share at 2 years' purchase and up to three-quarters in a year or two. Panel about 600. Parish p.o. £80 to £85. Visits 3/6 to 21/-. Vendor's attractive house available on his retirement. Single man preferred *pro tem.*—No. 8522.

MONMOUTHSHIRE.—Colliery PRACTICE. £2,620 p.a. or more. Panel of 2,445. Contract work about £1,230. Very little midwifery; 3 to 5 gns. Surgery, waiting, and consulting rooms and dispensary. Rent £30 p.a. Premium 1 year's purchase. Golf, fishing, and shooting within reach.—No. 8610.

CORNISH COAST.—£4,200 p.a. One-third share for £2,250. Surgical scope Panel about 1,500. Appointments about £220. Fees 3/6 up. About 100 midwifery cases p.a.; fees 2 gns. up. Central Surgery. Good house, 3/4 acre garden, tennis court, etc. Rent £120 or sell, but house need not be taken over.—No. 8602.

SOMERSET.—Country PRACTICE. About £900 p.a. Vendor retiring. Easily worked. Panel of 500. Good house and nice garden. Price £1,250 freehold. Premium for Practice about £1,300. Suit young man fond of surgery and hunting.—No. 8605.

LONDON, E.—Cash and Panel PRACTICE over £800 p.a. Old-established. Panel of 524 patients. Visiting fees 5/- and 10/-. Surgery fees 3/6, with medicine. Small house, rent £50 p.a. Premium £1,200.—No. 8562.

DORSETSHIRE.—Nearly £2,300 a year. PARTNER wanted to replace Junior retiring. Half share for sale. Mixed general Practice, with Surgical scope. Hospital in Town. Population about 10,000 and large district. Expenses moderate. Panel £150. Partner's house available, 6 bedrooms, 3 reception, etc. Garden. Gas and electric light. Rent £70.—No. 8537.

CORNWALL.—£5,000 a year. In favourite seaside resort. One Partner out of three retiring. Panel 2,400. Midwifery 100 cases; 2—6 guineas. Good house, rent £60. Hospital in Town, Nursing Home, etc. Scope for surgery. Good sporting facilities, schools, etc. One-fifth share for sale for 2 years' purchase.—No. 8493.

DURHAM.—£2,800 a year. Old-established PRACTICE in seaport and shipbuilding town of over 50,000. PARTNER wanted, owing to death of Senior. Appointments £300 a year. Panel 2,600 names. Fees 2/6 to 7/6. Surgery 2/6. Good house available. Rent £150 a year, covers interest and repayment of mortgage. Good schools, Hospital, etc. Premium for half share 2 years' purchase.—No. 8453.

NOTE.—Fuller particulars of the above, and also details of many others in all parts of England, will be found in a printed list of about 60 investments, including Institutions, Nursing Homes, &c., which will be sent post free to bona-fide intending purchasers on application stating their requirements.

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(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London. Oxford Street, W.1. Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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Practices and Partnerships for Disposal. **Full particulars sent free.**

1 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

2 DEATH VACANCY.—LONDON, S.W.—PRACTICE averaging £650 p.a. Panel nearly 1,000. House (4 bedrooms) to rent. Scope for increase.

3 EAST MIDLANDS.—Practice of £2,600 p.a. in good town. Panel 1,750. Very good house (8 bedrooms), nice garden and garage, to rent. Hospital. Premium 1½ years' purchase.

4 NEAR EAST.—Practice, with some major Surgery if desired. Good Hospital. Two appointments. Low premium for quick sale.

5 YORKSHIRE. — Partnership in Practice £2,300 p.a. in seaside town. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths or one-half share 1½ years' purchase.

6 SCOTLAND.—Sound Practice of over £800 p.a. in large thriving Hospital Town. Small panel. Modern house, with garden and garage, for sale or to rent. Premium to effect prompt sale £950, to include book debts (about £250).

7 LONDON, S.W.—Partnership in Practice £5,300 p.a. in suburban district. Panel 2,200. House (3 bedrooms) to rent. Premium one-third or two-fifths share 1½ years' purchase.

8 WEST OF ENGLAND.—Assistant required (with view to Partnership) in busy Town and Country Practice of £1,700 p.a. Good Hospital. Two-fifths share at 1¾ years' purchase to suitable man (English or Scotch).

9 LONDON, E.—Practice of £1,225 p.a. in thickly populated area. Panel 1,736. No midwifery. Suitable house to rent. Premium £2,000 cash, to include drugs, surgery, furniture and fittings, etc.

10 SOUTH COAST. — Small easily worked PRACTICE of £410 p.a. in fashionable Health Resort. No night work or midwifery. Large house. Premium—house and Practice—£6,000.

11. LONDON, E.—"Lock-up" Practice averaging £875 p.a. Panel nearly 300. Net rent 15/- weekly. Premium £1,100.

12 ESSEX.—Country Practice £400 p.a., near coast. No panel. Pleasantly situated house, garage, and garden. Ample scope. Premium—house and Practice—£1,100.

13 SEAPORT TOWN, South of England.—PARTNERSHIP (after preliminary Assistantship) in Practice averaging £2,200 p.a. One-third share would be sold to suitable man.

14 SOUTH AFRICA.—Old-established PRACTICE of over £1,800 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200.

15 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Choice of two houses. Prem. two-fifths share 1½ years' pur.

16 DEATH VACANCY. — NORTH DEVON. —PRACTICE about £700 p.a. in beautiful country district. Panel about 400. Fishing, hunting, shooting. House for sale.

17 CORNWALL. — Partnership in Country Practice about £2,000 p.a., near the coast. Panel 1,200. House (5 bedrooms), with beautiful garden, to rent. Excellent schools. Premium one-half share £1,400.

18 FIRST-RATE RESIDENTIAL TOWN within easy reach of London.—PARTNERSHIP in non-panel, non-dispensing Practice. Very little midwifery. House (5 bedrooms) to rent. Share worth over £2,700 p.a. at 2 years' purchase. Partner must be well qualified, pref. Oxford, Cambridge, or London.

19 SOUTH MIDLANDS.—Country Practice of just over £1,000 p.a. in hunting centre. Panel 700. Good house, with modern sanitation, excellent garden and paddock, to rent. Premium £1,500, to include drugs and fittings.

20 KENT.—Country Practice £1,260 p.a. in beautifully situated village. Panel about 400. Detached residence (5 bedrooms), garage, garden, and field, for sale. Premium 1½ years' purchase.

21 N.W. COAST.—Practice in small Seaside Town. Receipts average £946 (including £350 from panel). Small compact house (4 bedrooms), with nice garden, for sale. Sport. Premium—Practice and house—£2,000.

22 WEST HAM. — Practice (carried on by Medical Woman) of about £540 p.a., including small panel. No midwifery. House to rent. Premium 1½ years' purchase.

23 LONDON, S.W.—Practice over £900 p.a., close to West End. Panel 700. Premium 1½ years' purchase.

24 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

25 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

26 EAST COAST.—Partnership in good-class non-dispensing Practice of £3,400 in small select Seaside Resort. Practically no panel. Very great scope. Premium one-half share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

27 KENT. — Partnership in Practice of well over £2,000 p.a. in beautiful country district. Panel about 2,000. Detached modern house (4 bed. and dressing rooms) for sale. Premium one-half share 2 years' purchase.

28 MEDITERRANEAN RESORT.—PARTNERSHIP in good-class non-dispensing Practice of between £1,300/£1,400 p.a. Suitable flat to rent. Premium one-half share £950, with succession to whole Practice later.

29 LONDON, S.W. — Good-class non-panel PRACTICE in pleasant residential outlying suburb. Receipts formerly about £1,500 p.a. House in good position. Premium based on results.

30 NORTH MIDLANDS. — Country Practice about £1,000 in old-fashioned village, easy reach of County Town. Panel nearly 600. House (6 bed. and dressing rooms), with garage, garden, and orchard, for sale. All kinds of sport. Premium 1½ years' purchase.

31 LONDON, N.W. — Steadily increasing PRACTICE easy distance of Marble Arch. Receipts 1929, £422. Panel 550: House, with 3 bedrooms, for sale. Great scope. Premium £650.

32 DEATH VACANCY.—HARROGATE.—Receipts about £600 p.a. Panel over 500. Well-situated house (6 bedrooms) to rent.

33 LONDON, N.—Sound easily worked PRACTICE in residential district. Receipts average £2,590 p.a., including small select panel. Good corner house (5 bed and dressing rooms), with garden, for sale. Small Hospital. Premium £3,000.

34 SOUTH WALES. — Steadily increasing PRACTICE in good Town, with beautiful surrounding country. Receipts last 12 months £750. Panel 700. Centrally situated house (6 bedrooms) for sale. Scope for increase.

35 SOUTH OF ENGLAND.—Practice worth £500 p.a. in a coast town. Detached house (6 bed and dressing rooms) to rent. Premium £500.

36 HOME COUNTIES.—Increasing Country PRACTICE within 30 miles of London. Receipts average over £870 p.a. Panel 499. Detached house (5 bedrooms), garage, and good garden, to rent. Premium 1½ years' purchase.

37 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms), garden and garage, for sale. Premium 1½ years' purchase.

38 X-RAY PRACTICE in large Town in the S.W. Receipts average £950 p.a. Vendor on Staff of Hospital. Premium £900.

39 LONDON, E. — Cash and Panel Practice (held by Medical Woman) in densely populated area. Receipts £360 p.a. Panel 290. Small house. Rent £50. Prem. £450.

40 ESSEX. — Non-panel Practice averaging over £1,400 p.a. in populous suburban district. Detached double-fronted house, with good garden, etc., for sale. Scope for increase. Premium £2,000.

41 DEATH VACANCY.—BIRMINGHAM.—PRACTICE averaging £750 p.a. Panel 380. Charming house (4 bed and dressing rooms), garage and nice garden, for sale.

42 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium.

43 NOTTINGHAMSHIRE. — Country PRACTICE averaging £1,070 p.a. Panel 700. Good house (6 bedrooms), garage, and 1½ acres ground, to rent. Great scope. Premium 1½ years' purchase.

44 KENT. — Partnership in Practice about £4,000 p.a. in good residential district. Panel about 1,100. House (6 bedrooms), with nice garden, for sale. Scope for surgery. Premium for a 5/24ths share 2 years' purchase.

45 SOUTH OF ENGLAND. — Partnership in non-dispensing Practice £3,600 p.a., in attractive watering-place. Panel about 1,800. Great scope. One-fourth share now and up to one-half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

46 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,020. House (5 bedrooms), with electric light, for sale. Premium 1½ years' purchase.

47 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house for sale. Scope. Premium 1½ years' purchase.

48 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £775.

49 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

50 ITALY. — Season Practice in famous City. Average receipts last 4 seasons £522. Up-to-date Hospital. Premium £553.

51 LONDON, E.—Cash and Panel Practice of about £350 p.a. (£310 from panel). Well-situated house (3 bedrooms) to rent. Considerable scope. Premium £1,000.

52 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

53 BIRMINGHAM.—Practice over £1,200 p.a. in residential suburb. Small panel. Particularly nice house to rent on lease. Premium 1½ years' purchase.

54 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

55 MIDLANDS.—Partnership in Practice over £6,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

56 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

57 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

58 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

59 SOUTH OF ENGLAND. — Practice averaging £750 p.a. in first-rate country town. Panel 937. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

60 GLOUCESTERSHIRE.—Practice averaging £1,300 p.a. in an industrial village. Panel 1,169. House (5 beds.) for sale. Beautiful surrounding country. Prem £1,250.

61 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

62 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale. Premium £1,050.

63 KENT AND SURREY BORDERS.—PRACTICE about £800 p.a. in growing and pleasant residential district. Choice of residence for sale. Good scope. Premium £1,200.

64 EASTERN COUNTIES. — Partnership in Country Practice of £1,800 p.a. Panel 755. Partner should be able to give anæsthetics. Premium one-half share 2 years' pur.

65 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

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1. LONDON, EAST.—Old-established and very sound chiefly working-class PRACTICE, averaging £1,225 p.a., including panel of over 1,700. Appt. worth £100 p.a. Visits from 3/-. No midwifery. Very good house, with 8 rooms, etc. Rent on lease £115 p.a., part let off. Premium £2,000, cash. Excellent scope for increase.
3. LONDON, NORTH-WEST.—In a pleasant rapidly growing suburb, old-established and increasing mixed-class PRACTICE, averaging £966 p.a. (last year £1,097), including club £50 and panel of nearly 1,000. Visits 3/6 to 10/6. Mid. 3½ to 10 gns. (about 20 cases). Semi-detached house, with good accommodation, garden, garage. Vendor's leasehold (47 years to run at ground rent of £9). Price £1,000. Premium £1,500.
4. GLOS. — COUNTRY PRACTICE. — Old-established PRACTICE in picturesque surroundings, averaging about £1,250 p.a., including panel of over 1,100. Visits from 3/-. Commodious house, with 3 reception, 6 bedrooms, etc. Garden. Garage. Price for freehold £1,500, £1,000 on mortgage. Premium £1,850.
5. WEST OF ENGLAND.—(Within 100 miles of London).—PLEASANT TOWN.—Old-established mixed general PRACTICE. Average income for last 2 years about £1,250, including panel of 1,200. Fees 2/6 to 6/-, and a few at 10/6. Little midwifery. Excellent house, recently redecorated, with ample accommodation. Garden. Garage. Good sport and schools. Premium for Practice and house £4,500.
6. NORTH LONDON.—Old-established good middle-class PRACTICE, held by Vendor 25 years. Gross cash receipts for immediate past twelve months £2,811. Selected panel of about 250. Fees from 5/- upwards. Mids. from 7 gns. (only few cases). Very good corner house, non-basement, with 3 reception, 5 bedrooms, etc. Price for leasehold £1,800. Premium only £3,000.
7. LONDON, S.W.—Within easy reach of Charing Cross.—Good middle-class non-panel PRACTICE, averaging over £2,000 p.a. Fees 2/6 to 10/6. Mids. 5 to 10 gns. Suitable house, with 2 reception, 5 bedrooms, etc. Garden. Rent on lease £65 p.a. Premium £3,000.
8. SOUTH-WEST OF SCOTLAND.—COAST TOWN.—Old-established, non-dispensing, good mixed PRACTICE. Income for the last year £1,100, including panel of 400 and increasing. Fees 2/6 to 2 gns. Good house, with 2 reception, 5 bedrooms, etc., rent on lease £42 p.a., or could be bought for £1,300. Premium £1,000.
9. BIRMINGHAM SUBURB. — *Well-established and rapidly increasing* mainly working-class PRACTICE, producing for last year £763. Panel of 860. Visits 2/6 to 7/6, practically all cash. Little midwifery. Suitable small house (on lease 77 years). Price £600. Premium £1,050.
10. *SOUTH DEVON.—COUNTRY PRACTICE, steadily increasing, and* situated in very pleasant agricultural district, within easy reach of coast. Gross cash receipts for past 12 months £2,326. Panel produces, with mileage, about £420. Fees 3/6 to 21/-. Only about 20 cases of midwifery from 2 to 5 gns. Suitable house, in main street, *with 2 reception, 5 bedrooms, etc. Garden. Garage. Rent on* lease £50 p.a. Good sport. Premium £2,800.
11. SOMERSET.—Attractive Town, within easy reach of coast. Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. *worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good* surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
12. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000.)—Old-established mixed-class PRACTICE. Income last year £625, but offering exceptional scope. *Panel of about 430 and 2 small* appts. Visits 3/6 to 5/-. Practically no midwifery. Very attractive residence, on main road and near the sea, with professional rooms, 2 reception, 4 bedrooms, bathroom, etc. Pretty garden. Garage. Rent on lease £100 p.a. Premium 1½ years' purchase.
13. PARTNERSHIP.—MIDLANDS.—*COUNTY TOWN.—TWO ONE-FIFTH* SHARES (suitable two friends or will be sold separately) are offered in a very old-established good mixed Practice owing to the retirement of the senior of two partners. Gross cash receipts for immediate past 12 months over £5,900, including panel of 3,400. Fees from 4/-. *Not much midwifery. Good house, with 2 reception, 6 bedrooms, etc.* Rent on lease £75 p.a. Premium for share two years' purchase.
14. SOMERSET COAST.—In a small but increasing and delightful seaside resort, the five-twelfths share of a very old-established PRACTICE, producing last financial year £1,600, but offering exceptional scope. *Panel brings in £480 and appointments. Visits 5/- to 4 guineas.* Mid. 4 to 6 gns.; only about 12 cases yearly. Choice of 2 suitable houses (price, freehold, £950), with gardens. Electric light and gas. Premium 2 years' purchase.
15. SOUTH-WEST COAST.—VERY FAVOURITE RESORT.—Old-established good middle-class non-panel PRACTICE, held by *Vendor (who is* retiring) over 20 years. Receipts average £1,142. Fees 5/- to 10/6 and upwards. Mids. 5 to 15 gns. (about 12 cases). House is an exceptionally good one, in perfect order, with ample accommodation, central heating, electric light. Good garden. Garage. Price for freehold £3,250. Premium 1½ years' purchase.
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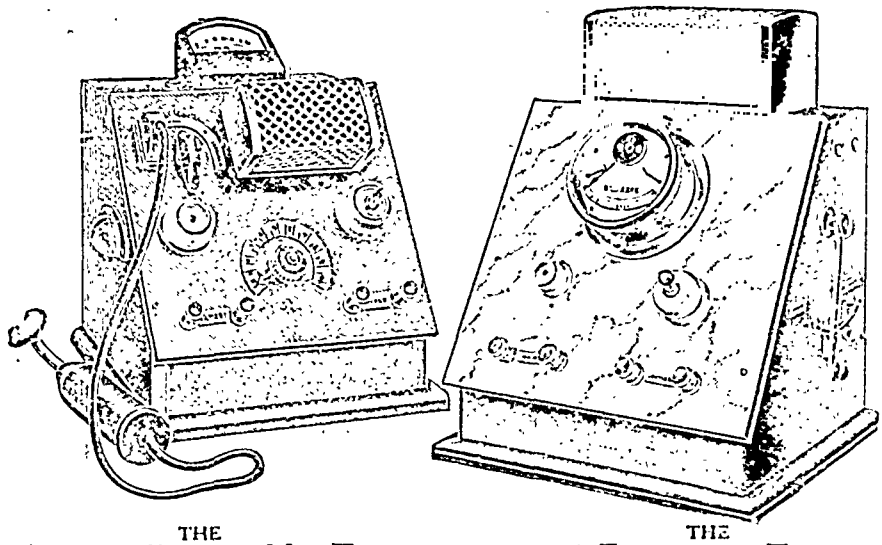
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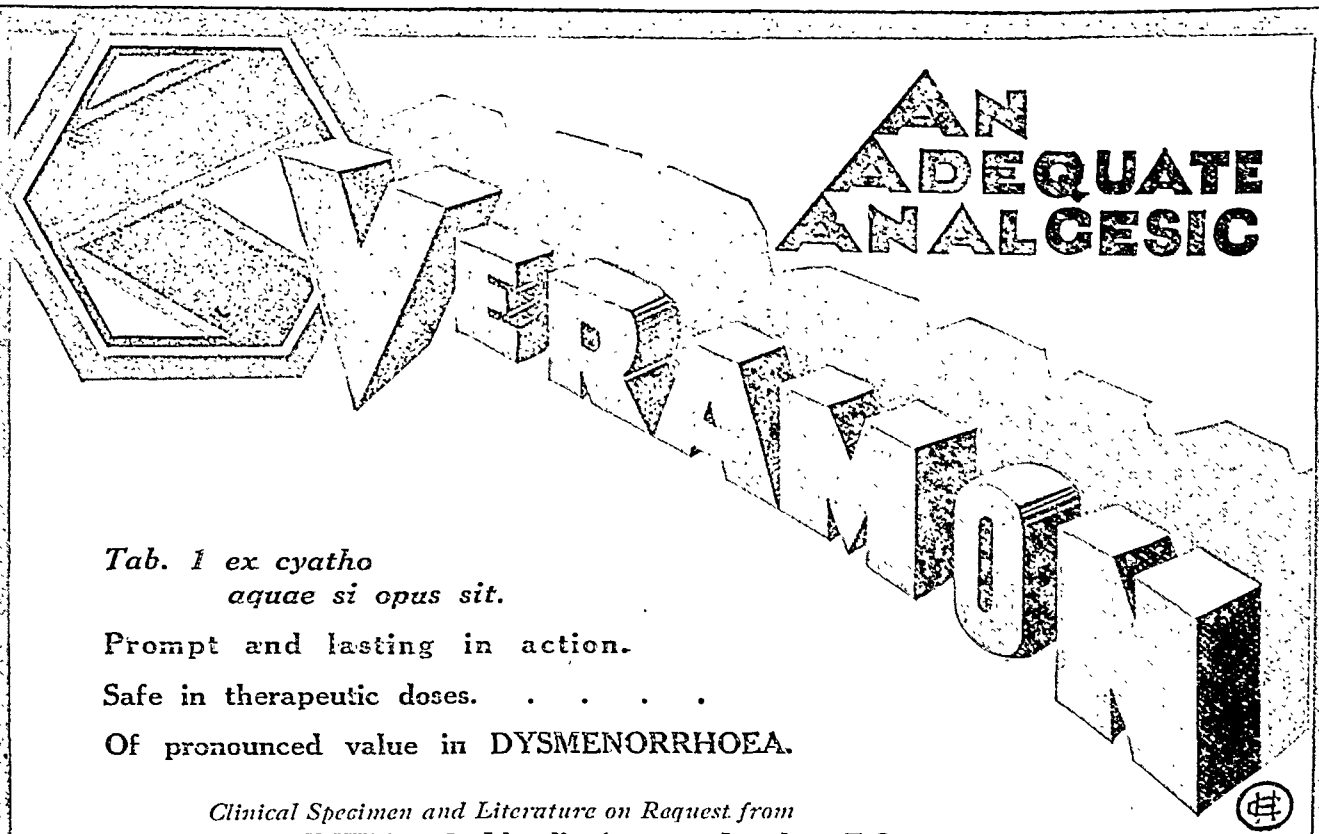
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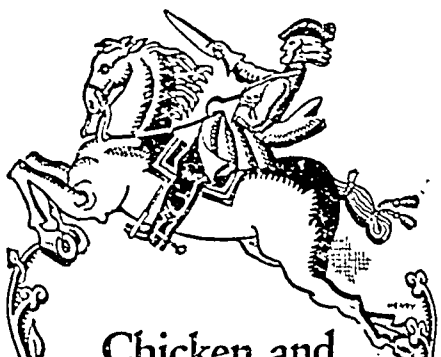
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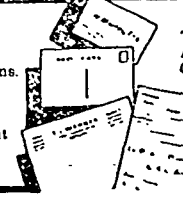
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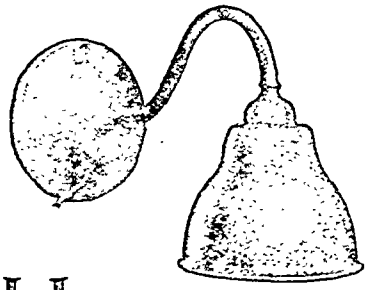
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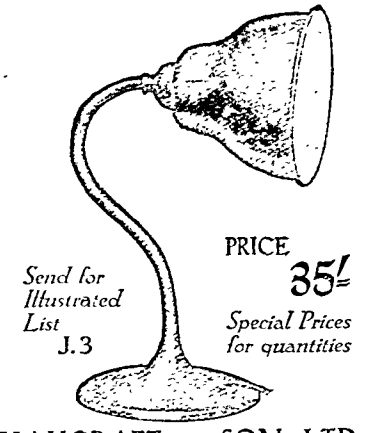
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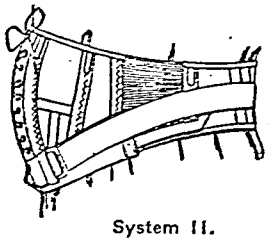
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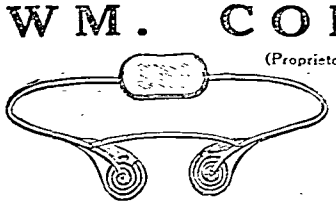
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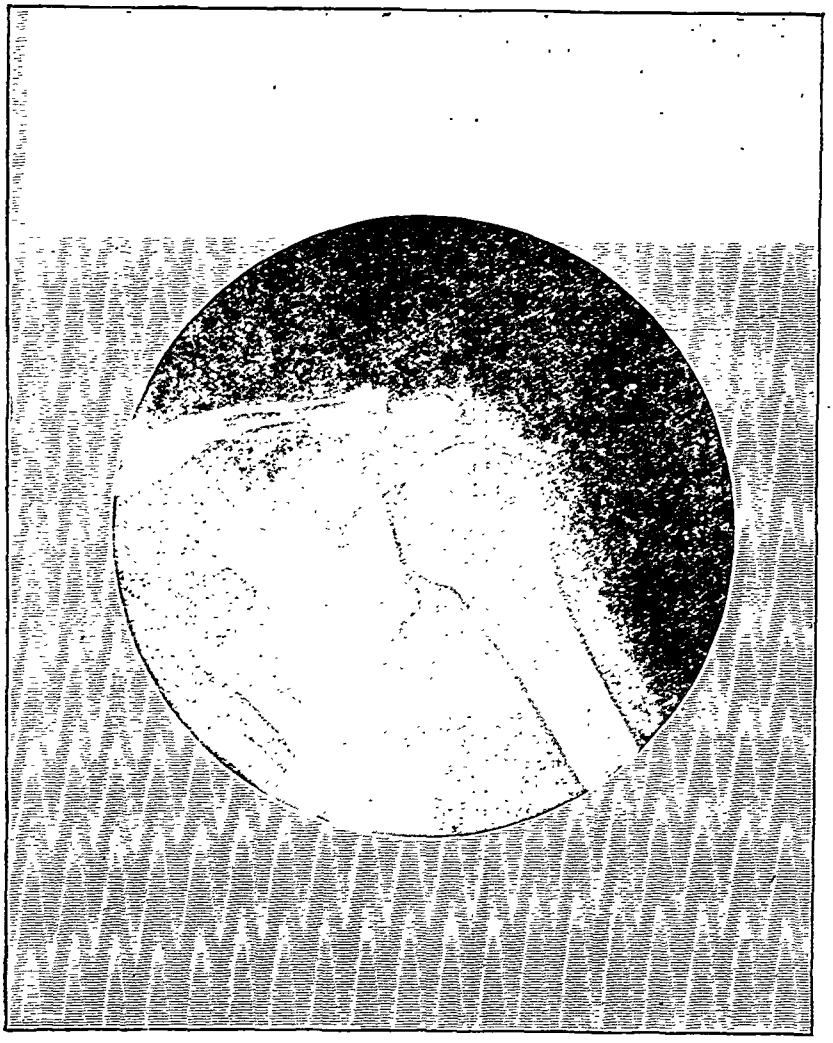
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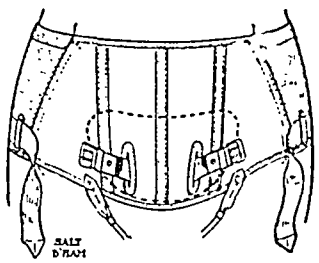
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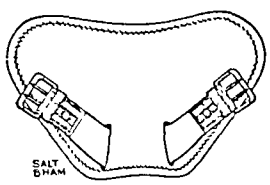


Fig. A.
Front View of Springs and Pad.

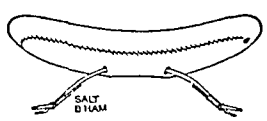


Fig. B.
View from top showing thickness of spongy rubber pad and position of steel springs.

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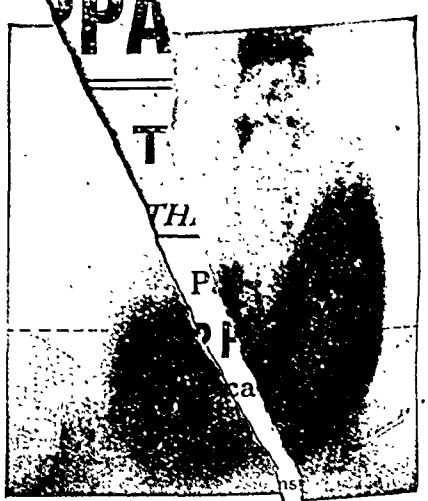


Fig. A.
A slightly dilated and much dropped stomach radiographed immediately after partaking of a Barium (6 ozs.) "Umbrose" Meal. The greater curvature projects 3½ in. below a line drawn from one iliac crest to the other.
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Fig. A.

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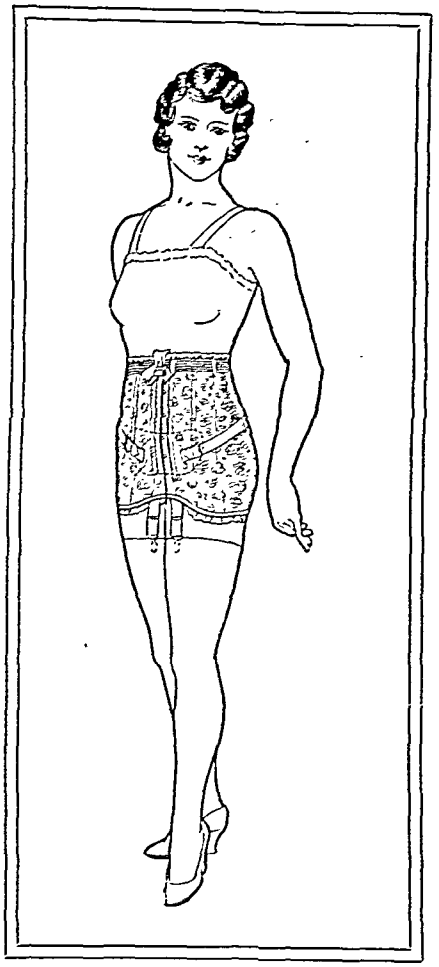
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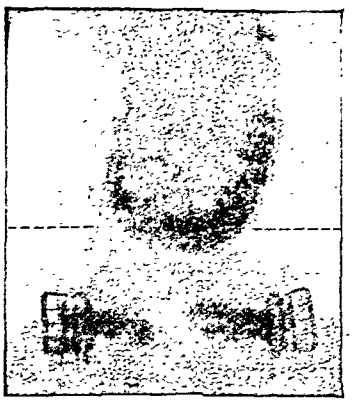


Fig. B.

Fig. B.

Shows same stomach radiographed 15 minutes later, the patient having lain upon a couch, the bottom feet of which were raised 9 in. *The Belt was then applied,* the patient allowed to walk about for 5 to 6 minutes, and the radiograph *taken in the upright position.*

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Alex Robb & Co Ltd (Dept. 6), NURSERY BISCUIT FACTORY, ATKINS ROAD, CLAPHAM PARK, LONDON, S.W.12.



WILL YOU ACCEPT ½lb. GRATIS?
In order that Doctors all over the country may test the tea their colleagues have so generously recommended, we will send ½-lb. free to any medical man who will write for it. This offer applies solely to members of the Medical Profession.

DOCTOR'S CHINA TEA

WHY IT IS PRESCRIBED FOR GASTRIC PATIENTS.

When ordinary tea is out of the question it is essential that only the finest China should be drunk. Doctor's China Tea has won the enthusiastic approval of practitioners simply because it is a perfect blend of the finest China leaf with all excess tannin eliminated. It can therefore be prescribed for invalids and dyspeptics with safety—it has no ill after-effects.

Priced at 3/- and 3/8 per lb. A super quality at 4/2 per lb.

HARDEN BROS. & LINDSAY, LTD.
(Dept. 153), 30/34, Mincing Lane, London, E.C.3.

CYS.6

Builds up in underweight conditions and provides a perfectly balanced, highly nutritive diet for growing children

TO the problem of the "underweight" child Horlick's Malted Milk provides a convenient solution.

For many years it has been successfully used by the medical and nursing professions for fast-growing children, for invalids, for expectant and nursing mothers — in all cases where it is particularly important to sustain strength and replenish natural energy quickly.

Excellent results obtained by adding Horlick's to the diet of growing children have been strikingly recorded in many thousands of letters written by parents and members of the medical profession.

Made from fresh, full-cream cows' milk, selected wheat and malted barley, Horlick's Malted Milk constitutes a perfectly balanced food — containing fat, proteids, and soluble carbohydrates in correct nutritive ratio.

The vitamins of its constituents are unimpaired by the Horlick process.

Horlick's contains neither cane sugar nor unaltered starch, but presents in proper proportions a sufficiency of valuable malt sugars, for which children have a greater toleration. Moreover, Horlick's is partially pre-digested during manufacture, thereby assuring perfect assimilation.

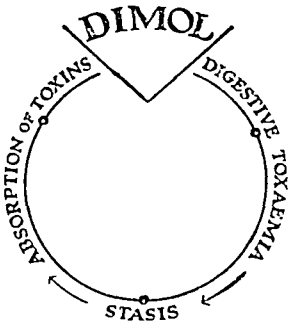
In addition to its important body-building qualities, Horlick's has the advantage of being an extremely palatable beverage. Most children like the natural flavour of malt and will drink Horlick's with pleasure. And it is now obtainable also in a new Chocolate Flavoured form — identical in constituents with the original Horlick's, but with fine chocolate added.

Horlick's Malted Milk (both forms) is obtainable everywhere in sealed glass bottles, at 2/-, 3/6, 8/6 and 15/-. Also in tablets.

Further details and supplies for tests may be obtained from Horlick's Malted Milk Co., Ltd., Slough, Bucks.

Break the Vicious Circle in Chronic Constipation

THOUGH THE differential action of many of the toxins of the intestinal tract on the tissues of the body is still a matter of conjecture, it is probable that each putrefactive organism creates a toxin productive of some deleterious effect. It is on this hypothesis that constipation is primarily ascribed to the influence of some of these poisons acting directly on the musculature of the bowel or on the nerve cells and ganglia in its walls.



HOWEVER THE diminished peristaltic action is caused, it is certain that it is the beginning of a vicious circle, which is completed by a deepening line of inertia, stasis, digestive toxaemia, and lowered resistance of the glands and cells of the mucosa.

TO BREAK THE vicious circle, an efficient, non-toxic intestinal disinfectant is clearly indicated; the resultant action is easy to understand. Now that the problem of intestinal disinfection has been solved by the introduction of the benzene derivative Dimol, we know that the putrefactive organisms can be destroyed, thus shutting off the further supply of toxin. The nerve cells, released from the paralysing action of the toxins, are once more free to stimulate the muscles, with the consequent result that peristalsis is re-established—the accumulated contents of the intestine are expelled and the vicious circle is broken.

Samples and Literature will be sent on application to the

Dimol Laboratories, 40, Ludgate Hill, London, E.C.4.

Distributing Agents:

SANGERS LTD., 258, EUSTON ROAD, LONDON, N.W.1.

Cremo-Carbonates

(Tri-Carb-Cream-Mulford)

Effective
Non-Caustic
Palatable

H. K. MULFORD
COMPANY LTD.
Regent Arcade House,
252, Regent Street,
London, W.1

CREMO-CARBONATES presents certain unique features which warrant its preference whenever an antacid and corrective is indicated. For the first time the well-known protectives and antacids—bismuth, magnesia, and lime—are supplied as a suspension of particles of colloidal dimensions.

Its colloidal nature gives it maximum covering power superior to that of a mere mechanical mixture of bismuth, magnesium, and calcium.

CREMO-CARBONATES is a soothing antacid, corrective, and digestant, particularly useful in the treatment of hyperacidity accompanied by flatulence and of any other conditions where there is excessive secretion of the gastric juices.

Literature and samples sent free to members of the medical profession.

OVALTINE

IN GALACTOSIS

Diet in lactation is a matter of no less importance than diet during pregnancy.

"Ovaltine" completely meets the requirements of the diet of the nursing mother by providing adequate and appropriate nourishment.

It is easily digested, wholly nourishing, and does not convey any noxious or unpalatable substances to the breast milk. For these reasons "Ovaltine" will be found a most dependable prescription for establishing galactosis.

"Ovaltine" is recommended to be given about the sixth month of gestation and should be continued throughout the nursing period. A rich milk secretion is thus encouraged and the health of the patient safeguarded against overstrain.

As an example of the nutritive power of "Ovaltine" it may be stated that one cupful yields more nourishment than 3 eggs or twelve cups of beef-tea.

A liberal supply for clinical trial sent free on request.

A. WANDER, LTD., 184, Queen's Gate, S.W.7. *Works:* King's Langley, Herts.



NEHEBKAU.—*A Serpent Goddess who performed many offices for the dead.*

M.214

'Panopepton'

AN IDEAL FOOD FOR INVALIDS

'PANOPEPTON' can be relied upon in cases where the nutrition of the patient is of prime importance.

'PANOPEPTON' is the most nutritious, the most agreeable and reliable, the **BEST** of all foods for the sick.

Supplied in 12-oz. bottles.

'Pepsencia'

'PEPSENCIA' **is an ever-ready digestive fluid,** containing all the soluble constituents of the gastric juice preserved in an agreeable aromatic menstruum.

It represents both the peptic and milk-curdling ferments obtained directly from the fresh peptic glands.

Supplied in four sizes:—4-oz., 8-oz., 16-oz., and W. Qts.

Originated and Manufactured by
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NEW YORK, and 65, Holborn Viaduct, London, E.C.1.

Agents:
Burroughs Wellcome & Co.,
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Medisoap Therapy

This method of skin medication has been brought into favour by the ease with which applications can be made and the certainty of absorption through regularity of use by the patient. A further advantage is that the intensity of action of the medicaments may be increased or modified by varying the manner in which they are used.

A PRESCRIBER'S INDEX

relative to the comprehensive range of MEDISOAPS (Midgley's Medicated Soaps) is now available for members of the Medical Profession, and may be had on application to:

Sole Makers:
CHARLES MIDGLEY, LTD. The Soap Specialists MANCHESTER
Associated with EVANS SONS LESCHER & WEBB, LTD., LIVERPOOL & LONDON.

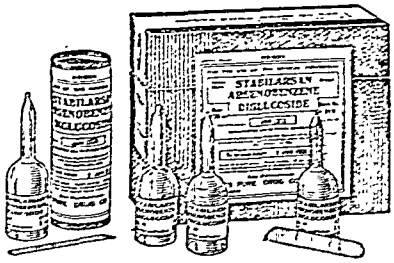
BOOTS PRODUCTS
OBTAINABLE THROUGH ALL BRANCHES OF
The Boots Chemists

WHOLESALE AND EXPORT DEPARTMENT,
BOOTS PURE DRUG Co. Ltd.,
NOTTINGHAM, ENGLAND.
Telephone: Nottingham 45501.
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Stabilarsan (BOOTS)

THE Standard Drug for the treatment of Syphilis and other Spirochætal Diseases. Stabilarsan is manufactured under Licence No. 19, from the Ministry of Health, tested in accordance with the regulations made under the Therapeutic Substances Act, 1925, and is approved by the Ministry of Health for use in Public Institutions.

DOSES:
0·10 gm. 0·30 gm.
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Supplied in Sterile Solution, in Ampoules READY FOR USE.



EPHEDRINE B.D.H.

In Hay-Fever Treatment

The value of Ephedrine B.D.H. in hay-fever lies in its power to reduce the sensitiveness of the mucous membrane and to contract the capillaries; hence the quick relief that it affords from the nasal congestion associated with this condition.

Ephedrine B.D.H. is issued specially for Hay-Fever treatment as follows:—

Ephedrine B.D.H.
Inhalant
A solution of Ephedrine B.D.H. in liquid paraffin

Ephedrine B.D.H.
Inhalant Compound
Containing camphor, menthol and oil of thyme in liquid paraffin

Ephedrine B.D.H.
Nasal Spray
An aqueous solution of Ephedrine Hydrochloride B.D.H.

Ephedrine B.D.H.
Nasal Jelly
Containing Ephedrine B.D.H. in pure petroleum jelly

Full particulars on application

THE BRITISH DRUG HOUSES LTD. LONDON N-1

A1112

You will like to prescribe them.



Because the relief of pain is naturally your first desire, you will like to prescribe

Anusol BRAND Haemorrhoidal Suppositories

They relieve pain without the use of narcotic drugs; they control haemorrhage and allay inflammation. Safe to use in all rectal diseases.

A trial of Anusol Brand Suppositories will prove a satisfying experience. May we send you a liberal trial package?

British Distributors:
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Manufactured by GOEDECKE & CO., LEIPZIG (Germany)

Valentine's Meat-Juice

In the **Treatment** of **Weak Babies,** in the **Gastric** and **Enteric Troubles** of **Infants** and in the **Wasting** and **Febrile Diseases** of **Children,** the **Ease** of **Assimilation** and **Power** of **Valentine's Meat-Juice** to **Sustain** and **Strengthen** has been **Demonstrated** in

Hospitals for Children.

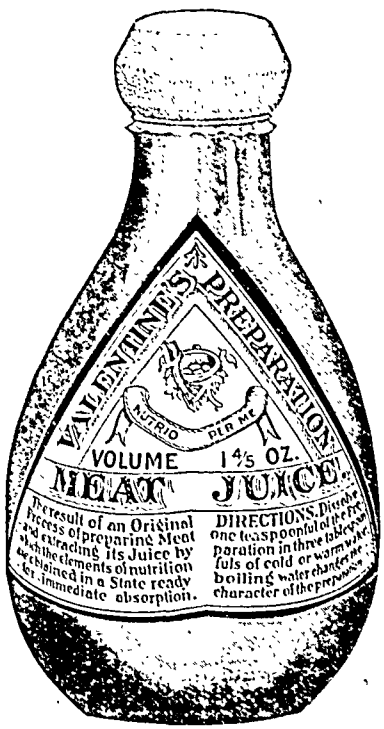
The quickness and power with which **Valentine's Meat-Juice** acts, the manner in which it adapts itself to and quiets the irritable stomach, its agreeable taste, ease of administration and entire assimilation recommend it to physician and patient.

Physicians are invited to send for Clinical Reports.

For sale by European and American Chemists and Druggists.

VALENTINE'S MEAT-JUICE COMPANY,
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JB 95



MONSOL *in* MIDWIFERY

An authority on the subject has expressed the considered opinion that the use of Monsol in midwifery would reduce the incidence of Puerperal Sepsis by fully 90 per cent.

Bacteriologists and Clinicians have proved repeatedly that Monsol has a selective action on Streptococci—an action ten times greater than lysol (which cannot destroy these germs except at a concentration liable to injure the tissues).

Outstanding features of Monsol are:

1. A high germicidal power against the organisms that cause sepsis.
2. A bland and emollient action—non-irritating to the tissues and mucous membranes at therapeutic concentrations.
3. Low toxicity. (One-sixth as poisonous as lysol.)
4. Great power of penetration, reaching deep-seated inflammation.

Many Hospitals, Nursing Homes and Lying-in Institutions are now specifying the use of Monsol in all maternity cases. In addition to reducing the risk of infection, Monsol leaves the hands and skin soft and supple, a fact much appreciated by the Nursing Profession.

Monsol is the product of a Mond Laboratory, prepared under strict scientific control.

MONSOL
THE SAFE GERMICIDE

Monsol Toilet Soap 8d. Monsol Throat Pastilles 1/3 & 2/3. Monsol Dental Cream 1/-. Monsol Ointment 1/3 & 2/-. Monsol Liquid Germicide 2/-.

Manufacturers: The Mond Staffordshire Refining Co., Ltd., Abbey House, London, S.W.1.
Trade enquiries to: The Monsol Distributing Agency, 165/172, Drummond St., London, N.W.1.

PHYSIOLOGICAL TREATMENT OF CONSTIPATION

TAXOL

COMPOSED OF

EXTRACT OF THE INTESTINAL GLANDS, which strengthens the glandular secretions of the organ.
BILIARY EXTRACT, which regulates the secretion of the bile.
AGAR-AGAR, which rehydrates the contents of the intestines.
LACTIC FERMENTS, anti-microbian and anti-poisonous action.

IN TABLET FORM *ITS USE DOES NOT LEAD TO HABIT*

Laboratories: **LOBICA**, *46, Avenue des Ternes, PARIS (17e)*

FOR—

EXPECTANT AND NURSING MOTHERS

"ALMATA"

KEEN'S COMPLETE FOOD

Medical Practitioners and Nurses are invited to write for samples and full analytical and clinical data to KEEN ROBINSON & CO., Ltd., Carrow Works, Norwich.

Sold by all Chemists. *Price 2/1 and 4/- per tin.*

"BYNO" HÆMOGLOBIN

A Powerful Hæmatinic and Tonic

Presents the hæmoglobin, proteins and salts of fresh blood in combination with "Bynin," Liquid Malt. The hæmoglobin is prepared by a special process which conserves its physical properties and prevents decomposition, an important point since decomposition is accompanied by loss of therapeutic properties.

Advantages of "Byno" Hæmoglobin over inorganic iron preparations are its rapid absorption, greater hæmatopoietic effect, and its freedom from gastro-intestinal disturbances.

Indicated as a routine treatment in simple anæmias, in general debility and in convalescence.

Clinical trial samples and literature will be gladly sent on request.

Allen & Hanburys Ltd.

Telephone: 3201 Bishopsgate (10 lines) **London, E. 2** Telegrams: "Greenburys Edo London".

For quick relief in

Urinary Tract Infections

CAPROKOL

The first result of Caprokol administration is prompt relief from pain, burning, frequency and other unpleasant symptoms associated with pyelitis, cystitis, urethritis and similar infections of the urinary tract.

The beneficial effects, however, do not end here, for in Caprokol there are combined with the properties of a soothing anodyne those of a powerful germicide. Persistent treatment, therefore, not only brings symptomatic relief, but eventually effects the complete sterilisation of the urinary tract.

Capsules for Adults *Solution for Children*

Literature on request

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Ca.27

Regesan

CREAM OF MAGNESIA with LIQUID PARAFFIN

(Contains 30% Liquid Paraffin).

A stable well-balanced [illegible] 30% Liquid Paraffin held in suspensi[illegible] Its consistency is such that the [illegible] by Liquid Paraffin is eliminated.

Regesan Cream of Magnesia with Liquid Paraffin provides suitable treatment for all digestive troubles with which constipation and hæmorrhoids are associated. It is certainly the ideal laxative during pregnancy and lactation, and most suitable for infants and children.

Price 1/6 per bottle.

Full-size trial package free to Medical Practitioners in the British Isles on application to Boots the Chemists, Station Street, Nottingham.

OBTAINABLE FROM

The Boots Chemists

NEARLY 900 BRANCHES IN GREAT BRITAIN



Boots Pure Drug Co. Ltd., Nottingham

Irritable Bowel

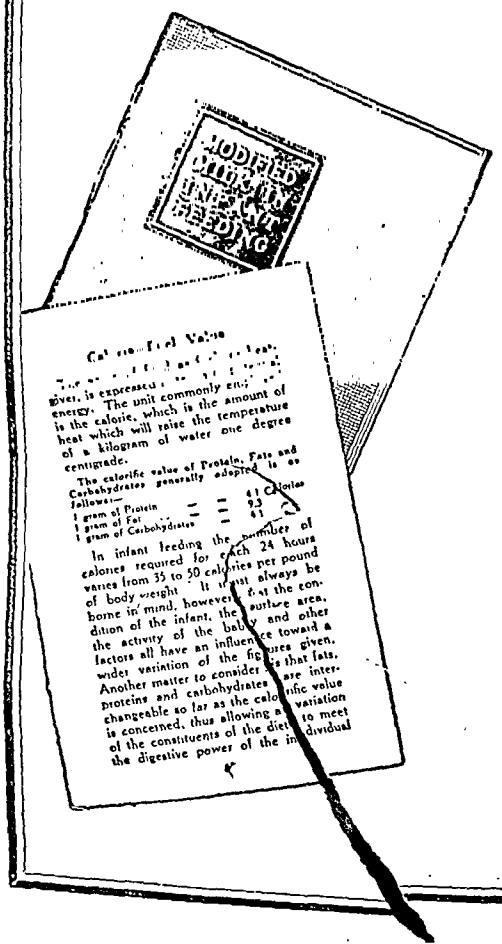
Nujol is of great assistance in the treatment of chronic irritable bowel. Unlike cathartics, whose action is stimulating to the muscles or irritating to the lining of the intestines causing excessive secretion of mucus, Nujol acts merely as a gentle lubricant and solvent of impacted fecal matter. Though it absorbs intestinal toxins to a high degree, it cannot, itself, be absorbed. Consequently, toxemia is prevented, peristalsis is at a natural rate, and the stool is normal and properly formed.

Nujol

REGISTERED TRADE MARK.

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McC14



Mellin's Food

yields a complete and perfect diet for the hand-reared infant because it supplements the deficiencies of cow's milk, and is adaptable to the varying needs of the infant in health and in sickness. The mixture may be readily modified to meet the daily food requirements of any infant from birth onwards.

Corresponding to breast-milk in composition and properties, it is suitable for the most delicate babe from birth. The Mellin's Food prevents the formation of indigestible curd and assists the digestion of the milk.

Samples and booklet "Modified Milk in Infant Feeding" will be gladly forwarded to members of the medical profession on request.

MELLIN'S FOOD Ltd., LONDON, S.E.15

R A N D C

TRADE Endomin MARK

Anaemia and its treatment. The use of liver has practically revolutionized the treatment of Anaemia, but it frequently gives rise to digestive disturbances. The metallic elements present in liver have a pronounced effect in increasing haemoglobin and red blood corpuscles.

Endomin—a hematopoietic based upon an entirely new principle—contains the essential metallic elements in a lipoid soluble readily assimilated tablet form. Packings of 100, 500 & 1,000 Tablets.

You are invited to send for a free stock size bottle to the Distributing Agents: Coates & Cooper, 41, Great Tower Street, London, E.C.3.

Manufactured by
REED AND CARNRICK
Pioneers in Endocrine Therapy
Jersey City, New Jersey.
South Africa: Lennon Ltd., Cape Town & Branches.

FORMULA

Each tablet contains in lipoid soluble form

Iron	8.0 mg.
Copper	0.6 mg.
Manganese	0.4 mg.
Zinc	0.3 mg.
Nickel	0.03 mg.
Cobalt	0.03 mg.
with the addition of Sodium Germanate	0.05 mg.

Roboleine
THE FOOD THAT BUILDS THE BODY

ROBOLEINE contains all essential vitamins:—BONE MARROW: Yellow marrow from the long bones to stimulate formation of red corpuscles and so strengthen the whole nervous system. Red marrow from the rib bones to stimulate formation of white corpuscles and increase resistance to disease. MALT, a natural laxative and source of energy. EGG YOLK, containing lecithin, the greatest nerve food known. LEMON JUICE, neutralised for building bone and preventing skin trouble.

ROBOLEINE corrects Metabolism and is recommended in cases of Malnutrition, Debility, Sleeplessness, Loss of Weight, and in all Tuberculous conditions; also to Nursing and Expectant Mothers as a galactagogue, and as an adjunct in the Dieting of Infants, etc.

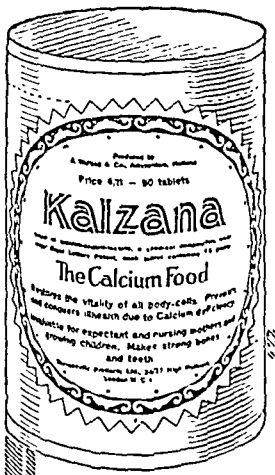
ROBOLEINE is concentrated nourishment that revi[tal]ises body and feeds the nerves. Easily assimilable, [the] reconstructive tonic food available.

Samples sent gladly on request.

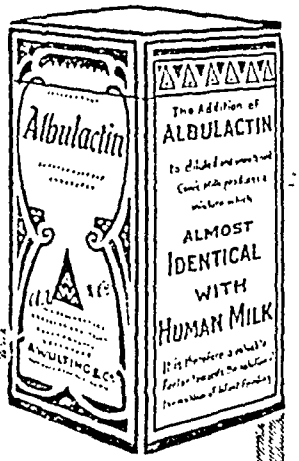
OPPENHEIMER SON & Co.,
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, LTD.
[Ne]w Close,
ON, E.C.1

Roboleine
the food that Builds



Wulfing Products

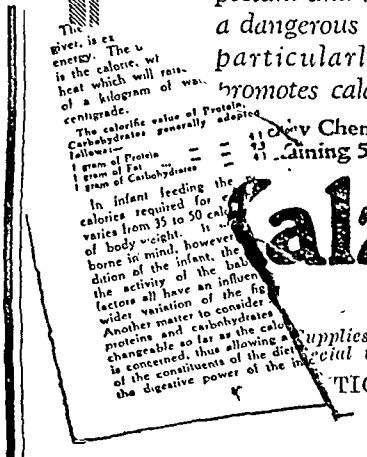


Calcium Deficiency in Women

Pregnancy and lactation often produce manifestations of calcium deficiency because the calcium reserve cannot meet the demands made upon it. The systematic use of Kalzana in these cases stays the destructive processes in the teeth and bones of the mother, and ensures normal development of the skeletal structure of the infant. The special feature of Kalzana is that it combines calcium lactate and sodium lactate in the form of a double salt, with the result that the sodium element improves the blood alkalinity to the extent necessary to secure adequate calcium retention.

The Practitioner says:

"*Kalzana acts efficiently in promoting the growth of strong bones and healthy teeth, in protecting the expectant and nursing mother against a dangerous loss of calcium . . . . particularly because Kalzana promotes calcium retention.*"



Of Chemists in air-tight packets containing 50 and 100 tablets.

Kalzana

Rational Infant Feeding

The aim, in artificial feeding, is to produce as near as possible the equivalent of human milk, and therefore the most important constituent is the lactalbumin, because, apart from its protein value, it is responsible for breaking down the casein curd into minute, digestible particles. Albulactin is pure, soluble lactalbumin — the vital proteid of human milk — and when added to properly modified cow's milk it produces a milk mixture closely allied to human milk in composition and physiological effect. With Albulactin it is easy to meet every phase of infant feeding between the premature weakling and the normal robust infant.

The British Medical Journal says:

"*There appears to be every reason to expect this preparation to prove of great value in the 'Hand feeding' of infants.*"

Supplied in bottles at 1/9, 3/6 and 7/-

Albulactin

Made by A. WULFING & CO. (Foreign Produce)

Supplies for your own dispensing, and for Hospitals, Sanatoria, etc., are available on special terms. Adequate samples for clinical trial sent with pleasure upon request.

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Wulfing



(Aesculapius)

INJECTION TREATMENT OF

VARICOSE VEINS

Quinine and Urethane Method.

The injection treatment of Varicose Veins with a solution of Quinine and Urethane, introduced by Genevrier, gives excellent results. It is safe (no fatality after thousands of injections as yet has been recorded), it is non-toxic, non-caustic, and produces no general reaction or febrile disturbances.

VARIXOL

This is the scientifically prepared solution made at Evans' Biological Institute. It contains 4 grammes of Quinine Hydrochloride and 2 grammes of Urethane in a 30 c.c. bottle and is a stable and effective preparation. It is issued in 30 c.c. rubber-capped bottles and in ampoules of 1 c.c. and 2 c.c.

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Sodium Morrhuate Solution is als used for the injection treatment of Varicose Veins. The effect is prompt and striking; it is harmless to the subcutaneous tissues, and very little discomfort arises from its injection.

EVANS' Sodium Morrhuate Solution 5%

is issued in rubber-capped bottles of 5 c.c., 10 c.c., 20 c.c., & 30 c.c. ampoules of 0.5 c.c., 1 c.c., and 2 c.c.

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Evans' Biological Institute, Runcorn.

EVANS SONS LESCHER & WEBB LTD.

56 Hanover St., LIVERPOOL

DUBLIN

50 Bartholomew Close, LONDON, E.C.1

Prophylaxis against Dysentery by Oral Vaccines.

This method of establishing immunity against dysentery is very valuable since it has been found impossible to vaccinate by subcutaneous injections owing to the extraordinary toxic reactions produced thereby, whereas oral vaccines cause no inconvenience.

Oral Anti-Dysentery Vaccine (Genatosan) contains equal parts of Shiga's and Flexner's bacilli and is supplied in 5 c.c. bottles containing 100,000 million killed organisms.

Additional information regarding the above Vaccine will gladly be supplied to any Practitioner who writes to the Vaccine Department, Genatosan Ltd., Loughborough, Leicestershire.

To VISITORS FROM ABROAD:

We shall welcome a visit from you so that we may bring to your notice a number of CHEMICALS, etc., which we make, and of which there are no equivalents elsewhere.

AMYL NITRITE "STERULES." As exported all over the world. Invaluable in relieving Angina Pectoris. Largely used in threatened fainting and collapse.

"AUREMETINE." A combination of Emetine and Auramine, used with success in Amoebic Dysentery.

"ASPRIODINE." A definite compound of Aspirin and Iodine, containing 41.47% of the latter. Largely used in Rheumatic affections and in Arterio-sclerosis.

CHAULMOOGRA DERIVATIVES. In Leprosy.

"METHYL-ASPRIODINE." Chemically this is Methyl Salicylate as official in many parts of the world with the salicyl radical converted into Aspirin and containing 39.7% Iodine. For local inunction.

MOSS DRESSINGS. The most absorbent Surgical Dressing in sheet form (compressed).

PEPTONE "STERULES." In Asthma. Graded doses ready for treatment, either intramuscular or intravenous.

"PHENYL-ASPRIODINE." An important new Aspirin derivative as an Urinary Antiseptic.

"SEDASPRIN." A member of our Halogenised Aspirins, containing 30.86% bromine.

"STERULES" of Gum Acacia, Glucose, *Indigo-Carmine, Phenolsulphonephthalein, etc.*

W. MARTINDALE, *MANUFACTURING — CHEMIST —*

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(5 minutes' walk from Oxford Circus.)

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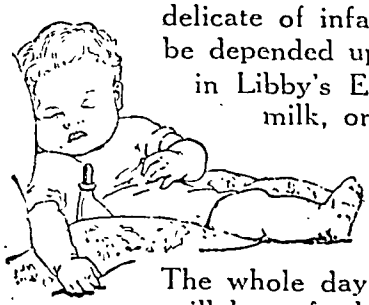
Milk



that is a supremely excellent Food for Infants.....







Libby's Evaporated Milk reaches the nursery scientifically clean. The curds are soft and flocculent as in human milk. The big fat globules are broken up by the process of homogenization into particles as small as those in mother's milk. That is why the fat of Libby's Milk is so easily assimilated even by the most delicate of infants. The two vitamins which milk can be depended upon to supply are present in abundance in Libby's Evaporated Milk, and as with any other milk, orange juice or tomato juice can be given to supply Vitamin C. You can safely prescribe Libby's Evaporated Milk for infants in your care.

The whole day's feeding can be prepared at once and will keep fresh and sweet.

Libby's Evaporated Milk



£1,000 *will be paid to any Hospital or other public charity if it can be proved that the claims made for Libby's Milk are not in accordance with scientific facts.*

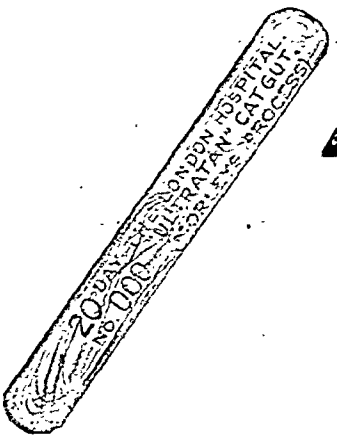
Libby, McNeill & Libby, Ltd.
(Dept. 22), 8, Gt. Tower St., London, E.C.3

M.J. 5.30

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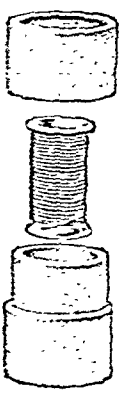
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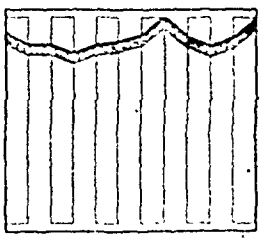
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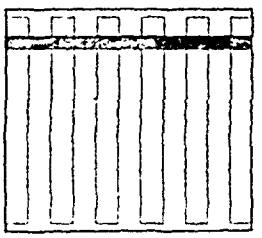
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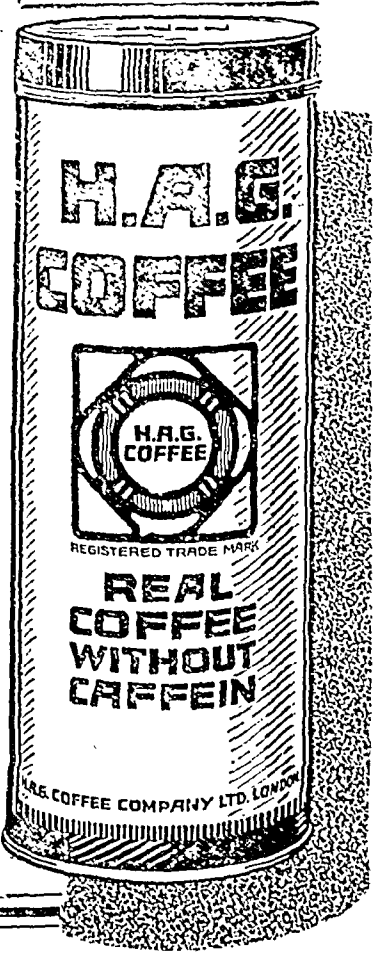
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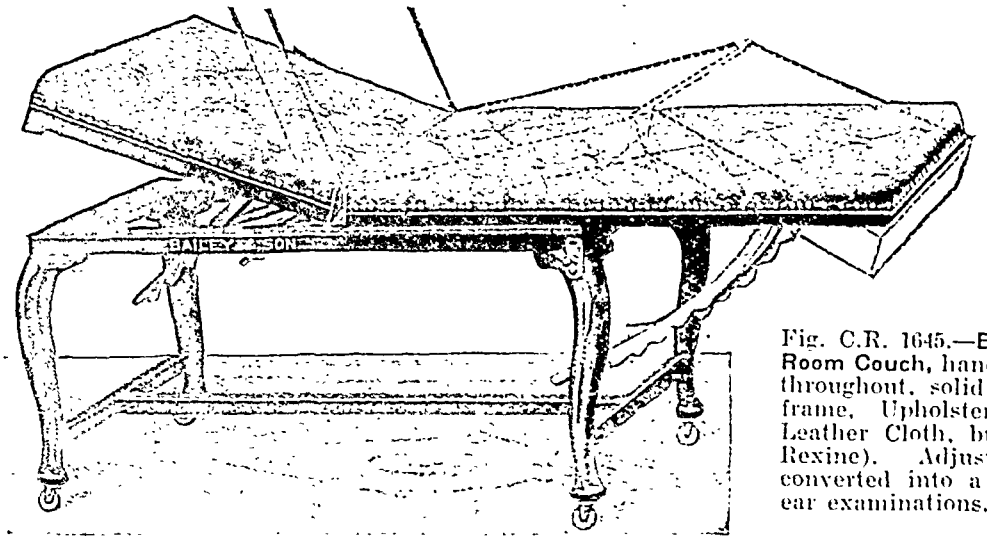
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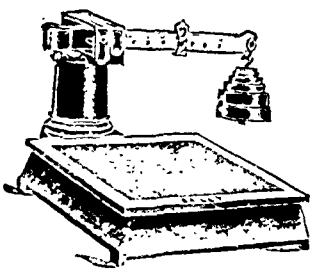
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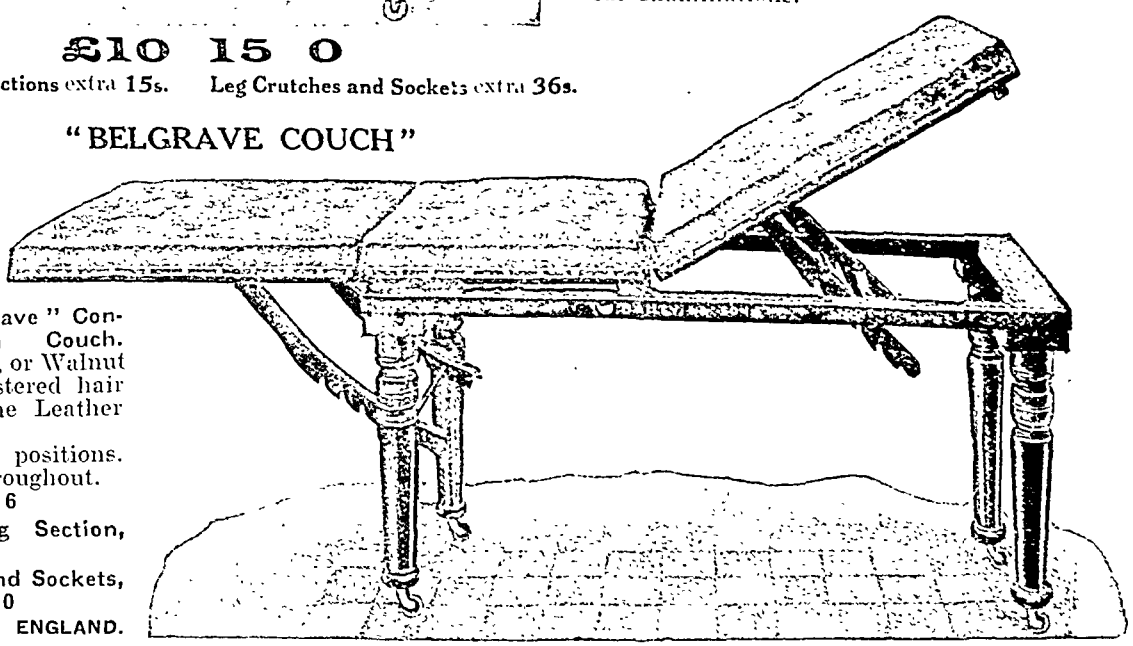
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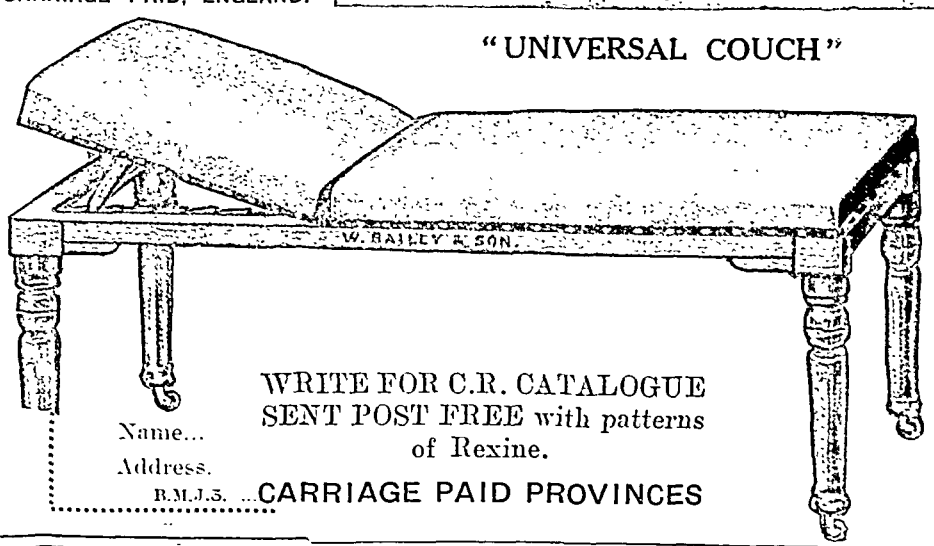
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ON
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BY
V. WARREN LOW, C.B., M.D., F.R.C.S.,
CONSULTING SURGEON TO ST. MARY'S HOSPITAL, AND TO THE LONDON MIDLAND AND SCOTTISH RAILWAY COMPANY.

In a very early stage of civilization there appeared to be a feeling amongst men that some sort of amends should be made to the injured party for an injury wantonly inflicted. Many centuries had to pass before this idea also included accidental injuries. In Exodus xxi, 18, 19, we read:

"And if men strive together, and one smite another with a stone, or with his fist, and he die not, but keepeth his bed:
"If he rise again, and walk abroad upon his staff, then shall he that smote him be quit: only he shall pay for the loss of his time, and shall cause him to be thoroughly healed."

There you have the special damages, but not much for "pain and suffering." Then follow a few verses where other special forms of damage are mentioned, and, finally (verses 24 and 25), a sort of schedule of compensation:

"Eye for eye, tooth for tooth, hand for hand, foot for foot, burning for burning, stripe for stripe." And in Leviticus xxiv, 20: "As he hath caused a blemish in a man, so shall it be done to him again."

There is in all this a good deal of that vengeful spirit which is rather characteristic of the Old Testament.

No doubt for a long while in the world's history compensation lay chiefly in the direction of reparation for an intentional injury—a sort of business-like compromise for an act of revenge. Then there followed the rewards for military service, particularly when the soldier had been wounded, and this gradually developed into the idea that a man who had been disabled by military service had some sort of claim for maintenance on those in whose service the hurt had been sustained. But in all these examples the penalties were exacted for injuries inflicted intentionally, and it was an entirely new principle in law, at any rate in this country—and I believe that this country has usually been the pioneer in these matters!—when in 1846 Lord Campbell's Fatal Accidents Act was passed, which gave a right of action for compensation to the families of persons who are killed by the negligence of others.

WORKMEN'S COMPENSATION ACTS.

We as a profession are concerned only in the use of the term "compensation" in connexion with personal injuries, either in what are known as common law cases, but more particularly, because of their numbers, in connexion with cases under the Workmen's Compensation Acts. It is in these cases that the responsibility is thrown on our shoulders of giving advice as to the extent of the damage and the amount and duration of the disability caused thereby. Probably this is one of the most difficult and thankless tasks ever imposed on any profession. It involves, in the first place, a very accurate diagnosis, a difficult enough task in itself, but rendered none the less easy by the intense desire on the part of the patient that the damage done to him should not be underestimated, nor that any pathological peculiarity or blemish found on him should be dissociated from the accident.

Prognosis, always a thorny problem, is, in these cases, often complicated by the patient's apprehension that he may be getting well too quickly, or that the doctor is taking too cheerful a view of his case. There is always the feeling, either latent or openly expressed, that the transgressor must pay, and must pay well, till I sometimes wonder whether that old spirit of revenge is entirely confined to the Old Testament. Generally it can be said that the greater the injury the less the difficulty in assessing the damage; the patient is then too ill and too crippled to attempt to do the assessing for you, or, at any rate, is so confident of the reality of his disability that he can well afford to leave it to your judgement without any lead from him.

For a workman to uphold a claim under the Workmen's Compensation Act for personal injuries it is necessary for him to show that the injury was sustained as a result of (1) an accident arising out of and in the course of his employment*; (2) one of the industrial diseases brought specially within the scope of the Act. The word "accident" has received various interpretations, and at present the mishap or occurrence is looked at from the workman's standpoint, and, whatever its cause or origin, it is treated as accidental unless designed by the workman himself. This definition has been held to be wide enough to include such cases as heat-strokes, chill developing into inflammation of the kidneys, and the rupture of an advanced intrathoracic aneurysm. Practically it may be said that the injury is treated as the accident, and it does not matter that the injury was not caused by an accident, but resulted from merely normal and customary activities.

I think it may be stated as a fact that, owing to the number of cases that have been decided under the Acts, and to the manner in which the law has been codified and rendered more simple, the legal position of any plaintiff, except in very rare cases, is clear, provided that the facts can be proved. With very few exceptions the facts in dispute are in connexion only with the medical aspects of the case, and it is here that our difficulties begin. To the legal mind, untrained in medicine, it must sometimes appear that the opposing doctors, apparently in all good faith, are expressing views which are poles apart on the same circumstances. Often the difference is more apparent than real, and depends more on different methods of expression or on inequalities of emphasis than on any real divergence of opinion on what are the essentials of the case.

Quite apart from this, however, there is, in this class of case, plenty of room for an honest difference of opinion with regard to even the essential points at issue. This difficulty is not lessened when the plaintiff, either from ignorance, stupidity, or from motives less naive, exaggerates or imagines the symptoms which are responsible for his incapacity. Yet it is on controversial material like this that a tribunal, untrained in medicine, may have to come to a decision. I am referring to those cases where a county court judge sits without a medical referee. There are, however, some county court judges who do not consult their referee, even when he is sitting, and I know of one judge who believes, or affects to believe, that the only function of the medical referee is to explain the meaning to the judge of such medical terms as the latter does not understand. From this decision on the medical evidence there is no appeal, as the courts above assume the findings of the county court judge as the facts of the case.

The difficulties in connexion with these cases arrange themselves under two heads: (1) The question of entitlement. Is the workman's disability the result of accident, or has it been aggravated by accident, or is it due to some other cause? This is often largely a matter of diagnosis. (2) The question of duration of incapacity. This is a matter of vast difference of opinion between employees and employed. It is often a matter of very considerable difficulty for a conscientious surgeon to decide at what period the injured workman ought to be forced, under the penalty of losing his weekly compensation, to resume his normal employment. One occasionally, I am glad to say not often, comes across a case of frank malingering, but one sees numbers of cases in which a few weeks' inactivity appears to promote an "inertia" and "work shyness" which are exceedingly difficult to overcome, and to which the certifying doctor often shrinks, for some months, from applying the drastic remedy of refusing a certificate. It would be impossible to compute the number of working days that are thus lost to the community or the thousands of pounds thus paid in unnecessary compensation, and, what I think is of greater importance, the damage done to the workman's own morale. I am not suggesting that

*The phrase "arising out of and in the course of his employment" has been the subject of so much judicial consideration that its meaning is well settled.

this is peculiar to cases which come under the Workmen's Compensation Acts. There is always a startling contrast in the time taken to resume the normal occupation after accidents incurred at football, polo, hunting, etc., where the responsibility of the incapacity rests with the patient, to the time taken to recover from accidents for which the responsibility rests with others. It is the enormous number of Workmen's Compensation Act cases that renders the matter of so much importance.

It is very often the first certificate that ties the doctor's hands. Given, perhaps, on the first occasion, after a hurried examination of the patient and with a vague, half-formed excuse to one's own conscience that the patient should have the benefit of the doubt, the certificate reads to the effect that "A.B. is suffering from the effects of an accident of a certain date, and that he is unable to follow his employment." Even A.B. is a trifle astonished. He had given expression to what to him was but a half-formed idea that his pain in the back, never very serious, must have been due to a slight strain that he had experienced the other afternoon. He had rather expected to be cross-examined on the subject, and had felt very uncertain of his ground, and would have been quite willing to be guided by the doctor's opinion, but here it was in black and white with the doctor's signature beneath it. From that moment his doubts in the matter diminish, and as his certainty grows so does his incapacity, and it becomes increasingly difficult for the doctor to recede from the position in which his first certificate has placed him. Finally, the fear of being thought inconsistent and not knowing his own mind drives the doctor into the witness-box, where his counsel coaxes him into a position far in advance of that which he had intended to take, and where he is still more strongly entrenched by his reaction to the bullying tactics of the cross-examining counsel. In the meanwhile A.B. feels that he ought to do his best to support the very handsome testimonial of incapacity given him by his doctor in the witness-box, under circumstances which A.B. regards as heroic, and he becomes more than ever firmly entrenched in a fortress of incapacity from which it will take many months to dislodge him.

This may appear to be an extreme case, and possibly, to many of you, a mere fantasy, but I can assure you that I have seen compensation cases grow up in this manner until finally, whatever may have been the periods of doubt through which they passed in the process, the two who are most convinced of the justice of their cause are the patient and the doctor. But, as I have said before, it is often on the different meaning applied to medical terms that we, as a profession, fail in the eyes of the public, owing to our inability to agree. Take, for example, the use and misuse of the term "shock."

"SHOCK."

Shock, as I think most of us understand it, is a condition of profound physical depression resulting immediately from some serious accident or operation. The patient either dies or gradually recovers from such a condition. With this conception of the meaning of the term it is impossible to believe that a person can remain, for months or even for weeks, in such a condition. The term "delayed shock" is obviously a misnomer, although it has been used in text-books, but the pathology of the conditions for which the term "delayed shock" stood is now known not to be the same as that of shock. Shock, however, as we meet it in the law courts, and as it is understood by every solicitor's clerk, is a very mixed bag of nervous phenomena following any accident, however trivial, usually coming on slowly and insidiously, and often after an interval—an interval which Charcot used to call, with, I should like to think, a sly humour, "a period of meditation." This sort of shock often produces a condition of so-called "nerve exhaustion" to which that vague and misused term "neurasthenia" is applied. I should like to contrast a case of real surgical shock with one of the cases where the term "shock" is used only in its legal sense.

I saw, last year, a girl of 14, who had been involved in a very serious railway accident early in January, 1929. The accident had occurred in the small hours of the morning in a fog, when the temperature was below freezing point. To the ordinary horrors of a railway accident were added those of fire, and many of the injured were burnt to death. The accident happened on January 8th, and I saw the child on January 26th. I also interviewed the doctors who had administered first aid, and under whose care the child had come, at the local hospital.

She had already been removed from the wreckage of the train by the time the doctors arrived on the scene of the accident, and was lying on some hot-water pipes in the waiting room of the station where the accident had happened. The child was then quite cold, livid in colour, and pulseless; her breathing could not then be detected, and her limbs were flaccid and her pupils dilated. I was assured by both doctors that for some time they were unable to decide whether she was alive. She was actually, at one moment, destined for the ambulance in which the dead were being removed to the mortuary. Some doubt existed, however, and she was allowed to remain on the hot-water pipes. She presently showed more signs of life, and was removed to the hospital. She remained for a few days in a critical condition. Her abdomen and right loin were extensively bruised, and she had passed blood from both her bladder and intestine. It was feared, therefore, that she had ruptured some internal abdominal organ, but her condition of extreme shock made it impossible to carry out any further investigations, and treatment only of the shock was undertaken.

When I saw her nearly three weeks afterwards she showed very little evidence of the extremely critical period through which she had passed. Her pulse, respirations, and temperature were normal. There was some slight tenderness of her abdomen, and some faint discoloration over the right lumbar region. It was then obvious that no internal organ had been seriously injured, though possibly there had been extensive bruising of some of the viscera, and this was corroborated by the haematuria and melaena. She had, however, unfortunately, two large superficial burns on her left buttock. For these, I presume, the hot-water pipes were responsible, but as probably the hot-water pipes had to be thanked for the preservation of her life the balance of merit was with them. When I saw the child, in spite of the considerable discomfort of her burns, she was lying placidly in bed reading. She talked to me cheerfully, and made no allusion to her illness or to her being in hospital. I was told that she evidently had no memory of the accident, and no allusion to this was ever made to her. She ultimately recovered and did well without any of the nervous phenomena usually associated with shock in connexion with railway accidents.

The case, I think, illustrates two points: first, how completely may be the recovery from shock of the most extreme degree; and secondly, how much depends on the environment of the patient during the period of recovery. Had the child not remained in the judicious calm by which she was surrounded at this little hospital, she might have been exposed to emotional stresses, quite unconnected with the accident, which would have reacted on her and produced a symptom complex which is thought by some to be the peculiar product of railway accidents. The consequence would have been a long period of mental ill health for a child at, perhaps, the most critical period of her life.

May I contrast this case with another from the same accident?

In this case an elderly gentleman claimed a large amount in compensation for disability resulting from shock sustained in this accident. I did not see the patient until May 24th, when I examined him in a Midland town with another surgeon. The patient was a very healthy-looking man of 67 years of age. He was able to give us a very detailed and dramatic account of the accident so far as it affected himself. He told us exactly what he was doing just before the accident. He remembered all the details of the accident itself, and all that happened immediately afterwards. He remembered his anxieties and fears, the cold and the fog, and how he was extricated from the wreckage. He was able, with assistance, to walk the fifty yards to the railway station, and was taken to the same hospital as the child. Here two scalp wounds were sewn up without an anaesthetic, and after four days in hospital he returned to his own home by car.

His solicitors claimed for him that he had been severely shocked in the accident, and that his present symptoms were the sequelae of the shock. Mr. X himself complained that he was possessed of a "horrible sense of fear," which was brought on by the slightest noise when he was awake, and which possessed him like a nightmare when he was asleep. On being asked for any further consequences of the accident Mr. X produced some notes from his pocket, and then complained of "lack of confidence in himself" and "that he dreaded travelling." In answer to a question he explained that his reference to his notes for such apparently

important symptoms was due to his "lack of concentration and memory." He made no complaint of headache, giddiness, or of inability to sleep.

As a result of all this he had given up his business and had had to retire since the accident. He was a brisk, cheerful-looking man, who scarcely looked his age. He was well nourished, and said that he weighed 14 stone. He thought that he had put on weight since the accident. There were two small scars on his head, which were not tender nor adherent to the skull. We could find nothing abnormal with his nervous system. We also considered his mental condition to be singularly alert, and at that interview he showed certainly neither want of confidence nor want of concentration. There was nothing in his condition when we saw him, except what Mr. X himself told us, which would suggest that less than six months previously he had been involved in such a serious accident.

It was, of course, quite impossible to traverse such statements that he was "nervous," "suffering from nightmares," and "unable to travel," but his very detailed description of the accident was not consistent with his "lack of concentration" and "loss of memory." Nor was it consistent that a man who could remember all the details of his accident, and the reasons why he did this or refrained from doing that, should have to resort to his notes to remember such important symptoms as "loss of concentration and confidence" and "dread of travelling."

This is an excellent example of the misuse of the term shock. It was used by the lawyers in exactly the same sense as the term was used in the case of the child. Mr. X had obviously and fortunately escaped even the slightest degree of shock. He had, no doubt, passed through a very trying experience, and the fright of the accident and the scenes he had witnessed might well have produced on him a mental effect which must, at the time, have been very upsetting, and may have produced the "sense of fear" and "the nightmares" of which he complained. In our opinion, when we saw him these effects were passing off, if they had not already done so, and Mr. X was confusing, in his mind, memories of the immediate past with the present. It would probably have been wiser for an ordinary man, at that time, to have resumed his occupation. Unfortunately, Mr. X was 67 years of age, and we realized how difficult it was for a man of that age, after a period of rest, to resume what were, perhaps, already waning activities.

My point, however, is to emphasize the misuse of the term shock by the lawyers, the public, and occasionally, I am afraid, by our own profession. Had this case come into court I should have been confronted with medical evidence to the effect that Mr. X was suffering from the sequelae of severe shock caused by the accident. What else should you expect, say the public, from a railway accident but shock? This is true enough if one uses the term in the sense in which we all use it when we find that our income tax has been raised, but this kind of shock, serious as it may be, does not carry with it the mortality nor the sequelae of surgical shock. I should like to add that I believe that, with proper treatment, surgical shock produces very little in the way of nervous sequelae. We have all seen many cases of severe surgical shock. The treatment, if the patient survives, is that of the condition which caused the shock; and how many cases have we seen in which there are marked nervous symptoms afterwards which could be ascribed to the shock itself? I should say very few.

The misuse of the term, however, whether conscious or not, is a distinct legal asset to the plaintiff. It at once emphasizes the severity of the original injury, and at the same time forms a useful link between the accident and any rather possibly remote nervous phenomena which may occur. The severity of this kind of shock is often measured by the narrowness of the patient's escape from danger. That a car or a wheel should have missed someone by a few inches is a great "shock" producer.

Concussion.

"Concussion" is another term which is constantly mishandled by the legal profession and by the public. Mr. Trotter[2] has described concussion as "indicating an essentially transient state, due to head injury, which is of instantaneous onset, manifests widespread symptoms of a purely paralytic kind, does not, as such, comprise any evidence of structural cerebral injury, and is always followed by amnesia of the actual moment of the accident." The essential features of concussion are its suddenness and the loss of consciousness, however brief.

Mr. Trotter has made use of the term "retrograde amnesia" to express the loss of memory of events immediately preceding the accident. When I was a registrar at St. Mary's I collected a number of instances of this. They varied between, in a slight case, the loss of memory of the events of the four or five minutes immediately preceding the accident, as could be measured by the time it took the patient to walk the distance from the last point remembered to the scene of the occurrence, to, in a more serious case, the loss of memory of the events of weeks before. It often happens that the victim of a railway accident which has happened after he has been on his journey for some hours can remember events only up to the time when he left his own home in the morning and took his ticket at the station.

The sequelae of a head injury, with or without concussion, are many, and since the war we have accustomed ourselves to the use of the term "cerebral contusion," which has partly taken the place of the older term "cerebral laceration," and which has also gone some way to explain the pathology of conditions which previously were regarded as functional. I think we owe a good deal of this again to Mr. Trotter. The symptoms which used to be described as those of cerebral irritation are now regarded as "contusion effects." The chief of these is what is known as "contusion headache."

For some unexplained reason the headaches in these cases of cerebral contusion may often occur after a latent interval.[3] They are not, as a rule, continuous, but intermittent. They are often associated with a certain amount of mental impairment and with giddiness, and with the latter are usually in relation with some alteration of posture, such as stooping, or turning the head suddenly to one side. The mental impairment usually takes the form of defective memory, inability to concentrate, and some diminution of emotional control. All of these are more or less indications of mental fatigue. Such a condition is to be distinguished from the headache of a functional neurosis following a head injury. The neurotic headache usually dates from the time of the accident, is continuous rather than intermittent, has little or no relation to posture, and is aggravated by any emotional stress. What is most important in the neurotic headache is the absence of any evidence of mental impairment or fatigue. The neurotic patient has usually the most acute memory for anything connected with his disability and anything that may have caused it. During the examination he is keenly alert, and often displays, in an unusual degree, that power of concentration which, according to his notes, should be missing. The following cases illustrate the distinction between the two types.

"A man, 44 years of age, was injured on November 24th, 1925, in an accident in which one train ran into the rear of another. He was in the back part of the front train. At the time of the accident he lost consciousness for a brief period of time. When he came to his mouth was bleeding and his teeth were loose, in fact one tooth came out in the night. There were some wounds and abrasions of the mucous membrane lining his cheek, and his nose was bleeding. He remained at his home in the country until January 3rd. He did not keep his bed, and used to go to the doctor's house. His chief complaint was pain in the head. On January 3rd he came up to London on business, but the journey upset him, and he remained at home for another week. He then came up to town four times a week. In February he was not so well, and had to consult a neurologist. He took three weeks' holiday at Whitsuntide, and was better. While returning from his holiday some jolting of the train, owing to a defective brake, restarted the pains in his head, and he had not been so well since.

When I saw him on July 24th, 1927, he complained of pain over the posterior part of his head and shooting pains over his eyes. He also felt a sense of constriction round his head. The pain came and went, and he might go for days without it. During our interview he said that he had a "pressing down pain on the top of his head," and that this sensation of pressure was worse when he stooped. He said that he suffered from loss of memory, but that his memory was better than it had been, although he was still liable to make mistakes. There was no tenderness over the

painful area of his scalp, and I could find no evidence of any organic disease of his nervous system. He gave me the impression of candour and frankness, and made no attempt to exaggerate his symptoms. These appeared to me, and to the neurologist who examined him with me, to correspond with the symptoms due to a cerebral contusion.

In contrast to this case, on July 21st, 1920, I examined a temporary porter, aged 34, who on the previous April 17th had fallen backwards about 5 feet and hit the back of his head. He did not lose consciousness, and there was no wound of his scalp. He immediately left his work. He did not go to a hospital, but was attended by his panel doctor. He went to bed for three days, but since then had been walking about. To me he complained of weakness and giddiness and pains in his head. There was a marked tremor of his hands while he was under observation, but this ceased when his attention was thoroughly engaged in conversation. I could find no evidence of any organic nervous disease, nor was there a scar on, or tenderness of, his scalp.

He neither drank nor smoked; he was unmarried, and lived with his parents. I could find nothing the matter with him, and suggested that he should return to work. He did not do so, and on September 30th he went before the official medical referee, who certified that he was suffering from "mild traumatic neurasthenia," and that his condition was such that he was fit for light work and should resume his ordinary work in a month. How anyone can predict that traumatic neurasthenia, even of the mild variety, is going to cease in a month is a question which might be indefinitely and uncertainly discussed.

The porter accordingly resumed his ordinary work on November 19th, and with the ill luck that attends these "neurasthenics," on November 20th was struck on the side of the head by the handle of a hand truck. He said that he lost consciousness. He was taken to the Poplar Hospital, but was not detained, and went home in an omnibus.

I saw him on February 11th, 1921. He had remained at home ever since, and was quite unable to work or even to perform, on occasion, such domestic labour as to carry coal upstairs for his mother, a woman aged 78. He was, however, able to take walking exercise up to two or three miles. He complained to me of inability to sleep, that he became giddy, and that he had pricking sensations in his eyes and pain in his head. He also complained of great weakness. The objective evidence of his condition was tremor of his hands, as on the previous occasion, and a pulse rate of over 100.

The curious mentality of this man may be realized by this incident. When endeavouring to ascertain what he did with himself during these long periods of leisure, I asked him if he read any books, and what books he had read. He told me that there was a copy of *Robinson Crusoe* in his house, and I strongly advised him to read it. He replied to me, somewhat reproachfully, that he did not read secular books, but only the Bible. He described himself as an "undenominational non-sectarian."

As the man had been in the company's employ for only a year, and during practically all that period had been drawing compensation for two comparatively trivial accidents, and as he appeared to be rather unlucky in the matter of accidents, and the official referee had stamped him with the hall-mark of traumatic neurasthenia, I advised the company to get rid of him at any cost. This was achieved at the price of £175.

TRAUMATIC NEURASTHENIA.

The mention of traumatic neurasthenia brings me to a very thorny problem. What is traumatic neurasthenia? It is our inability to answer this question, or rather the inability of all of us to give the same answer, that makes us, I think rather deservedly, the butt of the legal profession. As Lord Melbourne said, it doesn't matter what we say, so long as we all say the same thing.

[illegible] misnomer. The word neurasthenia is "nerve [illegible] shock," or essentially "nerve exhaustion"—a very [illegible] as public, as it either suggests that they [illegible] mixed bag of effort far beyond their legitimate [illegible] ever trivial in consequence (nervous breakdown," and often "that some virtue from that [illegible] to call, nervous system, has been lost to [illegible] their own (traumatic neurasthenia, a condition heroes or martyrs, both [illegible] that [illegible] of our profession who hold [illegible] with charity and wherever inflicted, [illegible] only in its physical condition of the [illegible] tic signs and symptoms, [illegible] 14, who have, to which the term [illegible] in January, 1929.ed.[3] I am not one [illegible] a thing without presumption, I do not believe that there is such an entity as traumatic neurasthenia or psychasthenia. I believe that the cases which pass under these names are those of people with some derangement or disorder of what I prefer to call temperament, which renders them fearful, introspective, gloomy, and anxious, with all the physical consequences which such qualities connote. I do not suggest that such sufferers should not command our sympathy and, on occasion, should not obtain compensation when their condition, as it very often is, has been the fault of another; but each case should be decided on its own symptoms, and not under the name of a large and indefinite generalization. For instance, a nervous man may, as the result of an accident, be rendered more nervous and apprehensive, or a man hitherto care-free may have assumed a habit of anxiety and introspection. Both of these are deserving of our sympathy, and should receive compensation.

It may be argued that all this is merely a question of words, but I believe that it is very much better for the patient that he should know that though, as the result of the accident, he has become more fearful than he was, or more prone to worry about himself and his future prospects, he is not suffering from a mysterious physical condition which is affecting his mind and darkening his outlook on life. It would, I am certain, be more easy to assess these cases and to explain the degree of disability to the legal audience with whom the ultimate award rests.

I admit that, as the result of an injury, a man's temperament may undergo an alteration; he may become more irritable, more fussy, more fearful, and the rest; but to give that undoubted fact a name like traumatic neurasthenia is to give the layman, and often ourselves, quite a wrong conception of what has happened.

Once a condition has a name it requires no further definition. Even if the name means nothing it becomes part of the established order of things,[3] and if the condition for which the name stands is not well defined anyone can attach to it such meaning as he likes. To my mind the mental or temperamental conditions which follow injuries are not yet sufficiently defined to deserve a name, and it would be more convenient for the patient, for the doctor, and for some future judicial authority if the exact condition of which the patient complains were explained in plain English terms, and no attempt were made to give it any name.

"Traumatic neurasthenia" seldom, if ever, follows very serious injuries or disabling injuries, like fractures of the limbs. It is almost invariably restricted to injuries which result from accidents which are due to the alleged fault or negligence of others.[3]

I could say much more on this subject, but it has been said much better in a paper by Sir Farquhar Buzzard and published in the *Lancet* for 1923, vol. ii, which I strongly commend to your notice.

"RAILWAY SPINE."

In the sixties of the last century, owing to the increasing rate of railway travelling, a number of cases of "concussion of the spine" were reported, several of which had paraplegia. They formed a large part of that curious entity "railway spine."

In the early eighties my late colleague and teacher Mr. H. W. Page showed that these cases were not uniform, and could be accounted for by lesions other than concussion. Some were actual organic lesions of the spinal column or cord, cases in which the cord had been crushed but the bones had sprung back into their place, cases of haemorrhage into and around the cord, and, in many cases, inflammatory lesions, some of which were obviously syphilitic. There were also a large number in which the symptoms were purely functional and in which there had been no damage to the cord or spinal column. Gradually the conception of concussion of the spinal cord, analogous to cerebral concussion, has died a natural death, and with this, I think, has disappeared a large proportion of the cases of functional paraplegia which in the sixties and seventies used to follow railway accidents.

I have unfortunately no figures, but I have a strong impression that whatever direction functional disabilities

following railway accidents may take now they do not assume the character of paraplegia with anything like the same frequency which they did in those days. I venture to think that this, in a rough way, is a case of supply and demand. The medical profession had conceived the idea of concussion of the spinal cord with a resulting paraplegia, and the public immediately supplied the cases. When the demand failed the supply gradually petered out. Analogies are dangerous, but is it not possible that our trite label of "traumatic neurasthenia" helps to keep up the supply?

On August 1st, 1923, I saw Mr. Z, a man aged 58, who was an overseer in the post office, and had been in its service for forty-four years. On February 29th, 1928, he was in the post office van in the front part of a train which entered a London terminus at an excessive speed and came into sharp contact with the buffer stops at the end of the platform. As a result of the accident Mr. Z became unconscious for a short time. He was admitted into a hospital and remained there for three days. There was no fracture of his jaw or skull, and he was reported as having suffered from slight concussion. He remained in bed for six weeks, and then got up and moved about his house. He had been away for a change, but had had to return home on account of his condition.

He was a very unhappy-looking man. He was entirely wrapped up in himself and his symptoms, and it was difficult to rouse him from this condition of egotistic misery. Neither his doctor nor another surgeon nor I could find any evidence of organic disease of his nervous system. His condition was, I believed, mental, and partly due to the fright which he had experienced at the time of the accident, and partly to his anxiety that he would not recover, and that he suffered from some obscure hurt to his nervous system which was likely to become worse. I also thought that his condition was accentuated by the anxiety of his family that he would not receive compensation adequate to the discomfort to which he, and incidentally they, had been put.

Mr. Z's symptoms were headaches, loss of appetite (he had not lost weight), and attacks of giddiness (though he never fell). He had lost four teeth from his lower jaw as the result of the accident. He was certainly not fit to be an overseer in the post office, and he would have been much too frightened to have resumed his position in the post office van of a train; besides, I did not think that a man of his age would be able to take up his original duties after having fallen out of his routine for a period of over six months. I saw no reason why he should not recover, and I saw nothing in his condition which was likely to shorten his life. I thought that he would be more cheerful if he could escape from his present environment.

I reported on these lines to the railway company and Mr. Z received a sum in compensation which I hoped would allay both the anxieties of himself and his family; it was not perhaps quite as much as was asked—that, if given, would have probably been responsible for a nervous breakdown on the part of the solicitor, as he would have feared that he had not done his client justice.

INJURIES OF THE BACK.

It is part of our language that the back is an important item of our anatomy. We talk of a man having or not having "backbone." One is exhorted to put "one's back into it." It is on our "backs" figuratively and in reality that we bear our burdens. Amongst manual workers the "back" is peculiarly sacrosanct. It is also peculiarly vulnerable. It easily weakens, it is unduly susceptible to cold, and to it are attracted strains and sprains as iron filings to a magnet. It is also singularly tenacious of anything which it has acquired, and an injury to the back, even if apparently slight, is always a long business.

I am not going to refer to the gross injuries of the spinal column and cord, such as fracture dislocations; they are simplicity itself compared to what are miscalled the "minor injuries" of the back, and it is with these that we are principally concerned in matters of "compensation." Much might be written, and much has been written, particularly in America, about "backache" and "low back pain" following injuries of often quite a trivial nature, and I know of no class of case which presents such extraordinary difficulties as do these.

X rays have shed considerable light on some of the pathological conditions underlying the complaint of a painful back, but they have also done much to confuse the issue in individual cases. What, perhaps, is not always realized is that it requires considerable skill and much experience to take a reliable *x*-ray photograph of the spinal column. Photographs to be of value should be taken in more than one plane, and should, where it is possible, be stereoscopic. If it requires technical skill and experience to take an *x*-ray photograph of the spinal column, it also requires knowledge and experience to interpret the photographs, and this particularly applies to photographs of the lumbar and sacral spine.

An *x*-ray picture of the fifth lumbar vertebra presents its own peculiar difficulties, owing partly to the wedge-shaped body of the vertebra and to its close relation with the massive part of the sacrum. Its so-called sacralization, either by union with the body of the first sacral vertebra or by the articulation of the transverse process with the ilium, has been regarded by some as the cause of symptoms, and as the result of injury. The want of union of the two bodies of the neural arch has been mistaken for a fracture. This also has happened in the case of the transverse process of the first lumbar vertebra when the epiphysis of the costal element has failed to unite with the epiphysis of the transverse element. Split vertebral bodies which have been developed from two epiphyses and half vertebrae have presented appearances which have been mistaken for the results of injuries.

I could multiply examples like these, but I have said enough to show that considerable knowledge and experience are required before attempting to interpret an *x*-ray photograph of the spinal column. On the other hand, *x* rays have enabled us to diagnose compression fractures of the bodies of vertebrae and fractures of the lumbar transverse processes, both lesions almost impossible of accurate diagnosis without radiography. The *x* rays have also shown us how common and widespread are osteo-arthritic changes in the vertebral columns of manual workers, partly due to the daily stresses and strains of manual labour, but assisted by toxaemia from neglected pyorrhoea and septic teeth.

Let me give you, in conclusion, an example of a mistaken diagnosis.

A man, aged 26, on May 26th, 1927, while wheeling a barrow, stepped on a piece of loose rubble and fell forward. He saved himself by sudden and violent muscular effort, and while recovering his balance he felt a sharp pain in the lower part of his back. He reported the accident to the foreman, and rested until the dinner hour. When he tried to get up he felt a sharp pain in his back, and the latter became stiff. When he stood up he was unable to straighten his right leg without giving rise to pain in his back, suggesting the possibility that he had ruptured some fibres of origin of the psoas. He went home by train, and also went to his doctor and got some *liniment*.

The next day he went to the local hospital and was *x*-rayed, and, as a result, was admitted to the hospital on the following day. The radiologist's report was to the effect that the patient "had sustained a fracture of the body of his fifth lumbar vertebra and a partial dislocation of the body of the fourth vertebra on the fifth." He was kept on his back in the hospital, but owing to some misunderstanding between himself and the hospital authorities he took his discharge after ten days and went home in an ambulance, and continued in his own home to rest on his back with sandbags to steady him. After two months he went to a convalescent home, but felt worse when he returned. He was still under treatment when I saw him in January, 1928.

At this time he complained of "scalding pain" in his lumbar region. He said that he could not walk as well as he did. He also had pains at the back of his head, and occasionally had difficulty in making his water. I could find nothing wrong with him or with his back. He took his boots off and laced them up again while standing: an accomplishment many would envy. I had him *x*-rayed by Dr. Harrison Orton, who also examined the prints of the former *x*-ray photographs. Dr. Orton's stereoscopic photographs showed a perfectly normal fifth lumbar vertebra, which was neither crushed nor dislocated. The fourth vertebra was also *normal*. The appearances seen in the former photograph could be explained by the particular angle at which the photograph had been taken.

The patient had, for nearly a year, been living under the cloud of a broken back, and this alone, I think, might explain the nervous symptoms of which he complained. His own doctor and the surgeon at the hospital undertook to explain matters to him, and I understand that he was then persuaded to go back to light work.

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A CASE OF RUPTURED EMPYEMA OF THE GALL-BLADDER ASSOCIATED WITH ASCARIS LUMBRICOIDES.

BY

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GALL-BLADDER disease in young children has always been regarded as extremely rare, hence the occurrence of a case at the early age of a little more than 2 years makes it worthy of record.

W. W., an only child aged 2½, had been in perfect health until the present illness, except that for the previous fortnight, while staying with his grandmother, he had passed two round-worms. She had remarked that he was always twitching and that she could not satisfy him with food. She also said that he was "*full up with worms.*"

On January 26th of the present year he first showed signs of illness; on that day he went off his food and vomited everything he was given. The next day he was still unwell, but the vomiting ceased and he did not complain of any pain. On January 28th and 29th the condition was much the same; he was fretful, would not take food, but was very thirsty, drinking a lot of milk and tea. On the following day he was about the same, but no further vomiting occurred. He was seen by one of us for the first time, and some medicine was ordered. On the morning of January 31st he seemed a little better and took some bread and jam, but in the afternoon he complained of abdominal pain, and was flushed and appeared very feverish. The next day he was worse; he perspired very freely, and refused to eat or drink. There was no vomiting, but he still complained of abdominal pain. He was again examined, and it was thought that it might be a case of appendicitis. An enema was ordered, and a round-worm was passed in a good result. On February 2nd he was still disinclined to eat, and took only liquids; he was very irritable and perspired freely all day, and had five motions. About midnight he appeared very much worse, and complained of severe abdominal pain. The next morning he was ordered to hospital.

On admission the child looked ill. His temperature was 99° F., the pulse 140. He was very restless; the tongue was dry and coated, and the abdomen was rigid all over. A diagnosis of acute appendicitis with generalized peritonitis was made. Within a few hours of admission a paramedian incision below the umbilicus was made and on opening the peritoneum free pus was encountered. Examination of the appendix revealed that it was not the offending organ, and a search for a Meckel's diverticulum was also fruitless. On palpating the upper abdomen a mass was felt, and the incision was enlarged up to the costal margin. The omentum was found wrapped around the gall-bladder, from which, on freeing the omentum, thick pus was seen to be oozing. A clamp was applied to check the pus, but the slightest traction resulted in the forceps tearing away. All attempts to prevent the pus escaping were abandoned, and it was mopped up until the gall-bladder was emptied. The common bile duct was inflamed, but nothing abnormal was revealed by palpation; it was not opened. The gall-bladder was then removed and two drainage tubes inserted, one in the region of the gall-bladder and the other into the pelvis; the abdomen was then sutured.

After-History.—The usual post-operative treatment was carried out, and an enema given on the second day brought away a fourth round-worm; each of these worms measured about six inches. Widal's reaction was negative, and antihelminthic treatment was carried out, but no more worms were passed. The recovery was uneventful, and the child left hospital six weeks later quite well. The pus showed a mixed infection of *B. coli*, streptococci, and staphylococci.

This case presents two interesting and rare conditions: first, the occurrence of an acute empyema of the gall-bladder in such a young child, and secondly, its association with the *Ascaris lumbricoides*. It may be of interest to review the literature of these two conditions separately.

Acute Perforated Empyema of the Gall-bladder in the Young.

From a perusal of the literature this condition appears to be of very rare occurrence. Griffith states: "Acute cholangitis and cholecystitis are very infrequent conditions, but may occur after typhoid fever or from sepsis. Cholecystitis of a more chronic nature is probably not an infrequent sequel of typhoid fever. Tuberculosis of the gall-bladder is sometimes seen."

Reid and Montgomery of the Johns Hopkins Hospital collected eighteen cases of typhoid fever in children under the age of 15, who either died from, or were operated on for, complications arising in the gall-bladder. They preface their tabulation with the statement that "in children, acute suppurative cholecystitis of any kind is rare. Altogether there are only about twenty reported cases."

We have tabulated all the reported cases of ruptured empyema of the gall-bladder occurring in patients up to the age of 15 which we can find in the literature of this subject. It will be seen (Table I) that with the exception of the second case, in which the age is not stated, the present case appears to be the youngest yet reported.

Cholelithiasis, it will be observed, occurred in three of these cases. We have been able to trace 139 cases of this condition in which the patients were under the age of 16, and only in the above-mentioned cases was it associated with empyema of the gall-bladder. As two of these patients had also typhoid fever it may be presumed that

TABLE I.—*Reported Cases of Ruptured Empyema of the Gall-bladder.*

Year.	Author.	Age.	Sex.	Cholelithiasis.	Pathology.	Symptoms.	How Diagnosed.
1835	Husson	8	Unknown	No	Peritonitis; perforation of gall-bladder	Typhoid fever	Autopsy.
1852	Archambault	Infant	Unknown	Yes	Ulcerative cholecystitis, perforation of gall-bladder	Typhoid fever; peritonitis	Autopsy.
1853	Barthez and Rilliet	12	Unknown	No	Ruptured gall-bladder; large abscess	Typhoid fever	Autopsy.
1864	Chédevergne	15	Unknown	No	Ulcerative cholecystitis	Typhoid fever	Autopsy.
1882	Steadman	13	F.	No	Ulcerative cholecystitis; perforation of gall-bladder	Typhoid fever; peritonitis	Autopsy.
1882	Steadman	6	F.	No	Perforated gall-bladder	Typhoid fever; peritonitis	Autopsy.
1884	Bond	10	M.	Yes	Perforated empyema of gall-bladder	Typhoid fever	Autopsy.
1892	Treves	10	Unknown	Yes	Abscess in back from which calculus was discharged	Indigestion; vomiting	Symptoms.
1893	Chiari	12	Unknown	No	Ruptured empyema of gall-bladder	Typhoid fever	Autopsy.
1895	Alexieef	5	Unknown	No	Ruptured gall-bladder; culture *B. typhosus*	Typhoid fever; peritonitis	Operation.
1906	Dover	13	M.	No	Ruptured gall-bladder	Peritonitis	Operation.
1908	Ashurst	12	M.	No	Perforation of gall-bladder	Typhoid fever; peritonitis	Autopsy.
1922	Howze	5	Unknown	No	Acute gangrenous cholecystitis	Fever; biliary colic	Operation.
1924	Lowenberg	Child	Unknown	No	Perforation of gall-bladder; peritonitis	Typhoid fever	Operation.
1924	Bittner	9	Unknown	No	Suppurative cholecystitis; perforation	Typhoid fever	Operation.
1924	Bittner	9	Unknown	No	Suppurative cholecystitis; perforation	Typhoid fever	Operation.
1924	Bittner	11	Unknown	No	Suppurative cholecystitis; perforation	Typhoid fever	Operation.
1924	Fischer	10	F.	No	Empyema of gall-bladder	Typhoid fever	Autopsy.

TABLE II.—*Reported Cases of Ascaris lumbricoides of the Gall-bladder.*

Year.	Author.	Age.	Sex.	History of Ascariasis.	Symptoms.	Operative Findings.	Result.
1850	Heaviside and Bloch	—	—	Two cases reported, no details.			
1765	Lorry	—	—	Vomited an ascaris	Convulsions		Necropsy: 3 ascarides in gall-bladder.
1918	Aviles	33	F.	Vomited ascaris	Gall-bladder colic	One ascaris in gall-bladder	Cholecystostomy.
1920	Tyau	—	M.	Ova found in stools	Pain and mass in gall-bladder area	- -	Necropsy: 9 ascarides in cystic duct.
1920	Eberle	9	M.	Treated for ascariasis	Pain and jaundice	Ascaris in gall-bladder.	Cholecystotomy.
1922	Butt	30	F.	Frequently passed ascarides in stools	Biliary colic	One ascaris in gall-bladder	Gall-bladder closed without drainage.
1928	Morton	45	F.	Vomited ascaris day before operation	Gall-bladder pain five weeks	One ascaris in gall-bladder	Cholecystectomy.

cholelithiasis plays but little part in the etiology of empyema of the gall-bladder in the young.

The chief factor in the etiology of this condition is typhoid fever. It will be noted that it is the causative factor in fifteen of the recorded cases; the etiology of the remaining cases is not given. In the past typhoid fever has been very closely associated with biliary disease at all ages, but with its great decrease in recent years this condition should become still more rare. The etiology of empyema of the gall-bladder appears to depend on two conditions: (1) infection of the gall-bladder; (2) obstruction of the cystic duct, either by inflammatory oedema or by a foreign body. A. L. Wilkie has carried out some very interesting experiments on animals in regard to the etiology of gall-bladder infection. He has isolated a streptococcus from the cystic gland in the human being in 84 per cent. of cases of cholecystitis, and with the same organism has produced a similar condition in animals. He injected the streptococcus intramurally into the gall-bladder, the cystic duct being patent in one instance and ligatured in the other. In the case in which the cystic duct was occluded a chronic empyema occurred; when the cystic duct was patent a cholecystitis alone was produced. Similar results were obtained with intravenous injection of this organism. Wilkie has also shown that the bile inhibits the growth of these organisms; so it would appear that it is only when the gall-bladder has been occluded for some time and the bile loses this property that acute empyema occurs.

Non-suppurative cholecystitis in children under the age of 16 has been traced in 115 cases; the etiology in most of them has not been given. Forty-four are associated with calculi, but Potter is of the opinion that influenza, appendicitis, scarlet fever, diphtheria, etc.—in this order—can be preceding factors. Farr, who reported five cases, believes that appendicitis "is a frequent concomitant, if not an etiological factor." In four of these five cases the appendix was found to be in a pathological condition. One of his patients had had a recent attack of scarlet fever. Snyder, who reported three cases, states that in two of them there was a history of previous scarlet fever.

Association of Ascaris lumbricoides with the Gall-bladder.

The invasion of the biliary ducts by the ascaris appears from the literature to be of fairly common occurrence, but this parasite very rarely intrudes into the sanctum of the gall-bladder. There are only eight recorded cases (see Table II).

Aviles has pointed out that the pathogenicity depends on three characteristics. The first is a poison found in the extract of the worm; the second is the carrying of infection by its motile and migratory traits; the third is mechanical—the obstruction sometimes caused in a hollow viscus by a parasite or a group of parasites. The last two characteristics are of importance in considering the pathology of the present case.

It appears to be doubtful whether the ova can be hatched out in the human body. Huber says: "It may be positively affirmed that ova which contain embryos and which are still surrounded with the mulberry envelope, will develop into round-worms in the human intestine." Stiles, on the other hand, states: "The eggs of the ascaris will not hatch as long as they are in the human body. They must pass out and there undergo their changes. The young worm is developed inside the egg, the egg is then swallowed, hatched out in the stomach, crawls through the wall of the stomach, gets into the circulation, goes to the heart and lungs, up the trachea, down through the stomach to the small intestine, there develops further." It is difficult, then, to say whether the worm develops from ova already in the biliary tract or migrates there from the intestine. Tyau has found the ova in the gall-bladder, and, if Huber's theory is true, one would expect to find the ascaris as frequently in the gall-bladder as in the bile ducts. On the other hand, if Stiles is correct and they migrate from the intestine, it is little wonder that they so rarely invade the gall-bladder when one considers the size of the cystic duct. Referring to this point Deaver says: "In a normal condition of the duct it is impossible to carry the smallest probe through it owing to its double course and the peculiar condition of its mucous lining." Tonnelé has found an ascaris partly in the common duct and partly in the duodenum. It is probable that Stiles's view is correct.

The literature is replete with reports of the presence of this parasite in the bile ducts. Huber has collected sixty-eight cases; in one as many as eighty worms had passed up from the intestine. Rokitansky reported a case of a cretin whose hepatic and common ducts were sausage-shaped, more than an inch in diameter, and filled with worms; they had found their way into the smaller ducts; two were found in the duct of Wirsung. That they may cause biliary stasis has been shown by Bonnapart of Pisa, who reported a case of icterus which ended fatally, the cause of death being the presence of an ascaris in the common duct. Both ova and worms are reported as forming the nuclei of biliary calculi. Degorce reports a case of violent hepatic colic recurring for seven years; at operation many biliary calculi were removed from the common duct. The patient died six months later from pulmonary tuberculosis. At the necropsy about forty stones were found in the biliary passages, all of which contained eggs of the round-worm. On section one of the largest stones contained a filament 1½ inches long which proved to be a small ascaris. Pasley reports a similar case of a native boy, aged 12, on whom he operated for obstructive jaundice caused by biliary calculi. He states: "A curious cylindrical body was at once noticed in the centre of this stone, which on subsequent examination proved to be a portion of an ascaris worm."

Table II calls for little comment except the constant feature of the association of intestinal infestation with the parasite and symptoms referable to the gall-bladder. Morton in his summary calls attention to this point; he states: "These two constant features of the cases do not assure the diagnosis, but when elicited they should at least lead one to bear in mind the possibility of ascariasis of the gall-bladder."

Conclusion.

1. A case of ruptured empyema of the gall-bladder is reported at an early age.

2. The child had no previous illness usually associated with gall-bladder infections with the exception of ascariasis.

3. The number of worms generally found is two; the passing of four in this case would suggest the possible presence and migration of others.

4. Aviles (see above) has pointed out that the worms may carry infection and also cause obstruction in a hollow viscus. It is suggested that in the present case one or more migrated to the biliary tract, causing obstruction of the

cystic duct and subsequent infection in the gall-bladder. Although neither ova nor worms were found, it is probable that if they were present they would have undergone disintegration in the pus.

5. In view of the numerous cases reported in which small worms have been found in the common duct, we would advise that the common duct be opened and examined in all cases of gall-bladder disease associated with *Ascaris lumbricoides*.

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CONTROLLABLE SPINAL ANAESTHESIA:

SOME RECENT EXPERIENCES WITH SPINOCAIN SPINAL ANAESTHESIA.

BY

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STIMULATED by the experience of several American surgeons who have been using spinocain spinal anaesthesia with success, and by the statement by Dr. Frank A. Kelly[1] that "all textbooks on spinal anaesthesia will have to be rewritten, as a result of the epochal work of Dr. George Pitkin," we decided to try spinocain in a varied number of cases at the Norfolk and Norwich Hospital, and to investigate the advantages claimed for this anaesthetic by Drs. Pitkin and Kelly at the recent meeting of the British Medical Association at Manchester.

All the cases were under the charge of Sir Hamilton Ballance, senior surgeon to the hospital. We have used spinocain in thirty-four cases in all. With the exception of the first one or two we have been agreeably impressed by the anaesthesia obtained and particularly by the comparative absence of toxic symptoms, noticeably of any serious degree of shock and other post-operative complications. Almost all the cases have suffered from some pulmonary, cardiac, or other complication contraindicating a general anaesthetic, and a few have been in such a serious condition that the operation would have been associated with serious risk if performed under general anaesthesia. Our experience has been confined to adults—eighteen females and sixteen males. We have not yet had any children in which spinal anaesthesia was indicated.

List of Cases.

1. Male, aged 65. Intestinal obstruction due to peritoneal bands.
2. Female, aged 19. Skin graft of leg.
3. Male, aged 68. Strangulated inguinal hernia (radical cure).
4. Female, aged 37. Intestinal obstruction (caecostomy).
5. Female, aged 35. Amputation of cervix.
6. Male, aged 44. Cystoscopy.
7. Male, aged 33. Skin graft.
8. Female, aged 72. Appendix abscess.
9. Male, aged 65. Right-sided colectomy for neoplasm of caecum.
10. Male, aged 62. Extensive anal fistula.
11. Female, aged 24. Carcinoma of stomach (jejunostomy).
12. Male, aged 78. Suprapubic prostatectomy.
13. Male, aged 23. Manipulation of Pott's fracture, and plaster.
14. Female, aged 36. Myomectomy.
15. Female, aged 49. Cholecystectomy.
16. Male, aged 59. Sliding bone graft of tibia.
17. Female, aged 60. Strangulated femoral hernia (resection of small intestine).
18. Male, aged 35. Psoas abscess.
19. Male, aged 73. Suprapubic prostatectomy.
20. Female, aged 50. Colpoperineorrhaphy.
21. Male, aged 63. Radical cure of inguinal hernia.
22. Female, aged 18. Lengthening of tendo Achillis.
23. Female, aged 55. Cholecystectomy and appendicectomy.
24. Female, aged 54. Subphrenic abscess and suppurative cholecystitis.
25. Female, aged 23. Hammer-toes.
26. Female, aged 41. Cholecystectomy and choledochotomy.
27. Female, aged 50. Subtotal hysterectomy.
28. Male, aged 62. Reduction of fracture tenotomy of tendo Achillis.
29. Male, aged 55. Fistula in ano.
30. Female, aged 54. Tumour of colon (colostomy).
31. Male, aged 55. Double inguinal hernia.
32. Male, aged 70. Suprapubic prostatectomy.
33. Female, aged 52. Carcinoma of colon (right-sided colectomy).
34. Female, aged 47. Strangulated femoral hernia.

It will be seen from the above list that the cases, if not numerous, are at least varied, and in every case but one we were able to finish the operation without the aid of a general anaesthetic and without undue anxiety about the patient's condition.

The longest period of anaesthesia was in a male aged 65 (Case 9). The patient had severe myocarditis, but though the operation lasted two and a half hours he stood it well. He died nine days later from a heart attack. Another case which shows well the length of anaesthesia which can be expected is No. 17. The patient had a strangulated femoral hernia of four days' duration, and the operation, involving resection of gut and radical cure of hernia, lasted two hours and five minutes. This patient was in a very serious condition on admission, yet she gave no anxiety during the operation. These two cases and others in which the operation lasted over two hours serve to show that, provided sufficient spinocain is given, there need be no fear of the anaesthesia passing off.

In the above list there have been three deaths, none of which could be attributed to the anaesthetic. There has been no case of severe post-operative toxic symptoms. A few patients have vomited a little during the first twelve hours, and several have complained of slight headache and stiffness in the posterior muscles of the neck; apart from these, the convalescence has been smooth, and almost all who have experienced a general anaesthetic previously declare their preference for the spinal anaesthetic.

In our first few cases, while we had 100 per cent. successes in operations upon the perineum and lower extremities, there was considerable difficulty in gaining anaesthesia above the umbilicus sufficient for an abdominal operation of any length. This difficulty has, however, been easily overcome, as will be shown later.

Spinocain appears to have a selective action, the patient feeling some vague sensations of touch, but yet not complaining of any pain. Sensory fibres conveying temperature and touch are undoubtedly less affected than those conveying pain, the latter being completely paralysed along with all motor nerves below the spinal block.

Technique of Spinal Injection.

With a few important modifications we have followed the technique devised by Dr. Pitkin, and used needles of 20 and 22 gauge, which undoubtedly traumatize the spinal theca less than the ordinary lumbar puncture ones. These needles have an accurate bayonet-fitting joint with the Pitkin syringe, which is made in three sizes to contain 2, 3, and 4 c.cm. of solution. We have confined ourselves to the solution of light spinocain of specific gravity of 1005, containing 200 mg. of novocain and 2.2 mg. of strychnine sulphate, dissolved in 2 c.cm. of a special solvent consisting of alcohol 14.5 per cent. and sterile water, with the addition of amylo-prolamine, which is supposed to prevent diffusion of the anaesthetic fluid. In conjunction with the above we have used the ephedrine-novocain ampoule of 1 c.cm. containing 10 mg. of novocain and 50 mg. of ephedrine, these being the two solutions used by Dr. Pitkin and manufactured by the Metz Laboratories of New York. Following upon an article by Dr. Falkner Hill[2] we have also used planocain, manufactured by May and Baker, which is really strychnine-free spinocain, and theoretically would appear to be better, the strychnine tending, as Dr. Hill has stated in his article, "to break down the internal resistance of the spinal cord, so that a definite stimulus tends to produce a bigger motor response than in normal conditions."

Following the usual preparations for an abdominal operation, the patient is brought to the anaesthetic room half an hour before the time for the operation, and an injection of omnopon 1/2 grain and hyoscine hydrobromide 1 100 grain given, which serves to allay fear or apprehension. The injection is given in the usual position, the patient lying on his side, the knees being drawn well up and the neck flexed forward. The contents of the ephedrine-novocain ampoule are used to anaesthetize the path down to the spinal theca. A fine-bladed scalpel is then passed along the anaesthetized route, and this, we have found, breaks down the resistance of the ligamentous structures, enabling the spinal puncture needle to pass down to the theca without using the slightest force, and the dura can be punctured with ease. We usually inject between the second and third lumbar vertebrae, though, provided one keeps to the lumbar region of the spine, the actual site does not seem to matter. The patient should feel no pain at all.

Mixing the solution with the cerebro-spinal fluid, to the extent recommended by Pitkin, we have found tends to diminish the depth and length of the subsequent anaesthesia and also to delay the start; hence, once the cerebro-spinal fluid appears, we draw up 1/2 c.cm., slowly inject the mixture of spinocain and cerebro-spinal fluid in the syringe, but before the last 1/2 c.cm. is injected, again draw up a few drops of cerebro-spinal fluid and complete the injection. We believe this is better than alternate aspirating and injecting, as in some of the earlier cases in which this was done often ten to twelve minutes elapsed before the operation could be started. Since we have used the technique just described the onset of anaesthesia has been immediate, or, at any rate, as rapid as with stovaine. Prior to the injection the so-called tiltometer is attached to the table, and the degree of tilt necessary can be adjusted.

In the case of an abdominal operation where a mid-line or paramedian incision is being used, the patient is immediately turned on his back. In the case of a hernia, or an operation on an extremity, the patient is kept on his side with the operable site uppermost for five to seven minutes, hemianaesthesia being thus obtained. Spinocain having a lower specific gravity than the cerebro-spinal fluid, the patient lies on the opposite side to the incision, exactly the reverse to stovaine (heavy solution).

Dosage.—We consider that a dose of 2 c.cm. of spinocain, unless the operation be a short one, is inadequate. Dr. Pitkin stated that 400 mg. of spinocain, equivalent to 6 grains of novocain, could be given with impunity, and we have found that anything from 2.5 c.cm. up to 3.2 c.cm., varying with the length of anaesthesia required, the state of the blood pressure, etc., can be given with safety. Our average is 3 c.cm., equivalent to 4½ grains of novocain, and with this amount anaesthesia up to two hours can be obtained, and the onset is also much more rapid.

The Blood Pressure.

According to Pitkin and Kelly,[1] spinocain does not cause any considerable fall in blood pressure, provided sufficient ephedrine is given beforehand. We cannot altogether subscribe to this statement, for in spite of the injection of 50 mg. of ephedrine a very considerable fall may take place. A patient with a systolic pressure of 160 mm. of Hg before the spinal injection is given may, a quarter of an hour afterwards, register only 70 mm. of Hg. According to Hill[2] the fall in blood pressure is very variable, and there may be no fall even in the event of the anaesthesia reaching the second dorsal root. We have not found this so, there being usually a considerable fall, even when the anaesthetic agent reaches the fourth dorsal root.

Kelly states that "if the spinocain is allowed to run up to the second dorsal root, all the vasomotor nerves will be paralysed, and a considerable fall in blood pressure will result." We frequently have anaesthesia up to the nipple level, which corresponds roughly to the fourth dorsal root, and in such instances the fall in blood pressure is very variable, being sometimes great and at other times slight—that is, it may fall as much as 100 mm. of Hg or only 10 or 20 mm. of Hg. Hill suggests that the variability of the fall may be due to the posterior nerve roots only being anaesthetized, and not the anterior, the vaso-constrictors thus escaping. It is difficult to see how this can be when it is remembered that spinocain is lighter than cerebro-spinal fluid. One would expect the solution to float to the surface when the patient is lying on his back, and so to affect the anterior nerve roots as well as the posterior. Suffice it to say that a considerable fall in blood pressure may take place, and certainly the addition of strychnine does not appear to prevent it. We agree with Dr. Hill that "the last word has not been said on this question": it is certainly difficult to explain the variability of the fall in these high anaesthesias.

Undue stress appears to have been laid on the fall of blood pressure. It is usually only transient, being greatest during the first half-hour, and from this period onwards it usually rises slowly, and at the finish may be only little below the original reading. In the event of its falling to 70 mm. of Hg we usually inject another half-grain of ephedrine and lower the head of the table, and this usually causes it to rise slowly. We have not seen any patients become nauseated or restless as a result of lowered pressure, and apart from some pallor of the face they do not seem to be affected to any great degree. It would appear that the toxic symptoms of nausea and collapse, which were at one time attributed to the fall in blood pressure in stovaine anaesthesia, are at least in part due to the much greater toxicity of stovaine; they are certainly absent in spinocain anaesthesia, and there is no reason to fear this early fall in blood pressure.

Controllability of Anaesthesia.

Dr. Pitkin states that if the table be lowered to a 5 degree Trendelenburg position following administration, anaesthesia reaching up to the costal margin will be obtained thereby. We had at first considerable difficulty in obtaining anaesthesia above the umbilicus, sufficient for a simple coeliotomy, following the injection of 3 c.cm. of spinocain, even when the table was placed with the tiltometer at zero. It would appear that to gain anaesthesia up to the fourth or fifth dorsal root the fluid would require to run towards the head—that is, downwards—owing to the convexity of the dorsal spine when the table is level as shown by the tiltometer. This is supposed to be impossible. Dr. Hill states that if 2 c.cm. of spinocain is injected into the lumbar region with the patient in a 5 degree Trendelenburg tilt, "there may be anaesthesia running downwards from an inch below the nipple level; or only from an inch below the umbilicus." We have not found this so; as a general rule we have not been able to get adequate anaesthesia to the costal margin with 2 c.cm. when there has been such a 5 degree tilt.

It was this difficulty that finally induced us to put the patient in the reversed Trendelenburg position and allow the fluid to run up to the dorsal area of the theca. We now give the injection with the patient on his side and with the table in a 7 to 10 degree reversed Trendelenburg position. We have found that 3 c.cm. given thus produces

a perfect anaesthesia with good muscular relaxation sufficient for any abdominal operation. With the adoption of this position for the injection it is important to keep the head and upper cervical area lowered; this can be done with safety by placing the shoulders on a level with the cephalic joint of the table, and by lowering the headpiece. This simply means that during the injection the thorax is raised 7 to 10 degrees, but the head and neck are dropped; and this position, with the head dropped after the patient is turned on his back, is maintained throughout the operation. In the event of a fall of blood pressure taking place, or should the operation require it, the table can be placed level, or even in the Trendelenburg position after ten to fifteen minutes; this does not appear to affect the anaesthesia, the solution being apparently fixed after this period of time. We have not found the controllability to be as accurate as Dr. Pitkin would lead one to believe: in the case of an extremity, however, the anaesthesia can certainly be confined to the lower reaches of the cord by using a sufficient tilt, say 12 to 15 degrees.

Duration of Anaesthesia.

Dr. Hill states that "duration is a variable quantity." Possibly it is, if only 2 c.cm. be used, but if 3 c.cm. be given there is no fear of the anaesthesia passing off under 1¾ hours. Since adopting the reversed Trendelenburg position we have frequently had anaesthesia lasting 2¼ hours, and no case has required general anaesthesia to finish off with.

Comparison with Other Spinal Anaesthetics.

We have had no experience in using percaine or a 10 per cent. novocain normal saline solution. Prior to the introduction of spinocain we have employed Barker's solution of stovaine as a routine. Dr. Howard Jones (*Lancet*, January 25th, 1930, p. 211) seems to be unnecessarily severe in his criticism of the Pitkin method. We have found spinocain to be superior in many ways to stovaine; true, the muscular relaxation may not be so good, but this is more than counterbalanced by the absence of toxic symptoms, so often seen with stovaine, by an increased measure of safety, and lastly by an increased duration of anaesthesia.

Summary.

We regard spinocain as a distinct advance in spinal anaesthesia. Whether the addition of amylo-prolamine is of importance in preventing too rapid absorption of the novocain or not we cannot say; we have certainly found it an ideal spinal anaesthetic which can be given to patients in a critical condition, with little or no fear of a catastrophe. Age does not appear to be any bar, and some of our best results have been in old and enfeebled patients in whom only a local or regional anaesthesia would have been permissible. We regard the most important points in connexion with it to be:

1. A preliminary injection of omnopon and hyoscine half to three-quarters of an hour before the operation.
2. An accurate technique during the spinal injection, which should be painless.
3. Comparatively little mixing of the solution with the cerebro-spinal fluid.
4. For upper abdominal work a 7 to 10 degree reversed Trendelenburg position of the table during the injection.
5. Close attention to the blood pressure readings throughout the operation.
6. Adoption of the Trendelenburg position in the ward for some two hours following upon the operation.

Provided the above details are attended to we are confident that a safe and lasting anaesthesia can be obtained, sufficient for any present-day abdominal operation.

I am greatly indebted to Sir H. A. Ballance for permission to publish these cases, and for his kindly help and criticism of this article.

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[1] Pitkin and Kelly: Spinocain, the Controllable Spinal Anaesthetic, *British Medical Journal*, August 3rd, 1929, p. 183.
[2] E. Falkner Hill: Spinal Anaesthesia, *Lancet*, January 18th, 1930, p. 124.

REMARKS BY SIR HAMILTON BALLANCE.

Additional cases of operation under spinocain and planocain anaesthesia have been performed since the above was written, bringing the total to 50 with uniformly satisfactory results, including a difficult case of renal calculus in an old man. Although novocain has been used for spinal anaesthesia for many years, Dr. Pitkin deserves credit for again directing attention to its advantages and for describing a method of painless administration. In the past I have had many anxious times with such drugs as stovaine, tropacocaine, etc., but there has been no anxiety after administration of the novocain solutions. The hypodermic injection of omnopon and scopolamine about three-quarters of an hour before the spinal injection is a distinct advantage; some patients state afterwards that they do not remember coming into the theatre for the operation. The temporary upward tilt of the thorax ten degrees during the injection, but with the head low by means of lateral flexion of the neck, is recommended if anaesthesia to the nipple line is essential for the operation, and I believe this position to be perfectly safe.

The precise action of novocain on the spinal nerves, motor and sensory, may be a matter for discussion, but I have been impressed with the reliability and controllability of the method, the completeness and duration of the anaesthesia, and the absence of bad after-effects on the patients.

TREATMENT OF EYE DISEASE BY TUBERCULIN.

BY

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THE ophthalmic surgeon is not infrequently faced by cases of inflammatory trouble in the eye which do not yield to ordinary methods of treatment, and in some instances progressively get worse until partial or complete blindness results. I am convinced that in some of these cases the trouble is due to tuberculous disease of the eye, and for the last seven years I have been observing the effect of tuberculin in the diagnosis and treatment of certain refractory cases of chronic conjunctivitis, irido-cyclitis, scleritis, episcleritis, and even some obscure forms of retinitis. Apart from tubercle in the choroid in acute tuberculosis, it would seem that tubercle bacilli may reach the choroid and cause a simple choroiditis.

These tuberculous lesions of the eye have some special characters that have helped to obscure their diagnosis. Like the secondaries of syphilis they occur in the secondary stage, when tubercle bacilli are circulating in the blood; therefore one must not expect any phthisical lesion of the lungs. Examination of the lungs may not help in the diagnosis of tuberculosis of the eye, for these eye diseases are earlier in time than the chronic or phthisical lesions of the lungs. They develop slowly—in the course of years rather than months. They tend especially to recur, and they remain localized; yet in course of time one attack after another causes severe symptoms, and though the lesion is limited, it may give rise to pain, headache, and photophobia, and may greatly impair or destroy sight.

Within the last two or three years I have been given the opportunity of making more extended use of tuberculin, through the interest and co-operation of several ophthalmologists, notably Mr. C. L. Gimblett of the Royal Westminster Ophthalmic Hospital and Dr. Douglas McAlpine of the Middlesex Hospital. The necessary ophthalmoscopic examinations during the progress of treatment were made by surgeons interested in their respective cases. The following notes are of cases that have been referred to me for diagnosis, and for treatment when suitable.

CASE I.

An unmarried woman, aged 31, was described by Mr. Gimblett in June, 1928, as being a case of obscure irido-cyclitis of four years' duration, ending in secondary glaucoma. On incising with the keratome the lens was found to be disintegrated and destroyed. A similar condition has appeared in the left eye, which threatens to go the same way as the right. Tested with

tuberculin by the intracutaneous method the result was positive (++). She was treated with subcutaneous doses, beginning with 0.00001 c.cm. TR. When 0.00006 c.cm. was reached, the temperature was raised to 99.6°, and there was a track reaction (++). In one month there was some improvement, and in January, 1929, Mr. Gimblett wrote: "Patient is very strikingly better, and nothing until she started under your treatment did her the least good. In a few more months she would have been blind. Keratitis punctata has almost disappeared even from the right eye. As to the two anterior chambers, the vitreous chamber is still crowded with exudate." Treatment was continued until 1 c.cm. TR was given in one dose; there was then severe track reaction (+++), but the temperature was only 99.4°. As progress seemed to have come to a standstill, though the patient was very much better from treatment, I proceeded to graduated doses of BE, until 1 c.cm. was given at one dose. The temperature hardly rose above normal. In November, 1929, Mr. Gimblett wrote: "Both eyes quiet and the left vision with a +0.75 D cylinder 80° is 6/18 all. There are deposits on the lens, but no keratitis punctata now. Is there any possibility of her working?" By December, 1929, the patient had gained half a stone in weight and looked a new woman; her eyes were so improved that she hoped to do some work after years of incapacity, and her general health was very much improved.

CASE II.

A girl, aged 16, was treated at Great Ormond Street Hospital for rheumatism at the age of 12, and the heart was thought to be affected; in 1928 it was quite normal. In March, 1923, the eyes became red and painful, and the patient attended the Western Ophthalmic Hospital, where she was treated by Mr. Robinson for seven months, during which time the legs also became inflamed and discharged as the result of erythema induratum. In 1927 the eyes were again affected, and the patient was again treated by Mr. Robinson, being sent to Bournemouth for two months. The eyes became worse and were very painful; there was sharp pain in the head, and the patient was unable to sleep, leeches being applied without benefit. She attended the Ophthalmic Hospital twice a week and had drops instilled. Dr. Douglas McAlpine could find no trace of tuberculosis in the lungs (December, 1927), but sent the patient to the tuberculin dispensary for specific diagnosis. The result was positive, and after prolonged treatment with tuberculin, until very large doses were being taken without any serious reaction, the patient was restored to apparent health. The eyes are now quite normal in appearance and function, and the legs are completely healed. The patient has been back at her usual work (carpet sewing) for more than twelve months.

CASE III.

In October, 1927, a patient was sent by Dr. Carter of Wolverhampton, the symptoms being violent pains in the eyes with photophobia; the eyes were very bloodshot, there was sickness and giddiness, and the temperature was often 99.2° to 99.4° in the evening. The patient was absolutely incapacitated, and was confined to a dark room for many months. The weight was 8 st. 4 lb. Tested with tuberculin (Pirquet method) the reaction was positive. Subcutaneous injections of TAF were given, beginning with 0.0000125 c.cm. The temperature rose to 99.6°. In November the patient wrote: "The sight of both eyes is almost normal now, which is surprising, as the right eye has been short-sighted for several years, and there has been no return of the pain or fear of light that I have had for so many months, and in addition to this I have gained weight—six pounds since I was last weighed in August—so the treatment seems to be eminently satisfactory." In December he wrote again, "The eye is still clear, and it is having quite a normal amount of use." The patient was treated with TAF up to a dose of 0.6 c.cm. (September, 1928); by February, 1929, a dose of 0.95 c.cm. TR had been reached. The weight was 8 st. 9½ lb., and in March, 1929, the patient wrote: "My general health is most satisfactory."

CASE IV.

A married woman, while at the seaside in 1923, had a severe attack of conjunctivitis, the eyes being intensely inflamed, painful, and discharging. They recovered in six weeks; but each summer the sunlight caused recurrence of the inflammation, and dark glasses have been required. In 1928 the eyes were again inflamed and painful, and the vision was blurred; she went to the Central Hospital twice a week for two months, and atropine ointment was applied night and morning. The patient was then almost blind, her vision being gravely distorted. She was seen by Dr. Leech of Watford, who advised that a specific test should be made at the tuberculin dispensary. Her weight was 8 st. 11 lb. At the commencement of specific treatment one eye was completely blind and the other partially so. After treatment with increasingly large doses of tuberculin for eight months the sight became quite keen, and the weight increased from 8 st. 11 lb. to 9 st. 9 lb. In August, 1929, the vision being again impaired, a further course of tuberculin was given. In October, 1929, Dr. Leech wrote. "Her sight is now quite clear and she can read small print, whereas when she started treatment she was unable to see even the largest test-type clearly." Mr. Gimblett wrote: "Evidence of old iritis in right; no keratitis punctata now. Venous engorgement of both discs. Everything appears quiet. No doubt she has had an inflammation of all the ocular structures, even the optic nerves, which is gradually subsiding."

CASE V.

A woman, aged 56, who was sent in July, 1923, by Mr. James of St. George's Hospital, had attended there since 1914 for iridocyclitis. The left eye was blind and the right was gravely affected. She had to be led to the dispensary by her sister, being able to see nothing, not even light. She reacted severely to the intracutaneous test with tuberculin. She was treated at the tuberculin dispensary, the final dose being 1.1 c.cm. TAF. In February, 1929, the sight was so much improved that she could walk through London streets to the dispensary by herself; the general health had also improved. In August, 1929, she could still go about by herself.

CASE VI.

In July, 1928, a female patient with a very bloodshot eye, attributed to ulcers, was given drops and tonics for one month with no improvement; the eye was greatly swollen and red, and she had severe pain. At the Western Ophthalmic Hospital iridocyclitis of eight months' duration was diagnosed. Mr. Taggart suspected tuberculosis, and Dr. Douglas McAlpine sent her to the tuberculin dispensary for specific tests, which were positive. Tuberculin treatment was begun in February, 1929, and the sight is now completely restored; the general health vastly improved, and she "feels a different person."

CASE VII.

A married woman, aged 32, saw Mr. Gimblett in 1925 and was ordered glasses. In October, 1928, she had headaches, and he found retinitis. A blood test was negative. She was sent to the tuberculin dispensary and tested with tuberculin. After a subcutaneous dose of 0.0015 c.cm. T.A.F. the temperature rose to 102°, and the track reaction was ++. She was treated with tuberculin until July 20th, 1929, when with 1.5 c.cm. TAF there was a reaction temperature of 100°. Her improvement was marked, and all pain has been lost since treatment. In April, 1929, Mr. Gimblett wrote: "She has now very much less floating opacities in her right eye and no further fresh patches of retinitis in the left; so far so good."

CASE VIII.

In August, 1928, an unmarried woman, aged 21, complained that her eyes were misty; she could hardly see, and went to the Middlesex Hospital; she attended for three months with no improvement. In November, 1928, she went to the Royal Ophthalmic Hospital and saw Mr. Gimblett, who sent her to the tuberculin dispensary for "double irido-cyclitis of three months' standing." Her weight was 6 st. 7 lb. She was tested with tuberculin, the reaction being +++, and was treated with small doses. In December Mr. Gimblett wrote: "The keratitis punctata has practically disappeared, although both vitreous chambers contain much floating opacities." In March, 1929, he added: "The patient is very greatly improved, and all the keratitis has disappeared. The left pupil is almost fully dilated, and the vitreous is very much clearer." In August, 1929, he wrote: "The eyes are quiet"; and in November, 1929, "The right eye is well; I think the left eye has no keratitis punctata, and apparently no active lesion." In January, 1929, after an absence of fifteen months, the patient returned to work (fine needlework). Her weight was 6 st. 12 lb., a gain of 6 lb. and the general health had greatly improved. She is extremely sensitive to tuberculin, and still needs treatment for a long time.

CASE IX.

In a married woman, aged 44, the right eye was affected at the ages of 25 and 28. In February, 1929, she visited the Western Ophthalmic Hospital, where the eyes were reported weak, and reading glasses were ordered. Six weeks later she had an operation on the left eye, followed by complete loss of vision. She was advised by Mr. Taggart to attend the Hospital for Epilepsy at Maida Vale, where she saw Dr. McAlpine, who sent her to the tuberculin dispensary. The eye was still blind and very painful. A tuberculin test resulted in a reaction of +++, and a course of treatment was begun in May, 1929. In July there was less pain, and the sight was clearer. In August the eye was weak again, and there was pain and inflammation; a fortnight later the eye was much better; the discharge had ceased, and the eye was clearer than before. The sight is now so much better that she can read, and her general health is excellent. The treatment has been uninterrupted in spite of relapse. In December, 1929, she reached the highest dose so far, 0.5 c.cm. TAF; the treatment is still continuing.

Four other patients who were sent to the tuberculin dispensary for diagnosis gave negative reactions both to intracutaneous and to subcutaneous tests, showing that it

is far from true that all persons react to tuberculin. In these cases tuberculin treatment was not undertaken.

The cases I have recorded above seem to offer prima facie evidence that there are patients with inflammatory trouble in the eyes who do not benefit by ordinary methods of treatment; that many of these patients react to diagnostic doses of tuberculin; and that treatment with tuberculin produces marked improvement, or even arrest of the trouble, in a considerable number of these reacting patients. Since the use of tuberculin, for both diagnosis and treatment, by the methods I advocate is completely innocuous to the patient, I submit that its employment in such cases is amply justified. The satisfaction of the patients who have been treated at the tuberculin dispensary, coupled with the recorded opinions of the ophthalmic surgeons under whose care they were, encourage me to suggest that wider trial of these methods should be made in the treatment of eye diseases.

ON SPECIFIC ANTITOXINS IN STREPTOCOCCAL INFECTIONS.

BY

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WHILE it has long been common knowledge that streptococcal infection was responsible for a number of clinical varieties of disease—for example, cellulitis, erysipelas, tonsillitis, puerperal fever, scarlet fever, ulcerative endocarditis, etc.—it is only in recent years that it has been possible to differentiate and classify special groups of streptococci.

It was found that streptococci could be differentiated by their fermentative action on different sugars, and also by their haemolytic action on blood corpuscles, certain streptococci when grown on blood agar plates producing a clear red halo of haemolysis around each colony. These haemolytic streptococci are of special importance, as they are responsible for some of the most serious infections—for example, puerperal septicaemia, erysipelas, and scarlet fever. In 1924 the Dicks described a soluble toxin, derived from culture of haemolytic streptococci obtained from the throats of scarlatinal patients, and with which experimental scarlet fever had been produced. This toxin when injected intradermally produces a pronounced erythematous blush in the surrounding skin of patients whose blood does not contain enough of the specific antitoxin to neutralize it, and is widely used to test susceptibility to scarlatinal infection (the Dick test), exactly in the same way that the diphtheria toxin is used to test susceptibility to diphtheria (the Schick test).

Similar toxins were discovered in 1926 by Birkhaug in the case of erysipelas, and by Lash and Kaplan in the case of puerperal sepsis, the toxin of which differs from the Dick scarlatinal toxin in being heat labile, whereas the Dick toxin is not destroyed by boiling. These toxins also produce skin reactions similar to those of the Dick reaction in persons susceptible to erysipelas and puerperal fever respectively. The toxin prepared by Lash and Kaplan was made use of for testing the susceptibility of pregnant and non-pregnant women to puerperal sepsis. Antitoxic serums were produced by Birkhaug by immunizing animals with erysipelas toxin. This serum agglutinated haemolytic streptococci from erysipelas, and also had a striking therapeutic effect in erysipelas infection. Similar antitoxins have been prepared from toxin from puerperal septicaemia. Some doubt, however, has been thrown on the specific nature of these toxins and antitoxins during the last few years, especially by some investigators in this country. It would appear probable that there is a factor common to all three groups, that there is also a factor special to each of the toxins and antitoxins, and that to produce the most satisfactory therapeutic effect the specific antitoxin should be injected.

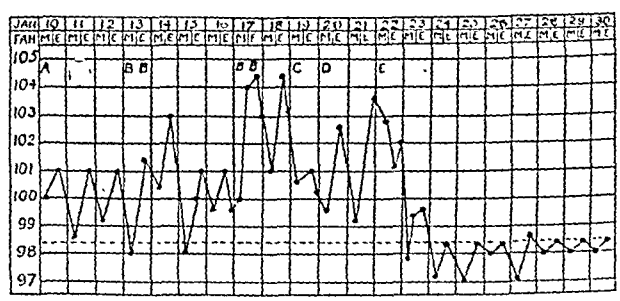
With regard to the specificity of the scarlet fever and erysipelas toxins, the Dicks have lately conducted a series of experiments which should be conclusive.[1] They demonstrated that there was no direct relation between spontaneous immunity to scarlet fever and erysipelas toxin. It was shown that an attack of scarlet fever does not confer immunity to erysipelas, and that artificial immunization by scarlet fever toxin confers no immunity to erysipelas toxin; also that scarlet fever antitoxin prepared by immunizing a horse with toxin from scarlet fever streptococcus neutralizes scarlatinal toxins, but does not neutralize erysipelas toxin, and erysipelas antitoxin neutralizes toxins derived from strains of erysipelas streptococci, but not scarlet fever toxin. The Dicks conclude, therefore, that the soluble toxins produced by scarlet fever and by erysipelas haemolytic streptococci are immunologically specific and distinct.

Working with scarlet fever, erysipelas, and puerperal fever toxins, and with convalescent serums and antitoxins, Ferry and Fisher found that in low dilutions of the serum there was more or less cross-neutralization of the toxin by the serum, but in high dilutions the serums neutralized only their homologous toxins. If these results are accepted it is evident that to get the fullest advantage from antitoxic treatment the special antitoxin should be employed. In the case of puerperal fever, although the great majority of severe infections are due to the haemolytic *Streptococcus pyogenes*, other organisms are occasionally responsible, and a culture from the cervical canal and from the blood should be taken.

A case which has recently been under my care is a very striking illustration of this specific action.

The patient was attacked by a throat infection with a haemolytic streptococcus, which in the course of two or three days from the beginning of the illness invaded the middle ear and the mastoid cells on the right side. I saw her on the third day; her evening temperature was 101° F., and there was tenderness and slight oedema over the mastoid. A swab from the throat was taken, and 10 c.cm. of polyvalent antistreptococcal serum administered. On the following day an operation was performed upon the mastoid by Mr. K. D. Mackenzie. All the mastoid cells were infected, and a pure culture of a haemolytic streptococcus was obtained. The throat culture showed haemolytic streptococci and *Micrococcus catarrhalis*. The culture was incubated with the patient's blood by Dr. Biddle, pathologist to the East Suffolk Hospital, and the blood was found to have no bactericidal effect upon the streptococcus.

Following the operation there was free suppuration, and the temperature showed no diminution, reaching 101° F. each evening. On the fourth day after the operation 10 c.cm. of concentrated scarlet fever antitoxin was given intramuscularly in the morning, and the injection was repeated in the evening. On the following



A, Operation. B, 10 c.cm. scarlatinal antitoxin. C, 10 c.cm. polyvalent serum. D, 15 c.cm. collosol argentum (intravenous). E, 10 c.cm. erysipelas antitoxin.

day, the fifth after operation, the temperature reached 103° at 2 p.m., and definite erysipelatous infection of the pinna of the ear and the skin in the temporal fossa was evident. The pulse rate went up to 110; it had previously ranged between 80 and 100. The leucocyte count was 13,000.

During the next few days the erysipelas continued to spread in the skin of the forehead to the nose. On the eighth day after the operation the temperature was 104° in the morning and 104.4° in the evening; the pulse rate was 116. The patient was given 10 c.cm. of scarlatinal antitoxin intramuscularly in the morning, and a similar amount in the evening. On the next day the temperature was 101° in the morning and 104° in the evening. On the tenth day the temperature was 101°, and 10 c.cm of polyvalent streptococcal serum were adminstered. The leucocyte count was 10,000. On the eleventh day erysipelatous infection had reached the left side of the face. The temperature was 102.6°, and 15 c.cm. of colloidal silver was given intravenously. No improvement followed, and on the thirteenth day the temperature again reached 103° F. An intramuscular injection of 10 c.cm. of concentrated erysipelas antitoxin was given on that afternoon.

On the next morning the temperature fell to 98°, only reaching 99.4° in the evening, and on the following and subsequent days it remained absolutely normal. All traces of erysipelas had disappeared from the face, the leucocyte count dropped to 7,000, and the patient looked and felt completely convalescent. Suppuration rapidly diminished, and completely disappeared in a fortnight.

The improvement in the patient's condition was remarkably dramatic, and I think undoubtedly due to the specific action of the erysipelas antitoxin on the streptococcal infection.

REFERENCE.

[1] *Journ. Amer. Med. Assoc.*, December 7th, 1929.

PSITTACOSIS WITH ENCEPHALITIC SYMPTOMS.

BY

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DR. A. P. THOMPSON (*Lancet*, February 22nd, 1930, p. 396) describes a case (No. 8) of psittacosis in which the nervous symptoms were marked enough to suggest a diagnosis of encephalitis. Below is a description of a similar case occurring in Port Said. This is the first recorded case of the disease in Egypt.

The patient, Mrs. H., aged 32, a British resident of Port Said, had begun to feel ill on the evening of February 10th, 1930, with headache, cough, and vomiting. She was seen by a local practitioner, and as her condition became steadily worse during the next few days and no definite diagnosis could be arrived at, she was admitted to the British Hospital on February 15th.

On admission the patient looked ill, being flushed and bathed in perspiration. She complained of severe headache, especially at the back of the head, and difficulty in speaking and swallowing. She was also slightly delirious. Her temperature was 102.8° F., pulse rate 114, and respiration rate 28. On examination a few moist sounds were heard at the left apex. The right lung was clear and the heart normal. The abdomen was distended, but not tender on palpation, and the tip of the spleen could just be felt. A trace of albumin was present in the urine. A bilateral Babinski response was elicited, and also Kernig's and Brudzinski's signs. Both knee-jerks were absent, and the fundi were normal. There was no cough or dyspnœa, and no sputum could be obtained.

On February 16th the patient's condition was worse, the temperature being 104° F. and the pulse rate 98. She was still complaining of severe headache. Lumbar puncture was performed; the fluid was clear and not under pressure and it disclosed no abnormalities on examination. On February 17th she was much worse; the abdominal distension had increased, the temperature was 102.6° F., and the pulse rate 88. The left apex was now solid and air entry was practically absent. Coarse crepitations were present over the whole of the left chest. The patient was more delirious, very weak, and unable to speak.

Agglutination tests for "O" and "H" agglutinins against *B. typhosus* and *B. paratyphosus* A and B were negative, and it was not possible to demonstrate the presence of specific agglutinins for any member of the biphasic group of salmonella organisms. Blood culture in a variety of media and inoculation experiments were negative. Culture of the fæces and urine resulted in the isolation of *B. faecalis alkaligenes*. It was present in pure culture in the urine. Thompson notes a similar finding in one or two cases. There was a leucocytosis, the number of white blood corpuscles being 15,000 per c.mm.

During the evening of February 17th the patient was seen by another medical man in consultation, and a diagnosis of psittacosis was made. The patient had twenty-three birds at home including three parrots and two love-birds recently acquired. The husband stated that some of the birds had been fighting furiously. Two had died after this disturbance; probably they had been sick and were killed by the others. All the birds were gassed, and post-mortem examination and a fairly extensive cultural investigation yielded negative results. This does not discount the possibility of the dead birds having been infected with the virus.

During the next three days coma supervened; the abdomen became more distended and the temperature remained between 103° and 104° F., the pulse being relatively slow. Examination of the fundi showed blurring of the edges of the discs, suggesting a rise of intracranial pressure. The condition of the patient was critical. On the evening of February 21st lumbar puncture was again performed; the fluid was clear, but this time it came out under great pressure, and on examination small numbers of diplococci were seen. The same evening an injection of 30 c.cm. of polyvalent antipneumococcal serum was given intrathecally. After a rather severe reaction the temperature fell the next day to 100.2° F. A further 20 c.cm. of the same serum were then given, intrathecally as before. A mild reaction occurred, during which the temperature rose to 102° F. and then fell to 99° F. The coma now began to diminish, and the patient seemed much better. The fundi were now normal.

On February 23rd 20 c.cm. of polyvalent antimeningococcal serum were given intravenously, and the temperature fell to 98.2° F. in the next few hours. During the following two weeks the patient slowly gained ground and made an uninterrupted recovery. On March 5th she was able to sit up in bed and take solid nourishment. At the moment of writing she still has some slight difficulty in articulation, and the features are rather inexpressive, resembling the mask-like facies seen after encephalitis lethargica. However, both these conditions are improving rapidly, so that in all probability no permanent disability will result.

I have never seen any reference to a case of psittacosis in which the meningeal symptoms and the general nervous symptoms were so pronounced. Although an apical lobar pneumonia is always associated with active delirium and some nervous symptoms, I incline to the clinical diagnosis of psittacosis, for these reasons:

1. After a week's illness the patient appeared to be as ill as if she were in the third week of enteric fever—she had a brown, furred tongue, sordes on lips, etc.

2. The left lung was solid: there was no tubular breathing and hardly any air entry; the patient had no dyspnœa, no cough and no expectoration: coarse crepitations were present: in fact, the chest condition was more acute than in any condition I know.

3. A meningitis can develop in any acute condition.

4. The specific serum treatment was hardly sufficient to have worked so remarkable a cure.

5. The nervous symptoms were more those of an encephalitis than of a pure meningitis—for example, the mask-like expression of the face, the early loss of knee-jerks, the double Babinski response, and bulbar paralytic symptoms (speech and swallowing) before the cerebro-spinal fluid was even cloudy or contained abnormal cells or organisms.

6. The impression I gained from this case was that it was a clinical syndrome that I had never met before.

I am indebted to Dr. Dolbey and Major Benstead of Cairo for their kind and valuable assistance in enabling me to prepare this case for publication, and to Dr. R. P. Stewart for permitting me to publish this report.

TREATMENT OF MEASLES WITH AMIDOPYRIN.

BY

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THESE observations are intended as a preliminary communication on the curative effects of amidopyrin in the treatment of measles. This drug is a white crystalline compound, slightly bitter, and easily soluble in water. According to the French *Pharmaceutical Codex* the maximum single dose is 15 grains, the maximum in twenty-four hours is 45 grains.

In the following case of measles drastic measures seemed to be indicated, and I decided to utilize the powerful antipyretic property of the drug. The discovery that it seemed to exercise an almost specific action on the disease itself was fortuitous, and led me to make a search of the literature. I found that Loewenthal[1] had used the same drug in the treatment of measles, but it does not seem to have been generally adopted.

The patient, a girl aged 8, had a history of whooping-cough in 1922, leaving her with chronic bronchitis. In September, 1929, she had lobar pneumonia, and while convalescing, though still weak and coughing, she developed measles. I was called to see her one afternoon when the rash was just appearing behind the ears and on the forehead. Her temperature was 104.5°; there was marked coryza, and Koplik's spots were present. The pre-existing cough was more severe. She was immediately put on amidopyrin, 5 grains four-hourly day and night. The next morning (about twenty hours after she was first seen) the temperature was down to 100°. Instead of the anticipated profuse eruption only a faint morbilliform rash was showing. The drug was continued

for forty-eight hours. Improvement was rapid, and in four days after the onset of the rash the patient was feeling quite well and able to get out of bed. The cough was almost gone and indeed was less intense than it had been before her attack of measles.

In view of this result, which confirmed Loewenthal's findings, I decided to make further investigations, and administered amidopyrin in twenty-six cases. The drug was given in the form of pyramidon crystals, the appropriate dose being administered in a teaspoon with a little water. In all cases twelve powders were given at four-hourly intervals during the day and night. Even infants took the drug easily. Comparatively large doses were used according to the formula:

$$\text{Dose (to nearest grain)} = \frac{\text{Age}}{\text{Age}+12} \times \text{maximum dose of drug (gr. 15)}.$$

The doses given were 2 to 5 grains.

Results.

It must be stated at the outset that it was impossible to obtain accurate statistics in general practice, especially in the poorer districts of London, where this work was carried out. In some cases a doctor is called in only to make a diagnosis and in other cases only when the patient does not seem to be progressing well. In view of the special treatment patients were visited more often than is usual in such cases, though a number of parents had to be persuaded to allow this to be done. In the series of cases reported six were seen twice a day during the course of the illness, fifteen were seen once daily, and five only twice with an interval of a few days. It follows that the results can only be recorded in general terms, but, even so, the results are remarkable.

It may be taken that an average case of measles as seen in general practice is quite well and able to get out of bed in ten to twelve days, a slight cough usually persisting even for a week or two longer. This will be taken as a standard with which to compare these cases treated with amidopyrin. These are divided into three groups, according to the time of administration of the drug in relation to the onset of the disease.

Group 1 consists of five cases, contacts from another member of the family, who were specially watched for the onset of the disease, and were treated during the invasion stage on the appearance of Koplik's spots. The measles did not develop in these cases; in only two was there a suspicion of a rash. The children were put to bed as a precaution, but were quite well in two days.

Group 2 consists of sixteen cases seen at the onset of the rash. This is the largest group, the stage at which most cases are first seen in general practice. The administration of amidopyrin caused immediate reduction of temperature, and all symptoms cleared rapidly. The patients were quite well in three or four days.

Group 3 consists of five cases seen at various late stages of the disease in which the drug had a beneficial but less striking effect.

A marked feature of the drug treatment was the fall in temperature within the first day and the complete clearing up of the cough. No complications were observed. The impression conveyed by these results was that the drug must be given early in the disease, and if given early enough in the "Koplik's spot" stage the disease is even aborted.

Criticism.

These results are open to criticism in several directions. It may be argued that the cases treated were mild cases of measles which would have shown almost the same results had no special treatment been given, for it is well known that epidemics of measles vary much in intensity and such mild cases are not uncommon. It might also be argued that many of the cases were not measles, but were diagnosed in error.

This investigation was carried out in the borough of Stepney, where it is interesting to note there were sixteen deaths from measles in February, 1930. In order to obtain a full investigation, necessitating observations at regular short intervals, and confirmation of diagnoses by fever specialists, the medical superintendent of the Eastern Fever Hospital was approached on the subject. Dr. Ronaldson of the staff of this hospital agreed to carry out treatment in six cases of measles on the lines described. Cases at various stages of the disease were chosen, and these were treated and re-examined three days later. The results were considered so satisfactory that it was decided to try the method on a large scale with observations at four-hourly intervals. The results of this investigation will be published in due course. It should, however, be pointed out that measles is not isolated in hospital. The cases are usually treated at home and only sent to hospital when complications are setting in. It follows that hospital cases of measles are usually late cases.

Conclusion.

Amidopyrin has a striking curative effect on the course of measles. The disease may be completely aborted if treatment is given early enough. This treatment is specially suited to general practice, where the disease is seen at its earliest stage.

I am indebted to Dr. Ronaldson of the Eastern Fever Hospital for his help and suggestions in this paper.

REFERENCE.

1 *British Medical Journal*, July 12th, 1924.

DESTRUCTION OF TONSILS BY DIATHERMY.

BY

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IT is well known that many patients with diseased tonsils cannot be subjected to surgical treatment on account of fear or age, or some condition rendering them more liable than the average person to surgical shock. Until treatment by diathermy was introduced the only forms of physical therapy for these patients were by x rays, radium, or the simple electric cautery. X rays and radium cause the tonsils and lymphoid tissue to diminish in size, but the remaining shrunken fibrous tonsil may continue to serve as a focus of infection. Haemolytic streptococci and other pathogenic organisms have repeatedly been found in tonsils that have been subjected to treatment by x rays and radium. Moreover, such treatment may produce dermatitis, and damage to the thyroid and parathyroid glands or neighbouring structures. The effects of the simple electric cautery do not reach the depths of the tonsil, and the hot metal moving through the tissues may damage blood vessels enough to bring about the possibility of secondary haemorrhage.

The inadequateness of other methods affords special reason for examining the possibilities of treatment by diathermy. Diathermy apparatus has undergone steady improvement in design, and side by side with this improvement has accumulated a considerable experience of its use. In this country, in America, and on the Continent, the value of diathermy as a technique for the treatment of lesions of the throat is now pretty generally accepted. During the past four years I have combined true diathermy with fulguration. The tonsil is first killed by the production in its substance of heat, which almost immediately causes coagulation of the proteins and boiling of the tissue fluids. This is true diathermy coagulation. Next I deliberately arc from the tonsil with the active ball electrode, in order to seal the smaller blood vessels and lymphatics, and this process is as efficient as surgical ligation. As a preliminary measure it is often advisable to estimate the blood coagulation time and to consider whether the patient is in a fit state for tonsillectomy. I mention this precaution as I once escaped disaster by refusing to treat a patient who some hours later developed influenzal pneumonia. A general anaesthetic is not required; the use of ether would be dangerous, as a mixture of ether and air might easily be exploded by the sparking of the machine. I prefer cocaine spray anaesthesia, using 1½ to 2 grains of the hydrochloride dissolved in 2 drachms of water.

It is necessary to work with a temperature between 60° C. and 100° C., and this is a predetermined constant for the particular controls of the machine when an indifferent lead electrode 8 × 6 × 1/16 in. is used. This electrode, bearing a suitable terminal, is covered with four

thicknesses of lint, saturated in 20 per cent. saline and strapped securely to one wrist. There is no advantage to be gained from multiplying the number of indifferent electrodes. The active electrode is usually a small metal ball mounted on a curved ebonite holder, through which the insulated current is carried. It is well to keep a variety of electrodes for special sizes and situations of the tonsils. A diathermy current of two amperes is adequate, the frequency of oscillations being about 500,000 per second. The surgeon depresses the patient's tongue with a glass spatula, and uses a forehead spotlight illumination; he should not switch on the current until the active ball electrode is in contact with the tonsil tissue. The operation is rapidly effected with the patient sitting in a comfortable chair. During the operation the tonsil becomes rapidly hotter and a coagulation area spreads from the point of application of the ball electrode to the outer surface generally. The entire operation takes but a few seconds, and the ball electrode is withdrawn to allow sufficient arcing effectively to seal the smaller blood vessels. After the operation the patient is told to use an antiseptic mouthwash three times a day, and not to gargle. A suitable throat tablet—for example, of benzoic acid, cocaine, eucalyptol, and menthol—is prescribed, and for three days the patient should take a light diet. During the first twenty-four or forty-eight hours the tissue round the tonsil becomes oedematous. The patient has only slight discomfort, but as in some cases there is a rise of temperature I think it is advisable to order rest in bed for forty-eight hours. Surgical shock does not occur. Coagulated tissue starts to separate as a slough in about three days, and the process continues for a week or a fortnight. The odour of the slough, though slightly disagreeable, does not trouble the patient, and it disappears when the slough has separated. Infection has not occurred in any of my cases. The formation of scar tissue is accompanied by an ingrowth of epithelium, and the resulting scar is soft and glossy, and shows practically no sign of contraction. I know of no case in which secondary haemorrhage has occurred.

In diathermy the heat is generated within the tonsil and surrounding tissue; in contrast, therefore, with treatment by means of the electric cautery, where the effect is limited to a narrow zone around the hot metal, the tonsil is treated as a unit. In tissue subjected to cautery treatment the proteins are broken down into products responsible for causing toxic shock, the coagulated protein produced by diathermy has no such effect.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CYST OF THE EPIGLOTTIS.

THE following case of dysphagia associated with cyst of the epiglottis is interesting, because the dysphagia persisted after the cyst had been removed.

The patient, a very emaciated woman aged 64, had been seen once by Dr. Masterman-Wood, who sent her to me with the following report: She had come to him complaining that in the past twelve months she had had difficulty and increasing pain in swallowing; regurgitation of food, an associated symptom, produced cough and dyspnoea. By indirect laryngoscopy Dr. Masterman-Wood had recognized an abnormality of the epiglottis, and on account of this he referred the patient to me at the Torbay Hospital. I made a laryngeal examination on January 8th, and found a large globular swelling with blood vessels passing over its surface, situated in front of the left half of the epiglottis and obscuring the left vallecula.

The patient was admitted to hospital on January 23rd, and on the following day, using general anaesthesia, I passed a Jackson's direct laryngoscope, and found that the swelling had a narrow base and was attached to the anterior surface of the left half of the epiglottis. By means of Paterson's laryngeal forceps I grasped the swelling, but being cystic it ruptured, and thick viscid secretion escaped. The site of the cyst was then mopped dry, and I removed all visible remains of the cyst wall by means of the forceps. A diathermy terminal was now passed through the laryngoscope down to the raw area from which the cyst had been removed and the current was applied by Dr. B. Halliwell.

The pathologist's report on the cyst wall was as follows:

"The tissue consists of squamous epithelium forming a layer over young fibrous tissue. The histological appearances are quite consistent with the cyst being dermoid. There is no suggestion of any malignant growth."

The patient was discharged from hospital on January 23rd. She still complained of difficulty in swallowing, and the site of origin of the cyst was incompletely healed. On February 10th she came to the out-patient department; the difficulty in swallowing was still present. Indirect laryngoscopy showed that the affected area was completely healed, and that there was some contraction of the left lateral glosso-epiglottic fold. The patient was instructed to return to the hospital if the dysphagia persisted, but so far she has not appeared. She showed no relief at being told that the condition was non-malignant. It is difficult to explain the continuance of the dysphagia after the site of the cyst had healed.

C. DE W. GIBB, F.R.C.S.Ed.,
Honorary Laryngologist, Torbay Hospital.

ACUTE DILATATION OF THE STOMACH.

THE following details of a case of acute dilatation of the stomach seem to be worth recording in view of the rarity of such a rapidly fatal termination after taking a single large meal.

I was called early one morning to see an Indian labourer, aged about 23. The history was that he became suddenly ill some time during the previous night, about six hours before my arrival. He said he had attended a dinner that night, and had eaten a large quantity of food. He was vomiting enormous quantities of yellow fluid, was in great pain, and could not swallow anything. On examination, he was found to have a subnormal temperature and a distended abdomen, and he exhibited all the signs of collapse. On percussing the stomach, its lower border could easily be made out about three finger-breadths above the pubis, and the stomach note could also be elicited for about the same distance to the right of the middle line. He also had intense pain all over the abdomen, but no rigidity could be made out. The vomited matter had a sour smell; it contained a few grains of rice, of which article the patient had partaken liberally. He was very restless and, though placed in the knee-elbow position, he obtained no relief. He was ordered to hospital, but died on the way.

The patient was well nourished and muscular, and no evidence of any organic disease was discovered at the necropsy. The stomach was found to extend as low down as two inches from the symphysis pubis, and was very congested. The arteries stood out prominently, and the duodenum was also dilated. On slitting open the organ it was found to contain only some bile-stained fluid. Death was undoubtedly due to the acute dilatation of the stomach.

HORACE GILLETTE, M.B., Ch.B.Ed.
St. Lucia, British West Indies.

THIRD NERVE PARALYSIS AFTER MUMPS AND CHICKEN-POX.

PARALYSIS of the intrinsic muscles of the eye after diphtheria is sufficiently common, but it is not often that a similar condition is seen following other infective diseases.

Some three years ago a child was admitted to the eye ward of the Coventry Hospital suffering from paralysis of the sphincter of both irides and from loss of accommodation. Her food returned through her nose, showing that the palatal muscles were paralysed. In fact, the child showed the complete picture of post-diphtheritic paralysis. There was no history of a sore throat, and a swab from nose and fauces was negative. After some questioning a history of mumps was obtained, which had affected several members of the family. The patient was transferred to the medical wards and rapidly made a complete recovery. Unfortunately I have lost sight of the case and cannot trace the notes.

Recently Dr. O'Connor of Leamington asked me to see a girl, aged 15, who was just recovering from varicella. She still had pustules on her face and body. I found that she had a complete paralysis of the sphincter iridis of both eyes, causing the pupils to be fully dilated. Accommodation was also paralysed. In this case the palatal muscles were not affected. Six weeks later she could read ordinary print without glasses, there was no paralysis of accommodation, and the pupils were nearly normal in size and reacted to light and accommodation.

Birmingham. T. HARRISON BUTLER, D.M.Oxon.

Reports of Societies.

OSTEOGENESIS IMPERFECTA.

AT a meeting of the Section for the Study of Disease in Children of the Royal Society of Medicine on May 30th, Mr. H. A. T. FAIRBANK delivered his presidential address on osteogenesis imperfecta.

Mr. Fairbank remarked that the condition of bone fragility had been burdened with a multitude of names, some of which were now recognized as misleading. He preferred the term "osteogenesis imperfecta" because it was descriptive, and in this country was the name by which the disease was most commonly called. It was applied to the infection met with in infants and children in which the chief feature was fragility of the bones. Cases were usually divided into those in which fractures occurred before birth, and those in children who were apparently healthy when born, bone fragility being only evident at a later date; there were many reasons, however, for believing that in the second group as well as in the first the affection began in intrauterine life, and Mr. Fairbank believed it was always congenital. Bone fragility and sclerotics of a deep blue tinge might occur together or separately in members of the same family; many instances of such families had been recorded. Of twenty-eight cases in which he had been able to collect radiographic and other details, familial or hereditary influence was evident in eight. Of the thirteen in which the first fracture was known to have occurred at or before birth there was only one in which the affection appeared in another member of the family, and that was a post-natal case. Of the fifteen post-natal cases in this series many sustained their first fractures soon after birth, and might well be reckoned as ante-natal cases of mild severity. The association with blue sclerotics was seen in eleven cases, four of which were ante-natal. So many infants had blue sclerotics that it was necessary to limit the term to cases in which the blueness was definitely marked. The cases might be divided into the thick bone type, and the disease, a and fragile bone type. The features of the first appearance re best seen in a severe case soon after birth. these cases; long bones were short and, usually, broad and children were puey showed one or more fractures, with a two days. us formation. The second group was much

Group 2 consists and was seen in twenty out of his twenty- This is the largest a child lived long enough it was probable seen in general practeristics shown in the radiographical pic- immediate reduction g to the first group were gradually rapidly. The patients of the second. The increase in dia-

Group 3 consists of f the first group was apparent only in disease in which the dr , and tibia, and not in any other long

A marked feature bones were the seat of obvious frac- temperature within eater extent than the other long bones, up of the cough. Neption of the ribs, which often showed impression conveyed ractures. In seven of his cases there must be given early ending in of the pelvis. Scoliosis, enough in the "Kopl s a sign of want of solidity of the aborted. on eight occasions. An interesting was the imperfect calcification and These results are open of the teeth; occasionally the It may be argued that tter calcified than the temporary. of measles which would tiology, there seemed to be no results had no special tr m was generally thickened and well known that epidemics in a normal manner. It was tensity and such mild ca fractures in these cases united, might also be argued that of fracture was necessary to measles, but were diagnosed to existence in any numbers.

This investigation was carr investigation into the histo- Stepney, where it is interesting this disease, and the teeth deaths from measles in February s the bone. Research was a full investigation, necessitati rence to the biochemical short intervals, and confirmatio irbank believed that the specialists, the medical superint y of material, but this Fever Hospital was approached members of the Section, Ronaldson of the staff of this ho colleagues, were willing out treatment in six cases of measles esent nothing could be Cases at various stages of the dis pe of effecting a cure. Massage had been recommended for the limbs, but this had to be practised with the very greatest care. Faradic treatment of the muscles should be more helpful if the children could stand it; this was a rational treatment, for it seemed hopeless to expect much solidification of the bones without some preliminary treatment of the muscles. In the speaker's experience it was rarely possible to pull out the limb shortened by a malunited bone, and to maintain the length for the many weeks necessary. It was therefore of paramount importance to preserve, if possible, accurate alignment from the first when treating a fracture, for if any bowing was allowed to occur the chance of re-fracture was increased. The only way to deal with a case of marked deformity was to abandon all efforts at lengthening the limb, and if, after due consideration, it was thought advisable to operate, the bone should be supported by overlapping the fragments so that perfect alignment and fixation could be maintained with ease. His operative experience in this condition was limited; he had treated only five cases, but he could not help feeling that the right way to operate for correction of the deformity was to sacrifice lengthening of the bone in order to obtain, instead, a perfect alignment.

PAGET'S DISEASE OF THE BREAST.

A MEETING of the Section of Pathology of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on May 9th, with the president, Dr. J. LAIT, in the chair. Dr. A. B. CLERY showed specimens from cases of Paget's disease of the breast.

The PRESIDENT said he had seen two cases of Paget's disease, neither of which resembled either of the specimens shown by Dr. Clery. In one of his cases the nipple had completely disappeared owing to ulceration, and in the other case there was discharge from the nipple. On reading Professor Muir's paper on Paget's disease in the *Journal of Pathology* he had been surprised to find that some of his own sections resembled very closely some in that paper. One of Professor Muir's cases showed very clearly intraduct carcinoma; this had appeared markedly in one of his own cases. On examining the nipple large swollen cells were found which were quite obviously not part of the squamous epithelium. He thought that in Paget's disease there was an example of duct cancer spreading into the skin.

Dr. T. T. O'FARRELL thought the first case described by Dr. Clery was one of epithelioma; he did not regard the second case as malignant. He mentioned a case he had recently seen in which the nipple was full of cancerous growth; this was not a cancer of the nipple, but a cancer of the breast involving the nipple. He divided these cases into three groups: expected early malignancy, true early malignancy, and established malignancy.

Dr. CLERY, replying, said that the first specimen showed fairly well Paget's cells situated deep down in the Malpighian layer; these were large cells with dropsical protoplasm, and rather deeply stained nuclei. He believed that 1 per cent. of cases of cancer of the breast followed Paget's disease, which he considered as a clinical entity. Epithelioma could occur in the nipple as anywhere else, but he did not think that such an epithelioma was Paget's disease. He was inclined to conclude that his first case exhibited the characteristics of a duct cancer.

Malignant Disease of the Thyroid.

Dr. A. HALPENNY showed a specimen from a case of malignant disease of the thyroid gland with formation of secondaries.

The patient was a woman, aged 21, who was admitted to hospital on September 23rd, 1929, and died on October 15th. A swelling which corresponded with the position of the thyroid gland was stated to have appeared three months previously. The patient complained of huskiness, but there was no tremor and no exophthalmos, and the urine was normal; the enlarged thyroid was found to be smooth and firm, but not hard. She developed marked dyspnoea, and on October 3rd part of the right lobe of the thyroid gland was excised. A week later she became pyrexial, and the temperature reached 103° F. on the day before she died, apparently from asphyxia, fourteen days after the operation. At the necropsy the thyroid gland was found to be nodular and

enlarged; secondary growths of small nodules appeared in the larynx and the trachea. There was gross enlargement of the mediastinal glands, and numerous secondary nodules were scattered throughout the lungs.

The PRESIDENT raised the question of frequency of cancer of the thyroid gland; he thought that it was not very common. He had only once performed a post-mortem examination on a case of malignant disease of the thyroid. He believed that cancer of the thyroid spread most frequently to the lungs. Dr. A. B. CLERY said the patient was suffering from very profound dyspnœa. The advisability of tracheotomy was considered, but the idea was abandoned. He thought the clinical question was whether the dyspnœa was due to heart failure and œdema of the lungs, or to pressure on the trachea. Dr. A. HALPENNY, replying, said there was no evidence of metastasis in the bones, and nothing in the clinical history to suggest it. The incidence of malignant disease in tumours of the thyroid gland was about 1 per cent.

Cerebral Thrombosis and Aneurysm.

Dr. A. R. PARSONS showed two brain specimens. The first was taken from a woman, aged about 60, who was admitted to hospital complaining of some difficulty in articulation. When Dr. Parsons saw her early in September, 1929, he could find nothing wrong with the movement of lips, palate, or tongue, but gradually impairment of movement of the tongue came on with partial paralysis of the pharynx; then difficulty in swallowing set in, and paralysis of the right third nerve. The patient died on September 23rd. Until the paralysis of the third nerve developed the case looked like an ordinary acute paralysis of the pharynx, tongue, lip, and larynx. The second specimen was taken from a patient, a woman aged 47, who had been found unconscious in her bathroom, foaming from the mouth; on admission to hospital she was thought to be suffering from an attack of cerebral haemorrhage. Her sister said that since the age of 14 she had been liable to attacks of *petit mal* at each menstrual period. All the limbs seemed to be equally affected, but there was no distortion of the face. She gradually improved, and seemed to be nearly well. A Wassermann test was negative; her systolic blood pressure was 137, and the diastolic was 95, there was a trace of albumin in the urine. After thirteen days she was peculiar in her manner, and suddenly became unconscious. A spinal puncture was performed, but only pure blood came away. A large haemorrhage, probably at the base of the brain, was suspected, and she died in twenty-four hours.

The PRESIDENT, demonstrating the first specimen, said there was unilateral thrombosis of the pons and medulla. In the second specimen the brain showed miliary aneurysm in the circle of Willis, and extensive haemorrhage. He asked if a Wassermann test had been performed in the first case described by Dr. Parsons, and said that these thrombosis cases were usually syphilitic.

Dr. A. B. CLERY said it was difficult to realize how a sufficient degree of trauma could occur without producing a fracture. He thought the transient diplopia in the aneurysm case might have been due to third nerve paralysis. Dr. A. HALPENNY mentioned the possibility of the patient's peculiar behaviour in the second case being due to a lesion somewhere else, perhaps in the frontal lobes, and asked if Dr. Parsons believed that aneurysms of the circle of Willis were very seldom due to syphilis; in America it was thought that only about 5 per cent. of them were due to syphilis. Dr. G. C. DOCKERAY asked Dr. Parsons if his second case was not really a congenital cranial aneurysm. Dr. T. T. O'FARRELL said that the site of the aneurysm was unusual. The lesion in the first case was very extensive, involving the crus, pons, and cerebellum. It was rather peculiar that involvement of the third nerve had occurred so late, but he thought this depended on the position of the lesion.

Dr. PARSONS, replying, said that so far as could be seen there was no other lesion of the brain in the second case. His opinion was that these aneurysms were not syphilitic. In his first patient the Wassermann reaction was absolutely negative. In most cases of intracranial haemorrhage it was possible to see patches along the basilar artery.

Reviews.

A TEXTBOOK OF HYGIENE.

THE ever-increasing scope of public health and preventive medicine affords the author of a modern textbook on the subject opportunities that were denied writers of a generation ago. Professor CURRIE of Glasgow University, in his *Textbook of Hygiene*,[1] has made full use of these opportunities, though he has, perhaps wisely, adhered to the more or less traditional arrangement of his subject-matter. The earlier sections deal mainly with hygiene of the environment, then comes an account of public health administration, followed by chapters on such matters as dwellings, food, diseases, vital statistics, and the various social services. The appropriate legal enactments are set out at the end of each section, and English as well as Scottish sanitary law is quoted in sufficient detail. The book is well illustrated, especially that part dealing with meteorology and climatology.

The aim of the author is to present an account of modern hygiene which will meet the requirements of students of medicine studying hygiene and public health under the medical curriculum, and which will at the same time be of service to candidates for a diploma in public health. It is not in any way detracting from the value of the book to say that the medical student will find himself rather out of his depth if he tries to master the bulk of its contents. Indeed, the ideal textbook on hygiene and preventive medicine for medical students has yet to be written. Professor Currie's book is much more suitable for the D.P.H. student, and here it can hold its own with any other published work. Though it is impossible in a single volume to cover the whole field of hygiene, Professor Currie has succeeded admirably in choosing the salient points in each subject for presentation to the student, and, what is more, he has produced a very readable book.

The earlier sections are especially good, that on food being particularly well written. The chapter on statistical methods, although very complete, does not perhaps make sufficiently clear the application of these methods to ordinary public health practice, but the duty of making statistics interesting to the student must obviously lie with the teacher of the subject.

The section on infectious disease opens with a well-balanced summary of present views on infection, immunity, epidemiology and the control of infectious disease, and recent work on such diseases as diphtheria, scarlet fever, and small-pox is fully recorded. Parasitology in its relation to public health is dealt with at some length and in a very clear manner. Maternity and child welfare, school hygiene, industrial hygiene, and port sanitary administration receive adequate treatment, and in the last section of all, headed "Miscellanea," are placed national health insurance, aids to medical practice, health propaganda, and various legal provisions not incorporated in the earlier chapters. The book is remarkably free from error and is well indexed. It is thoroughly to be recommended.

MEDICO-LEGAL ASPECTS OF ACCIDENTS.

IN *Trauma, Disease, Compensation*,[2] Dr. A. J. FRASER, chief medical officer to the Workmen's Compensation Board, Winnipeg, deals with accidents and industrial diseases and their sequelæ in their medico-legal relations. His conclusions are based on experience gained from observing and advising on thousands of cases over a period of twelve years. He makes no claim to originality, professing only to have made a careful collation of these cases and of the opinions expressed about them.

The greater part of the book is given over to a detailed review of the injuries and diseases of the principal systems—the brain and nervous system, the heart and circulatory system, the gastro-intestinal tract, the respiratory system, bones, joints, muscles, etc.—the occupational diseases being

[1] *A Textbook of Hygiene.* By J. R. Currie, M.D., M.R.C.P., D.P.H. Edinburgh: E. and S. Livingstone. 1930. (Demy 8vo, pp. xix + 624; 119 figures. 27s. net.)

[2] *Trauma, Disease, Compensation.* By A. J. Fraser, M.D. London: Macmillan and Co., Ltd. 1929. (Med. 8vo, pp. xiv + 524. 25s. net.)

ELECTIVE LOCALIZATION OF STREPTOCOCCI.

LECTURE BY DR. E. C. ROSENOW.

A POST-GRADUATE lecture was delivered on May 26th at the Royal Dental Hospital of London by Dr. E. C. Rosenow of the Mayo Clinic, Rochester, U.S.A., who reported the results of certain experiments which he had undertaken. The devitalized teeth of dogs were inoculated with streptococci derived from various infective lesions elsewhere in the bodies of human patients; similar lesions were reproduced in many of the dogs. The following abstract has been contributed by Dr. Rosenow.

If the streptococci shown to possess elective localizing power on isolation in a considerable number of diseases (as shown in a series of published reports) really have etiological significance in the different diseases studied, then they should localize and produce lesions in the specific organ or tissues, following other methods of inoculation. Owing chiefly to their relatively low virulence, this has been demonstrable in particular instances in different diseases following intraperitoneal, subcutaneous, intratracheal, intratibial, and intraocular infections, and, in diseases of the nervous system, after the intracerebral injection of suitable doses of cultures or of the material obtained directly from foci.

In order to remove all doubt that streptococci showing elective localizing power may produce disease in remote parts of the body through chronic, low-grade, symptomless foci of infection, such as occur commonly in human beings, we have inoculated the teeth of dogs with streptococci shown to possess elective localizing powers. Under ether anaesthesia the four cuspids were isolated, sterilized with tincture of iodine, and severed with a bone-cutting forceps. The pulps were removed and, under sterile conditions, the pulp chambers of three were inoculated with the cultures of the streptococcus in question. The opening was then sealed with gutta-percha and amalgam, and the animals were observed, together with controls, for from two to twenty-four months. Highly specific results were obtained in this series of experiments. Thus of 34 dogs in which the teeth were infected with streptococci from foci of infection and the urine of nine cases of nephrolithiasis, 26 dogs (75 per cent.) developed urinary calculi. Three (60 per cent.) out of 5 dogs inoculated in the teeth with streptococci from two cases of alkaline phosphatic cystitis developed similar calculi. Thirteen (65 per cent.) out of 20 dogs with teeth infected by streptococci from three cases of ulcer of the stomach developed ulcer of the stomach. Seven (47 per cent.) of 15 dogs whose teeth were infected with the diplostreptococcus from chronic ulcerative colitis developed ulcerative colitis. In no instance were lesions other than the specific ones observed in these experiments, but some strains had insufficient infecting power to produce the specific or other disease. Thus, out of 40 dogs whose teeth were inoculated with the streptococcus from sixteen cases of chronic arthritis, not one developed arthritis, nor did any of 38 dogs inoculated in the teeth with twenty-three strains of streptococci from one or more cases of cholecystitis, iritis, chronic encephalitis, spasmodic torticollis, chronic poliomyelitis, goitre, and abortion, develop specific lesions. Five (13 per cent.) showed small calculi in the kidney. Of 1,014 control dogs, the teeth of which were not inoculated, and which were kept and fed in the same way at the institute, 51 (5 per cent.) revealed small urinary calculi, and 6 (0.6 per cent.) ulcer of the stomach.

The relation of the respective streptococcus to the disease produced was substantiated by demonstrating its presence microscopically in the specific lesions and granulomas about the teeth, and by proving that the streptococci isolated from the focus at the apex of the tooth and systemic lesion had, at the end of the experiment, retained specific or elective infecting power. The teeth, rendered pulpless, remained firmly in the jaws; they apparently caused no pain, but became opaque and dark in colour. At the apices, areas of rarefaction were found filled with granulation tissue. The disease produced, especially in chronic ulcerative colitis, ran a typical clinical course, the experimental lesions being essentially like those that occur spontaneously in patients. Sections of the granulomas produced experimentally were often indistinguishable, both as regards the character of the cellular infiltration and the diplococci, from those that develop so commonly about the apices of pulpless teeth in human patients. In the dogs that developed systemic disease, as in patients having chronic disease, the antibody content of the serum was low. The tooth from which the pulp was merely removed often became infected with the streptococcus inoculated into the other three teeth rendered pulpless. The foci produced experimentally with different streptococci, besides giving rise to the specific disease characteristic of the streptococcus inoculated, had other more general deleterious effects. The dogs lost weight and hair, and became highly susceptible to intercurrent infections. A dietary and other living conditions adequate to maintain health in normal control dogs was inadequate for the dogs in which chronic foci were produced experimentally.

In order to throw some light on the mechanism of elective localization, we have injected animals simultaneously with the living cultures, with the corresponding heat-killed bacteria (60° C. for thirty minutes) in larger amount, and with the filtrate of rapidly growing broth cultures. In this way we have found that streptococci having elective localizing power develop in their protoplasm, and set free in the broth, toxins or poisons which injure electively the very tissues in which the living streptococcus becomes localized and produces lesions. This has been shown especially in the case of streptococci from myocarditis, endocarditis, ulcer of the stomach, and epidemic hiccup. An interesting point emerged—namely, that after the living culture had lost the power to localize electively from artificial cultivation or successive animal passage, the dead bacteria and filtrates also no longer had specific effects.

On the basis of our clinical observations and experimental results, a focus of infection which for mechanical reasons cannot heal or drain should be regarded not only as a place affording favourable conditions for entrance into the blood, or lymph stream, of bacteria and their toxic products, but as affording also conditions (relative lack of oxygen, mixture of bacteria) favourable for the bacteria to acquire and maintain peculiar and relatively high infecting power. The focus makes for a forced relationship between living bacteria and the resisting mechanism of the host. Since the bacteria, usually streptococci isolated from foci, have been shown to possess elective localizing power, to contain and produce specific poisons and antigens, and the properties which may render the host and the tissues in which they localize hypersensitve or allergic, the importance of the focus cannot be ignored in any phase of a study of the etiology, pathology, immunology, and treatment of a large number of infective diseases. Since immunity to streptococcal infections is of short duration, the focus will need to be considered even after highly specific curative vaccines and serums are discovered and successfully applied. The importance of high resistance from proper living in the maintenance of continued health is taken for granted.

Devitalization of teeth and the filling of root canals, practised as a routine in the past, at any rate in America, should cease. It is to be hoped that efficient methods will be found that will not only sterilize pulpless teeth and periapical tissues that have become infected, but will also prevent subsequent infection, especially of the periapical tissues. The fulfilment of the latter requirement seems almost unattainable, and until this has been accomplished by the newer methods now being introduced, and which appear more promising, it would seem wiser to remove teeth that have become infected, or that require extirpation of the pulp, than to retain them at the risk of having them become the source of an insidious infection later. Normal vital teeth, free from pyorrhoea, pulp stones, and fillings, should never be extracted, except when necessary for restorative work, but the extraction of pulpless teeth seems to me to be indicated, regardless of the appearance of the *x*-ray photographs. It seems to me also that tonsils should be removed, regardless of whether they are large or small, or whether they are visibly infected or not, unless this is contraindicated for various reasons, in all patients who have serious systemic diseases presumed to be of focal origin, and provided that no other focus can be found. It must not be supposed, however, that other regions, not in any sense foci, may not also harbour the streptococcus with which the disease from which the patient is suffering may be reproduced. We have isolated streptococci in some instances, not only from foci, but also from the more normal mucous membranes of the upper part of the respiratory tract, and from the stools. This may explain why the condition of some patients does not improve following the removal of one focus or more.

It also goes to show that our conception of the principle embodied in focal infection must not be too mechanical. The bacteria that gain entrance through foci must overcome the same inherent resistance of the host as those that gain entrance elsewhere; the factors determining their localization are the same in both instances.

In the demonstrated fact of focal infection and elective localization there is nothing incompatible with the broadest possible concepts regarding the importance of other and more general factors at work in the causation of disease. It does not at all minimize the importance of peculiarities in the host, such as those due to inherited constitutional predispositions, to allergy, to undue fatigue and exposure, to alcoholism, and to intercurrent infections. Indeed, our newer work emphasizes the importance of these, and reveals more clearly how they are operative.

The streptococci isolated are believed to have etiological significance because they have been almost constantly demonstrated in foci and, when available, in the affected tissues. They possess on isolation elective localizing power and the characteristic cataphoretic potentials. The different diseases have been simulated by various methods of injection of freshly isolated strains, and some diseases have been accurately reproduced with the respective streptococci through chronic foci such as occur commonly in human subjects. Most of the strains from the different diseases studied are agglutinated specifically by the respective hyperimmune serums prepared in horses, and which possess curative properties in several of the diseases arising spontaneously in man, as in those experimentally induced in animals with the respective streptococcus.

E. C. ROSENOW.

THE RESEARCH DEFENCE SOCIETY.

ANNUAL MEETING.

LORD LAMINGTON presided at the annual meeting of the Research Defence Society on June 3rd, when the annual report of the committee was presented. The fourth Stephen Paget Memorial Lecture was delivered by Mrs. Mellanby, her subject being the value of animal experiments in determining the question of diet and dental disease.

The committee, whose report was presented by Lord KNUTSFORD, pointed out that the Home Secretary (who was himself on the list of vice-presidents of the British Union for the Abolition of Vivisection) had expressed the opinion that, in view of the thorough investigation by the Royal Commission, which reported in 1912, there was no call at present for further inquiry. This was precisely the attitude taken up by the Research Defence Society, and now that it came from a man who in private life was an antivivisectionist, but who by virtue of his office was in a position to inquire into the true facts, it deserved wide notice. The main trend of antivivisection endeavour during the year had been propaganda against the appeal of the Royal Veterinary College, and against the work of the Medical Research Council. With regard to the former, the society had exposed the absurd position whereby, on the one hand, antivivisectionist societies stood for the prevention and alleviation of animal suffering, while, on the other, they spent their funds on campaigns against the progress of veterinary medicine. As for the Medical Research Council, it was well to remember that, apart from the valuable researches conducted by that body, it had been responsible for some time past for the maintenance, and, in some cases, the development, of the national biological standards for certain drugs and preparations of the utmost value in everyday practice.

Sir LEONARD ROGERS, the honorary treasurer, had no very encouraging report to present. The society had been obliged to realize some of its invested capital in order to meet expenditure; an appeal was made for increased regular annual subscriptions.

Stephen Paget Lecture.

Mrs. MELLANBY'S Stephen Paget Lecture, which was illustrated by lantern slides, recounted her well-known work on the study of the teeth. Mrs. Mellanby confessed that she had started as an antivivisectionist, but, like other antivivisectionists, she knew nothing about the matter except the stories she had heard. At Cambridge, however, she found herself unable to continue her work without taking part in a *vivisection experiment*; she had since seen thousands of so-called *vivisection experiments*, and had come to realize what "a humane crowd of people" were those who were thus engaged. A very large proportion of the total experiments on animals were feeding experiments, though for these, as for others, it was necessary to have a licence, and an inspector was entitled to pay unannounced visits. The work she had to describe, from which results of advantage to children particularly had emerged, entailed the feeding of animals on experimental diets, with the object of ascertaining the effect of variations of feeding upon the structure and arrangement of teeth. She mentioned that the animals were kept in large cages, which were cleaned out every day, and had a bed lined with shavings. In attempting to find out the effect of any one set of conditions animals of the same litter were used, the diets were started at the same time, and the animals killed at the same time. The value of *vitamin D* in the calcification of teeth was illustrated by a photograph of the jaws of four puppies whose permanent teeth were just beginning to develop. The diet of all four consisted of lean meat, separated milk, white flour, a little orange juice, and a little yeast, the only difference being in the type of fat given. The fats were respectively salad oil, butter, egg yolk, and cod-liver oil. With the first of these foodstuffs the structure of the teeth was extremely bad, with the second and third it was good, and with the fourth it was best of all. Vitamin D was absent from salad or linseed oil, and present in abundance in cod-liver oil.

Turning to the structure of human teeth, the lecturer said that it was usually believed that the milk teeth of children were well calcified; but animal experiment had suggested that this could not be widely true, and the result of examining the teeth of a large number of children had convinced her that a very large proportion of children in this country suffered from defective calcification, especially of the milk teeth. In more than 600 cases she found only 1 per cent. in which the milk teeth were nearly perfect, and in 29 per cent. they were very defective. A question arose whether the beginning and spread of decay in human teeth could be influenced by diet *after* the teeth were fully formed. The experiments had shown that after the structure of teeth was established, diet could influence the spread of decay. The proper diet might not be able to arrest decay, though sometimes it did. Mrs. Mellanby also spoke on the presence of pyorrhoea in animals; dogs suffered greatly from this complaint, and the period of early development was of the greatest significance from the point of view of subsequent pyorrhoea. In conclusion, Mrs. Mellanby said that in the work she had described, experiments on animals had been the means of leading to a better understanding of the facts of human dentition. Experiments on animals and investigations on human beings had been intermingled in this research, but, of course, it had to be remembered that only beneficial influences could be tested on man. The worst errors in feeding, especially of children, were now known, and permanent improvement only became possible as a result of animal experiment, which could never have been undertaken if a small section of the community had had its way.

At the conclusion of the lecture a lady in the audience desired to put some questions to Mrs. Mellanby, but these were disallowed by the chairman as irrelevant. The proceedings closed with a vote of thanks to the lecturer, proposed by Lord KNUTSFORD, who commented upon her combination of expert knowledge and disarming modesty.

THE annual meeting of the American Medical Association will be held this year at Detroit from June 23rd to 27th, under the presidency of Dr. William Gerry Morgan of Washington. The scientific proceedings have been organized in fifteen sections. A special feature of this meeting will be the presentation of symbolic medals to ex-presidents of the Association. All the eighteen past-presidents now living, except Dr. W. W. Keen who is 93 years of age, will attend in person to receive the emblem. A portrait of each appears in the special Detroit number of the *Journal of the American Medical Association* dated May 24th.

British Medical Journal.

SATURDAY, JUNE 14TH, 1930.

DISSEMINATED SCLEROSIS.

By common agreement disseminated sclerosis is at the same time one of the most common and one of the most intractable organic diseases of the nervous system. None of the various theories of its etiology hitherto advanced have met with general acceptance. Hence the claims recently put forward by Miss Kathleen Chevassut[1] to have isolated the causal organism have naturally aroused the greatest interest, although it is desirable to await the confirmation of other workers before these claims can be definitely accepted. Dr. Russell Brain's[2] critical review of the whole subject of disseminated sclerosis appears, therefore, at a particularly opportune moment. Any student of the disease should be much indebted to him for the careful manner in which he has sifted the now enormous literature and provided the reader with a condensed but highly pertinent résumé, not only of the pathogenesis, but of every aspect of the disease.

Modern histological methods have definitely placed disseminated sclerosis as an inflammatory affection of the central nervous system, of which the sclerotic plaque is but the end-result. In their distribution the inflammatory patches tend to occur principally in three situations: (1) perivascular, (2) subpial, (3) periventricular; the absence of any marked secondary degeneration of nerve fibres is a characteristic feature which has long been recognized. There is no general agreement as to whether these changes are produced by a toxin acting through the blood stream or by some definitely neurotropic infective agent; but at the present time a preponderance of opinion inclines towards the latter view, which is certainly supported by comparison with other forms of encephalomyelitis in which very similar pathological changes occur. Dr. Brain considers that there is evidence that both the blood stream and the cerebro-spinal fluid may play a part in the spread of the infection.

Positive knowledge of the nature of the infecting agent is still absent until the recent claims of Miss Chevassut have been confirmed. The spirochaetal theory of the disease, first promulgated by Bullock in 1913 and later supported by Kuhn and Steiner and by Adams and others, has failed to receive general acceptance. Moreover, the numerous experimental attempts to transmit the disease do not carry conviction. Miss Chevassut has put forward strong claims to have isolated from the cerebro-spinal fluid of cases of disseminated sclerosis an organism which has been named the *Spherula insularis*, but the attempts made at transmitting the affection to animals cannot be said to have reproduced anything really resembling the disease in man. It is highly desirable that her work should be repeated by others, but in view of the difficult nature of the technique some time must elapse before any definite conclusions can be established. A line of treatment based upon the discovery of Miss Chevassut has been suggested and practised by Sir James Purves-Stewart,[3] consisting in the intravenous injection of a vaccine made from cultures of the *Spherula insularis*. In view of the well-known tendency for cases of disseminated sclerosis, especially of the more acute forms, to display spontaneous remissions, which sometimes indeed amount to a complete disappearance of all the symptoms, it is certainly premature to draw any definite conclusions as to the value of such a method of treatment. Dr. Brain refers briefly to most of the therapeutic measures which have hitherto been employed, and remarks, justly enough, that their large number is sufficient evidence of their inadequacy. Many observers, however, do attach a definite value to the use of arsenic, especially in the form of one of the salvarsan compounds.

It is of much practical as well as academic interest to consider the possible relationship of disseminated sclerosis to other disseminated inflammations of the central nervous system. This problem is briefly reviewed by Dr. Russell Brain, who points out how difficult it is to separate clearly such conditions as the so-called neuromyelitis optica and acute disseminated encephalomyelitis from acute cases of disseminated sclerosis. Many authorities, indeed, are not prepared to distinguish them. It is greatly to be hoped that the work of Miss Chevassut, even if it should fail of confirmation by others, will provide an impetus to a renewed investigation into all the problems of this disease, not only in this, but in other countries.

[1] Chevassut, K.: *Lancet*, 1930, i, 552.
[2] Brain, W. Russell: *Quart. Journ. Med.*, 23, No. 91, April, 1930.
[3] Purves-Stewart, J.: *Lancet*, 1930, i, 569.

PHYSIOLOGY AND PUBLIC HEALTH.

SEVERAL important questions at once arise when it is asked how best can increased emphasis be laid on the preventive aspects of medicine in the training of medical students and at the final test of their fitness to be registered as medical practitioners. In the first place it may be contended that these aspects, even more fully than the curative or clinical aspects, are dependent upon a knowledge of the preliminary sciences of physics, chemistry, and biology, and of the pre-clinical subjects of human anatomy and physiology. The information, therefore, which the General Medical Council has recently been obtaining about the manner in which the teaching of all these pre-clinical subjects is continued during the later student years, and the inquiry into the best methods of correlating these sciences with the needs of actual medical practice, is of importance quite as much in respect of prevention as in respect of clinical and curative work. The final examination of a student is not to be regarded merely as a more or less satisfactory test of attainment; it is an encouragement to the continuance of effective study in all those subjects with which it is liable to deal. It is found that, except in applied anatomy, definite questions on the pre-clinical subjects are seldom set in the final examination papers. Would it not have an equally good effect if it were understood that a question on applied physiology must be answered in the final paper on medicine; and that in the clinical examination the candidate might have to report on the condition of a healthy subject and his suitability for work of various kinds, and not merely to diagnose some condition of disease?

A second fundamental question is whether or not it is desirable to associate the teaching of the preventive aspects of medicine, and the testing of the results of such teaching, with lectures and examinations dealing specifically with what is known as "public health." In a recent report on "Preventive Medicine in the Curriculum" (*Journal*, May 24th, 1930, p. 968) the Society of Medical Officers of Health recommends that each student should be compelled to attend a "special

course on public health and preventive medicine," and should have to pass a "separate examination in public health and preventive medicine." It may well be held that this is an unfortunate way of presenting a good case. There is much force in the contention that all students should attend lectures and receive other instruction in matters of public health, including the duties of private practitioners in relation thereto, and should be examined as to their knowledge of these matters; but it would be lamentable to do anything which would tend to identify the practice of preventive medicine with the organized public health service. The preventive aspects of medicine extend much more widely than this, and from the beginning they should be regarded and taught as an intimate part of the work of every practitioner, inseparable from his clinical activity and duty.

A third question that has recently been raised is whether members of the public health medical service are really on the right lines in some of the later developments of their work. This has been forcibly put by Dr. G. C. M. M'Gonigle, the medical officer of health for Stockton-on-Tees, in his presidential address to the Northern Branch of the Society of Medical Officers of Health, published in the May number of *Public Health*. His address is well worthy of notice and discussion by his colleagues in the public health service and in the profession outside. That service has been notably successful in dealing with environmental factors that are detrimental to health. Beyond this, Dr. M'Gonigle says, it is the duty of the service "to maintain normality and not to undertake curative medical practice, though of late much curative work has been thrust upon us." He contends that the study of physiology—he calls it "normal biology"—should be the foundation of the business of the "practitioners of preventive medicine," and that that business is "to teach correct living and not to remedy defects." While acknowledging the good work that has been done, he gives a number of striking instances, and asks a number of pertinent questions, which tend to raise grave doubts as to the validity of certain common hygienic dicta, and as to whether all the present work of public health clinics is on safe lines. The application of physiological truths to the art of living, and especially to the rearing of children, should certainly now become one of the main functions of "practitioners of preventive medicine."

THE B.C.G. DISASTER AT LÜBECK

REPORTS from Berlin on June 6th stated that of the 246 children in Lübeck to whom B.C.G. vaccine had been administered during March and April, 28 were dead, 103 were still ill, and 86 had been ill but had fully recovered. It will be recalled that the authorities at Lübeck were of the opinion that no contamination of the cultures could have occurred during their transit from Paris, or in the course of their further development in Lübeck itself. None the less, a number of separate investigations were started with a view to discovering if careless or negligent handling of the cultures, or their pollution, could be held responsible for the infections. In view of Petroff's work on the virulence of B.C.G., in the course of which he claims to have cultivated from this preparation two separate colonies, "R" and "S," of which the latter is capable of producing progressive tuberculosis, it was necessary also to consider the possibility that in the course of cultivation the "R" colonies had reverted to the "S" type, and so had increased the virulence of the vaccine. Professor Bruno Lange, of the Robert Koch Institute, Berlin, who has been in charge of the investigations on behalf of the State Office of Health, rejects completely any explanation based on Petroff's findings. According to Lange[1] an examination at the Robert Koch Institute of colonies cultivated by Petroff showed that they contained human tubercle bacilli, obviously a contamination, as transmutation of bovine organisms—from which B.C.G. is cultivated exclusively—to organisms of the human type has never been shown to occur. Petroff, in replying to Calmette and his colleagues, who had dismissed his work on similar grounds, said that it was no justifiable criticism to accuse him and his research associates, all trained workers, of such gross carelessness.[2] The outcome of Lange's report is that, while he is convinced that the fatalities among the inoculated infants were due to the presence in the vaccine of virulent tubercle bacilli, he can hold out very little hope of discovering how they found their way there. Investigations, he states, will continue for several weeks; but, unfortunately, neither the original material from the Pasteur Institute nor the first subculture is available for study. Meanwhile, according to reports from Berlin, the citizens of Lübeck have set up their committee of inquiry, and an inquiry is also being made by the department of the public prosecutor.

HYGIENE AT THE JAMBOREE CAMP.

DR. R. WYSE, who was chairman of the hygiene subcommittee which controlled the sanitary arrangements in connexion with the Jamboree camp of over 4,000 boy scouts last August at Arrowe Park, Birkenhead, has compiled a full account of the measures which were taken. In a previous reference (*Journal*, August 10th, 1929, p. 275) mention was made of certain outstanding points, and of the success achieved in the preservation of health. The committee, when it came into being, found itself unable to obtain any detailed guidance from existing literature for safeguarding the health of a camp of this kind, and it is therefore most desirable that the experience gained on this occasion should be made available for others who may have similar responsibilities to face in the future as regards latrine construction; the supply of water; the disposal of refuse; the campaign against flies, mosquitos, and gnats; and the prevention of infectious diseases. Dr. Wyse, in his preface, dwells on the importance of forming a committee composed of medical officers of health, medical practitioners with public health qualifications, sanitary inspectors, and experienced Territorial officers; he remarks that in this way the work is made very easy, as well as very pleasant. Details are given of the planning and construction of the latrines and their cleansing; here, as elsewhere in his booklet, Dr. Wyse discusses the various possibilities, indicating their relative advantages and disadvantages, and stating in each case why each particular decision was made. Numerous pictorial illustrations are provided, and a pleasing feature of the whole booklet is the repeated occurrence of definite suggestions—for example, how the necessary agreements should be drawn up with contractors, the chief requirements being enumerated. As regards the water supply, arrangements had to be made for some 50,000 persons, and the estimated rate for each was three gallons per day. The quantity used was two and a half gallons a head per diem, and, since the usual daily domestic consumption is estimated at twenty-five gallons, an indication is given how economical in this respect camp life actually is. The supply was so arranged that no scout had to walk more than 100 yards to obtain drinking and cooking water, but he might have to travel further for washing purposes. Pipes were laid along the ground for the most part; only half a mile of the total five and a half miles of piping had to be dug in. Standpipes were placed at intervals, and

[1] *Deut. med. Woch.*, May 30th, 1930, p. 927.
[2] Forty-fourth Annual Medical Report of the Trudeau Sanatorium.

each of the ninety-eight required was supplied with six half-inch taps at a height of three feet from the ground, the whole structure being protected by wooden supports. Ordinary screw taps were employed, and water wastage was controlled quite easily by camp discipline. One pathetic note is sounded in this connexion. A week before the camp opened arrangements were made by the Water Board to irrigate the rally ground in order to stimulate the poor growth of grass following the spell of dry weather. No sooner had this been done, however, than what Dr. Wyse mildly describes as "phenomenal" rain fell almost continuously for a week. Refuse was removed in motor wagons by the sanitary department of the Birkenhead Corporation, and there was not a single incinerator in the camp. The quantity dealt with amounted to twenty tons a day, and an interesting comparison is made by Dr. Wyse showing what would have happened had any other method of destruction been adopted. A list of practical suggestions for future camps, whether of boys or men, contains hints that it is well to have the bins for waste food coloured differently from those for rubbish, and that the contractors should be instructed to make their rounds in the same order each day. Before the camp opened the Birkenhead scouts had thoroughly disinfected every pond and streamlet on the estate, and, whether for this reason, or owing to the climatic conditions, no insects invaded the camp; it was observed, moreover, that in private houses in Birkenhead, during the remainder of the summer and autumn, there was a very remarkable absence of flies. Details are given of the measures taken to prevent the outbreak of infectious diseases; the success attained in this respect is a matter of common knowledge. Dr. Wyse is to be congratulated on the production of a valuable handbook. It is published by Messrs. B. Haram and Co., Ltd., Printers, Birkenhead, and the price is 2s. 6d.

ATMOSPHERIC CONDITIONS IN TEXTILE MILLS.

THOUGH New South Wales is not by any means to be considered as an industrial State, there is attached to the department of the Director-General of Health a special section of industrial hygiene. It is in the charge of Dr. Charles Badham, who, with his several technical assistants, has already proved what useful research work can be carried out in connexion with occupations which, though not necessarily industrial, are of some importance in Australia. Since 1923 fifteen reports have been published dealing with such subjects as sandstone quarrying and working, silicosis, dermatitis among rubber workers, lead poisoning, and textile factory conditions. The practical outcome of these investigations has usually been an issue of, or alteration to, regulations. The latest report of the series was officially published, under the heading "How to improve atmospheric conditions in textile mills,"[1] at the end of 1928, but has only just reached this country. Temperature and humidity have hitherto been dealt with by general factory regulations, but as spinning and weaving of wool and cotton are increasing it was considered necessary to make thorough investigation into the relationship of these atmospheric conditions to textile processes, the result being that it is deemed advisable to vary the regulations in their application to textile industries. We have knowledge of a cotton factory in Sydney, and there may be others elsewhere, but the investigators apparently limited their efforts to wool-spinning mills, so that the report may be taken as applying to this branch of the textile industries. In this country and in India a great deal of research work on atmospheric conditions has been carried out during recent years, but mainly in relation to the cotton industry and, in lesser degree, to the linen industry. The value of this work, and its bearing on their own problems, is suitably acknowledged, and Dearden, Hill, Maloney, Vernon, and Wyatt are extensively quoted. The climate of Sydney is equable and considered fairly suitable for wool spinning, its summer temperature being about equal to that of an Indian winter, and its annual range of humidity being between 60 and 80 per cent. Processes are divided into two classes: the first, which takes in frame-spinning, covers those requiring a humidity not greater than 55 per cent. at 75° D.B., and the second a humidity above this at the same temperature, which mainly applies to mule-spinning. Natural ventilation methods are suitable for frame-spinning during most of the year, but dry westerly winds necessitate the use of sprays, and cold weather requires artificial heating and sometimes artificial humidity. Mule-spinning requires artificial humidity for practically the whole year, and to supply this the plenum system, with additional sprays for use when needed, is approved. It is claimed that the basic metabolism of the Australian operative is lower than that of the British operative, and that he can therefore tolerate a higher wet bulb temperature. Provided, then, that the workers are suitably clothed and air movement is sufficient, it is suggested that 85° W.B. should be the "cease work limit," instead of 80° W.B. as in British weaving sheds. Air movement is insisted upon in both classes when the temperature exceeds 80° D.B., and a wet kata standard of 14 is recommended. It is advised that plans for new buildings should be approved by the factory department and that no young persons under 16 years should work at a Class II process. The report is well worth the attention of our own Factory Department, which does not appear to have done very much towards improving atmospheric conditions for cotton and wool spinners.

[1] Sydney: Alfred James Kent, Government Printer, 1930.

NATIONAL ASSOCIATION FOR THE PREVENTION OF TUBERCULOSIS.

THE sixteenth annual conference of the National Association for the Prevention of Tuberculosis will be held in the Great Hall of the British Medical Association House, Tavistock Square, from July 3rd to 5th. The Minister of Health will open the conference at 10.30 a.m. on the first day, and introductory addresses will be delivered by Sir George Newman and Dr. J. Parlane Kinloch. The main subject for discussion is the effects on the tuberculosis campaign of the Local Government Act, 1929, and the first part—which will follow the introductory addresses—will be devoted to the effect on the institutional treatment of tuberculosis. In the afternoon of the first day consideration will be given to the relation of the general practitioner to the treatment of tuberculosis, with special reference to domiciliary attendance; this will be followed by a discussion on tuberculosis in relation to education, including the work of open-air schools, nursery schools, and the feeding of school children. The conference will be opened on the second day, July 4th, by Dr. Walter Elliot, M.P., late Parliamentary Under-Secretary of State for Scotland. The subjects at the morning session will be: tuberculosis and factory workers; the change from the percentage grant to the block grant as affecting the efficient development of tuberculosis schemes; and the way in which the Act affects the problem of continuous care in tuberculosis. The afternoon session will be devoted to social aspects of the problem, with special reference to care committees, district nurses, health visitors, and other health agencies. Interesting excursions are being arranged for the third day, details of which will be sent later to all delegates. The conference is open to all persons interested in tuberculosis, on payment of a fee of one guinea, which includes the cost of a copy of the report of the proceedings. Reduced railway fares will be available, and payment of the expenses of delegates has been sanctioned by the Ministry of Health and the Department of Health for Scotland. Further information

may be obtained from the secretary of the National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, W.C.1.

THE UNMARRIED MOTHER AND HER CHILD.

THE eleventh annual report of the National Council for the Unmarried Mother and her Child is chiefly concerned with the efforts of that body to obtain reform of the existing *Bastardy Acts* and *Affiliation Acts*, so as to ensure that fathers who emigrate to escape their responsibilities may be compelled, by reciprocal legislation, to fulfil their duties to their illegitimate offspring. At present an affiliation summons issued in England against the father of an illegitimate child cannot be served even in Scotland or Ireland. The influx to England of unmarried Irish mothers is said to be creating a serious problem. The council has also paid attention during 1929 to the obscurities of the Legitimacy Act (1926) and to the safeguarding of the Act of Adoption. It regards with some apprehension the coming operation of that part of the Local Government Act which places all local and voluntary homes under county councils or county borough councils, for, if a local authority controls the grant, it may refuse applications from those residing in another area. On the other hand, the expectant mother is usually eager to leave her own neighbourhood, and would be so reluctant to permit any kind of inquiry in her home district that she would probably refuse the assistance of a maternity home altogether, with subsequent danger to her life. Assurances of discretion and suggestions of reciprocity between the areas have been received by the council. Figures are quoted to prove that the maternal death rate is highest among unmarried mothers. The hope is expressed that the inquiries conducted by the Maternal Mortality Committee of the Ministry of Health will lead to the frequent publication of comparative statistics. One reason for the preponderance of deaths among unmarried mothers is believed to be the sale of abortifacients by unscrupulous vendors. The Case Committee has found evidence that drugs dangerous to health or life are recommended and sold over the counter, and that there exists a system of fraud in the sale of pills and powders purporting to be "a certain cure." The report has much value as evidence of a growing body of opinion that the unborn child *demands* rather than pleads from the community the best chance of health possible, and that *anything* so vulnerable cannot be left to bear the burden of the follies or misfortunes of its parents.

THE OUTBREAK OF TRICHINOSIS IN STUTTGART.

BRIEF accounts by Dr. K. Beckmann and Dr. Weitz of an outbreak of trichinosis at Stuttgart were published in the *Medizinische Welt* of April 26th; the reports are only preliminary, since many cases are still in the pyrexial stage. It appears that from February 15th to March 4th bear ham was on sale in a restaurant; it came from a polar bear, shot because it was becoming blind. Other of the bear meat was sold also, but as that was well cooked no disease resulted. The microscopical examination of most meats has been required for three years at Stuttgart, but, unluckily, bear meat had not yet been scheduled. So far seventy-five cases of trichinosis have been seen, with already ten deaths. One man ate only the well-smoked edges of the bear ham, and he escaped illness. The encysted trichinae are liberated in the small intestine, where they rapidly become sexually mature and conjugate; in about three days the fertilized females pass through the intestinal walls into the lymph spaces, whence their numerous offspring, in successive broods, make their way into the circulation by way of the thoracic duct. They thus reach the voluntary muscles when they leave the circulation, and become encysted in two or three months. The first symptom is diarrhœa, usually slight, with offensive stools and nausea. At this stage there is a slight pyrexia which tends to subside; there is no eosinophilia yet. In the next week the temperature rises again, the pulse is accelerated, and the patient is weak, the condition suggesting typhoid fever, but a leucocytosis is present with notable eosinophilia. The weakness of the patient soon attracts remark, and he cannot walk or even stand. Kernig's sign is positive, but there is no patellar tendon reflex because the contracting muscles are so painful. Pyrexia increases, and in one case the temperature reached 106.5°; the pulse may be as rapid as 140. The muscles are tender to pressure and the skin overlying them is swollen. The blood pressure is low, sometimes dangerously low. Pain may be obvious in the muscles of the jaws, larynx, pharynx, arms, and legs. The patient may be unable to protrude his tongue, which may be fissured, swollen, and furred. Respiration may become thoracic owing to involvement of the diaphragm, while sweating and sleeplessness cause serious discomfort. Widal's reaction is negative, the diazo-reaction positive, and the spleen is sometimes enlarged; albuminuria does not occur. The blood picture, unchanged at first, soon shows a leucocytosis of 10,000 to 14,000, and even 22,400, with eosinophilia to 40 per cent.; in four fatal cases reported the eosinophilia was only 8 to 12 per cent. At the necropsy cysts are found of varying age, showing that there have been successive broods. The treatment is symptomatic, calomel and vermifuges being prescribed in the first week; but few patients complain to a doctor so early as this. Later on the pain and sleeplessness have to be relieved, a watch being kept on the heart and lungs. The patients are very weak, and convalescence is protracted. Perusal of these reports recalls the completeness of Osler's classical account of this disease thirty years ago.

BROADCAST EPIDEMIOLOGICAL INTELLIGENCE.

THE Singapore Bureau of the Health Organization of the League of Nations has for some years been doing valuable work in preventing the spread of disease by acting as a collecting and distributing centre of epidemiological intelligence in the Far East. The value of this information service will be increased by a recent development which should be of considerable interest to shipping companies with business in the East. A broadcast summary in clear of infectious diseases and quarantine notifications is now sent out daily—instead of weekly, as hitherto—from the long-range station at Malabar (Java), and the wireless stations at Hong-Kong (Cape d'Aguilar), Karachi, Madras, Sandakan (British North Borneo), Shanghai (Zikawei), and Tokyo also broadcast weekly epidemiological information in clear for the benefit of ships in Eastern waters. Reports received at Singapore from captains as a result of these messages show that on the whole run from Suez to Japan it is possible for ships to pick up one or more of these stations; Malabar, owing to its range and daily transmissions, being the one most frequently quoted. The broadcast summary is based on information on their bill of health and related subjects received from more than 140 ports and broadcast in code to over thirty health administrations. Owing to lack of wireless facilities in Singapore it is practically impossible for the Eastern Bureau to check the working of its radio services; it would therefore welcome further reports from captains of ships as to their success or failure in picking up these health bulletins, as well as any suggestions which may help to increase the efficiency of this information service. Such reports should be addressed to the Director, Eastern Bureau, League of Nations, Singapore.

Orthopaedic treatment was given to children under the age of 5, a clinic being held as often as was found to be necessary. At the end of 1928 five cases of mild small-pox remained in the Pontypridd and Caerphilly joint small-pox hospital; 35 further cases were notified during the early part of 1929, several of the patients being seriously ill. No "return" cases occurred as the result of the discharge of patients from hospital. The local medical practitioners co-operated intimately with the medical staff of the health department, consulting them in difficult cases; contacts were closely followed up, and doubtful diagnoses of chicken-pox were confirmed. As a result of these energetic measures an epidemic of small-pox which had persisted for more than two years was brought to an end. There was a falling off in the total of public vaccinations for 1929, as compared with 1928, in consequence of the regained feeling of security on the part of the inhabitants. The report contains details of the scheme for the provision of meals to undernourished school children, which was first commenced in October, 1928. A complete survey of the whole school population was made in October, 1929, by the assistant school medical officer, and the influence of the greater prevalence of unemployment was shown by the considerable increase in the number of children receiving free meals. It was, however, found impracticable to issue milk to children prevented by illness from attending school. A special clinic is held each Saturday for the medical inspection of children suspected to be subnormal, many of them being referred by the head teachers, who are in a position to know the home circumstances of the cases. If evidence of malnutrition is discovered by the medical officer, milk is prescribed. Dr. Severn has no doubt that the application of this scheme has been of inestimable value in combating the evil effects on young children of parental unemployment; its completeness has allowed little loophole for any needy children to remain hungry in school.

Training in Social Hygiene.

The growth of the child guidance movement has created a demand for a new type of social worker trained in normal and abnormal psychology, and in the practical application of the principles of mental hygiene in the treatment of maladapted children. Such social workers are needed not only by child guidance clinics, but by mental hospitals, associations for the care of mental defectives, and similar agencies, for it is now realized that the adequately trained lay worker can play an important part in helping persons suffering from psychological illness, or handicapped by temperamental difficulties, to take their place in the life of the community. Hitherto there have been no special courses of training in this country for men and women wishing to undertake this difficult and responsible task, but, beginning in October, a special one-year post-graduate course, covering the appropriate subjects, will be held in the Department of Social Science and Administration of the London School of Economics and Political Science. The course will be repeated each year. The theoretical sides of the subject will be dealt with in lectures on psychiatry, psychology, and social case work, special stress being laid on the psychological development of the child, the characteristics of different stages of mental abnormality, the psychological foundations of abnormal behaviour, the formation of personality, the bearing of psychiatry on family relationships, and the methods of studying the individual mind. The practical work will include visits to the homes of children and adults who are under treatment at child guidance or hospital clinics, inspection of institutions and hospitals, and case discussions, conferences, and demonstrations. Students will be admitted to the course on the recommendation of a selection committee, and, generally speaking, they will be accepted only if they are over 25 years of age, have already obtained a social science certificate at a university, and have had experience of some form of social work. The fee for the course is thirty guineas. The Child Guidance Council offers six scholarships of £181 10s. each to students desiring to take the course. Application forms may be obtained from Miss E. V. Eckhard, London School of Economics, Houghton Street, W.C.2.

Ireland.

Royal College of Surgeons in Ireland.

THE annual election of officers of the Royal College of Surgeons in Ireland was held in Dublin on May 2nd, when Mr. Richard Atkinson Stoney was elected president, Mr. Frank Chetwode Crawley vice-president, and Sir F. Conway Dwyer secretary of the College. The newly elected president has taken a keen interest in the College, where he has served as an examiner, member of council, and vice-president. He comes as a successor of men whose names are household words in the medical world, such as Crampton, Carmichael, Abraham Colles, Butcher, Jolliffe Tufnell, Sir Philip Crampton Smyly, Edward Hallaran Bennett, Sir Charles Cameron, and Sir Henry R. Swanzy. He is surgeon to the Royal City of Dublin Hospital, surgeon specialist to the Ministry of Pensions, and honorary surgeon to the Masonic Boys' School. During the war he served as surgical specialist in the French army, and was created a Chevalier of the Legion of Honour. He has written many interesting papers on surgical subjects. Mr. Frank Chetwode Crawley, the new vice-president, is a graduate in arts of Cambridge University and in arts and medicine of Dublin University, having taken his medical degrees in 1896. He has been a Fellow of the Royal College of Surgeons in Ireland since 1900, and is ophthalmic surgeon to the Royal City of Dublin Hospital, surgeon to the Royal Victoria Eye and Ear Hospital, Dublin, consulting ophthalmic surgeon to the Rotunda Hospital, a Fellow of the Royal Academy of Medicine of Ireland, and president of the Ophthalmological Society of Great Britain and Ireland. Mr. Crawley acted as examiner in ophthalmology for many years, and during the war served with the Dublin 83rd General Hospital in France. Mr. Crawley's many friends "on the Island" will appreciate the honour he has received.

Vital Statistics for Northern Ireland.

During the quarter ended March 31st, 1930, 6,359 births were registered in the twenty-seven superintendent registrars' districts in Northern Ireland, this number representing an annual birth rate of 20.4 per 1,000 of the estimated population. The equivalent figure for England and Wales is 16.2, and for Scotland 19.7; the rate in Northern Ireland is 0.2 above the rate for the corresponding quarter of 1929 and 2.4 below the average rate for the first quarters of the ten years 1920 to 1929. Deaths registered during the quarter numbered 5,265, or an annual rate of 16.9 per 1,000. This rate is 7.8 below the rate for the corresponding quarter of 1929, and 2.2 below the average rate for the first quarters of the ten years 1920 to 1929. The urban mortality from the principal epidemic diseases recorded during the quarter was equivalent to an annual rate of 0.7 per 1,000 of the population, the death rate from these diseases being 0.4 for the remainder of Northern Ireland. Deaths from cancer numbered 392, being equivalent to an annual rate of 1.26 per 1,000, as compared with an average of 1.12 for the previous five years. The number of deaths of infants under 1 year of age was equal to 78.2 per 1,000 births registered.

School Inspection in County Derry.

Dr. Matilda Watson, school medical officer for the Derry and Limavady area, in the course of her annual report for 1929–30, states that the number of children who presented themselves for examination was much the same as last year—namely, 73 per cent. of those on the rolls. A larger proportion than previously was examined in the Limavady schools, and many who had refused examination last year had come forward willingly. Dental caries was still the most common defect; this had increased during the year from 36 per cent. to 42 per cent. Since the school inspections were completed much progress had been made in dealing with this defect under the free dental scheme. The number of children suffering from enlarged tonsils and adenoids was still very large—namely, 22 per cent., com-

pared with 26 per cent. last year. A considerable number in the Dungiven district, mainly private patients, had their tonsils removed. It was found that 330 children, representing 9 per cent., suffered from defective vision. Some of these cases were very slight; others irremediable. Twenty-eight children suffered from defective speech, but they were all able to learn at school in spite of this disability. There was a definite improvement in some of the younger children who had been defective last year. Only 29 children were anaemic, compared with 57 in the previous year. In several cases the school teachers provided suitable medicine and administered it personally after having obtained the parents' permission. Next year the cases of anaemia should be still further reduced. The commonest nervous disease was epilepsy. Two children who had chorea were advised long rest from school work and referred to their own doctors for treatment. The nurses who had followed up these cases reported improvement.

Typhus in County Mayo.

Following an outbreak of typhus fever in the Cashel district of County Mayo, eleven patients affected with the disease were admitted to the Swinford Fever Hospital. A wardsman in the hospital who assisted in the removal of some of the patients contracted the disease, and one death is reported. The cases are all confined to the Foxford dispensary district. When the matter was reported to the Department of Local Government and Public Health a medical inspector visited the district. On inquiry at the Department of Local Government and Public Health a press representative was informed that the situation was well in hand, and that everything was being done to prevent a spread of the disease. Dr. Stephenson, Chief Medical Officer of the Department of Local Government and Public Health, stated that all the patients were now in hospital, and he did not expect any further outbreak. The houses in which the disease occurred have been thoroughly disinfected, and the entire locality is under medical observation.

A Medical Officer's Salary.

At the last meeting of the County Wexford Health Board a letter from the Department of Local Government and Public Health, refusing to sanction a salary of £100 per annum for the medical officer of the county fever and auxiliary hospitals at New Ross, was under consideration. The Department in its letter stated that the salary offered was totally inadequate. After discussion, the salary was fixed at £200 a year.

Scotland.

Health of Scotland.

THE return of the Registrar-General for Scotland for the quarter ending March 31st, 1930, records that the birth rate was 1.9 per 1,000 higher than that of the previous quarter, and 0.3 higher than that of the first quarter of last year, although it is still 3.3 lower than the mean for the first quarters of the preceding ten years. The death rate for the quarter—namely, 15.8 per 1,000—was 3.4 higher than that of the previous quarter, but 6.1 lower than that of the first quarter of last year, when influenza was prevalent in the country. The death rates per 100,000 from all forms of tuberculosis and from tuberculosis of the respiratory system were 96 and 67 respectively, both of these being higher than those of the previous quarter, although lower than those for the first quarter of last year. Deaths from malignant disease numbered 1,750, representing a death rate of 145 per 100,000. The number of deaths from this cause was 63 less than in the previous quarter, but 18 more than in the first quarter of the past year. Deaths from diseases and accidents of pregnancy and childbirth numbered 194, which represents a mortality rate of 8.2 per 1,000 births, this number being 64 more than that of the previous quarter. Deaths from violent causes numbered 804, an increase of 42 over that of the previous quarter and 53 over that of the first quarter of last year. Of these, 152 were attributed to motor accidents—23 more than in the first quarter of the preceding year. The deaths of children under 1 year of age numbered 2,593, representing an infantile mortality rate of 110 per 1,000 registered births. This figure was 415 less than in the first quarter of the previous year, and the same as the mean of the first quarters of the preceding five years. The six principal epidemic diseases accounted for 866 deaths, or 4.5 per cent. of all deaths, the chief causes of mortality being measles and whooping-cough, which were responsible for 355 and 178 deaths respectively. The death rate from this cause was 0.7 per 1,000, the same as that of the first quarter of the preceding year. The number of deaths from cerebro-spinal meningitis was 63, and from encephalitis lethargica 36, which was respectively 23 and 12 more than in the previous quarter.

Memorial to Dr. Dawson Turner.

A memorial tablet, erected in the radiological department of the Royal Infirmary of Edinburgh to the memory of Dr. Dawson Turner, for many years radiologist to that institution, was displayed on June 3rd to the friends and co-workers who were responsible for its erection. The tablet is the work of Mr. C. d'O. Pilkington Jackson, and consists of a marble panel with the Turner coat of arms and the following inscription: "In Memory of Dawson F. D. Turner, M.D., F.R.C.P.E., F.R.S.E., Pioneer and founder of Roentgen Ray and Radium Work in the Royal Infirmary, Edinburgh. 1899–1925. Prosper Thou the work of our hands upon us, O prosper Thou our handiwork."

Morison Lectures at Edinburgh.

The annual Morison Lectures of the Royal College of Physicians at Edinburgh were delivered on June 2nd, 3rd, and 4th by Dr. S. A. Kinnier Wilson of London, who took as his subject nervous semeiology. In the first lecture Dr. Wilson dealt with the relation of nervous symptoms to nervous lesions, explaining the physiological nature of symptoms and dwelling upon the defects of the clinical-anatomical method. In the second lecture he discussed the symptoms indicative of release or increase of neural function, and considered the auras, fugues, and other symptoms associated with the highest level type of fits, as well as the reflex epilepsy associated with middle level fits. In the third lecture he continued to discuss the symptoms associated with release of neural function, and dealt with fits of infracortical origin, such as striatal epilepsy, tonic cerebellar fits, and periventricular epilepsy.

Small-pox in Aberdeen.

A single case of small-pox has been notified in Aberdeen, the case being that of a woman aged 30. As the patient was employed in the handling of material imported from abroad, it is thought that the fomites have been responsible for carrying the infection, and arrangements have been made for the vaccination of all those engaged in the same employment. Arrangements have also been made for the free vaccination or re-vaccination of any who care to submit themselves.

Home Relief for Incurables.

At the annual meeting of the Royal Society for Home Relief to Incurables, Lord Provost Whitson, who presided, said that the society had been in existence for 125 years. During the past year £4,900 had been distributed among the beneficiaries in all parts of Scotland. Dr. J. Haig Ferguson, President of the Royal College of Surgeons, said that short of the prevention or abolition of disease there could be no nobler function than to promote the comfort and mitigate the anxiety of those who were permanently disabled. He hoped that within the next fifty years the victory which had been achieved over tuberculosis would be achieved in the case of cancer. As a number of people would always be permanently incapacitated he thought that there would always be scope for the work of the society.

Correspondence.

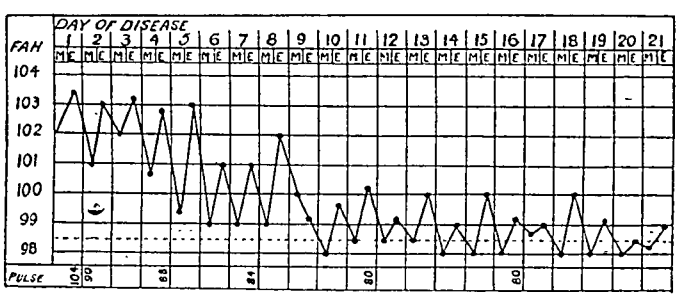
GLANDULAR FEVER WITH ROSEOLAR RASH.

SIR,—Is it not probable that there is a definite connexion between the obscure exanthem referred to by Drs. Cantor and Shulman (*Journal*, May 24th, p. 976) and the outbreak of glandular fever reported by Drs. Letheby Tidy and David Krestin in your issues of May 10th and 24th? Such a connexion is suggested to me by a case at present under my care, which combines the distinctive fevers of each in striking fashion.

The patient, a young City man aged 26, was taken ill on May 15th with exactly the same train of symptoms as those reported by Dr. Cantor—sudden pyrexia, severe frontal headache, increased pulse rate, nausea, and lumbar pain. On the fifth day a roseolar rash appeared on the abdomen, similar in type to the rose spots of typhoid fever, disappearing on pressure, and fading away entirely in three to four days, to be replaced, however, by further crops. The spleen was just palpable, but there were no abdominal symptoms, and an examination of the faeces revealed no organisms of the typhoid-paratyphoid group, nor other definitely pathogenic intestinal type, and no parasitic ova or cysts. Serum reactions proved negative to typhoid, both paratyphoids, and to *Bacillus abortus*.

The blood picture, which is of peculiar interest, is as follows: red corpuscles 4,700,000 per c.mm., white corpuscles 10,000 per c.mm., haemoglobin 88 per cent., colour index 0.9. Corpuscles normal in type, and no suppression of platelets. Differential count: neutrophils 36 per cent., lymphocytes 57 per cent., hyalines 7 per cent., eosinophils and basophils 0; 4 per cent. of the lymphocytes are hyperchromatic.

The temperature, as will be seen by the accompanying chart, came down by lysis at the end of ten days, but



there have been periodical rises every second or third day since that time.

Up to this point it may be said that the case has differed in no important characteristic from the obscure exanthem of Drs. Cantor and Shulman, but the interesting fact to be added is that on the fourteenth day there appeared a definite enlargement of the lymphatic glands, particularly the occipital group and the chain of glands along the posterior border of the sterno-mastoid. The axillary and inguinal groups have also been enlarged to a less extent. The tonsils have been clear throughout the attack, though there has been some vascular congestion of the fauces.

The presence of these glands and the characteristic lymphocytosis would certainly suggest that this is a definite case of glandular fever, and it raises the question whether Dr. Cantor's cases were not of the same nature.—I am, etc.,

Lingfield, June 3rd. HAROLD BALME, M.D., F.R.C.S.

SIR,—I am much indebted to the notes on glandular fever which have recently appeared in your columns, and venture to give my experience in three cases (mother, daughter, and housemaid) as I think it most important to make it generally known that we are having at present an epidemic of an infectious disease—glandular fever with roseolar rash—an accurate description of which is not to be found in the textbooks.

The rash is apparently a regular symptom in this epidemic. It corresponded in my cases exactly to that described as an "obscure exanthem" by Drs. Cantor and Shulman in your issue of May 24th (p. 976). The spots and papules are very definite, but may be easily overlooked, as they are not always numerous and are only present for a few days during the first two to three weeks of the illness.

I found no lymphocytosis on the second day of the fever. Later, the blood picture as well as the glandular enlargement reminded me of rubella. Characteristic is the large number of atypical lymphocytes (big cells with pale protoplasm and blue granules, and "piasma cells" with blue-stained protoplasm and eccentric nucleus). I saw in two cases typical large lymphocytes with two nuclei. Culture from lymph glands proved sterile.

R. R. Spencer reported upon a similar epidemic in America in 1926 (*United States Public Health Reports*, 41, 2181).

The diagnosis is easy if attention is drawn to the prevalence of this disease, and I hope that we shall soon learn more about the epidemiology, etiology, and, perhaps, a specific treatment.—I am, etc.,

London, W.1, June 7th. F. E. LOEWY.

ETIOLOGY OF RHEUMATIC DISEASES.

SIR,—Dr. L. C. Dundas Irvine, commenting on the etiology of rheumatic diseases (*Journal*, June 7th, p. 1075), remarks that he believes that, in addition to any focus of infection, there is some other necessary factor, and makes a point that many of his patients have noted their first symptoms within a month or two of a normal confinement, and therefore considers that there must be some ovarian deficiency in these cases.

At the Bath Conference on Rheumatism, in May, 1928, I particularly emphasized this point in a paper on "The endocrine factor in rheumatic disease,"[1] giving three main reasons:

1. That these cases of atrophic arthritis are associated with the advent of menstruation, the child-bearing period, and pregnancy.

2. That the balance of the endocrines is more unstable in the female, and the previous history of these cases frequently reveals enlargement of thyroid, a family history of Graves's disease, or delayed menstrual onset; and, if pregnancy has occurred during the course of the disease, the patient will frequently state that all the symptoms were relieved only to return with fresh vigour during the puerperium.

3. That in cases of intermittent hydrarthrosis the symptoms improve very much, or entirely disappear, during pregnancy.

We are told that during pregnancy the stimulation of the secretion of pituitrin by the internal secretion of the ovary is arrested by that of the corpus luteum until the time is ripe for the uterus to contract and the milk to flow. It appears to me that it is well worth considering whether the inhibitory action of the corpus luteum on the posterior pituitary has any part in the amelioration of the arthritic symptoms during pregnancy. There may also be some association with the presence of the placental secretion. There must be some physiological reason why the female in animals eats the placenta, or why, as I have been informed, the peasant mother does likewise in some parts of the Continent.—I am, etc.,

Harrogate, June 9th. G. L. KERR PRINGLE.

ASTHMA AND ADRENALINE.

SIR,—As a result of previous correspondence on this subject I have been asked on several occasions how it is that I am not in favour of the use of adrenaline in asthma when there is a general consensus of opinion that it is the most successful drug to use. My answer is that I am entirely in favour of its use, and agree with what Dr. Hurst has said about it. The only way in which I differ is about the method of its administration. There are two courses open: one is to allow the suprarenal glands to exhaust themselves, and then to administer adrenaline by hypodermic injection; the second is to conserve the supplies of adrenaline in the suprarenal glands by controlling their output. I suggest that the second method has some advantages over the first. We must not forget that Cannon has shown that the emotions of fear and anger cause a copious flow of adrenaline. But there is another unnamed

[1] *Rheumatic Diseases*, p. 34.

emotion which causes the same phenomenon. It is the "anticipation of exertion," and in its most acute form is known to rowing men as "rowing needle." It is very common. These emotions are most frequent in persons of the highly strung constitution which is one of the earliest observed components of the asthmatic diathesis. If they are allowed free and uncontrolled sway they are bound to produce frequent suprarenal exhaustion. This phenomenon is called "neurasthenia" or "nervous exhaustion" by neurologists.

The method I have adopted, in addition to treating the nasal "trigger," is one which is recommended by Sir Maurice Craig. That is to say, in adults I give a daily dose of 5 grains medinal *nocte*, continuing until the nervous system has quietened down. In children a dose of potassium bromide, 5 grains, dissolved in water, at the evening meal, is usually sufficient. I have had some admirable results from this treatment.

These drugs are recognized by all the leading neurologists to be *not only harmless, but also beneficial in* patients of this diathesis. For physiological confirmation of this method I am indebted to Professor McDowall, who tells me that under the influence of drugs of the veronal type dogs actually store up reserves of adrenaline in the suprarenal glands.—I am, etc.,

London, June 3rd. H. MORTIMER WHALEY.

EPIDEMIC CATARRHAL JAUNDICE: THE INCUBATION PERIOD.

SIR,—The excellent description of an epidemic of catarrhal jaundice by Dr. W. N. Pickles in the *Journal* of May 24th (p. 944) prompted me to look up a few rough notes I had made at the time of a similar, but much smaller, epidemic in this village in 1927. At that time the epidemiology of this condition was obscure and the incubation period uncertain (see Ministry of Health Report on Public Health and Medical Subjects, No. 42, 1927, pp. 8, 9). Dr. Pickles's observations throw considerable light on these important questions, and as a study of my notes amply confirms his conclusions, I have thought a brief review of my cases worthy of record.

The accompanying table has been compiled from my notes. In some of the cases the dates of onset are possibly a day or two late, being really the dates of my first visit; a few of my records are incomplete on this point.

Case No.	Patient.	Sex.	Age.	Date of Onset of Illness.
				1927.
1	W. L.	M.	7	May 9th.
2	A. L.	M.	7	June 3rd.
3	G. T.	F.	4	June 7th.
4	M. E.	F.	6	June 8th.
5	D. K.	F.	12	June 9th.
6	N. C.	F.	8	June 10th.
7	Mrs. B.	F.	32	June 11th.
8	G. F.	M.	5	July 6th.
9	H. C.	M.	5	July 6th.
10	D. L.	F.	11	July 6th.
11	D. C.	F.	16	July 12th.
12	Miss R.	F.	21	July 14th.
13	E. T.	F.	15	July 14th.
14	M. T.	M.	24	July 15th.
15	G. S.	F.	10	July 15th.
16	G. G.	F.	4	July 20th.
17	C. T.	M.	17	August 23rd.
18	S. T.	M.	19	October 24th.

The similarity in epidemiology between this and the Wensleydale epidemic is at once obvious from the table. Here the cases occurred in crops at approximately monthly intervals with no fresh cases in the intervening periods. In a few instances the incubation period can be stated more exactly. Patients 1, 2, and 10 are respectively twin brothers and their sister, and the intervals between their attacks were twenty-five and thirty-three days. Patients 14 and 17 are brothers, and their illnesses were separated by a period of thirty-nine days. There were no other instances of multiple infection in one household. Presumably an undiscovered patient linked cases 17 and 18, who are cousins, and whose illnesses were separated by an interval of almost exactly two months. My cases would thus suggest an incubation period of about one month, but varying from twenty-five to thirty-nine days.

The clinical features of the cases conformed to the typical textbook type, and gave no difficulties in diagnosis. The cases were all mild, and never caused any anxiety. A point of some importance is that two of the adults affected were school teachers, which emphasizes the role of school segregation in the spread of the epidemic.—I am, etc.,

Owston Ferry, Nr. Doncaster. S. ERDHEIM, M.B., Ch.B.

HARE-LIP AND ITS TREATMENT.

SIR,—I should like to reply to some of the points raised in the *Journal* of May 3rd (p. 840) by Mr. T. Pomfret Kilner in criticism of my recent article on the above subject (April 19th, p. 732).

I am aware of the importance of obtaining sound muscle union as well as accurate skin approximation, and Mr. Kilner is correct in his surmise that the muscle layer is included in the silkworm-gut sutures passed deeply into both sides of the lip. I have not used buried catgut sutures as *I fear they would so often become infected, and either work* out through the skin margin or cause deep suppuration, much to the detriment of the subsequent scar; neither have I tried the end-on vertical mattress suture which Mr. Kilner uses, and which I believe is also largely used by Dr. Vean of Paris. Though I have not seen this stitch used it seems to me that with it it would be difficult to be sure that the different layers of muscle were in accurate approximation.

As regards the anaesthetic, I have not been inconvenienced by the proximity of the anaesthetist during the operation, and, owing to the position of the child's head and the constant gentle sponging-out of the pharynx—sometimes with the help of a suction apparatus—I have had practically no trouble from the child's inhaling blood through the glottis. I personally should rather object to putting a tube into the trachea of a young baby for fear of the possibility of setting up broncho-pneumonia or other respiratory trouble. I must say that I have never been inconvenienced in any way, and can hardly detect the smell of the anaesthetic in the slight expirations of a young infant.

Mr. Kilner also criticizes the extensive separation of the soft tissues from the bone; in my article I mentioned extensive undercutting only in cases where the separation of the parts was unduly wide, such as in complete double hare-lip with prominent displaced pre-maxilla, or where there had been a previous and unsuccessful attempt at closure, so as to bring the parts together with as little tension as possible, which is essential if successful closure is to be made: one naturally moulds the pre-maxilla in the unilateral cases as well as in the bi-lateral when it is badly displaced.

I have not practised the method of wiring of the alveolar margins as I have found that moulding and closure of the lip over the prominent part is sufficient practically to close the gap in the alveolus in almost every case: moreover, it seems to me that the presence of a *strong wire in contact* with the unerupted tooth buds for a few weeks must have a very deleterious effect on them.

Since the article was published I have, among subsequent cases, had one which must be very rare indeed and which was the first of its kind that I have seen—namely, a baby with a complete double hare-lip and a prominent displaced pre-maxilla, but with no cleft palate of any kind behind; the gap in the lip on either side was very wide. In operating on this case I had the greatest difficulty in closing the lip, as there was no cleft in the palate in which to push the pre-maxilla, and I was strongly tempted to remove it; only very extensive undercutting enabled me to bring the edges of the lip together in front of the pre-maxilla.—I am, etc.,

Manchester, June 5th. GILBERT B. WARBERTON.

UNDULANT FEVER.

SIR,—My committee has recently appointed a subcommittee to consider what steps, if any, are necessary for the prevention of undulant fever in the borough, and we are empowered to confer with an eminent local veterinary surgeon on the subject.

It is evident from some of the letters recently published in the *British Medical Journal* that the matter should be taken seriously, and I should be grateful if any of your readers, having knowledge of the subject, would write to me giving their views.—I am, etc.,

G. H. R. HOLDEN, M.D.,
Chairman of the Reading Health Committee.

8, Bath Road, Reading, June 9th.

PARALDEHYDE BEFORE AND AFTER ANAESTHESIA.

SIR,—Paraldehyde as an adjuvant to anaesthesia has been given a very good trial by Dr. Hugh R. Phillips, and his statements in the *British Medical Journal* of February 15th (p. 279) are illuminating; the results here proffered are merely accessory to his.

My experience of the *pre-anaesthetic* administration of paraldehyde has been purely in connexion with laboratory animals. The method has, however, had a most extensive trial in the department of human physiology and pharmacology at the Adelaide University, and our results have been so good that all previous methods have been abandoned. The animal mainly used is the Australian rabbit. A dose equivalent to 10 c.cm. of paraldehyde per kilogram of body weight is introduced into the stomach by means of a No. 15 French catheter one hour before starting ether anaesthesia. The results have been excellent and the fatalities are negligible, especially when compared with earlier procedures. Our former methods were pre-anaesthetic injections of luminal or amytal, or no pre-anaesthetic preparation, open ether without preliminaries being given, or A.C.E.3.

In regard to the *post-operative* administration of paraldehyde, I have for some time endeavoured to prevent dehydration due to vomiting, etc., by giving patients immediately after operation 20 oz. of normal saline solution, with two to three drachms of the drug per rectum. The same amount of saline solution is given four hours later, with 1½ to 2 drachms of paraldehyde, and if retained this is repeated after a further four hours. The result has in general been gratifying. Compared with cases in which this after-treatment has not been used, the results have been satisfactory in many respects. The advantages may be summarized as follows: reduction of vomiting, less tendency to abdominal discomfort and intestinal distension, less post-operative dryness of the mouth, easier nursing. If the operation is performed in the morning the patient usually goes through to the following morning with very little trouble. A considerable amnesia is produced. The disadvantage is that the paraldehyde is excreted through the lungs for a long time and is rather objectionable, but the same might be said of ether.

Thus the pre-operative paraldehyde treatment of Dr. Phillips might well be continued into the post-operative period without fear of ill effect, though in that event the post-operative dose of paraldehyde might be reduced, and perhaps the patient should wait for an hour or so after the operation before the first post-operative dose of paraldehyde is given.—I am, etc.,

R. FRANCIS MATTERS, M.D., M.S., F.R.C.S.Ed.

Department of Human Physiology, University of Adelaide, April 10th.

STERILITY IN WOMAN.

SIR,—The interesting discussion on this subject brings to my mind the following case. I was informed by a man, well known to me, and whose word I have no reason to doubt, that he had had frequent illicit connexion with an unmarried woman over a period of one or more years, without pregnancy resulting, although no precaution of any kind was taken. Each married about the same time, and each became a parent just under one year from the date of marriage. No doubt the majority of cases of sterility are due to some mechanical defect in the female sexual organs, or to some physiological or pathological defect in the ovary or testicle respectively, but this case seems to suggest that there is some other factor not yet identified. One also knows of cases where pregnancy only occurred after ten or more years of married life. Such cases can hardly be due to an inherent defect in either party, as a rule, but may be attributable to what I might describe as psychological reasons; perhaps some gynaecological expert would contribute his views.—I am, etc.,

D. J. GAIR JOHNSTON.

Birkenhead, May 26th.

PERIANAL RESISTANCE TO INFECTION.

SIR,—I should be much obliged if someone would explain why it is that wounds in the region of the anus and rectum seldom become infected. I read in the *Queen Charlotte's Practice of Obstetrics* (p. 405) that the perianal region is "the most heavily infected surface of the body," and a great source of danger to the placental site. Yet the wound after operations such as for anal fistula or for piles rarely causes trouble, though it is exposed to contamination by faecal discharge.—I am, etc.,

H. W. WEBBER.

King's Tamerton, Plymouth, June 4th.

PAYING WARDS IN HOSPITALS.

SIR,—In the *Times* of May 30th there was a letter under this heading from Dr. Alfred Cox about which I should like to say a few words. The letter was one of grateful thanks to the *Times* for a leading article upon the same subject in the issue of May 29th.

The writer of that article was pleading for the many practitioners who, as he put it, were often from force of circumstances not upon the staff of any hospital. He welcomed the idea that with paying wards attached to a hospital these practitioners would be able to give institutional treatment to patients who could not afford the charges of an ordinary nursing home. In the opinion of the writer of that article, it is quite clear that patients occupying the paying wards should be free to choose their own doctor, and should not necessarily be under the care of a member of the visiting staff of the hospital. The paying wards would, in fact, supply the needs of a nursing home for those of moderate means.

From Dr. Alfred Cox's letter it would appear that he takes an entirely different view of the matter. He speaks of the patient in the paying ward as being under the responsible care of a member of the hospital staff in association with the private practitioner, who should have access to his patient at all times, and have such share in the treatment as might be agreed upon. Dr. Cox, while allowing the patient in a paying ward to select his own medical attendant, says: "If the treatment should involve the application of special skill the practitioner undertaking that treatment may be required to satisfy certain conditions ensuring that he has the necessary experience and training" to perform them.

Now, Sir, this seems a most remarkable requirement, for it means that the medical attendant, in order to treat his private patient in the paying ward, must, after having "satisfied the examiners" and received his licence to practise, subject himself to an inquisitorial examination and inquiry before he is allowed to use his skill upon his patient. If a policy such as this is to be adopted in the management of paying wards in or attached to general hospitals it is not likely to make for the best interest of the patient or the good working of the system. Something much more liberal and on the lines suggested in the *Times* article would commend itself far more to all concerned.—I am, etc.,

PRESTON KING, M.D.

Bath, June 4th.

*** Dr. Preston King may be referred to the relevant part of the British Medical Association's Hospital Policy, as set out in the *Supplement* of April 19th, 1930 (p. 157)—Appendix B, "Conditions of Admission and Treatment of Private Patients in Hospital."

Obituary.

R. McKENZIE JOHNSTON, M.D., F.R.C.S.Ed.,

Consulting Surgeon to the Ear and Throat Department, Royal Infirmary, Edinburgh.

THE death took place in a nursing home in Edinburgh, on June 1st, of Dr. R. McKenzie Johnston, who was for many years well known in Edinburgh as a specialist in diseases of the ear, nose, and throat. He was born in Edinburgh in 1856, his father, the late Henry Johnston, having been a surgeon to the Honourable East India Company. Several of his brothers have also attained to distinction in fields other than those of medicine, including Sir Duncan A. Johnston, whose work in connexion with the Ordnance Survey is well known, and who since the war has done a great deal of good work for disabled men; Lord Johnston, who recently retired from the Bench; and Mr. William C. Johnston, Deputy Keeper of the Signet.

Robert McKenzie Johnston was educated at Edinburgh Academy and at Clifton College, and after the usual course of medical study in Edinburgh he graduated M.B., C.M. in 1881, proceeding M.D. in 1883. In 1882 he held the post of resident physician to the late Dr. John Wyllie, and was senior president of the Royal Medical Society of Edinburgh. In 1884 he became a Fellow of the Royal College of Surgeons, but conducted a general practice in Edinburgh till 1890, when he adopted diseases of the ear, nose, and throat as a specialty. For several years he held the post of assistant surgeon, and later, for three years, of surgeon in charge of the ear and throat department of the Edinburgh Royal Infirmary, resigning this in 1906, when he was appointed by the managers consulting surgeon to that department. Laid aside for a time from active work by reason of an affection of the throat, he was obliged, following upon an operation, to give up active professional work, but he continued almost to the time of his death to interest himself energetically in public work in various directions. He was the author of the article on "Acute inflammation of the middle ear" in the *Encyclopædia Medica*, and had published numerous contributions to the periodical literature of his special subject, including a report on "A case of intratracheal tumour" in the *Edinburgh Medical Journal* of 1886; on "The use of papain in ear disease" in the same journal for 1890; and a record of a "Rare case of nasopharyngeal tumour" in the *British Medical Journal* of 1888.

Dr. McKenzie Johnston was one of the founders of the Laryngological Society of the United Kingdom, and of the Otological Society of London, and he took a deep interest in the work of the British Medical Association. In this Association he acted as vice-president of the Section of Laryngology and Otology at the Annual Meeting held in Edinburgh in 1898, and subsequently was president of the Section of Laryngology, Otology, and Rhinology in the meeting held in Exeter in 1907. He had two periods of office as a member of the Central Council of the Association, in 1904–5 and 1909–10, and he was a valued member of the Building Subcommittee of the Association in connexion with the rebuilding of its Strand premises in the year 1907–8. In local medical affairs in Edinburgh he took an active part, and his advice was eagerly sought. Thus he was for many years surgeon of the Edinburgh Ear and Throat Dispensary, and his eminence in his specialty was recognized by the Royal College of Surgeons, which appointed him its president in the year 1917. For many years after ceasing to be a member of its staff, he acted as a manager of the Royal Infirmary of Edinburgh, where his services were particularly valuable during the later stages of the war. From 1903 to 1928 he was a member of the University Court of the University of Edinburgh. Other positions held by him were those of a governor of Fettes College, and a member of the Royal Company of Archers (the King's Bodyguard for Scotland).

Dr. Johnston had been married to a daughter of the late Mr. Henry Younger, D.L., of Benmore, Argyllshire, by whom he was predeceased in 1919, and he is survived by three sons and a daughter. The interment took place in the Dean Cemetery, Edinburgh, on June 3rd, after a funeral service in St. John's Episcopal Church, Princes Street, which was attended by a large assemblage of personal and professional friends, including a deputation from the Royal College of Surgeons.

DR. A. LOGAN TURNER writes:

After a brief period spent in general practice, Dr. McKenzie Johnston turned his attention to the study of diseases of the ear and throat at a time when specialists were not so numerous as they are to-day. In the spring of 1890 he was appointed assistant surgeon to the ear and throat department of the Royal Infirmary of Edinburgh, then in the charge of Dr. Peter McBride. At this time there was no accommodation for the treatment of in-patients, and the necessity for beds for this purpose was becoming increasingly clamant. Accordingly, in 1891, six special beds were provided in the Infirmary for ear and throat cases. For thirteen years Dr. Johnston held the position of assistant surgeon, until, in 1903, on the retirement of Dr. McBride, he became full surgeon, and succeeded to the appointment of university lecturer on diseases of the larynx, ear, and nose. With the slow but steady growth of the department during Dr. McBride's tenure of office, and with the establishment, in 1897, of the lectureship, the increasing amount of work gradually outgrew the accommodation hitherto assigned to it. A separate pavilion was accordingly built and equipped with twenty-four beds, with commodious out-patient rooms and a lecture theatre. This was completed in 1903, and was occupied for the first time by Dr. McKenzie Johnston shortly after his appointment as surgeon. He brought to the equipment of the new department an essentially practical mind and an intimate knowledge of what was necessary in the installation of electrical equipment and the appliances required for the conduct of the work.

After thirteen years of diligent and unremitting attention to duty as assistant surgeon, and after holding for a brief period the senior position which he had deservedly merited, his professional career was unfortunately brought to an end by an illness which incapacitated him for further usefulness as a teacher. Realizing that his disability would act as a hindrance to his powers as a lecturer, he decided to demit office rather than jeopardize the teaching of his subject in the medical school. Consequently, in July, 1926, he resigned his hospital and university appointments. Dr. Johnston faced the situation with admirable fortitude, and after a long period of rest he returned to work, applying his energies in other important directions. For nearly twenty-five years he took a very active part in various administrative posts, and the Royal Infirmary, the University, and the Royal College of Surgeons of Edinburgh reaped the benefit of his administrative and financial ability. In 1907 he joined the Board of Management of the Royal Infirmary, and for twelve years served the institution as a manager, giving ungrudgingly much time and attention to its affairs. For over twenty years he was an active and valued member of the University Court. As secretary to the College of Surgeons for ten years, he devoted himself with untiring application to the duties of that office, and his election as president of the College in 1917 was an honour duly merited by his previous services.

JOHN BUCKLEY BRADBURY, M.A., M.D., F.R.C.P.,

Downing Professor of Medicine in the University of Cambridge; Consulting Physician to Addenbrooke's Hospital.

PROFESSOR BRADBURY'S death on June 4th, after a week's illness, breaks a link with the past; he was a survivor of the old apprentice system, had lived continuously in Cambridge since 1866, at one time or another had taught most of the subjects that medical students have to learn, was one of the oldest resident members of the University, and since 1928 had been the senior Fellow of the Royal College of Physicians of London.

Born on February 27th, 1841, at Saddleworth in Yorkshire, he was the eldest son of John Bradbury, merchant; both his father and mother died comparatively early, and he had not any long-lived ancestors. At the age of 17 he became an apprentice to a medical man, and in the Easter

term of 1862 entered Gonville and Caius College, but early in the following year migrated to Downing College, where he had gained a scholarship thrown open to the University and tenable until the standing for the degree of M.A., if the holder obtained a first-class in the tripos. In 1864 he was placed second in the first class of the Natural Sciences Tripos, one of the examiners being P. W. Latham, his private tutor, future colleague, and predecessor in the Downing professorship. After working at King's College Hospital he returned to Cambridge in 1866, and was appointed lecturer on comparative anatomy at Downing College. In the following year he took the final M.B., and in 1870 proceeded to the degree of M.D. It may be interesting to quote his opinion of the examinations, which he thought were more difficult then than now. At that time there were two M.B. examinations; the subjects of the first were selected passages from the medical classics —Hippocrates, Aretaeus, and Celsus—botany, chemistry, comparative anatomy, materia medica and pharmacy, human anatomy, physiology, and pathology; the second examination comprised medicine, surgery, midwifery, and jurisprudence.

After lecturing for ten years at Downing he became lecturer on anatomy and physiology at Caius until 1880, when he gave up lecturing on natural science, as the claims of private practice were becoming insistent. On Professor H. J. H. Bond's resignation of the physiciancy at Addenbrooke's Hospital in 1869 Bradbury was elected, and held this office for the remarkably long period of half a century, his tenure having been prolonged on several occasions. For many years he had an extensive practice in and around Cambridge, and, indeed, never gave up work entirely, for on the day of his fatal seizure with hemiplegia and aphasia a patient came to see him. In the early days of waiting, when he was beginning to despair and thinking of going elsewhere, he gained considerable reputation for the correct diagnosis of hydatid disease of the liver, a condition formerly common in the district, in a case regarded by a senior as malignant. In 1872 he succeeded Sir George Paget as Linacre Lecturer at St. John's College, and gave lectures on pathology until 1884, when the late C. S. Roy was appointed the first professor of pathology in the University. He was succeeded in 1904 by Sir Donald MacAlister in the Linacre Lectureship, which in 1908 became an annual appointment given to extra-university authorities, the first being Sir William Osler.

In 1894, after twenty years' tenure, P. W. Latham resigned the Downing Professorship of Medicine, and Bradbury began his long occupation of this chair. He was fortunate in attracting as his assistants Professor C. R. Marshall, now of Aberdeen, in 1894, and in 1899 W. E. Dixon, now reader in pharmacology in the University. At the Royal College of Physicians of London, of which he became a Member in 1867 and a Fellow in 1874, he was Bradshaw Lecturer in 1895, taking as his subject "Some new vaso-dilators," Croonian Lecturer in 1899, "On some points connected with, sleep, sleeplessness, and hypnotics," and councillor 1899–1901. He also wrote the article on disorders of sleep in the first edition of Allbutt's *System of Medicine* (1899, vol. vii), and a book on vertigo (1870). Some four years ago he sustained an accident to an eye; recently his sight failed, and he had become somewhat deaf. He was twice married, and is survived by his second wife, [illegible] in the medical profession, and two daughters, one of [illegible] perhaps as a sister at Addenbrooke's Hospital. The funeral [illegible] at 3.30 [illegible] on June 7th, at St. Mary's the [illegible] is given.—[illegible] Street, Cambridge.

[illegible] R. F.

[illegible] 10th.

H. COOPER PATTIN, M.D.

[illegible] Medical Officer of Health for the [illegible], D.P.H.,

announced in our last issue, [illegible] WOM City of Norwich.

[illegible] years medical officer of heal[illegible]ion on Dr. Cooper Pattin,

died at Torquay on May 30th [illegible] was [illegible]th for the city of

[illegible] me months.

Cooper Pattin was born in 18[illegible]ord I[illegible]h after an illness

[illegible] llege, Cambridge, as a medical st[illegible]illicit [illegible]

[illegible] h honours in the Natural Science[illegible] of one[illegible]2, and entering

his medical course at St. Thomas's [illegible]ugh [illegible]dent graduated

[illegible] about[illegible]s Tripos, com-

[illegible] Hospital [illegible]

1889 he obtained the M.R.C.S. and L.R.C.P. diplomas, and graduated M.B., B.Ch. at Cambridge in the following year. He took the Cambridge D.P.H. in 1891, and proceeded to the M.A. and M.D. degrees in 1899. Having decided on a career in the public health service, Dr. Pattin was appointed medical officer of health for Norwich in the late nineties, and continued to hold that post with distinction until he retired four years ago under the age limit. On relinquishing office he received public expressions of gratitude and good will from the corporation and citizens of Norwich.

After his retirement Dr. Pattin travelled round the world, and in February, 1927, acted as official delegate of the British Medical Association at the Australasian Medical Congress held at Dunedin, New Zealand. In former years he had taken an active part in many annual meetings of the Association, serving as honorary secretary of the Section of Public Medicine at Carlisle in 1896, and as vice-president of the Section of State Medicine at Ipswich in 1900. He had long been an active and prominent member of the Society of Medical Officers of Health, and held office as president in 1909–10. He was also a past-president of the Ipswich Medico-Chirurgical Society. Outside his official work he had many interests. He was a lover of books, plays, music, and pictures, and spent nearly all his vacations in travel abroad.

The editor of the *Medical Officer* allows us to quote the following extracts from a personal tribute written by Sir Arthur Newsholme:

Dr. Harry Cooper Pattin will be remembered by his many friends and acquaintances for qualities which enlisted both interest and regard. When I visited him in Torquay in January of this year he was evidently failing in health, but his so early death could scarcely be anticipated. It is regrettable that this occurred in a place remote from his old colleagues and friends of the Society of Medical Officers of Health and of the ancient city of Norwich—as he delighted to describe it—so that few of them could pay him the last tribute of respect and regard. My first acquaintance with him originated in a letter received when he was elected to the Norwich post, announcing in his own special way his intention to visit Brighton to ascertain what was being done there. I need not attempt to describe his official work. Others can do this with more complete local knowledge than I possess. He often had difficulties to overcome—as we all had—but his tact and self-possession and the absence of bluster helped him to secure the reforms advocated by him. His colleagues of the Society of Medical Officers of Health elected him their president for the session 1909–10, and he held the post with dignity and success.

Some of my most pleasant memories are of bicycling expeditions in France, visiting a succession of cathedrals, visiting and revisiting the châteaux of the Loire, etc., with Pattin. He was well informed on all general subjects, and loved to study and realize history in its association with the localities concerned. At home the same characteristics emerged. Occasionally he would announce an impending visit to the London house of his friend. This would mean his appearing about midnight, after a theatre matinée and an evening concert or theatre. A few days later would come a press cutting from the *Eastern Daily Press* containing an admirable appreciation of what he had seen or heard. Some of these articles, and others describing his travels, were collected in a volume entitled *The Excursions of an Improvident Philosopher*, which contains some of his most characteristic writing. He affected a literary style of his own, which reminded one somewhat of Sir Thomas Browne's writings. It made him happy to invent a new word, or to use an almost obsolete word in an unusual, but quite legitimate, manner. Among his other writings were *Ritual of Temperance*, *Obiter Scripta*, and *Rummage*; in all of which Pattin's special views on life emerged. They showed much wisdom in a light and easy form. But although it would appear from the above that Pattin had much that characterizes a *dilettante*—of a choice type—it must not be assumed that his professional work was shirked or belittled, and the record of Norwich during his period of office is adequate proof of this. He was a choice spirit, and his memory is one of life's treasures.

A. F. R. WOLLASTON, D.S.C., M.A., B.CH.,

Fellow and Tutor of King's College, Cambridge.

THE deplorable affair at Cambridge, on June 3rd, when Dr. A. F. R. Wollaston was shot dead in his rooms at King's College by an insane undergraduate, has caused grief in many circles, and not least among his friends in the medical profession, who loved him for his personal qualities as much as they admired him for his achievements as explorer and naturalist.

Alexander Frederick Richmond Wollaston was born in 1875, and came of a family which produced many distinguished scholars and men of science, notably William Hyde Wollaston, M.D., F.R.S., the eminent physiologist, chemist, and physicist (1766–1828). From Clifton, where his father was a well-known house-master, he went to King's College, Cambridge, graduating B.A. in the Natural Sciences Tripos of 1896, and thence to the London Hospital. He became M.R.C.S., L.R.C.P. in 1903, and afterwards took the M.A. and B.Ch. degrees. Though practice never appealed to him he acted as medical officer to several of the exploratory parties of which he was a member, and throughout the war he served as temporary surgeon R.N., being mentioned in dispatches and receiving the Distinguished Service Cross. Wollaston's ability as an all-round naturalist was widely recognized in the world of science, and his literary gift enabled him to write of his travels and discoveries with charm and precision. Wollaston Peak, on Mount Ruwenzori, records his ascent in 1905 as a member of the British Museum expedition to Central Africa. On the second of his two journeys in Dutch New Guinea he acted as leader of the British Ornithological Expedition, acquiring much ethnological information and bringing home many valuable specimens of flora and fauna. For these services he received, in 1914, the Gill memorial award from the Royal Geographical Society, which after his return from the Mount Everest expedition in 1922 awarded him also the patron's gold medal.

Ten years ago his College elected Wollaston to a supernumerary fellowship, and at the close of 1928 he was re-elected a Fellow and appointed tutor in succession to Dr. J. H. Clapham. This post, which brought him into intimate touch with all the undergraduates of King's, was most congenial, and his friends looked forward to many happy and successful years of work for the great foundation which he loved so well. Wollaston was a man of outstanding character and attainments, and his death, in the full tide of active service for others, is regarded by all who knew him as nothing short of a calamity.

T. I. CANDY, M.B., D.M.R.E.,

Radiologist to the Royal Gwent Hospital, Newport, Mon.

NEWS of the death of Dr. Candy at Newport, Monmouthshire, on June 1st, after a very brief illness, was received with profound regret and sorrow by the medical profession in South Wales and Monmouthshire, and also among the community in which he lived and worked.

Thomas Ignatius Candy was born in Londonderry in 1892, and received his early education at St. Columba's College in that city. He then entered Queen's College, Belfast, and graduated M.B., B.Ch., B.A.O. of Queen's University in 1918. After some time spent in general practice and subsequently in post-graduate study, he obtained the diploma in radiology of Cambridge University in 1920. He was formerly medical superintendent of the War Pensions Hospital, Birmingham, clinical assistant to the *x*-ray department of King's College Hospital, and deputy physician in charge of the *x*-ray department at Charing Cross Hospital. He was appointed honorary radiologist to the Royal Gwent Hospital, Newport, in 1922. He created and organized this special department and rapidly made a name for himself as a skilled investigator; he applied himself particularly to establishing the value of skiagrams taken at various stages of pregnancy with the object of discovering *malpositions of the foetus in utero*. He published some monographs and several papers of great merit in the medical press, and translated *Lenk's Index and Handbook of X-Ray Therapy* (Oxford Medical Publications).

Candy gained the complete confidence of the general practitioner, and was able to help him in the elucidation of many difficult problems; he frequently gave expert evidence on workmen's compensation cases at Monmouthshire County Court. In addition to excelling in his specialty he was a first-rate photographer, and spent much of his spare time in making films for production as moving pictures. He was a Fellow of the Royal Society of Medicine; a member of the executive of the Monmouthshire Division of the British Medical Association, serving as secretary of the Section of Radiology at the Annual Meeting in Cardiff in 1928; and secretary of the Newport Medical Society.

Dr. Candy leaves a widow and four young children, with whom much sympathy is felt. A Requiem Mass was celebrated at St. Mary's Catholic Church on June 4th, and was well attended by people of every section of religious belief, indicating the esteem in which he was held.

"S. H." writes: I have known Dr. Candy since his advent to Newport; his death from toxaemia at the early age of 38 is a blow to his fellow practitioners and a sad end to a life full of promise and of service to others. Candy was a most lovable man—simple, sincere, and absolutely free from guile, with the heart of a child; his characteristics received outward expression in his pleasant, smiling face. Everyone loved him, yet he never sought popularity. He passed through life quietly and steadily, doing what came to his hand with all his might. His work was marked by industry and painstaking thoroughness. He made the most of the day. "The honour of the day is forever the honour of that day. It goes into the treasury of things that are honestly and completely ended and done with." One may reflect with the poet Horace on the uncertainty of life:

> "Quis scit an adjiciant hodiernae crastina summae
> Tempora Di superi?"

DR. ROBERT CAMPBELL GILROY, who died on April 23rd, studied medicine at Glasgow University, where he graduated M.B., C.M. in 1885. Having held an appointment as house-surgeon to the Paisley Infirmary, he went to Birmingham, where he was engaged in practice till the outbreak of the Boer war, when he joined the Army and sailed for South Africa. After the war he practised in Standerton for a few years, and then returned to England, settling in Leicester. There, for many years, he carried on a large practice, from which he retired owing to the state of his health. For a time he stayed in Edinburgh, but eventually went to Paignton in Devon, where he lived in retirement. A colleague writes: Dr. Gilroy inspired respect in those who met him: and all who knew him held him in esteem and affection. He was a well-informed and successful practitioner. By his skill, patience, sympathy, and tact he won the confidence of his patients; and his bright cheery nature, his unassuming disposition, his interesting and informative conversation, combined with his fine powers of description, made him a great favourite with his friends. He leaves a widow, and a son who is in the medical profession.

We regret to announce the death of Dr. HERBERT W. G. MACLEOD, which took place in London on May 30th. Dr. Macleod graduated M.B., C.M. at Edinburgh in 1886, and in the following year was successful in the competitive examination for commissions in the Indian Medical Service. He took part in the Black Mountain expedition, for which he received the medal and clasp. On retirement from the service he returned home, and subsequently proceeded to take the M.D. and B.Sc. degrees at his old university, and later, the M.R.C.P.Lond., engaging in consulting medical practice in Wimpole Street. As he had been greatly interested for many years in the legal profession as well as his own, he began to study law at the Middle Temple, and was called to the Bar in 1913. He was a Freemason of long standing and one of the founders of the King's College School Lodge. He was also a Fellow of the Royal Astronomical Society, and a member of the British Medical Association for many years.

Medico-Legal.

DOCTORS' PARTNERSHIP DISPUTE.

KILLARD-LEAVEY v. O'FLAHERTY.

IN the Chancery Division of the High Court of Justice, before Mr. Justice Bennett, on May 29th, an action was begun by Dr. T. J. Killard-Leavey of Torrington, Devon, against Dr. A. R. O'Flaherty of the same town, with whom he had been in partnership since 1926, for a declaration that a notice given by defendant determining the partnership was void, and for an injunction restraining the defendant from excluding him from the partnership premises. The defendant counter-claimed for a declaration that the notice was valid. A dissolution of partnership by the court was sought by both parties.

Mr. J. E Singleton, K.C., who appeared for Dr. Killard-Leavey, said that both he and Dr. O'Flaherty were nearly 60 years of age. The former, before entering the partnership, had carried on an extensive practice at Southend, which he sold in 1926, preferring a country practice. Dr. O'Flaherty had practised for some years at Torrington before he was joined by Dr. Killard-Leavey. The gross earnings of the practice, partly insurance and partly private, were about £2,000 a year. Difficulties arose between the partners, and in January last Dr. O'Flaherty gave notice dissolving the partnership under a clause in the agreement which stated that if either partner neglected the business or was guilty of flagrant conduct likely to injure it, the other might expel him. He also took down Dr. Killard-Leavey's name from the surgery door. Both parties now wanted the partnership dissolved, but Dr. Killard-Leavey, who had put £1,445 into the business, contended that if the partnership was dissolved under the articles, as defendant claimed the right to dissolve it, he would receive only £450, whereas if Dr. O'Flaherty's charges were shown to be unjustified, and the partnership were dissolved by the court as a result of this action, he would be entitled to at least £1,500 under the agreement. He also desired that the allegations made against him by Dr. O'Flaherty should be publicly refuted. There were sixteen complaints, eleven of which related only to something in the nature of disapproval expressed by the plaintiff of the defendant's treatment.

Mr. Rayner Goddard, K.C., who accepted onus of proof on behalf of the defendant, and opened the case, said that Dr. Killard-Leavey had been guilty of gross neglect, and had committed breaches of the partnership articles. He had not been diligent or faithful to his partner. The allegations concerned inexcusable neglect of patients and criticisms to patients of his partner's treatment. With regard to the latter complaint, in one case when the defendant had diagnosed erysipelas, plaintiff told the patient that he had never had that complaint, but was suffering from shingles. In another, he tore up a prescription given by the defendant. Three specific allegations of neglect were made. It was alleged that after receiving a message that a private patient, a farmer's daughter, six miles away, was very ill, Dr. O'Flaherty being out, Dr. Killard-Leavey refused to go, saying that he knew nothing about the case, and that he would tell Dr. O'Flaherty on his return. In another instance, on being called up at an early hour in the morning, it was stated that he inexcusably declined a call to visit an insurance patient who was liable to heart attacks. In the third case, that of a child suffering from symptoms of appendicitis, it was alleged that Dr. Killard-Leavey, after delaying a visit for several hours, diagnosed chronic gastritis, pooh-poohed the parents' fears, and declined to consult with another doctor whom they proposed. Later, the child was operated upon for appendicitis just in time to save her life.

The Defendant's Evidence.

Dr. O'Flaherty, in giving evidence in support of these complaints, said that he was not questioning Dr. Killard-Leavey's skill, but he was questioning his conduct. He thought it a most serious thing for a practitioner to tear up the prescriptions of his partner. He agreed that he had sometimes called in a second opinion without any reference to Dr. Killard-Leavey.

Evidence was given by the messenger who had summoned the doctor to the case of the farmer's daughter. Dr. O'Flaherty was out, and she drove to the house of Dr. Killard-Leavey, who refused to go, saying that it would be better for his partner to go on his return. The hour was about 8 p.m., and she learned that Dr. O'Flaherty was expected back between 9.30 and 10. Another witness said that when he asked Dr. Killard-Leavey at 1.45 a.m. to attend his son, who had a heart attack, he said: "It is not quite fair to me, is it? Go and give him a hot drink." Witness called in another doctor. The father of the child who had suffered from appendicitis said that Dr. Killard-Leavey told him that he (the father) thought the child much worse than was really the case. He refused to consult with the doctor whom the father proposed to call in. The child was removed to hospital and operated on for appendicitis. Mr. Ellis Pearson said that he operated on the child, who had an inflamed appendix and adhesions. He agreed that it was more difficult to diagnose that condition in a child than in an adult. He had frequently met Dr. Killard-Leavey in consultation, and had no suggestion whatever to make against him in his professional work.

The Plaintiff's Evidence.

Dr. Killard-Leavey, in evidence, said that it was his custom to ask patients about the action of their medicine, and if it was not suiting them he asked if he might change it. Dr. O'Flaherty seldom made discussion possible, and would turn his back and walk off. His remark in the erysipelas case was made without knowing what Dr. O'Flaherty had said.—With regard to the case of the farmer's daughter, he told the messenger that if his partner would not go, he would go himself. He gathered from the messenger's manner that there was no immediate urgency, and that the practitioner who knew the case was the best man to attend. He agreed that he did not take any steps that night to see whether Dr. O'Flaherty had gone. The messenger was mistaken as to the time of her call on him. He looked at the church clock at the time, and it was just upon 9 p.m., and Dr. O'Flaherty was expected back at 9.30. In reply to a further question, he admitted that the church clock was not illuminated, and that it would be difficult to see it at nine o'clock on a November night, but it was possible he had ascertained the time by his own timepiece; he did not think it material. Later he assumed that Dr. O'Flaherty had returned in time to visit the case, otherwise he would have been rung up. With regard to the other case, in which he had been called at 1.45 a.m., he did not see that he could do any good by going; the boy only wanted soothing, and when he called next morning the boy's mother said that he had gone to work, and that she had summoned another doctor. In the appendicitis case he had not been able to find any cardinal symptom of it.

Judgement.

Mr. Justice Bennett, in delivering judgement, said that there was evident incompatibility between the partners, and it was not surprising that before the third year of the partnership the relations became strained. The question to be decided was whether the plaintiff had grossly neglected the business of the partnership or had committed a breach of the articles sufficient to entitle defendant to expel him from the partnership. There were two classes of acts upon which defendant justified his action: (1) negligence in connexion with patients, and (2) conduct calculated to lead the patients of the partnership to think lightly of the defendant by criticizing in a hostile or contemptuous manner the defendant's diagnosis or treatment. With regard to the second ground of complaint, the defendant had failed to prove to his satisfaction that the plaintiff had ever deliberately and intentionally criticized in hostile or contemptuous words the defendant's diagnosis or treatment. With regard to the first ground of complaint, the decision was more difficult. The most serious complaint was with regard to the child who had appendicitis. His lordship had no doubt, after hearing the evidence, that the plaintiff in his conduct of the case fell far short of the standard which either the patient or her parents or his partner were entitled to expect. With regard to the call at 1.45 a.m., he was not prepared to hold that a doctor summoned at that hour and acting as Dr. Killard-Leavey had done, was necessarily guilty of gross neglect of the business of the partnership. One instance of that kind might well be excused as an error of judgement. There remained the case of the farmer's daughter. It was a great pity that Dr. Killard-Leavey, in fixing the time at which he was called to that case, had made an untrue statement about the church clock. He was satisfied that the plaintiff was summoned to the case before 9 p.m., and that he knew something about the case, and possibly thought no great harm would be done by allowing an hour or an hour and a half to elapse before the patient was seen by a doctor. In the judge's view, the practitioner refused to go and see the case because, at that stage of the partnership, he was not disposed to turn out late at night to see one of his partner's patients. His temper got the better of his judgement. There were therefore two cases in which the defendant had satisfied him: in respect to one, the plaintiff had been guilty of neglect, and in respect to the other, he had acted in a way in which he would not have acted if he had kept his temper. But one act of negligence or one error of judgement could not be said to be gross neglect of the business of a partnership. Taking the case as a whole, he was not prepared to hold that the plaintiff had grossly neglected the business. The clause in the articles required proof of some regular course of careless conduct or something in the nature of wilful neglect. He was satisfied that there was no wilful neglect in the case of the child who had appendicitis, also that the plaintiff was not the kind of man who would have been careless of the interests of the patients for whom he was responsible. He was entitled to the declaration which he claimed—namely, that the partnership remained subsisting not-

withstanding the notice. It was clearly a case, however, in which it was quite impossible for the partnership to continue, and the court would make a decree for dissolution in the usual form. Defendant must pay the costs of the action.

On the application of Mr. Goddard, his lordship agreed to allow costs to the defendant for the matters in which he had succeeded—namely, the case of the child suffering from appendicitis and the case of the farmer's daughter.

The Services.

CORRECTION.

BY a regrettable mishap the name of Colonel C. K. MORGAN, C.B., C.M.G., late R.A.M.C., appeared in the list of deaths at page 1003 of the *Army List* for May, 1930, and on the strength of that notification a brief biography was printed in our issue of May 31st, under the heading "Deaths in the Services." We hasten to contradict the announcement. Colonel Morgan's friends will be glad to know that he is now recovering from his recent severe illness.

Universities and Colleges.

UNIVERSITY OF OXFORD.

AT a congregation held on June 8th the following medical degrees were conferred:

D.M.—C. R. Croft, Alice E. B. Harding.

UNIVERSITY OF CAMBRIDGE.

AFTER his installation as Chancellor of the University on June 6th, the Right Hon. Stanley Baldwin conferred honorary doctorates in law, science, or letters on H.R.H. the Duke of Gloucester, the American Ambassador (General Dawes), Earl Beauchamp, Viscount Sumner, Viscount Bridgeman, the Right Hon. Arthur Henderson, Sir John Withers, Professor Einstein, Professor Max Planck, Sir John Rose Bradford, P.R.C.P., Sir James Irvine, Professor W. Meyer-Lübke, Professor Lascelles Abercrombie, Sir James Barrie, Mr. Sydney Cockerell, Mr. John Galsworthy, and Professor H. J. C. Grierson.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

THIRD M.B. [illegible] E. Cook, *†K. M. Robert-[illegible] E. F. D. Baker, D. A. [illegible] W. F. Burnett, E. A. [illegible] *Con*beare, W. W. Craner, [illegible] C. C. de Silva [illegible] P. B. P. [illegible] klin, Ruth C. Galletly, [illegible] Harsant, J. C. Hatrick, [illegible] on, C. B. Huss, Phyllis [illegible] Lloyd-Davies, Laura H. Macfarlane, H. G. McGregor, B. R. Medlycott, T. W. Morgan, C. L. Oakley, C. M. Ockwell, R. Oliver, R. A. H. Pearce, G. F. Peters, R. K. Price, Ruth Pumphrey, B. Ram, H. Richards, Margaret P. Roseveare, T. N. Rudd, J. C. Saldanha, R. M. Sargent, J. G. Scaddicg, J. M. Scott, M. D. Sheppard, L. A. H. Snowball, T. T. Stamm, B. Stanley, Sybil M. A. Stanley, W. D. Steel, J. H. Watkin, Margaret M. White, G. P. B. Whitwell, Joyce M. Wigram, R. N. Wilcox, E. G. Wilkins, Margaret D. Wright.

Group I.—T. Back, E. F. Barnardo, F. G. L. Barnes, A. C. Byles, W. H. P. Cant, Rosa E. Chambings, E. E. Claxton, H. J. Croot, C. E. Dolman, Beryl M. Furlong, Mabel E. Grace, Honor E. C. Harvey, H. H. Jackson, Victoria A. King, H. J. Knight, Nellie L. Lanckenau, L. W. Lazarus, Annie M. McGrath, Joyce MacInnes, Eileen M. Massey, Elizabeth T. Mess, Ruth Milne, R. S. Risk, J. B. Robinson, D. Stanley Jones, H. H. Steadman, Muriel H. Steven, Olive C. Watkin, T. H. Wilson.

Group II.—W. L. M. Bigby, A. Caplan, A. G. Carmichael, J. B. George, Bryneilen Griffiths, D. Gwynne-Evans, Mary W. Hamlyn, P. Y. Hicks, R. E. Holmes, S. [illegible] Mary L. Marsh, W. C. W. Nixon, A. D. C. Price, J. D. Ritchie, E. B. Rogers.

* Honours. § *Distinguished in pathology.*
† Distinguished in medicine. ‖ Distinguished in surgery.
‡ Distinguished in forensic medicine.

UNIVERSITY OF LIVERPOOL.

THE honorary degree of D.Sc. has been conferred upon Dr. George Barger, professor of chemistry in relation to medicine in the University of Edinburgh.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE following have been admitted Fellows of the Faculty: Robert Grieve Hutchison, M.B., Ch.B., and James Sharpe, M.B., Ch.B., D.P.H.

Medical News.

SIR CHARLES MARTIN will deliver his second and third Croonian Lectures before the Royal College of Physicians of London, at 5 p.m., on June 17th and 19th. His subject is the thermal adjustment of man to external conditions, more particularly those pertaining to warm countries. The first lecture was on June 12th.

THE annual general meeting of the Medico-Legal Society will be held at 11, Chandos Street, W.1, on June 25th, at 8 p.m., for the election of officers and to receive the report of the honorary secretaries and the financial statement. An ordinary meeting of the society will follow, when Professor J. S. Haldane, F.R.S., will read a paper on carbon monoxide poisoning, which will be followed by a discussion.

A MEETING of the Biochemical Society will be held in the Department of Biochemistry, Oxford, to-day (Saturday, June 14th), at 2.30 p.m., when papers will be read and demonstrations given.

THE annual meeting of the Incorporated Lancashire and Cheshire Society for the Permanent Care of the Feeble-minded will be held in the Sandlebridge Institution, Alderley Edge, on Monday, June 23rd, at 3.15 p.m. The Lord Mayor of Manchester will preside, and will be supported by Miss Dendy, M.A., president, Sir Lewis Beard, and members of the governing body. The Thomasson and Sam Gamble day school will be open for inspection.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that the following lectures suitable for candidates for the M.R.C.P. examination will be given by Dr. O. L. V. de Wesselow at the Medical Society of London, 11, Chandos Street, Cavendish Square, at 8.30 p.m.: June 17th, "Hypotension and renal disease," and June 20th, "Diabetic and other acidoses." The fee for each lecture is 10s. 6d., payable at the lecture hall. On June 17th, at 2 p.m., Dr. E. U. Williams will give a clinical demonstration in the *x*-ray department of the Bolingbroke Hospital, Wandsworth Common, and on June 18th, at 11 a.m., Mr. G. H. Howells will demonstrate on ear, nose, and throat cases at the East London Hospital for Children, Shadwell. Both of these demonstrations are open to the medical profession, without fee or ticket. Three courses begin on June 16th, each of two weeks' duration: An intensive course in medicine and surgery at the North-East London Post-Graduate College (Prince of Wales's Hospital), Tottenham; the daily sessions will be from 10.30 a.m. to 5.30 p.m., and instruction will cover work in all departments; fee £5 5s., or £3 3s. for either week. A course in gynaecology at the Chelsea Hospital occupying some mornings and some afternoons; fee £5 5s. An afternoon course in diseases of the skin at the Blackfriars Hospital; fee £1 1s. From June 30th until July 5th there will be an all-day course in proctology at St. Mark's Hospital; fee £3 3s. Detailed syllabuses of all the courses can be obtained on application to the secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course of cancer and its treatment will be held at the University of Strasbourg from July 16th to 26th. Particulars may be obtained from Dr Gunsett, Directeur du Centre Anticancéreux, Hôpital Civil à Strasbourg.

SIR ANDREW BALFOUR, director of the London School of Hygiene and Tropical Medicine, will formally open the new research milk laboratories of the United Dairies, Ltd., at Scrubbs Lane, Willesden, on Monday, June 16th, at 1 p.m.

MISS BALSILLIE, who in March last was appointed principal matron in the service of the London County Council, has since intimated that she does not wish to take up the appointment, but to remain as matron of the Park Hospital, Hither Green. The Council has therefore appointed Miss Nellie Butler, matron of the Southern Hospital, Dartford, to the position.

COMMEMORATION DAY at Livingstone College, Leyton, was held on June 5th. A large number were present at this annual gathering in the grounds, including Sir George Makins, Dr. J. H. Cook, Dr. H. White, and many other representatives of missionary organizations and friends. The chair was taken by the Right Rev. Bishop Ward, president of the British Mission Board of the Moravian Church, who spoke of the personal knowledge he had of conditions in other lands, and of the mission hospitals he had visited in foreign fields. The Rev. R. E. Scott, of the Lebombo Mission, Portuguese East Africa, told of some of his experiences in the mission field, and testified to the practical worth of the training given at the college. Miss E. May Pateman, of the London Missionary Society, Gilbert Islands, said that the knowledge she had gained at Livingstone College had been of incalculable value to herself and others. Short statements as to finance and the general working of the college were made by the treasurer, Mr. R. L. Barclay, and the principal, Dr. Tom Jays.

AT a meeting of the committee of the Royal Eye Hospital, Eastbourne, on June 6th, Dr. Milner Moore, on his retirement from office, was presented with a portable wireless set, in appreciation of the services he had rendered that institution as honorary secretary for a period of seventeen years.

THE May issue of the *Bulletin of Hygiene* contains a review of recent literature on alcoholism—the third of an annual series—by Dr. J. D. Rolleston, dealing chiefly with its prevalence in various countries, with special reference to the cocktail habit and methyl alcohol drinking, the association of alcoholism with tuberculosis and mental disease, the decline of the use of alcohol in therapeutics, the diagnosis of alcoholism by colorimetric methods, and the recent drastic legislation in Soviet Russia for combating alcoholism. A bibliography of thirty-six references to the literature of nine different countries is appended.

THE fund being raised for the Birmingham Hospital Centre scheme reached the sum of £477,997 on June 6th. This amount included the £100,000 which Mr. Harry Vincent, president of the Birmingham and Midland Hospital for Diseases of the Nervous System, promised on condition that £350,000 was offered by the date mentioned.

THE challenge cup presented three years ago to the Metropolitan Counties Branch, to be awarded to the best all-round athlete who is a student at one of the London medical schools, was competed for at the United Hospitals annual sports, when Mr. Cramer, of the London Hospital, Mr. W. Hertzog, of Guy's Hospital, and Mr. Sandyford, of St. Thomas's Hospital, each won two events. These three gentlemen, therefore, will hold the cup jointly for the year.

IT has been agreed with the authorities of the London Hospital that the London County Council shall, as soon as the necessary arrangements can be made, undertake the responsibility for the conduct of the venereal diseases clinic at the hospital. An agreed amount will be paid by the Council for the use of the venereal diseases department, and the Council will take over such of the equipment in the clinic as is the property of the hospital at a valuation to be devised jointly by both parties. The clinic is to be open every weekday from 8 a.m. to 9 p.m., and also on Sundays.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

The ***TELEGRAPHIC ADDRESSES*** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediscera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TREATMENT OF HEADACHE.

"SUBURBAN" asks for suggestions for treating a schoolmaster, aged 46, temperate in his habits, who suffers from headache after any kind of physical strain. The pain comes on a few seconds after the provoking cause. It does not last long, but if a further action is taken the pain becomes continuous and then persists for several hours. Mental work does not induce the headache. The patient has also a slight unsteadiness while walking, particularly if the head is turned upwards or sideways. Aspirin, in 10-grain doses, taken an hour or so before playing a game, will usually minimize the headache. The eyes have been examined and a slight defect corrected. The blood pressure is 140. There is a tendency to constipation, and a faint reduplication of the first mitral sound; the heart is otherwise normal. All the usual remedies have been tried, such as aperients, sedatives, alkalis, and anticatarrhal vaccines, with little more than temporary benefit.

PREVENTION OF SUNBURN.

DR. R. J. BROCKLEHURST (London, N.W.11) writes as follows in reply to Dr. I. B. McCann's query under the above heading: A liberal application of "pommade sechehaye" protects the skin efficiently against severe sunburn. It is a brown ointment, sold in tubes; the grotesque appearance of the face after its application is amply compensated by the subsequent absence of discomfort and disfigurement which are sustained by those who travel unprotected over the snow under the summer Alpine sun. It is obtainable everywhere in Switzerland, and is stocked in London by two or three dealers who sell Alpine equipment.

TREATMENT OF PRURITUS ANI.

DR. ROBERT E. LORD writes in reply to "Cerons's" inquiry (June 7th, p. 1089) as to the treatment of *pruritus ani*: Many years ago a patient, whom I still see frequently, suffered from intense *pruritus ani*, accompanied with a jelly-like discharge from just inside the anus. After many methods of treatment had been tried and discarded as useless, he found that he could always get relief from the application of the faradic current applied as strong as he could bear it, one pole being a metal rectal electrode and the other a flat electrode placed on the abdomen. He used this nightly for some months, and not only did the *pruritus gradually cease, but the jelly-like discharge* disappeared. There have been occasional relapses, but the same treatment has always succeeded in cutting them short, and he has had no return of symptoms for years.

DR. S. PENNY SNOOK (Weymouth) writes: I have found the occasional application of calomel ointment beneficial.

"G. P." writes: I have suffered from this complaint and am now (and have been for twenty years) cured, but I have *still* to continue the treatment, which is as follows: Wash the parts thoroughly with a sponge dripping with water (no soap); dry well, and apply a little of the following after each evacuation: zinc oxide in fine powder, pulv. amyli, equal parts; glycerinum q.s. Rub down to a soft paste. All greasy applications should be avoided.

INCOME TAX.

Professional Use of Residence.

"H. T." uses one room of his residence entirely and two rooms partly for professional purposes. The inspector of taxes agrees to the deduction of one-third of the rent, rates, etc., as applicable to the professional use, but will not allow more. Is this the usual proportion? The rateable value of the house is £34.

*** So much depends on the precise circumstances that it is difficult to advise specifically. If the three rooms in question are the best rooms on the ground floor they would account for considerably more than one-third of the total rental value, but the "waiting room" is, we gather from the total rental value, probably in fairly general private use. On the whole, while the proportion seems to us on the low side, we do not think it is entirely unreasonable, and "H. T." is not likely to obtain any substantial increase.

LETTERS, NOTES, ETC.

AORTIC ANEURYSM SIMULATING ASTHMA.

DR. F. WILLIAM COCK (Ashford) writes: The case of aortic aneurysm simulating asthma described by Dr. L. G. Hill (June 7th, p. 1048) is particularly interesting to me, as during a rearranging of the materials I collected for the account of the introduction of anaesthesia by Robert Liston I came across the notes of his necropsy made by Wm. Cadge in December, 1847. Dr. Hill's description is almost word for word that of Mr. Cadge. Liston, however, had a longer time for the disease to prove fatal—possibly a year, for after a very copious haemorrhage he survived for several months. He, too, had considerable asthma at the end. The small apertures from the aorta into the trachea were plugged with old ante-mortem fibrinous material. At that time (twenty years ago) I made many inquiries as to whether the specimen had been preserved, but no success followed, although I tried University College, the College of Surgeons, Edinburgh, and the Norwich Hospital, where Cadge's specimens are preserved. Sir William Osler particularly was interested because of the somewhat uncommon nature of the case. The condition was stated to be the after-effects of a blow on the sternum from the boom of his (Liston's) yacht.

SPONTANEOUS SURGICAL EMPHYSEMA.

DR. G. W. DANDO (Southsea) writes: In the *Journal* of August 29th, 1925 (p. 402), I reported a case of spontaneous surgical emphysema following the confinement of a young primipara; this closely corresponded with the cases described by Dr. F. Bedo Hobbs on May 24th (p. 950). My case occurred in the Crayford Nursing Home, Kent. The labour was a somewhat prolonged one, but the emphysema cleared up in a few days. I was unable at the time to find any reference to the condition in my textbooks.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 46, 47, 48, 51, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 49 and 50.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 267.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

533. The Lymphatic Reaction and Glandular Fever.

W. STEPP and H. WENDT (*Dent. med. Woch.*, April 18th, 1930, p. 645) review our present knowledge of cases variously described as lymphatic reaction, infective mononucleosis, and glandular fever. In adults the important clinical symptoms are tonsillitis, which may occur at the beginning or during the course of the illness; general enlargement of the lymphatic glands and of the spleen; fever, often high and remittent; and the characteristic blood picture with its increase of white cells usually to 10 or 20 thousand, 50 to 90 per cent. of which are lymphocytes. Some of the mononuclear cells are two or three times the normal size, and may have reniform nuclei; they give the normal staining reactions of lymphocytes, however. There may be an acute onset with all the appearances of severe illness, and the disease is often diagnosed as influenza at the commencement. Enlargement of the lymphatic glands and tonsillitis are occasionally absent throughout, as shown by two of the illustrative cases recorded by the authors. Organs such as the liver and kidneys are rarely involved, giving rise to jaundice and haematuria. The glandular fever of children (described by Pfeiffer in 1889) is held to be the same disease, since the same symptoms can occur both in children and in adults, and both types have been noted in the same epidemic. Diagnosis is often simple if the existence of the disease is borne in mind, but lymphatic leukaemia may be confused with it. Against the latter disease are the absence of anaemia and haemorrhagic diathesis. The general condition is worse in leukaemia; a sudden onset of the disease, and the later diminution in the size of the glands, are in favour of glandular fever. The total white count and percentage of lymphocytes, on the other hand, are not always helpful in diagnosis. The course of glandular fever is always benign, no undoubted case terminating fatally, or progressing into lymphatic leukaemia, having yet been established. The illness lasts for some weeks, after which the white count only gradually returns to normal. The origin of glandular fever is not yet known. Some authors have held that it is a constitutional abnormality, the lymphocytosis being a response to infection peculiar to certain individuals; this is rendered unlikely, however, as the patients respond normally to test injections of foreign proteins; moreover, small epidemics have been reported, suggesting a specific infective factor.

531. Extra-articular Forms of Rheumatism.

H. GRENET (*Presse Méd.*, March 12th, 1930, p. 353) notes that as far back as the time of Trousseau, the occurrence of visceral lesions was attributed to rheumatic disease, in the absence of any articular manifestations. Trousseau, however, gave few instances, and the tendency in medical literature has been to regard such lesions as rarities. Grenet records several examples of these lesions in his own practice, and places them in the following groups. (1) Pure infection forms; these may simulate typhoid fever, and be associated with enlargement of the spleen. Two cases are quoted, one of which was first mistaken for typhoid and the second for tuberculosis; both responded to salicylate treatment. A third case was that of a child who had typical rheumatic nodules without any arthropathy whatever. (2) The attenuated infection form; in such cases a history of previous acute rheumatism might be elicited. There was often slight fever, with pallor of the skin and mucous membranes. Severe cardiac lesions resulted from such cases being missed. (3) The pure visceral form; four varieties are mentioned, the first being cardiac lesions appearing with no previous warning of the nature of arthropathy. The pleuro-pulmonary variety, which was described by the older writers as associated with arthropathy, does occur in its absence. The oesophageal variety, associated with dysphagia, was previously described in association with arthropathy; it was not encountered by the author until he met with a case where mediastinitis and pericarditis, with displacement and constriction of the oesophagus, occurred without any joint lesions. The patient responded well to salicylates. Grenet recognizes a pseudo-surgical form; although it is generally taught that serous effusions due to rheumatism never go on to suppuration, he mentions a case where a pleural effusion (associated with endocarditis and pericardial inflammation) was followed by the aspiration of purulent material, which was sterile on culture. Blood cultures being also negative, salicylates were given, with the result that the whole condition cleared up without any surgical intervention. Certain cases coming under this heading may simulate acute abdominal conditions, such as appendicitis. The author emphasizes the importance of considering the possibility of rheumatism in all obscure febrile conditions; it is also pointed out that a careful inquiry into the previous existence of fleeting joint swellings and pains should never be omitted.

535. Pulmonary Atelectasis complicating Bronchial Asthma.

J. A. CLARKE, *jun.* (*Arch. Int. Med.*, April, 1930, p. 624), states that the occurrence of massive pulmonary collapse in typical bronchial asthma, independently of operative procedures, has been reported by Berkhard, by Kaufchorn and Ellis, and by Sante. He now records two additional cases, in one of which the condition was diagnosed by routine *x*-ray examination, and in the other only at the necropsy. Both patients showed the same symptoms as are noted in post-operative cases. In the patient with the favourable outcome the recovery was complete. The high incidence of allergy in subjects with post-operative atelectasis and the occurrence of atelectasis in asthmatic patients on whom surgical procedures have not been performed suggest that there is an allergic factor in post-operative atelectasis. Surgeons recognize two types of atelectasis, the fulminating and the latent. The fulminating symptomatology is possibly an allergic reaction to the bronchial secretion retained in the collapsed lung and absorbed with the air, similar to the reaction usually termed "bronchial asthma." The absence of the typical asthmatic rales over the uncollapsed lobes of the lungs is one point distinguishing this from the ordinary less severe paroxysms of asthma. Small areas of collapsed alveoli have been found after death in cases of true bronchial asthma; these are not uncommon, and may explain some of the severe paroxysms. It seems possible that lobar collapse might result from the coalescing of several such areas until the whole lobe would be involved without any obstruction in the larger bronchi. Acute obstructive emphysema should not be forgotten when such areas are found.

Surgery.

536. Chronic Duodenal Stenosis.

ACCORDING to R. APPELMANS, F. VAN GOIDSENHOVEN, and J. BOINE (*Rev. Belge des Sci. Méd.*, January, 1930, p. 1), chronic duodenal stenoses are relatively frequent and of various causation, four main groups being defined. In the first, the most important, the stenosis is due to compression by the superior mesenteric artery, the duodenum being held as in a vice between the root of the mesentery and the artery in front, and the aorta and vena cava, lying on the vertebral column, behind; in the second the middle colic artery is the constricting agent; in the third the duodenum is stenosed by adhesions of peritonitis, which may be primary, but is usually secondary to some other lesion; in the fourth group the stenosis is caused by adjacent tumours. Other less frequent causes are duodenal ptosis, cicatrices of duodenal ulcers, and congenital anomalies of the duodenum and of the suspensory system of Treitz. The four main groups are fully described, and cases illustrative of each are recorded. The symptomatology varies with the cause of the stenosis; by clinical and radiological signs it is often possible to differentiate the various types. Generally speaking, these stenoses cause digestive and general disturbances due to the intoxication produced by the duodenal stasis. Radiologically they can be recognized by the appearance of a dilatation above the constriction; the contents stagnate in the dilated part and undergo violent mixing by the peristaltic movements. In occasional cases few digestive troubles occur, and signs of toxic poisoning, such as great emaciation, physical and psychical asthenia, and headaches, predominate. When general symptoms coexist with digestive ones, even of a slight character, the duodenum should always be *x*-rayed; and also, since these stenoses can be caused by anomalies of the colon, the latter should be carefully examined in all cases of duodenal dilatation with stasis. When perduodenitis exists with the stenosis the cause should always be sought for and treated; the most usual cause is a duodenal ulcer, and the next most frequent the appendix. Haemorrhages without any discernible ulceration of the gastro duodenal

mucosa, and duodenal or pyloric ulcers, are complications of an existing duodenal stenosis. Medical treatment, principally by diet and laxatives, is sometimes useful and should be tried, especially in slight cases. However, recourse usually has to be made to surgical intervention, the operation of choice being a duodeno-jejunostomy.

537. Congenital Dislocation of Hip.

C. H. JAEGER (*Surg., Gynecol. and Obstet.*, April, 1930, p. 757) stresses the importance of diagnosing congenital dislocation of the hip as early as possible in infancy, and describes a new method of treatment which is said to effect physiological restoration of the joint within three months, and which can be applied to infants as young as 3 or 4 months. By its use the necessity for anaesthesia, manipulation, open operation, and plaster is avoided. Diagnostic signs of importance in unilateral cases are habitual outward rotation and shortening of the limb, apparent widening of the pelvis due to fullness over the trochanter, abnormal mobility in rotation, noticeable differences in the inguinal and gluteal folds, and the confirmation obtained by *x*-ray examination. The method of treatment aims at a gradual replacement of the dislocated head in the acetabulum by means of a pressure pad over the trochanter, the leg being held in marked abduction in a long hip splint. Reliance is placed upon the rapid growth in infancy to assist in the formation of a socket, the main requisite for the deepening of which is the removal of the pressure of the femoral head upon its upper rim. Jaeger disagrees with the view that functional weight-bearing is necessary for the operating of such a deepening process; he claims that *x*-ray examinations show that the rim develops rapidly as soon as the trochanter pad has pushed the head down to the position which is to become the socket.

538. Ureteral Lithiasis.

K. LANGE (*Deut. Zeit. f. Chir.*, April, 1930, p. 1) remarks that new diagnostic methods have shown that some diseases formerly regarded as rare are relatively frequent. This particularly applies to ureteral lithiasis and carcinoma of the lung, as had been formerly shown by Moynihan to be the case with duodenal ulcer. Two forms of ureteral lithiasis are described—namely: (1) the renal type in which the calculus has originated in the kidney and has become lodged in the ureter, and (2) the ureteral type, consisting in primary disease of the ureter with secondary calculus formation. As the result of his observations on 35 cases of ureteral calculus for which operations were performed at the Zwickau Hospital in the period 1924–29, Lange comes to the conclusion that the ureteral type is not so very uncommon, since 6 of the series were probably examples of the kind, and that its diagnosis is possible, while the prognosis is more favourable than that of the renal type owing to the possibility of already existing complications connected with the latter. Formerly about half the cases of the ureteral type were mistaken for appendicitis, but this error can be avoided by repeated examination of the urine, *x*-ray examinations, and cystoscopies. Early operation is particularly indicated in the ureteral type of calculus.

Therapeutics.

539. Prophylaxis of Measles with the Serum of Convalescents.

O. BANG (*Nordisk Medicinsk Tidskrift*, March 8th, 1930, p. 146) records the experience of the Blegdam Hospital in Copenhagen in the period 1926–28, during which the serum of convalescents from measles was given to 163 patients as a prophylactic measure. After the withdrawal of some of these cases as unsuitable for a comparative study, there remained 152 who were given intramuscular injections of serum; 4 of them developed more or less normal measles, and 8 an attenuated form of measles. Many of the patients were discharged from the hospital before the date at which it could be definitely claimed that they had escaped measles, but as many as 93 of those who did not develop measles were kept under observation for at least thirty days. In 122 cases escaping infection the observation period was at least fourteen days. The serum used was taken from the seventh to the tenth day after the temperature of the convalescent had become normal, and was prepared by the State Serum Institute. The dose for infants up to 1 year was 5 c.cm., for children from 1 to 3 years old it was 10 c.cm., and over the age of 3 it was 15 c.cm. The injection was given in every case on the first day of the appearance of a rash in a case of measles—that is, it was given on the second, third, or at most the fourth day of the incubation period. No ill effects from the serum were observed apart from a temperature of 100.5° to 101° on the day after the injection in 2 cases. Trying to ascertain why the serum failed to abort measles in 12 cases, the author noted that all the 4 patients in whom the serum failed completely to establish even temporary immunity were already very debilitated; many of the failures were in cases of whooping-cough. Thus, among 22 cases of diphtheria there was only one failure, and among 59 children admitted to hospital for a mixed assortment of ailments there was again only one failure, but among the 26 cases of whooping-cough there were as many as six failures, and among the 45 cases of scarlatina there were four failures. As the supply of the serum of convalescents is liable to be limited, it is necessary to decide which are the age groups to be given preferential treatment. The first year of life is the most dangerous: among all the deaths from measles in Denmark in the period 1922–27 there were 398 in the first year, 292 in the second year, 105 in the third year, 41 in the fourth year, and an average of only 6 in each of the years from the fifth to the tenth. The comparatively great number of deaths in the first year cannot be traced to a great number of infections, for their number was only 5,513—a mortality of 7.2 per cent. In the age period 1–5 years there were as many as 57,579 infections, with 479 deaths—a mortality of only 0.83 per cent. In the age period 5–15 years there were 73,157 infections, with 107 deaths—a mortality of only 0.15 per cent. With regard to the immunity acquired from the mother by the newborn infant, it is noteworthy that in the period under review there were only 6 deaths from measles in the first month of life, whereas there were 26 deaths between the second and third month, and 356 between the fourth and the twelfth month. The serum of convalescents may therefore be economized at the expense of the newborn, but only when it is established that their mothers have had measles.

540. Anti-asthmatic Drugs.

THOUGH observations on asthmatic subjects and their reactions to drugs after the development of symptoms have frequently been made, there is no record of similar observations immediately preceding, during the development and course of, or during recovery from, an attack subsequent to the administration of a broncho-dilating drug. O. W. BARLOW and J. F. FRYE (*Arch. Int. Med.*, April, 1930, p. 538) present such a study of an asthmatic case, in which uniform typical attacks could be produced by exercise (air hunger). In the patient no foci of infection could be detected, and the physical examination was negative, except for the observation of a slightly deflected nasal septum. The type of asthma was complex; it was primarily allergic, since a certain kind of dust invariably precipitated an attack, but it was also partly reflex, because the presence of an irritant in the air passages, and air hunger as a result of exercise, invariably produced typical asthmatic attacks. These symptomatic conditions differed in no respect from the usual allergic responses; they persisted for at least eight hours after development, and were promptly relieved by adrenaline. The criteria used for ascertaining the presence and the course of the asthmatic attacks were the respiratory movements and volume, and the degree of emphysema present; the respiratory and circulatory changes noted are described. The anti-asthmatic efficiency of adrenaline, ephedrine, and atropine was tested in this case, and their use during the induced attacks of asthma, as well as their routine employment over a three-year period, showed that their efficiency from greatest to least was in the order named. Adrenaline was the most potent, being effective in all attacks; ephedrine was most effective in relieving mild attacks or as a preventive; while atropine was unsatisfactory for either acute or mild attacks. The surgical correction of the deflected nasal septum did not significantly influence either the number or the severity of the allergic or reflex attacks during the year following operation.

541. Serum Treatment of Post-vaccinal Encephalitis.

J. HEKMAN (*Med. Welt*, February 22nd, 1930, p. 247) records in detail three cases, in children aged 6, 5, and 11 years, of encephalitis which developed from ten to twelve days after primary vaccination, and was cured by intravenous injections of the serum of the father or mother, who had been successfully vaccinated at the same time but without bad effects. Hekman adds that five more cases were cured in the same way in the Bergweg hospital, and that he had heard of good results obtained by other practitioners with this method. The number of injections was one, two, and five respectively in the three cases, the dose being 10 c.cm. He also describes a case of post-vaccinal encephalitis in a boy, aged 4, which ended fatally in spite of seven intravenous injections of serum. In this case, however, the serum of the parents was not available, and the serum of the donor in one of the successful cases was used.

Anaesthetics.

542. Rectal Anaesthesia with Avertin.

A. SPIEGEL (*Amer. Journ. of Surg.*, January, 1930, p. 97) describes the administration of and results obtained from avertin used as a rectal anaesthetic. Avertin, chemically known as tribromethylalcohol, was produced through the reduction of bromal by means of yeast. It is a white crystalline substance which is sensitive to light and air; if heated above 40° C. hydrobromic acid is split off and dibromacetaldehyde, which is a severe irritant to the mucous membrane of the colon, is formed. Avertin is absorbed by the colon more rapidly than water, and in case of ill effect it would be of little use to withdraw the remaining fluid since the greater part of the avertin would already have been absorbed; the safety of the drug is dependent upon the relatively large margin between narcotic and lethal doses, the latter being twice the dose required for anaesthesia, which varies from 100 to 185 mg. per kilogram. Pre-operative treatment consists of an enema the night before with 5 grains of veronal to ensure sleep; half an hour before the operation, morphine sulphate (¼ grain) and atropine sulphate (1/150 grain) may be given. During administration the patient lies on the left side and the fluid is slowly injected into the rectum with a large syringe, the tube being pushed upwards into the sigmoid. About five minutes after the avertin has been given the patient falls asleep and is completely anaesthetized after fifteen or twenty minutes. The operation can safely last for two or three hours. There were no deaths from avertin in 100 cases reported, and post-operative vomiting in only 6 cases.

543. General Anaesthesia by Intravenous Alcohol Injections.

M. G. MARIN (*Arch. Internat. de Laryngol.*, February, 1930, p. 244) describes his attempts to find an anaesthetic agent less toxic than those usually employed, and claims that the intravenous administration of ethyl alcohol is much superior to the anaesthetic methods at present in use. Ethyl alcohol is said to be 137 times less toxic than chloroform, and is in addition a cardiac tonic. The advantages of the intravenous route of administration are the absence of preliminary syncope which is produced reflexly by the irritation of inhalation anaesthetics and the elimination of post-anaesthetic pulmonary complications. Moreover, in operations on the head and neck the operation field is left entirely to the surgeon. The author claims that there is more relaxation and less movement of the abdomen in operations in that region than with any other anaesthetic agent. The preparation used is a mixture of 90 per cent. ethyl alcohol with a 25 per cent. hypertonic solution of glucose; 2 to 3 c.cm. of alcohol per kilogram of body weight are required, and the total dose is dissolved in 60 c.cm. of the glucose solution. Marin adds that this dose, which was found satisfactory in Mexico, is possibly rather high for the anaesthetization of European patients.

544. R. PALMA (*Rif. Med.*, April 7th, 1930, p. 515) has experimented with the Marin method of producing general anaesthesia by the intravenous injection of ethyl alcohol in a 25 per cent. glucose solution. This is injected alternately with a certain quantity of isotonic glucose solution; 3 to 4 c.cm. of alcohol for each kilogram of body weight is required to produce a general anaesthesia in five to fifteen minutes, and lasts one to one and a half hours. According to Marin it can be administered to patients suffering from Bright's disease, diabetes, or cardiac disorders. General anaesthesia was produced by this method on nineteen dogs subjected to various operations. The quantity of alcohol administered varied for each individual dog, thus showing that for alcohol the same rule applies as with other narcotics. The previous injection of 1 to 2 cg. of morphine did not influence the anaesthesia in any way. Breathing, at first deep, becomes gradually more superficial and remains so during the whole time. The blood pressure is not altered at first, but as soon as the anaesthetic dose is reached the pressure falls abruptly and remains low during narcosis. This is in accordance with the known physiopathological actions of alcohol and glucose, and is contrary to the findings of Marin and Constantin, who have recorded an initial rise and subsequent normal pressure. Four out of nine cases presented transitory renal lesions, such as albuminuria with the appearance of granular and blood casts, and in two cases there was retarded elimination of indigo-carmine injected intramuscularly. These lesions are, however, described as being transitory and not due to alcohol. One day after the operation anatomical lesions, such as renal congestion and haemorrhages, were found, especially in the medulla. A notable complication was a venous thrombosis at the site of the injection; this was the cause of death of two of the animals. The thrombosis is certainly due to alcohol, and its dilution with glucose does not eliminate this possibility. The author concludes that this method of anaesthesia is not devoid of danger, and may perhaps give rise to embolism, pulmonary congestion, renal lesions, and excessive lowering of the blood pressure.

545. Spinal Anaesthesia with Gravity Solutions.

WHILE the controllability in spinal anaesthesia of Pitkin's novocain solution (spinocain), which is lighter than spinal fluid, has been ably demonstrated, it became apparent that the usefulness of this form of anaesthesia would be enhanced if a solution heavier than spinal fluid was also available. F. T. ROMBERGER (*Amer. Journ. of Surg.*, April, 1930, p. 773) describes his trial of such a solution, which he terms "novocain solution heavy"; it contains 40 per cent. of novocain as compared with the 10 per cent. of spinocain. The author points out that with spinocain the patient's head must be kept down in order to avoid blocking the cervical nerve roots and medulla—that is, the Trendelenburg position must be assumed; with the heavy solution the head must be kept up, Fowler's position being adopted. The anterior roots of the spinal nerves control voluntary motion and the superficial and deep reflexes; hence, when these are affected by the anaesthetic, muscular paralysis and relaxation (motor block) occur. The posterior roots are sensory, and therefore, when these are affected, all sensations of pain, touch, and temperature are lost (sensory block). By means of diagrams Romberger shows that with spinocain the sensory roots are paralysed as high as the second dorsal vertebra and the motor roots at the sixth cervical; while with novocain solution heavy the sensory roots are paralysed to the seventh cervical vertebra and the motor roots to the third dorsal only. These are the highest levels of spinal anaesthesia which are warranted for any type of surgery. The heavy solution is particularly indicated in those patients who are elderly, or who are suffering from cardiac disease or asthma, and in whom respiratory embarrassment must be avoided; it is also particularly useful when it is desired to limit the anaesthesia to the perineum. To obtain uniformly optimum results in the block, corresponding percentages of novocain must be injected into the subarachnoid space. The anaesthesia obtained by 100 to 120 mg. of novocain lasts for three-quarters to one and a half hours, with an average of one hour. Larger amounts up to 400 to 600 mg. can be used, but the employment of such doses requires a perfection of technique, judgement, and experience. The great benefit of giving ephedrine in large doses is emphasized, and also that, to get any response, this drug must be given before the block is established—that is, before splanchnic paralysis has occurred. The necessity of a strict aseptic technique is also emphasized.

Obstetrics and Gynaecology.

546. Puerperal Scarlet Fever.

J. DELORME (*Thèse de Paris*, 1930, No. 44), who records six illustrative cases, states that lying-in women may contract true scarlet fever which may properly be called puerperal, with certain peculiar features, such as absence of sore throat associated with little or no uterine infection. On the other hand, lying-in women may develop puerperal scarlatiniform erythema, which must not be confounded with true scarlet fever in spite of an undoubted clinical relationship. Apart from cases in which there is an obvious spread of infection from the sick to the healthy, the diagnosis between true scarlet fever and puerperal scarlatiniform erythema can only be made by the Schultz-Charlton test. Contrary to the opinion generally held, Delorme holds that the newborn child is not absolutely immune to scarlatinal infection, and that therefore it should be isolated lest infection take place.

547. Retention of Dead Ectopic Foetus.

R. BERNARD (*Presse Méd.*, February 19th, 1930, p. 252) states that although there are cases on record in which a dead ectopic foetus has been retained for an indefinite period without untoward results, yet, once the diagnosis has been made, surgical intervention becomes obligatory. If the death occurred some time previously the operation should be immediate; but if the death is recent then regression of the placental vascularization should be awaited; Brindeau estimated the period of choice as between four and six weeks after death. The present author quotes Courtois as defining three methods of treatment: (1) marsupialization; (2) extirpation of the sac and placenta without drainage;

and (3) removal of the foetus followed by closure of the abdominal wall without drainage. Marsupialization has the advantages of a good immediate prognosis and is easy to perform, but the risk of secondary haemorrhage and of septicaemia gives a mortality ranging from 13 to 40 per cent., according to different authors. Extirpation of the sac and placenta, although the most rational method in the author's opinion, is to be avoided. In support of his view he cites a case of his own in which the actual operation was easily and rapidly performed. At the end of the operation the patient was pulseless, although respirations continued for a time, the picture being one of toxic shock; in spite of vigorous anti-shock treatment death ensued from "toxic shock," "anaphylactic shock," or toxaemia. From a study of the literature the author concludes that such terminations to the operation are not uncommon; Courtois thinks they occur in 4 per cent. The method of choice in these cases appears to be to remove the foetus and, leaving the placenta and sac *in situ*, to close the abdominal wall. The placental circulation is thus gradually arrested as absorption proceeds.

548. Glucose-Insulin Treatment of Hyperemesis Gravidarum.

P. CAFFIER (*Zentralbl. f. Gynäk.*, March 22nd, 1930, p. 723) describes twenty cases of moderately severe hyperemesis gravidarum subjected to combined glucose and insulin treatment. On the first day the stomach and bowel were washed out, and on the second day (after rectal lavage) in the morning and afternoon the patient was given by drop-by-drop rectal injection 30 to 50 c.cm. of 10 per cent. glucose solution. Each injection was followed by 10 to 15 units of insulin given subcutaneously, and up to this time, with the exception of fragments of ice, both food and drink were rigorously withheld. If vomiting had not ceased this treatment was repeated on the third and other days. Twenty-four hours after the cessation of vomiting sips of cool sweetened cocoa were given, replaced, if nausea was induced, by intravenous sugar injections. During this stage, and the subsequent one of light dieting, insulin injections were continued twice daily in sequence to oral administrations of sugar—two or three grams to one unit. Insulin injections were given until discharge from hospital, the preceding sugar feeds being omitted when ordinary diet was reached. Of twenty patients, two left hospital relieved before the completion of treatment, seven were completely cured, four had recurrences eventually cured by the same means, two improved but aborted, and there were five failures. Of these, one patient aborted, but in the remainder cure was eventually attained by dietetic and psychotherapeutic measures, after insulin-glucose medication had been suspended on account of icterus or hypoglycaemic shock (two cases each). The treatment is only suitable for hospital trial, and its chief drawback is the risk of inducing hypoglycaemic shock. Other observers also have reported a fairly high incidence of abortions after the treatment, and insulin has been found to diminish fertility in animals.

549. Pruritus Vulvae.

ACCORDING to H. POUEY (*La Gynécol.*, December, 1929, p. 711) the most common sites of pruritis vulvae are the clitoris, labia, vestibule, and perianal region; it may extend to the genito-crural folds, pubis, or vagina, may become localized in a small area (constant in the same patient) of the genital zone, and may be associated or alternate with nasal or plantar pruritus. In vulval pruritus the general causes of pruritus in other regions are usually absent, but in the great majority of cases the patient suffers in addition from morbid nervous conditions, such as hypochondria, neurasthenia, hysteria, epilepsy, vaginismus, frigidity, or crises of anal sphincteralgia. The usual duration of the crisis is from three to five minutes, and the usual incidence is several times a day, but more frequently during the night. In at least one-third of the cases vulval lesions may be noted, of which the most frequent are eczema, leucoplakia, and furunculosis; in nearly one-third of cases a chronic cervicitis with leucorrhoea is present, and in both groups cure of the associated disease is in many cases followed by disappearance of the pruritus. It may occur regularly before, during, or after the menses, and may be noted only during pregnancy. The pruritus of diabetics may disappear after a dietetic reduction which is not sufficient to abolish glycosuria. About 5 per cent. of sufferers from pruritus are sexually frigid. Treatment must be preceded by an exhaustive physical examination; the cure of cystocele, prolapse, cervicitis, haemorrhoids, fistula, and glycosuria will frequently cure pruritus vulvae. Local bathing with 2 per cent. silver nitrate solution is recommended, followed by the application of red or yellow precipitate ointment. For nocturnal pruritus local application may be made before bedtime of half an ounce of lukewarm water containing one gram each of antipyrin, laudanum, and potassium bromide. Anaesthetic injections into the bladder are used for hospital patients. For vaginal irrigation, ensol, 5 per cent. carbolic acid, 5 per cent. copper sulphate solution, or mercuric chloride (1 in 10,000) may be used. The scope, in refractory cases, of *x*-ray and radium treatment, and of wide or localized vulvectomy, is illustrated by case-histories.

Pathology.

550. Influence of Hepatic Innervation on Alimentary Hyperglycaemia.

F. CONTI (*Il Policlinico*, Sez. Med., April 1st, 1930, p. 183), with a view to determine in the case of alimentary hyperglycaemia the action of a nervous stimulus produced by a diet of carbohydrates and the glycogenolytic function of the liver, has conducted experiments on dogs by isolating this organ from its nerve connexions, thereby studying the variations of alimentary hyperglycaemia. This condition appeared to be more moderate after such an operation, suggesting the existence of a stimulus exercised by the exogenous glucose on the hepatic glycogenesis. Other complementary investigations proved that such a phenomenon was not due to variations of the intrahepatic circulatory regimen, but that there exists an entero-hepatic reflex stimulated by the introduced carbohydrates. To demonstrate this reflex, produced through the vegetative nervous system, attempts were made to paralyse simultaneously its two sections with products of pharmaco-dynamic action, but they failed. The lowering of the glycaemic curve was not obtained by a direct injection of glucose into the portal system, excluding thus the hypothesis that the phenomenon is due to circulatory disturbances following isolation of the nerves. The author concludes that in hyperglycaemia there exists a component due to glucose secreted from the liver by nervous stimulation, and another component probably represented by a part of the glucose absorbed by the intestines.

551. The Protective Power of B.C.G.

P. MAURIAC and E. AUBERTIN (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, January 20th, 1930, p. 57) inoculated with virulent tubercle bacilli three dogs which had been previously vaccinated with B.C.G. Subsequently two of them were subjected to chronic phosphorus and thyroxin poisoning. Neither of these animals, nor the control, exhibited any tuberculous lesion when killed seven months after inoculation with tubercle bacilli. Similar results were obtained in three heifers, killed seven months after the intravenous injection of virulent bovine tubercle bacilli. Experimental intoxication by thyroxin or phosphorus did not modify the immunity produced by B.C.G. in dogs and cattle. The authors also inoculated guinea-pigs and rabbits with B.C.G., and subsequently with virulent tubercle bacilli; these animals were then submitted to chronic poisoning by phosphorus, thyroxin, and uranium nitrate. The immunity attained under these conditions appeared uncertain; some of the animals when killed exhibited tuberculous lesions.

552. Br. abortus Infection in Latvia.

E. DARSIN (*Zentralbl. f. Bakt.*, February 20th, 1930, p. 457) between September, 1928, and June, 1929, examined 1,100 human serums sent in to the Hygienic Institute at Riga for agglutinins to *Br. abortus*. As agglutinating antigen living suspensions of several strains of this organism were used, washed off agar slope cultures three to five days old. The serums examined were sent in either for a Wassermann or a Widal test. Agglutination to a titre of 1 in 100 or over was regarded as a positive reaction to *Br. abortus*. Of the 1,100 serums, 18, or 1.6 per cent., reacted positively. This percentage is considerably less than that recorded by Kristensen in Denmark. Clinically the chief symptoms were irregular fever of a low type, obstinate headache, and joint pains, particularly of the lower extremities, and general laxity. Fever of the typically undulant type was only seen on one or two occasions. Two of the patients, both of whom had apparently been infected from aborting cows, had been ill for three years or more. Attempts to isolate *Br. abortus* from these two patients proved unsuccessful, but the cultures were made in Veillon tubes and were apparently not incubated in 5 to 10 per cent. CO_2. From one patient, who had a suppurative lesion in connexion with a metatarsal bone, a strain of *B. proteus* was isolated, which was agglutinated by the patient's serum to about 1 in 200. This strain was likewise agglutinated by certain other serums that were positive to *Br. abortus*, but not by *abortus*-negative serums. The meaning of this coagglutination was not fully elucidated.

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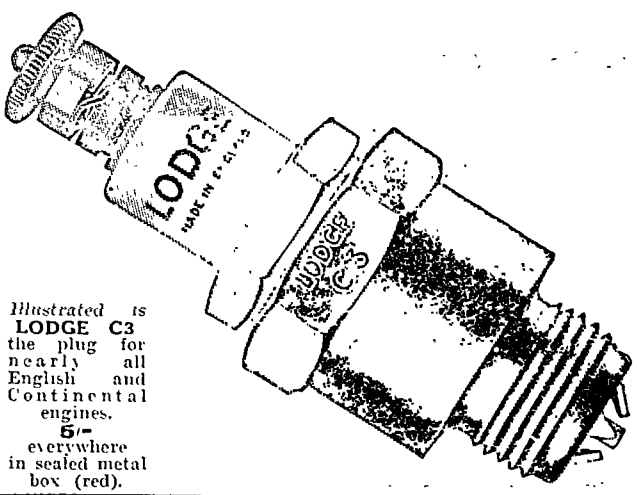
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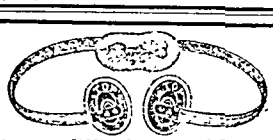
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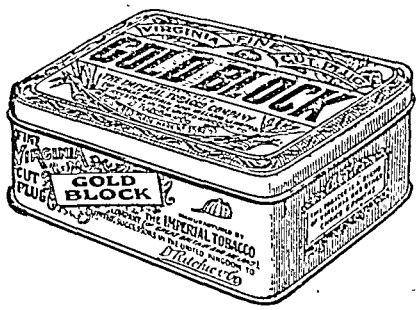
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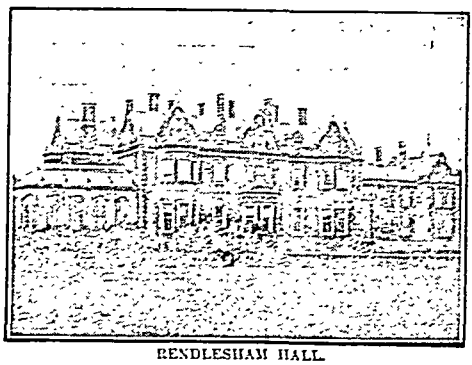
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For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

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No cases under certificate. Thorough clinical and pathological examinations. Psychotherapeutic treatment, occupation, and recreation as suited to the individual case.

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Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

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Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

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FOR MENTAL DEFECTIVES, REDHILL, SURREY.

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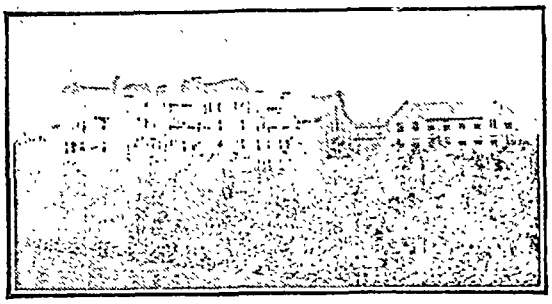
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Medical Director: **David Lawson, M.D., F.R.S.E.**

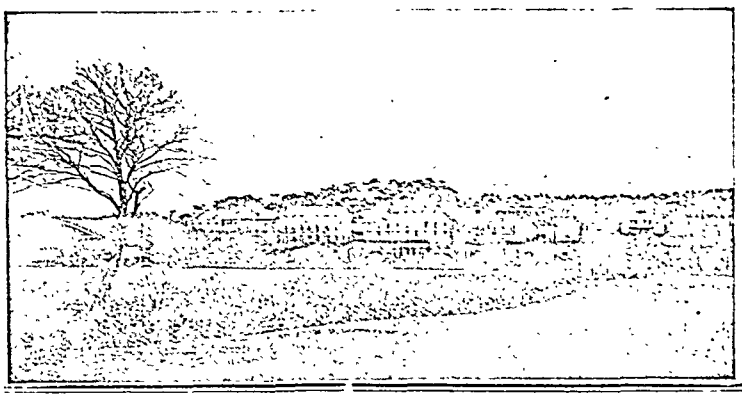
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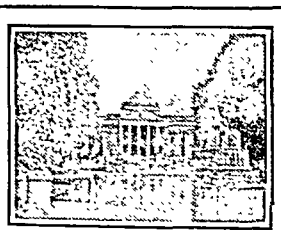
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WILDBAD—
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Germany—1,400 to 2,500 feet above sea-level.

CURATIVE SPRINGS 93-99° F.

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For information apply to: Spa Director, Baden, Switzerland.

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One hour by electric railway from Loèche (main station on the Simplon route). Mild alpine climate. The baths were already known to the Gauls and Romans. The radio-active springs contain chiefly sulphate of lime. Two swimming pools. Every hotel has its own bathing installation. Treatments: warm baths, douche-massage, injections, air and sun baths. Recommended for: gout, rheumatism, sciatica, anaemia, post operational conditions, convalescence, gynaecological diseases, circulatory disturbances, skin diseases.
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For information apply to: Hotel Association, Loèche-les-Bains, Switzerland.

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Near Chur. Situated on a picturesque plateau. Mild sub-alpine climate. Vast forests
Treatments: The Ulrichs spring (alcaline muriatic), Belvedra spring (chalybeate), Fortunatus spring (alcaline-muriatic with iodine), Helen spring (mildly alcaline and acid), Theopnil spring. All varieties of accessory treatment. Dietetic treatment. Indications: Diseases of the digestive organs, diseases of the liver and bile ducts, kidney and bladder diseases, diseases of nutrition and metabolic diseases, especially diabetes, arterio-sclerosis, diseases of the blood and tropical diseases.
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10 miles from Basle, on the railway line Zürich-Basle. Famous for its vigorous [illegible] salt, and for its "Kapuziner" spring, a [illegible]d boric acid well, and for its "Magdaler [illegible]phates of calcium, sodium, and magnesium [illegible] with up-to-date installations.
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For information apply to: Spa Director, Schinznach Bad, Switzerland.

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The chief spa of the Lower Engadine. Glauber salts wells. The advantage of this spa lies in the combination of the curative properties of the waters with the alpine air and sun.
10 mineral springs of various composition. Up-to-date equipment for drinking and baths, air and sun baths, swimming baths, Zander-hall, X-ray institute, diet. Recommended for: affections of the digestive organs, metabolic ailments, nervous troubles, affections of the organs of circulation, of the organs of respiration, of the genito-urinary system, malaria.
Information supplied by: General Manager, Kurhaus Tarasp.

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Special provision is made for the diet of gouty patients in the hotels.

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Every kind of Bath. Plombière Lavage.
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Society of Apothecaries of LONDON.

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Further particulars can be obtained from the Secretary, Radium Department, London Hospital, Whitechapel.

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The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincia Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

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Special Terms to Medical Men.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Graham Scholarship in Pathology

The Senate of the UNIVERSITY OF LONDON invite applications for the Graham Scholarship in Pathology, value £300 per annum, in the first instance for two years, founded under the will of the late Dr. CHARLES GRAHAM to enable "a young man to continue his pathological researches and at the same time to secure his services to the School of Advanced Medical Studies connected with University College Hospital as a Teacher under the direction of the Professor of Pathology."

The successful candidate will, if possible, take up the Scholarship as from October 1st, 1930. The Scholarship is in no way restricted to students of Medical Schools of the University. Applications must be made to the undersigned before June 18th, 1930.

Further particulars should be obtained from the Academic Registrar, University of London, South Kensington, S.W.7.

EDWIN DELLER, The Principal, University of London.

THE CLINICAL RESEARCH ASSOCIATION, LTD.

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A COMPLETE LABORATORY SERVICE.

The Consulting Rooms and Laboratories of this Association (established in 1894) are available for all Medical Practitioners desiring Laboratory assistance in the investigation and diagnosis of cases under their care. All necessary apparatus and full instructions for collecting pathogenic material, or for the personal attendance of Patients at the Consulting Rooms of the Association, will be forwarded immediately on application.

X-RAY EXAMINATIONS AND NURSING HOME ACCOMMODATION ARRANGED.

Telephone: TEMPLE BAR 8995 (5 Lines). Telegrams: "TUBERCLE, WESTRAND, LONDON." W. J. CURRY, Secretary.

GLASGOW POST-GRADUATE MEDICAL ASSOCIATION

The following arrangements have been made for POST-GRADUATE TEACHING in Glasgow during the Summer of 1930.

A. A General Medical and Surgical Course from August 18th to September 12th.
Fee £10 10s. or £6 6s. for first or second fortnight.

B. Clinical Assistantships in General and Special Hospitals.

Syllabuses and any other information may be had on application to the **Secretary, Post-Graduate Medical Association, The University, Glasgow.**

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

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Are you desirous of obtaining one of the special higher qualifications?

Diploma in Psychological Medicine.
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UNIVERSITY EXAMINATION POSTAL INSTITUTION

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(FOUNDED IN 1882.)

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M.R.C.P.(Lond.), 1914-29	168
D.P.H. (Various) 1906-29 (Completed Exam.)	286
F.R.C.S.(Edin.), 1918-29	43
M.R.C.S.,L.R.C.P. *Final* 1910-29 (Completed Exam.)	433
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Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all* [illegible] Courses, and Oral [illegible] the higher Medical [illegible] for the higher Surgical [illegible] tions for the Special [illegible] fresher Course. Open[illegible] writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

UNIVERSITY OF LONDON.

EXTERNAL EXAMINERSHIPS, 1931.

The Senate announce the following vacant External Examinerships for all Examinations above Matriculation for the year 1931. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.

For the First Examination for Medical Degrees.
CHEMISTRY.

For the Second Examination for Medical Degrees.
PHARMACOLOGY.

For Final and Higher Examinations for Medical Degrees.
MEDICINE. SURGERY.

Associate Examiners.

Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it.

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable, on or before Monday, July 7th, 1930. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, South Kensington, S.W.7. EDWIN DELLER, Principal.

June, 1930.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to **The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5** for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and ante-natal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

Doctors attending Post-Graduate Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

WEST AFRICAN MEDICAL STAFF.

Vacancies at present exist for MEDICAL OFFICERS in the WEST AFRICAN MEDICAL STAFF.

Qualifications. Candidates must be British subjects of European parentage and under 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held Hospital or Public Health appointments, or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose, and throat, venereal diseases, etc.

Salary. £660 per annum, rising by annual increments of £30 per annum to £720 per annum, and then, on confirmation, £720 per annum, rising by annual increments of £40 to £960 per annum, together with a seniority allowance (payable only in West Africa) at the rate of £72 per annum. After three years' service on £960, the salary may be raised to the scale of £1,000 per annum, rising by annual increments of £50 to £1,150 per annum, together with a seniority allowance at the rate of £100 per annum.

Quarters. Free quarters are provided or an allowance is given in lieu.

Outfit Allowance. An outfit allowance of £60 is granted on first appointment.

Passages. Free first-class passages are provided for the officer only both on first appointment and when proceeding on or returning from leave. A married officer will, in certain circumstances, be granted half the cost of his wife's passages to and from West Africa.

Terms of Appointment. The appointments are pensionable, subject to a probationary period of three years in the first instance.

Tour of Service. The normal tour of service in West Africa is approximately 18 months, though vacation leave may be granted by the Governor after 12 months, and is followed by leave at the rate of one week for each completed month of residential service, plus the time necessarily spent in the voyages to and from England.

Course of Instruction in Tropical Medicine. Selected candidates will normally be required to attend a course of instruction in Tropical Medicine and Hygiene before proceeding overseas.

Duties. Though Medical Officers are appointed in the first instance for general service, there are good opportunities for work in special branches of medicine and surgery and for research.

Further particulars and forms of application may be obtained, on application in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Onderstepoort, South Africa.

THREE RESEARCH FELLOWSHIPS.

Applications are invited for Three Research Fellowships tenable at the ONDERSTEPOORT VETERINARY RESEARCH LABORATORY, PRETORIA. These Fellowships have been established by the Empire Marketing Board in conjunction with the Government of the Union of South Africa.

Candidates will be required in each case to furnish proof that they are familiar with particular aspects of research, namely:

(1) *First Fellowship*, methods of tissue culture and work with filterable viruses;
(2) *Second Fellowship*, bacteriological work and the physiology of animals, especially ruminants;
(3) *Third Fellowship*, methods of extracting toxic substances from plants and determining the nature of such substances.

Selection will be made by a Committee consisting of the President of the Royal Society, the High Commissioner for the Union of South Africa in London, the Chairman of the Research Grants Committee of the Empire Marketing Board, and the Director of the Imperial Bureau of Animal Health.

The Fellowships will be tenable for a period of three years with the possibility of renewal for a further period of two years. Remuneration will normally be at a rate not less than £800 and not more than £1,000 per annum, but special consideration may be given to candidates whose qualifications and other circumstances warrant a higher rate.

Each successful candidate will be provided with a free passage for himself and his family from his place of residence to Pretoria. Duties should commence as early as possible.

During the tenure of the Fellowship the holder will be responsible to the Director of the Onderstepoort Laboratory.

Applications should be addressed to the Secretary, Empire Marketing Board, 2, Queen Anne's Gate Buildings, London, S.W.1 (cables "Empmart, London"), and should be received not later than September 1st, 1930.

Applications should be accompanied by six typed copies each of three testimonials and references to any published work.

University College Hospital,

Gower Street, W.C.1.

Applications are invited for the post of HONORARY ANAESTHETIST to University College Hospital, and should be forwarded to the Secretary before noon on Friday, June 27th.

Countess of Dufferin's Fund.

WOMEN'S MEDICAL SERVICE FOR INDIA.

Medical Women are invited to apply for the following posts, which must be taken up by the end of October:

(1) MEDICAL WOMAN for General Service. Emoluments: Rs. 550 per mensem, rising; furnished quarters; provident fund; passage and outfit allowance.
(2) MEDICAL WOMAN, with special experience in Maternity and Child Welfare and administration in Public Health work. Emoluments: Rs. 750 per mensem, rising; furnished quarters; provident fund; passage and outfit allowance.

Applications, on special form to be obtained from undersigned, with copies of three recent testimonials, should be returned by Friday, July 11th, to Hon. Secretary, United Kingdom Branch Dufferin Fund, c/o Major-General Sir LEONARD ROGERS, India Office, Whitehall, S.W.1.

June 10th, 1930.

Walsall General Hospital,

WALSALL.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post Tuesday, June 17th.

WALTER FRANCOMBE, Secretary.

Lincoln County Hospital.

Wanted, a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' approved service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

Lincoln. ARTHUR MOORE,
June 10th, 1930. Secretary-Supt.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invites applications from registered male Medical Practitioners for the post of Assistant Medical Officer. Applicants must not be over 35 years of age, and must possess the Diploma of Public Health. The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare and Tuberculosis Acts, and Venereal Diseases Regulations; and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County. The salary will be £600 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained together with further particulars from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Saturday, June 28th. All communications must be endorsed "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

County Hall, DUDLEY AUKLAND,
Kingston-upon-Thames. Clerk of the
June 7th, 1930. Council.

Chesterfield and North Derbyshire Royal Hospital.

(190 Surgical and Medical Beds.)

CASUALTY OFFICER.

Applications are invited from fully qualified men for the above post. The appointment is for six months. The Casualty Officer is next in seniority to the R.S.O., and acts for him in his absence.

Candidates must have held previous Hospital appointments.

Salary at the rate of £200 per annum, with board, apartments, and laundry. Duties include those of House Surgeon to the Ear, Nose, and Throat Department.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, 12th instant.

G. SUNNUCK,
June 2nd, 1930. Supt. & Secretary.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts, and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank	Basic Pay	Overseas Pay	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£70	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
„ 18 „ „ „	450
„ 19 „ „ „	460
„ 20 „ „ „	500
„ 21 „ „ „	540
„ 22 „ „ „	580
„ 23 „ „ „	620
„ 24 „ „ „	660
„ 25 „ „ „	700
„ 26 „ „ „	730
„ 27 „ „ „	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office in July, and the selected candidates will be required to join a course of instruction commencing early in August, 1930. Applications should be submitted as soon as possible.

Cardiff Royal Infirmary.
(Associated with Welsh National School of Medicine.)

Applications are invited for the following appointments:
RESIDENT REGISTRAR.
CASUALTY SURGICAL OFFICER.
HOUSE SURGEON to Ophthalmic Dept.

The post of Resident Registrar is tenable for a year with a possible extension to two years. Salary is at the rate of £100 per annum, with board and lodging.

The post of Casualty Surgical Officer is tenable for six months. Salary is at the rate of £75 per annum to an applicant with previous Hospital experience, and £50 per annum without.

The post of House Surgeon to Ophthalmic Department is tenable for six months, and the salary is at the rate of £75 per annum, preference is given to a candidate with knowledge of refractions.

Application forms may be had from the undersigned and should be returned, with copies of recent testimonials, at the earliest possible date, as the three appointments fall vacant on June 20th.

R. ARMSTRONG,
June 7th, 1930. Medical Supt.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:
HOUSE PHYSICIAN. Salary at the rate of £125 per annum.
HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.
HOUSE SURGEON to Gynaecological, Aural, and Skin Departments. Salary at the rate of £125 per annum.
CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered on or before June 16th.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
June 2nd, 1930.

Salford Royal Hospital.
(263 Beds.)

The Board of Management invite applications for the post of HONORARY ASSISTANT SURGEON.

Every candidate for the office of Honorary Assistant Surgeon shall be a Fellow of the Royal College of Surgeons of England.

All candidates must be on the *Medical Register* and must not practise midwifery or pharmacy.

Applications, accompanied by certificates of age and of registration, and by not more than six testimonials, must be delivered to the undersigned on or before June 27th.

By Order of the Board of Management,
GEORGE RUDDLE,
June 14th, 1930. Gen. Supt. & Sec.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four resident medical officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
June 5th, 1930. Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Queen Mary's Hospital for the
EAST END, Stratford, E.15.
Telephone: Maryland 2616.

Applications are invited from fully qualified and registered Medical Men for the following posts:
One HOUSE PHYSICIAN. Salary £120 p.a.
Two HOUSE SURGEONS. Salary £120 p.a.
One OBSTETRIC HOUSE SURGEON. Salary £120 p.a.
One HOUSE PHYSICIAN and RESIDENT ANAESTHETIST. Salary £120 p.a.
One HOUSE PHYSICIAN and CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 216 beds, including 46 Maternity beds and other Special Departments.

Candidates, who should have previously held Hospital appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Wednesday, June 18th.

RAPHAEL JACKSON (Major),
Secretary.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF SURGEON to the THROAT DEPT.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, July 22nd, at 4 o'clock in the afternoon, to elect a Surgeon to the Throat Department of this Hospital.

Candidates are required to lodge 50 copies of their applications and testimonials with the undersigned (from whom particulars as to qualifications for the office can be obtained) on or before Friday, July 4th.

THOMAS HAYES,
Clerk to the Governors.
June 13th, 1930.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, July 22nd, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Friday, July 4th.

THOMAS HAYES,
Clerk to the Governors.
June 13th, 1930.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Victoria Hospital, Blackpool.
(132 Beds.)

HOUSE SURGEON (Junior), male or female, six months. Salary £150 per annum, with residence, board, and washing.

Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Manchester Ear Hospital,
Grosvenor Square, All Saints'.

NON-RESIDENT HOUSE SURGEON required. Salary at the rate of £150 per annum, with partial board. Appointment for six months.

Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester.

Royal Infirmary, Blackburn,
(240 Beds—Five Residents.)

RESIDENT HOUSE PHYSICIAN (male) required at a salary of £175 per annum, with board, residence, laundry, etc. In addition to Medical Wards, to be attached to Eye, Ear, Nose, and Throat Department. To commence duties on July 1st.

FOURTH HOUSE SURGEON (male) also required at a salary of £150 per annum, rising to £250, with board, residence, laundry, etc.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Sec.

This Institution is recognized for the Surgical Practice required for the F.R.C.S. Final Examination.

Torbay Hospital, Torquay.
(146 Beds.)

HOUSE PHYSICIAN and HOUSE SURGEON wanted as soon as possible.

Salary £175 per annum, with board, residence, and laundry allowance. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, must be received by the undersigned not later than first post on Thursday, June 19th, with copies of not more than three recent testimonials.

E. L. GRIST,
June 7th, 1930. Secretary.

Children's Hospital, Sheffield.

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery St.), vacant July 1st. Salary £100 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of three recent testimonials, to the undersigned.

The successful candidate will be eligible for the next Senior post when vacant.

T. H. G. GARTLAND, Secretary

Bristol Homoeopathic Hospital.
(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of HOUSE SURGEON at a salary of from £120 to £150 per annum, according to experience, with board, laundry, and residence in the Hospital, etc., provided.

Good Surgical and general experience.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they can commence duties, if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

Warneford General Hospital,
LEAMINGTON SPA.

RESIDENT HOUSE SURGEON required on July 1st. Salary at the rate of £165 per annum, with board and laundry.

Applications from qualified and registered Medical Practitioners should be sent at once to the undersigned, with copies of testimonials.

W. RUSSELL RUDALL,
House Governor & Secretary.
June 7th, 1930.

Midland Hospital
(For Homoeopathic and General Treatment),
Easy Row, BIRMINGHAM.

A vacancy occurs for the post of HOUSE SURGEON at the above Hospital on August 6th. Salary £150, with board, residence, and laundry.

Applications, stating age and qualifications, accompanied by recent testimonials, should be sent to the Secretary at the Hospital not later than June 28th.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, residence, and laundry. To have charge of Out-patients, administer Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male) Qualified. A knowledge of Eye work is desirable. Salary £200, with board, lodgings, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Doncaster Royal Infirmary.
(185 Beds.)

HONORARY PHYSICIAN AND PATHOLOGIST.

Applications are invited for the newly created post of Hon. Physician and Pathologist to the above Hospital. An honorarium at the rate of £250 per annum, plus 50 per cent. of fees received for public and private work, will be paid.

He must hold the degree of M.D. or be a Fellow or Member of the Royal College of Physicians, and be competent to undertake all Bacteriological and Pathological work of the Hospital.

Applications, with full particulars and copies of testimonials, to be received by the undersigned on June 18th

J. LAWRENCE MEARS,
Secretary-Superintendent.

British Red Cross Society and
ORDER OF ST. JOHN OF JERUSALEM.

EAST LANCASHIRE TUBERCULOSIS COLONY, Barrowmore Hall, Great Barrow, near CHESTER.

ASSISTANT MEDICAL OFFICER (male) required.

Commencing salary £275 per annum, rising to £360 per annum after six months' satisfactory service, with residence, board, and laundry. The appointment will be terminable by one month's notice. Preference will be given to candidates with experience in Tuberculosis.

Two previous Assistants have obtained important posts as Tuberculosis Officers in County service.

Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before 9 a.m. on Tuesday, June 17th.

The King Edward VII Welsh
NATIONAL MEMORIAL ASSOCIATION.

Applications are invited from duly registered Practitioners for the appointment of LADY ASSISTANT RESIDENT MEDICAL OFFICER at the CEFN MABLY HOSPITAL, MICHAELSTONE-Y-VEDW, near NEWPORT (110 beds for male and female pulmonary cases).

Salary £250 per annum, plus maintenance, the appointment being limited to one year.

Applications, stating age, full qualifications, and experience, together with copies of three recent testimonials, should reach the undersigned not later than June 19th.

Memorial Offices, Westgate Street, Cardiff. D. A. POWELL, Principal Medical Officer.

The Willesden General Hospital,
N.W.10.

SURGICAL OUT-PATIENTS' DEPT.

Applications are invited for the appointment of CLINICAL ASSISTANT to the Surgical Out-patient Department on Fridays at 2 p.m. The successful applicant will be expected to attend the Hospital regularly and to take charge of the Department when the Medical Officer is absent. The appointment is for a period of six months from July 1st.

Applications should be addressed to the Secretary not later than Monday, June 16th, from whom full particulars of the appointment may be obtained.

R. J. HEARNE,
May 30th, 1930. Secretary.

Stockton and Thornaby Hospital,
STOCKTON-ON-TEES.
(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties earliest possible.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

Norfolk and Norwich Hospital,
NORWICH.

Applications are invited for the post of HOUSE SURGEON, for which appointment preference will be given to a candidate who has held a previous Hospital appointment. Salary £120 per annum, with board, residence, and laundry. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than June 17th.

FRANK INCH,
June 6th, 1930. House Gov. & Secretary.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the combined post of OPHTHALMIC HOUSE SURGEON AND RESIDENT ANAESTHETIST. Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS,
June 2nd, 1930. Supt. & Secretary.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER.

Candidates must be *qualified and registered* under the Medical Acts.

The appointment is tenable for 12 months. Salary will be £130 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three) to be sent to the undersigned.

WALTER BANKS,
June 6th, 1930. Supt. & Secretary.

Royal Hampshire County
HOSPITAL, WINCHESTER.
(158 Beds.)

Vacancies will occur on July 1st next for the following officers:

SENIOR RESIDENT MEDICAL OFFICER. Salary £200 per annum.

HOUSE PHYSICIAN. Salary £130 per annum.

HOUSE SURGEON. Salary £150 per annum.

Board, lodging, and attendance is provided in each instance. Candidates (male), who must be unmarried, must be of British nationality and duly qualified and registered. Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned.

HERBERT MASLEN, Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male).

Duties to commence as soon as possible.

The duties include charge of four beds devoted to complicated Midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of May, 1930.

ARTHUR H. LIMB, Secretary.

Margate and District New
GENERAL HOSPITAL. (80 Beds.)

Applications are invited for the post of *RESIDENT MEDICAL OFFICER (male)*, to commence duties on June 25th next. Twelve months' engagement (renewable).

Salary £125 per annum, with board and *laundry*.

Applications, accompanied by copies of testimonials, should be sent to the Secretary, Margate Cottage Hospital, as early as possible.

Newark General Hospital.
(50 Beds.)

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

Wanted for the Infirmary,
KILMARNOCK, a RESIDENT MEDICAL OFFICER (male), to begin duty at the end of June. Salary at the rate of £140 per annum, with board, etc.

Applications to be lodged immediately with the Secretary, Kilmarnock Infirmary, Ayrshire.

Royal Edinburgh Hospital for
SICK CHILDREN.

MATRON.

Fully trained Nurse holding General and Children's Certificates wanted for the Royal Edinburgh Hospital for Sick Children (132 cots), to enter on her duties on September 1st. She will have the superintendence of the Nursing and Domestic Staff, and the entire charge of the household arrangements, with the help of an Assistant Matron and a Home Sister. She will also be in charge of the Convalescent Home at Gullane (24 cots) with the help of a Sister in charge. Salary £200. Twelve copies of applications, with four recent testimonials, to be lodged on or before June 21st with Messrs. HENRY & SCOTT, W.S., 55, Frederick Street, Edinburgh.

Royal Edinburgh Hospital for
SICK CHILDREN.

Wanted for this Hospital, Two HONORARY RESIDENT HOUSE SURGEONS and Three HONORARY RESIDENT HOUSE PHYSICIANS. One of the latter shall have charge of both a Medical Ward and an Ear and Throat Ward. The appointments shall commence on October 1st, and shall be for a period of six months. Information as to duties, etc., can be obtained from the Ordinary Physician and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged on or before July 25th, with Messrs HENRY & SCOTT, W.S., 55, Frederick Street, Edinburgh. No applications will be received after that date.

Ancoats Hospital, Manchester.

HOUSE SURGEON required to commence duty on July 1st, for a period of six months. Salary at the rate of £100 per annum, with board, apartments, laundry, etc.

Also a CLINICAL ASSISTANT required in the Ear, Nose, and Throat Department (Out-patient Clinic), to attend on Thursday afternoons at 2 p.m. A fee of 10 6 per clinic will be paid.

Applications for the above appointments to be forwarded to the undersigned on or before June 18th, together with copies of three recent testimonials.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

The Salvation Army,
THE MOTHERS' HOSPITAL,
Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the posts of *SENIOR AND JUNIOR RESIDENT MEDICAL OFFICERS*. The Senior position, which is for twelve months, becomes vacant on August 1st, the salary being £150 per annum; and the Junior post for six months as from July 1st, salary £60 per annum. The salaries are in addition to board, residence, and laundry.

Applications, with testimonials, must be sent to the Secretary on or before June 18th

EDGAR DIBDEN, Secretary.

Ingham Infirmary,
SOUTH SHIELDS.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per annum respectively, with *residence, board, and* washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

Royal South Hants and
SOUTHAMPTON HOSPITAL,
SOUTHAMPTON.

Required for duty at this Hospital, SENIOR HOUSE SURGEON. £225 per annum, to commence duty July 1st.

ASSISTANT HOUSE SURGEON. £130 per annum, to commence immediately.

Candidates (male or female) should apply to the undersigned, stating age and enclosing copies of testimonials

HY. TRYSON, Secretary.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH AND BACTERIOLOGIST.

Applications are invited for the above appointment from duly qualified men holding a Diploma in Public Health or a qualification in State Medicine.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum.

The successful candidate will be engaged on bacteriological and biochemical investigations in connection with the work of the Corporation's Hospitals, etc. He will also be required to undertake any other medical duties which may be assigned to him by the Medical Officer of Health, under whose supervision and direction all his work will be carried out.

Candidates must produce satisfactory evidence of special post-graduate training and practical experience in bacteriological and biochemical work.

Canvassing in any form whatever, direct or indirect, will disqualify an applicant. This condition will be strictly enforced.

Particulars of the appointment and form of application may be obtained from D. MORLEY MATHIESON, Esq., M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than Monday, June 30th.

Town Hall, Birkenhead. E. W. TAME, Town Clerk.

June 6th, 1930.

North Riding Infirmary,

MIDDLESBROUGH.

(General Hospital—150 Beds.)

SENIOR HOUSE SURGEON (*male*) required to take up duties middle of July, also JUNIOR HOUSE SURGEON to take up duties as early as possible.

Salary of Senior House Surgeon at the rate of £200 per annum and Junior House Surgeon £150 per annum, with board, residence, and laundry. Three residents are employed.

Appointments for not less than six months.

Candidates eligible for higher posts as they become vacant.

Applications, stating age, *nationality*, and previous experience, with three *recent testimonials*, should be sent to the undersigned as soon as possible.

CHARLES POSTGATE, Secretary-Superintendent.

Argyll County Council.

MEDICAL OFFICER wanted for the Burgh and District of INVERARAY. The salary includes a payment of £60 p.a. from the County Council for services as Local Medical Officer, and £60 p.a. from the Burgh of Inveraray as Burgh Medical Officer, along with free house and taxes, exclusive of panel and private practice. A grant from the Highlands and Islands (*Medical Service*) *Fund is made by the* Department of Health and considerable private practice may be expected.

For further particulars reference may be made to the County Medical Officer, Oban, Argyll, with whom application, with six copies of testimonials, are to be lodged on or before June 20th.

Argyll County Council.

MEDICAL OFFICER wanted for the KILNINIAN and KILMORE District of the Island of Mull. The salary includes a payment of £115 p.a. by the County Council for services as Local Medical Officer, and £10 p.a. by the Burgh of Tobermory as Burgh Medical Officer. A grant from the Highlands and Islands (Medical Services) Fund is made by the Department of Health and considerable private practice may be expected.

A knowledge of Gaelic is desirable.

For further particulars reference may be made to the County Medical Officer, Oban, Argyll, with whom application, with six copies of testimonials, are to be lodged on or before June 20th.

Peterborough and District

MEMORIAL HOSPITAL. (154 Beds.)

TWO RESIDENT HOUSE SURGEONS required.

Applications are invited from fully qualified male Practitioners for above posts.

Salary £135 per annum, with board, residence, and laundry.

Appointments will be for a minimum period of six months.

Applications, stating age, qualifications, and experience, with *copies of recent testimonials*, to be sent to the *undersigned*, from whom further particulars may be obtained.

FRANK A. C. TAYLOR, *Secretary*-Superintendent.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Southport General Infirmary.

(120 Beds.)

Special *Departments* for Eye, Ear, Nose, and Throat, X-Rays, Massage, Skin, Pathology, etc.

Wanted, to take up duties on or about July 1st, a JUNIOR HOUSE SURGEON, fully qualified and registered, unmarried.

Salary at the rate of £100 per annum, with residence, board, and laundry, and additional salary of £50 per annum for services rendered in the V.D. Department.

Applications, *stating age, nationality*, and experience, with copies of testimonials, to be sent in by June 23rd to the Secretary, The Infirmary Office, Pilkington Road, Southport.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (*male*, unmarried). Candidates must be duly qualified and registered. The appointment will be for a period ending October 31st. Probable promotion if satisfactory. Salaries of Resident Staff are as follows: Resident Surgical Officer £250, First House Surgeon £175, Second House Surgeon £150, and Third House Surgeon £125 *per annum*, with residence, board, and laundry.

Particulars of duties may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent.

A. MIDGLEY, Secretary.

May 7th, 1930.

City of Birmingham.

FIRST ASSISTANT MEDICAL OFFICER required. Salary £600 per annum, together with board, etc. Adequate resident experience in a large Infectious Diseases Hospital is essential. Applicants should preferably also have held a resident post in a Children's Hospital, and should possess a post-graduate qualification in *Medicine or Public Health. Forms of application* may be obtained from Dr. E. H. R. HARRIES, Medical Superintendent, City Hospital, Little Bromwich, Birmingham, and should be returned to him on or before Thursday, June 26th.

F. H. C. WILTSHIRE, Town Clerk.

The Royal Portsmouth Hospital,

PORTSMOUTH.

(Five Resident Medical Officers.)

CASUALTY OFFICER, male (qualified), required to commence as soon as possible. Salary at the rate of £100 per annum, with board, etc. Six months' appointment. Eligible on completion of term for appointment to other resident posts.

Applications, *stating age, nationality*, etc., and copies of three recent testimonials, to be sent to the undersigned, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

Liverpool Hahnemann Hospital,

Hope Street.

[illegible] are invited for the post of OFFICER to the above Hospital, which [illegible]s vacant on July 1st. Appointment is for six months, renewable. Salary at the rate of £100 per annum. Knowledge of Homœopathy desirable but not essential. Duties include casualties, anæsthetics, and assisting at operations.

Apply, stating age, sex, *experience*, and enclosing copies of recent testimonials, to the *Registrar*.

Darlington General Hospital.

(120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, fully qualified, British. Salary £125 per annum, board, residence, etc. Applications, stating experience, with copies of two recent testimonials, to be addressed to *me forthwith*.

A. RIDDLE, *Secretary*.

The Sheffield Royal Hospital.

RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £80 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

Northampton General Hospital.

There is a vacancy immediately for an ASSISTANT HOUSE SURGEON, male, *British* nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidate will be appointed for the period ending September 30th, *and will be* eligible for re-election for a further period of six *months*.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than first post on June 25th.

H. ST. JOHN WOOD, Secretary-Supt.

May 19th, 1930.

Coventry and Warwickshire

HOSPITAL, COVENTRY. (307 Beds.)

RESIDENT ASSISTANT HOUSE SURGEON (male) wanted. Salary £125 per annum. Board, laundry, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before June 23rd.

(Mrs.) R. HOOPER, Secretary.

June 7th, 1930.

Worcester General Infirmary,

WORCESTER.

A JUNIOR RESIDENT MEDICAL OFFICER is required to commence duties on July 1st. Salary at the rate of £120 per annum, including board, residence, and laundry.

Applications, together with copies of three testimonials, to be forwarded to the undersigned immediately.

PERCY N. GLASS, General Secretary.

Great Yarmouth General

HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two Resident posts).

Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £150 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

Royal Alexandra Hospital for

SICK CHILDREN, BRIGHTON.

(100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. No canvassing allowed. To commence duties at the earliest possible date.

Applications, in writing, accompanied by testimonials, should be sent to A. F. GRAVES, Secretary.

June 3rd, 1930.

The Royal Infirmary,

SUNDERLAND. (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of *testimonials*, to be sent to the undersigned.

S. C. FRYERS, House Governor & Secretary.

East London Hospital for

CHILDREN, Shadwell, E.1.

The Board of Management invite applications for the post of DERMATOLOGIST to see *Out*-patients one morning a week. Applications, with not more than three recent *testimonials*, should reach the undersigned not later than Saturday, June 28th.

W. M. WILCOX, Secretary.

Newcastle-upon-Tyne Eye

HOSPITAL.

Wanted *at once*, a RESIDENT HOUSE SURGEON (female). Salary £150 per annum. Preference given to applicant possessing some Ophthalmic experience. Apply, stating *age* and qualifications, with copies of three recent testimonials.

CHARLES E. V. UPTON, Secretary.

Assistant Resident Medical

OFFICER (*lady*, unmarried) required for the ISLINGTON DISPENSARY, 305, Upper Street, N.1. Applicants must be registered Medical Practitioners. Salary £220 p.a., with furnished apartments. Applications, *before* June 26th, on printed form to be *obtained* (*by post-card*) *from* the Hon. Secretary at the Dispensary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	LLANELLY BOROUGH. *(Assistant Medical Officer of Health and Assistant School Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH**	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	**SOUTH AUSTRALIA.** *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide	**WELLINGTON, NEW ZEALAND.** *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	**WESTERN AUSTRALIA.** *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

By Order of the Council.

June 11th, 1930. ALFRED COX, Medical Secretary.

The Cancer Hospital (Free)

(Incorporated under Royal Charter), Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of PATHOLOGIST to the Hospital.

Experience in Clinical Pathology is essential. Salary £850 per annum.

The appointment is subject to Rules, a copy of which can be obtained from the Secretary.

Applications, accompanied by copies of not more than three recent testimonials, to be sent to the undersigned by not later than Monday, June 23rd.

J. COURTNEY BUCHANAN, Secretary.

Hull Royal Infirmary.

(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS, House Governor.

April 7th, 1930.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON.

The salary attached to the appointment (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of testimonials, should be addressed to the undersigned forthwith.

JNO. W. BARNES, F.C.I.S., Gen. Supt. & Sec.

Board Room, May 14th, 1930.

The London Female Lock HOSPITAL,

283, Harrow Road, London, W.9.

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates, who must be doubly qualified and duly registered, should send in their applications by June 23rd, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing August 1st.

By Order of the Board, HY. J. EASON, Secretary.

The Royal Gwent Hospital,

NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and House Physician.

Salary £135, with board, lodging, and laundry.

Large Out-patient Department. Eligible for promotion. Resident Medical Staff 5.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD, Secretary-Supt.

June 3rd, 1930.

East Suffolk and Ipswich HOSPITAL.

(265 Beds—7 Residents.)

Wanted end of June, HOUSE PHYSICIAN (male, British). Salary at the rate of £120 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned.

The Hospital, Ipswich. ARTHUR GRIFFITHS, Secretary.

The Queen's Hospital for CHILDREN,

Hackney Road, London, E.2.

RESIDENT MEDICAL OFFICER required on July 31st.

The appointment is made for six months, and may be extended for further periods of six months, but cannot be held for more than two years.

The Resident Medical Staff consists of the Resident Medical Officer as above, Two Casualty Officers, Two House Physicians, and One House Surgeon.

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May 26th, 1930.

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Practices and Partnerships for Disposal (continued).

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39 ESSEX. — Non-panel Practice averaging over £1,400 p.a. in populous suburban district. Detached double-fronted house, with good garden, etc., for sale. Scope for increase. Premium £2,000.

40 DEATH VACANCY.—BIRMINGHAM.—PRACTICE averaging £750 p.a. Panel 380. Charming house (4 bed and dressing rooms), garage and nice garden, for sale.

41 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium

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53 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

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58 SOUTH OF ENGLAND. — Practice averaging £750 p.a. in first-rate country town. Panel 997. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

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60 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

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3. LANCS.—Pleasant town, near open country.—Well-established middle and better-class PRACTICE. Cash receipts last year over £980, including panel of 900. Visits 5/6 to 7/6, medicine extra. Mid. 2 to 10 gns. (about 20 cases). Suitable house, with 2 reception, 4 bedrooms, etc. Price for leasehold £1,100, £600 on mortgage. Premium 1½ years' purchase, part by instalments.
4. GLOS. — COUNTRY PRACTICE. — Old-established PRACTICE in picturesque surroundings, averaging about £1,250 p.a., including panel of over 1,100. Visits from 5/-. Commodious house, with 5 reception, 6 bedrooms, etc. Garden. Garage. Price for freehold £1,500, £1,000 on mortgage. Premium £1,850.
5. WEST OF ENGLAND.—(Within 100 miles of London).—PLEASANT TOWN.—Old-established mixed general PRACTICE. Average income for last 2 years about £1,250, including panel of 1,200. Fees 2/6 to 6/-, and a few at 10/6. Little midwifery. Excellent house, recently redecorated, with ample accommodation. Garden. Garage. Good sport and schools. Premium for Practice and house £4,500.
6. NORTH LONDON.—Old-established good middle-class PRACTICE, held by Vendor 25 years. Gross cash receipts for immediate past twelve months £2,311. Selected panel of about 250. Fees from 5/- upwards. Mids. from 7 gns. (only few cases). Very good corner house, non-basement, with 3 reception, 5 bedrooms, etc. Price for leasehold £1,800. Premium only £3,000.
7. LONDON, NORTH.—Old-established working-class PRACTICE; in well-populated district. Cash receipts for last financial year nearly £1,300, including panel of over 2,000. Practically no midwifery. Expenses very small. Double-fronted house in good position (2 reception, 2 bedrooms, bathroom, etc., and professional accommodation). Rent on lease (12 years to run and renewable) £80 p.a. Premium £2,800.
8. SOUTH-WEST OF SCOTLAND.—COAST TOWN.—Old-established, non-dispensing, good mixed PRACTICE. Income for the last year £1,100, including panel of 400 and increasing. Fees 2/6 to 2 gns. Good house, with 2 reception, 5 bedrooms, etc., rent on lease £42 p.a., or could be bought for £1,300. Premium £1,000.
9. BIRMINGHAM SUBURB. — Well-established and rapidly increasing mainly working-class PRACTICE, producing for last year £765. Panel of 860. Visits 2/6 to 7/6, practically all cash. Little midwifery. Suitable small house (on lease 77 years). Price £600. Premium £1,050.
10. SOUTH DEVON.—COUNTRY PRACTICE, steadily increasing, and situated in very pleasant agricultural district, within easy reach of coast. Gross cash receipts for past 12 months £2,326. Panel produces, with mileage, about £420. Fees 5/6 to 21/-. Only about 20 cases of midwifery from 2 to 5 gns. Suitable house, in main street, with 2 reception, 5 bedrooms, etc. Garden. Garage. Rent on lease £50 p.a. Good sport. Premium £2,800.
11. SOMERSET.—Attractive Town, within easy reach of coast. Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
12. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000.)—Old-established mixed-class PRACTICE. Income last year £623, (but offering exceptional scope. Panel of about 430 and 2 small sale. Visits 5/6 to 5/-. Practically no midwifery. Very attractive
8 DEA on main road and near the sea, with professional rooms, 4 bedrooms, bathroom, etc. Pretty garden. Garage. PRACTICE and £100 p.a. Premium 1½ years' purchase.
bedrooms) to MID.—MIDLANDS.—COUNTY TOWN.—TWO ONE-FIFTH
9 EAST able two friends or will be sold separately) are offered established good mixed Practice owing to the retirement p.a. in good town.wo partners. Gross cash receipts for immediate past nice garden and gas900, including panel of 3,400. Fees from 4/-. purchase. ood house, with 2 reception, 6 bedrooms, etc.
10 NEAR EAST.— remium for share two years' purchase.
small but increasing and delightful sea- Surgery if desired. Good Hospita of a very old-established PRACTICE, mium for quick sale. 600, but offering exceptional scope.
11 YORKSHIRE. — Pa tments. Visits 5/- to 4 guineas. £2,300 p.a. in seaside town. Panel ov gardens. Electric light and house (8 bedrooms) for sale. Premium two-h. 1½ years' purchase.
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12 SCOTLAND.—Sound Practice by Vendor (who is p.a. in large thriving Hospital Town. Small panel 1,142. Fees 5/- to with garden and garage, for sale or to rent. Pr 12 cases). House is prompt sale £950, to include book debts (about £250
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17. YORKS (NORTH RIDING).—In a small pleasant market town, with pretty and prosperous surrounding country, very old-established mixed-class PRACTICE averaging £1,247 p.a., including appts. worth £80 and panel producing last year £566. Visits 5/6 to 25/-. One opponent. Good house, facing south (3 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Electric light. Vendor's freehold. Price £1,350 (£1,000 on mortgage), or would let for few years at £80 p.a. Premium £1,500. Educational and social amenities.
18. SOUTH YORKS.—GOOD TOWN. — Old-established good middle-class PRACTICE, producing for last twelve months nearly £4,500. Small selected panel of 400. Fees 5/- to 10/-. Mid. 2 to 10 gns. (only about 50 cases yearly). Suitable house, with 3 reception, 6 bedrooms, etc., and professional rooms. Electric light. Good garden. Garage for 3 cars. Rent on lease £100 p.a. Excellent schools, sport, etc. Premium £5,700.
19. KENT.—Pleasant Seaside and residential Town (pop. 17,000).—Old-estab. non-dispensing middle and working-class PRACTICE, averaging for the past 3 years over £1,050 p.a. including transferable appt. worth about £200 and panel of 500. Visits 5/6 to 10/6. House contains 8 rooms, kitchen, bathroom, etc. Garden. Garage. Price freehold £1,500, but might be rented. Premium £1,500.
20. LINCS.—Very old-estab. easily worked Village PRACTICE, averaging £1,335 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.
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26. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £904 p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (5/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, bathroom, etc.). Large garden and garage. Water laid on and gas plant installed. Rent £50 p.a. Premium £1,400. Excellent sport.
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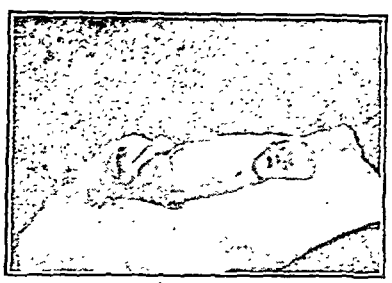
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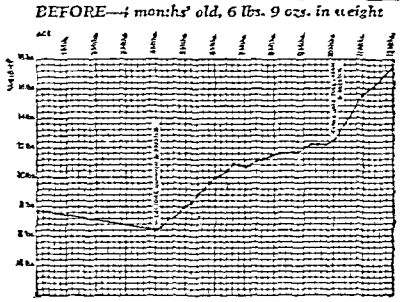
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Progress chart



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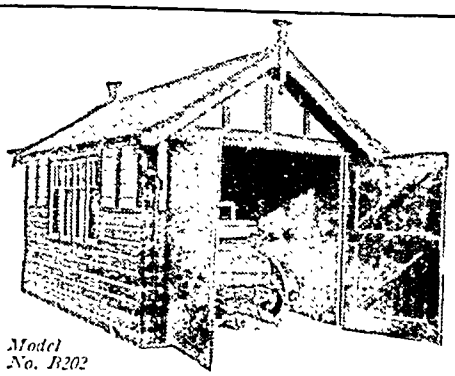
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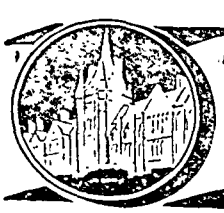
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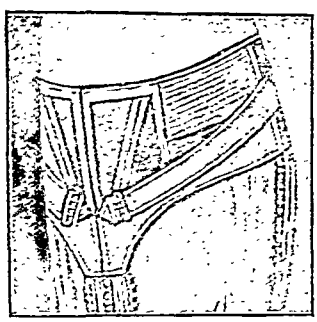
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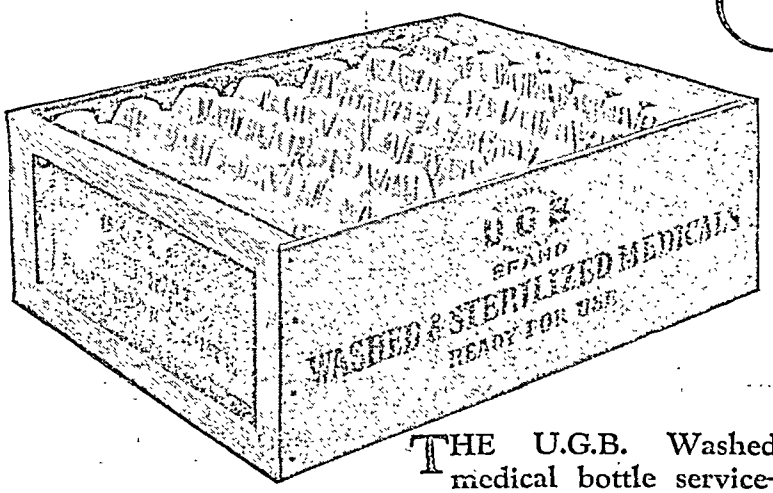
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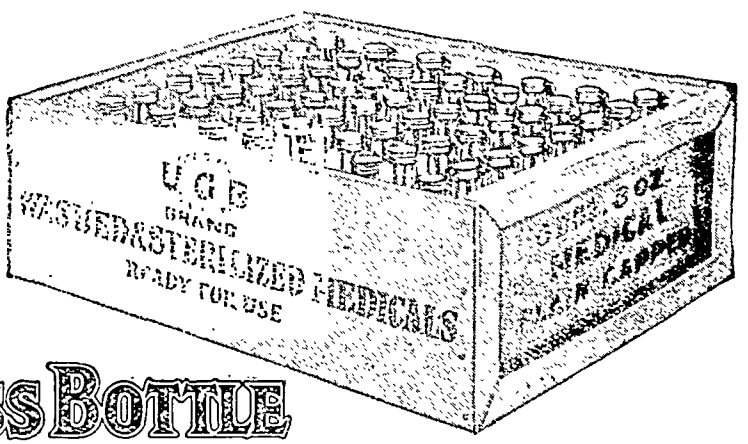
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THE U.G.B. Washed and Sterilized medical bottle service—introduced early in 1929—has proved to be an unqualified success, so much so that we were recently compelled to increase the capacity of our washing and sterilizing plant.

The screw cap service is in particular demand, and owing to the preference of users for a cap in a neutral colour, we have now standardized in fitting the bottle with an attractive RUSTLESS WHITE ENAMELLED CAP.



Photograph of actual package of Screw-cap bottles with cover removed.

UNITED GLASS BOTTLE MANUFACTURERS · LIMITED

The largest manufacturers of Glass Bottles in Europe.

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MICKLEFIELD IRRADIATED MILK



Treating the Cow.

By this process—

(1) VITAMIN A AND NATURAL FLAVOUR ARE PRESERVED.

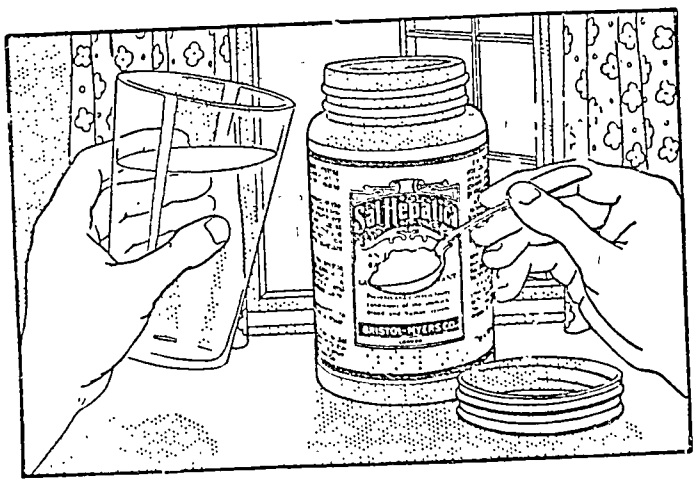
(2) VITAMIN D CONTENT IS INCREASED 1,800 PER CENT., OR TEN TIMES THAT OF ANY OTHER IRRADIATED MILK.

One pint equivalent in Vitamin D to 600 drops or 12 grammes of average Cod-Liver Oil.

Full particulars appeared in an article in the LANCET, January 18th, 1930, p. 127, et seq., a reprint of which will be sent post free on request.

The milk is delivered every weekday in London; elsewhere by arrangement.

Write to J. O. HICKMAN, MICKLEFIELD GREEN, RICKMANSWORTH.



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One or two drachms of Sal Hepatica induces quick, painless and complete evacuation, which eliminates all toxic substances, reduces the blood pressure and renders the blood and urine alkaline. ¶ The toxic amino-acids present in the system which result in diabetes, rheumatism, gout, sciatica, lumbago, neuritis and all other disorders associated with acidosis, can be eliminated daily by the exhibition of Sal Hepatica. ¶ Sal Hepatica is non-habit-forming.

"Sal Hepatica"
TRADE MARK

the proved medicinal saline laxative and cholagogue.

¶ Sal Hepatica contains sodium sulphate, sodium phosphate, sodium chloride and lithia citrate in an effervescent medium.

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1-7 in 6-lb. Bottles.

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2 lb.
Aurant. @ 2/4 "
Aurant. Co. @ 2/
Columbæ @ 1/3 lb.
Cinchon. Acid @ 2/6 lb.
Lassar's Paste, 14 lb. @ 1/2 lb., 1 lb. sti-
*Lin. Belladon. Meth., 5 lb. @ 2/2 lb.; - @ 2/5.
*Liq. Æther Nitros. (Sp. Æther Nit. Su tute), 5 lb. @ 2/5 lb.
*Liq. Ammon. Acet. Conc. (1-7), 6 lb. @ 1/
" " Aromat., 6 lb. @ 1/- lb.
Petroleum Jelly Flav., B.P., 7 lb. @ 7½d. lb.
Bismuth Carb., 3 lb. @ 11/11 lb.
Chloroform Pur., 8 lb. @ 3/4 lb.
Pot. Bromide, 7 lb. @ 2/1½ lb.
Quinine Sulph., 4 oz. @ 2/2 oz.

Gentianæ @ 1/6 lb.
Rhei @ 2/6 lb.
Senegæ @ 4/6 lb.

@ 1/4 lb.
; 1 lb.

PILLS TASTELESS COATED.

Potass. Iodid., B.P., 5 lb. @ 18/6 lb.
Sod. Sulph. Feathery cryst., 7 lb. @ 3d. lb.
Sp. Æther Nit., B.P., 4½ lb. @ 4/6 lb.; 1 lb. 4/10
Sp. Ammon. Aromat., B.P., 5 lb. @ 3/6 lb.
Syr. Cascara Aromat., B.P., 6 lb. @ 2/9 lb.
" Glycero-Phosp. Co., 6 lb. @ 1/9 lb.

SYRUPS.

Aurant., B.P., 7 lb. @ 1/10 lb.
Easton's, B.P., 7 lb. @ 1/6 lb.
Ferri Iodid., B.P., 7 lb. @ 1/10 lb.
Ferri Phosp. Co. 7 lb. @ 8d. lb.
Hypophosph. Co., B.P.C., 7 lb. @ 1/- lb.
Pruni Virg., B.P., 7 lb. @ 1/- lb.
Rhamni, 7 lb. @ 1/2 lb.
Rhei, B.P., 7 lb. @ 1/1 lb.
Scillae, B.P., 7 lb. @ 8d. lb.
Sennae, B.P., 7 lb. @ 1/2 lb.
Tolut., B.P., 7 lb. @ 10½d. lb.

TABLETS COMPRESSED.

We can supply smaller quantities at slightly increased rates.

	Per 1,000.
Blaud's (Sugar-coated), gr. 5... ...	... 3/10
Nitroglycerini, B.P., gr. 1-50th ..	... 5/-
Perchloride of Mercury (Coloured)	... 15/-

One Tablet in 1 pint of water is equivalent to 1 in 1,000.

Thyroid Gland, gr. 5 ... ... 12/6

We endeavour to adhere to prices quoted, but as same fluctuate from day to day, they must be considered as subject to change without notice.

TINCTURES.

in 5-lb. Bottles.

	B.P. Aquos.	B.P. Aquos.		B.P. Aquos.	B.P. Aquos.
Belladon.	... 4/3	1/6	Hyoscyam.	... 4/3	2/4
Benzoin Co.	... 4/7	—	Nucis. Vom.	3/10	1/4
Camph. Co.	... 3/-	1/6	Opii ...	... 6/7	4/6
Card. Co.	... 2/6	1/6	Quin. Ammon.	3/3	—
Gentianæ Co.	2/8	1/6	Rhei Co.	... 2/8	1/9

Ung. Acid Boric., B.P., 28 lb. pail @ 11d. lb.
" Hydrarg., B.P., 7 lb. @ 4/6 lb.
" " Ammon., 7 lb. @ 1/11 lb.
" Ichthamolis, B.P.C., 7 lb. @ 1/10 lb.
" Zinci Ox., Benz., 28 lb. @ 1/- lb.

*Minimum quantity at these prices: Home Trade 3, Export 12 Winchester Quarts assorted. We can supply smaller quantities than advertised at slightly increased rates.

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CONDITIONS dependent upon infection of the urinary tract by *B coli* are by no means uncommon, and present varying degrees of severity, from serious suppurative lesions of the kidney to mild bacilluria of little importance.

The mechanism of infection by *B. coli* in these cases is uncertain, but it may depend upon minute lesions of the mucous membrane of the bowel through which it passes, together with probably an increase in the numbers of a particular and more virulent type (hæmolytic varieties of *B. coli* are common in urinary infections in the male).

If, then, disinfection of the intestinal canal is accomplished, these forms are destroyed, and those already located in the urinary tract may be attacked by a urinary antiseptic By the combined administration of Kerol, urotropin (hexamine) and acid sodium phosphate, the treatment of urinary infections by *B. coli* is placed on a rational basis, and many cases are cured by this line of treatment when they fail to yield to urotropin alone.

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Kerol Capsules

Please send for Literature and Samples, which will be sent free to any member of the Medical Profession.

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SOLIDIFIED PEROXIDE OF HYDROGEN

in neat, handy glass tubes.

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BONE-MARROW IN ANAEMIA FROM HAEMORRHAGE

W. Borchardt (*Deut. med. Woch.*, March 28th, 1930, p. 521) records the results of his experiments on young dogs in which anaemia had been artificially produced by the removal of about half their blood. In the first series some of the animals were fed with rib-marrow, others with marrow from the long bones. Control animals received a corresponding amount either of fat or of liver extract. The basal diet in each case contained a sufficiency of iron (5 mg. per cent.). Only the animals receiving the red rib-marrow showed a definite increase of weight, and their haemoglobin formation was more rapid than that of the others. In the next series the experiment was repeated, but the iron content of the diet was reduced to 1.4 mg. per cent. The result was similar but more striking, the dogs receiving the rib-marrow regaining their haemoglobin far more quickly than the others.

THIS extract from the "Epitome of Literature," published in the "BRITISH MEDICAL JOURNAL," dated May 3rd last, is important as representing, in 1930, a complete justification of the formula upon which

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THE FOOD THAT BUILDS THE BODY

has been produced without variation during the past twenty-five years.

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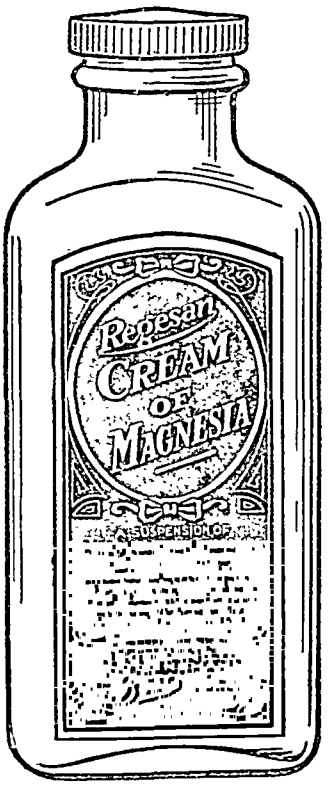
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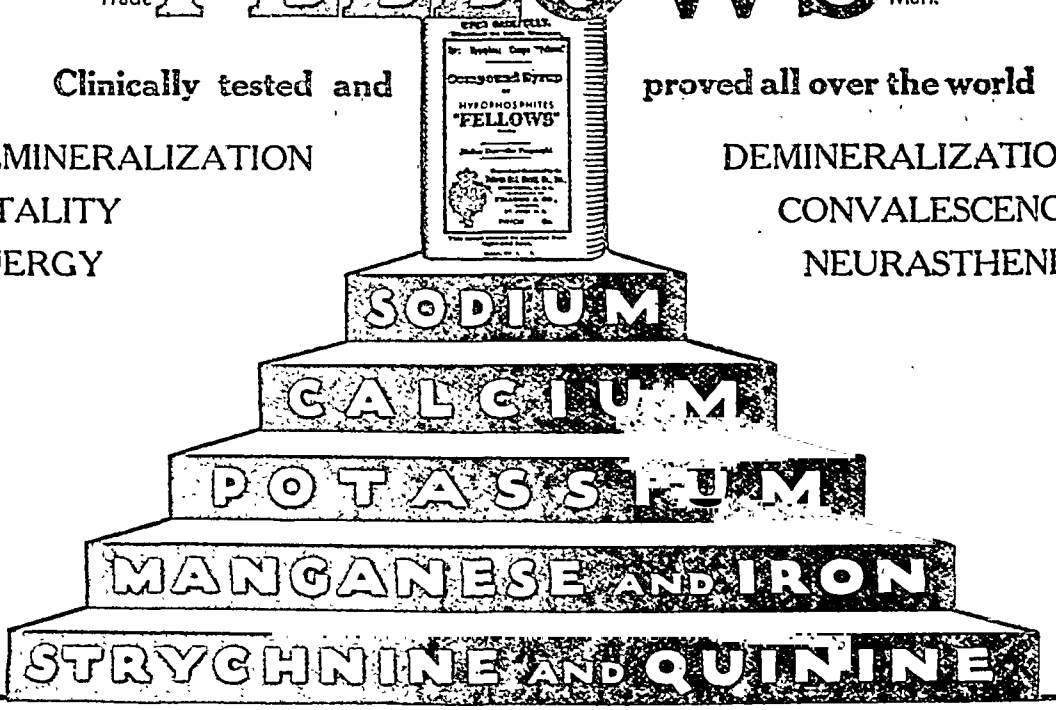
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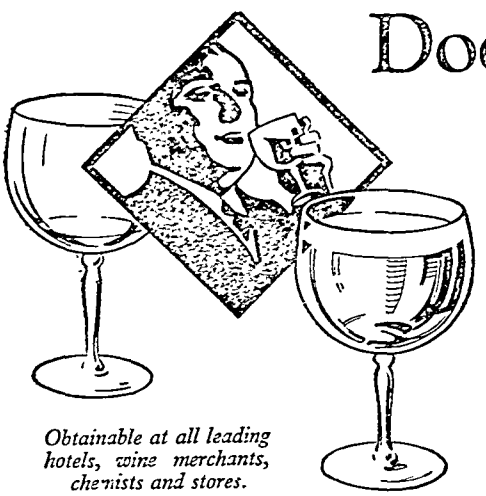
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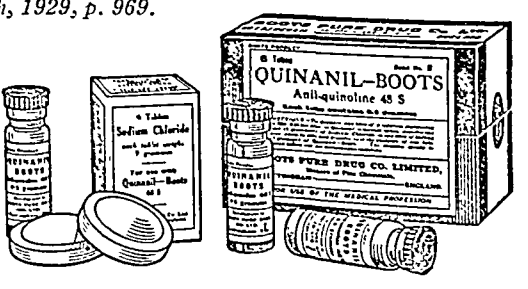
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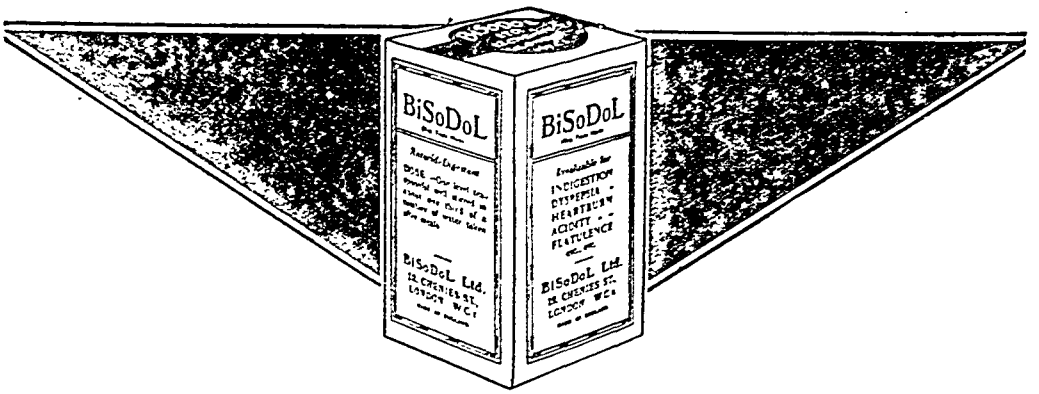
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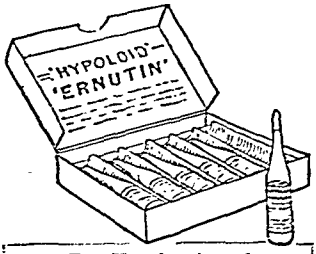
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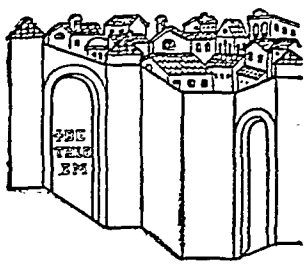
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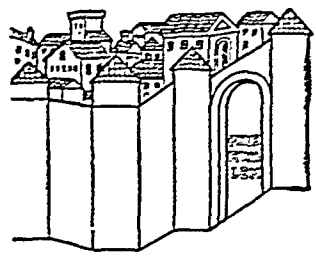
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Observations
ON
SOME SKIN AFFECTIONS DUE TO YEAST-LIKE FUNGI.*

BY
J. M. H. MacLEOD, M.D., F.R.C.P.,
PHYSICIAN FOR DISEASES OF THE SKIN, CHARING CROSS HOSPITAL; HONORARY DIRECTOR OF THE PATHOLOGICAL DEPARTMENT OF ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN.

WITHIN recent years considerable advances have been made in the etiology of skin diseases by the discovery that certain "yeast-like" fungi, previously believed to be saprophytic and harmless in the skin, are pathogenic and responsible for various forms of dermatitis of which the causation has long been a matter of controversy. As these affections are commonly met with in general practice, and since on the recognition of their cause depends their rational and successful treatment, I have chosen them as the matter of this address. I propose to illustrate it by a series of lantern slides, which have been specially prepared from photographs of cases in my own practice or which have been kindly lent me by my colleagues, and from specimens and cultures made in the St. John's laboratory.

It is only within the last few years that the yeast-like fungi pathogenic in the skin have attracted much attention in this country, and most of the literature is American, French, or German. I do not propose to discuss the different mycotic findings in their chronological order, or to attempt to apportion the credit due to the various workers on the subject, but simply to describe in a general way the present position. At the same time, however, I should like to express our indebtedness to all the workers on the subject—to Gilchrist, Stokes, Ricketts, Ormsby, Shelmire, Weidman, Finnerud, and others in America, to Dubreuilh and Ravaut in France, to various workers in Germany and Austria, and to Castellani, Chalmers, and my colleague J. B. Dowling in this country.

As a preliminary it will be necessary to consider briefly the group known as the yeast-like fungi from their close relationship and morphological similarity to the yeast fungus (*Saccharomyces cerevisiae*). The fungi in question belong to the group of the "fungi imperfecti," and are of a lower order than the yeasts, in that reproduction takes place in the simplest manner by budding, without the formation of asci (receptacles containing spores). They consist of the Monilias, the Pityrosporon of Malassez, and, of a higher order and more nearly related to yeasts, the Blastomyces and Coccidioides. These fungi are members of the great botanical division of the Thallophyta, and have a vegetative part consisting of mycelium, made up of filaments or hyphae, usually septate, and a reproductive part consisting of spores which multiply by budding, or under certain conditions are developed from hyphae as lateral buds or conidia.

As early as 1889, when Tommasoli described six different yeasts which might occur in the epidermis, it was known that yeasts were common denizens of the skin, and to be found chiefly in moist intertriginous parts such as the axillae and genito-crural region. They seem to be especially common in the skin in tropical countries, and Castellani years ago observed a number of cases of yeast infections in Ceylon, to which he gave the name of intertrigo saccharomycetica.

There was no consensus of opinion, however, as to whether the yeasts were responsible for the intertrigo or simply existed in these regions as harmless saprophytes. Since then cases have been reported from time to time in which fungi believed to be yeasts and to be pathogenic have been isolated in intertriginous dermatitis. In the light of the study of monilia infections and further knowledge of the true yeasts it appears that in such cases the fungi are not saccharomyces, but monilias and other yeast-like fungi. It is now known that the yeast fungus itself is not pathogenic; when inoculated on the skin it produces no definite lesion, and men whose occupation entails constant handling of yeast, such as workers in breweries, are not specially subject to dermatitis, whilst baker's itch, once attributed to yeast, is now considered to be due to the hygroscopic action of the dough itself.

* Delivered before the Isle of Thanet Division of the British Medical Association.

MONILIAS.

The monilias belong to the family of the Oosporaceae. They reproduce themselves by free spores or conidia, and present budding forms on cultivation on artificial media. The spores are ovoid or rounded in shape, vary in size from 2μ to 6μ in diameter, and have a tendency to be arranged in chains, hence the name monilia, from *monile*, a necklace; the mycelium shows hyphae, which are usually long and septate. In culture the fungi are Gram-positive, liquefy gelatin, and ferment certain sugars such as glucose and maltose, with, in the case of glucose, the formation of gas and the emission of a characteristic odour. They grow readily on Sabouraud's maltose agar at 25° C. in from twenty-four to forty-eight hours; young cultures show round or ovoid yeast-like cells, and older cultures single or branched mycelial hyphae with lateral buds.

There are several varieties of monilia, certain of which are pathogenic, while others are only saprophytic. Morphologically they may be indistinguishable, but differences can be detected by means of biochemical tests based on their capacity of fermenting different sugars. The most familiar member of the group is the *Oidium albicans* of thrush, which it is now customary to designate the *Monilia albicans*. Other well-known pathogenic monilia are the *M. pinoyi* and *M. candida*.

The *M. albicans* is a slightly higher fungus than the others in that culturally it occasionally shows endospores, and certain mycologists have claimed it as an endomyces. The cultural distinctions between the *M. albicans* and the *M. pinoyi* on maltose agar are as follows: the *M. albicans* at 25° C. grows in twenty-four to forty-eight hours as a crinkled culture of a light yellowish-brown tint, while the *M. pinoyi* on the same medium and at the same temperature appears as pinhead-sized hemispherical colonies, which are smooth, shiny, and of a dirty beige tint, which is darker in the centre.

Mucous Membrane Lesions due to Monilia.

Monilias may produce lesions in the mucous membranes in the mouth, vagina, anus, and bronchi. It was in 1853 that Charles Robin gave the name of *Oidium albicans* to the fungus of thrush, and it was believed for long afterwards that this familiar clinical condition was due to a single fungus. It is now known that a number of different fungi may be responsible for it, not only monilias, but cryptococci, and possibly others.

In the mouth the fungi produce the well-known whitish or cream-coloured, wash-leather-like membranous patches, situated on the tongue and the inner surface of the cheeks, which on removal leave a raw red surface but no ulceration or bleeding. Not infrequently cracks appear on the tongue or at the commissures of the mouth, where they may be associated with maceration, desquamation, and crusting of the red portions of the lips, and with an erythemato-squamous dermatitis spreading for a quarter of an inch or more from the corners of the mouth, which is generally known as "perlèche," and was attributed until recently either to a streptococcal or staphylococcal infection.

In a case under my care, in a boy aged 10 years, with extensive thrush of the mouth and associated perlèche, *M. pinoyi* were found in scrapings of the scales at the angles of the mouth as well as in the buccal mucosa. In another case, in a girl aged 8 years, crusted, cracked patches were present at the angles of the mouth, at the nasal orifices, and on the eyelids, and from these lesions the *M. pinoyi* was isolated and cultivated.

In 1929 Finnerud reported an epidemic of perlèche in an orphanage near Chicago in which 100 cases occurred out of 1,250 children.

It appeared first as greyish-white thickenings on the mucous membrane side near the angles of the mouth and spread out on the neighbouring skin in the form of erythemato-scaly or crusted patches with one or more cracks. In certain of the cases perlèche-like lesions were also present at the nasal orifices, and in one or two instances scaly patches like seborrhoeic dermatitis were observed on the chin and cheeks. In 77 per cent. of the cases fungi of the monilia or cryptococcus type were isolated. It was believed that the infection in this epidemic had been spread by drinking-vessels, sucking pencils, the use of common towels, kissing, or possibly by the habit the children had of sharing fruit with each other and even biting the same apple.

In the vagina monilia infection may give rise to a membranous or purulent vaginitis suggesting gonorrhoea. It would seem to be specially prevalent in diabetics and in pregnant women. Cases of conjugal infection where a

husband has presumably contracted it from an infected wife have also been reported.

Monilia infection has been known to occur in the mucosa near the anal orifice in association with the presence of the fungus in the rectum and in the faeces, and to spread from there to the circum-anal skin; it may also occur in the urethra and glans penis.

Skin Lesions due to Monilia.

The lesions of the skin which may be caused by monilias are almost as multiform as those due to the fungi of ringworm. At the same time apparently identical lesions may be produced by different monilias, and it is just as impossible to predict the exact fungus responsible in monilia infections from the appearance of the clinical lesions as it is to foretell the precise microsporon or trichophyton which has caused a patch of ringworm. The cutaneous lesions due to pathogenic monilias may be widely distributed, certain parts, such as the intertriginous regions, being specially involved, or they may be localized in one or more situations as in perlèche or perionychia.

The disseminated type is met with most commonly in suckling infants, in whom the eruption may or may not be associated with buccal thrush. It is usually first seen around the anus, and spreads from there to the genito-crural fold and genitalia and down the thighs. In severe cases it may extend to the buttocks, abdomen, interdigital spaces of the hands and feet, and may even be met with on the palms, soles, and face. The initial lesion is either an erythemato-squamous macule, or a superficial vesicle or vesico-pustule, which on rupturing leaves a small denuded surface enclosed by a ring of undermined epidermis. These lesions increase peripherally to form confluent patches with an indefinite border of detached epidermis, beyond which are numerous isolated vesicles or inflamed scaly macules. In older patches the scaliness may so predominate that an appearance results which is indistinguishable clinically from ringworm. As a rule, however, the presence of the detached epidermal border enclosing a pinkish, somewhat moist central patch will serve to indicate the diagnosis.

In severe cases the fungus may be present in the alimentary tract and stools, and it is in such cases that there is a danger of general infection, which has been known to terminate fatally. Buccal moniliasis in sucklings may lead to infection of the nipples and breasts of the mother.

In the adult the intertriginous regions usually implicated in body ringworm—namely, the genito-crural region, axillae, beneath the breasts in stout women, and the interdigital folds—are the usual sites of infection. As in the infant, the eruption begins as minute papules or vesicles which eventually form a red scaly patch, irregular in outline, occasionally fissured, and bounded by an edge of detached epithelium, beyond which variously sized discrete lesions may extend for some distance. The presence and growth of the fungi in the skin causes itching, and certain cases of pruritus ani or vulvae are caused by it.

E. C. Smith, in an interesting paper on dermo-moniliasis among natives of West Africa, isolated monilias which he regarded as pathogenic in connexion with a desquamative dermatitis of the scrotum, psoriasis-like patches scattered over the trunk and limbs, and lesions of an impetiginous character covered with crusts. The fungus, believed to be *M. pinoyi*, was found microscopically in scrapings, in culture, and in histological sections about the hair follicles, but not in the hairs themselves.

There are various factors which predispose the skin to monilia infection by rendering it a suitable soil for the growth of the fungus. These are the moisture and warmth of the intertriginous regions; excessive sweating; the presence of glycosuria, sugar favouring the growth of the fungus; and maceration of the skin from wet dressings, or from immersion in continuous baths, such as those employed in Vienna as a routine treatment for certain cutaneous affections. In the continuous bath cases it is usually most marked about the hands, knees, and axillae, regions which are not continuously immersed, but for parts of the day are out of water and exposed to the air.

In the interdigital folds monilia infections are indistinguishable from ringworm, and may occur as a papular or vesicular eruption like dysidrosis, which spreads from the clefts to the neighbouring skin of the back of the hands or the dorsum of the foot, or it may appear as whitish patches of sodden skin, not infrequently fissured, to which type of lesion Fabry gave the name of "Erosio interdigitalis seu blastomycetica."

Another variety of monilia infection is perionychia, chiefly of the fingers, with a pad- or bolster-like swelling of the nail-walls, which on being squeezed emits a bead of pus on to the nail-plate, the result of the presence of minute abscesses on the undersurface of the nail-wall. This condition is painful and singularly intractable. It is most common in women, and seems to be especially prevalent in those whose occupation necessitates the handling of sugar, such as confectionery workers, pastrycooks, etc. In these industries various factors are combined which further the inoculation and growth of the fungus—for example, the heat of the workrooms, the moistness of the hands of the operators, the sugar, and the liability to abrasions from sugar granules or traumatism.

The nails themselves may be infected by monilia by spreading of the fungus from the nail-fold or the nail-bed. The appearance of the affected nails is similar to ringworm. In both the nail-plate becomes opaque, discoloured, irregular, ridged, and brittle, and may be raised up from the nail-bed by greyish-white keratotic masses. In certain cases the infection takes place from the mouth, and may persist indefinitely after the buccal thrush has been cured.

In a case of this kind which came under my observation a lady sought advice on account of an affection of the nails of the hand which had been present since childhood. The appearance of the nails suggested ringworm, but on microscopical and cultural examination the fungus found proved to be the *M. albicans*. All manner of treatment had been tried without success, and even on one occasion the nails were removed, but the affection recurred with their regrowth. There was a history of recurrent attacks of inflammatory perionychia, but at the time of examination the perionychia was quiescent. As it had been present in infancy it was regarded by the patient as a congenital defect. On questioning her it transpired that as a baby she had suffered from persistent buccal thrush, and there seemed little doubt that the infection had taken place at that time and continued ever since.

This case is interesting in that it shows that an apparently trivial action such as sucking the fingers in infancy may have a profound influence throughout life.

Pathogenicity of the Monilias.

Numerous inoculation experiments have proved that certain monilias are definitely pathogenic. By inoculation on normal skin of culture material from monilia lesions in the mouth or skin a vesico-pustular dermatitis can be produced, and from the roofs of the vesicles and from scrapings of the experimental lesions the fungus can be recovered, demonstrated microscopically, and successfully cultivated. Conclusive experiments of this kind have been done by various workers, including myself, both with the *M. albicans* and the *M. pinoyi*. As a rule the artificially produced lesions clear up rapidly under treatment or even become involuted spontaneously, but this does not invalidate the pathogenicity of the fungus, as the inoculated skin may have been uncongenial soil for its growth. The inoculations took best in the intertriginous situations, such as the anal fold and the interdigital spaces.

In the epidemic of perlèche described by Finnerud, lesions of a persistent type and indistinguishable from perlèche were produced in nine out of ten cases experimentally inoculated from pure culture of monilia, and from them the organism was recovered and cultivated.

So far as I am aware no successful experiments have been carried out in connexion with inflammatory perionychia due to monilia in man, but Guggenheim claims to have infected the claws of a guinea-pig by the inoculation of a culture from moniliasis of the human nail. Animal experiments have also been done with the fungi in mice, rats, rabbits, and guinea-pigs, by local inoculation on the shaved skin and by subcutaneous, intraperitoneal, and intravenous injection. In this way inflammatory lesions have been produced in the skin of a papulo-vesicular or scaly type, while intravenous injection of a culture of *M. albicans* in mice has proved fatal, and intramuscular inoculation in a guinea-pig has given rise to local abscesses.

In short, both human and animal experiments have proved that two at least of the monilias are pathogenic and conform to Koch's postulates.

Diagnosis of Moniliasis.

The diagnosis of cutaneous moniliasis from the clinical appearance of the lesions is as a rule impossible, but the presence of lesions in intertriginous parts associated with buccal thrush should naturally suggest a common origin, and the peculiar type of perionychia with its bolster-like nail-wall, beads of pus, and discoloured, opaque nail-plate should point to a monilia infection. In every instance the diagnosis should be confirmed by a microscopical examination. With this object scrapings should be made of the cutaneous patches or of the affected nails, and examined microscopically, either in potash solution or after staining by Gram or gentian violet, and the microscopical findings confirmed by cultivation on maltose agar.

Treatment of Moniliasis.

The treatment of moniliasis depends on the situation affected.

In buccal cases the mouth should be cleansed with a 2 per cent. aqueous solution of borax and potassium chlorate, and the membranous parts of the tongue and cheek painted subsequently with a 1 per cent. aqueous solution of gentian violet. The use of artificial teats should be discontinued as they are liable to harbour infection.

Lesions in the intertriginous parts should be treated with potassium permanganate baths followed by the application of a 2 per cent. benzoic and salicylic ointment, or of a 2 to 5 per cent. solution of gentian violet in 15 per cent. spirit.

In the interdigital spaces the papulo-vesicular type may be cured by the use of Whitfield's benzoic and salicylic ointment or by the application of 1 per cent. chrysarobin ointment, but in the resistant type with white sodden fissured skin more drastic treatment is necessary, and it may even be necessary to resort to curettage and the application of 5 to 10 per cent. solution of silver nitrate.

In perlèche from monilia the application of 6 to 10 per cent. solution of silver nitrate or the gentian violet solution should effect a cure.

In suppurative perionychia the hands should be immersed in warm saline solution for half an hour, dried, and then painted with 5 per cent. solution of silver nitrate or 10 per cent. solution of iodine, which should be pushed in below the nail-walls as far as possible with a soft camel-hair brush. This treatment should be repeated at intervals of two or three days until a cure is effected.

In monilia of the nails the treatment is as unsatisfactory as in ringworm. An attempt may be made to cure them by soaking the affected fingers in warm saline solution, scraping the nail-plate as thin as possible, and dressing either with the following iodine solution (iodine 1, potassium iodide 2, water 1,000) or with Fehling's solution. It may even be necessary to extirpate the affected nails, and treat the nail-bed freely with gentian violet solution till regrowth of the nail takes place.

THE PITYROSPORON.

The second yeast-like fungus to which I wish to refer is the pityrosporon.

This organism was first recognized by Malassez in 1874, and was named after him the "spore of Malassez." It was designated subsequently by Unna, on account of its shape, the "flask-shaped bacillus" or *B. asciformis*, by Hodara the "balloon bacillus," and by Sabouraud the "bottle bacillus." As the organism is one of the yeast-like fungi of the family of the Cryptococcaceae (Kützing), and not a bacillus, it is inadvisable to perpetuate these synonyms, however descriptive of its morphology they may be, and to adhere to the title of "spore of Malassez," or, as it produces a scaly dermatitis, the pityrosporon. Like the monilias it is of a lower order than the yeasts, and shows no reproductive asci on cultivation; it is believed to be closely allied to the *Microsporon furfur* of pityriasis versicolor.

Morphology.—The morphology of the fungus can be studied in extempore preparations of scales and scrapings in liquor potassae, and in stained preparations of scales and cultures. It is Gram-positive, and stains readily with gentian violet, methylene blue, and Giemsa. Its spores are polymorphic, and vary considerably in shape and size. Their usual form is that of a gourd or flask with a large spherical portion surmounted by a small, rounded process or bud, but they may be hour-glass shaped, or, more rarely, ovoid, round, or sausage-shaped. In size they average from 2μ to 4μ in their long diameter. They may be arranged singly or in groups or chains varying in number up to twenty or more. In preparations from the skin and cultures from solid media no mycelium can be detected, but in fluid media mycelium is found in abundance in the form of delicate non-septate hyphae with clubbed extremities and lateral buds. It is distinguished from monilia in that the spores are polymorphic, instead of being ovoid or lemon-shaped; they average in size about 3μ in diameter, while the monilia spore averages about 4μ, and on cultivation the pityrosporon shows no mycelium on solid media, but abundant mycelium with thin, delicate hyphae in fluid media, while monilia shows mycelium with thick hyphae in solid media and no mycelium in fluid media.

Cultivation.—Great difficulties have been met with in the cultivation of this organism. As early as 1908 Mr. W. G. Garner, pathological assistant in the laboratory of St. John's Hospital, succeeded in growing it at 25° C. on acid glycerin agar, Sabouraud's maltose agar, and peptone broth with the addition of 1 per cent. oleic acid and 1 per cent. glucose, by scraping scales off the scalp with a sterilized knife into a sterile watch-glass and planting them on the media. On solid media it grew in twenty-four to forty-eight hours as a white, glistening, smooth culture, which readily assumed a yellowish or fawn tint. On oleic peptone broth it appeared as a flocculent growth in which an abundant fine mycelium was present. Other workers also claim to have grown it; in 1926 Templeton reported that he had cultivated it on beerwort agar, and in 1929 Panja announced that he had succeeded in getting it to grow on scales as chalky points or pinkish bead-like masses in a medium consisting of equal parts of meat infusion in 15 per cent. glycerinated water and egg, tinged with gentian violet to inhibit the growth of staphylococci, and that in subculture he had been able to grow it on all laboratory media, but best on glucose agar.

Biochemical Reactions.—It ferments galactose with no gas formation, maltose with slight gas formation, and glucose with slight gas formation; it does not ferment saccharose, insulin, lactose, and mannite. Gelatin is not liquefied by it.

Cutaneous Lesions Caused by Pityrosporon.

(1) *The Scalp.*

On the scalp the pityrosporon produces the familiar condition variously known as dandruff, pityriasis capitis, or seborrhoeic dermatitis of the scalp. In its mildest form this affection occurs as delicate, pellucid, powdery scales, either present between the hairs or around them in the form of small collarettes, which are shed when the hair is brushed, and tend to fall down and collect on the coat collar. It begins as minute scaly patches, which extend and coalesce, and, as the affection is progressive, eventually cover the whole scalp.

In mild cases the inflammation of the scalp is so slight that no obvious signs of it can be detected, but in severe cases there is an inflammatory base, which extends beyond the scaly areas, and the scales themselves, instead of being fine and powdery, are coarse and greasy. In the affected parts the hair becomes lustreless and brittle, and tends to fall out, at first about the vertex and sides of the forehead, leaving bald areas, which gradually spread till only a fringe of hair is left at the sides of the head and the occiput, where it may persist long after the rest of the scalp has become bald.

In many of the cases the defluvium of the hair is associated with a greasy condition of the scalp due to an oily and waxy substance containing an excess of oleic acid or stearin, which oozes from the orifices of the follicles. The oiliness of the scalp may be aggravated by a hyperactivity of the sweat glands (hyperidrosis oleosa).

(2) *Glabrous Skin.*

The pityrosporon infection is liable to spread from the scalp on to the glabrous skin, and to be responsible for the different types of lesion which have been grouped together under the heading "seborrhoeic dermatitis." These consist of scaly papules, scaly patches on an inflamed basis, characteristic circinate or gyrate patches with a well-defined border of a brownish-yellow tinge and a smooth or slightly scaly surface, and eczematized patches situated chiefly in the flexures of the larger joints and in the intertriginous regions. These different types of lesion are due to individual peculiarities of the skin affected, differences in the situation of the lesion, and secondary changes from

rubbing, scratching, and the inoculation of septic organisms. From the scalp it spreads readily on to the forehead in pinkish scaly festoons (corona seborrhoeica), down behind the ears, and on to the nape of the neck. On the face it may occur as ill-defined, pinkish, scaly patches, or it may attack the eyebrows, margins of the eyelids, or moustache region, giving rise to chronically inflamed scaly patches. On the trunk it is frequently met with in the sternal and interscapular regions in the form of circinate or figured lesions, to which the appropriate name of pityriasis circinata has been applied, and which have for long been popularly known in this country as "flannel rash," since the wearing of flannel next the skin predisposes to the eruption, as it encourages the growth of the fungus by increasing perspiration and sebaceous flux, and by keeping the skin moist and clammy from its non-absorbent characteristics. It is also liable to affect the intertriginous regions—namely, the axillae, genito-crural fold, and interdigital spaces, and is not infrequent about the umbilicus, nipples, and scrotum, where it is liable to become cracked, moist, and eczematized.

Other types of lesions may be met with on the trunk, such as groups of small follicular papules with definite horny plugs or patches with a reddish border studded with minute vesicles. On the limbs it is generally most marked on the flexor aspects, especially the bend of the elbows and the popliteal spaces. On the scalp and trunk it is generally associated with itching, which is aggravated by heat, and which leads to scratching and eczematization, and in rare instances to exfoliative dermatitis.

Pathogenicity of Pityrosporon.

It is only recently that the pityrosporon has been established as the cause of seborrhoeic dermatitis. It occurs invariably in the different lesions of that disease, and is present in the scales of dandruff, in the scaly lesions about the trunk and intertriginous regions, in the circinate and gyrate lesions, and in the horny plugs in the follicular type of lesion, and is absent in other types of scaly dermatitis. Experimentally it has been proved to be pathogenic on the human skin and scalp, and to be non-pathogenic in the usual experimental animals, such as mice, rabbits, and guinea-pigs.

Though it had long been known that seborrhoeic dermatitis is auto-inoculable and capable of transmission from one person to another directly by contact, as in the case of a suckling infant infecting the breast of the mother, or indirectly by the medium of infected brushes, combs, caps, etc., and although it had been regarded as the cause of dandruff by Unna and others, it was only in 1928 that conclusive inoculation experiments proved its pathogenicity. These experiments were carried out by Dowling in the St. John's Hospital Laboratory, and are described in detail in a paper published by Dowling and myself in the *British Journal of Dermatology* (1928, xl, p. 139). The experiments were briefly as follows:

E. *Cxriment 1.*—A drop of suspension of the fungus in water among ected intradermally in patients with seborrhoeic dermatitis. regarded *ment 2.*—Organisms taken from cultures of pityrosporon dermatitis*lanted after light* scarification in patients with seborover the t*matitis and in controls on normal skin.*
character co*instance lesions precisely similar to seborrhoeic dermat*oduced by the inoculation, these being most marked *M. pinoyi*, uffering from the disease, and especially in greasy culture, and in cases the artificially produced lesions were even but not in the than those which occurred spontaneously. They

There are variety-four hours, reached their maximum develop-monilia infection by and persisted two to three weeks before growth of the fungus. spontaneous lesions, they appeared first as of the intertriginous uged in groups, and under suitable con-presence of glycosuria, s haracteristic circinate lesions.
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marked about the hands, knees, *Considerations.*
are not continuously immersed, *tury a controversy has raged*
are out of water and exposed to t*oeic dermatitis, and the*
In the interdigital folds monili*of discussion in derma-*tinguishable from ringworm, and m*This has been due not* or vesicular eruption like dysidrosis, *s attempts to cultivate*
the clefts to the neighbouring skin of th*at it is not present*

alone in the scales, but generally in symbiosis with other organisms believed in the past to be pathogenic. These organisms are: (1) a slightly virulent staphylococcus known as the "grey coccus" of Sabouraud from the tint of its culture, or the "morococcus" of Unna from the arrangement of its cocci in mulberry-like clusters; (2) a small bacillus known as the micro-bacillus of Sabouraud or the acne bacillus of Unna which occurs in scales and scrapings from seborrhoeic dermatitis and in vast numbers in comedones.

The "grey coccus" is found chiefly in symbiosis with the pityrosporon in the more acute types of seborrhoeic dermatitis with greasy scales of both the scalp and glabrous skin, its precise relation to the lesions being undecided, but it seems most probable that it is of secondary importance and responsible for aggravating the lesions already produced by the pityrosporon by increasing the inflammatory disturbance. The micro-bacillus was believed at one time to be the cause of the comedo and also of seborrhoea, but is now almost universally regarded as non-pathogenic.

Another controversial factor in connexion with pityrosporon infections is the greasy condition of the skin due to excessive activity of the sebaceous glands, and to some extent of the sweat glands, known as seborrhoea. This is most marked where the glands are largest, as about the intertriginous regions, sides of the nose, auricles, etc. It was believed by certain writers to be a pathological condition, and it has even been suggested that it is of microbic origin; Sabouraud, for example, attributing it to the micro-bacillus. Its importance lies in that it renders the skin a favourable soil for the growth not only of the pityrosporon but of staphylococci, such as the grey coccus, the excessive growth of which may be largely responsible for transforming rather insignificant scaly lesions into acute inflamed itchy patches covered with greasy scales.

The microbic theory of the origin of seborrhoea, however, is no longer tenable, and it is now believed to be essentially a physiological process which becomes active in most individuals about puberty in association with the appearance of hair in certain regions of the body, and may persist through early adult life, but which may be met with also as a hereditary peculiarity running in families, an idiosyncrasy, or an acquired condition the result of a dyscrasia due to some endocrinal derangement, or of a faulty dietary with an excessive fatty or carbohydrate intake.

The exact mechanism by which the falling of the hair takes place in seborrhoeic dermatitis of the scalp is uncertain. It has been attributed on the one hand to the direct action of the pityrosporon, and on the other hand to the underlying seborrhoea. A third suggestion is that it is due to an interference with the balance which normally exists in the pilo-sebaceous follicle between the hair and the sebaceous gland, and that when the gland becomes hyperactive and hypertrophic the hair itself undergoes a compensatory atrophy.

BLASTOMYCES.

Another pathogenic yeast-like fungus is the blastomyces, so named by Gilchrist in 1894, a fungus of which we have had comparatively little experience in this country. The cases of infection by it have nearly all been in America, and only a few have so far been reported here, though in all probability others have occurred which have escaped recognition.

This fungus is nearly related to the pityrosporon, and is one of the pathogenic cryptococci. It is readily found in the crusts and sero-purulent discharge from the lesions caused by it and in small abscesses in the tissues.

It occurs as round or oval bodies, arranged singly, in pairs, or in small groups, 5μ to 10μ or larger in diameter, with a single or double wall and a fine granular protoplasm.

In culture it shows a rudimentary mycelium with short pod-like segments containing spores. It reproduces itself either by budding from spores or by lateral and terminal conidia or short hyphae, but never by the formation of asci. It grows on ordinary media; on glycerin agar it appears in about seven days as greyish-white colonies, and on blood agar at 37° C. it has been grown in three days as small cream-coloured colonies. It neither liquefies gelatin nor ferments sugar. It is pathogenic in man, and in mice, rats, guinea-pigs, sheep, etc. When introduced intraperitoneally in experimental animals it gives rise to a systemic infection with the formation of abdominal nodules and frequent involvement of the testicles.

Lesions in the Skin Produced by the Blastomyces.

The lesions in the skin caused by the blastomyces, constitute what is generally known as blastomycetic dermatitis. They begin as groups of small, reddish-brown nodules, which increase and coalesce to form irregular patches, which may be dry and hard or moist and soft, and are separated by fissures from which oozes a sero-purulent or sanguineous discharge, which wells out when the patches are squeezed. The borders of the patches are well defined and abrupt, and usually slope gradually down to the healthy skin. The lesions so closely resemble the verrucose type of tuberculosis cutis that they are usually mistaken in the first instance for it, and the diagnosis is only established by the discovery of the fungus.

The patches are usually multiple, are spread by autoinoculation, and are most commonly situated on the face, hands, back, and legs. Histologically they are verrucose granulomata with minute abscesses in the epidermis and corium, where the fungus can usually be detected. The infection, as a rule, remains local without glandular involvement, but in rare instances it has been known to become generalized and to invade the internal organs, with the production of multiple abscesses.

Under suitable treatment with potassium iodide retrogressive changes may take place, with the formation of red, shiny, smooth cicatrices, which may completely or partially replace the whole lesion.

COCCIDIOIDES.

The "*Coccidioides immitis*" of Rixford and Gilchrist is the last of the yeast-like fungi to which I wish to refer.

It is a more highly developed fungus than the blastomyces, belongs to the family of the Endomycetaceae, and forms a connecting link between monilias and true yeasts. It occurs in the tissues as variously sized, rounded bodies, much larger than blastomyces, of 10*u* to 30*u* or larger in diameter, some of which contain spores. It grows slowly on dextrose peptone agar in the form of a milky white culture, which subsequently becomes cream-coloured. It reproduces itself by endosporulation in the tissues, the spores being small and capable of dissemination through the blood stream and lymphatics, and in culture it shows mycelial threads, which may be branched or straight, and asci.

The fungus is found in the discharge from cutaneous lesions, in the pus from abscesses, and where the infection has become generalized in the sputum, blood, urine, and faeces. In the tissues it may be found in small abscesses or in the midst of the granulomatous infiltration, either free or in giant cells of the Langhans type, in the form of round or oval bodies, sometimes containing a large number of spores. The fungus does not ferment sugars. It is pathogenic in man, and in the lower animals, such as mice, rabbits, and guinea-pigs.

Unlike the blastomyces it usually gives rise to a general infection which only occasionally originates in the skin, and most frequently takes place through the lungs and affects the skin secondarily. Cases of the infection have been described in the past under various headings, such as saccharomycosis, coccidioidal granuloma, and dermatitis coccidioides, and have occurred chiefly in California, where as many as 160 have been reported. Its most marked feature is the presence of multiple abscesses situated in the skin and internal organs.

In the skin it appears as crops of small nodules, pustules, or occasionally verrucose papules about the size of a pea, which become red, enlarge, soften, and break down, forming ulcers with an unhealthy granulated floor, from which oozes a purulent discharge which dries up to form crusts.

The internal abscesses are present chiefly in the lungs, liver, kidney, and spleen, but may be met with also in the muscles and may cause necrotic changes in the bones. The presence of abscesses in the lungs may give rise to symptoms suggesting tuberculosis, and in the kidneys and intestine to albuminuria and diarrhoea, and the neighbouring lymphatic glands are invariably enlarged. As a result of septic absorption an irregular temperature and malaise occur, and death usually supervenes from pyaemia.

CONCLUSION.

These four yeast-like fungi which we have had under review must be regarded simply as types, for just as there are variants of the ringworm fungus, so there are variants of the monilia, blastomyces, and pityrosporon, but the variations which occur are so apt to be inconstant that their precise classification in the present state of our knowledge is almost an impossibility.

SOME OBSERVATIONS ON THE MENTAL DEVELOPMENT OF FEEBLE-MINDED CHILDREN.

BY

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AND

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DURING the last nine years periodic examinations have been carried out to discover what educational progress, if any, is made by children who have attended the special school for defectives in Bath. Under the Education Acts, it is incumbent on local authorities to provide a special school for those children who, in the opinion of the school medical officer, are incapable of benefiting by education in the ordinary elementary school, but are not so deficient in intelligence or adaptability as to be totally unable to fend for themselves. In other words, the school provides for those children who legally come under the category of feeble-minded. In practice the child is referred from the ordinary school as being probably unable to benefit by instruction at that school, and must have reached the age of 7 before he is allowed to be dealt with by certification. He is examined by a school medical officer, using the Terman scale as the criterion, and if in his opinion he can be classified as feeble-minded, he is certified as such, and sent to the special school. In the course of the present investigation it has been found that quite a large number of children admitted to the special school have proved to be imbeciles—that is to say, they are not able to fend for themselves in life, and therefore must be cared for in some way or other, either by being sent to special residential institutions, or by being placed under the protection of some specified guardian, who may be the parent. This guardian is responsible for the protection of the imbecile against himself and society, and of society against the imbecile. At the age of 7 children may appear likely to turn out to be imbeciles, but where there is a doubt on the subject the child is naturally given the benefit of that doubt, both on humanitarian and economic grounds, and afforded a chance of improvement at the special school. If, as often happens, such children do not improve, it becomes necessary to hand them over to the care of the statutory mental deficiency committee, which is responsible for dealing with imbeciles by sending them to institutions, or putting them under special guardianship, or by supervising them in their own homes.

The special school under discussion contains on an average 45 children—25 boys and 20 girls. They are taught very slowly along ordinary lines up to the level of Standard II or a poor Standard III of the elementary school, and at the same time practical manual work is encouraged. The staff of the school consists of two specially experienced teachers of ordinary school subjects, and of instructors in bootmaking, carpentry, and domestic subjects respectively. The size of the individual classes varies with the number of children being taught in the special departments at any given time. The education authority has power to retain children in a special school until the age of 16.

During the period under review 66 children passed through the school and were discharged as follows: 27 per cent. were passed to the statutory mental deficiency committee as imbeciles—that is to say, they proved unable to fend for themselves in life; 36 per cent. were classified as low grade feeble-minded, probably unable to fend for themselves; and 37 per cent. were considered able to fend for

themselves and not notified to the statutory committee. The actual results up to the end of 1925 are known as regards 52 children, of whom 42 per cent. are at work fending for themselves, 10 per cent. are out of work, apparently failing to fend for themselves, 25 per cent. are at home incapable of work, and 23 per cent. are in institutions. It may be noted that the prognosis of the school medical officer in consultation with the head teacher underestimated the number able to find a position in the labour market.

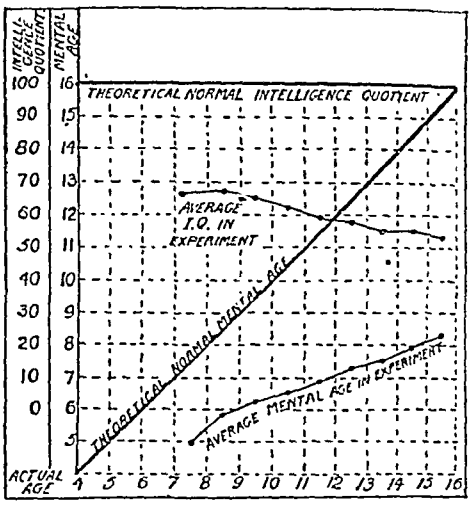
So far as the present inquiry is concerned 82 children were examined by the Terman method, which aims at discovering not only their intellectual capacity, which is a measure of their power of receptive activity, but also their manual dexterity or power of effective activity, and their general capacity for adaptation to life. Long experience and elaborate statistics show that on the whole this test, if it is carried out by an experienced observer who is prepared to use his judgement in the interpretation of results, does afford a very fair indication of the child's general capacity. The scoring of the test establishes the child's mental age (M.A.), by which is meant the age of the average normal child who might be expected to have the same general capacity as the child under observation is proved to possess, and the intelligence quotient (I.Q.), by which is meant the relationship between the actual age and the mental age of the subject under examination. On this reckoning the normal child will have an I.Q. of 100, the precocious child an I.Q. of 100 upwards, and the backward child an I.Q. of less than 100. Of these 82 children, 78 (32 girls and 46 boys) were cases of primary amentia—that is, they had a developmental defect not due to intercurrent disease or injury—while 4 were presumably cases of secondary amentia, 1 (a boy) having a history of birth injury, and 3 (2 girls and 1 boy) of congenital syphilis. Of the 78 cases of primary amentia, 61 were not complicated by other defects. Of these, 31 boys were feeble-minded and 5 were imbeciles, while 20 girls were feeble-minded and 5 were imbeciles. Of the cases complicated by other defects, 2 might possibly be taken out of the category of amentia altogether. Of these, one was a boy with word blindness and idioglossia—that is, word deafness—and the other a boy with severe cerebellar ataxy.

Definite conduct disorder was noted in 7 cases (4 boys and 3 girls), one of the boys being also a haemophilic. This almost exactly tallies with Cyril Burt's estimate of an 8 per cent. correlation between delinquents and certifiable defectives. One girl had severe heart disease, one girl had severe defective vision, and one girl was a cripple. One boy had a severe stammer, one boy was epileptic, and one boy had a cleft palate. It would appear, therefore, that the correlation of gross physical defect with mental defect is not high, though the incidence of minor ill health among mentally deficient children is high. In children with primary amentia this is usually found to be the case. Two children in this group (one boy and one girl) were of the mongol type of mental defect.

In the investigation Terman tests were performed at more or less regular intervals of twelve months on each child, and naturally the M.A. of these children was considerably below their actual age on the first examination. The I.Q.'s on admission to the school were as follows:

I.Q.	Individuals.
80	... 2
75+	... 4
70+	... 13
65+	... 16
60+	... 23
55+	... 7
50+	... 11
45+	... 5
45-	... 1

In the series, therefore, 69.7 per cent. ranged from an I.Q. of 60 to 75 on admission, so that on the average the children had rather less than three-quarters of the capacity which they ought to have had for their age. On subsequent examinations the progress was neither uniform nor consistent with their age development. If reference is made to the accompanying graph, which does not include the imbecile children, it will be seen that the theoretical average advances in mental age one year for every year advanced in actual age, although in practice the advent of puberty and other causes are apt to disturb this completely symmetrical progress. The defectives do not gain a year in mental age with a gain of a year in actual age, and consequently their I.Q. always tends to drop, although in one-third of the children the I.Q. actually shows a rise after their admission to the special school, probably because they are taken away from an atmosphere of unfair competition with other children who they cannot but feel are superior



to themselves. Sometimes it was found that there was no progress whatever from one year to another, but this check was only temporary, and on the whole they definitely, though slowly, advance in mental age right on to 15 years and over, thus showing progress for fully as long a period as the normal. It is interesting to note that in only five cases was there ever an actual drop in the M.A. from one year to another. One girl lost two months between 10 and 11—her present age. One girl showed a drop of two months from 11 to 12, regained the loss between 12 and 13, and then gained six months from 12 to 14. One girl lost two months between 14½ and 15½, but at this age tests are perhaps less reliable. One boy similarly lost two months between 15 and 16. One mongol boy lost a year between 13 and 14, but mongols cannot be considered quite in the same category as ordinary defectives, as the causal factor in the genesis of this very specialized type is not known. If, as is sometimes supposed, congenital syphilis is responsible for the mongol, deterioration at about puberty may be expected, for it is by no means uncommon in other varieties of congenital syphilitic lesions.

The exceptions are so slight that they may be neglected in a generalization that these defectives do progress in a slow but definite manner in the acquisition of general capacity with advancing age right on to 16 years of age. As Sherrington has shown, a child is born with his complete complement of neuroblasts. These neuroblasts are potential neurones or nerve cells, which can only function when they acquire their medullary sheaths. The formation of the functioning neurone appears to be the direct result of interest associated with stimuli derived from the body itself, or from the environment through the organs of common sensation, and more particularly through the distance receptors—sight, hearing, and to a less extent smell. The mentally deficient are no exception to this rule, for they also require to have their neuroblasts converted into functioning neurones, and it is only when the requisite stimuli can be provided and the necessary interest aroused that this can occur. It is reasonable to suppose that such stimuli can be supplied and interest aroused to better advantage when the children are put to tasks within their capacity than when they are subjected to the unfair competition of the ordinary school.

The accompanying graph shows the composite results of the inquiry. In this boys and girls are taken together, and they show a flattening of the curve of progress about the years 11½ to 13½, with a continuation of a rising curve from

15 to 16. In boys the flattening starts at 10½ and continues to about 13½, but the rise to 15 to 16 is quite striking. In girls there is a flattening from 9½ to 10½, and again at 12½, but the late rise is not so marked, though sufficiently obvious. The influence of puberty on the slowing-down periods is, of course, purely inferential, but it is at least suggestive; while the continued rise—which appears to go on after the child leaves the school, since the number of successes exceeded expectation—may be due to a variety of causes. It may be that in the later years of training more attention is paid to manipulative work, and that this develops an inherent power for such performances, which has not previously been given a chance, and so gives more opportunity for the reception of stimuli and arousing of interest necessary to convert neuroblasts to neurones. It must be remembered, however, that the Terman tests are by no means purely intellectual in their scope, and should record capacity for manipulative and intellectual advance apart from achievement, though unless neuroblasts have been converted capacity will remain undiscoverable. On the other hand, the continuance of progress is in accordance with the finding of a previous investigation we made into children of slight degrees of backwardness. This showed that while many of these children failed to adjust to the requirements of life during the school period, they made remarkably good adjustments later on in late adolescence and early adult life. The 15 and 16 year olds may be approaching this period of more successful adjustment, and therefore make a better showing in their tests than might have been expected from the common supposition that mental defectives stop short in their development. The following tables show the findings at the various ages exclusive of the imbeciles.

TABLE I.—*Boys and Girls together (82 Children).*

Age Groups:	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15+
Highest I.Q. found	80	73	82	77	74	71	70	66	62
Average mental age	5	5 6/12	6 3/12	6 6/12	6 11/12	7 5/12	7 7/12	7 11/12	8 4/12
Average actual age	7 6/12	8 6/12	9 7/12	10 6/12	11 6/12	12 6/12	13 6/12	14 6/12	15 7/12
Average I.Q. ...	66	65 9	65.2	61.9	59.4	58.0	55.2	55 5	53 4
Lowest I.Q. ...	46	45	50	47	48	44	42	42	41
No. of tests performed	31	32	39	47	42	44	41	43	47
No. of individuals	27	30	39	46	40	43	39	42	42

TABLE II.—*Boys.*

Age Groups:	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15+
Highest I.Q. found	78	78	82	77	74	71	70	65	61
Average mental age	4 10/12	5 8/12	6 2/12	6 7/12	6 10/12	7 1/12	7 5/12	7 11/12	8 5/12
Average actual age	7 7/12	8 7/12	9 6/12	10 5/12	11 5/12	12 5/12	13 4/12	14 5/12	15 6/12
Average I.Q. ...	64.0	66.6	64.9	63 1	58 7	56 6	55 6	55.5	53.7
Lowest I.Q. ...	46	45	50	47	48	44	42	42	41
No. of tests performed	21	21	25	23	23	22	20	21	22
No. of imbeciles ...	18	20	25	22	22	22	20	20	20

TABLE III.—*Girls.*

Age Groups:	7-8	8-9	9-10	10-11	11-12	12-13	13-14	14-15	15+
Highest I.Q. found	80	72	75	70	70	67	62	66	62
Average mental age	5 1/12	5 9/12	6 4/12	6 5/12	6 11/12	7 3/12	7 5/12	7 11/12	8 4/12
Average actual age	7 6/12	8 6/12	9 7/12	10 6/12	11 6/12	12 6/12	13 6/12	14 6/12	15 7/12
Average I.Q ...	67.7	67.6	66	61.1	60.1	53 6	54.9	54.6	53.1
Lowest I.Q. ...	57	61	60	52	50	47	46	45	41
No. of tests performed	10	11	14	18	19	22	21	22	25
No. of imbeciles ...	9	10	14	18	18	21	19	22	22

Certain points in addition to the continuance of progress stand out in relation to these tests. The early improvement in capacity after admission to the special school illustrates the necessity of removing backward children from competition with normal children of their age, since this always causes them to be discouraged and renders them sullen or mischievous. The low correlation with gross physical defect and conduct disorder is of interest in so far as it fits in with proved statistical records, which are, however, often looked on askance by the medical and lay public because they do not conform with certain preconceived ideas. The whole nature and development of mental defectives is interesting in relation to certain physiological experiments on rats. Mental defect is held to be due to a relative absence of the higher level cortical cells—an amentia. The failure is proved on post-mortem examination to be fairly general in distribution throughout the cortex, and is not localized in any one area. Although these cells are not there to develop, and no new cortical neuroblasts are ever laid down after the period of infancy, the capacity of the child does improve, though slowly, provided he rises to a level above the imbecile. The cells that are present must therefore to some extent assume the functions of those which are missing, for even the conversion of all the neuroblasts present is probably not enough. Professor Lashley and his colleagues have shown that it is comparatively easy to teach rats to find their way through a maze; that when various parts of the cortex are destroyed the rats can still be taught to run the maze, but with greater difficulty. They have, moreover, shown that the difficulty depends not on the localization, but on the extent of the injury, and that, so far as the function of maze learning is concerned, it is a property of the cortex as a whole rather than of any particular part, and that the remaining cells are capable of undertaking, at any rate to some extent, the functions of those which have been destroyed. The analogy between the history of mental defectives and the rats of Lashley's experiments is very striking.

The extent to which it is worth while expending money on the teaching and training of mental defectives is a question which is likely to give rise to a considerable amount of controversy, but the fact that 42 per cent. of the children trained in this particular special school were able to find work, and that only 23 per cent. had to be placed in institutions, is at least encouraging; but even so, there can be little doubt that the colony system on a large scale is the optimum method of dealing with certifiable mental defect in the bulk.

SEPTICAEMIA AND ENCEPHALITIS IN RELATION TO VACCINATION.

BY

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ANYONE who has followed at all closely the history of post-vaccinal fatalities must have been struck by the fact that, until recently, these patients, as a general rule, died from septicaemia, whereas now they die from encephalitis. Much more research than that which has been published is required to determine whether any causal relation exists between vaccination and the encephalitis reported as occurring in such cases, and, if so, what is the nature of such relation.

Of the sixty-two post-vaccinal cases of acute nervous diseases considered by the Ministry of Health Committee in 1925, only six were submitted to post-mortem examination and studied histologically. Meagre details were forthcoming in the majority of cases, and in no case was a blood culture performed either before or after death. It is not surprising, therefore, that the majority of the committee referred to hesitated to find proof of any direct causal relationship between vaccination and the deaths following shortly thereafter. In a minority report, however, the opinion was expressed that there was such a relationship. The medical profession would appear to have ignored the majority report and to have accepted the minority report, for this is the only explanation we can

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find of the curious fact that all such deaths are now reported as "post-vaccinal encephalitis."

Such a case came before us recently when one of us (T. G.) was asked by the coroner for East London (Dr. Guthrie) to make a post-mortem examination on a patient dying in the East London Hospital for Children after vaccination and reported to the medical officer of health as a case of "post-vaccinal encephalitis." The patient was under the immediate charge of the other of us (W. W.), and, in accordance with the usual clinical routine in any case presenting obscure generalized symptoms, a blood culture was made in two broth tubes and on an agar plate, *Staphylococcus aureus* being found in all media. The details are as follows.

A girl, aged 10, was admitted on July 27th, 1929, under Dr. Geoffrey Bourne with a temperature of 103°; she had been vaccinated on July 23rd by the public vaccinator, who used Government lymph, two insertions being made in the left deltoid region. Another child in the family was vaccinated at the same time. The girl seemed to be fit till the evening of July 26th, when she complained of pains in her head and abdomen, followed by two or three attacks of vomiting. She was feverish, but rested well at night. On the morning of July 27th she had a chill and was feverish; she became delirious and very drowsy. The drowsiness persisted all day, and she vomited again. There had been no fits or convulsions, nor any history of recent infectious diseases. She had had measles when 2 years old, and chorea at 5, but she was apparently in good health when vaccinated, and was well nourished.

On examination she was found to be prostrated and semi-conscious, being aroused with difficulty; there was no rash or eruption, except a small, reddened, indurated area over the right tibia. Her colour was good; the respiratory rate was somewhat increased, but there were no rhonchi. The breath was foul, with no odour of acetone; there was marked trismus, and the pharynx was seen with difficulty. The air entry was slightly lessened over the right side of the chest; the percussion note was somewhat flattened, but there were no added sounds. On percussion the cardiac area was found to be normal, and the pulse was thready, 150 to the minute; there was no murmur and no friction rub. The abdomen was soft, and the spleen and liver were not felt. There was no oedema of the extremities, or evidence of paralyses or spasticity. The ear drums were normal, but the pupils were widely dilated, the right reacting to light and accommodation, while the left was fixed; no ptosis was noted, and no facial paralysis, but there was intense papilloedema of the fundi, the disc outlines being very blurred and the vessels greatly engorged. The corneal reflex was intact on both sides. The arm reflexes were normal, but the abdominal reflexes were absent; the knee-jerks were sluggish, there was no ankle clonus, the plantar reflexes were flexor, and the Brudzinski sign was present.

The laboratory findings were as follows:

Blood count: Leucocytes 33,400 per c.mm.; polymorphs 90 per cent.; lymphocytes 9 per cent.; and myelocytes 1 per cent. There were many young polymorphs of the single-lobed variety, with a definite shift to the left in the Arneth count.

Catheterized urine: Acid reaction; protein 0.5 per cent.; no glucose; trace of ketones; no blood; no deposit.

Lumbar puncture: 10 c.cm. of slightly hazy fluid was withdrawn, and no coagulum formed in incubating; the count was 75 cells per c.mm., 90 per cent. of which were lymphocytes; smears showed no tubercle bacilli or other organisms; there was no growth on culture; the protein content was 0.06 per cent., and the chloride content estimated as sodium chloride was 0.64 per cent.

Blood culture: Staphylococcus aureus was recovered. The blood urea figure was 80 mg. per 100 c.cm.

The child remained comatose, but the temperature rose to 104–105° F.; the pulse was hardly perceptible, and the reflexes remained unaltered. Milk and sugar solutions given by the nasal tube were all vomited. Clonic convulsions of the arms and legs developed, with considerable opisthotonos and cyanosis, and the child died on July 28th.

At the post-mortem examination the signs of recent vaccination were apparent as two raised papules over the left deltoid; the lesions were clean. The face and neck were flushed, the tongue was furred, and there was early green discoloration of the abdomen. The middle and lowest lobes of the right lung were adherent posteriorly and to the diaphragm; all lobes were congested except the upper left one. The heart muscle, liver, and kidneys showed cloudy swelling; and there were numerous vegetations of the mitral valve. A Giemsa-stained film of the heart blood revealed numerous staphylococci. The spleen, which was large and firm, contained several infarcts, and the pancreas was injected. The appendix was bound down behind the caecum, and kinked. The stomach contained a small amount of material indistinguishable from intestinal contents; there had been some retroperistalsis, and a small amount of this material was present in the oesophagus and right bronchus.

The brain surface, which was much engorged, was dotted with multiple pyaemic abscesses from which staphylococci were isolated. The meninges of the brain and cord were injected, and the cord was somewhat soft. No macroscopic lesions of the brain or cord substance were detected, and there was no disease of the middle or inner ear.

Death in this case was due, then, to septicaemia and pyaemia. It will be seen that the scepticism with which the fashionable diagnosis of "post-vaccinal encephalitis" was approached was amply justified, and but for the inquiry this case would have found its way into the statistics as one of "post-vaccinal encephalitis."

Another case, attributed by the friends and neighbours (but not by any medical practitioner) to vaccination eighty-six days before death, was investigated by one of us (T. G.) for the North-Eastern district coroner (Dr. Edwin Smith). The details are as follows:

A man, aged 20, was vaccinated on May 18th, 1929. He was treated in May and June for a febrile condition beginning two days after vaccination. He was examined by another doctor on July 16th, two teeth having been extracted the previous day; he was diagnosed as having influenza, and was seen frequently till July 30th, when he was admitted to a municipal hospital with a temperature of 101.4°. Swelling and ulceration of the gums was then present, with suppuration round all the teeth; there were enlarged tender glands on both sides of the neck and in both groins. The spleen was large and tender. The temperature fluctuated between 102° and 104°, and no improvement in the mouth condition resulted from conservative treatment. Complete dental extraction was performed under general anaesthesia on August 1st, but no improvement followed, and the patient died on August 12th.

At the post-mortem examination four recent scars were observable in the left deltoid region, presumably due to vaccination. The inguinal glands were enlarged. The mouth was in a septic condition, and the tongue was covered with sordes; the jaws were edentulous (recent extractions); and osteomyelitis was present. Bacteriological examination revealed large numbers of staphylococci and streptococci, besides a few saprophytes. There was an enlarged gland in the right anterior triangle of the neck. Four ounces of blood-stained fluid was found in the peritoneal cavity. The spleen was much enlarged (24 oz.), as were the mediastinal glands; 8 oz. of blood-stained fluid occupied the left pleural sac, and there was 10 oz. in the right, but no pleurisy or chronic pathological process (macroscopic) was detected in the lungs. Some broncho-pneumonia was present, but no oedema of the glottis.

The kidneys showed macroscopic changes suggestive of leukaemia; sections revealed lymphatic leukaemia, as did sections of the spleen, liver, and brain. There was 4 oz. of blood-stained fluid in the pericardial sac; the heart was flabby, and some myocarditis was present; the vessels were healthy except for scattered atheromatous patches about the aortic valves. Microscopic examination of the blood films showed a lymphatic leukaemia and the presence of staphylococci.

Death was apparently due to septicaemia and osteomyelitis in a case of lymphatic leukaemia.

Since by hypothesis septicaemia and pyaemia can hardly be without effect on any and every tissue of the body, it is an extraordinary thing that the histologist has, with rare exceptions, so little to tell us about the state of the brain and spinal cord in these conditions. Diamond[1] stressed the point that in septicaemia one finds no organism in the brain, although histological examination reveals multiple areas of softening due to a toxin reaction, and not to any definite infiltration of the brain by organisms. These changes he likened to those of disseminated sclerosis. But the changes in post-vaccinal encephalitis have been compared with those in disseminated sclerosis (Turnbull and McIntosh[2]).

On the other hand, although the histology of encephalomyelitis, with its characteristic areas of demyelination, is now on a satisfactory basis, it must constantly be borne in mind that these changes can occur apart altogether from vaccination.[3]

Conclusions.

1. No condition can be fairly described as encephalitis pure and simple unless septicaemia has been excluded as a possible cause by appropriate bacteriological examinations.

2. All cases of severe illness within three weeks after vaccination should be under hospital treatment, in order that the necessary special examinations may be performed; should death occur, the necropsy should include bacteriological and histological investigation of the other tissues as well as those of the central nervous system.

3. Only when a larger number of cases have been examined in a uniform and careful manner can any conclusions be

safely adopted. Meanwhile, it may be fair to suppose that vaccination can light up a dormant infection such as low grade septicæmia.

4. The comparative immunity of infants to complications after vaccination would appear to be due to the fact that they are hardly likely to be harbouring such an infection. As for the still not uncommon gross infection of the vaccination site, young infants are obviously unable to set up such a condition, since they cannot scratch their own arms.

REFERENCES.
[1] Diamond: *Arch. Neurol. and Psych.*, vol. xx, III, p. 521; Grinker and Stone: *Ibid.*, p. 241.
[2] Turnbull and McIntosh: *Journ. Exper. Path.*, 1926, vol. vii, p. 181.
[3] Troup and Weston Hurst: *Lancet*, 1930, i, 556.

PRIMARY CARCINOMA OF THE APPENDIX.

BY

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MALIGNANT disease of the appendix is of some special interest, not only by reason of the popular idea as to its rarity, but also because of the histological and other problems which are concerned. It may therefore be worth while recording a case which illustrates some points of importance in these respects.

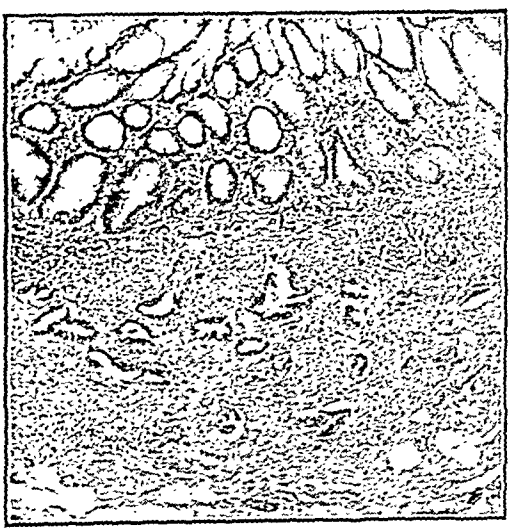


FIG. 1.—Growth in the appendix.

A multipara, aged 56, who had lost one sister from carcinoma of the cervix, but whose personal and family history was devoid of tubercle, sought belated advice for colicky pains and distension, variable in relation to meals; the condition was becoming more constant, and never exhibited periodicity. She gave a history of previous indigestion over a period of some years, sometimes interspersed with fairly severe and prolonged colic. Medical advice she eschewed on the representations of officious friends, who feared for her the "way of the knife." Her symptoms gradually became more severe, and the supervention of some wasting and occasional bouts of vomiting made a consultation imperative. She was constipated; she never at any time suffered from alternating diarrhœa, nor was there ever any declared blood in her stools.

Physical Examination.—The woman was pale and cachectic, and there was loss of dermal elasticity. Her regular pulse of 90 was of a suitset softness in quality. No chest lesion was detectable. The upper abdomen showed a little fullness, and peristalsis could just faintly be discerned. Liver dullness was normal, and no splenic enlargement could be made out. It was observed that while no caput medusæ was in evidence, the protruding umbilicus, quite small, had a nodular cartilaginous feel. In the right iliac fossa there was an indefinite hard mass, freely movable through a small arc of a circle centred at the umbilicus, though not along its radius. The swelling, about the size of an orange, presented no graded upward margin, as in ileo-cæcal tuberculosis, and it appeared to be of uniform consistency. Pelvic examination shed no further light, nor was there any enlargement of the ovaries. Owing to temporary disorganization of plant, and the comparative urgency of the case, radiography was dispensed with. The diagnosis, indeed, seemed clearly to be adeno-carcinoma of the cæcum, or possibly the formative type of ileo-cæcal tuberculosis, either alternative offering a reasonable hope from surgical intervention.

Operation.—A low paramedian coeliotomy was performed, and a little free fluid escaped. The most striking feature was a hardened nodular cake-like mass, consisting of omentum, obviously infiltrated with growth, and receiving at the umbilicus a small but firm attachment to the anterior abdominal wall. From this region it was carried downwards to adhere to, to cross superficially, and to kink, almost to the occlusion of its lumen, the lower four inches of the ileum. From here it proceeded to the appendix, which in part it clothed, and to which it firmly, but sparingly adhered. The appendix, twisted upon itself, presented three ovoid swellings, cartilaginous to the feel, measuring 1 by 1.5 cm., serially arranged in apposition like a string of beads. The mesentery of the appendix was short, thick, and infiltrated with excess of fat. The appendicular lymph nodes were not enlarged, nor indeed was there any evidence anywhere in the abdomen of glandular involvement, save in the portal fissure, and here it formed a noteworthy feature. The serous coat of the appendix was much thickened, but retained its sheen, and was typically pearly. Macroscopically there was no involvement of the cæcum, which was connected to the oval masses by a short length of apparently normal appendix. Systematic and meticulous scrutiny excluded all other of the abdominal contents than the appendix as the *fons et origo* of the primary neoplasm. The precarious state of the patient, no less than the infiltration of the whole of the great omentum and the involvement of the lymph nodes in the portal fissure (a seeming anomaly), precluded further surgical procedure than the removal, *secundum artem*, of the appendix and the freeing from its omental embarrassment of the involved segment of the ileum.

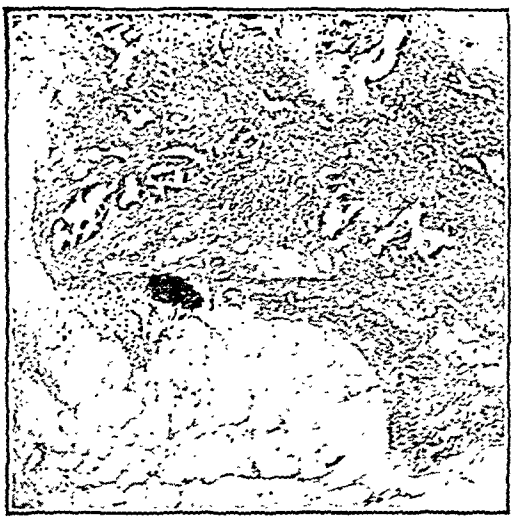


FIG. 2.—Growth in the great omentum.

Morbid Histology.—For the following pathological report on the condition of the appendix and the omentum we are indebted to Dr. Arthur Sladden, director of pathology at Swansea Hospital: "Sections of the appendix show the presence of a growth of the adeno-carcinomatous type infiltrating the whole of the submucous coat. The cells are regular, uniform, and cubical. The portion of omentum submitted for examination exhibits diffuse infiltration with a neoplasm whose cells are of the same general type."

The appendicular neoplasm is generally looked upon as a rare condition. The Mayo Clinic papers, however, place its incidence at 1 in 225 of all cases of appendicitis necessitating operation. Although this figure would seem a little pessimistic, and perhaps not quite in accord with common experience, the growth cannot be so uncommon as one might suppose. Many more examples would undoubtedly be revealed if all appendices removed were submitted to histological investigation.

Much controversy has centred in the phylogeny of the yellow tumour of the appendix, with its characteristic ring

of infiltration of the submucosa. Some, notably Aschoff, relegate it to the angioblastomas. Its cells are so ordered, flattened, and clear that this conclusion is tempting. Other histologists, interpreting these cell appearances as results of low grade anaplasia and tissue pressure, regard the growth as carcinomatous, but of such low malignancy as never to occasion metastases, nor, in the words of Boyd, "to cause the death of a patient."

This case shows that under unfavourable conditions, of which the time factor is one, an appendicular neoplasm can at least infiltrate, and has encompassed the death of a patient. It is evident that this growth, or its probable predecessor, chronic appendicitis, had been troubling our patient for years, and, unfortunately for her, not very severely. Indeed, but for the fortuitous offices of her over-zealous "policeman of the abdomen," the great omentum, she might yet be harbouring a neoplasm of the appendix, still "benign," with little to show for it beyond dyspepsia.

In 90 per cent. of all cases the incidence of the morbid process is at the tip of the appendix. More fortunate, however, is the lot of the 10 per cent. in whom it is found (incidentally and accidentally) in the proximal part, for in this region the early narrowing of the lumen leads to appendicitis of the obstructive type, calling for immediate intervention and its removal out of harm's way, as in the series of cases recorded by Wilkie.

It may be argued that our case is in no way comparable with the typical appendicular neoplasm; that, indeed, it bears the stamp of an evident adeno-carcinoma such as may be found anywhere in the alimentary tract. If that is so, it must be unique and all the more interesting. It must be admitted that macroscopically it is only by straining the imagination that we could describe its colour as yellow. From its histological appearances we should prefer to suggest that it is transitional between the hitherto described "benign carcinoma" of the appendix and the frankly malignant group of alimentary adeno-carcinomas in general. Microscopically, it bears an undoubted resemblance genetically to the so-called "benign carcinoma"; but it has infiltrated, and it certainly exhibits rather more anaplasia in the omentum, where tissue pressure relaxes, and the cell, ever impatient of restraint, automatically becomes more wayward.

ETHER CONVULSIONS.

BY

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CONVULSIONS during anaesthesia are rare, but when they occur they are both dramatic and dangerous. The tragically sudden death of one of my own patients aroused in me a desire to know more about this subject, and led me to make the following collection of existing theories. My own case corresponds very closely indeed with those described by Wilson[1], and may be taken as typical.

The patient was a young adult, aged 28, with a septic lesion (pyosalpinx). The induction was uneventful, and the anaesthesia proceeded without incident for thirty to forty minutes. Suddenly, without previous cyanosis or warning of any kind, twitchings of the face appeared, which spread to the arms and legs until the whole body was in clonic convulsions and the patient had to be held on the table. There was no primary failure of the heart or respiration. Cyanosis did not occur until convulsions had been in progress some time, and was only slight. Death took place before it was well marked. (The death rate is nearly 25 per cent. in the recorded cases. It must be clearly understood that the convulsions come on when the patient is properly under.

Most of the published accounts regard the convulsions as an entirely new phenomenon, the first crop of cases occurring in 1925-26. One observer,[2] however, saw five cases between 1913 and 1925, so that this is not strictly true. Another case is on record dating from 1922. It is certain, however, that they are much more common now than formerly. It may be argued that they occurred before, but passed unnoticed because of their rarity, and it is true that even now they are very rare. McCardie[3] in thirty-two years' anaesthetic practice never saw a case at all, and many other anaesthetists of vast experience are in a similar position. I have seen one case in nearly 5,000 administrations. On the other hand, it is the rarities which get described in the journals, and ether convulsions are so *unprecedented and so fatal that it is justifiable* to assume their incidence before 1925 to be infinitesimal, or some of them would surely have been reported. Delayed chloroform poisoning is also extremely rare, and not nearly so evidently connected with anaesthesia as these convulsions are, but in spite of this it has been known to the textbooks for decades.

Theories of Causation.

The obscurity of the subject is well illustrated by the number of theories purporting to explain it.

Muskens[4] states: "In my book *Epilepsy* I have been able to assemble evidence . . . to prove that the period of transition from unconsciousness to consciousness, as in waking from sleep, is the period *par excellence* for the occurrence of epileptic phenomena. Further, a latent tendency to epileptic manifestations is frequently betrayed for the first time at this period. . . . The period of transition from unconsciousness induced by a narcotic . . . is associated with the same tendency. . . . The evidence afforded seems to me to suggest the question: Why are epileptic manifestations so comparatively rarely seen in persons emerging from narcosis?"

This hypothesis alters the facts to fit the theory. Ether convulsions begin *during the surgical stage of anaesthesia*, and not during the emergence from narcosis. Their most startling and characteristic feature is the sudden occurrence of movements in a person who ought, by all previous experience, to be absolutely immobile. In every recorded case the convulsions began when the patient was either stated or implied to be under. My own case was sufficiently under for the surgeon to sew up the peritoneum without comment. Muskens is either confusing the condition with true epilepsy (during induction or recovery) or with the harmless ether tremor of light anaesthesia. It bears no resemblance whatever to this or to the jactitations of gas administration. Incidentally, most reports, including my own, give a negative history of epilepsy.

Fairlie[5] draws attention to the use of the Pinson bomb in a large percentage of the cases. In 11 of Pinson's 15,[6] and in one recorded by Dickson,[7] this was the method employed. Fairlie suggests that the bomb is the cause, possibly because of something inherent in its superheating of the ether.

Superheating is peculiar to this method, but since the convulsions may occur in the absence of the bomb the theory breaks down. In my own case an ordinary closed inhaler was used, and in some of the others the open method or Shipway's apparatus.

Fairlie[8] also suggests that high concentration of ether or excess of CO_2 is the cause, both of which, he thinks, are specially liable to occur with the bomb method.

But high concentration of ether and excess of CO_2 can also *be obtained by other methods with apparent impunity*. In the early years of the century ether was given exclusively in closed inhalers to patients who had received no preliminary medication whatever (the resulting cyanosis causing ether to be disliked by the surgeons of that generation) and convulsions did not occur. Extreme cyanosis is often seen during inexpert nitrous oxide administration, but it produces nothing more serious than the jactitations of the textbooks, which cease as soon as air or oxygen is given. Again, true ether convulsions are not ushered in by cyanosis.

Hewer[9] brings forward the additional argument that convulsions have occurred during endotracheal administration, when the CO_2 content of the alveolar air is less than normal. Pinson[10] blames high concentration of CO_2, while denying that the bomb is a factor in its production. The same objections apply as in the preceding paragraph.

Hornabrook[11] holds that ether is not to blame, but that the atropine given before anaesthesia is the cause, a dose safe enough in itself being an overdose to a patient under ether.

It is true that atropine in poisonous amounts will cause convulsions, but it is difficult to believe that routine doses can have this effect, when it is common knowledge that they are insufficient to produce the other manifestation of atropinism—pupillary dilatation. If they did, convulsions would be very common and the synergism would be well

known, in the same way that the dangers of chloroform combined with adrenaline are well known. Atropine was in use for years before convulsions were noted. Sington[12] remarks that at Great Ormond Street 1/100 grain is given to all children of 4 and upwards before every operation. Over 7,000 operations take place every year, and no convulsions have occurred. Most of the convulsions recorded are in young adults and the dose of atropine usually given is not greater than those mentioned above, which have been proved safe for children.

Gwathmey[13] puts forward an exactly opposite explanation. Referring to Wilson's paper,[12] he disagrees with the impurity theory and states that Wilson, in his post-mortem report, mentions the cause of death but overlooks it: "the lungs were congested and a small amount of frothy fluid exuded on pressure." Gwathmey found that in animals ether had no effect on the lungs after preliminary medication. In unmedicated controls the lungs were distended, congested, oedematous, and contained petechiae. Sometimes atelectasis and oedema of the alveoli and bronchi took place as well. This, he states, might cause the convulsions by diminishing the oxygen supply.

If this be true, ether convulsions should have been of frequent occurrence during the half-century before the introduction of preliminary medication, and should have declined to vanishing point as the practice became universal. The reverse is the case. They should also occur more frequently in out-patient and general practice, whereas all the reported cases seem to be in in-patients, who rarely escape the preliminary dope.

McDonagh's explanation[14] is original, complex, and comfortably dogmatic. ". . . Anaesthetic substances act by subjecting the protein particles in the plasma to sudden dehydration, and then to an equally sudden hydration. In the first process the protein particles go into solution, and in the second process they . . . tend to become precipitated in . . . the brain. It is to the protein particles becoming arrested in the cerebral vessels that the loss of consciousness is due. Should the hydration persist, or increase to a point where the surrounding nerve cells are damaged, then convulsions, coma, and death are liable to occur . . . It thus comes to pass that there is no fundamental difference between the convulsions occurring during anaesthesia and the convulsions . . . that are met with in . . . shock, eclampsia, status epilepticus, tetany, etc."

This is abstruse, and, I think, not free from discrepancies. If anaesthetic convulsions are identical in cause with eclamptic and epileptic fits why should anaesthetics be an infallible method of stopping these fits, as in fact they are? According to this theory anaesthesia should make them worse. Again, the theory does not explain why the hydrated protein particles should only have produced deleterious results during the last few years.

The late S. R. Wilson[15] attributed the convulsions to impurities in the ether, which must for historical reasons have recently arisen, due either to changes in the method or materials of manufacture or to modern methods of administration. His paper should be read by all interested in the subject. He concluded that the cases did not correspond to any known form of anaesthetic collapse, and that the safety of ether was seriously assailed. All the patients were young and most of them toxic. He recommended that only pure ether be used, and that it should be periodically tested and always stored away from light and air. Amber bottles and bone or ivory tubes should be used for Shipway's apparatus and stale ether discarded. All convulsions should be reported and the ether preserved.

The above precautions were all proved to be desirable by Wilson's experiments on the formation of peroxides and aldehydes in ether, but my own case, among others, demonstrates that impurities are not the sole cause. Aether puriss. (B.D.H.) was used from a stock bottle of amber glass wrapped in black paper, so that the action of light can be excluded. A clean closed inhaler was used, so there was no question of stale ether or the production of impurities by gaseous bubbling. The makers sent me an analysis of the batch of ether as marketed, which showed it to be pure, but, as many people had access to the anaesthetic room, it was quite possible that stale ether had been poured back into the bottle. The makers kindly analysed samples from this, and the results showed that no deterioration had taken place except for slight traces of mechanical dirt. Peroxide was less than 0.05 per million and aldehydes were absent. Wilson claims that these are toxic if present to the extent of 0.5 per cent.

Overdosage is suggested by Kirkby Thomas.[16] My own case was never very deeply anaesthetized. The patient was an easy subject and sufficiently relaxed when moderately under. I have had hundreds of patients far more deeply under without incident.

Hadfield[17] suggests some unrecognized impurity, but himself dismisses this theory because the suspected batches of ether have been used for many other patients without ill effects. The same writer[18] quotes an explanation from an unnamed source to account for the sudden outbreak in 1926. At the end of the war the Government sold large stocks of good ether, and manufacturers used them instead of making their own. As soon as these stocks were exhausted and ether manufacture was restarted convulsions began to be noticed.

Hadfield's inquiries as to the truth of this story were met with denials, as were my own. In any case the story collapses on examination. The Government ether was not a gift from the gods. Presumably it would come from the same sources as civilian ether, sources which would be working continuously before, during, and after the war. The army consumption was so enormous that the Government was very unlikely to accumulate sufficient stocks to last the whole country, including the Ministry of Pensions, for eight years. Even if this happened, as Hadfield pertinently remarks, "are we to believe that on resuming manufacture they all became so inefficient as to produce ether which caused symptoms never produced by even the worst ether during the previous seventy years?" Finally, in many cases, including my own, the ether was found to be pure.

Hadfield[19] suggests idiosyncrasy with a qualification. "Probably in all cases it is necessary for one or more of several other conditions to be present at the same time." Heat, sepsis, or other toxaemia, impurities in the ether, and youth in the patient are the other factors assumed to be necessary in addition to personal idiosyncrasy. He illustrates this by a case described as "some thyroid condition." Two operations took place, both attended by convulsions, the second time fatal. Here thyroid toxaemia was present on both occasions. One of Wilson's cases also fits this hypothesis. A patient had an anaesthetic for an open fracture with no ill effects. Three days later another for gas gangrene was accompanied by fatal convulsions. Here the accessory factor only came into play on the second occasion.

But, on the other hand, one of McDonald's cases,[20] a girl of 2, had slight non-fatal convulsions during an operation for cicatricial contracture of the fingers following burns. Two anaesthetics were given to her afterwards without any trouble, a fact which is inexplicable on the hypothesis of idiosyncrasy. It is interesting to note that this is one of the few non-septic cases on record, thus forming a double argument against the theory.

A case described by Bull[21] here crops up awkwardly. In 1919 (again an early date) he met with convulsions in an Arab woman at Basrah. The climate was too hot for ether, and chloroform was used.

This is a strong argument against all the theories which accuse the ether itself. In this case no oxygen was used (see below).

Mennell[22] suggests over-oxygenation. The eight cases which had come to his knowledge were all flooded with oxygen and deeply anaesthetized.

This may be considered in several different ways:

(*a*) Over-oxygenation pure and simple. As an example of the untoward effects of a normal and essential gas there is a condition known to deep-sea divers as oxygen intoxication, but here the gases are supplied under great pressure and the conditions are different. It is for the physiologists to find out whether convulsions can be produced by a mere excess of oxygen at normal pressure. It seems unlikely, because they form a feature of the second stage of asphyxia. My own case was supplied freely with oxygen.

(*b*) The production of impurities in the ether by the action of oxygen. The comparative unimportance of these has already been dealt with.

(*c*) The ability of the nerve cells to absorb more ether in the presence of oxygen. It is true that oxygen often helps to deepen the anaesthesia in a difficult case, but this effect is automatically limited by its sedative action on the respiratory centre. Also, as in my own case, the convulsions may occur when the patient is not excessively deeply anaesthetized.

(*d*) There is another possibility which has apparently been overlooked—impurities in the oxygen itself. In favour of this

tissue the musculature has been completely replaced by fibrous tissues, prolongations from which spread throughout its musculature. The fibrous tissue is well supplied with blood vessels of considerable size and there is no indication of a true sarcoma."

It is noticeable that the sections do not show any inflammatory process, but suggest rather the appearance of a neoplasm.

Endocrine disturbances have been described as a cause of myositis fibrosa progressiva, but probably some non-specific toxin of intestinal origin is an important factor.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A CURIOUS COMPLICATION OF MEASLES AND WHOOPING-COUGH.

THERE has been for some time evidence of a changing character in our common infectious diseases and the complications arising. This has been noticeably so in cases in which measles and whooping-cough have occurred in conjunction. The case here recorded, however, presented features I have never encountered before.

A girl, aged 7 years, of poor physique, but previously healthy, developed a cough in March. A typical whoop came on two weeks later, and at the same time the child commenced a severe cold in the head, with a rise of temperature to 101°. As there was a considerable epidemic of measles also about, I warned the parents that an attack of this disease might be beginning. A typical rash developed on the morning of April 9th, and the progress of the case was as follows.

April 10th. Child very ill; temperature 103°; rash fully out; some headache, cough troublesome.

April 11th. Severe headache; temperature 103°–104°; rash fading on face.

April 12th. Pain in head intolerable; child delirious; became unconscious in the evening; temperature 104°; pulse 140.

April 13th. Child unconscious; in the morning she ceased to move her left leg, and by evening her left arm was also to all appearances paralysed. On the left side the knee-jerk was exaggerated, and ankle clonus was present. There was no definite Kernig's sign, and no tache cérébrale.

April 14th. Temperature 100°; pulse 110; child seemed slightly conscious, but appeared, to my horror, to be blind.

April 15th. Child conscious, but blind; can move left leg, but not arm; temperature 99°, pulse 100.

April 17th. Child can now move left arm very slightly and leg better. Complains of severe headache, but can distinguish between light and dark; can ask for the bedpan, and is sleeping for two or three hours at a stretch. The ankle clonus is gone, but the knee-jerk is still more marked than on the right side.

From this stage the child made a gradual recovery. The eyesight, after considerable photophobia, became normal in a fortnight. The leg first, and then the arm, entirely recovered. The girl is now (June 15th) perfectly normal; she is unusually bright mentally (which, incidentally, I had warned the parents might not be the case), and has had no ill health since.

Dr. Edmondson of Lancaster, who saw the patient with me, agreed that it was obviously a case of cerebral irritation, and suggested the possibility of the cause being a secondary rash on the meningeal membrane.

The treatment, on her return to consciousness, was simply urotropine, 5 grains every four hours.

Bentham. J. F. DOW, M.D.Vict.

Reports of Societies.

PSYCHIATRIC LESSONS FROM AMERICA.

AT the quarterly meeting of the Royal Medico-Psychological Association held at the House of the British Medical Association on May 22nd, with the president, Dr. NATHAN RAW, in the chair, a discussion took place on American psychiatry and its possible bearing on the application of recent local government and mental treatment legislation.

Dr. A. A. W. PETRIE, who opened the discussion, gave an account of a recent visit to American general and mental hospitals, psychiatric clinics, reception units, observation wards, and mental deficiency institutions, as well as to mental hygiene centres and various forms of child guidance organizations and associated nursery schools. Observations were also made of psychiatric work in connexion with juvenile courts. Each State, said Dr. Petrie, had its own method of dealing with the problems involved. In the progressive Eastern States it was usual for the mental hospital service to be a subsection of the state welfare services under medical commissioners. Concentration of executive authority in the State rendered progressive development easier, and made it more possible to obtain legislative and other changes. Well-organized State social services were being developed in New York and New England. The larger unit provided by a State allowed a co-ordination of activities that was not possible in smaller units. New York State, for instance, dealt with over 63,000 patients, who were drawn from a population of 44,000,000. The recent Local Government Amendment Act, however, did make one authority in an administrative area responsible for the treatment of the earliest stages of mental disorder. Well co-ordinated and efficient reception hospitals should take the place of the present wasteful division into observation wards of doubtful efficiency. Dr. Petrie also hoped that the Mental Treatment Bill when it became law would allow the development of voluntary clinics on the same lines as in the Maudsley Hospital and the famous Phipps Clinic in Baltimore, which consisted of sixty beds and an out-patient department, education and research being prominent features. Notable also was the clinic at Philadelphia, a hospital somewhat resembling Bethlem in London. The Psychiatric Institute which had been established in New York in connexion with the medical unit of Columbia University would be one of the most notable in the world when fully developed. Reception hospitals were increasing in number, which was one of the most hopeful signs in the United States. He doubted whether such clinics and reception hospitals should be an actual part of the hospital to which they were attached. The out-patient department at the Boston Psychopathic Hospital, which was the clearing house for Boston area, attracted as many patients as the corresponding out-patient department at Boston General Hospital. The work of these reception units was largely determined by the source of the admissions. In the Chicago clinic, with its 175 beds, about 100 beds had to be cleared weekly in order to deal with new admissions. These units had not usually sufficiently large staffs to deal with the great amount of material. A unit with 600 beds was projected in New York. The chronic patients in the large State hospitals in America were not any better dealt with, in Dr. Petrie's opinion, than they were in England; in America overcrowding occurred at many places. Much difference of opinion existed in America as to what was the best size of mental hospital. In Massachusetts, a very progressive State, 2,000 patients was the usual limit. He found in the United States a tendency, similar to that in England, to modernize old hospitals by building new and up-to-date units for recently admitted mental patients, and infirmary blocks for those suffering from physical diseases. He also saw good examples of the villa or colony hospital. Consultants were usually appointed on a liberal scale in American mental hospitals. In the progressive States the medical staff was in larger proportion to the number of patients than in England; in Massachusetts there was one assistant physician to 150 patients. A useful appointment, common in the States, was that of clinical director or clinical psychiatrist, who was equal in rank to the deputy medical superintendent and the pathologist. He directed and co-ordinated treatment, and was usually a teacher in a medical school.

The laboratory facilities were similar to those in England; frequently there was a more elaborate equipment. Lectures to psychological and theological students and social workers in general were encouraged in the States. Much could be done in this way to break down the prejudice and mystery which were generally associated with mental hospital work. A sharp division existed between nurses and attendants, based upon the preliminary education required. Attendants had no special training. The line of cleavage would become more marked in the future when a complete secondary education for nurses was demanded. Occupational therapy, said Dr. Petrie, was more broadly developed in a general way in the States than in this country. At St. Elizabeth's Hospital, Washington, sixteen occupational therapy officers were engaged

for 4,000 patients. The institutional farms tended to be larger than ever. Canning of meat was common as a form of occupation. Hydrotherapeutics was well organized, and hot baths and packs were usually employed, sometimes under conditions which in this country would be termed "restraint." Electrical treatment installations were generally of a high standard. Diathermy and other high-frequency apparatus was often used to induce high temperature in the treatment of general paralysis. Ultra-violet and infra-red light rays were very popular, and it was common to see automatic recording apparatus in connexion with bath treatment and blood pressure. Out-patient departments for mental cases were usually run in connexion with the State hospitals. This certainly kept the medical staff in touch with the early phases of the disease. The terms of commitment varied in the different States, but, on the whole, were not very different from those obtaining in England. Temporary observation was permitted for a period of from ten to thirty days. Several States permitted voluntary admission, but owing to the overcrowded condition of the mental hospitals few were received on this basis in the State hospitals. The cafeteria (self-service) system was worth consideration as there was a minimum of waste, but Dr. Petrie did not think that even the advantages of the system would justify the cost of initiating it in this country. An interesting development was the wide establishment of "beauty parlours" and hairdressers' shops in State hospitals, which did much to improve the appearance and increase the self-respect of the patients. Another feature was the combined canteen and club rooms provided for patients on parole. The cost per patient per week in the States averaged about 35s. In Canada it was rather less, in New York a little higher. Dr. Petrie was favourably impressed with the mental defective "schools" which he inspected at Wrentham and Letchworth. To a great extent the institutions trained their own people, as there were not many trained teachers available for the work. Child guidance, nursery schools, and parent guidance were comparatively new features; each of these agencies had a psychiatrist who acted as director. Sometimes a children's physician, a social worker, and a worker who specialized in recreation were added. This work had been started in association with juvenile delinquency. The mental hygiene movement had done much to stir up and educate public opinion in the North American continent. One reason why progress was being made was that the professions and laity in the States were being educated to take a more reasonable attitude towards mental illness.

Dr. J. R. LORD said his visit to the United States to attend the World's Mental Hygiene Congress was a short but intensive one. The medical profession in America was not so unanimous about the value of sterilization as was thought. The layman, however, had taken up the subject keenly. An important discussion took place at the congress on the organization of the mental hospital in the mental hygiene service. He had expressed the view that if care were not taken there was a danger that psychiatry might again become a closed system and revert to a position of isolation. There should rather be a psychiatrization of all medical and social services, leaving to psychiatry the care and treatment of actual mental disorders from their earliest stages. The magnitude of the problem of the mentally afflicted in the United States was much greater than in England. The rate per 100,000 of the general population in America for first admissions to mental institutions of all kinds was 76.0; in England and Wales it was 45.4. In America 277.7 per 100,000 of the population were in mental institutions; the figure for this country was 290.6. To the American figure, for comparative purposes, must be added 24.0 for paroled cases, giving a total figure for that country of 301.4. In addition, American State institutions were for the most part shockingly overcrowded. State control of mental institutions had been commented upon favourably, but Dr. Lord could not help thinking that such a state of affairs would not have been tolerated if the responsibility for providing the accommodation had rested with local authorities. The more closely local people were identified with the care and treatment of their mentally afflicted and defective, the sooner would ignorance and prejudice regarding them disappear, and the need for judicial intervention be reduced to minimum requirements. It was for the State to lay down large principles and advise how they should be carried out, reserving to itself a veto when such principles were disregarded. What appeared to be certain was that America had no intention of trying to solve its psychiatric problems by bricks and mortar alone, and that was the lesson America had for this country. Child guidance and welfare work of all kinds directed towards and organized for the prevention and early treatment of mental disorders, eugenic measures, and parental education were to have the financial assistance of the State for the future—hence the reluctance to increase the State hospital accommodation. America had also lessons for us in the importance it attached to the psychiatric education of medical men, social workers, occupational therapists, and others in the field of public welfare. Research work, too, was more widely developed and received greater support and encouragement from both the State and private citizens than in this country. As regards the mental services, Dr. Lord said that America had little or nothing to teach this country—certainly not if the Mental Treatment Bill became law—except perhaps in respect of recent enactments in one or two of the more progressive States, and also in the way in which patients were allowed out on leave or discharged.

OCCUPATIONAL DERMATITIS AND CHEIROPOMPHOLYX.

AT a meeting of the Section of Industrial Hygiene of the Royal Institute of Public Health, on June 5th, a paper on occupational dermatitis and cheiropompholyx was read by Dr. W. J. O'DONOVAN, physician to the skin department of the London Hospital.

Dr. O'Donovan described cheiropompholyx as a deep vesicular and bullous eruption of the extremities, more commonly of the hands, characterized by great itching, recurrences, and seasonal exacerbations, particularly in May and June. This disease was a pattern reaction in individuals with a predisposition to the eruption owing to chance or heredity. It appeared after exposure to circulating toxins and drugs, after virus infections, and exogenic skin damage; it was often seen after nervous strain such as worry and shock, and was continued by the strain of too intimate acquaintance with county court procedures under the Workmen's Compensation Act. Cheiropompholyx was not a disease *sui generis*, but belonged to a group of skin affections in which the effects of mental strain and instability of the nervous system were commonly accepted by teaching dermatologists. If looked for in the same cases, other skin maladies were frequently found: chronic urticaria, pruritus ani, "névrodermite" (the lichen simplex chronicus circumscriptus of Vidal); a chilblain type of circulation and exophthalmic goitre might be discovered, either actually present or in the patient's past history. Admittedly, cheiropompholyx was often found in occupations having a recognized skin hazard, but it occurred in many other trades. It was most commonly exhibited by furriers and cleaners, less frequently by nurses, medical students, sugar workers, and bakers. It was found also in workers on the "dole," in childless women at home, and sometimes in children of school age. Moreover, after first occurring at work and relapsing after a resumption of the same work, further long relapses would occur at any work, after exercise, and even under observation in a hospital bed. Red, scaling, and moist dermatitis of the hands had often a definite history of a distinct cheiropompholyx origin. It was most difficult to believe that a surface damage to the skin arising in the course of work tolerable to most persons should be followed by a deep disorder of the basal layer of cells found in active form six or more years afterwards when the original cells affected had long been shed; surgical incisions, electrical burns, and acid splashes had no such influence on the skin for a decade afterwards. It was hard to trace a parallel between the damage done by

flour and sugar and the admittedly persistent ill effects of penetrating radio-therapeutic dermatitis. Dr. O'Donovan stressed the great pressure exercised upon insurance and works doctors to certify a dermatitis of the hands as due to work.

The condition of cheiropompholyx could not necessarily be diagnosed at sight; epiphenomena due to scratching, sepsis, or the application of strong antiseptic remedies made photographic recognition a wrong technique. The taking of a full history was essential; the patient should be allowed to talk, to reveal dramatic introspection, and to use superlative adjectives (" terrible " pain, " unbearable " irritation, etc.), associated with a placid mien, a comfortable girth, and trifling physical signs. Charcot's full range of hysterical stigmata could often be demonstrated even in a public clinic. Dr. O'Donovan urged clinicians to be as rigid in their acceptance of occupational skin disease as were laboratory workers in admitting the coercive nature of any demonstration. Coincidence, intervening and primary causes, and transient aggravation due to work in general or to a specific irritant, should be recorded with some precision. If after full consideration the doctor was uncertain, he should refuse to facilitate book-keeping or doubtful claims at the expense of scientific certainty; his modest opinion should be clearly qualified to distinguish it from a dogmatic statement of fact. The irrevocable nature of the certificates of many certifying factory surgeons led to much injustice, since time often upset the confident opinion. The semi-permanent pensioning of sufferers from minor skin affections conduced after a time to obvious deterioration of the patient's morale. Neuroses were becoming more common in every field of medical practice, and not least in dermatology. The occurrence of compensated cheiropompholyx in work as bland as the sewing of curtains and the stitching of georgette blouses compelled the dermatologist to halt in the easy acceptance of work as the satisfactory causal factor. A predestined fragility of the integument, which might erupt under many factors of external and internal strain, was a more probable explanation of much cheiropompholyx and its later eczematous developments. The notes of a case should be sufficiently complete (comprising the factors of personality and environment as well as of occupation) to stand cross-examination upon these matters before a hand dermatitis having a spontaneous history of irritating, pinhead, watery blisters between the fingers was accepted as a case of occupational dermatitis.

REDUPLICATION OF RENAL PELVIS.

A MEETING of the Section of Surgery of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on May 16th, with the president, Mr. R. ATKINSON STONEY, in the chair.

Mr. T. J. MORRIN showed a specimen of reduplication of the renal pelvis and ureter. *The patient, a female* aged 35 years, was admitted to hospital complaining of pain in the right renal region, with rigors, vomiting, and dysuria. Her symptoms started three years previously, when she was under the care of a genito-urinary specialist. The double ureters were recognized, and sympathectomy was performed on the renal pedicle. She remained free from symptoms for two and a half years, and then began to have them more severely than before. A pyelogram was taken of the upper ureter. Owing to the position of the lower ureter, behind a ridge of mucous membrane, the lower opening could not be catheterized. The specimens obtained from both kidneys were normal, but the bladder specimen showed a few leucocytes and red cells, and an occasional cast. Operation by the anterior extraperitoneal route was adopted to avoid the scar of the previous lumbar operation. Beyond the two ureters no gross deviation from the normal was noticed. In view, however, of the persistence of symptoms, nephrectomy was carried out. The specimen showed complete duplication of the kidney, pelvis, and ureter. The lower ureter emerged from the upper segment of the pelvis, thus preventing adequate drainage, and producing hydronephrosis. This hydronephrosis was completely intrarenal, there being no extrarenal pelvic dilatation.

The PRESIDENT, taking into account the appearance of the specimen, asked if it might have been possible to remove only the lower half of the kidney. He supposed there had been no way of injecting the extra ureter. Mr. V. J. MCALLISTER said that as a rule in pelvic reduplication the lower portion of the pelvis was the larger. It would be an advantage if a method could be worked out for showing by means of a pyelogram whether there was reduplication of the pelvis or not. Mr. F. J. HENRY suggested that if the ureter coming from the dilated pelvis had been merely ligatured, the other pole would have been saved, and thus renal tissue have been conserved. Mr. MORRIN, in reply, said that the difficulty about doing a partial resection was to arrive at a diagnosis beforehand.

Fibroma in the Knee-joint.

Sir WILLIAM WHEELER showed an illustration of a loose body (fibroma) found in the knee-joint of a male, aged 25. The case was of interest owing to its rarity. So far as could be ascertained, it was the result of neither disease nor injury. At the time of removal it was believed to be a lipoma, but on microscopic section was found to be a pure fibroma. The patient sought advice owing more to discomfort and stiffness than to actual pain. There was no effusion, and no history of trauma. The only point which might have a bearing on etiology was that the patient was a conductor of a band, and kept time by constant movements of the knee-joint. A localized movable swelling could be felt to the inner side of the patella. Movements of the knee-joint were not limited, but full flexion and pressure on the swelling caused discomfort almost amounting to pain. X-ray photographs were negative. A provisional diagnosis of a cystic condition of the internal semilunar cartilage was made. The knee-joint was opened, and what appeared to be a lipomatous mass extruded. It was attached by a fine pedicle to the outer side of the deep surface of the ligamentum patellae. The pedicle was believed to spring from the retropatellar pad of fat, but may have been from the synovial membrane. After removal of the body the knee-joint appeared normal in every respect.

Calcification of Kidney.

Sir William Wheeler also recorded the case of a patient, aged 68, who had served in France for two years. He was invalided home in 1918, owing to frequency and pain on micturition. During the last few years he had intermittent attacks of high temperature, with recurrence of the bladder symptoms. On cystoscopic examination the bladder was found tolerant, and held a normal amount of fluid. The orifice of the right ureter could not be seen. On the left side it was normal in appearance, and normal urine was excreted. Indigo-carmine was eliminated in six minutes. There was some congestion of the trigone and fibrosis about the neck of the bladder and prostate. The history sheets stated that tubercle bacilli were never found in the urine, and that guinea-pig inoculations were negative. An *x*-ray photograph showed complete calcification of the right kidney. The ureter appeared to be palpable. Sir William recorded a similar case of a pensioner seen some years ago, but the kidney was not completely calcified. There was pain and frequency of micturition. Several attempts had been made to remove the kidney, but the operation was abandoned owing to adhesions and haemorrhage. The patient was cured by division and ligature of the ureter about its middle.

Mr. V. J. MCALLISTER said that radiological examination in these cases was a great help, because often the bladder was extremely irritable, and it was difficult to see the openings of the ureters. In this case *x* rays had shown that the kidney was completely destroyed. Mr. F. J. HENRY said that he found it rather difficult to accept the view that calcification was due to tuberculosis. The general outline of the kidney shadow did not suggest a tuberculous origin, the calcification being a good deal too uniform and not sufficiently patchy. He asked if there had been any calcification of the tibial arteries. Sir WILLIAM WHEELER, in replying, said that the arteries of the limbs had been *x*-rayed, and there was no general calcification; in fact, there was no arterio-sclerosis.

Reviews.

INTRACRANIAL PRESSURE.

The Intracranial Pressure in Health and Disease,[1] a symposium issued by the Association for Research in Nervous and Mental Disease, includes contributions from most of the American physiologists, neurologists, and neuro-surgeons who have gained distinction in recent years for their work on intracranial conditions. The importance of work on intracranial pressure at the present time cannot be magnified. Doubtless as a result of the steady development of neurological surgery, the problems of intracranial pressure have been studied during the last twenty years with unexampled activity, and already, in a remarkably short time, clinical medicine has gained from this work such aids to diagnosis and treatment as Queckenstedt's test, ventriculography, and the use of hypertonic salt in the treatment of raised intracranial pressure.

The first section of this book is concerned with the physiology of intracranial pressure, and in it such workers as Weed and Howe set out their views on the phenomena of intracranial pressure, and report their most recent experiments. It is interesting to note that there is some divergence of opinion as to whether the cerebro-spinal fluid is absorbed by the arachnoid granulations or by the capillaries of the brain, or by both. Many interesting experiments are recounted that show how intracranial pressure is modified by venous pressure, by posture, and by the administration of hypertonic and hypotonic solutions. The work is excellently described and illustrated, and it raises fresh possibilities in the treatment of intracranial conditions, as, for example, in the treatment of meningitis suggested by Kubie. But the reader is left with a sense of disappointment that so little attempt is made to link up the experimental observations with phenomena observed in various stages of intracranial disorders in man. He appreciates the more, therefore, some important observations by Stevenson, Christensen, and Wortis on cerebral hernias in man, which show that the intracranial pressure is raised during sleep and by the administration of morphine. When caffeine is given there is a fall of intracranial pressure, and consequently the authors advocate caffeine as the sedative of choice when intracranial pressure is raised.

The second section deals mainly with the methods of measuring and estimating rise of intracranial pressure in man, and is chiefly remarkable as showing the wide uses of the exploring needle in clinical investigations in the United States at the present day. Lumbar puncture, cisternal puncture, and ventricular puncture are used, either alone or in combination, for the diagnosis of intracranial conditions, and the pressure is measured before the cerebro-spinal fluid is withdrawn. Munro finds that after birth injury the pressure of cerebro-spinal fluid in newly born infants is raised, and he advocates its reduction by lumbar puncture and withdrawal of fluid. In hydrocephalic infants Blackfan and his associates are often able to ascertain the type of hydrocephalus by combined ventricular and lumbar puncture. The same type of combined puncture has been investigated by Ayer, and also by Hodgson, as a method of diagnosing intracranial tumours. In subtentorial tumours, and especially in tumours of the cerebello-pontine angle, the protein content of the spinal fluid is much higher than that of the ventricular fluid. Ayer, however, doubts whether this method is worth the risk of doing a lumbar puncture, since the findings are not pathognomonic of intracranial tumour. In the light of this statement by one who is noted for his pioneer work on cisternal puncture, the claim of Masson, another contributor to this volume, that lumbar puncture in intracranial tumour is never dangerous if certain precautions are taken is perhaps unduly optimistic.

The ophthalmic aspects of intracranial pressure are not neglected. Parker reports further work in support of his earlier contention that, other things being equal, papilloedema tends to appear first in the eye of lower tension. The method of Baillart and Magitot of measuring pressure in the retinal arteries is examined by several workers. From perusal of their papers the reader will probably form the opinion that the method is difficult to employ with even approximate accuracy. And from other experimental work in this volume it is very doubtful whether retinal arterial pressure is appreciably raised when the intracranial pressure rises. It does not seem likely, therefore, that the method will become of practical value in estimating rises of intracranial pressure. Horrax and Haight study the recession of papilloedema after operations for brain tumour in Cushing's clinic. The morbid anatomy of raised intracranial pressure is dealt with by Hassin, and, in a particularly thoughtful paper, by Wilder Penfield.

The remaining two sections of the book consist of papers from a number of neuro-surgeons on the clinical and therapeutic aspects of intracranial tumours. These sections are rather disappointing, since no attempt is made to attack the problem of distinguishing, in cases of intracranial tumour, between those symptoms and signs that are a result of a general rise of intracranial pressure and those that are produced by disturbance in the region of the tumour itself. However, there is an interesting article by Dandy on tumours of the third ventricle, in which the author describes his methods of localizing the tumour by ventriculography, at a time when there are no distinctive localizing signs, but when it may be still possible to remove the tumour. Dandy states that he has two patients alive, one five years and the other two years after removal of a tumour of the third ventricle. It is to be regretted that the cases are not reported in detail, for this is obviously pioneer work of the first order, and other surgeons who are confronted with cases of this type would be greatly helped by a careful and full report of Dr. Dandy's experiences. Another outstanding article in this part of the book is a critical and commendably impartial examination by Professor Heuer of the effects of subtentorial and subtemporal decompressions in his own series of some eight hundred intracranial tumours. His experience is that decompressive operations are of no value in tumours of the brain stem and cerebello-pontine angle, whereas in tumours of the cerebellum and of the cerebral hemispheres an appropriately placed decompression may be expected to relieve pressure symptoms in at least 75 per cent. of the patients who survive the operation. There will doubtless be many who do not agree with all of these conclusions, and it is to be hoped that this paper will stimulate other neurological surgeons of experience to make a similar examination of their material.

The publication of such a book is particularly opportune, for it appears at a time when the problems with which it deals are being studied from so many different aspects, and by means of so many technical procedures, that there is danger that workers in one field may be unaware of what is going on in other fields of the subject. This book succeeds in giving a comprehensive survey, and we have no hesitation, therefore, in recommending it to all who are interested in the subject of intracranial pressure.

[1] *The Intracranial Pressure in Health and Disease*: An Investigation of the most Recent Advances. Association for Research in Nervous and Mental Disease: vol. viii of a Series of Research Publications. Baltimore: The Williams and Wilkins Company; London: Baillière, Tindall and Cox. 1929. (Med. 8vo, pp. xvii + 513; 151 figures. 27s. net.)

TREATMENT OF LARYNGEAL CANCER.

THE treatment of cancer in regions accessible to radiation is now engaging general attention, so that Dr. MARCEL OMBRÉDANNE's work on the treatment of endolaryngeal cancer[2] appears at an opportune moment. It is further welcome because it contains an authorized account of the work of Dr. A. Hautant, written by one of his pupils. In the first part Dr. Ombrédanne passes in review what has been accomplished by surgery from the time of Billroth, and gives an unbiased description of what can now be done by thyrotomy, hemilaryngectomy, *laryngectomie économique*, and total laryngectomy. While the larynx is not a vital necessity to its possessor, its functions are such that he

[2] *Traitement du Cancer Endolaryngé: L'Hémilaryngectomie (Technique A. Hautant)*. Par Dr. Marcel Ombrédanne. Préface du Dr. A. Hautant. Paris: Masson et Cie. 1930. (Med. 8vo, pp. 174; 22 figures. 25 fr.)

can ill afford its total loss, and thus conservative operations, provided they are adequate to their purpose, are of prime importance, and much ingenuity has been exercised in devising them. It is natural, then, that the author should pass on to consider the achievements of radiation, a still more conservative method of treatment. Dr. Hautant has been a pioneer in the use of radiation, with the collaboration of Professor Regaud and Dr. Coutard at the Institut Curie. The possibility of obtaining permanent benefit by means of x rays has been amply demonstrated, but an experience of some two hundred cases has shown that those benefiting constantly fall within two limited classes. First, the glandular cancers which arise in the ventricle or on the ventricular band; these are rare, and do not amount to more than one-tenth of the cases. Secondly, cancers limited to one cord which is still mobile. It follows that in most cases, unless x rays are combined with surgery —a method which has given some success—surgery is still the principal weapon.

The chief success of radium has also been in early cases, with the growth limited to a movable cord; in other words, it is just in those cases for which a conservative operation such as thyrotomy is inadequate that radiation also is uncertain and unreliable. Dr. Hautant has therefore turned his attention to devising a radical operation adequate to deal with more advanced cases without inflicting the mutilation of laryngectomy, and the second part of the book describes this operation and the principles on which it is based. It is called hemilaryngectomy, but is not strictly so, and differs from the true hemilaryngectomy of Gluck. It is similar to laryngo-fissure as now practised by Sir StClair Thomson; but it is still more extensive, for part of the cricoid cartilage is removed, giving a wider access to the subglottic region. The results show that this operation has been practised with success in cases too advanced for the widest excision by laryngo-fissure, but it has only given 40 per cent. of good results in the group of advanced cases which would otherwise have called for total laryngectomy. Dr. Hautant has made notable contributions to the treatment of laryngeal cancer, both by radiation and by surgery, but it appears that the search for a satisfactory alternative still fails in most of those cases in which an alternative to laryngectomy is most needed to preserve some part of the laryngeal functions.

The book is written with extreme lucidity, the steps of the operation are beautifully illustrated, and there is a valuable bibliography of writings on laryngeal cancer since the year 1900. It is an important addition to the literature of laryngeal surgery.

ELECTRO-DIAGNOSIS OF NERVOUS DISEASES.

IN disease of the nervous system a knowledge of the electrical reactions of the excitable tissues is often of diagnostic importance. At the present time the faradic and galvanic currents are almost universally employed for the determination of these reactions, although the defects of the customary methods have long been realized. In recent years important researches have been conducted by French workers. The studies of Professor Lapicque and Dr. Bourguignon, and the determination of the "chronaxie" of muscle and nerve, in health and disease, may lead to the discovery of information of diagnostic or prognostic value. In an excellent monograph entitled *L'Electro-diagnostic*,[3] Dr. P. DUHEM gives a clear and concise account of the use of electrical methods in the investigation of diseases of the nervous system. He describes all that is of importance in what he calls the "classical methods" of investigating the electrical reactions. In these methods the faradic and galvanic currents are employed, but the procedure, while quick and convenient, is not free from possibility of error, nor is it as precise as could be desired. The author then gives an account of the methods which have been devised in order to overcome these disadvantages. Most important of these is the method in which the chronaxie is determined. The chronaxie is a measure of the duration of the excitatory process. In normal muscle and nerve it is extremely brief, but in denervated muscle it is from twenty to one hundred times longer. The determination of the chronaxie has not yet provided information of clinical importance that the customary method of electrical testing does not afford; but it is a much more accurate and precise method of examination, and it is quite likely in the future to aid diagnosis and prognosis in disease of the nervous system. Bourguignon has made the interesting observation that when muscles on one side of the body show the reaction of degeneration the corresponding muscles on the opposite side, though clinically normal, show a lengthening of the chronaxie.

Dr. Duhem concludes with a description of the electrical reactions that are found in different diseases of the nervous system. The book is written in a lucid manner, and is a credit to the French school, which, from the days of Duchenne onwards, has made such important and original contributions to the subject of electro-diagnosis.

[3] *L'Electro-diagnostic.* Par Dr. P. Duhem. Paris: Gauthier-Villars et Cie. 1931. 8 × 8, pp. xvi + 132; illustrated. 25 fr.)

THE MORPHINE HABIT.

IN the introduction to his well-written little book on *The Morphine Habit*[4] Dr. G. LAUGHTON SCOTT protests against the popular view that vicious weaklings form a considerable part of the addicts in this country. On the contrary, he shows from his own experience that a number of doctors have successfully conducted large practices for many years while taking a constant amount of the drug throughout the whole period. So far from the addict getting any voluptuous satisfaction from the drug, except in the earliest stage, the morphine habit is an intimate physical necessity from which the victim is usually trying to escape. From his experience of English addicts, the author is of opinion that overwork and fatigue are the principal causes of the habit, while calculated self-indulgence is probably the least common of all motives. More than half of his patients have been persons of apparently sound nervous inheritance, about a quarter presented a definite though slight psychical abnormality, while not more than 15 per cent. showed a general failure of adaptation to the difficulties and responsibilities of life.

Dr. Laughton Scott has devised a system of withdrawal by which he claims that in almost every case the discomfort and shock may be reduced to a minimum without producing either delirium or coma. The procedure, which is a modification of Lambert's method, consists in a gradual withdrawal of morphine under a gradually developed tolerance to belladonna and hyoscine, with free and increasing use of luminal. Care is taken to reduce the morphine *pari passu* with the gradual development of belladonna tolerance so that the mental equilibrium is not disturbed. Numerous illustrative cases are recorded, several of which occurred in middle-aged medical men, while an appendix contains the experience of a medical morphinist who developed the habit as the result of being treated for iritis with injections of morphine by a physician who was himself a morphomaniac.

The work will be read with interest by every practitioner, who will gather from its perusal that not only is the morphine habit more prevalent than is generally supposed, and by no means confined to the degenerate and vicious, but that withdrawal of the drug is a simpler and more hopeful task than current teaching indicates.

DIFFERENTIAL DIAGNOSIS OF ALIMENTARY DISEASE.

THE comprehensive and ambitious series of handbooks on practical differential diagnosis, under the general editorship of Professor HONIGMANN of Giessen, has several times been noticed in these columns. The most recent of the series is Part 4 of the first group,[5] and is devoted to disorders of

[4] *The Morphine Habit and its Painless Treatment.* By G. Laughton Scott, M.R.C.S. London: H. K. Lewis and Co., Ltd. 1930. (Cr. 8vo, pp. vii + 94. 5s. net.)

[5] [illegible] Herausgegeben von Professor Dr. G[illegible] Medizin; Teil 4, *Erkrankungen der* D[illegible] Dr. Louis R. Grote. Dresden und L[illegible] 214-330; 5 figures. R.M.6.80.)

the alimentary tract, the author being Professor GROTE of Dresden. This little volume is similar to the remainder of the series, being a self-contained set of essays in somewhat dull and difficult prose on such topics as abdominal pain, dyschezia, examination of the faeces, and meteorism. It forms part of the group entitled "Internal medicine," and must be read in conjunction with its companion volumes. Those interested in the more recondite aspects of the functional and common disorders of the alimentary tract would do well to read through this book and the associated Parts 2, 3, and 5.

NOTES ON BOOKS.

In *Medicine. Its Contribution to Civilization*[6] Lieut.-Colonel EDWARD B. VEDDER of the Medical Corps, U.S. Army, sets out to present for the intelligent lay reader a non-technical account of the more important facts of preventive medicine. While, however, it is doubtful if many members of the lay public will be drawn to a work which describes in an unsensational way the advances that have been made in the medical sciences during recent years, medical men will find in it a great deal that is readable and useful. The book might, in fact, serve well as a textbook to be read, side by side with more formal works, by students working for the diploma in public health. In all his teaching the author displays an admirable common sense; thus, he points out that to open all windows in the dead of winter and spend all night shivering in bed is not to promote ventilation—the aim of which is to maintain the body temperature at the correct level—but to chill the body and so reduce its resistance to colds and other respiratory infections. And with regard to exercise and physical culture, he warns men of 40 and over against the dangers of excess, suggesting as a good working rule that exercise has been too severe if it is followed by fatigue that survives even a night's rest. His chapter on nutrition is up to date, and he emphasizes the need of including a sufficient amount of inorganic salts in the dietary, for the ordinary diet does not necessarily protect against inorganic deficiency. Whether he is explaining scientific phenomena in simple non-technical language, or writing about infectious diseases, nutrition, endocrine disturbances, the cancer problem, or the conquest of disease, Colonel Vedder is always clear in his exposition, and never fails, where it is appropriate, to enliven his text with pleasant humour.

The first volume of the fortieth series of *International Clinics*[7] contains as usual numerous papers on a great variety of subjects, among which we may draw attention to those by Professor Lewellys Barker of Baltimore on the diagnosis and treatment of the maladies grouped under the designation "sciatica"; further experiences with encephalography, by Professor Friedmann of New York; on hernia of the diaphragm, by Dr. P. E. Truesdale of Fall River, Massachusetts; by Dr. George F. Dick, on scarlet fever, with a consideration of other haemolytic streptococcus infections; and by Dr. Frederick Tilney, on the structural basis of behaviourism. Recent advances in toxicology are discussed by Dr. Max Trumper of Philadelphia, and recent advances in surgery by Dr. Donald C. Balfour and Dr. Archibald H. McIndoe of the Mayo Clinic. The volume concludes with a richly documented paper by Dr. Russell M. Wilder of the University of Chicago on the recently discovered endocrine diseases—hyperepinephrinism, hyperinsulinism, and hyperparathyroidism.

Many epidemiologists of ancient and modern times have surmised that cosmic or terrestrial forces are responsible for the disturbance of epidemiological equilibrium which finds expression in a pandemic of influenza. Dr. JOHS. MYGGE has devoted a well-documented monograph[8] to the subject and has himself made a number of observations. He has come to the conclusion that variations of the electrical state of the atmosphere, particularly oscillations of the manner of electrical exchange between the air and the earth with regard to convection charges, play some part in the genesis of an epidemic constitution. Dr. Mygge has assembled many data, but their interpretation requires technical knowledge of physical meteorology few epidemiologists possess, so that his work is hardly within the range of most medical readers. It should, however, be carefully studied by the fortunate few who have the needed preliminary knowledge.

In her little work on *Fevers and Fever Nursing*,[9] Miss EVELYN C. PEARCE, now sister tutor at the Middlesex Hospital, and formerly sister tutor at the Fazakerley Fever Hospital, Liverpool, has given a clear and practical account of the principal acute infections, including influenza, lobar pneumonia, puerperal fever, and venereal diseases, in addition to those usually nursed in isolation hospitals. There are an unusually large number of verbal errors, such as flagellae (p. 1), consular for proconsular (p. 73), Shick (pp. 82 and 203), rothelin for röteln (pp. 131 and 202), Frankel (p. 153), Schaudin and Hofman (p. 191), Wasserman (pp. 192 and 194), and neokharvisan (p. 194).

Four Months' Camping in the Himalayas,[10] by Dr. W. VAN DER SLEEN, is an interesting and well-written account of a tour in the valley of the Sutlej, following the comparatively unexplored main road from Hindustan to Tibet, which runs through that valley. The main object of the author was to study the geological formation of the valley, but the present volume is restricted to matters of general interest. A vivid description is given of the scenery of the entire route from Simla to Kunmarsain, including an account of some of the sacred mountains of the Hindus, and it is illustrated with numerous fine photographs. Of special interest are the descriptions of the manners and customs of the natives. Particularly worthy of mention are the accounts of the ceremonial of the dance of the gods, and of the funeral of the maharanee; these are illustrated by a number of photographs exhibiting the successive stages of the ceremonies and giving a very complete idea of the proceedings.

[6] *Medicine: Its Contribution to Civilization.* By Edward B. Vedder, M.D., D.Sc., F.A.C.S. London: Baillière, Tindall and Cox. 1929. (6 × 9¼, pp. ix + 393. 22s. 6d. net.)

[7] *International Clinics.* Edited by Henry W. Cattell, M.D. Philadelphia. Vol. 1. Fortieth series. London: J. B. Lippincott Company. 1930. (Med. 8vo, pp. viii + 303; illustrated. 12s. 6d. net.)

[8] *Étude sur l'Éclosion Épidémique de l'Influenza.* Par Johs. Mygge. *Acta Medica Scandinavica*, Supplementum xxxii. Copenhagen: Levin and Munksgaard. 1930. (Med. 8vo, pp. 145; 5 charts.)

[9] *Fevers and Fever Nursing.* By Evelyn C. Pearce. With a foreword by Claude Ruddle, M.D. London: The Scientific Press, Faber and Faber, Ltd. 1930. (Cr. 8vo, pp. ix + 203. 5s. net.)

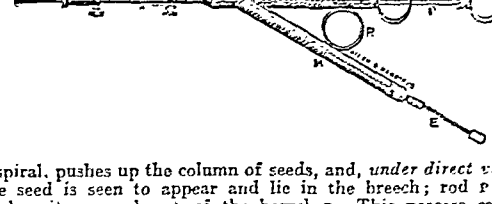
[10] *Four Months' Camping in the Himalayas.* By Dr. W. G. N. van der Sleen. Translated by M. W. Hoper. London: P. Allan and Co., Ltd. 1929. (Sup. roy. 8vo, pp. xiii + 215; illustrated. 21s. net.)

PREPARATIONS AND APPLIANCES.

A RADON SEED DEPOSITOR.

MR. W. ETHERINGTON WILSON, F.R.C.S. (Torquay), writes: The idea of this design is to overcome the rather slow and tiresome business of loading the gun each time with one seed; only one rod, P, is used, and need not be taken out of the instrument at all, as is done in other models.

Description of Parts.—The magazine M is lined with 2 mm. of lead, and will hold about fifteen 0.5 cm. or eight 1 cm. radon seeds. The magazine is loaded by ramming home piston rod P, which closes the opening of M into the open breech H, and introducing seeds at the lower end of the magazine. The ejector rod E is then screwed in until it meets the last seed. Having introduced the barrel B (ruled at 1 cm. intervals up to 10 cm.) into the tissues, the rod P is pulled back until it is clear of the breech H. A slight turn of the rod E, which is



a spiral, pushes up the column of seeds, and, *under direct vision*, one seed is seen to appear and lie in the breech; rod P then pushes it on and out of the barrel B. This process can be repeated in quick succession and the magazine emptied. The ring, finger, and thumb-grips R R R facilitate the use and steadying of the whole instrument; S is a sliding sleeve, which may be fixed at any point along the ruled barrel B. The rod P is bevelled slightly at its distal end, and acts both as a needle and a pusher quite effectively.

The instrument is heavy, simple, effective, and saves time. I would draw attention to two points: the breech is left open above deliberately to enable the operator to see one seed properly and safely introduced; it is absolutely necessary to allow one seed only to lie in the breech (the oncoming seed, if pushed too far by the fine adjustment rod E, will foul the rod P when it is pushed home). The knack is easily acquired.

Allen and Hanburys Ltd. of Wigmore Street, W., have made the instrument for me.

"HAZELINE" SNOW.

Messrs. Burroughs Wellcome and Co. (Snow Hill Buildings, London, E.C.1) have added a collapsible tube packing of "Hazeline" Snow to their well-known series of "Hazeline" preparations for the skin and mucous membranes.

ASTHMA RESEARCH.

A SCIENTIFIC meeting of the Medical Advisory Committee of the Asthma Research Council was held on June 5th, Dr. A. F. HURST presiding, when several workers on the subject gave an account of recent investigations.

Physiological Aspects of Asthma.

Professor R. J. S. MCDOWALL (King's College) said that from the physiological point of view asthma must be looked upon as essentially a symptom which indicated bronchial constriction with probably some turgescence. Constriction might be brought about by local irritation or by chemical, nervous, or psychic stimulus. It was highly desirable that the general metabolism of individuals suffering from asthma should be studied. The work of Oriel seemed to him very important in that connexion. It pointed to something wrong with the protein metabolism, due either to upset of digestion or to access of fractions of foreign proteins into the blood. He pointed out how many divergent views of asthma fitted into a simple picture. Asthma research was a much more coherent effort than at first sight seemed possible. The greatest need was to find out more exactly the nature and mode of production of sensitization.

The Hereditary Influence in Asthma.

Dr. G. BRAY (Asthma Research Clinic, Hospital for Sick Children), speaking from a study of hundreds of children, had found a hereditary factor in two out of every three children with asthma. The heredity was rather a history of allergy than of asthma alone; parents might have suffered from urticaria or migraine, and they had children with asthma. Of the 70 per cent. of children with an allergic heredity, rather less than one-third belonged to families where both parents were affected. Among the children at his clinic the asthma sufferers included three times as many males as females, but other investigators had found that from puberty onwards to the menopause a greater percentage of females were affected. Males, therefore, seemed to improve from puberty. Symptoms of asthma developed during the first year of life in 20 per cent. of the children, irrespective of a history of allergy in the parents. Those with a bilateral history all developed their asthma before the age of 10. It was stated in America that the earlier in life a person became sensitive the more pronounced was hereditary influence, but that was not borne out by his own figures. Up to the age of 2, food reactions were common; later on such things as feathers and hair played a more important part in etiology. With a pure asthma lineage a child was more likely to be affected with asthma; if there was a hay fever lineage, he was likely to have hay fever as well as asthma.

Dr. HURST said that the study of heredity offered some hope of prophylaxis. If as many as 70 per cent. of the cases had a history which pointed to heredity, the great thing was to get at the child asthmatics early, and find out by periodical examinations what could be done to prevent development of asthma. In his experience, in a family of half a dozen children it was very uncommon for more than one or two to be subject to asthmatic attacks. Dr. JOHN FREEMAN said that the weight of the heredity factor appeared to depend on the number of relatives. If there were few relatives there was a small chance of heredity becoming manifest. He thought a false division had been made by Dr. Bray between asthma due to heredity and asthma due to tissue damage; in his view these were not mutually exclusive.

Types and Age Variations.

Mr. FRANK COKE spoke on the necessity of recognizing types of asthma, for asthma was merely the *name* of a symptom. It was hopeless to lay down a line of treatment unless it was known to *which* type of asthma the case belonged. There was no panacea for asthma, and if a cure were found for cases of one type, so long as asthma was undifferentiated the cure would be applied indiscriminately in all types, and, because of its failure in all except the type to which it was appropriate, would be discredited. Thousands of cases has been treated with glucose, and the fact that it had not done good in many cases had prevented its application in cases which it might have benefited. The speaker drew attention to four types of asthma, all absolutely different: (1) cases in which the asthma supervened directly upon some upset in the chest, such as bronchitis; (2) ordinary cat or horse asthma; (3) a type of asthma seen, almost without exception, in plump women in middle life, probably suffering also from urticaria, with menstrual flow nearly always scanty, and a considerable amount of pain; (4) the aspirin-sensitive type, in which 5 grains of aspirin would throw the patient into paroxysmal asthma; these last cases had polypi in the nose.

Dr. L. J. WITTS (Asthma Research Clinic, Guy's Hospital) discussed age variations. The allergic diseases tended to occur early in life. Eczema, in nearly 90 per cent. of the cases investigated at Guy's, began before the age of 5; asthma before the age of 10; hay fever commonly before puberty, while urticaria was not so closely related to age, and might begin at any time of life. When asthma began before the age of 10, over 60 per cent. had some other allergic symptom as well. Skin reaction was almost a function of age, very frequent in early life, and diminishing later. In children asthma was a much more general disturbance than in adults. Very often in children dyspnoea was not the most common symptom. Children had headache, vomiting, sometimes bowel disturbance, but were well between attacks; later in life the patient was rarely free from dyspnoea. Up to 20 years of age the length of the attack might vary from twenty-four hours to seven days; in later life the attacks were much more brief—from two to four hours. The treatment of which he had had most experience was glucose, and in children under 10 there was a high percentage of improvement; in later life the response to glucose was poor.

Dr. HURST stressed the dangers of making too rigid a classification. It had been supposed that some cases were due solely to polypi in the nose, but, the polypi being removed, the underlying infective factor remained untouched, and unless this was dealt with the patient's condition might be aggravated.

Gastric Secretion and Digestion.

Dr. BRAY then made some remarks on the hypochlorhydria of asthma. He showed the result of 100 fractional test meals on asthmatic children, aged 6 months to 10 years, at Great Ormond Street. In 12 per cent. of the cases no specimen was found to contain any free hydrochloric acid, and in 45 per cent. never more than ten units. The secretion generally was below a low normal average for the age and for the type of test meal used. The possibility was that there were either mechanical defects of secretion, or the mucus, being slightly alkaline, combined with the acid and so neutralized it. Acid therapy had been used in the treatment of these cases, and although there had not been time for any clear indication of *results*, it appeared that the larger percentage of cases showed some improvement in the frequency or severity of their attacks, and there was a rapid return of appetite and gain of weight.

Dr. F. T. HARRINGTON (Newcastle) discussed the effect of digestion. He had many patients who had been freed from broncho-spasm and attained perfect health, in whom the treatment had been nothing more than the correction of bad habits in diet. One of the most common statements volunteered by the patient was that if he had not to eat he would not have broncho-spasm. The relationship between asthma and digestion was shown by the frequency with which vomiting would cut short an attack of asthma. The natural cure of a spasm was to empty the stomach of unsuitable or undigested food and to restore the function by insisting on digestible food, thorough mastication, proper intervals between meals, digestives, and other methods calculated to improve digestion. If the blood stream were charged with the irritating products of imperfectly digested food, one of the most frequent organs to be affected would be the nose. The mucous membrane became inflamed, oedematous, and highly sensitive, with the result that a coughing or sneezing reflex was readily

produced, and broncho-spasm frequently occurred. Ethmoiditis was not a cause of asthma; it had a trigger action only. With improved digestion the nasal mucous membrane, which had been red, irritable, and catarrhal, would often become pale and insensitive. If he had to pick out one article of food which appeared to do more harm than another in asthma it would be milk.

Dr. HURST said that it was a clear advance to have elucidated the hypochlorhydria of asthma as Dr. Bray had done, but he hoped he would not be content with giving his patients hydrochloric acid, but would get them to secrete their own acid. There seemed to be a difference in this respect between the child and the adult, acid deficiency being much more common in the former. Out of forty cases in adults twenty-four showed perfectly normal test meals, and four were above normal in acid content. There were three cases of complete achlorhydria, with no trace of acid, and as a result of treatment of the stomach, without giving them hydrochloric acid, they were now excreting their acid again. In some cases the removal of affected tonsils would restore the normal secretion of gastric juice.

Dr. E. P. POULTON suggested that in the taking of the first test meal some psychological factor might be at work in the case of children, and it would be well to repeat the test meal before the patient had any washing-out treatment. Dr. JOHN ADAM thought the hypochlorhydria in some adults examined was the result of defective ferment action of the stomach; bad diet was one of the contributing factors.

Serological Aspects, Blood Picture, Excretion.

Dr. JOHN FREEMAN (St. Mary's) dealt with the evidence afforded by Prausnitz's reaction for the passage of foodstuffs from the gut into the circulation. He described an experiment carried out on students at St. Mary's. The skin of the forearm of two students was injected with a serum from a fish-sensitive patient, and into the other forearm he put some of his own serum as a control. One student was given a dinner consisting of a considerable amount of fish; the other had no fish. The forearm of the first student became very red and swollen where the serum from the fish-sensitive patient had been injected, while the forearm of the other student did not react at all. Not that the latter escaped, for two days later he had a cod steak, and shortly afterwards developed a most marked reaction. It was not possible to escape the conclusion that the actual thing to which a man was sensitive got through into the blood stream and caused the local reaction. Prausnitz's reaction was a very good test for all kinds of asthmatic theories, especially some theories of the psychologists.

Dr. MARJORIE GILLESPIE (Asthma Research Clinic, Stobhill Hospital, Glasgow) gave an account of variations in *eosinophilia* seen in asthma. Of the cases which she had been studying for the last six months, only two had an eosinophil count of under 4 per cent., while the normal count was usually 2 per cent. The average count in these patients was somewhere between 7 and 10 per cent., but a good many were over 10 and a few over 20 per cent. The eosinophilia varied according to the state of the patient. During an attack, in the majority of cases, there was a fall to perhaps half the former percentage. There was a fall after giving adrenaline, but no effect after giving glucose. The amino-acids in the blood were raised when the eosinophil count was high, but the rise was not relative. Dr. BRAY said that in his cases the average eosinophil count was 7 per cent., with variations from 3 to 23 per cent. In normal children the figure was 2 per cent. with 10,000 leucocytes, whereas in these children it was at lowest 3 per cent. with 15,000 or 18,000 leucocytes.

Dr. F. A. KNOTT (Guy's Hospital) contributed some observations on the examination of the sputum and the faeces in asthmatics. The bacterial picture of the sputum was as follows:

	No.	Skin reaction.
Micrococci	10	0
Moulds	3	2+ 1-
Gram-negative	43	74% positive.

The faecal examination gave the following results in 120 cases:

	No.	Presence of lactose fermenters.
Excess undigested protein ...	37	17- 20-
Excess starch	17	10+ 7-
Starch and Protein	7	2+ 5-
Fatty excess	0	- -
Normal	59	6+ 53-

Urinary Proteose.

Dr. G. H. ORIEL (Guy's Hospital) spoke of the significance and therapeutic value of urinary proteose in asthma. An attempt had been made to prove whether the substance isolated was specific. During an attack of asthma what was called the proteose effect increased to about ten times what it was in the interval. The normal person turned out a small amount of proteose a day, and did not give positive skin reactions with it. Discussing the origin of this proteose he said that there were certain breakdown products in the gut which, if they got through, should be capable of sensitizing a patient. On a meat-free diet it was well known that eczematous and asthmatic patients tended to improve. If sufficient glucose were given, far less of this substance was excreted, and it did not as a rule give positive skin tests.

Dr. H. W. BARBER described some clinical results of Dr. Oriel's treatment with urinary proteose, but the cases in which he had employed injections of proteose had not been asthmatics, except that some of them had asthma in addition to the cutaneous symptoms for which primarily they were treated. Very dilute solutions were used—1 in 1,000,000 or thereabouts—and of these solutions only a small quantity was given—0.1 to 0.25 c.cm.—so that the reactions which were produced must, he thought, indicate specificity. He had tried this in rheumatoid arthritis associated with psoriasis and had got an acute reaction. It had been tried in urticaria, prurigo of various kinds, and certain types of eczema, as well as other conditions. In selecting cases he had made a choice of difficult ones of long standing, and had used great care to avoid any psychic factor. In cases of urticaria the method was strikingly successful; some eczemas did very well; uncomplicated psoriasis seemed to be little influenced, if at all, but when associated with rheumatoid arthritis the case did well under treatment, both as regards the rheumatoid condition and the psoriasis. He believed, after two years' observation, that the proteose in cases of sensitization did contain what might be looked upon as a specific antigenic substance.

Nasal Conditions.

Mr. C. GILL-CAREY (Guy's Hospital) dealt with sinusitis in asthma. In a group of cases of asthma which he had thoroughly examined for the presence of sinusitis, only some 50 per cent. had anything the matter with the nasal sinuses. There were two distinct types of sinusitis in these patients. A small proportion had a suppurative type of sinusitis, localized to perhaps one or two sinuses, and in this group rhinological treatment seemed to give better results than in the other group, which showed a generalized thickening of the lining membrane. This second group presented enormous difficulties in treatment. Amongst these people with hyperplasia were a certain number that got definite benefit from nasal treatment, though often the benefit was only temporary. Sometimes the return of the asthma might be due to inefficient surgery; at other times there appeared to be nothing wrong with the nose, and yet the asthma came back. He was inclined to think that the nasal condition was also the result of whatever was causing the asthma.

Dr. HARRINGTON described the technique of diastolization in nasal conditions associated with asthma. The aim of the treatment was to improve the nasal airway and reduce the sensitivity of the nasal mucous membrane. The apparatus consisted of thin rubber bougies shaped to the nasal fossa. The suitable type of case was one of nasal inefficiency not associated with pus or with bony deformity.

One result of the meeting was the formation of an Asthma Research Club, to meet informally in the various laboratories and clinics, with Dr. Freeman as honorary secretary.

British Medical Journal.

SATURDAY, JUNE 21ST, 1930.

CURRENT VIEWS ON THE ASTHMA PROBLEM.

IT was a happy inspiration of the Medical Advisory Committee of the Asthma Research Council to organize a scientific meeting at which both those who are working under the auspices of the Council and independent investigators should give an account of their labours. An opportunity was thus given for co-ordinating the results obtained by different lines of approach in different centres, and the interesting discussion which is reported on another page will doubtless stimulate the authors of the original communications to renewed efforts to solve the many problems connected with this most puzzling disorder.

Professor R. J. S. McDowall's introductory remarks on the physiological aspects of asthma gave a valuable survey of the whole subject, which is very necessary for those engaged in investigating isolated features to bear in mind. He accepted the definition of asthma which the chairman of the meeting, Dr. A. F. Hurst, had suggested several years ago—a constitutional condition, in which the nervous mechanism of the bronchi is in an irritable state, rendering it liable to periods of excessive activity as a result of chemical, reflex, and psychological stimuli. Dr. G. W. Bray found that one or other parent of no less than 70 per cent. of asthmatic children had suffered from asthma, hay fever, urticaria, or migraine, and that in one-third of these cases both parents had been affected. Dr. L. J. Witts pointed out how frequently asthma in children is associated with other allergic conditions. The recognition of the constitutional and inherited factor in asthma brings with it some hope of successful prophylaxis. Asthma in children can so often be cured by attention to the digestion and general hygiene, that it should be possible, by proper supervision of the children with asthmatic parents, to prevent its development. As a considerable proportion of all cases of asthma begin in childhood, this would prove the first step in the solution of the problem which the Asthma Research Council was founded to discover.

It has long been surmised that an alimentary toxaemia may be one of the most important factors in producing asthma, and Dr. James Adam has done much in the past to emphasize this aspect of the question. An insight into the nature of the digestive factor has now been afforded by the important investigations carried out, with the aid of grants from the Asthma Research Council, by Dr. Bray at the Great Ormond Street Hospital for Sick Children, and by Dr. G. H. Oriel and his colleagues at Guy's Hospital. Dr. Bray, in a series of 100 fractional test meals given to asthmatic children between the ages of 6 months and 10 years, found achlorhydria in 12 per cent. of the cases and hypochlorhydria in 45 per cent. Administration of hydrochloric acid generally leads to a diminution in the frequency and severity of the attacks, together with a return of appetite and gain in weight. Dr. Hurst has shown that achlorhydria and hypochlorhydria are more often secondary to gastritis than constitutional in origin, so that removal of such causes as septic foci in the mouth, throat, and nose, and lavage of the stomach with weak hydrogen peroxide, may be expected to restore the secretion to normal. In three cases of complete achlorhydria in a series of 40 adult asthmatics under his care, treatment of this kind had led to the return of a normal secretion of acid with considerable improvement of the asthma. Dr. F. A. Knott found undigested meat fibres in the stools of 44 out of 120 cases of asthma, whereas starch digestion was impaired in only 24 and fat digestion in none. This may well be the result of associated hypochlorhydria, and it explains the improvement in the condition of many asthmatics which follows restriction of meat. It shows, moreover, the need for thoroughly investigating each individual case, as in patients with excess of starch in their stools a reduction of meat is useless, but the avoidance of potatoes is followed by disappearance of intestinal flatulence, with consequent improvement in the asthma. Dr. Oriel has discovered that the majority of asthmatics excrete a proteose in their urine, the quantity of which is increased tenfold during an attack. The patient's skin reacts strongly to the intradermal injection of his own proteose, whereas normal people give no such reaction to the trace of proteose which is present in their urine. The urinary proteose is probably a product of protein digestion, and is absorbed from the bowel, as the quantity excreted is reduced on a meat-free diet. Desensitization by inoculating the patient with minute doses of his own urinary proteose has not only led to improvement in many severe cases of asthma, but Dr. H. W. Barber has found it strikingly successful in urticaria, in some forms of eczema, and in cases of psoriasis associated with rheumatoid arthritis.

The value of a full discussion between those working on different aspects of the asthma problem is well illustrated in the investigations at the Great Ormond Street and Guy's clinics; for Dr. Bray will now doubtless determine whether the hypochlorhydria of his patients is associated with albumosuria, and Dr. Oriel and Dr. Knott will determine to what extent the abnormalities they have discovered are dependent upon deficiencies in gastric secretion. If a curable gastritis is the primary factor in both groups of abnormalities, then its treatment may do away with the necessity for giving acid on the one hand and inoculation with albumose on the other. Dr. John Freeman described some striking experiments which prove that traces of proteins pass in an unchanged condition through the intestinal wall into the circulation, thus explaining the effect of certain foods in producing attacks of asthma and various cutaneous disorders. Dr. Knott has discovered that a Gram-negative bacillus with numerous eosinophil cells is frequently found in the washed mucous plugs expectorated by asthmatic patients. A positive skin reaction is given in 74 per cent. of such cases, whereas a reaction is never obtained with micrococci isolated from the sputum. This appears to be due to the fact that a histamine-like substance is produced by the Gram-negative bacilli, and it seems probable that the paroxysms in some cases of asthma may be due to the direct effect of this substance on the abnormally sensitive bronchi. These are the cases in which eosinophilia, which has been the subject of special study by Dr. Marjorie Gillespie, is generally highest. So much has been written on the nasal factor in asthma that the definite statistics given by Mr. Gill-Carey are very welcome. He finds that in 50 per cent. of cases sinusitis is present. These cases include the small group of aspirin-sensitive patients, to which Mr. F. Coke has drawn attention; polypi are always

present, and their removal results in actual aggravation of the symptoms unless the underlying ethmoiditis is adequately treated. When the whole nasal mucous membrane is in a sensitive state without any well-localized sinusitis, treatment by "diastolization," the technique of which was described by Dr. F. T. Harrington, is often of service.

The clinics founded by the Asthma Research Council have certainly justified themselves, and we can only hope that sufficient financial support will be forthcoming from the thousands of sufferers from asthma and allied disorders to make it possible for these clinics to continue the good work so auspiciously begun.

ECONOMIC PROBLEMS OF UNIVERSITIES.

As one half of the world does not know how the other half lives, some of the statements of fact in the report of the University Grants Committee for the academic year 1928–29[1] may cause surprise in many minds. Is it generally known, for instance, that of the total income—£5,174,510—of the universities and university colleges of Great Britain, 46 per cent. is obtained through grants by Parliament and by local authorities? The contribution from endowments is only 14 per cent., and from tuition fees 23 per cent. Again, it is possible that in some minds the notion still lingers that universities are mainly for the well-to-do. As a matter of fact, inquiry has shown that over 40 per cent. of the students are "assisted students"; and the committee is convinced that if comprehensive information were available, the number of assisted students would be found to be little short of 50 per cent. of the total number.

The University Grants Committee reports to the Treasury once a year; but towards the end of each quinquennial period it makes a tour of the universities and university colleges, and the report for the last year of the period contains a review of the progress made, and suggestions for the amount and objects of the Treasury grant for the ensuing five years. In the year 1923–24 the Treasury grant was £1,273,000. The annual grant was then raised to £1,550,000 per annum. On the recommendation of the committee Mr. Snowden has now made provision in the Estimates for an increase of £250,000 in this vote. Among the objects for which the committee feels that an increase in the vote is needed are improvement in the salaries of teaching staffs and the expansion of libraries. The man in the street will probably be surprised to learn that the average salary of a professor at a university is something less than £1,100 a year. An interesting question which is not answered in the statistical tables at the end of the report is, how many of the twelve professors with an income of £2,000 are medical men attached to hospital units? In any case the incomes of these twelve professors have raised the average, more than half of the 747 university professors having incomes below the £1,000 level. The state of assistant professors and readers is still worse. Their average income is £632. The section of the report dealing with this question of salaries is written with well-balanced judgement. The attractions of a university career are by no means minimized, but the committee is convinced that additional income for salaries is urgently required. It makes wise suggestions on the gradual attainment of improvement; and it urges concentration by the universities upon securing their academic foundations before attempting elaborations of the superstructure by pursuing a "forward policy" of expansion and development.

At the present time there are nearly 45,000 university students in Great Britain. Not counting the ex-service men who were being educated in 1923–24, this represents an increase of 3,000 over the number in the last quinquennium. The increase is entirely amongst the men; and though many causes for this may exist, it is regarded as being partly due to depression in commerce and industry. In bad times men go to the university—with a view to entering the more sheltered profession of teaching—rather than into business; and hard-hit families cannot afford to give a university education to daughters as well as to sons. It must not be forgotten, however, that the largest decrease in numbers is in medicine, a faculty in which the number of male students has fallen from 8,977 to 7,279 in the five years, and of females from 2,020 to 1,108. The number of male dental students has fallen from 1,018 to 630. In arts, on the other hand, there has been a remarkable change; and the percentage of students reading for an arts degree has risen from 34.7 to 44.6. The committee notes with some anxiety that there is a tendency to pay professors in the faculty of arts less than in science faculties. The report deals at length with the difficult problem of combining research work with teaching and administration, a problem for which no solution has hitherto been found, though in two universities, Cambridge and Edinburgh, the difficulty has been mitigated by relieving a professor of his teaching duties for part of a session in order that he might pursue his own line of investigation undisturbed. The committee hopes also that the universities will find it desirable to set limits to the external responsibilities they permit themselves to assume. All manner of bodies, from Government departments downwards, now thirst for "expert" advice, and seek the co-operation of the trained intellects of university staffs. Therein the committee scents danger, because the proper performance of the functions of advancing knowledge and teaching students leaves most universities with little margin for other purposes.

The report of the University Grants Committee is an admirable and judicious exposition of the difficulties with which universities have to contend; and if bureaucracy were content in all cases to exercise its control of public funds through similarly discreet and sympathetic bodies, it is possible that little fault could be found with that system of government.

[1] University Grants Committee. Report including Returns from Universities and University Colleges in Receipt of Treasury Grant, Academic Year 1928–29. London: H.M. Stationery Office. 1930. 3s. 6d. net.

MEDICAL ADMINISTRATION IN INDIA.

THOUGH, in the first part of its report[1] on the working of the system of government, the growth of education, and the development of representative institutions in British India, the Simon Commission deals very shortly with the medical services, it does not underestimate their importance. "The maintenance of the European elements in other services," states the report (p. 278), "is dependent upon the Government's ability to provide qualified European doctors for the treatment of officers and their families." And again, in dealing with the part that the Indian Medical Service has played, and must continue to play, in the medical administration of India, the Commission states: "We gladly recognize the enthusiasm of Indian public men for the improvement of medical facilities. But enthusiasm without adequate standards has its dangers; and the loss of contact with the standards and progress of Western medicine which would be entailed by

[1] Cmd. 3568. Report of the Indian Statutory Commission, vol. I. London: H.M. Stationery Office. 3s.

a failure of recruitment for the Indian Medical Service would, we are convinced, be disastrous for the future of the public health of India." Two reasons are given by the Commissioners for the difficulty that the Indian Medical Service has experienced in recent years in recruiting its full complement of officers. First, as a result of the Lee Commission's recommendations, the number of Indian Medical Service officers employed under provincial Governments is now limited to those required to supply a medical reserve for the Indian Army in war and to provide treatment for the European members of the services and their families—the medical staff of the provinces, over and above this, being provided by provincial medical services. Secondly, the new policy in relation to local self-government limits the effective powers of the civil surgeon for medical administration. One of the attractions of the Indian Medical Service has been that it has allowed a certain number of officers to transfer to service under the civil administration, their normal appointment then being that of civil surgeon of a district. These officers, working in close co-operation with the district officer, were formerly able to ensure that measures they thought necessary for the public health of the district would be carried out. Since, however, much of the medical administration has been placed in the charge of local self-governing bodies under non-official chairmen, civil surgeons have only been able to offer advice where once they issued orders. The civil surgeon still remains the medical representative of the provincial Government in relation to any matter over which it retains direct control; in particular, he is in charge of the headquarters district hospital. A failure of recruitment to the Indian Medical Service would have, in the opinion of the Commission, a very serious effect on the public health. Deaths in India from preventable disease each year amount to five or six millions. "The problems presented by such enormous figures can only be attacked by persistent research by highly trained and enthusiastic medical investigators, and a medical service recruited provincially in India will be no substitute in this regard for one with the exceptional standards and traditions of the Indian Medical Service." In a paragraph in Section VI, on the need for university reform, the Commission makes passing reference to the extensive unemployment of university graduates in India, and remarks that "the provision of specialized training for the professions of law, medicine, engineering, and for commerce, industry, and agriculture, exceeds in many cases the absorptive capacity." The second volume of the report, dealing with future developments, will set out the Commission's conclusions and recommendations. It is to be published on Tuesday, June 24th.

THE STORY OF THE "M.A.B."

THE Metropolitan Asylums Board has disappeared by reason of the transfer of its duties to the London County Council, but the disappearance of the Board is due to no shortcomings of its own, and indeed its supplanters unite to praise it. Its sixty-three years' work makes a notable chapter in the story of social amelioration and humane effort, and we are glad to have it put on record, even in so slight a form as to be little more than minutes, in *The Metropolitan Asylums Board and its Work, 1867–1930*,[1] which is a compilation by the late clerk of the Board, Sir Allan Powell. The initials "M.A.B." have been familiar to two generations of Londoners, but although the Board had to make provision for a daily population of 30,000, and controlled about 70 institutions, not counting such places as ambulance stations, few citizens of the metropolis could have passed an examination in its status and functions. The word "asylums" in its title gave rise from the very first to misunderstanding. Thus, in the first year of the Board's existence the Mile End guardians wrote that they were keeping a dangerous lunatic in their workhouse, and would be glad to know when the asylums to be erected by the Board were likely to be ready. The Board replied that it was proceeding with the proposed asylums for imbecile patients with all possible dispatch, but it had no power to provide for the class of lunatics to which reference was made. The reason for the Board's foundation in 1867 was that it might undertake for London as a whole branches of work which at that time were the duty of separate boards of guardians of the poor, but which could not be adequately carried out in one great city by a number of independent bodies with varying needs and resources. In tracing the Board's work in a number of useful directions, Sir Allan Powell remarks that at first, in respect of every disease, the admissions to the Board's institutions were limited to the pauper class, but in the natural order of things it was found necessary to throw open the doors and make the need for treatment the basis of admission rather than the lack of means. Mental cases formed an exception to this rule, and the pauper limitation remained, though some widening of the class of case treated took place here also. An interesting sketch is given of small-pox epidemics. The first with which the M.A.B. was called upon to deal was that of 1870–72, when 16,000 cases were admitted to the Board's hospital, in which 3,000 died. In the epidemic of 1901–2, 7,000 patients were admitted in three months, and 1,628 died. Since then the series of years of low incidence has remained unbroken, though a mild subtoxic type has lately been prevalent. Comment is made on the immunity of the Board's staff. At the outbreak of the epidemic of 1901–2, the number of small-pox cases dealt with since 1884 was 17,900, and among the staff of 2,198 persons there was not a single instance of the disease being contracted where there had been successful re-vaccination. Those who are familiar with the fine fleet of ambulances to-day will find it difficult to imagine the time, early in the Board's history, when cases of infectious disease were conveyed to hospital in hired vehicles, which stopped on the way at public-houses for the refreshment of the driver and the friends of the patient who accompanied him. Fifty years ago the Board was empowered itself to transport patients from home to hospital. The early ambulances were four-in-hand horse vehicles, and in these 1,600 small-pox cases were conveyed to Dartford. It is not so very long since a familiar sight in the streets was urchins running behind the Board's slow-moving horse ambulance shouting "Fever!" The mechanization of the service began in 1902, when a steam ambulance was introduced, with a capacity for eight stretchers, and a road speed of five miles, with a man in front carrying a red flag. The horse finally received honourable dismissal in 1912. Another fine story told in this volume is the work of the Board in housing war refugees. Altogether, one feels that the M.A.B. deserved a better fate than obliteration.

[1] *The Metropolitan Asylums Board and its Work, 1867–1930.* Compiled by Sir Allan Powell, C.B.E. Published by the Board.

THE B.C.G. DISASTER AT LÜBECK.

DURING the past week there have been several more deaths among the infants treated at Lübeck by B.C.G. inoculation. In most of the fatal cases the interval between inoculation and death has been under two months, the more recent deaths having been among the infants treated in April. As inoculations were made until the end of April it is to be feared that further deaths will occur during the next three or four weeks. The representatives sent out from England by the Medical Research Council—Professor Georges Dreyer, chairman of the Council's committee upon the bacteriology of tuberculosis, and Captain S. R. Douglas, director of the Council's department of

pathology and bacteriology in the National Institute for Medical Research—were, we understand, given every facility for investigation both at Lübeck and in Berlin. We may hope that the information they gathered will serve to guide the Council in deciding on future lines of research in B.C.G. immunization. It is opportune to recall here that the committee set up by the Medical Research Council in 1927 to investigate B.C.G. decided to confine its attention to statistical and bacteriological studies, and in fact the Council has so far promoted no clinical trials of B.C.G. in this country. On its behalf, however, Professor Major Greenwood has examined the statistical evidence relating to the use of B.C.G. in France; Dr. A. Stanley Griffith, working in the whole-time service of the Council at the Field Laboratories, Cambridge, and Professor Dreyer, at Oxford, have investigated the bacteriological basis of the method; and Dr. Griffith and Professor J. B. Buxton have studied the protection of calves against tuberculosis, using their own modification of the Calmette method. Accounts of these investigations have appeared in the annual reports of the Council and in the reports of the Chief Medical Officer of the Ministry of Health.

A YEAR AT THE NATIONAL PHYSICAL LABORATORY.

THE report of the National Physical Laboratory for 1929[1] contains a detailed account of the many investigations on which that institution is continually engaged. These cover the fields of general physics, radiology, acoustics, optics, electrical standards and measurements, wireless, metrology, aerodynamics, and metallurgy. During last year the physics department of the Laboratory was engaged on the measurement of several grams of radium purchased by the National Radium Trust for distribution by the Radium Commission to the centres authorized to receive it. This work has involved the testing of the platinum containers for leakage as well as the determination of the radium content. An instrument has been designed at the Laboratory for the rapid visual identification, with the minimum of handling, of the large numbers of radium needles, tubes, and applicators which come to Teddington for testing. There was noted during the year a marked increase in the number of tests on feebly active preparations, such as radio-active waters, ores, luminous compounds, and the like. In *x*-ray measurement the workers in the department have been establishing the international unit of radiation, the "Roentgen," or "*r*" unit, which was adopted at the Stockholm Conference in 1928, and measuring the pa-tille dose in this unit. Investigation into certain problems relating to the energetics of *x* rays has been started, and the construction of a constant voltage generator for this purpose is well advanced. Among the problems which it is proposed to examine is the variation of *x*-ray output with tube voltage, anticathode material, and the angle which the *x* rays make with the target surface and with the exciting cathode rays. The testing of protective materials and the inspection of *x*-ray equipment and hospital installations in accordance with the recommendations for *x*-ray and radium protection have been continued. Some interesting work has also been done on sound, a line of research to which little attention was paid until recent years. The production, reception, and analysis of sound and speech, and their reproduction, transmission, and magnification for broadcasting, telephony, and similar purposes, have brought many problems to the Laboratory. Experiments are in progress for the Aeronautical Research Committee with the object of reducing the noise of the flight of aeroplanes. High speed in an aeroplane contributes much to noisiness; an increase of 100 feet per second in speed multiplies the sound tenfold. The noise in the cabin of an aeroplane is stated to be one thousand times that in an express train. A portable noise-measuring instrument has been devised for preliminary work, and a number of measurements of air-screw noises have been made. Street noises, in particular the noise due to motor horns, are also being investigated. On the subject of glare—a parallel infliction—the Laboratory is working on the effects of coloured light sources, and on the problem of vision under night-driving conditions. Another useful side of the National Physical Laboratory's work is temperature research undertaken for the Food Investigation Board, including a study of distant-reading thermometer outfits. An electric resistance thermometer designed at the Laboratory for cold storage work has been patented. A refrigerating railway truck, built for one of the railway companies, has been the subject of test. The truck is provided with a small methyl chloride refrigerating plant driven from the axle. A number of investigations have been made on long-distance journeys, which have shown that the plant is capable of cooling the truck and its cargo sufficiently rapidly, and also that the rate of temperature rise when the plant is not in operation is sufficiently slow. One part of the routine work of the Laboratory is the testing of clinical thermometers. More than ten thousand of these were tested last year, and the demand for individual certificates showing the actual corrections at various points of the scale has increased by 30 per cent., as compared with the number issued in the previous year. An inspection by the General Board of the Laboratory will take place at Teddington on June 27th from 3 to 6 p.m. Experiments and apparatus will be shown in the various departments, and the gardens of Bushy House will be open to visitors during the afternoon.

[1] H.M. Stationery Office. 1930. 11s. net.

FOUNDATIONS OF MODERN SUPERSTITION.

"THE main interest of Egyptian medicine," writes Garrison, "lies in its proximity and relationship to Greek medicine." An interest of even greater concern to the comparative folklorist is brought out by Mr. Warren R. Dawson, who, in his book *Magician and Leech*,[1] shows how to Egyptian medicine may be traced many of the superstitions that are prevalent even at the present time. A remarkable example of the vitality of superstition is in the survival of the custom of making sick children in extremis swallow skinned mice. This procedure, which was extant in this country within living memory, is actually recommended in a papyrus written about 1400 B.C.; but it must have been prevalent since the dawn of Egyptian History, for remains of mice have been discovered in the alimentary canals of the bodies of children found in a pre-dynastic cemetery in Upper Egypt; moreover, there is evidence that these mice had been skinned. In the presence of such a custom, supported by the empirical practice of sixty centuries, most medical procedures of to-day look uncommonly like upstarts. In the Ebers Papyrus the blood of bats was recommended for use as a depilatory, but at some time or another the Egyptian word for bat was misread as bug, with the result that the blood of bugs found a place in the mediaeval pharmacy, and remained there for several centuries. This is perhaps one of the earliest examples of error arising from the careless reading of prescriptions, though in this case the consequences do not appear to have been serious. In view of the belief prevalent in some quarters even to-day that the blood of menstruating women exercises a toxic action on plants, it is interesting to note that phyto-pharmacology was applied by the ancient Egyptians as a test for pregnancy. A woman subjected to this test watered spelt and wheat with her urine; if the wheat grew the foetus was a male, if the spelt grew it was a female, and if neither grew the woman was not pregnant. Culpeper gives a modified version of

[1] *Magician and Leech*. By Warren R. Dawson, F.R.S.E. London: Methuen and Co., Ltd. 1929. 7s. 6d. net.

this test, which thus lingered on for about 3,000 years. It would seem, therefore, that the survival of a test is by no means jeopardized by the fact that its validity can easily be disproved. Indeed, the uncritical imagination is so much more likely to be arrested by the irrational and bizarre than by cold reality that the social survival value of an idea might seem to be in a direct ratio with its absurdity. In defence of empirical practices against scientific criticism it is a favourite rationalization to invoke a hypothetical wisdom of the ages as embodied in a continuous tradition. Mr. Warren Dawson gives in his book many interesting examples of the kind of wisdom such traditions may sometimes preserve.

THE PHYSIOLOGICAL SOCIETY.

THE next meeting of the Physiological Society will be held to-day (Saturday, June 21st), at 2.30 p.m., in the Department of Physiology, University College, London, with Sir Charles Sherrington in the chair. The subject for consideration is "chronaxie"—the latent period between the application of an electric stimulus to a muscle and its contraction. A discussion on "Chronaxie and central nervous activity" has been arranged under three headings, each of which will be introduced separately by Professor Louis Lapicque. Dr. Henri Laugier and Dr. Catherine Veil of the Sorbonne, and Professor Henri Fredericq of Liège, have promised to contribute to this discussion. During the tea interval Dr. Georges Bourguignon will demonstrate the technique of chronaxie measurements on human subjects, and Dr. Léon Brillouin will demonstrate and explain his new apparatus. We are asked to state that the society will be pleased to receive interested medical men as guests. In the evening a dinner in honour of Sir Edward Sharpey-Schafer will be held at the Trocadero Restaurant, under the chairmanship of Sir Charles Sherrington. There will be a meeting of the society in the Department of Physiology, University of Oxford, on Saturday, July 5th, and a discussion on "Colloid science applied to biology" will be held at Cambridge from September 29th to October 1st.

THE new Bethlem Royal Hospital at Monks Orchard, Eden Park, Beckenham, will be opened by Her Majesty the Queen on Wednesday, July 9th, at 3 o'clock. It stands on a site occupying 330 acres. The foundation stone was laid by H.R.H. Prince Arthur of Connaught on July 10th, 1928.

LONDON HOUSE.

A STUDENTS' HALL OF RESIDENCE.

THE establishment of a university hall of residence in London for men students from the provinces, but particularly from overseas, is being actively pursued. An excellent site has been secured in Bloomsbury, where a hall, to be called London House, will be erected. While closely associated with the University of London, the hall will be an independent institution with a governing body including representatives of London University, the Royal Colleges of Physicians and of Surgeons, the various institutions of engineers, and other societies. A small private company, known as the Dominion Students' Hall Trust, has been formed to further this object, and a fund of £250,000 is being raised for the purchase of the site and the building and equipment of this new centre of student life. Towards this sum £130,000 has been subscribed by City interests, including donations of £5,000 each by the Corporation of London and the Rhodes Trustees.

The first governors include Mr. L. S. Amery, formerly Secretary of State for the Dominions, Lord Atkin, chairman of the Council of Legal Education, Sir W. H. Beveridge, director of the London School of Economics, Mr. H. A. L. Fisher, Warden of New College, Oxford, and formerly President of the Board of Education, Lord Melchett, Lord Lothian, and Mr. F. C. Goodenough, chairman of Barclays Bank, who is honorary treasurer of the fund. While the student from the provinces will be admitted, the hall will be primarily for the British student from the Dominions and Colonies, for whom there is a growing need to provide the right accommodation, since every year sees an increase in the numbers of such men coming to London both for undergraduate and for post-graduate work in every faculty.

Mansion House Meeting.

Recently an influential meeting was held at the Mansion House, presided over by the Lord Mayor, in support of the movement, when a letter was read from the Prime Minister giving an assurance of the Government's sense of the importance of the venture in relation to the establishment of the proposed post-graduate hospital and medical school at Hammersmith, towards the creation of which the Government has made a grant of £250,000. The Lord Mayor said that the need for such a hall of residence had been felt for years. As Dominion students came in increasing numbers to London, the duty to provide that corporate life wherein the students might mingle with British students from the home country became imperative. Mr. L. S. Amery remarked that the genius of Cecil Rhodes had divined what collegiate life could give to the younger generations from overseas, and this had been confirmed by the experience of the last twenty-five years at Oxford. But Oxford, said Mr. Amery, was not the only university to which Dominion students resorted. A large number came to London University, with its wide range of studies, its great hospitals, and technical schools, and these students had in the past been compelled to seek accommodation in boarding houses scattered throughout the metropolis. Mr. H. A. L. Fisher, in bringing to the scheme the blessing of the older university, said that the educational advantages of London were incomparable, and there was no department of knowledge in which London did not offer unrivalled opportunities. Other speeches in support were delivered by Mr. Stanley Bruce, late Prime Minister of Australia, the Hon. Sir James Parr, late High Commissioner for New Zealand, Sir William Clark, British High Commissioner in Canada, and Sir Drummond Chaplin, representing South Africa.

Lord Moynihan's Speech.

Lord Moynihan of Leeds, P.R.C.S., spoke for the medical profession. He referred to the lack of opportunity for post-graduate instruction in this country. This want was now being remedied by the setting up of the Hammersmith Hospital as a post-graduate centre. But neither hospital nor school was complete unless there was a hostel in connexion with them in order that students from overseas might be properly housed. "Above all things, it is the clash of one mind against another, the impact of one temperament against another, which does more good than all the other things, in my judgement, in a university education, and it is that which a hall of residence produces." Lord Moynihan described the recent arrangement whereby, for the primary Fellowship examination of the Royal College of Surgeons, examiners were being sent out to the Dominions—next year the examiners would go both to Canada and to Australia, but for the final examination the men must come to this country. "We have every possible advantage in London that the medical student or post-graduate from abroad can desire. We have the best material in the world. We have really, though the men themselves hardly believe it, the best men for teaching and for practice in the world. All that we want is the determination that we are going to have a residential hall where we can house those men as we open our arms wide to receive them."

We learn that on the freehold site in Bloomsbury which has just been purchased, it is proposed to build by stages a great hall and common rooms, and eventually to have a collegiate hostel of which it is hoped London and the Empire may be proud.

ALPHONSE LAVERAN AND HIS WORK.*

BY

JAMES H. SEQUEIRA, M.D., F.R.C.P., F.R.C.S.

CHARLES LOUIS ALPHONSE LAVERAN was born in Paris on June 18th, 1845, a year later than Patrick Manson and in the same year as Elie Metchnikoff and Wilhelm Conrad Rontgen. There is no doubt that heredity and family surroundings exercised a decisive influence on his mental and moral development. The Laverans were of Flemish origin, and Alphonse was the son and grandson of doctors. His father, Dr. Louis Théodore Laveran, was a renowned teacher at Val-de-Grâce, being professor of military medicine and epidemiology at the Army Medical School, an institution of which he was later director. He died in 1879, on the eve of the discovery which made his son famous. As a great teacher he cultivated in his son a love of Nature and a taste for exact observation. Laveran's mother, who belonged to an old Lorraine family, was born in a village near Metz. Her father was Commandant d'Artillerie Guénard de la Tour, and two of her maternal uncles were celebrated soldiers under Napoleon.

Alphonse Laveran passed his early days in Paris; later, as his father's military service determined, he moved to Metz and then to Algeria. In 1856 he returned to Paris, and, after a period at the College Sainte-Barbe, entered the Lycée Louis-le-Grand, where he finished his classical studies. As soon as he had obtained his baccalaureate he decided to follow his father's career, and commenced his studies at the School of Military Hygiene in 1863. This was followed by a four years' course at Strasbourg, which, at this time, excelled in the teaching of histology. In 1866 Laveran became an intern at the Civil Hospital, and obtained his doctor's degree for a thesis on the regeneration of nerves. After a course at Val-de-Grâce he was appointed aide-major to the Military Hospital St. Martin. At the opening of the Franco-Prussian war Laveran served with the ambulances at the battles of Gravelotte and Saint-Privât, and retired with the broken French armies into Metz, where he remained throughout the siege. It is almost impossible to realize now the appalling conditions. The be-sieged town was filled with casualties, most of the wounds were complicated with septicaemia, erysipelas, and gangrene, dysentery and typhoid prevailed; and the resources of the medical service were inadequate. On its capitulation Laveran was taken prisoner, but, being a doctor, he was speedily released: on returning to France he was appointed to the Military Hospital at Lille. Here he remained till the end of the war. In the civil war that followed he was at his old post at the Hospital St. Martin, where patients and staff were injured during the bombardment. These events culminated in the great conflagration of May, 1871, which destroyed the Tuileries, the Hôtel de Ville, and many other notable buildings.

In 1874 Laveran was elected to the chair held by his illustrious father at Val-de-Grâce, and his lectures and practical classes on pathology increased his reputation. A year later he published a treatise on the subject of his lectures. During this time he was assiduously attending the laboratory of Professor Ranvier to perfect his knowledge of histological technique. When his term of office at Val-de-Grâce expired in 1878 he was appointed to the province of Constantine in Algeria. Now began his studies of the blood and viscera of malarial patients. He soon came to the opinion that the pigmented elements, first figured by Virchow in 1848, which had hitherto been thought to be melanin-bearing leucocytes, were of a parasitic nature, but he was unable to complete his investigations, being transferred to Biskra. As there was very little malaria in Biskra, Laveran made a study of the variety of oriental sore known as Biskra button. Next year, in collaboration with Dr. Tessier of Lyons, he published a book on clinical medicine and pathology in two volumes, a work that reached its fourth edition in 1894. In 1880 Laveran was again appointed to the military hospital at Constantine, and resumed his studies of malaria.

The first notice of his historic discovery is found in the *Bulletin de l'Académie de Médecine de Paris* (1880, 2 sér., tome ix, p. 1235).[1] It is a simple record that M. Laveran addressed a note on a new parasite found in the blood of several patients suffering from malarial fever. There is no text. In the same *Bulletin* (p. 1346) there is a second note relating to a new parasite found in the blood of patients suffering from malaria. Here again there is nothing in the text except a few remarks by M. Colin. Laveran's first paper was a communication from Constantine dated December 15th, 1880, to the Société Médicale des Hôpitaux de Paris and published in the *Bulletin* of that society (1881, 2 sér., xvii, pp. 153-164). The author states:

"On the 20th October last, while examining by microscope the blood of a patient suffering from malarial fever I observed in the midst of the red blood corpuscles the presence of elements which appeared to me to be of parasitic origin. Since then I have examined 44 cases, and in 28 have found the same elements. I have searched in vain for these elements in the blood of patients suffering from diseases other than malaria. I have described the elements as Bodies No. 1, No. 2, and No. 3. Bodies No. 1 are elongated elements more or less tapering at the extremities, often curved into crescents, sometimes of oval form. They measure 8-9 thousandths of a millimetre. They are colourless, except towards the central part, where there exists a blackish spot formed of a series of rounded granulations, which appear to be pigment granules. Some of the bodies show on the concave side a pale curved line which appears to tie together the extremities of the crescent. Bodies No. 2 show different aspects in rest and in motion. At rest they are spherical and show a circle of granules of pigment. In movement there is a rapid change; very transparent filaments animated by active movement are seen outside the bodies. The filaments are symmetrical. A free filament of one of these bodies is figured. Bodies No. 3 are generally spherical but larger than No. 2, and show alterations in shape."

Although we have improved our microscopes and methods of staining we can recognize at once the completeness of this succinct description and the identity of his reproductions.[2] He discusses several possible objections in regard to the nature of these protozoa. Bodies Nos. 2 and 3, he observes, appear to him to be different phases of the same parasite. He remarks that the parasitic elements under consideration had hitherto been confused with melanin-bearing leucocytes, and he concludes that the presence of these parasites in the blood is probably the principal cause of the symptoms of malaria. This was confirmed in 1882, when he found the parasite in the same forms while studying malaria in the Roman Campagna. But to his questions, What becomes of the elements? How are they introduced? How do they cause the disease? there was, as yet, no answer. It was natural that Laveran's early observations on the haematozoon of malaria should be received with scepticism. Bacteria had been known since 1683, when they were observed and figured by Leeuwenhoek, whose only instrument was a small simple lens.[3] The improvements in microscopy, especially the development of the compound microscope, had increased enormously the number of micro-organisms known to science, but the haematozoon of malaria was the first pathogenic microbe of animal origin to be described. The work of the Italians was particularly valuable, Golgi made a notable contribution in his discovery of the plurality of the parasites of malaria.

In 1889 Laveran received the Bréant prize from the Academy of Science, and two years later, as professor of military hygiene at Val-de-Grâce, he published his *Paludism and its Haematozoon*, which was enthusiastically received. It was recognized, as Professor Ranvier said, "that the discovery of the haematozoon was not a matter of chance. It was the result of the perseverance and great talent of the observer." Many honours were

* Abstract of presidential address at the Laveran Jubilee Meeting of the Kenya Branch of the British Medical Association, which was devoted this year to the study of various aspects of malaria. A report of the proceedings appeared in the *Supplement* of March 22nd (p. 52).

[1] In the small room where the discovery was made plaques commemorating the event have been set up by the military doctors at Constantine and the civil practitioners in Algeria.

[2] Dr. Sequeira showed a lantern slide of a tracing of the woodcut in Laveran's original paper.

[3] Leeuwenhoek's papers were published by the Royal Society.

conferred upon him, not only by his own country, but by many foreign academies and learned societies, among them the Jenner medal of the Epidemiological Society. In 1894, having completed his term at Val-de-Grâce, a "narrow and paltry militarism" detailed him for administrative work at Lille and Nantes. (His character and independence had offended certain Ministers.) In these posts he had no hospital and no laboratory for his researches. When the expedition to Madagascar was being organized in 1895 his assistance was not invited, although the danger of malarial infection was generally realized. The atmosphere was uncongenial, but he carried out his duties with characteristic energy until the following year, when, in spite of the urgent protests of friends and colleagues, he retired from the service. Just over 50 years of age, and freed from official restrictions, Laveran offered himself as a voluntary worker at the Pasteur Institute, where he was welcomed by MM. Duclaux and Roux. He was appointed chief of the honorary service, and shared a workroom for several years with M. Mesnil. Here he extended his researches to the pathogenic protozoa of the animal kingdom, and described and studied a number of new organisms. These included the intracorpuscular haematozoa of birds, which are of special interest in relation to the work of Ronald Ross.

Although absorbed in his new work Laveran did not lose his interest in malaria. The fruitless search for the haematozoon in air, water, and soil led him to the conclusion that the organism must pass a phase of its existence in an animal host, and, like Manson, he thought that the host was probably the mosquito, which was well known in all malarious districts. Manson had already, in 1878, demonstrated the role of the mosquito in the pathogenesis of filariasis. Up to 1894 the predominant opinion was that flagellation was the result of the death and disintegration of the parasite. Manson, on the other hand, maintained that "since the flagella appear only when the malarial blood gets outside the body, their purpose must be to continue the life of the parasite in the outer world . . . for the purpose of infecting mosquitos which suck the blood of patients." MacCallum showed that the flagella were microgametes, and he and Opie proved the crescents to be sexual forms. At Secunderabad in 1897, Ronald Ross, then a major in the Indian Army, found in the stomach of two "spotted winged" mosquitos, bred on larvae and fed on a patient whose blood contained malaria crescents, certain pigment cells indistinguishable from those observed in malaria parasites. He confirmed these observations in another species of anopheles also bred from larvae, and sent in his report. A week later he was sent on official duty to Rajputana, and his researches were stopped for six months. Speaking many years later at the opening of the Ronald Ross Gate Commemoration in Calcutta (1927) Sir Ronald referred to Laveran as "his master" and to Sir Patrick Manson as "my sponsor and the man who put me on the right track." Fortunately Manson was medical adviser at the Colonial Office, and by his intervention Ross was transferred to Calcutta for "special duty." There he studied the details of mosquito transmission in the allied parasite of birds, as few malaria patients were available. Even when he had worked out the cycles of avian malaria his shortsighted superiors failed to realize the importance of his discovery, and he was sent to Assam to investigate kala-azar. It thus fell to the Italians—Grassi, Bignami, and Bastianelli—to verify Ross's observations in human malaria. The final and complete proof that malaria is carried from individual to individual by mosquitos, and by mosquitos alone, was made in 1900. At Manson's suggestion the Colonial Office and the recently founded School of Tropical Medicine sent Drs. Sambon and Low to live in a mosquito-proof hut for the three most dangerous months at Ostia, a heavily infected area in the Roman Campagna. They lived normal lives during the day, taking no quinine or any other precautions. The only condition carefully observed was that from sunset to sunrise they remained in their anopheles-protected hut; as a result they enjoyed complete immunity, while all their Italian neighbours were attacked by the disease. The complementary test was made at the same time. Mosquitos that had been fed in Rome on malarious patients were sent to London and allowed to infect the late Dr. Thorburn Manson[4] and Mr. George Warren, neither of whom had been abroad or exposed to malaria. Both developed the characteristic fever, and the haematozoon was found in their blood in the initial attack and in the relapses.

Laveran was naturally one of the strongest supporters of the malaria-mosquito theory, and soon developed its practical application. After an exhaustive study of the mosquitos of Corsica he presented a report in 1901 to the Academy of Medicine, urging that an organization should be formed to combat malaria on the lines suggested by the recent discoveries. The following year the Corsican Anti-malaria League (Ligue Corse contre le Paludisme) was inaugurated with Alphonse Laveran as honorary president. Under the energetic direction of Dr. Battesti the league devoted its attention to such matters as the destruction of breeding places, the prophylactic use of quinine, and propaganda in schools. A similar league was formed in Algeria during the next year, and organizations working on these lines are now found all over the world. It was the immediate development in this branch of research that cleared Havana of yellow fever and freed the Panama Canal zone of mosquito-borne diseases.

Among the many subjects which Laveran studied at the Pasteur Institute were the trypanosomes, and he and M. Mesnil described at least thirty new species. His book, *Trypanosomes and Trypanosomiasis*, published in 1904, became a classic. In the same year he reported the first case of infantile kala-azar, a disease now known to be widespread on the European and African coasts of the Mediterranean. In 1907 he received the Nobel Prize.[5] At this period the council of the Pasteur Institute decided to purchase an adjoining property, comprising a dwelling-house in the Rue Falguière and large stables and coach-houses. The house was made into laboratories, and the second story was placed at Laveran's disposal. The other premises were converted into stables, kennels, aviaries, and aquaria. To this laboratory of tropical diseases Laveran contributed 100,000 francs (then worth about £4,000) from his Nobel Prize. Here he worked from 1907 to 1922, taking his share of the courses on microbiology, malaria, piroplasmosis, leishmaniasis, and sleeping sickness. In his second floor apartment, the door of which was indicated by a modest visiting-card fastened with a tack, his advice and counsel were sought by workers from all parts of the world. In 1908 Laveran founded the Society of Exotic Pathology and was president for twelve years. The bulletins of the society bear witness to his amazing industry. During the war he served on numerous commissions and visited nearly every army corps. In the Salonika campaign his advice was, of course, of great value.

These duties must have imposed a heavy strain on a man of 70, but he continued to work at the Pasteur Institute, where only a single attendant had been left. Despite difficulty he brought out his book on leishmaniasis, which was similar in scope to his classic publications on malaria and trypanosomiasis. He presided at the centenary fête of the Academy of Medicine in 1920, but his strength was failing, and he died on May 18th in the same year as the British Father of Tropical Medicine, Sir Patrick Manson.

It would be difficult to give a finer example of sustained action or of higher ideals of duty. Laveran was devoted to his home and family. A man of rather slow speech he had inherited a certain reserve, but his kindness was always apparent to those who worked with him. The world-wide recognition of his contributions to medical science is shown by the honours he received at home and abroad. He was an honorary fellow of the Royal Society and of the Royal Society of Edinburgh, honorary fellow of the Royal Society of Medicine, of the Pathological

[4] Dr. Thorburn Manson's lamented death was not due to malaria.
[5] Ross had received it in 1902.

Society of Great Britain and Ireland, of the Society of Tropical Medicine and Hygiene, and of the Institute of Public Health. The University of Liverpool, which has done much to foster research in tropical disease, conferred upon him an honorary doctorate.

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New Zealand.

[FROM OUR CORRESPONDENT.]

Social Insurance.

THE national scheme of medical service propounded by the British Medical Association has received some prominence in the cablegrams to New Zealand. Legislation in New Zealand may be considered advanced in many ways, but in this country there is no system of national health insurance apart from that which is connected with the various lodges or friendly societies. The public hospitals here are to a great extent under the control of the Government and of local bodies, and have unusually large out-patient departments, which lessen the need for a national medical service. Domiciliary visits are authorized to a very limited extent by the hospital and charitable aid boards, this being our nearest approach to a Poor Law medical service. The New Zealand Branch of the British Medical Association is not in sympathy with general medical insurance. Dr. Erwin Liek in his book *The Doctor's Mission* condemns at least the German system of medical insurance; he considers that the production of hypochondria, and the wholesale malingering to obtain incapacity payments, as well as other evils, outweigh its obvious advantages. The comments on the outlines of the scheme propounded by the Association may be invalid because of insufficient knowledge here of the actual proposals, but one of our leading journals, *The Dominion*, may be quoted to express the views of an influential class in New Zealand.

"Tendencies should be carefully studied in New Zealand before any attempt is made to introduce social insurance in its various forms. It is not only that great bureaucracies grow up and fatten on such schemes, but that the so-called beneficiaries are morally debauched, losing in self-respect, self-reliance, and independence. They are not even happy because they have put away the salt of life—its constant quest and effort and adventure and every spice of risk—to rest snug in a slack and savourless security. In fact, however discouraging it may be to reformers and however sad a reflection it may cast on weak human nature, experience suggests that social insurance tends to create the very ills it sets out to cure."

Hospital Policy.

The average daily number of occupied beds in the public hospitals of New Zealand in the eighteen years from 1911 to 1929 increased from 3.1 to 5.8 per 1,000. During the same period the number of in-patients annually receiving treatment rose relatively to the population to the extent of 148 per cent.; out-patient services developed to a still greater extent—that is, from 18,867 out-patients in 1911 to 73,952 in 1929. The gross annual maintenance cost of public hospitals has in the same period increased from £200,631 to no less a sum than £1,206,190 for last year, disregarding indirect expenses and also expenditure on district medical nursing and ambulance services. The Minister of Health states that the provision of public hospitals, including administrative expenses and interest, and depreciation charges, entails a burden on local and general taxation exceeding £1,000,000 per annum. If these figures continue to increase at the same rate it will not be long until hospital expenditure will become a very serious burden for the taxpayer. Under the present hospital system the class of people who pay most in taxation for the upkeep of public hospitals do not themselves obtain treatment in the public hospitals except to a very limited extent. Arising partly out of these considerations a conference was held recently of representatives of the hospital boards, the Health Department, the New Zealand Branch of the British Medical Association, and the New Zealand Section of the College of Surgeons of Australasia, and the following resolutions were adopted:

1. That all members of the community requiring treatment in hospital be eligible for admission to public hospitals.
2. That patients in public hospitals who need, because of the nature of their illness, accommodation other than in the large wards shall be provided for by an adequate number of one to four-bedded wards.
3. That patients voluntarily availing themselves of such special accommodation shall pay the full cost of maintenance, including overhead expenses, provided that no distinction is made in the case of patients unable to pay.
4. That the medical attendance of patients be in the hands of a visiting staff with the assistance of a requisite number of resident medical officers, the foregoing not in any way to interfere with the administration of the hospital or such powers as are already vested in the medical superintendent and stipendiary staff.
5. That each hospital board must determine the number of the visiting staff, but it be recommended that in arriving at a decision the board shall, consistent with the convenience and smooth running of the institution, appoint as many of the medical practitioners residing in the district as possible.
6. Subject to the approval of the board, that the right of attending their own patients admitted under Resolution 3 be extended to all practitioners except such as may for special reasons be deemed unsuitable.
7. That in making appointments to the visiting staff, and in determining the suitability or otherwise of practitioners for the privilege of attendance on patients, the hospital board should be guided by the advice of a special consultative body, or, in the case of the smaller hospital districts, by the advice of the Director-General of Health.
8. That such special consultative body comprise the consulting staff, if any, of the hospital or the senior members of the medical profession of the district, such senior members to be selected by the hospital board.
9. Patients unable to pay the ordinary hospital fees shall be attended by the visiting medical staff in an honorary capacity.
10. Patients entering the hospital and able to pay for medical attendance in addition to maintenance fees shall make their own terms with their medical attendant, who will be responsible for collection of his own fees.

Belgium.

[FROM OUR CORRESPONDENT.]

Progress of the Campaign Against Syphilis.

AN important statement has been published by Professor Bayet and Dr. Timbal detailing the results obtained during recent years in the reduction of nine-tenths of the prevalence of syphilis in Belgium. The number of chancres treated by the dispensaries and clinics fell from 2,504 in 1920 to 204 in 1927, and the incidence per 1,000 of primary syphilis in men on military service from 13 in 1920 to 0.43 in 1925; this incidence rose slightly to 0.59 in 1927, but it then fell again, reaching an approximate figure of 0.4 in 1928. All the available evidence, notably that obtained by recent investigations of the National League of Belgium against Venereal Diseases and of the health administration, indicates that, during the last two years the position has remained favourable. Yet here and there a slight increase is still manifest from time to time in the number of fresh infections; it may be that these sporadic outbursts are inevitable, and imply that the decline in prevalence has reached a stage below which it will be difficult to pass. Alternatively, the arrest of the fall in the statistical curves may be associated with the restrictive measures which came into existence in January, 1925. It would be premature to draw final conclusions yet, but, whatever may be the cause of this halt, the Government is determined to continue the campaign energetically. Its sanitary health visitors will follow up syphilitic women detected in the obstetrical departments of hospitals and ante-natal clinics, and will endeavour to secure the return of defaulters to

treatment centres. Such measures have obviously a considerable social bearing. Nevertheless, the Government believes that still more is necessary, and that the special measures enacted in 1926 and 1927 must be re-enforced on the following lines. Recognized medical practitioners will now, as before, be empowered to prescribe at the expense of the State such specific treatment as is necessary to ensure the curing of infective lesions; hospital consultations are to be re-established; post-graduate courses in syphiligraphy will be organized in the universities for final year students, and only those practitioners who possess certificates issued at the end of such courses will be permitted to benefit by the free supply of specific remedies.

An International Pharmacopoeia.

The Belgian Government has approached the Council of the League of Nations with reference to the second International Conference for the Unification of the Descriptions of Drugs, which was held at Brussels in September, 1925. It was proposed to establish an international organization to bring about unification of the national pharmacopoeias, and to set up certain special commissions. The Belgian Government has informed the general secretary of the League of Nations that the international agreement elaborated at the conference has now been ratified by a sufficient number of countries, and the view of the League of Nations is sought with regard to the creation of the contemplated international organizations.

Prophylaxis Against Tuberculosis in the Congo.

Legislative steps have been taken in order to deal with the increase of tuberculosis in the Belgian Congo. It has now been enacted that no one of foreign derivation may enter the Belgian Congo to live there unless he possesses a duly legalized medical certificate, signed by a registered practitioner in the country in which he is living, or in the country where he last lived, and certifying that he has no sign of open tuberculosis. Any person not of Congo descent who is living in that country and is found to be infected with open tuberculosis will be required to leave the territory within six months after the diagnosis has been established.

The Proposed Flemish Academy.

A very important debate was held at the Academy of Medicine on the proposal to create a Flemish academy of medicine, science, and fine arts. Professor Bordet made a strong speech on the danger innate in such a proposition. It was evident, he said, that the adoption of a measure of this kind would bring about a serious cleavage between men imbued by a like culture and ideal; they desired, on the contrary, to co-ordinate their work, maintaining the closest mutual relations in order to serve that still higher interest which was common to humanity—namely, the scientific interest. Belgian men of science refused to believe that they would be asked to accept this great dissociation, which would drive them to forget all that united them and concentrate on what might divide them. The academies were justly proud of having been, and of being, in the intellectual sense, the representatives of the whole of Belgium, one and indivisible. It was evident that the language question was of the first importance in matters relating to purely literary interests, but, in the case of science the position was wholly different. For the scientist languages were the means of propagating discoveries; he had no wish to confuse himself with the separating of mankind into different nationalities. Most scientists in the course of their work had to make use of foreign languages, such as English or German, and liberty in this respect was an absolute necessity for science. It was absurd to decree the use on all occasions of one particular language for discussions or scientific writings. To impose such a blind restriction based on linguistic rivalries and national aversions was an offence to science itself; it amounted to a complete misconception of what constituted the real dignity of science. The self-sacrificing devotion of scientists was based on the human and international nature of science, the part it played in drawing together civilized peoples, its task of linking men together in sincere co-operation to make life more peaceful and more pleasant, and thus to quiet those racial antagonisms which had caused so much evil and were still so often to be discerned. The text of Professor Bordet's speech, and the account of the discussion which followed, have been forwarded to the Government by the unanimous desire of the Academy, special attention being called to some of the considerations which were put forward in the course of the meeting.

Scotland.

The Prince of Wales's Visit to Edinburgh Royal Infirmary.

On June 12th the Prince of Wales paid a visit to the Royal Infirmary, Edinburgh, with the object of commending to the public the appeal made by the managers in connexion with the bicentenary of the institution. The Prince proceeded first to the George and Agnes Murray Home at Gilmerton. This institution, completed in the spring of the present year at a cost of £22,000, has been established as a convalescent home in connexion with the Royal Infirmary of Edinburgh, and is especially intended for invalid British soldiers and sailors. Lord Provost Whitson mentioned that the home would accommodate twenty convalescents. It had been provided out of funds left by the late Miss Helen Murray, and was designed to give the maximum amount of sunlight to all rooms at the time of day when they were in use. In declaring the home open the Prince remarked that he was proud to be associated at any time with an institution that could benefit ex-service men; he shook hands with the fifteen convalescent soldiers who are already in residence. Proceeding to the Royal Infirmary, the Prince was received there by the superintendent, Dr. G. St. Clair Thom, Mr. Henry Maw, secretary and treasurer, Miss Bladon, superintendent of nurses, and a number of the managers and honorary staff. After visiting a male surgical ward and a female medical ward, his Royal Highness planted a tree on the lawn between Wards 31 and 34 at the south side of the Infirmary to commemorate his visit. A tour of inspection was then made of the radiological department, where His Royal Highness showed special interest in an *x*-ray film illustrating the case of a man who had swallowed a safety razor which lodged in his stomach. He was also interested in the arrangements made for the radium received from the Radium Commission, which is stored in a special lead safe weighing three tons. Before leaving the institution the Prince visited the residency, where he signed his name on the dining-table that bears the names of all the residents who have passed through the institution since 1879, as well as those of distinguished visitors, including the King and Queen. He was presented by Dr. A. Logan Turner with a copy of his book dealing with the history of the Royal Infirmary of Edinburgh. After a visit to the National War Memorial in Edinburgh Castle the Prince was entertained to lunch in the City Chambers. Here the Lord Provost proposed his health as Duke of Rothesay, Steward of Scotland. The Lord Provost remarked that the visit had been made on account of the celebration of the bicentenary of the Royal Infirmary, which had begun in a small house with six beds at Robertson's Close in 1729. The Infirmary had grown greatly since that time; its patients came from a very wide area, including the Hebrides, Orkney, and Shetland, a large part of the north and east of Scotland, and the area immediately round the Lothians and southern border. The visit of His Royal Highness would draw attention to the need for extension in view of the long waiting list, the requirements of the nursing staff, and other matters. The sum required for this purpose would be at least £500,000. The Prince, in reply, remarked that the Edinburgh Infirmary was the largest voluntarily supported hospital in Great Britain, and he would be very happy if his visit helped to draw attention to its needs and to the appeal which was about to be made. He sincerely hoped that the funds required for the extension would be obtained.

Care of the Blind in Scotland.

The annual conference of the Scottish National Federation of Institutions and Societies for the Blind was held in Perth on June 12th and 13th, and was attended by about eighty delegates. A civic welcome was accorded by the federation by Lord Provost Dempster, who referred to the beneficent work carried on by the various institutions and societies affiliated to the federation, especially in providing blind persons with the means of working and earning something to maintain their spirit of independence. Parliament was now rightly providing pensions for the blind, and had conferred powers on local authorities to promote their welfare, but the need for these societies was as great as ever in order to supply the personal and human touch. An address was delivered by Colonel Robert Forbes, Government inspector, on the training of the blind. He stated that in recent years, as the result of the advance of medical preventive and remedial measures, the number of blind children had shown a very marked decline. In the past the tendency in training had been to overlook the fact that the psychological outlook of the person born blind was entirely different from that of a person who had a conception of a visible world. It was a debated question whether the blind child should be educated in a day class or whether he should reside and be taught in an institution reserved for the blind. In either case there was an absolute necessity to detect as early as possible any particular aptitude or ability, and to develop any special bent.

Glasgow Radium Institute.

The Glasgow and West of Scotland Radium Institute at Garnethill was formally opened on June 10th by Principal R. S. Rait of Glasgow University, under the chairmanship of Sir John M. Macleod, who expressed regret at the absence of Sir George T. Beatson, to whose vision, wisdom, and patience, he said, the hospital owed its present position. Principal Rait, in declaring the institute open, referred to the great excitement caused about the year 1893 by the discovery first of x rays and then of radium. He mentioned that before the war radium cost about £36,000 for one gram, but, unlike other commodities, the price had fallen since the war owing to the discovery of deposits on the Congo; one gram could now be obtained for about £12,000. He quoted a statement that radium could undoubtedly remove cancerous growths without injury to the surrounding healthy tissue, and thought that this represented an enormous advance in the alleviation of human suffering. It justified the spending of a large amount of money in procuring radium, and also in training people in its use. The practical application of the properties of radium required the most delicate and sustained study; this was not understood by many people. As the result of the munificent gift of Lady Burrell it had been possible to establish this radium institute; those in charge of the cancer hospital did not intend to confine the radium to the use of the hospital itself, but to share it with other hospitals. An important scheme of a radium institute with a radium officer, beds for patients, and staff of trained nurses had been formulated, and it was a matter for pride that this had been done before the Government scheme was elaborated by the National Radium Commission. There was still room, however, for the operation of such an independent foundation, and the Commission admitted that the work in Glasgow was in no way antagonistic, but that the two undertakings could cooperate. The Duchess of Montrose afterwards performed the opening ceremony of the nurses' home at the institute, and mentioned, as an example of the increased work of the Glasgow Cancer Hospital, that about thirty-four years ago, when the first extension to the hospital was opened, about eighty or ninety patients were treated annually in the wards, whereas last year the figure was 479.

New Edinburgh Medical Officer of Health.

At a meeting of the town council of Edinburgh on June 10th, Dr. John Guy was elected medical officer of health for the city in succession to Dr. William Robertson, retired. After some discussion it had been resolved to advertise the post, and twenty-one applications were received. The two names finally submitted to the town council were those of Dr. Guy and Dr. William George Clark, at present senior assistant to the medical officer of health, Glasgow. On a division Dr. Guy received 41 votes and Dr. Clark 21. Dr. Guy, prior to his appointment, acted for several years as deputy medical officer of health for Edinburgh, and was tuberculosis officer for the city. He graduated M.B., C.M. at Glasgow in 1894, proceeded M.D. in 1900, and received the diploma in public health from Cambridge University in 1899. He became a Fellow of the Royal College of Physicians of Edinburgh in 1917. After holding the posts of county tuberculosis officer in Gloucester and medical superintendent of the Bridge of Weir Sanatorium, he went to Edinburgh about sixteen years ago as tuberculosis officer. He has contributed to numerous periodicals dealing especially with the treatment and administrative control of tuberculosis.

Edinburgh Hospital for Crippled Children.

A garden fête in aid of the Edinburgh Hospital for Crippled Children was held on May 31st at Craigiehall, Cramond Bridge, near Edinburgh. Sir David Wallace occupied the chair, and the fête was opened by Lady Rosebery, who remarked that although several hospitals existed in England for the treatment and cure of crippled children, no provision of this nature had so far been made in Scotland. The general infirmaries and children's hospitals were often unable to keep such children for a sufficient time, and their home conditions were very often such that a relapse was almost inevitable. The hospital soon to be completed near Edinburgh would specialize in these cases, and would provide educational and gymnastic facilities during the long period that it would be necessary to keep these children. The hospital would have seventy-five beds to start with, but provision was being made for another seventy-five beds, and although the bulk of the money required for the hospital had been received a great deal would be necessary for its extension. The sum raised by the fête amounted to over £900.

Measles Epidemic in Edinburgh.

A severe epidemic of measles has recently occurred in Edinburgh. The disease has been generally spread over the city; during the fortnight ended June 7th, 1,041 cases were notified, with twenty-one deaths. Since March of this year there have been approximately 8,000 cases, involving about 4,000 families.

England and Wales.

Sir William Morris's Gift to Oxford.

THE munificent gift to the University and city of Oxford made recently by Sir William Morris was gratefully accepted for the University in a unanimous vote in congregation on Tuesday, June 10th. This gift—as wise in conception as it will be far-reaching in its consequences—consists of a large area of land adjoining the Radcliffe Infirmary, known as the Observatory site, and the Observatory and other buildings on the site which have been purchased by Sir William Morris. It is to be administered by trustees, the land being for the use of the hospital, and the existing buildings for the purposes of the School of Medicine. To the Radcliffe Infirmary the possession of this land will be an inestimable boon. It solves a problem which had recently become one of great urgency, and of the utmost anxiety to the hospital, shut in as it is on a comparatively narrow strip of ground between Somerville College and the Observatory grounds; for the hospital now serves the greater part of the three counties of Berks, Bucks, and Oxon, as well as the city and neighbourhood, and the need for new wards and other extensions had become extreme. But there was nowhere to put them, with adequate regard to modern hospital requirements and future needs, short of moving the whole hospital to an entirely new site in the suburbs—a plan which had been under serious consideration. The Observatory ground will meet all possible needs for very many years to come, and practically in perpetuity. Its possession, together with that of the Observatory buildings

(which are besides of considerable architectural interest), will also make possible the initiation of a scheme which has been present to the minds of members of the Faculty of Medicine for some years past, and must become prominent in the future development of the School of Medicine, for the provision of full facilities for clinical research, and the further linking up of the University departments of medical science, with their unrivalled opportunities for research, with the clinical investigation of disease at the bedside. This scheme is still in an embryonic stage, but Sir William Morris's generous and far-sighted gift lends it fresh vitality, and brings it into the field of living possibilities. It will now only await a free supply of that form of nourishment which alone is adequate to pass successfully through its period of gestation. Large new benefactions must, however, be obtained before this can be achieved, and the scheme carried on to full maturity.

Papworth Village Settlement.

An encouraging account of the work of the clinic for women and children run in connexion with the *Papworth Village Settlement* appears in the medical director's report for 1929. The number of children now under supervision is 173, and of these 44 are of pre-school age, 36 are over 14 years of age, and have employment in Cambridge or are continuing their education there, and 93 are of school age and attend the village school. Medical examinations during the year under review have confirmed the previous experience that the children born in the village have remained free from tuberculosis. In selected cases a series of tests have been carried out with Hamburger's ointment, consisting of ground tubercle bacilli, by means of which, according to Hamburger, 100 per cent. positive results may be obtained in tuberculous children. The test has been applied only to children who had been exposed to infection, but gave, contrary to expectation, a negative tuberculin reaction as indicated by Moro's tuberculin ointment test. In this way evidence "of having met the bacillus," though not of actual tuberculosis, has been found in two children not born in the village. Both these children are maintaining excellent health. Although, as in previous years, the Papworth Settlement has been remarkably free from infectious diseases, the outbreak of streptococcal tonsillitis reported last year has been troublesome and has persisted throughout the winter. During 1927 the effect of small doses of iodine given in the form of iodized chocolates was tried in a group of eight children with enlarged tonsils thought to be due to hypothyroidism. During the year under review nine children, in whom there was some indication for tonsillectomy other than simple enlargement of the tonsils, were selected as a control, and subjected to tonsillectomy. As a result it appeared that, though in most cases the general condition improved considerably, the procedure had certain disadvantages. Among the sequels have been troublesome middle ear disease and prolonged febrile attacks with involvement of glands. It is noteworthy that microscopical examination, which was carried out on all the removed tonsillar tissue, has shown no evidence of tuberculous infection.

New Milk Laboratories opened in London.

An extension of the milk research laboratories of United Dairies, Ltd., at Willesden, was opened by Sir Andrew Balfour on June 16th, on the occasion of a luncheon presided over by Mr. J. H. Maggs, chairman of the company, and attended by many hygienists and medical officers of health. Before the opening a tour was made of the laboratories, which are well equipped with every means of investigation into milk problems. The routine work consists of the examination of milk samples by microscopical, chemical, bacteriological, and physical means, the cleanliness, freshness, quality, and purity of the milk being thus determined. It was stated that more than a million samples, taken at every stage of the milk's progress, are tested every year, a number several times greater than the total of samples taken by the public health authorities throughout Great Britain. This work goes on in thirty laboratories, nine of which are in London. At the new Willesden laboratories, in addition to the routine tests, research work is carried on with the object of still further improving the milk supply. One item of the most recent equipment is a lantern through which milk samples, magnified 225,000 times, are projected on to a screen. The routine of the actual pasteurizing process, which is undergone by the milk at the London depots before dispatch for distribution, is controlled from the research laboratory, and any peculiar result is carefully investigated. To demonstrate the advances which have been made in milk production, the firm staged an exhibit of the primitive tests carried out by the dairy trade twenty years ago—tests made by visual observation, and carried out irregularly and by unqualified people. To-day more than a hundred analytical and bacteriological chemists are in the employment of the company.

Sir Andrew Balfour welcomed the members of the public health services, whose presence, he said, testified to the co-operation which existed between science and industry. Happily the time was rapidly disappearing when medical officers of health regarded traders as crafty schemers endeavouring to take advantage of the public, while traders looked upon the M.O.H. in the same light as the burglar looked upon the detective. The United Dairies had been leaders in an industry which had made greater advances in the past decade than any other branch of industry connected with food supply. Beginning with the cow and the cowshed, they had aided the work of the M.O.H. in rural districts by influencing the cleaner production of milk through the introduction of clean milk competitions and young farmers' clubs. They had also developed new and hygienic methods of transport in the shape of large glass-lined tanks, and in London they had established a chain of pasteurizing plants, which were most efficient, and which contained the very latest in the way of equipment and machinery. They had also done a great work by transferring practically the whole milk supply of the metropolis from the open can to the hygienic sterile bottle. He also referred to the help which the United Dairies had given in popularizing the results of research, and in helping research itself. They had seconded the teaching of the public health schools by supplying exhibits of a highly technical nature, which enabled students to obtain a thorough grasp of the whole subject of milk from the cow to the consumer. The fine laboratories opened that day, with their highly trained staff, were yet another effort on the part of this enlightened company to give the best service they could to the milk-consuming public and to raise the milk industry to the position it deserved. When one remembered experiences long ago in general practice in connexion with enlarged cervical glands, which in the majority of cases were due to infection by bovine tuberculosis, one could not but rejoice at these developments. Other speeches were made by Mr. Ben Davies and Mr. P. B. Tustin of United Dairies, and Dr. J. B. Howell, president of the Society of Medical Officers of Health, responded for the visitors.

St. Marylebone Rheumatism Centre.

In a brief report on the activities of the St. Marylebone Children's Rheumatism Supervisory Centre during 1929 the medical director states that, owing to closer co-operation with the London County Council's schools, more children are now being referred to the centre for advice and supervision, and that parents of children who have been treated at the centre are also responsible for making the work better known. The London County Council has voted a grant to the centre in recognition of the value of its work to the schools in the Marylebone area. The centre has no intention of competing with institutions which exist for the purpose of treating definitely developed rheumatism in children and adults; its primary aim is to inquire into the nature of the constitution of rheumatic children. *Each child is given a complete clinical examination* when it is first brought to the centre, and further observations are made on its subsequent attendances. Biochemical investigations during the period under review tend to confirm the view previously arrived at that the most common abnormality of chemical constitution in the rheumatic subject is faulty metabolism of calcium, phosphorus, magnesium, and sulphur. Two biochemical groups can be differentiated: one, which as a rule does not suffer

from cardiac rheumatism, presenting either no deviation of the acid-base equilibrium of the body, or a slight deviation to the alkaline side; the other, to which belong cases of cardiac rheumatism, showing a deviation of the acid-base equilibrium to the acid side. In a very large proportion of the children investigated up to date no evidence has been found of an infective process, and the medical director makes the suggestion that most of the subjective symptoms can be accounted for by metabolic abnormalities alone. Recent studies have suggested the possibility that lack of balance or inadequacy of the glands of internal secretion may be one of the primary causes of rheumatism, and at the centre an attempt is being made to interpret both clinical and biochemical findings in terms of endocrine functions.

Bath's Summer Season.

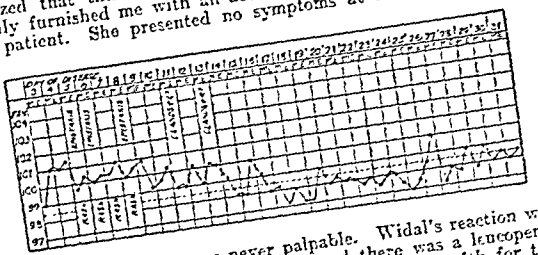
The recognized season at Bath is autumn to spring, but in order to extend the usefulness of the spa during the summer, and in view of the many to whom "taking the waters" at any other time of the year is impracticable, the spa committee of the corporation has arranged to issue a "summer cure ticket." For an inclusive sum of three guineas this ticket admits its holder to a three weeks' course at the baths during the months from June to September, as well as to all the publicly provided amenities of the spa. The ticket can be used only under medical advice, but it is available up to a maximum of six treatments a week for any bath or douche or other form of application at the bathing establishment, prescribed by the physician before the course is begun. The bathing establishment, as readers of the *Journal* know from many descriptions in these columns, has now a very large and comprehensive installation, and includes numerous electrical and other accessory methods. The holder of the ticket will find the Pump Room open to him, as well as the gardens by the Avon, where the waters are also served for drinking, and where band concerts and other entertainments are continually being given. The hotels, by arranging special inclusive terms for the three weeks' period, are co-operating in the effort, the motive of which is to divert to the West of England some whose summer fancies might stray to Continental resorts. Inquiries should be addressed to Mr. John Hatton, the spa director.

Correspondence.

GLANDULAR FEVER.

SIR,—In their interesting account of a series of cases of glandular fever reported in the *British Medical Journal* of June 7th, Drs. Evans and Robb emphasize the difficulty of making a diagnosis when the case is a solitary one. The following case, which I think must have been one of this kind, seems of sufficient interest to record.

On April 18th a hospital nurse began to have headache, backache, and general malaise. She was admitted to my ward on April 20th (temperature 100°, pulse 84, respiration 20). She seemed rather dull and drowsy, but there was nothing definite. On the evening of April 22nd she had epistaxis, and again next morning. Typhoid was suspected and apparently confirmed by finding a typical rash on the abdomen. The only uncertain features were its early appearance, the rather large amount of it, and the wide area over which it extended. Spots were seen not only on the abdomen, but on the chest and back, and a few on the upper arms and thighs. The abdomen was not palpable, nor was its dullness increased. The abdomen was not distended. The tongue was not typical. Leucocytes 6,300 per c.mm. The blood was negative to the typhoid group. Blood culture was sterile. During the next few days her general condition remained much the same, the temperature being between 99.5° and 101.4°. Fresh crops of spots appeared daily for the next few days, the older ones fading. On April 24th there was more epistaxis. On April 25th the diazo-reaction of the urine was negative. The spleen was still not palpable; there was no distension. The bowels were normal. On the strength of the rash, the unexplained fever, and the epistaxis together with the leucopenia, I thought this was one of the typhoid group, and yet it was not altogether like typhoid. On April 28th, the eleventh day of her illness, she complained of pain and stiffness in the left side of the neck, and a chain of small hard tender glands was palpable behind the sterno-mastoid. Two days later similar painful glands were felt in the right side of the neck. The fever continued. The tonsils were rather large, but there was no sore throat, and a swab was negative. On April 30th Dr. Egerton Williams of the City Fever Hospital saw her with me, and offered to take her into the observation wards there. On May 10th Dr. Tidy's letter appeared in the *British Medical Journal* calling attention to an epidemic of glandular fever in London, and I then realized that this might be such a case. Dr. Williams has kindly furnished me with an account of the further history of the patient. She presented no symptoms at all suggestive of



typhoid. The spleen was never palpable. Widal's reaction was again negative in the fourth week, and there was a leucopenia of 5,000. The temperature fell to normal on May 4th for two days, then went up again; it became normal once more on May 7th for six days, and on May 13th rose again for four days; it finally came down on May 17th—that is, on the thirtieth day of her illness. She was discharged ten days later.

This case does not conform fully to glandular fever; there was no lymphocytosis and no splenic enlargement. Whether there was actually a relative lymphocytosis is unfortunately not known, as at the time the first count was made the question of glandular fever had not arisen, and the record of the differential count made later is missing. The absence of splenic enlargement tells equally against each diagnosis. On the other hand, there is much in favour of it being glandular fever: (1) the definite appearance of enlarged lymphatic glands on both sides of the neck on the eleventh and following days of a continued fever; (2) the duration of the fever, with intervals of normal temperature during the third and fourth weeks; (3) the absence of the typical course of typhoid, and of a positive Widal reaction even during the fourth week. As regards the rash one can only say that typhoid-like rashes have been recorded in cases of glandular fever, and that in this case it seemed to be just a little too obvious and too early for typhoid. Finally, the case occurred about the time of the known epidemic in London. The three charts in Evans and Robb's paper are dated as beginning on March 28th, and April 6th and 22nd respectively. This case began on April 18th.—I am, etc.,

ARTHUR J. HALL.

Sheffield, June 10th.

MATERNAL MORTALITY.

SIR,—In reply to Dr. Jellett's letter in the *Journal* of May 24th (p. 974) I would like to make it perfectly clear that the remarks I quoted about asepsis had no reference whatsoever to the Rotunda Hospital, but to midwifery in general. The two quotations were taken from different parts of the book, with a full stop between. No one was more surprised than I was that Dr. Jellett should have taken this interpretation; no one has more admiration than I have for the methods and teaching of the Rotunda Hospital. With regard to rectal examinations, I am glad to know that they do not meet with Dr. Jellett's approval, and that my impression from reading the considerable discussion allotted to them in his book was erroneous.—I am, etc.,

A. LOUISE MCILROY.

Obstetric and Gynaecological Unit, Royal Free Hospital, June 11th.

ANTIMALARIA MEASURES.

SIR,—The malaria-mosquito controversy has been further illuminated by Colonel Gill in the correspondence columns of the *Journal* (April 12th). The subject is of vital interest to all public health workers in Malaya. It is owing to the patient research and indomitable perseverance of Sir Malcolm Watson and other workers that a firm foundation has been laid for a system of antimalaria control without which this country could never have reached its present stage of development.

If claims of successes were unsubstantiated by practical results, is it likely that the great majority of large rubber estates and other commercial organizations, working *within* malaria danger zones in Malaya, would have voluntarily adopted measures of specific anti-larval control by means of oiling or drainage, as the only known means of keeping the incidence of malaria within reasonable limits? And what of Italy, where anti-larval measures, suitably applied, have helped to free large tracts of country from the havoc of malaria? Yet those who cling to the belief that active measures should be taken, wherever possible, to reduce malaria by breaking a certain link in the chain of this disease are now to be classified as complaisant heretics whose existence "exercises a baneful influence on the prosecution of antimalaria measures."

Those who have followed Sir Malcolm Watson's teaching are aware that he is no less a believer in research than in the need for immediate action. In a striking paragraph on page 217 of his book *The Prevention of Malaria*, he clearly visualizes the time when "drainage schemes may become methods of the past."

Surely there is no need to define an issue by the aggressive attribute of "old" and "new." We all will welcome and are striving for some new means of combating malaria, but such is the urgency of our problem that tropical sanitarians throughout the Empire should join forces to enlighten lay administrators as to what can be accomplished by the use of present knowledge and what *may* be possible when research has paved the way for a great discovery. In Malaya, happily, research and the practical application of existing knowledge go hand in hand.—I am, etc.,

J. W. SCHARFF, M.D., D.P.H.,
D.T.M. and H.

Singapore, May 18th.

SIR,—I should like to be permitted to reply briefly and collectively to the criticisms evoked by my letter in your issue of April 12th. These criticisms have mainly been directed against (1) the distinction made between the old and modern schools of malariologists, (2) the employment of the term "unsubstantiated" in connexion with the successes claimed by the old school, and (3) the alleged neglect of anti-larva measures by the modern school.

If the use of the term "old school" is a source of offence I gladly withdraw it. There is, indeed, as Sir Ronald Ross remarks, only one school, whose members are all actuated by one motive alone—to render the malaria-ridden world a healthier place for man to dwell in. Such differences of opinion as do exist refer to the relative value of the methods of attaining the object in view; one school, whose views are at present dominant, maintaining that anti-mosquito, and more particularly anti-larva *measures, constitute the first and last word in malaria* control; whilst others hold that this view is not only not in accord with modern scientific knowledge, but that existing methods of mosquito control do not provide, for financial and administrative reasons, a practicable means of controlling malaria among the teeming millions of the Tropics. Time alone will prove which of these schools will survive; in the meantime the difference of opinion may be regarded as a healthy sign, provided the protagonists on each side keep an open mind and do not obscure the issue by indulging in personal recriminations.

In regard to the use of the term "unsubstantiated," my contention was not that the claims made by the mosquito enthusiasts were unsubstantial, but that in many cases they had not been substantiated. To illustrate my point it is only necessary to refer to Sir Malcolm Watson's letter in your issue of February 8th, in which he states that in Malaya his methods have resulted in "a saving of tens of thousands of lives (over 58,000 in the city of Singapore alone since 1911), and an enormous, indeed incalculable, saving of money." No malariologist would hesitate to advocate, and no Government would fail to adopt, any scheme which is capable of yielding such magnificent results, but before doing so they have a right to expect that a full and detailed account of the methods employed both in the execution of the scheme and in the statistical appraisement of its results should be published. I appeal to Sir Malcolm Watson to provide this information, for if his contention is correct he will have provided a complete answer to those who hold that anti-larva measures are financially and administratively impracticable in respect of the vast rural areas of India, where 90 per cent. of the population dwell. But having regard to our own studies of the malaria problem and of our special knowledge of local conditions we first require to be convinced, and, as scientific men, we are not prepared to act on bare assertions from whatever source they may emanate.

It is perhaps unnecessary to say anything more in regard to the alleged hostility to anti-larva measures. A reference to my letter will show that it contains no statement that anti-mosquito or anti-larva measures are useless or of little value. The point it was desired to make was that in the present state of knowledge little or no progress in dealing with the problem of rural malaria in the Tropics is possible, except on a small scale and in a few favoured localities, with the aid of anti-larva measures *alone*, and that it would appear to be unwise, in carrying out anti-malaria measures in these areas, to ignore the part played by economic conditions and by human carriers. This statement does not imply that anti-larva measures are of little value—in the case of urban malaria in India this method is indeed usually the method of choice—but it was made to emphasize the view that no instructed malariologist who has to deal with malaria under a wide variety of conditions should confine his attention solely to one of the several factors concerned in the endemiology of the disease and direct attention solely to one factor concerned in its causation. Unfortunately many malariologists are entomologists, either by profession or by choice, and it is consequently only natural that they should stress that aspect of the problem with which they are peculiarly fitted to deal.—I am, etc.,

C. A. GILL,
Lieutenant-Colonel I.M.S.

Simla, June 4th.

"DISCARDED METHODS" IN LARYNGOLOGY.

SHOULD SHORTENING OF THE ELONGATED UVULA, AND THE ORIGINAL LARYNGOSCOPIC METHOD FOR LARYNGEAL WORK BE DISCARDED?

SIR,—In a small work on modern treatment of diseases of the throat, nose, and ear, recently reviewed in your columns (*Journal*, June 14th, p. 1099), I find under the heading of "Discarded methods" the "complete or partial removal of the uvula" and the "indirect (original laryngoscopic) method" for "laryngeal work."

It will be a sorry day for certain patients when the shortening of the uvula is discarded. We know that an inordinately long uvula may be present without any symptoms, and we know that a cough may coexist with a long uvula and be due to some other cause altogether, but we know—or, at least, I know—that in many cases a cough is caused by an elongated uvula and is removed at once, and often for all, by the shortening of that appendage.

As regards the discarding of the original laryngoscopic or *indirect method in favour of the direct endoscopic* method for laryngeal work, the latter may be much easier for the operator, but it is certainly not easier for the patient, unless under a general anaesthetic. For the most common innocent new growth in the larynx—namely, the so-called "fibroma" on the edge of a vocal cord at or near the junction of the anterior and middle thirds—the specialist ought to be able to effect the removal by means of the ordinary forehead and laryngeal mirrors and laryngeal forceps, without the paraphernalia of the endoscopic apparatus, and without general anaesthesia. This applies still more to the electro-cauterization of tuberculous ulcers in the larynx, as it may have to be repeated on several occasions.—I am, etc.,

JAMES DUNDAS-GRANT.

London, June 16th.

TREATMENT OF RECTAL PROLAPSE.

SIR,—I am glad to find that Mr. Ian Fraser, in his article on prolapse of the rectum in children (June 17th, p. 1047), supports my advocacy of treatment by injection. In my article in the *British Medical Journal* of April 14th, 1928 (p. 633), the case was instanced of a man of 66, suffering from bronchitis and double hernia in addition to a large prolapse of ten years' duration, who was cured of the prolapse by half a dozen injections, and who reported no recurrence over a year later. If subsequent correspondence be any criterion, the article aroused very considerable interest in the method, which does not require the use of an anaesthetic, nor necessitate the patient leaving off work during treatment, and is applicable to any age. Since its adoption by my staffs I have not required to operate on a case of prolapse in any of the hospitals to which I am attached.—I am, etc.,

J. MACEWEN.

Glasgow, June 11th.

DRUG TREATMENT OF MEASLES.

SIR,—We read with interest Dr. J. I. Collier's article (June 14th, p. 1093) on the use of amidopyrin in measles, as we used the drug in all cases treated last winter. All patients were seen daily at least for the first five days, and daily notes of all cases seen are kept. One or two cases were mild, several were severe. In one case the diagnosis was doubtful; it may have been German measles. The following six cases are taken at random.

Case 1.—Aged 15; seen twenty-four hours after rash appeared; temperature 102°; cough; fine rales all over chest. Temperature normal in twenty-four hours; cough much less, and rales gone. Well in three days, out in eight days.

Case 2.—Aged 4; had whooping-cough recently; temperature 104°; cough; rash out. Temperature normal in twenty-four hours, and remained normal. Well in five days.

Case 3.—Aged 48; had slight bronchitis for months, and had pyrexia for three days before being seen. Temperature 103.8°; very bad rash, and bronchitis. Temperature fell to 99° in twenty-four hours, but there was an evening rise to 100° for three nights. Was well in seven days, and then had less bronchitis than before the measles. An expectorant mixture was taken from the fourth to the eighth day.

Case 4.—Aged 8; temperature 103.8°; rash just appearing; cough troublesome. Temperature was 98.8° in twenty-four hours, but rose to 100° by evening, remaining normal after the second day. The child was very ill for twelve hours and had diarrhoea. Refused to take prescribed dosage on the second day. A younger sister died of measles at home (treatment unknown). Patient was in a boarding school.

Case 5.—Aged 3; temperature 104°; rash out; cough troublesome. Temperature fell in twelve hours, and remained down. Cough was almost gone in twenty-four hours. One dose of a linctus was taken.

Case 6.—Aged 5; just recovered from bronchitis. Temperature 104°; cough; rash out; rather ill. Temperature fell to 99° in thirty-six hours, and general condition was good. Only one dose of amidopyrin had been given in the first fourteen hours.

The drug appears to have an almost specific action. There were no complications, and the catarrhal symptoms cleared up with surprising rapidity. There was no need to give a linctus to relieve the cough; this subsided with the temperature. Drug treatment other than amidopyrin appeared unnecessary, and practically all cases could have been allowed up on the fourth day. The dose given was 5 grains four-hourly until the temperature was normal, then 5 grains thrice daily for two days. In Case 5 this appeared rather too much; the patient slept for fourteen to fifteen hours. In two cases a haemorrhagic rash may have been due, in part or wholly, to the drug used.

The treatment would appear worthy of trial on a large scale.—We are, etc.,

G. H. URQUHART, F.R.C.S.Ed.
A. H. WINCHESTER, F.R.C.S.Ed.

St Annes-on-the-Sea, June 15th.

SIR,—I was much interested to read in last week's *British Medical Journal* the results of the treatment of measles with amidopyrin. For some years now I have been treating measles with the powder consisting of acetosalicylic acid 5 grains, compound ipecacuanha powder 2½ grains, and phenacetin 2½ grains, made for me by Messrs. Richardson of Leicester, and of which I claim to be one of the originators. When discussing with the late Sir Archdall Reid of Portsmouth the marvellous effects of these powders, if given in sufficient doses and early, in acute lobar pneumonia in children, he advised me to try them in measles and mumps. His exact words in his letter to me were: "In measles you will get amazing results, the last six cases I treated being well in forty-eight hours, and mumps in one day, though in the latter the swelling persisted for a short while." I think it is due to his memory that these facts should be known.—I am, etc.,

H. J. CLUTTERBUCK.

Llanelly, June 16th.

INSTRUMENTAL ROTATION IN THE OCCIPITO-POSTERIOR CASE.

SIR,—In the *British Medical Journal* for June 7th Dr. Douglas Miller says that forceps rotation for occipito-posterior cases "demands a high degree of manipulative skill, and . . . should be attempted only by the expert." Your leading article on the subject adds that "the modern obstetric forceps is an unsuitable instrument for rotating an occipito-posterior head," which reads like an editorial announcement that the discussion is now closed. Fortunately Professor John Hay, in his splendid Mackenzie Memorial Lecture (printed in the same issue), pleads that "the general practitioner must become one of the team, his position frankly realized, and his co-operation welcomed."

On more than one occasion during the past twenty years I, a general practitioner, have dared to interrupt these recurrent studies of the occipito-posterior problem with a plea for the use of forceps to rotate. Oftener I have remained silent. No specialist has urged the merits of the method; some have turned it down; one grimly pictured its potentialities for fatal torsion of the foetal neck. I think it was then that the open minds closed with a snap. But wait.

Just recently I learned that the professor in whose class some thirty-six or thirty-seven years ago I received the hint to rotate an occipito-posterior head with forceps never himself reckoned the method safe enough to use. He confessed the fact to his successor in the chair. But his class (in my day) never sensed a doubt. So in faith, happily ignorant of apprehensions, reckoning naught of twisted necks, unsuspicious of the suitability of "modern obstetric forceps," never pausing to take stock of my "manipulative skill," I have gone on all these years applying the lesson. And not once have I seen cause to repent.

The manœuvre is simplicity itself. There is no feat in obstetrics so essential in general practice, easier to perform, more effective. Deep chloroform anaesthesia is desirable throughout. You diagnose the position of the head, lay your blades as squarely to its sides as possible, lock the instrument, *and keep it locked*, then (in a pause between pains, and gently) push the foetus back towards the uterus until its head feels free. Now, still gentle, you give the forceps a half turn (like a key in a lock) and proceed to deliver. The original instruction—to bring the head down until it is fixed and then withdraw the reversed forceps and apply them again—is unnecessary. More, it may do harm. Heads can revert too easily. Thus in all but exceptional cases it is safer and easier not to unlock the forceps. The facility with which delivery can be effected with them in this manner is a shock to one's notions about the parts and the art—but a salutary shock, for modern obstetrics tends to become paralysed with exuberant theory.—I am, etc.,

ROBERT WATSON.

Belfast, June 8th.

LOCAL RESISTANCE TO INFECTION.

SIR,—I was interested in Dr. H. W. Webber's letter (June 14th, p. 1112) concerning the high resistance to infection in the perianal region. The mouth, at the other end of the alimentary tract, is equally exposed to infection. Here also the local immunity is very high. Surgical operations and the ordinary extraction of teeth leave raw and damaged tissues bathed with saliva having countless micro-organisms in suspension, yet healing takes place rapidly without infection spreading. In the process of evolution this local immunity has no doubt been a necessary condition for our survival.—I am, etc.,

R. ERNEST RIX, M.R.C.S., L.D.S.

London, W.1, June 14th.

CONTROLLABLE SPINAL ANAESTHESIA.

SIR,—I was interested in Mr. R. A. Grant's article (June 14th, p. 1088) giving an account of his experience with spinocain. Most surgeons will agree that stovaine is now quite out of date for spinal anaesthesia. Its alleged advantages—complete relaxation and small amount of bleeding—are probably due to low blood pressure and collapse. Its use was given up in this hospital in February, 1928; since then spinal anaesthesia has been used on 1,300 occasions. The drug first used to replace stovaine was neocaine, supplied by Corbière, but after a time May and Baker supplied a preparation which they first called ethocain, and later planocain. I have always understood that these drugs had the same formula as novocain. In each case the drug was supplied dry in a sterile ampoule, and was dissolved in cerebro-spinal fluid before injection. The dose was usually 0.1 gram. The results have been very satisfactory, and the number of cases in which the condition of the patient gave any cause for anxiety has been very small.

There can be no doubt that novocain is an enormous improvement on stovaine, but Dr. Pitkin is not entitled to credit for this, as might be assumed from Mr. Grant's statement that planocain "is really strychnine-free spinocain." I tried spinocain on one case, but the resulting anaesthesia was not quite sufficient, and as excellent results were being obtained with planocain I was not encouraged to persevere.—I am, etc.,

HENRY H. MACWILLIAM.

Walton Infirmary, Liverpool, June 16th.

ANAESTHETICS FOR SHORT OPERATIONS.

SIR,—Dr. R. W. Hornabrook (*Journal*, May 31st, p. 1022) expresses views on anaesthetics which are not in accordance with the usual experience of the majority of anaesthetists. They are not necessarily wrong because of that, but it is a special reason why statements so contrary to the generally accepted belief should be backed up by facts to support them. I do not want to write a long letter, and should not have written at all but for one sentence, although I do not agree with many other statements in Dr. Hornabrook's letter. The particular assertion I object to, because it is entirely wrong, is: "Nitrous oxide, and nitrous oxide and oxygen, have many advantages, but they are largely overrated." I say they are very much underrated; if they were used more extensively we should not get the wretched tale of chloroform fatalities following teeth extraction and the opening of small abscesses which we do at present. It is only necessary to look up the standard works on anaesthesia to appreciate the fact that they all agree that nitrous oxide with oxygen is the safest anaesthetic, the chief objection to its use being the cost and cumbersome apparatus.

In a recent number of the *Dental Journal* Dr. de Caux gives an account of 24,000 cases of gas and oxygen anaesthesia, including many major operations, without a fatality. He adds that if trouble is experienced with this anaesthetic it is invariably the workman who is at fault, and not the tools. I have seen men who tried to screw a nut on a bolt cross-threaded, and then complained that it would not fit. I have also seen men trying to give gas and oxygen who were incapable of holding a mask on a patient's face without allowing about two inches gap for air to leak, and then complaining that the gas and apparatus were all defective. Ross and Fairlie, in their textbook, state at page 93: "The lack of toxic properties in nitrous oxide gas, and the rapidity with which it is eliminated, give it a tremendous advantage over chloroform and ether. . . . Even in normal subjects the after-sickness and malaise are definitely less than with other anaesthetics." In his book on anaesthetics Blomfield writes (p. 390): "So far as short operations are concerned, universal record and opinion put nitrous oxide with air or oxygen in the first place of all general anaesthetics as regards safety." Hewitt records 20,000 cases with no death. In Gwathmey's *Anaesthesia* (p. 325) we read: "Nitrous oxide with oxygen is easily the safest anaesthetic known. It is almost impossible to kill normal animals with this combination."

I take it that safety is with most of us the first consideration in the choice of an anaesthetic. I know it is with me, but there are also other reasons for preferring nitrous oxide and oxygen which I will not go into now.—I am, etc.,

Doncaster, June 5th. E. J. CHAMBERS.

CANCER-PRODUCING SUBSTANCES.

SIR,—The discovery in the Research Institute of the Cancer Hospital (*British Medical Journal*, June 7th, p. 1044) that a certain cancer-producing substance shows a blue-violet fluorescence which becomes very intense in a beam of ultra-violet light, and the hope expressed by Dr. Kennaway that it might be possible to state if products contain cancer-producing substances by analysing their spectrum, suggest ways of improving our knowledge of cancer. The most striking among many facts should be that a very high temperature appears to be necessary for the production of most of the cancer-producing substances; it has therefore been assumed that living tissue is capable of a synthesis at low temperatures which can only be produced outside the body by the use of great heat.

In this connexion it must be remembered that electronic action in many cases is able to promote the same synthesis as great heat. On metallic surfaces, for instance, rapidly moving electrons are present with a kinetic energy high enough to transpose molecules to one of their higher energy states (in this way catalysis may be explained). Such molecules are very active, and may return to their normal state by liberating energy in the form of radiation.

Now it is believed that radiation of one wave-length furthers cancer, just as another wave-length destroys cancer. In the same way cancer-producing substances may promote cancer by radiation directly or through intermediary products formed. The increase of cancer may therefore be a result of some of the methods used in the modern chemical industry. The hardening of fats, for instance, takes place in the presence of highly dispersed catalysts, which may not be quite removed before the fat is mixed into margarine. A minute quantity of substances able to cause radiation may thereby be introduced into the body, and the development of cancer be thereby promoted. That natural food seems to keep down the spread of cancer is in accordance with this view. Hence it should be of the highest importance to co-operate with food manufacturers to obtain products free from the possible cancer-producing substances which chemical treatment may be able to incorporate with them.—I am, etc.,

Copenhagen, June 14th. J. E. NYROP, B.Sc.

MEMBERS OF THE ROYAL COLLEGE OF SURGEONS.

SIR,—During the next two weeks the Society of Members of the Royal College of Surgeons of England will circularize all Members resident in the United Kingdom and Ireland soliciting a postal vote on the question of some representation of the Members on the Council of their College. Having regard to the great amount of work and expense entailed thereby it is earnestly hoped that all Members will respond promptly, and thus make their views known.—I am, etc.,

London, W.1, June 10th. ERNEST E. WARE.

FINANCE AND RESPONSIBILITY.

SIR,—National health insurance is so much better than nothing at all, or than clubs of the baser sort, that almost everyone in our profession accepts it without question. When a desert blossoms into 9s. capitation fees the plodding ass rejoices. But animals that feed with a snatching movement uproot the tender plant. Sir Walter Kinnear has warned us!

Inherent in the Act is this vice: that the finance is divorced from the responsibility. The patient has paid by his stamps, and does not see why he should not get his own back. The married woman in industry, who "could

do with a month at home"; the domestic who is "always tired" and wants "a real rest"; the subchronic valetudinarian workman who is unfit to work for twenty-six weeks, but recovers miraculously on the twenty-seventh—all such as these are weeds that yearly grow ranker. There are half-reasons why they should go sick; there are half-reasons why the doctor should give them a note. A financial bias is needed to stiffen native honesty—witness the return to work after the twenty-sixth week.

The doctor who says, "Do you want a note?" exceeds his duty. "If so desired by the insured person" the note is to be given. The note-profferer feeds with a snatching movement. Why are the funds getting less and less adequate? Is there really more sickness year by year? Is it not that our national self-reliance is sapped by this vicious divorce of finance from responsibility?

The B.M.A. Proposals for a General Medical Service, beautifully woven into a closely knitted fabric, may all, I fear, fray out on pulling the financial thread. In seventy-one splendid paragraphs the Council builds up its scheme, and then in No. 72 refers the foundation of the whole structure to "bodies which are much more competent to deal with the financial aspects." You might as well say: "Let the architect design the façade; it is the duty of an engineer to plan the construction."

The finance of a scheme is integral. When you separate means from ends things go wrong. In a really national system the patient pays in the long run, and proportionately to his means he ought to pay in the short run, and to know that he pays and what he pays. On any other footing he will come in time to ask more than any professional panel can provide or any sick fund bear.—I am, etc.,

LIONEL JAS. PICTON.

Holmes Chapel, Cheshire, June 12th.

A PANEL OF EXPERT TRANSLATORS.

SIR,—I venture to bring to your notice a project which is likely to be of interest to your readers—the formation by the Association of Special Libraries and Information Bureaux of a panel of expert translators.

Those who require the services of a translator often experience difficulty in finding one who has both a knowledge of the language and also of the special subject concerned, and the difficulty increases where the language is uncommon and the subject highly technical. Proficiency in the language is not enough. To afford specialized service the translator must have not only a good knowledge of the language, but a really close acquaintance with the subject he has to translate—for example, the law, metallurgy, medicine, architecture, management, or whatever the subject may be.

With the object of overcoming this difficulty, which has been brought to their notice continually, the council of the association recently appointed a committee consisting of Dr. S. C. Bradford, librarian, the Science Library; Allan Gomme, librarian, the Patent Office; Dr. R. S. Hutton, director, British Non-Ferrous Metals Research Association; Miss A. L. Lawrence, M.B.E., M.A., LL.B., intelligence officer, British Medical Association; Brigadier-General Magnus Mowat, C.B.E., M.Inst.C.E., M.I.Mech.E., secretary, Institution of Mechanical Engineers; and E. J. Robson, M.A., librarian, Institute of Agricultural Engineering, to prepare a scheme for establishing a panel of translators having both linguistic and technical qualifications, the part taken by the association being to act as a connecting link between the translator and the user. Names of approved qualified persons are now being registered under the scheme adopted, and those who are interested, in either capacity, are invited to write for particulars to the secretary, Association of Special Libraries and Information Bureaux, 26, Bedford Square, London, W.C.1.

Whilst the panel is intended to consist primarily of approved individual translators, it is hoped that commercial translating bureaux, which may partly or wholly function in the field of specialized subjects, will apply for registration if they are prepared to satisfy the association of their ability to offer such high-grade service.—I am, etc.,

J. J. THOMSON,
President.

June 16th

Obituary.

GEORGE NEIL STEWART, M.D., D.Sc., LL.D.Ed.,

Professor of Experimental Medicine, Western Reserve University, Cleveland.

WE regret to learn of the death, on May 28th, after a long illness, at Cleveland, U.S.A., of Dr. G. N. Stewart, professor of experimental medicine, and formerly professor of physiology, in the Western Reserve University, and clinical physiologist to Lakeside Hospital, Cleveland.

George Neil Stewart was a student of Edinburgh University, where he graduated M.A. with honours in mathematics and D.Sc. in 1889. He obtained the M.B. degree in 1890, and proceeded M.D. in 1891, winning the gold medal for his graduation thesis. He was also a D.P.H. of Cambridge. After post-graduate study in Berlin he became senior demonstrator of physiology in the Owens College of Manchester, and was for some years on the staff of the Department of Physiology at Aberdeen. He also held for some years the George Henry Lewis student-ship at Cambridge University. Before his appointment to the chair of physiology at Cleveland, Dr. Stewart was for a number of years professor of physiology in the University of Chicago. His *Manual of Physiology*, first published in 1896, went through no fewer than eight editions. The author's purpose was to interweave formal exposition with practical work, according to a programme he had followed for some years in teaching physiology to medical students on the other side of the Atlantic. He was also the author of a series of papers on the "Liberation of epinephrin from the adrenals," published in the *Journal of Pharmacology and Experimental Therapeutics*. In 1922 the University of Edinburgh conferred on him the honorary degree of LL.D.

The funeral was held at the University Chapel in Cleveland on May 31st. Professor Stewart's remains were cremated and the ashes taken to Toronto, where his wife and four children live.

A. A. SCOT SKIRVING, C.M.G., M.B., C.M., F.R.C.S.Ed.,

Late Senior Surgeon, Edinburgh Royal Infirmary.

THE death took place, on June 14th, at his residence in Rothesay Place, Edinburgh, of Mr. Archibald Adam Scot Skirving, lately senior surgeon of the Royal Infirmary, Edinburgh. His health for a few years past had been unsatisfactory, so that about two years ago he resigned his appointment at the Royal Infirmary, although he had not completed his full period of office in that institution.

He was born in 1869, a member of a well-known Edinburgh family, his great-grandfather, Adam Skirving, having been well known as the author of the Jacobite song "Hi! Johnny Cope." After receiving his early education at Edinburgh Academy and Cheltenham College, he took up the study of medicine at Edinburgh University, graduating M.B., C.M. in 1893. After graduation he acted as resident surgeon to the late Professor John Chiene, and subsequently pursued a course of study in Paris and Berlin. He took the Conjoint qualification in London in 1895, and joined the Royal College of Surgeons, Edinburgh, as a Fellow in 1897. For a time he held the post of demonstrator in anatomy at Surgeons' Hall, Edinburgh, and of surgeon to the New Town Dispensary, afterwards being appointed surgeon to Leith Hospital, and later surgeon to the Edinburgh Royal Infirmary. He was for many years a lecturer on systematic surgery in the School of Medicine of the Royal Colleges at Edinburgh, where he always succeeded in attracting a large class of students. He was the author of a treatise on *Surgical Applied Anatomy*, and of the article on the "Neck" in the *Encyclopædia Medica*, and contributed numerous articles to periodical surgical literature, such as "Extensive injury to brain by Mau-er bullet," in the *Edinburgh Hospital Reports*, vol. vii, and a paper on "An unusual symptom in secondary syphilis" in the *British Medical Journal* for 1901.

During the South African war Mr. Scot Skirving went to South Africa as the chief surgeon attached to the Imperial Yeomanry Field Hospital, and his services there

were mentioned in dispatches and received recognition by the award of the C.M.G. During the great war Mr. Skirving again acted as a surgeon, attached, in the first place, to the Second Scottish General Hospital, and afterwards to the Bangour War Hospital; and for about a year he served in France as a temporary major in the British Expeditionary Force. His interests outside medicine were many. As a student he was senior president of the Students' Representative Council at Edinburgh University, and he played Rugby football for the Edinburgh Academicals. He was a keen sportsman, his recreations being fishing, shooting, and motoring, and he constantly took a great interest in the work and sports of his old school, the Edinburgh Academy. Here he was the leading figure in connexion with the preparation of such things as the school register, the war memorial, and the war register.

Possessed of a generous, open, and kindly disposition, he was universally popular, and greatly beloved by his medical colleagues. His cheery, bright, and amusing temperament made him a much sought raconteur at medical gatherings, and his charming personality, as well as his surgical skill, will be greatly missed by a wide circle of colleagues and friends. Mr. Skirving is survived by a widow.

DR. THOMAS TREFFRY COCKILL, who died on June 12th, after some months of confinement to bed, was the son of the late Rev. W. R. C. Cockill, and was born in India in 1866. He entered Middlesex Hospital in 1887, where he gained an entrance scholarship, the Broderip scholarship, and the Lyell gold medal. He qualified as M.R.C.S., L.R.C.P. in 1891. After service as house-physician at the Middlesex and the North Staffordshire Infirmary he entered into general practice at Hanley, and was appointed assistant physician to the North Staffordshire Infirmary and Eye Hospital. Later he removed to Richmond, Surrey. Dr. F. Jupe, assistant medical officer to King Edward VII Sanatorium, Midhurst, writes: Commencing with a gastric ulcer Cockill was dogged by ill health, which would have kept any ordinary man in an armchair. But he believed in spending himself for others and, although obliged to relinquish general practice, he filled his years with work. In 1916, although very much a C3 man, he consented to set Dr. Bardswell free for war work by acting as medical superintendent of King Edward VII Sanatorium, and only those who knew him most intimately at that time realized at what cost to himself and his devoted wife he managed to carry on during the following three years. Really in need of treatment himself, he sacrificed his own health to give hope and the ideals of a new life to his patients. Since 1920 Dr. Cockill acted as secretary to the Surrey Local Medical and Panel Committee, in which capacity his broad-mindedness and sense of humour has made his counsel invaluable. Lately, in addition, he undertook the work of the secretaryship of the Surrey Branch of the British Medical Association. As an old patient and colleague of his I owe more than I can ever tell to his example of cheerfulness and unselfishness. His legion of friends have lost one whose inspiration has made life a far richer thing for all of us.

The death of DR. JOHN CHARLES GRANT of West Boldon in the county of Durham (writes Professor Grey Turner) removes certainly the most popular figure from that village and from the neighbouring colliery. His father was an old Crimean veteran, and the son, whose death is so much deplored, was born sixty-seven years ago in the house where he died on June 2nd. As a young man, he helped his father in the practice, but he was rather late in qualifying, which explains how he and I came to be fellow students for a time. After the death of his father, Charles Grant carried on and largely extended the old practice almost up to the day that he died. His activities can best be described by saying that he was always "on his rounds," for I never knew anyone so continuously occupied in professional duties. He was most devoted to his practice and to the people among whom he lived and laboured. He did most of his work on a bicycle, except on those rare occasions when he allowed himself the luxury of a hire from "Mark," who for many years was the local cabman, and afterwards motor proprietor. Grant was always courteous and dignified, and with an attractive old-world bearing, and although he lived among the people of the large colliery district where he held sway, he always remained the same, and was universally looked up to and respected. He had a great sense of the dignity of the profession, and worthily upheld that ideal often under difficult and trying circumstances. Though he sent numbers of patients to the infirmary, he always politely acknowledged every communication sent by the members of the staff who saw his cases, so that we were all very familiar with his bold penmanship. There is no doubt that his devotion to work shortened his life, for, in spite of his continuous day and night exertions, he could scarcely ever be persuaded to take a day off, much less a holiday; but though his death in harness is so much regretted, I feel sure that he would not have wished it otherwise. No name will ever be better remembered in Boldon, and none ever mentioned with more respect. His funeral was a remarkable demonstration of affection. The little church of St. Nicholas, where he had worshipped during the whole of his lifetime, and where he was remembered as a choir boy, was packed to overflowing during the beautiful service preceding interment, and the mourners at the cemetery made a great throng, who came out of affection for their lost friend.

The death took place on May 30th, at his residence, Redhurst, Dunoon, Argyllshire, of DR. JOHN BANKS, who had attained the age of 81 years. Dr. Banks graduated M.B., C.M. at Glasgow in 1872, and was one of the few remaining medical practitioners who studied under Lister in that medical school. He commenced practice in Dunoon in 1877, and shortly afterwards obtained the position of medical officer of health for the burgh, taking the D.P.H. in 1889. He held this post for over fifty years, retiring in January of the present year, when he was a recipient of a presentation from his patients. Dr. Banks was a widower, and leaves a family of two sons and two daughters.

The Services.

HONORARY SURGEON TO THE KING.

MAJOR-GENERAL W. R. Blackwell, C.M.G., late R.A.M.C., has been appointed honorary surgeon to the King, vice Major-General H. P. W. Barrow, C.B., C.M.G., D.S.O., late R.A.M.C.(ret.).

Medico-Legal.

ATTENDING WORK WITH SMALL-POX.

DOROTHY BEECH was fined at the Lambeth Police Court, on June 11th, for having, on April 17th, travelled across London to her employment while suffering from small-pox. The summons alleged that she had wilfully exposed herself without taking proper precautions against spreading the disease. In pleading ignorance, the defendant stated that she had been vaccinated twice and considered herself immune from infection. As evidence that she was aware of her condition, Mr. Roberts, who prosecuted on behalf of the Lambeth Borough Council, referred to certain statements made by the defendant to Dr. Ashley Thompson, the borough medical officer of health.

SPECTACLES FOR A SCHOOLBOY.

ON June 13th Henry Ford was summoned, at the Bromley Police Court, Kent, by the National Society for the Prevention of Cruelty to Children for neglecting to provide optical treatment for his son, aged 12, when ordered to do so by the school medical authority. He was fined 40s., and ordered to pay £5 5s. costs. It appeared from the evidence that the school medical officer ordered spectacles for the boy in January, but the father, resenting outside interference, declined to get them for four months, although the society was prepared to pay the cost if necessary. The prosecution was undertaken on the ground that permanent injury to the boy's eyesight might have resulted from this delay.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT reassembled on June 17th. On that day and subsequently the House of Commons was in committee on the Finance Bill. The Ministry of Labour Estimate was also debated. An amendment made by the House of Lords to the Mental Treatment Bill was set down for consideration by the House of Commons on June 20th. This amendment deleted the proposed audit of accounts in licensed houses.

In the House of Lords, on June 17th, the Illegitimate Children (Scotland) Bill was read a second time.

R.A.M.C. Officers.

In the House of Commons, on June 6th, Dr. FREMANTLE asked whether Mr. Shaw knew that, whereas combatant officers' pensions had increased in value since the war, the pensions of officers of the R.A.M.C. had decreased. He drew attention to the fact that the pension earned by a major R.A.M.C. at twenty years' service was now £368 per annum, which was worth little more than half the pre-war rate of £365 per annum fixed in the reorganization of 1902. He asked Mr. Shaw whether it was proposed to reduce or increase this pension next year, and whether the Minister could give an undertaking that the maximum pension for a lieutenant-colonel of the R.A.M.C., attainable after twenty-eight years' service, would not be further reduced from its present amount of £558

Mr SHAW replied that the retired pay of majors and lieutenant-colonels of the R.A.M.C. in receipt of post-war scales was subject, like that of other officers, to revision next year in the light of the cost of living figure. He could not say what the result of that revision would be.

Dr. FREMANTLE asked if the pensions of lieutenant-colonels had been reduced this year to £1 a day, and would be further reduced next year. He asked further whether this would not affect the recruiting of young medical officers.

Mr SHAW said the rule with regard to the cost of living applied to all officers of the Army without distinction. He promised to inform Dr. Fremantle from time to time of the results of the consideration.

Dr. FREMANTLE also asked Mr. Shaw if he was aware that the officer strength of the Royal Army Medical Corps was made up for requirements, resulting in the employment of civilian practitioners and the re-employment of retired officers, all of whom did home service only, and that the average period of foreign service undertaken by regular officers of the R.A.M.C. had increased in consequence; and whether, seeing that this prospect was bound adversely to affect the recruitment of young medical officers to the service, he would consider how these conditions of service could be improved.

Mr. SHAW said he had under his consideration at the present time the whole question of the supply of officers for the R.A.M.C. Last year special steps were taken to render conditions of service in the Corps more attractive. Certain concessions had been made regarding the counting, for purposes of promotion, increase of pay and pension, by officers appointed to permanent commission in the Corps, of temporary service in the Corps, or of time spent in a civil hospital appointment. The Army Council were also in touch with civil hospitals at the present time to see whether arrangements could be made by which R.A.M.C. officers might be enabled to secure experience in civil hospital appointments.

Dr. FREMANTLE inquired whether Mr. Shaw knew the question of recruitment of medical officers would arise again that month, and presumably the Minister would not be able to get a supply of officers for the Corps unless these matters were remedied.

Mr Shaw did not reply.

Silicosis.

Mr. HOPKIN asked on June 5th, about the case of a man of Gorslas, Carmarthenshire, who was certified in June, 1929, to be suffering from silicosis, was a few weeks later declared by the medical referee not to be suffering from silicosis, and was proved by post-mortem examination in April, 1930, to have died from silicosis.

Mr. CLYNES replied that the facts appeared to be as stated by Mr Hopkin. Owing to the condition known as anthracosis the diagnosis of the disease in this case during lifetime would be of particular difficulty. He added that the case afforded an illustration of the need for improved medical arrangements by setting up of an expert medical board for the whole country, as recommended by the Departmental Committee. He sought to obtain the necessary powers for this purpose in the Workmen's Compensation (Silicosis) Bill now before the House. He hoped this would be proceeded with immediately after the recess, and as soon as the bill became law steps would be taken to establish the new medical organization with the least possible delay.

Asked whether he would include anthracosis in the bill, Mr. CLYNES said he must have notice of that question.

In a further reply to Mr. Hopkin, on June 5th, Mr. CLYNES said the investigation of silicosis in the Cross Hands district of Carmarthenshire by the Mines Department was proving much more laborious than had been anticipated. He could not say whether the report would be published when received.

Cancer of the Bladder in Aniline Workers.—In an answer to Mr. Philip Oliver, on June 5th, Mr. CLYNES said it had been decided that, to assist in the investigation by the London Cancer Hospital into the incidence of cancer of the bladder among workers in aniline factories, the Factory Department of the Home Office should co-operate by tracing the exact occupations of persons who had died of cancer of the bladder. The Registrar-General was extracting information, and his first return was practically ready. The research was complex and difficult, and Mr. Clynes could not forecast when conclusive results might be expected.

An Antivivisection Mare's-nest.—Mr. FREEMAN asked Mr. Clynes, on June 5th, whether experiments upon living animals had been conducted at the physiological laboratory, Cambridge, by Mr. B. H. C. Matthews; the purpose of which was to measure pain; what species of animals were used in this investigation; and under what certificates the experiments were conducted. Mr. CLYNES said he had inquired into the circumstances. The purpose of the experiments was not to measure pain but to measure electrical impulses, and they were not performed on living animals. No licence was necessary for this, and Mr. Matthews did not hold one.

Notes in Brief.

During the year ended March 31st, 1930, the Government paid the following grants to voluntary societies in England and Wales: maternity and child welfare, including grants for the training of midwives and health visitors, £264,354; welfare of the blind, £124,007; treatment of tuberculosis (paid to the Welsh National Memorial Association), £112,196.

Whether treatment of national health insurance patients by ultra-violet rays is within the scope of medical benefit has to be decided, Mr. Greenwood says, in any particular case in accordance with Article 43 of the Medical Benefit Regulations.

Mr. Greenwood states that beds are not specially set aside in institutions under the Board of Control for cases receiving psychotherapeutic treatment, though such treatment is available in the normal course at many of these institutions.

Universities and Colleges.

UNIVERSITY OF OXFORD.

Schorstein Research Fellowship.

THE Board of the Faculty of Medicine has elected Patrick Corbett Mallam, M.A., B.M., of University College, to a Schorstein Research Fellowship.

UNIVERSITY OF LONDON.

A READERSHIP in biochemistry, tenable at the London School of Hygiene and Tropical Medicine, is to be instituted in accordance with the Regulations on University Titles (*Calendar*, 1929-30, pp. 214-224).

GUY'S HOSPITAL MEDICAL SCHOOL.

Applications for the Gull studentship in pathology and allied subjects, of the annual value of £250, tenable for three years, must be received by the Dean, Guy's Hospital Medical School, London Bridge, S.E.1, by June 28th. The studentship is open to candidates under 35 years of age who have studied in the Medical School of Guy's Hospital.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examinations indicated:

CH.M.—R. V. Cooke.

FINAL M.B., CH.B., PART I (*including Forensic Medicine and Toxicology*).—K. P. Beaubrun, L. C. Holland. (*In Materia Medica, Pharmacy, Pharmacology and Therapeutics, and Pathology (completing examination)*: A. J. B. Miall. PART II.—*J. F. Coates (distinction in Medicine and Obstetrics), *G. F. Langley (distinction in Medicine and Public Health), H. T. G. Cornfield, R. D. Jones, R. A. Lattey, R. P. Lucas, H. M. Strover. *In Group I (completing examination)*: R. M. Norman.

DIPLOMA IN PUBLIC HEALTH, PART II (*completing examination*).—W. W. S. Sharpe. * Second-class honours.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary meeting of the Council of the Royal College of Surgeons was held on June 12th, when Lord Moynihan, the President, was in the chair.

Fellowship.

It was reported that of the 134 candidates who presented themselves for the Final Fellowship examination, 44 were approved, including one candidate who had not yet complied with the regulations. The Diploma of Fellowship was granted to the following 43 candidates:

C. L. Kindersley, A. G. Hayward, Philippa P. Martin, H. R. Bishworth, L. A. Bennett, A. E. Smith, T. E. Cawthorne, T. S. Donovan, A. E. De Chazal, F. J. T. Foenander, J. G. Milner, J. G. Y. Bell, A. C. Copley, J. R. Bateliffe, J. C. Ross, T. H. Sellors, G. H. Livingstone, H. Lyon-Campbell Wood, H. O. Hanvell, A. C. Perrit, R. Rutherford, M. L. Ashmawi, A. M. A. Moore, J. Fesser, A. E. Taylor, K. H. Watkins, H. H. Stewart, D. W. Currie, V. Srinivasan, H. Tayler, T. Giblin, J. G. Sandrey, R. H. Hedley, S. J. Mehta, S. Lal, W. D. Bedford, N. L. Formby, R. Grainger, V. J. Kinsella, E. I. A. Macdonald, J. Mark, R. J. C. Maxwell, H. M. Stewart.

Membership.

Diplomas of Membership were granted to Mabel E. Grace, Joyce MacInnes, Ruth Milne, and Helen E. Rodway, who had previously passed the final examinations of the Examining Board in England and had now complied with the regulations.

Examiners.

Mr. C. Max Page, surgeon to St. Thomas's Hospital, was elected a member of the Court of Examiners for a period of five years, in the vacancy occasioned by the retirement of Mr. Graham Simpson (Sheffield).

The following examiners were elected for the ensuing year:

Dental Surgery (Surgical Section): L. B. Rawling, John Murray, H. S. Clogg, C. E. Shuttock, T. P. Legg, C. P. G. Wakeley, Russell J. Howard, Gwynne Williams.

Fellowship (Anatomy): P. N. Blake Odgers, William Wright, J. E. S. Frazer, J. Basil Hume. *(Physiology)*: H. E. Roaf, C. Lovatt Evans, R. J. S. McDowall, J. Mellanby.

Under the Conjoint Board:

Elementary Biology: J. P. Hill, T. J. Evans. *Anatomy*: R. B. Green, W. E. Le Gros Clark, H. A. Harris. *Physiology*: E. B. Verney, H. Hartridge. *Midwifery*: C. White, Trevor B. Davies, A. W. Bourne, S. Forsdike. *Diploma in Public Health (Part I)*: J. W. H. Eyre; *(Part II)*: C. W. Hutt. *Diploma in Tropical Medicine and Hygiene (Pathology and Tropical Medicine)*: David Harvey; *(Tropical Medicine and Surgery)*: G. C. Low. *Diploma in Ophthalmic Medicine and Surgery (Part I)*: H. Willoughby Lyle W. S. Duke Elder; *(Part II)*: R. Affleck Greeves. *Diploma in Psychological Medicine*: J. G. Greenfield. *Diploma in Laryngology and Otology (Part I)*: W. M. Mollison, Norman Patterson; *(Part II)*: W. G. Howarth. *Diploma in Gynaecology and Obstetrics*: J. D. Barris.

Hunterian Professor.

Dr. Harold Dew, Professor of Surgery, Sydney University, was elected a Hunterian Professor for the ensuing year, and will deliver a lecture on "Hydatid disease—some interesting complications," on Thursday, July 10th, at 2.45 p.m.

Primary Fellowship Examination in Canada.

It was decided to proceed with the arrangements for holding the Primary Examination in Anatomy and Physiology for the Fellowship in Canada at Montreal, and Professors William Wright and C. Lovatt Evans were appointed to conduct the examination.

University of Brussels and School of Medicine.

Sir H. J. Waring was appointed to represent the College at the ceremonies of the inauguration of the buildings of the University of Brussels and of the School of Medicine on June 23rd, 24th, and 25th, 1930.

Primary Fellowship.

At the recent primary examination for the Fellowship 158 candidates presented themselves, of whom the following 54 were approved:

S. Ahmad, G. L. Alexander, D. R. Bharucha, R. W. Billington, V. G. Borgaonkar, G. H. Brandis, M. Coleman, T. G. B. Crawford, A. W. Cubitt, M. P. Ellis, R. E. Fernando, D. I. Fitzpatrick, G. H. V. Froggatt, E. Galinsky, P. H. R. Ghey, B. Gilbert, A. El S. Handousa, J. B. Harman, B. P. Harris, G. J. Hollis, J. F. Jarvis, A. N. Jones, K. D. Keele, T. King, R. Lal, J. M. Leggate, A. H. London, F. R. Leonard, H. G. Letcher, A. L. Light, S. N. Lytle, E. G. MacMahon, K. M. Masani, Mary H. Mayeur, D. M. Mitchell, N. St. C. Mulhearn, F. G. Murphy, J. H. North, J. O'Donnell, J. Penry, G. Qvist, F. C. T. Rawle, R. V. Rickard, L. N. Ross, J. E. Semple, E. J. Smith, B. R. Sworn, G. R. A. Syme, G. G. Talbot, W. H. Taudy, Lilian E. Tracey, E. N. Wardle, J. C. F. L. Williamson, I. Zieve.

ROYAL FACULTY OF PHYSICIANS AND SURGEONS OF GLASGOW.

THE Royal Faculty of Physicians and Surgeons of Glasgow has decided to confer the distinction of its Honorary Fellowship upon the three following members of the medical profession: Robert Muir, M.D., Professor of Pathology in the University of Glasgow; William Loudon Reid, M.D., Lecturer on Midwifery and Gynaecology in the Anderson College of Medicine, Glasgow; and Lieut.-Colonel Laurence Austine Waddell, C.B., C.I.E., M.B., LL.D., Professor of Chemistry and Pathology at Calcutta Medical College.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting held on June 13th, the following candidates were admitted Licentiates and Members of the College: H. F. Moore, S. C. Chatterjee, L. Rodrigues.

The representatives of the College on the Irish Medical Council and on the General Medical Council reported on the recent proceedings of those bodies.

SOCIETY OF APOTHECARIES OF LONDON.

THE Court of Assistants of the Society of Apothecaries of London has appointed Mr. Reginald Silby Lewis, M.A., LL.B.Cantab., to be Registrar to the Society.

LONDON INTERCOLLEGIATE SCHOLARSHIPS BOARD.

THE following medical scholarships have been awarded on the results of the Board's examinations:—*University College Medical School*: (£30 per annum for three years) to H. A. Catley. *King's College*: Warneford scholarship (£30 per annum for four years) to C. W. Dixon and H. J. Stammers; Sambrooke scholarship (£30 per annum for three years) to J. V. Dacie.

ROCKEFELLER MEDICAL FELLOWSHIPS.

THE Medical Research Council, on behalf of the Rockefeller Foundation, has made the following awards of Travelling Fellowships for the academic year 1930-31. These Fellowships are awarded to graduates who have had some training in research work either in the primary sciences of medicine or in clinical medicine and surgery, and who are likely to profit by a period of work at a chosen centre in America or, in special cases, in Europe, before taking up positions for higher teaching or research in the British Isles.

RUSSELL CLAUDE BROCK, F.R.C.S., Guy's Hospital, London.
FRANK BURNET BYROM, M.D.Lond., M.R.C.P., London Hospital.
DESMOND CURRAN, M.B.Cantab., M.R.C.P., Hospital for Epilepsy and Paralysis, Maida Vale, London.
ALAN AIRD MONCRIEFF, M.D.Lond., M.R.C.P., Hospital for Sick Children, Great Ormond Street, London.
ARTHUR SPENCER PATERSON, B.A.Oxon, M.B.Ed., Assistant Physician, Royal Glasgow Mental Hospital.
CHARLES CADY UNGLEY, M.D.Durh., M.R.C.P., Royal Victoria Infirmary, Newcastle-on-Tyne.

Dr. Moncrieff's Fellowship is tenable at Hamburg; the others at centres in the United States. Mr. Brock and Dr. Curran have been appointed on modified conditions while receiving emoluments from other sources.

Medical News.

THE annual dinner of the Royal Medico-Psychological Association will be held in Christ Church Hall, Oxford, on Wednesday, July 2nd, at 7.30 p.m.

THE annual dinner of the St. Bartholomew's Hospital Ninth Decennial Contemporary Club will be held at the Langham Hotel, Portland Place, W., on Wednesday, July 2nd, at 8 o'clock, with Dr. R. J. Morris in the chair.

A SPECIAL meeting of the Orthopaedic Section of the Royal Society of Medicine will be held at St. Vincent's Orthopaedic Hospital, Haste Hill, Eastcote, near Pinner, on Saturday, June 28th, at 3 p.m. There will be a short demonstration of methods by the gymnastic staff and an inspection of the hospital and cases under treatment. Tea will be provided.

THE inaugural meeting of the Paddington Medical Society was held on June 10th at the Paddington Town Hall. There was a large attendance. The object of the society is to discuss all modern developments in medicine in so far as they affect the medical practitioner, and to promote and safeguard the efficiency and independence of the medical practitioner. Membership is open to all practitioners residing or practising in the metropolitan borough of Paddington. Meetings will be held once a month. Intending members should communicate with the honorary secretary, Dr. J. Cohen, 23, Westbourne Park Road, W.2.

AT a conference to be held at L'Hydro Institut Hélio-Marin d'Ostende on July 6th papers will be read on the symptomatology, meningeal forms, and serotherapy of poliomyelitis, and on the present state of vaccine therapy in the treatment of acute pulmonary infections. In connexion with the conference there will be a banquet and a concert. Medical men and women wishing to be present are asked to notify Dr. Ed. Delcroix, 94, Boulevard Van Iseghem, Ostende, before June 30th.

THE Fellowship of Medicine and Post-Graduate Medical Association announces that Dr. W. J. Adie will give two lectures on diseases of the nervous system, to candidates for the M.R.C.P. examination on June 24th and 27th, at 8.30 p.m., at the Medical Society of London; fees 10s. 6d. per lecture, payable at the lecture hall. On June 23rd, at 2.15 p.m., Dr. J. Strickland Goodall will give a demonstration at the National Hospital for Diseases of the Heart in the out-patients' department. On June 25th, at 1.30 p.m., Mr. R. Y. Paton will demonstrate at the Royal National Orthopaedic Hospital. Both of these demonstrations are free. Courses in progress are an intensive course in tropical diseases, continuing until July 4th; the second week of an intensive course in medicine and surgery at the Prince of Wales's General Hospital; the second week of a morning and/or afternoon course at the Chelsea Hospital for Women; and an afternoon course at the Blackfriars Skin Hospital. Proportionate fees will be accepted for these courses. From June 30th to July 5th an all-day course will be given by the staff of St. Mark's Hospital for Diseases of the Rectum; fee £3 3s. Attention is directed to an intensive course in maternity and child welfare to be held under the auspices of the Maternity and Child Welfare Group of the Society of Medical Officers of Health and the Fellowship of Medicine. The full programme may be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1, to whom application should be made about the above-mentioned courses.

DR. E. GRAHAM LITTLE, M.P., has been appointed to represent the University of London at the tenth session of the Journées Médicales de 1930, to be held at Brussels from June 28th to July 2nd.

A POST-GRADUATE course of instruction in maternity and child welfare arranged, under the auspices of the Maternity and Child Welfare Group of the Society of Medical Officers of Health and the Fellowship of Medicine, will be given in London from June 30th to July 5th inclusive. The fee for the course (ten shillings) should be sent to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

AN international medical post-graduate course, with special reference to balneology and balneotherapy, will be held in Carlsbad from September 14th to 20th. Addresses will be delivered by clinicians and scientists from various European countries and the United States of America. Further details may be obtained from the secretary of the course, Dr. Edgar Ganz, Carlsbad, Czechoslovakia.

THE National Hospital, Queen Square, announces that, beginning on July 2nd, the out-patient department will be open from 1 p.m. on Wednesdays. Under this new arrangement out-patients will be seen each afternoon except Saturday.

AT the invitation of the baths directorate of Pistany Spa, Czechoslovakia, a three weeks' tour for medical practitioners and others will be held in August and September. The itinerary includes a week-end at Oberammergau, with seats for the Passion Play; three days in Vienna, visiting various medical centres; day visits to Munich, Prague, and Linz; and a week at Pistany Spa, where fishing, golf, and tennis are available. The cost of the tour is inclusive, and substantial reductions have been arranged for the party. Further details may be obtained from the Pistany Spa Representation, 136, Regent Street, W.1.

MISS M. E. DAVIES, matron-in-chief, Ministry of Pensions Nursing Service, retired from that post on June 16th, on completing eleven years' service. Owing to reduction in the hospital work of the Ministry it has been decided that the post of matron-in-chief shall lapse. The post of principal matron will continue to be held by Miss H. G. Palin, who will discharge the necessary inspectorial functions in addition to her duties as matron of Queen Mary's (Roehampton) Hospital.

THE Council of Epsom College will shortly elect a girl to a St. Anne's Scholarship of £120 a year. Candidates must be of the age of 9 years, and not over 12 years of age on July 30th next, and must be orphan daughters of medical men who have been for not less than five years in independent practice in England or Wales. Application must be made by July 3rd, on a form to be obtained from the secretary of the College, at 49, Bedford Square, W.C.1.

AT the meeting of the Central Midwives Board for England and Wales on June 5th a letter was read from the Ministry of Health referring to a suggestion from the Board that, in view of the fact that Poor Law institutions were now under the control of local supervising authorities, the approval of training of all midwives should be identical. The reply was to the effect that the Minister did not consider there were any sufficient reasons for reconsideration of the present position. The Board agreed that all training schools, whether attached to hospitals or otherwise, should, as regards approval, be dealt with on a uniform basis. A letter was read from the clerk of the Buckinghamshire County Council informing the Board that the Council was prepared to support the Joint Committee of Associations in its opposition to any legislation involving the transference of the control of the profession of midwifery from an independent body like the Central Midwives Board to a Government Department, and any interference with the rules of the Central Midwives Board.

THE report for 1929-30 of the Birmingham Women's Welfare Centre, affiliated to the Society for the Provision of Birth Control Clinics, records a steady increase in the number of attendances since the clinic was opened in 1927, and the result of an investigation from which it was learned that about 84 per cent. of the patients attending the centre had previously experimented with contraceptive methods on their own account. The committee, in order to obtain detailed information about the value of the methods taught at the centre, has decided to follow up the early cases, starting with the first 150, and towards the expenses of this investigation it has received a grant from the Birth Control Investigation Committee.

MESSRS. H. K. LEWIS AND CO., LTD., have published charts for recording the curve in sugar tolerance examinations. Each chart has printed on it the average normal curve, and it is therefore easy to plot the results of a particular examination, and to determine at once the degree of any departure from the normal. The price of these charts ranges from twenty-five for 2s. to 1,000 for 50s.

THE forty-eighth annual dinner of the West London Medico-Chirurgical Society was held at the Trocadero Restaurant on June 12th, when the president, Dr. J. F. Halls Dally, was supported by a large and representative gathering. In his speech proposing prosperity to the society, Lord Moynihan of Leeds, P.R.C.S., took occasion to administer a genial rebuke to medical London for its provincial outlook. Nevertheless, he agreed that London, for all its backwardness, had taught undergraduates almost all it knew, and had instilled into them the principles of right conduct. Its besetting fault had been the lack of a proper post-graduate ideal and sense of responsibility towards those whom it had trained in its schools and those who came to London from other places at home and abroad. Lord Moynihan hoped, however, that when the British Post-Graduate Hospital and Medical School arose London would take its place as a great centre of medical thought and inspiration. An indispensable part of this scheme was the setting up of a hostel where graduates could get into social contact during their courses. The whole scheme rested on four pillars—a hospital, a school, a hostel, and a centre for surgical research, which he hoped might be established at Charles Darwin's home. The chairman, in replying to the toast, touched briefly on the history of the West London Medico-Chirurgical Society, its debt to Charles Keetley, and its pride in the distinguished men who had received its gold medal or delivered its Cavendish Lectures. The health of the guests and kindred societies was proposed by Dr. A. Knyvett Gordon, and responded to by Sir Edward Macartney (Agent-General for Queensland), Dr. P. Montague Smith (president of the Harveian Society of London), and Major Hugh Wakefield. The chairman's health was proposed by Sir Dennis Herbert, and Dr. Halls Dally replied.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9361, 9362, 9363, and 9364* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocera Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62559 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

DISCONTINUANCE OF PEPTONE TREATMENT.

"H. A. C." writes: I have treated a patient successfully for migraine with peptone I grain twice daily, and should be glad of suggestions as to discontinuing the treatment, which has been maintained for six months. Should the peptone be stopped suddenly or gradually?

TRICHINOSIS.

DR. JOSEPH LLOYD (Swansea) writes: I have under my care in this district a family of five persons who have been stricken very ill—all having been in good health previously—with signs and symptoms of trichinosis. The illness started with gastro-intestinal symptoms, followed by very severe oedema of the face, high fever, muscular pains, especially affecting the biceps and gastrocnemii muscles, weakness, and prostration. There is marked eosinophilia. I should be grateful for information about any similar cases existing at the moment in other parts of the country. So far it appears that the illness followed a meal of boiled ham taken a few weeks ago.

*** In the *British Medical Journal* of April 5th, 1930 (p. 630), Drs. Herzberg and Vitenson reported a case occurring in London, and on May 10th (p. 832) Dr. Jean Murray reported an outbreak of trichinosis in a bacon factory at Bradford-on-Avon.

TREATMENT OF PRURITUS ANI.

MR. C. D'OYLY GRANGE, F.R.C.S. (Harrogate), writes in reply to "Cerous" (June 7th, p. 1080): I have had excellent results with the subcutaneous injection of "A.B.A." as described by W. B. Gabriel in the *British Medical Journal* of June 15th, 1929 (p. 1070). If there is much moisture I combine this with the application of calamine, either in the form of powder or in a very thick lotion.

*** Mr. Gabriel stated that "A.B.A.," prepared for him by Messrs. Allen and Hanburys, is a 3 per cent. solution of anæsthesin with benzyl alcohol 5 per cent. and ether 10 per cent. in sterilized olive oil.

DR. FREDK. WM. ALEXANDER (Teddington) writes: About two years ago a septuagenarian medical man asked me if I could do anything for his pruritus ani, from which he had suffered for years and tried every known remedy without relief. For a period of about ten minutes I applied on the outside of the anus high-frequency electricity by means of an ordinary glass vacuum electrode kept close to the surrounding parts and moved around. From the first application the effect was striking, and an absolute cure resulted after a few treatments. Was it the ozone in this instance?

DR. THOMAS I. MILLS (York) suggests the use at bedtime of a salve containing ol. menth. pip. 5 per cent. in Lassar's paste.

PROTECTION AGAINST SUNBURN AND MIDGE BITES.

PROFESSOR J. A. NIXON (Bristol) sends the following replies to questions by Dr. Ivan B. McCann and "Perplexed" in the *Journal* of June 7th (pp. 1079, 1080):

Prevention of Sunburn.—The best protecting substance is quinine, either in the form of a lotion (1 per cent.) or an ointment (5 per cent.). As it is difficult to introduce quinine into an ointment, I give a formula which I have found effective in the mountains:

Quinine acid hydrochloride (dissolve 1 in 2 of water)	5
Anhydrous wool fat	40
Oil of lavender	1
Soft paraffin	to 100

Midge Bites.—Cod-liver oil provides complete protection. I use it in combination with quinine to make a "sunburn and midge cream." This is the formula:

Quinine acid hydrochloride	5
Cod-liver oil	20
Anhydrous wool fat	75
Oil of lavender or geranium	q.s.

DR. CLAUDE WILSON (Tunbridge Wells), president of the Alpine Club, writes on the prevention of sunburn as follows: Dr. McCann will find his question answered in the *British Medical Journal* for April 10th, 1926 (p. 681), in which there are some notes that would interest him. But, for practical purposes, there are many preparations sold by the chemists at most mountaineering centres. The original, and the best, is the pomade Sechehaye, made and sold in collapsible tubes, at 2.50 francs per tube, by the Pharmacie Hausser, 10, Bourg-de-Four, Geneva.

"J. F. W." has found an anti-insect preparation which is sold under the name of "No-Midge" to be very satisfactory. It is made by Adams, of 162, Higher Hillgate, Stockport, and is supplied in small collapsible tubes.

"YARRAMAN" thinks that "Perplexed" will find oil of citronella (a drop here and there on the dress, not forgetting the stockings) will keep away midges. The smell is pleasant. When camping out (he says) a cake of dry cowdung, lighted, will smoulder like touchwood, and keep away midges and mosquitos.

INCOME TAX.

Deductible Expenses.

"G. C." inquires what expenses can be deducted in computing assessable income from clinics, lectures, consulting practice, and journalism.

*** There can be no question about such expenses as professional postage and telephone costs, rent of consulting room, and professional subscriptions, which are clearly allowable. The cost of travelling from residence to consulting rooms is perhaps open to doubt. If professional work is done at home and the various earnings are so interconnected that they should be dealt with as a single entity—and there seems good ground for suggesting that that would be the correct course—we are of opinion that the travelling expenses are allowable.

Request to Produce Bank Pass Books.

"J. G." has for the past eight years employed a certified accountant to prepare his income tax returns. He has been asked to supply his bank pass books and details of his investments, sales, and purchases for some of the past years. Is this request supported by legal authority?

*** We presume that "J. G." has supplied certified copies of his professional accounts in the past; if so, the request seems quite unusual, and we suggest that "J. G." might ask the inspector of taxes to state the reason why it has been made to him. So far as the legal position is concerned, the inspector has no legal right to enforce the request, but the Commissioners responsible for the assessment in the last resort could require the production of the pass books, etc., if they decided to do so in the course of an appeal which "J. G." might make against an assessment made on his income.

Cash Receipts Basis.

"J. J." bought a share in a partnership at January, 1928. At the end of 1928 there was an amount of over £400 due to him for professional work, which, in many cases, was being paid off gradually in small weekly sums. The inspector of taxes has made an allowance for probable bad debts, but will not accept a computation of liability based on the cash receipts of 1928.

*** The inspector is legally correct. There is undoubtedly some hardship in having to pay tax on income before it is received, but as the law stands it is the amount of the earnings, whether received in cash or not, that determines the amount of the liability.

LETTERS, NOTES, ETC.

EMERGENCY OPERATIONS UNDER DIFFICULTIES.

DR. A. G. NEWELL (St. Leonards-on-Sea) writes: Dr. Moir's experience (*Journal*, June 7th, p. 1048) is interesting; it reminds me of one of several done under difficult conditions. I was travelling by train in Sylhet and we had arrived at a station. Immediately after the train started on its journey we heard an agonizing cry and loud shouts, and on looking out I found a native woman was lying on the rails. I shouted to the guard to stop the train. The woman had discovered this was the station she should have got out at; she had opened the door and evidently succeeded in getting to the lower step, from which she either jumped or fell. Her left foot was practically severed and hanging to the leg by a flap of skin; she had a large tear up the leg and the tibial and popliteal arteries were torn; there was much haemorrhage. I improvised a tourniquet, and took her into my compartment. I was to get out at the next station, where I had arranged for a trap to convey me to an estate about two and a half miles off. I had to put digital pressure on the femoral artery continuously till I reached my station. I then put a second improvised tourniquet and some firm bandaging on the femoral artery, and took the woman in my trap to the estate. There I arrived at dusk, and had to send ten miles for my instruments for amputation. In the early hours of the morning, in a small but dispensary, I amputated above the knee. I had as assistants an unqualified babu doctor and a native syce. There were three candles and a small oil lamp. After a few days the patient was fit enough to be conveyed to the railway hospital at headquarters. After ten or eleven days she died. The amputation was a success, but it was found that she had an enlarged spleen, which had burst from the fall and caused secondary internal haemorrhage.

HERPES AND VARICELLA.

DR. E. G. LEOPOLD GOFFE (Kingston-on-Thames) sends the following note: N. D., male, only child, aged 9 years, developed lobar pneumonia on October 15th, 1929. He was nursed at home by his mother, assisted by a grandmother and an aunt. N. D.'s mother, aged 46 years, developed herpes on November 1st, 1929. There was irritation of the skin, at the site of the subsequent eruption, for two days before the appearance of well-marked herpetic vesicles in the right groin and on the right labium majus, the upper and inner part of the right thigh, the inner side of the right knee, the right trochanter, the right buttock, and over the lumbo-sacral spine. None elsewhere. N. D., who occupied the same room as his mother, developed varicella on November 12th, 1929. He had well-marked vesicles on the face, scalp, palate, tongue, trunk, and limbs. The only visitors to N. D. and his mother during their illness were adults—namely, his father, grandmother, two aunts, and two uncles, none of whom showed any signs of herpes or of varicella. These contacts knew of no one who had either herpes or varicella before, during, or after N. D.'s and his mother's illness. This association between herpes and varicella I had noticed on several occasions while I was a resident in a fever hospital. A patient in a ward would develop herpes, and a fortnight later varicella would crop up in the ward, to be followed by successive outbreaks at regular fortnightly intervals.

RAPID LABOUR IN A PRIMIPARA.

DR. L. SCHAPERA (London, N.W.10) writes: I think the following case of rapid labour is worth recording. A primipara, aged 24, commenced labour at 8 p.m., and gave birth to a fully developed male child, weighing 6½ lb., at 11.55 p.m. I examined her at 10.55 p.m., when the os was only one fingerbreadth dilated; the membranes ruptured at 11.30 p.m.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 44, 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 283.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

552. Fatal Exophthalmic Goitre following Administration of Thyroid Gland.

E. MOLLER (*Acta Med. Scand.*, February 28th, 1930, p. 1) distinguishes hyperthyroidism from exophthalmic goitre; the latter presents some or all of the symptoms of hyperthyroidism, but in addition there is a soft goitre, characterized usually by thrill and bruit, exophthalmos, and the other well-known eye signs. Hyperthyroidism following thyroid administration is seen most frequently in obese patients, but it has occurred in cases of simple goitre, and in myxœdema after overdosage. The symptoms of exophthalmic goitre are usually aggravated by thyroid administration. Möller mentions eight previously recorded cases of exophthalmic goitre following thyroid medication; only one was fatal. Three patients suffered originally from myxœdema, and two from simple goitre. He reports a ninth case, the patient being a woman, aged 43, without a familial history of thyroid disease, who had had an artificial menopause induced on account of uterine fibromyomata two years earlier. Subsequently she became rather obese and thyroid tablets were prescribed; in six weeks she took between 110 and 120 tablets, and alarming dyspnœa, palpitation, insomnia, tremor, diarrhœa, hyperidrosis, thirst, and faintness developed. A moderately large goitre was present, accompanied by thrill and bruit; there was slight exophthalmos, a positive von Graefe's sign, and fine rapid tremor of fingers. For two weeks the condition remained unchanged. The basal metabolism at first showed an increase of + 52 per cent.; this fell to + 28 per cent. in four days. In spite of a high calorie diet, bromides, medinal, and iron, she became more restless, with occasional hallucinations and sphincteric incontinence, and died four weeks after admission to hospital. The etiology of exophthalmic goitre is still unknown. Möller adds that in this case the disease progressed for six months after cessation of thyroid medication; the preparation used was reliable and the dosage moderate. In view of the grave danger of the indiscriminate administration of thyroid extracts Möller considers that this treatment should be restricted to cases of evident hypothyroidism.

554. The Sciatic Syndrome.

A. VALERIO (*Rev. Sud-Americaine de Méd. et de Chir.*, April, 1930, p. 348) holds that sciatica is essentially a neuritis, and not a mere neuralgia; he refers to a previous publication on the subject by himself in which he insisted on the consideration of sciatica as a syndrome, and not a clinical entity; the work of the past five years has confirmed his opinion. Syphilis is a more common cause of sciatica than is commonly supposed; Valério has treated 30 cases, all successfully; in suspected cases, where the Wassermann reaction is negative in the blood and cerebro-spinal fluid, he attaches diagnostic importance to lymphocytosis and increase of albumin in the spinal fluid. The importance of looking for the Argyll Robertson pupil is also emphasized. In syphilitic sciatica the essential lesion is a funiculitis rather than a radiculitis, being usually localized to the region between the posterior root ganglion and the plexus. The treatment is by neosalvarsan in doses not exceeding 0.45 gram, up to a total of 4 grams in all, a second course being given after three months' rest, if necessary. Gleet and gonorrhœa are possible causes, and Valério has treated 22 cases of these conditions. In gleet the associated micro-organisms (including sometimes Koch's bacillus) are responsible; the treatment is by local diathermy for fifteen minutes daily, and ten to twenty applications are made, associated with the classical local genito-urinary treatment. Autohæmotherapy is sometimes employed, injections of 1, 1.5, 2, or 2.5 c.cm. being given at intervals of three or four days. In gonorrhœa the local genito-urinary treatment is supplemented by ultra-violet radiation in a series of ten treatments, beginning with one minute, and increasing by one minute daily; autogenous vaccines, although believed to act by colloidoclasic shock, have been found more effective than the stock kind. In eight instances the sciatica began during the first or second week after infection, being associated with an attack of rheumatism. In these cases, there is not only a neuritis, but also a peri-neuritis, and there is accompanying pyrexia; but also a peri-of a sacro-iliac arthritis should be looked for, and Valério has noted 16 such cases, which he designates "parasciatica." It should be noted that such gonorrhœal infections give rise to a true neuritis from bacterial and toxic action, and are not merely representative of reflex pain; the most usual lesion is probably a funiculitis, between the ganglion and plexus. Parasciatica is defined as sciatic pain caused by a lesion, not primarily of the sciatic nerve, which may affect the nerve roots before or after their exit from the bony canal, or the main nerve within the true pelvis; examples of exciting causes are lesions of the meninges or spinal column, pelvic tumours, adnexitis, and prostatic growths. Among less common causes Valério has seen four cases of appendicitis giving rise to sciatic pain, which ceased after appendicectomy; there was one case of popliteal lipoma, the size of the tumour being that of an orange. Sacralization of the lumbar spine must be considered as a possible cause of parasciatica, and 14 such cases were found in 92 radiographs of adults and children with sciatic and lumbar pain; in two cases sacralization was found unaccompanied by pain, and in some cases of spondylolisthesis and spina bifida occulta there is no complaint of pain.

555. Amelioration of Mental Disease after Influenza.

K. A. MENNINGER (*Journ. Amer. Med. Assoc.*, March 1st, 1930, p. 630) records 18 cases, of which several had come under his own observation, in which various psychoses had undergone improvement after an attack of influenza; 9 of the patients were males and 7 females, while in 2 the sex was not stated. In 7 the psychoses had lasted from twelve to eighteen months, in 3 for two to four years, in 6 from five to fifteen years, and in 2 the duration was not stated. Complete cure ensued in 11 cases; 3 patients showed some improvement, and 4 a remission of their mental symptoms. The diagnosis in the cases reported cured were mania (1 case), melancholia (2), schizophrenia (4), organic brain disease (1), epilepsy (2), and migraine (1). Menninger remarks that though it would be unsafe to draw any statistical conclusions from so small a series, both sexes, various syndromes, and illness of variable duration were included.

556. Aertrycke Infection.

P. M. HOLST (*Norsk Mag. f. Laegevid.*, February, 1930, p. 163) records an outbreak of enteritis in a farm where in the course of about six weeks between 20 and 90 pigs died of enteritis. About a fortnight after the beginning of the epizootic the seven inmates of the farm were also taken ill with diarrhœa, vomiting, fever, and headache. *B. aertrycke* was isolated from the stools of one of the patients, and was agglutinated both by the patients' serum and by serum from two sick pigs. It is probable, therefore, that both the epidemic and the epizootic were due to *B. aertrycke*.

Surgery.

557. Diathermy-Coagulation of Haemorrhoids.

DIATHERMY, according to G. FRIEDEL (*Paris Medical*, April 5th, 1930, p. 325), is the ideal treatment for haemorrhoids, in that the destructive action is strictly limited and the resulting scar is supple. Further, there is absolute safety, no infection nor haemorrhage, and conservation of the sphincter function. Contraindications are dilatations of the ano-rectal veins due to pressure (from a gravid uterus, fibroma, ovarian cyst, or other abdominal tumour), to cirrhosis of the liver, or to insufficiency of the right heart. The diathermy apparatus should supply at least 500 milliamperes of current. The active electrode is a needle mounted in ebonite; the other is a moist cubical pad, 15 cm. in each dimension. There should be ready to hand a 5 c.cm. syringe with two needles, each 5 cm. in length; iodized alcohol; a 1 in 10 solution of chromic acid; two pairs of Kocher's forceps; sterile compresses and cotton-wool; and an anal speculum. The anæsthetic recommended (for the operation is very painful) is butelline, a sulphate of para-amino-benzol-dibutyl-amino-propanol; to it adrenaline and potassium sulphate are added, and a preliminary injection of scopolamine morphine is recommended. The anal region having been swabbed with iodized alcohol, 4 to 5 c.cm. of butelline are injected at the four poles of the anus in the region of the subnucosa, a finger in the anus guiding the needle to avoid perforation of the mucosa. On each side of the sphincter zone 2 c.cm. more are injected deeply. Anæsthesia is generally complete in ten minutes. The sensitiveness of the mucosa having been carefully tested, the needle is introduced into the centre of

each pile, at a depth of 1 cm., and the current is passed until a white area around the needle indicates coagulation; the current is then switched off and the needle withdrawn. Haemorrhoidal masses would require four to six such punctures. Any superficial bleeding points are readily cauterized with the needle, and the scars are touched with chromic acid. Oedema may occur, of no consequence in internal haemorrhoids, while in external haemorrhoids hot and cold compresses cause rapid resorption. During the first twenty-four hours no food is given, but abundant fluid, with morphine at night, when it may be necessary to draw off the urine. If flatus is troublesome it may be evacuated through a well-lubricated gum-elastic catheter. On the third day light food is given and a further morphine injection. On the fourth and succeeding days a dose of castor oil is administered in paraffin to ensure loose motions. At the end of eight days the patient should be able to resume his normal life. Abscesses formed in three cases of the author's series of 300, and post-operative haemorrhage occurred in three other cases.

558. Pulmonary Abscess following Tonsillectomy.

P. H. PIERSON (*Arch. of Oto-Laryngol.*, March, 1930, p. 279) defines this condition as a consolidation of the lung followed by necrosis; it includes, therefore, many so-called "ether pneumonias." Two theories have been advanced to explain the development of these abscesses, the first being the more obvious aspiration theory, and the second the view that the lesion in the lung is caused by infected emboli from the site of operation; it is propable that both processes occur. More pulmonary abscesses follow operations under local than under general anaesthesia, a fact which constitutes strong evidence in favour of the embolic theory. Studying the bacteriology of the condition, Pierson found both aerobic and anaerobic organisms; he holds that the anaerobes are the agents in the formation of abscesses. The clinical picture is a sudden onset of cough, fever, and sweating, followed by foul sputum and loss of weight. The physical signs are few; dullness, the most constant of these, is usually accompanied by diminished breath sounds, and, later, signs of cavity formation will be found. Treatment calls for the co-operation of the physician, surgeon, and bronchoscopist. Medical measures result in cure in 50 per cent. of the cases, and the author emphasizes the value of postural drainage and prolonged rest in bed even when the prognosis is very favourable. Heliotherapy is of assistance as a general tonic. If postural drainage is unsatisfactory, bronchoscopy is performed, and granulation tissue is removed, thus opening up the drainage track. If after three months failure follows medical and bronchoscopic treatment, surgical intervention must be considered. As possible measures for the prevention of such abscesses the author suggests the careful pre-operative examination of the patient and attention to the condition of the mouth. During operation it is advisable to use suction apparatus, and to avoid the mass ligaturing of the tissues.

559. Cholecystitis.

A. C. NICKEL and E. S. JUDD (*Surg., Gynecol. and Obstet.*, April, 1930, p. 655) report a bacteriological and experimental study of 300 consecutive cases of the surgical resection of the gall-bladder at the Mayo Clinic; Rosenow's technique was used, with Wilkie's modification in some cases. Their results confirm a previous observation that viable bacteria are present in resected gall-bladders which have been the site of cholecystitis; the majority of those from patients with acute or subacute cholecystitis contained, in order of frequency, green-producing streptococci, Gram-negative bacilli, and staphylococci, while those from patients with chronic cholecystitis were sterile, as were also cultures from "strawberry" gall-bladders unless there was a complicating factor. The cultures were made irrespective of the reasons for removal, and of the amount of visible pathological change; 23 per cent. of the patients were men and 77 per cent. were women of whom 89 per cent. were married, many having a history of cholecystitis commencing or recurring soon after childbirth. Of the total number, 85 per cent. showed potential foci of infection in the teeth, tonsils, prostate, cervix, or sinuses. Cultures from cystic lymph nodes were approximately parallel with those from the walls of the gall-bladders. The streptococci from grossly diseased gall-bladders were of definite etiological significance, since they tended to reproduce cholecystitis and cholelithiasis in rabbits injected intravenously; staphylococci were found to be non-pathogenic when injected in pure culture. *B. coli* appeared to have a selective action for the gall-bladder, and were usually associated with the streptococcus in relatively acute cases and in those with stones in the common or cystic duct. The authors' conclusions agree with those of Branch, who regards "the disconcerting consistency of positive cultures from the acute cases" as "only equalled by the persistent lack of growth from the chronic cases."

Therapeutics.

560. The Salicylates in Acute Articular Rheumatism.

R. LUTEMBACHER (*Presse Méd.*, May 10th, 1930, p. 634) believes that rheumatic infection, like syphilis, should be treated for a prolonged period of one or two years, and preferably by intravenous injections. The dangers of using concentrated solutions of the salicylates are pointed out; these rapidly cause an induration of the venous walls and act also on the endocardium. Moreover, if the injection is not given very slowly, pains along the course of the nerves, and sometimes alarming malaise, are caused. Dilute solutions (1 in 20) are therefore recommended. Venous sclerosis has never been noted following the administration of such solutions, and better results have been obtained. Despite the tolerance of the organism for dilute injections of chemically pure sodium salicylate, Lutembacher has shown that there is a danger of overcharging the organism with sodium ions during prolonged treatment with this drug. This disturbance of the equilibrium is harmful for all the tissues, particularly the heart, and also impairs blood coagulability, a possibility which should not be overlooked in patients with more or less marked anaemia. A 1 in 20 solution of the salicylates of sodium, calcium, and potassium is advised; in this the ions are equilibrated in the physiological proportions of Ringer's liquid. The activity of this polysalicylate solution is said to be equal to that of the sodium salt alone; intravenous injections are remarkably well tolerated, the taste is less disagreeable, and oral doses are more acceptable to the stomach. Four cases, with the dosage employed in each, are described to illustrate the benefits resulting from this method. The doses should be reduced after the age of 30; young subjects, especially with grave forms of rheumatism which are complicated by subacute degeneration of the hepatic and renal parenchyma, singularly fail to respond to salicylate medication.

561. Digitalis as a Cause of Arrhythmia in Children.

S. P. SCHWARTZ (*Amer. Journ. Dis. Children*, March, 1930, p. 549) believes that digitalis may produce both the transient and the permanent forms of auricular fibrillation in children with heart disease. This possibility has in the past been questioned on the ground that other factors which might have been responsible for the arrhythmia had not been eliminated. An account is given of two patients, aged 6½ and 12 years respectively, in whom the onset of fibrillation seemed to be definitely attributable to digitalis administration. The first child received daily 3 c.cm. of the tincture of digitalis as treatment for severe heart failure, accompanied by oedema of the legs and ascites, in the course of an attack of rheumatic fever. After five days definite improvement resulted, and the dosage was continued despite progressive prolongation of the PR interval in the electro-cardiogram. On the eighth day dropped beats were observed, auricular fibrillation developed, and death followed. The second child suffered from organic valvular heart disease and recurrent bouts of rheumatic fever. Cardiac insufficiency with oedema appeared during one of the exacerbations, and large doses of tincture of digitalis were given. After 32 c.cm. had been administered over nine days auricular fibrillation developed, with a slow rhythm and persistent coupling. Six days later the normal rhythm was restored. That auricular fibrillation is an early disturbance of the cardiac mechanism produced in children by digitalis is suggested by the appearance of this arrhythmia before the onset of premature ventricular beats. Additional reasons are given for believing that the development of fibrillation is the result of vagal stimulation by the drug during a period of active carditis. The author concludes that the administration of digitalis is contraindicated in children with rheumatic fever and signs of cardiac insufficiency.

562. Serum Therapy in Gas Gangrene.

E. E. LARSON and D. S. PULFORD (*Journ. Amer. Med. Assoc.*, March 1st, 1930, p. 613) repeat the warning that infection by anaerobic bacteria is not uncommon in civil practice. It may be suspected in lacerated wounds and compound fractures, especially where earth or woollen material has entered the lesion, and if the patient has, usually within the first twelve hours, pain disproportionate to the degree of injury; high temperature and pulse rate, with flushed face and unimpaired mental function; swelling of the injured part, with pallor of the surrounding skin; and a dirty creamy tint of the wound margins with blood-stained serum but no pus on the dressings. Later, bubbles of gas can be expressed, and crepitation is felt under the skin. Smears of the secretion and cultures should be made immediately, some of the macerated tissue being placed in a test tube and covered with melted agar. Bubbles appear after a few hours' incubation if anaerobes are present. An *x*-ray examination

may show bubbles in the tissues before crepitation can be felt. Treatment must be applied early and thoroughly. It consists in the removal of all devitalized tissue and foreign matter, leaving the wound open; frequent (three-hourly) irrigation, preferably with 1 per cent. chloramine, and immersion of the injured part in this solution for an hour three or four times daily; and the administration for an hour antiserum—*B. perfringens* (*welchii*), *Vibrion septique*, and *B. oedematiens*—both intravenously and locally into the deep and superficial tissues above the wound. The dose of the serum is as much as 50 c.cm. in 100 c.cm. of physiological saline solution for daily intravenous injections, and 50 c.cm. for local application. Seven cases are recorded by the authors, in all of which the anaerobic infection was successfully controlled. In one instance amputation was performed eleven days after the injury, but the patient died from streptococcal septicaemia a week later. The stump was free from anaerobic infection. The other patients recovered.

563. **Treatment of Meningococcal Septicaemia.**

J. PUJET (*Thèse de Paris*, 1930, No. 476) records seven cases in patients aged from 16 to 53, of meningococcal septicaemia characterized by intermittent fever, an erythematous eruption on the limbs, myalgia, and good general condition. With one exception, none showed any signs of meningitis. In the first case, after all other methods had failed, recovery took place after two intravenous injections of trypaflavine. In the second case proteinotherapy was of no benefit, but recovery followed the injection of trypaflavine. In the third case cerebro-spinal meningitis, which was followed by meningococcal septicaemia on which the disease had no action, but a cure was effected by injections of yellow. In the fourth and fifth cases, in which the disease had proved refractory to serum and vaccine treatment, were cured by two injections of trypaflavine. In the sixth case, when trypaflavine was given on the twentieth day, only a slight and transient improvement resulted from a single dose of 0.10 c.cm., but a cure was obtained by daily repetition of the dose. In the seventh case, where some reduction of the pyrexia had been obtained by pyoformine, four injections of trypaflavine produced a cure.

Radiology.

534. **Combined Radium and X-ray Therapy in Rectal Carcinoma.**

RECTAL cancers are notoriously difficult to cure because 40 to 50 per cent. are inoperable when first seen; the rectum is in daily use; the tumour mass is not easily accessible; the degree of dissemination cannot be estimated by physical examination; and the complete removal of all cancer-bearing tissue is difficult and accompanied by a high immediate mortality. I. ARONS (*Radiology*, March, 1930, p. 232) believes that radium and *x*-ray treatments are palliative measures which relieve suffering and prolong life. Epithelioma or squamous-cell carcinoma of the anus is uncommon (only 3 to 4 per cent. of all rectal cancers), and its most satisfactory treatment is irradiation by the interstitial deposition of small metal-filtered radon implants, known as gold or platinum seeds. The remaining cancers of this region are adenocarcinomas, of which the four common types are adenocarcinoma, papillary carcinoma, the colloid or gelatinous carcinoma, and the destrnens, the colloid or malignant adenoma or adenoma sclrrhus or fibrocarcinoma. The colloid and scirrhus, especially the latter, are radio-resistant. Rankin and Broders have divided these growths into four groups or grades, based on their degree of malignancy. A knowledge of the lymphatic drainage of the rectum is essential in order to place properly interstitial foci of radon, and thus anticipate and prevent the dissemination of the cancer. The lymphatics of the rectum are: the intramural lymphatics, which are arranged in two plexuses, the submucous and the intermuscular; the intermediary lymphatics, which spread in three directions—extramural lymphatics, which spread superiorly, laterally, and inferiorly. Ano-rectal cancer is disseminated by direct extension or continuity, by permeation of the lymphatics, and by metastases through the blood vascular system. The lymph spread may follow any of the lymphatic pathways mentioned above, and the proper arrangement of radio-active foci is as follows: gold or platinum radon seeds superficially in the submucosa of the rectum in the same segment in which the cancer occurs, in order to prevent the circular spread by the submucous plexus; similar seeds in the wall above and below the cancer, to prevent the longitudinal spread by the intermuscular plexus; similar seeds of similar seeds or radium element needles in the perianal ...ion, the externa... fossa, the treatments to be supplementary to the direct attack on the tumour mass. Before the cancer is irradiated colostomy should be performed, and, within a few days of this, irrigation of the lower loop with 5 per cent. sodium bicarbonate should be begun for cleansing purposes. In the absence of faeces and with continual irrigation the infection subsides and the tumour seems to become smaller. Two weeks after the colostomy is made, a pelvic cycle of *x*-irradiation is given, followed almost immediately by interstitial radium therapy. The technique employed is fully described. Either sacral or spinal or nitrous oxide anaesthesia is sufficient for the introduction of the needles or seeds.

565. **X-ray Treatment of Syringomyelia.**

RAYMOND, OBERTHUR, and DELHERM were the first (in 1905) to report the improvement, from both a motor and sensory standpoint, in a case of syringomyelia following spinal *x*-ray treatment for a year. DELHERM, MOREL-KAHN, and DESGREZ (*Presse Méd.*, February 26th, 1930, p. 281) summarize the results reported by various authorities, and record those obtained in 15 personal cases by this method. Of the latter, 9 (60 per cent.) were improved, 1 remained stationary, and 5 (33 per cent.) became aggravated. Of 153 cases collected from the literature, 124 (73 per cent.) were improved, while the others either remained stationary or became worse. Syringomyelia advances by successive recrudescences, interspersed with remissions which are sometimes prolonged, and the lesion is apt to extend both above and below. thus necessitating an irradiation greatly beyond the limits of the suspected region. In this disease the cord resembles a soft sac, which collapses after its liberation; the hollowed cavity in the middle of the cord, which histologically characterizes a glioma, sends prolongations, sometimes very extensive, to the upper and lower segments. Thus both compression and destruction of tissue occur. In the latter case there can be no hope of any useful repair of the tissues; on the other hand, it is conceivable that, if the compression is arrested, the nervous elements, freed by the action of the irradiation, may resume their activity. Many authorities believe that syringomyelia is due to the formation of a glioma; it has been shown that *x* rays have a considerable action on gliomatous tissue composed of young cells, and that fibrous tissue is radio-resistant. Bergonié-Tribondeau has asserted that radiotherapy can be efficacious in lesions composed of young cells but not in fibrous ones; that in every case it can cause the arrest of the disease and even a partial regression; but that, as destroyed tissue can never be re-formed, there is no question of complete cure. The present authors believe that radiotherapy can bring about an improvement, sometimes marked, in an appreciable number of cases, provided that it is begun early in young subjects and continued for a long period, and that its applicat on is extended considerably beyond the clinical seat of the lesions. Even in cases of long duration this treatment is recommended as being the only method capable of producing any improvement. Small doses at short intervals are preferable to large ones at long intervals. The dosage is 400 R, and two exposures are given weekly, each side of the cord being alternately irradiated. At the commencement, intervals of three or four weeks are allowed between each series, but as improvement becomes more marked and permanent these intervals are lengthened. The skin should be carefully watched because of the importance of protecting possible sites for future irradiations.

535. **The Electrical Treatment of Arthritis.**

W. B. SNOW (*Med. Journ. and Record*, November 20th, 1929, p. 559) stresses the importance of dissipating the infiltration, or local swelling, or stasis in the joint structures in all cases of arthritis. An experience of thirty years has convinced him that electricity may be properly employed in acute joint conditions. He uses the static current in the forms of static wave current, static sparks, and static brush discharge as his method of treatment. The static current acts directly on the cell mass, overcoming the resistance of the skin, which the constant current of low voltage cannot do. It thus sets up among these cells active impulses of contraction which expel the accumulated elements from the lymph spaces and so effect a complete drainage of the local field where stasis is present. Thus the aim of treatment is achieved—diminution of pain and restoration of movement. Snow employs this treatment for cases of traumatic arthritis, and cites cases to show the rapidity with which movement is restored. In toxic arthritis the etiological factor should be thoroughly investigated for diagnosis, and methods directed to the removal of causative features. In this connexion Snow mentions that he has found diathermy of the septic focus very beneficial. Rheumatoid arthritis, even in apparently hopeless cases, has responded to static electricity. Children suffering from Still's disease have also gained quick relief; static current and replacement.

Obstetrics and Gynaecology.

567. Acute Sacculation of the Uterus.

W. FLETCHER SHAW (*Journ. Obstet. and Gynaecol. of the British Empire*, Spring, 1930, p. 72) records the case of an unmarried nulliparous woman, aged 31, who suffered from acute abdominal pain after three months' amenorrhoea; she was found to have an extremely tender cystic swelling, surmounting and of equal size with a uterus enlarged to the size of three months' pregnancy. The pulse rate and temperature were normal. The pre-operative diagnosis was pregnancy with red degeneration of a subperitoneal fibroid. Laparotomy showed a median thin-walled spherical cystic swelling the size of a cricket ball springing from the upper edge of the uterus, unconnected with the adnexa; when it was incised the swelling gave vent to liquor amnii and a four months' foetus. The tumour communicated by an aperture admitting two fingers with a uterus the walls of which were of normal thickness. The placenta was inserted in the uterine cavity, and both that and the tumour cavity were lined by the foetal membranes. The incision in the sacculation was stitched. At a second operation two years later the uterus was found to be normal save for a thin-walled median vertical depression extending from the fundus down both the anterior and posterior walls. Shaw describes three cases, and illustrates two similar cases from the literature. He ascribes the sacculation in his case to a weakness in the uterine wall at the site of fusion of the Müllerian ducts, and the abdominal pain to forcible distension by the growing ovum of a non-resistant portion of the uterus at the apex of the abnormal zone.

568. Sodium Iso-amylethyl Barbiturate in the Late Toxaemias of Pregnancy.

J. H. MOORE (*Amer. Journ. Obstet. and Gynecol.*, April, 1930, p. 544) reports four cases of grave toxaemia occurring late in pregnancy, in which sodium amytal (sodium iso-amylethyl barbiturate) played an important part in treatment. Three of the patients were suffering from nephritis which was complicated by pregnancy. Fear of approaching labour added a serious mental hazard to these patients, who in any case could only be considered poor obstetrical risks. The fourth was the only case which showed all the symptoms and signs of eclampsia. The problem of anaesthesia as well as analgesia was greatly simplified by the use of sodium amytal. No ill effects were noted in the four premature infants of these toxic mothers, but two of the mothers showed symptoms of moderate shock, one six hours and the other ten minutes after the injection of the drug. The depression in both cases was only temporary; it occurred in patients who had been unusually nervous and apprehensive before the induction of labour. The prompt anaesthetic and sustained analgesic effect in all the patients was satisfactory.

569. Pregnancy and Eruptive Fevers.

H. DUFOUR (*Journ. de Méd. de Paris*, April 3rd, 1930, p. 287) states that erysipelas does not usually have an unfavourable influence on pregnancy; Roger, Legendre, and himself had recorded 17 cases of erysipelas in which delivery was normal. Contrary to what might have been expected, streptococcal infection in the puerperium in such cases is rare. Of 20 pregnant women who contracted measles under Dufour's observation, 9 either aborted or had a premature confinement; while of 10 pregnant women who contracted scarlet fever, none aborted, and only one had a premature confinement at the eighth month. As regards lactation, the mother may be allowed to suckle her child provided that care is taken to prevent infection of its umbilicus, since no condition is more serious than erysipelas in the newborn. In the absence of broncho-pneumonia, which is very contagious, a woman suffering from measles should be allowed to suckle her child, and it is generally agreed that lactation may be continued by a mother who is suffering from scarlet fever.

570. Treatment of Uterine Bleeding.

G. DANEFF (*Zentralbl. f. Gynäk.*, March 29th, 1930, p. 808), from an experience of 72 cases of menorrhagia and/or metrorrhagia, 42 of which were ascribed to altered ovarian function, and in 30 of which no organic disease could be detected in the pelvis or elsewhere (patients of this group were of the delicate, slightly cyanotic, and asthenic type), recommends the administration of digitalis, preferably intravenously as digalen. He reports the disappearance of morbid uterine bleeding after this treatment, even in patients in whom objective cardiopathic signs were absent or indefinite. The treatment is also of considerable use, it is said, in cases in which morbid bleeding coexists with inflammatory adnexal disease.

Pathology.

571. Bacillus typhosus Type G.

L. K. WITKOROW and G. I. SINAI (*Deut. Arch. f. klin. Med.*, January, 1930, p. 60) state that in a previous paper Witkorow bestowed the name of "Type G" on a special bacillus which serologically was closely related to Gaertner's bacillus, and in its biochemical features occupied a position midway between the typical typhoid organism (Type T) and paratyphoid bacilli. The present paper deals with the etiological role of "Type G" in diseases of a typhoid character. From examination by the Widal and Castellani tests of 302 serums from patients with clinical symptoms of enteric fever the following results were obtained. (1) 12 per cent. of the patients were infected with "Type G"; in 8 per cent. of these cases this infection could be determined by the Widal test alone, and in 4 per cent. by the Castellani test. (2) In a certain number of cases "Type G" infection was determined by growth of typical cultures from the blood and stools. (3) The serological specificity of "Type G," which had been formerly demonstrated by examination of the serums of artificially immunized animals, was confirmed by the clinical results obtained with Castellani's test, and in like manner Witkorow's previous conclusions were confirmed as regards the character of the serological relations between "Type G," *B. paratyphosus* N_2 (Russian terminology), and *B. enteritidis* Gaertner. Clinical observation of patients suffering from "Type G" infection yielded the following results. (1) Infection with "Type G" may produce two kinds of diseases—namely, in 77 per cent. the symptom-complex of typical enteric fever, and in 23 per cent. a condition in which symptoms of gastro-enteritis predominated. (2) "Type G" must be ranked with *B. typhosus* and *B. paratyphosus* A and B as a cause of enteric fever. (3) Infection with "Type G" probably explains some of the cases of clinical enteric fever in which the Widal test for typhoid or paratyphoid infection is negative. Investigation of a family epidemic of "Type G" infection in which seven persons were involved showed that the epidemiology of "Type G" infection in its dissemination in the form of isolated foci, and in the importance of carriers and articles of food, closely resembled that of typical enteric fever.

572. Passage of Inert Materials through the Intestine.

F. HOELZEL (*Amer. Journ. of Physiol.*, March, 1930, p. 466) has studied the rate of passage of various inert materials through the digestive tracts of various animals and man, the substances used being rubber, cotton knots, seeds, glass beads, aluminium, steel, silver, and gold. The rates of passage were found to be more or less proportionate to the specific gravity of the materials, the heavier ones passing more slowly than the light. The rates varied considerably in different species and individuals. In rabbits stasis occurred more rapidly in the duodenum, and to a lesser extent in the stomach, colon, appendix, and caecum. In guinea-pigs most of the heavy material was retained in the stomach and less in the caecum; in rats the caecum was the main site of stasis, and in pigeons and hens the gizzard. In man heavy materials tended to accumulate mainly in the terminal parts of the ileum, the colon, and the caecum. The stasis of gold was so great that intestinal obstruction could be produced with it in rabbits, but not in guinea-pigs, rats, or mice. A relation was traced between the gastro-intestinal motor activity of female rats and their fertility, the viability of their young, and the sex ratio in their litters.

573. Filterable Elements of the Tubercle Bacillus.

J. VALTIS (*La Vie Méd.*, March 10th, 1930, p. 245) discusses the acid-fast bacilli found in the glands of guinea-pigs most easily during the first fortnight of infection and also during the first two months following the inoculation of certain filterable elements of tubercle bacilli and tuberculous material. He gives reasons for believing that these bacilli were not previously present in the animals before inoculation, nor are they "paratubercle" bacilli; and he maintains that they have an attenuated virulence which can be recovered after passage through several animals. The possibility of imperfect technique is discounted, new Chamberland L2 candles having been used, and the experiments being [illegible] controlled by a twenty-four-hour-old culture of [illegible] cholera. With Professor Calmette, the author chicken cu[illegible] probability that the so-called granulations of suggests the [illegible]own into smaller invisible elements capable Much break[illegible]searches of Kahn and Torrey seem to favour of passing [illegible]als.
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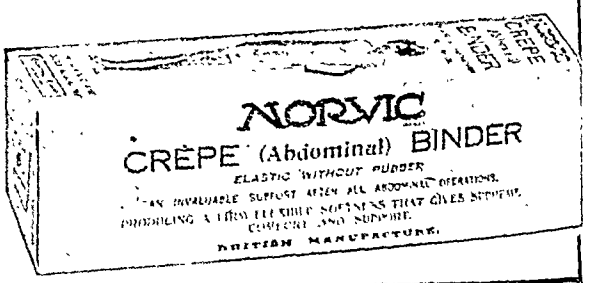
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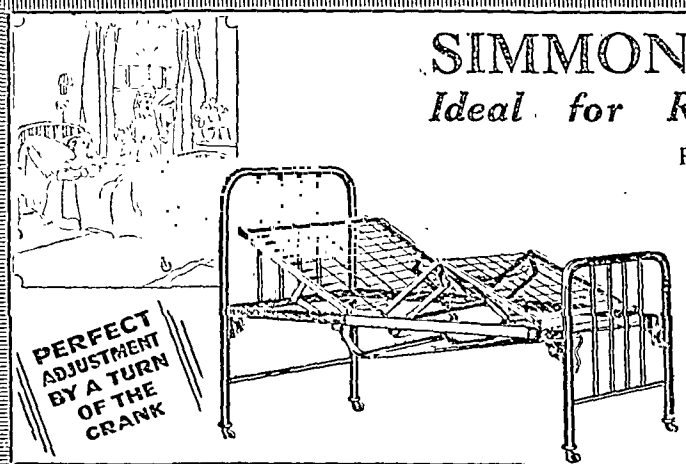
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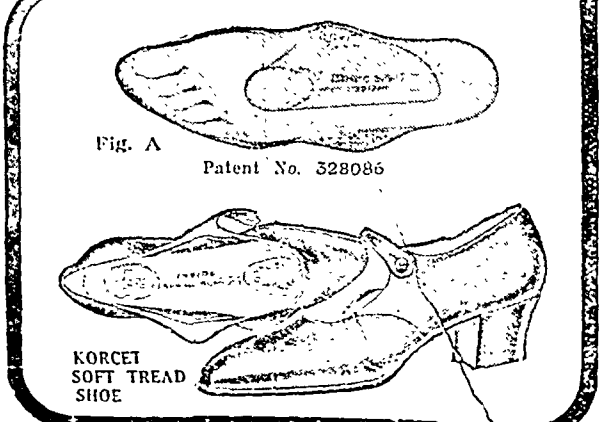
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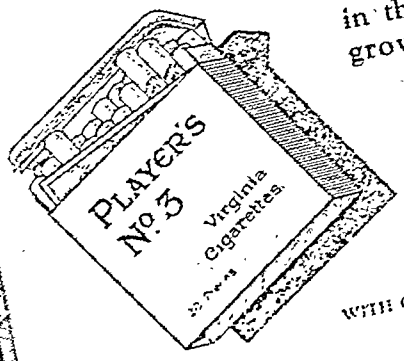
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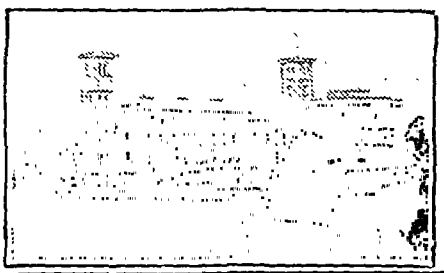
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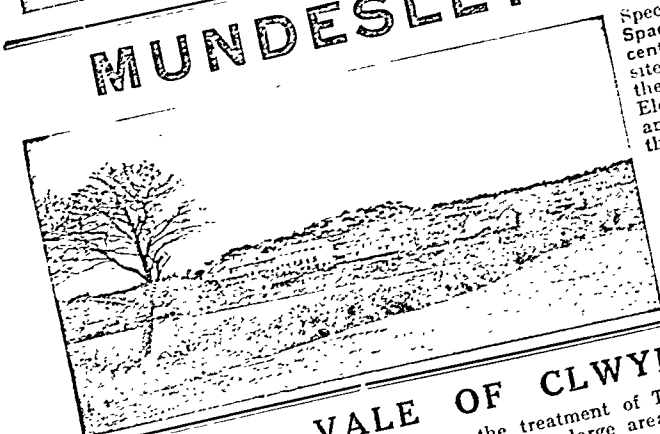
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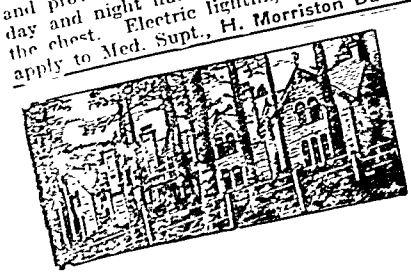
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Applications for admission to the Course of Study for the DIPLOMA IN BACTERIOLOGY at the LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE for the academic year 1930-31, commencing in October next, should be addressed without delay to the

SECRETARY OF THE SCHOOL,
KEPPEL STREET, GOWER STREET, LONDON, W.C.1.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.
(University of London.)

Tropical Medicine and Hygiene.
The School provides two courses yearly, each of 22 weeks. The Autumn Course commences on September 30th, 1930, and the Spring Course on February 2nd, 1931. Composition fee, to include hire of Microscope, etc., £34 5s.

Diploma in Public Health.
The next course of study, covering a period of twelve months, commences on September 29th, 1930, and is so designed that Students wishing to do so can proceed to the New Academic Diploma instituted by the University of London. The composition fee of 54 guineas covers the cost of the necessary practical work and instruction in Infectious Diseases, etc.

Diploma in Bacteriology.
The course of study, covering one academic year, commences early in October. Composition fee £47 15s.

Epidemiology and Vital Statistics.
Special three-monthly advanced courses. Composition fee £7 7s.

Applications for Prospectuses and for other information should be addressed to the Secretary, Keppel St. (Gower Street), London, W.C.1.

TAUNTON SCHOOL,
TAUNTON.
A PUBLIC SCHOOL FOR BOYS.
Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.
Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology. *New Science Buildings*, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. Prospectus from Head Master.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.
(UNIVERSITY OF LIVERPOOL)
COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 28rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)
For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

UNIVERSITY OF LONDON.
EXTERNAL EXAMINERSHIPS, 1931.

The Senate announces the following vacant External Examinerships for all Examinations above Matriculation for the year 1931. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.
For the First Examination for Medical Degrees.
CHEMISTRY.
For the Second Examination for Medical Degrees.
PHARMACOLOGY.
For Final and Higher Examinations for Medical Degrees.
MEDICINE. SURGERY.
OBSTETRIC MEDICINE.
Associate Examiners.
Applications will also be invited for Associate Examinerships and the word "Associate" must be written on it.
Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.
Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable, on or before Monday, July 7th, 1930. (Envelopes should be marked "Examinership.")
The Senate desire that no application of any kind be made to individual members.
If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.
University of London, EDWIN DELLER, Principal.
South Kensington, S.W.7.
June, 1930.

CITY OF LONDON MATERNITY HOSPITAL,
CITY ROAD, E.C.1.
MIDWIFERY TRAINING SCHOOL.
MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.
PUPILS TRAINED as Midwives and Monthly Nurses in accordance with C.M.B. regulations.
PRIVATE WARDS for Paying Patients.
MATERNITY NURSES sent out for private cases.

Glasgow Post-Graduate Medical ASSOCIATION.
CLINICAL OBSTETRICS.
Special facilities are offered at the Royal Maternity and Women's Hospital for the study of Clinical Obstetrics, including Ante-natal work, during the months of August and September.
Particulars may be obtained from the House Superintendent, Royal Maternity and Women's Hospital, Rottenrow, Glasgow.

POST-GRADUATE SPECIAL COURSES.

PROCTOLOGY: St. Mark's Hospital (June 30th to July 5th). Fee £3.3.0
INFANTS' DISEASES: Infants' Hospital (July 21st to August 2nd). Fee £3.3.0
UROLOGY: All Saints' Hospital (August 5th to August 30th). Fee £2.12.6
CHEST: Brompton Hospital (August 11th to August 16th). Fee £3.3.0

Apply: FELLOWSHIP OF MEDICINE, 1, Wimpole Street, London, W.1. Telephone: MAYFAIR 2237.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL MEDICAL SCHOOL.

(FOUNDED 1816.)

Telephone: TEMPLE BAR 1457. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station.)

The Hospital has just been re-built and has 86 beds, including fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination commence October 1st.

Out-patients are seen daily at 1 o'clock. Operations are performed at 3 p.m.

Qualified medical practitioners and registered students may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

POST GRADUATE STUDY

Are you preparing for any Medical or Surgical Examination?

Do you wish to specialize in any branch of Medicine or Surgery?

Send Coupon below for our valuable publication.

"GUIDE TO MEDICAL EXAMINATIONS"

Principal Contents.

The Examinations of the Conjoint Board.
The M.D. Degrees of all British and Colonial Universities.
How to pass the F.R.C.S. Examination.
The M.R.C.P. London and Edinburgh.
The D.P.H. and how to obtain it.
The Diploma in Tropical Medicine.
Diploma in Ophthalmology.
Diploma in Psychological Medicine.
Diploma in Radiology.

You can prepare for any of these qualifications by postal study at home. We specialize in Post-graduate tuition. Clinical and practical courses in any subject. Attendance at Hospital practice arranged.

THE SECRETARY,
MEDICAL CORRESPONDENCE COLLEGE,
19, Welbeck Street, Cavendish Square, London, W.1. Telephone: WELBECK 8901.

Sir,—Please send me a copy of your "Guide to Medical Examinations" by return.

Name.....

Address.....

Examination in which interested.....

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE

From Specialist Tutors, in conformity with the Regulations of the various Universities.

Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.

BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.

"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."

STAMMERING, CLEFT PALATE SPEECH, LISPING, 3/9 of Miss BEHNKE, 39, Earl's Court Sq., S.W.5.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

17, RED LION SQ., LONDON, W.C.1.

(FOUNDED IN 1882.)

Principal: Mr. E. S. WEYMOUTH, M.A. (Lond.).
POSTAL OR ORAL PREPARATIONS FOR ALL MEDICAL EXAMINATIONS.

SOME SUCCESSES:

M.D.(Lond.), 1901-29 (9 Gold Medallists during 1915-29)		319
M.S.(Lond.), 1901-29 (including 4 Gold Medallists)		21
M.B.,B.S.(Lond.), *Final* 1906-29 (Completed Exam.)		257
F.R.C.S.(Eng.), *Primary* (1906-29)		154
	Final	149
M.R.C.P.(Lond.), 1914-29		168
D.P.H. (Various) 1906-29 (Completed Exam.)		286
F.R.C.S.(Edin.), 1918-29		43
M.R.C.S.,L.R.C.P. *Final*. 1910-29 (Completed Exam.)		433
M.D.(Dur.) (Practitioners) 1906-29		37
M.D. Various. By Thesis. Numerous successes.		

Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

ORAL CLASSES.
M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

THE MIDDLESEX HOSPITAL MEDICAL SCHOOL, LONDON, W.1.

(UNIVERSITY OF LONDON.)

Two Entrance Scholarships of the value of £100 each, one in Arts and one in Science, will be offered for competition.

Two Scholarships of the value of £90 and £60 respectively, are open to students of the Universities of Oxford and Cambridge who have completed the curriculum for or passed the Examinations in Anatomy and Physiology.

The Examination will take place on July 29th, 30th, and 31st, 1930.

The successful candidates will be required to become general students of the School.

Winter Session opens on October 1st.

Application forms and last year's papers can be obtained from the Secretary, Middlesex Hospital Medical School, Mortimer Street, W.1.

MIDDLESEX HOSPITAL.

Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Tuesday, July 1st, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1. ANATOMY, given daily by Professor T. YEATES, M.B., C.M.

Personal instruction is given daily by PHYSIOLOGY.

The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

BIOCHEMISTRY. GENERAL PHYSIOLOGY. HISTOLOGY.

A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

Instruction is given daily except on Saturdays. The Course will continue until the end of July. There will be a vacation during the whole of August, classes resuming first week in September.

FEES—£12 12s each subject or £21 for both.

Warrington Infirmary and Dispensary.

POST-GRADUATE COURSE.

SYLLABUS OF LECTURES AND DEMONSTRATIONS.

LECTURES TO BE HELD AT 8.30 P.M. IN THE INFIRMARY BOARD ROOM.

June 24th—P. B. MUSGRAVE, M.D., M.R.C.P. "Clinical Demonstration and Discussion of Some Common Skin Conditions."

July 1st—N. B. CAPON, M.D., M.R.C.P. "Diseases of the Urinary System in Children."

July 8th—R. COOPE, M.D., M.R.C.P. "Internal Toxæmia."

The Sessions are from May to July 8th and from the middle of September to the end of October.

These Lectures are open to the members of the Medical Profession without fee.

London Clinical Society.

President:

HERBERT J. PATERSON, Esq., C.B.E., M.C., M.D., F.R.C.S.

The FIFTH ANNUAL MACALISTER LECTURE of the Society will be delivered at the London Temperance Hospital, Tuesday, June 24th, 1930, at 9 p.m., by Sir ROBERT ARMSTRONG-JONES, C.B.E., D.Sc., M.D., Lord Chancellor's Visitor in Lunacy.

Subject: "The *Evolution of the Human Mind*" (Illustrated by Lantern Slides).

All Medical Practitioners are cordially invited to be present and may bring friends (ladies or gentlemen).

Smoking, tea, and coffee.

Dr. MARIE CASSIDY, Hon. Sec.

41 Elvaston Place, S.W.7.

Oldham Royal Infirmary.

HOUSE SURGEON to Male Wards required. Appointment tenable until December 31st. Successful applicant will be eligible for re-appointment. Salary at the rate of £175 per annum, with board, residence, and laundry. Applications to be submitted forthwith, together with copies of three recent testimonials, to the undersigned.

CHARLES D. DRAKE, General Superintendent.

LONDON HOMOEOPATHIC HOSPITAL

(Incorporated by Royal Charter),

GREAT ORMOND STREET, W.C.1.

Post-Graduate Summer Course, 1930.

Friday, June 20th. 5 p.m. Dr. C. E. WHEELER, Honyman-Gillespie Lecturer. *The Principles of Homœopathy.*

Friday, June 27th. 5 p.m. Dr. WILLIAM ROBERTS, Registrar-Tutor. *Methods relating to the Selection of the Homœopathic Remedy.*

Friday, July 4th. 5 p.m. Dr. JOHN WEIR, C.V.O., Compton Burnett Lecturer. *The Principles involved in Homœopathic Prescribing.*

Friday, July 11th. 5 p.m. *A series of Clinical Cases, showing Results of Homœopathic Prescribing.*

PAID CLINICAL CLERKSHIPS.

To enable Doctors desirous of studying Homœopathy for three months at the London Homœopathic Hospital—Out-patient Clinics, Lectures, etc.—a limited number of paid Clinical Clerkships, value £25, are available.

Apply the DEAN, Educational Committee.

County Borough of Birkenhead.

MEDICAL OFFICER'S DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH AND BACTERIOLOGIST.

Applications are invited for the above appointment from duly qualified men holding a Diploma in Public Health or a qualification in State Medicine.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum.

The successful candidate will be engaged on bacteriological and biochemical investigations in connection with the work of the Corporation's Hospitals, etc. He will also be required to undertake any other medical duties which may be assigned to him by the Medical Officer of Health, under whose supervision and direction all his work will be carried out.

Candidates must produce satisfactory evidence of special post-graduate training and practical experience in bacteriological and biochemical work.

Canvassing in any form whatever, direct or indirect, will disqualify an applicant. This condition will be strictly enforced.

Particulars of the appointment and form of application may be obtained from D. MORLEY MATTHESON, Esq., M.A., M.D., Medical Officer of Health, 9, Hamilton Square, Birkenhead.

Applications must be received not later than Monday, June 30th.

E. W. TAME, Town Clerk.

Town Hall, Birkenhead.

June 6th, 1930.

Surrey County Council.

ASSISTANT MEDICAL OFFICER.

The Surrey County Council invites applications from registered male Medical Practitioners for the post of Assistant Medical Officer. Applicants must not be over 35 years of age, and must possess the Diploma of Public Health. The duties of the post include the Medical Inspection of School Children; work under the Maternity and Child Welfare Regulations; and Acts, and Venereal Diseases Regulations; and such other Public Health duties as may be allocated to him. The person appointed will be required to devote his whole time to the service of the County Council and reside in the County. The salary will be £600 a year, rising by annual increments of £20 to a maximum of £700, together with travelling expenses in accordance with the Council's scale.

The person appointed will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Applications must be made upon a form which can be obtained together with further particulars from the County Medical Officer, County Hall, Kingston-upon-Thames, to whom the completed forms should be returned not later than Saturday, June 28th. All communications must be endorsed "Assistant Medical Officer."

Any form of canvassing is strictly forbidden, and will disqualify.

DUDLEY AUKLAND, Clerk of the Council.

County Hall, Kingston-upon-Thames.

June 7th, 1930.

Egyptian Government.

EGYPTIAN UNIVERSITY.

FACULTY OF MEDICINE.

Applications are invited for the newly created CHAIR OF PROFESSOR OF HYGIENE. Applicants must have a University Medical qualification and at least ten years' experience of Public Health work, preferably in a Tropical country. Candidates must have a recognized qualification in Public Health and preferably a qualification in Tropical Medicine and Hygiene. They must have held a post in a recognized institute.

The duties of the Professor include giving a Course of Instruction to Under-Graduates and a Post-Graduate Course for the Diploma of Public Health and Tropical Medicine. He will also conduct Research work. The language of instruction is English.

The salary offered is £E1,500 (approximately £1,538) a year, and the appointment will be on contract for three years' renewable. The contract may be terminated by either side by three months' notice in writing.

One month's salary will be paid in lieu of travelling expenses if the successful applicant is resident in Europe.

If an official of the Egyptian Government is selected for the post he will not receive the advertised salary unless it is sanctioned by the Financial Authorities.

Applications, with copies of published Research and copies of testimonials, should be addressed to the Dean of the Faculty of Medicine, Egyptian University, Cairo, so as to be received by him not later than September 20th, 1930.

Further details may be secured by application to the DEAN.

Egyptian Government.

EGYPTIAN UNIVERSITY.

FACULTY OF MEDICINE, DENTAL SCHOOL.

Applications are invited for the post of LECTURER IN DENTAL SURGERY and ASSISTANT DENTAL SURGEON in the DENTAL SCHOOL, CAIRO. The duties will be instructional and clinical.

Preference will be given to candidates possessing the L.D.S.R.C.S.England.

The appointment will be on contract for three years at a salary of £E.420 (approximately £492) a year, and private practice is allowed.

One month's salary will be paid in lieu of travelling expenses if the successful applicant is resident in Europe.

Applications, with details of experience and copies of recent testimonials, should be addressed to the Dean of the Faculty of Medicine, Kasr-el-Aini, Cairo, so as to reach him not later than September 20th, 1930.

County Borough of St. Helens.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of Assistant Medical Officer of Health (male).

The duties will be mainly in connection with Maternity and Child Welfare and the School Medical Service, but will frequently include Tuberculosis, Infectious Disease, and General Sanitary work, so that the post gives considerable general experience.

Candidates must have had special experience in the diseases of children and infants, and possession of a Diploma in Public Health is very desirable.

Salary £600 per annum, subject to a five per cent deduction for purposes of the Council's Superannuation Scheme under the Local Government and other Officers Superannuation Act, 1922.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, St. Helens, and completed applications, accompanied by copies of not more than three recent testimonials, should reach him not later than Monday, June 30th.

FRANK HALEWELL, Medical Officer of Health.

Town Hall, St. Helens.

June 7th, 1930.

Staffordshire County Council.

COUNTY BACTERIOLOGICAL LABORATORY.

A BACTERIOLOGIST is wanted for the above Laboratory, Stafford.

The person appointed must be a registered Medical Practitioner and must have had experience in the routine of a Public Health Laboratory, including the Wassermann Reaction.

Remuneration at the rate of £250 per annum, with a fee per week and necessary travelling expenses.

Applications should be addressed to the undersigned.

EUSTACE JOY, Clerk of the County Council.

County Offices, Stafford.

June 16th, 1930.

EAST AFRICAN MEDICAL SERVICE.

VACANCIES at present exist for MEDICAL OFFICERS in the EAST AFRICAN MEDICAL SERVICE.

Qualifications.—Candidates must be British subjects of European parentage and under 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held Hospital or Public Health appointments, or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose, and throat, venereal diseases, etc.

Salary.—£600 per annum, rising by annual increments of £30 to £840 per annum, and thence, subject to an efficiency bar, by £40 to £920 per annum.

Quarters.—Free quarters are provided or an allowance is given in lieu.

Passages.—Free first-class passages are provided both on first appointment and when proceeding on or returning from leave. A married officer will be granted an allowance towards the cost of his family's passage once each way in respect of each tour of service.

Terms of Appointment.—The appointments are pensionable subject to a probationary period of two years in the first instance.

Length of Tour of Service.—The normal tour of service is 20 to 30 months, after which leave is granted, with full salary, for 2½ to 3½ days, according to the districts in which the officer has served, for each month of service, plus the period of the voyage to England. If the officer is returning to East Africa for further service, he receives a further similar amount of leave, plus the period of the voyage to East Africa.

Course of Instruction in Tropical Medicine.—Selected candidates will normally be required to undergo a course of instruction in Tropical Medicine and Hygiene before proceeding overseas.

Duties.—Though Medical Officers are appointed in the first instance for general service, there are good opportunities for work in special branches of medicine and surgery and for research.

Further particulars and forms of application may be obtained on application, in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Countess of Dufferin's Fund.

WOMEN'S MEDICAL SERVICE FOR INDIA.

Medical Women are invited to apply for the following posts, which must be taken up by the end of October:

(1) MEDICAL WOMAN for General Service. Emoluments: Rs. 550 per mensem, rising; furnished quarters; provident fund; passage and outfit allowance.

(2) MEDICAL WOMAN, with special experience in Maternity and Child Welfare and administration in Public Health work. Emoluments: Rs. 750 per mensem, rising; furnished quarters; provident fund; passage and outfit allowance.

Applications, on special form to be obtained from undersigned, with copies of three recent testimonials, should be returned by Friday, July 11th, to Hon. Secretary, United Kingdom Branch Dufferin Fund, c/o Major-General Sir LEONARD ROGERS, India Office, Whitehall, S.W.1.

June 10th, 1930.

British Hospital, Port Said,

EGYPT, requires PRINCIPAL MEDICAL OFFICER, married, age not over 45, fully qualified, good surgeon with all round experience, knowledge of women's and children's diseases, firm yet agreeable administrator. Term three years, subject to confirmation after first 12 months. Salary, first year £800; second year £850; third year £900. Private practice allowed. Good prospects right man. Interview London. Only English Doctors eligible. For further particulars, etc., apply in writing, giving qualifications, to No. 4066, B.M.A. House, Tavistock Square, W.C.1.

City of Birmingham.

FIRST ASSISTANT MEDICAL OFFICER required. Salary £600 per annum, together with board, etc. Adequate resident experience in a large Infectious Diseases Hospital is essential. Applicants should preferably also have held a resident post in a Children's Hospital, and should possess a post-graduate qualification in Medicine or Public Health. Forms of application may be obtained from Dr. E. H. R. HARRIES, Medical Superintendent, City Hospital, Little Bromwich, Birmingham, and should be returned to him on or before Thursday, June 26th.

P. H. C. WILTSHIRE,
Town Clerk.

City of Manchester.

PUBLIC HEALTH DEPARTMENT.

BAGULEY SANATORIUM (333 Beds).

APPOINTMENT OF ASSISTANT MEDICAL OFFICER.

Applications are invited from qualified Medical Men for the position of Assistant Medical Officer, to take up duties on August 16th.

Every applicant must be a registered Medical Practitioner, under 40 years of age, and unmarried.

Preference will be given to applicants with previous Hospital experience; some experience of Bacteriology is desirable.

Salary £350 per annum, with board, residence, and laundry in addition.

The appointment is made in the first instance for a period of twelve months, renewable at the expiration of that period.

Every application, stating fully the training, qualifications, and experience of the candidate, and his age, with copies of three recent testimonials, and endorsed on the envelope "Medical Officer, Baguley Sanatorium," must be addressed to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester, only, and not to members of the Committee or Council, and must reach him not later than Saturday, July 12th.

The gentleman appointed will be required to pass a medical examination, to devote the whole of his time to the duties of the office, to contribute to the Corporation Superannuation Fund, and to execute the deed of service. Canvassing in any form, oral or written, direct or indirect, is prohibited.

By Order,
Town Hall, F. E. WARBRECK HOWELL,
Manchester. Town Clerk.
June 5th, 1930.

Nelson Hospital, Merton, S.W.20

RESIDENT MEDICAL OFFICER (male), fully qualified, required. Small General Hospital (62 beds), majority of work surgical. Appointment for six months in first instance.

Salary at rate of £100 per annum, all found. Comfortable quarters provided near Hospital.

Further particulars may be obtained from the Hon. Secretary.

Applications, with copies of two recent testimonials, should be sent to the Hon. Secretary not later than June 25th.

City of Manchester.

ASSISTANT MEDICAL OFFICER.

The Public Health Committee invite applications from Medical Practitioners (male) for the appointment of Fourth Assistant Medical Officer at the BOOTH HALL HOSPITAL FOR CHILDREN (750 beds), Charlestown Road, Blackley, Manchester.

The appointment will be for a period of six months and will not be renewable.

The Hospital is a recognized training school for nurses and is equipped with all modern Hospital requirements.

The salary will be at the rate of £250 per annum, with rations and furnished apartments.

The successful candidate will be required to commence duty as soon as possible after appointment, also to contribute to the Corporation Superannuation Fund and to execute their deed of service.

Applications, endorsed on the envelope "Medical Appointment, Booth Hall," accompanied by not less than three testimonials, must be forwarded to the undersigned not later than Saturday, June 28th.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, F. E. WARBRECK HOWELL,
Manchester. Town Clerk.
June 10th, 1930.

Central London Ophthalmic HOSPITAL,

Judd Street, St. Pancras, W.C.1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEON. Salaries at the rate of £130 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates, must be sent to the undersigned on or before July 5th.

H. R. S. DRUCE, Secretary.

Manchester Ear Hospital,

Grosvenor Square, All Saints'.

NON-RESIDENT HOUSE SURGEON required. Salary at the rate of £150 per annum, with partial board. Appointment for six months.

Applications, with copies of four recent testimonials, to be forwarded to Mr. REGINALD S. MILFORD (Hon. Sec., Manchester Ear Hospital), c/o Mr. W. J. ELLAM, 33, Brazennose Street, Manchester.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay	Year of Total Service.
1	2	3	4	5
Lieut.		Rs.	Rs.	1st
			150	2nd
			150	3rd
		560	150	4th
			150	5th
			£15	6th
Capt.	(i) During first 3 years' service as Captain	650	£15	7th
			£25	8th
			£25	9th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	10th
			£25	11th
			£25	12th
	(iii) With more than 6 years' service as Captain	850	£20	
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 9 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250	£20	13th and over
Lieut.-Col.	(i) Until completion of 23 years' total service	1500		
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	£00

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1 The Selection Committee will meet at the India Office in July, and the selected candidates will be required to join a course of instruction commencing early in August, 1930. Applications should be submitted as soon as possible.

Dumfries and Galloway Joint SANATORIUM.

RESIDENT MEDICAL SUPERINTENDENT.

The Dumfries and Galloway Joint Sanatorium Board invite applications for the appointment of Resident Medical Superintendent of (1) the Board's Sanatorium, and (2) an Infectious Diseases Hospital, which adjoin and are situated at Lochnaben, Dumfriesshire. The officer will be required to devote his whole time to the duties and not to engage in private practice. Salary £700, rising by annual increments of £50 to £800 per annum, with free house, coal, light, and laundry. Candidates must be regularly qualified in medicine and surgery.

Full particulars and forms of application may be obtained from the undersigned, with whom applications (on the prescribed form) must be lodged prior to Tuesday, June 24th.

County Buildings, Dumfries. JOHN ROBSON, Clerk of the Board.

June 11th, 1930.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) from July 1st to December 12th (during first six weeks duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, before 26th inst., to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
June 16th, 1930. Secretary-Supt.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four resident medical officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three *recent testimonials*, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
June 5th, 1930. Secretary.

Walsall General Hospital, WALSALL.

The Committee invite applications from men for the post of CASUALTY HOUSE SURGEON. Salary £120 per annum.

Candidates, who must be registered under the Medical Acts, must produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post Tuesday, June 24th.

WALTER FRANCOMBE, Secretary.

Royal Edinburgh Hospital for SICK CHILDREN.

Wanted for this Hospital, Two HONORARY RESIDENT HOUSE SURGEONS and Three HONORARY RESIDENT HOUSE PHYSICIANS. One of the latter shall have charge of both a Medical Ward and an Ear and Throat Ward. The appointments shall commence on October 1st, and shall be for a period of six months. Information as to duties, etc., can be obtained from the Ordinary Physicians and Surgeons at the Hospital. Thirty copies of applications and relative testimonials to be lodged, on or before July 26th, with Messrs HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh. No applications will be received after that date.

Royal Southern Hospital, LIVERPOOL.

Wanted One HOUSE PHYSICIAN, One HOUSE SURGEON, and One MEDICAL OFFICER to the Special Departments. The salary for the above appointments is £60 per annum, with board and residence. The appointments are for the period ending September 30th next, and appointed candidates will be eligible for re-appointment for a further period of six months.

Applications to be sent in at once, addressed to the undersigned.

ALLEN NALDRETT,
Superintendent & Secretary.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

North Riding Infirmary, MIDDLESBROUGH. (General Hospital—150 Beds.)

SENIOR HOUSE SURGEON (male) required to take up duties middle of July, also JUNIOR HOUSE SURGEON to take up duties as early as possible.

Salary of Senior House Surgeon at the rate of £200 per annum and Junior House Surgeon £150 per annum, with board, residence, and laundry. Three residents are employed.

Appointments for not less than six months. Candidates eligible for higher posts as they become vacant.

Applications, stating age, nationality, and previous experience, with three recent testimonials, should be sent to the undersigned as soon as possible.

CHARLES POSTGATE,
Secretary-Superintendent.

The Royal Infirmary, Sheffield. (500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE PHYSICIAN;
HOUSE SURGEON;
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON;
ASSISTANT CASUALTY OFFICER.

The appointments will be tenable for six months from July 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence.

Applications, together with copies of testimonials, to be sent to the undersigned immediately.

JNO. W. BARNES, F.C.I.S.,
Board Room. Gen. Supt. & Secretary.
June 11th, 1930.

Northampton General Hospital.

There is a vacancy immediately for an ASSISTANT HOUSE SURGEON, male, British nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidate will be appointed for the period ending September 30th, and will be eligible for re-election for a further period of six months.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than first post on June 25th.

H. ST. JOHN WOOD,
May 19th, 1930. Secretary-Supt.

Ingham Infirmary, SOUTH SHIELDS.

Wanted, SENIOR and JUNIOR HOUSE SURGEONS (male). Salaries £200 and £150 per annum respectively, with residence, board, and washing. No out-visiting. Candidates must hold registered qualifications in Medicine and Surgery. The appointment will be terminable by one month's notice. Applications, stating age and accompanied by copies (which will not be returned) of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

JOHN POTTER, Secretary.

The Jessop Hospital for Women, SHEFFIELD.

Gynaecological and Maternity Departments. (145 Beds.)

The Board of Management invite applications for the appointment of Three ASSISTANT HOUSE SURGEONS (male) for six months from July 15th.

Salary £100 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of recent testimonials, should reach the undersigned on or before July 1st.

H. B. SHELSWELL, Secretary.

The County Hospital, York.

Applications are invited for the post of RESIDENT ANAESTHETIST, who will also be required to assist the House Surgeon. Salary £150, with board and residence. Duties begin August 1st. Applications, stating age and experience, together with copies of not more than three recent testimonials, to be sent to the Manager not later than July 1st.

The Guest Hospital and Eye INFIRMARY, DUDLEY. (General Hospital—104 beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Salary £150 per annum, according to experience, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be *sent to the undersigned*.

H. RAYMOND HURST,
The Guest Hospital, Dudley. Secretary.
June 14th, 1930.

The Guest Hospital, Dudley.

Applications are invited for the posts of HONORARY ANAESTHETISTS (two) to the above Hospital. Applicants must be in a position to give the requisite time necessary for a proper performance of the duties entailed. Applications, stating age, qualifications, and experience (particularly in the giving of Anaesthetics), and accompanied by certificate of registration and copies of testimonials, to be sent to the undersigned, Guest Hospital, Dudley, not later than July 15th.

By Order of the Committee,
H. RAYMOND HURST,
The Guest Hospital, Dudley. Secretary.
June 14th, 1930.

The Guest Hospital, Dudley.

APPOINTMENT OF HONORARY GYNAECOLOGIST.

Applications are invited for the post of Honorary Gynaecologist to the above Hospital. Candidates must be Fellows of the Royal College of Surgeons and should have had special experience in Gynaecology.

Applications, stating age, details of experience and posts held, together with certificate of registration and copies of testimonials, to be sent to the Secretary, Guest Hospital, Dudley, not later than July 15th.

H. RAYMOND HURST,
The Guest Hospital, Dudley. Secretary.
June 14th, 1930.

Beckett Hospital & Dispensary, BARNSLEY.

The Committee invite applications for the post of HOUSE PHYSICIAN. Applicants must be registered and hold a Medical and Surgical qualification, and preference will be given to applicants who have held a previous Hospital post and having Pathological experience.

Salary £200 per annum, with board, residence, and laundry.

Applications, together with testimonials, should be sent to the undersigned not later than Monday, June 23rd.

ARTHUR L. BOURNE,
May 29th, 1930. Secretary-Supt.

Children's Hospital, Sheffield.

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery St.), vacant July 1st. Salary £100 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of three recent testimonials, to the undersigned.

The successful candidate will be eligible for the next Senior post when vacant.

T. H. G. GARTLAND, Secretary

Stockton and Thornaby Hospital, STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties earliest possible.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

Midland Hospital (For Homœopathic and General Treatment), Easy Row, BIRMINGHAM.

A vacancy occurs for the post of HOUSE SURGEON at the above Hospital on August 6th. Salary £150, with board, residence, and laundry.

Applications, stating age and qualifications, accompanied by recent testimonials, should be sent to the Secretary at the Hospital not later than June 28th.

Chesterfield and North Derbyshire Royal Hospital.
(190 Surgical and Medical Beds.)

CASUALTY OFFICER.

Applications are invited from fully qualified men for the above post. The post becomes vacant on July 1st, the appointment being for six months. Candidates must have held pre-House Hospital appointments.

The Casualty Officer is next in seniority to the Casualty Officer, and acts for him in his absence.

The R.S.O. and acts for him in his absence.

Duties include House Surgeon to the Ear, Nose, and Throat Department.

Salary at the rate of £200 per annum, with board, apartments, and laundry.

Applications, stating age, together with copies of three recent testimonials, to be sent to the undersigned immediately.

HOUSE SURGEONS.

Applications are also invited from fully qualified men for the above posts, which become vacant on July 31st.

The appointments are for six months.

Salary is from £100 to £175 per annum, according to experience, with board, apartments, and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned not later than Friday, July 4th.

G. SUNNUCK,
Supt. & Secretary.

June 16th, 1930

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Bristol General Hospital.

The Committee invites applications for the following appointments, which becomes vacant on August 1st next:

Two HOUSE PHYSICIANS, Two HOUSE SURGEONS, RESIDENT OBSTETRIC OFFICER, HOUSE SURGEON to the Special Departments, and a CASUALTY HOUSE SURGEON.

The appointments will be for six months at salaries at the rate of £60 per annum and at the rate of £80 per annum for the Casualty House Surgeon, with board, residence, etc., provided in the Hospital.

Candidates must be registered under the Medical Acts and produce testimonials of good personal character and ability, and must have recent experience in the administration of Anaesthetics.

Forms of application, etc., to be obtained from the Secretary, must be returned completed with copies of testimonials, addressed to the undersigned, on or before Monday, July 7th next, from whom further particulars may be obtained.

THOMAS W. GREGG, Secretary.

Newcastle-upon-Tyne General Hospital.

Applications are invited from registered Medical Practitioners for the following appointment:

SURGICAL DIRECTOR, part-time, to take charge of the Surgical Clinic of approximately one hundred beds, organise and direct the same. It is proposed that the staff assisting the Director will be Two Assistant Surgeons, Two Surgical Registrars, and Two Resident House Surgeons. Applicants for the post of Surgical Director must be practising as Consulting Surgeons and Masters of Surgery or Fellows of the Royal College of Surgeons of England. Preference will be given to candidates who have had experience on the staff of a Teaching Hospital, and have acted as Teachers in a recognized School of Medicine. Salary at the rate of £300 per annum.

Applications to be sent to the Medical Officer of Health, Town Hall, Newcastle-on-Tyne.

Newcastle-upon-Tyne General Hospital.

Applications are invited from registered Medical Practitioners for the following appointment:

SURGICAL DIRECTOR (part-time), to take charge of the Medical Clinic of approximately fifty beds, organise and direct the same. It is proposed that the staff assisting the Director will be an Assistant Physician, a Medical Registrar, and a Resident House Physician. Applicants for the post of Medical Director must be practising as Consulting Physicians and Doctors of Medicine of a British University, or Fellows or Members of the Royal College of Physicians of London. Preference will be given to candidates who have had experience on the staff of a Teaching Hospital, and have acted as Teachers in a recognized School of Medicine. Salary at the rate of £300 per annum.

Applications to be sent to the Medical Officer of Health, Town Hall, Newcastle-on-Tyne.

General Infirmary, Salisbury.
(General Hospital—151 Beds.)

Two HOUSE SURGEONS (male) required, to commence duty as soon as possible.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

East London Hospital for Children, Shadwell, E.1.

The Board of Management invite applications for the post of DERMATOLOGIST to see Out-patients one morning a week. Applications, with not more than three recent testimonials, should reach the undersigned not later than Saturday, June 28th.

W. M. WILCOX, Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies which will occur in the Resident Medical Staff (male) on June 30th next:

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

HOUSE SURGEON (attached to the Genito-Urinary Department). Salary at the rate of £125 per annum.

HOUSE SURGEON to Gynaecological, Aural, and Skin Departments. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be returned without delay.

By Order of the Board,
GEORGE RUDDLE,
Gen. Supt. & Secretary.

Salford Royal Hospital.
June 16th, 1930.

Salford Royal Hospital.
(263 Beds.)

The Board of Management invite applications for the post of HONORARY ASSISTANT SURGEON.

Every candidate for the office of Honorary Assistant Surgeon shall be a Fellow of the Royal College of Surgeons of England.

All candidates must be on the *Medical Register* and must not practise midwifery or pharmacy.

Applications, accompanied by certificates of age and of registration, and by not more than six testimonials, must be delivered to the undersigned on or before June 27th.

By Order of the Board of Management,
GEORGE RUDDLE,
Gen. Supt. & Sec.

June 14th, 1930.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of RESIDENT ASSISTANT PHYSICIAN at the above Hospital, duties to commence at once. Candidates must be unmarried and duly registered Medical Practitioners, and must have held the post of House Physician at a General Hospital.

Preference will be given to candidates who hold the Diploma of M.R.C.P. As Senior Resident Officer he will be responsible for certain administrative duties, and later those of Medical Registrar, and such duties in connection with the Post-Graduate College as the Board may approve.

The appointment is for one year, but the holder shall be eligible for re-election annually up to a maximum period of three years. Salary at the rate of £300 per annum (plus £25 p.a. for services in connection with the Venereal Diseases Department), with board and residence. The appointment may be terminated by one month's notice on either side.

Candidates are required to send to me seven copies of their application and testimonials, also to send a copy to and to call upon each member of the Medical Council. Applications must reach me not later than first post on July 11th. Candidates must attend a meeting of the Medical Council at 4.30 p.m. on Friday, July 18th. Selected candidates will be required to attend the Board of Management at 5 p.m. on Tuesday, July 22nd, when the appointment will be made.

H. A. MADGE, Secretary.

West London Hospital,
Hammersmith, W.6.

Applications are invited for the post of CLINICAL ASSISTANT (Two Vacancies) in the Children's Medical Out-patient Department from registered Medical Practitioners, male or female unpaid. Attendance on Wednesday and Saturday mornings.

H. A. MADGE, Secretary.

Lincoln County Hospital.

Wanted a JUNIOR HOUSE SURGEON, male, unmarried. Salary at the rate of £150 per annum, rising to £200 per annum at the conclusion of six months' satisfactory service. Board, residence, and washing will also be provided.

Every candidate for the appointment must be registered under the Medical Acts.

Applications, stating age and other particulars, with copies of testimonials (not more than three), are to be sent to the undersigned, from whom further particulars may be obtained.

ARTHUR MOORE,
Secretary-Supt.

Lincoln
June 10th, 1930

Manchester Northern Hospital For WOMEN AND CHILDREN.
Park Place, Cheetham Hill Road, Manchester.

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON, both duly qualified, who are to commence duties on July 1st.

Senior House Surgeon, salary £130 per annum, with board and residence. Junior House Surgeon, salary £100 per annum, with board and residence.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than June 24th.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant July 26th. Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Applications, together with copies of testimonials, should be sent to the undersigned on or before July 5th.

R. J. CARLESS,
House Governor.

June 16th, 1930

King Edward VII Hospital,
WINDSOR. (181 Beds.)

HOUSE SURGEON required immediately for six months from date of appointment. Applicants must be fully qualified and registered.

Salary at the rate of £100 per annum, together with board, residence, and laundry.

Applications, stating age, qualifications, and experience, accompanied by testimonials, should be sent to the undersigned not later than June 25th.

ARTHUR E. CHURCHER, Secretary.

King Edward VII Hospital,
RIVELIN, SHEFFIELD.
SURGICAL TUBERCULOSIS. (130 Beds.)

HOUSE SURGEON required immediately. Six months' appointment with possibility of extension for a further six months. Salary £150 per annum, with board, residence, and laundry. Preference will be given to candidates with experience in the administration of anaesthetics.

Application, with testimonials, to be sent to C. LEE PATTISON, Medical Superintendent.

The Victoria Hospital for Children,
Tite Street, Chelsea, S.W.3. (132 Beds.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant August 1st). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, July 11th. (No travelling or other expenses will be paid.) They must hold Medical and Surgical qualifications, and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 9th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

Royal London Ophthalmic
HOSPITAL (Moorfields Eye Hospital), City Road, E.C.1.

Applications are invited for the office of SENIOR HOUSE SURGEON.

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on August 1st. Salary at the rate of £150 a year, with board and residence in the Hospital.

In the event of the Second House Surgeon being appointed, other candidates are requested to state whether they would accept the office of Second House Surgeon at the rate of £125 a year, or Third House Surgeon at the rate of £100 a year.

Applications, with testimonials, stating age and qualifications, must be received not later than June 30th.

A. J. M. TARRANT, Secretary.

Peterborough and District
MEMORIAL HOSPITAL. (154 Beds.)

TWO RESIDENT HOUSE SURGEONS required.

Applications are invited from fully qualified male Practitioners for above posts.

Salary £135 per annum, with board, residence, and laundry.

Appointments will be for a minimum period of six months.

Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

FRANK A. C. TAYLOR,
Secretary-Superintendent.

Derbyshire Royal Infirmary,
DERBY.
(General Hospital—346 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON AND CASUALTY OFFICER. Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three) to be sent to the undersigned.

WALTER BANKS,
June 20th, 1930. Supt. & Secretary.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY REGISTRAR to the Ear, Nose, and Throat Department. Candidates must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland. Applications to be sent to the undersigned on or before July 12th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY ASSISTANT RADIOLOGIST. Candidates must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland. Applications to be sent to the undersigned on or before July 12th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Central London Ophthalmic
HOSPITAL, Judd Street, W.C.1.

There is a vacancy for an OUT-PATIENT OFFICER to the Hospital, who shall attend on four afternoons a week. Remuneration at the rate of £200 per annum. Applications, with testimonials, showing Ophthalmic experience, to be submitted not later than Saturday, July 5th. Details in regard to the post may be obtained from the Secretary, H. R. S. DRUCE.

Royal [illegible] Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the post of RESIDENT CASUALTY OFFICER (male). Salary £150 per annum. Candidates must be duly qualified registered Medical Practitioners, and must submit applications, with recent testimonials, to the undersigned on or before June 28th.

Newark General [illegible] Hospital.
(50 Beds.)

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

The Royal Gwent Hospital,
NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and House Physician.

Salary £135, with board, lodging, and laundry. Resident Medical Staff 5. Eligible for promotion.

Large Out-patient Department.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
June 16th, 1930. Secretary-Supt.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON; also OPHTHALMIC HOUSE SURGEON (68 Ophthalmic beds).

The salary attached to the appointments (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of testimonials, should be addressed to the undersigned forthwith.

Board Room, JNO. W. BARNES, F.C.I.S.,
June 17th, 1930. Gen. Supt. & Sec.

The Royal Liverpool Children's
HOSPITAL,
Myrtle Street, LIVERPOOL.

A vacancy has occurred for One RESIDENT HOUSE SURGEON (work mainly Orthopaedic) at the CITY BRANCH, Myrtle Street. The appointment will be for a period ending September 30th. Salary at the rate of £60 per annum.

Applications, with copies of recent testimonials, to be sent to the Secretary, Royal Liverpool Children's Hospital, Myrtle Street, Liverpool.

Birkenhead & Wirral Children's
HOSPITAL,
Woodchurch Road, BIRKENHEAD.

HOUSE SURGEON (Second).

The Board invite applications for the post of Second House Surgeon (female), for a period of six months from July [illegible] the rate of £75 per ann[illegible] dence, and laundry.

with copies of testimonials, should be addressed to the Secretary at the Hospital, not later than June 27th.

Rotherham Hospital.

Wanted, HOUSE PHYSICIAN (male), qualified. Salary £180 p.a., with board, residence, and laundry. To have charge of Out-patients, administer Anaesthetics, and assist Honorary Physician.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male). Qualified. A knowledge of Eye work is desirable. Salary £200, with board, lodgings, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

Bristol Eye Hospital.

Applications are invited for the post of TEMPORARY ASSISTANT HONORARY SURGEON, and also for the post of REGISTRAR at the above Hospital. Applications should be received by the Secretary not later than June 28th.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH.
(240 Beds.)

HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. Appointment is tenable for six months and subject to renewal. Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by June 28th.

ARTHUR R. CASH,
June 16th, 1930. Gen. Supt. & Secretary.

Royal Berkshire Hospital,
(243 Beds.)

Wanted on July 9th, a HOUSE PHYSICIAN, a CASUALTY OFFICER, and a RESIDENT ANAESTHETIST. Candidates must be fully qualified and registered. The appointments are for six months and the salaries are at the rate of £150 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be addressed to the undersigned.

Reading. HERMAN BURNEY,
June 13th, 1930. Secretary.

The General Hospital,
BIRMINGHAM.

Applications are invited for the following Resident appointments:

HOUSE SURGEON—Throat and Ear Department. Salary £70 per annum.

ANAESTHETIST. Salary £120 per annum.

Both appointments are now vacant and applications, giving full details of qualifications and accompanied by testimonials (if desired), should reach the undersigned by June 24th.

A. H. LEANEY,
June 16th, 1930. House Governor.

South-Eastern Hospital for
CHILDREN, Sydenham, S.E.26.

Applications are invited for the posts of Two RESIDENT MEDICAL OFFICERS (ladies). The appointments will be for six months from June 30th. Honorariums £100 and £75 per annum, with board, residence, and laundry. Ample time for reading. Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woolfield," Daeres Road, Forest Hill, S.E.23, at once.

The Willesden General Hospital
(Incorporated), N.W.10.
(106 Beds.)

Applications are invited for the appointment of RESIDENT HOUSE SURGEON. Candidates must be duly registered under the Medical Acts, and unmarried.

Salary at the rate of £110 per annum.

Detailed applications, with copies of testimonials, to be sent to the Secretary by Thursday, July 3rd.

R. J. HEARNE,
June 14th, 1930. Secretary.

Wallasey Victoria Central
HOSPITAL, WALLASEY.

Applications are invited for the position of JUNIOR HOUSE SURGEON (male). Salary at the rate of £100 per annum, with board, residence, and laundry. Candidates chosen would be appointed for six months. Duties include Dispensary, Out-patients, and some House Visiting.

Applications, with copies of recent testimonials, to be sent to the Secretary not later than June 28th.

Stockport Infirmary.

Wanted immediately, a VISITING ASSISTANT OPHTHALMIC SURGEON for the Eye Department.

Particulars of the duties can be obtained from the undersigned, and application, with copies of three recent testimonials, should be sent to the Secretary-Superintendent at the earliest possible date.

EDWIN J. PEARCE,
Secretary-Superintendent.

Warneford General Hospital
LEAMINGTON SPA.

RESIDENT HOUSE SURGEON required on July 1st. Salary at the rate of £165 per annum, with board and laundry.

Applications from qualified and registered Medical Practitioners should be sent at once to the undersigned, with copies of testimonials.

W. RUSSELL RUDALL,
House Governor & Secretary.

June 7th, 1930.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.
CONTRACT PRACTICE.
EBBW VALE, MON. (*Workmen's Medical Society.*)
GILFACH GOCH, GLAMORGAN. (*Workmen's Medical Scheme.*)
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. (*Workmen's Medical Scheme.*)
MARDY, GLAMORGAN. (*Workmen's Medical Scheme.*)
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. (*Workmen's Medical Scheme.*)
NEATH AND DISTRICT. (*Medical Aid Association.*)
OAKDALE, MON. (*Medical Officer for Medical Aid Association.*)
OGMORE VALLEY, GLAMORGAN. (*Wyndham Colliery Medical Aid Society.*) (*Workmen's Medical Scheme.*)
PUBLIC HEALTH
CORNWALL EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female.*)
LLANELLY BOROUGH. (*Assistant Medical Officer of Health and Assistant School Medical Officer.*)
MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. (*Assistant Medical Officer.*)
YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. (*Assistant School Medical Officer.*)
YORKSHIRE WEST RIDING COUNTY COUNCIL. (*School Medical Inspector.*)

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. (*All Friendly Society Appointments.*)	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.
QUEENSLAND. (*Brisbane Associated Friendly Societies Institute.*)	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.
SOUTH AUSTRALIA. (*Lodge Appointments.*)	Secretary, South Australian Branch, 207, North Terrace, Adelaide.
VICTORIA. (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.
WELLINGTON, NEW ZEALAND. (*Contract Practice Appointments.*)	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
WESTERN AUSTRALIA. (*Contract and Lodge Practices.*)	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

By Order of the Council.
ALFRED COX, Medical Secretary.

June 18th, 1930

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART TIME JUNIOR CASUALTY OFFICER is required on July 9th, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer, who includes a large number of Tonsillectomies and other minor operations. The work of this Officer includes a large

Candidates must be registered Medical Practitioners, and have held a responsible Hospital appointment

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 30th, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months, and is non-resident.

Salary at the rate of £150 per annum, with luncheon

All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, July 2nd, at 4.45 precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1930 Secretary.

Queen Charlotte's Maternity
HOSPITAL, Marylebone Road, N.W.1.

RESIDENT MEDICAL OFFICER (male or female) required for the new ISOLATION HOSPITAL (for Puerperal Fever) at Goldhawk Rd., Hammersmith, to commence duty towards the end of July. Appointment for twelve months, which may be extended. The salary is at the rate of £200 per annum, with board, residence, and washing.

Applications, with copies of testimonials, will be received by the Secretary up to June 30th.

ARTHUR WATTS, Secretary.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st next. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
House Governor.

April 7th, 1930.

Coventry and Warwickshire
HOSPITAL, COVENTRY. (307 Beds.)

RESIDENT ASSISTANT HOUSE SURGEON (male) wanted. Salary £125 per annum. Board, laundry, and attendance provided. Candidates must be duly qualified and registered.

Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned on or before June 23rd.

(Miss) R. HOOPER,
June 7th, 1930. Secretary.

Hospital for Women at Leeds.
(For the Treatment of Diseases peculiar to Women.)

HOUSE SURGEON wanted at once. Salary at the rate of £50 per annum, with board, quarters, and laundry. Appointment to terminate on October 31st next. Applications, with copies of three testimonials, should be sent immediately to the Secretary.

S. CECIL HILL, Secretary.

Leicester Royal Infirmary.
RESIDENT MEDICAL APPOINTMENTS.

A casual vacancy has arisen for a HOUSE SURGEON, and the Resident Casualty Officer is a candidate. If he is elected a vacancy will occur for a Resident Casualty Officer. Applicants must have held a resident Hospital post or had similar experience of Hospital work. Salary at the rate of £125 per annum for six months' appointment. Applications to the House Governor and Secretary on or before Tuesday, July 1st.

June 14th, 1930.

Darlington General Hospital.
(120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, fully qualified, British. Salary £125 per annum, board, residence, etc. Applications, stating experience, with copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

Durham County and Sunderland
EYE INFIRMARY.

Wanted, a LOCUM for the above Institution for about 10 (ten) weeks from July 7th. Must have good experience of Ophthalmic work. Apply, with full particulars, to JOHN BUTTERFIELD, Secretary, Eye Infirmary, Stockton Road, Sunderland.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
Tel.: MUSEUM 9861 (4 lines).

SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
Each Additional Line, 1s. 6d.
(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted, an Assistant in a Colliery and Panel Practice in Glamorganshire. A Dispenser kept. Salary £400 per annum, with furnished rooms, attendance, etc. Usual bond.—Address, giving age, nationality, and references, No. 4125, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Experienced Male ASSISTANT, indoor, with view, usual bond, for large panel and private Practice in fashionable seaside resort, South-West England. Irishman, C. of E. preferred.
Address, particulars, copies of testimonials, and photo, No. 4117, B.M.A. House, Tavistock Square, W.C.1.

Wanted, July or August, young male indoor ASSISTANT, panel and priv. Practice, West Riding City; ex H.S. or H.P. preferred. £300, or £400 outdoor (house available).—Particulars and copies of testimonials to No. 4029, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — October next.—Indoor male ASSISTANT, English or Scot, under 35, with some experience. Must drive car. Salary £350, possibly with view. Full recent testimonials and particulars and photograph. — Address, No. 4111, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced, indoor, male ASSISTANT, under 30, Protestant, English or Scot. Private and panel Practice. Clean town. Prospects. Salary from £300 p.a. Photo. — Address, No. 4131, B.M.A. House, Tavistock Square, W.C.1.

Wanted, Midlands, Assistant, with view, male. Panel 1,950 and private. Receipts £2,700. Good house and garden available. No Jews or men of colour. Give full particulars. — Address, No. 4236, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, in mixed Practice, ASSISTANT, to live in; all found except laundry. Commencing salary £250, rise to £300 in six months if suitable. Commission on mds. — Address, No. 4122, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant in large Practice near Manchester, married and abstainer. £350 and rent-free house. Usual bond. — Address, No. 4108, B.M.A. House, Tavistock Square, W.C.1.

Wanted at once, outdoor Lady ASSISTANT, good district near London. Some experience preferred but not essential.—Address, No. 4112, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Country and Town Practices, with and without view. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted.—Assistant (male) for Panel Practice in Devon. Protestant. Prospects.—Address, No. 4121, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, indoor. Southern County Practice. Salary £300. Reply with photo.—Address, No. 4124, B.M.A House, Tavistock Sq., W.C.1.

Assistantship, with view, required by M.R.C.S., L.R.C.P. (male, unmarried, aged 28). South of the Thames, Surrey, or Suffolk preferred. Free now. Own car. — Address, No. 4134, B.M.A. House, Tavistock Square, W.C.1.

Assistant, with view, or 1/4 share Partner required. Young man, preferably Scotch. Please send photo and recent testimonials.—Address, No. 4119, B.M.A. House, Tavistock Square, W.C.1.

Assistant (man or woman), indoor, wanted; Country Town, Midlands. Public Health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essential particulars are stated.—No. 4026, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship required. — West Indian, M.R.C.S., L.R.C.P.(Lond.). Good refs. and tests. Well received. Experienced panel and private practice. Abstainer. Protestant. Married. London preferred.—Address, No. 4115, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Assistant required in Central London. Suitable for retired gentleman or one engaged in Post-Graduate work, as surgery is readily accessible to several Hospitals. — Address, stating particulars, No. 4126, B.M.A. House, Tavistock Square, W.C.1.

Straits Settlements. — Wanted, ASSISTANT immediately, age about 30. Excellent prospects for keen suitable man.—Address, No. 4107, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B., B.Ch., 2 years' experience of G.P., private and panel, cyclist or motorist, desires ASSISTANTSHIP or LOCUM.—Address, No. 4027, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Fully qualified DOCTOR for service in the TROPICS. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passage provided. Candidates must be unmarried. Ladies not eligible. — Address, with copies of testimonials (not returnable), No. 3801, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

A thoroughly experienced DISPENSER-BOOKKEEPER required immediately for busy Practice. Commencing salary £3 per week. Application to be made in writing, stating age and experience, and enclosing copies of testimonials, to Drs. PLATTS & HARRIS, Thornwoods, Chelmsford.

Dispenser-Bookkeeper, male (42), desires POST in Yorkshire, or anywhere near London. Thoroughly experienced and hold undeniable refs. Used to good-class practice.—Address, No. 4138, B.M.A. House, Tavistock Square, W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary - Dispensers, Nurse - Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Lady Secretary seeks RE-ENGAGEMENT—Shorthand, Typing, Bookkeeping, French. Good references.—Miss PAGE, "Littlecote," Linksway, Northwood, Midx.

Physical Training Graduate (Dartford)—remedials, typing, shorthand, experience posts of responsibility, travelled—requires position as SECRETARY to professional man. — Address, No. 4105, B.M.A. House, Tavistock Square, W.C.1.

Qualified Lady Dispenser-Bookkeeper desiring a HOME, would give her services as above to elderly Doctor and wife in return for a kind home and small remuneration. Testimonials, personal interview.—Address, No. 4118, B.M.A. House, Tavistock Sq., W.C.1.

The Royal Army Medical Corps ASSOCIATION. — If you require well-trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

Young Lady of good education seeks engagement as SECRETARY-RECEPTIONIST to Doctor. Shorthand, typing, French, German.—Address, No. 4101, B.M.A. House, Tavistock Square, W.C.1.

LOCUMS.

For Reliable Locums and Assistants
AT SHORT NOTICE, CONSULT
British Medical Bureau
(Northern Branch),
33, CROSS ST., MANCHESTER.
Telegrams—"LOCUM, MANCHESTER."
Telephones—CENTRAL 3925; after office hours: 2549 RUSHOLME.

HOLIDAY LOCUMS.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2 *Tel.* { TEMPLE BAR 10[illegible] RIVERSIDE 1254 (*Night Calls*).
Telegrams:
"REASIDE, TUBERCLE, WESTRAND, LONDON

Wanted. — Reliable and experienced Practitioners (male and female) for LOCUM engagements. State full particulars —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Locum Work pleasant district, hospitality wife, retired Doctor. Work light. Excellent testimonials.—"L.," Post Office, Staveley, Kend[illegible]

Wanted. — Locum from July 28th to July 28th. Work light. Terms by arrangement.—Address, No. 4102, B.M.A. House, Tavistock Square, W.C.1.

As Locum.—Experienced (middle-aged) Doctor, had own Practice, now doing some 10 locums annually, desires further ENGAGEMENTS from 6 gns. p.w. If country where car and driver available. Good refs.—"Marcus," c/o Poolaert, 24, Colvil'e Rd., Bayswater.

Dr. having just transferred his own Practice is anxious to do LOCUM in the South Aug., Sept., Oct. Accustomed good-class patients.—Address, No. 4120, B.M.A. House, Tavistock Square, W.C.1.

Experienced Locum, English Scotch, with own car or cycle, required 4—5 weeks July 1st. Panel and private, near Cambridge. Must dispense. Hospitality wife considered. Testimonials. State terms. No. 4109, B.M.A. House, Tavistock Sq., W.C.

General Practitioner (retired life abstainer), with wide experience undertakes LOCUM WORK. If the work is light terms 5 guineas. Has vacancy from July 1 to 18th. — Address, No. 4116, B.M.A. House, Tavistock Square, W.C.1.

Locum Engagements required by experienced and reliable man, qualified 1907, St. Bart's. Free July 25th. Non-driver.—Apply, stating terms, to "MEDICUS," c/o Dr. Parr, Milton House, Feltham, Mid[illegible]

Locum wanted, August 9 to September 2nd. Beautiful district, near large Yorkshire town. Able to drive Austin. State terms.—Address, No. 4135, B.M.A. House, Tavistock Square, W.C.1.

FOR LOCUM TENENS APPLY TO Mr. PERCIVAL TURNER, Ltd. The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals. 4, ADAM ST., Strand, London, W.C.2. Telg. "Epsomian, Lond." Phone: Temple Bar 9011. After Office Hours: Epsom 9142.

Locum (Woman) required first 3 weeks in September. Clinic and G.P. Experience essential. London.—Add. Box, No. 4133, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS.

Wanted.—Partnership in mixed Practice by energetic, well-received Scotch M.B., Ch.B., abs aimr, ex. H.P., 8 yrs.' exp., anxious to return to busy practice in south, pref. near London. Prem part down bal. out of income, or joint, on agreed price. Interview London July.—No 4128, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, an X-ray and/or Medical Electrical PARTNERSHIP, preferably in country town. Solo Practice considered. Income £1,000 to £1,500. Applicant is M.B., B.S., and La. D.M.R.E. Cantab.—Apply, No. 6282, c/o PERCIVAL TURNER, Ltd., 4, Adam St., Strand, W.C.2.

Wanted.—A Partnership or ASSISTANTSHIP, with view, by young M.B., B.S. London, with good Hospital experience. Home Counties or South Coast preferred. Capital available.—Address, No. 4114, B.M.A. House, Tavistock Square, W.C.1.

Far East.—Prospective Partnership in first-class Practice, suitable for well-qualified Graduate, experienced, keen, ex resident. Enquiries address No. 3819, B.M.A. House, Tavistock Square, W.C.1.

Manchester. — Partnership in excellent old-estab. mixed Practice. Aver. cash receipts £5,816. Panel 3,575. Good house available, 3 bedrooms. Rent £60 p.a. Premium—1/3rd share—1½ years' purchase, part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership desired, income £1,500, in Southern country or seaside town (p.p. £1,500) upp. by M.D. Advertiser married, aged 32. Ex H.P. and H.S. 3 years G.P. Capital.—Address, No. 4136, B.M.A. House, Tavistock Square, W.C.1.

Partnership.—Good-class Practice in first-rate South Coast Town. Small panel. Suitable house in growing district. 2/5 share (approx. £900) at 2 years' purchase.—No 4104, B.M.A. House, Tavistock Sq., W.C.1.

Scotland.—Partnership over £3,000 offered at 1½ yrs.' purchase, with view to development, for which great scope, in old-established industrial Practice with panel of 1,10 —Address, No 4139, B.M.A. House, Tavistock Square, W.C.1.

PRACTICES.

Wanted immediately, Country PRACTICE, with panel, suitable two Partners; West of England, within easy reach of Bristol. Adjacent single Practices essential. Income Two good houses and gardens essential. £3,000 to £4,000 Capital available.—Add., No. 4024, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, by experienced Graduate, general PRACTICE or PARTNERSHIP Succession. Income about £2,000 or over including substantial panel. London preferred Capital (cash) available.—Address, No. 4239, B.M.A. House, Tavistock Square, W.C.1.

Wanted by two M.B.s., Industrial PRACTICE with large panel. Annual income £2,000 up. Capital actually in hand £2,000.—Address, No. 4014, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice or Partnership, with large panel, income £1,200 upp. by Scot. M.B.(1921), 30, ex H.S., etc. Capital immediately available. — Address, No. 4242, B.M.A. House, Tavistock Square, W.C.1.

Aberdeenshire. — Old-estab. unopposed Medical PRACTICE for Sale in country district within easy reach of town. Good house and garden. — Full particulars address, No. 4105, B.M.A. House, Tavistock Square, W.C.1.

Birmingham. — Old-established cash) panel of 1,460 and industrial (mostly over PRACTICE. Two years' average receipts £930. Price £1,460 cash. Excellent corner HOUSE, with garage, large garden, and attached surgery. Price £1,600, or will be let on long lease to a suitable man, at rent £108, payable quarterly.—Address, No. 4106, B.M.A. Hours, Tavistock Square, W.C.1.

East of Scotland University Town.—Good middle-class PRACTICE for sale. Seller's dwelling house may also be acquired. —Address, No. 4004, B.M.A. House, Tavistock Square, W.C.1.

Established Practice in London suburb for Sale, with prominent corner house, garage, etc., on favourable lease. Panel about 500. Great scope for increase. Premium £770.—Address, No. 4235, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic —4, Adam St., W.C.2.

For Sale.—Small, easily worked, Radiological and Electrical PRACTICE, pleasant town near London. Capable rapid increase.—Address, No. 4243, B.M.A. House, Tavistock Square, W.C.1.

Hospital Town — Fifty miles from London.—Old-established better and mixed-class PRACTICE; panel 1,000. Receipts average over £3,600. One-third share offered at slightly under 2 years' purchase; up to one-half share in 5 years. Good prospects to Physician.—Address, No. 4130, B.M.A. House, Tavistock Square, W.C.1.

Isle of Man.—Seaside Town.—Old-estab. PRACTICE. Receipts average £946 (including £350 from panel). Semi-detached house, 3 reception, 4 bedrooms. Garden. Good schools. Premium—Practice and house—£2,000, part by arrangement.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lady Doctor's Practice, Liverpool.—Cash receipts £400. Much scope. Excellent flat to rent on lease. Good introduction.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town.—Small well-established PRACTICE. Good house, rent £25 on lease. Average receipts £350, great scope for increase. Panel over 100, increasing. Price £460.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATIONS, 6, Brown Street.

Lancs Town. — Old-estab. PRACTICE. Cash receipts £750. Panel 1,000. Appointment £54. Plenty of scope. Good house to rent at £52 p.a. Premium £1,000 (including house-hold furniture, drug, and fittings).—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lancs Town. — Old-estab. PRACTICE. Average cash receipts £1,250. Panel 900. Scope. Good house to rent, 2 reception, 4 bedrooms. Premium 1½ years' purchase. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Old-established PRACTICE. Nice house, good district, with gardens front and back, rent £50. Receipts (including panel £135) over £800. Great scope Price £1,100, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester (residential).—Old-established. Nice corner house, large gardens, lawn, garage, rent £120. Receipts £2,000, good scope. Panel over 1,500. Price 2 years' purchase, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester. — Residential Suburb.—Old estab. PRACTICE. Average cash receipts £1,918. Panel 1,400. Excellent house for sale, 2 reception, 4 bedrooms. Garage and garden.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Medical Practice in Glasgow, East End. Panel list approx. 1,300. Life vacancy. Good opportunity. — Apply, PETER MUIR MACNAB, Solicitor, 163, Hope Street, Glasgow, C.2.

Midlands.—Branch Practice for Sale in large town, old-established; convenient house, main thoroughfare; easily worked. Panel 1,500. £500 down, balance to be arranged. Preliminary Assistantship.—Add., No. 4241, B.M.A. House, Tavistock Sq., W.C.1.

North-West Coast. — Old-estab. mixed PRACTICE. Cash receipts 1929, £1,129. Panel 580. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice, £3, Cross purchase.—BRITISH MEDICAL BUREAU, Street, Manchester.

Required, a well-established mixed-class PRACTICE, with a good panel and scope for midwifery. A nice medium-size house to be rented on a substantial lease. Vicinity of Birmingham or Wolverhampton preferred. — Address, No. 4110, B.M.A. House, Tavistock Square, W.C.1.

Scotland.—Old-established Medical PRACTICE for Sale in progressive industrial area. Panel over 1,800. Receipts over £2,000 p.a. Excellent house and garden. Introduction.—Apply, W. M. MARSHALL, Ross & MUNRO, Solicitors, 3, Merry St., Motherwell.

South Kensington Practitioner, with Nucleus, is open to PURCHASE a panel or small PRACTICE in neighbourhood. Partnership considered. — Address, No. 4028, B.M.A. House, Tavistock Square, W.C.1.

South-West Seaport Town.—For immediate Sale, owing to ill health of Vendor, old-established good-class non-dispensing PRACTICE. Small panel, not been encouraged, but could be rapidly increased. Income last year £1,225. Books audited by Chartered Accountants for last five years. House, overlooking Park, with ample accommodation, to be sold, or would let at £90 a year. Premium £1,500 for quick sale. Reasonable introduction would be given.—Address, No. 4123, B.M.A. House, Tavistock Square, W.C.1.

To Purchasers. — Do not buy without expert assistance. With 40 yrs. experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Urgent.—Wanted immediately, Country PRACTICE with panel, in the South. Payment of premium out of receipts.—Address, No. 4238, B.M.A. House, Tavistock Square, W.C.1.

Welsh Border. — Unopposed Country PRACTICE. Average cash receipts £1,100. Panel over 700. Appointments (transferable) £264. Scope. Excellent house, 4 bedrooms, garage, and large garden. Rent £70 p.a., or would sell for £1,250 (freehold). Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Woman Doctor's Nucleus, London, N.W. Panel and private. Flat to rent in exceptional position. Price £400, including drugs, etc.—Address, No. 4129, B.M.A. House, Tavistock Square, W.C.1.

HOUSES, CONSULTING ROOMS.

Amersham Common, Bucks (main road).—A well-built Detached RESIDENCE in 1½ acres nice grounds. 5 beds., 3 recep. rooms. Tennis. Garage. Suitable opening for Medical Practitioner. Price £3,000. Thold. SWANNELL & SLY, Chalfont Rd., Amersham Com.

Bath.—The Circus.—Consulting ROOMS, in fine position, to be Let, with attendance. Suitable for a Doctor or Dentist.—Full particulars of FORTT, HATT & BILLINGS, 3, Burton Street, Bath.

Bed and Sitting Room or Bed-Sitting Room, with part-time use of Consulting Room and name-plate on door, close to Harley Street. House reserved for Medical Men.—Address, No. 3824, B.M.A. House, Tavistock Square, W.C.1.

Charming House in best district of Putney, suitable in every way for Doctor's house. This beautiful secluded house is fitted with every convenience, and accommodation consists of 4 bed, 3 reception, bath, kitchen, and flower garden. Double garage. Price £2,350.—Apply, MANAGER, Owners' and Tenants' Association, Fetter House, 54/55, Fetter Lane, London, E.C.4.

For Sale.—Ideally situated in centre of Matlock, large BUILDING, 9 rooms, suitable Sanatorium, Convalescent Home, etc., standing in own grounds 2,½ sq. ft. Lawn, gardens. Electric light, town's water gas. Freehold cheap.—DALTON, 54, Westcotes Drive, Leicester.

Large Consulting Room, half-time, with plate and attendances; Nottingham Place. £55 per annum.—Address, No. 4237, B.M.A. House, Tavistock Square, W.C.1.

MENAI BRIDGE.

COUNTY OF ANGLESEY.

The Attractively-placed Detached Freehold Residence known as

BRYNTEG

FOR SALE BY PRIVATE TREATY WITH VACANT POSSESSION.

The Accommodation comprises:

ON THE GROUND FLOOR.—Hall, Drawing Room, Dining Room, Sitting Room and Breakfast Room, excellent Domestic Offices; Main and Secondary Staircases.

ON THE FIRST FLOOR.—Eight Bedrooms, Dressing Room, Linen Room, Bathroom, etc.

GARAGE, CHAUFFEUR'S COTTAGE, STABLE BUILDINGS.

Brynteg, which has a south-east aspect, occupies an elevated site and commands beautiful views of the Menai Straits and Caernarvonshire Hills.

THE GROUNDS,

which are pleasantly laid out, extend to an area of about 4,600 SQUARE YARDS.

The buildings are in an excellent state of repair and the rooms are of good size. This property is well placed for the purpose of a Nurses' Home or Convalescent Home. Menai Bridge is about 2 miles from the University Town of Bangor.

For all further particulars apply to the Sole Agents:

Messrs. WM. DEW & SON and R. ARTHUR JONES, at their Offices:

BANGOR, CONWAY, AND COLWYN BAY.

ESTABLISHED 1845.

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Estate Agents, Auctioneers, and Surveyors,

are the BEST LOCAL AGENTS for HOUSES and CONSULTING ROOMS in the Harley, Wimpole, Queen Anne, and other Streets in the Cavendish Square district. Valuations for all purposes.

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SPECIALISTS IN PROFESSIONAL HOUSES AND CONSULTING ROOMS

in Harley Street and leading Medical Positions.

Telephone: *Langham* 3927 *and* 3928.

Grange Park, N. — New Estate in growing district; opportunity for Medical Men. Beautifully designed and exceptionally well-built Semi-detached and Detached HOUSES, with garages attached, 3, 4, or 5 bedrooms, 2 or 3 reception, bath and lavatory separate. Good gardens. Prices from £1,400 freehold.—Apply, MANAGER, Owners' & Tenants' Assoc., Fetter House, 54/55, Fetter Lane, E.C.4.

Harewood Chambers, 74-80, Gower St., W.C. — Just opened, newly decorated and furnished. Hot and cold water. 'Phones. Room and breakfast from 2 gns., with dinner 3 gns. Bed and breakfast 7/6.—Museum 3941.

Harley Street.—14, Nottingham Place.—Superior Bed-sitting Rooms from 2 gns. Also Furnished Self-contained Flat, with service. Ground floor large Furnished Room 3 gns. Bed and breakfast 7/6.—Welbeck 7585.

Harley Street.—Furnished Flat, 3 rooms, kitchen, and bath. To Let for 6 to 12 months. Six guineas per week.—Apply, LEY-CLARK & PARTNERS, 3a, Wimpole Street, W.1.

Medical Man doing special work wishes to be taken as PAYING GUEST. Breakfast and dinner. Preferably with bachelor. London or outside, with good train service. — Address, No. 4127, B.M.A. House, Tavistock Square, London W.C.1.

Norfolk East Coast.—Established gentleman's NURSING HOME on magnificent sea front, for disposal. Well patronized by Medical Profession. Goodwill, lease, furniture, and fittings, £650. Two sitting rooms, dining room, 10 bedrooms, up-to-date sanitation, well-equipped operating theatre.—Address, No. 4240, B.M.A. House, Tavistock Square, W.C.1.

Queen Anne Street.—An exceptionally fine MAISONETTE, with Consulting Room, will shortly become vacant. Every convenience. Low rent.—Address, No. 3910, B.M.A. House, Tavistock Square, W.C.1.

Queen Anne Street, W.1.— Only £10 a year secures PART-TIME USE of fine ground floor CONSULTING ROOM, plate on door, attendance, and every convenience.—Address, No. 3417, B.M.A. House, Tavistock Square, W.C.1.

Required.—Very occasional use CONSULTING ROOM in Harley Street, with plate. State terms.—Address, No. 4113, B.M.A. House, Tavistock Square, W.C.1.

The Dowery, Nantwich, Cheshire. Fine TUDOR HOUSE, vacant possession, good preservation, quiet locality, ideally situated for Doctors or Private Nursing Home; beautifully kept old-world gardens, large garage, outbuildings. Too large for present owner. Price £2,500.

Week-end Cottage in lovely part Essex, 5 miles Harlow (*main line*) Station.—3 beds. and bathroom, lounge and 2 *sitting rooms*. A charming old-fashioned place in excellent order, with constant hot water and other amenities. Two cottages in keeping. Garages, stabling. 5 acres. Only £1,850, f'hold. KEMSLEYS, 164, Bishopsgate, E.C.2. (Fo. P.36.)

Welbeck St., W.—Two Bed- rooms to Let or Bedroom and Sitting-Room. Also part-time use of Consulting Room.—Address, No. 4132, B.M.A. House, Tavistock Square, W.C.1.

MISCELLANEOUS SALES, etc.

IMPORTANT

MEMBERS OF THE MEDICAL PROFESSION

Can secure Perfect Fitting and Distinctive Clothes of Exceptional value. FINEST QUALITY MATERIALS. *BEST WORKMANSHIP ONLY.*

SPECIAL OFFER.

JACKET & VEST (in black or grey), £5 5s.
SOLID FANCY WORSTED TROUSERS, £2 2s.

THE Ideal Suit for Professional or Business wear

TWEED SUITS & OVERCOATS to measure from £6 6s.
SOLID WORSTED SUITS ,, £7 7s.
DINNER SUITS fr. £8 8s. DRESS SUITS fr. £10 10s.
PLUS FOUR SUITS, Coat with Pivot Sleeves, fr. £6 6s.
THE IDEAL Suit for ALL Sporting Purposes.
GOLD MEDAL RIDING BREECHES ... from £2 2s.
RIDING HABITS fr. £10 10s. COSTUMES fr. £6 6s.

UNSOLICITED APPRECIATION.

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As a result of our unique experience over many years, we obtain all reliefs and concessions for our numerous medical clients.

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TAXATION CONSULTANTS.

49, Chancery Lane, London, W.C.2.

'Phone: Holborn 6659. Write for Tax Guide, Free.

Medical Surgical Sundries Ltd.

Supply Instruments, etc. "Esseff" Inhaling Apparatus, price £12 10s. (can be hired, particulars on application). Write for price list of Tablets and Government surplus articles.

Showroom: 97, Swinderby Road, Wembley.

For Sale.—Bargain. — Almost new "HOMESUN" Lamp, 240 volts, A.C., complete, manufactured by the British Hanovia Quartz Lamp Co., Ltd. Can be seen at FIELD, 44, Theobalds Road, W.C.1.

For Sale.—Complete Instru- MENTS of Ear & Throat Specialist. Mahogany Cabinet 36 in. × 18 in. × 38 in. high, 6 drawers. Electric appliances, weighing machine, hundreds of instruments, includ. Cystoscope, Pharyngoscope, Ophthalmoscope, Aspirator, Burrs, etc. Cheap at £60 or offer, or by instalments to suit purchaser.—MASSEY, 21, Addington Grove, Sydenham, S.E.26.

Consult GRIMALDI'S before buying your next Car, whether NEW or USED. Agents for all leading makes. 100 USED CARS IN STOCK ALL GUARANTEED 12 months. Special deferred terms for Doctors, financed entirely by ourselves. Strictest privacy ensured.—ERNEST GRIMALDI, LTD., 148/150, Gt. Portland St., W.1. Museum 3931 & 7235.

APPOINTMENTS.—Contd.

Royal Infirmary, Wigan.
(180 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post. Candidates must be qualified and registered and have held previous resident appointments at a Hospital. The salary is at the rate of £250 per annum, with board, residence, and laundry. The appointment is tenable for one year, and the officer is eligible for re-election for a second year. The duties to commence on July 1st. Applications, giving proof of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRUNT,
June 2nd, 1930. Gen. Supt. & Sec.

Hampstead General and North- WEST LONDON HOSPITAL, Haverstock Hill, N.W.

APPOINTMENT OF CASUALTY SURGICAL OFFICER.

Applications are invited from unmarried registered Medical Women for the position of Casualty Surgical Officer, now vacant, at the Out-patient Department of the Hospital, Bayham Street, Camden Town. The salary will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications, to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should be addressed to the Secretary.

Rotherham County Borough.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Public Assistance Committee invite applications for the above post at the Hospital, Alma Road, Rotherham.

Salary £150 per annum, together with the usual residential allowances.

Candidates must be single, not exceeding 30 years of age, fully qualified and registered.

Applications, stating age, qualifications, *etc.*, together with copies of three testimonials, to be sent to the Public Assistance Officer, 25, Moorgate Street, Rotherham, not later than July 7th.

CHAS. L. DES FORGES,
Municipal Offices, Town Clerk.
Rotherham. June 17th, 1930.

The Guest Hospital, Dudley.

Notice is hereby given that a meeting of the Committee of Election will be held in the Board Room, Guest Hospital, Dudley, on July 18th at 12 o'clock noon, for the purpose of electing an HONORARY GYNAECOLOGIST to the Hospital.

By Order of the Committee,
The Guest Hospital, H. RAYMOND HURST,
Dudley. Secretary.
June 16th, 1930.

Hounslow Hospital, Staines Rd.
Hounslow, Middlesex. (70 Beds.)

Wanted, August 1st, male HOUSE SURGEON. Salary £200 per annum, with board, residence etc. The appointment will be for six months.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent by July 8th (mark "House Surgeon," top left-hand of envelope) to W. T. ROSS, Secretary, Hounslow Hospital, Staines Road, Hounslow.

Royal Infirmary, Wigan
(180 Beds.)

Wanted July 1st, for six months, Two HOUSE SURGEONS. Salary £150 per annum, with board, apartments, and washing. Must be registered.

Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, to reach the undersigned as soon as possible.

A. STANLEY BRUNT,
June 2nd, 1930. Gen. Supt. & Sec.

Appointment of a Registered Medical Man or Woman as a Clinical Research Worker in Mental Deficiency.

The MEDICAL RESEARCH COUNCIL, the governing body of THE DARWIN TRUST, and the COMMITTEE OF THE ROYAL EASTERN COUNTIES INSTITUTION for the MENTALLY DEFECTIVE at COLCHESTER, invite applications from registered Medical Men or Women to undertake research work in Mental Deficiency.

The person appointed will be a member of the Medical Staff of the Royal Eastern Counties Institution and will be expected to take some part in the Administrative and Clinical work of the Institution itself, but the major part of his work will be an investigation into the causes of mental deficiency from the clinical, social and genetic aspects. A Social Investigator will be appointed to assist in the work.

Commencing salary at the rate of £600 a year, non resident.

A form of application can be obtained from Mrs. DARWIN, The Orchard, Huntingdon Road, Cambridge, which must be completed and returned to her before July 14th. Duties to commence October 1st, 1930.

Erith Urban District Council.

OPHTHALMIC SURGEON.

Applications are invited from duly qualified and Registered Medical Practitioners who have had special experience in Refraction work and are Education Authority, for the above appointment under the Erith Education Committee.

Sessions are usually held fortnightly on Fridays, afternoons at the School Clinic.

The fee payable is £2 12s. 6d. per session, but shall not exceed two hours in duration.

Further information is desired it may be obtained from Dr C. HERINGTON, Council Offices, Erith, to whom applications and copies of not more than three recent testimonials must be sent, to reach him not later than July 1st.

Council offices, DOUGLAS S. TWIGG.
Clerk to the Council.

Erith.
June 13th, 1930.

Swansea County Borough.

LADY ASSISTANT MEDICAL OFFICER.

The Swansea Borough Council invite applications from duly qualified and experienced Women Medical Practitioners for the post of Assistant Medical Officer to assist with the Medical Services of the Corporation. Special experience in diseases of women (ante-natal and obstetrics) and children, school medical service, and mental deficiency work are desirable qualifications. Salary £600 per annum. Form of application and list of duties can be obtained from Dr Timothy EVANS, Medical Officer of Health, Public Health Office, Swansea. Applications must be received not later than Thursday, June 25th.

County Borough of Swansea.

ASSISTANT SCHOOL DENTAL SURGEON

Applications are invited from registered Dental Surgeons for the above appointment. Salary £450 per annum, rising by annual increments of £25 to £550. Applications (on special form to be obtained from the Medical Officer of Health, Public Health Office, Swansea) to be received not later than Thursday, the 26th

The Royal Infirmary, SUNDERLAND (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

The Sheffield Royal Hospital.

RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £100 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

Southend Victoria Hospital, SOUTHEND-ON-SEA. (96 Beds.)

JUNIOR HOUSE SURGEON (male) required for July 1st next. Six months' appointment. Salary £150 per annum, board, residence, and laundry. Apply, stating age, qualifications, previous experience, with copies of three recent testimonials to the Secretary before June 25th.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Leyton Education Committee.

APPOINTMENT OF TWO SCHOOL NURSES.

Applications are invited for the appointment of Two School Nurses in connection with the work of the School Medical Service.

Candidates should be State Registered Nurses and under 40 years of age.

Previous experience in school nursing and additional qualifications will be a recommendation.

Salary at the inclusive rate of £150 per annum, rising by annual increments of £10 to a maximum of £220 per annum, together with allowance of £5 per annum for travelling and £5 per annum for uniform.

The successful candidates will be required to pass a medical examination, and the appointments will be subject to the Local Government and Other Officers Superannuation Act, 1922.

The persons appointed will work under the direction of the School Medical Officer.

Application forms, which should be returned duly completed before June 25th, may be obtained from the Director of Education, Town Hall, Leyton, on receipt of a stamped addressed foolscap envelope.

JNO. ATKINSON,
Town Clerk.

Town Hall,
Leyton, E.10
June, 1930.

Farnworth Education Committee.

SCHOOL DENTIST (Part-time)

Applications are invited from duly qualified Dentists to carry out the Inspection and Dental Treatment of elementary school children. The person appointed will devote five sessions of 2½ hours each per week to the duties of the post, and will act under the administrative supervision of the School Medical Officer. Salary will be at the rate of £300 per annum.

Applications, with copies of not more than three recent testimonials, should be sent to the undersigned on or before July 7th.

H. J. TYRER.
Director of Education.

Education Offices,
Raven Street,
Farnworth, near Bolton.

Royal Cornwall Infirmary, TRURO. (64 Beds.)

HOUSE SURGEON (male) required, with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing.

Apply with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

Bolingbroke Hospital, Wandsworth Common, S.W.11. (121 Beds.)

HOUSE PHYSICIAN (male) required. The appointment is for six months, commencing on August 1st next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, should be sent to the undersigned on or before July 5th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

St. Mark's Hospital for Cancer, FISTULA AND OTHER DISEASES OF THE RECTUM, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months. Applications, with copies of testimonials, to be sent to the Secretary (from whom further particulars may be obtained) by Friday, July 4th.

Free Eye Hospital, Southampton

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry. Applicants must have had Post-Graduate experience in Ophthalmology. Applications, with three recent testimonials, to reach the Secretary by Wednesday, July 2nd.

Borough of Ilford.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation invites applications from legally qualified Medical persons of both sexes for the office of Assistant Medical Officer of Health, for duties in connection with Maternity and Child Welfare work, School Medical Inspection, and General Public Health work. Candidates for the appointment must have had special experience in Midwifery since qualification, and, subject to this, preference will be given to candidates who possess the Diploma of Public Health or similar qualification, and have had experience in Children's Diseases.

The commencing salary of the officer will be £600 per annum (no bonus), rising by one annual increment of £25 to £700 per annum, subject to satisfactory service.

The Person appointed will be required to devote whole time to the duties of the office, to reside within easy distance of the Corporation's Maternity Home, and to enter into an agreement for the due performance and fulfilment of all the duties and conditions governing the appointment. The appointment will be subject to a satisfactory medical examination and to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

Applications, which must be made on forms obtainable (with list of duties) from the undersigned, accompanied by copies of three recent testimonials, and by copies (which will not be returned), endorsed "Assistant Medical Officer of Health," must be received at my office, at the Town Hall, Ilford, not later than Tuesday, July 1st.

Canvassing Members of the Council, directly or indirectly, is prohibited and will disqualify.

By Order,
ADAM PARTINGTON,
Town Clerk.

Town Hall,
Ilford.
June 17th, 1930.

City of Liverpool.

PUBLIC ASSISTANCE COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Committee invite applications for the appointment of a Resident Assistant Medical Officer (male) at the MILL ROAD INFIRMARY, LIVERPOOL, for a period of one year, at a salary after the rate of £200 per annum, together with the usual residential allowances.

Candidates must be single, fully qualified, and registered.

Applications, stating age, qualifications, etc., with copies of three testimonials, to be received by the undersigned not later than 10 a.m. on Thursday, June 26th.

WALTER MOON,
Town Clerk.

Public Assistance Office,
Bangham Terrace, Liverpool.
June 17th, 1930.

City and County of Newcastle-upon-Tyne Education Committee.

Applications are invited for an appointment as full-time ASSISTANT SCHOOL MEDICAL OFFICER (man or woman). Salary £500 per annum, rising by £25 per annum to a maximum of £700 per annum in accordance with the National scale. Applicants should have had at least three years' experience in the practice of their profession subsequent to obtaining their qualifications.

Form of application and particulars of the appointment may be obtained by sending a stamped addressed foolscap envelope to the Director of Education, Education Office, Northumberland Road, Newcastle-upon-Tyne.

Applications will be received up to and including June 28th.

North Shields and Tynemouth Dispensary

Applications are invited from qualified Medical Practitioners for the post of MEDICAL OFFICER to the North Shields and Tynemouth Dispensary. Salary £400 per annum, non-resident. Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, to be sent to the Hon. Secretary, North Shields and Tynemouth Dispensary, 20, Church street, North Shields, not later than June 25th.

General Infirmary, Salisbury. (General Hospital—151 Beds.)

HOUSE PHYSICIAN (male) required, to commence duty at the end of July.

Candidates must be unmarried, fully qualified and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES

MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),

29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary*

ST. LUKE'S HOSPITAL

FOR MENTAL DISORDERS.

Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
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Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male).

Duties to commence as soon as possible.

The duties include charge of four beds devoted to complicated Midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of May, 1930.

ARTHUR H. LIMB, Secretary.

Merthyr General Hospital,

MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

St. Bartholomew's Hospital,

E.C.1.

OFFICE OF SURGEON to the THROAT DEPT.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, July 22nd, at 4 o'clock in the afternoon, to elect a Surgeon to the Throat Department of this Hospital.

Candidates are required to lodge 50 copies of their applications and testimonials with the undersigned (from whom particulars as to duties can be obtained) on or before Friday, July 4th.

[illegible] Man
S. HAYES,
[illegible] to the Governors.

June 13th, 1930.

[illegible]'s Hospital,
[illegible]. Bartholomew
W.C.
E.C.1.

—PHYSICIAN

OFFICE OF ASSISTANT

HOME meeting of the
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Address, London,
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[illegible] is hereby given that a meeting of the Committee will be held on Tuesday, 22nd, at 4 o'clock in the afternoon, to elect an Assistant Physician in the room of [illegible] who must be Fellows of the Royal College of Physicians of London, required to lodge 50 copies of their testimonials, with the undersigned [illegible] Friday, July 4th.

THOMA[illegible]

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OLD-ESTABLISHED NOTTINGHAMSHIRE TOWN PRACTICE. Small panel. Average receipts £2,687. Good house may be rented. Premium £3,300 cash.—Apply 2536.

CAMBRIDGESHIRE COUNTRY PRACTICE.—Average receipts £822. House to rent. Garden and lawn. Premium £1,200 cash.—Apply 2535.

OLD-ESTABLISHED PRACTICE for sale in West Riding Town. Average receipts for the past three years over £1,000 (including panel £170). Purchase price of freehold £1,060. Premium £1,500.—Apply 2527.

LINCOLNSHIRE COUNTRY PRACTICE.—Average receipts £1,200 (including panel £330). Premium 1½ years. Purchase price of freehold £2,000. Electric light and good water supply.—Apply 2532.

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LINCOLNSHIRE COUNTRY PRACTICE.—Average receipts over £1,300 (including panel £536). Premium 1½ years. Purchase price of freehold £900.—Apply 2531.

JUNIOR PARTNER required in West Riding Practice. Receipts over £4,000. Panel almost 3,000. House and garage may be rented at £52 p.a. Premium for 1/4 share £1,450.—Apply 2534.

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Essex Suburb.—Near Country.—1/2 share of £2,500. Great scope. Panel about 1,550. Suit man or woman. House or flat.—No. 8619.

Essex Suburb.—£1,150 p.a. Non-panel, but ample scope. Fees 5/- up. House and garden on lease.—No. 8668.

S. W. County.—Near Sea.—Share worth £700, ample scope. Very little midy. Visits 5/- to 4 gns. Choice of houses. Ample scope.—No. 8666.

Hants.—Semi-rural.—Nearly £1,000 p.a. Small panel. Fees 3/6 to 15/-. House, 2/3 recep., 5/6 bed., large garden.—No. 8653.

London, W.—Electrical & X-ray.—£1,500/£2,000. Fees 21/- up. Hours in good locality on lease. Low prem.—No. 8655.

Harrogate.—Death Vacancy.—Now over £700 p.a. Panel over 500. Very little midwifery. Average visits 5/-. Good house, 5 bed., etc.—No. 8664.

Yorks.—Country.—About £1,000, increasing. Panel nearly £400. Visits 5/- to 12/6. Mids. 3 gns. up. House, 3 recep., 3 bed., garden, etc., £50 on lease.—No. 8660.

London, S.W.—£2,000 p.a. Non-panel. 12 mids., 5 gns. up. Visits 5/- mostly, and up to 10/6 or over. Large house and garden to rent.—No. 8655.

Cambs.—Over £800.—Old-estab. unopposed. Panel 475. Appts. £90. Fees 5/6 to 7/6. Large house, 5 bed., and garden, at low rent.—No. 8654.

S. Wales.—Death Vacancy.—£700 p.a., largely colliery. Panel 709. Small house, low rent or price. Premium £500 or near.—No. 8651.

Lancs Town.—£2,500 p.a. Panel 1,800. Ins. £120. Two houses available, with 5 bed., etc. Good opportunity for two friends.—No. 8645.

Berks.—About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or more. No mids., ample scope. Small house, with surgery.—No. 8641.

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LONDON, N.W.—PARTNERSHIP in old-established upper and middle-class G.P., in residential locality. House to rent on lease. Receipts £6,000. Panel 2,000. Suitable only to experienced man, aged about 35, preferably 'Varsity Graduate. Premium for 1/4 share (with view to larger share) two years' premium.

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LONDON, N.—Working-class PRACTICE in thickly populated locality. Receipts nearly £1,400. Panel over 2,000. Very little, if any, midwifery. Well located house to rent at £80 p.a., on lease. Premium £2,800 cash, or near offer.

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WALES.—Old-established non-dispensing Town PRACTICE, with Surgical scope. Excellent house to rent on lease at £80 p.a. Receipts nearly £2,200. Panel about 400. Premium £1,500 cash.

BLACKPOOL (near).—Well-established middle and working-class PRACTICE. Suitable 8-roomed house available, with garden, garage, etc. Receipts nearly £1,200. Panel (about) 250. Premium for house and Practice £3,250.

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WALES.—DEATH VACANCY.—Good-class PRACTICE, situat in Seaside Health Resort. Large house for sale or to rent. Premium 1 years' purchase. Receipts approx. £1,200 p.a. Small panel.

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4. BEDFORDSHIRE. — Country PRACTICE, near large town. Receipts last year nearly £500, including small panel. Nice house, garden, etc. Rent £68 p.a. Opposition very weak. Premium only £350.
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7. LONDON, E.—Cash and Panel PRACTICE. Receipts now about £500 p.a.; have been much more. Panel 400. Eight-roomed house, rent £65 p.a. Offers invited.
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18 SOUTH COAST.—Practice nearly £900 in favourite watering-place. Panel about 200. House (5 bedrooms) in good position for sale. Scope in all directions. Premium to effect quick sale only £600.

19 OPHTHALMIC PRACTICE in good Town 30 miles from London.—Receipts past twelve months £467 (one day a week only). Hospital. Premium £800.

20 SOUTH WALES.—Seaport Town.—Non-dispensing PRACTICE of £1,300 p.a. Small panel. Pleasantly situated house (5 bedrooms), garden, and garage, for sale or rent. Premium £1,500.

21 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1¼ years' purchase.

22 EAST MIDLANDS.—Practice of £2,600 p.a. in good town. Panel 1,750. Very good house (8 bedrooms), nice garden and garage, to rent. Hospital. Premium 1½ years' purchase.

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32 NEAR OXFORD. — Country Practice of just over £1,000 p.a. in hunting centre. Panel 700. Good house, with modern sanitation, excellent garden and paddock, to rent. Premium £1,500, to include drugs and fittings.

33 N.W. COAST.—Practice in small Seaside Town. Receipts average £946 (including £350 from panel). Small compact house (4 bedrooms), with nice garden, for sale. Sport. Premium—Practice and house—£2,000.

34 WEST HAM. — Practice (carried on by Medical Woman) of about £540 p.a., including small panel. No midwifery. House to rent. Premium 1¼ years' purchase.

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9. WEST OF ENGLAND.—(Within 100 miles of London).—PLEASANT TOWN.—Old-established mixed general PRACTICE. Average income for last 2 years about £1,250, including panel of 1,200. Fees 2/6 to 6/-, and a few at 10/6. Little midwifery. Excellent house, recently redecorated, with ample accommodation. Garden. Garage. Good sport and schools. Premium for Practice and house £4,500.
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15. SOMERSET.—Attractive Town, within easy reach of coast. Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
16. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000).—Old-established mixed-class PRACTICE. Income last year £623, but offering exceptional scope. Panel of about 430 and 2 small appts. Visits 3/6 to 5/-. Practically no midwifery. Very attractive residence, on main road and near the sea, with professional rooms, 2 reception, 4 bedrooms, bathroom, etc. Pretty garden. Garage. Rent on lease £100 p.a. Premium 1½ years' purchase.
17. PARTNERSHIP.—MIDLANDS.—COUNTY TOWN.—TWO ONE-FIFTH SHARES (suitable two friends or will be sold separately) are offered in a very old-established good mixed Practice owing to the retirement of the senior of two partners. Gross cash receipts for immediate past 12 months over £5,900, including panel of 3,400. Fees from 4/-. Not much midwifery. Good house, with 2 reception, 6 bedrooms, etc. Rent on lease £75 p.a. Premium for share two years' purchase.
18. SOMERSET COAST.—In a small but increasing and delightful seaside resort, the five-twelfths share of a very old-established PRACTICE, producing last financial year £1,600, but offering exceptional scope. Panel brings in £480 and appointments. Visits 5/- to 4 guineas. Mid. 4 to 6 gns.; only about 12 cases yearly. Choice of 2 suitable houses (price, freehold, £950), with gardens. Electric light and gas. Premium 2 years' purchase.
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20. CORNISH RIV[illegible] . . od mixed PRACTICE in exceptionally att . . steadily increasing. Receipts for last 12 m . . panel of over 400. Visits 5/- to 21/-. . lue south, with 6 bedrooms, etc. Good garden. Rent on lease £56 p.a. Premium £1,800.
21. YORKS (NORTH RIDING).—In a small pleasant market town, with pretty and prosperous surrounding country, very old-established mixed-class PRACTICE averaging £1,247 p.a., including appts. worth £80 and panel producing last year £366. Visits 3/6 to 25/-. One opponent. Good house, facing south (3 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Electric light. Vendor's freehold. Price £1,350 (£1,000 on mortgage), or would let for few years at £80 p.a. Premium £1,500. Educational and social amenities.
22. SOUTH YORKS.—GOOD TOWN. — Old-established good middle-class PRACTICE, producing for last twelve months nearly £4,500. Small selected panel of 400. Fees 5/- to 10/-. Mid. 2 to 10 gns. (only about 50 cases yearly). Suitable house, with 3 reception, 6 bedrooms, etc., and professional rooms. Electric light. Good garden. Garage for 3 cars. Rent on lease £100 p.a. Excellent schools, sport, etc. Premium £5,700.
23. KENT.—Pleasant Seaside and residential Town (pop. 17,000).—Old-estab. non-dispensing middle and working-class PRACTICE, averaging for the past 3 years over £1,050 p.a. including transferable appt. worth about £200 and panel of 500. Visits 5/6 to 10/6. House contains 8 rooms, kitchen, bathroom, etc. Garden. Garage. Price freehold £1,500, but might be rented. Premium £1,500.
24. LINCS.—Very old-estab. easily worked Village PRACTICE, averaging £1,335 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.
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27. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, producing £2,500 p.a., including panel of 1,804, and appts. worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
28. CHESHIRE.—Industrial Town within easy reach of Manchester.—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
29. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £904 p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (3/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, bathroom, etc.). Large garden and garage. Water laid on and gas plant installed. Rent £50 p.a. Premium £1,400. Excellent sport.
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IN VITAMIN "D"

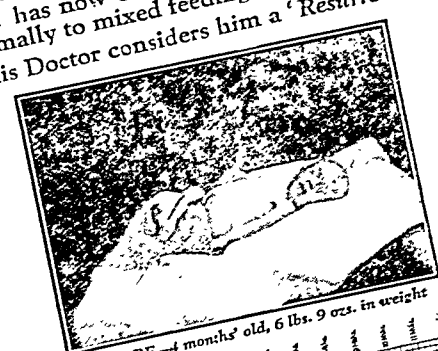
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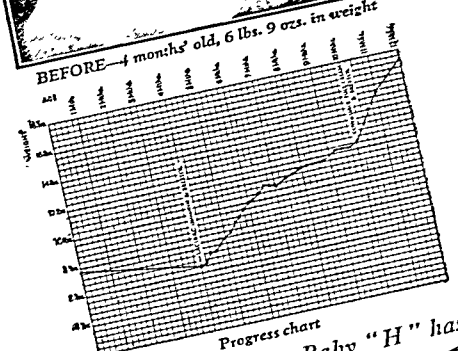
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Progress chart



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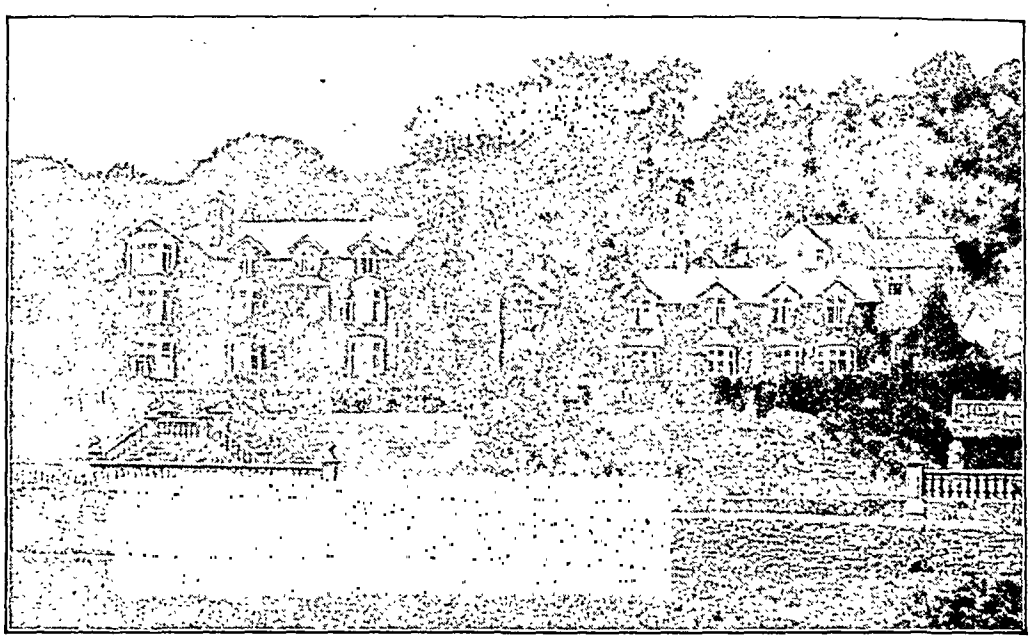
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JUNE 28TH, 1930.

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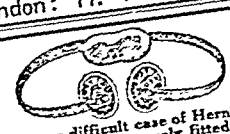
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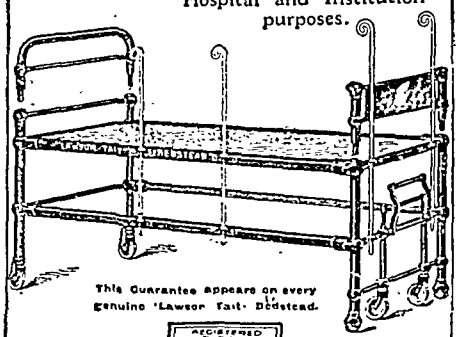
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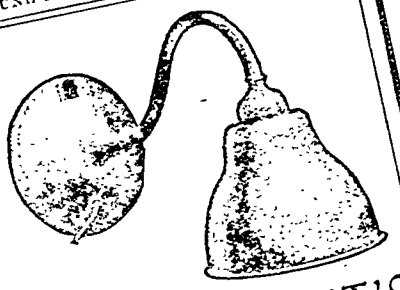
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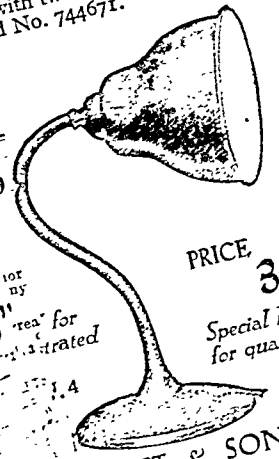
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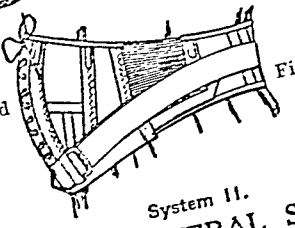
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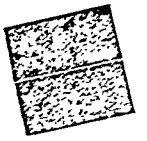
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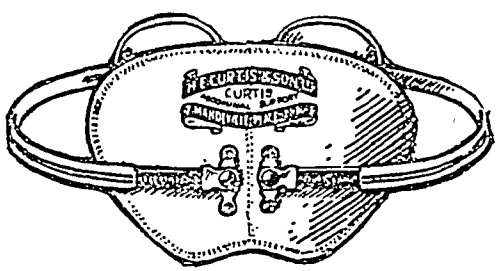
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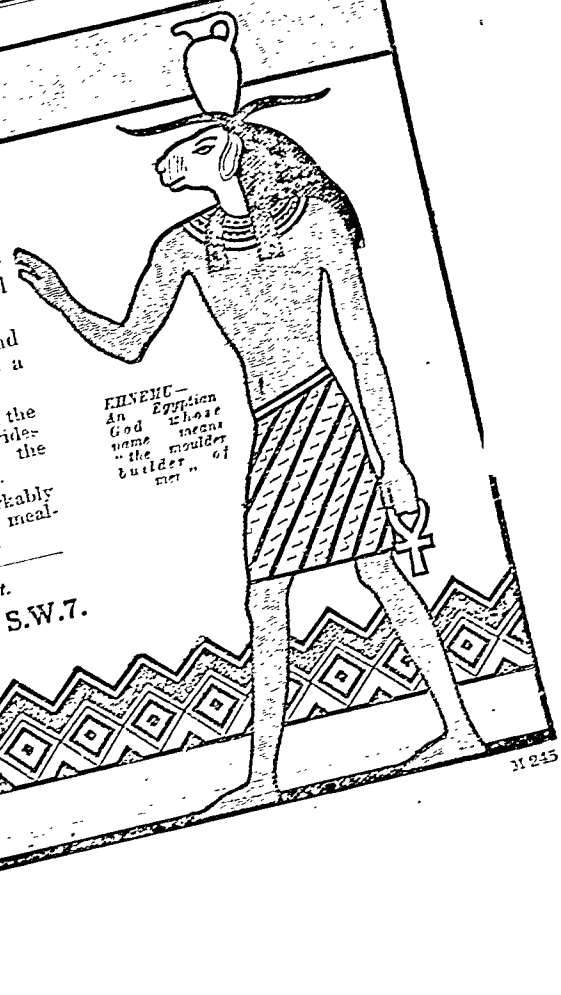
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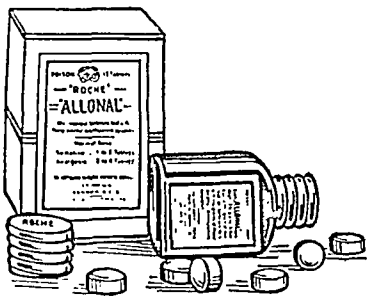
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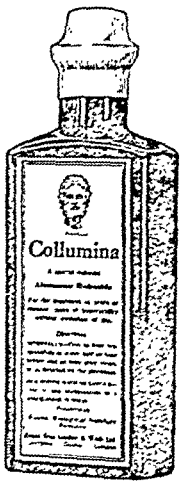
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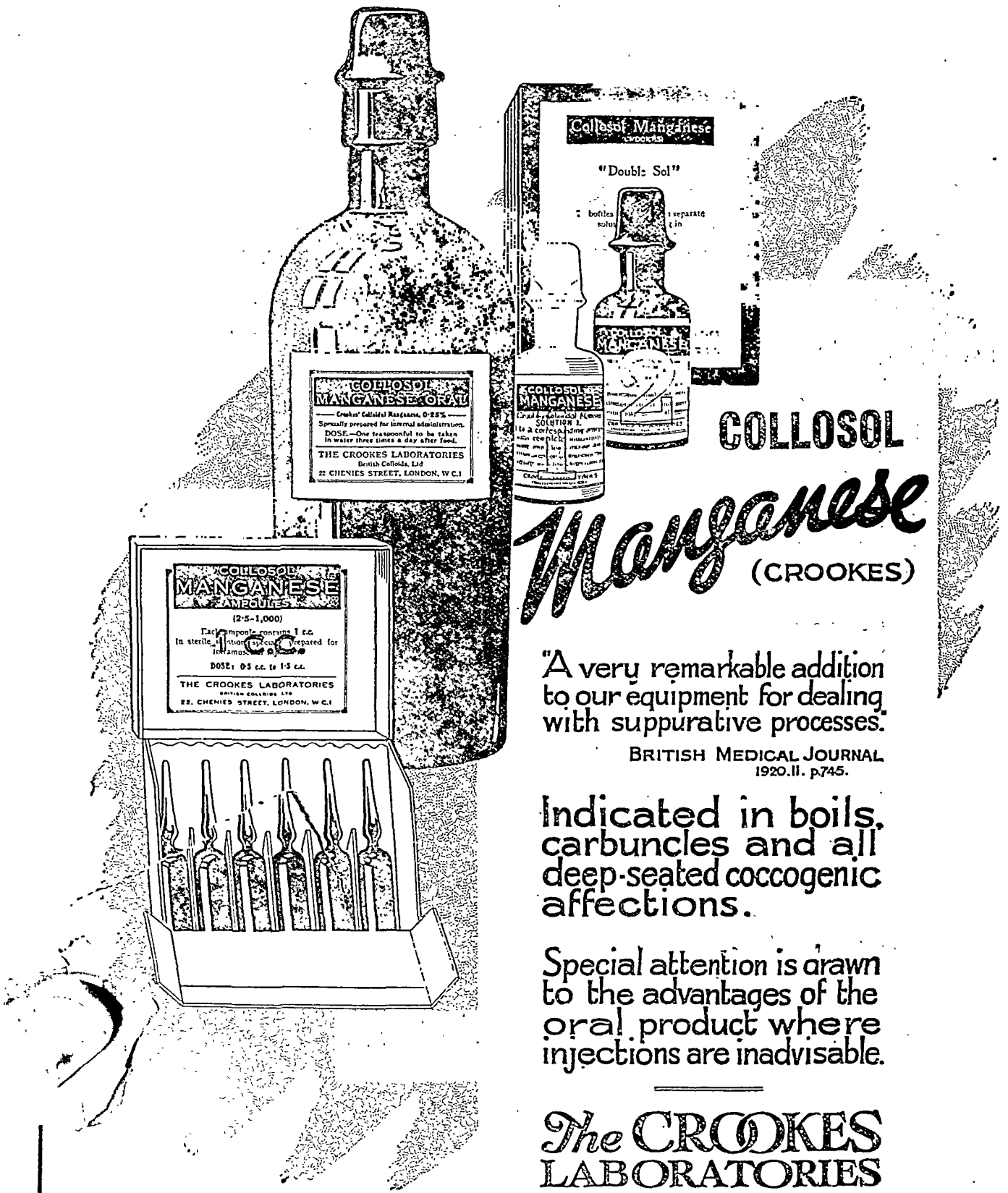
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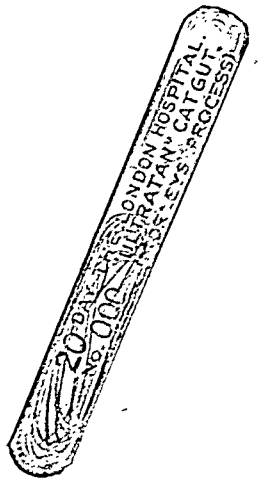
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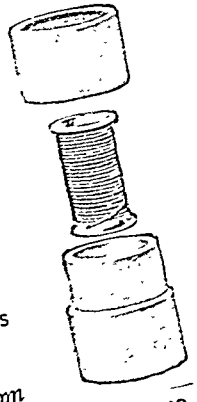
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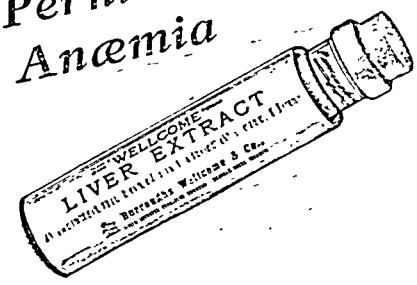
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A Lecture
ON
ILEUS: ACTIVE AND PARALYTIC

DELIVERED TO THE HAMPSTEAD MEDICAL SOCIETY ON JANUARY 16TH, 1930,

BY

H. TYRRELL-GRAY, M.A., M.Ch.Cantab., F.R.C.S.,
SURGEON TO THE WEST LONDON HOSPITAL, THE HOSPITAL FOR SICK CHILDREN, ETC.

"ILEUS" was thus described by Barnard[1]: "an ancient term incapable of precise definition, and therefore should not be used." In our everyday practice, however, this title outlines to all of us the picture of a motionless distension of the intestine in the absence of any obstructive lesion.

There are two main causes of intestinal distension:

1. *Obstruction* to the passage of contents is associated with overaction and hypertrophy.[2] Clinically peristalsis is seen and felt.

2. *Inertia* of the intestinal muscle from (*a*) active inhibition, and (*b*) interference with the circulation; either ultimately leading to distension.

Intrinsically the distinction is so sharp, both clinically and pathologically, that I submit the following definition of "ileus": "Distension from intestinal inertia."

Four factors are concerned: (*a*) an organ of independent functioning power (even when removed from the body),[3] co-ordinated and controlled for the needs of the body by (*b*) *sympathetic nerves*—inhibitory to bowel movements and vaso-constrictor to the arteries; (*c*) *parasympathetic nerves*, whose stimulation excites intestinal motility; and (*d*) the blood supply of the intestine. The co-ordination of these constitutes a physiological balance.

It is generally recognized that ordinary simultaneous stimulation (whether experimental or pathological) of these antagonistic nerves always leads to a domination of the sympathetic or inhibitory group,[4] and a motionless intestine results.

Now in the etiology of ileus (or "inertia distension") at least four primary types demand consideration: (*a*) the effect of bacterial toxins on the bowel wall; (*b*) mechanical obstruction; (*c*) "active ileus"; (*d*) "paralytic ileus."

The Effect of Bacterial Toxins on the Bowel Wall

The observation of active intestinal movements after death from "ileus" (Nothnagel)[5] would appear to exclude this as a cause.

Mechanical Obstruction.

As an example, in carcinoma of the colon, the stage of overaction and hypertrophy signifies an effort to drive the

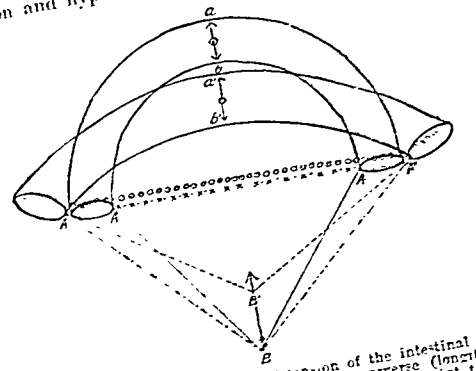


FIG. 1.—*a-b*, *a'-b'* represent the distension of the intestinal lumen; A-A and A'-A' represent the increase of transverse (longitudinal) mesenteric tension; B, fixed point of mesentery; B', point to which mesentery would be dragged if it were not *fixed*; B-A and B'-A', being equal, B-A' and B-B' show vertical *mesenteric* tension.

"inert area" of the intestine down the intestinal tract. The ultimate compression of the congested and swollen mucosa into the narrowed lumen completes the picture of final obstruction. The gradual transition from the "active" stage to "intestinal inertia," with the typical cachexia, is attributable to two factors: (1) compression of capillaries and veins in the intestinal wall. This leads to increasing failure of intestinal muscle. (2) Tension on the mesentery in two directions (Fig. 1). Mesenteric tension was recognized by Nothnagel[5] and Barnard,[1] and I have demonstrated it experimentally.

Here I must remind you that increase of pressure in a bent tube tends to straighten it; and that, owing to the increased length of the intestine over that of its mesenteric attachment, the same law holds good for the gastro-intestinal tract.

Increased mesenteric tension has two results:

(*a*) Mechanical stimulation of the contained sympathetic fibres, and the resulting inhibition of intestinal movement.[3]

(*b*) Tension on, and obliteration of, the most collapsible structures—that is, mesenteric veins.[10] This leads to venous stasis and paralysis of intestinal muscle.

These last two factors can each, separately or conjointly, institute intestinal inertia or "ileus" by a different mechanism. Accordingly there are two varieties to be recognized.

"Active Ileus."

This is intestinal inertia excited by sympathetic inhibitory impulses, and it is conveniently illustrated by the example of acute inflammation of the appendix adjacent to the ileal mesentery ("five o'clock appendix").

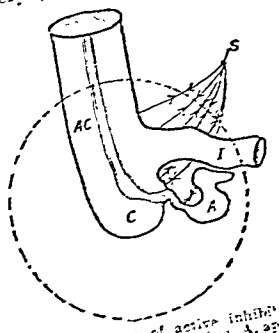


FIG. 2.—Diagram of the area of active inhibitory nerve impulses (afferent and efferent) in acute appendicitis. A, appendix; C, caecum; I, ileum; AC, ascending colon; S, sympathetic nerve supply to the inflamed area. Dotted line = extent of *direct* intestinal inhibition.

In sharp contradistinction to the retrocaecal or pelvic appendix, it is in this situation (Fig. 2) that acute appendicitis is associated with the classical symptoms from the onset, by reason of the mesenteric reflexes it evokes. Such a lesion stimulates in the immediate neighbourhood (Fig. 2):

(*a*) The efferent sympathetic. Intestinal movement is inhibited in the dotted area.

(*b*) The afferent sympathetic. The efferent response evokes: (i) proportionate immobility of the whole intestinal tract; and (ii) proportionate closure of the pylorus against the passage of food.

(*c*) The afferent vagus. The resulting contraction of the proximal stomach against a closed pylorus empties this viscus of food.

The whole picture of the empty stomach and motionless intestine is that of a protective mechanism. It is to be regarded as a physiological response to injury or infection; as a mechanism designed to immobilize and rest the inflamed part; to prevent the ingestion of food; and to localize the inflammatory process.

One further protective mechanism is evident. The presence of Paccinian (or touch) corpuscles in the mesentery—long recognized—was emphasized years ago by Keith.[11] He described them as "end organs for receiving pressure." Their stimulation excites the reflex immobility of the abdominal wall—again a protective mechanism. The whole protective picture is proportionate to the extent of the exciting cause—clearly the resulting distension may reach a sufficient degree to interfere with the venous return, and so to initiate the onset of "paralytic ileus."

"Paralytic Ileus"—Intestinal Inertia of Circulatory Origin.

A classical example is that of "acute intestinal strangulation," in which the importance of the circulatory factor was recognized by Barnard.[12] This is a clinical analogy to the experimental ligature of the intestinal veins with the arteries intact. The result is:

(i) Severe stimulation of the Paccinian corpuscles, leading to shock,[13] vomiting, and initial immobility of the abdominal wall.

(ii) As soon as the pressure in the obstructed veins exceeds that in the intestinal lumen, gases pass from the blood into the viscus by osmotic pressure, and progressive inertia and distension begin.

(iii) When in due course the pressure in the bowel exceeds that in the veins, gases will pass by osmosis back into the blood stream; and these, exhaled by the lungs, will give a faecal odour to the breath—a most significant diagnostic symptom. The progressive extension of mesenteric tension so induced leads to a proportionate spread of venous engorgement, and thus:

(iv) Fluid from the veins passes, not only into the peritoneum, but into the intestinal lumen. In due course absorption of fluids and gases from the bowel accentuate the initial shock with a profound toxaemia. Such a process, if unrelieved, is essentially progressive; so that, when the gastric musculature is involved and failure of the pyloric sphincter occurs, the intestinal contents obtain access to the stomach, and the result is stercoral vomiting. The condition is now analogous to that seen in "acute dilatation of the stomach."

(v) *The ileo-colic sphincter.* Normally the large bowel is adapted to tolerate a degree of intermittent obstruction, created by the voluntary control of the anus. From this the small intestine (which is not so adapted) is protected by the ileo-colic sphincter. This Elliott[14] showed to contract as the result of sympathetic stimulation, anaemia, and adrenaline. (That this function of the sphincter is of importance is shown by the changes in the ileum following colectomy—changes which are hardly noticeable after a year, when the same operation is performed by implanting the ileo-colic sphincter into the sigmoid and so preserving its function.) Whereas, then, the ileo-colic sphincter is closed in "active ileus" (from sympathetic stimulation), it will, in common with the rest of the intestine, be paralysed by venous engorgement. The free access of the infective contents of the colon to the small bowel may be one of the reasons for the highly increased "infectivity" of the contents when intestinal paralysis follows venous obstruction.

Clearly severe toxaemia and faecal odour of the breath are not features of "active or protective ileus," but are evidence of venous stagnation and "paralytic ileus." In minor degrees such ileo-colic incompetence may play a part in chronic disease. Further, if this picture is correct, the absence of toxaemia in obstruction (when the venous return is unimpaired) is in sharp contrast to the rapid toxaemia of strangulation, due to the obstructed venous return.

The clinical lesson stresses the significance of the breath as an indication of intestinal derangement associated with a defective venous return.

(vi) *The abdominal wall.* Increase of intra-abdominal pressure, by further compression of the larger veins, accentuates venous stasis. Accordingly "paralytic ileus" tends to occur sooner in subjects who are stout, or have firm abdominal walls, than in those with flabby muscles. For instance, it is remarkable to see the degree of distension which sometimes follows Caesarean section without marked distress or constitutional symptoms.

PRACTICAL ISSUES.

The clear-cut distinction between these two forms of ileus—active and paralytic—should form the foundation of our clinical practice. Accordingly we recognize two main groups of primary exciting causes of intestinal inertia and subsequent distension: (*a*) extra-abdominal; (*b*) intra-abdominal.

A.—*Extra-abdominal.*

A brief reference only to some of the more important conditions which may confuse or aggravate the clinical picture is possible.

1. *The Psychic Factor.*—Excessive or prolonged sympathetic stimulation of psychic origin inhibits both secretory and motor functions of the gastro-intestinal tract. In acute forms cessation of intestinal movement was recognized by Cannon,[15] Leonard Hill,[16] Langdon Brown,[17] and many others. In milder form such derangements may result from excessive mental activity; anxiety and apprehension; fear; unhappiness, etc. If long-continued, the gastro-intestinal sequelae may become permanent, and so accurate diagnosis of the primary disease may be exceedingly difficult.

2. *The Pulmonary Factor.*—Abdominal distension associated with pneumonia and empyema is a common experience, especially as a terminal feature. Mannaberg[18] believed it to be due to peritonitis (that is, infective agencies), but it is probably circulatory in origin.

3. *Cardiac.*—Heart failure has long been recognized as a cause of venous stasis in the viscera (Nothnagel, loc. cit.) and consequent distension.

In both the latter groups the absence of that characteristic odour of the breath constitutes an important clinical distinction.

4. *The Renal Factor.*—This factor (in renal colic, for example) induces an "active" or inhibitory ileus by sympathetic stimulation. Again the odour of the breath in addition to the history, etc., is a useful guide unless the circulatory type—"paralytic ileus"—supervenes.

A striking example came under my notice last summer. I operated on a man of 51 years for pain and repeated vomiting, absolute constipation associated with an enormous degree of abdominal distension, and visible coils of gut. No gross lesion of the alimentary tract could be found, but he had a haemorrhage into a left hypernephroma, which I subsequently removed, when the distension subsided as the result of a temporary caecostomy.

B.—*Intra-abdominal.*

Post-operative Ileus ("Paralytic Ileus").—I have long believed (and invariably acted on the belief) that if we would aid (and, if necessary, supplement) Nature's methods of immobilization and rest of the gastro-intestinal tract after laparotomy, this dreaded sequel would be excessively rare. The mechanism is the same for trauma as for infection, both of which, as we have already seen, primarily evoke local and general immobility by direct and indirect sympathetic stimulation. This, as already stated, results from injury to the mesentery and also to the parietal peritoneum. The stimulation of the contained Paccinian corpuscles further immobilizes reflexly the abdominal wall.

This picture of a protective mechanism is designed to ensure rest, and should be the basis of our treatment, characterized largely by masterly inactivity. "Active" (physiological) ileus is to be promoted by various measures.

Starvation.—Common sense indicates a middle course between absolute starvation of fluids and plethora. The former induces restlessness and misery from thirst, and violates the principles of rest, both bodily and psychic. The latter may induce vomiting and flatulence. A medicine glass of fruit juice stood at the bedside and sipped at will, or chewing fruit (for example, pineapple, grapes, etc.), will suffice to check thirst, clean the mouth, and supply carbohydrates.

Rectal salines (less irritating and more easily retained than water) with 5 per cent. glucose, at approximately four-hourly intervals, are less disturbing than continuous proctolysis.

The Fowler position is adopted for two reasons: (*a*) relaxation of the abdominal muscles adds to comfort; (*b*) gravitation of peritoneal fluid to known regions (Box[19]) and the more innocuous sites.

Sedatives.—Local and general rest are promoted by sleep. Blood pressure tracings during the exhibition of emotions (anxiety, apprehension, fear, etc.) so closely approximate those seen in the initial stages of shock that, for these reasons, for personal comfort, and for humanitarian purposes, the liberal administration of morphine (or its allies) is an essential routine.

I have in mind a medical man (intent on analysing his symptoms) who developed, after operation for obstruction, an alarming degree of distension of from four to five days' duration, relieved only by liberal administration of morphine and radiant heat to the abdomen.

Purgation and Feeding.—Diverse practice and teaching on this point are evidence that current views are based on empyrical rather than scientific grounds. There is no

general rule. The subsidence of an inflammatory or traumatic lesion is evidenced by a return of intestinal movement. Clinically this is ascertained by the patient; the use of the stethoscope; and the spontaneous passage of flatus. These constitute a demand (whenever they occur) either for temporary assistance by pituitrin injection and turpentine washouts, or for initiating a normal routine with a purgative followed by a gradual return to normal diet—each case being considered on its merits. The former is a temporary measure which can always be employed to prevent or relieve a distension which may threaten to become, in itself, a source of distress. The momentary effect is a negligible violation of the principle of rest. Purgation, if adopted before there is evidence of a return of intestinal activity, only causes hyperaemia, outpouring of fluids and gas into the intestines, and distension. Finally it may actually precipitate the onset of "paralytic ileus." Accordingly adherence to principle will forbid the administration of a purgative until there is evidence of the return of intestinal activity.

"Paralytic Ileus."

It is evident that distension arising from physiological ileus may, in any case (often as a result of mismanagement), reach a degree sufficient to compress the veins, and initiate paralytic ileus—in any instance this may be accentuated by cardiac failure, pulmonary complications, etc., as already stated. The odour of the breath, the state of the tongue, and the constitutional changes are all evidence of the onset of venous obstruction and the interchange of gases referred to. Measures for prevention are, in part, measures for cure. Accordingly we should add the following to the routine outlined.

Radiant heat to the abdomen—recommended to me many years ago by Sir George Makins—has formed so integral a part of my routine that my own nursing sister applies it to every case until it can evidently be dispensed with. To its routine employment I attribute a relative immunity from serious "paralytic ileus." Its action is to reduce deep congestion by causing superficial hyperaemia.

Cardiac insufficiency and pulmonary complications—both of which have been discussed as potentially initiating or accentuating venous obstruction—must be watched and controlled. The injection of strychnine 1/30 grain, atropine 1/100 grain, adrenaline (1 in 1,000) 10 minims (sometimes called the A.S.A. (or Trinity) hypodermic of Boyd), given six-hourly for four doses (and repeated in half doses if necessary), is an excellent precautionary measure. With its employment the pulse rate and thirst must be watched and controlled.

Progressive "Paralytic Ileus."

Nothnagel's[20] observations would appear to contradict the theory of Reichel,[21] that ileus is due to bacterial invasion of the bowel wall. Accordingly clinical methods, directed towards the restoration of intestinal motility, should be concentrated upon the relief of distension and intra-abdominal pressure. Interval injections of pituitrin followed by turpentine or human bile washouts promote a diminished intra-abdominal pressure, and so a restoration of intestinal circulation.

Gastric lavage further reduces abdominal distension and favours the return to a normal circulation. This measure (which appears never to be harmful) is urgently indicated when vomiting has commenced.

Avoidance of purgation.—It has been pointed out that intestinal inertia is only accentuated by purgation—morphine (or an allied sedative) is indicated. I have in mind an instance of an over-anxious doctor administering 1 grain doses of calomel hourly to a lady during the stage of post-operative protective ileus. The resulting picture of acute obstruction was relieved by morphine and radiant heat to the abdomen.

I must emphasize the rule that the only sure indication for purgation and feeding is evidence of the return of normal intestinal activity.

In the rare instances when this routine is ineffective a light general anaesthetic should precede a spinal anaesthetic. This may result in a copious evacuation, from the removal of inhibitory reflexes. If this occurs after the abdomen is open (and mechanical obstruction is excluded) a catheter passed per rectum as high as possible is sufficient. Otherwise a temporary ileostomy or jejunostomy (by Witzel's method) is indicated. The initial discharge of faeces from this procedure is usually followed by an absence of drainage for twenty-four to thirty-six hours—a feature which often causes unnecessary anxiety to those in charge.

The explanation is that the relief of pressure (and the consequent return of normal circulation) spreads consecutively from loop to loop of intestine, and is associated with a gradual spreading return of intestinal activity. This is a relatively slow process. Initially purgation only increases ileus; morphine and radiant heat are indicated to ensure rest, diminish secretion, and relieve congestion. To mention a striking example:

A woman, aged 40, had a gangrenous appendix removed and the pelvis drained. Acute obstruction supervened on the tenth day. A second operation released the volvulus round the tube sinus, and temporary ileostomy was followed by a copious evacuation. Subsequently there was little drainage for forty-eight hours. It was ascertained that pituitrin injections, enemata, and purgation had been persisted in during this period, and were only followed by increasing distension. This yielded immediately to radiant heat and the liberal administration of morphine, which gave sleep and led to natural actions of the bowels and the subsequent automatic closure of the fistula.

Intermittent and Chronic Ileus.

So far viscero-motor reflexes (in their physiological or protective capacity), and circulatory (pathological) defects arising from trauma or infection, have been considered only in acute form. It is not difficult to envisage analogous symptoms arising from milder or more chronic lesions of similar character.

1. *Inhibitory Impulses in Chronic Disease.*

If the symptoms of acute inflammation of the "five o'clock" appendix be again referred to, and be modified to those of chronic disease arising either from inflammatory or mechanical agencies, it is not difficult to substitute: (*a*) flatulence and anorexia for vomiting; (*b*) constipation requiring laxatives for general intestinal inhibition; and (*c*) discomfort and referred pain from acute epigastric pain becoming localized to the inflammatory area.

In chronic or intermittent form such symptoms are only a mild but faithful mimicry of the acute crisis. As an analogy the flatulence, distension, and constipation associated with gall-bladder disease are referable to the same type of reflex; examples might be multiplied.

2. *The Circulatory Factor in Chronic Disease.*

It is important to realize that—the portal system being devoid of valves—the vasomotor tone, the support of the abdominal muscles, and the negative pressure of the thoracic inspiration are all factors of importance. This was realized by Leonard Hill and Barnard[22] when, discussing a flabby abdominal wall, they referred to "the abdominal vessels . . . similar in nature to an easily distensible bag."

Keith[23] realized the importance of the abdominal muscles in effective expansion of the lungs when, twenty-seven years ago, he described the diaphragm as an "abdominal piston" in the "abdominal type of respiration," in contradistinction to the normal "thoracic type" with efficient abdominal muscles.

Abdominal venous stasis, associated with the resultant intestinal inefficiency, is gradually initiated by: (*a*) pooling in the abdominal veins—the result of imperfect tone of the abdominal wall; and (*b*) insufficient negative thoracic pressure—due to an inefficient expansion of the lower lobes of the lungs (an important factor in pulmonary complications following "upper abdominal" operations). In chronic disease remedial breathing instruction has been beneficially emphasized by MacMahon.[24]

3. *Inhibitory and Circulatory Factors Combined.*

This is most conveniently illustrated by the congenital mobile colon, but, in preface, it is only fair to insist that the actual position of the colon means nothing whatever. What is really important is its means of support in the upright position.[25] The mesentery is *not* (and never was designed as) a supporting structure. As a result of this pathological imposition there are two results:

(*a*) Sympathetic inhibitory stimuli (with consequent general stasis, flatulence, etc.)—a mild mimicry of the mechanism and symptoms already portrayed in the picture of acute appendicitis (Fig. 2).

(*b*) Again the most collapsible structures suffer first. The resulting tension on the mesenteric veins leads to venous stasis (evidenced clinically by the tortuous arteries so commonly seen during operations on these subjects), and accentuates the existing intestinal inefficiency due to inhibition (Fig. 3). In subjects of visceroptosis these two factors combine to produce the symptoms which are in the experience of us all.

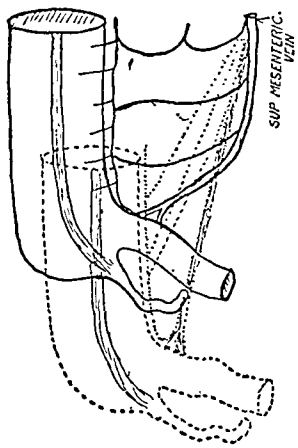


FIG. 3.—Showing tension on mesenteric vessels and concomitant sympathetic fibres in coloptosis.

As an example, we are all familiar with the patient of sturdy athletic build, with well-fixed colon, who suffers no symptoms from (or clinical evidence of) constipation, even if this extends over several days. A similar constipation in the subject of visceroptosis leads to fetor of the breath, discomfort and distension, flatulence, anorexia, etc. Is not this comparison again a mild mimicry of the picture we have already considered when we contrasted the absence of constitutional symptoms associated with chronic obstruction with the profound changes seen in strangulation? Can it be doubted that the venous factor is equally responsible for the symptoms in chronic mesenteric tension (visceroptosis) as it is in acute strangulation?[10]

Again, the end-result of venous stasis and the temporary intestinal inefficiency which results, ultimately is fibrosis. Fibrosis not only involves the muscle, but, far more serious, may (and in long-standing cases undoubtedly does) involve Auerbach's plexus, thereby dislocating the whole neuromuscular mechanism of the intestine.[4]

Surely it is our duty to anticipate this eventual and incurable sequel of venous stasis by imitating Nature's normal method of mesenteric fusion, and performing the simple operation of colopexy, in suitable cases. The success of such a procedure, carried out on sound principles, depends on the selection of cases for operation; and, from what has been said, this is often no simple problem.

In conclusion, it is submitted that the term "ileus" should present to us a picture of intestinal inertia of two types: (1) active ileus—a physiological and defensive mechanism due to inhibitory nervous impulses; and (2) paralytic ileus—a pathological and progressive condition due to venous obstruction.

In chronic form the symptoms are a mild mimicry of those we are familiar with in acute abdominal crises; but the principles on which treatment should be based are identical—namely: "active (physiological) ileus" should always be imitated and supplemented; while every effort should be directed towards the prevention of increased venous pressure (from any source) and the possible onset of "paralytic ileus."

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URGENT UTERINE HAEMORRHAGE OF CONSTITUTIONAL ORIGIN.

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LOCAL or pelvic causes account for by far the majority of cases of abnormal uterine haemorrhage, which, according to Beckwith Whitehouse, may be classified into four groups: epimenorrhoea (menstrual periods too frequent), menorrhagia (periods profuse), menostaxis (too prolonged), and metrostaxis (irregular bleeding). Minor degrees of any of these conditions are occasionally met with associated with constitutional disturbances or disorders of metabolism, such as myxoedema, exophthalmic goitre, acute infectious diseases, and the anaemias. Shaw,[1] in his very detailed work on irregular uterine haemorrhage, has noted that in 17.5 per cent. of his series of 200 cases of excessive uterine haemorrhage no explanation for its etiology could be offered. He states that it is always extremely difficult to attribute menstrual abnormalities to general metabolic and endocrinal disturbance, for in the majority of cases there is no obvious association, and it is undoubtedly true that, in the past, any association that there may be has been grossly exaggerated. He admits that it is possible that in many of the 200 cases investigated some such conditions have been present. Schmitz,[2] in a survey of 2,184 consecutive hospital records and 2,126 records of out-patients, found that about 36 per cent. of them complained of uterine haemorrhage. No diagnosis as to the cause of the bleeding was made in 22 cases of the in-patient series and in 23 cases of the out-patient series. Linton, Marks, and Smith[3] remark that possible factors in the etiology of abnormal flowing without demonstrable pathological conditions are, among others: local or systemic endocrine dysfunction, subclinical constitutional blood disease, and systemic blood disease. According to Munro Kerr,[4] the common blood diseases, such as anaemia and chlorosis, are associated with amenorrhoea; far more grave disorders, such as scurvy, purpura, etc., are generally accompanied by menorrhagia. Gow is quoted as having shown, in a study of mitral stenosis, that in about 20 per cent. of cases only was menorrhagia present, despite the hitherto general belief that the two conditions were associated. Munro Kerr states that haemophilia is a possible cause of uterine haemorrhage, but Osler[5] quotes Bulloch and Fildes's claim to have established the fact of immunity in females and their denial of the authenticity of all the published cases. In Grandidier's series of 334 cases of haemophilia uterine bleeding was not instanced. Meigs[6] has described a few interesting and unusual cases of benign uterine bleeding, excluding the usual causes, such as fibroids, inflammation, polypi, etc. They fell under the following headings: hyper-

thyroid, hypothyroid, pituitary disorder, thrombopenic purpura haemorrhagica, atypical purpura haemorrhagica, endocrine, and cases with no definite pathological findings. Possibly, in many clinical cases of mild or moderate uterine haemorrhage a general cause is overlooked. When bleeding is severe it almost always has a local cause.[7]

Profuse uterine haemorrhage, severe enough to endanger life and of constitutional origin, is undoubtedly uncommon, and in a review of approximately 19,000 in-patient records (from 1920 to 1930) in the Royal Samaritan Hospital for Women, Glasgow, I have encountered only seven cases of such a category. The main features of these cases are detailed below.

CASE I.

This girl, aged 15 years, was admitted urgently to hospital on February 22nd, 1921, suffering from profuse haemorrhage from the vagina. It was of sixteen days' duration, and hitherto she had not menstruated. Bleeding was continual, and had necessitated her remaining in bed. On examination she was found to be blanched, the lips, gums, and conjunctivae being almost colourless; she was poorly nourished, and haemic murmurs were present. No pelvic abnormality was detected on rectal examination.

Four years previously purple spots appeared one day "under the arms and breasts." On the following day epistaxis commenced, and was accompanied by sickness and vomiting. On two further occasions, at two-monthly intervals, nasal bleeding recurred. It was noticed by her mother that, prior to each haemorrhage, the patient became excited, and there was apparently involuntary blinking of the eyes. Each attack of epistaxis lasted about twenty-four hours and ceased spontaneously. Since 1917, too, successive crops of purple spots appeared and disappeared, and on one occasion there was some diffuse purple discoloration of the legs; there was no history of trauma, and there was no history of "bleeders" in the family.

Blood examination: The red cells numbered 1,600,000 per c.mm., the white cells 30,000. Polychromatophilia, poikilocytosis, and nucleated red cells were seen.

On March 8th she was transferred to Glasgow Victoria Infirmary for medical treatment. On admission she was blanched, breathing was shallow, the pulse small and weak, and she complained of thirst. She was given subcutaneous and intravenous salines. No abnormal constituents were present in the urine. On the following day she was examined under light general anaesthesia, and the uterus and appendages were found to be apparently normal. The cervix was dilated and the uterus curetted. She was given pituitrin (1/2 c.cm.) four-hourly, and 3 ounces of saline containing 30 grains of calcium lactate, four-hourly, per rectum; this was continued for seventy-two hours. For three or four days after admission she rallied, but then became delirious and developed gangrene of the right foot and of the toes of both feet. For ten days she was given, by the mouth, a mixture containing the chloride, lactate, and iodide of calcium. However, her condition became worse, and she died on March 20th—that is, six weeks after her first uterine haemorrhage commenced. Post-mortem examination revealed no features of note.

Unfortunately a detailed blood examination, including platelet count and bleeding time, was not carried out in this case, but from the history a presumptive diagnosis of thrombopenic purpura haemorrhagica may be made. Price[8] states that in purpura haemorrhagica, menorrhagia in the adult is frequent and is a dangerous symptom. Meigs's[6] case of this condition was that of a girl, aged 14 years, who had had four transfusions to stop nasal bleeding. Later, she had continuous uterine haemorrhage for three months, at the end of which her haemoglobin was 35 per cent. Transfusion and splenectomy were performed. Two days later the platelets and bleeding time were normal, and uterine bleeding stopped almost at once. Her periods subsequently were normal and regular. Linton, Marks, and Smith[5] report the results of treating by radium a series of 250 cases of uterine bleeding not due to malignant disease. One case (a young girl) in this series was due to idiopathic thrombopenic purpura, and was treated by three local radium applications and intensive ultra-violet ray treatment over the spleen; she is now apparently well, nine years after her first admission.

CASE II.

A girl, aged 14 years, was admitted to hospital on May 25th, 1922, as an urgent case of profuse uterine haemorrhage. Bleeding had commenced ten weeks previously, and had continued without interruption. On examination she was blanched, the pulse rapid, and the heart sounds soft but pure. The only feature of her past health was that "she had always been anaemic."

She was given elixir calcium chloride, 1 drachm thrice daily, and the foot of the bed was elevated. Two days later the pulse was still rapid and very poor in quality, and rectal salines were administered. Her condition remained serious for several days, but, when improvement showed, she was examined per rectum under anaesthesia, and no gynaecological abnormality was detected.

Blood examination (ten days after admission): The red cells numbered 4,775,000 per c.mm., white cells 11,875; haemoglobin 45 per cent.; colour index 0.47. The erythrocytes were pale in colour, and a few nucleated red corpuscles were seen. There was some poikilocytosis. No myelocytes were present, polymorphonuclear leucocytes predominating.

The diagnosis in this case was that of chlorosis. The usual medical treatment was employed, and she was dismissed well on June 23rd, 1922.

Almost eight years later (May 9th, 1930) I saw this patient, and was informed that periods had been normal and regular for several years. She was of small stature and generally underdeveloped, her appearance suggesting that she was still very anaemic. I examined her blood, with the following results: red cells 4,500,000 per c.mm., white cells 7,800; haemoglobin 50 per cent.; colour index 0.5. The erythrocytes were pale in colour, and "ring-staining" was marked. There was some poikilocytosis. No nucleated red cells or anisocytosis were present. No myelocytes were seen, polymorphonuclear leucocytes being in normal proportion. The blood picture, it is interesting to note, was still of the chlorotic type.

CASE III.

A patient, aged 45 years, was admitted to hospital as an urgent case on April 29th, 1924, complaining of very profuse menstruation. For twelve months prior to admission menstrual periods had been very irregular; her three most recent ones had extended for five to seven days, bleeding being very profuse and large clots being passed. On examination she was found to be very pale and the pulse thready; systolic murmurs were present at the apical and aortic areas of the heart.

Puberty was at 12 years of age, and menstruation had been regular and normal until the age of 44. With the exception of a slight attack of pleurisy, her past health had been good.

Blood examination: The red cells numbered 3,300,000 per c.mm., white cells 10,400; haemoglobin 60 per cent.; colour index 1.2.

Two days after admission she was examined under general anaesthesia; the uterus was dilated and curetted and the curettings examined microscopically. A small mucous polyp was found, but neither in it nor in the endometrium was there any evidence of malignancy. On the day following operation she developed phlebitis of the left leg. Three days later her condition became critical, and despite liberal stimulation and treatment with brandy, digitalin, strychnine, and salines, she died on the eighth day after admission to hospital.

Unfortunately a more detailed blood examination was not made in this case, and a suggested diagnosis of pernicious anaemia could not be made with certainty.

CASE IV.

This patient, a woman aged 43, was admitted to hospital on April 21st, 1926, as an urgent case of uterine haemorrhage. Bleeding per vaginam had been constantly present for the preceding three weeks, and for four days prior to admission had been extremely profuse. An ergot mixture from her physician had made no appreciable difference. She was found to be exsanguinated and in a critical condition. Her temperature was 96.4°, pulse rate 100, and respirations 20 per minute. Examination of the pelvis revealed no local or pelvic abnormality.

The patient had suffered for several years from "internal bleeding piles." There was also a history of myxoedema three years previously, and for this she had had thyroid treatment, which had latterly been discontinued. She had been married sixteen years, had five children and no miscarriages, and labours and puerperia had been uneventful. The menopause was eighteen months prior to her urgent admission to hospital, and in this interval there was no uterine bleeding whatever.

Blood examination: The red cells numbered 960,000 per c.mm. A blood film showed a polymorphonuclear leucocytosis; the red cells were of normal shape, and no poikilocytosis or nucleated red cells were present.

The patient was treated with the usual measures for the arrest of bleeding per vaginam, and rectal salines were administered. Her condition, however, became worse, the pulse became weaker, and she died four days after admission to hospital. A post-mortem examination was refused.

The features of this case were: (1) eighteen months of complete amenorrhoea and apparently normal health after the menopause: (2) one attack only of severe uterine haemorrhage (this proved to be fatal): (3) a history of myxoedema; and (4) an extremely low red blood cell

count and a normal film. (Unfortunately, for some reason not apparent, the haemogobin percentage was either not estimated or not noted.)

CASE V.

This patient, who was 27 years of age, was admitted to hospital on May 14th, 1928, with a complaint of very profuse haemorrhage per vaginam. Three weeks previously a menstrual period commenced, and for the first twenty-four hours was accompanied by epistaxis. Severe uterine bleeding continued throughout three weeks. On examination she appeared almost exsanguinated. The urine contained much albumin.

She had had scarlet fever during childhood. When 20 years of age she was a patient in Glasgow Royal Infirmary, and was under treatment for nephritis. For three years prior to the attack of menostaxis, oedema of the face and legs was absent, but albuminuria was constant. Since puberty menstruation had been scanty but regular.

Her condition improved with general measures and rest in bed. No abnormality was detected in the pelvis. On May 25th, 1928, she was transferred to Glasgow Royal Infirmary for medical treatment.

Blood examinations: On May 25th there were 830,000 red blood cells per c.mm., the white blood cells numbered 2,600; haemoglobin 18 per cent.; colour index 1.0. On May 29th the red cells numbered 1,300,000 per c.mm.; haemoglobin 17 per cent. A film showed an ordinary secondary anaemia. On June 7th there were 1,270,000 red cells per c.mm.; haemoglobin 18 per cent. On June 18th the red cells numbered 1,710,000 per c.mm.; haemoglobin 26 per cent. A film showed ring-staining of red cells and poikilocytosis. No nucleated red cells were present.

On account of a persistent cough and an evening rise of temperature the suspicion of tuberculosis was raised, but a skiagram of the chest and a von Pirquet test proved negative. A detailed examination by the urologist was made, but beyond a well-marked cystitis, seen per cystoscope, no gross abnormality was detected in the urinary tract. On June 11th and 13th the patient had severe attacks of epistaxis. On the latter date a blood culture was made, but this was negative after ten days' incubation. Her general condition improved, and there was no further uterine bleeding. She was dismissed, much improved, on August 15th, the diagnosis being chronic nephritis. There was, further, no recurrence of uterine haemorrhage, but her general health deteriorated, and she died at home on November 13th, 1928.

In this case of a young woman, aged 27, no explanation of the single, very profuse uterine haemorrhage is apparent beyond the condition of chronic nephritis. Osler[5] states that haemorrhages, particularly epistaxis, are not infrequent in chronic interstitial nephritis. Berkeley[9] writes that haemorrhage from the uterus may occur in chronic renal disease, in which not only is the composition of the blood altered, but the blood pressure is raised and arterial degeneration is present. General blood-vascular diseases may affect the uterine vessels in the same manner as those of other organs. In elderly women they may be atheromatous, and Eden and Lockyer have, in one case, found definite sclerotic changes in the arteries in a uterus removed for uncontrollable bleeding. Certain diseases, such as chronic nephritis and general arterio-sclerosis, sometimes occur in connexion with chronic metritis.[10]

CASE VI.

This patient, aged 30 years, admitted on October 9th, 1929, complaining of profuse bleeding per vaginam of ten days' duration. Hitherto her menstrual periods had been regular but excessive, the flow lasting for about eight days. On examination she was found to be blanched, the mucous membranes being almost colourless. The uterus was slightly enlarged, but no other abnormality was detected. Her past health had been very good. She had been married for eight years and had no family.

Rest in bed and haematinics were prescribed; the haemorrhage ceased, and she was dismissed, much improved, on October 31st. On December 9th she was readmitted as an urgent case of uterine haemorrhage, bleeding having been present for fourteen days.

On examination she was found to be exsanguinated. The pulse was rapid and thready, and a systolic cardiac murmur was present. Despite measures for the arrest of haemorrhage, bleeding continued. An attempt to make a detailed blood examination failed, as sufficient blood—almost colourless as it was—could not be obtained by the usual method. Thirty-six hours after admission a blood transfusion was performed, but during the course of it the patient died.

This case of a young married woman is one from which a lesson is to be drawn—namely, the necessity for detailed general and blood examination in the absence of a local cause of profuse uterine haemorrhage. She was dismissed from hospital, apparently much improved after her first residence, only to return and die of a recurrent haemorrhage two months later. The actual cause of bleeding in this case was unknown, except that it was not due to any appreciable pelvic abnormality. One patient in the series of Linton, Marks, and Smith (loc. cit.) was moribund on admission, from excessive flowing of ten days' duration, and she died on the following day; no pathological basis for it is mentioned.

CASE VII.

This patient, a woman aged 49 years, was admitted to hospital on December 3rd, 1929, as an urgent case of uterine haemorrhage. The history of the illness was that in September, 1929, her menstrual period lasted for ten days; two months later bleeding recommenced and persisted for four weeks—that is, until admission. At no time had there been any pain. On examination she was found to be exsanguinated and the pulse feeble and rapid.

Prior to September, 1929, menstruation extended for four or five days, and recurred at irregular intervals of from four to seven weeks. She had been married for seventeen years and had four children. After her first confinement (twins), in 1913, she had very severe post-partum haemorrhage, and was confined to bed for six weeks. The second puerperium (in 1914) was also associated with post-partum haemorrhage, but not as severe as in the previous one. In the following year she had an ante-natal haemorrhage, and developed pneumonia and enteric fever during the puerperium. For many years she had a tendency to bleed unusually readily.

On the day of admission 1 c.cm. of haemoplastin was given; rectal salines with glucose and sodium bicarbonate were administered four-hourly. A blood transfusion (500 c.cm.) was performed. On December 7th a curette was introduced into the uterus, but no evidence of malignant disease or of other gross cause for haemorrhage could be found.

A blood count taken on December 6th showed: red blood cells 1,100,000 per c.mm., white cells 10,000; haemoglobin 28 per cent.; colour index 1.3; polymorphonuclear leucocytes (including transitional neutrophils) 86.5 per cent., eosinophils 1 per cent., mononuclear lymphocytes (including basophil myelocytes) 2.5 per cent., small lymphocytes 10 per cent.

She was transferred to a medical ward at the Victoria Infirmary on December 7th. On admission there she was described as being *in extremis*, and another blood transfusion (500 c.cm.) was given. She consumed twelve pints of water and two pounds of glucose in forty-eight hours.

A blood examination was repeated on December 10th, and showed: red cells 1,180,000 per c.mm., white cells 16,700; haemoglobin 32 per cent.; colour index 1.45. A film showed poikilocytosis, polychromatophilia, and polymorphonuclear leucocytosis. Another blood transfusion (500 c.cm.) was given on the following day, and a blood examination on December 12th showed: red cells 1,220,000 per c.mm., white cells 12,600; haemoglobin 32 per cent.; colour index 1.3. A film showed similar features as in the one made two days previously.

A swelling appeared in the right submaxillary region and increased in size, the cheeks became oedematous, and the tongue greatly swollen. Mechanical respiratory distress became severe. Slight haemorrhage per vaginam continued throughout. She died on December 15th, 1929.

Post-mortem examination revealed no macroscopic features of note. The liver and spleen were normal. A film from the bone marrow, however, showed the characteristic features associated with anaemia (pernicious) of the aplastic type.

There can be little doubt that the fatal uterine haemorrhage in this case was due to the constitutional disease, aplastic pernicious anaemia. A feature of interest was the history of post-partum and ante-partum haemorrhages at her confinements, some fifteen years previously.

Severe uterine haemorrhage in pernicious anaemia is rare. Linton, Marks, and Smith (loc. cit.) record a case of a patient who was treated with radium on account of fibroids, the presumed cause of her menorrhagia, but two years and eleven months later she died of "pernicious anaemia" (*State Records*).

Conclusions.

I have described seven cases of urgent uterine haemorrhage in which no local or pelvic cause was discoverable, and which were presumably of general or constitutional origin.

When bleeding is severe and the true diagnosis at an early stage is missed, the prognosis is grave; four of the above patients were dead within a month of admission to hospital, one within two months, and one (Case V) within six months.

Other factors than dysfunction or disease of uterus and ovaries are responsible for some cases of uterine bleeding. Cases occur in which it is to be attributed to a pathological condition of the blood.

The mechanism of haemorrhage in these cases is not clear, but it may depend on disordered calcium metabolism—for example, increased calcium output or low blood calcium.

In cases of severe uterine haemorrhage without obvious pelvic or local cause, a systemic investigation and a detailed blood examination (preferably by a haematologist) should be made at the earliest opportunity.

I am indebted to the surgeons of the Royal Samaritan Hospital for Women, Glasgow (Drs. Shannon, West, Gardner, and McIntyre), and to the medical superintendents of the Glasgow Royal and Victoria Infirmaries (Drs. Grant and McCall Smith respectively), for access to records and notes in some of these cases.

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PRODUCTION OF PERNICIOUS ANAEMIA (BARTONELLA ANAEMIA) IN RATS BY DEFICIENT FEEDING.*

BY

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AND

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THE dietetic survey of various classes of women in Bombay suggested that the disease occurring in pregnant women known as "*pernicious anaemia of pregnancy*" was closely connected with a relative deficiency of vitamins A and C in their diet. In this connexion a series of experiments was carried out at Coonoor in which diets relatively deficient in these vitamins led to the production of a severe anaemia in intact albino rats, especially in the female animals; it was further shown to be a true "Bartonella anaemia." The term "Bartonella anaemia" is used to describe the well-known anaemia of rats which occurs after splenectomy in infected stock, and is associated with the appearance of Bartonella "organisms" in the red cells; it is used without prejudice as to the exact nature of these small bodies.

DIETETIC EXPERIMENTS.

The diets used had one common fault—a relative deficiency in vitamins A and C.

Series I.

These experiments have been reported before by McCarrison,[1] in his work on the production of urinary calculus by faulty feeding. In them two types of diet were used, the one based largely on oatmeal, and the other on atta (whole wheat flour). These diets contained no vitamin C and only a little vitamin A, the latter being obtained from the small quantity present in the grains used. Vitamin B was judged to be present in adequate amounts.

Cases of a severe, and frequently fatal, anaemia occurred among the rats fed on these diets: among those fed on the oatmeal diets there was a death rate from this disease of 13.8 per cent.; among those fed on the atta diet there was a death rate of 12.4 per cent. Milk added to the oatmeal diet appeared to afford the rats protection against this anaemia. The disease was much more frequent in females; out of a total of seven pregnant animals in one experiment five died of this anaemia.

The diagnosis of Bartonella anaemia was made on an examination of the blood slides. The characteristic appearances in the blood will be described in the account of the next series of experiments; in these the blood examination was much more complete.

Series II.

Six diets, two natural and four synthetic, were used in this series of experiments. The two natural ones were based on diets in common use among the hospital class in Bombay; one resembling that used by Mohammedan women and the other based on a diet used by Hindu women. Of the four synthetic diets the first was a basic one without vitamins A and C except such traces of vitamin A as might be found in the olive oil used (very little if any present, as the animals went downhill rapidly); the others were the same as the first with the addition of orange juice to the second, cod-liver oil to the third, and both orange juice and cod-liver oil to the fourth.

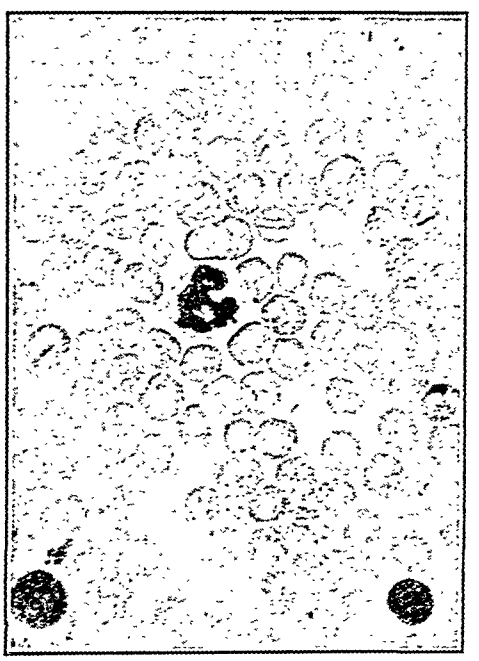


FIG. 1.—Blood from splenectomized anaemic rat showing "Bartonella organisms" in the red cells. (×1,000.)

Cases of Bartonella anaemia occurred spontaneously among the rats fed on the Mohammedan diet and among those fed on the basal synthetic diet. Pregnant animals living on the Hindu diet were, however, susceptible to inoculations of Bartonella-infected blood; in this respect they were unique, as we failed to produce an anaemia after inoculation either in well-fed rats, whether pregnant or not, or in pregnant rats when they were fed on the Hindu diet to which vitamins A and C were added in the form of cod-liver oil and tomato juice.

The amount of vitamin B and salts and also of fat varied in the different diets. The Mohammedan diet, on which the animals developed the anaemia most rapidly, was markedly deficient in vitamin B (poor growth from the beginning of the experiment) and salts, and at the same time had a high content of vitamin-A-free fat. The Hindu diet, on the other hand, had more vitamin B and a very low fat content. The synthetic diets had what has been shown to be an adequate amount of vitamin B and salts. The animals on complete synthetic diet grew well. The common factor in the diets which led to the production of the anaemia was, therefore, a relative deficiency of vitamins A and C, or very possibly some other dietetic fault associated with this deficiency.

*Summary of a paper appearing in the *Indian Journal of Medical Research*.

The anaemia was severe, as shown by the extreme pallor of all the organs and by the blood counts. Haemoglobinuria was common. The most striking post-mortem feature, apart from the general bloodlessness, was the fatty, mottled liver. This organ appeared to be enlarged; but when its weight was charted against body weight it was found that the organs obtained both from intact and from splenectomized rats fell within normal limits. In cases exhibiting haemoglobinuria the bladder was distended with dark-coloured urine and the kidneys were large and very dark. The bone marrow showed no macroscopic change.

The blood showed the typical picture of a macrocytic anaemia. The red cell count fell in certain cases from 10 to 1.35 million, and the haemoglobin from 13.2 to 4.9 grams per cent. This fall was associated with a marked degree of anisocytosis; the average diameter of the red cells was increased from 5.9 μ to 8.2 μ. As the anaemia progressed large numbers of normoblasts appeared in the blood stream. But the finding that clinched the diagnosis of Bartonella anaemia was the presence of the characteristic rod-like bodies in the red cells (Fig. 1).

Splenectomy Experiments.

In order to confirm the diagnosis arrived at in the previous experiments, and to show that all the stock and experimental animals were infected with Bartonella, and in addition to test various lines of treatment, a series of representative animals were splenectomized. Sixty-six animals were operated on by Colonel McCarrison. Of these one died of haemorrhage from the pancreas in the first twelve hours; the others survived the operation well. Post-operatively all the animals were fed on the stock diet with the addition of unlimited whole milk; 25 had no further treatment, 17 were treated with liver extract, 12 with fresh spleen, and 11 with vitamin A concentrate (radiostoleum). With a few exceptions all the animals developed the anaemia; liver, spleen, and vitamin A extract afforded no protection against the "infection" in splenectomized rats.

The clinical, pathological, and post-mortem appearances were identical in the splenectomized rats and in those developing the anaemia as a result of faulty feeding, save that the former had no spleens and their blood picture showed an enormous polymorphonuclear neutrophil leucocytosis and a much heavier incidence of red cells "infected" with Bartonella. The leucocytosis is probably a direct result of the splenectomy as it occurs immediately after the operation; but the reason for the number of "infected" red cells being so much greater, although the anaemia is no more severe, is not clear.

Inoculation and Cultural Experiments.

With the exception of the above-mentioned experiments with pregnant animals fed on a Hindu diet all attempts to produce anaemia by the inoculation of infected blood into intact animals were unsuccessful. We were also unable to confirm Ford's[2] work with young rats. All attempts to culture the "organism" failed.

Discussion.

The interest of these experiments lies in the fact that it has been possible by dietetic means alone to produce a severe Bartonella anaemia in intact animals, the anaemia being of the same order as that occurring after splenectomy in infected rats. The diets used have one common fault—a relative deficiency in vitamins A and C. There were many other experimental animals in close contact with those which developed the disease, but although all were infected, as shown by the splenectomy experiments, only those fed on diets with this dual deficiency developed the anaemia. It seems safe to conclude, therefore, that the factor that renders intact rats liable to this anaemia is a dietary one. The present series of experiments is not sufficiently conclusive to determine the exact nature of the deficiency; the results suggest that either a relative deficiency of vitamins A and C or of some other closely associated dietetic factor, perhaps a specific anti-anaemia one as found in liver, is most likely to be responsible. The presence of the characteristic "organism" in the red cells clinches the diagnosis of Bartonella anaemia.

It is suggested that the deficiency, whatever be its exact nature, may have some effect on the reticulo-endothelial system comparable to that of vitamin A deficiency on epithelial structures; and that it is by virtue of this action that the natural resistance of the intact rat is overcome, even as it is overcome in infected stock by removing a large bulk of this tissue—that is, the spleen. In view of the importance of the reticulo-endothelial system in the defence of the body against infections, particularly protozoal ones, the experiments reported here may not be without significance in connexion with the incidence of these diseases in India, where a large section of the population exists on diets having the faults described above.

Summary.

1. A severe anaemia has been produced in rats by feeding them on diets low in vitamins A and C.

2. The anaemia was more frequent and more severe in females than in males.

3. Blood examination revealed the presence of *Bartonella muris* in the red cells of the anaemic rats.

4. Splenectomy experiments showed that all the Coonoor rats were infected with Bartonella.

5. Liver, spleen, and vitamin A concentrate failed to protect the rats from this anaemia after splenectomy.

We wish to thank Colonel McCarrison for placing the material from his earlier experiments at our disposal, and for his generous help in this work.

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TREATMENT OF ANAL FISSURE AND SPASM BY DIATHERMY.

BY

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The use of high-frequency currents in the treatment of haemorrhoids and fissures and other painful and ulcerative conditions of the anus was first advocated and practised by Professor Doumer of Lille in 1897. Doumer introduced into the anus a conical metal electrode attached to the Oudin resonator of the original high-frequency apparatus. A detailed report of eight cases treated by Doumer's method was published by Seeuwen[1] in 1906.

The advent of the modern diathermy apparatus rendered possible a greater and more sustained production of local heat, and Bensaude and Meyer,[2] by employing this current, were able to improve upon Doumer's original technique. They published a report of 114 cases so treated with markedly beneficial results. They made use of a modification of Doumer's electrode in their more chronic cases, but in the very acute ones they did not attempt to penetrate the anal canal even with a fine electrode, confining themselves initially to a saline pad pressed against the orifice of the canal. The indifferent electrode was a pad placed upon the lumbar region. Finally J. H. Marchand[3] reviewed these various methods in the *Journal Médical Français* in 1929.

Our own experience of the treatment of certain ano-rectal cases by diathermy leaves no room for doubt that it is a curative agent of considerable value. Cumberbatch has drawn attention to the efficiency of this form of treatment, but it is remarkable that it has been so little employed in this country. The types of cases most suitable for its employment may be roughly subdivided under two headings—acute and chronic.

Acute Cases.

These include: (1) simple anal fissure and other ulcerations of the ano-rectal mucous membrane; (2) inflammatory and ulcerative conditions of the anus associated with haemorrhoids; (3) cases following operations on haemorrhoids and other operations in this area, in which the mucous membrane has not healed. Such cases are always attended with a considerable degree of spasm of the sphincter ani. The spasm cuts off the blood supply to the underlying mucous membrane, and the resultant tissue

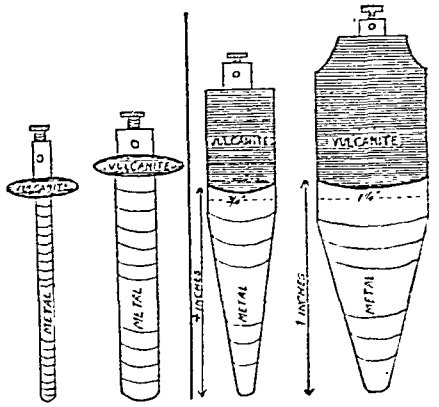
anaemia prevents healing from taking place. The pain caused by the unhealed mucous membrane sets up a reflex spasm of the sphincter, and a vicious circle is thus produced.

Chronic Cases.

The late results of all these conditions are not uncommonly seen. Fissures and ulcers have healed over by scar tissue, resulting in fibrous bands and contractions. The lumen of the canal is partially occluded, rendering defaecation painful and difficult. Constipation is induced, and the attempt to pass a normal stool produces a fresh tear. In such cases one frequently finds on rectal examination areas of old scarring and contracture in one segment and a recent tear in another, attended with persistent spasm of the sphincter. If the fibrosis exceeds the ulceration the stools are malformed. The attention of the patient is often concentrated upon these disabilities, and a definite state of hypochondriasis may be set up. If the ulceration exceeds the fibrosis, pain and spasm predominate.

Technique.

The patient lies on his side in the Sims position. We use as the indifferent electrode the metal abdominal belt described by Cumberbatch[4] and Robinson in the treatment of cervicitis. All towels and instruments should be sterilized, and complete asepsis observed.



Electrodes used in acute cases. | Electrodes used in chronic cases.

In very acute cases it may be found necessary to begin the first treatment by applying a pad to the anal orifice, as recommended by Bensaude and Meyer, with the object of reducing the spasm, but we have never met a case in which it has not been possible to insert a fine electrode before the completion of the treatment. All electrodes should be warmed to a temperature of thermal indifference with the skin, and well lubricated with sterile vaseline before insertion. The very greatest care should be exercised in introducing the electrode. We begin with a metal rod of 3 mm. diameter and of uniform bore. The sphincter closes tightly upon it. The current is turned on and very gradually increased until a sensation of warmth is appreciated by the patient, but it should never exceed 300 milliamperes with this electrode, because in very acute cases the patient is sometimes unable to distinguish the sensation of heat from that of pain. (Normally this transition takes place at about 115° F.) In a few minutes the spasm begins to relax, and the patient often volunteers the remark that the instrument appears to be falling out. The electrode *should be held in situ* for ten minutes. During this period a painful reflex spasm of the anus may occur from time to time, but this will gradually decrease and finally disappear. It will now be possible to move the electrode up and down quite freely without producing further spasm. It is then removed very carefully, and another of slightly wider bore inserted and retained for a further ten minutes. Treatment in the early stages should be continued daily or even twice daily. At each treatment the initial electrode should be of slightly smaller bore than that selected at the end of the previous treatment. In this way it is usually found possible to increase on each successive application, until full dilatation is obtained. The relaxation of the sphincter induced by the diathermy current remains for a considerable time after treatment, and defaecation is rendered less painful. Regeneration of the mucous membrane is promoted over the ulcerated surface by the increase in blood supply, and the passive dilatation of the canal prevents the occurrence of fibrosis.

In chronic cases in which stenosis of the canal has taken place as the result of fibrous contraction, and which are often the late result of operations for the removal of haemorrhoids or of old ulceration in this area, active ulceration is not usually present, although attempts to pass a stool of normal consistency may produce recurrent tears in the adjacent mucous membrane. The patient is driven to the use of every kind of purgative, the passage of a stool of normal size and consistency in some cases being mechanically impossible.

In these cases it is usually found possible to insert a fine blunt electrode without difficulty. The method we adopted was suggested to us by Dr. A. F. Hurst, who had previously treated cases with success. It consists in the use of a much more intensive application of diathermy, with the object of rendering the whole area flaccid and malleable. The anal canal is then dilated manually. Recourse is had to the conical electrode of Doumer. These we had made of varying gradients according to the type of case to be treated, the position of the stricture, and the degree of dilatation required. In no case should the electrode exceed four inches in total length, in order to ensure that its tip should not impinge upon the roof of the pelvi-rectal flexure. It is graduated at intervals of 1/2 cm. in order to check the progress made at successive treatments. The electrode is pushed forward until slight pain or discomfort is experienced, and is left in this position for a few minutes, and then further inserted. This process is repeated at each operation. The amperemeter is not a good guide as to current, because the surface contact varies in individual cases, and this increases as further dilatation is obtained. More than 1,400 milliamperes can be given. At the end of each treatment, which lasts from twenty to thirty minutes, the forefinger is inserted, and later both forefingers, and the canal is gently but firmly stretched. It will be found that a much greater degree of dilatation can be produced after diathermy than is possible without such application, and the tendency to spasm is very considerably reduced. The dilatation produced has in most cases been permanent, and there has been no recurrence of fibrosis.

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PROTEIN THERAPY IN INSANITY.

BY

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DURING a recent outbreak of dysentery it was observed that the blood of patients who eventually died of the disease showed the highest estimation in agglutinative properties. Although these patients had a considerable amount of specific antibody, it would appear that for some unknown reason they were unable to utilize it against the infection. Since complement is considered necessary in a reaction of this nature, it might be reasonably assumed that the amount present had been insufficient, or at least not in proper proportion to the amount of antibody and antigen.

It has been demonstrated in our laboratory that in order to produce complete fixation of specific antigen and antibody in known quantity, the amount of complement required had to be, within limits, in proportion to the amount of antigen and antibody. The complete fixation did not take place if the quantity of complement was too great or too small. Whether this applies to reactions in

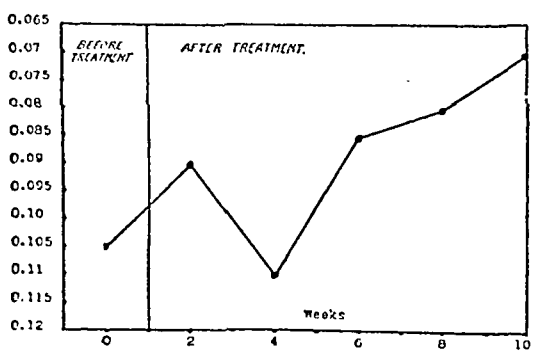
vivo it is difficult to say. Should this be the case, however, then it would seem that in order to get complete fixation of antigen in the body, complement will require to be present, within limits, in proportion to the quantity of antigen and antibody. In a given case of illness it is almost impossible to estimate the quantity of antigen, consequently the estimation of total complement presents obvious difficulties. As complement in the body is partly free and partly combined, estimates can only indicate the amount of free complement.

In "toxic confusional insanity" some cases after a short illness end fatally, while others presenting an almost similar clinical picture make a rapid recovery. Many clear up after months of confusion, while the more unfortunate victims develop permanent secondary organic changes in the brain. The duration and prognosis of the illness are in a great many cases a matter of speculation. Little or nothing is known of the toxins, their origin, or their antibodies, and consequently treatment tends to become non-specific. If the patient makes a rapid recovery it is reasonable to assume that he produced the necessary antibodies and complement to destroy the toxins. When he remains confused and physically exhausted for months, making no progress, it is possible that, as in the dysentery cases above mentioned, he is producing antibody but cannot make the balance in complement. The fact that confused and stuporose patients sometimes become clear mentally during an intercurrent illness may be due to the upsetting of the relative proportions of complement to antigen and antibody, thereby giving the antibody a temporary control over the antigen.

McIntosh[1] found that, apart from producing a slight diminution, the injection of vaccines had little influence on complement. McCully at this hospital, however, in some cases produced a fall, followed by a rise in free complement, by adminstering T.A.B. intravenously. Three asylum patients with very severe acne of several years' standing, resistive to all forms of treatment including vaccines, recovered only when they showed a rise in free complement.

Increase of Free Complement.

The following method appears to produce an increase of free complement in a considerable number of cases. Human serum when withdrawn and allowed to stand for a few days is alleged to become "anticomplemental," at least its presence in some way inhibits the action of the complement in fresh serum. On this hypothesis the "anticomplemental" serum is injected into the patient in the hope that any free complement in his blood will be absorbed, thereby stimulating a physiological increase of fresh complement—an analogy being the administration



Graph indicating complement based on figures from the table in cases which recovered from confusional insanity.

of an alkali to stimulate the production of HCl in the stomach. One cannot be dogmatic about the explanation of the reaction, but I find that the procedure can bring about an alteration in the value of free complement with beneficial results, especially in confusional states without secondary dementia. After injections of the serum, complemental estimates indicated an initial fall followed by a rise, the leucocytic cell count following the same curve. These results are shown in the accompanying graph. Injections given on alternate days produced better results than those given on consecutive days.

Technique of Treatment.

The technique is simple. About 90 c.cm. of blood are drawn into a test tube from the cubital vein. The test tube is rotated to prevent the clot from sticking to the side of the tube. The blood is put on ice; in twenty-four hours the serum is separated and centrifugalized; 2 c.cm. are retained for complement estimation and the remainder is put up in a sterilized serum bottle with a rubber cap. This is left on the ice for five days, 0.04 c.cm. of carbolic acid per 100 c.cm. of serum being added on the fourth day.

First Day of Treatment.—Two c.cm. of serum are given subcutaneously (abdominal wall), followed in one hour by 6 c.cm. The patient may complain of headache and slight shivering. He may become more restless and confused, and in about six hours the temperature usually drops to about 96.5°, the pulse rising to 100. A few hours later the pulse and temperature are again normal.

Third Day.—12 c.cm. of serum are administered subcutaneously. The patient is usually quieter, tends to sleep, and is more easily managed.

Fifth Day.—25 c.cm. of serum are administered

Sixth Day.—Blood is withdrawn for a second course of injections. Complement should be estimated in twenty-four hours.

Three or four courses of injections may be necessary before obtaining a rise in free complement. It is advisable to estimate complement before and after each course of injections.

The figures given in the accompanying table indicate the smallest amount of patient's serum which allows five doses of immune body completely to haemolize 1 c.cm of a 3 per cent. suspension of sheep's washed red blood corpuscles in a water-bath at 37° C. for an hour.

Results of Treatment.

After the first injections the condition of the skin and mouth becomes much cleaner, and the patient looks healthier. Although confusion persists, mental improvement is first noted in the fact that the patient is less restless, sleeps better, takes more food, and tends to be cleaner in his habits. Eventually the patient has short lucid intervals which gradually become longer. The improvement, which appears to have some relation to the increase in free complement, should take place in the course of a few weeks. I consider that by improving the patient's physical condition the treatment gives him a better chance of recovering from his confusion. A number of confused patients were treated in this way, the results being indicated in the table. It is possible that the "toxic" cases would have recovered if left alone, but they had all been in the observation wards before certification, and after admission to this hospital they continued to deteriorate both physically and mentally and to become dirty in their habits.

Other Methods of Producing Protein Shock.

Probably the treatment is a mild form of protein shock, the biochemistry of which is still obscure. My experience so far, however, has been that "toxic states" appear to improve with a rise in free complement.

In general paralysis, malaria inoculation, a dangerous and violent form of protein shock, is now past the experimental stage. It is generally accepted that varying degrees of remission can follow inoculation, but the underlying syphilis is unaffected to any great extent. Combination with antisyphilitic drugs is therefore imperative.[2] Bunker states that out of 2,460 cases treated with malaria 27 per cent. remitted, while in 542 cases treated with tryparsamide 35 per cent. remitted.[3] Fribourg-Blanc claims that with malaria alone 46 per cent. remitted, of whom 22 per cent. died later, while with malaria *plus* antisyphilitic drugs 66 per cent. remitted with a subsequent mortality of 6.7 per cent. The mortality in the first two months of malaria therapy is given by Meagher[4] as 40 per cent. McCully and I believe that any beneficial effects which follow malaria therapy are in part due to the auto-protein shock resulting from the enormous destruction of blood corpuscles which act as foreign protein. There are phases in the course of general paralysis during which it is almost impossible to tell whether the signs and symptoms are organic or toxic in origin. When remissions have been procured with protein shock the condition of the patient,

Case No.	Diagnosis.	Age.	Family History.	Duration of Illness before Treatment.	Complement before Treatment.	Complement after Treatment.	Result.
1	Confusional insanity, lactational	37	Insane	2 months	0.07	0.04 0.07 0.05	Became clear in a few days, but remained apathetic.
2	Confusional excitement, dementia praecox	25	?	5 years	0.03	0.05 0.05 0.07	Became quiet after years of excitement. Chronic acne cured.
3	Confusional insanity, puerperal	25	Insane	1 year	0.09	0.01 0.07	Recovered.
4	Confusional insanity, exhaustion	32	Insane	3 months	0.07	0.07 0.05 0.07 0.06 0.05	Recovered.
5	Confusional insanity, puerperal	30	?	4 months	0.07	0.12 0.09 0.07 0.05	Recovered.
6	Confusional insanity, lactational	27	Insane	5 months	0.07	0.09 0.07 0.05 0.06 0.05	Recovered.
7	Confusional insanity, exhaustion	17	Alcoholic	7 months	0.18	0.18 0.34 0.14 0.1	Recovered.
8	Confusional insanity, puerperal	21	Insane	4 months	0.22	0.12 0.14 0.12 0.12 0.09	Recovered.
9	Confusional insanity, exhaustion	21	Alcoholic	6 months	0.03	0.05 0.05 0.05	Recovered.
10	Confusional excitement, post-influenzal	21	? Insane	3 months	0.03	0.05	Recovered.
11	Confusional excitement, exhaustion	19	Negative	3 months	0.09	0.09 0.07	Recovered.
12	Mental defective, congenital syphilitic	24	Alcoholic	24 years	0.05	0.1 0.05 0.07	No change.
13	G.P.I., excitement, confusion ..	49	Insane and alcoholic	2 years	0.07	0.07 0.05 0.05	Became quieter.
14	Organic brain disease	52	Unknown	? years	0.03	0.03 0.05 0.07 0.35 0.05	No change.
15	G.P.I., excitement	57	Negative	? years	0.4	0.4 0.24 0.4	Became quieter, slept better.*
16	Epileptic, chronic	39	?	37 years	0.09	0.11 0.09 0.06 0.05	No change in fits. Acne cured.

* A persistent blood Wassermann reaction 16+ was reduced to 12+, but reverted to 16+ with fall in complement.

I consider, has been more toxic than organic. The use of relapsing fever (*Spirochaeta duttoni*) is even more dangerous, as its action cannot be controlled. It may set up violent inflammatory processes in the meninges, with coagula in the cerebro-spinal fluid, recovery from which is questionable. Antityphoid or T.A.B. vaccines intravenously give results which are almost as satisfactory as those of malaria. The shock can be controlled, and institutional treatment is not absolutely necessary. The shock influences the leucocytic cell count and the complement estimate. But again, as in all protein therapy in general paralysis, antisyphilitic drugs must be used.

The effects of protein therapy in encephalitis lethargica are only transient. In epilepsy injections of proteins have given varying results. The pathogenesis of the disease is so obscure that it is difficult in many cases to determine whether the condition is psychical, toxic, or organic. Results so far, however, seem to indicate that states of stupor, confusion, and excitement may be ameliorated, but the disease as a whole is uninfluenced.

The same difficulties arise in dementia praecox. In the early untreated cases remissions from stupor and confusion take place, indicating that the psychosis at this stage is probably more toxic than organic. Blume treated 33 schizoid women with neosaprovitan B, a preparation containing living air bacilli, cocci, sarcinae, and dead *coli* vaccine. Of this, 0.001 to 0.003 c.cm. is administered intravenously every two to three days, gradually increasing to 1.5 c.cm. in a course of twelve to fifteen injections. The cases were treated on an average for three and a half months after the onset of the disease, with the following results: cured or improved 57 per cent., temporarily improved 7 per cent., and unaffected 36 per cent. Of 25 untreated cases, 40 per cent. were improved, 44 per cent. were unaffected, and 16 per cent. died.

Videla,[5] after using many forms of protein, considered that Witte's peptone gave the best results. A 5 per cent. solution is made in sterilized and filtered physiological salt solution. He discovered that the mode of administration gave varying results.

Intramuscular: Doses of 5 c.cm., 10 c.cm., 15 c.cm., and 20 c.cm. can be given into the gluteal muscles at intervals of 72 to 96 hours. The doses are modified according to the severity of the case.

Intravenous: Doses of 1 to 5 c.cm. give uncertain results.

Subcutaneous (abdominal wall): Used mostly in melancholia in doses not exceeding 5 c.cm.; 10 to 15 injections may be given. Anxiety was diminished in some cases.

Intradermal: This method was discontinued owing to the risk of sloughing and ulceration.

Within a short time of treatment the patient tends to become restful. There is some shivering, arterial hypotension, and rise in temperature. This is usually followed by sweating, bradycardia, and polyuria. The general reaction is over in twenty-four hours, leaving the patient feeling weak and with the desire to lie in bed. Contraindications are cardiac and hepatic diseases.

Over a period of five years Videla claims that out of 218 cases of insanity treated in this way 16 relapsed, 5 eventually recovering with further treatment; 44 are still undergoing treatment, 13 of whom are improving. The remainder were discharged "recovered." He considers that as a non-specific treatment peptone injections have given satisfactory results. He believes that the shock "modifies the colloidal equilibrium of the blood plasma."

Current literature gives little information about the influence of protein shock on complement, but I consider that it is a field which should be explored as the information obtained may be useful as a guide to the patient's reaction when undergoing this form of treatment.

I offer my thanks to Dr. A. M. Dryden, physician superintendent, for his courtesy in giving me permission to carry out the investigation discussed in the first part of this article, and also to Mr. Winkworth, our laboratory assistant.

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DAMAGE TO THE SCIATIC NERVE FROM INTRAMUSCULAR ADMINISTRATION OF QUININE.

BY

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A FEW cases have been reported in which nerve lesions have resulted from the injection of quinine in the vicinity of nerve trunks. The following case, in which the lesion affected the sciatic nerve, illustrates the necessity of avoiding important nerve trunks in administering quinine intramuscularly.

The patient, a male aged 30 years, attended at the out-patient department complaining of pain and weakness in the right leg.

History.

He stated that about three months previously he had attacks of shivering and fever on alternate days, and a doctor, diagnosing

malaria, injected quinine (amount unknown) into his right buttock in the region of the gluteal fold. Immediately the injection was made the patient experienced a sharp, shooting pain running down the sciatic distribution as far as the foot of the same side; the pain lasted only for a second, and was immediately succeeded by a feeling of numbness and heaviness in the limb.

The remainder of the history was difficult to obtain accurately owing to the patient's dull mental condition, but he stated that during the seven days following the injection the affected limb remained free from pain but paralysed; this period of freedom from pain was succeeded by a period with marked pain and tenderness in the limb, especially below the knee, this condition persisting acutely for twenty-five days and then gradually subsiding. The exact distribution of the pain during that period is uncertain. The limb gradually began to regain some of its power, and by the time the patient attended the out-patient department it had recovered sufficiently to enable him to get about unaided. Apart from the above symptoms, his health had been good.

Condition on Admission.

On examination there was marked wasting and flabbiness and weakness of the flexor muscles of the thigh and of the calf muscles of the right lower limb. There was tenderness on pressure over the sciatic nerve below the region of the gluteal fold, this discomfort being most marked in the muscles of the calf. Pain in the sciatic nerve distribution was induced by flexion of the thigh on the abdomen and extension of the knee. Examination of the superficial sensations showed an area of anaesthesia on the outer side of the right leg, extending from midway between the knee and ankle down to and involving the outer border of the foot, all superficial sensations being lost in this region. Some blunting of sensation was detected outside this area of complete anaesthesia. Marked hyperaesthesia, especially to pin-prick, was found in the inner half of the sole of the foot. Deep sensations were normal.

The knee-jerks were present, equal and brisk on both sides; the ankle-jerk was present and brisk on the left side, but absent on the right side. The patient could now walk, but his right leg was still very weak, and he was unable to rise on his toes on the affected side. He was obviously suffering from the effect of the injection of quinine given either into, or in close proximity to, the sciatic nerve.

The irritative effect of quinine given subcutaneously or intramuscularly is well known, the subcutaneous route sometimes leading to obvious sloughing. The intramuscular injection also causes tissue damage and muscle fibre necrosis, but here the damage is deep-seated and so usually only detected on examination of the site of injection post mortem in fatal cases. The danger of tetanus following intramuscular quinine injection is one that must always be kept in mind, the necrosed tissues affording a favourable nidus for any organisms that may gain access along with the quinine.

Recently the occurrence of fixation abscesses at the site of intramuscular quinine hydrochloride injections has been reported by Giglioli[1] in a series of cases of paratyphoid C infections. Of 59 patients with paratyphoid C infection, to whom intramuscular quinine was given, 20 developed abscesses at the site of the injection, containing short and long Gram-negative rods, the organisms apparently gaining access through the blood stream.

In view of the local pain produced by intramuscular injections of quinine, and of the various complications that may possibly result from this method of administration, many authorities consider the intravenous route safer than the intramuscular, and now employ it as a routine in all cases with marked vomiting or with any other symptoms, the presence of which makes it necessary to get the patient rapidly under the influence of the drug. If precautions are taken to use not more than 0.5 gram at a time of a soluble preparation of quinine diluted in not less than 5 c.cm. of water, and to inject this very slowly intravenously, I have never found any ill effects resulting from this method of administration. The action of quinine given by this route is more rapid, and all danger of local ill effects is also thereby avoided.

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A CASE OF NARCOLEPSY.

BY

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ACCORDING to Gowers the term "narcolepsy" is best applied to a condition in which there is a tendency to fall into a sound sleep for a short time, usually for a few minutes, rarely for an hour or more. It is distinguished from trance by the brevity of the attacks of sleep, by their strong tendency to recur, and by the fact that the patient can be roused.

The patient in this case was a girl, aged 19, who was admitted into the Hull Royal Infirmary under my care. She gradually began to be sleepy when 16 years old. At night she went to sleep naturally, but would waken in two hours, and was afraid of being alone in the dark. She would scream out, being terrified, and then doze off, but would not get a proper sleep. Gradually, however, she became a little better, and slept more naturally, but lately she has grown worse. She now sleeps two to two and a half hours, awakening always in a fright, then dozing off into an unsatisfactory sleep.

She rises at 7 or 8 a.m., falls asleep at her breakfast and at all her meals, and sometimes between her meals. This happens every day. Even when talking to anyone she goes to sleep, loses consciousness, and falls against the table, remaining in this position for two or three minutes until she gradually recovers. When she has finished her meal she does some housework, but if she feels the sleepy feeling coming on she lies down. Two months ago she left her work on account of the sleepiness; she stopped work of her own accord, as she was a good worker, and her employer did not want to lose her.

During the attacks she never bites her tongue, never passes her urine or faeces unconsciously, and she has had no difficulty in eating or drinking. She has fallen a few times and knocked her head without wakening. She often dreams, but has no nightmares. No giddiness is present, but she is slightly deaf. After an attack she seems to be quite fresh and to have benefited from the short sleep. She appears to work up gradually to the next attack. From four to nine attacks may occur in a day. They last on an average from ten to fifteen minutes, but they are getting longer. Sometimes she turns quite pale during an attack. The number of attacks increases during her periods to about nine a day; also during the week before and the week after; they are longer at this time, but not more severe. Her periods are regular and normal, and last four or five days. She has had no illness except measles when a child.

Examination showed her to be of very good physique. The heart, lungs, abdomen, and urine are normal. Pubic hairs grow as high as the umbilicus. She is mentally intelligent but emotional. The knee-jerks are equally exaggerated; ankle-jerks are present. There is no ankle clonus, but rectus clonus is present on the left side. The pupils are equal, and react to light and accommodation; there is no nystagmus. Abdominal reflexes are present and normal; the plantar reflexes were not elicited. The cranial nerves are normal. There is no hypotonus, no Kernig, no inco-ordination, no anaesthesia or hyperaesthesia, and no flexibilitas cerea. A Wassermann test was negative.

An examination of the patient for worms was negative. Her periods were regular, but these seem to have affected the sleepiness to some extent. Her eyes were examined by an ophthalmic surgeon; her throat, nose, and ears by a throat surgeon; her teeth were good. An *x*-ray examination of the skull was made and revealed nothing abnormal.

The conditions in which sleepiness occurs are: (1) epilepsy, (2) trance, (3) catalepsy, (4) encephalitis lethargica, (5) sleeping sickness (trypanosomiasis), (6) narcolepsy, (7) katatonic form of dementia praecox.

Differential Diagnosis from the Above Conditions.

In epilepsy (petit mal) unconsciousness lasts only a few seconds, and is almost always followed by headache. A trance lasts for hours, days, or weeks; hysteroid phenomena occur and other manifestations of hysteria. From catalepsy her condition was distinguished by the absence of muscular rigidity. The chief characteristic of catalepsy is the maintenance for hours of some attitude that would very soon fatigue a normal person; the limbs remain as if petrified. In encephalitis lethargica there is diplopia, or a history of it, and very often a moral change, or Parkinsonism may follow, or rigidity and weakness. It was not sleeping sickness due to a trypanosome, because she had never been abroad, and there was no wasting, as is always found in the late periods of that disease. It is more difficult to distinguish her condition from the katatonic form of dementia praecox. During her stay in hospital she had an attack of a hysterical kind, which might be described as approaching a maniacal nature. It was probably nothing more than a hysterical attack; it is well known that in

organic nervous disease patients may, and frequently do, get such attacks.

The treatment on which most reliance was placed was caffeine citrate 10 grains, liq. strychninae 3 minims, and nitroglycerin 1 minim. Gowers quotes a case of his in which a girl had attacks commencing at the age of 16 and lasting till she was 22. They were almost identical with those in the present case, and were arrested by the same drugs. These had no effect in this case. Later she was also given thyroid gland (dried) 2 grains, hormotone 5 grains, three times a day, with no effect.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

ANOMALOUS PETRO-SQUAMOUS VENOUS CANAL COMPLICATING MASTOID OPERATION.

A BOY, aged 5, was brought to me with acute mastoiditis supervening on chronic otitis media: the only unusual clinical feature was that the maximum swelling and tenderness were above and rather in front of the ear, the mastoid process itself appearing unaffected. This generally indicates a very cellular mastoid in which the root of the zygoma has become pneumatized, so that infection from the antrum can travel forward into the temporal fossa. An operation, however, revealed that the mastoid was diploetic, and practically acellular; and, as so often happens in such a condition, the dura of the middle fossa tended to come well down over the upper part of the antrum. The latter had been opened, and I was enlarging the opening upward, working (rather cautiously on account of the position of the dura) from within outwards with a hand gouge, when there was a sudden brisk effusion of venous blood. This was puzzling; I was too far forward to wound either sigmoid or superior petrosal sinus; and it is very improbable that the gouge used thus would penetrate a sinus wall, which slips away under it. I supposed that I had damaged a large dural vein. It was also inconvenient, to say the least, for the bleeding seemed to come exactly from the region of the aditus, which was only just exposed; and the packing necessary to control it interfered with proper exposure of the aditus and of the root of the zygoma. When the bleeding was controlled I found that a large vein or sinus, about 3 mm. in diameter, ran in a bony canal across the roof of the mastoid antrum, about 1 cm. deep, and parallel, to the surface of the squama, and above and somewhat superficial to the aditus. It was separated from the middle fossa by a complete thin plate of bone, but its inferior or antral wall may have been dehiscent.

In early foetal life the lateral sinus drains into the primitive jugular vein—which in the adult becomes the external jugular—through the post-condylic foramen, which pierces the root of the zygoma immediately in front of the bony external auditory meatus. Later the internal jugular grows up internal to the primitive, forms the jugular bulb and, after entering the skull, the sigmoid sinus, and thus provides the normal adult effluent of the lateral sinus; the post-condylic foramen then closes. Occasionally, however, the original primitive venous channel coexists with the normal adult arrangement; we then find a petro-squamous sinus grooving the inner aspect of the angle between petrous and squama, communicating anteriorly with the temporo-maxillary vein through a persistent post-condylic foramen, and posteriorly canalizing the superior margin of the petrous to enter the lateral sinus. The vein or sinus that gave me trouble appears to be a variant of this petro-squamous sinus, situated in the substance of the bone instead of grooving its inner surface.

The sinus and canal are interesting from three aspects: first, the condition might explain why in the case of an acellular zygoma the mastoid infection approached the surface anteriorly; secondly, it produces an anomaly very inconvenient to the operator, even when the possibility is known; thirdly, it must be somewhat rare; in the course of several hundred mastoid operations I have never encountered anything like it. Convalescence was uneventful.

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DEATH FOLLOWING AN ALVEOLAR ABSCESS.

THE following details of an unusual sequel to alveolar abscess seem to deserve recording.

A healthy man, aged 25, had had no previous illness except indigestion six months previously, when he was advised to have dental treatment; this he did not do. On February 1st I was called to see him, and found an alveolar abscess in the left lower jaw. He had had very little sleep for some nights and looked ill, but he refused to have the tooth extracted under gas. Two days later I saw him again; the abscess having broken inside the mouth he felt much better.

On February 6th his wife reported that he was quite well, except for a slight headache. That same evening at 5 o'clock, while having tea, he said, "Oh, my head," and fell off his chair unconscious. When I saw him half an hour later he was unconscious, breathing stertorously, cyanosed, and sweating. The temperature was 102°; the pulse was irregular, the rate being about 120. He had bilateral external squint, the pupils were small and equal, and there was no reaction to light. There was marked rigidity of the neck, arms, and legs. He had passed both urine and faeces. He remained in this state until he died five hours later. No post-mortem examination was allowed.

My senior partner, Dr. J. C. Griffiths, also saw this man, and we are of the opinion that he had a blood-borne infection in the brain which caused an abscess to form; this eventually burst, resulting in acute septic meningitis. The fatal termination was very sudden, and emphasizes the fact that a prognosis must be guarded, even in cases of what are called "minor ailments."

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RUPTURE OF THE HEART.

A FEW days ago a man, aged 65, dropped dead in the street. Inquiries from members of the family elicited the information that he had been complaining of pain in the chest and back, with aching in both arms, and numbness and tingling of the ring and little fingers of both hands, chiefly the right. These symptoms were not severe enough to cause him to seek medical assistance, and, apart from them, he enjoyed good health.

At the request of the coroner for East Lancashire, I made a post-mortem examination. The pericardium was found to be enormously distended, and, when opened, a large quantity of serum escaped, together with a large clot. On the posterior surface of the left ventricle there was a tear one inch in length. The aorta was normal, except for atheromatous deposits in the cusps of the aortic valve. The transverse branch of the left coronary artery was completely occluded by atheroma, almost two inches from its origin. Two inches beyond this point there was a patch in the posterior wall of the left ventricle, an inch in diameter and less than a quarter of an inch in thickness, in the base of which was the tear already referred to.

The case is interesting in view of the rarity of the condition and the absence of serious symptoms preceding death. My own interest in the case was enhanced by the fact that I reported a similar one in the *Journal* of July 16th, 1927 (p. 99).

Ramsbottom. C. W. CRAWSHAW, M.B., D.P.H.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

BORDER COUNTIES BRANCH.

RHEUMATIC DISEASES: CAUSATIVE FACTORS AND TREATMENT.

AT the annual general meeting of the Border Counties Branch of the British Medical Association, held on June 6th, Dr. MURRAY B. STEUART, the president, delivered his address from the chair, taking as his subject, "Rheumatic diseases: causative factors and treatment." He drew largely upon the discussions at the Bath conference on this subject in 1928 (*British Medical Journal*, i, p. 852), endeavouring to co-ordinate the various opinions with a view to arriving at a common denominator.

Dr. Steuart began with a word on the question of nomenclature, and after indicating the common confusion,

as shown by the various definitions given by recognized authorities, he mentioned with approval the classification put forward by the Ministry of Health, which had been adopted in many Continental countries, and which offered itself as a basis for the description and discussion of this wide range of allied diseases. The classification comprised three main groups—rheumatic fever and subacute rheumatism, non-articular manifestations, and chronic joint changes—and there were nine subdivisions.

Causation.

Turning to the question of rheumatism in the child, he quoted from Dr. Vining of Leeds University, who had spoken at the Bath conference on the pre-rheumatic child; from Dr. Dingwall Fordyce, who was in accord with Dr. Vining as to intestinal defect being a principal cause of rheumatism in the child; from Dr. Reginald Miller, who believed juvenile rheumatism to be an environmental disease, the environmental factors at work being centred to some extent around infection of the tonsils; and from Dr. Carey Coombs, who pinned his faith to the streptococcal origin of acute rheumatism, and was supported in that view by many other workers. Expert opinion during the last ten years had undergone a gradual and reluctant change, and even now it went no further than to admit that rheumatic infection in childhood must be included amongst the streptococcal diseases. The infection was caused, not by toxins alone, but by the streptococci themselves, which had been isolated from the exudate in cases of pericarditis, and occasionally, though not so commonly, from joint fluids, and had been cultivated directly from the blood stream as well. The answer to the question as to the portal by which these organisms entered the blood channels was as yet incomplete. That the tonsils were responsible was so probable that it might perhaps be treated as proved, though the evidence was indirect and inferential—namely, the fact that tonsillectomy was occasionally followed by an outbreak of rheumatic infection, and also that the streptococci of the tonsil were in the same category as those which were found normally in the human mouth and intestine. This latter evidence raised the question whether a portal of entrance might not be the intestine, a theory vigorously supported by Vining.

With regard to rheumatic disease in adults, Dr. Steuart again quoted various authorities, mostly those whose views were expressed at the Bath conference. According to Sir Humphry Rolleston rheumatic diseases might be streptococcal in origin, their clinical and structural differences being due to variation in the seed and inborn or acquired differences in the soil—namely, constitutional, endocrine, and other factors. One of the causes of chronic rheumatism much discussed was that of foci of infection. When the true cause could be discovered and efficiently treated, the result was undoubtedly dramatic, but Dr. Steuart thought the discovery frequently to be so difficult and illusory that treatment of the supposed cause often led to disappointment. Numbers of patients had had all their teeth extracted on the supposition that the septic absorption from them was the cause of their rheumatic state, and they had been grievously misled.

Speaking of the endocrine factors, Dr. Steuart said that the most obvious reason for bringing in these factors was that women at the climacteric not infrequently developed rheumatoid disease for the first time. Most of the exponents of the theory had confined their attention to the thyroid, though some had included the ovaries and other glands. Both hyper- and hypo-thyroidism might be associated with rheumatism; in short, the condition might be described as one of dysthyroidism, and the common factor was a lack of iodine, which might explain to some extent the reputed benefit produced by the administration of iodine in both rheumatoid conditions and Graves's disease. With regard to the ovaries, Cumberbatch and Robinson, in treating gonorrhoeal rheumatism by pelvic diathermy (which included the ovaries as well as the uterus), stimulated the ovarian function in such a way as to produce a return of menstruation after it had been in abeyance, and along with this there was a disappearance of arthritic pains and swelling and a return of full range of joint movement.

Treatment.

In speaking of treatment, Dr. Steuart confined himself to certain physical methods, the objective of which was the production of heat, either locally or generally. He thought that heat production in the treatment of these cases was justified by the habitual subnormal temperature of rheumatic subjects and their deficient capillary circulation. The application of heat by certain special means was capable of raising the temperature of the body, thus stimulating the circulation, increasing the metabolism, and encouraging the elimination of waste products, particularly lactic acid, which was one of the immediate causes of rheumatism and its allied diseases. He mentioned one case in which he had carried out Wilde's pyretic treatment of rheumatism—a treatment whereby pyrexia and sweating were encouraged. The case was that of a lad, aged 19, whose illness began subacutely with lumbago and some pain also in the sciatic nerve. He was put on salicylates for a few days, when he suddenly developed a typical attack of acute rheumatism, with a temperature of 101° F. His hands became swollen and sodden-looking, very painful, and incapable of movement, and the ankles were also affected. The administration of salicylates was stopped, and for an hour each day sweating was encouraged by the application of hot-water bottles and blankets (for want of special apparatus). Within four days the temperature had dropped to 99.4°, and the swelling of the hands had practically gone. In two more days the hands were normal, and the pain in the ankles had become very slight. The lad returned to work ten days afterwards, without cardiac lesion, and had been well since. In the method as used by Wilde a metal cover was employed, this being placed over the patient as he lay in bed. The cover had condensers inside, and steam was admitted to these condensers by a couple of pipes attached to a boiler at the foot of the bed. The escape of vapour was arranged by means of small holes in the condenser. The patient, enveloped in a sheet, lay on the bed in the moist-heated atmosphere for about twenty minutes or half an hour, and afterwards had a needle bath or spray or was quickly sponged down.

Another physical method for the treatment of rheumatic affections was diathermy, either by general or local application, and here again Dr. Steuart gave some account of successful cases in his experience. One case was in a woman, aged 22, who complained of rheumatic pains in hands and knees, and a sensation of coldness throughout the body. After four treatments on the condenser couch there was marked reduction of pain in all the affected joints, and a return of a feeling of warmth. After twelve treatments she had no pain at all, and had ceased to feel the cold. In this case he had combined ultra-violet treatment by mercury vapour with diathermy, but he attributed the improvement mainly to the latter. Ultra-violet radiation sometimes gave very good results in muscular rheumatism, but it was not so certain as diathermy. It was useful as an adjunct to other treatment in the way of improvement to the general health, but was disappointing in its results in the treatment of rheumatic diseases—other than muscular rheumatism—when used alone.

Dr. Steuart's general conclusion was that in the present state of knowledge there was no definite *causa causans* of rheumatic diseases, but that there were numerous contributory conditions, acting separately or in varied combinations, which were favourable to their incidence and development. These included improper environment, deficient diet, intestinal defect, endocrine imbalance, septic foci, and certain streptococci, either as normally present but in a non-resistant host, or abnormally virulent in a normally resistant host. As to treatment, again there was no royal road to complete and invariable success. When, however, some form of the disease had been more or less established, improvement or cure might be attained by combating toxic conditions by complete removal, or by treatment with antitoxins (using the term in the broadest sense), or by the use of measures, especially heat and diathermy, to assist Nature to reassert her resisting and eliminative powers.

Reports of Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF LARYNGOLOGY: SUMMER MEETING.

THE summer meeting of the Section of Laryngology of the Royal Society of Medicine was held on June 20th, under the chairmanship of Dr. DAN MCKENZIE. The morning session was devoted to a number of short papers and discussions, and the afternoon to a clinical meeting.

Foreign Bodies in Air and Food Passages.

Dr. D. A. CROW read a paper entitled "Thirty foreign bodies removed from the air and food passages." In the first case of the kind he ever handled, he said, he introduced a steel hook to remove a jagged half tooth-plate from the post-cricoid space in the oesophagus; the hook stuck, with unhappy results. He never afterwards attempted to use the laryngoscope until he had studied Chevalier Jackson's methods in Philadelphia, but since then he had never been unsuccessful in a case involving a foreign body. Coins impacted below the crico-pharyngeal bend were easy to remove if the case was treated in good time, if there had been no blundering attempts at removal, and if the operator bore in mind the tendency of coins to hide beneath the bend. Oesophagoscopy was in most cases quite a quick procedure. A general anaesthetic had been used in most of his cases; it was not impossible to use a local anaesthetic, but he preferred to avoid the psychological trauma this procedure involved. Among the cases was one in which *x* rays had failed to reveal two aluminium wires, and another in which a young child had inhaled part of a safety pin, but had had no symptoms, the vigilance of the general practitioner preventing a dangerous delay. In two cases dental plates had been swallowed during sea bathing. Laryngologists should implore dental surgeons to take far greater precautions to prevent teeth from slipping down the throat. Extractions should never be performed in a hurry, and a large gauze swab should always be placed behind the site of operation. On a tooth going down the throat, the dentist did not keep faith with the patient unless he at once procured radioscopic and bronchoscopic examination. In one case where the dentist had acted promptly, the crown of a molar was recovered from deep in the left lower bronchus with Jackson's side-grasping forceps, after bronchoscopy. While precise methods were available, rough or blind methods had little to recommend them, and it was for laryngologists to show that their technique rested on a scientific basis.

The PRESIDENT said that if the foreign body was large or had been *in situ* for some considerable time, or if signs of rupture of the oesophagus were present, the external operation should be employed. The deeper planes of the neck should not be opened more than was absolutely necessary, particularly towards the lower end of the neck and the mediastinum.

Mr. T. B. LAYTON defended the use of the "coin-catcher," saying that tragedies were caused, not by its use, but by its abuse. He thought also that if local anaesthesia were properly given, psychological trauma should not occur. Failures were sometimes brought about through a foreign body in the oesophagus setting up respiratory symptoms. He declared the use of the "coin-catcher" to be no more harmful than that of the endoscope, and it was a thing which should be taught to every student, so that when practising in some remote place he could deal with foreign bodies himself. Such bodies were sometimes caught in the last inch of the oesophagus, where they were very difficult to detect with the endoscope.

Dr. J. S. FRASER could not understand anybody preferring the "coin-catcher" to the endoscope; it was so much easier to remove coins when they could be seen. Mr. E. M. WOODMAN described the "coin-catcher" as a barbaric instrument, which in half the cases pushed the foreign body into the stomach. Mr. H. A. KISCH, on the other hand, said that much trouble in the war would have been avoided if students had been taught to use the "coin-catcher." Every case should have an anaesthetic, and the "coin-catcher" could be used with great precision and delicacy on an anaesthetized patient. Dr. DOUGLAS GUTHRIE spoke of the applicability of the external operation to foreign bodies in the air passages. Mr. M. VLASTO described a case in which he had dealt with an obstinate fish-bone successfully by pushing it into the stomach, and he suggested that similar cases might be fairly common. Sir JAMES DUNDAS-GRANT said that the "coin-catcher" had given long and useful service before the days of the endoscope, and was not by any means superseded. Mr. THACKER-NEVILLE feared lest students should use the "coin-catcher" on miscellaneous bodies such as bones. The endoscopists needed every opportunity of practising the use of the endoscope. No student of Professor Jackson could hear Mr. Layton "with anything but fierce rage in his heart." As for anaesthetics, most patients with foreign bodies were healthy and needed no anaesthetic beyond half a grain of morphine and a little cocaine paste on the epiglottis and the pyriform fossae.

Mr. HERBERT TILLEY said that his hospital's "coin-catcher" was in the museum, and he considered that the student should not be taught its use. In this country there was always a trained endoscopist within reach, even in remote districts, and a coin might remain *in situ* for forty-eight hours without much danger. Junior endoscopists often missed a coin in the oesophagus through not flexing the head sufficiently as soon as the constriction was passed, so that the tube overrode the coin. For local anaesthesia he recommended a swab of gauze soaked in 10 to 15 per cent. cocaine, and left for 10 or 15 minutes in each pyriform fossa. Professor Jackson had used this method practically always on adults, and where necessary on children. The speaker described how, when a tooth-plate had been retained in the stomach for six weeks, he had fed the patient for two days with strips of butter-muslin; she had then passed the foreign body wrapped up in the cloth. He also recounted a case in which, in spite of cellulitis and profuse suppuration, it had not been necessary to operate externally.

Mr. E. WATSON-WILLIAMS consigned both the "coin-catcher" and the probang to the museum. In the classical statistics, all the fatal foreign-body cases had been due to unsuccessful attempts at removal with these instruments. It was most important to have an *x*-ray examination immediately before endoscopy, and not to rely on one taken some hours previously. Dr. RITCHIE ROGER corroborated Mr. Vlasto's suggestion that a foreign body could sometimes with advantage be pushed into the stomach. He had dealt with a tooth-plate in this way. Dr. CROW, in reply, made a plea for the use of elegant methods.

Congenital Stenosis of Oesophagus Associated with Hiatal Hernia.

Dr. A. BROWN KELLY, in a short paper on this subject, said that persistent vomiting or regurgitation might be of oesophageal origin, and he went on to describe four cases in which oesophageal stenosis was associated with hernia of the lower end of the oesophagus and part of the stomach into the thoracic cavity: these had occurred in young children. He also referred to Akerlund's work on hiatal hernias. Mr. E. WATSON-WILLIAMS expressed gratitude for the light this paper threw on a case which had perplexed him; the diagnosis had been oesophageal carcinoma, and the constriction, halfway down the oesophagus, opened under a general anaesthetic, had disclosed the gastric mucosa. Dr. KELLY said the condition might be simulated by diverticulum of the oesophagus just above the diaphragm.

Diathermy of the Faucial Tonsil.

Dr. DAN MCKENZIE, in a paper giving details of gradual diathermy of the faucial tonsil, said that, although he preferred to remove tonsils by operation, owing to the speed of that procedure, diathermy was safe in ordinary hands, and of great use in the growing class of persons who refused operation. The whole tonsil or any part could be removed. He preferred to stop at the capsule; it was possible to leave a perfectly smooth fossa without any tonsillar tissue, keeping intact the anterior pillar and plica semilunaris. Symptoms—generally speaking, rheumatic—were relieved after the first or second application, and patients often wished to discontinue treatment at that stage. He always, however, removed the whole tonsil when the patient allowed him to do so. He employed the pointed

Benson electrode to prevent coagulation beyond the point of immediate application. The first coagulation should occur at the supratonsillar fossa, where most of the bacterial absorption probably took place. Difficulty began when the tonsil was reduced to the level of the pillars, for their removal caused much more pain. He always applied the electrodes with the pillar retracted, and, when he came near it, used the needle. The hard, firm feel of the capsule was unmistakable. The extension down towards the tongue could be dealt with afterwards. Diathermy might be given once a week at the beginning, but less often later; an interval should be allowed to let the reaction subside so that the tissue to be excised could be more clearly distinguished. The treatment need not be painful if the coagulated area were restricted and the pillars were left alone. Extensive or deep diathermy might induce a secondary haemorrhage during the separation of the slough, and for this reason the patient should not go out of the control of the operator. In reply to discussion Dr. McKENZIE said that he used surface anaesthesia and injected novocain. Separation of the anterior pillar was not necessary, nor was it necessary to carry the destruction through the pillar or the fibrous capsule, which did not harbour bacteria. Mr. H. BELL TAWSE said that diathermy might have as painful after-effects as section, but that it was more useful for patients who could not take an anaesthetic.

Granulomata of the Larynx.

Mr. E. WATSON-WILLIAMS described a number of cases of granulomata of the larynx caused by mustard or other irritant gas. After some years of painless hoarseness, symptoms of laryngeal obstruction were manifested, sometimes with aphonia. The neoplasm was composed entirely of granulation tissue, with a squamous epithelial covering; it was non-malignant. Sir STCLAIR THOMSON remarked on the rarity of these growths, and suggested their origin from submucous haemorrhage.

Avertin in Laryngology.

Mr. W. S. THACKER NEVILLE brought forward the subject of avertin as a basal narcotic in surgery. This drug, he said, was administered per rectum in doses of aqueous solution, according to body weight, 0.1 gram per kilo, and was absorbed with great rapidity. The only contraindications were kidney disease, low blood pressure, and gross sepsis from empyema. It was non-toxic, and could be given to children with great advantage. A local anaesthetic was usually given as well, for avertin was a basal narcotic, not an anaesthetic. So little ether was required that the after-effects were over before the patient recovered from the avertin. The blood pressure fell considerably, and lobeline and ephedrin were given after the operation. In nasal operations avertin allowed ether to be given instead of chloroform, and adrenaline could therefore be given with perfect safety.

Sir STCLAIR THOMSON thought that the paper might have been delivered with the object of warning laryngologists off avertin. He wondered how much of the effect was really due to the small quantities of miscellaneous anaesthetics which were given at the same time. Dr. LESLIE POWELL said that avertin was quite apt to cause death from respiratory failure unless the patient was carefully watched. Mr. THACKER NEVILLE, in reply, admitted that he preferred morphine and scopolamine and block anaesthesia. Avertin was useful, however, in intranasal work on children, and had a good psychological effect.

Cases and Specimens.

At the clinical session Mr. NORMAN PATTERSON showed a case of deformity of pharynx after an attempt at removal of the tonsils; Mr. WALTER HOWARTH, a case of carcinoma of oesophagus treated by lateral thoracotomy and radium (progressive improvement in swallowing after nine months); Mr. J. F. O'MALLEY, slides illustrating a case of endothelioma of tonsil treated by radium, followed by recurrence in abdomen, and death; Mr. E. A. PETERS, a section from a case of haemoptysis due to cryptal ulceration of tonsils, and also a section of papilloma removed from the left aryteno-epiglottic fold; and Mr. BELL TAWSE, a case of growth on larynx, attributed by the patient to "gassing" during the war.

PUERPERAL INFECTION BY THE PATHOGENIC ANAEROBIC BACTERIA.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on June 20th, with Mr. EARDLEY HOLLAND in the chair, Mr. A. J. WRIGLEY spoke on puerperal infection, with special reference to cases caused by anaerobic bacteria.

Mr. Wrigley said he hoped to publish papers on this subject in the future. Between the years 1922 and 1927 death from puerperal infection had occurred in 16 cases at St. Thomas's Hospital, and of these 6 had been cases of generalized gas gangrene. This number might represent an unusually high percentage, or the condition might be commoner than was generally supposed. He proposed to devote his paper to cases of infection due to the *Bacillus acrogenes capsulatus*. This organism, which had been isolated from soil, fish, milk, the bile, urine, mouth, and skin, was probably normally present in the faeces; but there was no evidence that it occurred in the upper part of the vagina or the cervix, or that any allied organisms were found there.

Specimens of lochia had been obtained from 50 cases, the technique employed being as follows: A sterile Fergusson's speculum was introduced into the vagina and the cervix exposed. A blunt, curved pipette, fitted with a rubber teat, was introduced into the cervix to a distance of about 1 inch, and 1/2 to 1 c.cm. of lochial material was withdrawn by means of the teat. This material was then expelled into a sterile test tube and cultured aerobically and anaerobically. In 50 patients from whom specimens were taken at the beginning of labour the *B. acrogenes capsulatus* was not found. In specimens from 100 cases, taken on the second, sixth, and, in some cases, ninth day of the puerperium, following a normal pregnancy and delivery, the bacillus was also absent. This led to the conclusion that the bacillus was not present before or after a normal labour, with the corollary that the organism must be introduced from without. This might occur by infection from the skin of the anal region during manipulation. A group of abnormal labours, 69 in number, was therefore investigated. In 13 of these cases the bacillus was present; the foetus had died *in utero* and, in some, gross manipulation had been necessary. At this point it was convenient to enumerate the conditions necessary to produce infection by the bacillus. First, there must be introduction from without, so that infection was liable to occur in cases requiring much manipulation. Secondly, the organism required suitable material for its culture *in utero*, and dead tissues, as supplied by a dead foetus, were particularly suitable. Thirdly, this material must remain in the uterus sufficiently long for the organism to multiply; hence infection was more likely to occur in cases where a dead foetus was retained for some hours or days. Finally, infection was more likely to occur if the maternal tissues had been damaged by manipulation. The lowering of maternal resistance and the virulence of the organism of course played a part in determining infection.

In 4 of his 13 cases, said Mr. Wrigley, the foetus had been dead *in utero* for some hours and considerable interference had been necessary. In all these the infection had been severe and the foetal and placental tissues were heavily infected. In 4 more cases, though the child was dead *in utero*, the damage caused by manipulation was thought to be slight. The bacillus was found in the lochia, however, for several days after labour, and associated with symptoms of puerperal infection. In 1 case the patient was eclamptic and a dead foetus was retained for five days; the bacillus was found in the macerated foetus and in the placenta on delivery, and also in the maternal blood stream immediately after death, which occurred shortly afterwards. In the remaining 4 cases, although the dead foetuses had been retained for periods varying from one to five days, bougies were used for induction, and there was no injury to maternal tissues; the bacillus was found in the placentae and the lochia of all 4 cases for several days, yet there were no symptoms of infection. It was impossible to predict beforehand what form infection by the bacillus might take in a given

patient, but some of the fatal cases attributed to shock, and possibly some of those ascribed to eclampsia, might be due to this organism. The possibility of infection might, and should, be suspected before the onset of symptoms if there had been gross interference or injury to maternal tissues, with a dead foetus *in utero*. The lochia should be examined early for the bacillus, and it should be identified by cultural reactions and animal inoculation. Treatment included prophylaxis by better midwifery, and early administration of antitoxic serum in large doses in all cases where the conditions for the development of this infection were fulfilled. The German advocates of hysterectomy were not justified in seeking such an extreme form of treatment. The lecturer concluded by stressing the danger of leaving a dead child in the uterus, and of performing any but the gentlest manipulations during its removal.

Dr. IVENS-KNOWLES described a case which had fulfilled nearly all the conditions mentioned by Mr. Wrigley, and in which recovery had occurred after the early administration of serum. Dr. J. WYATT said that among 100 cases he had helped to investigate the *B. aerogenes capsulatus* had not been found.

Dr. COLEBROOK said that there had been no deaths in Queen Charlotte's Hospital from this organism during the past two years. He suggested that, since it was found in the late war that an acidosis was essential for the growth of this bacillus in the blood, its rapid propagation in the presence of a dead foetus was due to the acidity of the dead tissues. He asked whether bicarbonate had been used to combat acidosis in cases of puerperal infection due to this organism.

In replying, Mr. WRIGLEY said that the reason the organism was not usually found was because either the patient was dead or else the organism was present in a state which was comparatively harmless. He had not used bicarbonate in the treatment of these cases.

Cases and Specimens.

Mr. H. K. GRIFFITHS recorded a case of lithopaedion, and a case of pregnancy in one horn of a bicornuate uterus. Mr. EARDLEY HOLLAND described a case of secondary melanotic sarcoma of the placenta with transmission to the foetus. He also showed with Mr. BREWS six specimens from an interesting case of fibromyoma of the uterus. Dr. J. BAMFORTH described three cases: the first, of carcinosarcoma of the uterus in a woman of 59; the second, of carcinoma supervening on a hyperplastic condition of the endometrium; and the third, of an endometrium of the abdominal wall following Caesarean section. Dr. IVENS-KNOWLES recorded a case of recurrent melanotic sarcoma of the clitoris with an unusually long history. Mr. RIVETT showed a uterus removed for intractable bleeding in a woman who had been treated with radium, and a cervical fibroid removed from a woman weighing 19 st.

ATYPICAL MENINGITIS.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland on May 23rd, with the president, Dr. R. J. ROWLETTE, in the chair, a discussion was held on meningitis.

Dr. R. H. MICKS in a communication on atypical meningitis, related that during last year he had seen three cases of meningitis which had presented the following unusual symptoms: (1) a cerebro-spinal fluid which was turbid with polymorphonuclears; (2) the absence of organisms as tested both by direct film examination and by culture on standard laboratory media; (3) a negative Boveri reaction; and (4) an atypical course in that two out of the three patients recovered, and the third showed a very striking and well-maintained improvement until sudden death with a normal temperature. Dr. Micks referred to the fact that a mild recoverable meningitis was undoubtedly more common now than was once believed. Encephalomyelitis and associated meningitis of various types had increased in frequency of late, especially the type associated with vaccinia and measles, while there had been sporadic cases which were not associated with exanthems and were not apparently similar in course or post-mortem appearance to encephalitis lethargica. This was exemplified by the six cases described a little over a year ago by Russell Brain and others. But in all these examples of mild meningitis the cell count was usually low, and the predominating cell was the lymphocyte. A marked polymorph increase is apparently very rare in a meningitis which is not due to recognizable bacteria. For this reason he had thought these three cases worth recording as something distinctly removed from a lymphocytic meningitis or a "meningismus." Two further points of interest in connexion with the diagnosis and treatment of meningitis were touched upon: the great diagnostic value of Boveri's reaction properly carried out in the case of a clear or nearly clear cerebro-spinal fluid, and, secondly, the very marked polymorph leucocytosis which might follow the intrathecal injection of a foreign protein. This rather alarming phenomenon was not sufficiently known; indeed, the author had only been able to find one reference to it in medical literature.

Dr. V. M. SYNGE then read a paper on a case of meningitis associated with mumps.

A boy, aged 9, first complained of severe headache and vomiting on May 4th. The temperature was 104° and the pulse 156; he was delirious and semi-conscious. There was incontinence of urine, the neck was stiff, and there was a slight doubtful Kernig's sign. The pupils were equal and reacted to light, the knee-jerks were brisk, especially the left, and the right parotid was swollen. A lumbar puncture yielded a clear fluid under slightly increased tension; the globulin was increased, but sugar was absent and the Boveri reaction was negative. It was sterile on culture and no tubercle bacilli were found; the cell count was 360 per c.mm. (lymphocytes). The patient gradually improved, and left hospital on May 21st perfectly well.

Dr. Synge remarked that the enlarged parotid, the character of the cerebro-spinal fluid, and the rapid recovery left no doubt as to the diagnosis of mumps meningitis. Roux had stated that meningitis occurred in 1 per cent. of cases of mumps; Dopter had given 9.8 as the percentage of cases of mumps which showed meningeal symptoms, but he did not regard all these cases as being true meningitis. In Dublin meningeal complications certainly did not reach these figures.

The PRESIDENT said that Dr. Micks seemed to have touched the kernel of the puzzle in regard to a number of diseases in which the organism which gave rise to meningitis was unknown; he thought that some such infection probably accounted for Dr. Micks's first two cases. The second case might have been caused by some organism of the influenza class, and the subsequent cardiac condition might have taken its origin from that organism. He mentioned a case of urticaria which he had treated some years ago and which showed symptoms of meningitis; he gave sodium salicylate and the patient recovered perfectly. No lumbar puncture had been performed and no such thorough examinations made as would be made at present.

Dr. J. O'CONNOR mentioned the case of a baby 10 months old, who had been vaccinated on May 3rd, and who had become ill seven days later, when he was cross, very restless, and had vomited. Next day the baby was quiet and apathetic, and on admission to hospital resembled a case of tetanus. Lumbar puncture was performed; the fluid removed under tension was perfectly clear. The Boveri reaction was positive. Following lumbar puncture, the tetany spasms had completely disappeared, but next night further spasms occurred, and there was some rigidity of the neck. When Dr. O'Connor had tried to obtain Kernig's sign, the whole musculature of the child's body was thrown into action. A further lumbar puncture was performed, and again Boveri's reaction was positive. Lumbar puncture had been employed three times subsequently, and on the day of the meeting a ventricular puncture had been made through the fontanelle, perfectly clear fluid being removed under tension. At first it was thought that the case might be one of encephalitis following vaccination, but the vaccination had not taken, as there had been no reaction at all. The child was afebrile and no focus of infection could be found.

Dr. CYRIL MURPHY mentioned the possibility of the infection in some cases similar to those described by Dr. Micks coming from the antrum, and producing

inflammation of the dura and a slight Boveri reaction. He referred to a case which he had recently seen in which this had occurred, the patient ultimately making a good recovery. He thought that too much reliance should not be placed on the Boveri reaction. Dr. A. HALPENNY said she had found that cases in which the cerebro-spinal fluid was clear and contained lymphocytes and polymorphonuclear cells, and in which an immediate positive Boveri reaction was obtained, were invariably tuberculous. Dr. G. E. NESBITT described the case of a woman who, after severe headache and vomiting, had become very dazed and had very indefinite symptoms. A lumbar puncture gave vent to turbid fluid, and anti-meningococcal serum was then injected. No organism was found in the fluid. Lumbar puncture was repeated on the following day, and more serum was injected. After three days a few meningococci were found with great difficulty. The patient made a complete recovery. Dr. Nesbitt thought it was possible to have meningococcal infections in which the organisms were so few that it was impossible to find them.

Dr. J. LAIT mentioned a case of tetanus which had been admitted to hospital with definite trismus. Lumbar puncture was performed; the fluid was quite clear, but there was a slight increase in the cell content. Serum was injected, and the following day lumbar puncture was repeated, 10 c.cm. of turbid fluid being removed. More serum was injected, and the fluid on examination proved to be full of pus cells. The patient's condition improved, and in two days the fluid was sterile. This case, he thought, brought out the fact that an increase in polynuclear cells followed the injection of serum. The patient made a complete recovery. Dr. A. R. PARSONS thought lumbar puncture would greatly enlarge the physician's conception of meningitis. He noticed that Dr. Micks had used a large amount of antitoxin empirically, which seemed a rather rash proceeding. He personally always had the fluid examined first to see if the meningococcus were present before he injected antitoxin. Dr. MICKS replied that in all his cases there had been clearly marked symptoms of meningitis, and the fluid had come out quite turbid. He did not regard any of his cases as cases of meningococcal meningitis. He thought it was necessary to inject meningococcal antiserum before receiving the report on the fluid whenever turbid cerebro-spinal fluid was found on account of the well-known difficulty in finding meningococci in some cases. If the infection was not meningococcal no harm was done, provided that care was taken to avoid protein shock in a sensitive patient.

Spirochaetal Jaundice.

Dr. G. E. NESBITT described a case of spirochaetal jaundice.

A man, aged 22, had been sent to hospital last November as a case of "acute abdomen." Three days previously, when working in the fields, he felt violent pain between his shoulder-blades; in the afternoon it became so severe that he had to stop working, and two days later he came to hospital. He looked very toxic, and there was a definite icteric touch in the skin. His tongue was very furred, the temperature was normal, and the pulse 100. He vomited practically without ceasing from the time of his admission. The urine contained albumin and there was a slight reduction of Benedict's solution. The case was at first thought to be one of either acute pancreatitis, *B. typhosus* fever, spirochaetosis icterohaemorrhagica, or trichinosis. The second day after admission his condition was much the same, and the vomiting persisted, he complained of severe thirst and very severe pain in his legs. A blood film showed eosinophilia; the blood culture was negative. Next day jaundice was very marked, but he was still vomiting and very thirsty; he passed no urine, and a crop of red spots developed on his shoulders. Next day there was bad hiccup, and Fisher's solution was injected. On the following day he was still passing no urine and complained of great abdominal pain, much like the pains in his legs; it was then thought that he must be suffering from some acute abdominal condition. Next morning he passed about 2 c.cm. of urine, greenish in colour, but containing no spirochaetes. The abdomen was rather distended and tympanitic, but soft. Pituitrin brought about immediate relief from the abdominal pain. At 1 o'clock he became very weak and said he could not breathe, and at 1.45 got a similar attack and died. The liver and kidneys were large and smooth; the mucous membrane looked as if some strong acid was dissolving it away. All the organs were intensely bile-stained, but histologically showed very little damage considering the toxic condition of the patient clinically.

Dr. Nesbitt said that spirochaetal jaundice was originally described by Dr. Wilde in 1886. From the literature, however, it appeared that the same disease had been reported many years before his time by numerous authors, the first being Dr. Lavy in 1849. Until 1914 nothing more was known about the condition than the clinical features, but in that year a number of Japanese authors described the discovery of a spirochaete which was found in the liver of a guinea-pig which had been inoculated with the serum of a patient who was infected with Wilde's disease. The speaker referred at length to the work by the late Dr. Adrian Stokes with Ryle and Tytler, which established the nature of the infection in the cases which occurred in Flanders during the war.

Dr. T. T. O'FARRELL said he had examined specimens from the lungs, liver, pancreas, spleen, intestine, and a gland from the stomach in this case. He found nothing in the pancreas, but there was an organism in the spleen; he had failed to find organisms anywhere else, except in the kidney. He was quite convinced that they were spirochaetes, but it was impossible to say whether they were leptospira and whether the spirochaetes were the causal organisms. Dr. J. LAIT said he had examined specimens from this case and had not found any spirochaetes. He thought it possible, however, that spirochaetes might have been present, but was confident that there were no leptospira. Dr. W. H. ASHMORE mentioned the possibility of the case being one of metallic poisoning, probably arsenic poisoning, and asked if the organs had been examined for arsenic. Dr. J. O'CONNOR recalled a reference in the *Medical Annual* to cases similar to the one described by Dr. Nesbitt. In one case (described by Dr. De La Verne) a man fell into a ditch; a few days later well-marked jaundice and epistaxis with complete cessation of urine developed. In this case it was proved that the man had not swallowed any virus. Another case was a man whose finger had been bitten; the bite was followed by a whitlow, and jaundice developed. He mentioned an instance where a guinea-pig was bitten by a rat and jaundice ensued.

Dr. NESBITT, replying, said he had thought of arsenical poisoning, but no evidence of arsenic had been found in the organs examined. He thought the organs would have shown more damage histologically than they did if it had been a case of arsenic poisoning. Patients with spirochaetal jaundice were usually reported to suffer from diarrhoea, but his patient had obstinate constipation.

PSYCHOSES IN GENERAL PRACTICE.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society, held on June 5th, with the president, Dr. W. BARRINGTON PROWSE, in the chair, Dr. HELEN BOYLE read a paper on the milder forms of manic-depressive insanity and cyclothymia in general practice.

Dr. Boyle said that the term manic-depressive was part of Kraepelin's classification, and embraced, according to this author, a variety of conditions from acute mania to marked alteration of mood in the sane. She made a plea for several subdivisions under the heading manic-depressive, and called attention to the association between some manic-depressive states and thyroid disturbances—hyperthyroidism, hypothyroidism, and possibly dysthyroidism, and also a group associated with hyperpiesis, arteriosclerosis, morbid intestinal stasis, and kidney trouble. Real progress, she suggested, could only be assured in the treatment of these cases by close co-operation between general practitioners (who saw and treated all the early cases) on the one hand, and those specially interested in neuro-psychiatry on the other. Kraepelin had written as follows: "Manic-depressive insanity includes on the one hand the whole domain of so-called periodic and circular insanity, on the other hand simple mania, the greater part of the morbid states termed melancholia, and also a not inconsiderable number of cases of amentia. Lastly, we include here certain slight and slightest colourings of mood, some of them periodic, some continuously morbid,

which on the one hand are to be regarded as the rudiment of more severe disorders, on the other hand pass over without sharp boundary into the domain of personal predisposition." People liable to marked variations of mood, said the lecturer, were familiar to all, and most people had at times suffered from, and at times benefited by, the feverish energy, optimism, and determination to put things through of the cyclothymic. They were, in moderation, invaluable to the community. In their euphoric stages, short of insanity, they were sublimely self-confident, and devoid of self-criticism and inhibitions, and by that temper which could feel no difficulties, fine feats could be achieved. Some were eminently worth-while people. Cyclothymia, which signified a nervous or mental illness with a cyclic tendency, was a term applied to mild manic-depressive states in patients who were not insane and very possibly would never become so. Few would object to being called cyclothymic, while many objected to manic-depressive as a description of their condition. A number of authors, continued the lecturer, had observed the similarity between the hyper- and hypo-thyroidic illness and manic-depressive states, and it was noteworthy that in some of the latter there was a history of enlargement of the thyroid during adolescence, sometimes accompanied by cyclothymic tendencies. It would be of great value if practitioners would take note of this condition in schools or private practice and confirm or disprove the observation that it was a forerunner of cyclothymia in adult life. The treatment of the adolescent with thyroid enlargement would have to be modified, for it could hardly be doubted that the youngster should be set free from competitive work or play of all kinds, and the strain and anxiety that accompanied them. The group of manic-depressive states associated with hyperpiesis which might show themselves in early adult life had one clear indication for treatment. The blood pressure, even when considerable, should only be reduced with great care, and the treatment should be accompanied by steam baths, colon douches, and other eliminative measures. The high pressure was required for efficient excretion, and unless this was secured by other means an attack of insanity supervened. In these patients a systolic pressure of 185 to 190 millimetres of mercury was usually the lowest limit which was safe. These patients in later life showed confusion and disorientation in their attacks. Even in these patients, if the blood pressure rose and elimination was successful, the attacks might clear up in twenty-four hours.

BOHLER'S TREATMENT OF FRACTURED FOREARM.

At a clinical meeting of the Devon and Exeter Medico-Chirurgical Society, held on May 29th, with Dr. C. VINCENT SMITH in the chair, Mr. R. WAYLAND SMITH showed a boy, aged 11, with a recent fracture of the right forearm, to demonstrate Bohler's method. In this instance, the radiogram taken before the fracture was "put up" showed marked angulation inwards of the radius at the site of the fracture, and a greenstick fracture of the ulna. Bohler's method was undertaken to improve the position, three days after the fracture. The result, as shown by a second radiogram, was excellent as regards the position of the fragments. Mr. Wayland Smith, who had had the advantage of learning the technique at first hand when on the Continent, said that his method made for a revolution in the treatment of fractures, although the United Kingdom had so far been slow in adopting what had become almost universal outside. He then gave a brief account of the technique. The patient, lying upon a table, had the thumb and three fingers of the injured arm covered with gauze and collodion to afford a non-slip hold for the operator. Then, with the arm suspended and fixed, counter-extension was obtained by grasping the hand. At the same time the bones were manipulated into position. When position was obtained, plaster was put on next the skin—no fabric intervening—from the knuckles to the bend of the elbow anteriorly, and the middle of the arm at the back. Gooch splints were then applied, and, finally, more plaster. Movements were encouraged from the moment the plaster had set. The lad in question had his arm put up on a Thursday, and was using a hoe and rake on the following Monday; the result, as estimated at the meeting fourteen days later, appeared to be excellent.

Reviews.

RENAL DISEASE.

VOLUME xvii of the large French textbook on medicine[1] published by Masson is a complete treatise on renal disease, dealing with the subject from every aspect—physiological, pathological, clinical, and therapeutic—and including within its scope diseases that come within the province of both physician and surgeon. It is written by WIDAL, LEMIERRE, and PASTEUR VALLERY-RADOT, and we are informed in the preface that Widal had carefully revised every chapter during the last few months of his life. The volume may thus be taken to represent the final opinions of this great French physician, whose lifelong work on the problems of renal disease is known in every country.

Considered simply as a statement of the views of Widal and his school, the large section on the different forms of nephritis is obviously important, and will amply repay study. Only a few points from this section can be selected for mention. It is interesting to find Widal, in a short chapter of four pages on "war nephritis," insisting on the fact that cases of this disorder differed neither in their symptoms nor in their evolution and pathology from the acute nephritis met with in ordinary civil practice. In the chapter on tests of renal function the majority of tests commonly employed in this country are referred to, a notable exception being the MacLean urea concentration test. The importance of the urea concentration in the urine is, however, adequately discussed. Four full pages are given to a study of "Ambard's constant," an estimation which must seldom be carried out in this country nowadays.—The greatest emphasis is laid on the estimation of the blood urea, and Mosenthal's test is also given due prominence.

The short chapter entitled "L'ancienne urémie" raises questions of the utmost importance and interest. Widal, while admitting at once that the essential etiology of uraemia is obscure, states that he has worked for twenty years to put some order into the chaos surrounding this problem. The chapter begins with the ordinary divisions of uraemia into: (1) cerebral (including such symptoms as fits, coma, amaurosis, delirium); (2) respiratory (including dyspnoea and Cheyne-Stokes respiration); and (3) gastro-intestinal (including such symptoms as vomiting, diarrhoea, and intestinal ulceration). "Petite urémie" is distinguished from the grave and violent "grande urémie," and a division into "urémie lente" and "urémie aigue" is also made. But Widal claims that these various divisions, though useful clinically, lead to nothing; and some functional classification of the different types of uraemia is essential for prognosis and treatment. In this textbook the division is therefore made into the types of uraemia associated with nitrogen retention (azotémie), chloride retention, and arterial hypertension, and it is emphasized that uraemia may be very different in all its aspects in cases which can be placed in one or other of these three categories. The progressive and fatal coma of cases with nitrogen retention contrasts greatly with the less dangerous uraemic fits of other forms of nephritis in which chloride retention and oedema are the chief features. The coma in cases with nitrogen retention is preceded by a period, often of considerable duration, in which the only symptoms are fatigue, languor, loss of appetite, and often subnormal temperature. These are to be regarded as the cardinal clinical signs of nitrogen retention. In cases of high blood pressure the clinical features are the same, with the one added feature of hypertension. In cases with chloride retention premonitory symptoms are often absent altogether, and the prognosis of a uraemic attack is altogether much more favourable. The conclusion is emphasized that it is only by close investigation of the category into which the individual case of nephritis fits—nitrogen retention, chloride retention, or high blood pressure—that any reasoned prognosis or accurate treatment is possible in uraemia.

[1] *Nouveau Traité de Médecine*, Fascicule xvii: *Pathologie des Reins*. Par Fernand Widal, A. Lemierre, et Pasteur Vallery-Radot. Paris: Masson et Cie. 1929. (6½ x 10, pp. 1024; 100 figures, 3 plates. 125 fr.)

This textbook must be regarded as the most complete account of all forms of renal disease, ranging from nephritis to tumours, at present available. It has all the merits of clear French exposition, and all the peculiarities dependent on the isolated position which French medicine chooses to occupy. It is well worth reading, since in the study of renal disease no one can neglect the work of Widal and his school.

JOHN OF GADDESDEN'S "ROSA ANGLICA."

THE name of John of Gaddesden is still familiar, for he is mentioned by his contemporary Chaucer, and one of his books, no doubt "clothed in black and red," hung at the bed's head of the Doctour of Physicke. The *Rosa Anglica*[2] was written about 1314, and was for long a standard work of mediaeval practice, though it contains but little that is original. The work appeared repeatedly in manuscript in the fifteenth, and was printed at least four times in the sixteenth, century. It was never rendered into English as a whole, but portions of it were translated by the late Dr. H. P. Cholmeley in his scholarly thesis for the M.D. degree in 1912. Miss WINIFRED WULFF now supplies a larger portion from a translation from the Latin into Irish.

We are accustomed to think of Irish literature as having had a glorious past, followed by complete eclipse, but the researches of the Irish Texts Society, working on somewhat similar lines to the Early English Text Society, show this to be untrue, and we welcome Miss Wulff's contribution, which appears as the twenty-fifth volume issued by the society. Miss Wulff, in a painstaking and illuminating introduction, mentions fourteen Latin manuscripts of the *Rosa Anglica* and six translations from Latin into Irish. She says of these translations that the language is Early Modern, and that, apart from the technical terms, it would be intelligible to any good "Irish speaker" of the present day. It is evident, therefore, that there were people in Ireland in the fifteenth century who preferred to read a medical author in the vernacular rather than in Latin. There was a similar class in England about the same time, and it would be interesting to find out for whom the translations were made—clearly not for Churchmen, who read Latin as easily as their native tongue. In England it may have been due to the fact that an abortive attempt was made in 1423 to improve the standard of medical knowledge by forming a College of Medicine; the Irish have always been, and still are, greater readers than the English, as is shown by the bookshops in Galway and Cork, which would do credit to towns of much larger size in this country. The translations may, on the other hand, be a mere prelude to that great flood of literature opened up by the translators of the Tudor period a hundred years later. But, whatever the reason, the translations into Irish exist, and Miss Wulff says that they are accurate and show how the Irish language can be put to technical uses. On the whole they are literal, and reproduce the charm and quaintness of the original, so that they read pleasantly, and are clear and to the point. It bears out, she says, "Stanley O'Grady's contention that the mediaeval Irish were, when they gave their minds to it, excellent translators, and could solve the problem of how to render closely from a strange tongue without distorting the idiom of their own."

Miss Wulff has done her editorial work excellently, has provided a useful vocabulary, a list of the medical works quoted in the text, and a bibliography. She has perhaps somewhat underrated the position of the surgeons contemporary with John of Gaddesden. Whatever may have been the case in Dublin, in London the surgeon was not necessarily associated with the barber. Before the union of the Barbers' and Surgeons' Companies in 1540 the Fellowship of Surgeons was a well-recognized body co-opting its own members, practising surgery only, taking no apprentices, and not concerning itself with teaching. Master John Arderne was a member of the fraternity, and as he mentions a few words of Irish it would be interesting to know whether Miss Wulff has seen any Irish translation of his works, which were largely circulated in England but were never printed in full.

[2] *Rosa Anglica* (seu Rosa Medicinae). Johannis Anglici An early modern Irish translation of a version of [illegible] book of John of Gaddesden. Edited, with introduction, glossary, and English version, by Winifred Wulff, M.A. Irish Texts Society, vol. xxv. London: Simpkin Marshall, Ltd. 1929. (6 × 9, pp. lix + 434; 1 plate. 25s.)

INSOMNIA.

IN a volume entitled *Insomnia: An Outline for the Practitioner*,[3] Dr. H. CRICHTON-MILLER has clearly made it his aim to deal with this subject from the practical standpoint. The theories and mechanisms of sleep are adequately discussed, but emphasis is placed throughout on the clinical and therapeutic problems which the disturbances of sleep present. The medical practitioner will certainly find in this book much useful advice as to the methods of dealing with his patients who complain of insufficient sleep. Treatment is considered from both the medicinal and psycho-therapeutic standpoints, and, incidentally, the author makes out a good case for the utilization of psychotherapy in general practice. The book concludes with a number of illustrative cases which serve as problems in diagnosis and therapy, as comparable as may be to the problems that confront the practitioner when he has to deal with patients suffering from insomnia.

Insomnia: How to Combat It,[4] by Dr. JOSEPH COLLINS, is a useful addition to a Popular Health Series. In an easy and readable style the author gives the general reader an account of the causes, nature, and functions of sleep, and makes a number of suggestions which should be helpful to those who are sleeping badly.

POPULATION PROBLEMS.

DR. WARREN THOMPSON'S book, *Danger Spots in World Population*,[5] makes no specific appeal to medical readers, but it will be read by medical men, as by other educated minorities, with painful interest. Dr. Thompson's thesis is, briefly, this: It is a truism that most of the greater wars of the past have been due to pressure of population. A nation or tribe outgrows its own resources, it sees a less prolific nation in political control of natural resources which the latter is unable to utilize fully, and takes what it needs by force. But the same provocation is afforded to-day. Certain nations—for instance, Japan and Italy—have populations far beyond the resources of their proper political sovereignties. Other nations—the British Commonwealth and France are cited—control politically territories that their natural-born citizens have not effectively colonized, and, indeed—partly for reasons of climate, partly owing to industrial specialization—cannot colonize. Sooner or later, unless some more rational expedient can be devised, the "swarming" nations will dispossess the others by force of arms of what those others are incapable of using to the best advantage. A better expedient would be peaceful agreement, and, to that end, a candid and exhaustive statement of the facts and the examination of such statements by an international body would be requisite. In this book the author provides some data and examines seriatim the population problems of the whole world. His estimate of the position in our country is pessimistic. "It appears, then," he writes,

"that Great Britain, with all its vast resources, has, in many respects, the most difficult population problem of all the over-populated parts of the world. If the Japanese and the Italians were to be given suitable lands, they could care for their numbers without undue hardship until such time as birth control will result in a slowly increasing or even a stationary population. For these peoples are less specialized in their work and mode of life, and are yet adaptable to a variety of environments. There seems to be no clear way out of the present situation for Great Britain. Birth control is rapidly spreading to the entire population—the birth rate is now only sixteen or seventeen—and it may soon fall to the point where there will be no natural increase or even a natural decrease, but it will certainly be some time before

[3] *Insomnia: An Outline for the Practitioner.* By H. Crichton-Miller, M.D.Ed. and Pavia. London: E. Arnold and Co. 1930. (Demy 8vo, pp. ix + 172. 10s. 6d. net.)

[4] *Insomnia: How to Combat It.* By Joseph Collins, M.D. Appleton's Popular Health Series. New York and London: D. Appleton and Co. 1930. (Cr. 8vo, pp. vi + 131. 5s. net.)

[5] *Danger Spots in World Population.* By Warren S. Thompson, Ph.D. New York and London: A. A. Knopf. 1929. (5½ × 8¼, pp. xi + 343 + x; 1 map. 12s. 6d.)

a natural decrease will roll up a deficit of five millions or more, which appears to be the surplus population to-day. The disposal of this surplus, consisting of the present army of unemployed and their dependants, as well as many of those in receipt of poor relief, is a problem that seems to us to defy any satisfactory solution."

It would not be hard to criticize details in Dr. Thompson's statements; to object that at some point his statistical basis is doubtful, at another point he has neglected such and such economic possibilities, and so forth. Again, it is certain that no readers—least of all, perhaps, those who imagine themselves to be most sophisticated—will really form a judgement of the issues upon wholly intellectual grounds. Anybody who has soaked his mind in Burke—and most Englishmen who take an intelligent interest in political evolution have soaked their minds in Burke—feels instinctively that the future of a nation cannot be foretold, for it will not be determined, by ratiocination. The future *may* be less gloomy than conscious reason would allow. Still, even such a reader will commend Dr. Thompson's undertaking. His book is pessimistic in the best sense of the word. He is not trying to make our flesh creep, but telling us what he thinks are reasonable deductions from what seem to be well-ascertained facts.

PROBLEMS OF MODERN THERAPEUTICS.

THOUGH "Therapy and Therapeutics: A Warning to Doctors, Clinicians, and Pharmacologists"[6] is but a small book, its author, Professor BOAS of Berlin, manages in it to discuss most of the problems of modern therapeutics, including in his survey such subjects as medical patents, quacks, polypharmacy, and valuable and valueless therapeutic publications. He is, as the title suggests, dissatisfied with the present state of therapeutics, which, in his view, is cumbered with relics of mediaeval superstitions that must be cleared away if the subject is to be established as an exact science. He opens with the famous statement made by Virchow more than half a century ago: "Therapeutics must seek the aid of pathological physiology to raise itself above the empirical practice of clinicians if it is ever to become a science, which at present it is not."

The author devotes some attention to the difficulties attending any endeavour to obtain exact and adequately controlled evidence about the value of therapeutic methods. It is very difficult, he points out, for manufacturers to get adequate clinical tests of a new drug even when laboratory experiments indicate that it is likely to be of real value. Clinicians of reputation are unwilling to organize tests with suitable controls, though they have at their disposal the clinical material that would enable them to do so. The result is that the drug is hawked round till finally it falls into the hands of certain practitioners who are notorious for the inevitability with which they obtain 100 per cent. successes with every new drug they examine. With a few publications from such sources the manufacturers are able to start a propaganda campaign, and therapeutics becomes cumbered with a new drug, which is probably no better and no worse than a dozen of its predecessors. Professor Boas feels that there is a need for some arrangement by which new drugs could be submitted to adequate and impartial tests.

NOTES ON BOOKS.

THE May number of the *Annals of Medical History*[7] contains three sketches of remarkable men—two French and one a Scotsman. Dr. B. B. Beeson of Chicago writes of J. N. Corvisart, whose portrait appears on the cover. Corvisart's diagnosis was sometimes almost miraculous, and of him it is told that on seeing a picture he exclaimed, "If the painter was exact the original of this portrait died of heart disease"; and this proved to be correct, as was also his disapproval of Napoleon's marriage with Marie Louise, who was so much his junior. Of Alphonse François Marie Guérin (1816–1895), whose portrait forms the frontispiece, Dr. J. C. Wilson of Philadelphia says that beyond the borders of his own country his reputation as a clinician has never properly been recognized. George Fordyce was famous for his Gargantuan daily meal and for the following episode, which Dr. W. B. Howell tells: when called in his days of poverty to a rich woman and finding himself intoxicated he reproachfully murmured "Drunk, by God," a description which, fortunately for the Scot, the patient knew applied to herself, and accordingly bought his silence for a hundred pounds. Fordyce is also mentioned in Sir Humphry Rolleston's MacAlister Lecture on medical friendships, clubs, and societies. Dr. E. H. Hume of New York writes on medicine, ancient and modern, in China, and Dr. R. H. Shryock on the public relations of the medical profession in Great Britain and the United States, an article which, as it covers the period from 1600 to 1870, is rightly the longest in this number; it naturally contains a good deal about homœopathy and other medical cults. This number is noteworthy for the information provided about the incunabula in three American libraries—those of the New York Academy of Medicine which possesses 117, the Washington University School of Medicine, and the University of Rochester. Dr. F. R. Packard in an editorial refers to other American libraries rich in incunabula, and reviews Dr. Peyton Rous's Linacre Lecture on "The modern dance of death," delivered last year in Cambridge.

The British Red Cross Society has produced a second edition of its *Hygiene and Sanitation Manual*, No. 4,[8] first published in 1914, and reprinted on several occasions. Under the editorship of Lieut.-Colonel G. S. PARKINSON the changed outlook on military hygiene and sanitation resulting from the great war has been embodied in this little volume. A large amount of information is set forth clearly and concisely, and over seventy illustrations, from the *Manual of Military Sanitation* and other sources, assist in explaining technical descriptions in the text. In one case the illustration seems to be more correct than the text. In describing the lay-out of a camp site, it is stated that "the 'sanitary area' is placed to the windward side of the camp." The illustration gives the correct position to leeward.

Economic Housekeeping,[9] by J. S. BAINBRIDGE, is a small treatise on food values and marketing which attempts to translate "the language of the laboratory into the dialect of the household." It begins with a discussion on the food requirements of the body, elementary and occasionally rather sweeping in its implications. The examination of household budgets and the marketing advice about meat, vegetables, fish, game, and fruit afford useful hints for novices, though it seems doubtful if it is necessary to inform any purchaser not to acquire meat that has an unpleasant smell or vegetables that are "limp and soft."

[6] *Therapie und Therapeutik: Ein Mahnruf an Ärzte, Kliniker und Pharmakologen.* Von Professor Dr. I. Boas. Berlin: S. Karger. 1930. (6¼ × 9¼, pp. iv + 79. M.3·80.)

[7] *Annals of Medical History*, New Series, vol. II, No. 3, May, 1930. Edited by Francis R. Packard, M.D. New York: P. B. Hoeber, Inc. London: Baillière, Tindall and Cox. (8½ × 11, pp. 253–350; illustrated. Subscription in Great Britain £2 2s. per volume of six numbers.)

[8] *British Red Cross Society Hygiene and Sanitation Manual*, No. 4. By Lieut.-Colonel G. S. Parkinson, D.S.O., M.R.C.S.Eng., L.R.C.P.Lond., D.P.H. Second edition. London: Cassell and Co., Ltd. 1929. (Fcap 8vo, pp. xiii + 245; 68 figures.)

[9] *Economic Housekeeping.* By J. S. Bainbridge, M.Sc. London: Williams and Norgate. 1929. (Cr. 8vo, pp. 150; 12 figures. 5s.)

PREPARATIONS AND APPLIANCES.

CAROTENE PELLETS.

THE preparation "carotene" put on the market by British Drug Houses, Ltd. (Graham Street, City Road, N.1) is very welcome, for it will facilitate clinical tests of the interesting results that have been recently recorded with this substance. Euler, Euler and Hellström[1] in 1928 showed that crystalline carotene produced effects similar to those of vitamin A; their results were confirmed in this country. Recently Green and Mellanby[2] found that pure carotene conferred complete immunity in growing rats against the development of spontaneous infection. Mellanby[3] had previously shown that vitamin A was an important anti-infective agent, and, in particular, had reported results which indicated that a rich supply of vitamin A might exercise a definitely beneficial effect in puerperal septicæmia. In view of this experimental work, which suggests that carotene may prove to be a protective agent of exceptional importance, extensive clinical tests are obviously desirable. The preparation is in the form of pellets for oral administration, and each pellet contains 2 mg. of pure crystalline carotene. Green and Mellanby found that about one-fiftieth of a milligram of carotene daily was sufficient to protect rats against infection.

"SOMNOSAL."

"Somnosal" (H. R. Napp Ltd.) is a combination of α-brom-iso-valerianyl urea with dimethyl-amido-phenyldimethyl-iso-pyrazolon. The makers claim that it is a reliable sedative, that its toxicity is negligible, that it is non-cumulative, and free from tendency to tolerance or habit formation. It therefore appears to possess all the virtues usually claimed for new hypnotics.

[1] *Biochem. Zeit.*, 203, 370, 1928.
[2] *Brit. Journ. of Exp. Path.*, 11, 81, 1930.
[3] *British Medical Journal*, April 12th, 1930.

ROYAL SANITARY INSTITUTE.

ANNUAL CONGRESS AT MARGATE.

THE Royal Sanitary Institute has been holding its forty-first congress at Margate during the past week. After the inaugural address by the president of the congress, Lord CORNWALLIS, who, in welcoming the gathering of delegates to Kent, reviewed the health problems of the county and the way in which they were being solved, the congress divided itself into seven sections and seven conferences, each "conference" consisting of representatives of a particular line of public service, in which discussions went on in some cases simultaneously.

Imperial Aspects of Preventive Medicine.

Sir ANDREW BALFOUR, presiding over the Section of Preventive Medicine, delivered an address on "Some imperial responsibilities in hygiene," which was in certain respects an echo of his recent Hastings Lecture before the British Medical Association. He declared that as a nation we could look with considerable satisfaction on the way in which, of late years, through local administrations, the medical and surgical problems presented by British possessions in the Tropics had been approached. One result of the recognition of imperial responsibilities in hygiene was that writers of books on health subjects found that they could no longer neglect the maladies of the Tropics, and those aspects of tropical pathology which had a bearing on the public health. It was refreshing to see, Sir Andrew Balfour declared, how the work on tropical hygiene had reacted on home hygiene. Teachers and expositors of hygiene found that they must widen their outlook, and view, not this little island only, but the vast Empire of which it was the heart and head.

Professor W. W. JAMESON, in a paper on "The education of health personnel," gave some account of the instruction given at the London School of Hygiene and Tropical Medicine in its new era. In speaking of the desirability that some general experience of practice should be obtained before this specialized course of study was entered upon, he mentioned that of the 33 students at present sitting at the London School for the D.P.H., 25 had qualified more than two years before their admission to the course, 15 had held residential appointments in hospital, 9 had done general practice, and 9 had held appointments abroad. Dr. ARTHUR E. HORN, consulting physician to the Colonial Office, spoke on the tropical training of sanitary personnel, and sketched the duties of sanitary officers in tropical colonies. Other papers contributed were on the training of sanitary inspectors and of health visitors.

Medical Officers of Health and "Encroachments."

At the conference of medical officers of health Professor HAROLD KERR (M.O.H., Newcastle), in his address from the chair, touched upon what he called the famous "Encroachments" Report of the British Medical Association. Professor Kerr said: "The inquiry into the charges against the public services was conducted [by the Association] fairly and dispassionately, although by the representatives of the persons who believed themselves to be aggrieved. Their verdict regarding the public health services was in effect 'Not guilty, but don't do it again.' They had to confess as the reasons for various clinical undertakings, lack of any existing means to cope with what was admitted to be an urgent social need, or the inability of private practitioners to meet that need adequately. Local authorities," Professor Kerr continued, "do not want to burden themselves with the cost of schemes for treatment, but they are compelled by public demand, in the absence of efficient alternative, to undertake the work themselves. There is no doubt that more skilled service could often be given in municipal clinics by part-timers than by junior and relatively inexperienced whole-time assistants, if the first claim of private practice could be provided for so as to obviate unpunctuality and irregularity of attendance. Take an ante-natal clinic. Compare the relative values of a part-time doctor practising his or her profession actively, and becoming more proficient every day, and a young man or woman, of no great seniority, who is shut off from active practice, and quickly loses the little knowledge of obstetrics that he or she originally had. Which is the more helpful to the woman suffering from some slight but potentially dangerous defect in her approaching confinement? While the immediate gain to the authority, both in practical results and financially, may sometimes be seemingly considerable, such a whole-time specialist post proves in most cases a mere cul-de-sac, offering no prospect of professional or material advancement to the holder; if not soon relinquished it results only too often in a narrow and cramped outlook, which greatly depreciates the efficiency of the officer. Whole-timers, in general, have been caught comparatively young and drilled more or less into the methodical ways of the office. In this respect the part-timer frequently fails in his record-keeping. Doctors were ever bad business men, but what keen business man was ever a good doctor?"

The New Health Unit.

Dr. A. B. MCMASTER gave the conference a review of the new arrangements in public health administration consequent especially upon the recent passing of the Local Government Act. He mentioned the desirability that each autonomous county district health unit should have at least one voluntary hospital and one county hospital within its boundary; hence the area served by the respective new county hospitals appeared as a possible basis for the review of county districts. The result would be that in each such area one county district authority or combination of such authorities would be the local sanitary authority—the body given power for the prevention of disease—while the county council would be the authority co-ordinating the treatment. The dissociation of these two sides of public medicine was not ideal, and the disadvantages would be minimized if the administrator of the county district health unit was authorized to carry out on behalf of the county authority any treatment schemes in the district concerned.

Dr. R. M. F. PICKEN dealt with the place of school medical inspection and treatment in the public health service. He referred to the statement by the Council of the British Medical Association in its recent Annual Report (*Supplement*, April 19th, p. 137), that it had decided to approach the Ministry of Health when suitable opportunity offered in regard to the central control of the medical services at present dealt with by the Board of Education, and that it was inquiring how far the local health authorities had power to refer to their health committees the question of school children. This decision would be welcomed by the public health service, and it was to be hoped that the opportunity of approaching the Ministry would occur soon.

Diseases of Domestic Animals from the Human Standpoint.

A lecture was delivered to the congress by Dr. O. C. BRADLEY, Principal of the Royal Veterinary College, Edinburgh. Diseases, the same or similar, in the lower animals and in man, he said, were often mutually illuminating. Diseases of the lower animals always held out the promise—frequently in vain, unhappily—that they would throw light on the disease of man. For example, when the *Field* distemper investigation was initiated there were those who hoped that some truth or other would be revealed that would solve or simplify the problem of human influenza. Though the hope did not appear to have been fulfilled, the investigation had nevertheless excited the interest of the comparative pathologist scarcely less than that of the veterinary practitioner. Canine distemper belonged to a group of diseases which, to the pathologist and clinician, had much mystery and fascination, and were at the present time the subject of intensive study. One interesting feature of virus diseases was that the virus might occur in different strains with different potentialities. There were said to be three different strains of the virus of foot-and-mouth disease, which strains were not mutually protective. Dr. Bradley dealt in special detail with two diseases of domestic animals which affected the well-being of man and in which both the economist and the pathologist were deeply concerned—namely, bovine tuberculosis and *Brucella* infection. With regard to the latter, he mentioned that although, fortunately, up to the present, Britain seemed to have enjoyed comparative freedom from this disease, it was possible that the freedom was more apparent than real. Up to a few weeks ago the total number of cases on record was seventeen, but in one issue of the *British Medical Journal* (May 10th) no fewer than five cases of a distinctly suspicious character were reported.

The recent outbreak of psittacosis was the subject of a paper read in the Section of Preventive Medicine by Dr. S. P. BEDSON. He said that the demonstration of a filterable virus as the cause

of psittacosis had found ample confirmation. Although undoubtedly filterable, the results would suggest that the virus at times was more filterable than at others. The commonest way in which infection from bird to man occurred was by direct contact. In the case of birds which were carriers, an intimate degree of contact was necessary for infection to ensue; but in the case of an acutely ill parrot it was obvious from the available epidemiological evidence that the disease could be transmitted to man without direct contact. From man to man infection did not spread readily, so that the disease never assumed the form of widespread epidemics like those of influenza, but there were scattered foci—house epidemics, each centred on a sick bird. In view of this fact the disease should be readily stamped out by putting an embargo on the importation of parrots at the first sign of trouble and forbidding the sale of the birds until the danger was passed.

We hope to deal with the later proceedings of the congress in our next issue.

CARE AND AFTER-CARE IN TUBERCULOSIS.

REPORT OF THE JOINT COUNCIL.

IT is a common complaint from persons responsible for the care of tuberculous patients that only too often the good results achieved by the sanatorium are frittered away for lack of adequate provision for the after-care of patients. The prognosis in many cases of tuberculosis is dictated as much by economic factors as it is by lesions in the chest; in other words, the patient's chances of survival in good health will depend as much as on anything else on whether he can or cannot get work of a kind that is suitable to a person in his physical condition. Laborious work, occupations calling for prolonged mental effort, or that must be carried on in unhygienic surroundings, invite relapse; but even in trades without these glaring defects the ex-patient may be at a disadvantage as long as he has to compete for employment with ordinary healthy people. Numerous schemes for the after-care of tuberculous patients are based on an appreciation of these facts; so many, indeed, that in 1924 the Joint Tuberculosis Council formed a special committee to survey "the employment of the consumptive," with special reference to "schemes at present in existence." This committee has so far prepared three reports, the last of which, recently published, consists of a detailed analysis of most of the existing agencies for the employment of ex-patients.[1]

After-care Committees.

From its survey of the activities of 124 care and after-care committees, the employment committee arrives at the general conclusion that all aspects of treatment and convalescence, and all work concerning propaganda, visiting of patients in their homes, provision of extra nourishment on medical grounds, and provision of medical appliances, should be the immediate responsibility of the medical staff of the tuberculosis department; but that all cases where financial assistance to patients and families is considered necessary after investigation; questions of part maintenance of homes while patients are undergoing treatment in sanatoriums or hospitals; advice about other organizations to which patients may be eligible to apply for assistance; submission of applications on patients' behalf; questions relating to employment of certain patients in ordinary or sheltered industry; and the organization of voluntary effort, should be referred by the tuberculosis officer to a subordinate officer with duties similar to those of the almoner in certain hospitals.

Attitude of Employers.

The difficulties attending efforts to find employment for tuberculous patients are brought out clearly in the second section of the report, which deals with the attitude of industrial concerns towards the employment of consumptives. In order to obtain the opinions of certain important firms, the employment committee approached 220 employers of labour on the question of absorbing ex-patients in industry, making it clear that from the medical standpoint the aim would be to recommend only ex-patients who could be certified as non-infectious. To this appeal the committee received fifty-five replies, varying, of course, in detail, but nearly all pointing to the conclusion that ordinary industry can contribute nothing of great importance to a solution of the problem at issue. Particularly in times of industrial depression would it be difficult, in fact almost impossible, to find in ordinary industry enough openings for consumptives competing in a limited market with healthy individuals. The fact that tuberculous patients are liable to relapse is very widely known, and is another factor militating against their employment by most firms. To workers in the tuberculosis field, says the report, the challenge of industry is to raise the percentage of those who are capable of being reabsorbed into ordinary industry.

Employment in Sanatoriums.

In the third section of the report the committee sets out in detail and analyses communications received from twenty-eight medical superintendents of sanatoriums on the subject of the employment of ex-patients on sanatorium staffs. Most medical superintendents in charge of larger institutions favour the employment of ex-patients in this manner—a consensus of opinion which has great practical importance. As the employment committee points out, if ex-patients formed only 25 per cent. of the 5,400 or so persons employed in sanatoriums, then their combined wages would amount to over £140,000 a year—that is, nearly four times as much as is paid to workers in the various employment schemes and settlements specially set up for tuberculous patients in this country. Employment in this important labour market should, naturally, be given on the understanding that its object is to restore the patient to health and working capacity, and thereby to promote the final aim, which is to increase the proportion of ex-patients that can return to an ordinary working life.

Village Settlements.

The medical, financial, and economic problems relating to the after-care schemes inaugurated by local authorities and voluntary organizations form the subject of the final section of the report. Urban and municipal workshop schemes—for example, the Spero workshops in London, and the factory in the field at Leeds—have not yet passed the experimental stage. At present they have to be so heavily subsidized that unless they prove to be a powerful means of restoring patients to health, or of providing occupations for patients who, on medical grounds, could not be reabsorbed into industry, it is unlikely that many similar schemes will be developed elsewhere.

A great part of this section of the report deals with the village settlements—in particular with the settlements at Papworth and Preston Hall, whose activities are discussed at considerable length. The approximate number of ex-patients employed in the industries in connexion with village settlements in this country is 340. The employment committee was unable to determine the capital expenditure needed for the establishment of these settlements, largely because the finances of the industries are so intimately bound up with the finances of the sanatoriums to which they are attached that subdivision of accounts is not always possible. It points out, however, that at Preston Hall, one of the largest settlements, the estimated capital expenditure of the industries is now £125 per settler; or, if to this amount is added the cost of housing the patient with his family—approximately £400 per settler—the total per settler is about £525. To this expenditure, points out the employment committee, local authorities originally responsible for the patients have contributed nothing, in spite of the fact that they have been freed from infective or potentially infective inhabitants, and have otherwise gained by having houses previously occupied by consumptives available for occupation by healthy citizens.

An important criticism of village settlements is that they cater for so few people. The employment committee suggests that settlers who have been in residence for a

[1] Report of the Employment Committee of the Joint Tuberculosis Council on Care and After-Care Schemes in Tuberculosis. British Legion Press, Preston Hall Industries, Aylesford, Kent. Price 1s. 6d., post free.

number of years, and in whom the disease has been arrested, should be replaced by others likely to benefit from such prolonged treatment under good hygienic conditions.

Conclusion.

In concluding its report the committee expresses the view that the primary aim of all schemes for care and after-care should be to increase the proportion of cases that can enter ordinary industry, rather than to cater for the permanent employment of disabled persons. It may be admitted that with an improvement of the industrial position throughout the country the unemployment figures among ex-patients are bound to fall, but there will always be a large number needing employment under the sheltered conditions of the village settlement.

TEN YEARS OF WELWYN GARDEN CITY.

[FROM A CORRESPONDENT.]

TEN years ago the spot in Hertfordshire upon which now stands a garden city four square miles in area, with 2,500 houses, and a population approaching 10,000, was occupied by open fields and woodlands. The more astonishing achievement, however, of the creators of Welwyn Garden City is that the charm of this countryside, twenty miles from London, has been in no way spoiled by such urbanization. Indeed, the red-tiled roofs and pleasant architecture, of controlled design, the delightful roads, with grass margins and trees, the open front gardens, with backs equally tidy and interesting, and without fences or obtrusive hedges, the abundant recreational provisions, the happy innovations in the nature of communal services, and the evidence everywhere of character and the open mind, make a refreshing picture. Such, by the way, is the intensive production of the cottage gardens, that the output of the area, though a town has now been placed upon it, is greater than it was while it remained purely agricultural land.

To celebrate the tenth anniversary of Welwyn, Sir Theodore Chambers, chairman of Welwyn Garden City, Ltd., with Dr. F. E. Fremantle, member of Parliament for the division, and other directors, entertained the members of the press. One impression made on the mind of the visitor was that, while this is a developing district, there is none of that untidy sprawl to be seen on the growing edge of suburbs. Welwyn is not merely a dormitory for city workers. It is a self-contained township, with residential, industrial, and commercial zones, and a rural belt all round it to preserve its country character. It already houses some forty-five industries, which have their carefully placed factories, with the houses for the workers within walking distance. Factory life in Welwyn Garden City is found in ideal conditions, with clean, roomy buildings, green spaces visible through the windows, and ample opportunities for the workers to take their midday meal at home and to take their evening recreation without being already exhausted by a scrambling journey from town. A number of sectional factories have been built on the unit principle, which are let on lease to manufacturers who do not desire to build their own.

The festivities included a pageant in which the fairies are supposed to leave the garden city to mortals, who thereupon build the city and sell each other houses. But the real story of Welwyn is equally romantic; it is the story of how the late Ebenezer Howard—to whom a memorial has been unveiled in the heart of the town—hastily borrowed £5,000 from Dr. Fremantle and one or two other personal friends to pay a deposit on the purchase of the land, which was going at auction. The vision and courage of Howard and those associated with him, who saw here the second garden city in England (the first, a pre-war conception, being Letchworth) deserve high praise. It should be said that the funds raised in this week of festivities are to be devoted to the provision of a larger cottage hospital; the growth of the place necessitates better provision, though it holds a record in public health. For the last three years the average death rate has been 5.66 per 1,000 (compared with 12.46 for England and Wales), and the infant mortality rate 20.19 per 1,000 births, compared with 69.33 for the whole country. The birth rate, too, is 40 per cent. higher at Welwyn; whether this has anything to do with the fact that in the cheaper houses a deduction is made from the rent for every child, and an addition made thereto for every lodger, we cannot say. There is an energetic health association, which runs child welfare clinics, schools for mothers, district nurses, and a first-aid centre, as well as the cottage hospital, but this does not seem to have eliminated the private practitioner, seven of whom practise in the town.

Other things in the garden city which the visitors were taken to see included the city stores, with eighty departments under one roof, instead of the usual row of miscellaneous shops; the theatre, with its special acoustic design and modernist decorations; the film studios, where a "talkie" was seen in preparation, and an exhibition furnished house, designed by two architects of the Garden City in consultation with the estate manager—a pleasing middle-class house, showing good workmanship and good taste, and, what is so rarely experienced in the modern dwelling, a harmony between the house and the furniture. Finally, the visitors found their way to the inevitable inn, but a place as little like the traditional public-house as can be imagined. Its gardens and pleasant outside aspect invite the guest to take his refreshment out of doors, and even indoors there are none of the depressing accompaniments of the ordinary licensed premises. The "Cherry Tree" is controlled by the Garden City Company, and is under disinterested management. Here Dr. Fremantle, in proposing the health of the press, claimed for Welwyn Garden City that it met practically the case for the preservation of the countryside as against urbanization and ribbon development, and that it was a type of all that is good in modern town-planning from the point of view of industrial efficiency and welfare, traffic freedom, and public health and amenities.

MEDICAL CONGRESSES, 1930.

THE following congresses and conferences on medical and allied subjects have been announced for 1930. Particulars are given below in the following order: Date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

June 28 to July 2.—Journées Médicales de Bruxelles. Brussels.

July 3–5.—National Association for the Prevention of Tuberculosis. London. Secretary of Association, Tavistock House (North), Tavistock Square, W.C.1.

July 10–12.—Oxford Ophthalmological Congress. Oxford. Mr. C. G. Russ Wood, 12, St. John's Hill, Shrewsbury.

July 20–25.—International Society of Microbiology. Paris. Dr. St. John Brooks, Lister Institute, Chelsea Gardens, S.W.1.

July 26.—International League for Combating Trachoma. Geneva.

July 26–27.—Belgian Congress of Neurology and Psychiatry. Liège. Dr. Leroy, 30, Rue Hemricourt, Liège.

August.—International Congress of Cytology. Amsterdam. Frau Professor Rh. Erdmann, Berlin-Wilmersdorf, Nassauischestrasse 17.

August 3–10.—International Society of Sexology. London. Professor F. A. E. Crew, The University, Edinburgh.

August 4–9.—International Veterinary Congress. London. Dr. F. Bullock, 10, Red Lion Square, W.C.1

August 5–9.—International Congress of Dermatology and Syphilology. Copenhagen. Dr. S. Lumholt, 45, Raadhusplads, Copenhagen.

August 12–15.—International Union against Tuberculosis. Oslo. Secretary of Union, 2, Avenue Velasquez, Paris, VIII.

August 18–21.—International Congress of Paediatrics. Stockholm.

August 26–29.—British Medical Association Annual Meeting. Winnipeg. Financial Secretary of British Medical Association, Tavistock Square, London, W.C.1.

August to September.—International Congress of Neurologists. Bern.

August.—International Congress on Miners' Phthisis. Johannesburg. International Labour Office, Geneva.

August.—Congress of Northern Neurologists. Stockholm.

September 1–6.—International Birth Control Conference. Zürich. Mrs. Janet Chance, c.o. A. S. Cobden, Esq., 10, Adelphi Terrace, W.C.2.

September 4–7.—German Pharmacological Society. Königsberg. Professor J. Schüller, Pharmacological Institute, Zülpicherstrasse 47, Cologne.

September 7–10.—German Society for Natural Sciences and Medicine. Königsberg.

September 14–18.—International Congress of Physiotherapy. Liège. Dr. Dubois-Trépagne, 25, Rue Louvreux, Liège.

September 15–17.—German Orthopaedic Association. Heidelberg.

September 22–27.—International Congress of the History of Medicine. Rome. Dr. F. Rocchi, Corso Vittorio Emanuele 173, Rome.

British Medical Journal.

SATURDAY, JUNE 28TH, 1930.

MOUNT VERNON HOSPITAL AND RADIUM INSTITUTE.

SOME seven months ago we were able to give an account of the conversion of the Mount Vernon Hospital at Northwood into an institution for the study and treatment of malignant disease under research conditions.[1] It will be recalled that in order to give effect to the decision to divert the activities of this hospital into an entirely new direction, the council of management secured the passage through Parliament of an Act permitting the use of the present land, buildings, equipment, investments, and income of the hospital for any purpose conducive to the attainment of its new objects. The bill necessary for this purpose became law on May 10th, 1929. Since the reorganization of the hospital the medical staff has been augmented by workers from other institutions chosen because of their interest and experience in the radium treatment of cancer, and by the appointment of a pathologist, a physicist, and a radiologist. The intention throughout has been that the clinical and laboratory staffs should work together as a team, the admission of patients being regulated solely according to the needs of the hospital as a centre of research and teaching. The influential committee advising the council of management in these and kindred matters recommended that a medical director should be appointed to co-ordinate the activities of the hospital and to lead the team, and for this post they have been fortunate in securing Sir Cuthbert Wallace, until lately senior surgeon to St. Thomas's Hospital and dean of its medical school.

A further stage in this matter was announced early in April in the course of a statement issued by the National Radium Commission and printed in our issue of April 12th (p. 714). The cardinal feature of the Commission's policy has been the concentration of national radium at a limited number of centres where there are medical schools with complete clinical courses and where treatment of patients can be combined with instruction in approved methods of radium therapy. Of these centres 12 have been nominated for recognition—7 in the English provinces, 4 in Scotland, and 1 in Wales. London has been treated as a separate problem in view of its position as the metropolis of the whole country. Here no centre of the standard type is being set up, but steps have been taken to organize two centres to carry out special work of national importance. One of these, the Westminster Hospital Radium Annexe, has been experimenting on behalf of the Commission with a 4-gram "bomb" in order to determine the value of mass irradiation and long-distance radium therapy. The other London centre, as announced by the Commission on April 2nd, will be for the development of post-graduate teaching in radium therapy, the facilities provided being available for the benefit of qualified medical practitioners from any part of Great Britain. This centre, the statement went on, would be located at Mount Vernon Hospital and the Radium Institute, the two institutions being reorganized for these purposes as a joint teaching centre "under a single control, as far as medical services, teaching, and research are concerned. In all other respects the two institutions will retain their separate identities." Negotiations between the three bodies concerned—the Commission, the Institute, and the Hospital—have since then been actively proceeding, and it is hoped that by the autumn the combined centre for research and teaching in radium therapy will be set up. We understand that already a working scheme has been drafted for affiliation between the Radium Institute in Riding House Street, the pioneer organization of its kind in this country, and the Mount Vernon Hospital at Northwood, whose constitution and supply of beds are particularly well suited to the purpose in view. The advisory committee of the Hospital will be reinforced by representatives of the Institute, and co-ordination of clinical, laboratory, and teaching services will be secured by enlarging the sphere of responsibility of the director.

It is recognized by all concerned in the joint project that one of their primary duties is to increase the number of efficient workers in radium therapy by the establishment of a post-graduate school. This school would be under the control of a managing body reporting to the council of the Hospital and to the committee of the Institute, and comprising members appointed by both the participating bodies, together with representatives of the University of London, the British Institute of Radiology, and the British Post-Graduate Hospital and Medical School now in process of creation. It is proposed that the school thus formed shall be called the Mount Vernon Hospital and Radium Institute National Post-Graduate School of Radiotherapy, the duties of dean being undertaken by Sir Cuthbert Wallace, director of medical services and research at the new Mount Vernon Hospital. For the realization of this far-reaching scheme many things are needed, among them radium and money. An adequate supply of radium will no doubt be forthcoming from the Radium Commission. As regards money, the council of the Mount Vernon Hospital is issuing an appeal for funds to provide additional beds and greater research facilities, with the approval of its vice-patron, the Prince of Wales. That the educational aspect is being kept in the forefront may be judged from the preliminary announcement (published at page 1202) of a four weeks' post-graduate course in radiotherapy commencing on October 6th. The course is to be repeated at later dates, which will be advertised to the medical profession.

[1] *British Medical Journal*, November 16th, 1929, p. 916.

POLYCYTHAEMIA OF HIGH ALTITUDE.

DR. CARLOS MONGE'S monograph on what he calls "The erythraemias of altitude and their relation to Vaquez's disease"[1] is a very suggestive physiological and pathological study which shows that much further observation and experimentation of various kinds is still required to elucidate a subject already explained sufficiently to show that many points need further explanation or confirmation. Dr. Monge is professor of pathology in the University of Lima. He and those who have worked with him in the study of mountain sickness and acclimatization to high altitudes have had the advantage of living in a country, Peru, from the capital of which, only 160 metres above sea-level, elevations of 2,400 to 5,000 metres may be easily reached by mountain railway, so that symptoms due to altitude are not necessarily complicated with those due to muscular exertion and fatigue. Moreover, the

[1] *Les Erythrémies de l'Altitude: Leurs Rapports avec la Maladie de Vaquez. Etude physiologique et pathologique.* Par Dr. Carlos Monge. Préface du Professeur G. H. Roger. Paris: Masson et Cie. (2f 5s.)

whole subject has been facilitated by the writings of Barcroft, Harrop, and others during the last ten years, though much was already known before then, Paul Bert's original observation on the richness in oxygen of the blood of the llama in the Peruvian mountains dating from 1882.

Dr. Monge agrees, of course, that the polycythaemia of high altitudes represents a reaction to compensate for the diminished oxygen tension in the inspired air (and consequently also in the blood), and that this diminished oxygen tension is the cause of mountain sickness and of all the allied acute and chronic disturbances. The secondary polycythaemia and the associated symptoms he speaks of as a kind of "erythraemia," although by many writers the latter term is reserved for the Vaquez-Osler disease (splenomegalic polycythaemia), no certain cause of which has yet been discovered, and which is, therefore, an apparently primary disease of the bone marrow. Even the worst cases of "erythraemia" of high altitude are, indeed, obviously secondary, since, though in many respects they may closely resemble cases of the Vaquez-Osler disease, they are immediately remedied by residence at the coast or low elevations. Dr. Monge explains the steps by which the body adapts itself to high altitudes—at first by the spleen emptying its reserve of blood into the circulation and subsequently by the increased production of erythrocytes—leading to perfect acclimatization in suitable individuals, but not in others. Occasionally acclimatization may be lost, not only by individuals who have come from low altitudes and have acquired it, but even by individuals born in high altitudes and in whom acclimatization was therefore congenital. The only cure for such cases is shown to be descent to lower elevations, if not to the coast. What has happened in such cases? Apparently there has arisen some superadded hindrance to the diffusion of oxygen from the inspired air into the blood in the lungs.

It is certainly tempting to regard the various kinds of cases grouped together by Parkes Weber as examples of secondary polycythaemia of cardio-pulmonary, or rather of pulmonary origin (including "Ayerza's disease," from syphilitic disease of the pulmonary arteries), as due to interference with the pulmonary diffusion of oxygen, causing insufficient oxygen tension in the bone marrow. Such cases would therefore to some extent be analogous to cases of "erythraemia of high altitudes," excepting that the latter can be cured by descent to low altitudes, whereas in the former (being already in low altitudes) the oxygen tension could only be increased artificially, and probably only temporarily, by compressed-air chambers, etc. Dr. Monge, following suggestions of Harrop and Heath, goes so far as to believe that some of the cases clinically regarded as examples of the Vaquez-Osler erythraemia, and therefore of a primary disease of the bone marrow, may really be secondary to an interference with the pulmonary diffusion of oxygen due to a structural abnormality in the pulmonary epithelium. In regard to the subject as a whole he recognizes the importance of individual and familial constitutional proclivity. His monograph is of great interest from both the physiological and the pathological point of view, and is indispensable for those studying the problems of acclimatization to high altitudes. The observations on cases of what Dr. Monge calls "chronic mountain sickness" are of extreme importance. Obviously, in various kinds of polycythaemia further estimations are needed regarding the diffusion of oxygen from the air to the intra-pulmonary blood.

MEDICAL ADMINISTRATION IN INDIA.

THE Indian Statutory Commission returns in the second volume of its report[1] to the problems of recruitment for the medical services in India and submits detailed recommendations, together with the reasons that have led it to put them forward, for meeting the special difficulties presented by these problems, a survey of which appeared in the first volume of the report. In summarizing the relevant passages from the survey (June 21st, p. 1141) we directed special attention to the Commission's view that the maintenance of the European elements in the various services depends on the Government's ability to provide European doctors for the treatment of officers and their families. This view is once more emphasized in the second part. "European officers of the services," states the Commission, "lay great stress on the continued provision for themselves and their families of medical treatment by European doctors." The Commission, regarding such provision as essential, recommends that no change should be made in the present Devolution Rule 12, which gives the Secretary of State in Council power to prescribe the number of Indian Medical Service officers to be employed in the provinces, and the terms and conditions upon which they shall be employed; and that no effort should be spared to secure an adequate number of European recruits for the Indian Medical Service to implement this fundamental obligation. It will be recalled that, on the recommendation of the Lee Commission, All-India recruitment for the services employed in the transferred departments of the Government ended in 1924, with the one exception that each province was required to employ a certain number of officers of the Indian Medical Service. This exception was imperative not only because of the Government's obligation to secure European medical treatment for the European personnel and their families, but because it was obviously necessary to maintain a medical reserve for war. Recognizing, then, the need for encouraging European recruitment to the Indian Medical Service, the Commission proceeds to consider the conditions upon which future recruits to this and to other All-India services are to be employed. For the present members of the services it recommends simply that their existing rights and privileges shall be safeguarded; for new recruits it recommends the same rights and privileges, with the exception of the right of premature retirement. The Commission assumes that, as soon as possible after the new constitution is settled, a full explanation of the changes involved, and their implication for the services, will be made public, and that every possible step will be taken to ensure that prospective candidates are fully informed of the conditions under which they will serve. In such circumstances the Commission suggests that to grant recruits the right of premature retirement on pension before any case for it has been established would throw an unjustifiable burden upon Indian revenues. It does not pretend to be able to forecast the future of the services or to guarantee that conditions may not arise in which able and energetic officers will find their continuance in them impossible; it therefore puts on record its strong view that there should rest upon the Secretary of State for India a special obligation to see that officers who may join the All-India services hereafter are treated in the spirit of the recommendations of the Joint Select Committee in regard to the services; in short, that every precaution should be taken to secure to the public servants the career in life to which they looked forward when they were recruited. Turning to public health problems, the Commission points out that the proper working of medical services, as of other matters which are entrusted to the legislative and administrative control of the provinces, demands co-operation between the Centre and the provinces,

[1] Cmd. 3569. Report of the Indian Statutory Commission, vol. ii. London: H. M. Stationery Office. 3s.

and between province and province, setting up as an example of the kind of methods which it thinks should be adopted the recent institution of the Council of Agricultural Research. Improvement of public health in India, the increase in the supply of trained nurses and doctors, and the reduction of infant and maternal mortality, might be materially promoted if there were a wider central organization staffed by competent officials, both men and women, whose business it would be to co-ordinate and encourage the work that is so much needed in these directions. In the Commission's view such a bureau would have functions that would extend beyond the range of the Central Medical Research Institute which was recommended two years ago by Sir Walter Fletcher's Committee.[1]

THE LISTER INSTITUTE.

IMPORTANT changes in the staff of the Lister Institute of Preventive Medicine are foreshadowed in the recently issued report[2] of the governing body. Towards the end of this year Sir Charles Martin, director of the Institute, and Professor Arthur Harden, head of the department of biochemistry, will complete their term of service, having been on the staff of the Institute for twenty-seven and thirty-three years respectively. The governing body places on record its high appreciation of Sir Charles Martin's administrative ability, his many scientific achievements, his gift of securing harmony among the scientific staff and other workers who have enjoyed the hospitality of the Institute, and his services to commissions and committees engaged in the investigation of problems of preventive medicine. In equally felicitous terms it refers to Professor Harden's long and distinguished service, and recalls with pleasure that it was for researches pursued in the laboratories of the Institute for over twenty-five years that he received the high honour of the Nobel Prize in chemistry for 1929. Professor J. C. G. Ledingham, at present head of the department of bacteriology, who joined the staff of the Institute in 1905, has been appointed to succeed Sir Charles Martin; and Dr. R. Robinson, who joined the staff of the biochemical department in 1912, to succeed Professor Harden. Before proceeding to its survey of the researches that have been in progress during the year in the various departments of the Lister Institute, the governing body expresses its gratitude to the Medical Research Council, the Department of Scientific and Industrial Research, the British Empire Cancer Campaign, and the International Committee for the Study of Infantile Paralysis for their co-operation and help. With the financial support of the latter body, Drs. Fairbrother and Hurst have completed their research on the path of spread of poliomyelitis virus in the experimental animal. When they started their work the most generally favoured theory of spread was that the virus, entering the body by the naso-pharyngeal mucosa or by the intestinal tract, reached the central nervous system by the perineural lymphatics, and was then disseminated by the cerebro-spinal fluid. The primary lesion was held to be a meningitis which spread along the vessels of the anterior fissure to affect the anterior horn cells of the spinal cord. Drs. Fairbrother and Hurst by minute histological examination and search for the virus during both the incubation period and the period of symptoms found, on the contrary, that all the facts—especially the mode of advance of the lesions and the distribution of the virus after intracranial inoculation—pointed to the axis cylinders as the chief paths of the infective agent. Their experiments suggest the conclusion that meningitis never occurs in the early phases, but that the disease begins as a primary degeneration of the anterior horn cells accompanied by foci of interstitial inflammation in the interior of the brain and cord. Moreover, whatever the route of inoculation, histologically the infection spreads from above downwards, while the first symptoms are nearly always referable to the lumbar cord. The virus occurs most abundantly in those regions which show the most marked changes. Dr. Fairbrother, investigating the serum therapy of poliomyelitis, showed that serum from a horse that had been successfuly immunized by repeated intramuscular inoculations with a filtrate of poliomyelitis virus possessed antiviral properties comparable with those of human convalescent serum. It is hoped that this horse serum may be made available for therapeutic trial in man. Attempts to obtain complement-fixation with poliomyelitis virus as found in cord emulsions and filtrates and convalescent human and monkey serums have been consistently unsuccessful. Complement-fixation occurred with the serum of the immunized horse, but it occurred also with normal monkey cord as antigen. Drs. Fairbrother and Hurst have started experiments with a view to discovering whether coincident vaccinia can modify the reaction of the central nervous system to poliomyelitis. In later issues we hope to touch on other matters of outstanding clinical importance discussed in this report.

[1] The Organization of Medical Research in India. *British Medical Journal*, December 1st, 1923, p. 1001.
[2] The Lister Institute of Preventive Medicine. Report of the Governing Body, 1930. London: Chelsea Bridge Road, S.W.1.

THE MUSEUM OF THE ROYAL COLLEGE OF SURGEONS.

THE annual report on the Museum of the Royal College of Surgeons of England by the Conservator, Sir Arthur Keith, contains the reports of the curators of the several departments, together with prefatory notes by the Conservator. A prominent position is given this year to the subject of research. As is the case with all the great museums—the British Museum, the National Gallery, the South Kensington Museum, and others—the museum of the College has always been a place of research in the sense that workers from all parts are continually referring to it for information which may possibly bear on the subject of their investigations. But research work carried out within the walls of the College, although it has always existed to a certain extent, has hardly been recognized as one of the normal functions of the institution; it has never been definitely organized, and has been carried on in spite of inadequate equipment and financial support. These matters have now been corrected. The council has had an excellent laboratory erected, with adequate equipment for scientific work; it has also allotted some of the rooms of the old building to the exclusive purposes of research. Further, thanks to the effort of the president, Lord Moynihan, the College is now in a position to award scholarships, three of which will be available at an early date—namely, the Beaverbrook, Melchett, and Bernhard Baron scholarships, each yielding its holder £500 per annum. The Royal College of Surgeons has thus taken its stand as a centre of research. It will probably be found that the work undertaken at the museum, when compared with that conducted at other centres, is coloured to a large extent by the fact of its connexion with the museum. Successful experiments of such a nature as to allow of their results being placed as specimens on its shelves would seem to be appropriate to the normal working of a museum. Macewen's experiments on bone-grafting, the specimens from which are included in the collection, may be taken as a good example of this type of research. The annual report of the Conservator shows that the museum is a hard-working institution. Limitations of space permit of mention merely of a part of the work—that more especially of interest to medical men. The additions to the museum will be on view from July 3rd to 26th, and they include more than 150 pathological specimens illustrative of diseases of almost every part of the body. Among those of more than usual interest may be mentioned a fine series

of tumours of the testicle, a specimen of extensive ossification of the scar tissue around a gastro-enterostomy opening, hookworm disease, composite odontoma of the jaw, multiple deposits of melanotic sarcoma in the liver of a child secondary to a primary growth in the mother, generalized osteo-sclerosis of the skeleton secondary to carcinoma of the prostate, congenital hyperostosis affecting various parts of the skeleton, calcifying round-celled sarcoma of bone, congenital atresia of the aortic arch in a man, aged 54, and a cornual pregnancy. There is also a large and representative series of joints, constituting the Strangeways Collection and illustrating the lesions of osteo-arthritis, rheumatoid arthritis, Charcot's disease, and gonorrhoeal and pneumococcal arthritis. A series which should attract the attention of surgeons consists of a number of trephined prehistoric Peruvian skulls. The results in most instances are quite perfect, without the least trace of inflammatory reaction, and are probably to be explained by the fact that the indication was merely to provide sufficiently large exits for the spontaneous evacuation of demons in otherwise healthy individuals.

TROPICAL VETERINARY MEDICINE.

SOME time ago we drew attention to the findings of a Colonial Office Committee set up, under the chairmanship of Lord Lovat, to consider the improvement of the Colonial Veterinary Service. The scheme of reorganization put forward included a number of suggestions, some of which have already been put into operation. It was proposed, for example, to institute a number of post-graduate scholarships to enable graduates with a degree in the biological sciences to take a veterinary qualification, or veterinary surgeons to take a science degree. This has already been done, and there will be awarded a number of these scholarships of the value of £250 a year, tenable for a period of up to four years. This is regarded as an interim scheme which will be in operation for ten years. By that time, it is hoped, the attractions of the service will have become obvious to the schools, and undergraduates will take a science degree and a veterinary qualification simultaneously. This will be rendered the easier by the fact that from 1931 the qualifying veterinary course in this country will extend over five years. A few weeks ago the Colonial Office gave effect to a second recommendation and appointed a chief veterinary adviser in the person of Mr. R. Eustace Montgomery, a veterinary surgeon with wide colonial experience and an excellent research record. One of the greatest drawbacks that the newly appointed colonial veterinary officer had in comparison with his medical colleagues was the absence of any post-graduate instruction in tropical veterinary science. This is the more surprising as Britain has three diploma courses in tropical medicine—at London, Edinburgh, and Liverpool Universities. The close relationship existing between medicine and veterinary medicine has long been recognized by the medical profession in these islands; that this is even closer in the Tropics has been shown by the fact that many colonial veterinary officers have attended the relevant parts of the human courses at these schools. But the veterinary officer has many special parasites and diseases within his own province. The Lovat Committee realized this and put forward certain suggestions, which we are pleased to announce have been acted upon by the University of Edinburgh and the Royal (Dick) Veterinary College. Beginning in October of this year, there will be held jointly by these two bodies a course for those study[illegible] tropical veterinary medicine (D.T.V.M.Ed.). [illegible] will be [illegible] the D.T.M. and H.Ed., will occupy six [illegible] alls [illegible] arallel with the tropical medical curri- [illegible] diploma in [illegible]tance. [illegible] has much in common. The course [illegible] course, like [illegible] further e[illegible] parasitology and entomology, [illegible]s, and run [illegible] of oxyge[illegible]riology, animal nutrition and [illegible] with which [illegible] [illegible]gieue, animal breeding in the Tropics, epizoötology, animal diseases in relation to man, utilization of animal by-products, and so on. The teaching will be essentially practical, aiming at the instruction of the young veterinary officer in the science of his profession rather than in the art of clinical veterinary medicine, a subject which, even more than human tropical medicine, can only be taught satisfactorily in the Tropics. Edinburgh is fortunate in the close relationship which exists between its university and its veterinary college. Members of the British Medical Association will remember that Principal Bradley of the Royal (Dick) Veterinary College was president of the Comparative Medicine Section at the Edinburgh meeting in 1927. Edinburgh is particularly fortunate, too, in having available members of the staffs of both institutions qualified to teach the various branches of the subject. The university has always been associated with overseas interests, and by this prompt recognition of the needs of the Colonial Veterinary Service, Edinburgh has again justified its claim to be a great imperial university. We congratulate it on the active steps it has taken to provide a diploma course which should do much to improve the health and the material prosperity of the overseas Empire.

LIGHT AND WORK.

A MOST interesting series of experiments have been carried out by a committee of the Department of Scientific and Industrial Research on the effect of distribution and colour on the suitability of lighting for clerical work. The rapid increase in the efficiency of common illuminants, which has been one of the results of the application of science to industry in recent years, has now made it practicable to employ for ordinary purposes a lamp that gives a colour closely imitating daylight. High claims have been made for the advantages of this artificial daylight. The committee has conducted an extended series of tests of these lamps under laboratory conditions, and these tests have been supplemented by full-scale trials under more practical conditions in several Government offices. The first tests were made in the National Physical Laboratory at Teddington, where a room was fitted up so that both the distribution and the colours of the light admitted to the room under daylight conditions could be simulated by artificial means. An artificial window was fitted, which admitted artificial daylight from a variety of lamps, and the room had also interior fittings for semi-indirect pendent lamps. The relative illuminations under these different conditions were estimated and charted, the intensity of the illumination being made as nearly equal as possible. Tests extended over six weeks; relays of clerks, three at a time, were employed at tasks with which they were thoroughly familiar. There were some differences of opinion among them about the light they found most agreeable to work in, but artificial daylight coming from the dummy window gave by general consent the most comfortable artificial lighting, fourteen out of eighteen observers being agreed on that. Indeed, it was remarkable that this sham window light was preferred to twice the illumination provided by pendants with semi-indirect bowls and tungsten vacuum lamps. It was evident that not the power of the light determined the choice, but the quality. Further, when the dummy window was replaced by a normal daylight window it was found that there was general preference for this, notwithstanding that the arrangements were made in such fashion that the source of the light received was unknown. Full-scale experiments were carried out in some Government offices. Trials were made also in an engineering office, employing upwards of thirty men, and the result of these was a practically unanimous acceptance of movable individual lights over the drawing-boards combined with a

[1] Illumination Research, Technical Paper No. 10. The Effect of Distribution and Colour on the Suitability of Lighting for Clerical Work. London: H.M. Stationery Office. 1930. 6d. net.

few larger units for general lighting. Various forms of artificial daylight were included in the trials, but there was no marked preference for these, and the lamps finally adopted were pearl or ordinary obscured lamps. In rooms where ordinary clerical work was done the evidence obtained was quite inconclusive. Where contrast was not apparent ordinary diffusing glassware could be substituted for the coloured diffusing medium without the difference being detected. The Teddington laboratory tests suggested that, with lamps giving artificial daylight colour, adequate intensity might be less than with uncorrected lamps, but the trials indicated that for clerical work the adequacy figure was practically the same for the two types, adequacy being gauged as the intensity at and over which complaints of insufficient light did not arise, a figure that has been rising slightly during the last few years. In all these trials the daylight lamps or fittings were the usual commercial articles. Tests showed that they cut out only the minimum of red and yellow necessary to produce the daylight effect. There was objection to high intensity blue light from direct ceiling fittings in low rooms, probably because of its "cold" effect. In basement rooms the best results were obtained from panels or artificial windows in the walls combined with indirect ceiling fittings or ceiling panels. It is in this type of room that artificial daylight has an advantage, especially where office accommodation is expensive. The conclusions reached are that natural daylight is without doubt the best form of illumination, and that where this is insufficient and needs to be supplemented by artificial lighting for many hours in the day, then artificial daylight is superior to ordinary artificial light for reinforcing the natural light.

STAPHYLOCOCCAL INFECTIONS.

THE second instalment of this year's volume of the *Guy's Hospital Reports*[1] opens with Sir William Hale-White's sympathetic memoir of Sir Alfred Fripp and his manifold activities. This is followed by an interesting symposium on staphylococcal infections, which occupies a large part of the issue. The first of these eight papers—on the natural history, prognosis, and treatment of staphylococcal fever—is by Dr. J. A. Ryle, who, following in the philosophical footsteps of Sir William Gull, takes a wide view of the subject, and points out that general staphylococcal infection is much better understood when regarded as a specific fever like pneumonia or enteric fever. Staphylococcal septicaemia is usually secondary to a cutaneous focus; it may lead to a natural fixation abscess (always a favourable sign), and is best treated by a copious fluid intake, six pints daily for an adult, good nursing, and early detection and discrimination in the opening of abscesses; vaccines and chemotherapy, Dr. Ryle adds, are probably best avoided. He particularly notes the frequency of sweating in all fevers due to infection by a staphylococcus. As would be expected from his recent Lettsomian Lectures, Dr. H. W. Barber deals thoroughly with skin lesions. "The mild, transitory, and superficial staphylococcal lesions of the skin are usually caused by an *albus* strain, the deeper, more inflammatory, or chronic ones to an *aureus*, or occasionally a *citreus*." He sets out in tabular form a list of staphylococcal dermatoses, with the strain usually responsible for each and the site of infection, and follows this with a comparison in parallel columns between staphylococcal and streptococcal skin infections. Mr. J. L. Joyce contributes a study of the renal cases which form a small but important group of staphylococcal diseases. It is generally agreed that in these cases the cocci reach the kidney through the blood stream from some peripheral focus of infection; accordingly, the treatment of any staphylococcal lesion in the deeper tissues should begin with that of the focus from which it has been derived. While on this point Mr. Joyce insists that a boil or carbuncle must not be opened until it has formed pus, and that the utmost gentleness must be practised in all manipulations concerned in its treatment, using the sharpest of instruments and avoiding all such procedures as squeezing. In regard to the secondary kidney lesions, he suggests that in the early stages a conservative attitude should be adopted towards surgical treatment. This contribution is followed by notes of two cases of staphylococcal perinephric abscess, one by Dr. Hugh Barber and the other by Dr. W. J. Cotton. Dr. J. F. Venables reports two cases of severe non-Addisonian anaemia due to gall-bladder infection with haemolytic staphylococci; Dr. L. J. Witts gives an account of staphylococcic septicaemia complicating Addisonian anaemia; and Dr. F. A. Knott writes on the differentiation of active and inactive leucocytosis.

[1] *Guy's Hospital Reports*. Vol. 80 (Vol. 10, Fourth Series), No. 2, April, 1930. Edited by Arthur F. Hurst, M.D.

HINTS FOR MEDICAL AUTHORS.

To the May number of *Guy's Hospital Gazette* Dr. R. D. Gillespie has contributed a useful article on the "Writing of medical papers." His object is to guide Guy's men who may feel called upon to add to the already vast output of medical literature. He mentions four varieties of medical publication: the paper that contains a new discovery of wide application, the paper that records and tabulates the factors involved in the original discovery, the monograph or summary of medical knowledge in a particular field, and didactic publications mainly constituted by textbooks. A more cynical writer might perhaps have included a fifth variety. For the construction of the literary edifice Dr. Gillespie lays down admirable rules. Thus the purpose and scope of the paper should be clearly stated. Sources of reference should always be verified. Tables and graphs should be kept to the minimum necessary for the reader's understanding. A summary of the results and of the conclusions drawn is necessary. While finding the definition of literary form for medical works fairly easy, Dr. Gillespie feels diffident in offering reflections upon style. He is sure, however, that a good style can be acquired; and instances as a proof the achievement of R. L. Stevenson, who laboured at the craft of literary workmanship and "played the sedulous ape" to masters of prose. Editors no less than readers would be grateful for the observance of Dr. Gillespie's four fundamentals of good style: brevity, rhythm, the correct use of words, and a knowledge of grammar.

THE AGE INCIDENCE OF CARCINOMA.

DRS. T. R. WAUGH and T. L. FISHER have recently contributed to the *Canadian Medical Association Journal*[1] a statistical analysis of the age distribution of 1,736 cases of carcinoma (all histologically verified) studied in the Department of Surgical Pathology of the Royal Victoria Hospital, Montreal, from 1915 to 1928. They do not find that the average age of incidence of malignant disease is becoming earlier. If, therefore, the real age incidence has not changed, it follows that the education of the public is not bringing patients to hospital earlier in the course of the disease. Taking the data as a whole, the age incidence of cancer in women is on the average about 5 years earlier than that in men, but, of course, the data are not numerous enough to allow of very satisfactory comparison of the sexual incidences for one and the same site. Cancer of the breast, an almost exclusively female site, contrasts strongly with cancer of the lip, a predominatingly male site.

[1] *Canadian Medical Association Journal*, vol. xxii, No. 5, May, 1930, pp. 618-627.

The former shows as heavy an incidence at 40 as at 60, and then a decline, the latter a steady increase to the age of 55 years, and but little decline thereafter. The data analysed by Drs. Waugh and Fisher support the suggestion that carcinoma arising from glandular epithelium tends to occur earlier in life than that from squamous epithelium, with two main exceptions—the cervix uteri and the prostate, which derive their epithelium from the mesoderm.

INTERNATIONAL PAEDIATRIC CONGRESS.

THE second International Paediatric Congress will meet in Stockholm from August 18th to 21st. The morning sessions will be devoted to the discussion of subjects chosen by the Swedish organization committee, of which Dr. I. Jundell is chairman and Dr. Nils Malmberg secretary; and the afternoon sessions will be kept open for the reading and discussion of individual papers. At the morning session on August 19th Dr. Alfred F. Hess, New York, will open the scientific proceedings with a paper on the biological effect of direct and indirect ultra-violet irradiation. For the morning session on August 20th the subject will be the physiological and pathological significance of the thymolymphatic system; and for August 21st, the psychology and psychopathology of childhood, their significance as a branch of paediatric research and teaching, and their application in medico-social work. These three subjects were chosen from the large number that were proposed by the national committees. Applications for membership should be in the hands of the committee as soon as possible, the latest date being July 20th, and applicants are asked to state whether they wish to attend the special performance of the opera on August 20th and to be present at the congress dinner on August 21st. Dr. J. C. Spence (3, Eslington Terrace, Newcastle-on-Tyne), who is secretary of the British committee, will supply information about the programme and travelling arrangements and about tours to Dalecarlia, Jamtland, Trondhjem, and Visby, which have been planned to follow the congress, and will send printed forms of application for membership and for the booking of rooms in Stockholm.

As already announced in these columns, the eighth International Congress of the History of Medicine will be held in Rome from September 22nd to 27th, 1930. The Italian Government has given the congress its support, His Majesty the King of Italy has been pleased to grant his distinguished patronage, and His Excellency the Head of the Government has accepted the presidency. The Italian Embassy hopes that individuals and institutions connected with medicine in the United Kingdom will participate as widely as possible in the congress. Detailed programmes, and special terms for travelling, may be obtained from the general secretary, Dr. F. Rocchi, Corso Vittorio Emanuele 173, Rome.

THE annual meeting of the Royal Medico-Psychological Association will be held at Oxford in the Sir William Dunn School of Pathology from July 1st to 4th, under the presidency of Dr. T. Saxty Good. At the afternoon session on Tuesday, July 1st, Dr. Good will deliver his presidential address on the history and progress of Littlemore Hospital. The morning sessions on Wednesday and Thursday will be given up to the reading of papers, and on Friday Professor G. M. Robertson will open a discussion on out-patient clinics. The social functions include garden parties at Littlemore and Warneford Hospitals, and at Nuncham Park, a civic reception in the town hall, and a reception by the Regius Professor of Medicine and Lady Buzzard at Magdalen College. The annual dinner will be held on July 2nd in Christ Church Hall.

Nova et Vetera.

A DOCTOR'S BILL OF 1824.

CHARLES DARWIN demonstrated the biological relationship of cats and clover. The familiar and fragrant pink clover needs the help of the bumble bee to fertilize its flowers. Field mice destroy the bumbles' nests and eat their grubs and honey. Cats kill the mice and thus indirectly help to fertilize the clover. No doubt there are other enemies of the field mice which keep their numbers down, but the above is a succinct account of one of the episodes of the struggle for existence. In a somewhat like manner we think that it might plausibly be argued that the Royal College of Physicians was responsible for the success, if not for the invention, of homœopathy. The College forbade anyone to practise physic within its jurisdiction without its licence. Consequently general practitioners could not charge for advice, but only for drugs supplied. Notoriously this led to over-drugging, for if the practitioner was to earn his living he must supply many mixtures, draughts, boluses, powders, and pills. The success of homœopathy was due to its abandonment of all drugs but the most inoperative, and in the smallest quantities.

These reflections were started by the perusal of an old doctor's bill, which Dr. F. H. Rudge of Lostwithiel, Cornwall, has kindly sent to us. It is an account rendered presumably in 1824 to Captain Boger of the Royal Marines, for drugs supplied and for attendance on him and his family by Mr. William Burgess, Surgeon, of Lostwithiel. It seems to have been promptly paid in February, 1824, but it had been running for some time, for the first item is dated May, 1822. The total was £6 3s. Nearly all of it was for "Mrs. B.," including one guinea for "Delivery." There was but little variety in the medicines, which consisted chiefly of "Powders No. 4," and occasional anodyne and laxative pills. Mrs. Boger had a supply of these No. 4 powders eighteen times between May 26th and June 25th, so it is to be hoped that they did not contain any very active ingredient. A charge of 2s. 6d. for bleeding occurs only once. Although, as a rule, attendances were not charged for as such, when Mr. Burgess was "Called in the Night" to Master B. he charged half a crown for the visit, besides charging for two laxative powders, a 2½ oz. mixture, a blister and dressing as well on the same date, so it would seem that this was more or less of an emergency call.

The confinement apart, no one item amounted to more than half a crown. Powders were charged at 6d. each. The charge for anodyne pills was 1s., and for laxative pills 1s. 6d. for an unspecified number. There are long and irregular intervals between some of the dates of items, which suggest that the family needed no attention or were away from home at those periods.

We know of no writer who comes near George Eliot in lively delineation of medical matters in the country at about the time of this account, and to her pages we turn, not in vain, for an illustration of the drug-taking habits of a country matron. In *The Mill on the Floss*, Chapter IX, the following dialogue occurs. The scene is the house of Mrs. Pullett (born Dodson), and she, her husband, and her sister are the speakers.

> "There's 'the pills as before' every night, and the new drops at eleven and four and the 'fervescing mixture 'when agreeable,'" rehearsed Mr. Pullett, with a punctuation determined by a lozenge on his tongue.
>
> "Ah, perhaps it 'ud be better for sister Glegg, if *she'd* go to the doctor sometimes, instead of chewing Turkey rhubarb whenever there's anything the matter with her," said Mrs. Tulliver, who naturally saw the wide subject of medicine chiefly in relation to Mrs. Glegg.
>
> "It's dreadful to think on," said aunt Pullett, raising her hands and letting them fall again, "people playing with their own insides in that way! And it's flying i' the face o' Providence; for what are the doctors for, if we aren't to call 'em in? And when folks have got the money to pay for a doctor, it isn't respectable, as I've told Jane many a time. I'm ashamed of acquaintance knowing it."

Mr. Pullett piously kept all the empty medicine bottles, etc., as a kind of anticipatory monument to his wife; an

attention which she did not resent, but took pride in, thinking of the astonishment of the neighbours "when I'm gone."

The name of William Burgess of Lostwithiel appears in the list of Members of the Royal College of Surgeons in London from 1800 to 1824. (It was not until 1843 that this corporation became the Royal College of Surgeons of England.) We learn through Dr. Rudge from Mr. Boger of Lostwithiel, the grandson of Captain Richard Boger, that the latter was born in 1781. He belonged to a very old Cornish naval family, and saw much service as a Marine officer. He is mentioned in James's *Naval History of Great Britain* as taking part in a cutting-out expedition off the coast of Denmark in 1808. His brother was Admiral Edmund Boger, and his cousin Admiral Richard Boger.

It is an instance of the irony of fate that, while the lieutenant of Marines finds a record in the roll of naval fame, neither his admiral brother nor cousin is to be found there, worthy as they seem to have been.

FIBROSES OF THE HEART.

THE ST. CYRES LECTURE.

FIBROSES of the heart was the subject of the St. Cyres Lecture, delivered by Dr. JOHN COWAN on June 4th at the National Hospital for Diseases of the Heart, with Dr. FREDERICK PRICE in the chair.

It was sometimes useful, said Dr. Cowan, to take stock of our knowledge, and to inspect critically the opinions in vogue and those likely to develop in the future. During the past thirty years many points which at one time were discussed only in laboratories had come into clinical practice. Only recently, for instance, had the significance of syphilis in heart disease been realized.

The diagnosis of myocarditis was not always easy. Associated myocarditis was always present in acute endocarditis, and it might also arise in many acute infections. In the case of one patient with acute rheumatism, who had returned to work after fourteen days in bed, a sudden relapse had followed; after another short period in bed the patient had again returned to work; the result had been an attack of sudden acute dyspnoea; he had died, and on post-mortem examination an inflammatory lesion of the aortic valve, spreading to the mitral cusps, was found, and there were septal lesions affecting the bundle of His. The diagnosis of myocarditis might also be made in cases of progressive heart failure without obvious cause. Slides were shown of a case in which, without an obvious heart lesion, the apex beat had steadily moved further and further from the mid-line. The case had begun with an attack of bronchitis, which cleared up without causing any apparent injury. Later, another attack of bronchitis was also shaken off successfully, but instead of recovering the patient had grown worse, and later had died. At necropsy myocarditis was found.

The cardinal symptom of coronary disease was, of course, pain. If a ligature were tied about a limb, and the muscles were then forced into continuous action, a sense of discomfort, and subsequently of severe pain, was produced; nor was it relieved except by removal of the ligature. The pain of intermittent claudication was similar to the pain of the ischaemic limb. In aortic disease with incompetence the diastolic blood pressure was low, so that there was some degree of ischaemia even when the patient was at rest. It should be remembered that an injured heart might perform well as long as no undue demands were made upon it. One of his patients with angina had been driven home in a car; he had then jumped out and run up the steps, and this exertion had been sufficient to induce an attack. It had been atypical in that the patient was restless and talkative throughout, and had tried to relieve the pain by belching up wind. The pain had subsided and his pulse had recovered for a time; then the pain recurred, the pulse failed, and finally the patient had died in the attack. Throughout it his pulse had quickened only very slightly. In a second case of angina, seen in hospital, the patient had given evidences of severe pain and anxiety. The pulse rate had risen from 80 to 100, and its strength had gradually failed. The patient had died six months later of an infarct of the left coronary artery. In another patient, a stevedore, there had been sudden violent dyspnoea. He was forced to lie down for a while, but recovered and returned to work. A few days later he had had a similar attack, in which he died. It was discovered post mortem that he had aneurysm of the heart. In yet another patient, this time a policeman, the chief symptom had been shortness of breath. He was a very stout man, and had been admitted to hospital, where he had recovered. Later he died, and at post-mortem examination his heart had been found to show the condition of ischaemic fibrosis.

It was important to recognize the connexion of abdominal symptoms with infarct of the heart. In one patient, a medical man, there had been pain round the xiphoid cartilage associated with flatulence and indigestion. The patient had believed that he suffered from gall-stones. Another patient, a woman suffering from nausea and vomiting, who had been diagnosed as dyspeptic by all who had examined her, sat up in bed and died suddenly of a ruptured heart. One patient with infarct of the heart had been subjected to abdominal laparotomy before Dr. Cowan was called to see him.

In some cases electro-cardiography was useful in the diagnosis, but too much was not to be expected. Deformities in the electro-cardiogram depended on an imbalance between the right and left hearts, and might disappear from the picture if, on healing, the balance was again restored. Prognosis, said the lecturer, was difficult. Most patients with angina died suddenly; in myocarditis the prognosis was at its best if recurrence could be prevented. Syphilitic cases were hopeful. In coronary disease there were wonderful recuperative powers if the treatment was sufficient, and the treatment lay in the one word "rest." Rest for several months was essential, and it must be absolute. Two of his patients had died at stool. In some cases large doses of bromide, even up to 60 grains a day, were valuable if the patient could not be persuaded to rest otherwise.

Dr. Cowan closed his lecture by saying that the poets had known all about the heart long before the scientists. He quoted from *King John*: "My heart hath one poor string to stay it by"—in other words, the bundle of His. And from Samuel he quoted: "His heart died within him and became as a stone," which he diagnosed as pericarditis with calcification.

During the lecture Dr. Cowan showed interesting slides of myocardial lesions, including periarterial infiltration and fibroses, macroscopic and microscopic appearances of gumma, subacute interstitial fibrosis, and infarct of the coronary arteries accompanied by rupture or followed by massive clotting. He showed also a number of electrocardiograms, giving a description of the cases to which they belonged. At the conclusion the chairman proposed a vote of thanks, and presented Dr. Cowan with the St. Cyres medal.

Ireland.

Medical Benefits in Northern Ireland.

THE National Health Insurance (Medical Benefit) Bill has passed its second reading in the Northern Senate, an amendment for its rejection having been defeated by 9 votes to 4. In opposing the measure Mr. Long said that it was causing profound dissatisfaction in the rural areas, where it was considered unnecessary. Viscount Charlemont explained that the bill was designed to bring the Northern Ireland insurance scheme into line with that obtaining in Britain, both in the rate of contribution payable and in the benefits provided for insured persons. The principal reason for the Government's policy was the fact that the amount of sickness among insured persons and the general death rate in Northern Ireland were both much higher than the corresponding rates in Britain. Under the bill the insured person himself became a contributor to the cost of any medical treatment or any medicine he received: thus there could be no suggestion of "pauper test." The

arrangements made after negotiations with representatives of the dispensary medical officers were such that overlapping between the two services would be avoided, and the bill gave effect to an agreement with the dispensary medical officers to ensure that they would not receive double remuneration for attending the same person.

Royal Medical Benevolent Fund Society of Ireland.

The annual meeting of the Royal Medical Benevolent Fund Society of Ireland was held on June 18th at the Royal College of Surgeons, Dublin. The annual report stated that in spite of the fact that a few of the branches were inactive the receipts for the year had increased by £50, mainly as the result of larger collections. Thanks were recorded to the Leinster Branch of the British Medical Association for valued assistance given during the year. A joint circular letter seeking increased support for the Benevolent Fund had been issued in the names of Dr. J. P. Shanley, honorary secretary of the Leinster Branch of the British Medical Association, and of the central secretary of the society to all practitioners in the area of the Branch. The cost of printing, postage, and office expenses was borne by the Leinster Branch. It is difficult to appraise the result of this effort, but it is notable that the branches of the society in the area covered by the Leinster Branch of the Association are chiefly those from which increased returns have been received. It can be safely said, therefore, that the appeal has not been without effect. The number of grants awarded during the year was 86, compared with 83 in the previous year. The amount disbursed in grants was £2,104, compared with £1,863 in 1928-29. The beneficiaries included 7 medical men, 13 orphans, and 63 widows. The average amount of the grants was £24, compared with £22 in 1928-29, and £23 in 1927-28. A total of £4,326 was received from the estate of the late Mrs. Anne Hepburn. Dividends and interest yielded an increase of £128, and donations and subscriptions paid through the central treasurer amounted to £196 17s. 6d., being one shilling less than last year. No special donations from individuals were received, but those paid through branch treasurers amounted to £507, an increase of £50. The society expressed its thanks to the Irish Medical Association for its grant of £10, and to the Dublin Biological Club for a donation of £5. The British Medical Association remitted the sum of £69 11s., being the amount of subscriptions collected by the Association. Were it not for the activity of the Association most of these subscriptions, which are gathered all over the world, would be lost to the society. While expressing its pleasure at the increased strength of the Fund as evidenced by recent additions to the capital and by the increase in receipts from the branches, the Central Committee states that the majority of the members of the profession still remain deaf to its appeals for support. The need of the moment is to enlist the help of others to take the places of those trusted supporters who have gone. Sir John W. Moore, senior honorary secretary, again emphasized the fact that that society was the only body in Ireland charged with the duty of caring for the needy doctor and for the widows and orphans of members of the profession. Small as it was, the aid given meant a little extra comfort for the afflicted, support for the widow in her fight against adversity, better clothing for the children, and help in their education. In some cases it provided the very means of life itself.

Overcrowding at a Mental Hospital.

The necessity for early treatment of mental disorder was urged by Dr. John Mills, medical superintendent of the Ballinasloe Mental Hospital, in the annual report of the institution for 1928, in which he stated that only about a third of the new patients admitted during the year were received within the first three months of their illness. These patients numbered 219—122 men and 97 women; 198 were committed under the Dangerous Lunatics Act, and 3 as criminal lunatics. The principal factor in 45 cases was ascribed to inherited insanity, which was also stated to be the cause in the cases of congenital mental deficiency. Dr. Mills condemned the adherence to forms of criminal procedure in conveying patients to mental hospitals, but admitted that this seemed unavoidable under existing legislation. He also directed attention to the steady increase in the number of patients in the Ballinasloe Hospital, which, he asserted, had been overcrowded for the last twenty-five years to an extent that hampered efficiency and retarded recovery. While advising that no further additions should be made to the hospital, he suggested that a mental hospital should be built by the County Roscommon to provide sufficient accommodation for its own patients. Congestion in the Ballinasloe Hospital was a constant source of irritation to excitable patients. Moreover, nurses worked under great disadvantages, and their rooms were also overcrowded. The total number of patients under treatment during the year was 1,773. A memorandum of inspection, appended to the report, states that the estimated accommodation of the hospital is 1,317. Patients discharged as recovered numbered 51 men and 33 women; 9 were discharged as relieved or not improved. Including both sexes the average percentage of recoveries was 38.4. Ninety-five deaths were recorded, the chief causes of death being pulmonary diseases, senile decay, and exhaustion. A satisfactory report was given of the hospital farm, which employed over 200 men. The net profit for the year in working the farm amounted to £1,302. In regard to the general resources of the hospital the financial statement showed a credit balance of £2,739.

Infants' Hospital, Dublin.

At the recent annual meeting of St. Ultan's Hospital for Infants, Dublin, Dr. Dorothy Price stated that 283 cases had been treated in the wards during the year, an increase of 88 on the figure of the previous year; 59 per cent. of the patients were under 4 months of age. It was satisfactory to note that the death rate showed no corresponding rise, but had fallen steadily for the past three years. In 1927 the death rate was 34 per cent., in 1928 32 per cent., and in 1929 it was 25 per cent. Among contributory causes was increased efficiency in treatment resulting from eleven years' experience, and improved accommodation. The new wing had been in use for a year, and the single cot wards fitted with vita glass and opening on to a balcony aided recovery in certain cases. The benefit of more extensive accommodation was felt also in the out-patient department, where 6,192 cases were treated, an increase of over 1,000 on the number of the previous year. Dr. A. H. Davidson, in seconding the adoption of the report, stressed the necessity for fuller instruction in the medical curriculum in regard to the care of infants in health and disease, and emphasized the value of the hospital's work in the provision of skilled nurses. Dr. J. P. Shanley said that paediatrics was the Cinderella of medical science, and referred to the value received for money expended on the care of children in their earliest years.

Scotland.

University of Glasgow.

A GRADUATION ceremony was held in the Bute Hall of Glasgow University under the presidency of Principal Rait, on June 18th, when a number of representatives of Switzerland, America, and France received honorary degrees, besides a number of distinguished Scotsmen and Englishmen. Among those upon whom the LL.D. degree was conferred were Lewellys Franklin Barker, professor of medicine, Johns Hopkins University, Baltimore, U.S.A.; Julius Berend Cohen, emeritus professor of organic chemistry, University of Leeds; and James Kerr Love, consulting aural surgeon to the Glasgow Royal Infirmary. Eight bachelors of medicine received the degree of M.D.

A meeting was held in the Randolph Hall of Glasgow University on June 18th, when Professor Thomas Hastie Bryce, M.D., F.R.S., was presented with his portrait. Professor Bower presided, and after the portrait had been unveiled it was accepted for custody by Principal Rait. The chairman said that Professor Bryce came to Glasgow in 1890, having graduated in medicine at Edinburgh. In 1892 he was a university lecturer, and was engaged for a long period at Queen Margaret College in the medical training of women. In 1909 he was transferred to the chair of anatomy. Principal Rait remarked that Professor Bryce, in addition to his other qualifications, was a historian, and had performed the remarkable feat of

adding several centuries to the human history of these islands, as well as contributing greatly to our knowledge of the anthropology of their prehistoric population. In the course of his reply Professor Bryce recalled some of the developments that had taken place during his forty years' connexion with the university, and mentioned that his grandfather, who was born in 1765, had matriculated at the University of Glasgow.

Northern Infirmary, Inverness.

A gathering of the clan Donald was held at Inverness on June 13th, when the freedom of this burgh was conferred upon three distinguished representatives of the clan, the Right Hon. J. Ramsay MacDonald, Prime Minister, Sir Murdoch Macdonald, M.P. for Inverness, and the Right Hon. Stanley Baldwin, M.P. Mr. Baldwin described himself as one of the Children of the Dispersion, whose mothers' people had lost their home for having been out in the rebellion of 1745. In connexion with the gathering a visit was paid to the newly reconstructed Northern Infirmary of Inverness, and a tablet recording the names of the first list of subscribers to the institution was unveiled by the Prime Minister. The Mackintosh of Mackintosh, president of the hospital, occupied the chair, and said that on Christmas Day, 1925, he had made an appeal for £100,000 towards the reconstruction; to-day the new wards in the Infirmary had been opened after £99,647 had been actually subscribed. He characterized this as a splendid response from the Highlands. The directors still hoped that a grant would be made by the Government towards the cost of the hospital. The clan Donald had taken a special interest in the Northern Infirmary when it was originally opened in 1824, and he hoped that the Macdonalds would live up to their reputation. All the clans had taken a great interest in the Infirmary. As regards the Government grant, he hoped that the Prime Minister would use his influence to melt the ice-block of the present Chancellor. In referring to the grant, the Prime Minister, in his reply, said that he had that day received an official communication about a conference that the Government had held, and he was able to say that, in respect of the responsibility which Parliament had assumed for the provision of the Medical Services of the Highlands and Islands, the question of making a grant from this fund to the Northern Infirmary would be sympathetically and favourably considered. The amount would be settled by the Secretary for Scotland and the Chancellor of the Exchequer. In addition to this grant, however, the Government would give a sum of £1,000 to aid diagnosis and treatment, provided that £2,000 was raised by voluntary subscription before the end of the year. Subsequently, during a tour of the hospital, Sir Alexander Grant of Logie intimated that he would give a contribution of £3,000 a year for seven years towards the reconstruction fund.

Deaf Persons in Scotland.

At a meeting of the Scottish Association for the Deaf, held in Glasgow on June 18th, Sir John M. MacLeod, Bt., appealed for a departmental inquiry into the work of deaf persons, which would also have the object of avoiding the economic waste arising from this cause. Sir John suggested that the inability to hear or speak was a greater disability than that of blindness, for it struck at the root of the intellect; the deaf and dumb were cut off from the rest of the community. The outside public was sympathetic towards such persons but uninstructed; if it were realized that deafness imposed a handicap which was not merely physical but intellectual, ameliorative treatment would be forthcoming. The blind had been receiving preferential treatment for a long time from the State and from local authorities, and as support for the deaf was a sound policy it was desirable that a departmental inquiry should be held. A resolution was passed asking for a complete investigation by the Government into the conditions and needs of the deaf and dumb, and affirming that vocational training should be provided for deaf boys and girls in order to enable them to become self-supporting and to compete in industry with those of normal capacity. On the same day a meeting of the Glasgow Society for the Education of the Deaf and Dumb was held. It was stated that surplus funds were being gradually accumulated by the society for the purpose of undertaking a scheme of vocational training. The chairman referred to the progress that was being made in dealing with the after-care of ex-pupils; it was stated that a nurse had paid 1,000 visits to deaf and dumb ex-pupils during the year, while employment had been found for twenty-two girls and women during that period.

Royal College of Physicians of Edinburgh.

The Dr. Alexander Black Lecture, which is a triennial function of the Edinburgh Royal College of Physicians, was delivered on June 20th by Dr. David Rorie, D.S.O. The lectureship is the result of a bequest of £1,000 made in 1923 by Miss Ann Louisa Black of Castlebank, Cupar, in memory of her brother, Dr. Alexander Black, a former Fellow of the College; the proceeds are expended on the purchase of books for the library, the purchase of apparatus for the laboratory, and for the delivery of a lecture on some subject of general interest in medicine. Dr. Rorie took as his subject folk medicine in Scottish ballad and literature. He pointed out that there were many hundred old Scottish ballads which had been handed down by oral tradition in various forms, and which sometimes bore a considerable resemblance to the ballad lore of other nations. He explained this by the fact that many foreigners had been present as cooks, musicians, and other servitors at the courts of the older Scottish kings, especially of James IV. Many of the ballads had medical interests and medical references, and a subacid criticism of the leeches of ancient days could frequently be detected. Sturdiness in warfare had been glorified in the ballad of Sir Andrew Barton, who made a patriotic speech, according to the ballad, after he had been shot through the heart and brain by Englishmen; the death of this noted Scot had been largely responsible for the disastrous campaign of Flodden. The well-known ballad of a young Scottish knight who had been poisoned by a dish of eels probably accounted for the great prejudice against this fish as an article of food all over Scotland, a dislike which was not found in the southern part of Britain. He referred also to the touching ballad of Bessie Bell and Mary Gray, who, in the last epidemic of plague that ravaged Scotland in 1645, built themselves a bower in the woods to escape infection, which

> "They theekit it ower wi' rashes green,
> They theekit it ower wi' heather,
> But plague cam on them frae the toon,
> And slew them baith together."

University of Edinburgh.

The annual general meeting of the Alumnus Association of the University of Edinburgh was held on June 18th in the Senate Hall of the University, under the chairmanship of Mr. Alexander Miles, F.R.C.S.Ed., the acting president. It was reported that the membership of the Association now numbered 2,098, and that branches had been formed in several parts of the kingdom—for example, in South Wales, East Yorkshire, Birmingham, and Liverpool. The following were elected honorary presidents of the association: Sir James Barrie, the Chancellor; the Right Hon. Winston Churchill, Lord Rector; Sir Alfred Ewing, Principal Sir Thomas Holland, and Sir Harold Stiles. Dr. Logan Turner was unanimously elected to succeed Mr. Miles as acting president. The suggestion was made that a complete list of undergraduates of the university since its foundation should be drawn up; this was remitted to the executive committee for consideration.

Dundee Royal Infirmary.

The annual meeting of the governors of Dundee Royal Infirmary was held on June 9th, under the presidency of Mr. Athole F. Stewart, chairman of the institution, who made a special appeal for funds for the purchase of 500 mg. of radium. The directors, he said, had already purchased 500 mg. at a cost of £7,000, and he expected that an equal amount would be lent by the National Radium Commission. An appeal was also made for £2,000 for the reconstruction of the surgical out-patient department. The ordinary income of the Infirmary in the past year amounted to £33,830, and the ordinary expenditure to £46,939.

England and Wales.

Annual Reports of Medical Officers of Health.

THE Ministry of Health has issued a circular (No. 1119) to public health authorities in England and Wales describing the character of the report which medical officers of health should present for the current year. Although the annual report for 1930 will be more simple in its scope than the full survey report which was required for 1925, it should contain information on certain matters in more detail than has been given in the reports for the last four years. The reasons for this amplification are (1) that the transfer of the Poor Law functions in pursuance of the Local Government Act, 1929, and the other changes effected by this Act, have necessitated a careful survey, by the medical officers of health of counties and county boroughs, of the hospital and other medical services available in their areas; and (2) that the Government's proposals in relation to housing embodied in the Housing Bill at present before Parliament will necessitate the early directing of special attention by medical officers of health into housing defects in their areas and the compilation of accurate records regarding the housing position generally. The circular has been issued earlier than usual in order that medical officers of health may be aware of the heads under which information should be tabulated on these two matters.

Dr. R. A. Askins.

On June 6th the staff of the Bristol Health Department, presided over by Dr. R. H. Parry, medical officer of health, took leave of Dr. R. A. Askins, the retiring medical officer of health for the city and port, on his appointment as Principal Medical Officer to the Government of Southern Rhodesia. Dr. Peters, medical superintendent of Ham Green Hospital, the medical officer with the longest record of service, made the presentation of a pair of handsome etchings. Dr. Parry and other members of the staff expressed the feelings of the subscribers in wishing Dr. Askins God-speed, and emphasized the outstanding ability displayed by him during his term of office. On the same day Dr. Askins was also the recipient of a silver rose bowl, presented by the medical and administrative staffs of the Bristol Education Committee as a token of their esteem and affection. Councillor Giles, chairman of the Hygiene Committee, presided, and members of the different branches voiced the feelings of the subscribers. Dr. Askins, responding, spoke of the six years he had been associated with the Health Department as extremely happy ones, and although he regretted parting company he felt that his new appointment had many attractions; he would carry with him many pleasant recollections of the excellent feeling that had existed between himself and the staff. He also spoke of the considerable development of the school medical service since his appointment in 1914.

Stoke Park Colony, Bristol.

The managers of Stoke Park Colony, Stapleton, Bristol, have appointed the following to the consultant and research staff of the several institutions under their care. Director of Medical Services: R. J. A. Berry, M.D., F.R.C.S., formerly dean of the faculty of medicine, University of Melbourne, and honorary psychiatrist to the Children's Hospital, Melbourne. Consulting physician: J. A. Nixon, M.D., F.R.C.P., professor of medicine in the University of Bristol. Consulting surgeon: E. W. Hey Groves, M.D., M.S., F.R.C.S., professor of surgery in the University of Bristol. Consulting pathologist and bacteriologist: J. Walker Hall, M.D., professor of pathology and bacteriology in the University of Bristol. Consulting oculist: A. E. Ilcs, M.B., F.R.C.S., ophthalmic surgeon to the Bristol General Hospital. Consulting laryngologist: J. Angell James, jun., M.D., F.R.C.S., assistant surgeon to the Ear, Nose, and Throat Department, Bristol Royal Infirmary. Consulting radiologist: T. B. Wansbrough, M.B., D.M.R.E. In making these appointments the managers have acted in accordance with the intentions and expressed wishes of the late warden, the Rev. H. N. Burden. Mr. Burden had already rendered a great service to England and her mentally afflicted children, but he felt that even more could be done by organized study and research, especially along the lines of potential methods of treatment. The appointment of such a staff to Stoke Park Colony, with its 1,750 patients, is therefore a fitting testimony to him and his work.

Harveian Society Dinner.

A large number of Fellows and their guests attended the Buckston Browne annual dinner of the Harveian Society, which was held at the Connaught Rooms on June 19th, with the president, Dr. P. Montague Smith, in the chair. Among the guests of the society were Sir E. Farquhar Buzzard, Regius Professor of Medicine at Oxford; Professor W. Blair Bell, president of the British College of Obstetricians and Gynaecologists; the Rev. T. P. Conyers Barker, vicar of Hempstead Church, Essex; and the presidents of kindred medical societies. Sir Farquhar Buzzard, in proposing the toast of "The Society," said that the Harveian Society, like the other great medical societies, was in effect a post-graduate school, helping its members to adjust themselves to an ever-changing environment. He rejoiced not only in the society's present prosperity, but in the fact that its future had been provided for by a fairy godfather. The president, in his reply, gave an account of the proceedings of the society during the year. Attendances at meetings had been consistently good. The membership had increased from 317 to 329, and, flourishing thus, the society was able to look out not for members, but for quality. He reminded Fellows that the society had made itself responsible for reconditioning and rehanging of the bells of the Harvey memorial tower of the Parish Church at Hempstead, Harvey's place of burial. To do this the society would have to collect four hundred guineas, a trifle in comparison with the nearly £6,000 that was required to restore the tower, and he appealed to Fellows to help to place the bells in position as a very small tribute to Harvey from the society which had the honour of bearing his name. The Harveian Society had been in existence for ninety-nine and a half years; it was, said Dr. Montague Smith, to be his successor's glory to complete the century. Professor Tom Hare welcomed the guests in a charming speech, to which responses were made by Professor Blair Bell, the Rev. Paul Nichols, and Dr. F. J. McCann. A musical entertainment was contributed in the course of the evening by Mr. T. C. Sterndale Bennett.

The Last of the Old Middlesex Hospital.

On Tuesday, June 24th, a Court of Governors met for the last time in the old board room of Middlesex Hospital. The contract for the demolition of the last of the eighteenth century buildings has been signed, and the great board table, the familiar pictures, and the historic panelling, old when the old buildings were themselves new, will now be carefully stored until the board room of the new Middlesex is built and ready to receive them. Prince Arthur of Connaught, chairman of the hospital, spoke on this occasion of the progress made in medicine during the thirty years of this century. It was difficult, he said, to think of a hospital now without x rays for diagnosis, without a deep x-ray treatment plant, without radium and radon, with no clinics for tuberculosis and for venereal diseases, no neurological or orthopaedic special departments, no wards for the treatment of borderline mental cases. Thirty years ago there was no infant welfare department, no organized massage service, and the electrical department was little more than a toy in charge of one of the physicians. The modern hospital had to provide all such facilities, and the new Middlesex, when completed, would take its place in the medical service of the nation. The expenditure necessary to maintain a modern hospital had naturally risen enormously, and, for example, at Middlesex it was £84,500 last year for the main hospital, as compared with £34,000 in 1912. But as a result of such activities, as Prince Arthur pointed out, the nation is not only living longer but is living in greater

bodily comfort. Killing diseases are coming more and more under control, and he holds strongly that, as a national medical service emerges out of the chaos of the past, the great voluntary hospitals will be essential for the carrying out of research and the training of medical men to staff the national service. The new Middlesex means the colossal expenditure, first and last, of £1,100,000, and of this sum less than £300,000 now remains to be found. Already the west wing is fully in use, the new nurses' home is occupied, and the new out-patient department, to deal with the yearly quarter of a million patients, is in working order in the Annexe in Cleveland Street. On Tuesday there ended a chapter in the medical history of London, and the Middlesex Hospital board room closed down with the passing of an epoch in medical science. In the words of the energetic secretary-superintendent of Middlesex, Mr. S. R. C. Plimsoll, this is not a tragedy but a triumph.

Correspondence.

TREATMENT OF EYE DISEASE BY TUBERCULIN.

SIR,—There are several points in Dr. Camac Wilkinson's article in the *Journal* of June 14th (p. 1090) which, in my opinion, are open to criticism.

First of all it would seem a reasonable question to ask Dr. Wilkinson whether he is prepared to make the diagnosis of tuberculous disease of the *eye* on a *general* tuberculin reaction. The whole value of the treatment as regards specificity depends on the answer to this question. In none of the nine cases quoted is there mention of a *focal* reaction, on which Dr. Wilkinson used to lay so much stress. (That the danger of such reactions has been much exaggerated is in accordance with my own experience.) Having regard to the fact that certain authorities will not concede the possibility of tuberculous infection in chronic disease of the eye—apart from certain forms of iritis and a small group of cases of choroiditis—the absence of any reference to a focal reaction is unfortunate.

The analogy between the paths and stages of syphilitic and tuberculous infection is very picturesque, but until such pathological process is definitely proven we can only *conjecture* that the eye lesions in the published cases are manifestations of tuberculosis in the "secondary stage." The fact that the patients made excellent progress while under tuberculin treatment in no way substantiates the claim that the lesions were tuberculous. At the same time, as T.A.F. appears to have been the variety of tuberculin used in diagnosis, it is quite likely that the patients themselves were infected by the bacillus. However strongly we may believe that many chronic diseases of the eye are due to Koch's bacillus, we have as yet no indisputable evidence that they are so caused.

For the past ten years I have been associated in a medical capacity with the honorary surgeons at the Oxford Eye Hospital. We have always been interested in these "doubtful" tuberculous lesions. Some years ago Mr. P. H. Adams and myself tested a considerable number of patients by subcutaneous injections of tuberculin, by the von Pirquet and the blood complement-fixation methods, in collaboration with the late Dr. Inman of the Brompton Hospital. It was only the premature and lamented death of our colleague that prevented a publication of the series. It may, however, be stated briefly that the results were hopelessly inconsistent and of no practical value in diagnosis. In fact, the very inconsistency of the results rendered the tests dangerous in so far as they tended to obscure the value of a careful clinical examination.

In cases where a *focal* reaction is obtained to a tuberculin injection—for example, in cases of keratitis, iridocyclitis, choroiditis—when the Sigma test for syphilis is negative, we are on surer ground. These cases—incidentally not a very large number—are almost certainly tuberculous; they should be treated with tuberculin and will do well. On the other hand in some cases of chronic eye disorder—for example, iridocyclitis, even where a *general* tuberculin reaction has been positive—we have sometimes found "non-specific" antigen such as T.A.B. of value, and more rapid in action than tuberculin. Such "shock" tactics are, of course, well known in certain general diseases of unknown etiology—for example, rheumatoid arthritis and disseminated sclerosis.

The above criticisms may appear ungracious coming from one who owes much to Dr. Camac Wilkinson's teaching during the past twenty years, and who believes that his work has never been rightly appraised in this country; but it is only by the avoidance of injudicious and indiscreet claims of its value that tuberculin therapy will ultimately find its proper place—in the opinion of the writer a not inconsiderable place—in the diagnosis and treatment of tuberculous disease. At the same time I am in complete agreement with Dr. Wilkinson that tuberculin should certainly be used in doubtful cases of chronic eye disease. It will do no harm and can do good.—I am, etc.,

WILLIAM STOBIE.

Department of Ophthalmology, University of Oxford, June 15th.

ETHER CONVULSIONS.

SIR,—I am interested in Mr. Sykes's review of ether convulsions (*British Medical Journal*, June 21st, p. 1123), and in the case which he cites from his own experience. His suggestion that impurity in the oxygen, which is now so often used as an accompaniment of anaesthesia, may be the cause of the convulsions does not appear to me quite to meet the case. In the first place, in many of the cases quoted by others oxygen was not employed until after the onset of the attack. Used then, in Pinson's experience, it seems to have exerted a beneficial effect. In the case quoted by Walton in the *Journal* of July 7th, 1928, the convulsive attack came on independently of the use of oxygen. As far as one can gather most, if not all, the patients were cyanosed before the attacks commenced. I suggest that Mr. Sykes has misunderstood me in thinking that I attributed the convulsions to excess of CO_2; I pointed out, rather, that this was much likelier to have been present in the old days of closed inhalers than under modern conditions. Yet no mention of convulsions is to be found until comparatively recently. Impurity in the ether still seems to me to be the most probable cause. In Walton's case this was definitely found. I merely suggested superheating as a possible contributory cause in the formation of impurities. It would be very helpful in elucidating the matter if the ether, either from the drop bottle or from the container of the particular apparatus, as the case may be, were subjected to careful examination immediately after the occurrence of convulsions.—I am, etc.,

H. P. FAIRLIE.

Glasgow, June 21st.

THREADWORMS AND PRURITUS ANI.

SIR,—In some recent correspondence in your columns regarding pruritus ani, I have seen no mention of the threadworm *Enterobius vermicularis*. Many practitioners, in my experience, believe that the threadworm is an unlikely cause of pruritus ani in adults in this country, and that the parasite, if present, could hardly be overlooked. Unfortunately neither of these suppositions is true. In support of this assertion I may mention that at the moment of writing I have under treatment four adults suffering from this distressing complaint, in each instance acquired in England. The symptoms had lasted, before diagnosis, for from a year and a half to eight years, during which periods the sufferers had had repeated examinations, including sigmoidoscopy, and had received treatment from physicians, dermatologists, and radiologists, without permanent benefit, and without the cause of the irritation having been discovered. Three of the four had been advised to undergo surgical operation as a last resource.

I submit that in any case of nocturnal pruritus ani the first cause to be excluded is *Enterobius*. For practical purposes it may be taken that an active nocturnal pruritus which is stopped instantly by a rectal injection of strong salt and water, and which remains absent for the rest of the night, is due to threadworms. In cases of long standing, however, more exact diagnostic methods are advisable. Eggs may be found in the faeces, but are often absent,

They are more readily detected in scrapings from the neighbourhood of the anus. But it is most satisfying to the patient if the parasites themselves are demonstrated. In one instance the suggestion that *Enterobius* might be the responsible agent was not warmly received by the medical attendant, who attributed the trouble to some obvious haemorrhoids. Accordingly I visited the patient's house after he had retired to bed, and, when the pruritus commenced, a quick local examination with the help of an electric torch resulted in the capture of three female *Enterobius*. Or the worms may be looked for in a returned enema, administered when the irritation is present. A bedpan or similar receptacle should be employed, because the worms usually sink at once in water and are extremely difficult to detect in an ordinary closet pan, especially so as most of the worms passed are contained in the first ounce of fluid returned.

The most important point in treatment is to prevent auto-infection by the mouth, this being the cause of persisting infestation. It is not enough for the patient to wash his hands before meals and after defaecation, as is commonly advised; they must also be scrubbed thoroughly when he wakes in the morning—for the early cigarette and morning cup of tea are particularly dangerous—and again, whenever the skin of the body, or any article of underclothing, has been touched. I have recovered fragments of a worm and several dozen eggs from a single fingernail, and have found a crushed gravid female on an undergarment. Thus it is easy to see how eggs may be smeared all over the surface of the body.

The simplest curative treatment in my experience is rectal injections of salt and water, two tablespoonfuls of kitchen salt to the pint. If this causes griping, reduce the quantity of salt by half, but discomfort after injection is generally due to failure to expel all the air from the apparatus employed. The patient must be taught to give the injections himself, for these are properly effective only when pruritus is felt. An infant's 2-ounce enema bulb is all that is required. The patient lies down with the pelvis raised and injects the fluid; then, without rising, he refills the bulb and repeats the injection once. I have tried giving larger quantities of fluid, and employed more elaborate apparatus, but the results were no better, nor could I find any advantage in giving a preliminary simple enema. When the fluid is passed out the pruritus ceases at once, and the patient feels nothing more until the following night. Sometimes treatment has the effect of making the worms return to the rectum earlier than usual the next day. Thus, if the nightly irritation previously began between 10 and 11 o'clock, on the day following a wash-out it may be felt about 6 or 7 in the evening. With a little practice the whole process takes only a minute or two, and patients who have been tortured nightly for years will be found extremely grateful for so simple a means of securing undisturbed sleep.

I have obtained cure with a week's treatment; usually, however, the wash-outs have to be continued for about six weeks, but given only when pruritus is felt. Within this period all the developing females should have reached maturity and migrated to the rectum. Infestation persisting for more than six weeks suggests self-infection. I have never had reason to suspect any multiplication of the parasites within the body.

Anthelmintics are helpful in reducing the number of worms, but they cannot be relied on to reach those inhabiting the caecal pouches and appendix. It is suggestive that the drugs usually recommended either have a laxative action themselves or are given combined with purgatives. To one man who had not had a night's unbroken rest for several months, I gave as an experiment one day's treatment with santonin and calomel (santonin 2 grains, calomel 1/2 grain, t.i.d.). This had a sharp purgative effect, and the patient remained free from irritation for about a week. The worms expelled were passed alive, suggesting that the calomel was the active agent. Sufferers from an unrecognized threadworm infection often attribute the irritation to constipation, as they have observed that a sharp action of the bowels gives temporary relief.

Sometimes persons in seeking treatment for some late reflex phenomenon due to *Enterobius* omit all mention of pruritus, having been assured that this latter symptom is due to haemorrhoids, constipation, etc. I have had this experience in the case of patients who, respectively, complained of frequency of micturition, gastric hyperacidity, and passage of large quantities of mucus. The sufferer from the last-named complication, having recently returned from the East, had diagnosed it as dysentery, a supposition supported by the occasional appearance of a trace of blood, which came from excoriations around the anus.

For convenience I have called the anal irritation "pruritus." As a matter of fact, the sensation experienced by the subject of infestation with *Enterobius* is not really an itching, but an intolerable, light, rapid tickling caused by the movements of the worms.—I am, etc.,

Royal Army Medical College, S.W.1, June 18th. W. P. MACARTHUR.

THE OCCIPITO-POSTERIOR CASE.

SIR,—I have been most interested in the paper by Dr. Douglas Miller in the *British Medical Journal* of June 7th (p. 1036), and I have carefully noted the excellent advice given by him. I have been particularly interested in his suggestions concerning the treatment of occipito-posterior presentations seen when labour is well advanced. In the last ten years I have dealt with a large number of presentations of this sort, and have on three occasions met with a complication to which I can find no reference in the literature I have consulted on this subject. I refer to face presentations resulting from attempts to deliver by forceps after manual rotation of the head to the L.O.A. position. It will be suggested that this is due to too early application of forceps, but in each of my three cases full dilatation of the os has existed before rotation was attempted. In each of the cases there has been slight contraction of the pelvic inlet, but not to any marked extent. The cases were: (1) a multipara, (2) a primipara, (3) a multipara. In each case under deep anaesthesia, the cervix being fully dilated, manual rotation was done and forceps applied. In each case a face presentation resulted. In cases (1) and (3) this malpresentation was corrected, and delivery of live children was effected by light traction with forceps in a backward direction, the left hand at the same time being in the vagina and pushing the sinciput up to increase flexion. In Case 2 this procedure was also adopted, but extension persisted, and eventually a craniotomy had to be performed. I believe that when manual rotation is carried out in the type of case to which I refer there is a definite risk of the occiput becoming fixed against the pubic arch; and if traction with forceps in the usual direction is employed, extension of the head follows with a resultant face presentation, unless at the same time pressure is applied to the sinciput by the left hand to increase flexion, and traction is made with the forceps in a backward direction. A short time ago I discussed this subject with a well-known consulting obstetrician, and he agreed that this complication had no place in the literature on the subject, and also that he had experienced a similar difficulty.

I was also interested in Dr. Miller's use of the right blade first to maintain the head in the corrected position. For years now in difficult forceps deliveries where the amount of room is limited—whether the case is occipito-posterior or not—I have applied the right blade first. This procedure may be unorthodox, but it is certainly most efficacious. I learnt it from my late partner, Dr. John D. Davies, now of Stafford, who had found this method of application of forceps of great use.—I am, etc.,

Llanelly, June 12th. A. H. D. SMITH.

INSTRUMENTAL ROTATION IN THE OCCIPITO-POSTERIOR CASE.

SIR,—The letter of Dr. Watson in the *British Medical Journal* for June 21st (p. 1153) is interesting. I always use Kielland's forceps, and with this instrument rotation of the occipito-posterior is so easy that this presentation offers no more difficulty than the ordinary anterior presentation. It is hard to understand why Kielland's forceps has not taken the place of the axis traction forceps

in this country; it is the only forceps I use now, and the following are some of its advantages.

1. The head can be easily rotated in posterior and transverse positions.

2. The pull is exerted in the line of true axis traction.

3. It fits more snugly and there is less damaging compression to the foetal head.

4. It is easier to apply than any other forceps, even in the high operation.

5. It will grasp a smaller or malformed head more firmly than will other forceps.

6. It can be kept on until the head is completely delivered, with advantage to the perineum, as it fits so closely to the head that the vulva is not stretched more than by the head itself (due to overlapping of shanks).

The choice of operation in an occipito-posterior presentation in a multipara lies between internal version and Kielland's forceps; in a primipara rotation by Kielland's forceps is by far the best treatment.—I am, etc.,

D. C. WILLIAMS, M.B.

Port Talbot, June 22nd.

GLANDULAR FEVER.

SIR,—In your issue of May 24th (p. 976) Dr. Shulman and I reported on a number of cases under the heading of "An obscure exanthem." Since then I have been able to observe the further history of many of these cases. About 75 per cent. showed slight enlargement of the occipital and cervical glands as well as those along the posterior border of the sterno-mastoid. In some cases the glandular enlargement was more marked than in others. In a number of the cases the spleen became palpable but not tender. The glandular enlargement became palpable towards the end of the second or beginning of the third week, just when the roseolar rash was fading. One of my cases (a man aged 22) was still running a temperature (99.5°) eight weeks after the onset of the illness. His spleen, which was still palpable about a fortnight ago, cannot now be felt; whilst the glands can only be felt in the occipital region. Another case (a man aged 24) had such marked enlargement of the cervical and inguinal glands that a Wassermann test was performed, and proved to be negative.

I have read with interest the detailed descriptions of cases of glandular fever in recent issues of the *British Medical Journal*. The striking resemblance between these cases and those described under the title of "An obscure exanthem" leaves no doubt that, as Drs. Balme and Lowry suggested (June 14th, p. 1110), the latter were cases of glandular fever where the rash was the marked feature.

It would appear, therefore, that in an average case of glandular fever we have three stages:

1. Stage of onset, with pyrexia, rapid pulse, malaise, generalized pain, etc.

2. Stage of appearance of rash in successive crops from fourth to seventh or tenth day of illness.

3. Stage of glandular enlargement, the glands becoming enlarged from about the tenth day onwards. The spleme enlargement follows on the glandular enlargement. This stage lasts in an average case about three weeks, but may be as long as six to eight weeks, or even longer, and gradually leads up to the period of convalescence.

The pyrexia continues during the three stages, by which time the patients have usually lost considerable weight and have become very pale. Some cases may omit the second stage; others may miss the third stage. The latter type of case would naturally reach convalescence much sooner, without any noticeable glandular enlargement. Thus one is led to believe that in the recent outbreak of glandular fever the disease may have been more widespread than was at first apparent; and that many cases not showing the typical rash or the typical glandular enlargement may have been overlooked.—I am, etc.,

M. W. CANTOR.

London, E.1, June 23rd.

TREATMENT OF ASTHMA.

SIR,—With reference to the discussion on asthma, reported in your issue of June 21st, I venture to quote the following paragraph from my address on the use and abuse of the lime salts in health and disease (*British Medical Journal*, September 24th, 1910).

"*Asthma.*—In the attacks there is an excess of free calcium ions in the blood, and in the treatment, both during and between the paroxysms, the intake of calcium in the diet should be strictly regulated. During the paroxysm, not merely antispasmodics, but also decalcifying agents, should be freely prescribed. A milk diet should be rigidly excluded."

—I am, etc.,

JAMES BABE.

Hindhead, June 21st.

SIR,—The importance of the factor of heredity, and the injury caused by milk, were emphasized at the meeting of the Medical Advisory Committee of the Asthma Research Council, the proceedings of which were reported in the *Journal* of June 21st (p. 1133). I am sure that the bottle-fed children of allergic parents have great difficulty in becoming immunized to the proteins of cow's milk. I have found that such babies improve enormously and become able to take their feeds without sickness, constipation, etc., if three or four times a day after meals they receive a few minims of a mixture of ac. hydrochlor. dil., calcii chloride, liquor. strych. hydrochlor., and glycerin. This result is what might be expected from the gastric analyses of many of those cases in which the chief findings were diminution of acid and delayed emptying of the stomach. The chloride content of the gastric mucosa is also apparently impaired. The calcium chloride seems to have two functions: (*a*) activation of the rennin ferment in the stomach; (*b*) activation of trypsinogen of the pancreatic juice. The latter is perhaps the more important.

It is difficult to say if this treatment aborts potential asthma; it probably helps to prevent some allergic manifestation. The proteose reaction found in these cases seems to point to impairment of early stages of digestion. In infants with asthma I have had good results from the same treatment combined with parathyroid 1/40 grain and regulation of diet. These children require weekly cleansing of the liver and bowel with mercury and chalk, or rhubarb and soda, because whenever an attack is impending the stools become markedly offensive. When acetone is present during an attack glucose and sodium bicarbonate are the chief weapons; but glucose alone will not eradicate and cure an asthma of the hereditary type.

Workers in Vienna have recently described an eosinophilous bronchial catarrh of an asthmatic type associated with the expectoration of small pellets of mucus; the catarrh and eosinophilia were completely removed by the intravenous injection of calcium chloride.—I am, etc.,

R. CHALMERS.

Darlington, June 21st.

X-RAY TREATMENT OF TONSILLAR INFECTION.

SIR,—Dr. Warner Collins prefaces his article on destruction of tonsils by diathermy (June 14th, p. 1024) with some disparaging and almost wholly erroneous remarks on x-ray treatment.

In doses such as I have recommended and found useful—namely, "50 per cent. or less of the erythema dose with a 4 mm. Al. filter" (*Journal*, February 1st, p. 216)—x-ray treatment given in the usual fortnightly or longer intervals cannot possibly "lead to dermatitis." Nor can the correct localization of the radiation beam in any possible way reach the thyroid and parathyroid glands. (The portal is about 1½ inches square, behind and below the angle of the jaw, the rays passing in a medial and upward direction.)

Dr. Collins would also appear to ignore the fact that "normal human beings harbour haemolytic streptococci in the mouth and pharynx in a large percentage of individuals examined" (*Textbook of Bacteriology*, Zinsser, sixth edition, 1927, p. 344). What the recent American work on tonsils and their radiation has shown clearly is that the mere presence of organisms in the tonsil crypts is no evidence of their malign activity—rather the contrary. These organisms are essential factors in the normal antibody laboratory, consisting of the tonsil, together with the

rest of the Waldeyer ring of lymphoid structures, and serving the respiratory tract.

What x-ray treatment does is greatly to reduce the number of organisms deep in the tonsil crypts by causing shrinkage and natural drainage (a mechanical gain), and by an apparent or real stimulation of the tonsil's defence mechanism. That it reduces the numbers of organisms has also been shown by its help towards the diphtheria carrier problem; for many observers have reported freedom from diphtheria bacilli within a few weeks of treatment, when other measures had failed.

As a conservative method of treatment x-ray therapy must be held to be superior (in children, and in all but urgent surgical cases in adults, or those with hard, fibrous tonsils and deep pus collections) to any destructive method such as excision or diathermy, because the organ involved is not a remnant or useless appendage, but an active antibody-forming gland.—I am, etc.,

London, W.1, June 21st. J. H. DOUGLAS WEBSTER.

STORAGE OF *X*-RAY FILMS.

SIR,—The following incident may be of interest to those who have to store x-ray films in small country hospitals.

I store the films which have been used during the last year in a lead-lined cupboard adjoining my x-ray room for easy reference. The room in which the cupboard is has been enclosed from a verandah of an annexe to the hospital, and has a stone-flagged floor. I considered they were fairly safely housed, and was therefore somewhat surprised to find the films on fire this morning. The sole cause of the fire was a hot-water pipe connected with the radiator in the developing room. The cupboard with its lead lining has been built over this.

I have had the cupboard under precisely similar conditions for twelve years, and can only conclude that in the present warm weather the heat of the water was raised just to the degree required to set the films on fire. Though the films on the floor of the cupboard were burnt to ashes, and all badly scorched, the woodwork of the cupboard is entirely undamaged owing to its lead lining, which also doubtless saved a bad fire.

The only question is, Would the fire have occurred at all if the cupboard had not been lead-lined, and therefore practically airless? However, the moral is, do not store celluloid even over a hot-water pipe, and even if the floor of the cupboard is not actually touching it.—I am, etc.,

Woburn Abbey, June 16th. M. BEDFORD.

DRUG TREATMENT OF MEASLES.

SIR,—Since last March I have treated 24 cases of measles with pyramidon, and can confirm Dr. Collier's good results, published in the *Journal* of June 14th, and those of Drs. Urquhart and Winchester on June 21st. No case has had any respiratory complications, and by the fourth day nearly all were practically well. Instead of the lassitude and catarrhal condition often observed at this time the children were bright-eyed, cheerful, free from catarrh, and often from rash. The temperature is lowered the first day, and its duration is at least half the usual. In several cases treatment was begun when only Koplik's spots were present, and these cleared up very quickly, being practically well in three days, and the patient having scarcely any rash.

Two brothers were seen on a Friday, one having the rash, the other a big crop of Koplik's spots; both were practically well by the Monday. Two young infants were treated in poor homes. One had the chest full of crepitations when first seen, the other an abscess under the upper lip, which was opened. In four days both were well, but there is no doubt that without the specific treatment both would have been seriously ill. Another child, aged 2, was first seen by me after being ill two weeks; broncho-pneumonia was present. After two doses the patient had a good night and the lung trouble cleared up at once.

The dose I give is 1 grain for each year of age, with a maximum of 4½ grains for any age, given four-hourly. When the temperature falls the drug may be stopped unless some other symptoms show that the disease is active. The drug may be given as tablets, crushed in jam, or buried in a sultana.—I am, etc.,

June 20th. HOWARD B. GLADSTONE,
Honorary Medical Officer, Sydenham Infant Welfare Centre.

SIR,—Dr. J. I. Collier's paper on the treatment of measles with amidopyrin is a welcome confirmation of the results obtained by me in the treatment of measles with the same drug and published in the *British Medical Journal* on July 12th, 1924. These results, which are now the outcome of twenty years' experience, and comprise hundreds of cases, were summarized by me as follows:

> "It therefore seems to me that the drug acts as promptly in measles as quinine does in malaria, or the salicylates in rheumatic fever. A drug which checks the onward march of the symptoms, and particularly the development of the rash, surely has the right to be called a specific remedy."

It is regrettable that my article has been completely ignored in England for six years, because I am convinced that early administration of the drug in all cases of measles would not have remained without effect on the mortality statistics. Archibald Hoyne (*Illinois Medical Journal*, October, 1929) advocates the use of this drug in measles, and states that it has been used since 1924 at different children's hospitals in Chicago.

Since the drug must be exhibited in the early stages of the illness and gives prompt relief only in uncomplicated cases, it will always remain the remedy *par excellence* for measles in general practice, and although beneficial, will not be nearly so striking in its results in hospital practice, where chiefly advanced and complicated cases are seen. The final verdict on this question must therefore lie with the general practitioner, whose duties give him unique opportunities for studying the disease in all its stages.—I am, etc.,

Liverpool, June 14th. MAX LOEWENTHAL.

SIR,—Dr. J. I. Collier, in his note in your issue of June 14th (p. 1093), states that he could find only one reference to the use of amidopyrin as a specific in measles—that of Dr. Loewenthal in the *British Medical Journal* of July 12th, 1924. In the *St. Bartholomew's Journal* of December, 1929, appeared a report of a case of measles cured in one day; the writer further mentioned that he found the drug of equal value in scarlet fever (12 cases). In the *Illinois Medical Journal* of October, 1929, Dr. Archibald Hoyne corroborated these results, and drew attention to the fact that amidopyrin or pyramidon had been used in the Children's Memorial Hospital in Chicago since 1924 with "astonishing results." As to dosage, I myself have given as much as 5 grains night and morning to a contact aged 16 months, who had developed coryza, cough, malaise, and temperature 103°; in forty-eight hours (that is, after 15 grains in all of the drug) the child was perfectly well and exhibited no delcterious effects from the drug. That such a specific as amidopyrin in measles has not a more widespread use demonstrates how sceptical we are, as a profession, of any new therapeutic agent.—I am, etc.,

Bradford, June 16th. JAMES MORRISSEY, M.B., Ch.B.

STERILITY IN WOMAN.

SIR,—Like Dr. Gair Johnston, who writes in the *British Medical Journal* of June 14th (p. 1112) on sterility in woman, I should appreciate the views of gynaecological experts, not only on the interesting case of so-called "incompatibility," which he cites, but also on the following tentative explanation, based on simple Mendelian principles.

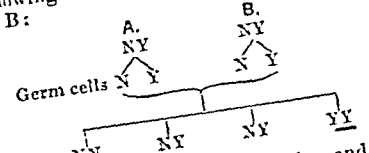
Geneticists have recognized for many years the existence in the chromosomes of factors, or genes, which, when present in a double dose (that is, in the homozygous condition) render the organism non-viable. Many such "lethal factors" are found throughout the animal and plant kingdoms, and some peculiarities in human pedigrees have been explained by assuming their presence. For example, an individual receiving the factor for haemophilia from both parents is incapable of prolonged existence, and dies either before birth or soon after. Further instances are found in the pedigrees of colour-blindness, brachydactyly, and other conditions.

Now let us take the case given by Dr. Gair Johnston. Let A be the man who had illicit connexion with the woman B, C be the woman A married, and D the man B married; and let Y be the lethal factor and N the factor

for normality. Then the genetical constitutions of the four individuals concerned are as follows:

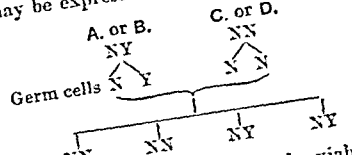
A—NY. B—NY. C—NN. D—NN.

The following scheme shows what happens when A is mated to B:



Now the individual YY is non-viable; and if it dies so early that the menstrual rhythm of the mother is not disturbed (that is to say, almost immediately after fertilization) the chance that the couple A B will *appear* to be sterile is as great as 1:3. This chance does not seem to me too small to account for apparent sterility throughout the reproductive period, and it certainly affords a reasonable explanation of delayed fertility.

The subsequent unions between A and C and between B and D may be expressed thus:



That is to say, all their offspring will be viable.

I fully realize that I am juggling with probabilities and assumptions, and that even if the explanation I have put forward happens to be correct, there is no remedy for such "incompatible" cases; I merely offer the suggestion in case it may interest Dr. Gair Johnston, and in the hope that experts may give their views on the matter.—I am, etc.,

V. C. ROBINSON.

Chelmsford, June 16th.

MEDICAL ASPECTS OF CIDER.

SIR,—The use of cider as a preventive or curative agent in certain conditions remained based on tradition without scientific confirmation until the latter part of the last century, when Dr. Denis Dumont[1] recorded the result of a number of experiments and personal observations. Starting out for an explanation of the absence of uric calculi and other gouty phenomena in the cider districts, though such conditions were not infrequent in the wine-drinking districts, he enlarged the scope of his inquiry. In France the facilities for experiment in hospitals were greater than obtain with us, for the common beverage given to patients is red wine diluted; hence he was able to substitute cider for the wine without difficulty. It was soon found that diuresis was promoted by cider, thereby contrasting with the wine, and the question then arose as to which of the constituents was the active one. By trial with equivalent amounts of solutions of malic acid, Dumont concluded that malic acid was the agent sought. Since his day we have learned that the chief difference between wine and cider or perry is that wine contains tartaric acid or acid tartrates, while these are completely absent from both cider and perry when these are in pure condition. Wine contains some amount, usually small, of malic acid, much of which, however, is turned into lactic acid during maturation. Wines, then, contain tartaric, malic, and lactic acids, ciders only malic and lactic acids, apart from small amounts of volatile acids in both.

If the physician, guided by this knowledge, advises his patient to use cider (or perry) as a beverage and avoid the products of the grape—advice which Dumont records in various successful cases—it behoves him to be sure that his patient is not taking tartaric acid, and so undoing the action of the other acid; this he cannot be sure of at the present time, for many beverages on the market named "cider" are in fact strongly sophisticated with tartaric acid. To the practised palate the alteration in flavour gives a clue that some foreign acid (tartaric or citric) is present; but a simple test will tell whether any inordinate amount of tartaric acid is present. It is carried out thus: to a third of a tumblerful of cider about half a teaspoonful of milk of lime is added slowly, and, stirring well, further small additions are made, until the liquid *begins* to change colour to a deeper and browner hue, showing that the acids are nearly neutralized. Then a small further addition of the cider is made, so that the original colour may be restored; the liquid must be in a fairly acid condition, for, when it is alkaline, malate of lime and tannin are also precipitated. After thorough stirring the glass is left till the following day, when, if tartrates are present, a fine crop of very bright little sandy crystals (orthorhombic, with obliquely cut ends) will have formed and settled out or become attached to the sides. With a pure cider no such crystals are seen. By adding different amounts of tartaric acid to a pure cider it was found, as a rough means of estimating, that an addition of 0.8 gram per litre gave a very marked result; with 0.4 gram the deposit is not so definite, but becomes more easily visible when about one-fifth of the volume of 70 per cent. alcohol is added, and a further twenty-four hours' delay afforded; the visible limit appears to be about 0.2 gram per litre with addition of alcohol and a forty-eight hours' crystallization period. Since the milk of lime is rather a messy reagent, other forms of calcium were tried; the best seems to be liquor calcis saccharatus, but it is rather slow in action, though very fine large crystals are eventually deposited.

It is regrettable that more approach from the scientific side has not been made on the effects of cider or its acids on the human frame; from Denis Dumont's work it may be presumed that the beneficial action in the vomiting of pregnancy, renal colic, etc., is due to an elimination of noxious matters by way of the kidneys. Obviously, in making further observations care should be taken that the experimental material is true cider.—I am, etc.,

HERBERT E. DURHAM, Sc.D., M.B., F.R.C.S.

Hereford, June 12th.

[1] *Les Propriétés médicales et hygiéniques du Cidre et sa Fabrication.* Third edition, 1833.

Obituary.

WE regret to record the death of Dr. JAMES HAMILTON, which took place at his home in Glasgow on June 10th. He received his medical education at the University of Glasgow, where he graduated M.B., C.M. in 1820, and obtained the F.R.F.P.S.Glas. diploma in 1896. He held appointments as assistant physician to the Victoria Infirmary, Glasgow, and as assistant physician and anaesthetist to the Glasgow Samaritan Hospital for Women. His publications include a "Case of double congenital hydronephrosis in a young man" in the *Transactions* of the Glasgow Pathological and Clinical Society, 1905, and "Cases of cerebro-spinal fever" in the same journal, 1906. During the great war he held a commission in the Royal Army Medical Corps and was attached to the 4th Scottish General Hospital. James Hamilton was an active member of the British Medical Association, serving as honorary secretary of the Glasgow and West of Scotland Branch from 1901 to 1903, and as a member of the Branch Council in 1909. In 1904 he was elected vice-chairman of the Glasgow Southern Division, becoming its chairman in 1905, and a member of the Executive Committee from 1906 to 1908, and from 1910 to 1911. He served on the Council of the Association from 1903 to 1904, and from 1907 to 1908. He was also a member, and sometime president, of the Glasgow Southern Medical Society and the Glasgow Royal Medico-Chirurgical Society.

The following well-known foreign medical men have recently died: Professor RICHARD LUMPE, a prominent obstetrician and gynaecologist of Salzburg, aged 75; Dr. SOMA BECK, professor of dermatology at the Elizabeth University of Fünfkirchen, Hungary; and Dr. WILFRED MASON BARTON, professor of medicine and applied therapeutics at Georgetown University School of Medicine, aged 58.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons has been in committee on the Finance Bill this week, and has discussed the Estimates for the Dominions Office and Colonial Office. The Land Drainage Bill was read a second time. The House of Lords has insisted upon its amendments to the Coal Mines Bill, including one to permit a ninety-hour working fortnight in mines.

Mental Treatment Bill.

The Mental Treatment Bill was before the House of Commons for the last time on June 20th, when the House considered the changes made by the Lords when the bill was returned there recently from the Commons. The House of Commons now accepted a drafting amendment made by the Lords in Clause 5, dealing with the issue of a free copy of an order or recommendation to the person detained under it or to his representative. Miss LAWRENCE, for the Minister of Health, then moved that the Commons agree with the Lords' decision to delete the new clause which provides for an audit, under the Board of Control, of the accounts of licensed houses. She reminded the House that this clause was not part of the original bill, which did not propose to deal with the perplexing and controversial topic of licensed houses. Dr. Fremantle had brought forward the new clause at the wish of Sir Boyd Merriman, and the Government had agreed to it in committee, but did not feel that it was of importance. It dealt with the fringe of a subject which future Parliaments would deal with fully and properly. The Government did not feel justified in endangering the bill for it.

Sir BOYD MERRIMAN pointed out that the bill provided for the reception of patients into licensed houses. The Royal Commission had recommended that there should be more of these houses. He did not oppose Miss Lawrence's proposal.

Mr. GOULD asked the House to insist on the amendment. He asserted that there were many private institutions in which excessive charges were made. He had heard of charges of £20 a week.

Dr. MORRIS-JONES said the new clause under discussion would not make any difference to the charges of these private institutions.

The House then agreed with the Lords that the audit clause should be deleted. The bill was then returned to the Lords to await the Royal assent.

The Workmen's Compensation (Silicosis) Bill.

This bill, which has passed the House of Lords, received a second reading in the House of Commons on June 20th. Mr. SHORT, in moving the second reading, said the bill was to amend the provisions of Section 47 of the Workmen's Compensation Act, 1925, which gave power to the Secretary of State to make schemes enabling employers to pay compensation to workpeople who contracted the disease of silicosis caused by silica dust. The bill provided for the introduction of improved medical arrangements for the diagnosis and certification of cases of silicosis, and extended the provisions of Section 47 of the Act of 1925 to fibrosis of the lungs caused by asbestos dust, now known as asbestosis. The diagnosis of silicosis had been found to be very difficult, requiring special skill and the latest scientific knowledge and appliances in connexion with radiography and so forth. To meet this difficulty, Section 47 of the Act of 1925 made provision for schemes for the appointment of medical boards consisting of whole-time medical officers, but no provision for the setting up of any special fund out of which these whole-time medical officers can be paid. In the refractories and sandstone industries a general trade compensation fund has been created, to which salaries might be charged, and a medical board had been instituted. In 1928 Lord Brentford launched the Various Industries Silicosis Scheme, but no compensation fund had been created by any of the industries covered by that scheme. The medical examination and certification in the case of silicosis depended upon the ordinary medical machinery. The certifying factory surgeon was the responsible person, and there was a right of appeal to the medical referees under the Workmen's Compensation Act. This system had been found to be inadequate as regards the diagnosis of silicosis. The certifying factory surgeon was not an expert, and had not at his disposal radiographic and other resources. Consequently it had been found necessary to limit the scheme to death and total disablement, excluding partial disablement due to silicosis. When the bill had been passed and the necessary medical organization established the Home Secretary intended to proceed with an amending order to remove these anomalies. The first object of the bill was to secure uniform and effective arrangments for diagnosis and certification of silicosis in all cases, and to provide for the payment of compensation in all the industries concerned in respect of partial incapacity. It was proposed that the medical arrangements to be embodied in the general scheme should be based on the recommendations of the Silicosis Medical Arrangements Committee, which consisted of Dr. Briggs, the senior medical inspector of factories, Professor Arthur Hall of Sheffield, and Dr. Coutts of the Ministry of Health. They recommended that medical boards appointed by the Secretary of State, consisting of at least two specially qualified whole-time officers, should form the basis of the medical arrangements, with panels set up at different centres. The work should be co-ordinated by a chief medical officer, with a central bureau in Sheffield. The Home Secretary proposed, with the consent of parties interested in the refractory and sandstone industries scheme, to convert the existing medical board into a national board.

Dr. VERNON DAVIES asked if these boards would be directly under the Factory Department of the Home Office.

Mr. SHORT said that he understood they would be under the Home Office. He detailed the provision made for a medical expenses fund, maintained by fees. The Departmental Committee had stressed the need for initial and periodic medical examinations of workers. The Potteries Workmen's Compensation Committee had arrived at a similar conclusion, and said that such examinations tended to the elimination of pulmonary tuberculosis and to the detection of early silicosis. Very striking evidence had also been given by Dr. Sutherland of Sheffield. There were possibly 60,000 or 70,000 workers affected by the bill. Periodic examinations would be made only as prescribed under the scheme and in processes where they were really necessary. The clause extending the power of making compensation schemes to industries involving exposure to asbestos dust on the lungs was in accord with a recent wide inquiry by Dr. Merewether and Mr. C. W. Price, H.M. inspectors of factories. They concluded that the risk of an asbestos worker contracting fibrosis of the lungs was large.

Mr. DOUGLAS HACKING said that when at the Home Office he had visited Sheffield and Stoke. In some of the well-managed factories every precaution was taken so that the siliceous dust could not get into the lungs of the workmen. In Sheffield they had abrasive wheels which did not contain silica. The dust from them did not affect the lungs in the same way as dust from silica wheels. He believed a great deal could still be done towards preventing this disease, and he begged the Government to consider whether it could not press certain employers to have these safety devices installed in their factories. He believed that to conquer the disease more than 100 doctors would be required to carry through 70,000 examinations a year—not ordinary doctors, but specialists. The Treasury should give a substantial grant to the industry for this expense.

Dr. VERNON DAVIES welcomed the bill. He said it was a skeleton, and its success must depend on the scheme to be prepared by the Home Secretary. He was glad the panel of doctors would be under the Home Secretary. The silicosis diseases were not incurable in the early stages. The health was slightly deteriorated, but if the patient was removed from the industry in time there was practically no detrimental effect. If such men subsequently developed chronic bronchitis they might claim for silicosis, and trouble would result unless there was absolute confidence in the medical men who examined these cases. One result, particularly in the worst industries, would be that only first-class lives would be admitted. Therefore it was essential that the medical men should be absolutely above suspicion, and that the medical boards should be absolutely under the Home Secretary, with a Government medical service. It would not require 100 doctors. The most serious cases would be examined first, and those where the risk was greatest. Six or seven medical boards would be needed. It would not follow that every miner who had a trace of silica in his lungs would be scheduled for compensation.

Mr. HARDIE declared that silica dust must be prevented from reaching people living near the works. It affected the women and children in Staffordshire.

The bill was read a second time without a division.

Cancer.

On June 18th Miss LAWRENCE, replying to Mr. Mills, said that no financial assistance was provided from the Exchequer for the provision of beds for the special treatment of cancer, but Parliament had voted £100,000 towards the provision of radium. The figure of 550 beds mentioned in the hon. member's question was presumably an estimate of the number of beds available only in those hospitals devoted wholly or mainly to the treatment of cancer, but it would be understood that the majority of cancer patients who were treated in hospital were admitted to general or public authorities' hospitals.

Mr. MILLS asked if Miss Lawrence was aware that the vast majority of these beds in hospitals at the moment were still subject to a means test, under which something had to be paid, and that consequently thousands of cases had to go by default for lack of necessary help by the Government.

Dr. VERNON DAVIES asked if Miss Lawrence was aware that at no hospital in the kingdom was a cancer case refused admission if any treatment could be given for its good.

Earl WINTERTON asked the hon. lady if she would give a reply to the monstrous charge made by Mr. Mills that cases were refused by voluntary hospitals on a means test. As chairman of a hospital he greatly resented that suggestion.

Miss LAWRENCE replied that she thought the only way in which she could reply to an allegation of that kind was by answering a question which might ask for further details and in which she might be asked to investigate.

Mr. MCSHANE asked if it was not the case that numbers of people who knew that they would be expected to pay something when they got in were, in that sense, deterred from entering a hospital.

Viscountess ASTOR asked if it was not the fact that a great many people were willing to pay for treatment if they could get into a hospital. It was not that hospitals would not take them; a great many people were willing to pay, but could not get any hospital because there were not the hospitals. No answer was given to the last two questions.

Hours of Shop Assistants.

The Select Committee on the hours of shop assistants heard evidence, on June 18th, from Mr. J. R. LESLIE, general secretary of the National Amalgamated Union of Shop Assistants, Warehousemen, and Clerks. He said that so far there had been only two measures limiting the working hours of assistants. Long hours behind the counter, worked often in a vitiated atmosphere, had a detrimental effect on the health of those employed. In the recent debate on shop hours in the House of Commons Dr. Bentham, speaking as a medical practitioner, declared that the health of shop assistants compared extremely badly with that of people in almost every other trade. The Shop Acts made no provision for sanitation, ventilation, or other health safeguards, as did the Factory and Workshops Acts. In large numbers of cases shop assistants stood almost elbow to elbow behind their counters. Ventilation on any scientific plan was paid to keeping existent, and in thousands of shops no regard was often non-a reasonable temperature. During the winter months the sick benefit paid by the union's approved society to its members was greatly increased, and was traceable in great part to the unheated shops. In February of last year, during an extremely cold spell of weather, the sickness ratio rose to the highest peak which their approved society had experienced. In a large number of shops there were no sanitary conveniences at all. Women were sometimes called on to lift weights which were liable to cause injury. He asked that the Factory and Workshops Act should be extended to include shops, warehouses, and offices, and that the standard set by the Home Office for sanitary conveniences should apply to shops.

The committee adjourned.

Indian Medical Degrees.

Mr. BENN told Major Pole, on June 18th, that he had not yet received the view of the Government of India in regard to the proposal to revive the competitive examinations for admission to the Indian Medical Service, but had ascertained that the Government did not propose to introduce legislation for the setting up of an All-India Medical Council during the next session, as it would be a very short one. The Government of India had, however, convened a conference, which Ministers in charge of medical administration, heads of medical departments, and representatives of medical faculties of universities have been invited to attend, that the principles of the proposed legislation might be settled. The agreement of the Provincial Governments would then be invited. The conference would meet on June 23rd, and would discuss all matters arising out of the temporary suspension of the recognition of Indian medical degrees by the General Medical Council.

Mr. BENN, replying on June 23rd to Mr. Freeman, said that the intention of the Government of India was to establish an All-India Medical Council, which would regulate the recognition of medical qualifications in India. Dr. VERNON DAVIES asked how any decision of the Indian Government to consider the formation of an Indian Medical Council could help Indian gentlemen who might desire to practise in this country. Dr. BENN replied that he would require notice of special points. Dr. MORRIS-JONES asked Mr. Benn whether he had been in consultation with the General Medical Council. Mr. BENN: The whole matter arose in connexion with the General Medical Council.

Consumption of Opium in British India.—On June 18th Mr. BENN informed Major Pole that he had not yet received a report on the results of the recent conference called by the Government of India to discuss methods of dealing with the high consumption of opium in certain areas in British India.

Notes in Brief.

On March 31st, 1930, 1,034,368 persons over the age of 65 were in receipt of old age pensions. Of these, it was estimated that 355,000 were still employed.

Ten inspectors of physical training are employed under the Board of Education. During the year ended December 31st last they paid 561 visits to elementary schools, 357 to secondary schools, and 137 to training colleges.

The average sick leave of sorting assistants in the Post Office during 1928 and 1929 was 11.5 days and 14.5 days respectively. The average sick leave of supervisors of sorting assistants was 13.7 days in 1928 and 22.1 days in 1929.

On June 24th Mr. Clynes told Major Nathan that officers of the Metropolitan Police did not carry first-aid appliances for use in cases of necessity. They were expected to improvise from any material available.

The Services.

HONORARY PHYSICIAN AND HONORARY SURGEON TO THE KING.

Major-General J. W. D. MEGAW, C.I.E., I.M.S., honorary surgeon to the Viceroy of India, has been appointed honorary physician to the King, vice Major-General A. Hooton, C.I.E., I.M.S. (ret.). Lieut.-Colonel F. D. G. Howell, D.S.O., M.C., R.A.M.C., has been appointed honorary surgeon to the King, and to be promoted to brevet-colonel, vice Major-General D. Harvey, C.B., C.M.G., C.B.E., late R.A.M.C. (ret.).

INDIAN MEDICAL SERVICE.

Annual Dinner.

The annual London dinner of the Indian Medical Service was held at the Trocadero Restaurant on June 18th. The chair was taken by Major-General G. Tate in the absence through illness of Major-General F. H. G. Hutchinson. The guests were Sir Harry G. Waters, Mr. F. H. Brown, Dr. N. G. Horner, Editor of the *British Medical Journal*, Dr. E. C. Morland of the *Lancet*, and Air Vice-Marshal Sir David Munro, together with the five I.M.S. officers now on probation at the Royal Army Medical College, Millbank.

The chairman, in proposing the toast of "The Indian Medical Service," said that they were awaiting the recommendations of the Simon Commission with reasonable confidence. Though some of the glory of the I.M.S. had departed its sun had by no means set; it still offered a fine career, and the research opportunities in India were unrivalled in any other part of the world. Lieut.-Colonel J. K. S. Fleming, in proposing "The Health of the Chairman," spoke of the changing conditions in India, and regretted that the I.M.S. had become the plaything of the political world. It would, he said, be better for everyone if it were recognized that the medical service in India had nothing whatever to do with politics. The health of the honorary secretaries, Colonel T. A. Granger and Sir T. Carey Evans, was proposed by Lieut.-Colonel D. G. Crawford, and compliments were paid also to Lieut.-Colonel Fleming for his work in Simla on behalf of these successful and enjoyable annual dinners.

The following is a list of the officers present at the dinner:

Major-Generals: R. W. Anthony, C.I.E., A. A. Gibbs, K.H.P., G. F. A. Harris, C.S.I., A. Hooton, C.I.E., Sir Leonard Rogers, C.I.E., F.R.S., Sir T. H. Symons, K.B.E., G. Tate, C.I.E., K.H.S.

Colonels: H. Ainsworth, J. Anderson, C.I.E., R. F. Baird, J. Fullerton, J. D. Graham, C.I.E., T. A. Granger, C.I.E., C. R. M. Green, A. J. Macnab, C.B., C.M.G., F. P. Mackie, O.B.E., F.R.S., W. G. P. Alpin, O.B.E.,

Lieut.-Colonels: A. W. Alcock, C.I.E., F.R.S., W. V. Coppinger, D.S.O., A. G. Coullie, H. E. Brown, A. Buchanan, W. V. Coppinger, D.S.O., A. G. Coullie, D. G. Crawford, J. M. Crawford, O.B.E., K.H.S., A. B. Fry, Hamilton, C.B.E., G. F. Graham, A. E. Griesewood, A. F. Hamilton, J. A. Hamilton, D.S.O., W. G. Hamilton, B. Higham, E. V. Hugo, C.M.G., J. B. Hunter Dalzell, O.B.E., S. P. James, H. Kirkpatrick, E. C. G. Maddock, C.I.E., F. O. N. Mell, C.I.E., A. Miller, T. R. Mulroney, R. A. Needham, C.I.E., O.B.E., F. O'Kinealy, C.V.O., C.I.E., C. H. Reinhold, E. R. Rost, A. N. Stokes, A. J. H. Russell, C.B.E., G. M. C. Sykes, D.S.O., C. Thomson, T. A. Thomson, Ashton Street, W. A. Sykes, C.M.G., R. Steen, G. Sloane Wilson, O.B.E., W. H. Thornhill, E. L. Ward, C.B.E., D. Warliker, C. M. D. Clyde, Sir T. Carey Evans, M.C., N. H. Hume, Clive Newcombe, J. M. Shah.

Majors: R. T. Advani, S. C. Alagappam, F. J. Anderson, M.C., J. R. Kataria, R. MacRobert, Percy Devonport, S. D. S. Greval, H. M. Strickland, F. H. White.

Captains: M. P. Atkinson, R. N. Bhandari, J. Carrey, H. A. Culhane, Captain J. McM. Wilder, Lieutenant F. H. A. L. Davidson, Lieutenant R. T. Hicks.

Officers on Probation: Captain E. G. Hurdwood, Captain M. H. Wace,

DEATHS IN THE SERVICES.

Lieut.-Colonel Frederick William Gee, C.I.E., Bengal Medical Service (ret.), of Westmead, Cookham, Berks, died in the Royal Northern Hospital, London, after an operation, on June 3rd, aged 67. He was born on March 11th, 1863, the son of the Rev. William Gee, vicar of East Coker, Somerset, was educated at Sherborne and at University College, London, and took the M.R.C.S. and L.S.A. in 1886. Entering the I.M.S. as surgeon on B.S.Lond. in 1887. Entering the I.M.S. as surgeon on March 31st, 1888, he became lieutenant-colonel after twenty years' service, was placed on the selected list for promotion on April 1st, 1916, and retired on August 5th, 1920. His whole service was spent in military employ, chiefly in the Bengal Cavalry. He served on the North-West Frontier of India in the Chitral campaign of 1895, took part in the relief of Chitral, and received the frontier medal with a clasp; in China, 1900, medal; in East Africa, in Somaliland, in 1903-4, mentioned in dispatches in the *London Gazette* of September 2nd, 1904, medal with clasp; and in the war of 1914-18, when he was mentioned in dispatches four times, in the *London Gazette* of August 15th, 1917, March 12th, 1918, August 17th, 1918, and February 21st,

1919, and, in addition to the medals, received the C.I.E. on June 3rd, 1915. He received a good service pension on August 18th, 1928. He married Jessie Elizabeth, daughter of John Graves of Southgate, and leaves a son and two daughters.

Lieut.-Colonel Narendra Prasanna Sinha, Bengal Medical Service (ret.), died on February 14th, aged 71. He was born on September 30th, 1858, and was educated in the Calcutta Medical College. After taking his degree there, he was appointed a civil assistant surgeon in Bengal in 1881; but a year later came to England, where he took the M.R.C.S. in 1882 and the M.R.C.P.Lond. in 1883, and passed into the I.M.S., being commissioned as surgeon on April 1st, 1886. He became surgeon major after twelve years' service, and retired on June 1st, 1904. After a few years' military service he got civil employ in Bengal, and was civil surgeon of Rangpur at the time of his retirement. After leaving the service he was for several years in practice at Ealing. In 1914, when the war began, he returned to India, and rejoined for service on January 30th, 1915. During the war he held various civil appointments in Bengal, and after it was ended continued to serve as police surgeon, Calcutta, up to January 10th, 1922. He was promoted to lieutenant-colonel from February 5th, 1917. He served in the Burmese campaigns from 1885 to 1889, receiving the medal with two clasps. He was a brother of Lord Sinha, late governor of Bihar and Orissa, the first, and so far the only, Indian to receive a peerage and to hold a provincial governorship.

Major Ian Paterson, R.A.M.C. (ret.), of Ardru, Onich, Inverness-shire, died there on June 7th, aged 69. He was born in Edinburgh on June 6th, 1861, was educated at the University in that city, and graduated as M.B. and C.M. in 1885. Entering the Army as surgeon on July 27th, 1887, he became major on July 27th, 1899, was on temporary half-pay on account of ill health from September 26th, 1902, to April 26th, 1903, and retired on July 27th, 1907. He served on the North-West Frontier of India in the Chitral campaign of 1895, with the relief force, receiving the frontier medal with a clasp; and in the South African war from 1899 to 1901, when he took part in the relief of Ladysmith, including the actions of Spion Kop, Tugela Heights, Vaal Kraietz, and Pieter's Hill, and in operations in Natal, including the action at Laing's Nek, and in the Transvaal, the Orange River Colony, and Cape Colony; and received the Queen's medal with seven clasps. He was also re-employed in the war of 1914–18, from August 5th, 1914.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE Vice-Chancellor announces that the Downing Professorship of Medicine is vacant by the death of Dr. J. B. Bradbury. Dr. L. E. Shore has been reappointed university lecturer in physiology for three years, and Mr. J. E. Purvis university lecturer in chemistry and physics in their relation to hygiene and preventive medicine for the same period.

The Vice-Chancellor gives notice that a congregation will be held on Saturday, August 2nd, at 2 p.m., for the conferment of medical and surgical degrees.

At a congregation held on June 21st the following medical degrees were conferred:

M.D.—L. S. Penrose, J. B. Ellison, P. M. D'A. Hart, T. F. Anderson, G. T. Calthrop.

M.B., B.Chir.—L. A. Richardson, W. H. Simonds.

M.B.—W. J. G. Drake-Lee.

UNIVERSITY OF LONDON.

THE Rev. J. SCOTT LIDGETT, D.D., has been elected Vice-Chancellor for 1930–31, in succession to Sir Gregory Foster, whose term of office expires on August 31st. Mr. J. L. S. Hatton, principal of the East London College, will succeed Dr. Scott Lidgett as Deputy Vice-Chancellor.

Dr. C. Cyril Okell has been appointed to the University Chair of Bacteriology at University College Hospital Medical School.

The degree of D.Sc. in Chemistry has been conferred upon Mr. Harold Burton, an internal student of Guy's Hospital Medical School.

UNIVERSITY COLLEGE.

Mr. R. K. Cannan, M.Sc., has resigned his lectureship in biochemistry on his appointment to the Chair of Chemistry in New York University. Mr. G. F. Marrian, M.Sc., has been appointed lecturer.

In the list of successful candidates for the Third M.B., B.S., published in our issue of June 14th (p. 1117), the sign indicating that Ursula Shelley had gained distinction in Forensic Medicine was accidentally omitted in the course of printing.

UNIVERSITY OF WALES.

THE following scholarships will be awarded in the session 1930-31, provided suitable candidates are forthcoming: (1) Cecil Prosser Research Scholarship (£250), for research in the department of tuberculosis; (2) Mrs. John Nixon Scholarship (£150), for research in the department of medicine and medical pathology; (3) Lord Merthyr Research Scholarship (£200), for research in the department of surgery; (4) Ewen Maclean Research Scholarship (£150), for research in the department of obstetrics and gynæcology. Full particulars and forms of application may be obtained from the Registrar, University Registry, Cathays Park, Cardiff.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

THE Victoria Jubilee Cullen Prize for 1930 has been awarded equally between Professor George M. Robertson, M.D., F.R.C.P., Physician-Superintendent of the Royal Hospital, Morningside, Edinburgh, and Sir Andrew Balfour, K.C.M.G., M.D., F.R.C.P., Director of the London School of Hygiene and Tropical Medicine. The value of the prize is £100.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—F. R. Crookes, H. J. Hale, J. Irger, C. Seeley.

MEDICINE.—G. T. W. Cashell, L. P. Clarke, F. R. Crookes, H. G. Edmunds, I. F. W. Edwards, H. Glynn, H. J. Hale, E. Lethem, E. H. W. Lyle, A. W. B. Wiggins.

FORENSIC MEDICINE.—F. R. Crookes, R. P. Davies, H. J. Hale, J. E. R. Heppoletto, K. V. B. Pillai, E. M. M. Shaw, G. Wilsker

MIDWIFERY.—V. J. H. Coidan, F. R. Crookes, H. J. Hale, K. V. B. Pillai, E. M. M. Shaw, I. J. Todd-Naylor, I. M. Williams.

The diploma of the Society has been granted to Messrs. L. P. Clarke, V. J. H. Coidan, F. R. Crookes, I. F. W. Edwards, H. J. Hale, E. Lethem, E. M. M. Shaw, and A. W. B. Wiggins.

Medical News.

H.R.H. PRINCESS MARY COUNTESS OF HAREWOOD will open the first section of the new Queen Charlotte's Hospital in Goldhawk Road, Hammersmith, at 2.45 p.m. on Thursday, July 10th.

AN intensive course in radiotherapy will be held at the National Post-Graduate School of Radiotherapy (the Mount Vernon Hospital and Radium Institute), Riding House Street, London, W.1, commencing Monday, October 6th. Full particulars will be announced later. Applications for copies of the syllabus may be made at once, and these will be forwarded as soon as available. The dean (Sir Cuthbert Wallace) will be glad to see prospective entrants by appointment. The course will be repeated on subsequent dates.

THE Fellowship of Medicine and Post-Graduate Medical Association announces two special M.R.C.P. lectures: the first on July 1st at 8.30 p.m. at 11, Chandos Street, W.1, by Dr. W. J. Adie on diseases of the nervous system, the second on July 4th at 8.30 p.m. at 10, Bedford Square, by Dr. A. Knyvett Gordon on diagnosis and treatment of certain bacteriological infections, followed by a laboratory demonstration. Fees payable at lecture rooms. Two free demonstrations will be given during the week, both on July 1st. The first is at 9 a.m. in the out-patient department of the Royal Ear Hospital, Huntley Street, by Mr. Herbert Tilley, and the second at 2 p.m. in the out-patient department of the Hospital for Epilepsy and Paralysis, Maida Vale, by Dr. D. McAlpine. A special course in proctology, with demonstrations, operations, and lectures, will take place at St. Mark's Hospital from June 30th to July 5th, occupying the whole of each day; fee £3 3s. A short course of demonstrations at various hospitals has been arranged in connexion with Baby Week from June 30th to July 5th. The fee is 10s., and a few vacancies will be reserved for graduates other than medical officers of health. A course in diseases of infants will be given from July 21st to August 2nd at the Infants Hospital; it will occupy each afternoon and include some special visits. Copies of all syllabuses and tickets of admission may be obtained from the Fellowship of Medicine, 1, Wimpole Street, W.1, to which all fees are payable.

A POST-GRADUATE course in oto-rhino-laryngology will be held at Strasbourg from July 15th to 27th, under the direction of Professor Canuyt. The fee is 400 francs.

THE second international congress of comparative pathology will be held at the Faculty of Medicine in Paris, from October 14th to 18th, 1931, during the French colonial exhibition. Professor Achard will be the president, and the subjects to be discussed include tuberculosis, cancer, psittacosis, the ultra-viruses, undulant and *abortus* fevers, anaphylaxis, and milk. Further information may be obtained from the general secretary, Dr. Grollet, 7, rue Gustave Nadaud, Paris, 26e.

DR. G. B. HILLMAN has been adopted by the Wakefield Conservative Association as the prospective parliamentary candidate for Wakefield. He has been a member of the Wakefield City Council since 1926, and was mayor in 1928.

THE ninth session of the International Association for the Protection of Childhood will be held at Liège, from July 31st to August 4th, on the occasion of the celebration of the centenary of the independence of Belgium. The following subjects, among others, will be discussed: tuberculosis in school children, introduced by Dr. Armand-Delille; protection of children of pre-school age (3 to 6 years), introduced by Dr. Rovèche; the rational examination of school children, introduced by Drs. Lauter, Grosset, Chailly-Bert, and Simon; and the physiology of digestion and the nutrition of the infant, introduced by Professor Rohmer. Further information can be obtained from the general secretary of the association, 67, Avenue de la Toison d'Or, Brussels.

THE twenty-third "Voyage d'Etudes Médicales," arranged for doctors in practice and for medical students who have completed their studies, will take place from September 1st to 15th, under the direction of Professor Villaret, of the Faculty of Medicine, Paris; of Professor Santenoise, of the Faculty of Medicine, Nancy; and of Dr. Blum, of the Faculty of Medicine, Strasbourg. Starting at Nancy and ending at Vittel, the tour will embrace the mineral water and climatic stations of Alsace, Jura, and the Vosges. The inclusive charge covering hotels, cars, tips, etc., is 1,100 francs. Reductions of 50 per cent. will be allowed on French railways for the outward and return journeys. Details of the programme and full particulars may be obtained from the office of the Federation of the Health Resorts of France, Tavistock House North, W.C.1.

IN the preliminary programme of the seventh international birth control conference, to be held in Zürich from September 1st to 5th, the following subjects are announced for discussion: birth control in relation to the health and economic conditions of men, women, and children; the general application of the occlusive pessary and other extra- and intra-uterine contraceptive appliances; composition and use of chemical contraceptives; physiological methods of contraception; new methods and experiments, with special reference to serums, spermatoxins, and the use of *x* rays and radium. The aim of the conference is to bring together the directors and workers of the various birth control clinics throughout Europe and the United States, and attendance will be by invitation only. Particulars may be obtained from Mrs. Janet Chance, c/o A. S. Cobden, Esq., 10, Adelphi Terrace, W.C.2.

THE publicity department of the Harrogate Corporation has issued an attractively illustrated pamphlet concerning the amenities of this famous spa. Condensed information about baths and pump rooms is supplied for invalids; but the town with its exhilarating air and its devotion to flowers and music is commended both as a pleasure resort and as a permanent residence. More than a hundred different methods of treatment are now employed at the bathing establishments. A separate booklet containing full particulars of the waters and of the treatments available may be obtained free of cost from the manager of the Baths Department, Harrogate.

THE issue of *Nature* for June 21st publishes, as a supplement, an abridged version of the six Hunterian Lectures given before the Royal College of Surgeons of England last month, by Sir Arthur Keith, on "Recent discoveries of fossil man."

A FURTHER programme of conducted tours has been arranged for July and August by King Edward's Hospital Fund. On July 4th at 5 p.m., Mr. Lawrence Tanner will take a party over Westminster Abbey, including parts of the building not ordinarily on view. On the afternoon of July 16th a visit will be made to the London Air Park at Hanworth, and on August 13th and 20th and September 3rd parties will be taken over the Tower of London, under the guidance of Mr. Walter Bell. Tickets (price 10s. for each event) can be obtained from King Edward's Hospital Fund for London, 7, Ash-cook, E.C.4.

THE late Lord Dewar has bequeathed £5,000 to St. Paul's Hospital and £2,000 each to Charing Cross Hospital and St. George's Hospital.

DR. GEORGE E. DE SCHWEINITZ, professor of ophthalmology in the University of Pennsylvania Graduate School of Medicine, has been awarded the Leslie Dana medal for prevention of blindness for 1930.

PROFESSOR L. T. HOGBEN of the University of Capetown has accepted the new chair of social biology at the London School of Economics (University of London). This appointment is a striking recognition of the importance of biological science in the study of modern social problems.

DR. F. J. WALDO, coroner for the City of London and Borough of Southwark, at an inquest held on June 12th on a case of death under chloroform and other anaesthesia, said that this was the second case he had investigated recently in which death had occurred under this anaesthetic mixture before the operation had actually started.

A FURTHER series of brochures—Nos. 195 to 205—has been issued by the International Labour Office in continuance of its series entitled "Occupation and Health." Their subjects are: dyeing; effort (strain); electrical apparatus; electroplating; emetine, enamels, and enamelling; ethylene and its derivatives; forges, ironworks; hor-chair, bristles, and hair; glove manufacture; dock labourers; dusts, fumes, and smoke; and dyes. They may be obtained from the London office of this organization, 12, Victoria Street, S.W.1.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association are *MUSEUM 9961, 9962, 9963*, and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963*, and *9964* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:
EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology Westcent, London.*
FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*
MEDICAL SECRETARY, *Medsecra Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

TREATMENT OF PRURITUS ANI.

DR. D. M. MACDONALD (Armside) writes: In reply to "Cerona's" inquiry (June 7th, p. 1020), I would suggest that he takes each night one hour before bedtime 1·8 to 1·4 grain of calomel, a dose that stops short of acting on the bowels. At the same time he should take 5 grains of sodium bicarbonate, which oxidizes the mercurial salt and converts it into a potent oxide. The fact that the pruritus comes on after the patient has been in bed, a fairly common feature, led me some years ago to the conclusion that the cause of the complaint is some chemical interference and change in the biliary secretion. The above treatment, carried out for two or three weeks, is, in the majority of cases, most effectual. In cases which resist this treatment I find that forcible stretching of the sphincter under a general anaesthetic is usually effective.

DR. J. P. SCATCHARD (Tadcaster) writes: I can strongly recommend the subcutaneous injection of anaesthesin in the form of azoule solution, "A.B.A." (Allen and Hanburys). It can be given painlessly, and does not cause any after-discomfort. The method was described in a paper by W. B. Gabriel (*British Medical Journal*, June 15th, 1929, p. 1070). Along with it a calamine lotion may be used after evacuation.

"SEPTUAGENARIAN" writes from Nottingham: I would suggest to "Cerona" and other sufferers that they should try the simple remedy of washing the anal region every night, just before going to bed, with soap and water, drying with a soft cloth. In my own case this simple treatment has been perfectly satisfactory.

INCOME TAX.

Car Transactions.

"M. B." had a car, the value of which appeared as £235 "in the previous year's Profit and Loss Account, under Stock Account." He has sold it for £90, and purchased a new car for £390 in the present financial year. What can he claim?

* * The transaction will affect the tax payable for next financial year, when he can claim (1) obsolescence allowances £235—£90=£145, and (2) depreciation allowance at, say, 20 per cent. on £390, say, £78.

Cash Receipts Basis.

"T. D. R." started practice in 1924, and his returns have hitherto been made (and accepted) on the basis of cash receipts. The inspector of taxes now objects to that basis, and for the current year has added £50 to the cash profit figures as his estimate of the increase in the amount of fees outstanding.

*** There is no legal justification for the adoption of the cash basis; its acceptance by the Inland Revenue is the result of a recognition of the fact that the value of a medical practitioner's debts is difficult to estimate, and also of the consideration that in a normal case the amount of the cash receipts over a period of years will approximate closely to the value of the bookings over the same period. But the latter consideration does not apply if the practice is growing; in that event the amount of the cash receipts lags behind the bookings of the same years, and a return based on cash receipts therefore is less than the true liability. If that is the case with "W. T. R.'s" practice, his only remedy is to compute the value of the book debts outstanding at the beginning and end of the year as best he can; if the income is not expanding, he might point out to the inspector that there seems to be no justification for his departure from a well-established practice of assessment in the case of professional profits.

Retirement of Partner: Succession.

B and C have been in partnership since June, 1929, on a three-fifths and two-fifths basis; prior to that A was also a partner in the firm, the basis of division being two-fifths, two-fifths, and one-fifth. A continues to draw cash representing two-fifths of the receipts from work done before June, 1929. How should B and C be assessed?

*** As from June, 1929, A ceased to be liable in respect of his drawings from the practice, those drawings representing the cash accumulations of earnings over periods for which he had accounted for his income tax liability. Conversely, as from that date B and C are entitled to the whole of the earnings of the practice, and must account for tax accordingly, and not merely on that portion of their earnings which reaches them in cash. Their liability can be computed in one of two ways—either on the basis of the value of the bookings or on the basis of the total cash received—but in neither case can A be charged on his cash receipts. B and C will be paying tax on income earned but not received, but that is in accordance with the income tax rules.

LETTERS, NOTES, ETC.

PATENTING OF MEDICAL INVENTIONS.

MR. A. HOME-MORTON, general manager of the Hoffmann-La Roche Chemical Works Ltd., writes: In his lecture on "Fine chemicals," reported in the *British Medical Journal* (May 24th, p. 957), Mr. Frank Lee Pyman, F.R.S., referred to "the brilliant work of Harington and Barger in determining the constitution and the synthesis of thyroxine," and the monopoly which a Swiss firm had acquired by securing British patent No. 318582 for an improvement on the novel, but unpatented, method of synthesizing thyroxine adopted by Harington and Barger. I am authorized to make the following statement on behalf of Messrs. F. Hoffmann-La Roche and Co., A.G., of the "Roche" Research Laboratories, Basle, Switzerland, the holders of the patent in question. They write: "Apart from the question of the actual value of the process covered by our patent, it is quite certain that, compared with Harington's fundamental invention, it is of minor importance. By taking out this patent we aspired to no monopoly. We merely wished to manifest to the outer world that our laboratories had been successful in improving the method. In order, however, to avoid any misconstruction of our intentions, and in view of Pyman's arguments, we have decided to relinquish our claim to the patent, and thus to allow our process to become general property." I should be grateful if you would give this friendly and open-handed gesture the publicity it deserves.

BRITISH-MADE INSTRUMENTS.

SIR JOHN CORCORAN, director of the National Union of Manufacturers, writes: In your issue of May 3rd you were good enough to publish an appeal from this Union to the committees of our large voluntary hospitals to set an example to similar bodies by equipping the institutions under their control with instruments of British manufacture. It will not be denied that by following this course at a time when we have over 1,700,000 unemployed, and when so many of our factories, including those engaged in the production of surgical instruments, are sorely in need of work, they will be acting in accordance with the wishes of the vast majority of their subscribers. I am moved to repeat my appeal because I have recently seen a letter from a well-known hospital asking for prices of hospital equipment in which it was expressly stated that the articles need *not necessarily* be of British make, and by a statement in the public press that two of the experts from one of the best-known metropolitan hospitals had proceeded to the Continent to select *x*-ray apparatus. No one disputes that our hospitals must be administered in the interest of the patients, and that if instruments of a suitable standard could not be purchased in this country they won't have to be obtained elsewhere; but where—as in the case of *x*-ray apparatus—the reputation of British manufacturers is second to none, it is surely desirable that hospital experts should thoroughly explore the possibilities of obtaining what they want in this country before proceeding abroad on tours of selection.

DANISH TREATMENT OF ITCH.

THE following is an abstract of a long report by Mr. G. E. SHAW, B.Sc. (Evans's Biological Institute, Runcorn), on this subject: (1) The only reference to a black form of sulphur is in *Thorpe's Dictionary of Applied Chemistry*, vol. v, p. 296, 1916 edition. Thorpe says that black amorphous sulphur may be prepared by heating sulphur with soda. It is highly improbable that sulphur is the black substance obtained by Dr. Ross (February 15th, p. 320). (2) Dr. A. Cannon does not state whether the 50 per cent. KOH is weight/volume or weight/weight, and I have taken it as the latter. (3) He makes no allowance for evaporation losses, which are bound to occur during a day's heating, even though this heating be "gentle." He also is rather indefinite as to what temperature should be considered as gentle. (4) In the method whereby KSH is first formed and then converted to K_2S, Dr. Cannon does not state whether the sulphur is then dissolved to the same amount as when KOH is used directly. I have, however, read this interpretation into his statement. (5) In using Mr. Cable's technique it is noticed that sometimes a thick crust forms, leaving a *deep* orange-yellow solution below. This has happened in my experiments, and the crust is obviously very largely sulphur. (6) Marcussen of Copenhagen frequently uses double the quantity of 50 per cent. KOH, and always obtains a clear solution. (7) In the original formula the proportions of potassium and sulphur are 40 to 100 weight/weight. In the K_2S solution the ratio is about 40 to 16 weight/weight. In the K_2S solution plus the full amount of sulphur the ratio would be 40 to 116 weight/weight. Where the amount of KOH solution is doubled the amount of sulphur in unit weight of product is of course halved. In those cases where a crust has been removed the decrease of sulphur per unit of weight is indefinitely lowered. (8) Notwithstanding the points raised in 7, the weight of product incorporated in the ointment does not seem to be changed. (9) Using the technique recommended by Cannon and heating on the steam bath to a temperature approximately 90° C., I found it impossible to make the full amount of sulphur dissolve in the specified quantity of KOH. It was possible to dissolve half the amount of sulphur with comparative ease. No blackening was noted, but a transparent *deep* orange-yellow solution was obtained. This solution mixed with and dissolved readily in water, giving a clear pale yellow solution. The sulphur added much in excess of the 50 per cent. would not go into solution on a water-bath, even on a day's heating. On allowing evaporation to take place and increasing heat gradually to maintain fluidity, practically the full amount of sulphur could be got into solution as a dark reddish-yellow solution. This product, however, precipitated sulphur on dilution with water. Using double the amount of KOH with the same amount of water, a satisfactory deep orange solution could be obtained which mixed readily with water. This product set to a solid on cooling. (10) The probable explanations of the "blackening" noted by Dr. Ross are: (*a*) that one of his chemicals contains metallic impurity; (*b*) that what he has actually observed is the dark reddish-orange colour described above. (11) A further experiment has indicated that a satisfactory reddish-orange solution may be obtained by dissolving the sulphur in K_2S solution prepared according to Dr. Cannon's instructions. A temperature of approximately 90° C. is adequate, but still about 60 per cent. of the total amount of sulphur can be made to dissolve.

DEVELOPMENT OF PHOTOGRAPHS.

THE second of a series of booklets published by Burroughs Wellcome and Co. under the title of "Photography Simplified" has just been issued; this deals with the question of development by the most scientific and safe method—the time and temperature method—as well as the relationship between exposure and development. The after-treatment of negatives by intensification or reduction is also described, the illustrations showing the difference between correct development, over- and under-development, and the improvement in faulty negatives which can be effected by using "tabloid" reducers or intensifiers. Notes are included on developers in relation to particular classes of work. To any reader mentioning this journal the booklet will be sent post free by Messrs. Burroughs Wellcome and Co., Snow Hill Buildings, E.C.1.

THE PETROL ENGINE.

A THIRD and revised edition of *The Petrol Engine*, containing many new illustrations, has been published in the Temple Series of Manuals for Motorists, price 3s. 6d. As already indicated in these columns, this popular handbook presupposes little mechanical knowledge, and covers a wide field from the petrol driven lawn mower to the latest type of aeroplane engine. The descriptions are concise, well arranged, and readable.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges and of vacant resident and other appointments at hospitals will be found at pages 40, 41, 44, 45, 46, 47, 48, 49, and 52 of our advertisement columns, and advertisements as to partnerships assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 291.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

574. **Anatoxin Prophylaxis in Diphtheria.**

J. LARDIER (*Thèse de Paris*, 1930, No. 22) states that although the value of immunization against diphtheria has been proved, the method is not infallible, any more than that of any other form of immunization. Faucial diphtheria occurring in children who have been given three injections of anatoxin presents the same clinical appearances as in those who have not been inoculated, and the prognosis is about the same as in the non-immunized, severe and complicated attacks occurring in about a third of the cases. Deaths and paralysis, however, are slightly less frequent in those who have been immunized. With rare exceptions serum treatment should be conducted in the usual way without taking any notice of the previous inoculation. Faucial diphtheria occurring in children who have been given only two injections of anatoxin is apparently identical with that occurring in children who have been given three injections. On the other hand, faucial diphtheria following a single injection of anatoxin appears to be more severe than in those who have had two or three injections, and possibly even more severe than in the non-immunized. Practitioners, therefore, while still in favouring the principle of active immunization, should be made to realize the relative frequency and occasional gravity of diphtheria in those who have been immunized.

575. R. CRUCHET (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, March 20th, 1930, p. 237) reports five cases of the occurrence of diphtheria in children inoculated with Ramon's anatoxin, and calls attention to certain possibilities of error, such as a leaky syringe, or an ill-fitting needle-mount. Further, many children are given insufficient doses of anatoxin. Among 365 children treated by the author only 242 had received three injections of anatoxin, while 58 had had two injections, and 68 had been given only one dose. After elimination of all sources of error, it is admitted by the advocates of all inoculated properly remain refractory to immunization; this prophylactic method that 4 or 5 per cent. of all small percentage accounts probably for the small number of cases of diphtheria which occur in patients who have received a full course of injections. In the majority of these cases, however, the disease runs a very mild course. Cruchet concludes that it is a mistake to regard anatoxin injections as useless. The statistics of the Bordeaux area show a reduction in the number of cases of diphtheria since the introduction of routine injections. He considers that intensive prophylaxis is indicated, three or even four injections being given at intervals of two weeks, or, better still, of three weeks. It has to be remembered that about 5 per cent. of cases remain refractory. When diphtheria occurs among those who have previously received anatoxin injections, these patients should be treated as if they had not had any prophylactic treatment.

576. **Measles and Tuberculosis**

P. NOBÉCOURT, R. LIÉGE, and A. HERR (*Arch. Méd. des Enf.*, February, 1930, p. 65) report that of 459 children admitted to the measles block of the Hôpital des Enfants Malades, Paris, during the first six months of 1929, 33 (7.18 per cent.) showed a positive skin reaction for tuberculosis during the course of the disease, though in only 4 of them had there been definite evidence of this disease before admission. The subsequent history of the rest, none of whom had shown any clinical symptoms of tuberculosis before their attack of measles, was as follows. In 10 cases measles pursued a normal course, 3 died from the usual complications of measles, 7 developed subacute pulmonary tuberculosis as a sequel of measles, and 2 of them died, the diagnosis being confirmed by necropsy; 2 had peritonitis in convalescence, and 2 meningitis. The authors conclude that tuberculosis has no definite influence on the course of measles, but measles has an unfavourable effect on the course of tuberculosis in some cases, though not in all. Measles may give rise to an acute and fatal pulmonary broncho-pneumonia of measles is particularly frequent in tuberculous children, and in such cases is usually fatal. On the other hand, tuberculosis is not a very common sequel of measles, since out of 459 cases of measles only 15 (3.48 per cent.) definitely developed tuberculosis. Moreover, only 62 per cent. of cases of tuberculous meningitis gave a recent history of an attack of measles. In some patients, before tuberculosis can be excluded it is necessary to make not only a careful clinical study of the case, but also repeated laboratory investigations as well as *x*-ray examinations, since, unless these are conducted systematically, tuberculosis may escape detection or may be wrongly diagnosed.

577. J. LUKÁCS and Z. DIRNER (*Arch. f. Kinderheilk.*, March 28th, 1930, p. 116) remark that the question of the relation between measles and tuberculosis has recently been the subject of numerous discussions. Noeggerath and Eckstein, followed by Bisken, disputed the old view that measles increased the susceptibility to tuberculosis, or roused a dormant tuberculous process into activity. Klein's statistics indicate that it is only in young children that measles has a pernicious effect, although in older children as well the possibility of a slight recrudescence of tuberculous disease must be reckoned with in every case. Two explanations may be offered for this bad effect of measles: either a change has taken place within the organism which renders the conditions more favourable for the growth of tubercle bacilli, or the specific protective powers of the organism have decreased owing to the measles. All the existing knowledge supports the second explanation, and particularly the fact that the tuberculous reactions become negative in the course of measles, or at least much weaker than usual. Since the authors held the view that the changes in the system took place chiefly in the tissue fluids and blood, they determined to investigate whether the addition of the blood serum of patients in different stages of measles to cultures of tubercle bacilli favoured the growth of the organisms. Comparative ob-ervations showed that the growth of tubercle bacilli was exactly the same as that the presence of measles serum was exactly the same as that of cultures not containing this serum. It also made no difference whether the patient gave a positive or negative tuberculin reaction. The authors come to the conclusion that measles does not favour the development of tubercle bacilli, but assists the tuberculous process by reducing the systemic defences.

Surgery.

578. **Primary Carcinoma of the Lung.**

J. A. MILLER and O. R. JONES (*Amer. Review of Tuberc.*, January, 1930, p. 1) discuss the clinical aspects of primary carcinoma of the lung from a study of the literature and from their personal observation of thirty-two cases of which details are given. The condition, more correctly designated primary bronchial carcinoma, comprises three groups of cases—namely, carcinoma of the lining epithelium of the bronchi; carcinoma of the mucous glands of the bronchi; and that arising from the pulmonary alveoli. The physical signs are varied and are not pathognomonic. In early cases they may be absent, or be simply those of a localized bronchitis with signs of consolidation, and, as the disease advances, with dulness and tenderness over the area in which the patient complains of pain. An *x*-ray examination is the most valuable single means of diagnosing the presence of a tumour, and bronchoscopy should be performed in all cases of chronic pulmonary disease in patients over the age of 40, where the sputum findings are negative for tuberculosis and the diagnosis is obscure. Ten clinical types, distinguished by their pathology, symptomatology, physical signs, and *x*-ray and broncho-copic findings, are described, but the diagnosis of the disease is frequently not made during life, and in its early stages is rarely possible. The main lines of treatment are at present symptomatic, though two cases have been recorded in which early tumours in the wall of the bronchus have been successfully removed with no recurrence four and eleven years later. *X*-ray treatment has so far shown no ability to arrest the progress of the disease, though it may afford relief to pain; in one case it appeared to produce a more chronic condition, so that the patient lived for a further two years. Where there is obstruction of the bronchus with atelectasis of the lung *x*-ray therapy may aggravate the symptoms, and in such cases it should not be used even to relieve pain. The thirty-two reported cases were observed during the past six years, and the diagnosis in each was substantiated by bronchoscopy or necropsy.

579. Appendicitis and Pyosalpinx with a Vesical Fistula.

BARBET and PASTEAU (*Bull. et Mém. Soc. des Chir. de Paris*, March 7th, 1930, p. 182) report a case of a girl, aged 21, who was under treatment for several years prior to operation for pyelonephritis by means of an auto-vaccine. When the symptoms became more severe a cystoscopy was performed and revealed a vesical fistula to the outside of the right ureteric orifice. In addition, there was tenderness on pressure over the appendix, and on rectal examination a mass was found on the right side of the pelvis. Consequently, a diagnosis was made of appendicitis, with an abscess opening into the bladder behind the right ureter. Laparotomy disclosed an appendix adherent to the mass in the pelvis and stenosed by an old attack; the appendix was removed. There was also evidence of an abscess localized by adhesions, with a large pyosalpinx adherent to the bladder, and communicating with it by means of a vesical fistula. The right ovary was partially destroyed and adherent to the Fallopian tube. The right adnexa were removed, and a catheter was left in the bladder. The patient made an uninterrupted recovery, was married six months after her operation, and has since given birth to two healthy children.

580. Nephroptosis.

G. GARRY and A. DRUCKMANN (*Zeit. f. Urol.*, Band 24, Heft 4, 1930, p. 241) have made a radiological study of normal persons, cases where the kidneys are palpable, and patients with indefinite abdominal and lumbar pain, pyelograms being taken in the sitting and lying positions. Theoretically the length, and the presence or absence of kinking or looping of the ureter, should distinguish between nephroptosis of congenital or acquired origin; in 80 per cent. of low kidneys they found a short straight ureter, but this criterion cannot be taken as absolute, since long kinked ureters can also be found with high or normally placed kidneys. In 52 per cent. of cases the position of the kidney was unaltered whether the patient was sitting or lying; in the rest it was 2 to 4 cm. lower in the sitting position. This movement however, was as commonly found in the high as in the low kidneys, so it is not necessarily a sign of ptosis. The movement of the kidney on sitting was accompanied by bowing of the ureter in 46 per cent., angulation in 17 per cent., and marked kinking in 37 per cent., the type of curve being constant in the same patient on re-examination months later. Even a low kidney accompanied by kinking of the ureter must be accepted with great caution as a cause for pain, however, as shown by some cases cited which were uninfluenced by nephropexy, but were cured when the real cause of the pain was later discovered and treated. On the other hand, dilatation of the renal pelvis in nephroptosis appears to cause definite symptoms, but is not necessarily associated with kinking of the ureter. In 7 out of 80 cases the ureter was found to arise not from the lowest part of the pelvis, but from a higher position, and this anomaly was associated with a dilated pelvis and renal symptoms in 5 of these, though only 2 had nephroptosis. The authors suggest that in some cases diagnosed as nephroptosis the pain is due not to the position of the kidney, but to an anomalous ureter arising from an abnormal situation in the pelvis and leading to interference with the outflow of urine.

581. Haemolytic Streptococcal Septicaemia.

C. S. ROLLER (*Amer. Journ. Dis. Child.*, January, 1930, p. 156), who records an illustrative case, has collected 43 cases of general sepsis observed at the Children's Hospital, Los Angeles, of which 10 were proved by blood culture during life to have been caused by the streptococcus. Five more cases were found to be streptococcal in origin by blood culture after death. Of the 43 patients, 40 died—a mortality of 93.1 per cent. All methods of treatment met with consistently poor responses. Roller's case was that of a male infant, aged 16 months, who developed acute haemolytic streptococcal septicaemia after mastoidectomy. Complete recovery ensued as the result of whole blood transfusions, anti-streptococcal serum, and intensive supporting measures such as the subcutaneous injection of saline solution, enemata of dextrose, and the administration of caffeine sodium benzoate, alternating with digitalis.

582. Chronic Infection of Cowper's Glands.

C. M. WHITNEY (*Urol. and Cut. Rev.*, April, 1930, p. 233), who records four illustrative cases in men aged from 28 to 34, states that infection of Cowper's glands may occur in three forms: the acute type, either with or without abscess formation; the subacute; and the chronic. The last form probably follows an acute infection, and if this is of a mild type no symptoms may be observed, except a recurrent urethral discharge. A chronic infection of Cowper's glands can often be diagnosed only by the occurrence of acute symptoms. The following diagnostic methods may also be of assistance. (1) Examination by combined rectal and perineal palpation. (2) Examination of the urine. The anterior urethra should be irrigated with boric acid solution and the washings saved. The urine should then be passed into two glasses and examined for shreds. If the wash-glass contains most of the shreds, they come from the anterior urethra, and probably from Cowper's glands. (3) Urethroscopy. The urethral mucous membrane is often much reddened at the site of the opening of the ducts of Cowper's glands. (4) Determination of the size of the urethra by a bougie, since occasionally an inflamed and enlarged gland may press on the urethra and narrow its calibre. The presence of stenosis is of value if a stricture can be excluded. Treatment consists in excising the diseased gland through a perineal incision.

Therapeutics.

533. Treatment of Vincent's Angina.

G. O. CUMMINGS (*New England Journ. of Med.*, April 17th, 1930, p. 768), who believes that the incidence of Vincent's angina has much increased during the last ten years, describes the condition as an ulcerated area on the tonsil or mucous membrane; the edges are red and irregular, while the base is firm and filled with adhesive grey necrotic tissue. It has to be distinguished from diphtheria, syphilis, and malignancy. The infective organisms, a fusiform bacillus and a spirillum, have been found in 50 per cent. of swabs from tonsils before, and 40 per cent. of swabs from tonsillar fossae three weeks after, operation in cases where there was no reason to suspect Vincent's infection. There may be severe pain or only discomfort on swallowing; the lymph nodes at the angle of the jaw are usually swollen and may be intensely tender. Constitutional symptoms are usually present for a few days and may be severe. The tonsil may slough away almost entirely in neglected cases. During the stage of invasion the patient should be kept in bed, with laxatives, antiseptics, and bland diet. Hot or cold packs on the swollen glands and gargles containing astringents, such as glycerin of tannic acid, and non-irritating antiseptics, such as hydrogen peroxide, afford comfort. The gingival sulcus about the teeth should be flushed out with a 1 in 500 solution of hexyl-resorcinol, using a syringe having a blunt-pointed needle set at an angle with the long axis of the syringe. Applications of 5 per cent. chromic acid are recommended, but no value is attached to silver nitrate or tincture of iodine. Pledgets of cotton-wool may be damped, rolled in powdered sodium perborate, and left in position around the gums for five minutes, or the perborate may be used as a dentifrice; it liberates free oxygen. Intravenous injections of salvarsan are not advised until less drastic treatment has failed; in severe cases, resisting the ordinary local and general medicaments, intravenous injections of 5 c.cm. of a 1 per cent. solution of antimony potassium tartrate may be tried. In convalescence the danger of recurrence owing to the use of an infected tooth-brush has to be borne in mind.

584. Liver Treatment in the Pernicious Anaemia of Pregnancy.

R. PETERSON, H. FIELD, jun., and H. S. MORGAN (*Journ. Amer. Med. Assoc.*, March 22nd, 1930, p. 838) report three cases of the pernicious or haemolytic anaemia of pregnancy which were treated with a high liver diet or liver extract. Though the results were complicated by transfusions in two cases, the response to liver treatment seems to have been quite analogous to that obtained by this therapy in primary pernicious anaemia. One patient was relieved by the treatment, but did not become well until after the termination of pregnancy; it is concluded that in this case the treatment had made possible a more normal type of blood regeneration but had not affected the underlying cause. In the majority of these pregnancy anaemia cases the condition is severe and often fatal. The colour index is high; there is a high-grade poikilocytosis and anisocytosis with megalocytes and frequently megaloblasts, and the blood bilirubin is increased. In distinction to the primary type, the macrocytosis is less marked, the leucocytes are more frequently normal or increased in number, and, if recovery occurs, there is little tendency to a relapse. A further difference is that achlorhydria is not a necessary concomitant. Free hydrochloric acid was found in the gastric contents of each of the three patients. Attention is drawn to the possible danger of high liver feeding during pregnancy when there is a tendency towards nephritis or toxaemia. The authors recommend especially careful observation of the urine and blood pressure when a high liver diet is given during pregnancy. One case afforded some evidence that liver extract might be as efficacious as liver; if so, it would avoid the danger emphasized, and be the most desirable treatment during pregnancy.

Administration of Strophanthin.

585. STROPHANTHIN has been associated with the digitalis derivatives and its action has been erroneously compared with that of digitalis; E. E. CORNWALL (*Med. Journ. and Record*, April 2nd, 1930, p. 355) enumerates some of the differences. In contrast with the effect produced by digitalis, the heart, after strophanthin poisoning, is found to be rigidly contracted; strophanthin does not affect the vagus mechanism, and appears to act by direct contact in increasing myocardial contractility and tonicity; finally, it has no cumulative action. If good results are to follow its administration, strophanthin must be given in proper doses. It has generally been considered that this drug should be employed only as an emergency method and in large doses; Cornwall, however, maintains that in smaller doses it can be continued for long periods, being often effective in prolonging life in cases of myocardial degeneration with heart failure, especially if its use is combined with a wise regulation of the physical activity and diet. The method of administration is of prime importance. Strophanthin is apparently used up in the body; it is not eliminated by the urine, saliva, or faeces. It may be given by intravenous, intramuscular, or hypodermic injections, or sublingually. In the majority of cases the last-named method suffices, and hypodermic injections in the bulk of the remainder, intramuscular and intravenous injections being only emergency methods. It should not be administered orally, since the amount which reaches the heart muscle by this route is too uncertain. The indications for the use of strophanthin and the dosage to be properly employed are dealt with. The great indication for its use is myocardial insufficiency. Heart failure from an impending arrhythmia, such as auricular fibrillation, calls for strophanthin only when there is also some intrinsic myocardial weakness, but it is indicated in all forms of myocardial disease with regular rhythm and signs of heart failure. In the cardiac failure of pneumonia and chronic myocardial degeneration, including hypertensive heart failure, this drug is most effective. It is also indicated in acute endocarditis with heart failure; in the cardiac failure occurring in acute febrile diseases; in chronic valvular disease, particularly in aortic and mitral incompetency; and in mitral stenosis with auricular fibrillation and heart failure, if there is much intrinsic myocardial weakness. As a general rule, ambulant patients should not receive more than 0.001 grain sublingually every four hours; if larger doses are necessary the patient should be put to bed.

Ophthalmology.

Subhyaloid Haemorrhage.

586. F. O. SCHWARTZ (*Amer. Journ. of Ophthalmol.*, March, 1930, p. 195) asserts that the presence of extravasated blood between the retina and vitreous is uncommon; it is very infrequent in adults and rare in children, except as a result of traumatism. These haemorrhages are usually of large size, covering the entire macular region, and including an area several disc diameters in the vertical and horizontal directions. The haemorrhage rarely reaches the temporal border of the disc, although cases have been known in which a portion of the nerve head was covered. More than one mass of blood may be present in the eye at one time; as many as three haemorrhages have been found in one eye, one small haemorrhage being on the optic disc, and accompanying two large subhyaloid ones. The condition appears suddenly in an apparently normal eye without any premonitory symptoms; tuberculosis, syphilis, focal infections, hyperthyroidism, and disease of the suprarenals are among the causes responsible for such effusions. Vision is greatly reduced, and objects appear reddish-brown or grey-green. The blood spreads equally in all directions and forms a thin layer, frequently assuming a number of shapes. The pre-retinal mass of blood may be separated into parts: a pale upper part and a dark lower. This division is caused by the settling of the corpuscles to the bottom of the still fluid blood. The line of contrast formed is straight and may be maintained upon inclination of the head; in rare cases this edge shows a concavity, but it may be convex. It is not difficult to recognize the condition. A favourable prognosis can be given, since full recovery of sight often occurs. Treatment is simple, comprising complete rest, supplemented by the administration of diuretics, cholagogues, and diaphoretics. Mercury and iodine are useful. Schwartz describes the case of a man, aged 23, who, while diving, struck the left temporal region of his head on the edge of a rock. Fifteen minutes later he noticed a greyish-green scotoma in the line of sight of the right eye; vision of this eye became generally obscured, and was limited to light perception. The man made an uneventful recovery; four weeks after the occurrence the vision had improved to 20/19, there being then no trace of the haemorrhages within the eye, while two and a half years after the accident his vision was 20/12, and he had a normal fundus.

Plasmoma of the Conjunctiva.

587. P. S. SOUDAKOFF (*China Med. Journ.*, March, 1930, p. 195) records seventeen cases of conjunctival plasmoma which he has encountered during the last seven years. The disease begins as a small growth of the fornix, spreading thence over the conjunctiva. Histologically it is a diffuse subepithelial plasma-cellular infiltration with which is associated a slight degree of hyaline degeneration of the connective tissue stroma. The condition is not a tumour, but a tissue reaction due to chronic irritation. Most patients with plasmoma also suffer from trachoma, and the author believes that the toxins of the latter play an important part in setting up the irritation which eventually gives rise to plasmoma. Treatment consists in early and complete excision of the growth, followed by radium.

Ocular Lesions in Oxycephaly.

588. A. COLRAT (*Journ. de Méd. de Lyon*, March 20th, 1930, p. 179) states that in oxycephaly the cranial deformity is accompanied by marked radiological signs and frequently by ocular troubles. The deformity is due to an abnormal height of the cranial vault, but its configuration varies in different cases. Usually the forehead is almost vertical, descending nearly perpendicularly on the naso-frontal juncture; sometimes it is slightly inclined behind; and sometimes it is prominent and the vertical plane passes in front of the orbital arcades. In typical cases the curve of the vertex is rounded from before backwards, making a marked prominence at the centre of the naso-inial line. The occipital region, as a rule, is flat. A slight prognathism of the superior maxilla exists, and the face and cranium in a general way are elongated and retracted transversely. Radiographs show particularly a falling-in of the middle portion of the base. The eyes are often prominent, and a diminution of vision may occur at various periods. The ocular lesion commences as a papillary oedema, but it is rarely noted at this stage when treatment would be of avail. This diminution of vision is caused by a post-neuritic atrophy, very often more marked in one eye, which ends in a more or less total blindness. The exophthalmos is often marked, and strabismus is very frequent. Other symptoms are not constant. Some children show meningeal crises (headaches and convulsions), but these are rare. Usually the intelligence is normal and the development satisfactory, except in cases of early blindness. These lesions appear to be due to a chronic meningitis of vague etiology, which causes a premature synostosis of the frontal and sagittal sutures, and secondarily an intracranial hypertension. This in its turn brings about the basal falling-in and papillary oedema, and later atrophy of the optic nerve. Early diagnosis is necessary to initiate successful treatment, thus preventing blindness; decompressive trephining is the method of choice. Two allied conditions are described: the cranio-facial synostosis of Crouzon, and the acrocephalosyndactylia of Apert. The former is characterized by a slightly analogous deformity of the cranium with a pseudo-acromegalic aspect of the face, but without marked basal falling-in. The latter shows a cranial malformation similar to that of Crouzon's disease, but with total syndactylia of all the extremities.

Obstetrics and Gynaecology.

The Time of Ovulation in the Menstrual Cycle.

589. Q. U. NEWELL, E. ALLEN, J. P. PRATT, and L. J. BLAND (*Amer. Journ. Obstet. and Gynecol.*, February, 1930, p. 180) have made an investigation into the time of ovulation in women, the menstrual history being correlated with careful macroscopical and microscopical observations of the corpus luteum. An attempt was also made to recover the corresponding ovum from the Fallopian tube. The material was selected from routine operations. A technique was devised whereby the tubes were irrigated with normal saline; the washings were collected in watchglasses, and were later searched for ova. The authors believe this method to be quite safe. Information about the presence of ova can be obtained from tubes which show no pathological lesion and are therefore left *in situ*. The method was also found useful in determining the patency of the tubes. More than ninety operations were performed at various stages of the menstrual cycle. Nine specimens were removed from the Fallopian tubes, five of which were definitely identified as tubal ova by examination of sections. From the data thus obtained the

time of ovulation occurred on, or one or two days before, the fourteenth (morning of the fifteenth) day following the onset of the previous menses. It appeared that the ovum had completely degenerated after the twenty-first day of the menstrual cycle, and, whether remaining in the tube or uterine cavity, would probably be incapable of undergoing fertilization.

590. Endometriosis.

J. V. MEIGS (*New England Journ. Med.*, April 3rd, 1930, p. 672) records four cases of endometriosis, each of which throws some light upon the debatable questions as to the age of incidence, conservation in treatment, atrophy after castration, and the etiology and prevention of growth in the operative scar. While it is generally thought that endometriosis usually occurs after the twenty-sixth year, the first case occurred in a girl aged 23, in whom the condition must have been present before the twentieth year. The second case shows that conservative surgery may be a safe procedure, though it is generally held that removal of all ovarian tissue in order to ensure cessation of growth is the wisest treatment. In this case, from which a large cyst of the right ovary and a smaller one from the left ovary were removed, the remainder of the left ovary and the uterus being conserved, the menopause did not ensue till ten years later; menstruation was regular till then, and there were no signs of recurrence at the end of that time. The third case is quoted as proving that endometriomas may atrophy and completely vanish following bilateral oöphorectomy, without leaving any palpable or visible sign. The questions why some endometriomas occur in abdominal scars, and how such recurrence can be prevented, are answered by the fourth case, in which the tumour probably grew from the fundus of the uterus, which had been sutured into the abdominal wound. Whenever, therefore, round ligament suspension, fixation, or intra-abdominal wall fixation of the uterus is contemplated in such a case penetration of the endometrial cavities by the stitches must be avoided if the risk of growth in the operative scar is to be prevented.

591. Radium Treatment of Carcinoma of the Cervix.

P. PETIT-DUTAILLIS (*La Gynécol.*, February, 1930, p. 99), as a preliminary to radium treatment of cancer of the cervix, recommends removal by a sharp curette of as much as possible of the growth, followed by thorough cauterization of the bleeding surface. He has not found that these measures are followed by serious haemorrhage, infection, or perforation of organs; they have the further advantage that the subsequent insertion of radium in the corporeal canal (reconstructed by the cautery, if it has been destroyed by the neoplasm) or in the deepest parts of the growth is easy. From these situations radiation of the internal iliac lymphatics and gland is secured, and slight filtration only (1 mm. of platinum and a few layers of gauze) is necessary; the radium, which is placed at the same time in the vaginal fornices, requires, however, very thorough filtration. The dose used is 10 millicuries destroyed daily for seven to eight days. For the purpose of peripheral radiation in cases in which the parametrium is widely invaded, the radium is inserted through the perineum and passes between the obturator internus and its aponeurosis in front of the great sciatic notch, whence not only the internal but also the external iliac glands are exposed to radio-activity. The parametrium is subjected to cross-fire from this situation and from radium placed in the utero-vaginal zone. Three cases of extensive parametrial carcinoma failed to respond to this treatment; but in a fourth advanced case, that of a patient aged 51 in whom radium treatment had been regarded as useless and probably harmful, curetting with cauterization and the application of 66 millicuries of radium destroyed in four days were followed by cure, which has been maintained for more than six years. Two months after treatment the patient had obturator neuralgia, and a fistula along the track of insertion of one of the radiferous tubes in the pelvic wall.

Pathology.

592. Blood Groups in Shansi.

J. A. CURRAN, E. C. ROSENOW, jun., and S. T. FENG (*Nat. Med. Journ. of China*, February, 1930, p. 75) have investigated the blood groups of the province of Shansi, an isolated country north-east of the Yellow River, where during recent centuries emigration and immigration have been slight. One thousand examinations were made from patients, members of the staff, and students in the Fenchow hospital, all the persons tested being of Shansi origin. In the method employed 2 to 3 drops of blood were dropped into 5 c.cm. of normal saline solution; a drop of anti-A serum and one of anti-B serum were pipetted on to separate marked cover-slips and a drop of the cell suspension was added to each; the preparations were well mixed, mounted on hollow-ground slides, incubated for fifteen to twenty minutes at 37° C., and then examined under a low power. The letters O, A, B, and AB were adopted for designating the four groups in accordance with the recommendation of the League of Nations. The biochemical racial index calculated from the ratio $\frac{A + AB}{B + AB}$ was 0.739, bringing the people of Shansi within the Indo-Manchurian group, though this index is slightly lower than the previous figures reported for China. The table of findings for other provinces investigated by various observers is useful for comparison. The authors add that the examinations made at the Fenchow hospital were of great assistance in obtaining data as regards possible donors for transfusion.

593. Specific Antibody Absorption by the Viruses of Vaccinia and Herpes.

W. SMITH (*Journ. Path. and Bact.*, April, 1930, p. 273) has performed experiments on the absorption of protective antibodies from anti-vaccinial and anti-herpes serum. The general technique was to mix the serum with large quantities of infected tissue suspension, incubate for three days in the presence of ether, centrifuge the mixture, filter the supernatant fluid through L2 candles, and test the filtrate for protective power against the homologous virus. The results showed that vaccinial and herpes testicular suspensions were capable of absorbing to some extent their homologous antibodies from immune serums. The specificity of the absorption was shown by cross-absorption tests, in which vaccinial testis failed to remove the antibodies from a herpes immune serum, and herpetic testis failed to remove the antibodies from a vaccinial immune serum; also by the fact that each virus removed only its own antibodies from a mixture of the two serums. When a vaccinial testis suspension, in which the virus had been killed by heating at 58° to 60° C. for one hour, was used for absorption, the antibodies were removed to only a slight extent. The author considers that these experiments suggest the probability of a direct union between antigen and antibody *in vitro*.

594. The Etiology of Cancer.

CITING Cramer to the effect that freedom from cancer is more likely to be attained by diminishing the susceptibility to this morbid change than by trying to hunt down various forms of chronic irritation, J. A. SHAW-MACKENZIE (*Journ. Trop. Med. and Hyg.*, May 1st, 1930, p. 117) recalls his suggestion made twenty-five years ago that cell proliferation or alteration of the type of division may be dependent on some systemic condition, and that local irritation determines the site of growth. After testing the effects of injecting different tissue extracts, certain biochemical conclusions were reached, the first of these being that variations in the action of serum on the ferment lipase occur in cancer and other diseases. When normal serum is added to pancreatic extracts or to the secretion itself, fat-splitting is markedly increased; serum does not split fats, but contains an activator. When carcinoma serum is added the fat-splitting is decreased; the serum then contains some inhibiting factor. In cases of recovery the action of the serum returns to normal or is increased. It was deduced from these experiments that the increased lipolytic activity is a factor which prevents the development of cancer, and favours its disappearance when present; it is associated with the resistance of the body to cancer. Discussing proteolytic and peptolytic factors, the author suggests that, in the case of lipase, a failure of response in an organ other than that of the one affected by cancer may be a possible factor in the development of this condition, and also that as a result of deficient digestive ferments the cells of any focus of lesser resistance would become overcharged with peptone, glycogen, fats, carbohydrates, etc., thus approximating to the foetal type of cell with its reproductive cell activity. Other points discussed are inhibiting factors, local aspects, the developmental factor, fatty acid in immunization, and some reactions of cancer in relation to diagnosis and treatment. Since in cancer there is not only deficient enzyme action in the case of lipase but of other enzymes, Shaw-Mackenzie suggests that in the remarkable results obtained by Murphy and Leitch in producing tumour by chemical substances from normal tissues, the substance isolated might be of the nature of an inhibitor or paralyser of normal enzyme action, a direct ferment action not being concerned. In conclusion, he states that systemic defensive factors have been demonstrated in natural and induced tissue lipolysis, in striking contrast to defective lipolysis in cancer and other diseases, and that this knowledge applied to treatment in inoperable cases of human carcinoma had met with some success. Whether defective tissue lipolysis and utilization of fats or defective oxidation, or both these factors, be the cause of the known excess of unsaturated fatty material in cancer, it is a fact that considerable alteration in the metabolism of fats and lipoids occurs in the blood and tissues in this disease.

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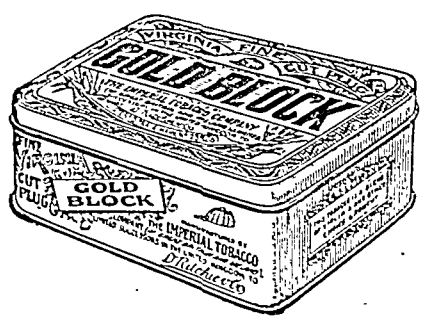
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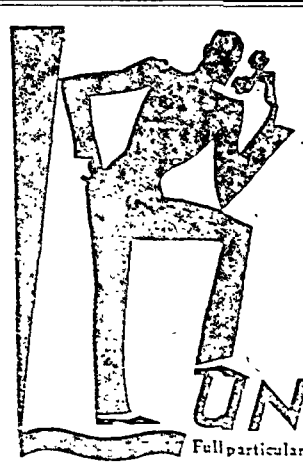


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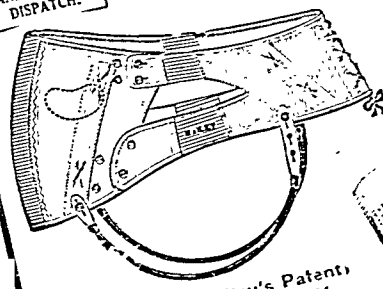
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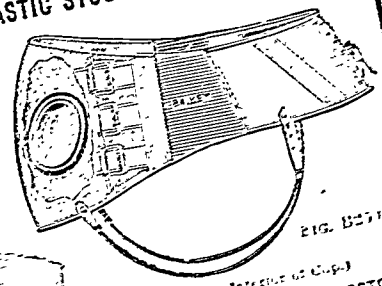
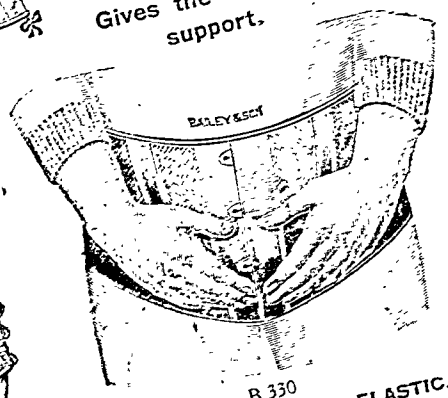


FIG. B571

(Showing Interior of Cup.)

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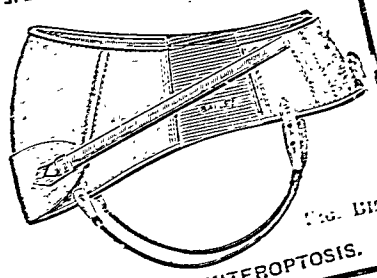
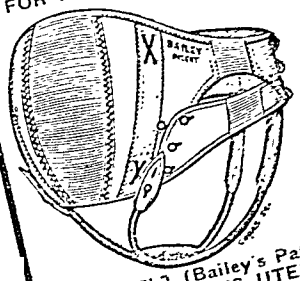


FIG. B559

BELT FOR ENTEROPTOSIS.



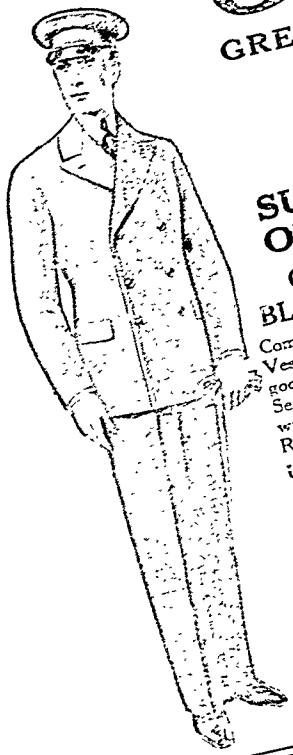
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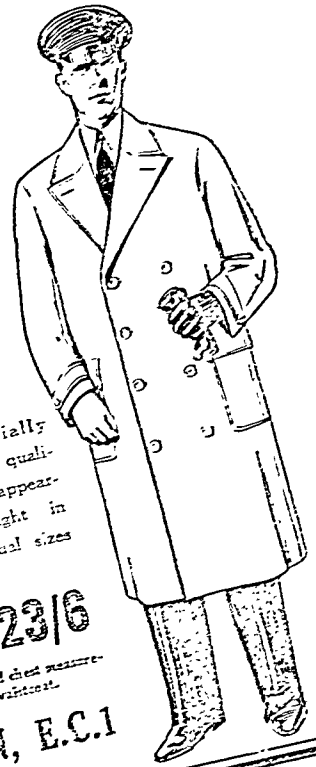
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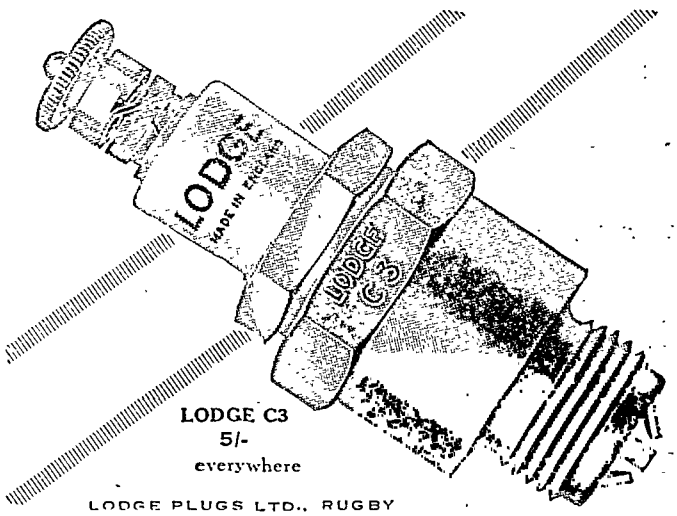
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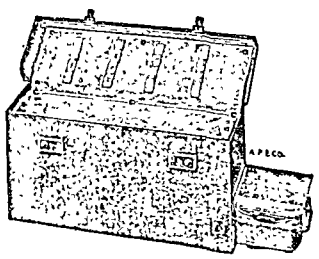
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Apply, ELIZABETH CASSON, M.D., D.P.M

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and *patients under certificates* received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

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A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

Apply for particulars to Dr. SANKEY.

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No cleaning required.
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CHAS. S. FORD, 37, Palace Rd., Bromley, Kent.

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There are vacancies for children under 15 years of age at the above-mentioned Home, which is an Institution for the training and education of MENTALLY DEFECTIVE CHILDREN, and has been very favourably reported on by the Board of Control on several occasions.

Full particulars and terms of admission may be obtained from the Clerk to the Trustees, 1, Queen Sq., Bath.

FENSTANTON,
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A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Boarders. Large Mansion with 12 acres of ground. (See *Medical Directory*, p. 2190.) Apply J. H. EARLS, M.D., Resident Physician. Telephone: Streatham 8430.

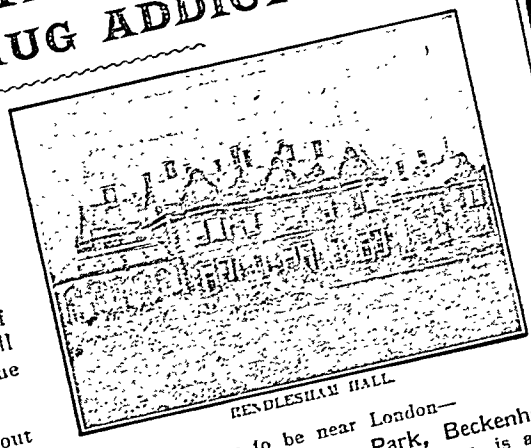
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A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

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RENDLESHAM HALL.

Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

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Telegrams and Telephone: Wickham Market 16. (Toll Call from London)

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Telegrams: NOSOTORIUM, BECKENHAM.

Telephone: BECKENHAM 1642.

Proprietors: The Norwood Sanatorium, Limited.

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90 acres, Gardens, Woods, and Park.

500 feet above sea-level on Southern Chilterns.

OR REST AFTER OPERATION or ILLNESS, CARDIAC and NERVOUS DISEASES, or PERMANENT INVALIDS.

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ESTABLISHED 1922.

A comfortable, private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line, 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary Patients. The treatment is the outcome of many years' experience, and besides removing all craving for drink or drugs, it has a tonic action on the system and the general health is improved. Alcohol and drugs reduced gradually, without suffering. FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well. Moderate, inclusive terms. Exceptionally good climate and ample and varied amusement. Bay Mount, Paignton. Prospectus, etc., from STANFORD PARE, M.D., Ch.B., Res. Med. Supt., Bay Mount, Paignton. *'Phone:* PAIGNTON 5110.

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DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

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Started 26 years ago by the late Mrs. William Archer, exists for the special treatment of FUNCTIONAL NERVOUS DISORDERS by means of a system of Relaxation correlated with training in Nerve Control. Home life in numerous small houses in charming grounds; chalets for resting, which is a special feature. Eurhythmics, Voice Production, Music, Dancing &c. Medical report required for admission. Apply Secretary. Telephone and Telegrams: King's Langley 19.

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Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

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For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D.

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A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions in adults. Special facilities for Psychotherapy in co-operative cases. All particulars may be obtained from the Resident Medical Superintendent, Dr. MARY R. BARRAS, M.D., D.P.M.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards, and VOLUNTARY BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON.

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion *bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc.* There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.
Telephone: Teignmouth 289.

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.

FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payments. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

Tel.: 04117. *For terms, etc., apply to the Medical Superintendent.*

The MAUDSLEY HOSPITAL
DENMARK HILL, S.E.5.

Telephone: RODNEY 4841—2.

A CLINIC instituted by the London County Council for Treatment of NERVOUS and CURABLE MENTAL DISORDER. Voluntary patients ONLY RECEIVED.

OUT-PATIENTS—2 p.m.: MEN—Mondays and Thursdays. WOMEN—Tuesdays and Fridays.
IN-PATIENTS: (*a*) 164 beds (both sexes) in wards or separate rooms. (*b*) 13 private rooms (for ladies) with special sitting room, garden, and dietary.

Terms:

(*a*) **£5** a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.
(*b*) **£6 6s.** a week.

Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 6 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive.

Apply: The Secretary, Ruthin Castle, North Wales.

The climate is mild and the neighbourhood beautiful.

Telegrams: Castle, Ruthin. Telephone: 65, Ruthin.

OXHEY GROVE,

HATCH END, MIDDLESEX.

A NURSING HOME for BORDERLINE CASES of BOTH SEXES, twelve miles from Marble Arch. Resident Medical Officer, male and female staff, visiting Pathologist. Fees 5 to 12 guineas.

Full particulars from the MEDICAL SUPERINTENDENT. *Telephone*: Hatch End 368.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone*: NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses. Conveniently situated four miles from Charing Cross. Easy of access from all parts. Six acres of ground, highly situated, facing Finsbury Park. Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover. For further particulars, apply to the MEDICAL SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

FOR THE TREATMENT OF MENTAL DISORDERS.

Telegrams: "PSYCHOLIA, LONDON." *Telephone*: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Terms very moderate.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

CONVALESCENT HOME at BOURNEMOUTH

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

NORTHWOODS, Winterbourne, Bristol.

Telephone and Telegrams: Winterbourne 18.

This beautiful mansion in fifty acres of secluded grounds was built specially for the TREATMENT OF MENTAL ILLNESS. Certified patients of both sexes. Thorough clinical, bacteriological, and pathological examinations. Separate bedrooms. Private suites. Indoor and outdoor amusements. Wireless and other concerts. Occupational therapy. Physical drill. Private golf course. Garden and dairy produce from farm on the estate. Reasonable terms. A few voluntary boarders are received in the Medical Superintendent's house. For further particulars and prospectus, apply to JOSEPH CATES, M.D.

GARTH HILL HOUSE

NORTH QUEENSFERRY, near EDINBURGH.

A SMALL PRIVATE HOME FOR TREATMENT OF NEURASTHENIC CASES.

Magnificent situation overlooking Firth of Forth. Stress laid on re-education of will and intelligent re-adaptation to environment. For particulars apply ARTHUR J. BROCK, M.D., Medical Superintendent. *Telephone*: *Inverkeithing* 179.

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BADEN.

On the main line Zürich-Basle and Zürich-Berne. The hot springs of Baden were already known to the Romans. 17 radio-active wells at a temperature of 118.4°F. They contain sulphur and sodium-chloride. The baths are obtainable in the hotels themselves. Treatments: warm baths, shower baths, massage, electric baths, inhalation, drinking cure, diagnostic-therapeutic institute, mechanotherapy. Recommended for metabolic diseases, rheumatism, gout, sciatica, diseases of the muscles, bones, and joints, retarded convalescence after injuries and operations.
Season: April 1st to November 1st.
For information apply to: Spa Director, Baden, Switzerland.

LOÈCHE-LES-BAINS.

One hour by electric railway from Loèche (main station on the Simplon route). Mild alpine climate. The baths were already known to the Gauls and Romans. The radio-active springs contain chiefly sulphate of lime. Two swimming pools. Every hotel has its own bathing installation. Treatments: warm baths, douche-massage, injections, air and sun baths. Recommended for: gout, rheumatism, sciatica, anaemia, post-operational conditions, convalescence, gynaecological diseases, circulatory disturbances, skin diseases.
Season: May to October.
For information apply to: Hotel Association, Loèche-les-Bains, Switzerland.

PASSUGG.

Near Chur. Situated on a picturesque plateau. Mild sub-alpine climate. Vast forests.
Treatments: The Ulricus spring (alcaline-muriatic), Belvedra spring (chalybeate), Fortunatus spring (alcaline-muriatic with iodine), Helen spring (mildly alcaline and acid), Theophil spring. All varieties of accessory treatment. Dietetic treatment. Indications: Diseases of the digestive organs, diseases of the liver and bile ducts, kidney and bladder diseases, diseases of nutrition and metabolic diseases, especially diabetes, arterio-sclerosis, diseases of the blood and tropical diseases.
Season: May to October.
For information apply to: Spa Director, Passugg, Switzerland.

RHEINFELDEN.

10 miles from Basle, on the railway line Zürich-Basle. Famous for its vigorous brine, containing 31% salt, and for its "Kapuziner" spring, a highly diuretic calcium and boric acid well, and for "Magdalena" spring, containing sulphates of calcium, sodium, and magnesium. 8 bath establishments with up-to-date installations. Treatments: brine baths, carbonic acid brine baths, drinking, mud packs, "Mutterlauge" packs, inhalation, massage, gymnastics, all varieties of electric treatment, dietetic treatment. Recommended for: gout, rheumatism, arthritis, women's diseases, sterility, obesity, children's diseases, arterial hypertension, diseases of the heart, affections of muscles, bones, and joints, convalescence.
Any information and detailed booklet gladly supplied by: Enquiry Office, Rheinfelden, Switzerland.

SCHINZNACH.

Railway connections: Basle-Brugg-Zürich, and Berne-Brugg-Zürich. The hot springs of Schinznach were in use in Roman times and belong to the strongest radio-active sulphur wells on the Continent. Newly equipped, comfortable baths and inhalation rooms. Treatments: baths, drinking, sulphur-mud and sulphur-water packs, irrigations, inhalatorium, massage, X-rays. Recommended for: gout, rheumatism, affections of bones and joints, non-tuberculous catarrhs of the air passages, arterio-sclerosis, diseases of the skin, diseases of women, children's diseases.
Season: May to October.
For information apply to: Spa Director, Schinznach Bad, Switzerland.

TARASP-SCHULS-VULPERA.

The chief spa of the Lower Engadine. Glauber salts wells. The advantage of this spa lies in the combination of the curative properties of the waters with the alpine air and sun.
10 mineral springs of various composition. Up-to-date equipment for drinking and baths, air and sun baths, swimming baths, Zander-hall, X-ray institute, diet. Recommended for: affections of the digestive organs, metabolic ailments, nervous troubles, affections of the organs of circulation, of the organs of respiration, of the genito-urinary system, malaria.
Information supplied by: General Manager, Kurhaus Tarasp.

For information and the booklet "Swiss Spas and their Mineral Springs" (sent gratis), please apply to the Office of the Swiss Federal Railways, 11b, Regent Street, London, S.W.1.

SMEDLEY'S

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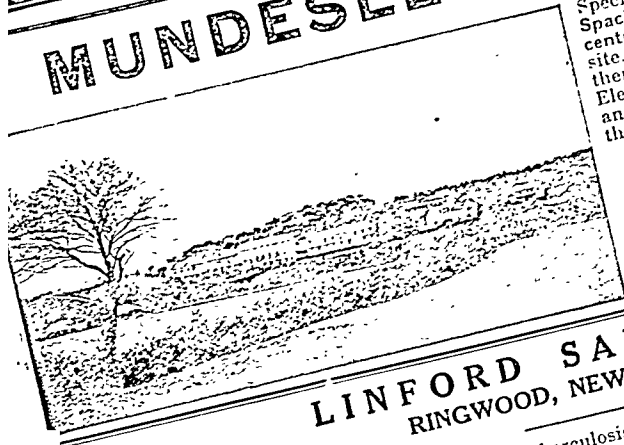
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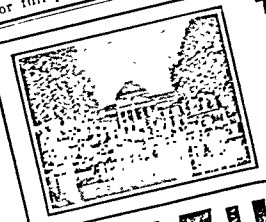
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The first Examination for Part I will take place on Monday, June 23rd, and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

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The Dean will be glad to see prospective entrants by appointment.

THOS. A. GARNER, Secretary.

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The following arrangements have been made for Post-Graduate Teaching in Glasgow during the summer of 1930.

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Warwickshire County Council.

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Applications are invited from qualified and registered Medical Practitioners for the post of Assistant County Medical Officer of Health. The duties will include Medical Inspection of School Children.

The salary is at the rate of £500 per annum, rising by annual increments of £25 to a maximum of £700 per annum, and is subject to a deduction of five per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922. In addition, motor car allowances in accordance with the Council's scale and reasonable travelling expenses are paid. The appointment is subject also to the production of a medical certificate satisfactory to the County Medical Officer of Health. Preference will be given to one who holds a Diploma in Public Health.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned.

Applications (marked "Assistant County Medical Officer of Health"), with copies of not more than three recent testimonials, must be received by me not later than Monday, July 14th.

Canvassing, directly or indirectly, will be considered a disqualification.

42, Warwick St., Leamington. June 20th, 1930. L. EDGAR STEPHENS, Clerk of the County Council.

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UNIVERSITY OF LONDON.

EXTERNAL EXAMINERSHIPS, 1931.

The Senate announce the following vacant External Examinerships for all Examinations above Matriculation for the year 1931. Except when otherwise stated, Examiners will act in all Examinations in which the subject is included.

For the First Examination for Medical Degrees.

CHEMISTRY.

For the Second Examination for Medical Degrees

PHARMACOLOGY.

For Final and Higher Examinations for Medical Degrees.

MEDICINE. SURGERY.
OBSTETRIC MEDICINE.

Associate Examiners.

Applications will also be invited for Associate Examiners in Medicine, Obstetric Medicine, Pathology, and Surgery. A separate application form must be used for Associate Examinerships and the word "Associate" must be written on it.

Application form (or forms if more than one Examinership is applied for) and particulars of the remuneration and duties can be obtained from the External Registrar.

Candidates must send in their names to the External Registrar, GEO. F. GOODCHILD, M.A., B.Sc., with any attestation of their qualifications they may think desirable, on or before Monday, July 7th, 1930. (Envelopes should be marked "Examinership.")

The Senate desire that no application of any kind be made to individual members.

If testimonials are submitted one copy only of each is required. In no case should original testimonials be submitted. If more than one Examinership is applied for a separate and complete application must be forwarded in respect of each Examinership. The appointments will be made by the Senate in November. Applicants who desire that the result should be communicated to them are requested to enclose a stamped and addressed envelope with their applications.

University of London, South Kensington, S.W.7. June, 1930. EDWIN DELLER, Principal.

Prifysgol Cymru.

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The following Scholarships will be awarded by the University of Wales in the session 1930-1931, provided suitable candidates are forthcoming.

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The Mrs. JOHN NIXON SCHOLARSHIP of the value of £150 for research in the Department of Medicine and Medical Pathology.

The LORD MERTHYR RESEARCH SCHOLARSHIP of the value of £200 for research in the Department of Surgery.

The EWEN MACLEAN RESEARCH SCHOLARSHIP of the value of £150 for research in the Department of Obstetrics and Gynæcology.

Candidates should send their applications to the Registrar, University Registry, Cathays Park, Cardiff, not later than September 1st. Particulars of the conditions of the award of the Scholarships may be obtained from the Registrar at the foregoing address.

The Royal Infirmary, Sheffield.

(500 Beds.)

The Weekly Board of Management invite applications for the undermentioned posts:

HOUSE SURGEON;
OPHTHALMIC HOUSE SURGEON;
ASSISTANT AURAL AND OPHTHALMIC HOUSE SURGEON;

The appointments will be tenable for six months from July 1st. The salary attached to each post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence.

Applications, together with copies of testimonials, to be sent to the undersigned immediately.

Board Room. June 23rd, 1930. JNO. W. BARNES, F.C.I.S., *Gen. Supt. & Secretary.*

Mildmay Mission Hospital,

Austin Street, Bethnal Green, E.2.

Applications are invited for the post of ASSISTANT CASUALTY OFFICER (female), which becomes vacant on September 1st. The appointment is non-resident and for six months. Salary £100 per annum.

Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital.

Applications, with copies of recent testimonials, should be sent to the Medical Superintendent immediately.

MIDDLESEX HOSPITAL.

Primary F.R.C.S. Examination.

The next Course for the Primary Fellowship Examination will begin on Tuesday, July 1st, 1930. Application for admission should be made as soon as possible to the School Secretary, Middlesex Hospital Medical School, London, W.1.

ANATOMY.

Personal instruction is given daily by Professor T. YEATES, M.B., C.M.

PHYSIOLOGY.

The Course is under the joint direction of the Professors of Physiology and Biochemistry, and will include the following subjects:

BIOCHEMISTRY. GENERAL PHYSIOLOGY. HISTOLOGY.

A Special Course of Lectures, dealing with the Physiology of the Special Senses, will be given by members of the Honorary Staff of the Hospital during the Course.

Instruction is given daily except on Saturdays.

The Course will continue until the end of July. There will be a vacation during the whole of August, classes resuming first week September.

FEES.—£12 12s. each subject or £21 for both.

City of Plymouth.

MEDICAL SUPERINTENDENT.

(AMENDED ADVERTISEMENT.)

Applications are invited from duly qualified and registered Medical Practitioners for the post of Medical Superintendent of the PLYMOUTH CITY HOSPITAL.

The salary will be at the rate of £1,000 per year, with an allowance of the sum of £250 in lieu of quarters, etc. No canvassing for this appointment is permitted, and any canvassing will disqualify the applicant. The appointment will be terminable by three months' notice on either side.

Personal experience in Hospital administration is essential. The appointment is whole-time and private practice is not permitted. The person appointed will be an Assistant Medical Officer in the Public Health Department, and will be on the staff of the Medical Officer of Health, who is the General Medical Superintendent of the Corporation Hospitals.

Applications will be considered only on the forms of application which will be provided. A form of application, together with further details relating to the appointment, can be obtained from the undersigned, on the receipt by him of a request for this, accompanied by a stamped and addressed foolscap envelope. Forms of application, duly completed, *together with* copies of not more than three recent testimonials, must be returned to the undersigned not later than Saturday, July 12th.

Town Hall, Stonehouse, Plymouth. June 21st, 1930. A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., etc., Medical Officer of Health.

City and County of Newcastle-UPON-TYNE.

CITY HOSPITAL FOR INFECTIOUS DISEASES.

RESIDENT MEDICAL ASSISTANT (Male).

Wanted immediately, a Resident Medical Assistant (male), who holds a registrable qualification in Medicine and Surgery (and preferably also in Public Health), and possesses a practical knowledge of Bacteriology. The holding of a previous resident appointment and some experience of general practice will be considered a recommendation.

Salary £350 per annum, with board, lodging, etc.

Applications, stating age, qualifications, and previous experience, to be forwarded with copies of not more than three recent testimonials, to the Medical Officer of Health, Town Hall, Newcastle-upon-Tyne.

June 23rd, 1930.

Royal Salop Infirmary, SHREWSBURY. (150 Beds.)

APPOINTMENT OF RESIDENT SURGICAL OFFICER.

Applications are invited from fully qualified men for the appointment of RESIDENT SURGICAL OFFICER, vacant immediately. The appointment is for a period of 12 months, at a salary of £200 per annum, with board, residence, etc.

The Resident Surgical Officer is Senior Resident Officer of the Hospital. House Staff comprises House Physician and House Surgeon.

Applications, stating age, qualifications, experience, nationality, and accompanied by copies of three testimonials, to be sent to the undersigned.

June 21st, 1930. J. W. NOBLE, Secretary-Supt.

WEST AFRICAN MEDICAL STAFF.

Vacancies at present exist for MEDICAL OFFICERS in the WEST AFRICAN MEDICAL STAFF.

Qualifications. Candidates must be British subjects of European parentage and under 35 years of age. They must possess a double qualification and be on the British Medical Register. Preference will be given to candidates who have held Hospital or Public Health appointments, or who have special knowledge of anaesthetics, radiology, surgery, medicine, ophthalmology, gynaecology and midwifery, diseases of the ear, nose, and throat, venereal diseases, etc.

Salary. £660 per annum, rising by annual increments of £30 per annum to £720 per annum, and then, on confirmation, £720 per annum, rising by annual increments of £40 to £960 per annum, together with a seniority allowance (payable only in West Africa) at the rate of £72 per annum. After three years' service on £960, the salary may be raised to the scale of £1,000 per annum, rising by annual increments of £50 to £1,150 per annum, together with a seniority allowance at the rate of £100 per annum.

Quarters. Free quarters are provided or an allowance is given in lieu.

Outfit Allowance. An outfit allowance of £60 is granted on first appointment and when proceeding on or returning from leave. A married officer will, in certain circumstances, be granted

Passages. Free first-class passages are provided for the officer only both on first appointment and half the cost of his wife's passages to and from West Africa.

Terms of Appointment. The appointments are pensionable, subject to a probationary period of three years in the first instance.

Tour of Service. The normal tour of service in West Africa is approximately 18 months, though vacation leave may be granted by the Governor after 12 months, and is followed by leave at the rate of one week for each completed month of residential service, plus the time necessarily spent in the voyages to and from England.

Course of Instruction in Tropical Medicine. Selected candidates will normally be required to attend a course of instruction in Tropical Medicine and Hygiene before proceeding overseas.

Duties. Though Medical Officers are appointed in the first instance for general service, there are good opportunities for work in special branches of medicine and surgery and for research.

Further particulars and forms of application may be obtained, on application in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Egyptian Government.

EGYPTIAN UNIVERSITY.

FACULTY OF MEDICINE.

Applications are invited for the newly created CHAIR OF PROFESSOR OF HYGIENE. Applicants must have a University Medical Qualification and at least ten years' experience of Public Health work, preferably in a Tropical country. Candidates must have a recognized qualification in Public Health and preferably a qualification in Tropical Medicine and Hygiene. They must have held a post in a recognized institute.

The duties of the Professor include giving a course of instruction to Under-Graduates and Post-Graduate Course for the Diploma of Public Health and Tropical Medicine. He will also conduct Research work. The language of instruction is English.

The salary offered is £E.1,500 (approximately £1 538) a year, and the appointment will be on contract for three years, renewable. The contract may be terminated by either side by three months' notice in writing.

One month's salary will be paid in lieu of travelling expenses if the successful applicant is resident in Europe.

If an official of the Egyptian Government is selected for the post he will not receive the advertised salary unless it is sanctioned by the Egyptian University, Cairo, so as to be received by him not later than September 20th, 1930.

Financial Authorities will not receive the applications, with copies of published Research and copies of testimonials, should be addressed to the Dean of the Faculty of Medicine, Egyptian University, Cairo, so as to be received by him not later than September 20th, 1930.

Further details may be secured by application to the DEAN.

Egyptian Government.

EGYPTIAN UNIVERSITY.

FACULTY OF MEDICINE, DENTAL SCHOOL.

Applications are invited for the post of LECTURER IN DENTAL SURGERY and ASSISTANT DENTAL SURGEON in the DENTAL SCHOOL, CAIRO. The duties will be instructional and clinical.

Preference will be given to candidates possessing the L.D.S.R.C.S.England.

The appointment will be on contract for three years at a salary of £E.480 (approximately £492) a year, and private practice is allowed.

One month's salary will be paid in lieu of travelling expenses if the successful applicant is resident in Europe.

Applications, with details of experience and copies of recent testimonials, should be addressed to the Dean of the Faculty of Medicine, Kasr-el-Aini, Cairo, so as to reach him not later than September 20th, 1930.

University of Manitoba,

WINNIPEG, CANADA.

FACULTY OF MEDICINE.

The post of ASSISTANT PROFESSOR OF ANATOMY in the University of Manitoba will be vacant from October 1st, 1930. Salary 3,500 dollars (200 in lieu of passage). Applications, with two or three testimonials, should reach me before August 6th, 1930.

Medical College, Winnipeg, Canada. S. W. PROWSE, M.D., Dean, Faculty of Medicine.

Durham County and Sunderland

EYE INFIRMARY.

Wanted, a LOCUM for the above Institution for about 10 (ten) weeks from July 7th. Must have good experience of Ophthalmic work. Apply, with full particulars, to JOHN BUTTERFIELD, Secretary, Eye Infirmary, Stockton Road, Sunderland.

Harrogate Infirmary.

Applications are invited from British subjects (male) for the post of JUNIOR HOUSE SURGEON, now vacant. Applications to be made on official form to be had from the undersigned.

GEO. BALLANTYNE, Secretary.

City of Birmingham.

SELLY OAK HOSPITAL.

SURGEON.

Applications are invited from fully qualified registered Medical Practitioners for the above whole-time appointment.

The present Hospital accommodation is 550 beds, divided into General Medical, General Surgical, Gynaecological, Obstetrical, and Children's Diseases sections. There are completely equipped Pathological and Biochemical laboratories, X-ray, Electro-therapeutic, Massage, Ultra-violet Ray, and Electro-cardiographic departments. Over 3,000 operations are performed annually.

Candidates for the appointment must have had good Surgical experience, and be Fellows of the Royal College of Surgeons (England).

The scale of salary will be £700, rising by annual increments of £50 to a maximum of £1,000 per annum, rations, laundry, and attendance will be provided. Alternatively, a Furnished quarters, rations, laundry, and cash allowance will be paid if the officer appointed is non-resident. The officer appointed will be required to account to the Council for all fees, allowances, and emoluments (other than the foregoing) received by him.

The appointment will be subject to the Birmingham Corporation's Superannuation Scheme, and to the candidate passing a medical examination, and will be subject to three months' notice on either side.

Further particulars of the appointment may be obtained from the Medical Superintendent, R. P. STANLEY KELHAM, Esq., M.B., F.R.C.S. (Eng. and Edin.), at the Selly Oak Hospital. Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, and endorsed "Surgeon," should be addressed to me and delivered at my office not later than 10 a.m. on Wednesday, July 16th.

The Council House, Birmingham. F. H. C. WILTSHIRE, Town Clerk.

June, 1930.

Queen Mary's Hospital for the

EAST END, Stratford, E.15.

Telephone: Maryland 2616.

Applications are invited from fully qualified and registered Medical Men for the following Post:

One HOUSE PHYSICIAN and CASUALTY OFFICER. Salary £150 p.a.

The Hospital contains 216 beds, including 46 Maternity beds and other Special Departments.

Candidates, who should have previously held hospital appointments, must send applications, accompanied by testimonials, to the undersigned, not later than Thursday, July 3rd.

RAPHAEL JACKSON (Major), Secretary.

Jewish Maternity Hospital,

Underwood Street, E.1.

Vacancies occur for CLINICAL ASSISTANTS. Candidates, who must be registered Practitioners, are admitted to the practice of the Hospital for a period of three months for the payment of £5 5s. Applications should be submitted to the Secretary.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
			150	1st
Lieut.		500	150	2nd
			150	3rd
			150	4th
Capt.	(i) During first 3 years' service as Captain	650	£15	5th
			£15	6th
			£25	7th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	8th
			£25	9th
			£25	10th
	(iii) With more than 6 years' service as Captain	850	£25	11th
			£30	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£30	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rates of pension are as follows:

	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officers' embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1 The Selection Committee will meet at the India Office in July, and the selected candidates will be required to join a course of instruction commencing early in August, 1930. Applications should be submitted as soon as possible.

ROYAL ARMY MEDICAL CORPS.

TWENTY-FIVE permanent COMMISSIONS in the ROYAL ARMY MEDICAL CORPS will be offered in July, 1930. Applications should reach the War Office not later than July 20th.

Candidates will be selected for Commissions without competitive examination, and will be required to present themselves in London for interview and medical examination towards the end of July. They mus be under 28 years of age on August 1st, 1930, and registered under the Medical Acts.

Officers of the R.A.M.C. are liable to serve in any part of the world where British Troops are quartered.

Ample opportunities exist in the Army for clinical professional work, both Medical and Surgical, as well as for the study and practice of Hygiene, Pathology, and all the special branches.

The cost of Post-Graduate study, which is compulsory, is met from Army Funds.

Pay and Allowances.—From £500 to £2,000 a year according to rank and length of service.

Gratuities on Retirement.—After 7 years' service £1,000.
" 15 " " £2,800.
" 18 " " £3,500

Current rates of retired pay range from £368 10s. per annum, normally earned by a Major after 20 years' service, to £930 per annum, the maximum for which a Major-General is eligible. The rates of pay and retired pay are subject to periodical variation consequent on fluctuation in the cost of living.

Outfit Grant.—An officer on joining receives £50 as outfit allowance.

Marriage Allowance.—Officers of 30 years of age and over who are married are entitled to draw special rates of allowances.

A Voluntary Widows' and Orphans' Fund exists for officers of the Corps.

A certain number of temporary Commissions will also be offered at the same time under the same conditions as regards age and qualifications as those required of candidates for permanent Commissions.

All particulars may be obtained by application, in writing or personally, to the Under Secretary of State, The War Office (A.M.D.I.), Whitehall, London, S.W.1.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A PART-TIME JUNIOR CASUALTY OFFICER is required on July 9th, to assist in the Casualty Department from 10 a.m. to 3 p.m. (Saturdays 10 a.m. to 1 p.m.), under the direction of the Casualty Officer.

The work of this Officer includes a large number of Tonsillectomies and other minor operations.

Candidates must be registered Medical Practitioners, and have held a responsible Hospital appointment.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 30th, accompanied by copies of not more than three testimonials written specially for the purpose.

The appointment is made for six months, and is non-resident.

Salary at the rate of £150 per annum, with luncheon.

All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, July 2nd, at 4.45 precisely.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
June, 1930. Secretary.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A MEDICAL REGISTRAR and PATHOLOGIST is required on October 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, with copies of not more than three testimonials written specially for the purpose, before 12 o'clock on Monday, July 14th.

The appointment is made for one year, but may be held, subject to re-election, for three years.

Salary £300 per annum, with luncheon and dinner when on duty, and an allowance of eighteen guineas for the purpose of providing a substitute during annual leave.

Candidates must be registered Medical Men, and must have held a responsible Hospital appointment, and be prepared to take up the duties on October 1st.

All candidates must be in attendance at the Hospital to appear before the Joint Committee, if necessary, on Wednesday, July 16th, at 4.45 p.m.

Forms of application and copies of the rules for, and details of the duties of, the appointment will be supplied on application to the Secretary.

By Order of the Board of Management,
JAMES McKAY,
June, 1930. Secretary.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY REGISTRAR, to the Ear, Nose, and Throat Department. Candidates must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland. Applications to be sent to the undersigned on or before July 12th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY ASSISTANT RADIOLOGIST. Candidates must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland. Applications to be sent to the undersigned on or before July 12th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

Hounslow Hospital, Staines Rd.,
Hounslow, Middlesex. (70 Beds.)

Wanted, August 1st, male HOUSE SURGEON. Salary £200 per annum, with board, residence, etc. The appointment will be for six months.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent by July 8th (marked "House Surgeon," top left-hand of envelope), to W. T. Ross, Secretary, Hounslow Hospital, Staines Road, Hounslow.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. RENYON, Asst. Secretary.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE SURGEON and CASUALTY OFFICER (male).

Duties to commence as soon as possible.

The duties include charge of four beds devoted to complicated Midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications, accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 26th day of May, 1930.

ARTHUR H. LIMB, Secretary.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st. Salary £150, with rooms, board, and laundry.

Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about [illegible]. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and [illegible] copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF SURGEON to the THROAT DEPT.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, July 22nd, at 4 o'clock in the afternoon, to elect a Surgeon to the Throat Department of this Hospital.

Candidates are required to lodge 50 copies of their applications and testimonials with the undersigned (from whom particulars as to qualifications for the office can be obtained) on or before Friday, July 4th.

THOMAS HAYES,
Clerk to the Governors.
June 13th, 1930.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF ASSISTANT PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, July 22nd, at 4 o'clock in the afternoon, to elect an Assistant Physician to this Hospital.

Candidates, who must be Fellows or Members of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Friday, July 4th.

THOMAS HAYES,
Clerk to the Governors.
June 13th, 1930.

The Royal Gwent Hospital,
NEWPORT, MON. (160 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER to act as House Surgeon to Out-patients and House Physician.

Salary £135, with board, lodging, and laundry. Resident Medical Staff 5. Eligible for promotion.

Large Out-patient Department.

Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to the undersigned.

Applications from ladies not entertained.

J. K. MILLWARD,
June 16th, 1930. Secretary-Supt.

The Royal Infirmary,
SUNDERLAND. (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

Manchester Royal Infirmary
NON-RESIDENT HOUSE PHYSICIAN and HOUSE SURGEON to the Out-Patient Dept.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointments.

Applicants, either sex, must be registered and hold a Medical and Surgical qualification, preference being given to applicants who have held a Hospital appointment.

The appointments are for 12 months, six months as House Physician and six months as House Surgeon) and the duties are wholetime except Sundays. Salary £200 per annum.

Applications, stating age, and testimonials, to be addressed to the Chairman of the Medical Board not later than July 12th.

By Order,
FRANK G. HAZELL,
June 23rd, 1930. Gen. Supt. & Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed to the Secretary, Hon. Medical Staff, Merthyr Hospital.

Leicester Royal Infirmary
PRIVATE PRACTICE. APPOINTMENT OF RESIDENT MEDICAL SUPERINTENDENT.

The Administrative Office[illegible] Military certain specified appointments, a casual vacancy for SURGEON, and the taking [illegible] Resident Casualty Officer to office, so not candidate. If he is elected with this he will be elected a vacancy occurs. Resident Casualty Officer candidates must have held a resident Hospital or had similar experience of Hospital work. Salary at the rate of £135 per annum, six months' appointment. Applications to House Governor and Secretary on or before Tuesday, July 1st.

June 14th, 1930.

Central London Ophthalmic Hospital, Judd Street, W.C.1
HOSPITAL, Judd Street, W.C.1

There is a vacancy for an OUT-PATIENT OFFICER to the Hospital, who shall attend four afternoons a week. Remuneration at the rate of £200 per annum. Applications, with testimonials, showing Ophthalmic experience, to be submitted not later than Saturday, July 5th. Details in regard to the post may be obtained from the Secretary, H. R. S. DRUCE.

Central London Ophthalmic Hospital,
HOSPITAL,
Judd Street, St. Pancras, W.C.1.

There are vacancies for the posts of SENIOR and JUNIOR HOUSE SURGEON. Salaries at the rate of £120 and £100 per annum respectively, with board and residence in the Hospital.

Applications, with testimonials, from duly qualified candidates, must be sent to the undersigned on or before July 5th.

H. R. S. [illegible]

[illegible] Infirmary, Salisbury.
General [illegible] Hospital—151 Beds.)

(Gen[illegible]

HOUSE PHYSICIAN (male) required, to commence duty at the end of July.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

General Infirmary, Salisbury.
(General Hospital—151 Beds.)

Two HOUSE SURGEONS (male) required, to commence duty as soon as possible.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

The Infants Hospital,
Vincent Square, Westminster.

The Committee of Management invite applications for the post of ANÆSTHETIST.

Applications, with copies of not more than three testimonials, to be sent to the undersigned, from whom further information may be obtained.

ALFRED J. SMALL, Secretary.

lministrative County of London

HOSPITALS SERVICE.

LONDON COUNTY COUNCIL invites cations from fully qualified Medical Prac- ers for appointment to positions at the rmentioned Hospitals. Candidates must had previous residential hospital experi- Residential accommodation is available for the person appointed. The appointed will be required to carry out such es as may be assigned by the Medical erintendents, and, should occasion arise, sist at any of the other establishments or ical districts under the control of the don County Council.

) COLINDALE HOSPITAL, Hendon, N.W.9 advanced cases of Pulmonary Tuber- culosis). SENIOR ASSISTANT MEDICAL OFFICER. Commencing salary £650 a year. Candidates must have had pre- vious experience at a Hospital for Pulmonary Tuberculosis.

LAMBETH HOSPITAL, Brook Street, Renfrew Road, S.E.11. JUNIOR ASSIST- ANT MEDICAL OFFICER. Salary £200 a year, with, if non-resident, an allow- ance of £125 a year in lieu of lodging and laundry, together with meals when on duty, these being valued for super- annuation purposes at £25 a year.

LEWISHAM HOSPITAL, Lewisham, S.E.13. ASSISTANT MEDICAL OFFICER; special experience in Midwifery desirable. Salary £300 a year, with board, lodging, and laundry.

NEW END HOSPITAL, Hampstead, N.W.3. JUNIOR ASSISTANT MEDICAL OFFICER. Salary £200 a year, with board, lodging, and laundry.

ST. MARYLEBONE HOSPITAL, St. Charles' Square, Ladbroke Grove, W.10. SECOND ASSISTANT MEDICAL OFFICER. mmencing salary £300 a year, with ard, lodging, and laundry.

RINAL GREEN HOSPITAL, Cambridge ICER. ASSISTANT MEDICAL H, F.2. £400 a year, with board, ing, and laundry.

ge provisional and are subject to se of Council.

se of women, marriage terminates service.

application may be obtained from l Officer of Health (Staff Division), y Hall, Westminster Bridge, S.E.1. d addressed foolscap envelope should ed and forms must be returned by Canvassing disqualifies.

ates desiring to apply for more than pointment must send in a separate form ication in respect of each Hospital. s for further details as to the nature ope of the duties at the individual ls should be addressed to the Medical ntendent of the Hospital concerned.

MONTAGU H. COX, Clerk of the London County Council.

nty Borough of Warrington.

al HITECROSS HOSPITAL. (300 Beds.)

ications are invited for the post of **or** ND RESIDENT MEDICAL OFFICER).

Sul ary £225 per annum, together with board, ence, and laundry at the Hospital.

the above is a General Hospital recently transferred to the Local Authority from the Board of Guardians, and the duties of the Candidate appointed will chiefly comprise the treatment of patients in the male Medical and Surgical and male and female Mental Wards.

Candidates must be single, not exceeding 30 years of age, fully qualified and registered.

Appointment for six months, which may be extended for a further period of six months by mutual agreement.

Applications, stating age, qualifications, and experience, together with copies of not less than three testimonials, to be sent to the undersigned not later than first post Tuesday, July 8th.

G. W. S. JOSEPH, M.D., D.P.H., Medical Officer of Health.

H. alth Dept., Sankey Street, Warrington.

Staffordshire County Council.

COUNTY BACTERIOLOGICAL LABORATORY.

A BACTERIOLOGIST is wanted for one ...ndar month to act as Locum Tenens at the above Laboratory, Stafford.

The person appointed must be a registered Medical Practitioner and must have had experience in the general routine of a Public Health Laboratory, including the Wassermann Reaction.

Remuneration at the rate of twelve guineas per week and necessary travelling expenses.

Applications should be addressed to the undersigned.

EUSTACE JOY, Clerk of the County Council.

County Offices, Stafford.

June 16th, 1930.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Borough of Ilford.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Corporation invites applications from legally qualified Medical persons of both sexes for the office of Assistant Medical Officer of Health, for duties in connection with Maternity and Child Welfare work, School Medical Inspection, and General Public Health work. Candidates for the appointment must have had special qualification, and experience in Midwifery since qualification, and subject to this, preference will be given to candidates who possess the Diploma of Public Health or similar qualification, and have had definite experience in Children's Diseases.

The commencing salary of the officer will be £600 per annum (no bonus), rising by one annual increment of £50 and two annual increments of £25 to £700 per annum, subject to satisfactory service.

The person appointed will be required to devote whole time to the duties of the office, to reside within easy distance of the Corporation's Maternity Home, and to enter into an agreement for the due performance and fulfilment of all the duties and conditions governing the appointment. The appointment will be subject to a satisfactory medical examination and to the provisions of the Local Government and Other Officers' Superannuation Act, 1922.

Applications, which must be made on forms obtainable (with list of duties) from the undersigned, accompanied by copies of three recent testimonials (which will not be returned), endorsed "Assistant Medical Officer of Health," must be received at my office, at the Town Hall, Ilford, not later than Tuesday, July 1st.

Canvassing Members of the Council, directly or indirectly, is prohibited and will disqualify.

By Order, ADAM PARTINGTON, Town Clerk.

Town Hall, Ilford.

June 17th, 1930.

Lancashire County Council.

BIDDULPH GRANGE ORTHOPAEDIC HOSPITAL.

The Lancashire County Council invite applications for the post of RADIOGRAPHER (Non-resident) at the above Hospital.

The salary to be paid is £200 per annum, together with part board. Indoor uniform will also be provided after one month's service.

Candidates should possess a certificate in Radiography from the Society of Radiographers or from an approved training school. The person appointed must be prepared to carry out such other duties in addition to Radiography as may be required.

The person appointed will be required to pass a medical examination and to contribute towards the Council's Superannuation Scheme.

The appointment will be terminable by one month's notice on either side.

Applications, stating age, full details of previous and present appointments and experience, certificates held, etc., and accompanied by copies of two recent testimonials, are to be sent to the Secretary, Biddulph Grange Orthopaedic Hospital, near Stoke-on-Trent, not later than July 14th. Envelopes should be endorsed "Radiographer."

J. J. BETTENWORTH, County Medical Officer of Health and School Medical Officer.

Preston.

Ministry of Pensions.

BIRMINGHAM PENSIONS HOSPITAL COMMITTEE.

HIGHBURY HOSPITAL, MOSELEY, BIRMINGHAM.

Applications are invited for the post of RESIDENT ASSISTANT MEDICAL OFFICER at the above Hospital.

The cases treated are Surgical (mainly Orthopaedic) and Medical. Salary £250 per annum, with lodging, fuel, and light. The appointed candidate is to be prepared to take up duty early in August.

Candidates selected for interview will be required to pay their travelling expenses.

Applications, stating age, experience, and war service (if any), together with copies of recent testimonials, to be received not later than Tuesday, July 15th, addressed to Chairman of the Committee, Highbury Hospital, Moseley, Birmingham.

County of Hertford.

APPOINTMENT OF ASSISTANT LADY MEDICAL OFFICER OF HEALTH FOR MATERNITY AND CHILD WELFARE SERVICES.

The County Council of the Administrative County of Hertford invite applications for the above-mentioned appointment.

Applicants must not be more than 40 years of age. Salary £600 per annum, Actual and necessary travelling expenses will be provided.

Candidates must be fully qualified and registered, and should have had previous experience in Maternity and Child Welfare work, including modern methods of ante-natal care and supervision.

The person appointed will be required to commence her duties at an early date and to devote the whole of her time to the duties of the office. She will hold office during the pleasure of the County Council, and if she desires to leave their service must give them three months' notice of her desire so to do.

Applications should be sent to the undersigned not later than July 12th, and will be required to sign an agreement containing the terms and conditions of her appointment.

The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, which has been adopted by the County Council.

A form of application can be obtained from the undersigned.

ELTON LONGMORE, Clerk of the Hertfordshire County Council.

Clerk of the Peace Office, Hertford.

June, 1930.

Farnworth Education Committee.

SCHOOL DENTIST (Part-time).

Applications are invited from duly qualified Dentists to carry out the Inspection and Dental Treatment of elementary school children. The person appointed will devote five sessions of 2½ hours each per week to the duties of the post, and will act under the administrative supervision of the School Medical Officer.

Salary will be at the rate of £300 per annum.

Applications, with copies of not more than three recent testimonials, should be sent to the undersigned on or before July 7th.

H. J. TYRER, Director of Education.

Education Offices, Ragian Street, near Bolton.

Farnworth,

Rotherham County Borough.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Public Assistance Committee invite applications for the above post at the Hospital, Alma Road, Rotherham.

Salary £150 per annum, together with the usual residential allowances.

Candidates must be single, not exceeding 30 years of age, fully qualified and registered.

Applications, stating age, qualifications, etc., together with copies of three testimonials, to be sent to the Public Assistance Officer, 25, Moorgate Street, Rotherham, not later than July 7th.

CHAS. L. DES FORGES, Town Clerk.

Municipal Offices, Rotherham. June 17th, 1930.

Birmingham Public Health Department.

TUBERCULOSIS SECTION.

TEMPORARY APPOINTMENT.

Applications are invited from single male Medical Practitioners for the post of Temporary Assistant Medical Officer for a period of four months. The successful candidate will be employed both in a sanatorium and in a dispensary. Salary at the rate of £7 7s. per week, with board, residence, and laundry. Forms of application may be obtained from the Chief Clinical Tuberculosis Officer, 44a, Broad St., Birmingham.

F. H. C. WILTSHIRE, Town Clerk.

Papworth Village Settlement,

near CAMBRIDGE, for the Treatment of all Forms of Tuberculosis.

Over 300 Beds (male and female).

Applications are invited for the post of HOUSE PHYSICIAN. Salary £150 per annum, with board, lodging, and laundry. The appointment is for six months.

Applicants must be male and single, and all applications must be sent to the Medical Director, Papworth Village Settlement, Papworth Hall, Cambridge, accompanied by copies of not less than three testimonials.

Ministry of Health.

The Minister of Health invites applications from registered Medical Practitioners for appointment as BACTERIOLOGIST at the GOVERNMENT LYMPH ESTABLISHMENT at Hendon.

The salary commences at £700 per annum, and rises by annual increments of £25 to £1,000 per annum. In addition to the salary, a bonus, which varies with the cost of living, is payable; the bonus on the minimum salary is at present £137 and is next subject to revision on September 29th.

The appointment will carry the usual Civil Service conditions as to pension, holidays, etc., and the Bacteriologist will be required to devote his whole time to the public service.

Candidates must be registered Medical Men of not less than seven years' standing.

Canvassing Members of Parliament or Officers of the Ministry will render the candidate liable to disqualification.

Forms of application, with further particulars of the appointment, may be obtained from the Director of Establishments, Ministry of Health, Whitehall, S.W.1.

No application can be considered unless received on the prescribed form not later than July 14th.

Lindsey County Council.

TEMPORARY ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited for the post of Temporary Assistant County Medical Officer of Health.

The person appointed will be required to act as an Assistant Tuberculosis Officer and School Medical Inspector. He will also be required to take charge of a Venereal Disease Clinic and act as Medical Officer to a Tuberculosis Hospital of 12 beds.

The appointment will be made in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930.

The salary will be at the rate of £600 per annum, with an allowance for travelling on the County Council's scale. The successful candidate will be at liberty to apply for the permanent post shortly to be advertised.

Applications to be made to the undersigned.

Public Health Dept., County Council Offices, Newland, Lincoln. June 21st, 1930.

W. S. H. CAMPBELL, County Medical Officer of Health.

County Borough of Rochdale.

BIRCH HILL HOSPITAL.

ASSISTANT RESIDENT MEDICAL OFFICER.

The Health Committee invite applications from registered Medical Practitioners for the appointment of Assistant Resident Medical Officer (unmarried), at Birch Hill Hospital, Dearnley, near Rochdale. (500 beds.)

The salary will be at the rate of £350 per annum, together with the usual residential allowances.

Forms of application and list of duties and conditions of appointment may be obtained from the Medical Officer of Health, Town Hall, Rochdale, to whom all applications should be returned endorsed "Assistant Resident Medical Officer," so as to be delivered at his office not later than the first post on Thursday, July 10th.

WM. HENRY HICKSON, Town Clerk.

Town Hall, Rochdale. June 21st, 1930.

Hospital for Consumption and DISEASES OF THE CHEST, Brompton, S.W.3.

The Committee of Management invite applications for the post of HOUSE PHYSICIAN (for which there are three vacancies). The duties include work in the Out-Patient Department as well as in the Wards. Applications, with copies of testimonials, must reach the undersigned not later than Saturday, July 12th. The appointment is for six months commencing on August 1st, with an honorarium of £50.

Brompton. June 28th, 1930.

FREDERICK WOOD, Secretary.

Hull Royal Infirmary. (272 Beds.)

Applications are invited for the post of THIRD HOUSE SURGEON (male), vacant July 26th. Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance and will be terminable by one month's notice on either side.

Applications, together with copies of testimonials, should be sent to the undersigned on or before July 5th.

June 19th, 1930.

R. J. CARLESS, House Governor.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

Chesterfield and North Derbyshire Royal Hospital. (190 Surgical and Medical Beds.)

HOUSE SURGEONS.

Applications are also invited from fully qualified men for the above posts, which become vacant on July 31st.

The appointments are for six months.

Salary is from £100 to £175 per annum, according to experience, with board, apartments, and laundry.

Applications, stating age, together with copies of three recent testimonials, should be sent to the undersigned not later than Friday, July 4th.

June 16th, 1930.

G. SUNNUCK, Supt. & Secretary.

City of Manchester Education Committee.

ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from fully qualified Medical Practitioners for the post of Assistant School Medical Officer.

Applicants must have been qualified three years and will be required to devote their whole time to the duties of the office. Preference will be given to those who have special knowledge in the diagnosis and treatment of Diseases of the Ear, and experience in the prescription of spectacles.

The salary is £600 per annum, rising by yearly increments of £25 to a maximum of £750. There is also a yearly allowance of £10 for travelling expenses.

The person appointed will be required to contribute to the Superannuation Scheme of the Corporation.

Forms of application may be obtained from the undersigned, and applications should be returned not later than Saturday, July 12th.

Education Offices, Deansgate, Manchester.

GEORGE GUEST, Acting Director of Education.

South-Eastern Hospital for CHILDREN, Sydenham, S.E.26.

Applications are invited for the posts of Two RESIDENT MEDICAL OFFICERS. The appointments will be for six months from July 7th. Honorariums £100 and £75 per annum, with board, residence, and laundry. Ample time for reading. Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woodfield," Dacres Road, Forest Hill, S.E.23, at once.

Wrexham and East Denbighshire War Memorial Hospital. (109 Beds.)

Two RESIDENT HOUSE SURGEONS (male or female) required at above Hospital, to commence on August 1st. Appointments for a period of not less than six months. Salaries £150 per annum, with board and laundry.

Applications, stating age, nationality, experience, and qualifications, accompanied by copies of three recent testimonials, to be sent to the undersigned not later than Friday, July 18th.

LESLIE SPENCER, Secretary.

Royal Free Hospital, Gray's Inn Road, W.C.1.

Applications are invited for the post of RESIDENT CASUALTY OFFICER (male). Salary £150 per annum. Candidates must be duly qualified registered Medical Practitioners, and must submit applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before July 12th.

REGINALD R. GARRATT, Secretary.

Worcester General Infirmary, WORCESTER. (128 Beds.)

Wanted, a JUNIOR RESIDENT MEDICAL OFFICER, to commence duties on July 1st. Salary at the rate of £120 per annum, including board, residence, and laundry. Applications, together with three copies of recent testimonials, and particulars of age and qualifications, to be forwarded immediately to the undersigned.

PERCY N. GLASS, Gen. Secretary.

The Royal Borough of KENSINGTON.

TEMPORARY TUBERCULOSIS OFFICER.

The Council of the Royal Borough of Kensington are prepared to accept applications for the appointment of a Male Medical Officer, with experience of Tuberculosis work, to act as Holiday Locum at the Kensington Tuberculosis Dispensary, 119, Ladbroke Grove, W.11, for one month as from September 1st.

Sessions: six morning, four afternoon, and one evening per week. Honorarium 35 guineas.

Applications must be delivered to the Medical Officer of Health, Town Hall, Kensington, W.8, not later than July 5th.

Town Hall, Kensington, W.8. June 23rd, 1930.

HORACE RAPSON, Town Clerk.

Fife County Council.

DISTRICT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly registered male Medical Practitioners for the appointment of a District Medical Officer in the County of Fife, commencing salary £500 (average over 10 years not less than £600 per annum). The duties are whole time under the direction of the Chief Medical Officer of Health and are mainly those of clinical work. The person appointed will also undertake such other Public Health work as may be required. Conditions of appointment are in the hands of the Subscriber. Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, to be lodged by June 30th.

County Buildings, Cupar. June 19th, 1930.

J. M. MITCHELL, County Clerk.

Salford Royal Hospital. (265 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered without delay.

By Order of the Board,

Salford Royal Hospital. June 23rd, 1930.

GEORGE RUDDLE, Gen. Supt. & Secretary.

Evelina Hospital for Children, Southwark, S.E.1.

The Committee of Management requires a HOUSE SURGEON (male) for seven months from July 12th (during first three months duty in Casualty and Out-patient Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, before July 7th, to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,

June 23rd, 1930.

H. C. S. SMITH, Secretary-Supt.

Hospital for Women at Leeds.

(For the Treatment of Diseases peculiar to Women.)

HOUSE SURGEONS (Two) wanted, to commence duties August 1st next. One appointment is for six months; and the other appointment will terminate on October 31st next. Salary at the rate of £50 per annum, with board, quarters, and laundry. Applications, with copies of three testimonials, should be sent to the undersigned.

S. CECIL HILL, Secretary.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

An additional CLINICAL ASSISTANT is required in the Surgical Departments of the above Hospital, to attend on Thursday afternoons.

Applications, together with copies of three recent testimonials, to be sent on or before the first post on Wednesday, July 2nd next, to—

June 23rd, 1930.

J. C. BURDETT, Director.

Warrington Infirmary and Dispensary.

ANAESTHETIST.

The Board of Management invite applications for the above post. Attendance at the Hospital is required on six days per week in the mornings up to noon.

The Board are prepared to form a rota of two or three Medical Practitioners if it is impossible for them to secure a candidate for the full six days.

An honorarium of £150 will be paid, or if the rota is made this sum will be proportionately divided.

As this is a part-time post the position may appeal to those Practitioners who are holding other part-time posts or studying for higher degrees.

Applications should be sent in to the undersigned at once, stating qualifications, and also the number of days they wish to attend.

By Order,
HENRY L. BOOT,
Supt. & Secretary.

June 23rd, 1930.

Eccles and Patricroft Hospital,

PATRICROFT, MANCHESTER.

(62 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The appointment is for six or twelve months, salary, commencing, £175 p.a., plus board, residence, and laundry.

Applications, stating age, qualifications, and experience, together with three copies of testimonials, should be sent to the Secretary at the Hospital, as above.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried). Candidates must be duly qualified and registered. The appointment will be for a period ending October 31st. Probable promotion if satisfactory. Salaries of Resident Staff are as follows: Resident Surgical Officer £250, First House Surgeon £175, Second House Surgeon £150, Third House Surgeon £125 per annum, with residence, board, and laundry.

The Hospital contains 230 beds, has a large Eye, Ear, Nose, and Throat Department, Maternity Ward, and Pathological Laboratory.

Particulars of the duties may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent.

A. MIDGLEY,
Secretary.

June 21st, 1930.

Royal Chest Hospital,

City Road, E.C.1.

(Royal Northern Group of Hospitals.)

The post of HOUSE PHYSICIAN at this Hospital is now vacant. The appointment is for six months. Salary at the rate of £100 per annum, with board, residence, and laundry. Applications, with copies of testimonials, should be sent to the undersigned, from whom forms of application, rules, and further particulars can be obtained.

GILBERT G. PANTER,
Secretary.

Royal Northern Hospital,
Holloway, N.7.

Royal Infirmary, Doncaster.

(185 Beds.)

OPENING NEW BUILDING.

Three HOUSE SURGEONS and One HOUSE PHYSICIAN required at once. New building ready for occupation. The House Physician will also be House Surgeon to Ophthalmic, and Ear, Nose, and Throat Departments.

The salary of each post is £150 per annum, with board, residence, and laundry.

Appointments are for six months and are renewable.

Applications, stating age and full particulars, together with copies of testimonials, should be sent at once to the Secretary-Superintendent.

The Mount Vernon Hospital,

NORTHWOOD, MIDDLESEX.

The Council of Management will shortly proceed to the election of a GYNAECOLOGIST. Candidates must be registered Fellows of the Royal College of Surgeons.

Applications, with copies of three testimonials, should be addressed to the undersigned.

Offices:
7, Fitzroy Square, W.1.
WILLIAM J. MORTON,
Secretary.

Advertisements for these columns must reach us before noon on Tuesday to ensure insertion in the next issue.

The Royal Hospital,

WOLVERHAMPTON.

(Incorporated under Charter.)

CASUALTY OFFICER AND HOUSE SURGEON to Ear, Throat, and Nose Department (male), required. Duties to commence forthwith.

The Hospital contains 240 beds, contains the usual Special Departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical practice.

Candidates must be registered under the Medical Acts, and unmarried.

The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients.

Salary at the rate of £125 per annum, Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned.

W. H. HARPER,
House Gov. & Sec.

June 18th, 1930.

Bath, Somerset, and Wilts Central Children's Orthopaedic Hospital,

Combe Park, BATH.

Applications are invited for the post of HOUSE SURGEON.

The appointment will be for six months, with salary at the rate of £120 per annum, together with quarters, board, and laundry.

Candidates must have had special experience in administering Anaesthetics.

Applications, with copies of three recent testimonials, should be forwarded at once to the undersigned.

HAROLD J. FRICKER, Secretary.

Bristol Homoeopathic Hospital.

(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of HOUSE SURGEON at a salary of from £120 to £150 per annum, according to experience, with board, laundry, and residence in the Hospital, etc., provided.

Good Surgical and general experience.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they can commence duties if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

Stroud General Hospital,

STROUD, GLOS.

HOUSE SURGEON required to commence duty on August 8th. Salary £150 per annum, with board, lodging, and washing. The appointment is tenable for six months, but application may be made for an extension of this period. Candidates must be registered according to the provisions of the Medical Act, etc.

Applications, stating age, nationality, etc., together with copies of three recent testimonials, to be sent to the undersigned.

C. FORD SPENCER,
Secretary.

Taunton and Somerset Hospital,

TAUNTON (104 Beds.)

JUNIOR HOUSE SURGEON (male) required. Two other Resident Officers. Appointment for six calendar months. Salary at the rate of £160 per annum, with board, residence, and laundry.

Applications with testimonials, to F. J. J. STACEY, Secretary.

Newark General Hospital.

(50 Beds.)

Wanted, a fully qualified RESIDENT HOUSE SURGEON (male or female, unmarried). Salary £150 per annum, with board, residence, and laundry. Appointment for six months or twelve if mutually desired. For form of application apply to W. T. CRAMPTON, 27, Kirk Gate, Newark, Notts.

Liverpool and District Hospital

FOR DISEASES OF THE HEART.

HOUSE PHYSICIAN (male or female) required for period of six months from July 1st. Salary at rate of £52 per annum, with board and residence (private sitting room). Applications to Miss LEWIS, Secretary, 14, Cook Street, Liverpool.

North Staffordshire Royal Infirmary, Stoke-on-Trent.

(350 Beds.)

(A recognized Training School for Nurses.)

MATRON.

Applications are invited for the post of Matron. Candidates must be certificated Nurses, have had experience of training of Nurses, housekeeping, laundry supervision, and administration of a Voluntary Hospital.

On receipt of a request, the House Governor will give all necessary particulars.

Applications for the appointment to reach the undersigned not later than Tuesday, July 8th.

W. STEVENSON,
Secretary and House Governor.

Derby-shire Royal Infirmary,

DERBY.

(General Hospital: 345 Beds.)

Applications are invited for the post of OPHTHALMIC HOUSE SURGEON.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months.

Salary will be £100 per annum, with apartments, board, etc.

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent [illegible]

June [illegible] 1930.

WALTER BANKS,
Supt. & Secretary.

The Jessop Hospital for Women,

SHEFFIELD.

Gynaecological and Maternity Departments.

(145 Beds.)

The Board of Management invite applications for the appointment of Three ASSISTANT HOUSE SURGEONS (male) for six months from July 15th.

Salary £160 per annum, together with board, residence, and laundry.

Applications, stating age, together with copies of recent testimonials, should reach the undersigned on or before July 1st.

H. B. SHELSWELL, Secretary.

Royal Infirmary, Wigan.

(160 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post. Candidates must be qualified and registered, and have held previous resident appointment at a Hospital. The salary is as follows: £250 per annum, with board, residence, and laundry. The appointment is tenable for one year, and the other is eligible for re-election for a second year. The duties to commence July 1st. Applications, giving full particulars of registration and not more than three testimonials, to be sent to the undersigned as soon as possible.

A. STANLEY BRENT,
Gen. Supt. & Sec.

June 2nd, 1930.

Royal Infirmary, Wigan.

(180 Beds.)

Wanted July 1st, for six months, Two HOUSE SURGEONS. Salary £150 per annum, with board, apartments, and washing. Doubly registered.

Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, to reach the undersigned as soon as possible.

A. STANLEY BRENT,
Gen. Supt. & Sec.

June 2nd, 1930.

Torbay Hospital. Torquay.

(146 Beds.)

HOUSE PHYSICIAN wanted for July 30th. Salary £175 per annum, with board, residence, and laundry allowance. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, must be received by the undersigned not later than Monday, July 15th, with copies of not more than three recent testimonials.

E. L. GRIST,
Secretary.

June 21st, 1930.

The Hospital for Sick Children, Newcastle-upon-Tyne.

The Committee of Management have declared a vacancy for an HONORARY SURGEON.

Applications, stating age and qualifications, are invited for this appointment, and should be sent to the Secretary, Mr. NEIL BARNES, 13, City Road, Newcastle, accompanied with copies of three recent testimonials, on or before July 7th. Canvassing a disqualification.

Central London Throat, Nose, and Ear Hospital, Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (Male).

There will be a vacancy for a Third Resident House Surgeon to enter on duty on Sept. 1st next.

The appointment will be for a period of nine months—three months as Third House Surgeon, three months as Second House Surgeon, and three months as First House Surgeon.

Remuneration at the rate of £75 per annum.

Applications for this appointment, accompanied by copies of not more than three testimonials, should be sent to the undersigned on or before July 5th.

JOHN H. YOUNG,
Secretary-Superintendent.

The Gloucestershire Royal Infirmary and Eye Institution, Gloucester. (153 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN (male) and SECOND HOUSE SURGEON (male). Salaries £135 and £100 per annum respectively, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointments are for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidates will be required to enter upon their duties at once.

F. J. SYMONS,
June 26th, 1930. Secretary.

Royal Free Hospital, Gray's Inn Road, WC.1.

Applications are invited for the post of RESIDENT ANAESTHETIST to the Gynaecological and Obstetric Unit. Salary £150 p.a. Candidates, who must be fully qualified and experienced, should send applications, stating age, accompanied by copies of three recent testimonials, to the undersigned on or before the 5th prox. The appointment is made for a period of six months, but renewable. Preference will be given to candidates who have held resident posts.

REGINALD R. GARRATT, Secretary.

St. Mark's Hospital for Cancer, Fistula, and Other Diseases of the Rectum, City Road, London, E.C.1.

HOUSE SURGEON (male) required. Must be fully qualified. Salary £75 per annum, with board, residence, and laundry. The appointment is for a minimum of six months. Applications, with copies of testimonials, to be sent to the Secretary (from whom further particulars may be obtained) by Friday, July 4th.

Huddersfield Royal Infirmary. (200 Beds.)

Male HOUSE SURGEON required, to commence duty July 20th. Salary £150 per annum, with board, residence, and laundry. Appointment terminates December 31st, but is subject to renewal for further three or six months.

Applications, with copy testimonials, to be addressed to the Secretary, Huddersfield Royal Infirmary.

Golden Square Throat, Nose, and Ear Hospital, London, W.1.

HOUSE SURGEON (male) required for August 1st. Salary £100 per annum, with board and lodging.

Applications, stating age, qualifications, and experience, together with copies of three testimonials, should reach the undersigned on or before July 7th.

F. P. CARROLL,
Secretary-Superintendent.

Free Eye Hospital, Southampton

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry. Applicants must have had Post-Graduate experience in Ophthalmology. Applications, with three recent testimonials, to reach the Secretary by Wednesday, July 2nd.

The County Hospital, York.

Applications are invited for the post of RESIDENT ANAESTHETIST, who will also be required to assist the House Surgeon. Salary £150, with board and residence. Duties begin August 1st. Applications, stating age and experience, together with copies of not more than three recent testimonials, to be sent to the Matron not later than July 1st.

Newcastle-upon-Tyne General Hospital.

Applications are invited from registered Medical Practitioners for the following appointment:

MEDICAL DIRECTOR (part-time), to take charge of the Medical Clinic of approximately fifty beds, organise and direct the same. It is proposed that the staff assisting the Director will be an Assistant Physician, a Medical Registrar, and a Resident House Physician. Applicants for the post of Medical Director must be practising as Consulting Physicians and Doctors of Medicine of a British University, or Fellows or Members of the Royal College of Physicians of London. Preference will be given to candidates who have had experience on the staff of a Teaching Hospital, and have acted as Teachers in a recognised School of Medicine. Salary at the rate of £300 per annum.

Applications to be sent to the Medical Officer of Health, Town Hall, Newcastle-on-Tyne.

Royal Northern Hospital, Holloway, N.7.

Applications are invited for the following posts, vacant on September 15th.

OBSTETRIC HOUSE SURGEON for six months.

RESIDENT OUT-PATIENT CASUALTY OFFICER AND ANAESTHETIST for six months.

HOUSE SURGEON for nine months (six months as House Surgeon and three months as Casualty Officer).

Salary in each case at the rate of £70 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent by July 12th to the undersigned, from whom forms of application and rules can be obtained.

GILBERT G. PANTER, Secretary.

Royal Westminster Ophthalmic Hospital (Incorporated by Royal Charter), Broad Street, Holborn, W.C.2.

REFRACTION ASSISTANTS.

The Committee of Management is prepared to receive applications for the appointment of Refraction Assistants, to commence on August 1st, for duty twice a week, and the appointments are tenable for six months. Salary at the rate of £100 per annum.

Candidates must be duly qualified Medical Practitioners, and have had experience in Refraction work.

Applications, with copies of testimonials, to be sent to the Secretary, from whom further particulars can be obtained, not later than Saturday, July 5th.

The Victoria Hospital for Children, Tite Street, Chelsea, S.W.3. (138 Beds.)

The Committee of Management invite applications for the posts of HOUSE PHYSICIAN and HOUSE SURGEON (both vacant August 1st). The appointments are for six months. Salaries at the rate of £100 per annum, with board, lodging, and washing.

Candidates must attend the Hospital for the purpose of an interview at 4.30 p.m. on Friday, July 11th. (No travelling or other expenses will be paid.) They must hold Medical and Surgical qualifications, and be registered under the Medical Act.

Applications, with copies of three recent testimonials, should be sent to the Secretary not later than first post on Wednesday, July 9th.

By Order,
D. ST. JOHN BAMFORD,
Secretary.

Stockton and Thornaby Hospital, Stockton-on-Tees. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties earliest possible.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

The Sheffield Royal Hospital.

RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £80 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—

W. H. BOOTH, Supt. & Secretary.

Royal Infirmary, Blackburn. (240 Beds—Five Residents.)

RESIDENT HOUSE PHYSICIAN (male) required at a salary of £175 per annum, with board, residence, laundry, etc. In addition to Medical Wards, to be attached to Eye, Ear, Nose, and Throat Department. To commence duties as early as possible.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Sec.

This Institution is recognized for the Surgical Practice required for the F.R.C.S. Final Examination.

Royal Hampshire County Hospital, Winchester. (158 Beds.)

HOUSE PHYSICIAN.

Applications are invited from fully qualified men for the above post, which is tenable for six months from July 1st. Salary £150 per annum, with board, residence, and laundry. Candidates, who must have had Ophthalmic experience and be of British nationality, should make application at once to the undersigned, enclosing copies of three testimonials.

HERBERT MASLEN, Secretary.

Royal Hospital, Richmond, Surrey.

JUNIOR HOUSE SURGEON (male) required to take up duties early in September. Salary at the rate of £100 per annum, with board, furnished apartments, and washing. Candidates must be fully qualified and registered, and single. The appointment will be for six months, after which the successful candidate will be eligible for the Senior post. Applications, stating age, experience, and copies of three recent testimonials, must be forwarded to me as soon as possible.

RICHARD ALLEN, Secretary.

Norfolk and Norwich Hospital, Norwich.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned, not later than Tuesday, July 8th.

FRANK INCH,
June 27th, 1930. House Gov. & Sec.

The Royal Infirmary of Edinburgh.

MEDICAL REGISTRAR FOR STATISTICAL RESEARCH.
Honorarium £250 per annum.

The Statistical Research Committee of the Honorary Staff invite applications for the office of Medical Registrar to supervise and direct work in the Statistical Research Department to be established under their direction in the Royal Infirmary.

Applications, stating age, qualifications, and experience, to be forwarded to the Superintendent, Royal Infirmary, Edinburgh.

The Queen's Hospital for Children, Hackney Road, London, E.2.

Telephone: Bishopsgate 6305 and 2534.

CLINICAL ASSISTANT required in the Orthopaedic Department. Attendance every Thursday at 1.30 p.m. Lunch provided. Honorarium of 5s. per attendance to cover expenses. Applications, stating age, qualifications, and experience, should be addressed to the Secretary at the Hospital, and should be delivered on or before July 10th.

T. GLENTON-KERR,
June 17th, 1930. Secretary.

Lowestoft and North Suffolk Hospital, Lowestoft.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in August.

Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Applications, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (in the case of Scottish appointments, with the Scottish Medical Secretary, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	CONTRACT PRACTICE.
EBBW VALE, MON. (*Workmen's Medical Society.*)	
GILFACH GOCH, GLAMORGAN. (*Workmen's Medical Scheme.*)	
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. (*Workmen's Medical Scheme*)	
MARDY, GLAMORGAN. (*Workmen's Medical Scheme.*)	

Town or District.	CONTRACT PRACTICE (*contd.*)
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. (*Workmen's Medical Scheme.*)	
NEATH AND DISTRICT. (*Medical Aid Association.*)	
OAKDALE, MON. (*Medical Officer for Medical Aid Association.*)	
OGMORE VALLEY, GLAMORGAN. (*Wyndham Colliery Medical Aid Society.*) (*Workmen's Medical Scheme.*)	

Town or District.	PUBLIC HEALTH
CORNWALL EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female.*)	
MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. (*Assistant Medical Officer.*)	
YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. (*Assistant School Medical Officer.*)	
YORKSHIRE WEST RIDING COUNTY COUNCIL. (*School Medical Inspector.*)	

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. (*All Friendly Society Appointments.*)	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.
QUEENSLAND. (*Brisbane Associated Friendly Societies Institute.*)	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.
SOUTH AUSTRALIA. (*Lodge Appointments.*)	Secretary, South Australian Branch, 207, North Terrace, Adelaide.
VICTORIA. (*All Institute or Medical Dispensaries.*)	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association Medical Society Hall, East Melbourne, Victoria.
WELLINGTON, NEW ZEALAND. (*Contract Practice Appointments.*)	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
WESTERN AUSTRALIA. (*Contract and Lodge Practices.*)	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

June 25th, 1930. By Order of the Council. ALFRED COX, Medical Secretary.

Bolingbroke Hospital,
Wandsworth Common, S.W.11.
(121 Beds.)

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male). The post is that of Senior Resident Officer and the work being chiefly surgical, preference will be given to candidates holding the F.R.C.S. qualification.

The appointment is for twelve months. Salary £200 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

W. S. RANDOLPH BISS, Secretary-Superintendent.

Bolingbroke Hospital.
Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE PHYSICIAN (male) required. The appointment is for six months, commencing on August 1st next. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three recent testimonials, should be sent to the undersigned on or before July 9th.

W. S. RANDOLPH BISS, Secretary-Superintendent.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON. also OPHTHALMIC HOUSE SURGEON (68 Ophthalmic beds).

The salary attached to the appointments (which will terminate on September 30th next) is £80 per annum, with board and residence.

Applications, with copies of testimonials, should be addressed to the undersigned forthwith.

Board Room, June 17th, 1930. JNO. W. BARNES, F.C.I.S., Gen. Supt. & Sec.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of RESIDENT ASSISTANT PHYSICIAN at the above Hospital, duties to commence at once. Candidates must be unmarried and duly registered Medical Practitioners, and must have held the post of House Physician at a General Hospital.

Preference will be given to candidates who hold the Diploma of M.R.C.P. As Senior Resident Officer he will be responsible for certain administrative duties, and later those of Medical Registrar, and such duties in connection with the Post-Graduate College as the Board may approve.

The appointment is for one year, but the holder shall be eligible for re-election annually up to a maximum period of three years. Salary at the rate of £300 per annum (plus £25 p.a. for services in connection with the Venereal Diseases Department), with board and residence. The appointment may be terminated by one month's notice on either side.

Candidates are required to send to me seven copies of their application and testimonials, also to send a copy to and to call upon each member of the Medical Council. Applications must reach me not later than first post on July 11th. Candidates must attend a meeting of the Medical Council at 4.30 p.m. on Friday, July 18th. Selected candidates will be required to attend the Board of Management at 5 p.m. on Tuesday, July 22nd, when the appointment will be made.

H. A. MADGE, Secretary.

The Willesden General Hospital
(Incorporated), N.W.10.
(106 Beds.)

Applications are invited for the appointment of RESIDENT HOUSE SURGEON. Candidates must be duly registered under the Medical Acts, and unmarried.

Salary at the rate of £110 per annum.

Detailed applications, with copies of testimonials, to be sent to the Secretary by Thursday, July 3rd.

R. J. HEARNE, Secretary.

June 14th, 1930.

Poplar Hospital for Accidents,
East India Dock Road, Poplar, E.14.

The Committee invites applications for the appointment of SECOND RESIDENT OFFICER at a salary at the rate of £175 per annum, all found.

Candidates must have held appointments as House Surgeon at a Hospital. Applications must be accompanied by a statement of the candidate's qualifications, and be forwarded to the Secretary, with three recent testimonials, not later than Thursday, July 10th. The appointment is for a period of six months.

The Guest Hospital and Eye
INFIRMARY, DUDLEY.
(General Hospital—104 beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Salary £150 per annum, according to experience, with furnished apartments, board, and laundry. Candidates must be fully qualified and registered. Applications, stating age, qualifications, and experience, and accompanied by copies of testimonials, to be sent to the undersigned.

H. RAYMOND HURST, Secretary.

The Guest Hospital, Dudley. June 14th, 1930.

Royal Cornwall Infirmary,
TRURO. (84 Beds.)

HOUSE SURGEON (male) required, with experience of X-ray work and Anæsthetics. Salary £170 per annum, rooms, board, and washing.

Apply, with copies of three recent testimonials, to the Secretary, of whom further particulars may be obtained.

West London Hospital,
Hammersmith, W.6.

Applications are invited for the post of CLINICAL ASSISTANT (Two Vacancies) in the Children's Medical Out-patient Department from registered Medical Practitioners, male or female, unpaid. Attendance on Wednesday and Saturday mornings.

H. A. MADGE, Secretary.

ASSISTANCIES.

Wanted, early in September, an outdoor ASSISTANT, with definite view to Partnership, in a good-class Country Practice. Must have held a resident appointment. English or Scotch. Oxford or Cambridge Graduate preferred.—Address, stating essential particulars, No. 4337, B.M.A. House, Tavistock Sq., W.C.1.

Wanted at once.—Experienced male ASSISTANT, outdoor, for mixed private and panel Practice in Manchester suburb. Scotch Graduate preferred. Good salary and commission on mids. Possibly with view later to suitable man.—Address, giving age, full particulars, copies of recent testimonials and photograph, No. 4319, B.M.A. House, Tavistock Square, W.C.1.

Wanted Shortly.—Assistant, outdoor, in an industrial district in North Staffs. Salary £5 plus an allowance for a motor. Coal, gas, light, and heat found. Sign usual bond. Must have some previous experience.—Address, No. 4322, B.M.A. House, Tavistock Square, W.C.

Wanted at once.—Experienced ASSISTANT, outdoor, in large mixed Practice near Birmingham; no view. Salary £450 p.a. Car or motor cycle if possible. Garage free. Allowances for petrol and oil. Age 27-35 preferred. —No. 4320, B.M.A. House, Tavistock Sq., W.C.1.

Wanted at once, in Cheshire town, male ASSISTANT, English or Scotch; no Jews. Some experience desirable. £3 0 indoor, or £170 outdoor; view to suitable man. —Address, No. 4328, B.M.A. House, Tavistock Square, W.C.1.

Wanted for early August, indoor ASSISTANT in pleasant country Practice in Midlands. British nationality. £300. Partnership at early date. Send photo. and particulars school and college, etc. Work light. All sports obtainable.—Address, No. 4313, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced, indoor, male ASSISTANT, under 30, Protestant, English or Scot. Private and panel Practice. Clean town. Prospects. Salary from £300 p.a. Photo. — Address, No. 4325, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Indoor Permanent ASSISTANT, panel and private Practice, East London. Scot pref.; no Jew or man of colour. Give full parties. Testimonials, with stamped addressed envelope only, returned. —No. 4310, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Midland County.—Lady ASSISTANT, outdoor. Experienced panel and midwifery. Able drive car.—Address, giving full particulars, No. 4327, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately. — Indoor and Outdoor ASSISTANTS for Country and Town Practices, with and without view. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant, for rural Practice in Lindsey. Good routine experience. Car to drive. Usual bond. —Address, giving particulars, EMINSON, Gonerby House, Scotter, Gainsborough.

Wanted.—Well-qualified Assistant, with view, in West Country Seaside Resort. No panel or dispensing. Terms on application.—Address, giving full particulars, No. 4302, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Woman Assistant in Partnership Practice, near Coventry, to commence on July 21st. Salary five guineas per week, indoor. Work light.—Address, No. 4312, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant male, young, capable, energetic, for panel and private Practice, Newcastle-on-Tyne. Salary £400 per annum.—Address, No. 4323, B.M.A. House, Tavistock Square, W.C.1.

Assistants and Locum Tenens.—Gentlemen immediately available for the foregoing, age 25—35, of good address, experience, and of British birth, are invited to call upon THE MEDICAL AGENCY, Watergate House, 15, York Buildings, Adelphi, W.C.2, between 10.30 and 4 p.m.

Assistant (man or woman), indoor, wanted; Country Town, Midlands. Public Health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essential particulars are stated.—No. 4326, B.M.A. House, Tavistock Sq., W.C.1.

Assistantship or Locum, desired by M.R.C.S., L.R.C.P., woman. Experience in private and panel practice. Used to sole charge. — Address, No. 4301, B.M.A. House, Tavistock Square, W.C.1.

Part-time Assistant wanted, South London. Five evenings per week, Dispensing, £2 12s. 6d.; or one evening Surgery and Sundays, £2 2s. Suit Doctor doing Post-graduate work.—Address, No. 4331, B.M.A. House, Tavistock Square, W.C.1.

Part-time Assistant required for Surgery in West Ham. Would suit man studying for higher degrees at London Hospital.—Address, No. 4321, B.M.A. House, Tavistock Square, W.C.1.

Reliable Assistants wanted. £300, Indoors. £175, rooms, light and attendance. Also Locums at £8 8s. per week. —HAROLD GRIFFITHS & Co., Medical Transfer Agents, Tredegar Chambers, Queen's Square, Newport, Mon.

Straits Settlements. — Wanted, ASSISTANT immediately, age about 30. Excellent prospects for keen suitable man.—Address, No. 4107, B.M.A. House, Tavistock Square, W.C.1.

Surgical Assistantship wanted by F.R.C.S.Eng., preferably abroad. Competent undertake all general surgery. Good experience and references. Married, aged 26 years. — Address, No. 4317, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Fully qualified DOCTOR for service in the TROPICS. Preferably ex House Surgeon or Physician. Agreement for three years. Salary £850, £900, £950. Renewable on higher terms. Free furnished quarters and first-class passage provided. Candidates must be unmarried. Ladies not eligible. — Address, with copies of testimonials (not returnable), No. 3801, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary - Dispensers, Nurse - Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctor wishes to recommend refined and capable LADY SECRETARY. Shorthand, typewriting, etc. Very responsible. Excellent references.—Address, No. 4308, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Experienced Medical Bibliographer seeks WORK.—Translations, Abstracts, etc.—Address, No. 4012, B.M.A. House, Tavistock Square, W.C.1.

Lady Clerical Assistant to Medical Officer. Large factory, London. Shorthand, typing and knowledge medical terms essential. Aged 25 to 32. Salary 65/- per week.—Address, No. 4316, B.M.A. House, Tavistock Square, W.C.1.

Lady Secretary seeks RE-ENGAGEMENT—Shorthand, Typing, Bookkeeping, French. Good references. — Miss PAGE, "Littlecote," Linksway, Northwood, Mdx.

Part-time Work in London from end August till November, required by M.B. reading for higher exam. Address, No. 4329, B.M.A. House, Tavistock Square, W.C.1.

Secretary - Dispenser (lady), qualified, requires POST, preferably South of England or abroad. Experienced in private and panel practice and Dispensary work. Splendid references.—Address, No. 4332, B.M.A. House, Tavistock Square, W.C.1.

The Royal Army Medical Corps ASSOCIATION. — If you require t trained in all branches of hospital wor Dispensers (capable of undertaking retur clerical work, etc., connected with Ministry Health), Clerks, Laboratory Assistants, gener hospital duties, Porters, Caretakers, etc.—Apply Secretary, 85, Eccleston Square, S.W.1.

Typewriting.—Expert undertake Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—Thes Primrose Hill 0803, or write BEATRI RADFORD, c/o Smith's, 487, Finchley Road N.W.3.

LOCUMS.

HOLIDAY LOCUMS.

FOR A RELIABLE SUBSTITUTE CONSULT

THE MEDICAL AGENCY.

(WILLIAM H. GRANT.)

WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2 *Tel.* { TEMPLE BAR 1034 RIVERSIDE 1234. *(Night Calls).*

Telegrams:

"REASIDE, TUBERCLE, WESTRAND, LONDON.

Wanted.—Locum Engagement for coming season, any period, M.R.C.S., L.R.C.P., age 27, keen, active, rehab well rec., 2 yrs.' exp. G.P., panel, priv. Lon S. Eng., or Manch. pref., not essen. Free now. No. 4309, B.M.A. House, Tavistock Sq., W.C.

Wanted. — Reliable and experienced Practitioners (male and female for LOCUM engagements. State full particulars —BRITISH MEDICAL BUREAU, 33, Cross Street Manchester.

As Locum.—Experienced (middle-aged) Doctor, had own Practice, now doing some 10 locums annually, desires further ENGAGEMENTS from 6 gns. p.w. If country where car and driver available. Good refs.—"MERCUS," c/o Poelaert, 24, Colville Rd., Bayswater, W.

Gold Coast Colony, West Africa —LOCUM TENENS required for six months commencing early August. Salary £8 per month (from date of sailing) and free quarters. Experience in Tropical Medicine and Practical Surgery essential.—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, Oxford Street, London, W.1.

Locum wanted July 31st t August 31st. Charming district near Cardi Work light. Own car or cycle preferred. H pitality for wife considered. State terms.—Appl Dr. BEVERIDGE, Glen View, Dinas Powis, Gla

Locum Tenens and Assistan required, preferably those living with easy distance of Liverpool.—For further p ticulars apply to Messrs. R. SUMNER & C Ltd., Manufacturing Chemists, 40, Hanover S Liverpool.

M.B., Ch.B.Ed., Scot, aet. 3 ex H.S., ex H.P., 2½ yrs.' G.P., desi 3 WEEKS' LOCUM, late Aug. or Sept., town country, with hospitality to wife. Terms nece ing to size of Practice and whether own car r —No. 4306, B.M.A. House, Tavistock Sq., W.C

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YORKSHIRE.—Middle and working-class G.P. Medium-sized house to rent at £85 p.a. approx. Fees 3/- up. Appointments. Receipts average £2,000 p.a. approx. Part down, balance by arrangement. Premium 1½ years' purchase or near offer.

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BEDS.—NUCLEUS Country PRACTICE. Medium-sized house, with all conveniences. Receipts about £500. Panel (increasing) 80. Premium £350.

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5. LANCS.—Good middle-class PRACTICE in Town of 45,000 and worth £1,200, with panel of 900. House in residential area, slightly opposed, with garage. Price £1,100 or might be rented. Premium 1½ years.
6. LONDON, N.W.—Very old-estab., PRACTICE at present run as a "Lock-up," returning, with 3 hours' daily attendance, £700 a year, mostly panel. Capital house in excellent main road (freehold) for sale. Capable of great extension by resident man.
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8. DEATH VACANCY.—NORTH WALES COAST. Good-class PRACTICE. Estab. 2 years. Receipts £1,200, and increasing. Small panel, not encouraged, but scope. Good modern house to rent or purchase.

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(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London.

Oxford Street, W.1.

Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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1 MIDLANDS.—Fourth Partner required in good middle-class non-dispensing Practice £8,000 p.a. in prosperous town. Very small panel. Small house to rent. One-sixth share at 2 years' purchase. Partner should be aged about 30 and well qualified.

2 LANCASHIRE.—Practice in rapidly growing district near coast and popular resort. Receipts last year £1,183. Panel 260 about. Very nice compact freehold house (4 bedrooms, electric light, etc.), with beautiful garden, for sale. Premium for Practice £500.

3 WEST MIDLANDS.—Practice about £1,050 p.a. in residential country district. Panel over 500. Excellent house (5 bedrooms), with electric light, etc., garage, and 3 acres land for sale or rent. Premium 1½ years' purchase.

4 YORKSHIRE (N.R.).—Practice £920 p.a. in small attractive Country Town. Panel 450. Good house (5 bedrooms), garage, garden, etc., for sale or rent. Very good trout fishing. Premium £1,250.

5 LONDON, S.E.—Partnership in increasing middle-class Practice £4,600 p.a. in suburban district. Panel 3,300. Premium one-third or one-fourth share 2 years' purchase. Partner aged about 30, with experience in minor surgery.

6 SOUTH MIDLANDS. — Practice over £1,200 p.a. in Market Town. Panel 900. Pleasantly situated house (6 bedrooms), with good garden, for sale. Scope. Premium 1½ years' purchase.

7 SOUTH MIDLANDS. — Practice of £756 p.a. in County Town. Small panel. Large freehold house (9 bedrooms), garages, and garden, for sale. Good hospital. Premium 1½ years' purchase.

8 LONDON, N.—Practice about £1,700 p.a. in thickly populated district. Panel 1,300. Corner house (2 bedrooms) to rent. Considerable scope. Premium £2,750.

9 SOUTH COAST. — Non-dispensing Practice about £550 p.a. in popular resort. Small panel. House (5 bedrooms), with garage, to let. Plenty of scope. Prem. £500.

10 OUTLYING EASTERN SUBURB.—Cash and Panel PRACTICE, averaging £800 per annum. Panel 750. steadily increasing. Great scope for one residing on premises. Long lease. Price £850.

11 LONDON, S.W. — Good-class non-panel PRACTICE in pleasant residential outlying suburb. Receipts formerly about £1,500 p.a. House in good position. Premium based on results.

12 WEST OF ENGLAND. — Easily worked better middle-class PRACTICE in Inland Health Resort. Receipts 1929, £1,179. No panel. Nice house (7 bed and dressing rooms), garage, and garden, for sale or rent. Great scope. Premium £1,650, to include drugs.

13 SOUTH-WEST OF ENGLAND.—Country PRACTICE averaging £1,763 p.a. (£600 from panel) in beautiful district. Good panel. Small house (4 bedrooms), garden and orchard, to rent. Premium 1½ years' purchase.

14 EAST COAST.—Partnership in Practice in favourite watering-place. No panel. Share of about £1,000 p.a. (after preliminary Assistantship) at 2 years' purchase. Applicant should be young and have held Hospital appointments.

15 HOME COUNTIES.—Country Practice over £1,200 p.a. in agricultural district. Panel over 800. Excellent detached house (5 bedrooms), garden, and paddock, for sale. Hunting, shooting. Premium 1½ years' purchase.

16 SOUTH-WEST OF ENGLAND.—Practice averaging £1,666 p.a. in seaport town. Panel over 2,000. House, with 5 or more bedrooms, for sale. Premium £2,500.

17 YORKSHIRE (W.R.). — Practice nearly £1,500 p.a. in manufacturing town. Panel about 750. Good house, with nice garden, to rent or purchase. Premium 1½ years' purchase.

18 SCOTLAND. — Practice averaging nearly £1,000 p.a. in small Seaport Town on South-West Coast. Panel about 400. Sport. Premium £850.

19 KENT AND SURREY BORDERS.—Practice about £800 p.a. in growing and pleasant residential district. Choice of residence for sale. Good scope. Premium £1,200.

20 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

21 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. Panel 500. House (5 bedrooms) for sale. Good scope. Premium £1,500.

22 SOUTH-WEST OF ENGLAND.—Partnership in increasing middle-class Practice of about £2,500 in seaport town. Panel 870. One-fourth or one-third share at 2 years' purchase. Preliminary Assistantship.

23 LONDON, W.—Rapidly increasing Practice about £600 p.a., easy access to the West End. Panel 370. House, with 2 bedrooms, etc., to rent. Premium £300.

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Practices and Partnerships for Disposal (continued).

24 LONDON, S.W.—Partnership in non-dispensing Practice about £3,300 in first-rate residential suburb. Small select panel. Hospital. Premium one-third share 2 years' purchase.

25 SOUTH OF ENGLAND.—Practice of £900 p.a. in Market Town under 100 miles from London. Panel 257. House (5/6 bedrooms), garage, and good garden, for sale. Premium 1½ years' purchase.

26 SOUTH COAST.—Practice nearly £900 in favourite watering-place. Panel about 200. House (5 bedrooms) in good position for sale. Scope in all directions. Premium to effect quick sale only £600.

27 OPHTHALMIC PRACTICE in good Town 30 miles from London.—Receipts past twelve months £467 (one day a week only). Hospital. Premium £800.

28 SOUTH WALES.—Seaport Town.—Non-dispensing PRACTICE of £1,300 p.a. Small panel. Pleasantly situated house (5 bedrooms), garden, and garage, for sale or rent. Premium £1,500.

29 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

30 EAST MIDLANDS.—Practice of £2,600 p.a. in good town. Panel 1,750. Very good house (3 bedrooms), nice garden and garage, to rent. Hospital. Premium 1½ years' purchase.

31 NEAR EAST.—Practice, with some major Surgery if desired. Good Hospital. Two appointments. Low premium for quick sale.

32 YORKSHIRE. — Partnership in Practice £2,300 p.a. in seaside town. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths or one-half share 1½ years' purchase.

33 SCOTLAND.—Sound Practice of over £800 p.a. in large thriving Hospital Town. Small panel. Modern house, with garden and garage, for sale or to rent. Premium to effect prompt sale £950, to include book debts (about £250).

34 WEST OF ENGLAND.—Assistant required (with view to Partnership) in busy Town and Country Practice of £1,700 p.a. Good Hospital. Two-fifths share at 1½ years' purchase to suitable man (English or Scotch).

35 SOUTH COAST. — Small easily worked PRACTICE of £410 p.a. in fashionable Health Resort. No night work or midwifery. Large house. Premium—house and Practice—£6,000.

36 LONDON, E.—"Lock-up" Practice averaging £875 p.a. Panel about 275. Rent recovered by sub-letting. Long lease. Premium £1,100.

37 ESSEX.—Country Practice £400 p.a., near coast. No panel. Pleasantly situated house, garage, and garden. Ample scope. Premium—house and Practice—£1,100.

38 SOUTH AFRICA.—Old-established PRACTICE of over £1,800 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200.

39 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Choice of two houses. Prem. two-fifths share 1½ years' pur.

40 NEAR OXFORD. — Country Practice of just over £1,000 p.a. in hunting centre. Panel 700. Good house, with modern sanitation, excellent garden and paddock, to rent. Premium £1,500, to include drugs and fittings.

41 N.W. COAST.—Practice in small Seaside Town Receipts average £946 (including £350 from panel). Small compact house (4 bedrooms), with nice garden, for sale. Sport. Premium—Practice and house—£2,000.

42 WEST HAM. — Practice (carried on by Medical Woman) of about £540 p.a., including small panel. No midwifery. House to rent. Premium 1½ years' purchase.

43 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

44 WEST MIDLANDS. — Partnership in Practice of about £2,250 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

45 EAST COAST.—Partnership in good-class non-dispensing Practice of £3,400 in small select Seaside Resort. Practically no panel. Very great scope. Premium one-half share 2 years' purchase.

46 MEDITERRANEAN RESORT.—Partnership in good-class non-dispensing Practice of between £1,300/£1,400 p.a. Suitable flat to rent. Premium one-half share £950, with succession to whole Practice later.

47 DEATH VACANCY.—HARROGATE.—Receipts about £600 p.a. Panel over 500. Well-situated house (6 bedrooms) to rent.

48 SOUTH OF ENGLAND.—Practice worth £500 p.a. in a coast town. Detached house (6 bed and dressing rooms) to rent. Premium £500.

49 HOME COUNTIES.—Increasing Country PRACTICE within 30 miles of London. Receipts average over £870 p.a. Panel 499. Detached house (5 bedrooms), garage, and good garden, to rent. Premium 1½ years' purchase.

50 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms), garden and garage, for sale. Premium 1½ years' purchase.

51 X-RAY PRACTICE in large Town in the S.W. Receipts average £950 p.a. Vendor on Staff of Hospital. Premium £900.

52 LONDON, E. — Cash and Panel Practice (held by Medical Woman) in densely populated area. Receipts £360 p.a. Panel 290. Small house. Rent £50. Prem. £450.

53 ESSEX. — Non-panel Practice averaging over £1,400 p.a. in populous suburban district. Detached double-fronted house, with good garden, etc., for sale. Scope for increase. Premium £2,000.

54 SOUTH OF ENGLAND. — Partnership in non-dispensing Practice £3,600 p.a., in attractive watering-place. Panel about 1,800. Great scope. One-fourth share now and up to one-half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

55 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,080. House (5 bedrooms), with electric light, for sale. Premium 1½ years' purchase.

56 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house for sale. Scope. Premium 1½ years' purchase.

57 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £700.

58 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

59 ITALY. — Season Practice in famous City. Average receipts last 4 seasons £522. Up-to-date Hospital. Premium £363.

60 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

61 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

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2. WEST OF ENGLAND.—In a small pleasantly situated town amidst beautiful surrounding country, old-established PRACTICE. Income nearly £1,350 p.a., including panel of 900. Visits 5/- to 21/-. Little midwifery. Very attractive house in own grounds of 2 acres, containing 3 large professional rooms (separate entrance), 2 reception, 5 bedrooms, bathroom, etc. Vendor's freehold. Price £2,400 (£1,800 can remain on mortgage). Premium £2,000. Good society, sport, etc.
3. PEMBROKESHIRE.—Prosperous Town.—Well-established mixed general PRACTICE. Income £1,000 p.a. Panel of over 700. Fees 3/6, 5/-, 7/6. No midwifery. Large house, with garden. Freehold price £1,600, or to rent £100 p.a. Premium £1,500.
4. SOUTH-WEST OF ENGLAND.—PARTNERSHIP.—In a large thriving seaport town the third share (with increase to half later) of old-established rapidly increasing middle-class Practice. Receipts for past 3 years average £2,272 p.a. (last year £2,549), including panel of 870. Very little midwifery. Suitable arrangements can be made as to house for incoming Partner. Premium 2 years' purchase. Scope for surgery if desired. District developing and prospects excellent.
5. BEDS.—DEATH VACANCY.—Mixed PRACTICE, held by Vendor 8 years. Income £350 p.a., but good scope. Panel of 500. Nearest opponent 6 miles. Fees 2/6, 3/6 upwards. Small centrally situated house, 4 bedrooms, etc. Rent £14 p.a. Larger house available if wished. Premium £350. Locum in charge.
6. LONDON, S.E.—Old-established good middle and better working-class PRACTICE, in pleasant suburb within easy reach Charing Cross. Average gross cash receipts £2,353, including panel of about 1,660. Appts. worth about £100. Fees from 2/6. No midwifery, but good scope. Suitable house, with 2 reception, 4 bedrooms, etc. Rent on lease £91 p.a. Premium £3,000.
7. NORTH LONDON.—Old-established good mixed-class PRACTICE, producing about £1,600 p.a. Panel of 1,000, and appts. worth about £300 p.a. Fees from 2/6. No midwifery, but scope if desired. Moderate expenses. Good corner house, with 2 reception, 5 bedrooms, etc. Small garden. Price for freehold £1,750, or might be rented.
8. PLEASANT CATHEDRAL CITY, within 200 miles North of London.—Old-established mixed-class PRACTICE, averaging £1,600 p.a., including £800 from panel and over £100 from clubs. Visits 5/- upwards (occasionally 2 gns.). Very little midwifery from 2 to 5 gns. large attractive house, with garden. Rent £80. Prem. 1½ yrs.' pur.
9. ESSEX.—Unopposed PRACTICE in very pleasant agricultural district, averaging £872 p.a., including panel of nearly 500, and appts. worth £140. Fees 3/6 to 10/6. Mid. 3 to 6 gns. (about 12 cases). Commodious house, with 2 reception, 5 bedrooms, and good professional accommodation. Large garden. Garage. Rent on lease £60. Good sport and schools within reach. Premium 1½ yrs.' pur.
10. LANCS.—Pleasant town, near open country.—Well-established middle and better-class PRACTICE. Cash receipts last year over £980, including panel of 900. Visits 3/6 to 7/6, medicine extra. Mid. 2 to 10 gns. (about 20 cases). Suitable house, with 2 reception, 4 bedrooms, etc. Price for leasehold £1,100, £600 on mortgage. Premium 1½ years' purchase, part by instalments.
11. GLOS. — COUNTRY PRACTICE. — Old-established PRACTICE in picturesque surroundings, averaging about £1,250 p.a., including panel of over 1,100. Visits from 3/-. Commodious house, with 3 reception, 6 bedrooms, etc. Garden. Garage. Price for freehold £1,500, £1,000 on mortgage. Premium £1,850.
12. WEST OF ENGLAND.—(Within 100 miles of London).—PLEASANT TOWN.—Old-established mixed general PRACTICE. Average income for last 2 years about £1,250, including panel of 1,200. Fees 2/6 to 6/-, and a few at 10/6. Little midwifery. Excellent house, recently redecorated, with ample accommodation. Garden. Garage. Good sport and schools. Premium for Practice and house £4,500.
13. NORTH LONDON.—Old-established good middle-class PRACTICE, held by Vendor 25 years. Gross cash receipts for immediate past twelve months £2,811. Selected panel of about 250. Fees from 5/- upwards. Mids. from 7 gns. (only few cases). Very good corner house, non-basement, with 3 reception, 5 bedrooms, etc. Price for leasehold £1,800. Premium only £3,000.
14. LONDON, NORTH.—Old-established working-class PRACTICE, in well-populated district. Cash receipts for last financial year nearly £1,300, including panel of over 2,000. Practically no midwifery. Expenses very small. Double-fronted house in good position (2 reception, 2 bedrooms, bathroom, etc., and professional accommodation). Rent on lease (12 years to run and renewable) £80 p.a. Premium £2,800.
15. SOUTH-WEST OF SCOTLAND.—COAST TOWN.—Old-established non-dispensing, good mixed PRACTICE. Income for the last year £1,100, including panel of 400 and increasing. Fees 2/6 to 2 gns. Good house, with 2 reception, 5 bedrooms, etc., rent on lease £42 p.a., or could be bought for £1,300. Premium £1,000.
16. BIRMINGHAM SUBURB. — Well-established and rapidly increasing mainly working-class PRACTICE, producing for last year £765. Panel of 350. Visits 2/6 to 7/6, practically all cash. Little midwifery. Suitable small house (on lease 77 years). Price £65. Premium £1,050.
17. SOUTH DEVON.—COUNTRY PRACTICE, steadily increasing, situated in very pleasant agricultural district, within easy reach of coast. Gross cash receipts for past 12 months £2,326. Farm produces, with mileage, about £420. Fees 3/6 to 21/-. Only about 20 cases of midwifery from 2 to 5 gns. Suitable house, in main street, with 2 reception, 5 bedrooms, etc. Garden. Garage. Rent on lease £50 p.a. Good sport. Premium £2,800.
18. SOMERSET.—Attractive Town, within easy reach of coast.—Old established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
19. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000).—Old-established mixed-class PRACTICE. Income last year £65[illegible] but offering exceptional scope. Panel of about 430 and 2 small appts. Visits 3/6 to 5/-. Practically no midwifery. Very attractive residence, on main road and near the sea, with professional rooms, 2 reception, 4 bedrooms, bathroom, etc. Pretty garden. Garage. Rent on lease £100 p.a. Premium 1½ years' purchase.
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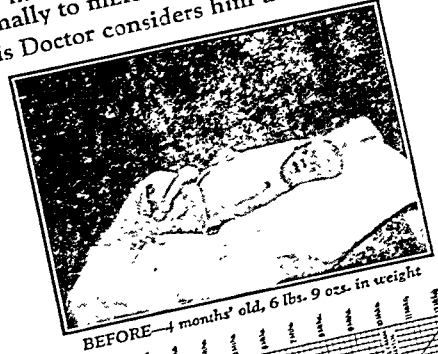
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THE mother of Baby "H" wrote to our Motherhood Bureau when he was 4 months' old (weight only 6 lbs 9 ozs.) suffering from Marasmus following Whooping Cough complicated by Double Pneumonia. The infant was put on to LACIDAC (Separated) with a small quantity of BRESTOL and immediately made steady progress.

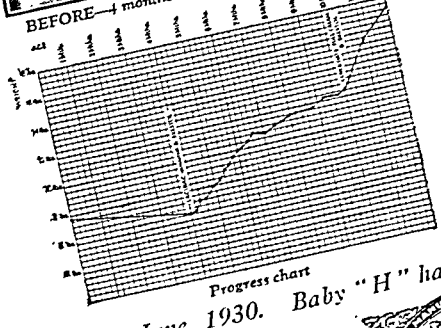
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His Doctor considers him a 'Resurrection.'



BEFORE—4 months' old, 6 lbs. 9 ozs. in weight



Progress chart



AFTER—10 months' old, 12 lbs. 6 ozs. in weight

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teeth will result, although not as imperfect as would have been the case had the calcium intake been low.

So far only those food factors aiding calcification have been mentioned. One group of foods, however, is outstanding because it interferes with the deposition of calcifying salts in bones and teeth. Those foods are the cereals. There is a wide difference between cereals in this respect. For instance, so far as animal experiments are concerned, oatmeal is the worst of all examined, and white flour interferes least with the calcifying process. Intermediate between these are maize, rye, barley, and rice. The embryo or germ of wheat and maize, and probably of other grains, has this baneful effect more developed than the endosperm. The germ of rye has vitamin D (in small quantities) as well as the substance interfering with calcification, and these actions can be separated owing to the solubility of vitamin D in alcohol. In spite of great endeavour, it has so far proved impossible to obtain information as to the chemical nature of the substance responsible for this effect of cereals. It is not associated with the carbohydrate nor with the fat. There is a possibility that it is in some way bound up with a protein, but this is by no means certain. As regards this anticalcifying effect of cereals there is one point I should wish to emphasize, because I believe it is of local interest in Kenya. Much has been said in recent years as to the significance of the mineral content of the diet, and various diseases of cattle have been ascribed to deficiencies of these, especially of calcium, phosphorus, and iodine. Now I have stated that of all cereals and cereal products tested, oatmeal and grain embryo interfere most strongly with the deposition of calcium and phosphorus in bones and teeth. It is at the same time well known that these grain products are far richer in calcium and phosphorus than such a substance, for instance, as white flour. Thus we have foods which, while they contain a more abundant supply of Ca and P, may in the absence of sufficient vitamin D result in a smaller retention of these elements in the growing bones and teeth. In other words, a greater deficiency of calcium and phosphorus in the body can be brought about by diets which actually contain more of these substances, so that an analysis of mineral intake may be quite misleading as to the efficacy of a diet in adequately supplying these substances to the tissues.

It may be well to emphasize, however, that the calcifying effect of vitamin D, whether it forms part of the diet or whether it is supplied to the body as the result of the activation by sunlight of ergosterol in the skin, will always, if present in sufficient quantity, antagonize the anticalcifying effect of cereals. Thus, although the diet of the native is largely composed of maize, so long as his skin is unprotected from the sun's rays his bones and teeth will remain well calcified. If, in the course of his civilization, he adopts European habits of clothing, especially in childhood, then his bones and teeth may be as badly calcified as are those of the average European. On the other hand, when Europeans provide abundant vitamin D in the diets of their children, just so soon will their teeth and bones approximate in structure to those of the native as found at present.

Caries of the Teeth and Diet.

European teeth are generally badly calcified, and it would seem likely that this defective calcification is in some way related to caries. When teeth are well calcified, as in the average African native, they are white and shiny, and evenly arranged in powerful well-grown jaws. In the European only too often are the teeth discoloured, rough, and unevenly arranged. The following table gives an idea of the general relationship between the structure of teeth and susceptibility to caries in the case of English children.

The Relation of Structure to Caries in 1,036 Deciduous Teeth of English Children.

Teeth.	Defective in Structure.		Carious.	
Incisors	14.4 per cent.	.....	20.8 per cent.	
Canines . .	54.5 ,,	.....	46.2	,,
First molars .	73.1 ,,	.....	61.9	,,
Second molars .	91.9 ,,	.....	87.1	,,

The teeth were first examined for caries, and were then ground down to thin slices and their minute structure determined by microscopic examination.

It will be seen from this table (1) that both caries and defective structure are very common, (2) that the least defective in structure (the incisors) are the least carious, while the most defective in structure (the molars) are the most carious.

As a matter of fact, these investigations made by May Mellanby showed that, although on the whole there was a close relationship between the structure of the teeth and caries, this was not absolute, for there were about 10 per cent. exceptions.[3] Thus some teeth were imperfect in structure and yet free from caries, while others were good in structure and yet carious. The probable explanation of this was again brought to light by animal experiment. It is well known to all that teeth wear down as the result of attrition according to the degree of hardness of the food eaten. In response to attrition the teeth normally react by producing a layer of secondary dentine adjacent to the dental pulp. By this means the pulp is protected from direct exposure to the food. It was found in dogs that the type and amount of secondary dentine produced as the result of artificial attrition depended on the type of food eaten at the time. Thus a diet of high calcifying qualities resulted in abundant well-formed secondary dentine, while a diet of poor calcifying qualities—that is, one with deficient vitamin D and much cereal—produced either no secondary dentine or a poorly calcified type of this tissue. Now human teeth when attacked by caries also respond by producing secondary dentine, which may be abundant and well formed or deficient and badly formed. When the exceptions in the children's teeth were examined from the point of view of secondary dentine it was usually found that badly formed teeth (primary dentine and enamel) when free from caries had well-formed secondary dentine, while well-formed teeth with caries usually had badly formed secondary dentine. Thus it would appear that not only is the original formation of the teeth important as regards incidence of caries, but that, after full eruption and formation, teeth alter in their resistance to a bacterial onslaught according to the diet eaten. Thus a child may have a poor diet resulting in badly formed teeth, but at a later stage the calcifying qualities may improve and so increase the resistance of the teeth to caries. Similarly well-formed teeth may lose their resistance when the diet becomes defective, and so become more susceptible to caries. The final proof that this actually occurred in children was also demonstrated by May Mellanby and C. L. Pattison, who showed that even badly formed teeth attacked by caries could increase their resistance to such a extent that the carious process was delayed or even arrested if these children were given diets very rich in vitamin D (irradiated ergosterol).[4] This addition was made to the food of one batch of children, while another similar batch received the same food without the additional vitamin. The children receiving extra vitamin D not only showed great resistance to caries in the sound teeth as compared with the control children, but in many cases the actual caries was actually arrested. (Sections of teeth showing arrest of caries produced by vitamin D were shown on lantern slides.)

To sum up: Well calcified teeth can be produced by the ingestion of sufficient vitamin D during the formation of the teeth. (2) Well calcified teeth are less susceptible and badly calcified teeth are more susceptible to caries. (3) Independently of their original structure, the ingestion of sufficient vitamin D raises the resistance of teeth to caries and may even arrest the carious processes, while diets deficient in this substance, especially if they contain much cereal, allow a lowered resistance to caries and more rapid development of this condition.

Food and the Central Nervous System.

It has long been known that diet has a special relation to the peripheral nerves, and, in particular, that the anti-neuritic vitamin or vitamin B_1 is implicated in this relation. I do not, however, wish to speak on this point, but to describe some results we have obtained in Sheffield of

seem to show that diet has important effects on the central nervous system in quite another way. Some of these results are too recent to allow any definite deduction as to their practical or clinical significance, but they seem to me to be sufficiently suggestive to warrant description here.

In investigating the action of cereals on the formation of bones (experiments referred to above) we were impressed by the fact that some of the dogs developed severe incoordination of movement, often associated with and followed by weakness of the hind legs.[1] When the nervous system of these animals was examined histologically by Marchi's method a scattered degeneration of the cord was often found, of such a nature that it suggested a subacute combined degeneration. On attempting to track down the conditions associated with this degenerative change in the nervous system we found (1) that it most often occurs in animals receiving much cereal, and especially in those whose diet includes the germ or embryo of grains; (2) that it is only found in animals receiving a diet deficient in fat-soluble vitamins.

In order to come more closely to grips with the problem, recourse was made to the use of ergot in the diet. The fact that ergot of rye produces degenerative changes in the cord has long been known, for these changes have been described in human beings affected by nervous ergotism—a condition which is very fatal and appears in epidemic form occasionally in European countries where rye is the main type of cereal eaten. Many attempts have been made by previous investigators to produce nervous ergotism in animals, but the success obtained has been very irregular in all types of animals, and nobody has understood why such disagreement in general results should have occurred. Incidentally, the curious distribution of nervous ergotism in epidemic form has never been understood. On the whole, it attacks the poorer people in times of famine, but it picks out, apparently without any discrimination, some members of a family and leaves others untouched. We soon suspected the apparent reason for this, for degenerative changes in the cord do not depend only on the presence of ergot in the diet, but also on the absence of a protective agent of the nature of a fat-soluble vitamin, probably vitamin A or a closely associated vitamin. The protective agent was not vitamin D, for ergot itself was found to contain vitamin D. If, however, cabbage, which contains little or no vitamin D, or mammalian liver oil (rich in A but poor in D) was added to the diet, then ergot left the cord untouched. Other substances containing vitamin A, such as egg yolk, butter, or cod-liver oil, also prevent nervous ergotism in dogs. Vitamin D in the form of irradiated ergosterol will not in itself prevent the pathological condition. These results probably afford the explanation of the arbitrary way in which nervous ergotism develops in human beings. It develops in times of famine and distress because not only is the rye ergotized but poverty prevents the consumption of such protective substances as milk, eggs, and green vegetables. If, however, any individual has a good supply of vitamin A in the liver and other organs, the nervous changes will not be produced until these reserves are used up. It seems probable, therefore, that ergotism of the nervous system can be prevented in human beings by the inclusion in the diet of sufficient sources of vitamin A.

Having found that the degenerative changes in the cord in experimental ergotism were dependent on the absence of a protective dietetic factor, attention was again directed to the action of grain embryo and other cereals. It was found possible to produce the pathological condition by rye germ unaffected by the *Claviceps purpurea*. That is to say, that the nerve toxin in ergotized rye germ is present merely in exaggerated amounts as compared with normal rye germ. It has not proved possible, however, to obtain without fail the nerve degeneration by means of pure grain products in all dogs. Some litters have remained without obvious degenerative changes of the cord even when diet has included much wheat embryo and the vitamin A intake has been small. The negative results seem to depend on the litter of puppies and not on the specimens of wheat germ tested. What the explanation of this resistance in families is has not been ascertained. It may be that in some cases the maternal diet has been so good as to give the resistant litters a larger reserve of the protective substance (vitamin A) in their livers. Only further work will clear up this problem.

It may be said that, so far as the experiments can be interpreted, most cereals examined contain this toxic substance, even white flour, but there is much more in the embryo of the wheat, a fraction of the grain separated off in the manufacture of white flour. Oatmeal has also been found to contain this nerve "toxamin" (I have introduced the word "toxamin" to describe substances of unknown composition which have harmful effects in the body and which can be antagonized by specific vitamins. See also the anticalcifying toxamin referred to above, which can be antagonized by vitamin D.)

The question now arises, What is the clinical significance of these facts? So far as nervous ergotism in man is concerned the importance of the results described above is obvious. The three other conditions best recognized in which subacute combined degeneration of the cord arises are: (*a*) lathyrism, (*b*) pellagra, (*c*) pernicious anaemia.

(*a*) *Lathyrism.*—As regards lathyrism, I have had no experimental or clinical experience of the condition. It is a nervous disease often found on a large scale in the North-Western Provinces of India, and is apparently due to a diet containing a large proportion of lathyrus peas. Experiments have been carried out on animals by many people, including Acton,[2] Anderson, Howard, and Simonsen,[3] and Stockman,[4] but there is considerable discrepancy in the results obtained. It seems to me, on the analogy with the experiments quoted above on ergotism, that this discrepancy is probably due in part at least, to the same cause as that responsible for the irregularity of the earlier animal experiments on nervous ergotism—namely, that the nerve degenerative changes are dependent on a toxic substance in the lathyrus peas, but that the condition is prevented if there is a sufficiency of a "protective" substance in the other part of the diet. It may be the same protective substance as in nervous ergotism—namely, vitamin A—but this is only surmise at the present time. The whole picture of lathyrism, so far as I understand it, suggests, indeed, that the toxic agent of the lathyrus pea is of a similar nature to that of ergot nerve toxin: but this again is supposition. It is true that Stockman produced lathyrism in a monkey when the diet included "one ounce of fresh cabbage or a little fruit" daily, but fruit would be of no value as a protective agent on the hypothesis suggested, and the amount of cabbage was not only small but there is no statement as to how often this was given in the food and how often the fruit. The disease of lathyrism needs further investigation from this new angle.

(*b*) *Pellagra.*—It has been asserted that the later investigations of Goldberger on pellagra have cleared up completely the etiology of this disease. There is indeed no question but that so far as the skin lesions are concerned, Goldberger's work has definitely shown the importance of the pellagra-preventing factor now usually known as vitamin B$_2$. It is impossible, however, to consider the nerve degenerations in the cord of pellagrins together with the results above discussed on the effect of cereal and cereal products on the nervous system without wondering whether in pellagra also the degeneration of the cord is not associated with a "toxamin." The almost constant association of a maize diet with pellagra increases this probability. Is vitamin B$_2$, or the pellagra-preventing factor, the same substance as the protective substance against nervous ergotism and the cord degeneration produced by cereals in the experiments described above? Sources of the pellagra-preventing factor in Goldberger's investigations included milk, meat, and yeast. So far as milk and meat fat are concerned these are also sources of vitamin A, which I have shown is a protective substance against nervous ergotism. The one real discrepancy between Goldberger's results on pellagra and mine on nervous ergotism is that according to him yeast cures pellagra whereas it does not, in my work, prevent nervous ergotism. Yeast does not contain any vitamin A.

There has been no suggestion up to the present that there is a positive pellagra-producing factor in maize responsible for the cord degeneration, but the results under discussion suggest that pellagra is possibly due to a positive harmful factor in certain cereals, including maize, and that this factor is in normal people prevented from having its baneful influence by a protective agent of the nature of a vitamin or possibly vitamins, including B_2 and A. I have been unable to obtain degenerative changes in the cord by yellow maize. This may be due to the fact that it contains vitamin A, or rather carotine, which acts in the same way as vitamin A.

(c) *Cord Degeneration in Pernicious Anaemia.*—The close relationship of the cord degeneration found in pernicious anaemia and the changes produced by cereals in dogs in the absence of vitamin A suggests a similarity in etiology. There is a further coincidence which is in line with this point of view. Pernicious anaemia is brought under control by liver and water-soluble extracts of liver. The nerve degeneration of ergotism and that produced by wheat germ or embryo can be prevented or, if developed, the condition greatly improved by the fat-soluble portion of liver. In my experience the blood changes in pernicious anaemia cannot be cured by the fat-soluble portion of liver. On the other hand, it has been recently claimed by Ungley and Suzman[15] that the nerve symptoms of pernicious anaemia can be greatly improved by feeding whole liver. If so, it seems probable that it is the fat-soluble portion which exerts this effect on the cord. It is possible that both the blood changes and the cord degeneration in pernicious anaemia are due to failure on the part of the liver, the blood condition being due to the exhaustion of some specific water-soluble substance and the cord changes to a deficiency of a specific fat-soluble substance, maybe vitamin A as discussed above. Only further work will show whether pernicious anaemia has a positive dietetic causation similar to that found in cereals which produces nerve degeneration. It is interesting, however, to speculate, on the basis of the results described above, as to what extent these experimental methods of producing and preventing pathological changes in the cord by dietetic means will prove to be of practical value in aiding the solution of problems of disease commonly found in man.

The Prevention and Cure of Some Infective Conditions.

I wish now to pass on to another aspect of this subject of diet and disease. So far I have dealt with the production of pathological changes in various organs by substances actually present in food and the prevention of these changes by other "protective" food elements. I shall now deal with pathological conditions produced by the invasion of the body by certain micro-organisms and a method of preventing this invasion by specific dietetic means. This subject, again, is too new to allow any great claims to be made as to the extent of its possible application, but the results obtained seem to me to be sufficiently definite to warrant the belief that ultimately it will prove to be of great importance as a means of raising the resistance of the body to pathogenic micro-organisms and of gaining an insight into the subject of immunity.

Everybody who has been interested in the experimental side of dietetics and nutrition must have been struck by the susceptibility of animals to infection when eating defective diets. I called attention to this fact so long ago as 1919.[9] At a later stage I became more interested in the subject as the result of an experience in the laboratory in which a large number of experimental dogs died of broncho-pneumonia.[10] At the time my interest was particularly centred round bone calcification, but the incidence of the disease showed that the lung infection and the condition of the bones were independent, although both were related to fat-soluble factors. In other words, the susceptibility to lung infections did not depend on the absence of vitamin D, but probably on the absence of vitamin A. These results were published in 1926.[10]

More recently we have shown that young rats fed on a diet which, so far as is known, is complete except for vitamin A, die in the course of six to fifteen weeks, and on post-mortem examination are found to have developed one or more abscesses in different parts of the body. The relation of vitamin A deficiency to xerophthalmia has been known for many years, but our animals developed many other septic conditions, sometimes without any xerophthalmia. The more common seats of infection included the base of the tongue, the nasal sinuses, the middle ear, the lungs, the kidneys and bladder, the alimentary tract, and many other places. It was shown so long ago as 1922[11] by Mori that a peculiar effect of vitamin A deficiency is to produce various forms of hyperplasia of epithelium, and it is at these seats of hyperplastic change that the infective condition develops. More detailed facts of the relation of vitamin A to infection in rats and the history of the subject can be read in a paper published by H. N. Green and myself in the *British Medical Journal* in 1928.[12] It may be said that if sufficient vitamin A is given to these animals after having developed the infective condition recovery is often brought about. On the other hand, the inclusion of this vitamin in the diet prevents the development of the pathological state.

We were so impressed by the results of the animal experiments that Green and I determined to see whether vitamin A played any part in the resistance of the human body to infection. It seemed at first sight that this would probably be the case, because not only are the lesions produced in rats very common in people in England—for example, septic nasal sinuses, middle-ear disease, genito-urinary infections, and pneumonic conditions—but the diet in this country is largely cereal and notoriously deficient in vitamin A. The difficulty was to find a disease due to bacterial invasion the investigation of which would yield results, definitely positive or negative, in a reasonable time. Most common infective conditions recover in any case, and in pneumonia the results are variable whatever the treatment. We decided to study the action of vitamin A in puerperal septicaemia, a disease in which the mortality rate is normally so high that a rapid decision could be made as to the efficacy of the treatment. As a control series of cases we took those patients who had entered the institution where the investigation was carried out, in the two years prior to the new treatment. In these two years 22 patients had been admitted from whose blood a growth of haemolytic *streptococci* had been obtained. Of these 22 patients 20 died, giving a mortality rate of 91 per cent. From the beginning we have treated with vitamin A 9 similar cases, and of these 8 have made complete recoveries. There have also been two other septicaemic patients, one with an infection of *Bacillus coli*, who recovered, and the other with a staphylococcic infection, who died. Thus, of the total 11 cases, 2 have died, giving a mortality rate of 18 per cent., as compared with the mortality rate of 91 per cent. in the control group. The results can be readily seen in the following table.

Type of Blood Infection.	Control Group of Cases.			Vitamin A Treated Cases.		
	No.	Deaths.	Mortality Rate.	No.	Deaths	Mortality Rate.
Haemolytic Streptococci	22	20		9	1	
Bacillus coli	0	0		1	0	
Staphylococcus ...	0	0		1	1	
Total ...	22	20	91%	11	2	18%

It is true that the number of cases treated with large doses of vitamin A is not sufficiently great to allow of a definite claim that this substance is a specific remedy for puerperal septicaemia. Nor were the cases of the intense fulminating type sometimes met with in this condition. On the other hand, we think there is strong evidence, especially taken in conjunction with the animal results, that vitamin A has a definite effect in raising the resistance of the body, both human and animal, to bacterial agencies, and that, in its absence from the

deficiency in the body, the resistance to infection of this type is greatly diminished. It is obviously necessary that this work[13] should be repeated on a larger scale and extended to the treatment of other infective conditions, for its practical importance, if established, cannot be exaggerated.

What value these results, if established, may have to medical men in Africa is for you to determine. They may point to a method of reducing the high mortality rate in pneumonia among the natives as well as among Europeans. If it does act curatively in this condition, the probability is greater that the inclusion in the normal diet of sufficient quantities of vitamin A will prevent the disease as well as other infections of a similar bacterial nature. Rich sources of vitamin A are egg yolks, mammalian liver, cod-liver oil, and there is some in carrots, green vegetables, milk, butter, and suet. It may be well to add that vitamin A is a very unstable sub-tance and is apt to disappear rapidly, especially in high concentrations.

I have endeavoured to supply you with evidence, both experimental and clinical, which shows how important is this subject of the relation of diet to di-ease. In particular, I have tried to demon-trate that food includes both harmful and protective constituents. In so far as the harmful substances mentioned are in the food itself, it appears that they can be neutralized in their action by the protective agencies. The protective agencies are of the nature of vitamins, and the two I have specially dealt with are vitamins A and D. The harmful factors are mostly associated with cereals and cereal products so far as present knowledge goes.

I wish especially to emphasize that this subject is only in its infancy, and that many of the facts I have dealt with here have still to be investigated more closely, partly because it is impossible as yet to decide what is their true clinical significance, and partly because there is no knowledge of the methods by which these substances exert their effect. So far as you in Kenya are concerned, it seems to me that these dietetic problems, especially those concerning the toxic action of cereals, may have special significance, for I cannot believe that your native population with its high cereal diet completely escapes those effects. It is true that the sun-shine to which the African native exposes himself mu-t tend to neutralize the anticalcifying effect of maize by supplying vitamin D, but I should expect the natives who wear European clothing, especially in childhood, and remain on his maize diet to suffer accordingly. Similarly it seems to me probable that a deficiency of vitamin A might be present in many native diets especially in the towns, and that pathological results would follow. I shall be interested to hear of any investigations which may be made in the future to see whether these hypotheses have a bearing on any of the problems of disease in Africa.

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A British Medical Association Lecture on CORONARY OCCLUSION.

DELIVERED BEFORE THE HARROGATE DIVISION, NOVEMBER 30TH, 1929,

BY

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IT is only recently that the subject of coronary occlusion has attracted the attention of clinicians in this country. Until a few years ago it had generally been regarded as of purely pathological interest, as one of the possible causes of sudden death; but we now know that many of these patients survive, and that the symptom complex is often so clearly defined that the diagnosis during life presents no difficulty.

INCIDENCE.

The condition is by no means rare. During the past two years I have seen 23 cases in private practice. This series,* though small, will, I think, suffice to illustrate most of the clinical features to which I wish to refer. I shall also include one other case (Case 1) which presented certain points of special interest. Both the sex and the age incidence in my series agree fairly closely with that reported by other workers.

The preponderance of males over females suggests that mental and physical strain may be important etiological factors. The age incidence coincides with that of the degenerative period of life, and this is what might be expected, since neither syphilis nor rheumatic infection appears to play any significant part in the etiology. It is curious that syphilis is not a more common cause of coronary occlusion, since the first part of the aorta is so frequently involved.

*This series is one of several groups of cardiac cases the after-histories of which are being followed up on behalf of the Medical Research Council.

TABLE I.—*Age and Sex Incidence.*

	Bramwell	Levine[3]	Parkinson and Bedford[4]
Age.			
Over 70	7	14	19
50–69	17	99	68
Under 50	6	12	23
Sex.			
Male	18	111	93
Female	6	14	7
Total	24	125	100

CLINICAL FEATURES.

Let me begin by recounting the clinical findings in two typical cases.

CASE I.

A man aged 53, who had always lived an exceptionally healthy and abstemious outdoor life, after a hurried lunch rose to play golf. When walking downhill to the sixth green he experienced a sense of fullness and discomfort in the chest. At the top of a hill which was an uphill slope, his discomfort increased and he had to give up and walk home. The pain spread down the left arm to the little finger, and continued to increase in severity in spite of his going to bed. His doctor saw him at 4 p.m., and gave amyl nitrite and a quarter of a grain of morphine. This, however, failed to bring any appreciable relief. The pain persisted during the night it began to involve the other arm, and it was not until the following afternoon that it became easier and gradually passed off.

When I saw him, ten days later, although he had had no recurrence of the pain since the day following the attack, he still looked extremely ill and careworn. He walked and behaved like an old man, obviously afraid that the least exertion might precipitate another attack. On physical examination the heart was slightly enlarged. The second sound was unduly resonant in the aortic area. The retinal arteries showed atheromatous changes. The blood pressure was raised (systolic 160, diastolic 105). The urine contained

albumin. The electro-cardiogram (Fig. 1)* showed the characteristic features associated with coronary thrombosis; but an *x*-ray examination, beyond confirming the presence of cardiac enlargement, revealed nothing abnormal.

Nearly three years have now elapsed since his attack. During this period he has had no recurrence. Nevertheless he has been compelled to take things quietly, for if he attempts to walk briskly uphill he gets what he describes as a "warning shadow" of the pain in his chest. His blood pressure, when I saw him two months after the attack, had risen to *190/115*. *It is now 220/130.*

In this case I wish to call attention more particularly to two points. First, to the fact that the patient was a man of exceptionally good physique who had lived a careful life, and believed himself to be in perfect health up to the moment that his pain commenced. Except for an operation for gall-stones three years previously he had never had any serious illness. Levine,[3] in his comprehensive survey of the subject, goes so far as to say that

"The typical patient is a well-set person, somewhat overweight, often of considerable physical strength, who enjoyed unusually good health. Such patients often have indulged in vigorous physical efforts either in the form of sport or in their ordinary work."

Secondly, I wish to dwell on the character of the pain itself. Pain such as I have described in this case differs from the pain of an ordinary anginal attack. Instead of passing off in the course of a few minutes, it lasted for many hours. The pain was not relieved by rest; in fact, for a time after the patient got home it actually increased, both in intensity and in the extent of its distribution. The pain was not relieved by nitrites, and only partially by morphine. Unlike angina, the pain of coronary thrombosis is just as liable to come on when the patient is resting. In several of my cases the attack occurred when the patient was lying quietly in bed at night, or before getting up in the morning. This is in striking contrast to the typical anginal attack, which is brought on by exertion or emotion, and relieved by rest. Further, instead of remaining absolutely motionless and afraid to move during the attack, the patient often tosses or walks about, for he discovers that rest does not relieve the pain.

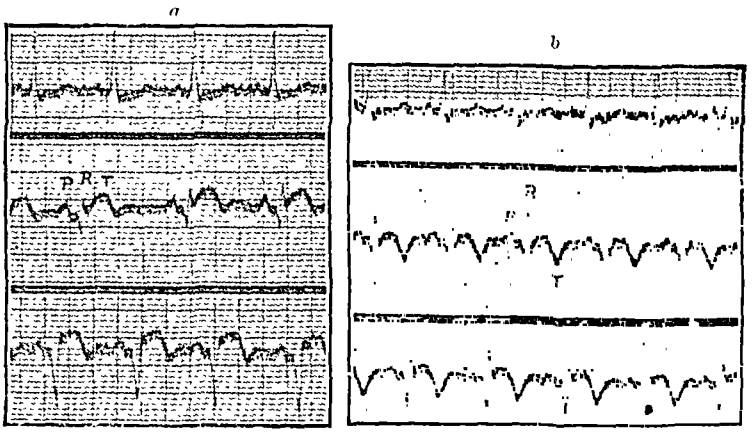


FIG. 1.—Two records taken from Case i on March 28th, 1927 (*a*), and May 16th, 1927 (*b*), showing change in form of ventricular complex.

Most frequently, in my series, the pain started either at the level of the lower end of the sternum, or in the epigastrium, though in one case it was first felt in the jaw, and in another in the region of the larynx. It often spread right across the chest. It varied greatly in intensity, and in the milder cases was sometimes described as a feeling of tightness and discomfort which prevented the patient taking a deep breath. The pain often spreads down the left arm, and in six of my cases the right arm was also involved.

CASE II.

A gardener, aged 70, who had never had occasion to consult a doctor, though he had been somewhat short of breath for about twelve months, was walking to his work, a distance of half a mile, one Thursday morning, when he suddenly experienced a sharp pain, strictly localized to a small area in the middle line at the level of the lower third of the sternum. The pain passed through to the back, but did not radiate to other parts of the chest nor to the arms. The day was windy, and he was walking uphill when the pain came on. He rested and returned home, having to stop at intervals on the way to obtain relief. On reaching home he vomited. After resting the pain gradually passed off. He had some lunch at noon, and felt sufficiently well to go back to work. On the way he experienced slight discomfort in the same position as before. When he had almost reached his destination the severe pain came on again, and again he vomited. He took things quietly for the next couple of hours, and the pain "mended" a little. About 3 o'clock, however, whilst he was potting some plants, it became worse, and he went home to bed at 6.30. His doctor saw him shortly afterwards, and found him collapsed and vomiting watery fluid. The liver was enlarged and very tender. The pain and vomiting continued all night. On Friday the pain was easier, and by midday it had quite passed off. On Friday and Saturday his temperature was slightly above normal; and on Sunday morning he coughed up a little blood.

When first I saw him, at noon on Sunday, his pulse was barely palpable, and he had auricular fibrillation, with a heart rate of 160. The blood pressure was about 110/90. The liver was still slightly enlarged and very tender, and there was some general rigidity in the abdominal muscles. He was lying flat in bed, and there was no dyspnoea.

On the following Thursday—a week after the attack—he was admitted to hospital. In the interval there had been no recurrence of the pain, and his general condition was much improved. The pulse was now quite strong and regular, the heart rate being 96 and the blood pressure 135/95. The electro-cardiogram showed ventricular deflexions of low voltage with a large negative T wave in Lead III. Examination of the blood showed a leucocytosis of just over 10,000, with excess of polymorphs.

On Sunday, when his wife came to visit him, she remarked how well and cheerful he was. About 6.30 the following morning, however, when the nurse went to make his bed, she thought at first he was asleep, but found that he was unconscious and cyanosed, with Cheyne-Stokes respiration. The radial pulse was not palpable. She administered a stimulant, and his condition had already improved when the house-physician arrived a few minutes later. His pulse was then quite good, 70 and regular, though he had not regained consciousness. When doing his morning round at 10.30 the house-physician noticed that he had again collapsed, never having completely regained consciousness in the interval. He died a few minutes later. Post-mortem examination showed *that death was due* to rupture of the ventricle at the site of the infarct.

This case serves to illustrate certain other features which are highly characteristic of coronary occlusion. The attack is frequently accompanied by intense shock and prostration, due to a sudden fall in blood pressure. This is obviously a very different state of affairs from the ordinary anginal attack, in which, if the blood pressure changes at all, it tends to rise. In an anginal attack the rate and rhythm of the pulse remain unchanged, whereas after a coronary thrombosis the patient may be pulseless, or, if the pulse be palpable, it is often very rapid or irregular. There is frequently a combination of pallor and cyanosis, which gives to the face a peculiar appearance.

Quite apart from the character of the pain and the shock and collapse associated with it, however, there are other features which serve to differentiate coronary occlusion from true angina. As in this case, vomiting often accompanies the pain. It is a symptom which is apt to be misleading, for when the pain is confined to the epigastrium, as is not infrequently the case, the condition closely simulates an acute abdominal emergency. The presence of abdominal rigidity helps to reinforce this impression. The abdomen has often been opened in error in cases of coronary occlusion. This is perhaps hardly surprising, for without an electrocardiogram the differential diagnosis may occasionally be very difficult. The occurrence of dyspnoea should arouse suspicion, for when epigastric pain, vomiting, collapse, and abdominal rigidity are associated with dyspnoea, in a patient past middle age, the possibility of coronary occlusion should always be considered.

Coronary thrombosis not infrequently occurs in patients who have previously suffered from ordinary anginal pain, though, as in Case i, it may come "like a bolt from the blue" to a man who had apparently been in perfect health up to the moment of the seizure. Very rarely, however, a patient who has previously suffered from angina

* All the electro-cardiograms in this paper were taken with a string galvanometer of 2 cm. = 1 mv.

develops coronary occlusion, he generally realizes at once that this attack is something quite different from what he has previously experienced. In 8 of the 24 cases in my series the cardiac infarction had been preceded by ordinary anginal symptoms.

Another sign of diagnostic value is transient pericardial friction, which may be heard over the site of the infarct. I met with this sign in three only of the cases in the present series, but it is probable that the true incidence is really considerably higher, for friction may disappear in a few hours, and often I myself only had the opportunity of examining the patient once, and that not until several days after the attack.

Atypical Cases.

When pain is not a prominent symptom the diagnosis is apt to present more difficulty. In the two following cases in my own series I should have been in doubt as to the diagnosis had it not been for the electro-cardiographic findings.

Case III.

An unmarried woman, aged 50, was sent to see me by one of my gynaecological colleagues whom she had consulted on account of amenorrhoea, under the impression that her symptoms might be due to the menopause. She gave a peculiar history, that for precisely one week she had suffered from tightness in the chest and dyspnoea on exertion. It was difficult to account for the sudden onset of these symptoms, and no cross-examination would shake the patient as to the date of their appearance.

On examination the heart was considerably enlarged. The blood pressure was 250/130; the resting heart rate was 120, with typical gallop rhythm. The electrocardiogram afforded the explanation of the unusual history, the features being characteristic of coronary occlusion.

This patient kept surprisingly well for eight months after I saw her. Subsequently, however, she became extremely emotional, and spent a large part of her time weeping, a mental state which I have noted in two other cases, and am inclined to attribute to the associated cerebral arterio-sclerosis.

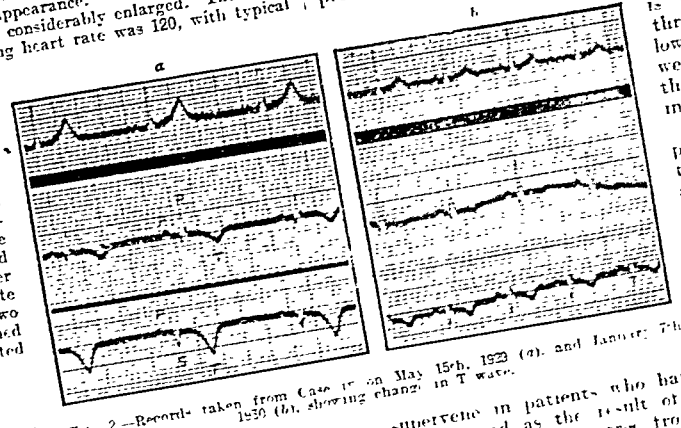


FIG. 2.—Records taken from Case iv on May 15th, 1929 (*a*), and January 7th, 1930 (*b*), showing change in T wave.

Case IV.

A commercial traveller, 40 years of age, who to the best of his knowledge had previously been in perfect health, was endeavouring to start his motor car one cold morning. He struggled with it for nearly half an hour, and then had to give up on account of dyspnoea and some discomfort in the chest. After resting a quarter of an hour he felt better, and tried again. This time he stuck it for about a quarter of an hour and again collapsed exhausted, the pain being more severe. His doctor, who saw him shortly afterwards, thought that he was going to die. He was intensely cyanosed and shocked. The pulse was barely palpable. All the following day the heart was extremely irregular, but normal rhythm was restored forty-eight hours later, and it was not till then that the pain passed off.

When I saw him four days later the slightest movement provoked respiratory distress, and he still complained of a good deal of pain in the left chest, passing through to the angle of the scapula. His heart rate was then 54 per minute, and the blood pressure only 85/50. He was admitted to hospital five days later, and the electrocardiogram shown in Fig. 2*a* was taken.

In this case it was difficult to account for the sudden onset of heart failure in a man who, up to the time of his attack, had apparently been in good health.

Differential Diagnosis.

Coronary occlusion is apt to be mistaken for various other conditions. To two of these I have already referred in some detail—namely, ordinary angina and the acute abdominal crises such as perforated peptic ulcer, acute cholecystitis, and acute pancreatitis.

An erroneous diagnosis of diabetic ketosis is not unknown. This is perhaps less surprising than might appear at first sight, for not only is transient glycosuria a common manifestation after an attack, but coronary occlusion not infrequently develops in patients suffering from true diabetes. Levine noted the presence of glycosuria or actual diabetes in 34 of the cases in his series, and two of my patients were diabetics. Lastly, those patients who develop pulmonary oedema with moist sounds at the bases of the lungs are sometimes thought to be suffering from pneumonia, and it is important to remember that in some cases dyspnoea, not pain, is the principal symptom.

Blood Pressure.

When one comes to analyse the blood pressure readings in these cases, one cannot fail to be struck by the figures obtained.

TABLE II.—*Blood Pressure.*

	Cases	Died
Normal values	3	1
High systolic (180 or over) after attack	7	1
High systolic (200 or over) before attack	3	0
Low systolic (110 or under)	7	3
High pulse pressure (both had aortic incompetence)	2	1
Low pulse pressure (150 115 and 140 110)	2	2
Total	24	11

It is interesting to follow up the after-histories of patients who had hypotension when I first saw them. Of the seven, three have died. In the remaining four cases the blood pressure subsequently attained the normal level, though in one case (Case iv) it took eight weeks to do so. It is noteworthy that the three cases with the lowest readings all did well. They were the three youngest patients in my series.

A considerable fall in pressure at the time of the infarction is the rule, and in some of the cases where prior to the attack the pressure was high, it never again attains its former level. This may be advantageous to the patient, for, as I have already mentioned, coronary occlusion is apt to supervene in patients who have previously suffered from angina, and as the result of the fall in pressure these patients may remain free from anginal attacks after the coronary thrombosis. On the other hand, there is a less fortunate group—patients who prior to the thrombosis had enjoyed good health, and who after the attack suffer from paroxysms of ordinary angina.

TABLE III

Blood Pressure when first seen	Age.	Sex.	Subsequent Readings.	Remarks.
105/65	50	F.	135/95	Fairly well 20 months.
110/90	70	M.	155/95	Died, ruptured ventricle (Case ii).
110/90	58	M.	—	Died three months after attack.
110/90	71	F.	—	Died in attack.
85/50	40	M.	160/85, 120/75	Well, working 7 months (Case iv).
80/60	57	M.	122/75, 140/90	Well, working 12 months (Case v).
Not obtainable	59	M.	155/95	Convalescent 2 months (Case vi).

Electro-cardiographic Findings.

I have already referred to the fact that certain changes occur in the electro-cardiogram in many, though by no means in all, cases of coronary thrombosis. Let me now amplify this point.

In 18 cases in my series I was able to obtain an electro-cardiogram. One case had right branch bundle-block, and another incomplete bundle-block. Eleven exhibited certain special features which are of peculiar interest and importance, for it has been shown by Smith[5] that they can be produced experimentally in the laboratory by ligature of one of the coronary arteries. In health the form of the electro-cardiogram remains remarkably constant in any one individual. After myocardial infarction, however, striking changes occur. The T wave starts before the initial rapid ventricular deflexion has returned to its base line. It "takes off" at an abnormally high level. Or perhaps it would be more accurate to say that the R–T interval becomes convex. In its extreme form this type of ventricular complex is absolutely pathognomonic of myocardial infarction, though minor degrees of variation from the normal, in which the T wave takes off slightly above the base line, have been met with in other conditions. Levine[3] has published records from cases of pneumonia and uraemia which exhibit this peculiarity, and Hoogerwerf, Ellis, and I[2] obtained similar records from athletes who were competing in the Olympic Games at Amsterdam. As time goes on the record again changes, the T wave becoming negative (Fig. 1).

Another curious feature in many of these records is seen in Lead III, where the initial ventricular deflexion is of large amplitude and of negative sign (Figs. 1 and 3). This

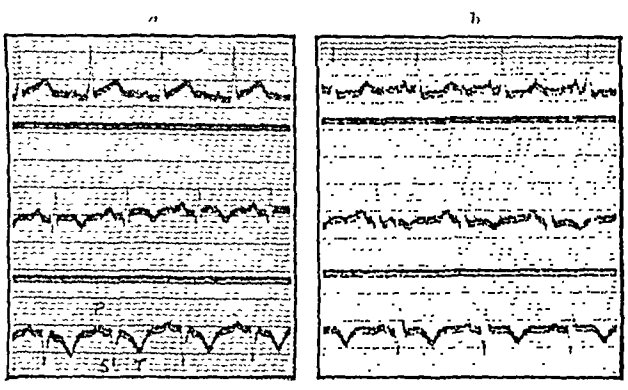


FIG. 3.—Records taken from two cases in present series showing characteristic form of ventricular complex with large negative T waves and initial negative deflexion in Lead III.

feature is not peculiar to coronary thrombosis; I have seen it occasionally in records from patients with old-standing high blood pressure.

PROGNOSIS.

There is perhaps no disease in which an accurate prognosis is more difficult than in coronary thrombosis. Eleven of my 24 patients have died, 3 from the effects of shock in their first attack, and 3 others in subsequent attacks. Those patients who survive their first attack are liable to have further attacks, any one of which may prove fatal. Hence the possibility, if not the probability, of sudden death must always be borne in mind in framing the prognosis. Sudden death in these cases is probably due to ventricular fibrillation. In patients who escape this fatality, the profound shock associated with the infarction is the most grave immediate danger. One should not, however, despair of recovery even in those cases which are most profoundly shocked. The most extreme example I have seen was the following.

CASE V.

A mechanic, aged 39, who had previously been in good health, rushed out one evening after a hurried meal to play in a tennis tournament. During the game he became dizzy, collapsed, and cyanosed. He managed to struggle home. When his doctor saw him his temperature was 95°, and he was intensely shocked and collapsed, and complaining of pain across the lower part of the chest. His pulse was 140. He vomited at the commencement, and several times subsequently. The following morning he developed a loud pericardial rub, and when I saw him, eighteen hours after the onset of his illness, he was still clammy and collapsed. No pulse could be felt in the radial or in the brachial arteries. The heart rate was 228, and its rhythm regular. Pericardial friction was audible all over the precordium. He appeared to be on the verge of death. For the next twenty-four hours his condition seemed hopeless, but on the following morning his heart rate suddenly dropped to 70, and he began to show signs of rallying. He then gradually improved, though it was not until ten days after his attack that he became fully conscious of his surroundings. Three months later he was sufficiently well to be brought up to London for re-examination.

Since seeing this patient I have hesitated ever to give an absolutely hopeless prognosis in coronary occlusion, no matter how desperate the condition of the patient might appear. In those patients who get over the initial stage of shock there still remains the danger of rupture of the heart. This complication may arise most unexpectedly, as in Case ii in my series. Though rupture generally occurs within a fortnight of the infarction, it is probable that cicatrization of the scar is not complete for another three or four weeks. For this reason alone the importance of complete and absolute rest during the early weeks of the illness is apparent. In a considerable percentage of cases death results from progressive heart failure of the congestive type, with or without auricular fibrillation. Three of my four deaths in my series were due to this cause.

Finally, there is one other accident which merits attention—namely, embolism. When infarction has taken place a mural thrombus forms on the infarcted area. Portions of this thrombus are liable to separate off and give rise to embolism in the brain or elsewhere.

During and immediately after the attack prognosis is exceedingly difficult. There does not appear to be any one symptom or sign which affords a reliable guide. The degree of the initial shock and the extent of the fall in blood pressure might be expected to indicate the ultimate prospect, but, as I have already pointed out, this is not invariably true; some of the most desperate cases make a truly surprising recovery. There is, however, in this connexion one finding which in my experience is of great significance—namely, the presence of a high diastolic associated with a low pulse pressure. As I have pointed out elsewhere,[1] I regard the systolic pressure as a measure of the heart's capacity to meet its liabilities. A high diastolic pressure greatly impairs the elasticity of the arteries. It increases the heart's liabilities, and necessitates a considerable elevation in the systolic pressure if the cardiac output is to be maintained. In these circumstances a fall in systolic pressure means a diminished output and a failing heart muscle.

On the optimistic aspect I am inclined to think that the age of the patient should be regarded as a factor of considerable importance. My three youngest patients are interesting. They were all very severe cases, and all three have done unexpectedly well. To two of them (Cases iv and v) I have already referred. The history of the third is as follows.

CASE VI.

An estate agent, aged 37, was suddenly seized with severe substernal pain while still in bed one morning. His doctor found him intensely collapsed, ashen in colour, and pulseless. He vomited. The pain spread to the region of the cardiac impulse and down the inner side of the left arm. By 11 a.m. it had become very severe, but was still present on the two following days, in spite of repeated injections of morphine. Nearly a fortnight after a pericardial friction was noticed for the first time, to the right of the sternum. It was only present for about twenty-four hours. It was accompanied by a slight rise in temperature. On the day of the attack the systolic blood pressure was 80, but when I saw him a fortnight later it had risen to 120, with a diastolic pressure of 75, though the first heart sound was still barely audible at the apex. The superficial vessels were not thickened, but his retinal arteries were unduly tortuous. An electro-cardiogram taken two months later showed a P–R interval of more than 0.2 sec. with a small wave in the ventricular complexes immediately preceding the rapid deflexions. The heart's rhythm remained regular throughout.

The patient's doctor now informs me that he has had no recurrence of the pain since his original attack, twelve months ago, and is able to attend to most of his office work, and to drive his car. In fact, he is remarkably fit.

This patient was a very heavy smoker, and admitted to fourteen ounces of tobacco a week. It seems possible that excessive smoking may have played some part in producing his arterial degenerative changes. On the other hand, there was a familial tendency to arterial disease, for his uncle died of angina at the age of 30, and his father

a heart attack in the forties. The patient himself, though otherwise healthy, had always been somewhat short of breath on going uphill.

TREATMENT.

I know of no drug but morphine which will relieve the pain of coronary thrombosis, and it must be given freely. A quarter of a grain is generally insufficient, and my own practice, in severe cases, is to give an initial dose of half a grain hypodermically. When the blood pressure is low active stimulation is indicated, and apart from the relief of pain the treatment resolves itself into that of "shock"—keeping the patient warm, raising the foot of the bed, giving brandy or other stimulants by mouth, and camphor subcutaneously. I have tried ephedrine in some cases, but am not fully convinced of its value. Measures such as these may tide over the danger period. Let me repeat that, if there is one group of drugs more strongly contraindicated than any other in these cases, it is the nitrites. Continuous oxygen inhalation may be helpful when oedema of the lungs is present, though it cannot be expected to do good when the cyanosis is attributable solely to a diminished cardiac output.

The rapid heart action associated with auricular fibrillation, or paroxysmal tachycardia, which sometimes complicates coronary thrombosis, may in itself endanger life. In the former digitalis given by the massive dose method of Eggleston or intravenous strophanthin is called for; while the only drug which seems to have any effect in arresting the paroxysms of tachycardia is quinidine; six grains may safely be given, and repeated, if necessary, at two-hourly intervals for five doses.

To the importance of complete rest I have already referred. After a severe attack of coronary thrombosis the patient should not be allowed even to sit up in bed for two or three weeks.

CONCLUSION.

In the short time at my disposal I have only attempted to deal with the more important practical points in connexion with coronary occlusion. I have endeavoured to show that the study of coronary thrombosis is not confined to the post-mortem room. It is a definite clinical entity, which, in a large percentage of cases, can be recognized with certainty during life. Its recognition is important, because many of the patients survive, and a few are sufficiently restored to health to resume their former occupations. Further, a correct diagnosis is of vital importance, not merely in framing the prognosis, but also in determining the treatment. An acute coronary occlusion may closely simulate an abdominal crisis, and if unrecognized may be submitted to laparotomy, which, in view of the cardiac lesion, is almost certain to prove fatal. Other cases are mistaken for ordinary angina and treated with nitrites—a dangerous procedure in view of the low blood pressure.

The crescendo character of the pain, its duration, the fact that it is not relieved by rest and that the attack frequently occurs when the patient is resting and is in no way attributable to exertion, are important. The fall in blood pressure, the shock, prostration, and vomiting which generally accompany the pain, serve to distinguish it from true angina, as do the feeble first heart sound, the gallop rhythm, the rapid pulse, and the pericardial friction which are sometimes present. I need hardly say that one must not expect to find all these signs in every case, but there is generally ample evidence, even without the electrocardiograph, which, if it be available, will often clinch the diagnosis.

The aspect of prognosis is so difficult that I almost hesitate to refer to it, though my own experience would lead me to believe that even the most desperate cases may recover, especially when the patient is under 50 years of age.

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THE CORONARY ARTERIES IN A CASE OF FAMILIAL LIABILITY TO SUDDEN DEATH.*

BY

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WE publish the following record in the hope of eliciting from others, and especially from family practitioners of long experience, notes of similar cases.

In 1924 Carey Coombs and J. J. S. Lucas described to the Association of Physicians a family of whom the father and two sons had died with great suddenness. They had examined the heart of one of these sons, a man aged 32, who had been taken ill while playing football and had died within an hour or so; it was found to present macroscopical changes apparently of an atheromatous type in the coronary arteries. These changes had not been histologically examined as the specimen had been lost. They also gave particulars of a third son who had been seen by them for symptoms suggesting angina pectoris.

This man was first seen in 1923. The history was that in 1918, during exercise, he complained of an uncomfortable tight feeling across the chest. This passed off and it was not until 1923 that

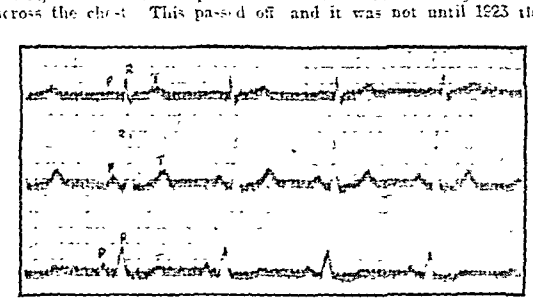
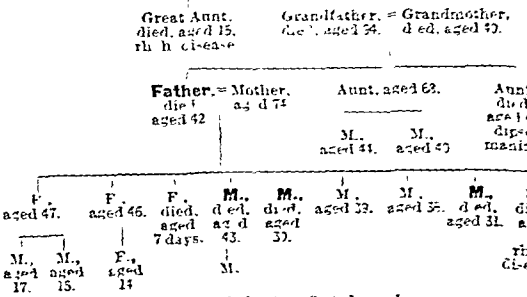


FIG. 1

the attacks became at all frequent. He then stated that for the previous ten months the attacks had been getting more frequent, and were brought on more and more readily, till in the latter part of the year he could not run ten yards without experiencing a tight gripping sensation in the chest. He never became dyspnoeic because the feeling came on before he had time to get out of breath. It never occurred at night, but was more easily brought on after a meal.

In May, 1925, one of us (C. E. K. H.) was asked to take an electro-cardiogram. (See Fig. 1.) The following is a genealogical tree of the family.



Heavy type indicates affected members.

In October, 1927, the patient was sent to see one of us (C. E. K. H.). He stated that the attacks were now associated with pain. A sudden tight feeling over the sternum was associated with an acute pain in the same region which was quite stationary,

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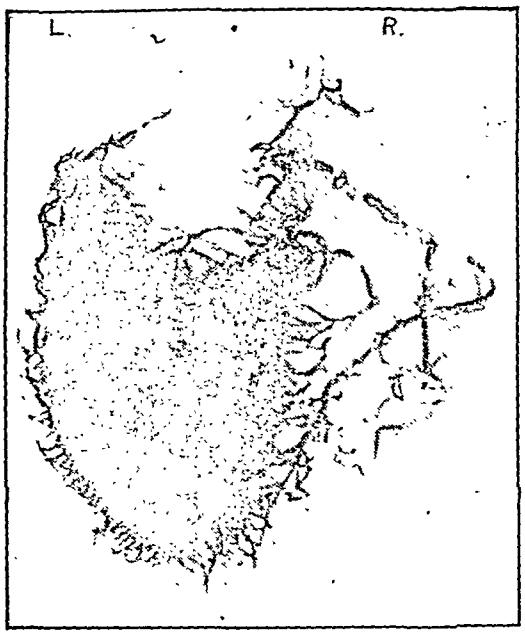


FIG. 3.—Radiograph of the injected heart, showing obstructions in the coronary circulation and the increased vascularity of the left ventricle.



FIG. 4.—Radiograph of a normal injected heart of the same age, showing the "age change" occurring normally, for comparison.

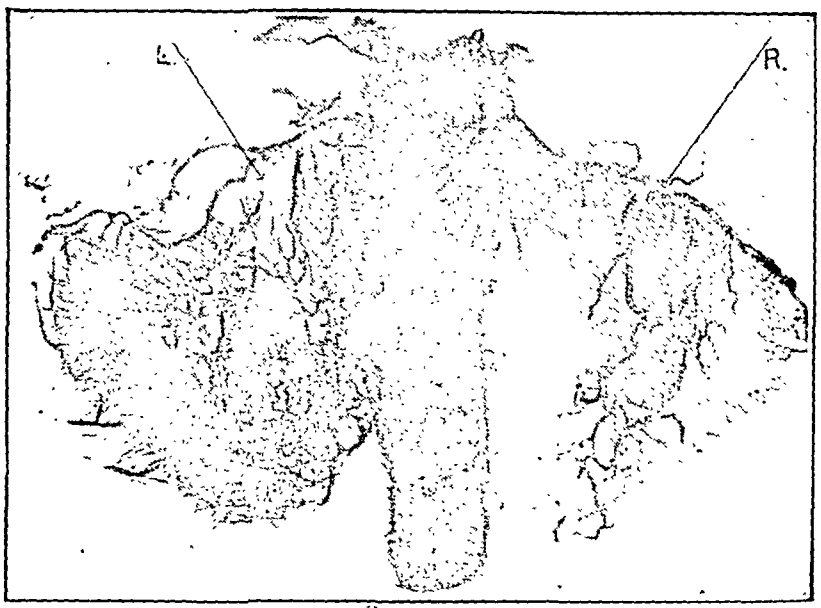


FIG. 5.—Radiograph of the injected heart opened out, showing obstructions in the coronary circulation and the increased vascularity of the left ventricle.

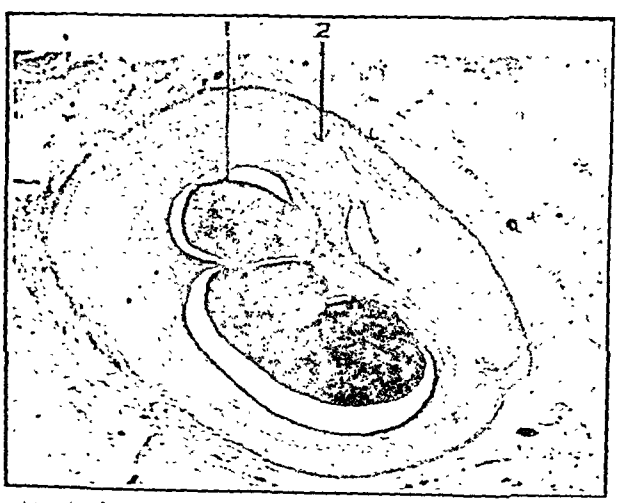


FIG. 6.—Low power photomicrograph of one of the larger [illegible] showing (1) the [illegible]

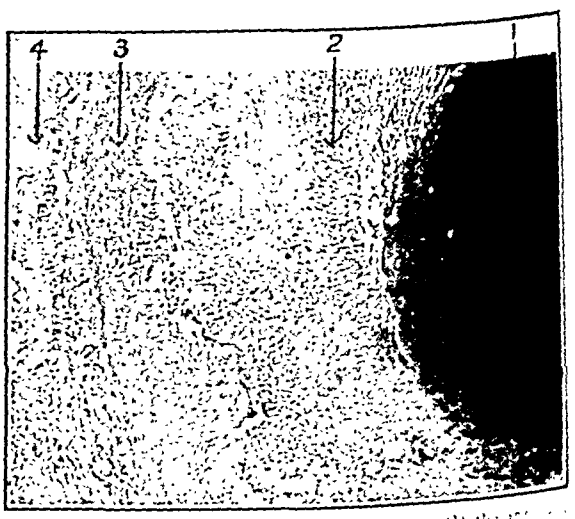


FIG. 7.—Higher power view of same, showing (1) the [illegible] mass; (2) the thickened intima; (3) the media; (4) [illegible]

and he felt bound to stand still for a few minutes, after which he was able to carry on again. The pain had never occurred at night, but was definitely produced more easily after food. The attacks had gradually got more frequent, though not more severe, and the exercise of quiet walking was sufficient to bring one on. Latterly he had had two or three attacks a day.

On physical examination the heart was not enlarged. An *x*-ray outline was taken, and this showed a heart of normal shape, but the aortic shadow was wider than normal. The heart sounds were clear, though the first sound was rather high-pitched; the aortic second sound was not accentuated. The arteries were not thickened, and the blood pressure was 120/70. The urine was normal, the Wassermann reaction negative, and no abnormal signs were present. Another electro-cardiogram was taken (Fig. 2), and this showed a marked difference in the "T" complexes.

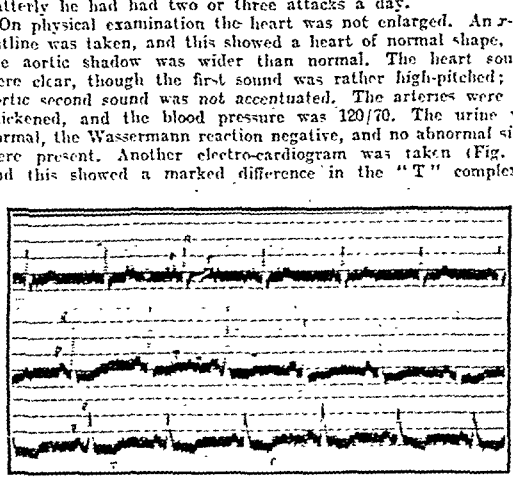


FIG. 2.

Whereas in the former one all the T's were positive, in this second one T2 is barely positive and T3 is definitely negative.

A month after this examination he fell down dead when getting into a tram-car.

Post-mortem Examination.

The post-mortem examination was performed at the Bristol Royal Infirmary by Dr. A. D. Fraser, and by his kindness one of us (C. B. P.) was able to examine certain organs in detail.

The subject was a well-nourished male about 40, and there were no external evidences of trauma or of disease. The lungs were normal in appearance, as also were the abdominal organs, with the exception of the aorta and kidneys. The aorta in its thoracic part showed slight atheroma, but the atheromatous change was very marked in the abdominal portion. There were several atheromatous ulcers, and in one or two places calcification had occurred. On section the aortic lesions show pronounced intimal thickening. In most places the media is the seat of replacement fibrosis. The intimal lesions in some parts show extensive fatty degeneration, and around the fat deposits are a certain number of mononuclear cells with a foamy cytoplasm, apparently engaged in phagocytosis of the fat. This is the only cellular reaction to be seen in the lesion.

The heart was somewhat enlarged, and on palpation the coronary arteries were definitely hard and thickened. It was injected with a barium gelatin emulsion, through the coronary arteries, according to the technique described by Gross,[1] and *x*-ray photographs were taken.

The skiagram of the injected heart shows intense vascularization of the left ventricle. This increase in vascularity of the left side compared with the right corresponds to a very extreme degree of the "age change" described by Gross, although in this case it is much more marked than one would expect at twice the age. At the age of 40 the increase of the blood supply of the left ventricle over the right is normally only just becoming obvious. In both the right and left coronary areas there are obstructions to the circulation.

All four valves were normal in appearance. On microscopical examination the myocardium shows areas of dense fibrosis. The coronary arteries are in many places almost completely occluded by massive intimal thickening, similar in type to that occurring in the aorta. In places this intimal thickening has been vascularized by new capillaries. Both internal and external elastic laminae are, in places, broken up, and the media shows some increase in the amount of fibrous tissue it contains. There appears to be some increase in the adventitial layer of fibrous tissue.

The kidneys were normal in size and appearance. There was very little abnormality in the small renal vessels; the renal artery shows medial fibrosis, but no intimal change.

The cause of death would appear to have been impairment of the coronary circulation due to degenerative changes in the coronary arteries. The pathological process corresponds with that of a premature senility of the arterial tree, with a particular incidence on the coronary arteries. There is no evidence of any infective factor. The pathology of the coronary artery lesions resembles that in the case described by Perla and Seligman,[2] except that in their case the lesion was by no means confined to the coronary arteries.

We may also refer to a recent paper from this laboratory in which Hughes and Perry[3] report the case of an infant, aged 7 weeks, who died suddenly, and was found at the necropsy to exhibit advanced degenerative changes in the coronary arteries.

REFERENCES.

1 Gross: *The Blood Supply of the Heart.*
2 Perla and Seligman *Arch. of Path.*, vii, 1, 55, January, 1929.
3 Hughes, F. W. T., and Perry, C. B.: *Bristol Med.-Chir. Journ.*, 1929, xlvi, 173, p. 219.

THE USE OF SURGERY IN PULMONARY TUBERCULOSIS.*

BY

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In the treatment of pulmonary tuberculosis, as in that of all other diseases, the simplest methods, carrying the least risk, must be tried first and continued as long as they show a possibility of succeeding. The simplest treatment for many patients with pulmonary tuberculosis is sanatorium treatment, being generally without risk. In a few cases, however, there is the danger that haemorrhage may curtail life before healing takes place under sanatorium regime. Again, sanatorium treatment may be inadequate on account of the acuteness of the disease, weak powers of resistance, recurrence of infection, or because the character of the changes, whether the result of the tubercle bacilli, or of the secondary infection, or of the resulting fibrosis, is such that healing cannot occur without the application of radical additional aid.

In this article it is proposed to consider the problems of how to diminish the relative virulence of the tubercle *bacilli to the resistance of the individual, and of how* to reduce the anxieties and dangers of haemorrhages: how, further, the healing processes and the eradication of the infectivity of the individual can be hastened when the time factor is of importance: and finally, how we can overcome the persistent infections of single large or of multiple small cavities in the parenchyma or in the dilatations of the bronchi.

Where one lung is involved the object is achieved if collapse can be readily secured, but this is not always possible. If the second lung is implicated, the radical treatment of the more seriously affected side may have to be greatly modified, and may even be impracticable

The simplest, but not always the easiest, method of collapse is that of artificial pneumothorax. The purpose here, however, is to discuss those surgical methods which may be accessory or alternative to artificial pneumothorax —namely, hemidiaphragmatic paralysis by phrenic evulsion, thoracoplasty, multiple neurectomy, and extrapleural pneumolysis. If it were always possible to get a perfect collapse with artificial pneumothorax, and if there were no complications to this method of treatment, there would be less need for these other operations. What often indicates the necessity for the operations of thoracoplasty or phrenic evulsion are the failures to obtain complete collapse by artificial pneumothorax, even with the aid of the cautery for dividing adhesions, and the various complications of pneumothorax.

The Operation of Evulsion of the Phrenic Nerve.

This operation consists in exposing the nerve in the neck, dividing it, and then, by traction on the distal end, drawing out the intrathoracic part of the nerve. In a case of complete evulsion the terminal filaments will be torn out from the diaphragm. It is not advisable, however, in certain cases, such as in those in which the nerve is caught up by thickened pleura, to attempt such a complete evulsion: it is satisfactory if some 10 to 12 cm. of the nerve can be removed.

* Contribution to a discussion at the Medical Society of London, February 10th, 1930.

Evulsion of the phrenic nerve has almost entirely superseded simple section, because, by evulsion, it is almost always possible to destroy the connexion of the accessory phrenic with the intrathoracic part of the nerve, and so interrupt this possible additional source of supply to the diaphragm. The operation is performed under local anaesthesia, except in young children. Under ordinary conditions an incision 2 to 3 cm. long is sufficient. Abnormalities of the phrenic nerve are frequent and varied, and it may be necessary to enlarge the incision slightly in order to make certain of finding and distinguishing the nerve which is to be evulsed. At times also, enlarged glands, or the scar tissue of old glandular infections, interfere considerably with the easy exposure of the nerve.

After evulsion, the dome of the diaphragm is paralysed and the muscle fibres gradually atrophy. Three changes occur in consequence. Where the muscle was in a state of tonic spasm, that spasm disappears; when normal or limited respiratory movements were present, they are abolished or may even be replaced by paradoxical movements, the paralysed dome rising as the unaffected dome descends, and vice versa. The third change is the rise of the dome into the thorax, which gradually increases during the ensuing two or three months as the muscle fibres atrophy.

Each of these changes exercises a favourable effect. The paralysis and loss of tone frees the lung, shrunken by the contraction of the pathological fibrous tissue, from the constant strain of the counter-drag of the muscle; while the rise of the dome, and the paradoxical movements when present, allow of a corresponding partial collapse of the lung, which in turn eases, and may even abolish, the drag of the shrunken lung on the mediastinum and its contents. The partial collapse of the lung is not limited to the base; this is strikingly illustrated in some cases by the great diminution in the size of cavities near its apex.

The relief of such symptoms as pain, aching drag, tightness round the base of the lung, and even of irregular tachycardia, when the pericardium is involved by basal adhesions, is among the most immediate results of hemidiaphragmatic paralysis; the presence of such symptoms is therefore an indication for phrenic evulsion. Hemidiaphragmatic paralysis may have a considerable influence also on certain other symptoms, such as cough and sputum. That form of dry recurrent cough due to irritation of the diaphragm is completely abolished. The bringing up of sputum is facilitated, because the expulsive force of the abdominal muscles acts directly on the lung, and is no longer damped by the semi-rigid, tonically contracted muscle.

Very briefly stated, the indications for phrenic evulsion are:

1. In cases of basal tuberculosis. It can be tried also in cases of basal bronchiectasis, but it is only rarely that any real or lasting success is obtained.

2. In cases of chronic basal effusions with thickened pleura: partly to reduce the space, and partly to relieve the dragging sensation.

3. In cases of more generalized tuberculosis when artificial pneumothorax has been tried and has failed.

4. For the relief of symptoms such as pain, dragging, cough, and tachycardia.

5. As an accessory to artificial pneumothorax when the base of the lung is adherent. It is also of particular value in that hemidiaphragmatic paralysis is said to help in preventing the recurrence of them, but I am not convinced that this is so. Phrenic evulsion can be done to check a basal extension in the opposite lung. Hemidiaphragmatic paralysis is said to help in preventing effusions or in checking the recurrence of them, but I am not convinced that this is so. Phrenic evulsion can be done to check a basal extension in the opposite lung. One should always be ready to convert the dome when a lung, long collapsed by thoracic pneumothorax, is being allowed to re-expand, to thoracoplasty. The chief object of the pleural cavity.

6. As a preliminary to thoracoplasty. The chief object as to reduce the size of the lower ribs which require to be resected, to prevent the later [illegible] in a case with an unresolved [illegible]

Thoracoplastic Operations.

The basis of all thoracoplastic operations is the excision of parts of ribs so as to produce collapse of the chest wall by mobilizing these ribs. This has been found to be less drastic than decostalization—that is, the removal of the whole length of the ribs. One essential condition of the operation is that the posterior line of division of each rib should be made at the level of the transverse processes. Another is that the excision of ribs should be carried up to and include the first, since each rib is fixed to the one above by the intercostal muscles and aponeurosis. When this has been done it will be found (1) that the ribs drop downwards, especially at the posterior ends, so that the cut end of the first rib may now lie opposite the transverse process of the third dorsal vertebra, and the others correspondingly; (2) that the lateral cut end of the ribs has become approximated to the spine; (3) that each of the ribs has become tilted downwards (bucket-handle action). These three actions cause the chest wall to fall mesially towards the mediastinum, so that very considerable collapse of the lung is produced.

According to the original paravertebral, extrapleural thoracoplasty as devised by Sauerbruch, the operation entailed division of ribs one to eleven inclusive. It has been realized more and more in recent years that this excessive resection is not always necessary, and that excision of parts of the first eight, seven, or even six ribs may produce a sufficient collapse to lead to the healing of the tuberculous lesion in upper lobe cases. When discussing apicolysis it will be suggested that a thoracoplasty limited to the first four or five ribs only is as efficacious, and is an operation preferable to apicolysis.

The collapse of an extensive thoracoplasty, and more so of a partial one, is not so complete as is the collapse of an uncomplicated pneumothorax, but it has the great advantage of being constant. Provided, therefore, the collapse by thoracoplasty is sufficient to obliterate existing cavities, it can be equally as efficient as the more complete collapse of pneumothorax.

It should be clearly understood that even the most complete thoracoplastic operation produces no crippling deformity. When the patient is clothed it is impossible to know on which side the operation has been performed. There is no drop of the shoulder, nor is there any limitation of the movements of the arms. When stripped the alteration in the angle of the axilla is the main indication from the front; there is flattening behind, and the scapula is bedded-in so that the posterior surface is at the level of the spinous processes.

The indications for thoracoplasty are in the main those for artificial pneumothorax, but the contraindications are much more severe. With one exception a thoracoplasty should not be done until artificial pneumothorax has been tried and has proved valueless.

It is sometimes easy to decide that the amount of gas which it has been possible to get into the pleural cavity is insufficient to be of any value; but occasionally it is very difficult to determine when an artificial pneumothorax which is producing a partial collapse and is exercising a slight control on the symptoms should be given up. In such cases the benefit of the doubt may be given to a more prolonged trial of the pneumothorax in the exudative type of case without cavity formation or much secondary bronchial change. Where there is extensive fibrosis, however, with dilatation of the bronchi and bronchiectatic cavities, it is probably a waste of valuable time to continue with the pneumothorax; this should be abandoned in favour of a thoracoplasty.

Occasionally, when the base is well collapsed by artificial pneumothorax, but not the apex, the basal pneumothorax is supplemented by a thoracoplasty of the upper ribs. When the pneumothorax is done primarily for the control of haemorrhage and is not efficacious, or if a lung, long collapsed, is re-expanding despite pneumothorax of the thorax, then a thoracoplasty is indicated.

A pyothorax complicating a pneumothorax is always a cause for anxiety; if this pyothorax is secondarily infected it becomes a serious menace to life. It may be possible to control the effusion and the pyrexia by an aspiration, but if this fails, a thoracoplasty must be done. The operation should not be too long deferred, since the [illegible]

becoming thickened and rigid, will interfere with the collapse of the chest wall, and the thoracoplastic operation will also be a failure.

There is one type of case for which I consider that thoracoplasty should always be preferred. I refer to those cases of advanced chronic unilateral fibrotic tuberculosis in which there are extensive changes, part cavitation, part great thickening and dilatation of the bronchi and bronchioles. For these cases artificial pneumothorax is only rarely feasible; even where it is, the principal advantage is the building up of the patient's general condition, if necessary, as a preliminary to, and control of the sputum during, the major operation.

The contraindications for thoracoplasty are much more precise than they are for artificial pneumothorax. In the latter the presence of active disease in the other lung is, in itself, no bar; it is rather the anatomical extent of the disease that is the deciding factor. When considering the suitability of a case for thoracoplasty the presence of an active tuberculous lesion in the opposite lung must be regarded as a complete contraindication—with one exception, to be noted directly. It is sometimes difficult, however, to determine whether fine crepitations heard at the apex of the better lung, in which there is a certain amount of fibrosis, are due to active tuberculous disease or to a catarrhal condition. If these signs have been watched over a period of some months and show little variation in area or quality, and the indications in the more seriously diseased lung are very strong, and if, further, after a preliminary phrenic evulsion these crepitations are not deleteriously altered, then a thoracoplasty need not be considered as contraindicated.

The single exception referred to above is in the case of haemorrhage. Bleeding from the more damaged lung, when it is periodically recurring and is of sufficient quantity to endanger the patient's life, and when the fear of it has become an ever-present terror, justifies certain additional risks. In such cases it is permissible, in my opinion, to attempt to control the bleeding by thoracoplasty, when no other means have been found practicable, even if there is a small area of activity in the less involved lung.

Tuberculous enteritis seems to me to be an absolute contraindication. Cachexia, a failing heart, albuminuria, unless transitory, and diabetes unless well controlled, are also contraindications. Tuberculosis of the larynx is not necessarily a bar unless there is considerable oedema interfering with the airway, or involvement of the epiglottis interfering with nutrition.

Multiple intercostal neurectomy has been tried by J. Alexander in certain cases in which there are contraindications to thoracoplasty. The nerves are resected under local anaesthesia. Slight collapse of the chest wall and immobility are obtained. There has been apparent benefit in some cases, but the number so treated is too small as yet for any definite conclusions to be drawn.

Extrapleural pneumolysis is the local collapse of the lung, which is secured by separating the parietal pleural membrane from the chest wall and by filling the space thus formed with a foreign body to prevent its return. This operation, which may be performed as an independent one, is generally used to induce collapse of the apex of the lung, and it is then called apicolysis. It is often supplemented by hemidiaphragmatic paralysis, and may be used to increase the collapse obtained by a thoracoplasty, especially in cases with thick-walled upper lobe cavities.

Various substances have been employed to fill the cavity between the parietal pleura and the chest wall, so that the collapse of the underlying lung may be maintained. Paraffin, however, may produce an extrapleural effusion, which, finding its way through the divided tissues, escapes and carries the paraffin with it. Fat and fatty tumours may degenerate and form an abscess. I have found a pedunculated graft of the pectoralis major in men, or the breast in woman, the most satisfactory.

As already mentioned, however, when an apical collapse is needed, a very extensive resection of the upper four or five ribs gives a more certain and satisfactory result.

It has been possible to touch the fringe only of the subject in this article. No reference has been made to technique or to the rarer operations.

EFFECTS OF AIR IN THE VASCULAR SYSTEM AND THE MECHANISM OF DEATH.*

BY

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THOUGH some surgeons profess to entertain no fears concerning the evil results of the introduction of air into a vein, most operators believe that such an accident is one to be carefully avoided. Experimental work on the subject was pretty extensive before modern apparatus like the electro-cardiograph could be used for interpretation, but not in recent times. The conclusions arrived at by experiment, though presenting general agreement with regard to salient effects, show certain discrepancies. The literature on the subject is not very extensive. Laborde and Muron[1] injected large quantities of air (500 c.cm. and more) into the jugular vein of the dog at a slow rate without fatal results, whereas rapid introduction of 100 to 200 c.cm. caused paralysis of the heart by distension. Couty[2] described most of the symptoms observed in the present experiments. The lack of an electro-cardiograph in his and other researches did not permit correct observation and interpretation of the cardiac phenomena. Begouin[3] allowed air into the jugular vein in cats and dogs; he also blew it into the vein by the mouth. Withdrawal of air from the ventricle by means of an aspirator was practised with apparent benefit. Depage[4] says that the entrance of air into veins is not so dangerous as is generally believed. He cites two cases of its occurrence during operation which were cured by artificial respiration, and quotes instances from the work of other surgeons. The three main theories of the mechanism of death—the nervous theory (Morgagni, Bichat), the pulmonary theory (Poisseule, Bernard, et al.), and the cardiac theory (Magendie, Amussat, et al.)—are discussed. Jung and Auger, in a fairly recent paper,[5] sum up the general views concerning the mechanism of death, the chief factors being rapid fall of arterial pressure, the entrance of air into the coronary vessels, and ventricular fibrillation. There is no reference to any influence of the respiratory mechanism, except in so far as disturbance of function may be implied as a result of the fall of blood pressure, and in no work up to the present account apparently is there a reference to the use of the electro-cardiograph. Little evidence is provided by the experiments done by myself to favour the view that ventricular fibrillation is a common cause of death after injection of air. The results of these experiments on dogs weighing 10 to 15 kilos are here considered in two chief categories.

A. Thorax Closed.

If 50 c.cm. of air or more be pretty rapidly admitted into the jugular or saphenous vein of a dog with closed thorax and natural respiration a fairly definite train of symptoms is produced—namely, respiratory distress, muscular agitation, polypnoea, marked fall of arterial pressure, and irregular action of the heart. The heart sounds are sometimes audible at a distance from the animal, and have a gurgling character. The electro-cardiogram may exhibit arrhythmia, extrasystoles, inversion of the T wave, etc. A dog thus treated does not necessarily die as a result, in fact, it usually recovers quite fully in the course of twelve to twenty-four hours. If a second large quantity of air be introduced before the effects of the first have passed off the animal may succumb to its influence, and death is generally preceded by a period of apnoea.

In deep anaesthesia the symptoms may be somewhat different from the above. Especially in the case of two dogs under chloralose, there was no marked polypnoea, and apnoea set in early, the effects of one injection being fatal. These two experiments were performed at the Institut Marey, in conjunction with Mr. L. Bull, to whom I am greatly indebted for help and counsel in the taking and interpretation of electro-cardiograms.

The most constant symptom, observed in practically all cases, and varying in degree with the amount of air admitted, is the fall of arterial pressure. When large

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quantities of air are introduced into the venous circulation the sudden drop in arterial pressure is due to mechanical obstruction to the venous flow through the pulmonary artery. The obstruction is soon overcome by an immediate process of breaking up of the air into small particles, so that the frothy blood passes to the lungs. It is remarkable how the pulmonary artery rapidly becomes free; post mortem it shows but few particles of air in the lumen either of the trunk or of the large branches. These appearances give little support to the view that the pulmonary factor is of importance in the mechanism of death.

Does anaemia of the bulbar centres account for the polypnoea? Not fully; polypnoea is sometimes developed when small amounts of air are introduced into the veins which are not sufficient, either in amount or in rate of entrance, to cause an appreciable lowering of arterial pressure. A reflex factor in the causation of the polypnoea is not unlikely, the afferent impulses arising within the cardiac area or in the carotid sinus, which, as shown by the work of Hering,[5] Heymans,[6] and others, is the seat of important reflex control of the vascular system in general, and of the encephalic blood pressure in particular.

In a paper on this subject read at a meeting of the Société de Biologie in Paris[1] I drew attention to apnoea as a prominent feature in the effects of injection of air. It is maintained in some cases for quite long periods before cardiac death. The respiratory centre fails, and the anomalous condition is seen of a heart beating, however slowly and irregularly, with no air entering or leaving the lungs, and a very low arterial pressure. The role of apnoea in the mechanism of death seems to be an important consideration, though it has not been given prominence as a factor in this. When sufficient air is injected to cause death apnoea is usually seen before the end, but it needs a larger amount of air to cause it than in deep anaesthesia. In animals with cut vagi the symptoms were like those of deep narcosis with intact vagi. Probably the vagus is an afferent path, not necessarily the only one, for the impulses to the respiratory centre, a path which is deleteriously affected in deep chloralose anaesthesia. In this condition and in vagotomized animals the polypnoeic disturbance is much less than in other cases, and the polypnoea is to be regarded as a mode of defence of the organism. Apnoea of short duration does not necessarily portend a fatal result. But if the apnoeic phase lasts more than half a minute or so it is a certain sign of failure of further resistance, and indicates a fatal termination.

B. *Open Thorax.*

When the chest is opened and artificial respiration performed the symptoms caused by the introduction of 50 to 100 c.cm. of air into the jugular vein are different from those mentioned in the case of natural respiration. The blood pressure falls as before, but of course there is no evidence of interference with the respiratory mechanism and no indication of the reactions of the respiratory centre in response to reflex or other influence. The heart is the organ which succumbs, and fibrillation is common in these conditions. In case of closed thorax the nervous centres die for lack of blood, consequent on the mechanical obstruction of the circulation, while the heart remains active for a time and is apparently capable of recovery if conditions can be made favourable. The duration of the period of starvation of the centres by deprivation of blood is a factor in causing the death of the centres. In some cases this period is fairly short.

How does the heart maintain its activity without an efficient coronary circulation and in conditions where one would expect serious anoxaemia? Probably a small supply of oxygen is sufficient to keep up the discharge of impulses from the sino-auricular node, and this supply may be available for a time by direct diffusion of oxygen from the arterial blood in the right auricle, which remains bright red for a long time. Removal of the products of combustion in the absence of a proper venous circulation may be also effected by diffusion, aided by contraction of [illegible] tion of [illegible] this fact, hydration should no

Conclusions.

Dogs can recover from the effects of introducing about 100 c.cm. of air into the jugular vein.

Resistance to the effects is diminished in deep anaesthesia and after section of the vagi.

The heart in some conditions is the organ which fails in fatal cases, but failure of the respiratory centre is the cause of death in others. Apnoea is an important symptom indicating the loss of reaction in this centre. Ventricular fibrillation is not a common cause of death.

With regard to treatment, the inhalation of oxygen while the respiratory centre is active is indicated. Artificial respiration should be tried when it shows signs of failure. As for bleeding and aspiration, they inspire little faith. Animals in experiment exhibit marked powers of natural recovery, and one is very prone to attribute to some remedial measure an undue beneficial effect.

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THE TREATMENT OF DESPERATE CASES OF DIABETIC COMA.

BY

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MANY physicians must have had the disappointing experience of losing a certain proportion of cases of diabetic coma even since the introduction of insulin. From all countries records and statistics show a varying number of patients who die in spite of energetic treatment with insulin. Such has been my experience. It therefore seems worth emphasizing an aspect of the treatment by means of which recovery has followed in two desperate cases of coma—in-patients who I am sure would have died under my treatment of a year ago. The deciding factor in their recovery was, in my opinion, the administration of *extremely large* quantities of intravenous fluid, hypertonic saline and gum acacia solution.

The most dangerous cases of coma requiring such treatment are easily differentiated by one or two simple clinical observations from the less severe cases which respond readily to adequate doses of insulin alone. Typical air hunger and varying degrees of unconsciousness are present in both types, and chemical tests show a large excess of sugar and ketone bodies in the urine and blood. In addition the desperate cases show evidence of dehydration, collapse, and circulatory failure. The pulse is rapid and feeble, the blood pressure very low, the veins are empty, the tissues drained of water, and the most striking sign is the *low eye tension*. This may be so extreme and the eyeball so flat that one has almost to lift the lid to make sure the eye has not previously been removed. There is a real "melting of the flesh into water" on old description of diabetes—or, more exactly, a melting away of water from the flesh, dehydration. This *dehydration* is produced by the intense polyuria of the preceding days and the failure to absorb fluid because of vomiting and unconsciousness. The volume of the blood is reduced, the blood is concentrated, of which a raised haematocrit content is evidence.

Another feature of these desperate cases is a very [illegible] secretion of urine, sometimes actual anuria. It has been suggested that kidney failure is the cause of death in such cases, and that death is really a uraemic one. In my opinion, however, oliguria or anuria is due to dehydration and a low blood pressure. An exactly [illegible]

[illegible] taking on insulin for the Medical Research Council

* [illegible]

condition is found in cholera—dehydration, collapse, and anuria. Certainly in all the cases of diabetic coma I have seen proteinuria, casts, and often blood cells have been found, but these have disappeared in a few days after recovery, and the oliguria within twelve to thirty-six hours after the re-establishment of the body fluid and circulation. This condition is accompanied by nitrogen accumulation in the blood and blood urea concentrations of 80 to 100 mg. per 100 c.cm. or even higher, due essentially to the dehydration. At the same time the blood chlorides are very much depleted, as in cholera.

The chemical findings in the blood in diabetic coma may be usefully divided into two groups, which may be called (1) the diabetic, and (2) the dehydration complex, all the features of the second being present also in cholera.

1. *Diabetic Complex.*
   - Hyperglycaemia.
   - Excess of ketone bodies.
   - Low alkali reserve.
2. *Dehydration Complex.*
   - Tissue depletion of water—for example, low eye tension.
   - Low blood volume and pressure.
   - Concentrated blood, high haemoglobin and specific gravity.
   - Nitrogen retention—high blood urea.
   - Low blood chlorides.

The first derangement is rectified by insulin, the second by abundance of fluid, which in desperate cases should be given in *large quantities* and preferably *intravenously*. The importance of the administration of fluid to coma cases has been known for years, and was recently brought out at a discussion at the Royal Society of Medicine; but the quantity of fluid necessary has not been emphasized or defined.

The following three cases are recorded, the first fatal, to illustrate the procedure and the amount of fluid that may be necessary in dealing with such cases. All were completely unconscious, and only such details are given as bear directly on the treatment.

CASE I.

Male, aged 52. Seen at noon: pulse 130 feeble, temperature 97° F.; very low eye tension. Urine: sugar ++++, ketones, Fe_2Cl_6+, blood sugar 1.531 per cent., alkali reserve 13 per cent. Insulin 40 units was administered intravenously, and 60 units subcutaneously. *Between 1 and 2.30 p.m. 2 pints of normal saline* were given subcutaneously and 1½ pints by the rectum, all completely absorbed. As this seemed a large amount I unfortunately did not give intravenous fluid. At 2.30 p.m. 3 ounces of urine were obtained, containing less ketone bodies: albumin, trace; casts, granular. At 3.30 p.m. the blood sugar was 1.30 per cent., the pulse 132 and slightly fuller, and 100 units were given. At 6.30 p.m. a few cubic centimetres of urine were collected, loaded with sugar, but with much less acetone—a negative FeCl. Blood sugar 1.020 per cent., temperature 102° F. Shortly after, the pulse collapsed almost entirely, but the patient was partially revived by adrenaline, 3 minims intravenously. Camphor and ether was administered, and a pint of hypertonic saline was being given to the moribund man when he died. No post-mortem examination was obtained. (It is interesting to note that the blood urea was 153 mg. per cent., and the chlorides (whole blood) 290 mg. per 100 c.cm.—extremely low. The increase in the osmotic pressure of the blood produced by the extreme hyperglycaemia (1.53 per cent.) was balanced by an exactly corresponding diminution of the sodium chloride.)

Total fluid: 2 pints subcutaneously, 1½ rectally = 3½ pints = 2 litres.

CASE II

Female, aged 53; admitted to King's College Hospital at 3.30 a.m. Temperature 97° F., pulse 86 and very feeble; intense dehydration; eyeball hardly palpable. Urine: sugar +++, acetone FeCl ++, albumin +, casts granular and blood. Blood sugar 0.600 per cent. She was given 120 units of insulin and 2 litres (3½ pints) of hypertonic saline from 4.30 to 5.30 a.m., and strophanthin 1/250 grain. 6.30 a.m.: Temperature 97.4°, pulse 112 and feeble. 10.30 a.m.: Urine (only a few cubic centimetres by catheter), sugar +++, FeCl +. Blood sugar 0.520 per cent. Insulin 100 units intravenously. From 11 a.m. to 3 p.m. 3½ pints of normal saline subcutaneously. 4 p.m.: Urine (a few c.cm.), sugar +++, FeCl 0, Rothera +: blood sugar 0.328 per cent. Dehydration obviously less; eye tension higher; temperature 98.7° F., pulse 124, still very feeble. She was given 1 pint of gum acacia *plus* 6 ounces bicarbonate solution (20 grams), and adrenaline 6 minims intravenously, which caused an immediate improvement of pulse and colour. Insulin 20 units and glucose 20 grams by mouth were now given four-hourly. At 10.30 p.m. the pulse (120) became less full, and 1 2 pint of gum acacia with 1½ pint (200 c.cm.) of 5 per cent. glucose, 20 units of insulin, and 4 minims of adrenaline were given intravenously. After this the pulse remained satisfactory, the eye tension was practically normal, and consciousness was partially recovered during the night. (It is interesting to note that the plantar reflex was extensor during unconsciousness, but became flexor next day.)

Total fluid: 9 pints 6 oz. (5.5 litres); 7 pints (4 litres) intravenously in ten hours.

CASE III.

Female, aged 54. Admitted 9.30 a.m. Very dehydrated, moderately low eye tension, pulse hardly felt, air hunger giving way to *feeble, intermittent gasps*: Urine: sugar ++++, FeCl ++++, albumin +, and granular casts. Intravenous injection started immediately, and from 9.30 to 11 a.m. 2.5 litres (4 pints) of hypertonic saline and finally 1 pint of gum acacia solution were given, the first litre containing 100 units of insulin, 5 minims of adrenaline, and 20 grams of sodium bicarbonate (5 drachms). At the end of this the pulse had considerably recovered, and the blood sugar was 0.356 per cent. No blood could be obtained before the injections on account of her desperate condition. From 11 a.m. to 1 p.m. she received 2 pints of normal saline subcutaneously, containing 30 grams of glucose, and by 2 p.m. the pulse was satisfactory (rate 115) and the eye tension higher. A small quantity of urine was obtained by catheter at 1 p.m., and the secretion was well established by 7 p.m. She became conscious enough to swallow, and was given 20 units of insulin and 20 grams of glucose four-hourly by the mouth with abundance of fluid.

Total fluid 7 pints (4 litres) in four hours, 5 pints intravenously in 1½ hours.

DISCUSSION.

It will be noticed that in Case I the patient, who died, *received only 3½ pints of fluid and none intravenously until* he was almost moribund. The other two patients, who recovered, received much more fluid, largely intravenous, at the beginning of treatment. One required 9¼ pints, the other 7 pints before the circulation seemed satisfactory. There is no proof that the first patient would have recovered with more intravenous fluid, or that the others would have died with less; but this is my strong impression, and I certainly the circulatory condition of the first (fatal) patient was better when first seen than that of the others.

The following points in the treatment merit a fuller discussion.

Technique of Injection.

The intravenous injections were given in all cases with a *Jubé blood transfusion syringe*. This is by far the simplest and most easily controlled method. Quite a small needle (size 12–14) can be used, and it has not been necessary to cut down on a vein, although they have all been collapsed. A small piece of rubber tubing (boiled) leads from the syringe and dips into the jug containing the infusion. It is my practice to add insulin, adrenaline, or any other stimulant (caffeine or digitaline, etc.) to the fluid in the jug. Also it is not easy with a small Jubé syringe to introduce the fluid too fast, and yet, as it can be injected under pressure, there is no risk of blockage or failure as with gravitation methods. The pressure and rate of injection are under perfect control. The fluid has been given at the rate of a litre in half to three-quarters of an hour, never faster. Such a syringe is invaluable, and can be used for aspirating as well as injecting fluids.

Nature of Intravenous Injections.

Double-strength physiological saline (1.8 per cent. sodium chloride) has been used for the first infusion in these and other less desperate cases. This strength was chosen arbitrarily in a hurry, because I did not know what strength of hypertonic saline was usually given. I subsequently found that 1.2 per cent. saline is given in the treatment of cholera (Rogers), and perhaps this would be better. Hypertonic saline was given because the available evidence shows that the body is depleted of sodium chloride and the blood chlorides are low (see Case i). It is an open question whether hypertonic has any practical advantage over isotonic saline (0.9 per cent.), but it is theoretically preferable. Gum acacia solution (7 per cent.) has been given after the saline because it is a fluid which remains in the vessels. I believe that much of the saline rapidly leaves the blood and goes to the dehydrated tissues, which can be observed to fill up during an infusion. It has been clearly noted in these cases that the effect of the pint of gum solution has been to amplify and fill the pulse more than the preceding larger volume of saline.

Volume of Fluid.

This paper advises the administration of very large quantities of intravenous fluid, much larger than has been advocated elsewhere, except in the treatment of cholera. In neither case, nor in other less severe cases, has there been any untoward sign of cardiac embarrassment or dilatation, or of general or pulmonary oedema, although the tissues visibly filled out during the infusions. The absence of such signs may seem remarkable in Case ii, where 9¼ pints (7 intravenously) were given in eighteen hours and only a few ounces of urine were secreted in twenty-four hours. The dehydrated tissues must be able to absorb such quantities without any surfeit of fluid. It is impossible to state dogmatically the ideal amount of fluid to give, as this must vary in every case with the body weight and degree of dehydration. The following theoretical considerations may be of interest.

If we knew the weight of the patient a few days previously and were able to weigh the patient when first seen in coma, some idea of the water loss could be obtained. This was impossible in the above cases. But recently another patient, not completely unconscious, was weighed on admission to hospital and again twenty-four hours later after treatment with insulin and fluid. The patient gained 12 lb. in weight without any oedema—a gain in weight which did not fall on succeeding days. In that twenty-four hours she received only 3 pints intravenously, but abundance of fluids (not measured) by mouth, and only 60 grams of carbohydrate as food. This 12 lb. is equal to 16 per cent. of her body weight, and is about 10 pints of water. It may be taken as her amount of fluid loss, and she was not by any means an extreme case of dehydration, as the eye tension was only slightly reduced. In some cases the percentage loss of water and the total loss must be much greater. When we consider that the body of a man of average weight contains over 40 litres of water, there is no doubt that over 4 litres, and probably 6 or 8 o. more, must be lost in extreme dehydration (7 to 14 pints). It is not surprising, therefore, that in Case ii, the most extreme, the patient showed no evidence of excessive administration of fluid when 9¼ pints had been given. Judging from the relatively poor condition of the pulse after 7 pints had been given, and its immediate improvement after only one pint of gum (the eighth), it seems probable that most of the intravenous fluid leaves the circulation for the tissues.

It is interesting to note the quantity of intravenous hypertonic saline given in the treatment of cholera. Rogers advocates 3 to 6 pints of 1.2 per cent. saline given at the rate of 4 oz. a minute—that is, 1 pint in five minutes (I have never given it so quickly in diabetic coma). Cox of Shanghai advises continuous intravenous isotonic saline for *several* hours, until collapse is overcome, at the rate of 2 oz. per minute. That is, 1 pint in ten minutes or 6 pints in the first hour—very comparable to the amounts I have given, but far exceeding my dosage when carried on for several hours. The conditions, however, are different, for the loss of fluid will continue in cholera while the diarrhoea lasts, whereas the loss in diabetes gives way to oliguria or anuria.

From the practical point of view, we may be guided by the following clinical considerations. Enough intravenous saline should be given as soon as possible to fill visibly the shrunken tissues and re-establish the fullness and strength of the pulse. This may require 3 to 5 or more pints of fluid, and I consider it wise to finish the infusion with a pint of gum acacia, a fluid which remains in the circulation while much of the saline rapidly leaves the blood and enters the tissues. It is desirable on theoretical grounds to commence with hypertonic saline (1.2 to 1.8 per cent.), but I have no proof that this makes any practical difference. After the intravenous treatment, it would seem advisable to give continuous subcutaneous for rectal saline, unless this is certainly localized and is not being absorbed into the general circulation, an indication of the body is sufficiently supplied with fluid. If the pulse volume collapses, more intravenous saline and gum solution (1 2 to 1 pint) should be given.

The complete recovery of the eye tension is a sign that sufficient fluid has been given, but it is noticeable that the eye tension (and the secretion of urine) is slow of recovery, even when dehydration of the rest of the tissues has been overcome. A series of estimations of the haemoglobin percentage of the blood might indicate when sufficient fluid had been given, but is open to fallacies. The heart should be watched for signs of dilatation, and the ankles and lungs for oedema. I have not observed such danger signals occur, and think the risk is extremely small. In any case this risk must be taken if these moribund patients are to have any chance of recovery.

It may be that the ketone poisons *per se* are an important factor in producing the circulatory collapse, but there is no proof of this. I have, at any rate, observed several fatal cases in past years in which the ketonuria and ketonaemia has been greatly reduced by insulin without recovery of the circulation; these patients died. in my opinion, because I failed to supply the necessary large quantities of fluid.

I do not propose here to discuss the dosage of insulin, the necessity of warmth, and treatment with cardiac stimulants, although I think it important in every collapsed case to give a few minims of adrenaline in the first infusion. This has a remarkable, if temporary, effect in stimulating the circulation. Nor shall I discuss the advisability of giving sodium bicarbonate to replace the depleted alkali reserve and abolish acidosis. It may be noted, however, in the latter respect, that the hypertonic saline can very quickly remove the main symptoms of acidosis—the air hunger. In the last patient I treated, a litre of hypertonic saline completely abolished the air hunger in half an hour, before the infusion was finished or the pulse had recovered satisfactorily.

SUMMARY.

Attention is drawn to dehydration as the immediate cause of death from circulatory failure of desperate cases of diabetic coma. They die, as do cholera patients, from depletion of tissue and blood fluids, and often in the anuric state. The condition is recognized clinically by a feeble, empty pulse, shrunken tissues, low eye tension, and oliguria or anuria. In addition to insulin they require immediately large quantities of fluid, preferably intravenous. A treatment with hypertonic saline and gum acacia solution is described.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

BILIARY CIRRHOSIS IN AN ELDERLY WOMAN

BILIARY cirrhosis of the liver is said to be common in young adults of the male sex. The following case, therefore, occurring in an elderly woman, appears to be worthy of record.

About 11.30 a.m. on January 19th I was called to see Mrs. X., aged 67, who complained of severe pain in the pit of the stomach. The onset was sudden, six hours previously, when she vomited on one occasion, some bile-stained fluid. She was pale and collapsed but not markedly emaciated. She looked ill, toxic, and exhausted with cold clammy skin, submormal temperature, and rapid pulse. the tongue was dry and covered with a brown fur. There was repeated retching, with gaseous eructations. The abdomen was flaccid and not distended; there was epigastric tenderness. The liver was slightly enlarged, and on percussion the lower border was found to be one fingerbreadth below the right costal margin. No other abnormality was found in the abdomen or chest, apart from an occasional rale at the base of the left lung. No examination-stools were available for examination.

From 11 p.m. (her relatives stated) until 5 a.m. the following morning she repeatedly vomited black, tarry material, about a pint in all, and died suddenly at 7 a.m.

Previously, she had had rheumatic fever in childhood, and during the last few years, frequent attacks of bronchitis. She had had attacks of diarrhoea, off and on, for the last two or three years, and had suffered from this continuously for the last three months. She always had a yellowish complexion, but had been of normal temperature in her habits.

At the necropsy all the abdominal concavity, parietal and visceral, stomach and greater omentum, were tinged with bile [illegible]

was about one pint of foul-smelling brown fluid in the peritoneal cavity. The mucosa of the lower end of the œsophagus and of the stomach, duodenum, and upper two-thirds of the ileum was congested. Small varicose veins were visible at the lower end of the œsophagus, but none was seen to have been ruptured. Apart from catarrhal exudate covering the mucosa, the stomach was empty. The catarrhal changes were most intense in the duodenum and upper part of the ileum, where the bowel was plum-coloured and distended, and the mucosa was brick-red in colour and covered with coffee-coloured exudate; these appearances faded away towards the lower end of the ileum. The large bowel contained solid faeces throughout. No possible cause of intestinal obstruction was found.

The liver was slightly and uniformly enlarged; the surface was smooth and of greenish-yellow colour, with small congested areas; the organ was friable, the cut surface was uniformly yellow and of granular appearance, being divided into innumerable small islands by minute congested areas; no gall-stones were found in the gall-bladder or bile ducts. The spleen was slightly enlarged, firm, and congested. All the other viscera appeared normal, except the lungs, which showed some hypostasis at both bases. There was about half a pint of brownish-red fluid in each pleural sac.

The diagnosis was confirmed microscopically. A section of the liver showed that, although the lobular structure of the organ was recognizable, necrotic areas in which the liver cells were destroyed and separated from each other were numerous. A moderate amount of small, round-celled infiltration was seen in the portal areas, de-quamation of epithelium had occurred in the bile ducts, but there was little evidence of fibroblastic reaction or of new formation of bile ducts.

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STRANGULATED HERNIA IN AN INFANT.

I was recently called in to see a case of strangulated inguinal hernia of the right side in a male infant 5 weeks old. The clinical details are as follows.

On the previous evening the mother noticed a lump in the right groin about the size of a small egg, which appeared as the baby was crying. The infant refused food at 5 a.m. next day, was sick about 10.30, and had only passed a little blood from the rectum. It had not been particularly strong since birth. On examination a fairly freely movable swelling was apparent in the right inguinal region. This swelling was translucent, and it was by no means certain whether we were dealing with a hernia or a cyst. The fact that a neck could just be felt, which appeared to pass up into the abdomen, and the history, led us to advise operation.

At the operation a cystic swelling presented, with the testicle lying behind it; when this was opened it was found to contain a quantity of clear fluid, and at the upper end a knuckle of large gut. The neck of the sac had to be enlarged before it was possible to reduce the hernia. The infant is doing well.

I think that the extreme youth of the patient warrants the case being put on record.

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DEATH DURING SPINOCAIN ANAESTHESIA.

HAVING read articles lately on the subject of spinocain anaesthesia for abdominal operations, I think that the following case may prove to be of interest.

A man, aged 58, suffering from carcinoma of the caecum, was operated on some ten days ago, spinocain being injected at about the level of the eighth dorsal vertebra. The anaesthesia was supplemented with gas and oxygen. All went well for an hour and ten minutes, when the heart ceased beating and the respiration entirely stopped. With massage of the heart through the abdominal wound and intracardiac injection of adrenaline the heart resumed its function, after fifteen minutes, during which time not a single beat had been felt. Oxygen was administered through a laryngotomy tube; the operation was proceeded with and completed. The heart continued beating for three and a half hours after it had resumed its function; oxygen being administered, with CO_2, and artificial respiration being kept up with relays of assistants until death.

A remarkable feature was that rigor mortis had set in in the neck fully two hours before the heart finally stopped. The spinocain had been injected with the patient lying on his left side, the operating table being level; after the injection the patient's head was lowered, and kept in that position during the progress of the operation.

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Reports of Societies.

AMPUTATIONS AND THEIR RELATION TO THE ARTIFICIAL LIMB.

AT a meeting of the Section of Surgery of the Royal Society of Medicine, on April 2nd SIR HOLBERT WARING presiding, a discussion was held on amputations and their relation to the artificial limb.

Mr. C. MAX PAGE, in opening, said that the surgery of amputations, although it represented the oldest branch of the subject, remained somewhat academical in its teaching until the war. The large number of amputations which then took place in this and other belligerent countries produced new ideas and methods. The early conclusions which traversed pre-war teaching had been made clear by Mr. Muirhead Little, who had produced a most valuable book of reference on the subject. Experience of the last ten years had further crystallized views on certain practical points, and the speaker's role in that discussion was to indicate the attitude of the operating surgeon to the problem. The general principles which governed the technique of any final amputation in either extremity might be defined as those which gave the stump the following characters: (1) approximately conical shape, except when the amputation was very close to the trunk; (2) ability to provide a lever of sufficient length for the attachment of an artificial limb suited to the level of the amputation; (3) closely covered by healthy, well-nourished skin or scar, both of which should be mobile on the deeper structures; (4) with no part tender on pressure or abnormally sensitive. For the below-knee amputation everyone was agreed that the ideal length of tibia to leave, circumstances permitting, was 7 inches, but a stump with as little as 4 inches of tibia was quite capable of controlling an artificial limb. If more than 7 inches of tibia was left it would be covered by skin of poor nutrition, which would almost inevitably break down and cause inadequacy of support for prosthesis. In leaving 4 or 5 inches of tibia it was worth while to remove the fibula entirely, thus diminishing the risk of pressure sores. In above-knee amputations the length which appeared to give the most satisfactory functional stump was one containing 10 to 12 inches of femur. One was tempted to spare as much of the femur as possible, but a rather long thigh stump often proved unsatisfactory. He was interested to see that in America and Germany the Stoke–Gritti amputation, which left something like 14 inches of femur, was very popular. It aimed at producing an end-bearing stump, but in the experience of limb-fitting centres in England these end-bearing stumps in the thigh had proved a failure.

The speaker then passed to some points in technique in an individual amputation which might affect the individual stump. The flaps should be approximately circular in shape in order to interfere with nutrition as little as possible; their total length should be little greater than the diameter of the limb at the level of section, and they should be of skin only. It was of interest to note that many American surgeons advocated the suture of muscle or tendon at the end of the bone or across it. The reason the flap approached to a circular or elliptical shape the better the nutrition was maintained. With regard to the inclusion of muscle in the flaps, the importance lay in cutting a wedge of muscle at the base of the flap in order to maintain nutrition, and not for any other purpose. In the treatment of bone, to avoid spur formation his own practice was to divide the periosteum about half an inch above the level of the saw cut, so that this passed through bone and not through periosteum at all. Attempts to cover the end of the bone with a graft in his experience led to failure and necessitated a re-amputation. He held the strong opinion that osteoplastic treatment of the cut end of the bone was not desirable. In the treatment of the nerves at the end of the stump it had been customary to identify as many of the large nerves as possible, pull them down, crush them, ligature them, and cut them off. The rather gross handling of large nerve trunks was overdone, and many of the patients had post-operative pain, which might be the basis of permanent subjective pain. The nerves

should be isolated for a distance of about 1 inch from the line of muscle section, crushed and ligatured, and the stump injected with absolute alcohol; this would at any rate ensure painless convalescence. The formation of nerve bulbs was inevitable; the only question was how far they could be got out of the way of pressure. They clearly should not be attached to the scar, and at the same time they must not be allowed to form at such a level that they were pressed upon by the artificial limb. With regard to drainage, he had always practised this with an amputation stump of any size.

Mr. P. JENNER VERRALL endorsed a remark made incidentally by Mr. Max Page in condemnation of the Syme stump. He had come across it first in the East, and it was an admirable amputation for the native who had no possibility of wearing an artificial limb; but in Europe, and especially in this country, where artificial-limb fitting had reached a high development, the Syme after six or seven years tended to go wrong. In the above-knee amputation he used an anterior flap and a very short posterior flap. The importance of spurs, he thought, was greatly exaggerated. His custom was not to treat the periosteum in any exceptional way; he divided it straight on the level of the bone. Spurs were unimportant except when they happened to be situated directly underneath the scar. He had used drainage for years at Roehampton and other places, but during the past year he had given up; if he was in any doubt he stitched loosely with interrupted stitches. Splinting of the knee for below-knee amputations was very important. A large haematoma did occasionally occur, and then it was necessary to evacuate; the cases in which a haematoma was very likely were those in which, on the operating table, when the tourniquet was taken off, one made the remark, "I cannot see why this will not bleed." Three weeks in bed was always very important in amputations. In treating nerve ends, the speaker certainly did not pull them down to any large extent, and he agreed that the minimum of trauma was very desirable. He condemned the use of plaster pylons below the knee. In their favour was the fact that the patient obtained an orientation of his walk early, also that a plaster pylon would save money because there would be less limb-fitting afterwards; but against this the patient had an unnatural gait, and, what was more important, he had never seen a below-knee amputation treated in this way which did not rub sores. The first cause for unsatisfactory stumps was to be traced to the circulation. The nerves most likely to be troublesome after amputation were the cutaneous ones; it was not the deep nerves that gave trouble. Sebaceous adenomata up the inside of the thigh were a great trouble; if it was necessary to deal with them surgically extensive resection of the skin should be performed, removing the whole area, but the use of white precipitate ointment would avoid much trouble. In a final word on arm amputations, the speaker said that having dealt with the median and ulnar nerves in the forearm, there sometimes ensued tender ends of the radius and ulna. A good practice was to strip back the periosteum and dig out the medulla, smoothing down the ends of the bones with a file and making them as neat as possible.

Dr. R. D. LANGDALE-KELHAM said that during the war most of the belligerent Governments arranged for the training of a certain number of medical men in artificial-limb fitting. Limb-making in the early days was a more or less empirical business, and the fitting was done on the principles of trial and error, but now a more exact science had developed. The civil population, however, being denied the result of such experience as had been obtained at Roehampton, was still to a great extent in the hands of the limb-makers, who varied very greatly in their anatomical knowledge, some being good and others indifferent. In 75 per cent. of the cases in which distress and discomfort were experienced the reason was the fitting of an unsuitable limb. The speaker discussed and demonstrated the different types of limbs available, including two main types for good above-knee stumps, one known as the American type, with central knee control, and the other depending on a special type of pelvic band and special knee construction. The purpose of the pelvic band was to suspend the limb, to control it, and to support it. In all types of good above-knee limbs the socket was so moulded around the stump that the patient felt that the artificial limb was part of him. It was always advisable to under-support rather than over-support the patient. By under-supporting him one encouraged him to apply his own powers. His experience of a very large number of cases at Roehampton was that the average thigh stump which required a rigid pelvic band had a length of 7 inches from the tip of the trochanter. Long stumps, over 12 inches, would give rise to circulatory troubles sooner or later, leading to re-amputation. The Stokes-Gritti amputation was still popular, but he did not like it, and he shared the dislike of the previous speakers for the Syme, especially from the point of view of the futuro of the patient. About ten years seemed to be the average length of a Syme amputation. There were certain surgical objections to the Syme; callosities formed sooner or later, and became painful. They occurred chiefly in two places, parallel to and running just beneath the anterior scar, and also on the bearing surface itself. The ideal site for the below-knee amputation was 6 to 7 inches below the knee. In conclusion, he pleaded for closer co-operation with limb-makers. The better the limb-maker the more he welcomed surgical co-operation. He also mentioned the indebtedness which limb-fitting surgeons felt to a number of pioneers, notably Mr. Muirhead Little and the late Mr. Openshaw.

Captain A. R. MAXWELL addressed himself to amputations of the upper extremity. At least three factors had to be considered—the surgical, the technical or mechanical and the psychological—and these three factors could not be divorced without the patient suffering. In the upper extremity much of what had been said about the lower limb applied, but in the science of artificial prosthesis it was axiomatic that the task of providing an artificial substitute for the lower limb was mere child's play in comparison with providing a substitute for the upper extremity. The hand and arm were more complicated mechanisms than the foot and leg. The requirements of foot and leg were locomotion and weight-bearing, those of the upper extremity were flexion, extension, abduction, adduction, pronation, supination, and, above all, ability to grip. Not a great deal could be done for the men who were unfortunate enough to suffer the loss of the upper extremity. Some of the substitutes were no good at all. The important thing, however, was that the operating surgeon should amputate with a view to the distinct type of prosthesis that had subsequently to be fitted to the stump. The co-operation existing at Roehampton between the operating surgeon, the limb-fitting surgeon, and the maker of artificial limbs was proving of benefit to all concerned. With regard to the length of stump, this should be sufficient to give adequate control over the prosthesis, and be free from adherent scars; the stump should be well covered, mobile, and free from pain. For this ideal stump several limbs were available. There could be no such thing as standardization or mass production in the manufacture of artificial limbs. It was not always the case that the longer the stump the greater the security and control. He was against the through-elbow amputation on account of surgical difficulties, scar tissue, malnutrition, and bony prominences, together with awkward, unsightly, ill-fitting prosthesis. If one had the chance it was well to amputate 2 inches above the epicondyle. Many surgeons regarded a very short forearm stump as practically useless, and said that, from the point of view of limb-fitting, nothing less than 3 inches of the ulna should be left; yet in many cases at Roehampton it had been possible to fit such stumps successfully with a special type of prosthesis. With regard to disarticulations at the wrist-joint, one of the chief reasons why this operation was performed was to preserve rotation at the wrist, but from the limb-fitting point of view it was not a desirable site. Captain Maxwell concluded with some remarks on the psychological effect on the patient of a well-fitting appliance, which changed the whole mental outlook to life. He spoke from special experience on this point as one who for twelve years had been giving instruction on the purely functional, not vocational, side to men who had lost their limbs, and he had seen, consequent upon

some adjustment of the limb, the whole attitude of a man change from despair to hope.

Sir HOLBURT WARING, in closing the discussion, said that the last speaker had mentioned three factors—the surgical, the technical, and the psychological—but surely there was a fourth, also interrelated—namely, the economic. It was very important to have manual training after the fitting of the limb.

At the end of the meeting several Roehampton patients who had been fitted with artificial lower extremities were introduced by Dr. Langdale-Kelham, and showed how excellently—almost normally—they could walk, climb stairs, and bend the limb.

THROAT INFECTIONS AND PUERPERAL FEVER.

AT a meeting of the North of England Obstetrical and Gynaecological Society, held at Sheffield on February 28th, with the president, Dr. J. W. BURNS, in the chair, a discussion took place on a paper on throat infections as an etiological factor in puerperal sepsis, read by Mr. W. W. King at Manchester on January 24th. Mr. King's paper, with certain additions, was published in the *Journal* of March 22nd, at page 533.

The PRESIDENT described two small epidemics which had occurred in a well-equipped hospital of fifteen beds. In both outbreaks some of the nurses had haemolytic streptococci in their throats, and others had non-haemolytic streptococci. Unfortunately he did not try, as Mr. King had done, to produce further evidence of association between the carriers and the cases which developed pyrexia. He had no doubt that the infection took place during the early days of the puerperium in both epidemics rather than during the actual labour. This was supported by the fact that since gloves and masks had been adopted in the wards no similar cases had occurred. Mr. King had focused attention on the haemolytic streptococci, but the president suggested that the non-haemolytic type was also capable of producing a virulent infection in the puerperal woman. Non-haemolytic streptococci could become very virulent by being passed through a second individual. They had therefore to guard their patients against all organisms which might be present in the throats of any of the attendants. Lying-in ward technique required reorganization and readjustment. At present very stringent rules were made for the labour ward, caps, masks, gowns, etc., were insisted upon, yet within twelve hours of the baby being born the mother had her vulval toilet carried out by a junior nurse who wore neither a mask nor gloves. The incidence of puerperal infection in the Rotunda Hospital was greatly reduced by insisting upon a separate bed-pan and douche-pan for each patient. These cases of spontaneous infection would be banished if more attention was paid to the nursing technique in the wards. All nurses ought to wear gloves and masks when carrying out their duties in connexion with the vulval toilet, and bed-pans ought to be boiled at once after use. He was particularly anxious that all nurses in the wards should wear gloves. Constant washing was liable to make the skin of the hand rough and cracked, and hence the nurse became a danger to herself and her patient. In conclusion, the president asked if the masks usually worn at operations afforded sufficient protection to the patient, and if Mr. King had had any experience in the treatment of cases of puerperal infection by streptococcal antitoxin.

Professor W. BLAIR BELL (Liverpool) said he agreed that streptococcal infection was often conveyed to patients from sore throats. Women appeared to have a greater liability to infection at labour than at other times. He referred to the correspondence between the zymotic and puerperal sepsis curves as a point in favour of Mr. King's thesis. The use of the term "autogenous" should be limited to direct infections from lesions already present in the patient herself before the onset of puerperal sepsis. Preparturitional vaginal infections by streptococci were not autogenous, but resulted from the introduction of organisms from without. He had called attention to the danger of late coitus in this respect at the Obstetrical Congress in 1925. The acidity of the amniotic fluid (*p*H about 5.5) made it a valuable antiseptic douche from above. The increased dangers of operations after the escape of the fluid might be explained in this way. Infection might be carried into lying-in wards by visitors. If it was impossible to exclude them their numbers should be strictly limited. Infection might be carried from one patient to another by bed-pans. He discussed the question of antisepsis *versus* asepsis, and pointed out the danger of the latter to those who have no aseptic conscience. He suggested that the Ministry of Health should supply a team to investigate outbreaks of puerperal infection in maternity wards. The control of the investigation would remain in the hands of the surgeon.

Professor MILES H. PHILLIPS (Sheffield) expressed the hope that Mr. King's paper would lead to further critical investigation of throat infections as a factor in puerperal fever. The danger of such infections in midwifery was pointed out, as Mr King had said, by Kanter and Pilot in *Surgery, Gynecology and Obstetrics* (January, 1924); and Dame Janet Campbell, in *The Protection of Motherhood* (1927), gave details of epidemics in maternity hospitals which were associated with the presence of carriers of the haemolytic streptococcus. Experience in general, and especially abdominal, surgery had led the great majority of surgeons to insist on the use of a face mask. There were many recorded investigations of outbreaks of sepsis in surgical clinics which had resulted in the discovery that one or more members of the theatre staff carried haemolytic streptococci in the nose or throat, and no other source of infection had been found. Investigations of epidemics in various maternity hospitals had led to the same conclusions. In discussing the use of face masks in midwifery practice, he had heard it stated that such a precaution would lead to carelessness in the use of other more essential precautions, such as the proper use of antiseptics. Such a statement was absurd, and could be countered by that of other critics who pretended to believe that the use of masks in the operating theatre had its only virtue in reminding the theatre staff of the necessity to attend to all the details of aseptic technique. Other critics of this theory of droplet infection by carriers expressed the belief that everybody's throat contained the haemolytic streptococcus. Many investigations had shown the fallacy of this. Professor Phillips gave the following two instances in his experience. In November last he saw a young primipara who had had a rigor with a temperature of 102.8° F., with a pulse rate of 140, seventy-two hours after an easy forceps delivery. Swabs were taken from a small perineal wound, the lochial discharge, and the throats of the two doctors present at the labour, the nurse, the husband, and a housemaid; none of the throats yielded a streptococcus, the vaginal swabs grew staphylococcus only, and the patient's blood was sterile. She made a quick recovery. The second, a primigravida with a funnel-shaped pelvis, was delivered by Caesarean section a few hours after the onset of labour. The membranes were intact, and no vaginal examination had been made for several days. A bacteriological test of the vaginal secretions yielded no growth of streptococci. The operation was carried out in the gynaecological operating theatre with all the usual precautions, in the presence of several nurses and students. It was perfectly straightforward. In less than forty-two hours the patient was dead from a fulminating streptococcal infection. No case of wound infection occurred in that theatre during several weeks preceding and succeeding the operation. The throats of all the individuals present were investigated, and only one—that of the first assistant—contained haemolytic streptococci. At that time masks of thin butter muslin were used; but masks made of a single thickness of butter muslin had been shown by bacteriological tests to be quite ineffective. A mask of four thicknesses of surgical gauze (each of which is itself fourfold) was probably effective.

Dr. LEITH MURRAY (Liverpool) considered that further control experiments were necessary before the "droplet infection" theory could be accepted as conclusive. He did not think that wearing of masks would lead to a reduction in the incidence of sepsis, and described briefly

two cases of puerperal morbidity which had occurred in a hospital. The first was subsequently proved to be a case of scarlet fever. The throats of six of the fifteen attendants in this hospital yielded haemolytic streptococci, and in his opinion this incidence was the result rather than the cause of the morbidity in the scarlatinal cause.

Professor DOUGLAS (Sheffield) said that though identification of strains of streptococci was still very difficult, this fact should not hamper the search for carriers of the organism responsible for puerperal infection. The effect of introducing haemolytic strains by carriers was all the more noteworthy in view of the fact that a certain proportion of pregnant women harboured haemolytic streptococci in the vagina or cervix without developing trouble. Although actual proof was lacking of identity of strain in the suspected carriers and the cases reported by Mr. King, yet his thesis afforded such strong evidence that carriers formed an important source of infection that it was worthy of serious attention, and would form an important basis for the further attack on the problem of puerperal infection.

Mr. W. GORGH (Leeds) thought all throats contained streptococci. He considered there was another factor besides the presence of haemolytic streptococci in the causation of puerperal sepsis.

Mr. A. GORGH (Leeds) said that the reason why the morbidity rate had not fallen was possibly due to a greater proportion of primigravidae than in the earlier returns of the Registrar-General.

Mr. J. ERIC STACEY (Sheffield), while considering that every possible channel by which infection could occur ought to be closed, was not convinced that the throat was the main source from which the organisms were introduced. He said that Mr. King was not maintaining throat droplet infection as the sole or even the commonest source of puerperal morbidity, but that this was a method by which the organisms could obtain entry to the vaginal tract and thus cause sepsis. All would accept this to be true, but it should not be allowed to cloud other issues—for example, why in certain cases puerperal sepsis should develop and under similar conditions fail to appear in others. The vast majority of women subjected to spraying from the throat of an attendant developed no sepsis. Epidemics of haemolytic streptococcus infection occurred in gynaecological cases from time to time where all woro masks in the theatre which should be adequate to prevent droplet infection. A large number of deaths and morbid cases arose in which haemolytic streptococci were not the causal organism at all, and a few in which the throat could not be the source of infection—for example, cases of *Bacillus aerogenes capsulatus* infection. He had recently investigated the question of "failed forceps," and in a series of 152 cases there were 21 deaths, with 12 cases from puerperal sepsis. From only 3 of these 12 cases had haemolytic streptococci been isolated as the causal organisms. In 3 cases gas-forming organisms were found, and in the remaining 6 the organisms were non-haemolytic streptococci. The figures, though small, were significant of the fact that haemolytic streptococci were not necessarily present, and that trauma, associated with an exogenous source of infection—such, for example, as faecal infection—must not be lost sight of. In a faecal source of infection he included all those organisms which entered from the intestinal tract and were carried downwards from teeth, tonsils, and elsewhere in the tract, and thus entered the uterus via the perineum. He also considered that the question of the presence of pre-existing haemolytic streptococcus in the vagina had not been sufficiently elucidated.

Professor A. M. CONNELL (Sheffield), speaking from a general surgical aspect, thought that the individual herself must have haemolytic streptococci in her throat before throat infection could act as the causal agent.

Dr. STIRLING (M.O.H., Chesterfield) considered that the isolation of contacts in nospital was an almost insuperable obstacle to the control of this method of infection. Co-operation was necessary between family doctor, hospital, and public authorities.

Mr. W. W. KING, in replying, said he was glad that he had been able to convince all but one or two that droplet infection from the air passages of apparently healthy attendants was a source of great danger to parturient women. He did not exclude other sources of infection, so that the important points raised in regard to antiseptics and bed-pans were irrelevant to the question. It was premature to attempt to grade the importance of his thesis in the causation of puerperal fever, but he had produced sufficient evidence to satisfy reasonable people that this avenue of infection must be closed. It did not seem much to ask that obstetricians should adopt the same care for their maternity cases as they did for their gynaecological operations. In regard to controls, Mr. King suggested that the best test of the value of the theory would be the results obtained by the use of masks during the next five years, especially in maternity hospitals. He was confident that if the scheme was conscientiously carried out puerperal fever in "booked" cases in maternity hospitals would be as rare as suppuration in laparotomy wounds. In anticipation of the objection that a large proportion of the population had haemolytic streptococci in their throats during the winter months, Dr. Kirk, at his request, had examined swabs from the throats of fifty out-patients taken at random during the month of February, and only one was found to be a carrier. These results confirmed those given in his paper. As Professor Douglas had said, final proof of the identity of the streptococci in the carrier and victim could only be obtained when accurate classification of haemolytic streptococci was possible. Almost any organism could be carried to the patient in this way, including anaerobic organisms, which were well known to be occasional inhabitants of the throat. Mr. King found it easier to believe that *B. aerogenes capsulatus* could get into the vagina from the throat of an attendant than that it should get in on the doctor's hands or instruments. The latter was unhesitatingly accepted without proof, the former should be put to the test. In regard to "autogenous" infection, he accepted Professor Blair Bell's definition as being much more accurate. The theory of preparturitional infection as a cause of puerperal fever was all right in itself, but, as he had said in his paper, there was surprisingly little positive evidence in its favour. Dr. Leith Murray had referred to the relationship of scarlet fever to puerperal sepsis. In the case he reported the throats of the staff might have been infected from the patient who developed scarlet fever, but it was equally possible that the patient was the victim of the attendant carriers. The relatively small number of cases of puerperal infection had been put forward as an objection to the droplet theory. The same objection was made to the contagion theory of Semmelweis. No more was known to-day than was known a century ago as to why only a few of those subjected to infection develop the disease. Infection from the rectum was improbable, as it so rarely followed gynaecological operations. In answer to the president and others, he thought that masks made of four layers of butter muslin were probably satisfactory if not worn for more than two or three hours. He agreed with Dr. Stirling that it was not always possible to exclude known carriers from the wards, and, if so, reliance had to be placed upon masks. Great watchfulness was necessary to see that the masks were always worn both for vaginal examinations and for the administration of enemata, as well as for delivery and the subsequent nursing.

MYOMECTOMY.

AT a meeting of the Edinburgh Obstetrical Society, held on March 12th, with the president, Dr. H. S. DAVIDSON, in the chair, Dr. LEITH MURRAY (Liverpool) read a paper on myomectomy, embodying a record of 154 consecutive cases.

Dr. Leith Murray expressed the view that this operation was not performed as frequently as it should be; conservation in gynaecology, although it could be overdone, was an excellent feature of our modern work. Women were marrying at a later age than formerly, and their uteri, therefore, were more likely to contain fibroids. He hoped to demonstrate statistically: (1) that myomectomy—in his own experience the largest number removed had been 41—could be removed from the substance of the

uterus as safely as the uterus itself could be removed; and (2) that the after-results as regards comfort, menstrual function, and safe fertility were satisfactory in all but a negligible fraction of cases. Married women in all but thirties or early forties should not be submitted to hysterectomy merely because they had been sterile for years: cases were quoted in confirmation of this statement. The speaker did not think it right to interfere in any radical way with the natural probabilities of married life, even in women with several children, provided that the fibroids necessitating intervention could be removed with moderate ease. To broaden his statement and survey he had included in his paper 60 cases in the non-pregnant woman already reported (*Journal of Obstetrics and Gynæcology of the British Empire*, 1926, vol. xxxiii, No. 2); later information was available in a good percentage of these. He emphasized the need for separating in any statistical survey cases of myomectomy in the non-pregnant from those operated on during pregnancy. The two operations were largely different in character and conduct; in the former alone was an attempt made to remove every fibroid. Of 137 cases of fibroids subjected to operation in the non-pregnant state tumours of appreciable size were in each instance "dug out" of the musculature of the uterus: all intraligamentary fibroids were excluded. He detailed the contraindications, and expressed his belief that neither any variety or degree of degeneration nor infection—a very rare complication—was a real barrier. The technique of the operation was outlined, with special stress on haemostasis. Mechanical or elastic clamps were considered unnecessary, and there appeared to be no need to reduce the resulting uterine mass by any trimming or excision of excess; involution occurred just as well and as quickly without this additional step. Examination at the end of three months showed that the uterus was normal in size and shape whatever its outline was at the end of operation. He recommended that the uterine cavity should be explored in all cases where haemorrhage was a symptom.

Dr. Leith Murray then discussed his series of 137 cases of myomectomy in the non-pregnant under the headings of: (1) statistical comparison with hysterectomy; (2) recurrence of fibroids and sub-equent operations for any reason; and (3) pregnancies following operation. During the three and a half years ending December, 1929, he had performed 1 myomectomy to 2.8 hysterectomies for fibroids; for the preceding two and a half years the relationship had been 1 to 3.7. Only one case had ended fatally, by embolism (0.73 per cent.), whereas his mortality for hysterectomy for fibroids was 1.5 per cent. Two cases of recurrence had been observed, and in one of these the uterine cavity, which four years later contained a fibroid polyp, had been explored at the original operation. Of the first series of 60 cases, 35 women under the age of 42 had had a reasonable chance of pregnancy, and of these 34.3 per cent. had had one or more pregnancies since operation. The later series of 77 cases had already produced, in 49 possible cases, 22.4 per cent. of pregnancies. For the total of 137 cases up to the end of 1929 the percentage of pregnancies was over 27. Detailed analyses were given of the ages of patients, the number and condition of the fibroids, the symptoms leading to operation, convalescence, and after-histories. The speaker called attention to the relatively small number of cases (15) operated on during pregnancy; he believed that many patients with acute necrobiotic degeneration could be tided over the danger period by repeated doses of morphine, and evidence of this was given in 10 cases operated on during pregnancy, 6 went to full term or viability, 3 miscarried within twenty-four hours—probably inevitably—and 1 died as the result of an injudicious operation on a diabetic patient. Five cases were associated with a diagnosis of intrauterine death, three strangely enough proving to be hydatid moles; all did well, and in two instances there had been a further pregnancy. Of two cases at full term with irreducible obstruction, one was easily delivered by Cæsarean section of a living child, and four fibroids, the largest the size of a red intramural fibroid) the size of a fist, were removed; the other patient died of a low-grade peritonitis, six days after a Cæsarean section with an extensive myomectomy, which operation did not appear to have contributed to the fatal result.

Dr. Leith Murray concluded that he had no reason to alter his opinion, expressed in 1925, that myomectomy was an operation of less difficulty and danger than was supposed, was available in a very large percentage of cases of women of child-bearing age, and should in such circumstances be preferred to hysterectomy.

The Edinburgh Pregnancy Diagnosis Station.

Dr. EDWIN ROBERTSON read a paper based on the work of the Pregnancy Diagnosis Station which has been established at the Department of Animal Genetics in Edinburgh University, where specimens of urine are examined by the Zondek-Aschheim test. his figures relating to a rather longer period than that covered by Dr. Crew's report, which was published in the *Journal* of April 5th (p. 652). Dr. Robertson said that microscopical examination of the ovaries showed that the action of the pregnancy urine was one of maturation. The comparatively massive dosage used in the test probably deranged the maturation processes involved, thus producing the atypical haemorrhages seen in the follicles. The ovary-stimulating factors in the pregnancy urine were similar to the ovary-stimulating factors which could be extracted from the placenta, not only in the type of reaction produced in the ovary—namely, maturation—but also in being destroyed, precipitated, and dissolved by the same agents. Therefore the active substances in the urine were probably only product of the placenta excreted for some reason, as yet undefined. Hence a positive test was a placental sign and indicated, at least, the presence of placental elements. The function of the ovary depended upon extraovarian factors, which were for the most part situated in the anterior lobe of the pituitary, and it had been shown that the ovary-stimulating powers of the placenta were similar to those of the anterior lobe of the pituitary. Wiesner had explained this mutual relationship in a most convincing way: "The internal secretion of the ovary is necessary for the inception and maintenance of the conditions of pregnancy, and the stimulus of the placental hormones is required for the continuation of the ovarian function beyond the initial phase which occurs under pituitary influence." This particular role of the pituitary and the activity of the placenta were reflected in the urine of pregnancy, therefore urine which would produce ovarian maturation came probably from a pregnant woman. The results of the station incorporated 997 tests, of which 479 had been controlled; 13 of these cases were labelled incorrect, but 4 were so designated through a misinterpretation of the test result by the clinician. Therefore, with only 9 incorrect results out of 479 tests, the degree of accuracy of the test was about 98.12 per cent. Apart from the diagnosis of pregnancy the test was useful in detecting the presence of active placental elements and also hydatidiform mole and chorion epithelioma Incomplete abortions, ectopic pregnancies, missed abortions and cases of retained placenta had all conformed to the "rule" that, if the elements present were alive and active, a positive result would be obtained, and vice versa. It was thought that both hydatidiform mole and chorion epithelioma were extremely active in the production of the ovary-stimulating substances, and that the presence of lutein cysts in association with these conditions was strong evidence in favour of this view.

SPLENECTOMY IN SPLENIC ANÆMIA.

A MEETING of the Section of Medicine of the Royal Academy of Medicine in Ireland was held in the Royal College of Physicians on March 14th, with the president, Dr. R. J. ROWLETTE, in the chair Dr F. X. CALLAGHAN showed a case of splenic anæmia treated by splenectomy, the patient being a boy aged 12, who was admitted to hospital in January.

Dr. Callaghan said that the boy had suffered from periodic attacks of vomiting and diarrhœa and some abdominal pain for several years, he had had periodic attacks of epistaxis, but no other haemorrhage. He was small, thin, and very pale, and his symptoms and general condition were obviously due to his spleen, which was so large that he had difficulty in walking. At the operation

very marked adhesions had been found between the spleen, the omentum, and the pancreas. The blood picture was consistent with a diagnosis of splenic anaemia. Dr. Callaghan thought that if the spleen had not been removed in this case the patient would not have lived. The blood count since the operation showed a very marked improvement. The Wassermann reaction was negative. About a fortnight after the operation the boy developed stiffness in the neck, and enlargement of the cervical glands was found. The pathological appearances conformed with those usually found in splenic anaemia, which was generally considered to be the pre-cirrhotic stage of Banti's disease; removal of the spleen was said to prevent the further development of this condition.

Mr. C. J. MACAULEY, who had performed the operation, said that splenectomy could be very easy or very difficult; in this case it was difficult because the boy's general condition was so poor, and he could not afford to lose much blood. Mr. MacAuley had employed a completely transverse incision, which allowed for the relaxation of the abdominal muscles, and so made the intra-abdominal proceedings more easy. Adhesions were numerous, and the separation of the tail of the pancreas was very difficult. Another advantage of a transverse incision was that it was quickly sewn up. Mr. MacAuley had thought of performing autotransfusion, but the blood squeezed out of the spleen was so full of debris that he was afraid to do so.

The PRESIDENT said that the question as to whether operation was the proper routine treatment for such cases could not be considered in this instance, as obviously the only thing to do if the child's life was to be saved was to remove the spleen.

The Significance of Achlorhydria.

Professor HENRY MOORE read a paper on the association of achlorhydria with certain pathological conditions. Of 745 patients submitted to fractional test-meal analysis, 168 (22.5 per cent.) showed achlorhydria. Of 21 cases of Graves's disease, 16 (76 per cent.) showed achlorhydria, and 19 (90 per cent.) a marked reduction or absence of gastric hydrochloric acid. Of 38 cases of diabetes mellitus 16 (42 per cent.) were found to have achlorhydria, and 22 (58 per cent.) showed marked reduction or absence of the gastric hydrochloric acid. Twenty-three cases of a moderate or severe low colour index anaemia with achlorhydria were described, and the possible rôle of the achlorhydria as a predisposing cause of the anaemia was discussed; the association of achlorhydria with a low colour index anaemia and its significance did not appear to have been recognized as a definite syndrome in medical literature. The treatment of this condition was described; it had been found that in five cases studied from this point of view the achlorhydria was still present after the blood picture had been restored to normal. Achlorhydria was found in 60 cases of diseases or complaints referable to the gastro-intestinal tract, and in 32 cases of miscellaneous conditions (excluding pernicious anaemia and malignant neoplasms). Five cases of hypocalcaemia with achlorhydria were also reported; in all of them the level of the blood calcium had been restored to normal by treatment.

The PRESIDENT expressed the belief that a great deal could be done to help research work in Dublin if practitioners who were not themselves working at a special subject would refer their cases to a specialist in that line. There was very little interchange between the hospitals, and it would greatly advance the knowledge in the Dublin school if members of the staff of various hospitals would pass on any cases which they could not thoroughly investigate themselves to another hospital where they could be studied by the appropriate specialist. Dr. G. E. NESBITT hoped Dr. Moore would draw some conclusions from his work in spite of the difficulty caused by the occurrence of achlorhydria in such very diverse conditions. He agreed that there should be more co-operation between the various hospitals, and that cases might be collected in groups and sent to specialists for investigation. Dr. HAYDEN remarked that the absence of hydrochloric acid in the stomach did not prove anything; until there had been further research on intestinal conditions, it would be very difficult to assess the true value of this acid in the body.

Reviews.

THE AUTONOMIC SYSTEM.

IN his recently published work on *The Autonomic Nervous System*,[1] Professor ALBERT KUNTZ has furnished us with a book of reference which will be widely appreciated. It will be particularly valued by British readers, because so much of the scientific basis of our knowledge of the autonomic system is based on the wide and philosophic researches of Gaskell and on the minute and painstaking investigations of Langley. The views on the subject now held in Great Britain and in America are unquestionably those that lead the opinions of the world, and Professor Kuntz gives us a well-digested and reasonably complete account of these views. To have collected so much information from such widely scattered sources and to have preserved proper historical balance must have been a considerable task, and it has been well done indeed.

The book opens with a description of the general anatomical relationships of the system and of its central connexions, and here it is interesting to note the close parallel between functions of the autonomic centres in the neighbourhood of the hypothalamus and the functions of the neighbouring pituitary body. Then follows a brief account of the physiology of the system and of its development, after which the autonomic supply of the various important systems is described seriatim. Of these chapters one of the most interesting is that on the autonomic innervation of skeletal muscle, since it involves the much-debated question of the relation of muscle tonus to special sympathetic innervation, on which the author has himself done a good deal of useful work. While he rejects the view that plastic tonus is subserved by the sympathetic system, he holds that removal of the sympathetic supply does diminish the resistance of extensor muscles to passive extension, and the whole of this difficult question is skilfully and fairly reviewed. The researches on the influence of sympathetic stimulation in delaying the onset of fatigue from motor excitation are also fully discussed, and though the author's own researches do not lend definite support to the view, he is inclined, it seems, to suspend judgement on the question.

After discussing the pathology of the autonomic system and the subject of referred pain, Professor Kuntz passes on to a discussion of the popular views on vagotonia and sympathicotonia. It would indeed be difficult for anyone, in a book dealing mainly with facts, to discuss at length so nebulous an aspect of the subject, and yet to do so with both enthusiasm and clarity; and this chapter therefore, though laudably brief, contains but little that is calculated to cheer the enthusiastic upholder of this greatly abused notion. Finally, there are chapters on the disorders and on the surgery of the autonomic nervous system. It is somewhat surprising to learn from the last how many operations have been performed on the autonomic system. Enthusiasts appear to have sympathectomized their hapless fellows for any and every reason, or for no reason at all. When one considers the serious reasons which the British laboratory experimenter must produce before applying to the Home Office for a certificate enabling him to remove the stellate ganglion from a cat, it is curious to note such exuberance of the experimental spirit in surgeons, and some thoughtful observers may wonder to what extent, in these sentimental days, the timidity of the one may have necessitated the boldness of the other, or even to what extent operative intrepidity and sound knowledge vary inversely.

The book is well produced and the bibliography is good, though it would have been better perhaps if the references had all been assembled alphabetically instead of being allocated to chapters of the book. There are some lacunæ, though not many. For instance, there is little reference to the sympathetic supply of the liver, though the liver is mentioned in connexion with referred pain. The index is certainly not so complete as might be expected with contents that represent such a mine of valuable information.

[1] *The Autonomic Nervous System.* By Albert Kuntz, Ph.D., M.D. London: Baillière, Tindall and Cox. 1929. (6×9½, pp. xii + 560; 75 figures. 31s. 6d. net.)

POST-OPERATIVE TREATMENT.

MR. P. LOCKHART-MUMMERY'S *After-treatment of Operations*,[2] now in its fifth edition, has earned a high place in the surgical literature of this country. It has, as its author claims in his preface, had a share in securing the emancipation of abdominal after-treatment from the starvation and prolonged recumbency that led in the past to so many complications and initiated so much chronic invalidism. The author's teachings are free from fetiches, and most of them he supports by excellent reasons. He includes very little that today would be regarded as controversial, and anyone criticizing the work on the grounds that his own or the pet fads are omitted may well ask himself if his own or the author's judgement is at fault. Mr. W. B. Gabriel contributes an interesting chapter on blood transfusion, in which he describes fully the citrate method, the Kimpton tube method, the multiple syringe method, and a two-way syringe method (*British Medical Journal*, March 24th, 1928, p. 492). Very brief reference is made to the use of gum saline in the treatment of shock, the only material which in Mr. Lockhart-Mummery's view is permanently effective being blood from another patient. During the diet after operations, he denounces the use of beef tea and meat extracts, and quotes from a recent writer on Napoleon the bloodshed caused by the warlike ambition of persons who have is as nothing compared to the myriad of persons who have sunk into their graves from a misplaced confidence in the food value of beef tea. Instead of beef tea he recommends egg albumen and rai-in tea, but omits reference to orange and other fruit juices which have a useful place in the post-operative dietary. White of egg mixed with orange juice is often very acceptable. The excellent chapter on abdominal after-treatment would be more complete if it included an account of the postural treatment for acute dilatation of the stomach. In advising a rest in bed of three to four weeks after hemorrhoids the author errs, perhaps, on the side of caution if he would apply this recommendation to the young adult patient in whom a treatment removal of the sac has sufficed; but there can be no doubt that such a period of confinement to bed would be necessary after a complicated hernioplasty in the middle-aged subject. Mr. Lockhart-Mummery's book is practical and clearly written. It deserves a place in the library of every young surgeon. Our only serious criticism is that it is worthy of a better index.

ARTHRITIS AND RHEUMATOID CONDITIONS.

MANY books have been written on the subject of arthritis in recent years, but the confusion of thought which is traditional to the subject has not notably diminished. One reason for this is the difficulty of classification. Dr. PEMBERTON has written a work on *Arthritis and Rheumatoid Conditions*[3] containing a great deal of general information as well as a detailed account of a number of original research undertaken by himself and his fellow-workers, both in the United States Army Medical Department and in the Presbyterian Hospital in Philadelphia, but it is doubtful if it will do anything to clarify the subject. He admits that classification is difficult, and tries to simplify the issue by adopting a simple grouping into atrophic and hypertrophic forms. So far so good but he immediately finds it necessary to qualify these simple terms and to differentiate the groups further into atrophic—proliferative—and hypertrophic—degenerative types. To the expert this nomenclature—though paradoxical will appear as essentially correct, but to the student it is bound to be very confusing. Dr. Pemberton, for all his attempts to achieve a simple classification, shows no inclination to over-simplify a complex subject, and as he proceeds he expounds the complex nature of the pathology, symptomatology, and treatment of the arthritides. He admits the importance of infection in the etiology of arthritis, but quite properly assigns to it an adjuvant rather than an exclusively causative role. He gives a long description of bacteriological experiments, mostly tending to negative conclusions, and assigns great importance to the observation that sugar is only slowly used by the tissues. This is in accordance with his own observation that large part of the capillary system are closed in arthritis. Such closure he regards as an allergic phenomenon, and points out that the same forms of treatment which are successful in the one case are capable of causing disturbance in the other. One very valuable lesson that may be learnt from this book is the danger to which even severe cases of arthritis can be subjected by unsystematic and careless treatment, and the author lays down a fine line of anti-treatment and the correct line of treatment, which are largely physical in nature, which are available.

The book is to be commended [illegible] errors [illegible] indeed [illegible] impression [illegible] to the early [illegible] fresh [illegible] our conception [illegible]

GUY'S HOSPITAL REPORTS.

THE [illegible] of the [illegible] *Hospital Reports*[4] opens with a [illegible] of the [illegible] treasurer of the hospital, Sir Cecil [illegible] a late Sir Alfred Fripp remarks [illegible] accrued to [illegible] patient [illegible] It is a [illegible] was written [illegible] Mansfield [illegible] Parkes [illegible] Glover [illegible] Hale-White [illegible] A. A. O[illegible] importance [illegible] have [illegible] but that [illegible] the acid [illegible] can be given [illegible] co-worker Dr H. G. Crowe finds that acute [illegible] is most prevalent in the autumn and [illegible] streptococcal [illegible] be a secondary accident [illegible] day of the disease the period when complications [illegible] nephritis and pleurisy are [illegible] convalescent to bed [illegible] is desirable [illegible] of reference on the [illegible] on the etiology [illegible] impossible [illegible] uble of [illegible] on [illegible] general [illegible] of the [illegible] [illegible] [illegible]

active chorea, or any evidence of a hypothyroidism after an attack. Mr. Ralph Thompson contributes the first part of an analysis of the cases of urinary lithiasis in the hospital during the years 1910–29 inclusive.

SOME PRESCRIPTIONS.

WE have received a copy of the tenth edition of *Pharmaceutical Formulas*,[5] which is described as a selection from various pharmacopoeias and other sources.

"You know my father left me some prescriptions
Of rare and proved effects, such as his reading
And manifest experience had collected
For general sovereignty."

The volume contains 1,146 pages. The index occupies 130 pages, and gives about 18,000 references, the bulk of which are to separate and distinct formulae. At first it is rather overwhelming to find that human ingenuity has devised 18,000 different modes of administering medicine to the sick. An examination of the contents diminishes the wonder, for much of this variety is a matter of permutations and combinations. Thus the eighty preparations listed as remedies for headache are for the most part merely changes rung on five common drugs. It must be confessed that most of the book makes heavy reading, though it is lightened here and there by interesting relics of the past. Confectio Damocratis, a mixture invented by Mithridates 2,000 years ago, is set forth in all the glory of its forty-four constituents. Reading this list makes one realize that medicine in modern times has lost a certain poetic touch. The names of modern synthetic compounds do not sound as pleasing to the ear as storax, bdellium, celtic nard, sagapenum, and spikenard, while there is something grimly mysterious about the last ingredient—bellies of scincs. At the end of the book seven pages are devoted to the history of the Medicine Stamp Acts, with a description of their provisions; and a dictionary of the difficulties arising out of these Acts occupies twenty-five pages. This dictionary shows what the legal mind can do when it works at high pressure. For example, all disorders of the skin—blotches, cutaneous eruptions, chilblains, and pimples—are ailments within the meaning of the Act, but blemishes of the skin—chapped hands, redness of the skin, and sunburn —are outside its scope. Again, dipsomania is an ailment, but inebriety is not, and a like distinction is drawn between obesity on the one hand and stoutness and fat on the other, while corpulence occupies a doubtful position. Neither a liver mixture nor an aperient mixture need be dutiable, but an aperient liver mixture is dutiable. Most readers will have heard of the absurdities and vagaries of these enactments, but when marshalled in dictionary form they are truly impressive. The volume is intended, of course, for the use of pharmacists, but the items we have picked out are enough to show that it contains much information of general interest.

NOTES ON BOOKS.

IN a small volume of less than ninety pages Mr. W. STUART-LOW presents his views on *Nasal Catarrh*,[6] which he attributes mainly to nasal obstruction. He describes the operations devised by him which he practises for the relief of this condition, and he also has much of a general nature to say about it. Except that there is no reference to treatment to say about it. Except the present book does not seem to differ much from his previous writings on the subject. The operations are probably not generally performed by the exact technique which he describes, but the methods he advocates are based on the sound principle of conserving the nasal mucous membrane as far as possible intact. The book is written in a popular style, and it is not quite clear for what class of reader it is primarily intended. The general public, the general practitioner, and the specialist are all provided with some food for thought, and, as Mr. Stuart-Low directs his attack upon one of the commonest of ailments, it would seem that he addresses himself to a wide circle of interested parties.

Dr. F. M. POTTENGER'S *Symptoms of Visceral Disease*,[7] the three previous editions of which in 1919, 1922, and 1925 were reviewed in these columns, has been revised and a new chapter added on the pharmacological and clinical tests for sympatheticotonia and parasympatheticotonia, but the size remains much the same, though the price has gone up by 15s. 6d. In the section on the viscerogenic reflexes of the lungs the author has considerably elaborated his conclusions, and hopes in the future to do the same for the other important organs.

The Cancer Research Committee of the University of Sydney has issued a record of *Investigations, Mainly on the Physiological Actions of X-Radiations*.[8] The director, Dr. H. G. Chapman, writes the foreword, besides contributing studies to the book. Radiotherapy has evidently been the subject of minute inquiry by these workers. The general opinion of the contributors is that, although the results of this method of treating cancer are as yet uncertain, its future is promising. Dr. B. S. Bishop, with some help from colleagues, has prepared a series of articles on the occurrence of lead in the egg of the domestic hen. Other papers record cytological observations on sarcoma in different animals.

The eighth volume of the *Nelson Loose-Leaf Living Surgery*[9] has been published as an *Index*. An index is not merely a catalogue of names and subjects, but an orderly procession of clues. It should therefore be designed to guide the reader. The publishers of the *Index Companion Volume* have kept this purpose in mind. Items are subdivided in alphabetical order, and each subdivision has a separate line. A subject can therefore be referred to at a glance. Related diseases are repeated under all related conditions. This convenient arrangement shows how two or more diseases may coexist, how one may predispose to another, and how they may be differentiated. Methods of treatment and how they are indexed separately as well as under the conditions for which they are employed. Indications and contraindications for surgery are given. Characteristic symptoms are also separately indexed. The volume is exceedingly well printed. It will be apparent from this brief notice that the publishers have not confined their energy and resource to the careful preparation of their articles only, and that the index is also evidence of an unusually enterprising spirit.

A pamphlet by Sir RONALD ROSS and Sir MALCOLM WATSON, entitled *A Summary of Facts Regarding Malaria Suitable for Public Instruction*, has now been published in a second edition by John Murray, at the price of 6d. The first edition appeared twenty years ago, and was reprinted five times. Brief particulars about the malarial parasite, mosquitos, and personal and public prophylaxis are here set out in plain language.

[5] *Pharmaceutical Formulas*, P.F. Vol. I. Tenth edition, entirely revised and rewritten by S. W. Woolley and G. P. Forrester. London: *The Chemist and Druggist*. 1929. (5¼ × 8¼, pp. vii + 1146. 15s.)

[6] *Nasal Catarrh*. By W. Stuart-Low, F.R.C.S.Eng. London: H. K. Lewis and Co., Ltd. 1930. (Cr. 8vo, pp. x + 84; 13 figures. 5s. net.)

[7] *Symptoms of Visceral Disease: A Study of the Vegetative Nervous System in its Relationship to Clinical Medicine*. By Francis Marion Pottenger, M.D., LL.D., F.A.C.P. Fourth edition. London: H. Kimpton. 1930. (Med. 8vo, pp. 426; 67 figures, 10 plates. 31s. 6d. net.)

[8] *Investigations, Mainly on the Physiological Actions of X-Rays and Allied Phenomena*. Conducted for the Cancer Research Committee of the Faculty of Medicine, Sydney; The University. 1930. (7¼ × 9¼; illustrated.)

[9] *Nelson Loose-Leaf Living Surgery*. Edited-in-Chief Allen O. Whipple, M.D. New York and London: Thomas Nelson and Sons. 1929. (Sup. roy. 8vo, pp. 269.)

PREPARATIONS AND APPLIANCES.

OPTOCHIN BASE.

OPTOCHIN BASE (Howards and Sons, Ltd., Ilford) is a preparation intended for the treatment of pneumonia. Professor Morgenroth and his co-workers prepared optochin (ethyl hydrocupreine), which is a synthetic derivative of quinine, and showed that the compound possessed a most remarkable specific action in killing the pneumococcus. The water-soluble salt, optochin hydrochloride, has been used successfully for local application in the treatment of pneumococcic conjunctivitis. Various attempts have been made to use optochin in the treatment of pneumonia, and American workers have recently claimed success with oral administration of the base. The method is to give five-hourly doses of the drug with milk for three days while withholding other food; it is claimed that by this method of administration enough of the drug is absorbed to confer pneumococcocidal properties on the blood serum. If the clinical results claimed are confirmed, then this method of treatment will constitute an important therapeutic advance. The difficulty of establishing with certainty the therapeutic value of a remedy for pneumonia is, however, well known.

NORMACOL.

Normacol (improved flavour) is a new preparation of the vegetable laxative prepared by Messrs. Napp, Ltd. No alteration has been made in the constituents, upon which the pharmacological action of normacol depends, but the flavour of the preparation has been improved.

THE GENIUS OF WILLIAM BOWMAN.

BEING THE BOWMAN LECTURE TO THE OPHTHALMOLOGICAL SOCIETY ON APRIL 3RD, 1930.

BY

SIR ARTHUR KEITH, M.D., F.R.S.

LET me, by way of introduction, refer to an incident from the life of Sir William Bowman which brings us at once *into close* touch with his personality. In 1863 the fiery but warm-hearted surgical dictator of the time, James Syme, Regius Professor of Clinical Surgery in the University of Edinburgh, and father-in-law of Joseph Lister, had publicly condemned the *operation* of iridectomy proposed by *von Graefe* for the relief of glaucoma in 1857. In 1863 Bowman was 47 years of age, and although he was Syme's junior by 17 years he was the acknowledged leader among the ophthalmic surgeons of England. He had already a wide experience of iridectomy, and, although he could not explain the rationale of the operation, he found it the only "certain and *indispensable*" treatment for acute glaucoma. Had Bowman been a "natural" man he would have rushed into print and trounced Syme in public for misleading the profession, but being master of himself and knowing that truth could be vindicated in a better way *he wrote* Syme a very direct personal note. The merits of iridectomy, he told him, were based on "facts which were numerous and positive"; the "rules for its application were precise"; "its results were capable of being anticipated with as much certainty as can be done in any department of our uncertain art." Syme replied that his condemnation of iridectomy was founded "on serious consideration of the anatomical, physiological, and pathological conditions in question," and that he foresaw unlimited dangers to the eyes of patients were the profession in general to practise the operation. To this Bowman replied that he had no wish to influence opinion except by sound reason." The answer from Edinburgh was brief. "*Iridectomy*," wrote Syme, "whatever may be its value for cure of blindness, will never interfere with the respect and regard which I entertain for yourself," and promptly dispatched the correspondence for publication in the *British Medical Journal*,[1] where his condemnatory statement had first appeared. I quote from this brief correspondence not only because it reveals the character of those two eminent Victorians in a favourable light, but also because it permits me at the outset of my address to illustrate the exceptional personality of the man who was invited to be president of this society when it was founded just fifty years ago.



SIR WILLIAM BOWMAN.

What was the secret of the high regard in which Sir William Bowman was held by his contemporaries? In his youth, as we shall see, he made brilliant discoveries in anatomy; these were known to only a few. In the full tide of his professional life he did more than any man in England to advance ophthalmology, a branch of medicine into which he was swept by force of circumstance. Such services are better known to you than to me, and I do not propose to consider them, but they *do not account for* the esteem in which he was held by his professional colleagues in all departments of medicine. It was not my privilege *to know him*; he died in 1892,* the year in which I became a unit in the medical life of London. I have to regard him, as have most of you, with the cold eye of posterity, but I am certain that those who knew him would never ascribe his ascendancy to the iridescence which shines in life and dies with a man. The *personality which captured* the heart of James Syme must have been moulded out of permanent and sterling stuff.

You must permit me to pursue my inquiry into the personality of Bowman because of a change in my outlook on medical history. If you had done me the honour ten years ago of inviting me to give this lecture in his memory I would have started by directing your attention to his discoveries, recounted them one by one, measured their worth, and sought for the circumstances which guided him from point to point in his career. Having done that I would have dismissed in a sentence or two all those qualities and activities of mind and heart which we call *personality or character, in the belief* that personality has no place in the narration of those events which make up the history of medicine. But now I would alter the order *of my treatment and place* personality first.

BOWMAN'S CHARACTER.

Bowman lived in a period in which *medical knowledge* was advancing with great rapidity; he was a Victorian; he entered King's College in 1837 at the age of 21, and before he was 25 he had "advanced" medicine by a series of notable discoveries. He was endowed with certain excessively rare gifts of mind without which no advance or discovery is possible. In King's College *he found himself in an atmosphere of research. But* rare gifts of mind, skilful hands, encouraging surroundings, do not explain the career of William Bowman. What urged him on? He must have cherished some ambition which had to be satisfied, or formulated some ideal which had to be attained. In his personality there must have been, as in all who seek to *improve the state of mankind*, some missionary quality which drove him onwards. When we look beneath the surface of medical history—and Sir William Bowman's life is part of it—we see that the mainspring of all our progress lies not *in man's intellectual equipment*, but in those qualities which we, *in our ignorance*, attribute to his heart. The urgent desire for betterment lies not in man's head but in his heart.

On a few occasions only did William Bowman give his contemporaries a glimpse of the motives which regulated his life. The first of these is somewhat disappointing: it is a paper read to his fellow medical students at King's College *in 1838*, his second year. One is more impressed by the rotundity and balance of his sentences than by the rather trite ideas which he expounded. At one point, however, he shows us where his heart lies; it is with the poor. He counsels his fellow students to show respect for *the dead* by the "purity and neatness of our dissection." We come across the same leading motive in the first lecture he gave to the students at Moorfields Hospital in his thirtieth year, having been appointed assistant surgeon to that institution in 1840. After referring to the

* Bowman died on March 29th, 1892, aged 76, at his country house on the Surrey hills between Guildford and Dorking, and was buried in the neighbouring churchyard of Holmbury St. Mary.

Clearly it is impossible in the course of a single lecture to recount all the discoveries which distinguished William Bowman's earlier years of toil in King's College; but I must refer, very briefly, to his work on the organs of sense. When you compare the account which Dr. Arthur Jacob, professor of anatomy and physiology in the Royal College of Surgeons in Ireland, wrote on the eye for the *Cyclopaedia* (vol. ii, 1839) with that which Bowman prepared for Todd's *Physiological Anatomy* you feel as if a century, not a year, had elapsed between the times of their preparation. Jacob's account of the eye was that obtainable by dissection with needles aided by a hand lens; Bowman's account is our modern one, the eye as revealed by sections observed through a compound microscope. As we read Bowman's descriptions we marvel, not at the revelations of the microscope, but at the sureness of his interpretation. Our conception of the cornea remains much as he left it; the ciliary muscle had no certain existence until he defined its relations, nature, and function. It is true he supposed that it served accommodation by altering the position not the form of the lens. He detected the circular and radial musculature of the iris; it was left for Koelliker and particularly for young Joseph Lister, working under the inspiration of Wharton Jones a decade later (1851), to amend his conception of the structural elements of that musculature. He saw the optic fibres circle on each side of the "yellow spot," yet dismissed the "spot" as of little importance in vision because it was not present in the eye of the dog, cat, rabbit, and bird, animals with perfect sight. He refused to regard the rods and cones (bulbs) as concerned in perception because they lay on the outer or "wrong" side of the retina. With a flash of insight he speaks of the eye as "a sheet of nervous matter brought towards the surface of the body to meet the appropriate stimulus"; in another passage he states that the relationship between the retina and the "sensorium" is a problem "too inscrutable for our limited powers." Nevertheless I think it may be said with truth that Bowman made a larger contribution to our knowledge of the anatomy of the eye than any other investigator.

The additions he made to our knowledge of the finer structures of the inner ear are at once apparent when we compare his account with that contributed by Wharton Jones to the second volume of the *Cyclopaedia* (1839). I first became aware of the importance of Bowman's observations on the ear about twenty years ago, when preparing an account of the structure of the cochlea for a work published by the late Sir Thomas Wrightson. We owe our present conception of the basilar membrane to William Bowman; it was he who first described its elastic and striate zones, its denticulate lamina and outer spiral ligament.

I must not give the impression that Bowman saw everything that was to be seen within the field of his microscope; he even made mistakes, but there are surprisingly few of them. For example, he had proved that the ciliary "ligament" of the eye was in reality a muscle, and served in the accommodation of vision. He applied the same conception to the ear, and believed that the outer spiral ligament of the basilar membrane was muscular in nature, and served in the accommodation of hearing. He missed the organ of Corti (it was first described in 1851), and thought that the tubular fibres of the auditory nerve ended directly in the basilar membrane. He was unable to follow nerve fibres to their true terminations. The technique needed to fix the delicate epithelial parts of sense organs and to define the final ramification of nerve fibres was unknown in his earlier years; hence we find that he went astray in regard to the sensory structures concerned in sight, hearing, smell, taste, and touch. He was certain that capillaries did not perforate the sarcolemma of muscular fibres, and concluded that it was the same with their nerve fibres.

It is even more interesting to observe, in connexion with the "cell doctrine" enunciated by Schwann in 1839, that there still clung to him something of the old metaphysical Adam. For example, he believed that new epithelial cells of mucous membranes arose not from other cells, but from granular intercellular substance. He also mentioned that bone cells (osteoblasts) could and did arise from the granular medullary matter. On the other hand, he admits that "in the early development of the embryo all the tissues, however dissimilar from each other, consist at first of nucleated cells." When, however, we make allowance for the primitive methods then at the disposal of microscopists, and the novelty and vastness of the field in which he laboured, it is surprising, not that he was sometimes in error, but that he was so often right.

I now come to what seems to me to be the enigma of William Bowman's life. In those earlier years, from his twenty-second until his twenty-sixth year, investigation followed investigation and discovery succeeded discovery. Then his ardour for research seems to have suddenly cooled. It is quite true that in 1846 he investigated the appearances seen by the microscope in experimental wounds of the cornea—a pioneer piece of research of the highest importance; there was also a study of the vitreous body, but thereafter he was concerned with wards rather than with laboratories. It is also true that at the height of his professional career he seldom allowed a year to pass without making an important addition to the resources of ophthalmic medicine and surgery. Nevertheless, the results of the last fifty years of his professional life (1842–92) did not fulfil the brilliant promise of those earlier years. What had happened? In 1842 he married most happily. Did his home tempt him from his laboratory? Or was it that research did not provide him with that fullness of life which his intellectual and artistic nature craved for? Or was it that, in spite of his great scientific accomplishment, he found that his way into the field of general surgery was blocked, and that, against his inclination, he was compelled to take a side path in his chosen profession?

BOWMAN AND LISTER: A PARALLEL.

One cannot help speculating how surgery would have developed in England if, at the end of his earlier years of arduous research, William Bowman had become surgeon to King's College Hospital in the place of Sir William Fergusson. Would he have prepared the way for Lister and made the path of antiseptic surgery easier? No one, so far as I know, has drawn attention to the many striking resemblances between these two men. Bowman was born in 1816, Lister in 1827. Both had educated well-to-do English parents; both had fathers who had a strong bent for scientific inquiry; Lister, like Bowman, was a natural draughtsman; both chose the more scientific schools for their medical education—the one King's College, the other University College. Both came under leaders in the new movement in anatomy—Bowman under Todd, Lister under Sharpey and Wharton Jones. Both became masters of the microscope while still students. Bowman's first research was into the structure of muscle; Lister's first research was to correct Bowman's description of the musculature of the iris. Both proved in their first publications that they were not apprentices but master workmen. Both became Fellows of the Royal Society. Physically they had also much in common; their tastes were similar. Both were moved by the same deep-rooted desire to relieve suffering, to help the poor and the unfortunate; both sought to improve surgery by inquiry and experiment in the laboratory; both sought to base their art on science. Both suppressed self to an extreme degree; both sought earnestly after truth; they were equally modest, humble, and unassuming. Both possessed in their clarity of thought, in their precision of statement, and in the finality of their proof, the same qualities as Harvey. Both were laboratory men; Lister was so all his life. Would Bowman have still resorted to his laboratory if he had become professor of surgery in King's College while his enthusiasm was still ablaze?* One cannot resist these speculations. They are perhaps futile and vain, but of this we may be certain, that if general surgery suffered a great loss in the direction which Fate gave to Bowman's career, ophthalmic surgery reaped an exceedingly great reward.

REFERENCES.

[1] *British Medical Journal*, October 24th, 1863, p. 458; November 7th, 1863, p. 509.
[2] *Collected Works*, vol. 2, p. 69.
[3] *Philosophical Transactions*, 1840, vol. 130, p. 457.

*By a curious coincidence it was Sir William Bowman who was the prime mover in bringing Lister to King's College in 1869 as successor to Sir William Fergusson.

British Medical Journal.

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CORONARY OCCLUSION.

THE development during the early years of the twentieth century of precise instrumental methods for the diagnosis of heart disease was greeted at the outset with some scepticism. Our profession has a way of approaching new wonders first with mistrust, then with enthusiasm, and later with renewed scepticism. In this case the third phase, that of philosophic doubt, was provoked by failure of the instrumental methods to fulfil the over-sanguine expectations that were aroused during the middle period. The pendulum of opinion has swung to and fro, thesis has given place to antithesis, and the conflict between enthusiasm and scepticism has resolved itself in a reasoned view that recognizes both the potentialities and the limitations of instrumental methods. These methods, it is realized, yield data which, assessed together with evidence arrived at by other means, may contribute to an accurate diagnosis; they cannot in themselves, except very rarely, furnish a diagnosis. When during the early years of the century James Mackenzie showed how precision in the diagnosis of arrhythmias could be obtained by means of the polygraph, and Thomas Lewis followed with his studies in electro-cardiography, it seemed as though the problems of cardiological diagnosis had been solved. A period of reaction followed, when clinicians began to wonder whether they had not been too hopeful, for the results yielded by the new methods, though academically interesting, seemed to guide them but little in arriving at a diagnosis or deciding on a course of treatment. But the pact between the traditional clinical methods and those demanding the use of instruments of precision has been profitable in many directions, one of the most noteworthy being in the diagnosis of coronary occlusion. In most cases this condition may be identified from its clinical features alone; but an electro-cardiogram, though not always distinctive, sometimes provides the only absolute evidence of its existence. In his brilliant monograph entitled *Coronary Thrombosis: Its Various Clinical Features*,[1] Dr. Samuel A. Levine, of the Medical Clinic of the Peter Bent Brigham Hospital, Boston, Massachusetts, notes the curious fact that in England coronary thrombosis failed to secure recognition as a clinical entity for many years after it had been fully accepted in the United States. Thus it is thirty-three years since Dock reported one of the earliest cases of coronary thrombosis diagnosed during life and confirmed at necropsy. Fourteen years elapsed before there appeared the next noteworthy clinical study of this subject, by Obratzow and Straschesko. Since then a slowly gathering stream of publications has appeared, principally in America. Osler, Mackenzie, and Allbutt knew coronary thrombosis well as a post-mortem finding; but none of these indicated in his writings that the clinical features might suffice to differentiate it from angina pectoris. Indeed, in this country it was not until 1925 that the clinical distinction between these conditions began to attract attention, though since then it has gained widespread recognition.

An attack of coronary thrombosis may, according to the localization of the pain, resemble closely one of two conditions: angina, or an acute abdominal emergency. The distinction from angina is not always easy. Coronary occlusion, however, is not precipitated by effort, and frequently it occurs at night. The pain is agonizing, persistent, and paroxysmal, now and then subsiding for a short time, only to be renewed with greater intensity; usually it is retro-sternal, but its distribution may correspond with that of a typical angina. In some cases the pain is localized to the abdomen, and, being accompanied by a varying degree of muscular rigidity, is apt to be mistaken for gall-stone colic, or attributed to the perforation of a gastric ulcer. During an attack the blood pressure falls considerably, and the pulse becomes weak, and often irregular; whereas in angina the blood pressure tends to rise, and the pulse rate to remain unchanged. Far from being held "bent rigid and immobile" in the classical attitude of angina, the patient restlessly turns this way and that, tearing at his breast in the extremity of his pain. A most important point in the differential diagnosis is that the pain responds to no drug except morphine. Amyl nitrite brings no relief whatever; it may in fact do harm by lowering the blood pressure still further. In a proportion of cases clinical examination reveals a small area of pericardial friction, due to the formation of an infarct. When this sign occurs after an attack characterized by the above symptoms it is pathognomonic; but its absence is of little significance, for it seldom lasts more than a few hours and often the site of infarction is inaccessible to the stethoscope. In the occasional atypical case which is painless throughout, an electro-cardiogram may afford the only conclusive evidence of the presence of coronary thrombosis. There is therefore every reason, especially as an electro-cardiograph can so easily be brought to the bedside, for invoking its aid in the diagnosis of any difficult case.

More of theoretical than of practical importance is the question of localization of the infarcted area. Barnes and Whitten[2] found that left coronary obstruction was followed by inversion of the T wave in lead I or leads I and II; if, on the other hand, those parts of the heart supplied by the right coronary artery became infarcted, T-wave inversion occurred in leads II and III. Obviously, if the formation of a mural thrombus is followed by its detachment and embolism, the accompanying symptoms and signs may indicate whether this has originated from the right or the left side of the heart. Such evidence is not an infallible guide, however, since left coronary obstruction may give rise to mural thrombi in both ventricles, through involvement of the interventricular septum. It seems probable that electro-cardiographic findings must ultimately be of greatest importance in the localization of cardiac infarctions.

Elsewhere in this issue (p. 631) will be found an excellent account by Dr. Crighton Bramwell of the clinical course of coronary occlusion, illustrated by several case records. Both Bramwell and Levine, it may be noted, draw attention to a characteristic constitutional type associated with coronary occlusion. According to Levine, the typical patient is a well-set person, somewhat over-weight, often of considerable physical strength, who enjoyed unusually good health. That there is a hereditary factor in their production is brought out by Drs. Hexamith and [illegible] in their record (p. 685) of a series of cases showing a familial

[1] *Coronary Thrombosis: Its Various Clinical Features.* By Dr. Samuel A. Levine. Medicine Monographs, Vol. xvi. London: Baillière, Tindall and Cox. 1929. (15s. 6d. net.)

[2] Barnes, A. R., and Whitten, M. B. Amer. Heart J., October, 1929, i. 14.

liability to sudden death in relatively young men with sclerotic coronary arteries; Levine, too, noted that many of the patients had a family history indicating a susceptibility of the vascular system to degenerative disease. Syphilis seems to be associated but rarely; indeed, Levine, who found it in only 4.5 per cent. of cases, doubts whether syphilis has any direct causative influence in the production of coronary thrombosis. Rheumatic infections are associated even less frequently: "In fact," states Levine, "it may be said that not only do patients suffering from coronary disease have no history of rheumatic fever, but that those having rheumatic heart disease but rarely show coronary disease. This probably is true even of those younger rheumatic patients having aortic insufficiency who may have attacks of angina pectoris." Diabetes, on the other hand, appears to have an important bearing on the development of coronary thrombosis. Its presence does not alter the prognosis or influence the age at which attacks occur, but the two conditions are so commonly associated that it seems as though diabetes, even if it has no direct etiological significance, indicates a type of patient with a vulnerable vascular system. The statistical relation between coronary thrombosis and diabetes is difficult to assess, for among the many cases that have been held to illustrate such a relation it is probable that there were some in which the glycosuria was transient, and due to the great pain and fear that go with an attack of coronary thrombosis.

Coronary thrombosis has a grave prognosis, but it is difficult to predict the outcome of any individual case. A patient having apparently a mild attack may die suddenly; in a most desperate case the symptoms may clear up. Moreover, an attack successfully combated is inevitably followed by others, and there is no way of knowing how long the fatal attack will be delayed. Treatment may be summed up in eight words: absolute rest, morphine in large doses, and hope. Rest is essential, because the site of infarction may be covered by a mural thrombus, which is liable to become detached in the early stages. Stimulation of the heart is allowable at the onset of the attack and for the following day or two, but is contraindicated thereafter until the end of the second week unless the inception of abnormal rhythm or the occurrence of cardiac failure renders such treatment imperative. Nitrites, as we have said, may be actually harmful.

AMPUTATIONS AND ARTIFICIAL LIMBS.

For many years amputations were the most commonly performed major operations even of civil surgery; in military surgery they had a still more prominent place as a rough-and-ready treatment of limbs severely damaged on the field of battle. A good idea of the proportion of the wounded in naval warfare who suffered this drastic but necessary procedure is brought out in a letter written by Midshipman Samuel Thornton to his father on April 12th, 1814, describing the famous naval duel between the American frigate *Essex* and her English counterpart, the *Phoebe*. According to Thornton, whose letter was quoted in the *Times* of March 8th last, 44 primary amputations were performed on the captured ship; and as the wounded on the highest estimate numbered no more than 70—the casualty lists of the action are inaccurate—this would imply that over 60 per cent. of them suffered amputation.

During the century between 1814 and 1914 improvements in surgery made amputation increasingly rare in hospital practice; indeed, in 1913, according to Mr. Edred Corner, only 34 of the 5,843 operations performed at St. Thomas's Hospital were amputations. Early in the campaign of 1914, however, the prevalence of gas gangrene and other septic conditions, and the large number of compound fractures and gross lacerations of soft parts, brought these operations once more to the front, and revived the interest of surgeons in artificial limbs. Furthermore, since the war the number of accidents due to motor traffic on the roads "has increased, is increasing, and ought to be diminished"; and though no statistics on this point are available it is certain that the number of amputations in civil life must be several times as great as it was in the years immediately preceding the war. The assembling of many hundreds of cases at Roehampton in 1915 gave members of the surgical staffs of Queen Mary's Convalescent Auxiliary Hospitals an opportunity of studying this subject, and enabled them to suggest tentatively certain modifications of previous practice. In the following winter, in a small pamphlet that was widely circulated among the surgical staffs of military hospitals, they set forth the sites and kinds of amputations which up to date had been found to give the best results from the point of view of the limb-fitter. This pamphlet, but little altered, was reissued towards the end of the war.

That a great deal of the officially recommended war-time practice survives to-day was brought out at the discussion on amputations and their relation to the artificial limb held on April 2nd at the Section of Surgery of the Royal Society of Medicine. From the report which appears in this issue (p. 693) it will be seen, however, that the present tendency is to decry long thigh stumps and Syme's amputation, the late results of which have been learned from experience accumulated since the war years. When Muirhead Little's book[1] was published in 1922 the excellence of the round stump operation in which the femur was divided some 3 inches above the articular surface was hardly questioned, and it was generally held that the advantage through the extra leverage obtained by saving on the average 15 inches of femur outweighed any risk of malnutrition. To-day this operation is discredited, and those who practised and advocated it realized that their hopes and beliefs of ten years ago were illusory. Similarly discredited is Syme's operation, which, properly performed in suitable cases, was held to produce one of the best stumps known. The experience of a dozen years has led many surgeons to discard it, on the ground that it is followed by late-appearing troubles, such as callosities of the scar and tenderness. In a large proportion of the war cases this operation had been rendered necessary by frostbite gangrene, the permanent ill effects of which often extended far higher than the site of amputation. In such circumstances it followed that the resulting stump had poor vitality and was abnormally sensitive; from the first patients had trouble with the prosthesis, and the need for re-amputation was common. It may be questioned, therefore, if it is safe to generalize about amputations on the basis of experience gained among war pensioners; whether, indeed, different conclusions might not be arrived at from a study of civilian cases in which there has been no complicating sepsis extending beyond the site of amputation. We do not know if statistics bearing on this subject are available, and it may be difficult to collect them, but the results of the suggested comparison could not fail to be of interest. We cordially agree with the speakers about the comparative worthlessness of such procedures as the amputations of

[1] *Artificial Limbs and Amputation Stumps.* London: H. K. Lewis & Co., Ltd., 1922.

Pirogoff, Gritti, or Stokes-Gritti, and, indeed, of all osteoplastic amputations. Nature is a better bone grafter than the most skilful surgeon; given a fair chance, she shuts off the medullary cavity of a long bone with precision, though in some circumstances she may produce exuberant bone in the form of spurs. But it is remarkable how seldom spurs of the bone cause disability and inconvenience in stumps. Prostheses in the upper extremity have small practical value, except in special cases. The unfortunate individual who has lost both hands may be obliged to rely upon artificial substitutes, though it is astonishing how much may be done with two bare long forearm stumps. In very many cases the man with one sound arm and hand, especially if it is the right limb that is intact, will wear a prosthesis only as an ornament or to conceal mutilation. Here, more than in the lower limb, the necessary harness is irksome and hinders the free use of the sound limb.

The importance of fitting sockets to stumps cannot be exaggerated. A bad fitting means loss of power of control and injury from friction and uneven pressure. The ideal fitting, in which the stump and the socket move as if they were all one piece without any play between them, gives comfort to the wearer and minimizes the sensation of weight and strain. Lightness, a well-designed mechanism, and good material are all obviously important in limb prosthesis, but good fitting is the most important of all. The best limb badly fitted may from the wearer's point of view be inferior to a much cruder appliance with a well-fitting socket.

PREPARATIONS OF ERGOT FOR ORAL ADMINISTRATION.

DURING the past year the properties of ergot preparations have been studied systematically at the Pharmacological Laboratory of the Pharmaceutical Society. Messrs. Wokes and Elphick[1] studied the alkaloidal content of various samples of ergot and found that the Polish ergot contained 0.6 per cent., whereas the average Spanish or Portuguese ergot contained about 0.2 per cent. Mr. Wokes[2] studied the stability of ergot preparations and obtained disappointing results; he found that liquid extract of ergot, made according to the directions of the *United States Pharmacopœia*, when freshly prepared, contained a considerable quantity (0.1 per cent.) of the specific alkaloids, upon which the therapeutic action of ergot depends. Unfortunately the preparation proved to be unstable, for even when stored in an ice chest, it lost half its activity in ten weeks and in twenty weeks less than a quarter of its original activity was retained. Concentrated soft extracts of ergot were found to be rather more stable, but these also lost half their activity in from four to nine months. The conclusion from these results is that better methods of preparation need to be discovered before reliance can be placed on ergot preparations. Dr. J. H. Burn[3] investigated the absorption of ergot from the alimentary canal of cats, and found that when defatted powdered ergot was given by mouth to cats about 30 per cent. of the alkaloid was absorbed, and that the drug maintained its action on the tissues for at least two days. The tragic history of epidemic ergotism proves clearly that ergot in the solid state can maintain its activity for long periods. These experiments in conjunction with the results of Wokes suggest that the best preparation of ergot for administration by the mouth is probably the defatted powdered drug.

[1] Wokes and Elphick: *Quart. Journ. of Pharmacy and Pharmacology*, 1929, 2, 519.
[2] Wokes: Ibid., 1929, 2, 384.
[3] Burn: Ibid., 1929, 2, 515.

COMPULSORY NOTIFICATION OF ACUTE RHEUMATISM.

THE rheumatism scheme of the Royal Borough of Kensington having been in operation since October, 1927, Dr. James Fenton, medical officer of health, and Dr. R. C. Lightwood, physician in charge of the rheumatism supervisory centre, are able, in their second annual report just issued, to take stock of progress, and provisionally to assess the value of the system of compulsory notification which was instituted in the first place for an experimental period of three years. They are satisfied that the establishment of the rheumatism supervisory centre has been amply justified, and believe that it is a preventive agent that should be placed on a permanent basis throughout the country. But their views about the value of compulsory notification are still so indefinite that they suggest the desirability of continuing the system of compulsory notification beyond the original experimental period in order that they may accumulate more facts to guide them. Before the expiry of any period of renewal they believe that they will be able to arrive at a final opinion in favour either of increasing the scope of the regulations to include some as yet unnotifiable forms and manifestations of rheumatism, or of rescinding the regulations altogether. At present they are of opinion that compulsory notification would be of greater value if the expression "acute rheumatism" were amended in the Kensington regulations to cover rheumatic pains or arthritis, or rheumatism chorea, or rheumatic heart disease, occurring separately or together in a child under the age of 16. The diminution in the notifications during the second year—105, as against 159 in the first year—was to some extent expected, because there was an accumulation of cases which immediately became due for notification on October 1st, 1927, when the scheme was first put into operation: it is probably true also that during the second year there was some tendency on the part of practitioners to overlook notification. Of the 105 patients whose cases were notified, 77 attended the centre, but 37 of these were notified by the medical officers of the centre itself. The experience of the neighbouring borough of Hammersmith, which, without any provision for the notification of rheumatism, is yet able, through the efforts of the Invalid Children's Aid Association, to refer an increasing number of children to the Kensington centre, suggests that a rheumatic supervisory centre backed by an energetic voluntary organization, can do a great deal of useful work without any scheme of compulsory notification. On the other hand, Drs. Fenton and Lightwood point out that though notification provides the centre with but a small proportion of its cases, it brings to their notice patients of whose existence they would otherwise be ignorant. Moreover, notification is useful in ascertaining those rheumatic children who, after recovering from an acute attack, are not kept under their doctors' supervision. Outside the sphere of the supervision and treatment of rheumatic children notification has been valuable in facilitating environmental research, and it would, the authors of the report believe, be advantageous to continue in existence three or four municipal schemes of notification in the London area in order that such environmental investigations might be allowed to mature. As an alternative to notification they suggest that the school medical service might be able to deal effectively with the control of rheumatism, though perhaps not with its present organization. Rheumatism supervisory centres could be fed chiefly by the school medical service, and other bodies encouraged to refer children to the centres, even children below school age. Drs. Fenton and Lightwood recommend that in each area rheumatism centres should be set up in close association with the existing hospitals, and staffed by physicians of general experience.

EUROPEAN WOMEN IN THE TROPICS.

THE effect of life in the Tropics upon European women was the subject of a short discussion in the Section of Tropical Diseases of the Royal Society of Medicine on April 3rd. Dr. G. W. Theobald, speaking as one who had practised gynaecology in the Tropics, said that the tropical environment, whether mental or physical, was bad for men but worse for women. Men proceeding to the Tropics had to submit to medical examination, but the majority of women went as wives, and were not necessarily medically examined, or if an examination was made it was not by a gynaecologist. No statistics appeared to be available as to the number of women who became infected with malaria; the Colonial Office and the India Office had no figures. Dr. Howard Cook, secretary to the medical committee of the Church Missionary Society, had stated that during the last ten years no woman missionary of the society had died from malaria, and only seven out of a total of *eight hundred in the field had been invalided* home with that disease. All the missionaries of the society were advised to take quinine daily. The majority of residents in the Tropics, said Dr. Theobald, would continue to live in real danger of malaria until the Governments concerned realized that effective malaria control was a necessary and economic policy. One requisite of life in the East was a more or less mosquito-proof dress, which could be made very attractive for women, but, as matters stood, many women spent several of the hours after sunset (when the anopheles began to bite) in evening frocks which exposed a large surface of the body to attack. He considered it was time that malaria experts expressed their disapproval of sleeping nets which tucked in under the mattress, for the foot, elbow, or hand might rest against the net, and so present something for the mosquito to bite. Screened houses were built by Americans, but avoided by British; nevertheless, he thought they lowered the incidence not only of malaria but of other fly-borne diseases. The round of social engagements and vigorous sports, which occupied many women's lives in the East as an escape from ennui, was not conducive to resistance. It was often said that women could not stand the climate, when the fact was that even under British climatic conditions such a programme as they attempted in India could not be undertaken without harm. In sharp distinction were the missionary women, who did not take alcohol or attend many social functions; they very often lived in the most uncongenial surroundings, without the luxuries of fans and ice, but they worked harder than they had done at home, and they remained remarkably fit for a great number of years. Dr. Theobald gathered that the balance of opinion was against women taking quinine as a prophylactic; there was no clear proof, however, that small doses affected menstruation, conception, or pregnancy. Even if there was a certain small amount of risk of terminating the pregnancy, it was necessary in the interests of the mother, the child, and the race that malaria should be energetically combated. As an obstetrician he had used quinine to induce labour in a number of cases, all of them thought to be almost at term, and out of 52 of which he had records it had failed to have this result in six. In all but one of these 52 cases the children were born alive. He believed that quinine increased the length and the severity of the normal uterine contractions, but it did not induce labour until the patient was at or very close to term. There was no need, however, for heroic doses as a malarial prophylactic; 10 grains in the morning and 10 grains at night were sufficient for the average woman, and such doses would not affect the course of pregnancy. In the course of the discussion the president of the Section (Dr. J. B. Christopherson) suggested that if women in the East would wear trousers it would be a great step towards malaria prevention. A mission in Africa had devised for its women members a dress proof against *Glossina morsitans* and included that garment. Sir Andrew Balfour said that it would be some advantage if women would wear two pairs of stockings instead of one, for the mosquito would not bite through more than one thickness. He mentioned also that it was now the custom in India to have bright lights fixed under the table at dinner; in such luminosity the mosquito would not bite. The screening of the verandah was very useful, and the description "stuffiness" applied to the screened house was not necessarily true. The conditions of the Tropics affected the nervous system of Europeans deleteriously, of women more than men, partly because women were more highly strung and partly also because they often had not sufficient employment, and so tended to overdo sport and social functions. Dr. Manson-Bahr considered that certain types of women were less suited than others to tropical life: the blonde type, preferred by mosquitos, was much more liable to break down than the brunette. He also expressed the view that in the majority of instances where abortion occurred under quinine, the abortion was due not to the quinine but to the malaria. Dr. G. C. Low said that, examining for a large missionary society working in Central Africa, he had refused to pass any woman who had any menstrual disturbance, and that since the examination had been made more strict the incidence of illness in the mission field had fallen considerably.

BENEVENUTUS GRASSUS.

REPRINTS of the classics are always interesting. The medical profession in general, and ophthalmologists in particular, owe a debt of gratitude to Dr. Casey Wood of Stanford University, California, for his translation of the *De Oculis, eorumque egritudinibus et curis* of Benevenutus Grassus of Jerusalem.[1] This little book is a true incunabulum, for it was printed before the year 1500 A.D.; the exact date may not be quite settled, but Dr. Casey Wood advances cogent reasons for placing it in 1474. The only other early printed book dealing with the eye would appear to be the *De Oculo Moradi* of Archbishop John de Peckham, printed by Anton Sorg at Augsburg in or about 1475. Dr. Casey Wood says of this latter work that "the contents are in the main a series of priestly homilies and quotations from the Fathers in which a rather good description of the visual apparatus, together with its diseases and their treatment, serves as a peg on which to hang saintly saws and religious dogmas." Considering his period, Peckham was a profound mathematician with a knowledge of optics second only to that of Roger Bacon, but he was not a medical man, and knew no practical ophthalmology. Grassus's work, on the other hand, is intensely practical. His treatment of trachoma—everting the lid, scarifying the conjunctiva, and expressing the contents of the granules—would pass muster to-day. He is cautious in the use of the cautery as a counter-irritant to the head and temples; he gives excellent advice as to the removal of a pterygium; and in his ocular treatment he never fails to call attention to the importance of considering the general health, as was fitting in one who had lectured at Salerno. His topical applications sound for the most part bland and unirritating; he is altruistic enough to admonish his hearers to treat the poor without fee; but if, for instance, powdered pearls or sapphires are indicated in the treatment, and the patient is wealthy, there is no reason why these should not be prescribed. It is a treat to find a mediaeval textbook which refrains from recommending dung, dead men's bones, coffin rings, and other nastiness as therapeutic measures; the urine of a

[1] Benevenutus Grassus of Jerusalem: *De Oculis, eorumque egritudinibus et curis*. Translated with notes and illustrations from the first printed edition, Ferrara, 1474 A.D., by Casey A. Wood, M.D., LL.D. Calif.: Stanford University Press; London: Milford, Oxford University Press. 1929. 23s. net.)

haste youth is the nearest thing we get here to such applications; while the apple poultice so often recommended was probably very efficacious, and we should not be surprised to hear of such treatment having been used by the more illiterate of the inhabitants of remote country districts within living memory. When couching for cataract the operator, having dislocated the cataract, is advised to hold it down long enough to repeat four paternosters. Not the least interesting part of the volume is the scholarly introduction by the translator. The late Professor Hirschberg was of the opinion that Grassus was a renegade Jew. Dr. Wood thinks that this book "does not necessarily picture an apostate Jew adding enough Christian savour to leaven the heretical text of his unbelieving book, but rather the act of a prudent printer-publisher, who, safeguarding his own interests and following the custom of the country, had brought the work 'up to date' by introducing, here and there, a few churchly maxims." This small volume was for more than 500 years the most popular ophthalmic manual of the Middle Ages. There are twenty-two manuscripts of the text extant, and about eighteen printed editions. Of the Ferrara (1474) edition, here printed, only eight copies are known to exist: three are in America, the Pierpont Morgan copy having been purchased in 1905 from an English sale; one copy is in the library of the Royal College of Surgeons of England; and the other four are on the Continent—two in Paris, one each in Naples and Rome. The book is enriched by fine illustrations of the first and last pages of the Ferrara edition, with one of the pages from the middle of the book (No. 33). There are also illustrations of a Provençal MS. of the thirteenth century, and the *explicit* and last folio of the old English Ashmolean codex in the Bodleian Library. The publishers deserve great credit for the beautiful paper, printing, and format of the book.

THE TOBACCO PROBLEM.

THE March issue of the *Bulletin of Hygiene* contains a review of recent literature on the tobacco problem by Dr. J. D. Rolleston, who has collected figures from various countries illustrating the enormous and increasing consumption of tobacco, particularly in the form of cigarettes. In Germany, for example, it has been calculated that the average number of cigars consumed yearly by males over 14 is 300, and of cigarettes consumed by adults of both sexes about 700. In the United States the figures for 1928 were 102,764,698,000 cigarettes, 8,036,714,162 cigars, and 378,874,261 pounds of tobacco in other forms. A good deal of attention has recently been given to the nicotine content of cigars and cigarettes, and most investigators appear to be agreed that the term "denicotinized" applied to various tobacco products and particularly to cigarettes is a misnomer. Though as a group the so-called denicotinized products contain less nicotine than tobacco not specially treated, some contain as much nicotine as is found in ordinary tobaccos, while none is sufficiently low in nicotine to warrant its unrestricted use by persons liable to suffer ill effects from the alkaloid. Dr. Rolleston remarks that though the relation of tobacco to public health has received rather stepmotherly treatment in this country, it has aroused more interest in Germany and the United States, where some hygienists not only hold that tobacco is in no way an aid to health, but recommend that smokers should undergo a thorough physical examination periodically in order to detect any ill effects that tobacco may have produced on the circulation. Lickint, in an interesting paper, of which Dr. Rolleston gives a full summary, analyses the tobacco consumption in a series of 100 men over 80 years of age. In this series there were 10 men over 100 years of age, and among these 3 had never smoked, 4 were still smokers, and 3 had been smokers, but were no longer so. The remaining 90, aged between 80 and 100, included 19 who had never smoked, 32 life-long smokers, and 39 who had given up the habit. It is noteworthy that all the smokers consumed tobacco either in pipes or in the form of cigars; none of them was a cigarette smoker, probably because when cigarettes were introduced into Germany these men were already too old to change their habits. Lickint suggests that the growing popularity of cigarette smoking, being accompanied by an increase in the practice of inhaling, whereby tobacco produces its most injurious effect, is leading to a diminution in the expectation of life. In another investigation among younger men Lickint had found that the proportion of non-smokers ranged from 5 to 8 per cent. The fact that among old men the proportion was much larger he believes is due to a passing of the taste and tolerance for tobacco with increasing years.

NATIONAL UNION OF STUDENTS.

THE National Union of Students, which is at present appealing for an establishment fund of £30,000, is the only organization that unites the students of universities and university colleges of this country in a single body. Its wider purpose is to eliminate national prejudice by facilitating more regular intercourse among students in all parts of the world. Internationally, it fosters a better understanding between the students of the Empire and those of other countries, partly through the Confédération Internationale des Etudiants, comprising thirty-eight national units, and partly by the interchange of groups of visiting students. It is non-sectarian and non-political. During the seven years of its existence "faculty" tours have been arranged in medicine and in fifteen other subjects. These tours are designed to give medical students first-hand experience of the practice of their profession abroad, and to provide them with widespread opportunities for studying the psychology and problems of the countries they visit.

BRITISH POST-GRADUATE HOSPITAL AND MEDICAL SCHOOL.

THE Minister of Health made an important announcement in the House of Commons on April 9th in regard to the founding of a British Post-Graduate Hospital and Medical School in London. He said that the Post-Graduate Medical Education Committee, appointed in 1925 by his predecessor, Mr. Chamberlain, had presented its report, and that the Government, after full consideration, had accepted the scheme put forward by this committee. In order to secure without delay the advantages of a proper system of post-graduate education in London, the committee proposed that a hospital and school should be organized comprising: (1) the existing public hospital at Hammersmith with 400 beds in modern wards, which on April 1st became the property of the London County Council, and will continue to be maintained by the rates; (2) a medical school, connected with the hospital, which will have to be built and maintained; and (3) a residential hostel, to be established in Central London. To ensure realization of this scheme the Government has decided to contribute from public funds a capital sum of £250,000 for building and equipping the school, in addition to providing for annual grants towards its maintenance through the University of London. In regard to the proposed hostel, the Government understands that an appeal with which it is in full sympathy will shortly be made to the public for funds to establish a residential institution, to be called "London House" for the use of students from the Dominions and Colonies, not only in medicine, but in other arts and sciences. Further reference to Mr. Greenwood's statement and to the Post-Graduate Medical Education Committee's report will be made in our next issue.

THE OPHTHALMOLOGICAL SOCIETY.

JUBILEE CONGRESS.

THE annual congress of the Ophthalmological Society of the United Kingdom, which took place in London, under the presidency of Mr. LESLIE PATON, F.R.C.S., from April 3rd to 5th, coincided with the fiftieth anniversary of the society's foundation, and the occasion was marked by the visit of an unusually large number of foreign ophthalmologists. Among those who offered congratulatory addresses at the opening of the congress were Professor Van der Hoeve (Leyden), Dr. M. Marquez (Madrid), Professor Josef Meller (Vienna), Professor F. Terrier (Paris), Dr. Henri Coppez (Brussels), Professor Emile de Grosz (Budapest), Professor F. C. Ask (Lund), and Professor Giuseppi Ovio (Padua). In the course of five sessions more than twenty papers were read, and the Barnes Hall of the Royal Society of Medicine was filled on each occasion.

A preliminary ceremony was the presentation of the Nettleship medal to Miss Ida Mann for her contributions to ophthalmology, particularly in its embryological aspect. One interesting event of the congress was a visit to the Zoological Gardens, where Miss Mann demonstrated the reptilian iris under the slit-lamp. Among the reptiles taken as examples were the gecko, the lizard (whose eyes were much the most beautiful), the python, and the frog. She pointed out that the arrangement of the vessels in the reptilian iris was fairly definite according to species, but pigmentation seemed to be absolutely fortuitous, and she could not say how this was determined.

On the first evening of the congress a reception was given at the Royal College of Surgeons. The visitors were received by Lord Moynihan, the President, and Mr. C. H. Fagge and Mr. Warren Low, Vice-Presidents. In addition to the more usual exhibits at Lincoln's Inn Fields a special display had been arranged by the curators in the shape of old ophthalmic instruments, microscopes, and books. On the following day Sir Arthur Keith delivered the Bowman Lecture, taking as his subject the genius of Bowman. This is published at page 701 of our present issue.

Presidential Address: Control of Position and Movements of the Eyes.

Mr. LESLIE PATON devoted his address from the chair to a consideration of the reflex factors controlling the position and movement of the eyes. He said that in man and other animals with frontally placed eyes and binocular vision the retinal stimuli played a predominant part in such control, but in lower types, with laterally placed eyes, other factors came into prominence, the most important of these being reflex stimuli originating from the labyrinth and from the neck muscles. These factors were also present in man, but were not so easily made manifest, though when their proper function was interfered with, signs and symptoms resulted which were often of grave significance and usually difficult to interpret. Among the most important of these signs and symptoms were vertigo, nystagmus, and nausea or vomiting. These lower controls were best studied in the rabbit or guinea-pig, in which it was found that every position of the head in space, and of the head relative to the trunk, produced its corresponding position of the eyes. There was a direct control by the labyrinthine stimuli and by proprioceptive impulses from the neck muscles on the eye positions. It was evident that the stimuli emanating from the sacculus and utriculus depended on gravitational pressure and might be called gravistatic. The stimuli from the neck muscles varied with every condition of contraction and relaxation, and might be called tonic; the stimuli from the semicircular canals initiated movements in the eyes, and were themselves initiated by variations in the fluid pressure in the canals acting on the gelatinous capsules covering the cristae ampullae, so that the activity of the semicircular canals might be described as kinetic. Anatomically the paths concerned in all these controls of eye movements and body equilibrium were very complex, and impulses might travel to their final common path by more than one route. Some of these paths were known, but many were yet obscure. Until they were more fully worked out it would not be possible to solve the problem of nystagmus nor many of the other problems involved in the interpretation of some of the more difficult forms of ocular palsies and disturbances.

Endocrine Disorders Associated with Eye Diseases.

The principal discussion of the congress was on disorders of secretion of the endocrine glands associated with eye diseases. It was opened by Mr. J. H. FISHER, who said that it was now fairly well established that the interrelation between the functions of the endocrine glands was provided by the chief hormones which each supplied and which were carried in the blood stream to all parts of the body. In some degree the product of one ductless gland might serve as a fair substitute for that of another. The hormones of some were antagonistic to, or corrective of, those of other glands, and an excess of one might stimulate the production of another; the balance must be held most carefully between the whole group if normal growth, health, and vitality were to be maintained. The endocrine glands were factories, each turning out its special product, which was sent into the blood stream. Possibly investigators had gone astray in concentrating so much attention on the "factory" and overlooking the importance of the material. Was the enlarged thyroid or pituitary the preliminary derangement, or might not the gland have been disorganized for want of raw material? Biochemists would do well to renew their investigations of the constitution of the blood from which the ductless glands drew their raw material, and into which they poured their products.

Professor H. MACLEAN remarked that little was known with certainty about the endocrine glands; he commented also on the ignorance about carbohydrate metabolism, for work done during the past two or three months went to show that views firmly held up to a year or two ago were all wrong. It had to be admitted now that practically nothing was known about the various reactions which took place in such a condition as diabetes. He thought, however, that in typical progressive diabetes the fundamental difficulty was in the tissues, which were unable for some reason to utilize or burn up sugar. If the liver lost its power to store the incoming sugar as glycogen, the blood in the peripheral circulation would be flooded with sugar, and there would be hyperglycaemia. The real defect concerned in the glycosuria of the elderly was not any difficulty in oxidizing or burning sugar, but in storing sugar in the liver. This condition was sometimes associated with some slight acetonuria, but the speaker did not believe that this primary difficulty in liver storage was really dependent on a pancreatic lesion at all. There was a certain amount of evidence completed recently that the pancreas was not the only organ which took part in this metabolism; the liver also acted, and it was in glycosuria associated with difficulty in liver storage that the retinal effects were noticeable. This condition went on year after year. In typical diabetes, on the other hand, there were not so many eye lesions seen, especially nowadays, because the condition in its usual form was very striking, and was quickly recognized as requiring insulin. He also suggested that the retinal changes seen in Bright's disease were due to high blood pressure and had nothing to do with the kidney.

Professor E. C. DODDS expressed some doubt regarding the ophthalmological textbook description of exophthalmos as due to the action of thyroid secretion in the blood. It was impossible to correlate the basal metabolic rate determination with the amount of exophthalmos. Exophthalmos might be unilateral, and might advance or recede quite irrespective of the general condition. As to retinitis occurring in diabetes, Professor Dodd's observations confirmed the view that this condition occurred only with associated arterial degeneration. All the diabetics admitted to the institution with which he was connected had had their retinas examined, and it had always been possible to correlate retinal changes with arterial degeneration. He had practically never found change in the retina associated with early diabetes. In conclusion, Professor Dodds said that biochemists were expected to provide solutions for these and other difficult problems, but he did not think they were given a fair opportunity. How many post-ophthalmic hospitals had a biochemist on their staff?

Biochemists at the general hospitals could give information on the negative or control side—they could say that a certain condition of the blood precluded a certain condition of the eyes—but for the other side of the story it was necessary to seek the experience of a biochemist engaged closely with ophthalmic cases.

Dr. W. CLARK SOUTER showed some interesting charts and pictures of clinical cases, and Mr. A. W. ORMOND and Dr. C. GOULDEN contributed to the discussion.

Papers and Demonstrations.

The many papers presented to the congress can only be briefly indicated. Mr. E. TREACHER COLLINS discoursed on the effect of deficiency in vitamin A in bringing about eye changes. He showed how, in such deficiency, the mucus-secreting cells of the conjunctiva atrophied and ceased to function so that keratinization of the epithelium took place. In the absence of mucous secretion the surface tension of the conjunctiva altered, and the fatty secretion of the meibomian glands adhered to it, forming an excellent pabulum for the growth of micro-organisms, pathogenic and non-pathogenic, the former exciting an inflammatory reaction, which in the cornea resulted in keratomalacia.

Dr. W. R. AYKROYD, from experience of Newfoundland and Labrador fishermen, spoke on the frequent association of functional night-blindness with external eye condition, unquestionably due to vitamin deficiency, suggesting that the former had the same etiology. Cod-liver oil or fresh liver would usually quickly cure this "nutritional dyskotopia," the term suggested for this particular form of night-blindness.

A very comprehensive paper was read by Dr. JAMES COLLIER on the various patterns of ocular paralysis resulting from infective or toxic processes, such as diphtheria, polyneuritis, botulism, and veronal intoxication, and of ocular paralysis growing in myasthenia gravis, for which there was as yet no pathology. Dr. Collier had been fortunate enough to observe quite a large number of unusual and illuminating cases, which he mentioned. He indicated four varieties of patterns of paralysis as met with clinically: the peripheral paralysis, in terms of the distribution of the peripheral oculomotor nerve or one of its branches; the supranuclear paralysis, in terms of the physiological use of the eyes, upward and downward movements, lateral movements, and convergence; the nuclear paralysis characterized by its irregularity, by the affection of both eyes, by the constant loss of parallelism, and by the presence of nystagmus; and, finally, the paralysis resulting from the specific selective activity of a poison upon a particular physiological mechanism—for example, the isolated paralysis of the ciliary muscle so common in diphtheria.

Dr. J. W. TUDOR THOMAS gave a remarkable demonstration in the form of a preliminary report on a series of experiments, carried out in the physiology department of the Welsh National School of Medicine, on the transplantation of the cornea in rabbits. The importance of finding a successful method of corneal grafting was that it opened up the possibility of restoring some sight to many at present incurably blind. Dr. Thomas described the main types of operation carried out. In his experience the cross-stitching operation gave by far the best results, and this was the only method by which he had obtained clear grafts. This was a central round graft with shelving edges, held in place by stitches inserted in the cornea, the stitches being arranged with the limbs crossed. Out of 14 experiments, 13 of the grafts united, and of these, 4 grafts were clear, and the four rabbits with clear corneal grafts were demonstrated at the meeting. The demonstration evoked a great deal of interest, and was the subject of some appreciative remarks by Sir Arthur Keith at the banquet the same evening.

Mr. W. S. DUKE-ELDER outlined some experimental work demonstrating the effect of choline and acetyl-choline on the extrinsic muscles of the eye. The matter arose during research upon the effect of various drugs on the intra-ocular circulation, when peculiar reactions upon the intra-ocular pressure were registered with choline. These were traced to a contraction of the recti and obliqui muscles, which was unaffected by atropine and abolished by nicotine and curare.

Some cases of damage to Descemet's endothelium were described in a paper by Mr. FRANK JULER. The first case was that of a man in whose anterior chamber a spicule of glass had been present for twelve months before detection. In three cases the cornea became opaque after irrigation of the anterior chamber during extraction of cataract; two were imbibition opacities, and the third was probably due to a deposit of calomel in the lining of the chamber. Another group was the condition of Fuchs's epithelial dystrophy of the cornea. Mr. Juler described two cases occurring in sisters, which is unusual.

Mr. F. B. CHAVASSE entered on an examination of the existing theories of concomitant convergent strabismus. He criticized strongly the accommodation theory, which, he declared, failed on various grounds. Taking all the theories of squint, including the theory that it was due to ocular inequality, there was not one that covered all the cases. Professor VAN DER HOEVE produced a striking collection of illustrations of malformation of the eye, as well as of other facial deformities, the result of amnion bands. Dr. GORDON HOLMES discussed the spasm of fixation; Mr. DOGGART read a paper on ocular rosacea, and Mr. GREEVES described x-ray applications in superficial keratitis. Mr. BERNARD CRIDLAND commented on the certified causes of blindness, and there were yet other papers for which time did not allow of adequate discussion.

The Congress Banquet.

The concluding social event of the congress was a banquet at Fishmongers' Hall, when 150 sat down at the tables under the presidency of Mr. LESLIE PATON. In proposing "The Health of the Society," Mr. Paton traced its history back to the little group of energetic men who used to meet in the house-surgeon's room at Moorfields to discuss ophthalmic questions. There were 114 original members of the society, of whom 11 were still alive, and two of them—Sir Thomas Barlow and Mr. J. B. Lawford—were present on that occasion. He mentioned the names of many outstanding figures in the early days of the society. At one time there was danger lest the society should lose its identity in the Royal Society of Medicine, but an arrangement was devised whereby it remained independent and pursued a distinctive line, though in the happiest relations with the large and flourishing Ophthalmic Section in that body.

Sir THOMAS BARLOW entered further upon reminiscence. The society began, he said, as a small club in the late seventies. It had been his happiness to work with Edward Nettleship, the mainspring of the society, and one of Hutchinson's most distinguished note-takers who had carried note-taking to a fine art; a quiet, reserved, dignified man, with a passion for accuracy, his own most severe critic, a conscientious clinical investigator, and a man of great intellectual and moral culture. Of other great names associated with the society he mentioned Jonathan Hutchinson as the "universal specialist," and Hughlings Jackson, whose discoveries regarding optic neuritis were the most fruitful and important in the whole of neurology. Jackson's philosophical reflections on the involved problems of neurology were an education in themselves. He brought to everything he touched a philosophical grasp. One of the great things that struck Sir Thomas Barlow about the society was that it made a common meeting ground for physicians, surgeons, and pathologists. For this reason the society was a lesson to the whole profession.

Sir JOHN PARSONS, in a witty speech proposed "The Health of the Bowman Lecturer," and Sir ARTHUR KEITH, in reply, praised the ophthalmological school on this country, which, he said, was one of the three strong schools of specialists in Great Britain, the others being the physiological and the neurological. Mr. J. H. FISHER proposed "The Health of the Guests," to which a charming response was made by Professor VAN DER HOEVE, who, in the name of the foreign visitors, presented to the society an ivory gavel suitably inscribed. Sir JOHN BLAND-SUTTON, who also responded for the guests, said that he attended a meeting of the then young Ophthalmological Society in December, 1880: he was invited thereto by George Critchett, an extremely dexterous surgeon, whom he saw perform his first operation of iritomy. In those days most of the ophthalmic work was done by general surgeons.

Sir John Bland-Sutton mentioned the extreme antiquity of ophthalmology, which was studied by the Greeks and Romans, who treated people for cataract: probably ophthalmology was older than surgery itself. It was curious how the phenomena of light and radiation had now come to dominate specialism. Since the invention of the incandescent lamp and the discovery of *x* rays five or six Sections had been added to the Royal Society of Medicine, all indicating specialisms which used light or radiant energy in some form or other. Every new instrument devised, of course, required dexterity in its practice to be successfully used, and thus specialism was encouraged. But he maintained that the ophthalmoscope was the prince of clinical instruments and ophthalmology the most justifiable of specialties

The gathering concluded after toasting "The Health of the President" and expressing thanks to the Prime Warden of the Fishmongers' Company, whose splendid hall gave a dignified setting to a memorable occasion.

LEAD TETRA-ETHYL IN MOTOR SPIRIT.

DEPARTMENTAL COMMITTEE'S FINAL REPORT.

THE final report of the Departmental Committee on Ethyl Petrol,[1] appointed by the Minister of Health on April 2nd, 1928, to inquire into the possible danger to health arising from the use of this type of motor spirit, reaffirms the conclusion of its interim report, summarized in the *British Medical Journal* of August 4th, 1928 (p. 219)—namely, that there are no reasons for prohibiting the use of ethyl petrol in this country so long as adequate precautions are observed. The committee, under the chairmanship of Sir Frederick Willis, held seven further meetings, and heard evidence from Professor H. E. Armstrong and Dr. Roche Lynch, senior analyst to the Home Office. Dr. Edgar's evidence, which was referred to in the interim report, was supplemented by Dr. Kehoe, who was also responsible for much of the scientific work undertaken in the United States by the Ethyl Gasoline Corporation. The results of the investigation—carried out under the supervision of the Public Health Department of the United States during the last few years—were examined by the committee in the preparation of its previous report; but further inquiry was considered desirable, particularly in regard to the effect of inhaling ethyl vapour when spilling occurred in garages. The general results of this inquiry, which consisted of a number of investigations conducted by the committee's experimental staff, were corroborated by evidence obtained in Canada and Australia.

Detection of Lead in Urine.

Experimental work in the United States had revealed that urine in normal conditions contained minute quantities of lead. As the committee was not satisfied that the method of detection employed in reaching this conclusion was sufficiently accurate, a new and more refined method was devised which could be used for testing other biological substances as well. No reason was found to disagree, however, with the results of the American experiments, which had also shown that comparatively larger quantities of lead were excreted by town-dwellers and by workers exposed to special risks. It appears from the report that the results of the chemical analysis were in harmony with the medical data of the persons (male) from whom the samples were taken. The average amount of lead found in all the samples of normal urine examined was 0.04 milligram per litre.

Settled Dust of Streets and Garages.

Evidence of lead contained in dust, which is stated to be a cause of its excretion in normal conditions, might be expected to disclose a basis for ascertaining the possible amount of air pollution when ethyl petrol is more extensively employed as motor fuel. This is considered doubtful, as the proportion of lead was found to vary as widely as *nil* to 3.3 per cent. in samples of dust collected in London and neighbouring country districts. The committee gives some indication that the risk of chronic plumbism, arising from the daily inhalation of dust or fumes over a long period, is remote, and observes that the proportion in the settled dust of factories using lead is much greater than in garages. The value of this experiment, however, so far as garages are concerned, is lessened by the fact that no sample of dust could be obtained from a garage using ethyl petrol exclusively.

Danger to Health from Spilling.

In commenting on the interim report we referred to the need for more precise information about the danger to health from residual evaporation when spilling occurred. It was obvious that possible risks depended, partly at least, on the quantities spilled, and on the size and ventilation of the building. A large quantity spilled in a small unventilated garage might be supposed to have an injurious effect, and this danger is not concealed in the report. The committee concludes, however, from its own observations and by reference to a series of American experiments, that the risk from short exposures to a maximum concentration of lead under severe conditions appears to be slight, especially as the spilling of large quantities happens, it presumes, only occasionally. With adequate ventilation the possible danger from the spilling of small quantities, even repeatedly, is regarded as negligible. Asphalt, concrete, and wood evidently reduce the amount of lead concentration in the air, which is also affected by the nature of the other elements in the mixture.

The Committee's Conclusions.

The committee's principal conclusions, briefly expressed, are as follows:

1. Urine, in normal conditions, contains a minute quantity of lead, the proportion being less in persons who live in the country. Excretion of lead is caused partly, if not mainly, by inhaling dust containing lead. On an average there is a fairly close relation between the degree of exposure to lead and the proportion of lead in the urine.
2. No evidence has been found to indicate that the settled dust in a garage where ethyl petrol was regularly used for some cars contains more lead than that of garages where this fuel is not employed.
3. Lubricating oil from the crank cases of cars using ethyl petrol contains a small proportion of volatile lead; the proportion of non-volatile lead associated with the insoluble "carbon" in the oil is significant. Deposits scraped from the cylinder heads, pistons, and exhaust systems of the engines contain a negligible quantity of volatile lead.
4. Oily deposits from the combustion chamber and exhaust pipes of cars run on ethyl petrol are unlikely to cause serious contamination of any water supply; deposits free from oil will have no serious effect on a water supply of a moderate degree of hardness, but the contamination of a soft water supply by oil-free deposits might be more serious.
5. Risks to health from spilling large quantities of ethyl petrol appear to be slight; if adequate ventilation exists the risk from the spilling of small quantities appears to be negligible. Garages should be efficiently ventilated and spilling should be avoided.
6. It is improbable that pedestrians would inhale a dangerous quantity of lead when "puffs" are blown out of the exhaust pipes of motor vehicles during the acceleration of their engines.
7. The risk from absorption of lead tetra-ethyl owing to contact of ethyl petrol with the skin is so small as to be negligible.

Recommendations.

The general impression conveyed by the committee is one of painstaking accuracy not only in assembling the results of its own experiments, but in the lucid presentation of the data collected from other sources. It is obviously premature to express an opinion on the validity of its conclusions until ethyl petrol is more extensively employed as a motor fuel in this country. Many of the results of the experiments are supported by data from the United States, but it is conceivable that even they may lose their authority in course of time. It is therefore desirable that tests of this nature should be resumed at regular intervals. Meanwhile the committee advises no legislative action so long as the precautions outlined in our previous summary are secured by the terms of the contract between proprietors and vendors. These are:

1. That cans and pumps should be labelled to indicate the presence of lead in the fuel and to warn the user to avoid spillage and not to use the fuel for purposes other than motor fuel.
2. That the fuel should be dyed as an additional check against its use otherwise than as motor fuel.
3. That the amount of lead tetra-ethyl in the fuel sold for ordinary commercial purposes should not exceed 1 part in 1,32 parts by volume, or about 1 in 650 by weight.

[1] H.M. Stationery Office. 1930. 1s. net.

HENRY HILL HICKMAN CENTENARY.

RECEPTION AT WELLCOME HISTORICAL MUSEUM.

On April 2nd (exactly one hundred years after Henry Hill Hickman's death) a noteworthy gathering was held at the Wellcome Historical Medical Museum in Wigmore Street, London, to commemorate Hickman's researches in connexion with inhalation anaesthesia, and to hear an address on the subject by Lord Dawson of Penn. In form it was a reception by the authorities of the museum to the Section of Anaesthetics of the Royal Society of Medicine, but the company included many other representatives of medicine and surgery. Among the guests were Lord Moynihan of Leeds, President of the Royal College of Surgeons, Professor A. H. Burgess, President of the British Medical Association, Sir Farquhar Buzzard, Sir D'Arcy Power, Sir Francis Shipway, Sir Holburt Waring, Mr. V. Warren Low, and the president of the Section, Dr. R. E. Apperly. Two of Hickman's granddaughters, Mrs. Bettridge of Tenbury and Miss Blanche Thompson of Birmingham, also attended.

In the absence of Dr. Henry S. Wellcome in America, the guests were received by Dr. C. M. Wenyon, chief director of the Wellcome Bureau of Scientific Research. A special centenary exhibit had been arranged in the portrait gallery of the museum. This included the authentic records of Hickman's experiments and demonstrations, his portrait, another oil painting showing him experimenting with anaesthesia on animals, certain letters and memorials, and a number of personal relics, such as the scales and weights and mortar and pestle which he used in his practice, the door-plate from his surgery at Tenbury, and a notice card from his consulting room intimating that he was "at home every Tuesday from 10 o'clock until 4, for the purpose of giving advice gratis to the poor and labouring classes." It was explained that many years ago, when Dr. Wellcome was preparing his museum, he made special researches for evidence of agents employed at various periods to lull and numb the senses, and the history of anaesthesia thus explored brought to light certain documents relating to the part played by Hickman in that history. Further documents were obtained from official archives in Paris and from members of Hickman's family, and this material was added to the Wellcome Museum.



HENRY HILL HICKMAN, M.R.C.S.
(From an oil painting in the Wellcome Historical Medical Museum.)

We may recall here that the first allusion to Hickman's discoveries in recent times was made by Mr. C. J. S. Thompson in an article he contributed to the *British Medical Journal* of April 13th, 1912 (p. 843).

A Noteworthy Souvenir.

A handsome souvenir of the occasion, produced by the Wellcome Foundation, Ltd., was presented to the guests. This work, of 70 pages, is much more than a complimentary brochure, because it represents the first publication in full detail of the Hickman material which the museum possesses. In addition to the rather pathetic narrative of Hickman's life, it contains a large number of illustrations bearing on his work, and reproduces some fifteen pages of closely written MSS., most of it from the pen of Hickman himself. His own record of his experiments is included, his famous (but futile) appeal to Charles X of France in 1823, and extracts from the French records, as well as a later series of letters by Dr. Thomas Dudley of Kingswinford, in 1847, to Mrs. Hickman, then a widow, relating his unavailing efforts to secure posthumous recognition for this young pioneer. The famous pamphlet of Hickman, published in 1824, its title beginning *A Letter on Suspended Animation* . . . . is also published in full, together with appreciations by Dr. J. D. Comrie and Dr. Dudley Buxton.

Address by Lord Dawson.

Lord DAWSON, after pointing out that the commemoration owed its fruition to the enthusiasm and energy of Dr. Cecil Hughes and the public spirit of Dr. H. S. Wellcome, said that in order to estimate faithfully the work of Hickman it was necessary to picture the life of his time, and to take measure of the state of knowledge and thought belonging to his day. Far back in the beginnings of history there existed a desire and an effort to discover a means of relief from pain and suffering, and it was curious to note that only in the eighteenth century did there seem to arise a feeling that pain was an inevitable accompaniment of human life. That indifference to pain became extended to surgical practice, and the same apathy, extending into the nineteenth century, was probably responsible for a very noteworthy fact—namely, that between the discovery and application of anaesthesia no less than forty years elapsed. During that period those who should have been concerned were so blind that they did not apply the perfectly obvious inference that should have been drawn from the experiments of the great scientists at the end of the eighteenth century. Anaesthesia, as now known, owed its origin to the discoveries of Lavoisier, the great French philosopher, to the discovery of hydrogen by Cavendish in 1766, the discovery of nitrogen by Rutherford, and, lastly, the discovery of oxygen by Priestley. The discovery of nitrous oxide by Priestley about 1774 was followed in the year 1800 by the important discovery of its anaesthetic properties by Humphry Davy. Davy, having investigated the effects of nitrous oxide on animals, published his researches in an interesting book, in which occurred a pronouncement of which Lord Dawson asked his hearers to make a mental note: "As nitrous oxide in its extensive operation appears capable of destroying physical pain, it may probably be used with advantage during surgical operations in which no great effusion of blood takes place." Humphry Davy had discovered the idea but it fell on deaf ears, and in 1818, when Faraday announced that "when the vapour of ether mixed with common air is inhaled it produces effects very similar to those occasioned by nitrous oxide," the imagination of the medical world still remained untouched.

Lord Dawson then introduced his audience to Hickman, who began his career as a practitioner in Ludlow, Shropshire, and to whom had to be given credit for appreciating the sufferings inflicted by surgical operations and the conception of means to alleviate them by the production of insensibility. Hickman was, in fact, the first to put these ideas to the test of experiment. He rendered animals unconscious, first through partial asphyxiation by the exclusion of air, then by inhalation of carbon dioxide, and later of nitrous oxide. During anaesthesia Hickman made incisions, applied ligatures, amputated ears and limbs, all without pain and with good surgical results. His earnest purpose was to extend the benefit of his findings to

mankind, and accordingly he came to London and put his views before the surgeons of his day. They turned down all Hickman's notions as fantastic. His famous pamphlet, *A Letter on Suspended Animation . . .*, remained a witness, however, to his scientific spirit and method. Ultimately Hickman went to Paris and presented to Charles X a memorial praying that his work might be presented to the Académie Royale de Médecine. That body went a step further than Hickman's compatriots, for a commission of investigation was appointed, but the investigation was never carried out. Having failed to gain recognition in France, as in England, for the work to which he had sacrificed his career, Hickman returned to his home, where he died in 1830, when only 30 years of age.

Continuing the history, Lord Dawson said that from 1831 onwards there gradually grew up, particularly in America, but also in England, a fashion of inhaling ether and nitrous oxide to the point of excitement, and even semi-intoxication. This was done out of motives of fun and curiosity, and among medical students and other youths such inhalations became a pastime—a sort of early version of the cocktail party! From time to time those indulging in such frolics became anaesthetized, and yet the scales did not fall from the eyes of the surgeons. It was not until 1842 that a young dentist, Crawford Long, used ether for the first time for a definite surgical purpose—namely, the extraction of a tooth. Then events followed more quickly, for in 1844 Wells employed nitrous oxide for anaesthesia at operations, and Morton, unaware of Long's work, in 1846 administered ether in Massachusetts General Hospital—the first public anaesthesia. In 1847 the distinguished French physiologist Flourens applied chloroform for the first time to animals, the results being sufficiently satisfactory to lead Sir William Lawrence at St. Bartholomew's and Sir James Young Simpson in Edinburgh to apply chloroform to human beings. Simpson was the first to publish details of about fifty cases of successful administration for anaesthetic purposes. Lord Dawson put it to his audience that when they came to adjudicate on what must be called the fruition of anaesthesia they must, in fairness, decide that the greater part of the credit belonged to three early workers—Humphry Davy, Michael Faraday, Henry Hill Hickman.

It was interesting to inquire why so many years separated the discovery from the adoption of anaesthesia. Was it because Great Britain, at the end of the eighteenth century and the early part of the nineteenth, was passing through a phase of apathy, not only of mind but of feeling, which led to insensitiveness towards pain? There was evidence of the truth of that suggestion, for Sir John Thomson-Walker had been kind enough to lend him a manuscript book of a surgeon who lived in the early part of the nineteenth century, and practised in Norwich. The book contained the most minute and accurate descriptions of various operations, and although the surgeon did all without any anaesthetics, never once was there expressed any concern for the pain the patient might be suffering. There was, however, another reason besides apathy. Necessity for and even pride in rapid operating might have excluded other considerations from surgeons' minds. The great Liston prided himself on being able to amputate a leg at the hip-joint in less than a minute. Of course, it had to be remembered that constructive surgery as now known did not exist in those early days; surgery then consisted, in large measure, in removal of parts of the body. Hickman, though a young country practitioner, without any of the advantages of access to town and to learned bodies, had the mind to see and the heart to feel what anaesthesia meant for humanity, and strove his hardest to get his colleagues in the surgical world to apply the results of what he had proved by experiment. He failed, just as Humphry Davy and Faraday had failed; but now honour was Hickman's due, and it was the privilege and happiness of all concerned on that centenary occasion to perpetuate his fame.

The Hickman Memorial.

After a hearty vote of thanks had been accorded, on the motion of Dr. APERLY, to Lord Dawson for his address, Dr. MINNITT expressed appreciation on behalf of the Section of Anaesthetics and the committee of the Hickman Memorial Fund to Dr. Wellcome for his hospitality, to Mr. L. W. G. Malcolm, the curator of the museum, for his assistance in gathering the historical facts concerning Hickman's work and character, and to all who had helped the fund, by subscription and in other respects. Dr. CECIL HUGHES announced that the amount received in connexion with the fund totalled £256. After expenditure on the family graves and on the memorial tablet, the residue would go as an endowment to encourage original work of merit in connexion with anaesthetics, which would, it was hoped, perpetuate Hickman's name and assist the progress of the branch of science to which he devoted his life. The names of the trustees appointed would be published later in the medical journals, to the editors of which thanks were due for the publicity afforded.

It remains only to add that on April 5th a tablet was unveiled in Bromfield Parish Church, in the yard of which Hickman lies buried. The tablet bears the following inscription.

A . M . D . G

HENRY HILL HICKMAN

Member of the Royal College of Surgeons
Born at Lady Halton, in this Parish, Jany. 27
Baptized in this Church, January 30, 1800

Died at TENBURY, April 2
Buried in this Churchyard
April 5, 1830

This tablet is placed here at the initiative of the Section of Anaesthetics of the Royal Society of Medicine as a Centenary tribute to the memory of the earliest known pioneer of Anaesthesia by Inhalation.

HONOUR A PHYSICIAN WITH THE HONOUR DUE UNTO HIM

A.D. 1930.

The tablet was unveiled by Sir StClair Thomson and dedicated by the Bishop of Hereford. Among those present were Lord Plymouth, the vicar of Bromfield, and Prebendary Joyce; Mr. Warren Low and Dr. Cecil Hughes (treasurer and honorary secretary of the Hickman Memorial Fund), Dr. W. Watkins-Pitchford (representing the Council of the British Medical Association), the President and five past-presidents of the Section of Anaesthetics of the Royal Society of Medicine, and several descendants of Hickman.

NATIONAL RADIUM CENTRES.

STATEMENT BY THE RADIUM COMMISSION.

THE following official communication, briefly noted in our last issue at page 675, has been received for publication from the National Radium Commission. It is dated April 2nd, 1930.

The work of the Radium Commission has now reached a stage at which it seems advisable and convenient to make a further statement with regard to the progress of the national organization which it is engaged in setting up.

As already announced, the cardinal feature of this Commission's policy has been the concentration of national radium at a limited number of centres in England, Scotland, and Wales, where there are medical schools with complete clinical courses and where treatment of patients can be combined with the education in approved methods of radium therapy.

Twelve Centres Nominated.

Of these centres twelve have already been nominated, and will be recognized as National Radium Centres as soon as they have complied with the requirements of the Commission. Their geographical distribution is as follows: In England, seven centres (Birmingham, Bristol, Leeds, Liverpool, Manchester, Newcastle, and Sheffield). In Scotland, four (Aberdeen, Dundee, Edinburgh, and Glasgow). In Wales, one (Cardiff). The special case of London is referred to later.

In every instance the channel of communication between the Commission and the centre is the medical faculty of the local university, and loans of radium are being restricted in each area to one hospital selected by the faculty.

By these means, and in this way alone, has it proved possible to avoid the dangers and futilities of splitting up the limited national stock of radium into minute quantities, which would not only give ineffective results but contribute little if anything to a national, controlled, and co-ordinated study and practice of radium therapy.

The progress to date of the National Radium Centres varies considerably; local difficulties are more pronounced in some places than in others, and there are initial obstacles of many kinds to be overcome in setting up appropriate machinery for dealing with the novel and complicated problems involved.

The following centres, however, have now completed their organization and have been actually supplied with radium by the Commission: Birmingham, Cardiff, Edinburgh, and Aberdeen. Three other centres—Manchester, Glasgow, and Newcastle—will receive their radium almost immediately, whilst the remainder will be recognized and supplied as soon as the necessary preliminaries have been completed and the agreements executed. Negotiations to this end are still proceeding though their respective medical faculties.

In some cases the setting up of plants for the preparation of radon (radium emanation), with the object of supplementing the supply of radium, and of thus serving larger areas, has been approved by the Commission, and additional supplies of radium (in the raw) are being allocated to this purpose.

London's Special Problem.

London has been treated as a separate and special problem, in view of its position as the metropolis of the whole country. Here no centre of the normal type is being set up, but steps have been taken to organize two centres to carry out special work of general and national importance. One of these, the Westminster Hospital, has been experimenting, on behalf of the Commission, for several months past, with a "bomb" (containing 4 grams), in order to determine the value of mass irradiation and long distance radium therapy. The results of this work are not yet sufficiently determined to justify a public report, but this will be made in due course.

The other London centre which is being organized by the Commission is one for the development of *post-graduate* teaching in radium therapy—a prime and urgent need—and the facilities which will be provided will be available for the benefit of qualified medical practitioners from any part of Great Britain. This centre will be located at the Radium Institute and the Mount Vernon Hospital (Northwood), which institutions for these purposes are being reorganized as a joint teaching centre, styled the "Mount Vernon and Radium Institute," under a single control so far as medical services, teaching, and research are concerned. In all other respects the two institutions will retain their separate identities, but the treatment of patients, by radium or other means, will be greatly facilitated by the new scheme, in view of the increased amount of radium available.

Supplies and Records.

Summarizing the present position with regard to national radium, it may be stated that approximately 17 grams (out of a possible total of about 22) have been ordered by the National Trust and provisionally allocated by the Commission to national centres. Of this quantity, 9 grams have already been received from the manufacturers, and, after being tested at the National Physical Laboratory, 6½ of these have been actually delivered to centres and a further 3½ will be going out very shortly.

Another feature of the Commission's policy has been the preparation, in collaboration with the Radiology Committee of the Medical Research Council and the British Empire Cancer Campaign, of a set of "Radium National Forms" for the use of recognized centres, in order that the clinical records of all cases treated may be kept on a uniform basis and eventually incorporated in general national statistics. While the obligatory use of these forms is confined to national centres, it is hoped that they may eventually be adopted by other institutions practising radium therapy. Specimen copies may be obtained on application to the secretary of the Radium Commission at 5, Adelphi Terrace, London, W.C.2.

Scotland.

Health Estimates for 1930

THE detailed estimates for the cost of administration of the national health, labour, and insurance departments, issued on March 29th, show a decrease of £313,376 in the figures for the Department of Health in Scotland. An increase in the cost of administration amounting to approximately £39,000 is due mainly to the provision of extra clerical staff to deal with national health insurance, contributory pensions, and unemployment insurance work. Housing grants for 1930 are increased from £1,726,346 in the preceding year to £1,848,610. Various other grants show a substantial reduction owing to the fact that under the Local Government (Scotland) Act, 1929, these grants are now covered by Exchequer contributions to local authorities. The figures of the General Board of Control for Scotland show an estimated cost of £50,456, as against £92,079 in the preceding year, on account of the decrease in contributions towards the expenses of local authorities in providing for mental defectives. In consequence of additional clerical assistance required for the taking of the census in 1931, the office of the Registrar-General for Scotland shows an estimated increase from £16,367 to £17,264.

Transference of Lunacy Administration.

A circular has been issued by the secretary of the General Board of Control for Scotland, addressed to clerks of parish councils and district boards of control, expressing its appreciation for the manner in which the officials of the parish councils, soon to be superseded by new local authorities under the Local Government (Scotland) Act, 1929, have conducted their duties under the Lunacy Acts. The circular points out that since the Lunacy (Scotland) Act of 1857 parish authorities and inspectors of poor have carried out onerous duties in the treatment of the insane. Special reference is made to the success of the Scottish system of boarding-out in private dwellings those of the chronically insane capable of enjoying the amenities of domestic life. This boarding-out system, which is peculiar to Scotland, is stated to have been admired by alienists from other countries. Parish councils are requested to exercise the greatest care in the preservation of such records as would be of permanent use and interest, and to hand over all books, records, and documents to the new authorities. The success of the Scottish system of lunacy treatment to-day is attributed to the work done by medical superintendents of asylums and certified institutions, and by the staffs of district boards, during the last seventy years.

Spring Graduation at Aberdeen.

At the spring graduation at Aberdeen University, held on March 26th in the Mitchell Hall of Marischal College under the presidency of Principal Sir George Adam Smith, the honorary degree of Doctor of Laws was conferred on Professor Ashley W. Mackintosh, who recently retired from the chair of medicine in Aberdeen University. Fifteen medical graduates received the degree of M.B., Ch.B. In the course of his address the Principal remarked that the number of medical students at Aberdeen had increased from 266 in the previous year to 292, including 24 women. In the past winter the total number of students was 1,332 (861 men and 471 women), compared with 1,342 in the previous year.

New Health Services.

A memorandum on the reorganization of health services in Edinburgh, drawn up by the town clerk and the city chamberlain, was considered on March 25th by the Public Health Committee of the Edinburgh Town Council. It was pointed out that in Section 27 of the 1929 Act there was an implication that the functions of the Public Health Department were no longer to be confined to duties connected with preventive medicine, but might be extended to include the subject of general hospitals, a provision of increasing importance in future. A comprehensive scheme is apparently foreshadowed which will deal, not merely with the utilization of properties and institutions transferred to the town council under the Act, but involve consideration of the provision made by voluntary institutions

for sick persons. As existing institutions in Edinburgh serve, not only the city, but wide areas outside it, such a scheme may extend to the whole of the south-east of Scotland. It will therefore be necessary to consult other bodies, including outside local authorities, and representations have already been made by a number of voluntary agencies in regard to the part which they might take in such a scheme. The memorandum states that a scheme of the magnitude foreshadowed will involve new capital expenditure on a very considerable scale, and it suggests that the question of a State contribution should be considered during its preparation. In view of the forthcoming appointment of a new medical officer of health it was decided that no action should be taken until he had had an opportunity of studying the scheme. Dr. William Robertson, medical officer of health for Edinburgh, said that the new medical officer of health would probably have to direct the operations of a larger administrative unit, which would come into existence after May 16th, and that he would probably require an experienced assistant to act as deputy medical officer of health for the city. He also pointed out that the taking over of the parish council hospitals would not provide extra accommodation for the population of the city immediately, because the parish council authorities had been finding considerable difficulty in providing for the indoor treatment of their own patients. He thought that as higher standards were being set up by the Act of 1929, a matter for early consideration would be the provision of adequate cubic and floor space for the treatment of the sick.

Edinburgh Health Exhibition.

The health and hygiene exhibition promoted by the Public Health Department of the City of Edinburgh closed on March 29th. There were over 130,000 visitors in the seventeen days. In addition, about 4,000 school children were admitted free of charge during the last week. The scope of the exhibition was outlined in the *British Medical Journal* for March 22nd (p. 563). The total receipts, which include £3,000 of entry money, are estimated to exceed the cost of the exhibition by a considerable amount. Numerous health lectures on such subjects as milk supply, smoke abatement, venereal diseases, and ultra-violet light were delivered to large audiences.

England and Wales.

Leeds General Infirmary and the University.

THE cordial relations that exist between the University and the General Infirmary at Leeds have been shown at various times by reciprocity in the adoption of regulations affecting their administrative departments—for instance, the rule that the pathologist of the Infirmary must also be the professor of pathology. Since this rule was made the professor has shared with the assistant physicians and with others in the now greatly developed pathological department of the University and Infirmary the duty of conducting the autopsies. With the same underlying intention of binding the two institutions together the following new rule was passed at the annual meeting of the Infirmary on March 25th: "The academic consulting staff shall consist, *ex officio*, of the holders of the following appointments in the University of Leeds—namely, the professorships of anatomy, physiology, mental diseases, public health, and experimental pathology, and the lectureships on pharmacology and infectious diseases." The holders of these offices have from time to time given help and advice to the honorary staff of the Infirmary, but it is felt, however, that they should have some definite status in the Infirmary so long as they retain their posts at the University. Members of the honorary staff retire and become consultants when they have acted on the full staff for twenty years, or when they have attained to the age of 60: this practice is to be modified somewhat in the case of those in charge of special departments. Professorships in the clinical subjects, such as medicine, surgery, and midwifery, are always held by the honorary officers of these departments, but not under any rule, but because they commend themselves as the most suitable men for the positions. The retiring age for professors at the University is 65, but by a recent rule the University has wisely decided that when an honorary officer joins the consulting staff, whether in consequence of age or of length of tenure of office, he shall also retire from his teaching post at the University. In the development of the School of Dentistry important decisions made some years ago have been definitely consummated. Reference was made in these columns, on March 24th, 1928 (p. 518), to the opening of the new Dental Hospital, which was built by funds provided jointly by the University, the Dental Board, the honorary dental staff, and indirectly by the Infirmary, which gave the site. It was decided that when the hospital was opened it should, in its capacity as a teaching centre, be under the control of the University authorities, and, as a clinical institution, should become the dental department of the General Infirmary. The staff—the present holders being confirmed in their posts—are to be elected in the same way, and under the same conditions as to length of service, as the other members of the honorary staff, and they are to have representation on the board of management.

King Edward VII Sanatorium, Midhurst.

As in previous years, particular attention is paid in the annual report of the King Edward VII Sanatorium, Midhurst, Sussex, to the results of treating pulmonary tuberculosis by the induction of pneumothorax. In last year's report the results since October, 1924, were discussed, and now in the twenty-third annual report, which covers the period ending July, 1929, the record is carried a stage further. Cases in which this treatment was employed are grouped as follows: Choice I—Cases with involvement of one lung; Choice II—Cases with excavation or much evident fibrosis of one lung, or with involvement of the better lung not beyond the upper third; and Choice III—Cases with bilateral disease, and those *in extremis*—for example, with haemoptysis. The Choice II cases bring out an interesting point in prognosis, for it appears that in this group, when it has proved impossible to induce pneumothorax, in consequence of failure to find a pleural space, the prognosis is better than when the procedure has to be abandoned on account of adhesions. This suggests that, while thoracoplasty must necessarily be kept in mind in all Choice II cases where the induction of pneumothorax fails, it is more particularly urgent when this failure is due to the presence of adhesions. As would be expected, a steady increase is reported in the work of the *x*-ray department, which is largely concerned in watching the pulmonary condition after the induction of artificial pneumothorax. Details are given of a case in which complete re-expansion was eventually obtained, and also of another case of closed haemoptic bronchiectasis; radiographical illustrations are supplied. The number of patients discharged from the sanatorium to date is 5,312, and the statistical department continues to follow their subsequent progress. Various tables of prognostic interest complete the report, which may be obtained from the medical superintendent, price 1s., post free.

London County Council and Midwives' Training.

Several of the committees of the London County Council have furnished observations to the main body on the report of the Departmental Committee on the training and employment of midwives, which was presided over by Sir Robert Bolam. It is stated that the system of inspection advocated by the Departmental Committee is one which is already administered by the Council—that is, inspection by medical inspectors with special training in Midwifery. The Midwives Acts Committee states that it appears to be impossible to formulate a practical maternity scheme or to arrive at any accurate figures of cost until the intentions of the Ministry of Health, so far as London is concerned, are known, and suggests that the Ministry should be asked to consult the Council before promoting the legislation necessary to give effect to the Departmental Committee's recommendations. The Finance Committee also finds the position too vague at present to define the financial commitments involved in carrying out the recommendations; with regard to the

proposal to have a preliminary examination by local health authorities for women who desire to enter the midwifery profession, the Finance Committee assumes that arrangements would be made so that there would be no charge against the education account. The housing difficulty alleged by the Departmental Committee is commented on by the Housing Committee of the Council, which states that on the Council's housing estates preference is given as tenants to a certain number of such persons as midwives and nurses whose services are essential to the well-being of the community.

London Returns of Lunacy.

The total number of insane persons for whose accommodation the London County Council was responsible on January 1st (excluding those accommodated by the Metropolitan Asylums Board and the Poor Law guardians) was 21,034, an increase of 163 on the year. Of this number, 20,679 were in the London County mental hospitals, and 19,244 of them were rate-aided patients. In addition, the Metropolitan Asylums Board's institutions accommodated 4,370 chronic harmless patients (excluding cases dealt with under the Mental Deficiency Acts); 115 insane persons were resident in Poor Law institutions, and 92 were boarded out by boards of guardians. During the year there has been a slackening of the average admission rate, and an increase in the average death and recovery rates. These factors have tended to relieve to a small extent the pressure on the available accommodation in the county mental hospitals, which, however, remains acute, especially on the male side. Next year's figures will be awaited with interest, for the present report is the last in which it will be necessary to discriminate between accommodation provided by the Council and by the Metropolitan Asylums Board.

Correspondence.

INDIAN MEDICAL DEGREES.

SIR,—My friend Sir Thomas Carey Evans has made a strong and eloquent protest against the recent action of the General Medical Council in its dealings with the Indian Universities. May I put the other side of the case? It will, I believe, be accepted on all sides that the Council is in no way actuated by hostility towards India. Quite the contrary; but it has a definite responsibility for the maintenance of a certain standard of education in the lands where its writ runs, and it cannot, without betraying its trust, allow that standard to be lowered.

As a professor for many years in the oldest of the Indian universities, I am (like Sir Thomas Carey Evans) zealous for their traditions. Moreover, I consider that in some respects we were ahead of and not behind British standards in our teaching. The difficulties met with were, I think, not insuperable, and indeed they may even yet be surmounted. I refrain from discussing these difficulties because I feel that the least said on both sides will be the soonest mended.

One point more: it is a mistake to suppose that the action of the General Medical Council will really affect medical interests in India to any very great extent. It is certainly detrimental to the small percentage of Indian medical students and medical men who are aiming either at practice elsewhere in the Empire, or at perfecting themselves in their knowledge of their profession by post-graduate work or by taking extra degrees here in Great Britain. I am not belittling the loss it is to these men, and I sincerely sympathize with them in it, but I think Sir Thomas is too pessimistic in his view of the harm that this action of the General Medical Council has done or may do to the cause of Western medicine in India.

India has much to lose by cutting herself adrift from Great Britain in the matter of medical education, and it is sincerely to be hoped by every well-wisher of that country that no effort may be spared on both sides to overcome the present difficulties. In this I am wholly with Sir Thomas Carey Evans.—I am, etc.,

R. H. ELLIOT,
Lieutenant-Colonel, I.M.S. (ret.).

London, W.1, April 1st.

SIR,—The decision of the Executive Committee of the General Medical Council to recommend that the degrees of Indian universities in medicine and surgery be no longer registrable in Great Britain was not unexpected in India, and cannot, honestly, be said to be unjust. In face of the attitude maintained by the Indian politician, into whose hands, as a "transferred subject," medicine has passed, recognition on former terms was obviously becoming impossible. At the same time, it must be fully recognized that unless authorities in England take suitable action, grave injustice may be done to the better type of Indian graduate who comes to Europe for post-graduate instruction. Whether the degrees of her universities (some of which are very good indeed and some not so good) are registrable or not, the fact remains that India is a very important part of the Empire, and that her better and abler graduates look upon the United Kingdom as their natural headquarters for higher studies.

In discussing Indian educational problems with teaching authorities in England I have been told frequently that English medical schools do not want Indian undergraduates, as these ought to obtain their pre-graduate training in India, where there are ample facilities, but that Indians working for higher degrees and diplomas are very welcome. Medical schools in Great Britain, however, are very unwilling to accept for post-graduate work men whose degrees are not registrable in Great Britain, and the general result of the recent recommendation might be the closing of England to Indian graduates. The alternatives facing the Indian medical graduate are, either to go to England and to take a registrable qualification on arrival there, or to go to Germany or America for his post-graduate work. A distinguished American teacher said to me only a few days ago: "Your boys need have no grouch. Send them over to us. We shall be glad to have them." The tendency for British overseas subjects to go to America and the Continent for higher studies is to be deplored, and it is advisable, I think, to point out to Indian graduates, many of whom are members of the British Medical Association, how they may best and most rapidly obtain a registrable qualification after landing in the United Kingdom. For these registrable qualifications they must, of course, look to the great licensing corporations of England, Scotland, and Ireland. It is, I believe, the custom for these bodies to permit graduates of foreign universities, including Indian, to enter for their examinations immediately after arrival in England on presentation of certificates of courses of instruction—that is, their courses of instruction are recognized, but not their examinations. In certain cases when the licensing corporations are fully satisfied with regard to the adequacy of the first and second examinations of these universities, exemption is given for examination in anatomy, physiology, pharmacology, and materia medica, and, in some cases, from pathology and bacteriology. This is frequently done in the case of Indian graduates who wish to take the English Conjoint diploma, as it is generally admitted, even by G.M.C. inspectors, that teaching in these subjects is very satisfactory.

I suggest that the licensing corporations set forth immediately the terms on which they are prepared to admit graduates of Indian universities to their examinations. May I, in general terms, suggest the following:

"Provided that a graduate in medicine and surgery of an Indian university produces certificates covering all the requirements of the G.M.C.—including three years attendance on the practice of a general teaching hospital and the requisite experience in midwifery—he may be admitted to the final examination of the corporation concerned.

I suggest, further, that where a graduate has passed a degree examination in pathology and bacteriology, including practical work no further examination in these subjects be required.

The above suggestions are in strict accord with what I know to be the present practice of the English Conjoint Board, and the fact that the results obtained by Indian graduates in the examinations of that body are almost uniformly good fully justifies them. By making their exact requirements and examination facilities more widely known, the medical corporations of Great Britain will be doing a service to the Empire at a time when relations

with India are somewhat strained, and at the same time will guarantee that Indian graduates in Britain are adequately qualified to undertake higher studies. Of course, it must be distinctly understood that these remarks refer strictly to graduates of universities, and not to the host of diplomates of short-course schools, State faculties, and of the numerous other easy channels through which the medical profession may be entered in India.—I am, etc.,

March 17th. MEDIATOR.

ANTIMALARIA MEASURES.

SIR,—The letter of Sir Malcolm Watson in your issue of February 8th shows that the fundamental difference of outlook between the modern school of malariologists, as represented by Colonel James, and the old school, to which Sir Malcolm Watson belongs, is still as conspicuous as ever. I have no wish to revive an ancient controversy or to introduce personalities, but as this difference of outlook has exercised and is still exercising a baneful influence upon the prosecution of antimalaria measures it is necessary that the position should be frankly stated and the issue clearly defined.

As the result of the discovery some thirty years ago of the role of the mosquito in the transmission of the malaria parasite, malariologists not unnaturally assumed that they had discovered the key to the solution of the malaria problem. They stated, in effect, that if all mosquitos could be destroyed, malaria would be completely abolished. Nothing has happened or is likely to happen to upset the accuracy of this inference, but when it came to translating theory into practice it soon became apparent that great, if not insuperable, difficulties, administrative and financial, prevented any appreciable progress, except in specially favourable circumstances, being achieved along these lines.

In these circumstances malariologists—who may now be termed the modern school—came to the conclusion that the prosecution of further scientific research was necessary in order to discover whether new and more effective weapons might not be fashioned to supplement or to replace antimosquito and antilarva measures in those numerous instances in which malaria control by measures of this nature alone was impracticable. This view failed to commend itself to the old school, who stoutly maintained that the failure to achieve success by antimosquito, and more particularly antilarva, measures was due to apathy or incompetence, and they further held that all it was necessary to know about malaria was known—and that, as Sir Malcolm Watson stated before the Royal Society of Tropical Medicine and Hygiene in 1924, the time was gone "when patient and searching investigation and careful and continuous experiments" could serve any useful purpose in connexion with malaria control. Sir Malcolm Watson has, I believe, to some extent modified his views in this matter, but a perusal of his letter under reply shows that he has not materially changed his outlook. For him antilarva measures are still the sovereign remedy, quinine is useless, and social and economic conditions are of no importance. None of these ex cathedra statements receive support from modern research, and hence the wide divergence of view between the practical sanitarians and the scientific malariologists.

We thus have two schools—the one completely satisfied with the state of scientific knowledge attained some thirty years ago, and the other holding that as malaria constitutes an age-old problem of great complexity, its solution on a w[illegible] public basis is most likely to be achieved in the light of accurate scientific knowledge of its endemiology. The holders of [illegible] This difference of outlook would not be help and advice it not for the fact that the old school of it is felt, however endeavoured to establish their view-status in the Infirm[illegible] unsubstantiated claims regarding their of the University, their declamations, mainly in the lay and become consultant[illegible] pidity and ignorance of those who staff for twenty years, them.

age of 60: this practice once when I say that the harm the case of those in charg[illegible] ists of the old school of malario-fessorships in the clinical lay administrator says, "As we surgery, and midwifery, are hority that there is no more officers of these departments the interest of the taxpayer, further expenditure upon research." Can you blame him? He also says, "As we are likewise told, by the same high authority, that the only way to control malaria is to destroy all mosquitos, and we know, as practical administrators, that in our province the men, money, and material necessary for this purpose are not available, therefore, as practical men, we must conclude that medical science can do nothing for us, and that malaria must, in consequence, be regarded as an irremediable evil." We thus arrive at the logically illogical position that one of the chief apostles of malaria control has unwittingly become one of the chief obstacles to progress in a matter of vital importance to the health and welfare of the Empire.—I am, etc.,

Lahore, March 17th. C. A. GILL, Lieutenant-Colonel, I.M.S.

A DANGER FROM PARALDEHYDE.

SIR,—Not long ago I had occasion to order a dose of paraldehyde to be given to a young woman under my care in hospital. It was necessary to choose the rectal route, and half an ounce was injected along with three or four times its volume of water. The patient complained of great pain after the injection, and, later, considerable sloughing of the rectal mucous membrane took place. On inquiry it was found that the paraldehyde used had been largely converted into glacial acetic acid. I understand that this takes place according to the equation

$$CH_3CHO+O = CH_3COOH,$$

and as no water is formed in the reaction the product is glacial acetic acid, and that once a trace of this has been formed it acts as a catalyst, which may finally lead to the conversion of 75 per cent. of the paraldehyde into acid. If the paraldehyde is kept in an airtight bottle there is no risk of such a conversion, but if the bottle is not airtight oxidation will ultimately take place, with the above results.

I confess I had not known of this danger till the above unfortunate occurrence, and I thought that it might be worth while drawing attention to it.—I am, etc.,

London, W., April 7th. ROBERT HUTCHISON.

ANAESTHETICS IN MIDWIFERY.

SIR,—May I be allowed to analyse some of the criticisms of my letter of March 1st (p. 414) upon the above subject?

The controversy really turns upon the question whether a normal, straightforward childbirth is to be regarded as a physiological or as a pathological act. I hold that such a labour is purely physiological, and that by administering an anaesthetic to every case (except possibly for a short time towards the end) the risk arises of converting such a physiological case into a pathological one. That there is such a risk in a straightforward case of slowing down and sometimes suspending the normal uterine contractions, and thereby enhancing the possibility of ultimate instrumental delivery, cannot be denied; by eliminating the assistance of the patient's will-power, increasing the tendency to post-partum haemorrhage, and possibly having a deleterious effect upon the child, the administration of prolonged anaesthesia in every case would tend to raise rather than lower the maternal mortality.

Mrs. Baldwin suggests that the words "when necessary" in my letter "reveal the weakness" of my case, but I contend that they show rather the very essence of its strength, for surely it would be unjustifiable to administer an anaesthetic when it was not necessary. I cannot agree with the suggested practice of "giving an anaesthetic in every case in order to avoid shock," since it is common experience that a perfectly normal labour is wonderfully free from shock compared with one in which labour has been prolonged by the giving of an unnecessary anaesthetic. Just as for the poor, so also for the rich, the decision as to when an anaesthetic should be given must be left entirely to the discretion of the medical attendant. Mr. d'Avigdor is apparently not aware of the facts when he suggests that "it is obviously impossible for the midwife, when dealing with a case single-handed, to administer the anaesthetic and effect the delivery," or he would have known that any such attempt on her part would be an infringement of stringent rules. Dr. Bodman places the patho-

logical gall-stone and renal colic in the same category with the pain caused by natural uterine contractions fulfilling a normal physiological role!

If the fund is merely intended to assist those maternity hospitals which cannot afford to appoint an anaesthetist to assist with abnormal cases, well and good, but I adhere to my original contention that for any difficulties among the poor the Midwives Act provides ample facilities when necessary, and I deprecate the assumption that, while the rich can have anaesthetics on payment, the poor cannot have them because they are poor, with the veiled implication that doctors only do their duty in an atmosphere of fees. The question of financial status does not affect the situation if anaesthesia is the right treatment.—I am, etc.,

Lichfield, March 29th. F. M. ROWLAND.

LIPIODOL INJECTION INTO THE BRONCHI.

SIR,—Dr. Arnott Dickson, in his article on pulmonary tuberculosis (*Journal*, March 1st, p. 376), mentions two methods for the injection of lipiodol. He rightly discards bronchoscopy, but his own method of crico-thyroid puncture seems to me to be inferior to that employed by Dr. Haslinger of the Hajek Clinic, Vienna. As it is possible that this method is not generally known, a brief description of it may be of interest.

(1) The pharynx and larynx of the patient are first completely anaesthetized with a 20 per cent. solution of cocaine to which an equal volume of adrenaline has been added. (2) Using a laryngeal mirror and syringe a small quantity of diluted cocaine and adrenaline solution is injected into the trachea, and the patient is immediately tilted towards the side which it is proposed to examine. (3) A soft rubber catheter is passed through the nose into the larynx and well down the trachea. The protruding end of the catheter is then fixed to the ala of the nose with a piece of adhesive strapping. The position of the catheter is easily verified by mirror inspection, and by asking the patient to phonate. (4) The patient can now walk to the x-ray department, where it will be found that the bronchi concerned can be gently filled with the lipiodol under the screen, and the necessary films taken.

This method, I am convinced, will be found relatively agreeable to the patient and conducive to the deliberate examination that is so essential to success.—I am, etc.,

Aleppo, March 18th. E. H. R. ALTOUNYAN.

DIAGNOSIS OF PULMONARY TUBERCULOSIS.

SIR,—In connexion with Dr. Arnott Dickson's very helpful article on this subject, I should like to point out the great value of "single finger" or "hooked finger" percussion. By this I mean that the middle finger of the left hand is flexed at an acute angle at the proximal interphalangeal joint, the distal interphalangeal joint being hyperextended, and the pad of the finger applied to the area to be percussed. Percussion is then made on the flexed joint with the index or middle finger of the right hand. Light percussion in this manner in the intercostal spaces is extraordinarily useful in detecting slight degrees of dullness, especially in children. This method is mentioned both in Fishberg's *Pulmonary Tuberculosis* and in Hotder and Gow's *Essentials of Medical Diagnosis*, but its advantages do not seem to be generally appreciated.—I am, etc.,

W. E. ROPER SAUNDERS, M.R.C.S., L.R.C.P., D.P.H.

Cheyne-Street, March 22nd.

THE SIGMOIDOSCOPE IN COLITIS.

SIR,—I have read with interest the letter by Dr. A. G. Biggam (March 8th, p. 465), but cannot help expressing my surprise at his recommendation of the employment of the sigmoidoscope as an "essential procedure" in the routine examination of colitis. Such a procedure may be tolerated, and in a sense justifiable, in a native hospital, where a majority of the patients suffer from bilharzia, but to use such an instrument for the diagnosis of bacillary dysentery—concerning the nature of which no serious difficulty should at any time arise—appears to me to be unthinkable. If such methods of diagnosis were attempted in private practice the instrument would very soon get rusty for want of use, but fortunately there is little danger of its extended use, as the majority of physicians must agree with Dr. *Tidy, who not only has pointed out its dangers*, but also the fact that hitherto no information has been obtained that would alter the line of treatment based on other methods of examination. *It is obvious that a patient* nowadays must be very robust to be able to withstand the mechanical procedures considered necessary to establish a diagnosis.—I am, etc.,

Cairo, March 19th. T. GERALD GARRY, M.D.

MICRO-ORGANISMS IN PSITTACOSIS.

SIR,—May I appeal in your *Journal* for very thin, air-dried films of blood from cases of psittacosis in its early stage, or very thin films made from any of the organs, especially the spleen, in cases in which a section has been made?

During some recent work on blood films of this disease, kindly sent me by Dr. G. T. Western of the inoculation department of the London Hospital, I have been able to find, in very small numbers, some minute organisms of a diplococcoid form. Coccoid and diplococcoid bodies measuring about 0.3 to 0.4 μ in diameter, staining usually a reddish colour with Giemsa, are present in the blood of three human cases, and also in the blood and spleen of an inoculated hen and mouse. In all of these cases a short, thin bacillus measuring about 2 μ has also been detected, but only in very small numbers after a prolonged search. These, I think, are probably secondary invaders.

Films made from the spleen of an inoculated mouse show not only scattered minute cocci and paired cocci in comparatively large numbers, but also very definite and distinctive groups or small clusters of these organisms. These have a very definite appearance on account of their staining reaction with Giemsa and their remarkably sharp *outline*, and can be readily distinguished from other granules present. The clusters are usually free, but are sometimes found in the protoplasm of enlarged endothelial cells.

A paper giving full description and measurements will shortly appear, together with photomicrographs of the small masses of coccoid bodies as found in the spleen. The search for either of these forms in the blood of human cases is very trying, but it is possible that they might be present in greater numbers in the early stage of the disease, and it is for this reason that I have ventured to make my request.—I am, etc.,

Poole Road, Bournemouth, April 3rd. A. C. COLES.

Obituary.

JOHN YULE MACKAY, M.D., LL.D.,

Principal and formerly Professor of Anatomy, University College, Dundee.

IN our last issue we had to announce, with regret, the death of Principal J. Yule Mackay, the well-known anatomist, who for many years was intimately associated with the educational business of the General Medical Council. When he went to Dundee thirty-six years ago, University College had not yet been united to the University of St. Andrews, and he played a considerable part in the union of the two bodies.

John Yule Mackay, son of the minister of Inverkeithing, was born in the Manse there on January 13th, 1860. Receiving his early education in Glasgow Academy he passed to the University to study medicine, and in 1881 graduated M.B., C.M., with commendation, and in 1885 became M.D. Appointed assistant to Professor Cleland, and later lecturer in embryology, he spent twelve years in teaching and research before his appointment in 1894 to the chair of anatomy at University College, Dundee, in succession to Professor A. M. Paterson. His report on "The development of the branchial arches in birds" was printed in the *Philosophical Transactions* in 1888. His appointment as principal of University College, Dundee, in 1897, and in January, 1902, as representative of the University of St. Andrews on the General Medical Council, in which he became chairman of the Education Committee, imposed a burden of administrative work that left no

further time for research. In 1920 he was made a member of the Scottish Consultative Council on Medical and Allied Services. Failing health caused him, in 1925, to resign the professorship of anatomy, but the failure continued, and on March 30th he died, after a week of terminal illness.

In St. Enoch's Church, where Mackay had long been an elder, a funeral service was conducted by the Very Rev. Principal Galloway, and the interment was made in the cemetery at Barnhill. Principal Mackay was unmarried.

For the following appreciation we are indebted to Mr. JOHN TAYLOR of Dundee.

The death of John Yule Mackay removes from our midst one who in a rare degree possessed the warmest affection of all his students. Few university principals have been so popular. As professor of anatomy his geniality and kindliness had a profound influence on all those who were privileged to come into the closer personal contact afforded by his practical classes. Prior to coming to University College, Dundee, in 1894, Yule Mackay had endeared himself to all Glasgow medical students, and at this time his fame as a brilliant anatomist was world-wide. His embryological work, in particular that dealing with the development of the branchial arches, was characterized by an enormous amount of accurate detail. During those twelve years when he was working under Cleland at Glasgow he elucidated many obscure points relating to muscle and the peripheral nerves. But his whole time was not spent in research, for was he not the greatest of all Cleland's demonstrators? Yet he nearly chose botany for a career. He left many friends behind him in Glasgow, quite apart from his medical friends. Both the University Union there and the Students' Representative Council owed much to his zealous endeavours. In 1896, two years after leaving Glasgow, Mackay, along with his old chief Cleland, published the well-known *Textbook of Human Anatomy*, and some months later a *Directory of Dissection* appeared. No other textbooks of anatomy have the same conciseness, clarity, and grace of diction. We have no record of any other publication after his election to the chair of anatomy at Dundee. The only reason to account for this was that he had to give to administrative work any time not spent in teaching, for, after a year of service *ad interim*, he was appointed principal of University College, Dundee, in 1897. Stormy days lay ahead of him then, and he devoted himself to the question of the incorporation of University College in the University of St. Andrews. How often would he vividly recall the difficulties of those earlier days! An amicable agreement being reached in 1897 Mackay set his mind to developing the medical school. His anatomical department, extemporized from an engineer's old workshop, served him until, in 1904, a completely equipped medical school in Small's Wynd was opened. After this had been accomplished more students came to Dundee to study medicine, and many more came to study embryology under Mackay. The individual attention then given to the students afforded many advantages over the methods in other schools of to-day. But his administrative gifts were not confined

[illegible] twenty-eight years he represented [illegible] Medical Council, and as [illegible]ittee Mackay drafted and [illegible]edical instruction.

[illegible] lecturer, always [illegible] in a clear [illegible]ity were [illegible] day

[illegible] 13th, 1860. [illegible] Academy he [illegible] and in 1881 [illegible] and in 1885 [illegible] professor Cleland, [illegible] twelve years [illegible]atment in 1894 [illegible] College, Dundee, [illegible] on his report on [illegible]es in birds," was [illegible]s in 1888. His [illegible] College, Dundee, [illegible]ntative of the [illegible]dical Council, [illegible] Committee, [illegible]at left no

[illegible] played. As his senior demonstrator in anatomy until he retired in 1925 I have none but the most pleasant of memories. No one could have wished for a better or more courteous chief—a more genial senior colleague and friend.

THE LATE DR. P. S. HICHENS.

WE have received the following tributes from two former colleagues, supplementing the notes printed in our issue of April 5th:

D. G. G. writes: After he had left Northampton and gone to live in Guernsey, his friends had seen little of him. A few months ago he came back on a visit sadly changed by a long illness; he felt his invalid condition very keenly, and one cannot help assuming that, when death came [illegible] him, it was not altogether unwelcome. He came to Northampton on his appointment as physician to the General Hospital in 1901, having already gained distinction at Oxford and at St. Thomas's. A man such as he was could not fail to achieve success as a consultant, and, when he retired from the staff in 1924, he had a great reputation throughout the county as a physician. A public presentation was then made to him, and a portrait, painted by a local artist, was hung in the board-room of the hospital to mark [illegible] services to that institution. Hichens was a man of wide [illegible]neral culture: he had a sound professional knowledge, and, [illegible], and had withal a fine sympathy. To everyone [illegible] he came in contact he was courteous and [illegible] the paraldehyde aloof in his manner perhaps—sometimes rather [illegible] glacial acetic acid rather older than his years, possibly from [illegible] according to the old diction and choice of words, yet to all friendship was warm and gracious. In [illegible] $CHO+O = CH_3COOH$, nts and with members of our profession he [illegible]ed in the reaction of all. He had many activities. As a young [illegible] once a trace[illegible]n under treatment at Nordrach, and he worked very [illegible] for the provision of open-air treatment for tuberculous [illegible]nts. The institution of the sanatorium at Creaton owed [illegible] paralo[illegible] at deal to his efforts, and in it he took a legitimate pride. [illegible]rtight [illegible] relaxations were more artistic than athletic. He read widely [illegible] enjoyed music and painting, in both of which arts he was a good amateur performer. Outside his profession, however, his chief interest was in the Church. Brought up in a cathedral city—his father was Dean of Canterbury—he seemed in many ways as suited for the Church as for the profession of his choice. All his life was imbued with a religious outlook. He worked very hard in Church matters, was churchwarden of the Northampton Parish Church, and at one time a member of Convocation. He often addressed public meetings throughout the Peterborough diocese. While he had strong feelings in controversial matters, he always spoke his mind with tolerance, leaving his hearers with no doubt as to his views, but with no feelings of rancour. At the outbreak of the war he was a Major R.A.M.C.T.A., attached to the 1st Eastern General Hospital at Cambridge, and, although he was at that time above the age for foreign service and in some ways unfitted for it, he found means to be sent to France. He was at first in command of a casualty clearing station and was with the Fifth Army when disaster overtook it in 1918; after this he commanded a general hospital at Calais. His reserved manner made the life of the army more difficult for him than for most, yet he made many friends there, and his interest and zeal in his work were remarkable. He has gone from us and, look where we may, there is no one that can quite fill the same place that he did. He leaves a widow, a son, and a married daughter.

P. N. B. O. writes: I remember Hichens jokingly saying years ago that any obituary notice of himself would describe him as a physician "of the old school." This self-appreciation is in part true, if it means that he was a man of wide reading who had the English classics at his fingertips, a musician who had a sound knowledge of music and was himself a pianist above the average, and an amateur artist with no little skill with his paint-brush. Add to these that he was a true and thoughtful appraiser of anything that was beautiful in scenery, pictures, furniture, or china. What I think he meant to imply himself was that he was very conservative by nature, and that, while he would be among the first to make use of them, he rather regretted the introduction of new methods of diagnosis of treatment. Again, I always thought that he appeared [illegible]rent that the claims of increasing practice should not [illegible]isure for the enjoyment of his hobbies. He hated [illegible] that he was allowing himself to be too absorbed in [illegible]ssional work, of which he entirely disliked the com[illegible] and business side, to the exclusion of his many other [illegible]. That he was a very sound and most painstaking [illegible]an must be obvious from his record, and anything [illegible] have written in this short note must not be taken to [illegible]ct from this true estimate of his work. Rather do I [illegible] to insist that he was something more than a good doctor;

...ES GRIFFIN BEASLEY, who died on March 25th ... wley Regis, near Birmingham, at the age of 84, ... ae first medical officer of health to the Rowley Regis ... n District Council, a post which he held for nearly ... years. He was also police surgeon to the local ... -ion, medical officer to the education authority, and ... Law and vaccination officer for the Dudley Union. Beasley, who qualified L.R.C.P.Ed., L.R.F.P.S.Glas. ... 868, celebrated his golden wedding in 1920, and retired ... n a large practice in the following year, owing to ... ing sight. He was for many years a member of the ... tish Medical Association.

...Dr. EDWARD O'REILLY SOMERS, *who died recently*, was ... son of a former professor of materia medica at Owens ... lege, Manchester, and was born in 1863. He received ... medical education in Manchester, whence he obtained ... diploma M.R.C.S. in 1884 and the L.R.C.P. three ... rs later. After holding resident appointments at the ...nchester Royal Infirmary and the Salford Royal Hos... al, he began to practise in Pendleton, continuing there ... il his death. Apart from his professional duties, he ...k a keen interest in the public life of Salford, where ... was a magistrate and president of the Civic League ... Health. He was an ardent politician, and at the last ...eneral Election was chairman of the Liberal Association ... one of the Salford divisions. He was also president of ...he Playgoers' Club, the Manchester Shakespeare Society, ...nd the Bolton Shakespeare Society; he delivered numerous ...ddresses of great value on stage characters in *Hamlet* ...nd *Othello*, dealing with them from the medical stand... point and bringing out the psychological elements in these ...and other plays. In addition to his enthusiasm for Shake... spearean studies, one of the leading interests in his life ...was affection for French literature and the French people. ...He was a member of the Alliance Française, and an officer ...f the Legion of Honour; he took an active part in bring...ing to Manchester each year the players of the Comédie ...Française. His genial character and the wide range of ...his interests won for him many warm friends. He was ...a keen member of the Salford Division of the British ...Medical Association and a regular attendant at its meet...ings; he was almost invariably present at the Annual ...Meetings of the Association, and had proposed to make ...the journey to Winnipeg.

Dr. JOHN LANDSBOROUGH of Tighnabruaich, who died on March 20th, received his medical education at Edinburgh, where he graduated M.B., C.M. in 1895. After holding a resident appointment in the County Hospital of Ayr, and *spending some years in general practice in England*, he settled at Tighnabruaich, Kyles of Bute, about twenty years ago, being appointed parochial medical officer, and deputy medical officer of health for Kilfinan. He was a member of the British Medical Association. A colleague writes: Dr. Landsborough's practice was far-flung, embracing a long coast-line, from Loch Striven along the Kyles to well up Loch Fyne and Glendaruel. This involved the necessity of long journeys over dangerous roads, and of sailings, often by night, in stormy weather, but this all came to him as only "in the day's work." As he loved his work of healing, so these good Highland folk loved him, for he neither considered self nor selfish interests, his one thought being to "mind" his flock. The work was hard, the financial returns small, but he was never known to whine or grumble. He would only smile at the mention of money. His clinical skill and acumen were remarkable, and he ever had some medical problem or other in his thoughts, until he found its proper solution. He was undoubtedly, for these twenty years, an integral part of the character, life, and landscape of that rugged but picturesque part of Argyllshire. A man of culture and refinement, he was ever philosophical in his outlook on life, as might be expected in one who was at the same time a true son of Hippocrates and of Isaac Walton. Many years will pass before his memory fades among the men, women, and children of Cowal, but especially to the mothers and the bairns will his passing be almost irreparable, for he was cast in the same mould as the doctor in Ian Maclaren's *Beside the Bonnie Brier Bush*.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE Housing Bill and the Housing (Scotland) Bill were both set down for second reading in the House of Commons this week, and the financial resolutions relative to these bills also came before the House. The closing stages of the Unemployment Insurance Bill were taken, and on April 11th the Mental Treatment Bill was down for report and third reading.

The Parliamentary Medical Committee and the Parliamentary Science Committee, at a joint meeting on April 8th, were addressed by Mr. Coste, chemist to the London County Council, on sewage disposal. On the same day the Parliamentary Medical Committee, in view of the coming Budget, briefly discussed the tax allowances for doctors' motor cars.

Mental Treatment Bill.

COMMITTEE STAGE CONCLUDED.

On April 3rd consideration of the Mental Treatment Bill was completed by a Standing Committee of the House of Commons.

The second schedule of the bill enumerates and describes powers under the Lunacy Acts, 1890 and 1891, to be transferred to the Board of Control. These include power to determine whether a hospital desiring registration should be registered, and to approve agreement by local authorities to unite for provision of mental hospital accommodation. Miss LAWRENCE said the matters of administration specified in the schedule were now dealt with by the Board of Control first and the Ministry of Health after. It was proposed to transfer them to the Board under the general oversight of the Ministry. Dr. VERNON DAVIES asked if the fact that the bill had to be read in conjunction with the Lunacy Act would not create difficulties for the medical profession. Miss LAWRENCE replied that the Lunacy Act itself required co-ordination and revision. She admitted that the present small amending bill had the vice of legislating by reference. Mr. GREENWOOD said the transfer of the powers mentioned in the schedule had been recommended by the Board of Control. The Board would always act in consultation with the local authorities.

An amendment by Mr. MORRIS-JONES was withdrawn, and the schedule was added to the bill.

The third schedule enumerates matters with respect to which rules may be made by the Board of Control. After the committee had made consequential amendments, Mr. GREENWOOD moved to add to the list the following matters:

"4. Applying to temporary patients received under Section 5 of this Act, subject to such modifications and adaptations, if any, as appear to the Board to be necessary or convenient, the following provisions of the principal Act, that is to say, Section 40 (which regulates the use of mechanical means of restraint), Section 41 (which relates to the letters of patients), Section 42 (which relates to the posting of notices), Section 47 (which relates to the visits of friends), Section 49 (which empowers the Board of Control to order the examination of a patient by two medical practitioners), Section 50 (which relates to inquiries as to property), Section 51 (which relates to searches in the records of the Board of Control), and Section 85 (which provides for the retaking of patients who have escaped).

"5. Modifying and adapting, in relation to institutions maintained by local authorities not being mental hospitals, the provisions of Sections 275 to 278 of the principal Act (which relate to the making of general rules and regulations and the appointment and duties of certain officers)."

Mr. Greenwood said the first paragraph had been inserted as a result of representations that the provisions set out in it from the principal Act and which now applied to certified patients only should be applied, with the necessary adaptations, to temporary patients received under Clause 5. It might be that these precautions were not necessary in many cases. The words here were being inserted as an additional safeguard to the patient. Para. 5 was consequential on an amendment made in Clause 6 (5) of the bill.

Dr. VERNON DAVIES was not prepared to agree entirely with the contention that these words were an additional safeguard to the patient. They would put temporary patients under all the regulations and restrictions of certified patients. He thought the provision regulating the use of mechanical restraint should be in the bill. That which related to the letters of patients did not appeal to him in the same way. The provision which empowered the Board of Control to order the examination of the patient by two medical practitioners was important. It might be applied in the case of a temporary patient who was kept on as such but who should be certified. The authorities would be acting illegally in keeping a definitely certifiable patient as a temporary one. The committee should squarely face the fact that the only difference between a temporary patient and a certified lunatic was that the former had a hope of recovery, and consequently was not certified.

Mr. GREENWOOD said he could not accept that view. Section 49, which provided for a patient to be examined, did not necessarily

mean certification. The Commissioners might order the patient to be discharged. Without the words he proposed the safeguards for the temporary patient would be less than for certified persons.

Dr. MORRIS-JONES agreed that, though the amendment appeared formidable, it was needed in the interest of the patient.

The committee agreed to the amendment and to the schedule, as also to the fourth schedule—"Repeals"—with consequential amendments.

This finished the work of the committee, and the bill was reported to the House. Subsequently its report and third reading were set down for April 11th.

The Army Estimates.

On the motion that the House of Commons should go into committee on the Army Estimates, on March 24th, Mr. SHAW expressed his regret that there was a shortage of medical men who were prepared to undertake a career in the Army. Although the physical tests had been scaled down, the Army as a whole was still under establishment. Out of a total of 72,268 recruits who presented themselves for enlistment in 1929, 23,131, or 39 per cent., were accepted, and 61 out of 100 were rejected even on the standards now insisted on. Of the rejections 91 per cent. were on physical and medical grounds. The lower dental standard, which had previously been tried in Scotland, had been extended to England and Northern Ireland, and by that means an additional 2,384 recruits were enlisted for all arms. In December, 1928, the height standard for the infantry of the line was lowered to 5 ft. 2 in., and 3,219 recruits were accepted who would otherwise have been lost to the Service. Without them, the intake for 1929 would have been only 24,840. The physical condition of the young men who presented themselves was a serious matter. He was asking his staff to investigate how far that physical deterioration was due to industrial depression, or to other causes.

Dr. FREMANTLE called attention to the fact that the medical service of the Territorial Force had been cut down to a point at which it would be difficult to expand it in time of active service. He said that the same thing had happened before the Crimean war and the South African war. In those cases, when war broke out the arrangements had collapsed, and then the Director-General of the Army Medical Services had been blamed, when the blame had really rested with the War Office and Parliament. In 1902, after the South African war, an Army Medical Service Departmental Committee went into the matter thoroughly. He (Dr. Fremantle) knew a good deal about it, because he was the assistant secretary to the committee. The committee was presided over by the then Secretary of State for War. Practically every reform which was suggested was introduced, with the result that there was an extraordinary improvement in the Army Medical Services right up to the late war. Adequate attention, however, had not been paid to the Territorial Medical Service. This matter should be taken into account, and he hoped that every Territorial field ambulance would be extended to three sections. One service after another was complaining of the shortage of medical officers. The Secretary of State for War had stated that there was still a regrettable shortage of candidates for the Regular Army, and that the supplementary officers and the Officers' Reserve were much below establishment. Only four years ago Sir Richard Luce, who was then a member for Derby, speaking on this subject, remarked that the establishment of medical officers was 900, and that the strength was only 794, a shortage of 106. The present establishment was 589, and the strength only 533. The British Medical Association felt that the War Office had treated it fairly in accepting its suggestions, but still the Government had not the men coming into the Service. Parliament had to consider, when trying to attract young students or medical men into the Service, that these men were looking to the future. A medical man came out of the Army, say, at 45 years of age, with a pension of £1 a day. What was he to do if he had a wife and children, and little chance of getting other work? Sufficient attention was not paid to the outlets from the Service. The Government was a large employer of medical men, and had many services in its different departments which required senior men, who often had to be brought in from outside. Under the Local Government Act passed last year the municipalities would need other senior medical officers. The Government had great influence and the power of the purse. If it would use its influence in helping in the selection of suitable candidates as medical officers of health it would give a considerable chance to officers who, having served their time in the Army, would thus be able to get a start in civil life. So long as medical services served on terms equal to officers of the combatant services, young men of enterprise, who liked to see the world, would be attracted, and they would come in for five, seven, or ten years. These young men, however, must be given an opening in civil life afterwards. The War Office ought not to rely on keeping these men on after their time had expired to carry on the work which ought to be done by younger men. These men became discontented. Dr. Fremantle recalled that in 1904, when the Army Council was set up, the one proposal of the Departmental Committee which was not accepted was that the Director-General of the Army Medical Services should have a seat on the Army Council and be responsible, as he was not at present for the whole of the equipment and organization of the medical service. That was a technical question, which could not be dealt with on this occasion. In essence that idea remained the fundamental belief of all successive Directors-General of the Army Medical Services. He hoped the Secretary for War would go into the matter again, because it had a considerable bearing on the efficiency of the medical service. That efficiency was vital to the future of the Army, for whatever purpose the Army was required.

Mr. SHAW assured Dr. Fremantle that he did not look on the matter with equanimity. Whereas the authorized establishment of the R.A.M.C. was 846 officers, there was a deficiency of 111, so that where they needed 7 doctors, roughly they had 6. He personally was willing to take the matter back and have it reconsidered by the Army Council in every way.

The Civil Estimates.

On the Civil Estimates, in the House of Commons on March 31st, Sir KINGSLEY WOOD raised the question of maternity and child welfare. He said that so far as infantile mortality was concerned the country could congratulate itself on the position, but the state of the maternal mortality rate was nothing like so encouraging, and provoked a considerable amount of disquiet. A great improvement in the carrying on of the work in connexion with these two matters would be obtained by transferring it from the smaller local authorities to the larger bodies like the county councils. With larger authorities they had the school medical service. If they could co-ordinate the work in connexion with maternity and child welfare, and link it up with the larger authorities, they would place that work on a level with the school medical service of the local authority. That would be a very great gain, which would be lost if they relied on the smaller local authority. They would practically have continuity in the supervision of the health of the children from birth up to the school-leaving age. He hoped the representative of the Ministry of Health would assure the House that the Ministry was going to assist in every way it possibly could the work both of the local authorities and of the voluntary agencies.

Miss LAWRENCE, in reply, said that it was stated that special money was required for infant welfare. That was one of the services which had to be taken away from proportional expenditure and had been placed under the block grant, which was stereotyped for a term of years. They could not give any more money for that purpose unless they tore up the Act of 1929. The average figure of maternal mortality had remained steady for a period of years over the whole country. Some years it fluctuated up and sometimes down. There were two committees dealing with the question. One was the Departmental Committee on Medical Research, which had already received confidential reports on individual cases. That committee was on the point of making a report. The second committee was dealing with the training and assistance of midwives, and had already reported. That subject raised a large number of questions of considerable difficulty, which would involve further legislation. The great difficulty was to obtain proper maternity services for ante-natal clinics and advisory clinics, and more co-operation on this subject was wanted between national health insurance work and the work of the local authorities. The matter was receiving the attention of the Ministry, but the question of legislation had not been fully explored up to the present by the Ministry of Health. There was no form of health work where the results in proportion to the expenditure were more gratifying than that of advice to expectant mothers. The work of public education in this matter was very important. The percentage of expectant mothers who attended antenatal clinics in Woolwich, where there was a really good publicity propaganda, was 40 per cent. The percentage in Bermondsey was 35, in Bristol 27, in Manchester 13, and in Gateshead 15. The problem was not insoluble. It raised very intricate questions which Parliament would do well to consider. If the local authorities would use their powers to the full and conduct a proper campaign of public education to bring up the level of the backward authorities to that of the best, we should see, not a complete solution, but a very gratifying improvement in this service.

Mr. MELLER urged Miss Lawrence to consider the development of the maternity and child welfare clinics, and not to attach too much support and co-operation under the national health insurance scheme. He said that too much stress was laid on this point, and that there was a greater desire to get hold of some of the money for the pockets of the doctors than to provide the health-giving services, which should be the main object.

Major GLYN remarked that he did not want to say anything against the medical profession. It was known what wonderful work was done by doctors, but he often felt that, since the panel system came into force, there had been an inclination on the part of some doctors rather to lie back and not keep up the high traditions of their profession. One of the most important things with regard to educating the community was to give that public sense of the

decencies of life which a man must contribute towards his wife. There was no doubt that many cases of maternal mortality and infant death were due to the selfishness of the husband. It was not a matter for the medical profession, but for public opinion. If possible, perambulating clinics should go in motor lorries to isolated villages and be available to explain to married women the main principles of the ordinary rules of life which people in cities could obtain by going to clinics.

Dr. VERNON DAVIES said that he regretted that the debate seemed to have developed into a more or less underhand attack on the medical profession. For an effective maternity and child welfare service they must have doctors. The maternity service of a medical man was an extremely onerous service. He had attended hundreds of confinements for ten days, and stayed up all night, for a guinea. He would not like to start again. They would find that practitioners were not now inclined to give their time to this work, and there was a tendency for the maternity service to get into the hands of particular doctors and certified midwives. That was a move which had the hearty sympathy of all medical men, because there was no doctor who had anything of a practice who could afford to spend hours on end waiting for some poor woman to be delivered of a child. It was better that certified midwives should attend to cases which lasted so long; they could send for a doctor if necessity arose. Unless the medical man and the midwife were adequately remunerated there would not be an effective maternity service. The question of maternal mortality was one of the greatest tragedies in the life of the nation to-day. Yet the peculiar thing was that it was not of necessity that they got these puerperal cases in the slums. Puerperal fever did not depend on slums, although they naturally did not want women to give birth to children in the slums. There was a tremendous shortage of beds for maternity cases in the country. According to the last report of the Ministry of Health, there were 2,480. It seemed appalling that there should only be that number for nearly 670,000 births. A method which could be much extended by the Ministry of Health through the local authorities was that it could take over, not what he called municipal maternity homes which were coming into existence, but large houses which had become more or less derelict. If these were made available as maternity homes they would prove a great boon. The need for ante-natal work had now become very well recognized, but here again the whole success depended, first of all, on the doctor, and, secondly, on the nurse. Education and propaganda were needed, so that the women of the country, especially the young married women, should realize that it was to their advantage, and to that of their babies, that they should be examined as early as possible in pregnancy, so that if things were not in order precautions could be taken. There was a committee sitting to inquire into the training of midwives. He believed that the Ministry of Health had some idea of either doing away with or relaxing some of the regulations of the Central Midwives Board. That would be a retrograde step. The Central Midwives Board had done extraordinarily good work, and was doing that work to-day. It should be the duty of the Ministry, instead of handicapping that institution or interfering with it, to do all it could to encourage the Board in its work. It was also necessary to see that there was efficient after-care, and that there were competent health nurses. He was glad that the Ministry of Health insisted that health visitors should possess the health certificate, but there was one great danger which applied to health visitors as well as to other nurses. It did not necessarily follow that the person with the best certificate, or with the largest number of degrees, was the best person for the work. There were such things as professional tact, common sense, and motherliness. Another point on which the Ministry might exercise a certain amount of control was the feeding of children. This country was perhaps not so far advanced as it should be in the matter of pure milk. Every effort should be made to see that women suckled their own children, because mother's milk was best for the child. The Ministry might concentrate more than it did on the question of pure milk. It could pay more attention to the unsweetened condensed milk, which was imported from the Continent in huge quantities, and which the late Minister of Health said was not fit for babies. People bought this milk because it was cheaper than ordinary milk, and in many districts children were being fed on milk which was found to do them harm. This condensed milk from abroad should not be allowed to be sold retail in less than 7 lb. tins. That would immediately stop the sale of the 4-ounce tins, and people would be compelled to provide one of the dried milk foods, or, better still, pure milk from the cow. Our milk supply required looking into. The amount of adulteration which went one was a disgrace to our civilization, and very often they found in the more residential towns the worst milk supply. Surgical tuberculosis in children, one of the most dreadful of complaints, was undoubtedly due to tuberculous cow's milk, yet how often was the milk examined for tubercle bacilli? There was tuberculin-tested milk, it was true, but ordinary people could not afford to pay for it. The first duty of the Ministry of Health was to see that the children were started well and were fed with tuberculin-tested milk to give them a chance of a good start in life. Another subject in connexion with maternity and child welfare centres was the very vexed subject of birth control. He hoped that the Government would persist in the attitude which it had adopted up to now, and would refuse to instruct any of their medical officers at the centres to give information on the matter.

Miss RATHBONE said that she hoped that the Ministry of Health would very quickly put part, at any rate, of the report on midwifery training into practice. The midwifery service was extremely ill paid. Many of them doubted the wisdom of the recommendation in the report that would place the whole onus of training, and of preparing the syllabus for the training of midwifery on medical officers of health rather than on the Central Midwives Board. There was always the fear that the medical officers of health had too little practical experience in this kind of work, and were too much under the thumb of local medical opinion.

The Housing (No. 2) Bill.

The Housing (No. 2) Bill, which was introduced by Mr. Greenwood and set down for second reading in the House of Commons this week, does not abolish the "Wheatley" Act for the erection of houses with a Government grant. It applies to England and Wales. Its chief object is to enable local authorities to clear the worst slum areas and to improve other areas which at present threaten to lapse into slums. "Clearance areas" are to be defined substantially as "unhealthy areas" are under the present law. Local authorities may purchase and clear, or require the owners to demolish the slums. Rehousing will normally be on other sites, but may, exceptionally, be on the cleared site. The grant proposed is normally 45s. per person displaced and rehoused. In agricultural parishes the grant will be 50s. a person, and in cities where persons have to be rehoused in tenements of more than three stories 70s. Each housing authority must present a five-year programme to the Minister of Health. Modifications are proposed to simplify and expedite the law relating to the repair or demolition of insanitary houses not in a scheduled area. The tribunal of appeal is to be the county court.

The Housing (Scotland) Bill, presented by Mr. Adamson, similarly proposes to deal with clearance areas, with improvement areas, and with individual insanitary houses. Grants may also be paid to hostels provided for single men by local authorities. Scottish housing authorities will also have the duty of reviewing housing conditions in their districts and to submit proposals to the Department in 1930, 1933, and each fifth succeeding year.

Under Mr. Greenwood's bill Government grants may be made to a voluntary housing association through a local authority. No such provision is included in the Scottish bill.

Mr. GREENWOOD moved the second reading of the Housing Bill on April 7th. He said it was short-sighted to spend money on health services and at the same time to condemn people to live under conditions which created the disease to deal with which the health services were brought into existence. When the time came that every overcrowded family had a decent home the nation would rid itself of a burden of disease, misery, and degradation.

Mr. CHAMBERLAIN said the Conservative party would support the bill.

Dr. FREMANTLE said that the bill was long overdue. As a past-president of the Society of Medical Officers of Health, and as one who, before the war did perhaps as much as anyone to bring before his colleagues in his profession the necessity for dealing with the housing problem, he spoke on their behalf, though without direct mandate, when he said that they wished the greatest measure of support to be given to the bill in general, and at the same time the most meticulous criticism of its details in committee. They must be perfectly frank in dealing with the problem. It was useless to compare the vital statistics of one slum area with those of the area surrounding it. People lived in the slums by reason of bad fortune of one kind or another. It was often a case of mental deficiency, heredity, and poverty. One of the greatest merits of the bill was its continuity; it really preserved a general continuity in regard to housing measures which were gradually getting to work. Medical officers of health looked forward to the result of the census of next year, which would tell exactly the state of overcrowing compared with 1921. They would then have definite data on which to proceed. Meanwhile, all the reports of medical officers went to show that there was an improvement in housing accommodation, although there had been a great change in the transportation and disposition of population. There had been a greater gravitation towards Greater London, which had made the position in London more difficult. The same was true of other big centres. The bill was supposed to enable them to close houses and to demolish slum areas, and at the same time to build houses. He hoped that it might be so. Medical officers of health had been working for a long time on this question of closure and demolition of houses. Closing and demolishing orders had unfortunately been a dead letter since 1914. The result was that in a recent report from the medical officers of health in England and Wales it was shown that of 2,500 houses recommended for closing and demolition only 500 were demolished. That was

because there was not a sufficient supply of new houses. No measure—not even the present bill—would be any good unless it helped to provide new houses in which to rehouse persons removed from the slum areas. One very material reason for delay in clearing slum areas was the Rent Restriction Act, which was not dealt with in this bill. Medical officers of health would welcome certain parts of the bill. In Clause 17 there was a very valuable power, which enabled part of a house to be closed without closing the house altogether. There were also valuable provisions in the improvement clause, which was really the only novelty in the bill. The provision for the aged should be extended. The method of subsidy was a valuable feature. It attacked overcrowding, which was really the greatest difficulty of all.

The bill was read a second time.

Position of Pharmacists in Poor Law Hospitals.

On the motion for the adjournment of the House of Commons, on March 31st, Captain GUNSTON called attention to the position of pharmacists in Poor Law hospitals under the Draft Poor Law Order published by the Ministry of Health, and now called the Public Assistance Order, 1930. He said that pharmacists were very much concerned about the Order, because they felt that the status of members of their profession employed in Poor Law hospitals would be seriously jeopardized. He asked that the Ministry should allow a local authority to make the pharmacist a principal officer if it wanted to do so. They did not ask for more control, but simply that these matters should be left in the hands of the local authorities.

Miss LAWRENCE said that if that were all that was asked she could answer "Yes." This was not a new Order. It was an old Order, reissued and reprinted—nothing more. There was no modification of substance. The only modification was the verbal one necessitated by the change in the names of the new authorities. If local authorities desired that a pharmacist should be a chief officer they could recommend the matter to the Minister and discuss it with him, and even appoint him as chief officer before the Minister examined the question. The assurance was given to the local authorities by the previous Government that any amendment or modification with regard to superior officers should not be made until after consultation with the authorities. If any amendment was desired it could be made subject to consultation with the local authorities. The Ministry had changed nothing. They had not made it impossible for these people to be appointed. In these matters, as in every other, they had left the position as it was, for consultation with the new authorities.

Tuberculin-tested Cows and Agricultural Shows.—Mr. GREENWOOD made a statement to Mr. Ramsbotham, on March 27th, regarding the order prohibiting the exhibition at shows of animals from tuberculin-tested herds. He said some of the bodies organizing agricultural shows were now prepared to arrange for the segregation of animals belonging to licensed tuberculin-tested herds, and he had promised to see their representatives with a view to considering the withdrawal of the prohibition in shows where effective provision was made for this purpose.

Psittacosis.—Mr. GREENWOOD told Mr. White, on April 3rd, that the Ministry of Health had received information of twenty cases of illness which commenced last month and in which the patients had been associated with parrots. In the present state of knowledge it was impossible to say definitely how many of these persons were suffering from psittacosis. This was not a notifiable disease.

Vaccination of Small-pox Suspects.—In a reply, on April 3rd, to Mr. Groves, Mr. GREENWOOD said he knew that doctors in the service of the Metropolitan Asylums Board vaccinated children sent to the shelters as suspected cases of small-pox, and that this was done without reference to the wishes of the parents or the fact that many of the children had been legally exempted from vaccination. The vaccination was solely in the interests of the children, who whilst under observation were exposed to small-pox infection at the shelters, in order that they might be protected against an attack of that disease if they had not already contracted it. It would not be desirable, in view of the risks involved, to make any exception to this practice. He had no authority to issue instructions that no child taken to the hospitals or shelters of local authorities should be vaccinated without the consent of its parents.

Silicosis.—Mr. SHORT, on April 1st, told Mr. Millar that the Home Secretary was not satisfied, on the evidence at present before him, that there was any sandstone quarry to which the Silicosis Order applied, in Scotland or elsewhere, in which there was no risk of silicosis. The medical inquiry into silicosis among sandstone workers, arranged for by the Home Office and Mines Department in 1928, extended to Scotland, and disclosed cases of silicosis in every area in which examinations were made, and showed that quarrying was among the dangerous occupations. Fuller information would be obtained from the medical examinations now being made at quarries by the medical board set up under the scheme. The Home Secretary intended, when these were completed, to review the position.

London Lock Hospital.—In a reply to Mr. Ernest Brown, on April 3rd, Mr. GREENWOOD said the governing body of the Lock Hospital had given effect to a large number of the recommendations contained in the papers presented to Parliament last July. Further improvements were in contemplation. The interests of the hospital would not be served by detailing at present the reforms effected. The board of management of the hospital included six women.

Health of the Mercantile Marine.—On April 1st Mr. GRAHAM told Mr. T. Lewis that the committee set up to consider and advise on questions affecting the health of the mercantile marine had in hand a detailed investigation into the question of how far and in what way the statistics relating to the mortality of seamen could be improved. The committee would inquire into the deaths reported month by month, from October last probably until September next. No report could therefore be expected for some months. Work on the hygiene of crew spaces on board ship was well advanced.

Sickness Certificates under the National Health Insurance Act.—On March 31st Miss LAWRENCE told Sir Kingsley Wood that the issue of sickness certificates under the National Health Insurance Act had been under discussion with representatives of those concerned for a considerable time. The draft of a new regulation with respect to this issue would be published at a very early date.

The Services.

THE GILBERT BLANE MEDAL.

THE Gilbert Blane medal has been awarded this year to Surgeon Lieutenant Commander J. F. H. Gaussen, R.N. The medal, which was founded in memory of the late Sir Gilbert Blane, is awarded annually to the medical officer who obtains the highest aggregate marks at the examination for promotion to the rank of surgeon lieutenant commander.

DEATHS IN THE SERVICES.

Lieut.-Colonel Eric Harding Sharman, Madras Medical Service (ret.), died suddenly in a nursing home at Bournemouth on March 5th, aged 64. He was born on July 21st, 1865, the son of the late Mr. Eric Rudd Sharman of Liverpool, and was educated at Westminster Hospital. After taking the M.R.C.S. and L.R.C.P.Lond., in 1890, he filled the posts of senior house-physician, house-surgeon, and clinical assistant in the skin and throat departments at Westminster Hospital, and of house-surgeon to the Hospital for Sick Children in Great Ormond Street, London. He entered the I.M.S. as surgeon lieutenant on July 29th, 1893, became lieutenant-colonel on January 30th, 1913, and retired on August 1st, 1913. In 1901 he took the diploma in tropical medicine of Liverpool University. He served in the China war of 1900, receiving the medal, and rejoined for service in the war of 1914–18.

Universities and Colleges.

UNIVERSITY OF BRISTOL.

THE following candidates have been approved at the examination indicated:

M.D.—J. F. O. Bodman, T. F. R. Hewer.

UNIVERSITY OF GLASGOW.

THE following candidates have been approved at the examination indicated:

M.B., B.Ch.—Isabel M. Adam, J. M. Alexander, *G. H. Bell, D. C. Brodie, G. H. Campbell, L. Charmatz, T. Crawford, A. N. Currie, D. W. Dewar, A. Duff, C. N. Gibb, A. Gibson, J. S. Gillies, W. Gunn, ‡J. F. Hegan, A. S. Henderson, S. T. Henderson, D. Jacobs, M. K. Johnston, Helen M. Keith, †R. Kirk, W. R. Logan, G. M'Dougall, J. A. M'Farn, D. M'Ghee, N. S. R. MacGregor, D. A. M'Intyre, J. B. L. M'Kendrick, Mary Nicolson, J. Paddin, F. B. Proksch, Hanna Birkalla, J. R. Robertson, D. Ross, Agnes A. S. Russell, J. G. Scott, A. Seton, A. M. Spence, Mary F. Tanner, D. W. Walker, A. B. Wallace, A. Young, T. M. Young.

* Distinction in surgery and midwifery.
† Distinction in medicine and midwifery.
‡ Distinction in midwifery.

NATIONAL UNIVERSITY OF IRELAND.

UNIVERSITY COLLEGE, DUBLIN.

THE following candidates have been approved at the examinations indicated:

D.P.H.—*Part I:* *P. J. Deery, *P. Keane, *M. M. J. Maughan, [illegible] nne, M. Kirby, Mary P. Moloney, O'Gorman, J. O'Neill, Margaret H. [illegible].

* First-class honours.
† Second-class honours.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

AT the monthly business meeting of the College, held on April 6th, the following candidates nominated on January 3rd were duly elected Fellows: David Gray, Ninian M'Intire Falkiner, Edward Thomas Freeman, Victor Ormsby M'Cormick.

The following, having passed the Final Conjoint Examination held in March, were duly admitted to the Licences in Medicine and Midwifery: J. H. de Villiers, D. Dorgan, V. J. Fielding, T. S. Harbison, J. E. Lewis, J. Lewis, Doris F. Weir.

Medical News.

ON Friday, April 18th, at 3 p.m., the Glasgow and West of Scotland Branch of the British Medical Association will give a reception, in the Students' Union of the University of Glasgow, to the students graduating in medicine on the following day.

THE house and library of the Royal Society of Medicine will be closed from Thursday, April 17th, to Tuesday, April 22nd, both days inclusive.

MR. SOMERVILLE HASTINGS, Dr. Salter, Dr. Ethel Bentham, about forty medical men who are not M.P.s, and two dentists met at the House of Commons on April 7th and adopted a constitution for a proposed National Medical Service Association. The constitution states that the association is to be independent of any political party. Membership is to be open to all registered medical men and women and dentists and to registered medical and dental students, and to such others as are in sympathy with its objects, and are invited to join by the executive committee. The association is to "advocate and make clear to the medical profession and to the public the advantages of a National Medical Service. For this purpose it shall from time to time hold public meetings, publish and circulate literature, and otherwise promulgate its cause. The association shall take all necessary steps to promote and secure legislation giving effect to its objects." *A footnote to this constitution runs*: "A National Medical Service should include the establishment of a medical service available to all members of the community, and providing every necessary form of medical, surgical, obstetrical, dental, and preventive treatment, co-ordinated as one service under the Ministry of Health. This would entail the provision of all necessary institutional treatment, consultant and specialist services, together with all known means for the prevention, diagnosis, and treatment of disease. The attainment of these objects will involve *the formulation* of a scheme or schemes by which the existing national health services and other State, municipal, and public services can be transformed, extended, and evolved into a comprehensive National Medical Service."

A THREE months' course of lectures and demonstrations in clinical practice and in hospital administration for the diploma in public health commenced on April 9th at the North-Eastern Hospital, St. Ann's Road, Tottenham, N.15. They will be continued on Mondays and Wednesdays, at 4.45 p.m., and alternate Saturdays at 11 a.m. The fee for the course, which complies with the revised regulations of the General Medical Council, is £4 4s. A course under the old regulations may be taken for £3 3s.

OWING to the Easter vacation no special courses have been arranged to be held under the auspices of the Fellowship of Medicine until April 28th, on which date three courses begin. These are an intensive clinical course in ear, nose, and throat diseases at the Central London Throat, Nose, and Ear Hospital, for four weeks; a four weeks' comprehensive course continuing until May 30th at the *Maudsley Hospital*, consisting of a series of lectures and demonstrations dealing with psychological medicine from various aspects; and an afternoon course lasting for two weeks at the Infants Hospital, under the direction of Dr. Eric Pritchard, especially suitable for those interested in infant welfare work. Several courses will take place in May, the subjects including: dermatology, at St. John's Hospital; ante-natal treatment, at the Royal Free Hospital; diseases of the chest, at the Victoria Park Hospital; diseases of children, at the Hospital for Sick Children; and medicine, surgery, and the specialties, at the Queen Mary's Hospital. From May 13th to July 4th there will be a course for the M.R.C.P. examination. Detailed syllabuses of all courses can be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE tenth of the series of congresses known as the Journées Médicales de Bruxelles will be held from June 28th to July 2nd, under the presidency of Professor Jules Bordet, and in connexion with the celebration of the centenary of Belgian independence. In addition to the usual meetings and receptions in Brussels, a visit will be paid to Liège. The French and Belgian railways will allow a reduction of 35 per cent. on the ordinary charges. Further information may be obtained from the general secretary, Dr. R. Beckers, 62, rue Froissart, Brussels.

THE eighth International Congress of Dermatology and Syphilis will be held at Copenhagen from August 5th to 9th, when the subjects for discussion will be the etiology and pathogenesis of eczema, immunity, reinfection, and superinfection in syphilis, and cutaneous tuberculosis and its treatment. Further information can be obtained from the general secretary, Dr. Svend Lomholt, Copenhagen.

THE annual congress of the German Society for Investigation of the Circulation will be held at Dresden on June 11th and 12th. Further information can be obtained from Professor Bruno Kisch, Köln-Lindenthal, Lindenberg.

THE report of the Joint Tuberculosis Council for 1928 and 1929 gives an outline of the activities of that body since the issue of the last report in January, 1928. Special mention is made of a memorandum on disinfection in tuberculosis circulated by the Council, and the statistical research on the fate of young children in tuberculous households, which was undertaken by Dr. Lissant Cox and the Lancashire group of tuberculosis officers. A recent memorandum by the Council on the subject of notification was circulated at the beginning of this year, and was mentioned in our columns on March 1st (p. 427). The report also refers to the steps taken by the Council to improve the tuberculosis service, to promote post-graduate study, and to ascertain the position with regard to the employment of tuberculous patients. The Joint Council includes representatives of medical organizations and Government departments; the British Medical Association is represented by Dr. C. O. Hawthorne and Dr. Arnold Lyndon.

A NEW catalogue of medical books has been issued by the Oxford University Press, including details of nearly 400 current works on medicine, surgery, and allied subjects, duly classified. We are informed that specimen copies of all these books may be inspected in the library at the London office of the Press, Amen House, Warwick Square, E.C.4.

THE Walton Hospital Training School for Nurses, Liverpool, has issued an illustrated booklet giving particulars of the training it provides for probationers and certificated nurses who are studying for the final examinations of the General Nursing Council and of the Central Midwives Board. Courses are also available for male nurses. The hospital, which is subject to inspection by the Ministry of Health and the General Nursing Council, has about 1,650 beds, and over 13,000 patients pass through the wards every year.

AT a meeting of the Chelsea Clinical Society, at the Hotel Rembrandt, Thurloe Place, S.W., on April 15th, at 8.30 p.m. Dr. R. A. Young and Mr. Philip Franklin will open a discussion on "Coughing." The meeting will be preceded by dinner at 7.30.

THE annual dinner of the Medical Superintendents' Society took place at the Holborn Restaurant on March 28th, with the president, Dr. E. W. G. Masterman, in the chair. Dr. Daly, in proposing the toast of "The Society," recalled some of the past history of the society, which was formed in 1887. Dr. Masterman, in reply, outlined the society's activities in the past, and pointed out that its name had been changed from Infirmary Medical Superintendents' Society so as to enlarge its membership, which now embraced medical superintendents of all public hospitals and voluntary hospitals, and whole-time medical officers in responsible charge of patients in public hospitals or institutions for the sick. Dr. Barrie Lambert, in reply to the toast of "The Guests," emphasized the enormous work the London County Council had undertaken, and showed the need for co-operation between the London County Council and the medical superintendents. Dr. J. J. Buchan, as a medical officer of health, stressed the need for co-operation between the curative and the preventive side of medicine.

AS an extension of the work of the St. John Ambulance Association, the first of three special rail coaches, designed to promote first-aid instruction among the 100,000 employees of the Canadian National Railways Company, has just been brought into use. The cars, which are miniature hospitals, including the latest emergency equipment and lecture theatres for first-aid demonstrations, will be used primarily in the more remote parts of Canada where the opportunities for the study of first aid under competent instructors are limited. Employees of the railway are encouraged to attend lectures on first aid in working hours, a corps of experts being retained for demonstration purposes. A special Canadian National Railway Council of the St. John Ambulance Association was established some years ago, and as a result of its activity 35,000 employees have obtained certificates of proficiency in first aid.

THE KING has granted authority to Dr. B. Spearman, Deputy Director of Sanitary Services, Zanzibar, to wear the Insignia of Class III of the Order of the Brilliant Star, conferred upon him by the Sultan of Zanzibar in recognition of valuable services rendered.

THE Union Castle Steamship Company has issued a series of folders giving particulars of a special summer tour to South Africa at reduced return fares, fortnightly holiday cruises from London to Antwerp, Rotterdam, Hamburg, and back, and weekly sailings to Madeira and the Canary Islands. Further information may be had from the Union Castle Mail Steamship Company, Ltd., 3, Fenchurch Street, London, E.C.3.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

REMOVAL OF TATTOO MARK.

"E. R. T." asks for suggestions for the removal of a large tattoo mark which has been present for some twenty years on the right arm of a woman, aged 35, and is causing her much worry.

POST-ENCEPHALITIS: RE-EDUCATION.

"G. W." would be glad to learn if there is any institution or any individual who undertakes the re-education of a post-encephalitic condition where the disease itself is arrested. There is partial paresis of the left humero-scapular region and lack of initiative. Parkinson's syndrome is obvious.

*** Since November, 1925, the Metropolitan Asylums Board has arranged for the after-care and treatment of post-encephalitis patients at the Northern Hospital, Winchmore Hill, London, N.21. Among other post-encephalitis units are Southmead Hospital, Bristol, Darenth Training Colony, Dartford, and Swinton Home, Manchester.

INCOME TAX.

Is an Honorarium Assessable?

"R. M." has given ambulance lectures to the employees of a colliery company for several years, and in each of the past three years the company has been paying him £10 10s. yearly as an acknowledgement for the services given in that way. Are these payments assessable as "R. M.'s" income.

*** In our opinion they are assessable. There are several cases dealing with honorariums payable in various circumstances—for example, the Easter offerings received by the clergy—and though we are not aware of a case quite similar to that put by "R. M.," the principle laid down seems to cover it—that is, that where the payment is made in respect of services rendered rather than as a personal benevolence, the recipient is assessable, and the payer can deduct the amount as a business expense. Further, if the colliery gave "R. M." something in kind instead of in cash the sale value in his hands, not necessarily the cost price to the company, would, on the same reasoning be assessable, in accordance with the principle laid down in Tennant *v.* Smith.

Income Transferred to Another Individual.

A. C. inquires as to the effect on taxation where "a sum of money is handed over by deed or paid periodically under a deed."

*** In such a case the annual amount handed over by virtue of a legally binding covenant to make the payment is income of the recipient and not of the payer. The latter, however, has to account to the Revenue for tax at the standard rate on the amount of the payment, but deducts the tax when effecting payment of the annuity. The recipient, therefore, suffers the tax at the standard rate by deduction, and can claim from the Inland Revenue Department the whole or such part of the tax as he may be entitled to claim. Suppose, for instance, that X undertakes by deed to pay his mother £25 a quarter for her life and assume that she has no other income. Then he pays out of his taxed income £25−£5 income tax = £20 sent the and she can claim repayment by the depart[illegible]e hospital quarter. This question of the legal transfer of income is, however, subject to various restrictions as regards its effect on taxation, particularly in the case of voluntary transfers for the benefit of a child of the transferor. If "A. C." has any particular set of facts in mind, perhaps he will state them in detail.

Assessments for Back Years.

"J. D." states that the income tax authorities say that he has not paid enough tax in previous years, and inquires how far back they are entitled to go; he also asks for reference to "a good book on income tax."

*** The right to assess profits which are discovered to have escaped assessment extends to the six years prior to the financial year current when such assessments are made. Of course, in a case where the inadequacy of the original payments of tax is due to wilful neglect or gross carelessness, the taxpayer concerned may prefer to make restitution for a longer period than six years rather than face proceedings for the recovery of the statutory penalties applicable to those six years. The standard books on income tax are expensive, and, for the most part, would be of no interest to a medical practitioner. Messrs. Nelson published an inexpensive income tax guide, which was as good as anything we have seen at the price, but if the tax involved is substantial "J. D." would probably find it best to employ an accountant familiar with income tax law and practice.

LETTERS, NOTES, ETC.

SUN AND AIR BATHING.

DR. REGINALD HODDER (Penge, S.E.) writes: The discussion at the recent meeting of the Section of Balneology and Climatology of the Royal Society of Medicine on the influence of sunlight and climate on health, brought out the important distinction between bathing in hot sunshine and active sun and air bathing. The beach loungers who, according to Dr. McClure, come home with deeply pigmented skins, *and* bronchitis, are victims of failure to appreciate this distinction. I agree with Dr. Buckley that movement of air is as important in the open as it is indoors. We hear a great deal about "sun bathing facilities" provided at this or that resort for the coming summer; in practice this means nothing more than that people will be permitted to loll around in blue-black bathing costumes absorbing potentially harmful heat rays. Moving air and ultra-violet light are essential to sun bathing, and that means that sun bathers must be practically *naked*. The *larger seaside corporations* can hardly be expected to tolerate nakedness, though a professional colleague tells me he bathed twenty years ago in Sweden with hundreds of respectable people of both sexes, all naked. *What we must* do, however, is to pass on to the public the *knowledge* we have about how ultra-violet radiations act through the skin, and ask public authorities to provide more facilities for persons who wish to practise sun and air bathing, and the public to adopt a more tolerant attitude towards nakedness in others. The Sun Bathing Society at Upper Norwood is an admirable example of what can be done; about sixty members exercise in the grounds at Sun Lodge wearing shorts or slips, the women supporting their breasts with brassieres. Air and light can reach the skin when such abbreviated costumes are worn.

CONTROL OF CONCEPTION.

DR. BINNIE DUNLOP (London, S.W.7) writes: Are you right in saying that the medical problem involved in birth control is quite separate from the economic one? One of your three medical questions is: "Can it be truly said *of any such measures* [of controlling conception] that *they produce no harmful effects?*" Well, the economic difficulty is such that the control of married people would not be influenced if even the least measures was proved to be slightly harmful. They would only be influenced if the effects were definitely *more harmful* than those of the alternatives to contraception. The reliable question is the most *important one*, and I hope that the safe ring method (*British Medical Journal*, January 18th, p. 1[illegible] which seems absolutely certain, will also *continue* to prove harmless in practically all cases.

INJECTION TREATMENT OF HYDROCELE: CORRIGENDA.

WITH reference to his article on the injection treatment of hydrocele (*Journal*, April 5th, p. 649), Dr. St. George R. Delisle (Ilfracombe) writes that, owing to a typing error, the word "phenol" was substituted for "formol" in the *translations* of the French articles quoted by him. *In lines* 5 *and* 8 of the first column, and in line 5 *from the foot* of the second column, for "*carbolic* acid" read "formaldehyde."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and *of* vacant resident *and* other appointments at hospitals elected [illegible] be found at pages 52, 54, 55, 56, 57, 60, 61, *and* 62 of Thomas[illegible]ertisement columns, and advertisements *as to* partnerships, locumtenancies, and assistantships at pages 58 *and* 59.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *119*.

T. S. [illegible]

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

350. Paratyphoid C Infection in British Guiana.

G. GIGLIOLI (*Trans. Roy. Soc. Trop. Med. and Hyg.*, November, 1929, p. 235) records observations on 92 cases of paratyphoid C infection admitted to the Demerara Bauxite Company Hospital at Mackenzie, British Guiana, between 1923 and 1928; 61 patients were males and 31 females. The ages ranged from under 1 year to 60 years, but most of the patients (45) were between 16 and 25. The race distribution was as follows: negroes 57, East Indians 4, aboriginal Indians 6, Portuguese 1, and mixed races 24. No particular relationship was observed between the rainfall and average mean temperature and the number of cases observed month by month from 1923 to June, 1928, except that there was a marked decline in the incidence of the disease during the first half of the drought years 1924 and 1926. Cases occurred throughout the year, but there was a decided increase during the winter months from November to May. Water, milk, food, and flies could be excluded as causes of spread of the infection, and the most likely means of distribution of the disease were carriers in the form of abortive cases, slight ambulatory infections simulating malaria, and convalescent patients. Urine was probably the most dangerous means of spreading the disease, not only on account of the large number of bacilli it contained, but also in consequence of the very insanitary habits of the population, who took no precautions as regards the disposal of urine. There appeared to be a close relationship between the incidence and distribution of paratyphoid C and malaria fever. Of the 92 patients, 32 died, a mortality of 38 per cent. These figures, however, do not indicate the actual mortality rate of the disease, since the great mass of the abortive, slight, and mild protracted cases escape observation.

351. Incidence of Tuberculosis in a Country District.

H. THORBORG and M. HOLM (*Ugeskrift for Laeger*, February 13th, 1930, p. 153) have performed Pirquet tests on all the patients admitted to a provincial Danish general hospital serving an area in which there were no large towns. Altogether 1,587 patients admitted in the period 1925–27 were thus examined, the tuberculin used being Koch's old tuberculin undiluted. As the object of this investigation was to determine the degree of tuberculous infection of the native population, the patients were classed in two main groups. In the first group the patients had been born in the neighbourhood and had lived there ever since. In the second group the patients had either not been born in the neighbourhood or had settled outside it for a shorter or longer period. Most of the patients in both groups were between the ages of 15 and 30. It was found that the frequency of positive reactions was considerably higher in the first than in the second group. For example, in the age period 15 to 24 only 33.2 per cent. of the 328 patients examined in the first group were Pirquet-positive, whereas in the second group in the same age period there were 90 positive reactions to 47 negative reactions—that is, 65.7 per cent. positive reactions. The difference was even more marked in the youngest age period (3 to 14 years), only 23.9 per cent. of the reactions being positive in the first group, as compared with 76.3 per cent. in the second group.

352. The Accessory Auricular Contraction in Stokes-Adams Syndrome.

E. GÉRAUDEL (*Arch. des Mal. du Cœur*, January, 1930, p. 18) refers to previous publications in which he has shown that the right auricle consists of an uppermost sinus or vestibular region, and a part which is of atrial origin and made up of superior and inferior diverticula. Two paths spring from the vestibular region, the uppermost supplying the superior atrial diverticulum and sending a branch to the inferior diverticulum, while the lower branch divides, supplying the inferior diverticulum and the ventricles; this latter division is the "bundle of His." If conduction in this bundle fails the patient's electro-cardiogram shows the usual curve of complete auriculo-ventricular dissociation; if the interruption in the conducting tract occurs higher up in the sino-ventricular path, before the separation of the branch to the inferior atrial diverticulum, a deviation may be found in the electro-cardiogram representing the contraction of this structure. This element of the tracing usually takes the form of a V; it is superimposed upon the ventricular complex and is known as Pi. Block occurring high in the sino-ventricular path will constantly produce the Pi wave provided the path connecting the superior and inferior atrial diverticula is also blocked. If this blocking is not present Pi only appears intermittently. Géraudel has reviewed the electro-cardiograms of forty-nine patients with Stokes-Adams syndrome, and has found the deviation Pi in eleven of them; in these patients, therefore, heart-block was due to a lesion above the bundle of His and above the auriculo-ventricular node. The deviation Pi was characteristically diphasic, and, although generally V-shaped, it was sometimes of opposite sign. Owing to the variable form of the element Pi and its appearance among the deviations of the ventricular complex it was frequently difficult to identify, and might be mistaken for a deformed ventricular complex.

353. Acute Influenzal Polyneuritis.

G. DALLA TORRE and A. CHINAGLIA (*Il Policlinico, Sez. Med.*, January 1st, 1930, p. 9) record an illustrative case, and have collected four others from the literature, reported by Bonnet, Leyden, Weill and Regand, and Bury respectively. The present case was that of a man, aged 40, who was admitted to hospital with tetraplegia of sudden onset, high fever, and general asthenia. Death ensued after about a fortnight's illness. The necropsy showed splenization of the lower lobe of the left lung, and a normal macroscopic appearance of the brain, spinal cord, and peripheral nerves. Histological examination, however, revealed the typical appearances of well-marked parenchymatous neuritis in the sciatic, popliteal, median, and ulnar nerves, the findings being similar to those described by the other writers mentioned previously.

354. Period of Infectivity and Serum Prevention of Chicken-pox.

J. E. GORDON and F. M. MEADER (*Journ. Amer. Med. Assoc.*, December 18th, 1929, p. 2013), as the result of their own experience and a study of the literature, come to the following conclusions. In the prodromal stage chicken-pox is apparently infectious for only a short period, and probably not more than twenty-four hours before the appearance of the eruption. In accordance with the experience of F. H. Thomson, they found that infectivity is less than is generally supposed, does not necessarily coincide with the persistence of scabs, and probably closes within ten days. Convalescence serum furnishes a high degree of protection (15 out of 16 cases) if obtained within one month of the appearance of the eruption, the dose being 10 c.cm. of a pooled serum. Serum obtained two to four months after the eruption proved less reliable, and after five months conferred protection in only a third of the susceptible individuals.

Surgery.

355. Abduction Treatment of Fracture of Neck of Femur.

R. WHITMAN (*Journ. of Bone and Joint Surg.*, January 1930, p. 11) describes the abduction treatment of fracture of the neck of the femur as being in accordance with that of other fractures, because the natural mechanics of the hip-joint are utilized to correct deformity and to oppose displaced fragments. By this treatment the limb is abducted, the fragments being brought into a horizontal plane, and therefore end-to-end. When this movement approaches the normal limit, tension on the capsule enclosing both fragments must appose and fix them in normal relation, direct bony contact being supplemented by complete suppression of muscular action. The limb is fixed in an attitude of full abduction, extension, and slight inward rotation, to maintain the essentials of functional repair. The long plastic spica is the most comfortable and efficient means of support, and permits the alteration of posture. Adequate protection and after-care are of great importance. It is contended that this new method of treatment is more satisfactory than older and more conventional methods. Comparative statistics are cited showing that among 169 cases of transcervical fractures treated by other methods the death rate was 12 per cent., and good results only occurred in 11.5 per cent., while among 176 cases of this type of fracture treated by the abduction method the death rate was 6 per cent. and bony union was attained in 67.5 per cent. of cases. It is therefore seen that the strict application of surgical principles is practicable in most instances, that the danger is slight, and that union of the transcervical fracture may be obtained in the larger proportion of cases.

356. Thyroid Metastases in Bone.

W. K. CONNELL (*Brit. Journ. of Surg.*, January, 1930, p. 523) states that the commonest situation for tumours in or on bone, containing thyroid tissue, is the skull, with the sternum, vertebrae, ribs, humerus, femur, pelvis, and clavicle as possible but less frequent sites. Thyroid metastases usually appear first in the vicinity of the cranial sutures or of the epiphyses of the long bones, and may be encapsuled or diffuse, endosteal or periosteal, and sometimes osteoplastic. Some are pale and almost bloodless, while others are intensely vascular with vigorous pulsation. The structure of thyroid metastases may be that of a carcinoma, an adenocarcinoma, a "foetal adenoma," a simple parenchymatous or colloid goitre, normal thyroid gland tissues, or a combination of two or more of these. Growth is usually slow, and a thyroid osseous metastasis has been known to be present for twenty years. It is considered that all cases are probably dependent on the presence of a thyroid carcinoma which is so slow and insidious as to be overlooked; and it appears that the type of thyroid carcinoma which produces bone deposits is of relatively low virulence. When the metastasis is single and the risk not excessive, treatment consists in excision of the metastasis followed by thyroidectomy. All tumours of the thyroid should be regarded as potentially malignant. Two cases are quoted occurring in African women between the ages of 45 and 50, but treatment or much study of these cases was not possible as the patients did not remain in hospital.

357. Duodenal Ulcer in a Newborn Child.

I. S. SCHWARTZ (*Zentralbl. f. Chir.*, February 1st, 1930, p. 270) describes the clinical aspects and treatment of a fatal case of perforating duodenal ulcer in an infant two days after birth, and discusses the pathology of the condition. The only symptom is sudden uncontrollable haemorrhagic diarrhoea, which is sometimes accompanied by haematemesis, and causes a severe and fatal anaemia. Operative treatment is not advisable, but good results have been obtained by combating the anaemia by transfusion. The condition is attributed to some infection, or to a thrombus in the umbilical vein with subsequent embolism into the vessels of the duodenum and stomach; retrograde emboli may also pass from the umbilical vein into branches of the portal vein. In the case here reported the child had pemphigus neonatorum simplex; the Wassermann reaction was negative. The initial attack was treated by intramuscular gelatin, and 2 per cent. calcium chlorate was given by the mouth; the haemorrhage was arrested for forty-eight hours, but then recommenced, and 10 c.cm. of the mother's blood was transfused without result, the child soon dying from extreme anaemia.

358. Aneurysmal Varices of the Saphenous Vein.

N. C. ORTIZ and J. A. SALABER (*Rev. Sud-Américaine de Méd. et de Chir.*, February, 1930, p. 122) state that 55 per cent. of all venous aneurysms are those of the saphenous vein, and that their diagnosis is often difficult. Anatomically these dilatations can be divided into cylindroids and ampullas; the first are characterized by their uniform extension through the whole wall of part of the vein, while the second involve only a limited portion of the venous wall. The upper part of the vein is the most frequent site of this affection, the next most frequent being at the level of the knee; multiple dilatations occur more rarely. Etiologically, saphenous varices may be congenital or acquired. The first variety is due to a constitutional weakness in the vessel wall, and varices here coexist with others elsewhere. The acquired type is more frequent in adult males, and occupation does not appear to be a predisposing factor in their causation. Certain determining causes are inflammation (endophlebitis) and injuries of the vessel wall or of the nerves which control its nutrition. Clinically, these aneurysms may be divided into those with a free circulation, uncomplicated, and reducible; and those without free circulation, complicated, and irreducible. The former group presents as a tumour in the middle and internal part of Scarpa's triangle. The tumour is of various sizes, of bluish colour (an important sign in thin subjects), and of soft and fluctuating consistency; it is not painful and not adherent to the skin or subjacent tissues. On coughing a thrill can be felt over the tumour. Functionally, this affection causes difficulty in flexing the thigh and, in cases of large swellings, neuralgia of the internal saphenous nerve occurs. In irreducible aneurysms symptoms of phlebitis occur in addition to those mentioned. The tumour enlarges and becomes painful, hard, and irregular. The pain may radiate along the whole vein and even the whole limb. Malleolar oedema is also present. If the phlebitis extends to the pelvic veins, symptoms of general infection and abdominal troubles (vomiting, constipation, and meteorism) appear. This condition evolves slowly, and is often discovered accidentally or after some injury. Complications are phlebitis, thrombus formation, and suppuration. Saphenous varices must be differentiated from crural hernia, crural cystocele, arterio-venous aneurysms, lymphatic varices, abscesses with double sac, lipomas, and particularly from strangulated hernia. The treatment is essentially surgical, and palliative treatment (the wearing of an elastic bandage) is indicated only in those cases, such as advanced age, in which operation is contraindicated. In infected cases operation must not be undertaken until all infection has subsided.

Therapeutics.

359. Thallium Acetate in Ringworm of the Scalp.

G. H. PERCIVAL (*Brit. Journ. of Derm. and Syph.*, February, 1930, p. 59) describes a series of 50 cases of ringworm of the scalp which were treated with thallium. A single dose of 8.5 mg. thallium acetate per kilo of body weight was given, and 10 per cent. sulphur ointment was applied daily; after a good regrowth of hair had occurred the local treatment was suspended for three weeks, and the scalp was re-examined for signs of disease. Complete epilation occurred in every case in seventeen to twenty-two days; 96 per cent. of cases were definitely cured, the average duration of treatment being 107 days, as compared with 135 days in the case of 50 successful *x*-ray cases treated in Edinburgh during 1924. Mild toxic symptoms (muscular "pseudo-rheumatic" pains in the legs, lethargy, and slight headache) appeared in 44 per cent. of cases between the third and twenty-eighth days, and lasted two to nineteen days. The author stresses the importance of efficient local treatment during the period that the scalp is completely bald. Regrowth of hair occurred in twenty to thirty-four days in this series. The mode of action of the drug is still regarded as uncertain, and is not adequately explained by any endocrine or vasomotor influence. It is noteworthy that growth power persists in the hair bulbs for ten or eleven days after the ingestion of thallium, and subsequently undergoes temporary inhibition. If thallium has a local action, it is probable that it, like the *x* rays, exerts an inhibitory action on the more primitive and actively growing cells of the follicle and bulb.

360. Contraindications to Gold Salt Therapy.

BERNARD has recorded the beneficial results obtained in diabetes associated with pulmonary tuberculosis by the simultaneous employment of a dietetic and insulin therapy with artificial pneumothorax, and has called attention to the lack of efficacy and even the injurious action of gold salts in certain cases of this condition. M. VILLARET, L. JUSTIN-BESANÇON, and R. CACHERA (*Presse Méd.*, February 12th, 1930, p. 218) report such a case, doing so especially because they were the first French authorities to recommend this treatment in pulmonary tuberculosis. The association of pneumothorax and insulin had effected a considerable improvement in their patient, and for three years the advance of the tuberculous process had been checked and the diabetes stabilized. A first series of injections of the double thiosulphate of gold and sodium caused a very marked recrudescence of the lung condition, with fever, emaciation, and reappearance of bacilli in the sputum, even though the antidiabetic treatment was continued. A second series of injections of the same salt, with a diabetic treatment calculated on the patient's tolerance for carbohydrates, caused a still more serious recrudescence of the pulmonary disease with infiltration of the lung that had been free till then. This extension of the tuberculous process, in its turn, brought about an aggravation of the diabetes. The authors agree with Bernard as to the ill effects of gold salts in tuberculous diabetics.

361. Liver Treatment of Anaemia.

JANET M. VAUGHAN (*Quart. Journ. of Med.*, January, 1930, p. 213) reviews the present position of the liver treatment of anaemias, which are considered under four groups: (1) pernicious anaemia, (2) the anaemia of sprue and pregnancy, (3) haemorrhagic anaemia, and (4) anaemias of unknown origin, including leukaemia and cancer. For the groups (1) and (2), characterized by megaloblastic hyperplasia of the bone marrow, the administration of liver or liver extract is a certain remedy, though its action is seriously inhibited by the presence of sepsis. For some cases of group (3) liver treatment has a definite value; the other forms of anaemia in group (4) are unaffected by the treatment. The action of liver depends on at least two hepatic factors. The action of liver depends on at least two hepatic factors, one or the inorganic salt contents and a complex polypeptide, one or both of which may be effective in varying conditions. These factors act either as inducers or as inhibitors of megaloblast

formation. According to one view, liver provides a substance absent in pernicious anaemia, which is necessary for the maturation of megaloblasts, the anaemia being the result of a deficient production rather than a massive destruction of red cells. In patients under liver treatment for pernicious anaemia a sudden improvement of the mental outlook and a rapid gain in weight are as important signs of response to the remedy as a rise in the reticulocyte count.

362. Injections of Trypaflavine in Meningococcal Septicaemia.

A. BÖTZEI (*Med. Klin.*, January 24th, 1930, p. 127) records two cases of the successful use of trypaflavine in a woman aged 30 and a youth aged 17, who presented the characteristic symptoms of protracted meningococcal septicaemia as described by Friedemann and Deicher in 1926—namely, an eruption resembling erythema multiforme, a temperature like that of tertian malaria, pain and swelling of the joints, and leucocytosis with a distinct shift to the left. As a general rule the disease lasts for several months, and though a spontaneous recovery may occur there is always the possibility of the supervention of meningitis. The author advises that trypaflavine, which was first introduced by Adler in 1922, should be injected intravenously in large doses for adults (0.6 to 0.75 gram). This treatment produces a rapid cure of the protracted form of meningococcal septicaemia, but is inefficient in the acute form in which the blood shows a massive infection with meningococci.

Anaesthetics.

363. Regional Anaesthesia in Urology.

C. M. JOHNSON (*Journ. Amer. Med. Assoc.*, December 21st, 1929, p. 1942) considers that regional anaesthesia is particularly suitable in urological surgery. In a series of over 300 cases three types of anaesthesia were employed: simple caudal block; caudal anaesthesia, together with transsacral block by injection of the sacral canal and the first, second, and third sacral foramina; and spinal anaesthesia. The relaxation of the vesical sphincters so obtained may confuse the cystoscopist in studying accurately the posterior urethra and bladder neck; this constitutes a disadvantage to the method. Its advantages, however, are so numerous that the author considers that it excels all others, affording as it does perfect anaesthesia lasting an hour and a half for any cystoscopic work, the anaesthesia being capable of repetition at frequent intervals if needed. The patient is able to co-operate throughout, and there is no suppression of renal function, no serious reaction, and no unpleasant sequels. In abdominal surgery of the lower genito-urinary tract spinal anaesthesia as an adjunct to gas and oxygen is said to be especially valuable. The author reserves it for operations on the lower ureters and lower abdomen, for nephrectomies in poor risks, and for cystotomy or suprapubic prostatectomy. He believes that it will become increasingly used as both the profession and the public gain confidence in it.

364. Dangers of Trigeminal Anaesthesia.

A. LINDEMANN (*Schmerz, Narkose-Anaesthesie*, January 15th, 1930, p. 363) illustrates the frequency of sequels in trigeminal anaesthesia by the fact that 28 such cases occurred in 1927, there were 23 in 1928, and 19 in the first half of 1929 in the West German Jaw Clinic at Düsseldorf. In almost all these cases intraoral or regional anaesthesia had been induced; it was followed in several instances by severe general infection, which in four cases ended fatally, while in another twelve cases serious and mostly irreparable damage to the soft and bony parts of the jaw developed. Lindemann urges prophylaxis in respect of careful preparation of the solution to be injected, with preliminary attention to the mouth, especially at the site of injection, which is best treated by a solution of iodine in alcohol. The injection should be given slowly, and massage of the injected part should be avoided. After the injection the patient should not speak or take any food for some hours in order to prevent any infective material gaining entrance through the site of injection.

365. Nitrous Oxide-Oxygen Anaesthesia in Tonsillectomy.

J. H. EVANS (*Anesthesia and Analgesia*, January-February, 1930, p. 14) believes that the technique of performing tonsillectomies under nitrous oxide-oxygen merits developing if only for those cases where ether is contraindicated. He records a brief summary of observations of approximately 6,000 tonsillectomies under this form of anaesthesia, a series in which there were no deaths and no lung abscesses. Evans agrees that the appetite usually returns more quickly and there is less nausea and vomiting when no ether is used, but he emphasizes the point that the anaesthetist should be conversant with this method of anaesthesia, since it is dangerous in the hands of a novice. The apparatus should be capable of delivering a large volume of the gases to meet the requirements of mouth-breathers, and it should be so constructed that pure oxygen can be forced into the lungs if necessary. This form of anaesthesia is the most pleasant for the patient, both for induction and for recovery; it is also entirely free from any risk of explosion. The anaesthesia is not likely to be so deep as to permit of the inhalation of infected material: in this, as with other procedures, the anaesthesia should not be pushed to the extent of abolishing the cough reflex. A disadvantage which has been encountered is the difficulty of knowing if the patient is too lightly or too deeply anaesthetized. The colour sign, while important, is not always reliable; Evans believes in maintaining at least a fairly pink colour. Of greater importance are the muscular signs, due to anoxaemia: these consist of twitchings and jerkings, and, in very young children, a jactitation of all the muscles of the body. In the latter cases it is usually better to add a trace of ether and give a higher percentage of oxygen. The pre-operative administration of morphine or some other narcotic is said to be more helpful than with any other form of anaesthetic. An important pre-operative measure is the winning of the patient's confidence. Adults, and occasionally children, may be given aspirin, to be dissolved on the tongue every four hours for the first day or two to lessen the pain of swallowing. Soft food may be allowed a few hours after operation if the patient desires it.

Obstetrics and Gynaecology.

366. Persistent Hiccup during Pregnancy.

SUZOR (*Bull. Soc. d'Obstét. et de Gynécol.*, December, 1929, p. 690) reports a case of persistent hiccup during pregnancy. The patient, aged 25, consulted the author during her second pregnancy, one month after the cessation of menses; she had then had incessant hiccup for three days. She had suffered from influenza with pulmonary complications in the previous year, and her first pregnancy had been complicated by persistent hiccup and vomiting which began one month after conception. Every possible therapeutic measure had been employed in an endeavour to stop the hiccup, but without success; the patient had refused to allow the pregnancy to be terminated, and the hiccup and vomiting persisted until the somewhat premature delivery. When she presented herself for treatment during her second pregnancy she appeared to be in good general condition, but was having hiccups at the rate of one spasmodic contraction a second. The uterus was enlarged and soft, and the abdomen was meteorized by aerophagia. The pulse was 72 and the tension normal, as were the reflexes. Compression of the phrenic nerve had no effect on the contractions. A subcutaneous injection of 1 cg. of spasmalgine diminished the frequency to 44 hiccups to the minute, but the patient obtained no sleep during the night and the next day an intravenous injection of soluble gardenol was without effect. She was watched throughout the day and night and had between 50,000 and 80,000 spasmodic contractions in the twenty-four hours. There was a manifest increase in frequency each time the patient was disturbed on the occasion of an examination. The contractions seemed to be more intense in the superior respiratory muscles. The author concluded that the hiccup was of nervous origin, and informed the patient that pregnancy would be terminated. peri-uterine anaesthesia was induced without effect. The following day the uterus was curetted: the hiccup did not cease immediately but progressively, the intensity of the contractions diminishing with the frequency.

367. The Course of Pelvic Infections.

H. SCHMITT (*New England Journ. of Med.*, December 5th, 1929, p. 1149) states that in one series of 916 consecutive gynaecological cases 28.78 per cent. were pelvic infections, while in another series of 903, 20.54 per cent. were of this nature. Approximately 75 per cent. of these infections were gonorrhoeal, 20 per cent. pyogenic or septic, and 5 per cent. tuberculous. The author believes that pelvic infections are self-limited processes: he finds that if they are treated conservatively about 65 per cent. end in complete cure, with restitution of the normal physiological and anatomical functions. In about 20 per cent. the patients become free from symptoms and regain their capacity for work and enjoyment of life, though permanent pathological processes remain. Sterility is usually present in these cases. The remaining 15 per cent. of the patients are chronic invalids who have to undergo radical surgical treatment before health can be restored. In such cases, he remarks, while proceeding with the treatment an attempt should be made to remove

the infection and at the same time to conserve ovulation, menstruation, and fruitfulness. If the tubal lumen is found by the air inflation test to be closed, and the site of obstruction can be determined by hystero-salpingography, plastic operations are indicated. If both tubes have to be removed *the insertion of a healthy ovary into the uterine cavity may* be considered.

368. Relief Measures during Labour.

H. W. SCHOENECK (*Amer. Journ. of Surg.*, December, 1929, p. 778) reviews 435 cases of labour treated in hospital, of which the mortality rate was 0.68 per cent. It was found that normal labour was the safest means of delivery; the maternal morbidity, which was determined by a rise in temperature to 100° F. or more for a period of at least two days between the second and fourteenth day, being less in spontaneous labour than in delivery by prophylactic forceps or version; lacerations of the birth canal were also lessened in number and degree. The maternal and foetal mortalities in this series were *nil*. Prophylactic or low forceps application gave the next lowest foetal mortality and maternal morbidity, while prophylactic version resulted in the highest proportion of these. The author remarks that the Kronig method of administering morphine and scopolamine affords *relief in both stages of labour. The amnesia obtained avoids* the harmful effects of the mental and physical suffering to a greater extent than does prophylactic version or prophylactic forceps, though if the latter supplements the use of morphine and scopolamine the benefits from these drugs are enhanced. A state of amnesia is to be aimed at, and not analgesia, the interval between the first dose and delivery being at least four hours. It was found that the necessity for instrumental delivery was frequent owing to the inability of the patient to use her abdominal muscles at the expulsive stage. A further 200 cases were delivered subsequently, Gwathmey's rectal anaesthesia, combined with morphine and scopolamine, being employed as a relief measure, and a solution of acriflavine, 5 per cent. in 50 per cent. alcohol and 10 per cent. acetone, being used as an antiseptic instead of iodine. Three ounces of this solution were instilled in the vagina at the onset of labour, and it was applied to the vulva, perineum, thighs, and lower abdomen at the time of delivery. *This treatment was* followed by a startling drop in the general morbidity rate to 1.8 per cent. The combination of instillation of ether, quinine, and oil with scopolamine and morphine was found to give a higher percentage of satisfactory results than the modified twilight sleep; for the relief of multiparae one dose of morphine sulphate 1/6 grain, scopolamine 1/150 grain, followed by rectal instillation, gave satisfactory analgesia and amnesia for two or more hours. Fractional doses of ether and oil were repeated in most cases until after delivery. It is contended that by these means the risk of puerperal fever is diminished and greater relief given during labour.

369. Ergotamine in Treatment of Uterine Haemorrhage.

C. COGGI (*Riv. d'Ostet. e Ginecol. Prat.*, January, 1930, p. 6) describes experimental studies showing that ergotamine exercises a stimulant action on the guinea-pig's uterus which is increasingly effective during the course of pregnancy and is only slightly diminished during the puerperium. He reports administration of ergotamine tartrate solution, in medium doses, by the mouth or intramuscularly, in 2 cases *of post-partum uterine inertia*, 44 *cases of uterine inertia* following; abortion, 37 cases of post-partum uterine subinvolution, and 11 cases of uterine subinvolution following abortion (spontaneous or operative). All the patients except one responded well and quickly to the treatment.

Pathology.

370. Effects of Splenic Opotherapy on the Blood.

J. MOUZON (*Presse Méd.*, February 12th, 1930, p. 219) reviews the recent work on the therapeutic employment of splenic extracts. Bayle has shown that the absolutely constant sign of their beneficial effect is an increase in the erythrocytes, often by as much as a million, and also in the haemoglobin; this is followed by a leucocytosis with a predominance of lymphocytes and eosinophils. These findings have been confirmed by many authorities *in all countries. This haematological* action of the extracts, which has been observed in both subjects and anaemic conditions, is very marked and persistent after intravenous injection, less after intramuscular injection, and very much less after oral ingestion. On the other hand, many authorities (notably Mayr and Meltzer) have found that the administration of splenic extracts causes a decrease of an eosinophilia. These results have been observed both in animal experiments and in the treatment of polycythaemia and in eosinophilic conditions, especially in the dermatoses which often accompany them. Great benefits have followed the use of the extracts in such conditions as erythrodermia, chronic eczema, prurigo, and pemphigus, these skin diseases being precisely those usually attributed to allergic causes. *With regard to this* double haematopoietic and haemolytic action, Verzar has shown that dry or aqueous splenic extracts contain two substances of opposite properties, which act in different conditions, and Zih has demonstrated that small doses have a haematopoietic action, while large ones are haemolytic. The latter worker has also noted that animals with a high cell count are more sensitive to the haemolytic effects and those with low counts to the haematopoietic effects, equal doses being given to each series. Mouzon suggests that polycythaemia may be due to the survival of too old cells, and that the splenic extract supplies to the organism a factor which enables it to destroy these useless cells; in anaemic states, however, a factor may be concerned which facilitates the formation of red cells and the increase of their haemoglobin content. He adds that the very specialized structure of the spleen is without doubt an important agent in its physiological functions, and that nothing indicates the presence of an internal secretion. Many other properties have been attributed to splenic extracts; among these are their action on the blood platelets, on infectious leucocytosis, and on cardiac tonus.

371. Tubercle Bacilli in Laryngeal Smear Preparations.

H. BEHMANN (*Münch. med. Woch.*, January 10th, 1930, p. 62) finds that tubercle bacilli can often be demonstrated in a smear from the larynx in cases of pulmonary tuberculosis in which sputum is otherwise unobtainable, or there is some suspicion of malingering or intentional mixing of specimens. A positive result can also be obtained sometimes by this means more quickly than from specimens of sputum procured in the usual way; cases of tuberculosis of the larynx are excluded from this discussion. The following technique is adopted. A probe carrying a wool swab is passed over the posterior surface of the epiglottis into the larynx and the patient is asked to cough; the very small quantities of sputum *thus obtained* adhering to different parts of the swab are spread as close together as possible on a microscope slide, and the stained material is very carefully examined for acid-fast bacilli before *it is pronounced* negative. A similar manœuvre is also useful in obtaining sputum for examination from children in various respiratory conditions.

372. The Significance of Ketogenesis.

BASING his views on Knoop's theory of the β-oxidation of the fatty acids in the body, A. B. MACALLUM (*Canadian Med. Assoc. Journ.*, January, 1930, p. 3) believes that in each stage there is formed, first a β-hydroxy acid and then from the latter a β-oxy acid, eventually CO_2 and H_2O. In this progressive oxidation of a molecule of fat there must be a "pull" on the oxygen available to carry that oxidation to completion before the initial oxidation of other fat. Of all the β-hydroxy and β-oxy acids found in the metabolism of fat from its fatty acids, β-hydroxybutyric and β-oxybutyric are the only ones soluble in water and, therefore, diffusible from the cells engaged in metabolism. Even in normal subjects traces of these acids appear in the blood. The oxidation of β-oxybutyric acid requires a *comparatively* large quantity of oxygen, and, if it is incomplete, acetone is formed. The supply of oxygen to the metabolizing cells, constantly replenished from that in the blood, is limited to the maximum these cells are capable of receiving and utilizing from moment to moment. This supply is for the most part used in the oxidation of the sugar and the fat present. Since the sugar is much more easily and therefore more quickly oxidized, a considerable portion of the oxygen held by the oxidizing complex is so used, the rest being left for the oxidation of fat. If glucose is sufficiently plentiful there will be little or no oxygen for the oxidation of fat. The production of β-hydroxybutyric and β-oxybutyric acids will be small. But when the sugar is unoxidizable, as in the diabetic, or is wanting in the normal subject after more or less prolonged fasting, a relatively large quantity of oxygen is available for the oxidation of fat, relatively large quantities of β-hydroxybutyric and β-oxybutyric acids are formed, and their diffusion *pressure is so great that they* escape from the cells in more or less considerable quantities, passing into the blood and eventually into the urine. In severe diabetes the fat supply in, or very immediately accessible to, the metabolizing cells has been so reduced that even when all the oxygen supply is available for the oxidation of the fat—as, for example, during fasting—the β-hydroxybutyric and β-oxybutyric acids are formed in such moderate quantities that they are oxidized before they can diffuse out of the cells.

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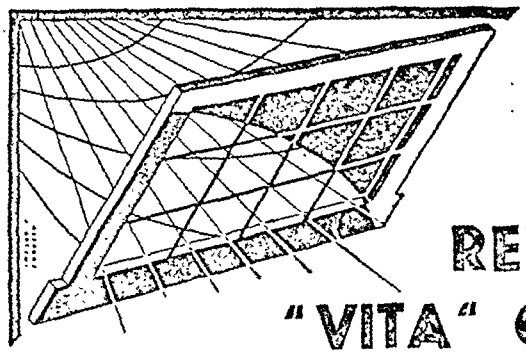
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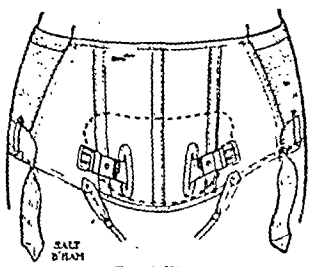
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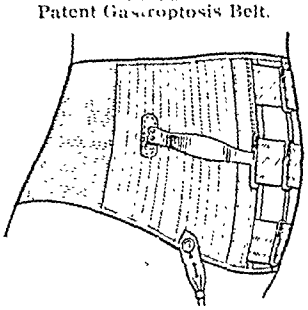
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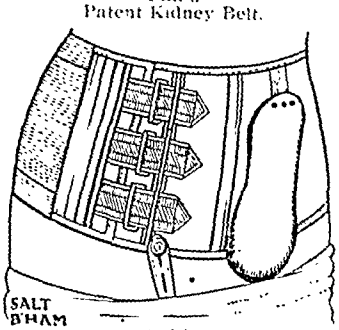


Front View.

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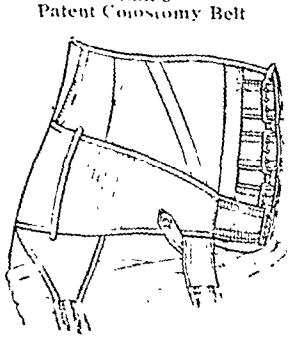
Salt's
Patent Kidney Belt.



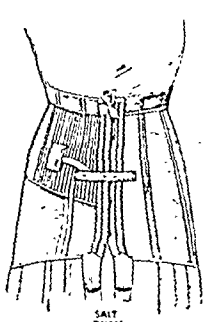
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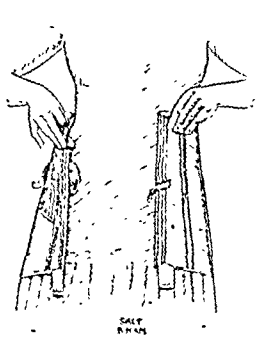
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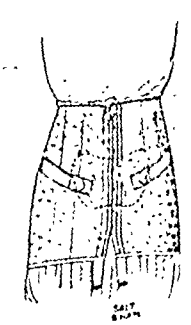


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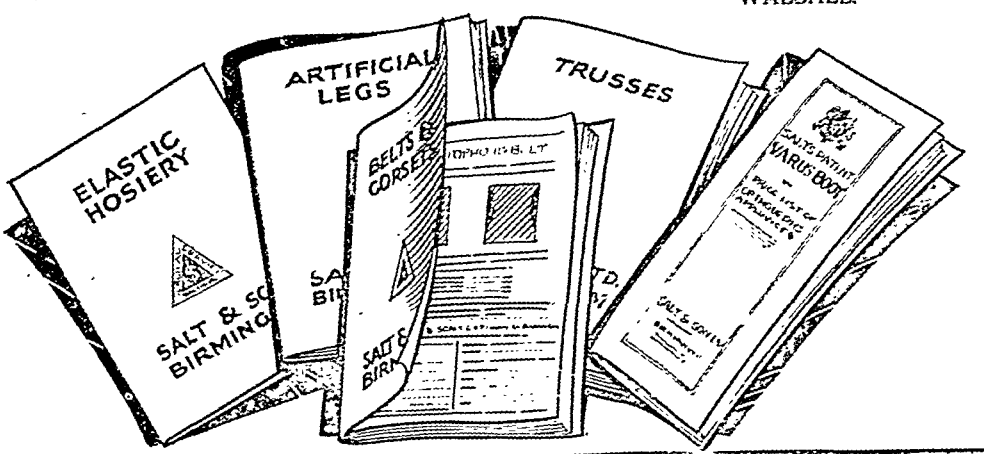
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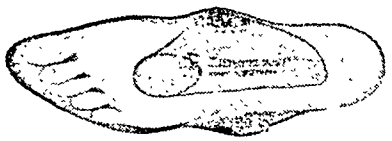
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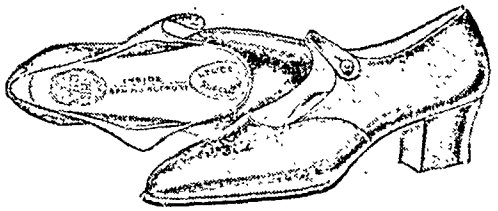
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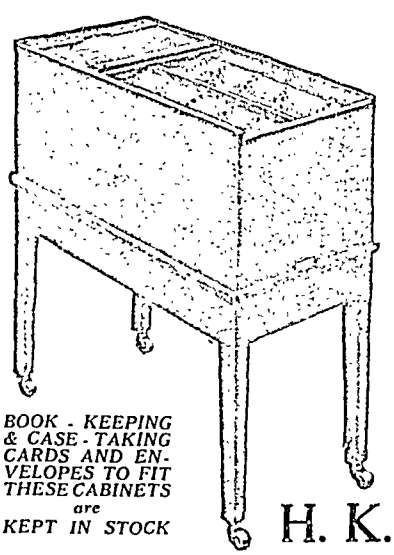
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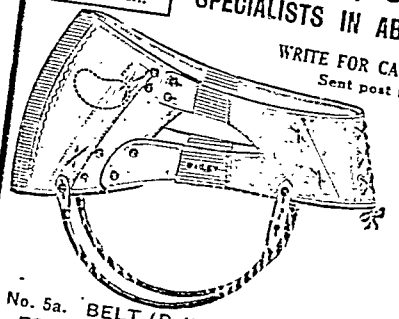
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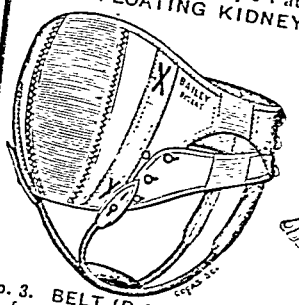
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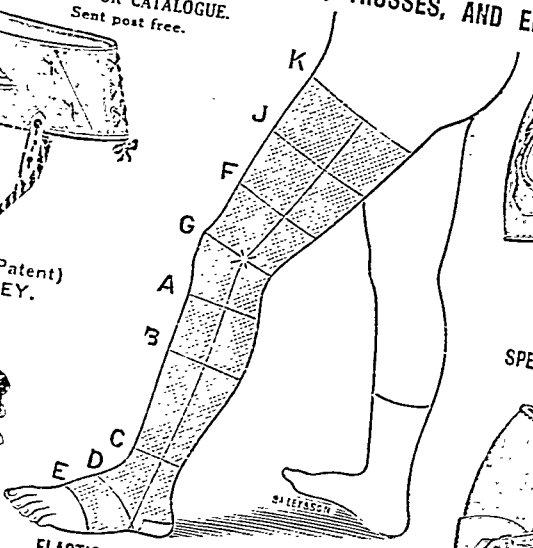
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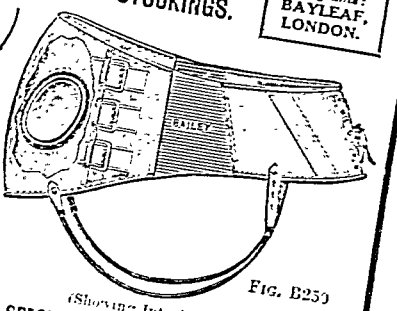


FIG. B250
(Showing Interior of Cup.)
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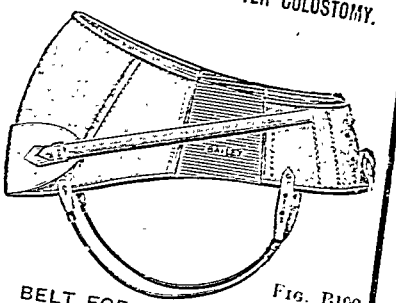


FIG. B190
BELT FOR ENTEROPTOSIS.

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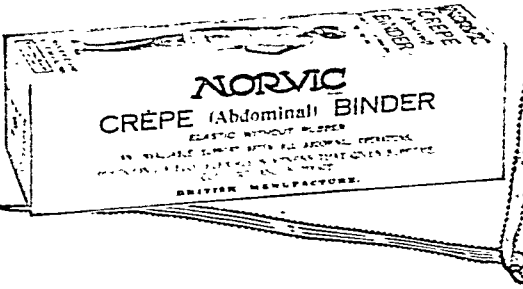
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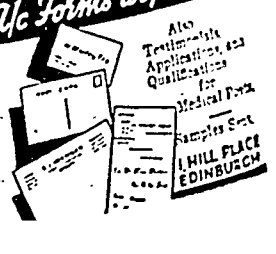
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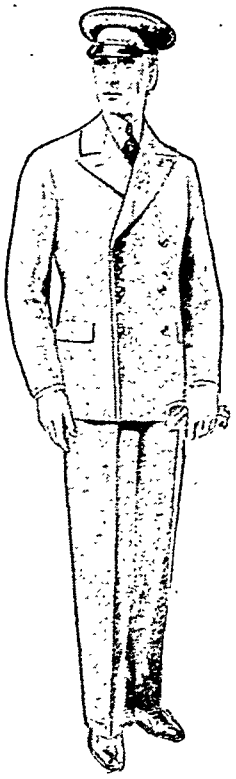
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OTHER DRUG HABITS, AND TROPICAL AILMENTS

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PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

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BARNWOOD HOUSE,

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment. Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
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Telephone: No. 7 Barnwood

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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received. For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

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A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, G.C. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S

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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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Medical Superintendent: DANIEL F. HAMBLY, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided.

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This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

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The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is front-fishing in the park.

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For terms and further particulars apply to the Medical Superintendent (Telephone No 56, Northampton), who can be seen in London by appointment.

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Limited to eight patients.
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CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a private road to the beach.

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Telegrams: Castle, Ruthin. Telephone: 66, Ruthin. Ruthin Castle, North Wales.

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(For the reception and treatment of cases of nervous and mental disease.) Tel.: Reliance 2182.

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Patients of the EDUCATED CLASSES, IN A PRESUMABLY CURABLE CONDITION, are eligible for admission. With a view to the ea treatment of eligible cases VOLUNTARY OR UNCERTIFIED patients are admitted. PATIENTS WHO CAN CONTRIBUTE THREE GUINE WEEKLY TOWARDS THE COST OF MAINTENANCE MAY BE RECEIVED AS VACANCIES ARISE. Treatment is carried out on the m modern principles. In connection with this Hospital there is a Convalescent Home on the Surrey hills at Witley.

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Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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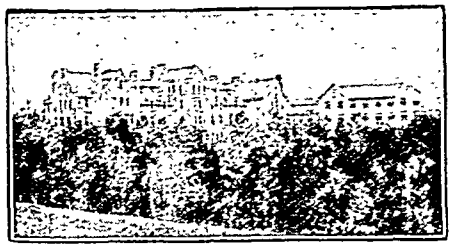
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MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

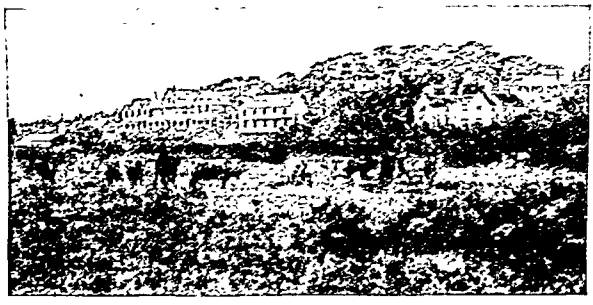
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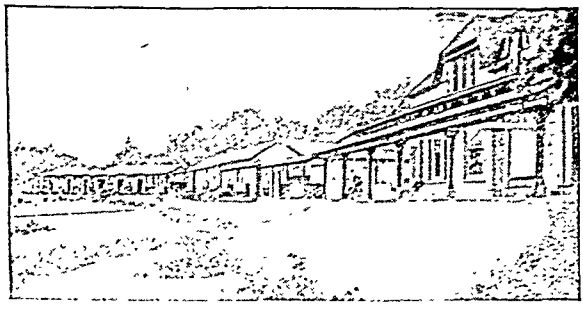
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Sir JAMES K. FOWLER, Hon. Secretary.

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APRIL 24th. Sir ALMROTH E. WRIGHT, M.D., F.R.S. (Principal of the Institute).	"Twelve years' work on Immunisation of the Blood in vitro."
MAY 1st. Prof. JOHN MELLANBY, M.D. (Professor of Physiology, University of London).	"Absorption from the Alimentary Canal."
MAY 8th. W. E. GYE, M.D. (Pathologist, Medical Research Council).	"The Action of Antiseptics on the Virus of Filterable Tumours."
MAY 15th. LEONARD E. HILL, M.B., F.R.S. (Director Dept. of Applied Physiology, National Institute of Medical Research).	"The Physiology of Diving."
MAY 22nd. Prof. C. A. LOVATT EVANS, F.R.S. (Jodrell Professor Physiology, University College, London).	"Stages in the Investigation of the Physiology of the Heart."
MAY 29th. Sir THOMAS LEWIS, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

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Royal College of Surgeons of ENGLAND.

ELECTION OF EXAMINERS UNDER THE CONJOINT EXAMINING BOARD IN ENGLAND.

Notice is hereby given that the Council in June next will proceed to the election of two Examiners in Elementary Biology for the Pre-Medical Examination, three Examiners in Anatomy, two Examiners in Physiology, and two Examiners in Midwifery for the Diplomas of L.R.C.P., M.R.C.S., two Examiners for the Diploma in Public Health, two Examiners for the Diploma in Tropical Medicine and Hygiene, three Examiners for the Diploma in Ophthalmic Medicine and Surgery, one Examiner for the Diploma in Psychological Medicine, three Examiners for the Diploma in Laryngology and Otology, and one Examiner for the Diploma in Gynæcology and Obstetrics.

The present Examiners are eligible for re-election except two Examiners in Elementary Biology, two Examiners in Anatomy, one Examiner in Pathology and Tropical Hygiene and one Examiner in Tropical Medicine and Surgery (D.T.M. & H.), one Examiner for Part 1 of the Examination for the Diploma in Ophthalmic Medicine and Surgery, and one Examiner for the Diploma in Psychological Medicine. The Examinership for the Diploma in Gynæcology and Obstetrics is also vacant.

In the case of the Examinerships in Anatomy and Midwifery for the Diplomas of L.R.C.P. and M.R.C.S., candidates must be Fellows or Members of the Royal College of Surgeons.

Candidates must make written application to the Secretary on or before Tuesday, the 29th instant.

S. FORREST COWELL,
April 12th, 1930. Secretary.

Royal College of Surgeons of ENGLAND.

ELECTION OF EXAMINERS IN ANATOMY AND PHYSIOLOGY FOR THE FELLOWSHIP.

Notice is hereby given that the Council in June will proceed to the election of four Examiners in Anatomy and four Examiners in Physiology.

The present Examiners are eligible for re-election except an Examiner in Anatomy.

Candidates for the Examinership in Anatomy must be Fellows of the College.

Candidates must make written application to the Secretary on or before Tuesday, the 29th instant.

S. FORREST COWELL,
April 12th, 1930. Secretary.

Royal College of Surgeons of ENGLAND.

BOARD OF EXAMINERS IN DENTAL SURGERY.

Notice is hereby given that the Council in June will proceed to the election of Members of the Surgical Section of the Board of Examiners in Dental Surgery.

The Examiners will be required to examine candidates in General Anatomy and Physiology, and in General Surgery and Pathology.

Fellows of the College desirous of becoming candidates for the office must make application in writing to the Secretary on or before Tuesday, the 29th instant.

S. FORREST COWELL,
April 12th, 1930. Secretary.

Doctor-Schoolmaster (ex Public School Resident Medical Officer and Master, and Preparatory School Housemaster and Doctor) has opened Sunny House on Kent coast as small HOME-SCHOOL for DELICATE and BACKWARD BOYS from 9 to 15 years of age. Individual care and tuition. Preparation for Preparatory Schools, or Common Entrance Examination, etc. Resident trained Nurse (ex Public and Preparatory School Matron, and Nurse in charge). Home Doctor's orders carried out.

Prospectus and all particulars from W. R. L. DRAWBRIDGE, M.R.C.S., L.R.C.P., St. Aidans Junior House, Westgate-on-Sea, Thanet.

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CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS commence 8 weeks prior to each Exam. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. ORRIN, F.R.C.S., Surgeons' Hall, Edinburgh.

Aden Settlement, ADEN, ARABIA.

The Executive Committee of the Aden Settlement invite applications for the post of MEDICAL OFFICER OF HEALTH. Applicants must possess a Diploma in Public Health or its equivalent, and preference will be given to holders of the Diploma in Tropical Medicine with Eastern experience. The salary will be Rs.800 per mensem (approximately £60 at the current rate of exchange), rising by annual increments of Rs.50 per mensem to Rs.1,000 per mensem, plus a car allowance of Rs.150 and a free unfurnished bungalow with water. The person appointed will be subject to the general control of the Executive Committee, but will work under the technical supervision of the Civil Administrative Medical Officer, Aden, who is a member of the Committee.

The appointment will be made on a two years' initial contract, subject to a probationary period of six months, with four months' leave on full pay on termination of initial contract, if re-engaged, or two months if not re-engaged. Free passage (first-class by British India Steamers or its equivalent) to and from Aden will be provided plus reasonable travelling expenses to port of embarkation.

Applications, with photograph (to be returned), stating age, nationality, and previous experience, with copies of testimonials (which will not be returned), should be sent without delay to the Chairman of the Executive Committee, Aden Settlement, Aden.

D. S. JOHNSTON (Major, R.E.),
Chairman, Aden Settlement.

Aden, March 14th, 1930.

Hong-Kong.

Vacancies at present exist for MEDICAL OFFICERS in Hong-Kong.

Salary. £600 per annum, rising by annual increments of £30 to £1,020 per annum, subject to deduction of 4 per cent. of salary as contribution to the Widows and Orphans Pension Scheme.

Qualifications. Applicants should be under 35 years of age. Preference will be given to candidates who have held Hospital appointments as House Physicians and House Surgeons.

Quarters. Partly furnished quarters, if available, are provided at a rental not exceeding 7 per cent. of salary; or an allowance is given in lieu.

Passages. Free passages are provided.

Terms of Appointment. The selected candidate will be engaged on a probationary agreement of three years, at the end of which period he will, if his services are satisfactory, and subject to his being certified medically fit, be placed on the permanent establishment.

Further particulars and forms of application may be obtained, on application in writing, from the Private Secretary (Appointments), Colonial Office, 2, Richmond Terrace, Whitehall, London, S.W.1.

Completed applications must reach the Private Secretary not later than May 3rd, 1930.

City of Georgetown, BRITISH GUIANA.

MEDICAL OFFICER OF HEALTH.

Applications are invited by the Mayor and Town Council of Georgetown for the appointment of a Medical Officer of Health of Georgetown, a city with a population of 55,000, and an area of approximately 2½ square miles.

Candidates must possess among other qualifications the Diploma of Public Health from a recognized Authority in the United Kingdom. They should state age, and also experience (if any) in the duties pertaining to a Medical Officer of Health.

The salary offered by the Council is £800 per annum, rising to £900 by annual increments of £25, and a travelling allowance of £100 per annum.

The appointment and dismissal of the Medical Officer of Health is subject to the concurrence of the Governor-in-Council of the Colony.

The successful candidate will be required to devote the whole of his time to the duties of his office and not to engage in private practice.

The appointment does not carry with it any pension rights, the granting of a pension or otherwise being by statute entirely in the discretion of the Council, who may award a pension for satisfactory long service.

The appointee will be entitled under the Council's leave Regulations to three months' vacation leave on full pay and three months on half pay for every completed three years' service.

The successful applicant will be required to pass a medical examination before assuming the duties of his office.

Applications, with copies of three testimonials, should be sent to the Director, London School of Hygiene and Tropical Medicine, Keppel St., London, W.C.1, not later than April 25th.

INDIAN MEDICAL SERVICE

Recruitment of European Officers.

Applications are invited from medical men for permanent commissions in H.M.'s Indian Medical Service. The terms offered include a gratuity of £1,000 on retirement after six years' service, or £2,500 after 12 years' service, together with free return passages, for those who no longer desire to remain in the Service. In other respects the terms will be as detailed below.

Candidates must be British subjects under 32 years of age at the time of application, and must be registered under the Medical Acts in force in Great Britain and Northern Ireland.

CAREERS.

The Indian Medical Service offers wide opportunities of medical experience, including clinical, preventive, specialist, and research work. At the beginning of his career an officer is employed on the military side, which has medical charge of the Indian Army. Promotion is on a time scale up to the rank of Lieutenant-Colonel, and by selection to the ranks of Colonel and Major-General. An officer may apply after two years' Indian service to have his name registered for transfer to the civil side, from which appointments are made to Civil Surgeoncies, which are established at the principal civil centres to provide for the medical needs of civil officials and for general medical administrative purposes; to specialist (for example, public health and bacteriological) services; to research posts; and to professorships at the Medical Schools.

PAY.

The monthly rates of pay for European officers in the Service who have a "non-Asiatic" domicile are as follows:

Rank.	Service in Rank.	Basic Pay.	Overseas Pay.	Year of Total Service.
1	2	3	4	5
		Rs.	Rs.	
Lieut.		500	150	1st
			150	2nd
			150	3rd
Capt.	(i) During first 3 years' service as Captain	650	150	4th
			£15	5th
			£15	6th
	(ii) With more than 3 and less than 6 yrs.' service as Captain	750	£25	7th
			£25	8th
			£25	9th
	(iii) With more than 6 years' service as Captain	850	£25	10th
			£25	11th
			£50	12th
Major	(i) During first 3 years' service as Major	950		
	(ii) With more than 3 and less than 6 years' service as Major	1100		
	(iii) With more than 6 years' service as Major	1250		
Lieut.-Col.	(i) Until completion of 23 years' total service	1500	£50	13th and over
	(ii) During 24th and 25th years' service	1600		
	(iii) After completion of 25 years' total service	1700		
	(iv) When selected for increased pay	1850		

EXTRAS.—In addition to the above rates various allowances are admissible for a large number of special appointments on both the military and the civil side which may be held by members of the Indian Medical Service. Special high rates of pay are also attached to the numerous administrative appointments open to officers in both branches of the Service.

ANTEDATES IN COMMISSION.

Any service rendered by an officer during the war as a medical or combatant officer, or in a position usually filled by an officer, may be counted as service for increments of pay, promotion, retirement and retired pay, but not for gratuity.

One half of any service in the ranks during the war may be counted as service for retirement and retired pay only.

Candidates possessing certain higher medical qualifications may be granted an antedate of one year in their commissions. Past service in certain hospital appointments may also render candidates eligible for an antedate of one year. Persons holding or about to hold resident posts at recognized hospitals may be seconded in those posts for a period not exceeding one year. The maximum period of antedate, secondment, or antedate and secondment combined, admissible under this paragraph, is limited to one year.

OUTFIT ALLOWANCE.

Officers on appointment will receive an outfit allowance of £50.

PRIVATE PRACTICE.

With the exception of Administrative Officers, military or civil, and officers holding certain special appointments, officers are not debarred from taking private practice, so long as it does not interfere with their proper duties.

PENSIONS.

The rate of pension are as follows:	Per annum.
	£
After 17 years' service for pension	400
,, 18 ,, ,, ,, ...	430
,, 19 ,, ,, ,, ...	460
,, 20 ,, ,, ,, ...	500
,, 21 ,, ,, ,, ...	540
,, 22 ,, ,, ,, ...	580
,, 23 ,, ,, ,, ...	620
,, 24 ,, ,, ,, ...	660
,, 25 ,, ,, ,, ...	700
,, 26 ,, ,, ,, ...	750
,, 27 ,, ,, ,, ...	800

These rates are subject to alteration on account of a rise or fall in the cost of living as compared with the year 1919 to an extent not exceeding 20 per cent. in all, the revision being undertaken triennially. With effect from July 1st, 1927, a reduction of 4½ per cent. has been made on this account from the amounts shown.

There are additional pensions ranging from £65 to £350 per annum for officers who have held administrative appointments.

PASSAGES.

An officer on appointment is provided with a free passage to India. The wives and families of officers who are married prior to the date of the officer's embarkation on first appointment will also be provided with free passage to India, subject to the payment of messing charges.

Officers and their families are also eligible for passage concessions under which they are granted a certain number of return passages home at Government expense during their service.

INSTRUCTION PRIOR TO EMBARKATION.

Officers are required to undergo courses of instruction at the Royal Army Medical College and at Aldershot, lasting approximately six months, prior to their embarkation for India on first appointment.

Full details regarding these appointments and forms of application may be obtained from the Under-Secretary of State for India, Military Department, India Office, London, S.W.1. The Selection Committee will meet at the India Office early in April to consider applications, and the selected candidates will be required to join a course of instruction on the 22nd April, 1930. Applications should be submitted as soon as possible.

British Medical Association.

APPOINTMENT OF ASSISTANT MEDICAL SECRETARY.

The Council of the British Medical Association is prepared to receive applications from registered Medical Practitioners for the appointment of an Assistant Medical Secretary. He will be required to work under the instructions of the Medical Secretary and to give his whole time to the duties of his office. If then considered suitable he will succeed to the post of Deputy Medical Secretary in October, 1932 (when the present Medical Secretary retires). Duties to commence on February 1st, 1931, and the appointment will be subject to six months' notice on either side.

Salary £1,000 per annum, subject to deduction for superannuation.

Applications, stating experience and age, with not more than three recent testimonials, should be sent to the Medical Secretary, British Medical Association, Tavistock Square, W.C.1, not later than by first post, May 12th, 1930.

Canvassing not allowed.

ALFRED COX, Medical Secretary.

St. Mary's Hospital, Institute of Pathology and Research.

Principal: SIR ALMROTH E. WRIGHT.

Applications are invited from qualified Medical Practitioners for a RESEARCH STUDENTSHIP. This will be tenable for six months, and may be renewed for a second period of six months.

The Institute comprises the following departments: Anatomy and Embryology, Physiology, Pathology, Chemical Pathology, Clinical Bacteriology, Systematic Bacteriology, and Immunology.

The student, who will receive an honorarium at the rate of £200 per annum, may elect to carry out his researches in any one of these departments, and would be required to work under the direction of the head of the department concerned.

Preference will be given to old St. Mary's Students.

For further particulars apply to the Secretary, Institute of Pathology and Research, St. Mary's Hospital, Paddington, W.2, to whom applications must be sent not later than April 28th.

Administrative County of London.

The LONDON COUNTY COUNCIL invites applications for the position of JUNIOR ASSISTANT MEDICAL OFFICER (man or woman) in the Public Health Department, for duty at QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. Candidates must be qualified by law to practise both Medicine and Surgery in England. The salary is £500 a year, which is subject to review. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate (at present £130 a year) fixed from time to time.

In the case of women, marriage terminates contract of service.

Application forms containing full details obtainable (stamped addressed foolscap envelope necessary) from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1, to whom they must be returned by April 24th.

Canvassing disqualifies.

The County Hall, Westminster Bridge, S.E.1. MONTAGU H. COX, Clerk of the London County Council.

County Borough of Sunderland.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

Applications are invited from fully qualified men and women for the position of Assistant Medical Officer for Maternity and Child Welfare.

Applicants must be registered Medical Practitioners, have had at least three years' experience in Public Health work since qualification, be able to show special experience in Ultra-violet Irradiation treatment, and hold a Diploma in Public Health.

Salary £600 per annum.

The appointment is subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical test as required by the Council for the purpose of that Act.

Applications, stating age, qualifications, and experience in Maternity and Child Welfare work, together with not more than three recent testimonials, should be delivered to the undersigned not later than Monday, April 21st, endorsed "Medical Officer."

Canvassing directly or indirectly, until after the first meeting of candidates, will disqualify.

H. CRAVEN, Town Clerk.

Town Hall, Sunderland.
March 24th, 1930.

Vacancies for Medical Inspectors of Factories.

The Home Secretary announces Two vacancies for Medical Inspectors of Factories (male). The scale of salary, exclusive of the cost of living bonus, is £600 per annum, rising by annual increments of £25 to a maximum of £900. The cost of living bonus at present payable on the initial salary is £176. The appointments will be subject to the usual Civil Service conditions as to retirement, pension, etc.

The Medical Inspectors will be required to undertake medical inspection, under the direction of the Senior Medical Inspector, in factories, workshops, and other places under the Factory Acts in any part of Great Britain, and to reside in such places as the Home Secretary may from time to time direct.

Candidates should be between the ages of 25 and 40, and should be natural born British subjects and children of persons who are or were at the time of death British subjects, though exception may be made in certain circumstances, of which particulars can be given on application.

Applications, on forms to be obtained from the Industrial Division, Home Office, Whitehall, S.W.1, should be forwarded so as to reach the Home Office not later than May 15th. Recommendations or testimonials will only be considered if given by persons having personal knowledge of the candidate.

The Royal Borough of Kensington.

THE LOCAL GOVERNMENT ACT, 1929.
VACCINATION.

The Council of the Royal Borough of Kensington invite applications from local Medical Practitioners who are duly qualified in vaccination work and who are willing to enter into contracts for public vaccination in the Districts of North and South Kensington respectively.

The duties will be in accordance generally with the provisions of the Vaccination Order, 1930, and subject to the approval of the Minister of Health, and the fees payable will be those laid down by the Vaccination Order with the exception that the payment authorised by Section 5 (1) (a) of the Order shall be 1s. 6d. instead of 1s. A copy of the Vaccination Order may be inspected at the Town Hall.

The contracts will be terminable by 28 days' notice on either side.

The successful candidates will not be regarded as officers of the Council, and will not be subject to any superannuation provisions.

Applications must be delivered to me not later than Wednesday, April 23rd.

Town Hall, Kensington, W.8. HORACE RAPSON, Town Clerk.

April 1st, 1930.

Borough of Luton.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Luton Borough Council invite applications for the appointment of Assistant Medical Officer of Health and Assistant School Medical Officer. Salary at the rate of £600 per annum. No bonus will be paid.

The gentleman appointed will be required to devote the whole of his time to the duties, and to act under the direction of the Medical Officer of Health.

On receipt of stamped and addressed envelope, the undersigned will supply particulars of the appointment and application form.

Applications (on such form), accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer of Health," must be delivered to me by not later than Wednesday, April 23rd.

Canvassing is prohibited and will disqualify.

2, Upper George St., Luton. W. SMITH, Town Clerk.

April 12th, 1930.

City of Edinburgh.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Corporation of Edinburgh invite applications from duly qualified persons for the appointment of Medical Officer of Health for the City.

Salary £1,500 per annum, rising to a maximum of £1,750 per annum.

A Memorandum specifying the terms of appointment, and outlining the duties to be performed, may be obtained on application to the subscriber.

Applications, stating age, qualifications, and full particulars of present and past experience, should be lodged with the subscriber not later than April 26th.

City Chambers, Edinburgh. A. GRIERSON, S.S.C., Town Clerk.

March 28th, 1930.

County Council of Durham.

ASSISTANT MEDICAL OFFICER FOR PUBLIC MEDICAL SERVICES.

Applications are invited from registered Medical Practitioners, with experience in private practice, and in Poor Law Institutional and District Medical work, for the post of Assistant Medical Officer for the General Medical Services of the Council.

The scale of salary is £800 per annum, rising by biennial increments of £50 to £1,000 per annum, with travelling expenses and subsistence allowances in addition.

The officer appointed will be required to devote his whole time to the duties of the office under the control and supervision of the County Medical Officer of Health, and to reside in the City of Durham or other approved centre.

The principal duties of the post will be concerned with the Medical Services transferred to the County Council under the Local Government Act, 1929, but the officer will also be required to undertake such other Public Health work as may be allocated to him.

The appointment will be subject to the provisions of the Local Government and other Officers Superannuation Act, 1922, and to a medical examination as required by the Council for the purposes of the Act, and to the statutory contributions to the Superannuation Fund under that Act will be deducted from the salary; and the appointment will be terminable by three months' notice on either side.

Applications, stating age, qualifications, and experience, and accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer for Medical Services," must be received by the County Medical Officer, Shire Hall, Durham, not later than April 15th.

Shire Hall, Durham. HAROLD JEVONS, Clerk of the County Council.

March 31st, 1930.

County Borough of Bournemouth

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the above post. Preference will be given to candidates who have had experience in Tuberculosis and the Diseases of Children.

The salary will be £650 per annum, rising by annual increments of £25 to £700, with an additional per annum for travelling expenses, and will be subject to the usual deductions under the Local Government and Other Officers Superannuation Act, 1922.

The appointment, which will be subject to one month's notice and to the approval of the Government Departments concerned, will be a whole-time appointment under the direction of the Medical Officer of Health and School Medical Officer. The person appointed to the post will not be allowed to engage in private practice.

The duties will relate principally to School Medical Inspection and Treatment and to Tuberculosis Clinics, but the person appointed will be expected to assist the Medical Officer of Health generally.

Personal canvassing of Members of the Council is prohibited.

Applications, on forms to be supplied from this office, should be sent to me on or before April 30th, endorsed "Appointment of Assistant Medical Officer, etc."

Town Hall, Bournemouth. HERBERT ASHLING, Town Clerk.

April, 1930.

County Borough of Rochdale.

ASSISTANT MATERNITY AND CHILD WELFARE MEDICAL OFFICER (Lady).

The Health Committee invite applications for the appointment of Assistant Medical Officer for Maternity and Child Welfare.

Candidates must be fully qualified Medical Practitioners, with post-graduate experience in Maternity and Child Welfare work, and in the treatment of Venereal Diseases in Women. The officer appointed will be required to devote the whole of her time to the duties of the office, which include attendance at the Ante-Natal, Maternity and Child Welfare, and Venereal Diseases Clinics, and the Infant's and Children's Hospital. Also the inspection of and lectures to midwives, or any other Public Health duties assigned by the Medical Officer of Health, under whose direction and supervision such officer will act.

Salary at the rate of £600 per annum.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Rochdale, and when completed should be returned, with copies of three recent testimonials, so as to be delivered at this office not later than Thursday, April 17th. Envelopes to be endorsed "Medical Officer."

Town Hall, Rochdale. WM. HENRY HICKSON, Town Clerk.

March, 1930.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, on May 12th.

Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on *Monday*, May 5th, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on completion for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must possess a legal qualification to practise, and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on *Wednesday*, May 7th, at 4.45 *p.m.* precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
April, 1930. Secretary.

General Hospital, Nottingham.
(377 Beds.)

A *SECOND CASUALTY OFFICER* (male) required at once at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, with an intimation as to when they can commence duty, if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MacCOLL,
House Governor & Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE PHYSICIAN required on June 1st. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held Resident appointments. The duties include those of House Surgeon to the Ear, Nose, and Throat Dept.

Applications must be made on forms to be *obtained from the Secretary, and must be sent in*, with not more than four testimonials, on or before April 28th.

T. GLENTON-KERR,
March 31st, 1930. Secretary.

Queen's Hospital for Children,
Hackney Road, London, E.2.

HOUSE SURGEON (male) required on June 1st. Six months' appointment. Salary at the rate of £100 a year, with board, lodging, and washing. Application must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before April 28th.

T. GLENTON-KERR.
March 31st, 1930. Secretary.

Royal Alexandra Hospital for
SICK CHILDREN, BRIGHTON.
(100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sunray Treatment. No canvassing allowed. To commence duty on May 4th.

Applications, in writing, accompanied by testimonials, should be sent to A. F. GRAVES, Secretary.

Peterborough and District
MEMORIAL HOSPITAL. (154 Beds.)

Applications are invited from fully qualified Male Practitioners for the post of RESIDENT HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry.

Applications, stating age, qualification, and experience, with copies of recent testimonials to be sent immediately to the undersigned—

FRANK A. C. TAYLOR,
Secretary-Superintendent.

Royal Asylum, Montrose

Wanted, ASSISTANT MEDICAL OFFICER. Male. Salary £325 (three hundred and twenty-five pounds) per annum, without deductions, with board, lodging, and laundry. Applications, stating age and qualifications, with testimonials, to be sent to the Physician-Supt.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a *HOUSE SURGEON* (male) for six months from April 12th (during first two months duty in Casualty and Out-patient Department). Salary £150 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, at once, to the undersigned at the Hospital. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates *must attend* Committee of Management. Date of meeting will be notified by undersigned, from whom rules and other particulars relating to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
March 26th, 1930. Secretary-Supt.

Royal Devon and Exeter
HOSPITAL, EXETER. (225 Beds.)

HOUSE SURGEON TO SPECIAL DEPTS.

Applications are invited for the post of House Surgeon to the Ear, Throat, and Nose, X-ray, and Casualty Departments at this Hospital, now vacant. The appointment is for six months, and candidates are eligible for re-election.

Salary at the rate of £150 per annum, with board, apartments, and washing.

Applications, giving particulars as to age and qualifications, together with copies of recent testimonials, should be sent to the undersigned as soon as possible.

By Order of the Committee,
S. S. COLE,
April 7th, 1930. Secretary & Manager.

Royal Sussex County Hospital,
BRIGHTON. (225 Beds.)

Required, a CASUALTY *HOUSE SURGEON* (male). Salary £120 per annum, with board, residence, and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent.

The Prince of Wales's General
HOSPITAL, *Tottenham*, N.15.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN.

Candidates must be Graduates in Medicine of a recognized British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, must be sent in by first post on Monday, April 21st next, to—

J. C. BURDETT,
April 3rd, 1930. Director.

The Prince of Wales's General
HOSPITAL, Tottenham, N.15.

Applications are invited for the post of *HONORARY SURGICAL REGISTRAR* (honorarium of £100 per annum).

Candidates must be Graduates in Medicine of a British University, or a Fellow or Member of the Royal College of Surgeons.

Applications, accompanied by three testimonials, to be sent on or before Monday, April 21st next, to—

J. C. BURDETT,
April 7th, 1930 Director

Royal Buckinghamshire Hospital
AYLESBURY.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male) for six months. To commence duty as soon as possible. Salary £200 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROAN, Secretary.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.

Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management, not later than April 18th.

H. B. NORTH, Secretary.

Chester Royal Infirmary.
(211 Beds.)

Applications are invited for the appointment of HONORARY SURGEON, a vacancy having been created by the retirement of Mr. R. V. TAVERNER. Candidates must hold the Degree of Master of Surgery of a University in the United Kingdom or the Irish Free State, or be a Fellow of a Royal College of Surgeons; provided that any Junior Member of the Royal Infirmary Staff, holding office on October 2nd, 1923, *who does not hold one of the above-mentioned higher qualifications*, and who undertakes to secure the same within two years after the date of election, shall be at liberty to apply, and, if appointed, to hold the office as Acting Honorary Surgeon, on condition of success within that period.

The successful candidate will be required to reside within three miles of Chester Cross.

Applications, stating age and qualifications, together with copies of not more than three testimonials, must be sent addressed to the Chairman of the Board of Management, on or before Wednesday, April 30th.

Canvassing is prohibited.

By Order of the Board of Management,
J. ROWSE MITCHELL,
April 1st, 1930. Secretary.

London Homœopathic Hospital
(Incorporated by Royal Charter),
for at *Great Ormond Street* and *Queen Square*, Bloomsbury, W.C.1.
A General Hospital—172 Beds.

RESIDENT MEDICAL OFFICER required, male or female (one of three), the appointment being for twelve months—one month as Medical and Casualty Officer, four months as House Surgeon, and four months as Medical and Gynæcological Officer—with Board, at the rate of £100 per annum, and Rooms, Apartments, and laundry. Candidates must be legally qualified and registered. Candidates will be required to attend a Meeting of the Medical Committee.

Applications, stating age, with 35 copies of application and 35 copies of each testimonial, may be sent to the Secretary at any time.

Successful candidates are required to take the Hospital course of instruction in the principles and practice of Homœopathy.

EDWARD A. ATTWOOD, Secretary.

The Hospital for Epilepsy and
PARALYSIS, Maida Vale, W.9

A RESIDENT MEDICAL OFFICER required May 1st. HOUSE PHYSICIAN required May 1st. Applications are invited for these posts. The salaries are at the rate of £150 and £100 per annum respectively, and the appointments are for six months. Candidates for the post of Resident Medical Officer should state if they are willing to take that of House Physician, and applications, accompanied by copies of three recent testimonials should reach me by April 12th.

The accommodation at the Hospital does not permit of Women Graduates holding these appointments.

H. W. BURLEIGH,
Secretary & General Supt.

The Elizabeth Garrett Anderson
HOSPITAL, Euston Road, N.W.1

Wanted, a [illegible] Medical Woman to act as ASSISTANT RADIOLOGIST in the X-ray Department. Honorarium £100 per annum. Applications, with [illegible] should be sent before April 23rd to the Acting Secretary, from [illegible] the post [illegible]

JEAN P. MURRAY,
Acting Secretary.

The Sheffield Royal Hospital.

The [illegible] of HOUSE SURGEON, the other as RESIDENT DENTAL SURGEON to the Hospital and Medical School, are vacant [illegible] Salary £[illegible] per annum, with board, residence, and laundry. Commencing salaries £100 per annum, with board, residence, and laundry. Applications to W. H. BOOTH, Supt. / Secretary.

Samaritan Free Hospital for
WOMEN, Marylebone Road, N.W.1

Applications are invited for the post of HOUSE SURGEON for a period of six months from May 5th next. Salary at the rate of £100 per annum, with board, lodging, and laundry. Previous experience in House Surgery essential.

Applications, accompanied by copies of three testimonials, must reach the Secretary at the Hospital not later than Friday next, April 25th.

G. H. HAWKINS, Secretary.

Worcestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER.

The above-mentioned Council invite applications for the post of Assistant County Medical Officer.

Applicants must be registered Medical Practitioners between the ages of 25 and 45, and must possess the Diploma in Public Health.

The duties will include work under the Council's Maternity and Child Welfare Scheme, the medical examination of Elementary and Secondary School Children, and such other Public Health duties as the County Council may direct.

The officer appointed will work under the supervision of the County Medical Officer, and will be required to reside in the district assigned to him or her by the County Council, and to devote the whole of his or her time to the work.

The salary will be £600 per annum, with actual travelling expenses in accordance with the County Council's Scale. The candidate appointed will be required to join the Council's Scheme under the Local Government and Other Officers Superannuation Act, 1922.

The engagement will be subject to three months' notice on either side.

Applications (on forms to be obtained from the County Medical Officer, 29, Foregate Street, Worcester), accompanied by not more than three recent testimonials, must be received by 12 noon on Wednesday, April 23rd, addressed to the County Medical Officer, 29, Foregate St., Worcester.

Canvassing disqualifies, and neither the names of the Members of the County Council nor of the Committee will be supplied.

Shirehall, Worcester. (W.85.) C. H. BIRD, Clerk of the County Council.

Borough of Folkestone.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified gentlemen for the position of Assistant Medical Officer of Health and Port Medical Officer, at a salary of £600 per annum.

The gentleman appointed must possess the qualifications prescribed by the Sanitary Officers Order, 1926, and will be required to devote the whole of his time to the duties of the office. He will also be required to assist in the duties of Medical Inspection of Aliens.

The post is designated under the Local Government and Other Officers Superannuation Act, 1922, and the appointment will be made subject to medical examination.

Applications, stating age, qualifications, and experience, accompanied by not more than three recent testimonials, and endorsed "Assistant Medical Officer of Health," should be addressed to me and delivered at my office not later than April 23rd.

There is no special form of application.

Town Clerk's Office, Folkestone. C. F. NICHOLSON, Town Clerk.

March 31st, 1930.

London (Royal Free Hospital)

SCHOOL OF MEDICINE FOR WOMEN AND ROYAL FREE HOSPITAL.

PATHOLOGICAL DEPARTMENT.

Medical Woman required as DEMONSTRATOR IN PATHOLOGY, June 1st. Salary £250 and Superannuation benefits.

Applications, with testimonials, by May 6th, to one of the undersigned, from whom particulars can be obtained.

LOUIE M. BROOKS, Warden & Secretary, 8, Hunter Street, W.C.

REGINALD R. GARRATT, Secretary, Royal Free Hospital, W.C.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF BACTERIOLOGY, tenable at University College Hospital Medical School. Salary £1,200 a year.

Applications (12 copies) must be received not later than first post on May 15th, 1930, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon Medical Staff Committee, not later than the first post Wednesday, April 23rd. Selected candidates will be invited for an interview Saturday, April 26th.

County Borough of Huddersfield.

"EDICAL OFFICER OF
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ERCULOSIS OFFICER,
UNDER MENTAL
id HOSPITALS SUPT.

The Huddersfield Corporation invite applications from fully qualified and registered Medical Practitioners, who are also holders of a diploma in Sanitary Science, Public Health, or State Medicine for the position of Medical Officer of Health for the County Borough, with which is combined the other offices above mentioned.

The gentleman appointed will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be in future assigned to him.

Candidates must not be more than 45 years of age, and the salary will be £1,100 per annum.

The successful applicant will be required to reside in the Borough, to devote his whole-time to the duties of the office, and not to engage in private practice.

The appointment is to be held in accordance with the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, the successful candidate being required to pass a medical examination and to pay contributions at the rate of 5 per cent. to the Superannuation Fund.

Applications, stating age, qualifications, and experience, accompanied by eight copies thereof and by eight copies of three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than Saturday, May 3rd.

Applications should also give three references other than the signatories to the testimonials.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Town Hall, Huddersfield. April 5th, 1930. J. HENRY FIELD, Town Clerk.

City Mental Hospital,

HUMBERSTONE, LEICESTER.

THIRD ASSISTANT MEDICAL OFFICER AND ASSISTANT PATHOLOGIST. (Male, under 30 years of age.)

Applications for the above combined post are invited. Salary £600 a year. Candidates must have held a resident house appointment in a teaching hospital for at least six months and be in possession of a Diploma in Psychological Medicine. Preference will be given to candidates holding a University degree. Board, lodging, washing, etc., can be had in the Hospital, if desired, at the rate of £100 a year. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Applications, marked "A.M.O.," with full particulars, and copies of not more than three testimonials, to be sent to the Medical Supt.

Cheshire Joint Sanatorium,

MARKET DRAYTON.

Applications are invited for the post of RESIDENT (Male) CLINICAL BACTERIOLOGIST at the Cheshire Joint Sanatorium.

There are 240 beds, and excellent opportunity for Research.

Salary in the first instance, £400 per annum, plus board and lodging.

Applications must be made on forms which are obtainable from the Medical Superintendent, and to be returned not later than April 24th.

Bradford Royal Infirmary.

Wanted for June 1st.

HOUSE PHYSICIAN (male).

HOUSE SURGEON (male).

Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.

There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than April 22nd.

April 8th, 1930. J. J. BARRON, Secretary-Supt.

The General Hospital,

BIRMINGHAM.

Applications are invited for the following resident appointment from May 15th.

HOUSE PHYSICIAN. Salary £70 per annum.

Applications, giving full details of qualifications and accompanied by testimonials (if desired), should reach the undersigned by April 25th.

April 8th, 1930. A. H. LEANEY, House Governor.

Urban District of Bilston.

MEDICAL OFFICER OF HEALTH.

The Council invite applications for the appointment of Medical Officer of Health, School Medical Officer, Superintendent of the Isolation Hospital, and Superintendent of the Maternity and Child Welfare Centres for the Urban District of Bilston.

Salary (inclusive) £800 per annum.

Applicants being fully qualified and duly qualified registered Medical Practitioners must have such additional qualifications as are prescribed in the Sanitary Officers Order, 1925.

The appointment will be made in accordance with the provisions of the Public Health (Officers) Act, 1921, the Sanitary Officers Order, 1925, the orders and directions of the Council and its Committees from time to time, and subject to the approval of the Minister of Health and Board of Education.

The officer appointed will be required to devote his whole time to the service of the Council and the Education Committee, and to reside in the district.

Forms of application may be obtained from and must be returned to the undersigned, accompanied by copies of not more than three recent testimonials, on or before April 26th, endorsed "Medical Officer of Health."

Town Hall, Bilston, April, 1930. JOSEPH L. ARLIDGE, Clerk and Solicitor of the Council.

The Northern Infirmary,

INVERNESS.

Wanted immediately for the new Infirmary, HOUSE PHYSICIAN, fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before April 21st next to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

Connaught Hospital

(100 Beds)

FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.

JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Connaught Hospital,

Orford Road, E.17. (100 Beds.)

MEDICAL OFFICER in charge of Electro-therapeutic and Massage Dept. Applications for above post are invited. D.M.R.E. essential. Must be able to attend on two half days per week.

Applications to reach the Secretary not later than Friday, April 25th, with three testimonials or copies.

Royal United Hospital, Bath.

Wanted as soon as possible, a HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Salaries £150 and £100 per annum respectively.

The appointments will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, together with three recent testimonials, should be addressed to the undersigned.

GERALD A. KENYON, Acting Secretary.

Charing Cross Hospital.

PHYSICIAN FOR MENTAL DISORDERS.

The Council invite applications for the post of Physician for Mental Disorders. Candidates who must have Degrees from one of the Universities recognized by the General Medical Council, and be Fellows or Members of the Royal College of Physicians of London, should send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, April 28th.

Charing Cross Hospital, W.C.2. PHILIP INMAN, House Governor.

The Abel Collin Maternity Hospital, Nottingham.

HOUSE SURGEON for May 1st. Honorarium 50 guineas per annum. The appointment is for six months.

Applications, with testimonials, to be sent to the Medical Superintendent.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*.	**PUBLIC HEALTH** *(contd.)*.
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	OLDBURY URBAN DISTRICT COUNCIL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. P. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 155, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.
April 9th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

County Mental Hospital,
STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £600, rising by £25 per annum to £700. £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £130 per annum will be charged for furnished quarters, board, laundry, and attendance.

Appointment subject to conditions of Asylums Officers Superannuation Act, 1909.

Applications, stating age, qualifications, etc., and enclosing copies of recent testimonials, to be addressed to the Medical Superintendent.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

Stockport Infirmary.
HOUSE PHYSICIAN *(male)*.

Applications are invited for the position of House Physician (male). Salary £175 and board-residence.

The Infirmary has 130 beds and large Out-patient side, with Specialist Departments.

Applications, stating age, University qualifications, and experience with copies of three recent testimonials, should reach the undersigned not later than April 22nd.

Duties to commence May 1st.

EDWIN J. PEARCE,
Secretary-Supt.

The Salvation Army.
THE MOTHERS' HOSPITAL,
Lower Clapton Road, Clapton, E.5.

Applications are invited from Medical Women for the post of RESIDENT ANÆSTHETIST (with some pathological duties), vacant May 1st. Salary £80 per annum with board, residence, and laundry. Candidates should have had previous experience in Anæsthetics and Pathology. She would be expected to call on members of the Honorary Staff, a list of whom can be obtained on application to the Secretary. Applications, with testimonials, must be sent to the Secretary on or before April 14th.

EDGAR DIBDEN, Secretary.

The Hospital for Women,
Soho Square, W.1.

Applications from fully qualified men and women are invited for the post of RESIDENT MEDICAL OFFICER for a period of six months commencing May 1st next. The salary is at the rate of £100 per annum, with board, residence, and laundry. Applications and testimonials must reach the undersigned, from whom further information can be obtained, by Friday, April 18th.

J. P. HEMING, Secretary.

Hampstead General and North-West London Hospital,
Haverstock Hill, N.W.3.

APPOINTMENT OF A HOUSE SURGEON.

Applications are invited from unmarried registered Medical Men for an appointment of House Surgeon, vacant on May 1st next. The salary is £150 at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on April 19th.

Lady Chichester Hospital,
HOVE.
(For Non-Pulmonary and Early Pulmonary Cases; 150 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, commencing on April 1st. Salary £100, board, lodging and laundry, and an allowance at the rate of £50 per annum.

Applications to be made in writing and to accompanied by two testimonials, and sent to the Secretary, Mr. A. F. OSBORN, 117, North Street, Brighton.

Royal Waterloo Hospital for Children and Women,
Waterloo Road, S.E.1.

There is a vacancy on May 1st for a HOUSE SURGEON at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Applications, with copies of testimonials, should be forwarded not later than Wednesday morning, April 16th, to the Secretary at the above address from whom further particulars can be obtained.

ASSISTANCIES.

Wanted. — Outdoor permanent ASSISTANT at a Branch Practice in South Durham; must be energetic, keen, and abstainer. Motor cycle supplied, or allowance given for using own car. Salary commencing £250, all found (board and furnished rooms at surgery). Usual bond to sign.—Address, No. 2303, B.M.A. House, Tavistock Square, W.C.1.

Woman part-time Assistant, with view to Partnership, wanted to work up Nucleus of about £300, and possibly live over surgery. N.W. district. Experience midwifery, ophthalmology advantage. Scope good-class work. — Address, No. 2507, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. Also LOCUM TENENS. State full particulars. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted at once, male Assistant, British, indoor, some experience. Would suit young married man. Apply personally, 11 a.m. (not Sunday).—Dr. RIDEWOOD, 103, Bethnal Green Road, E.2.

Wanted. — Male Assistant, outdoor, young, single, for panel and working-class Practice, South-East London. Must recently qualified man. — Address, No. 2532, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant (man or woman) for Practice in Scotland, with Hospital appointments. Must have hospital and general practice experience. State essential particulars. Interview essential.—No. 2547, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Outdoor male Assistant, with a view to Partnership, for a good class Country Practice. English or Scotch. Ex Hospital Resident, preferably surgical, essential. State essential particulars.—Address, No. 2506, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, gentleman, for early May, small country town; picturesque, sporting, and agricultural district Photo. Recently qualified man considered. — Address, essential particulars, etc., No. 2503, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Competent Man or Woman ASSISTANT, conscientious, and careful in details; own car, for experience in good Practice; outdoor; N. of England; early in May.—Address, No. 2322, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Assistant, by Woman Doctor, for six months. Small mixed Practice. Able to drive car. State age, salary required, testimonials, and send photo.—Address, No. 2522, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Post as Assistant to Doctor. Quals.: general training, C.M.B., C.S.M., M.G. Many years' practical exper. in all electrical treatments. Specialty: Diathermy, including intrapelvic, u.v. light. Entire charge. —No. 2502, B.M.A. House, Tavistock Sq., W.C.1.

Wanted, by M.B., B.Ch. (N.U.I.), ASSISTANTSHIP, with view to Partnership, or Outdoor Assistantship, preferably Midlands; aged 30; ex H.S. and H.P. Excellent testimonials. — Address, No. 2513, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by M.B. (Irish, 35, male, single, abstainer). Hosp. and G.P. exper. Drive car. Pref. view succession. Income, and panel no. about 1,500. 1/3 down, interest bal. Rent house. Vendor could stay on. — Address, No. 2525, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship by Woman M.B., B.Ch., about end of April. Excellent testimonials and keen.—Address, No. 2514, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship with view, in good mixed Country Practice. Share about £1,000, scope for increase. Male, aged 30, good experience. Herts, Beds, or Bucks pref. Interview arranged. No agents.—No. 2529, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship or LOCUM by Woman M.B., B.Ch., B.A.O., Queen's University, 2 years' experience G.P., private and panel. Young, energetic, well received. — Address, No. 2531, B.M.A. House, Tavistock Square, W.C.1.

Assistant required with view to Partnership, private and panel Practice, five minutes from Baker Street. English or Scotch preferred. State age, experience, in confidence.—Address, No. 2520, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted, panel and private Practice, in Bristol. £360 p.a. to start, outdoor.—Address, No. 2546, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted. — Young married Graduate required as Assistant, with early view, in a large mixed Practice in East Yorks City. Capital essential.—Address, No. 2536, B.M.A. House, Tavistock Square, W.C.1.

M.B., aged 40, well recommended, desires ASSISTANTSHIP or PARTNERSHIP in Mental or other institution in or near London.—Address, No. 2518, B.M.A. House, Tavistock Square, W.C.1.

M.B., Ch.B. (N.U.I., 1922), wants ASSISTANTSHIP, with view to Partnership; well experienced in general practice (private and panel). Had sole charge of Practice for four years. R.C. Highest refs.—No. 2538, B.M.A. House, Tavistock Sq., W.C.1.

Part-time Male Assistant wanted week-ends only in Westminster. Work very light, suit Post-Graduate. Terms 2 gns., outdoors. Must be on 'phone and live near. —Address, No. 2539, B.M.A. House, Tavistock Square, W.C.1.

Part-time Assistant wanted for London S.W. Practice. Preferably week-ends.—Address, No. 2521, B.M.A. House, Tavistock Square, W.C.1.

Woman M.B. would like to join another as WHOLE or PART-TIME ASSISTANT. London. Outdoor.—Address, No. 2530, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted, a Resident Woman MEDICAL OFFICER for a HYDROPATHIC HOTEL at an Inland Spa. The post requires a high professional capacity combined with tact and dignity. Age about 40. Salary £240, with board and residence, and prospect of share of fees. — Address, No. 2304, B.M.A. House, Tavistock Square, W.C.1.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Chauffeur - Mechanic. — Post wanted by a young man, versatile and intelligent. Would also act as dispenser or valet. Go anywhere. Ex. refs. from last two medical employers. Salary by arrangement.—No. 2510, B.M.A. House, Tavistock Sq., W.C.1.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary - Dispensers, Nurse - Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Dispenser-Chauffeuse, lady, excellent qualification, would like POST in London; preferably to live out.—Address, No. 2431, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Ex H.S. and H.P., working for Cambridge Medicine, will be free to do EVENING SURGERIES from April 21st to June 8th, in or near London, for remuneration. —Address, No. 2313, B.M.A. House, Tavistock Square, W.C.1.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BOTSFORD, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

Lady, young, well bred, intelligent, offers SECRETARIAL SERVICES, part or whole-time, to Doctor, return hour; ality, London; or room and very small rent. Run house, drive car, etc. Suggestions welcomed. —No. 2545, B.M.A. House, Tavistock Sq., W.C.1.

Municipal Doctor wanted for the MUNICIPAL DISTRICT OF WOODFORD - No. 550, ONOWAY, ALBERTA, CANADA. Salary 2,000 dollars per annum. Duties to include the Medical Health work inside the District, together with duties required in the Municipal Hospital. A limited outside private practice will be allowed. The application of either sex will be taken into consideration, stating experience to ARTHUR PERFAIT, Secretary-Treasurer, Onoway, Alberta.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of 'appreciation' from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION.—If you require well trained in all branches of hospital work Dispensers (capable of undertaking minor clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

LOCUMS.

For Reliable Locums and Assistants
AT SHORT NOTICE, CONSULT
British Medical Bureau
(Northern Branch),
33, CROSS ST., MANCHESTER.
Telegrams—"LOCUM, MANCHESTER."
Telephones—CENTRAL 3925; after office hours: 2549 RUSHOLME.

LOCUMS FOR EASTER.
FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 16, YORK BUILDINGS, ADELPHI, W.C.2. *Tel.* TEMPLE BAR 1254. RIVERSIDE 1254 (*Night Calls*)
Telegrams: "REASIDE, TUBERCLE, WESTRAND, LONDON"

A Medical Man, experienced in Hospital, panel, and private practice, bachelor, abstainer, motor cyclist, is now free for LOCUMS or ASSISTANCY WORK. Terms five gns. per week, and usual travelling exs.—No. 2549, B.M.A. House, Tavistock Sq., W.C.1.

Doctor, living in Dorset, near sea, would be glad to EXCHANGE PRACTICE with another for month of June or August. House with 6 bedrooms available. Advertiser has three young children.—Address, No. 2504, B.M.A. House, Tavistock Square, W.C.1.

Locum wanted for two months from May 15th, either sex. Motor. Seven guineas per week, board, etc. Young Scot preferred. Light rural Practice.—Address, No. 2378, B.M.A. House, Tavistock Sq., W.C.1.

Locum Tenens, experienced and reliable, G.P., panel, and mental work. Qual. 1907 St. Bart.'s. Abstainer. Recent ref. Now free.—Reply, stating terms, to MEDICUS, The Red House, Lancing, Sussex. 'Phone: Sompting.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 43 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9911.
After Office Hours: Epsom 9142.

PARTNERSHIPS.

Wanted by M.D.Edinburgh, PARTNERSHIP in good-class non-dispensing Practice. Share £1,200—£1,500. Large Hospital and general practice experience. —Address, No. 2516, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town, near Manchester.—PARTNERSHIP in old-estab. Practice. Cash receipts over £2,000 p.a. Panel 2,000. Scope for surgery. Good house, 3 reception, 5 bedrooms, garage, and garden. Rent £65 p.a. Premium—1/2 share—£1,500.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Large Town, Yorkshire.—PARTNERSHIP in mixed Practice. Receipts last year £2,60 . Panel 980. Premium for 1/2 share £1,000 cash. House with 2 recep. 3 beds, to rent or sell. Suit recently qualif. married Graduate.—No. 2585 B.M.A. House, Tavistock Square, W.C.1.

M. B., B.Ch., æt. 31 years, single, with capital, is desirous of securing PARTNERSHIP in Country or Country Town Practice. Preliminary assistantship preferred. — Address, No. 2509, B.M.A. House, Tavistock Square, W.C.1.

One-third Share for disposal in sound middle and working-class PRACTICE midway between Leeds and Bradford. Increasing to half share later. Average receipts over £3,000. Good house and garage. Premium 1½ years' purchase. Apply, 2403, REYNOLDS & BRANSON, Ltd., 13 Briggate, Leeds.

Partner or Assistant with early view wanted immediately. Old-established entirely unopposed Country Practice within 75 miles. Residential and sporting district. Vendor, in failing health, will retire in few years. Unusual scope for active man. Half share worth £600 for disposal at 2 years' purchase. Single man preferred with some experience.—Apply, PERCIVAL TURNER, Ltd., 4 and 5, Adam Street, W.C.2. Personally investigated and recommended.

Yorkshire.—Partnership in excellent PRACTICE, near large town. Cash receipts 1929, £3,354. Panel 2,100 and appointments, £134. Good house, 2 reception, 4 bedrooms, Garden, garage, and tennis court. Premium—1/3rd share (to be increased later)—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

County Durham.—For Sale.—Good old-established unopposed general PRACTICE, with local appointments. Panel over 1,900. Receipts approximately £2,000 per annum. Good house, and surgery with separate entrance, garden, garage for 3 cars, and garth, for sale or lease with Practice, and available for immediate occupation by purchaser. Drugs and fittings at valuation. Excellent opportunity for acquisition of a general practice.—Address, No. 2548, B.M.A. House, Tavistock Square, W.C.1.

For immediate Disposal.—East London PRACTICE. Receipts £900 per annum. Panel 350, increasing. Compact house with large garden. Great scope. 14 years purchase or nearest cash offer for immediate sale. Suit bachelor; marr ed man with small family; or could be run as lock-up. Only few midwifery. Lowest fee £6. Address, No. 2528, B.M.A. House, Tavistock Square, W.C.1.

For Sale, in a large Lancashire Town, an old-established PRACTICE, with a panel of about 2,300. Average receipts for the last three years about £2,500. This Practice is capable of further development. Vendor desirous of retiring. Introduction given. Price one and 2 half years' purchase.—Address, No. 2112, B.M.A. House, Tavistock Square, W.C.1.

Herts (12 miles London).—Lady Doctor's PRACTICE for Sale. Freehold mod. house, 1/4 acre, chalet for sunshine treatment, heated garage. Welfare Clinic and valuable appts. Rapidly incr. panel. £2,750. —No. 2430, B.M.A. House, Tavistock Sq., W.C.1.

Kent Town, 15 miles out, newly established Cash PRACTICE, already taking £10 per week. Great prospects. Rent 15/- p.w. Price, including drugs, furniture, etc., £400; £100 cash and balance out of takings.—Address, No. 2512, B.M.A. House, Tavistock Square, W.C.1.

London, N.W.—£950 for Practice yielding £900, for quick sale. Charming s.c. flat, with garden. Suit bachelor or couple. Rent £78, with share of rates. Garage. —Address, No. 1963, B.M.A. House, Tavistock Square, W.C.1.

London Cash and Panel Practice for Sale. Panel 1,700. Small shop-fronted house on long lease at £35 p.a. Living accommodation suitable for bachelor. Premium £2,500 cash.—Address, No. 2502, B.M.A. House, Tavistock Square, W.C.1.

Lancs.—Unopposed Practice in lovely district. Nice house, 5 rooms, bath, w.c., garden, garage. Receipts over £400, last year £75. Appts. £50. Excellent scope. Price £450 (freehold) and Practice £2,000.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown St.

Lancs Town.—Woman Doctor, intending to specialise, has small PRACTICE for disposal. Appointments about £ a. Convenient Panel list. Appointments about £100 per annum, steadily increasing flat to rent.—Address, No. 2537, B.M.A. House Tavistock Square, W.C.1.

Manchester.—Middle-class Practice in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5 to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Old-estab. Practice. Cash receipts 1929, £340. Panel 730. House, 2 reception, 5 bedrooms, garage. Rent £70 p.a. Scope for increase. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Industrial Practice. Average cash receipts £1,050. Panel 1,525. Good scope. Small House, 2 bedrooms. Rent £39 p.a. clear. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North-West Coast.—Old-estab. mixed PRACTICE. Cash receipts 1929 £1,129. Panel 520. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practically 2 years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nucleus.—County Town.—Particularly suitable to Woman Doctor. Established 5 years. Panel 270. Practically no visible means of support. Full particulars on application.—Address, No. 2544, B.M.A. House, Tavistock Square, W.C.1.

North London.—Flourishing NUCLEUS for Sale. Lock-up Surgery at low rental. Owner leaving London. Premium £275, to include drugs and some furniture. —Address, No. 2511, B.M.A. House, Tavistock Square, W.C.1.

N.W. England.—Practice, £1,150 average 3 years, including panel 350. Scope. Good house, let, or sell £2,000. Premium 1½ years.—Address, No. 2115, B.M.A. House, Tavistock Square, W.C.1.

North Wales (seaside).—DEATH VACANCY.—Nice house facing sea, garden, garage, £50. Receipts £5 . Excellent scope. Locum in charge. Golf, tennis, boating. Price £500 or near offer.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Practice wanted in or near London, over £1,000 p.a., with good panel. Not lock-up. Purchaser has cash. In free now. In strict confidence.—Address, No. 2519, B.M.A. House, Tavistock Square W.C.1.

Practice £1,200 — £1,500 wanted at once. Good panel. House with garden to rent at first. Purchase later if necessary. Bracing climate. Pleasant surroundings.—Address, No. 2524, B.M.A. House, Tavistock Square, W.C.1.

Panel Practice wanted in Country Town (East Coast preferred), about £200 p.a., with scope. Good house, garden, and garage, to rent. State particulars, premium, etc.—Address, No. 2517, B.M.A. House, Tavistock Square, W.C.1.

South Wales. — County Town, with Hospital. Agricultural district.—For Sale, very old-established PRACTICE. Average cash receipts £650, including £245 panel. Scope for much improvement. Vendor retiring owing to age. Sale on easy terms. — Apply, Good house. Premium 1½ years' purchase. WALTERS & WILLIAMS, 31, Quay Street, Carmarthen.

South Yorkshire. — Old-estab. PRACTICE. Cash receipts £2,553. Panel 2,505. Modern House, specially built, in an acre of ground. Garage and large garden. Beautiful country. Premium 1½ years' purchase, part by arrangement. Vendor retiring. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 years' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Woman Doctor's Nucleus in London suburb for Sale. Middle and working-class. Rapidly increasing. Receipts last month over £30. Freehold house to be let or sold, or surgery would be let separately. Premium £450.—Address, No. 2504, B.M.A. House, Tavistock Square, W.C.1.

Yorks.—Old-established, go-ahead PRACTICE £1,100 p.a. Panel 1,400. Very little midwifery. Modern house, garage, etc. Owner desirous of being near London; reading for high exams. 14 years' purchase.—Address, No. 2533 B.M.A. House, Tavistock Square, W.C.1.

Yorkshire Spa. — Splendid opportunity to acquire fine NURSING HOME in bathing resort. Premium £1,000 p.a. Price, including furniture and fittings, £2,500. Rent £65 p.a.—JEFFS, 2 Ely Place, E.C.1.

PRACTICES.

Wanted by experienced Practitioner, general PRACTICE or PARTNERSHIP Succession, London. Income about £2,000 or more p.a., including substantial Panel. Capital available (cash).—Address, No. 2550, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—PRACTICE £12—1,500 p.a., with good panel and scope. House to rent, garden and garage if possible. Suburb or provincial town. Death vacancy or retiring practice especially considered.—Address, No. 2534, B.M.A. House, Tavistock Square W.C.1.

Wanted by M.D., general PRACTICE about £1,0 0 p.a. Educational facilities essential. Ample capital. Address, No. 2526, B.M.A. House, Tavistock Square, W.C.1

Birmingham.—For Sale, panel of 1471 and industrial (mostly cash) PRACTICE (7 years' age about £1,650. Price 1,471 guas., with Freehold house (corner) garage, large garden and surgery attached. Price £ —Address, No. 2541 B.M.A. House, Tavistock Square, W.C.1

Cheshire.—Pleasant district. Nice house, large garden, garage. Receipts £5 0. Panel 650. Excellent scope. Appts. £60. House and Practice £2,500 or near offer, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

For Disposal.—High Colonic IRRIGATION TREATMENT CLINIC. Fitted most up-to-date apparatus. Comprises Treatment, Dressing, Consulting, Waiting, and Store rooms. Private lavatories. Central heating. Well furnished. Near Harley St. Fees 1 gn. Treatment. —No. 2542, B.M.A. House, Tavistock Sq., W.C.1.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

HOUSES, CONSULTING ROOMS

Wanted. — Good Bed-sitting ROOM, with breakfast and dinner in family. 3 Doctor's children. Terms Sept. to Dec.—Address, No. 2543, B.M.A. House, Tavistock Square, W.C.1.

Bristol. — Detached corner RESIDENCE to Sell. Excellent position. 23 rooms. Hardy Road.

Consulting Room, first floor, to let, Hardy Street. Vacant after Easter. Rent required. Good service.—Address, No. 2539, B.M.A. House, Tavistock Square, W.C.1.

Consulting Rooms to be Let. Harley Street and district, whole or part time. Low rents. Efficient service.—ELWOOD & CO., 10 Hertford Street, Carnaby Square, W.1. Telephone Langham 2601.

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A commodious modern Bungalow, 10 good light rooms, grounds 1/2 acre, electric light, central heating, etc., very suitable for a Doctor, occupying prominent corner position in pleasant populous district 12 miles N.E. of London. No resident practitioner. Extensive building programme rapidly progressing, and a large Practice should be made very quickly. Freehold available for £100 cash and balance on mortgage. Cost over £2,000 originally.—Write Owner, R. T. MORGAN, 129, Minories, E.C.3.

Comfortable Board-Residence for Doctors or Students. Good cooking, electric light, 'phone. Near tube, trams, and buses. Common at end of road. Tennis courts and clubs near. Particulars and terms on application.—96, Huron Road, Balham, S.W.17.

Cavendish Square.—One or TWO BEDROOMS to LET, or Bedroom and Sitting Room, furnished, in Doctor's house near Cavendish Square. Part-time use of consulting room can be arranged if desired.—Address, No. 2325, B.M.A. House, Tavistock Square, W.C.1.

Crackington Haven, North Cornwall.—S.c. FURNISHED FLAT for holidays, nr. beach, good bathing. Living room, kitchenette, bath., 4 beds., fitted h. and c., garage. From £3/3 weekly (May) to £8/8 (Aug.). Also caravan.—BOYLE, Wembdon Vicarage, Bridgwater.

Good opportunity for Doctor in growing neighbourhood in large City in the West. HOUSE, with three reception rooms and kitchen, 4 bedrooms, nice gardens and room for garage. Standing 230 feet above sea-level on main road. Nearest Doctor about half mile away; large population within this radius. Two good Nursing Homes within few yards.—Address, No. 2349, B.M.A. House, Tavistock Square, W.C.1.

Nursing Home.—To Let or Sell. Commodious HOUSE in country, within three miles Leeds. Three reception rooms, 11 bedrooms, electric light, 2 garages, good garden. Excellent condition. Splendid opening.—Apply, JONES, Monkswood, Kirkstall, Leeds.

Queen Anne Street.—To be Let, large light CONSULTING ROOM, just vacated by Dental Surgeon after many years' occupation. Small secretary's room. Also part-time Consulting Room. Low rents.—Address, No. 2525, B.M.A. House, Tavistock Square, W.C.1.

Rooms to Let over Chemist's shop, large and convenient, best business position. Suitable for Oculist.—BRICE & SON, Chemists, High Street, Uxbridge.

Sheffield Suburb, thickly populated by middle and working classes. Prominent CORNER HOUSE, modern conveniences, ideal position and premises for opening for Medico.—Particulars, J. MURPHY, 223, School Road, Crookes, Sheffield.

To Let.—Part-time Consulting ROOM, Queen Anne Street, Cavendish Square. Use waiting room; attendance. £10 per annum.—Address, No. 2320, B.M.A. House, Tavistock Square, W.C.1.

To Let.—Attractive Unfurnished First Floor FLAT, at 39, Gloucester Place, Portman Square. Suitable for Professional or Residential purposes. Four rooms, kitchen, bathroom, and other offices. Lift, constant hot water, central heating, caretaker. Inclusive rent £:.80 p.a.—Apply, OWNER, 40, Gloucester Place, W.1.

Pinner.—Now being built, imposing HOUSE on conspicuously attractive corner site, having frontage to two main roads. House contains 2 reception, 4 bedrooms, tiled bathroom, 2 w.c.'s, etc. Cavity walls, main sewer, and all services. Separate garage. House is planned to provide for surgery, if and when required. Exceptional opportunity in growing neighbourhood. Price £1,585, freehold.—Apply to Lt.-Col. COLMAN, "Vinny," Eastcote, Ruislip.

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THE Ideal Suit for Professional or Business wear
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PLUS FOUR SUITS, Coat with Pivot Sleeves, fr. £6 6s.
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(late Inspector of Taxes)
Assist you to avail yourself of special facilities provided for the Medical Profession relating to Income Tax. For further particulars write or call.—C. G. C. KILNER, 17, George St., Baker St., W.1. ('Phone: Welbeck 2012).

British Journal of Surgery.—For Sale, eleven bound volumes, 1913-24. Also unbound numbers July and October, 1924, and January and October, 1925.—Address, No. 2540, B.M.A. House, Tavistock Square, W.C.1.

Chrysler 1930 Model 70, 4 speeds, magnificent 2/3 seater COUPE, with large dickey. Cost £525. Mileage 500. Accept £395. Must be sold.—69, St. Paul's Avenue, Willesden Green, London.

Consult GRIMALDI'S before buying your next Car, whether NEW or USED. Agents for all leading makes. 100 USED CARS IN STOCK ALL GUARANTEED 12 months. Special deferred terms for Doctors, financed entirely by ourselves. Strictest privacy ensured.—ERNEST GRIMALDI, LTD., 148/150, Gt. Portland St., W.1. Museum 3931 & 7236.

Handsome Pair of £4 4s. square polished Ash TENNIS STANDARDS, complete with heavy ground plates, powerful fixing screws, and solid brass net-winder. Accept 47/6. Also full regulation size heavy Waterproof Net, with steel headline, 17/6. Both perfect condition, never used. Approval willingly against postdated cheque.—GILYARD, Darley St., Bradford.

Hanovia Quartz Sun Lamp, complete, for Sale. 100 volt D.C. Only been used for two applications, therefore as good as new. What offers?—Address, No. 2515, B.M.A. House, Tavistock Square, W.C.1.

X-Ray Apparatus.—Coil, valve tube, etc., interrupter, couch, protected box below, tube stand, two tubes (one water-cooled therapy), various accessories. All in good working condition. Nearest £47 10s. accepted. Advertiser willing to instal. Potter-Bucky Diaphragm, excellent, £30. Inspection invited. Sample film sent.—Address, No. 2302, B.M.A. House, Tavistock Square, W.C.1.

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Medical Surgical Sundries Ltd.

Supply Instruments, etc. "Essell" Ionic Apparatus, price £12 10s. (particulars on application). Write for price list of Tax[illegible] and Government Surplus articles.
Showroom: 97, Swinderby Road, West[illegible]

APPOINTMENTS.—Contd.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the [illegible] HOUSE SURGEON (male) to the Ophthal[illegible] and Ear, Nose, and Throat Departments, [illegible] now.

Salary £150 per annum, plus board, r[illegible] dence, and laundry.

The appointment will be for six months, [illegible] the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS, House Governor.

April 7th, 1930.

Royal Albert Edward Infirmary AND DISPENSARY, WIGAN.

Applications are invited for the post of SURGEON-IN-CHARGE of the Orthopædic Department. The holder will be required to attend the Out-patient Department one afternoon each week (Thursday), and also be responsible for the treatment of fracture cases in the Wards—these visits to coincide with clinic or two operation days each week as may be arranged.

A suitable honorarium will be paid, according to qualifications and experience, and during the time the holder is able to devote to the work.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned as soon as possible.

A. STANLEY BRINT, Gen. Supt. & Sec.

April 8th, 1930.

Victoria Hospital, Blackpool
(132 Beds.)

HOUSE SURGEON (JUNIOR), for [illegible] months. Salary £120 per annum, with [illegible] dence, board, and washing.

Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than April 28th, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Royal Aberdeen Hospital for SICK CHILDREN.

Wanted, Two HOUSE PHYSICIANS and Two HOUSE SURGEONS (male or female), to commence duties on May 1st. Candidates are requested to call on or communicate with Sec. Members of the Hon. Medical Staff. Applications, accompanied by one copy of testimonials, to be lodged on or before Friday, April 18, with Mr. A. S. R. BRUCE, 12, [illegible] Aberdeen.

Victoria Hospital Burnley.
(120 Beds.)

Applications are invited for the [illegible] HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £[illegible] per annum, with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING, Secretary.

April 8th, 1930.

Harrogate General Hospital.

Applications are invited from Registered Practitioners (male) for the post of HOUSE PHYSICIAN to the New Hospital, with 46 Medical Beds, at the rate of £150 per annum, with board, lodging, and laundry. Applications to be made on official form to be had from the Secretary, and signed should be sent in not later than May 3rd.

GEO. BALLANTINE, Secretary.

The Infirmary, Harrogate.

CAVENDISH NURSES (Male and Female)

Head Office: 54, BEAUMONT ST., LONDON, W.1 (late 43, New Cavendish St., London, W.1.)

A very convenient form of telephone message pad sent free on application to the Secretary.

Branches: *MANCHESTER*: 176, *Oxford Road.* *GLASGOW*: 28, *Windsor Terrace.* *DUBLIN*: 23, *Upper Baggot Street.*

TELEGRAMS: Tactear, London. Tactear, Manchester. Surgical, Glasgow. Tactear, Dublin.

TELEPHONES: London, 1277 Welbeck. Manchester, 3152 Ardwick. Glasgow, 477 Douglas. Dublin, 531 Ballsbridge.

Superior trained Nurses for Medical, Surgical, Mental, Dipsomania, Travelling, and all cases. Nurses reside on the premises, and are always ready for urgent calls Day and Night. Skilled Masseuses, Masseurs, and good Valet attendants supplied.

Terms from £3 3s. *Apply to the Secretary or Lady Supt.*

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me immediately.

W. COCKBURN,
Supt. & Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (*Final*).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE.
Gen. Supt. & Secretary.
April 7th, 1930.

Royal Southern Hospital,
LIVERPOOL.

Wanted, One HOUSE SURGEON and One MEDICAL OFFICER to take charge of the Special Departments. The salary for these appointments is £60 per annum, including board and residence. The appointments are for the period ending Sept. 30th, duties commencing immediately.

Applications, and copies of testimonials, to be sent to the undersigned on or before April 19th.

ALLEN NALDRETT,
Supt. & Secretary.

Glasgow Ear, Nose, and Throat
HOSPITAL.

INDOOR HOUSE SURGEON wanted, honorarium £50 for six months. Also NON-RESIDENT HOUSE SURGEON, honorarium £50 for six months.

Please apply, with particulars of experience, to the Secretary (D. N. MACKAY, 144, St. Vincent Street, Glasgow.

Hounslow Hospital, Staines Rd.,
HOUNSLOW, MIDDX.
(70 Beds.)

Wanted, SENIOR MALE HOUSE SURGEON. Salary £120 per annum, with board, residence, etc. The appointment will be for six months.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent (marked "House Surgeon," top left-hand corner) to W. T. ROSS, Secretary, Hounslow Hospital.

London Hospital, E.

There is a vacancy in the post of RADIOLOGIST to the *London Hospital*.

One of the Assistant Radiologists is a candidate for the appointment.

E. W. MORRIS, House Governor.

Manchester Royal Infirmary.
FIRST ASSISTANT IN THE CLINICAL LABORATORY.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which is non-resident, and is tenable for twelve months; the holder is eligible for re-election.

Salary £350 per annum. Candidates must be duly qualified and registered; they must state age and send twelve copies of their application and testimonials to the undersigned by Wednesday, April 30th.

The appointment is to commence on Monday, June 2nd.

By Order,
FRANK G. HAZELL,
April 12th, 1930. Gen. Supt. & Secretary.

Manchester Royal Infirmary.
ASSISTANT MEDICAL OFFICER, MASSAGE AND ELECTRICAL DEPARTMENT.

The Board of Management invite applications from registered Medical Practitioners (men and women) for the above appointment. Previous experience in the work is not essential.

The duties are to attend daily and to assist the Medical Officer in charge of the Department. The appointment is part-time (non-resident) for one year. Salary £100 per annum.

Candidates must state age, and send twelve copies of their application and testimonials to the *undersigned on or before* Thursday, April 24th.

By Order,
FRANK G. HAZELL.
April 7th, 1930. Gen. Supt. & Sec.

Manchester Royal Infirmary.
SECOND SURGICAL REGISTRAR.

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment, which becomes vacant on May 1st.

Applicants must be registered and hold a Medical and Surgical qualification, and are required to devote the hours of 10 a.m. to 1 p.m. (Sundays excepted) to the duties of the post.

The appointment (non-resident) is for one year, renewable for a further period of one year, subject to the provisions of the By-laws as to notice, etc. Salary £150 per annum.

Applications, stating age, to be addressed to the Chairman of the Medical Board not later than April 19th.

By Order,
FRANK G. HAZELL.
April 2nd, 1930. Gen. Supt. & Sec.

North Ormesby Hospital,
MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, April 17th.

GEORGE WATTS, Secretary-Supt.

Durham County Hospital.

The post of JUNIOR HOUSE SURGEON will be vacant on April 30th. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of beds 75. Salary £120 per annum, with board and lodging. Applications, with copies only of testimonials, to be sent to the undersigned by April 16th.

79, Saddler Street, Durham. WM. R. WILSON, Secretary.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Preston & County of Lancaster
ROYAL INFIRMARY.

The Board of Management invite applications from unmarried gentlemen of British nationality, duly qualified and registered, for the post of HOUSE SURGEON.

Duties in Male, Female, and Children's Wards, under Consulting Surgeon. Six months' agreement. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and experience, and when free, together with copy testimonials, to be forwarded as soon as possible to—

Royal Infirmary, Preston. JOHN GIBSON, Supt. & Secretary.
April 3rd, 1930.

East London Hospital for
WOMEN AND CHILDREN,
Shadwell, E.1.

Applications are invited for the resident post of WHOLE-TIME CASUALTY OFFICER (male). The appointment is for six months. Salary at the rate of £125 per annum, with board, residence, and laundry provided.

Applications, together with testimonials, should be sent to the undersigned not later than April 25th.

W. M. WILCOX, Secretary.

N.B.—Residents at this Hospital are eligible as candidates for the reciprocity scheme with Barnes Hospital, St. Louis, U.S.A.

Newcastle-upon-Tyne City
MENTAL HOSPITAL, GOSFORTH, NEWCASTLE-UPON-TYNE.

Wanted, as an early date, JUNIOR ASSISTANT MEDICAL OFFICER (*single, male*). Commencing salary £350, rising by annual increments of £25 to £450 per annum, with the addition of £50 on obtaining the Diploma of Psychiatry, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

Burton-on-Trent General
INFIRMARY.

HOUSE SURGEON.

The Committee require the services of a duly qualified Second Resident House Surgeon (male).

Salary £150, with board, residence, and laundry.

Duties to commence on May 1st.

Applications, with copies of testimonials to be sent to the undersigned.

The Infirmary, Burton-on-Trent. E. W. THORNLEY, Secretary.

Royal Victoria and West Hants
HOSPITAL, BOURNEMOUTH.
(POOLE ROAD BRANCH.)

HOUSE SURGEON (male, British subject) required to commence duties immediately. Salary £150 per annum, with board, lodging, and washing. The appointment is tenable for six months, and candidates must be registered according to the provisions of the Medical Acts. Applications, stating place of birth, with copies of three testimonials, to be sent marked to the undersigned. Where candidates are in training this

GORDON M. SAUL, Secretary.

Cardiff Royal Infirmary.
(Associated with Welsh National School of Medicine.)

Applications are invited for the post of AURAL HOUSE SURGEON.

Salary at the rate of £75 per annum, with board and lodging. The appointment is for six months, commencing April 22nd.

Forms of application can be obtained from the undersigned, and should be returned, with copies of three recent testimonials, as soon as possible.

R. ARMSTRONG,
April 3rd, 1930. Med. Supt.

South Devon and East Cornwall HOSPITAL, PLYMOUTH.
(240 Beds.)

Applications are invited for the following posts on the Honorary Medical Staff:
(1) ASSISTANT SURGEON. Candidates for this post must hold the Fellowship of a Royal College of Surgeons in Great Britain or the Mastership of Surgery at Oxford, Cambridge, or London.
(2) SURGICAL REGISTRAR. Candidates for this post must be duly qualified Medical Practitioners and registered under the Medical Act.
Applicants must send 12 copies of their application and testimonials to the undersigned by April 18th.

ARTHUR R. CASH,
Gen. Supt. & Secretary.

Victoria Hospital, Worksop.

HOUSE SURGEON required to take up duties on May 7th.
Candidates must be unmarried, fully qualified, and registered. Good Anæsthetist essential.
Salary at the rate of £170 per annum, with furnished rooms, board, and laundry. Beds 56.
There is a Dispensary attached to the Hospital, which is under the charge of the House Surgeon. The appointment is for six months, renewable at the discretion of the Board.
Applications, stating age, experience, etc., with copies of three recent testimonials, to be delivered to the undersigned not later than April 25th.

JAMES BOOTHROYD, A.I.S.A.,
Secretary.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers).
The appointment is for six months, which may be extended for similar periods by re-election from time to time.
Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
April 3rd, 1930. Secretary.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a RESIDENT SENIOR HOUSE SURGEON (male or female). Duties to commence at once and continue until October 31st next. Salary at the rate of £95 per annum, together with board, residence, and laundry. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle.

The Hospital for Sick Children, NEWCASTLE-UPON-TYNE. (92 Beds.)

Applications are invited for a JUNIOR HOUSE SURGEON (male or female), non-resident. Duties to commence at once and continue until October 31st next. Salary at the rate of £100 per annum. Applications, stating age and qualifications, with copies of testimonials, to be sent to the Secretary, Mr. NEIL BRODIE, 18, City Road, Newcastle.

St. John's Hospital, Lewisham, S.E.13.

There is a vacancy for a RESIDENT MALE CASUALTY OFFICER to take duty for a period of SIX months beginning on May 1st next. Remuneration £100 p.a. Applications, with copies of testimonials, should reach the Secretary of the Hospital not later than Monday, April 14th

Bootham Park, York.

JUNIOR ASSISTANT MEDICAL OFFICER wanted at Bootham Park, a registered Mental Hospital for private patients. Male, single, not over 30. Salary at the rate of £300 per annum, with board, accommodation, attendance, and laundry. Apply, with copies of testimonials to the Medical Superintendent, Bootham Park, York.

The St. Helens Hospital, LANCASHIRE.

Wanted, a fully qualified man as RESIDENT MEDICAL OFFICER, to commence duties at once. Salary £250 per annum, together with board and laundry.
Apply, with three recent testimonials, to the Secretary, The St. Helens Hospital, St. Helens

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

NURSES
MALE OR FEMALE.

TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

Nurses reside on the premises and are available for urgent calls Day or Night.

THE NURSES' ASSOCIATION
(In conjunction with the MALE NURSES' ASSOCIATION),
29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.

Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.

Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

Royal Halifax Infirmary.

Wanted, a FIRST HOUSE SURGEON (male), unmarried, with previous experience as House Surgeon; also wanted, a THIRD HOUSE SURGEON (male) unmarried. Candidates must be duly qualified and registered. The appointments will be for six months commencing May 1st. Probable promotion if satisfactory. Salaries of Resident Staff are as follows: Resident Surgical Officer £250, First House Surgeon £175, Second House Surgeon £150, and Third House Surgeon £100 per annum, with residence, board, and laundry.
Particulars of duties may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent not later than April 22nd.

A. MIDGLEY,
March 31st, 1930. Secretary.

Bolingbroke Hospital, Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE SURGEON (male) required. The appointment is for six months, commencing on May 1st next. Salary £120 per annum, with board, residence, and laundry.
Candidates must be fully qualified and registered.
Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before April 14th.

W. S. RANDOLPH BISS, Secretary-Supt.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, Junior (male), at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains over 100 beds, is one of the premier Provincial Hospitals in Scotland, and offers exceptional opportunities of gaining experience in all branches of the profession. Salary £100 per annum.
Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street, Dumfries, by April 14th.

North Lonsdale Hospital, BARROW-IN-FURNESS.

Applications for HOUSE SURGEONS are invited from fully qualified male Practitioners experienced in the administration of Anæsthetics. Salary £175 per annum, with board, residence, and laundry. Applications, stating age, qualifications, and experience, and accompanied by copies of three recent testimonials, to be sent to the Secretary as soon as possible.

Dundee Royal Infirmary.

Two ASSISTANT VISITING MEDICAL OFFICERS in the Medical Department required. Full particulars of duties, etc., may be obtained from the Medical Superintendent, with whom applications, with 20 copies of three testimonials, must be lodged not later than Saturday, April 19th.

THE OLDEST AND LEADING MEDICAL AGENT

PERCIVAL TURNER, LTD.
(Established 50 years.)
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Telegrams: "EPSOMIAN, LONDON."
Telephone: TEMPLE BAR 9011.
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Terms post free on application.

Yorks.—1/3 of £3,220. Panel 2,100. Appts. over £100 p.a. M. 40 mid. cases p.a. Visits from 3/6 up. G. house, 2 reception, 4/5 beds., etc., with gar. —No. 8542.

Berks. — About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or 1 No mids., ample scope. Small house, surgery.—No. 8641.

S. W. County. — Seaside Resort. About £600 p.a. Panel about 600. F. 3/6 to 5/6, and up. Good house, 2 rec 5 beds., garden, and garage, etc., to re —No. 8638.

Berks. — About £1,000 p.a. Panel 200. Visits 3/6 to 10/6 and 21/ Midwifery discouraged, scope. Good house, beds., etc. Rent £75. Premium £1,000— No. 8635.

Kent.—Over £1,100 p.a. Panel 460. Appts. over £400. Opening slight. Little midwifery. Fees 3/6 to 7/6. Good house, 5 beds., garden, etc.—No. 8636.

S. Wales. — Colliery Practice £2,600 p.a. Panel 2,445. Contract w about £1,200 p.a. Worked from Surgery. House available.—No. 8610

Surrey. — £1,000—£1,100 p.a., within reach of Town. Panel 500, 1 Fees 3/6 to 7/6. Large attractive house, 8 bed etc., to rent, others available.—No. 8598.

Channel Isles.—Nearly £400 p.a. increasing. No panel. Fees 3/- to 7/6 Med. extra. Good house in residential dist Excellent schools.—No. 8570.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Fees from 2/6. Small flat.—No. 8654.

London, S.E. — About £1,500 p.a., increasing. Non-panel PRACTICE. 2/5 share for disposal for £300 cash. Choice of houses.—No. 8652.

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £350. Clubs and appts. about £100 p.a. Mids. 2–6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8651.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3–12 gns. House, 3 beds., etc., to let.—No. 8629.

London, S.E. — About £1,000 p.a. Cash PRACTICE. Panel 350. Lock-up premises at £2 p.w. Low Premium. —No. 8627.

Leicestershire. — Country Practice over £700 p.a. Panel over 1,000. Fees 2/6—7/6. House, 4 bed., etc. Rent £70 Large garden.—No. 8626.

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6 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

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37 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

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46 ESSEX.—Partnership in Practice nearly £1,800 p.a. in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

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48 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

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63 WEST MIDLANDS. — Partnership in Country Practice of £2,100 p.a. in agricultural district. Panel about 600. One-third share for disposal at 2 years' purchase. Preliminary assistantship.

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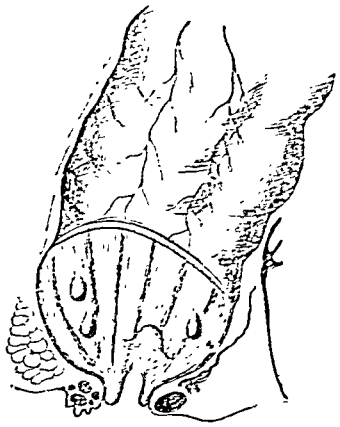
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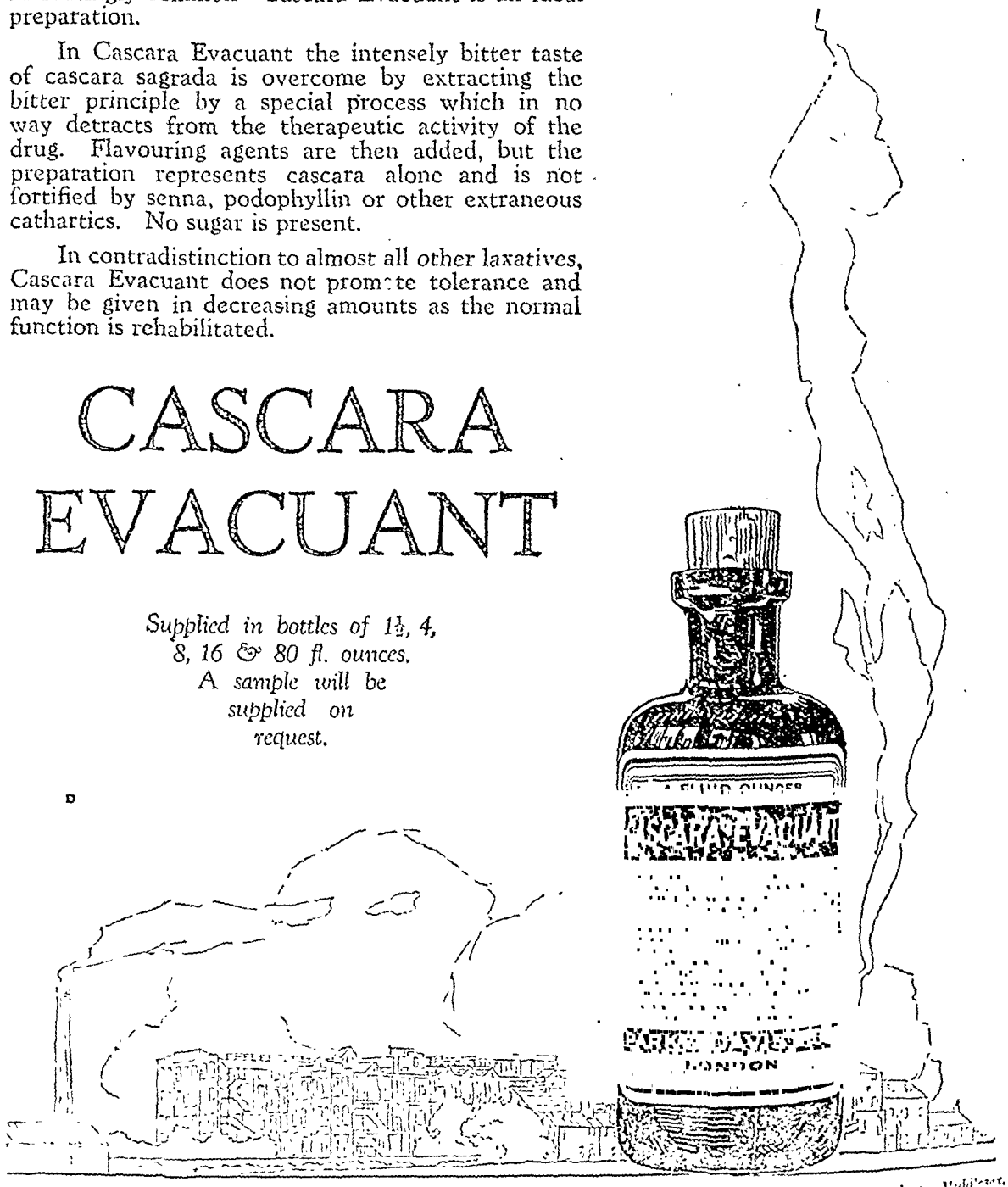
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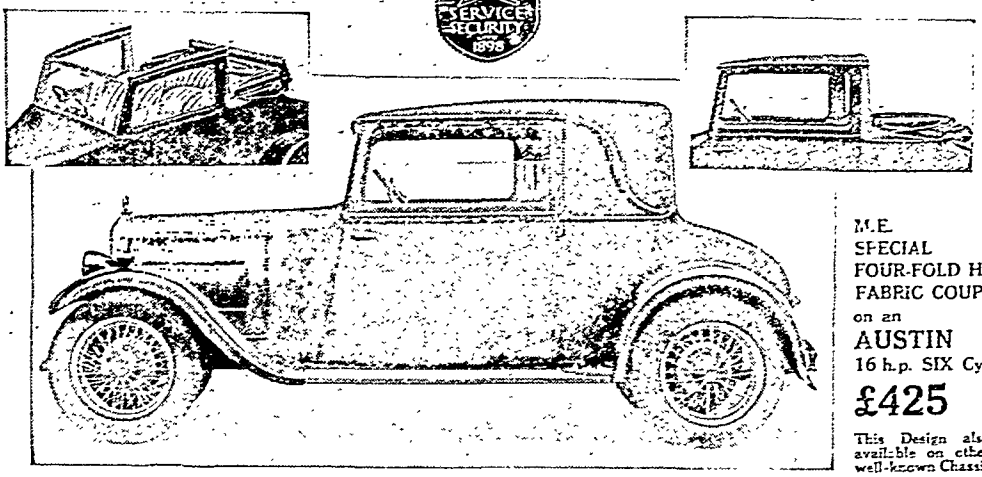
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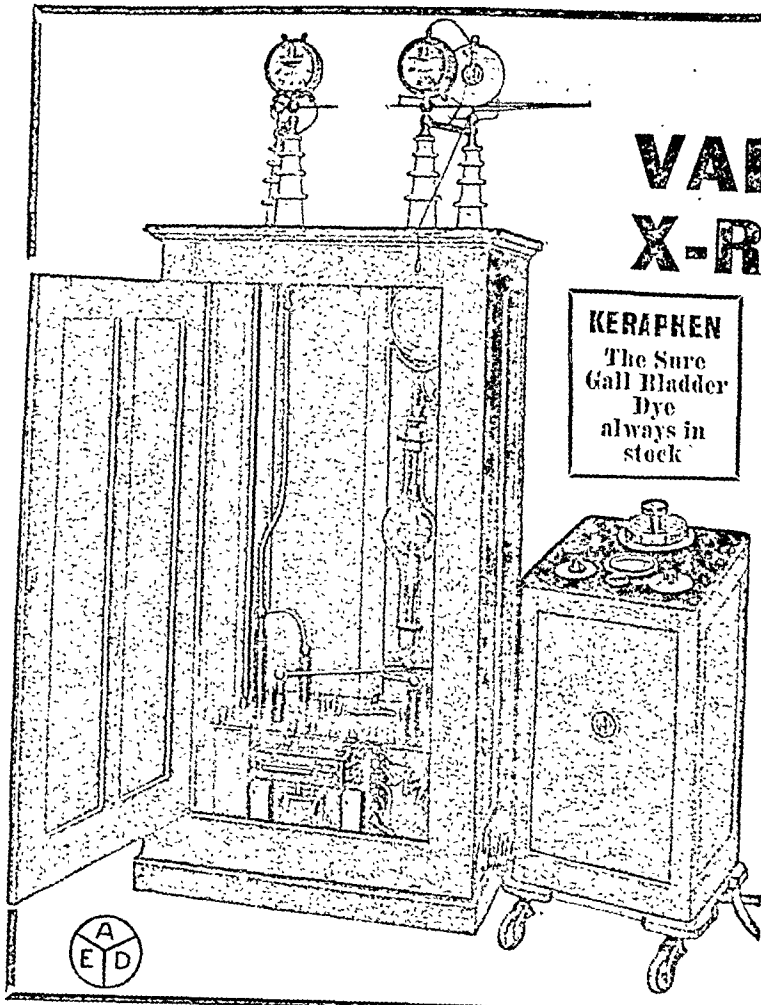
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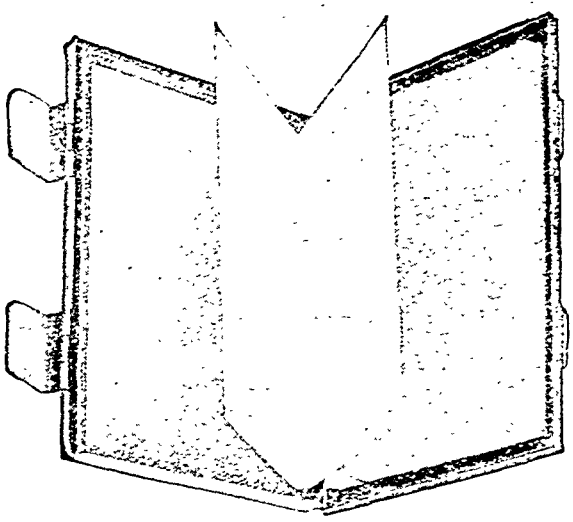
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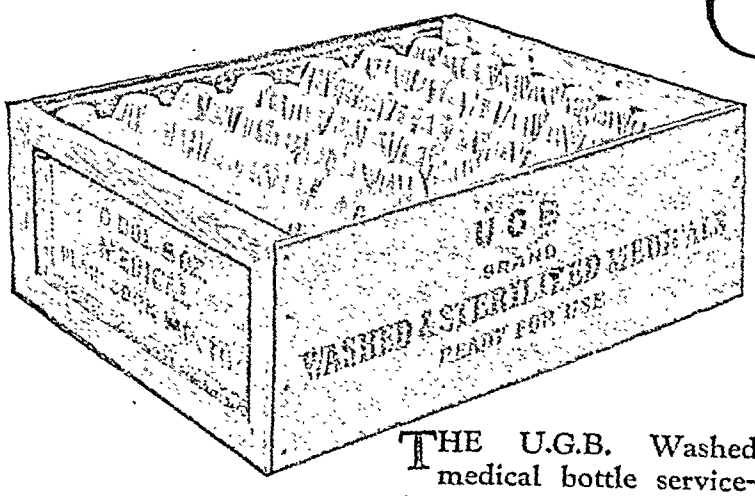
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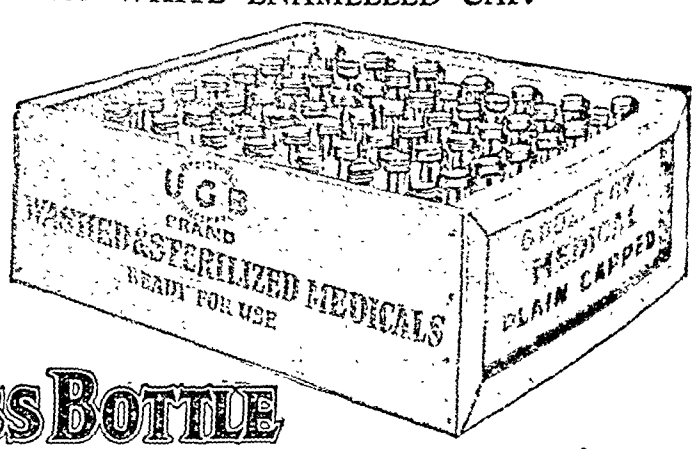


Photograph of actual package of Cork-mouth bottles with cover removed.

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By Chalybeate Waters, Tonic Baths and Extension Appliances

The Belle Vue Spa Hotel provides accommodation for patients for whom these tonic chalybeate waters are indicated. External treatment by tonic baths, as well as by manipulation and extension and light, is also provided.

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The result has been a restoration of joint function in many cases which had been regarded as hopeless and incurable.

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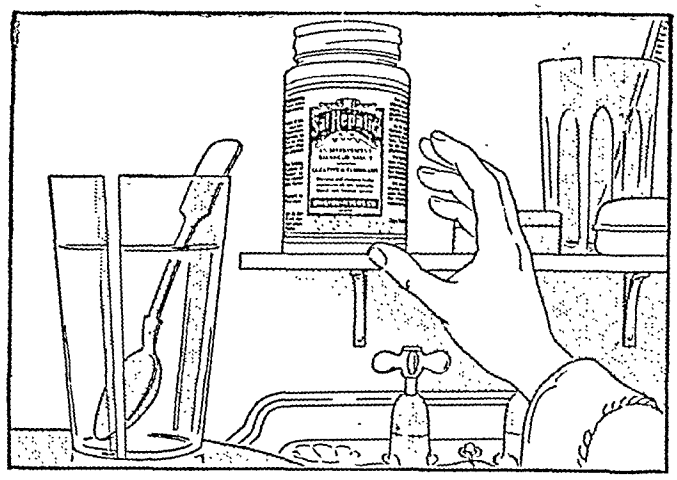
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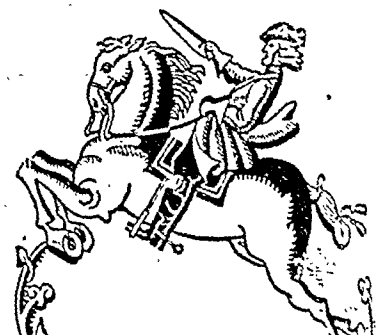
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Diagnosis: Suppurative cervical adenitis.

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Anaesthesia: Local infiltration, 20 c.c. of a 0.5 per cent. Novocain-Adrenaline solution.

Operation: A direct infiltration was made over the swelling, using 20 c.c. of a 0.5 of 1 per cent. Novocain-Adrenaline solution. The skin was picked up with towel pins to avoid pressure and a transverse incision was made down to the cervical fascia. At this point the operation was delayed when the cervical fascia was infiltrated. This layer was then picked up with towel pins and a sharp-pointed hemostat was forced through and spread widely, opening the abscess. —EXTRACT from PRACTICAL LOCAL ANÆSTHESIA (Farr).

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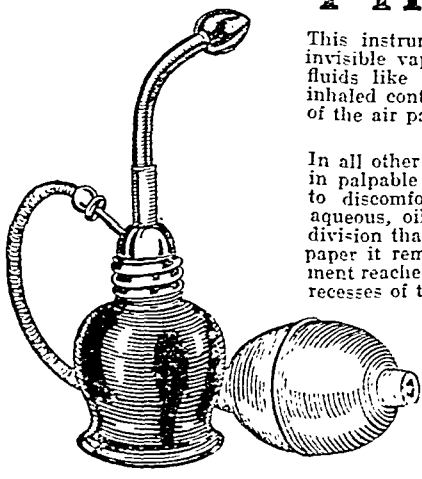
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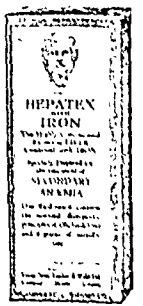


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The Lancet, Nov. 23, 1929, p. 1090.

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The Lancet, Jan. 18, 1930, p. 129.

* * *

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* *MEDICAL RESEARCH COUNCIL MONOGRAPH, "DIET AND THE TEETH" 1929 p. 304.*

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A British Medical Association Lecture

ON THE

RELATION OF MEDICINE TO SURGERY IN THE TREATMENT OF GASTRIC AND DUODENAL ULCER.

DELIVERED AT SWANSEA ON FEBRUARY 27TH, 1930,

BY

CHARLES BOLTON, C.B.E., M.D., D.Sc.LOND., F.R.C.P., F.R.S.,

PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

THE treatment of gastric and duodenal ulcer has probably occasioned more difference of opinion within recent years than that of any other single disease, both as regards the relative parts that medicine and surgery should play in it, and also as to what method or operation should be adopted, when either the one or the other treatment has been decided upon. The view of the physician is biased by the number of surgical failures which he sees, and that of the surgeon by the many cases he operates upon which have been medically treated after some fashion or other, generally inadequately, for years. The usual method of arriving at a decision is to compare statistics of cures, and certainly many surgical statistics show impressively high figures: no one can expect 100 per cent. successes, and it is urged that these figures speak for themselves, some enthusiasts believing that peptic ulcer is really a surgical disease and that medical treatment is of little avail. This relation should not, however, be decided by statistics of this kind, which cannot be rightly compared with each other, because the functions of medicine and surgery are different in that they should be concerned with different types of cases. As I shall point out later, most ulcer cases one sees have never had an adequate medical treatment, so that it seems reasonable to assume that surgical statistics are swelled by the inclusion of simple cases easily curable by medical means; on the other hand, those of medicine include many incurable chronic cases, which must be given the opportunity for healing before they can be pronounced incurable, owing to the difficulty of foretelling the condition of any particular ulcer. I have therefore no intention of bringing forward and discussing medical statistics with any other idea than to use them in support of the points I wish to raise. Instead of competing in a statistical race, we should make it our business to inquire, in greater detail than is afforded by the comparison of rough statistics, as to what are the precise functions of medicine and surgery in the treatment of this malady, and what is the most advantageous distribution of their shares in this work. If, with this end in view, we take a broad survey of the life-history of ulcer we shall realize that all the old thickened ulcers, which we hand over to the surgeon, have been originally acute and easily curable by medical means, and that during their evolution they have passed through similarly curable stages before reaching their final surgical destination. In my view ulcer is primarily a medical disease; its possessor consults, in the first instance, the practitioner of medicine, using this term in its widest sense, who should make the diagnosis, and successfully treat the bulk of the cases. He should hand over to the surgeon the recognized operable complications, and the uncomplicated ulcers which obstinately resist his treatment; and to his lot falls the treatment of the post-operative invalids. I shall first give you the facts, which are matters of common knowledge, in support of my view that ulcer is a medical disease, and can be successfully treated by medical means; I shall then describe what is meant by an adequate medical treatment; and, finally, I shall indicate what uncomplicated cases should be dealt with by the surgeon, and what we expect of him.

I. ULCER IS PRIMARILY A MEDICAL DISEASE.

(A) I have elsewhere pointed out that there is no pathognomonic symptom of gastric and duodenal ulcer[1]; and, indeed, it is self-evident that if we could certainly diagnose the condition by symptoms we should not resort to all the tests necessary for an exact diagnosis. The malady simply gives rise to various forms of dyspepsia, depending on its situation and indistinguishable from similar forms of dyspepsia due to other causes. It acts as a focus of irritation to the part of the apparatus in which it is situated, and induces pain, as all other causes do, referable to that particular part. I have already recorded thirty-three cases in which the symptoms so closely resembled those of ulcer as to be mistaken for them, and yet at the operation undertaken for the supposed ulcer no lesion was to be found in any part of the abdomen. The patient appears for diagnosis among a host of dyspeptics. His symptoms may or may not suggest ulcer, and in many cases we may accurately forecast the diagnosis by the regularity, severity, and clear definition of the pain; but no absolute diagnosis can be made in the absence of confirmatory tests. The difference is one of degree and not of kind. The patients have therefore to be sorted out of a multitude of medical cases complaining of similar symptoms, and this is the business of the physician. The ulcer may be, and not uncommonly is, beyond the hope of benefit by medical treatment when first seen, but it would have healed if it had been recognized in its earlier stages and afforded the opportunity.

(B) The development of ulcer shows that it has, indeed, passed through such intermediate stages. Too much attention is commonly focused upon the old chronic types to the neglect of these earlier and more curable forms. Unless one takes a broad view of the malady the relation of these early stages to the final chronic stage is not recognized. Each ulcer has a definite life-history, and may appear for diagnosis at any stage in its origin, evolution, or cicatrization. Many years ago I demonstrated the origin of chronic ulcer from the acute variety,[2] and pointed out that acute ulcer arising as a localized lesion in most cases heals normally; that the healing may be delayed for different periods of time; or that it may be arrested, when thickening and irregular extension convert it into a chronic ulcer. A second type of acute ulcer beginning at one point spreads rapidly in a circular fashion, destroying one coat of the stomach after the other. At any stage its extension may be arrested and healing occur; or it may thicken and, with or without the exposure of an organ to which it adheres, become chronic. A whole series of different types of ulcer are thus presented to the clinician for diagnosis, and success in medical treatment depends upon its early and efficient application. If all ulcers were thus treated there would be left no chronic ulcers or their complications for the surgeon to operate upon.

II. AN ULCER CAN USUALLY BE SUCCESSFULLY TREATED BY MEDICAL MEANS.

A.—*Clinical Evidence.*

Statistics to be of real value should show: (1) that an ulcer was originally present; (2) that it has been adequately treated; (3) that no test can subsequently prove its presence. No large series of follow-up cases answering all these requirements is to hand, the method of relying upon the patient's statement, as to whether he has had any symptoms or not since the treatment being adopted. If none at all, he is said to be cured: if symptoms occasionally, but not enough to call a relapse, he is said to be improved.

(1) *As Regards the Healing of the Ulcer.*

The immediate results of one of the recognized methods of treatment—and it does not matter much which is employed—are uniformly excellent. The pain rapidly disappears and the patient leaves his bed and becomes convalescent without symptoms in almost 90 per cent. of cases. If the pain does not subside some complication is present, the ulcer is an old chronic one, or there is a good deal of superadded nervous irritability of the stomach. Many of these ulcers are healed, many are advanced in healing, and some are unaltered. Now the knowledge we wish to obtain is twofold: (1) the percentage of the various types of ulcer which can be directly healed by medical treatment; and (2) what proportion of these patients can be protected from recurceration of the scar, or the formation of a new ulcer. We already know that an acute ulcer of moderate size takes from two to three weeks to heal, and

a subacute or chronic one from a few weeks to months. Some indefinite time after the treatment must therefore be allowed to elapse before the ulcer can be said to have healed, unless, of course, the healing is proved by tests. A time limit of this sort can only be approximate, and perhaps in most cases twelve months would be sufficient. If this time limit be selected we must regard all the cases without symptoms and many improved cases—that is to say, which have not had a relapse within this time—as being healed. The difficulty, of course, is that the absence of symptoms does not necessarily imply that the ulcer is healed. The carefully observed cases of Einhorn and Crohn[3] show the following results.

Time after Treatment.	Cured.	Improved.	Total.
1 year	67.5 per cent.	22.0 per cent.	89.5 per cent.
2 years	53.6 „	10.0 „	66.6 „
3 „	41.2 „	23.5 „	64.7 „
4 „	27.3 „	22.7 „	50.0 „

Taking the time limit for healing as one year, it appears that at least 70 per cent. were healed. Their statistics show very little difference between gastric and duodenal ulcers. The duration of the illness before treatment, or, in other words, the age of the ulcer, should be taken into account, and we should remember that a certain proportion of the improved cases which have had no definite relapse are without doubt healed. It is perhaps a fair statement to make that practically every acute ulcer, if efficiently treated, would heal, and that three-quarters of the subacute and moderately chronic ulcers would likewise heal, but that with increasing chronicity the probability of healing markedly diminishes.

(2) *As Regards the Prevention of Future Ulceration.*

Statistics dealing with longer time limits after the treatment refer more particularly to the liability to future ulceration. The statistics quoted above demonstrate that the percentage of cures diminishes with the lapse of time. According to Nielsen[4] about 88 per cent. of the relapses occur within the first two years, after which time up to the limit of his observations—that is to say, eighteen years—there is only a small liability to recurrence. He therefore took the time-limit of two and a half years, and worked out in a series of cases the number of cures within this period of time, according to the age of the ulcer. His results are as follows:

Duration of Illness.	Cured.	Improved.	Total.
6 months ...	60.0 per cent.	16.7 per cent.	76.7 per cent.
½-1 year ...	54.1 „	16.7 „	70.8 „
1-3 years ...	35.9 „	21.0 „	57.9 „
3-5 „ ...	20.0 „	26.7 „	46.7 „
5-10 „ ...	10.8 „	10.3 „	21.6 „
Over 10 ...	5.3 „	17.6 „	22.9 „

This is perhaps the most important series of cases hitherto published. They demonstrate the important fact that in the case of moderately recent ulcers a permanent freedom from relapse can be guaranteed in at least 54 to 60 per cent., or, including some of the improved patients, 60 to 70 per cent. of cases. They also show that the old chronic type is the least curable, for if the duration of the illness be five years and upwards the probability of a permanent cure is only, on the average, 10 per cent. The reason for this is because the scar of an old ulcer is unsound and the covering epithelium easily re-ulcerated.

Crohn concludes that four years after the treatment over 70 per cent. of patients with a duration of illness up to six months are cured, but only 37 to 47 per cent. of those with an illness duration of from one to twenty years. Setting aside the strict accuracy of these statistical figures, they give us the information that if ulcers were treated at a fairly early stage of their existence not only would the prospect of healing be excellent, but the risk of future ulceration would not be great. If, however, they have been untreated for five years or so the prospect of a permanent cure is poor. There are many series of statistics which have been published from time to time, dealing with mixed types of cases followed for varying periods, but not analysed year by year nor as to the chronicity of the ulcer. They show very varying percentages of cures, some high and some low. In a general sort of way their figures agree with those quoted above in showing that the longer the period of observation the smaller the number of cures. I believe that Nielsen's deductions, so far as statistics are able, give us the required information as to the possibilities of medicine and the reasons why it fails.

It is quite evident that our failure as regards *the actual healing of the ulcer* is due to neglect of the treatment in the early stages of the malady. We do not begin treatment early enough. It is unfortunately the fact that ulcer patients who have really been properly treated by medical means are in the minority, however long they have been ill. They have had numerous bottles of alkalies medicine, and perhaps a week in bed now and then when the pain was of unusual severity, but no systematic treatment by one of the recognized methods. This is neither altogether nor perhaps usually the fault of the medical attendant, because it is remarkably difficult, for one reason or another, to induce patients to undergo prolonged treatment in bed. Unless they are suffering from acute pain they are difficult to convince of the necessity for energetic treatment. It is perhaps better for the patient if he bleeds, for then bed is a necessity; even in such cases one not uncommonly sees patients who have only been in bed for one or two weeks. The same remark apply to the question *of the prevention of recurrence*, since this again also depends upon the age of the ulcer and when treatment is commenced. There is perhaps a greater difficulty in the way, because, having restored the general health, and regulated the habits and diet of the patient, we are at his mercy as to whether he carries *out our advice. It is only a certain* number of patients who will conform to dietetic and other rules when they have been free from symptoms for a certain length of time. The fulfilment of this condition is, however, perhaps of as great importance as the early treatment of the ulcer.

B.—*Pathological Evidence.*

(*a*) Scars of former ulcers are often found at *post-mortem examinations*. There are several old series of statistics which show that scars and ulcers are present with equal frequency. Others give the *proportion* of scars to ulcers as 2 to 1 or 3 to 1. More recently Stewart has paid special attention to this subject, and in 4,000 necropsies found chronic gastric ulcers in 2.2 per cent. and scars of chronic ulcers in 2.3 per cent. This is very valuable information, for it shows that 50 per cent. of chronic ulcers undergo spontaneous healing, and that healing of acute and subacute *ulcer is well known* to occur more easily than that of the chronic variety. Stewart found the scars of duodenal ulcer to occur with about the same frequency as open ulcers (2.8 to 2.5). Ulcers heal more easily than these figures indicate, for in such statistics there is no knowledge of the opportunity for healing which has been afforded to most of them, and it seems probable that all these ulcers—did *not* have the benefit of adequate medical treatment. Here again we see that more recent ulcers were included in the list healing which probably occur in not far short of three-quarters of the cases.

(*b*) *At an operation* undertaken for a supposed ulcer, a scar is not uncommonly found in its place; either the ulcer has already healed owing to postponement of the operation, or the pain was due to nervous irritability of the stomach, which had been previously the subject of an ulcer. Many examples of this kind, both gastric and duodenal, have come under the notice of physicians. I have had four such experiences myself, three of them being

duodenal. It is also a well-known fact that excised ulcers are frequently found to be advanced in healing.

(c) In death from *gastric haemorrhage* I have already pointed out that, in the case of acute ulcer when the patient has survived for a time, the ulcer will be invariably found to be rapidly healing, and in some cases it is healed up to the mouth of the bleeding artery, which thus appears to be embedded in the centre of a scar.[6] In another class of case, fortunately rare, of which I have seen two examples, during the systematic treatment of a more chronic ulcer a sudden haematemesis has carried off the patient. The ulcer base was filled with granulation tissue, and the mucous membrane all round extended on to the base in a perfectly normal manner. An artery in the centre had suddenly commenced bleeding.

C.—*X-Ray Evidence.*

The *disappearance of the ulcer niche* under medical treatment occurs commonly enough, and is valuable evidence of the healing of gastric ulcer, but unfortunately it is of little use in duodenal ulcer. Since Ohnell in 1917[7] published his cases of niche disappearance as a sign of healing of gastric ulcer, several groups of cases have been published, showing this disappearance under different forms of medical treatment. There are certain errors of the niche which should be easily avoided by a careful radiographer—for example, a loop of small intestine may cast a shadow behind the stomach, or the rare condition of gastric diverticulum may simulate a niche; even calcareous glands along the vertical column have been mistaken for it. These conditions having been excluded, a niche is indicative, not only of a chronic ulcer, but also of the acute or subacute varieties, for I agree with the opinion expressed a little while ago by Barclay[8] on this subject. Disappearance of the niche in general means *healing of the ulcer. This must not, however, be taken* as an absolutely accurate statement, for filling up with granulation tissue and contraction of the ulcer may cause disappearance of the niche, although the base of the ulcer is uncovered by mucous membrane, and such a condition has been found at operation. On the other hand, I have had two cases operated on for persistence of the niche, and depressed scars only were found. Disappearance of the niche has been recorded in 71 and 91 per cent. of cases,[9] and its reappearance has also been noted.[10]

III. An Adequate Medical Treatment.

I shall now give a brief outline of an adequate medical treatment. It is one which I have been accustomed to employ for many years, but there are many other well-known methods, all no doubt fulfilling the required conditions equally well.

All the prevailing medical treatments aim at facilitating the emptying of the stomach and reducing the acidity of its contents, since delayed emptying and hyperchlorhydria prevent cicatrization,[11] and it is the correction of these disorders which brings about the healing of the ulcer.[12] As I have already indicated, the first object in treatment is to promote the healing of the ulcer in question, and the second to endeavour to prevent future ulceration.

A.—*To Heal the Ulcer.*

The disordered gastric functions are righted by diminishing the work of the stomach and affording it as much rest as possible. The patient is put to bed for an average period of four to six weeks, because the gastric functions are more easily restored in an organ at rest than when subjected to nervous and physical disturbances; and, the requirements of the body being less, the work of the stomach may be reduced by diminishing the quantity of food with less serious effects upon the general nutrition than when the patient is following his ordinary calling. When all symptoms have disappeared and two or three weeks have elapsed, the work of the stomach is gradually increased by adding to the food up to the full diet the patient is to live on subsequently. He then gets up and enters upon the ambulatory stage of his treatment. The diet should be one which calls forth the minimum quantity of gastric juice and which has the maximum combining power with hydrochloric acid. Finely disintegrated and non-irritating food, which passes easily through the pylorus, relieves pyloric spasm and reduces acidity; by facilitating the emptying of the stomach it reduces hypersecretion. The food to begin with should, of course, be liquid. Beef-tea and meat extracts should be particularly avoided, because they contain very little protein to combine with the acid; they excite a maximal flow of gastric juice, and have a low nutritive value. On the other hand, milk excites a much smaller flow and has a very good combining power with hydrochloric acid; my practice is to give it not only as a preliminary food, but throughout the treatment with each meal. In a straightforward case 7 oz. of citrated milk are given every three hours—at 7 a.m., 10 a.m., 1 p.m., 4 p.m., 7 p.m., and 10 p.m.—which diet the patient continues for a week. At the end of this time raw egg beaten up with milk (strength, one egg to half a pint of milk) is substituted for three of the milk feeds—namely, at 7 a.m., 1 p.m., and 7 p.m.—for another week or two. This is the diet for the first two or three weeks, the latter for preference; and now it is gradually built up at these times into three meals a day with three milk feeds alternating. This process takes another three weeks; thus:—*First week*: a thin slice of bread-and-butter is added to the three egg and milk feeds; the egg is lightly boiled; pounded fish (sole, plaice, whiting) substitutes one of the eggs; and, lastly, pounded chicken substitutes a second egg. *Second week*: a cereal such as arrowroot or ground rice boiled in milk, or custard, or junket, forms a second course to the fish and chicken; ordinary fish stewed in milk and ordinary chicken substitute the pounded foods; milk pudding with stewed apples or prunes (seived) form the second course. The patient may now commence getting up, but it is better to delay for another week. *Third week*: mashed potato and sieved greens are added; minced mutton and then ordinary mutton are given; the milk with meals is continued the whole time. The first meal is given at 8 a.m., and the 10 a.m. and 10 p.m. milk feeds are omitted, so that the patient is taking three meals a day at the ordinary times, and milk for his 4 p.m. meal. The diet is further increased up to a permanent one by the addition of other kinds of white fish, tender beef once a week, cold boiled bacon or ham, stewed lamb's tongue, calf's head, tripe, sweetbread, rabbit; a further variety in vegetables, omitting those of coarse fibre; an addition to the second course in the shape of pudding made with bread or sponge cake; and stewed fruit, except the sour varieties and those containing seeds or coarse fibre; he is on stale bread, dry toast, biscuits, rusks, and his cakes are best limited to sponge, rice, or madeira. Hitherto he has been drinking milk with each meal, and now he may have, if he wishes, coffee with milk, and weak tea, each once a day. A glass of water before breakfast and at bedtime is a good practice, and he must masticate thoroughly and be careful not to rush his meals, taking a little rest before and after each. Fried foods, soups and meat extracts, and preserved and salted or second-cooked meats, together with such condiments as pickles and so on, are to be avoided. His teeth are to be put in order, and all sources of ill health, such as septic foci, removed as far as possible.

Administration of Alkalis.

The administration of alkalis is a necessary part of the treatment of ulcer, because hyperchlorhydria is commonly present, and they should be given in the later stages of digestion.[13] My plan is to give magnesium oxide 10 grains and sodium bicarbonate 15 grains three times a day, two hours after the chief meals (that is, those at 7 a.m., 1 p.m., and 7 p.m.); and sodium bicarbonate 15 grains two hours after the intervening milk feeds (that is, those at 10 a.m., 4 p.m., and 10 p.m.). Calcium carbonate 10 grains is substituted wholly or in part for the magnesium oxide if the motions are too loose. The phosphates of calcium and magnesium have more recently been used as antacids. There is no danger of alkalosis, as in the unnecessary "intensive alkali treatment" of Sippy,[14] by their employment, but they are inferior to the alkalis I have mentioned in neutralizing power, which, given in the amounts I have prescribed even for long periods, produce no ill effects.

Belladonna.

Hypersecretion tends to subside like the other pathological processes with the above treatment, but it may be troublesome in the night, and here atropine is of value. Given before food, or in the early stages of digestion, atropine to some extent lessens the secretory response to food, but its chief use lies in its ability to relax the pyloric sphincter and thus bring down the acid curve by neutralization. It is not really necessary unless one is dealing with an obstinate case, and the mouth may become dry with the treatment. If, however, continuous hypersecretion is found to be present by the tube, and the acidity of the resting juice is high, atropine is to be given at bedtime in doses of 1/50 grain. It has been shown easily to limit this interdigestive hypersecretion, and herein lies its real value.

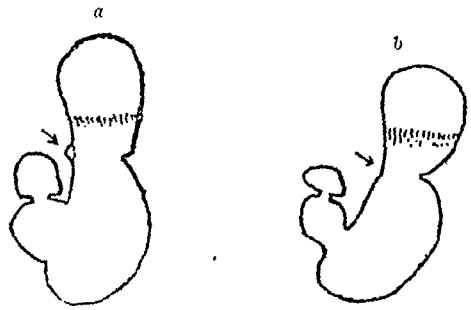


FIG. 1.—Drawings from radiograms of H. H. (female, 54 years of age). Ulcer on small curvature. (*a*) October 30th, 1929. Before treatment—ulcer niche. (*b*) December 18th, 1929. After treatment—ulcer niche disappeared.

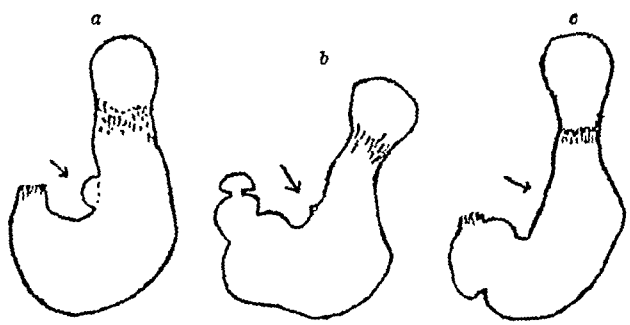


FIG. 2.—Drawings from radiograms of J. H. (male, 49 years of age). Ulcer on small curvature. (*a*) October 25th, 1929. Before treatment—large ulcer niche. (*b*) November 26th, 1929. During treatment—ulcer niche much smaller. (*c*) January 14th, 1930. After treatment—ulcer niche disappeared.

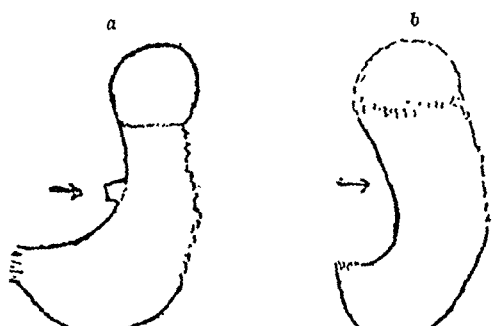


FIG. 3.—Drawings from radiograms of T. A. (male, 47 years of age). Ulcer on small curvature. (*a*) May 1st, 1929. Before treatment—large ulcer niche. (*b*) September 10th, 1929. After treatment—ulcer niche disappeared.

The treatment outlined above heals an ulcer quite well. Figs. 1, 2, and 3 are tracings of the *x*-ray appearances seen in three patients successfully treated in my wards at *University College Hospital within the last few months*, and which are shown by way of illustration. All observers find this, as I have already stated, to be quite a general rule; and, coincident with the disappearance of the crater, occult blood vanishes from the stools. Before freeing the patient these two tests, if they can possibly be applied, should be employed to prove that the ulcer is healed.

B.—TO PREVENT FUTURE ULCERATION.

The medical treatment having been administered and the general health restored, the patient is advised as to his habits and instructed to live permanently on the diet ordered. If he wishes to vary his diet he should see his medical attendant and ask his advice on the subject; and if any symptoms appear he is to get rid of them immediately by energetic treatment. He vanishes from our sight, and the subsequent course of events chiefly depends on himself. Some patients report their progress from time to time and scrupulously follow our advice, and, of these, recurrences occur in the old chronic cases only. The majority, however, doubtfully do so, and among these are most of the failures. When the patient is quite well many difficulties stand in his way. I need not enumerate these to you, who by your profession are students of human nature. All the manifold causes of dyspepsia gradually encroach; the lure of old habits and the exactions of business lead to forgetfulness in the healthy man, and an imperceptible return to the old manner of living. The position is summed up in the answer I received the other day from one of my old patients on inquiry as to his condition: "With a little self-denial I am in perfect health."

IV. THE PART PLAYED BY SURGERY.

A consideration of the above observations shows that medical treatment, efficiently applied, will heal the majority of ulcers; the intractable ones being those which are already too old and thickened, or have developed some complication when they come under the notice of the physician. In such cases, when medicine has failed, more drastic and more effective measures are obviously needed. The point at issue is when an uncomplicated chronic ulcer of the stomach or duodenum should be regarded as a fit case for surgical intervention, because there can be no question as to the surgical treatment of complications, except haemorrhage. This latter condition is not an indication for surgery, except, possibly, in rare cases.

It must be laid down quite definitely at the outset that *no case should be handed over to the surgeon unless it has been proved incurable by medical means*; and in making this statement I have the support of Moynihan[13] and other distinguished surgeons. I have described how a case should be treated, and an inquiry should first be directed to ascertain what medical treatment the patient has had, and what have been his subsequent instructions and conduct. I may, perhaps, here restate the observation already made that it is a matter for regret that so many cases are allowed to drag on for long periods of time without having had any systematic treatment for ulcer at all. If the patient has had satisfactory bed and ambulatory treatment the question arises as to whether he should be given further medical treatment or handed over to the surgeon. Every case must be judged separately on its merits, and the following points given due consideration: (1) the duration of the illness; (2) the length of the intervals of freedom from symptoms; (3) the length of time the patient has remained well since his treatment; (4) whether the recognized tests show that an ulcer is present. All these points are, of course, interdependent upon each other.

1. The duration of the illness is of the greatest importance, because, as we have seen, the older the ulcer the more difficult is the healing process. In a general sort of way it is a good rule to try further medical treatment if the duration of the illness has been no more than six or twelve months. If, on the other hand, the malady has been present for five years or more, it will be found, generally speaking, that an operation will be necessary. An onset with haemorrhage and attacks of haemorrhage at intervals are, of course, more reliable guides to the duration of the malady than pain. It is their significance as to the age and persistence of the ulcer which indicates operation, rather than the fear of further haemorrhage, because our aim is to heal *all ulcers whether they bleed* or not.

2. The length of the intervals of entire freedom from symptoms may indicate whether one is dealing with a single ulcer from start to finish, or with multiple recurring acute ulcers; for example, three or four years of complete freedom is commonly an indication of recurring ulcer,

whereas shorter intervals—say, six months—indicate a single ulcer. More significant of recurring acute ulcer are attacks of haemorrhage without pain—for example, if the haemorrhage has recurred at intervals of several years, with the total absence of symptoms in the intervals, the case should not be operated upon; whereas if pain has been present between the attacks of bleeding, it is probably one ulcer from start to finish, and the indication is towards operation.

3. A relapse within six or twelve months after the treatment would point more strongly to an operation than if relapse occurred after two and a half to three years.

4. No patient should be operated upon, even if there were clinical indications in favour of it, unless the presence of an ulcer is confirmed by the recognized tests.

These remarks are to be taken in a very general sort of way and as indicating how a case of relapse should be summed up. All these indications are, of course, subject to those obtained from the general condition of the patient and to his circumstances. For example, old people and those with some concomitant disease should not be subjected to operation unless the latter is absolutely necessary; and those in poor circumstances, and who cannot afford to give medicine a thorough trial, may prefer to take the shortest cut that affords a fair prospect of relief. Again, if, owing to the severity of the symptoms, wasting occurs from inability to take sufficient food, or anaemia from recurrent haemorrhages, operation is indicated.

V. Surgical Invalids.

It falls to the lot of the physician to see annually a certain number of unsuccessful operation cases, and he naturally wonders in each case whether the wisest course has been pursued in subjecting the patient to operation, and whether the most suitable operative procedure has been adopted. The particular operation selected must always be decided by the surgeon at the time of operation and determined by the conditions present, so that a variety of possible operations must always be available for use. There are definite principles, however, which should guide him in his selection, and which are based upon what we know of the pathology of peptic ulcer. We expect the surgeon not only to deal with the existing ulcer, but, in addition, so to alter the mechanism of the stomach as to ensure permanent achlorhydria and free emptying, so that immunity from future ulceration either of the stomach or the jejunum is assured. The first surgeon to insist upon reduction of acidity as being an essential to success was Paterson.[14] In order to protect the jejunum complete achlorhydria should be established by the operation, so that not only is the necrosing effect of hydrochloric acid eliminated, but also its action in activating pepsin.

The unaided stomach is not able materially to reduce the acidity of its contents, but this is normally kept in check by partial neutralization by regurgitation of the duodenal contents through the pylorus, the neutralizer being the pancreatic alkali—not the bile, as is sometimes erroneously stated. Pyloric spasm is commonly present in ulcer, and this condition prevents duodenal regurgitation, thereby maintaining a high acidity, especially if hypersecretion is present, and delays the emptying of the stomach. The surgeon alters this abnormal mechanism of the stomach by making a new outlet into the intestine, thus negativing this effect of the pylorus. With this end in view he either performs a simple gastro-enterostomy, or excises the pylorus together with varying portions of the stomach, anastomosing the intestine and stomach. Free emptying of the stomach is thus assured, and in many cases free regurgitation of intestinal contents into the stomach, thereby establishing the condition of achlorhydria. This desirable result is not, however, invariably attained, for, although the emptying may be satisfactory, in many cases regurgitation is defective, with the result that the acidity of the gastric contents remains as it was before the operation, or is only partially reduced. The patient thus runs the risk of jejunal ulcer, of a new gastric ulcer, or of his original ulcer remaining unhealed. This risk is small after partial gastrectomy, but is very real after gastro-enterostomy. The frequency of jejunal ulcer after gastro-enterostomy is not accurately known, because in addition to those ulcers which are operated upon there are acute ulcers which heal and recur, only revealing their presence by occasional bleeding, and ulcers in a later stage which cause pain and are very difficult to diagnose. It is particularly seen after the operation has been performed for duodenal ulcer, due no doubt in part, but not chiefly, to unrelieved hypersecretion, since the neutralization is a question of balance between acid and alkali.

In the absence of hydrochloric acid a stitch ulcer may no doubt arise, as in any other part of the body, but the occurrence of such an ulcer would be of relatively little importance. However high the percentage of successful gastro-enterostomies, we are still confronted with this fundamental inadequacy of the operation—that its power of permanently reducing the acidity of the gastric contents to the safety level is uncertain. This very materially detracts from the value of the operation, the ultimate result of which in any given case can never be accurately foretold. There is no mortality percentage in medical treatment, and if it fails the patient is no worse off. In addition to the mortality percentage of surgical treatment, if it is unsuccessful the lot of the patient is not uncommonly worse than before, and in some cases it is truly deplorable.[15] When a necessary operation is performed for an ulcer which has obstinately resisted medical treatment, the mortality percentage and complications of the operation may be put aside; but it is a different matter when it is performed for an ulcer which is easily curable by medical means, and the patient should not be subjected to it unless such means have been tried and proved a failure. There are therefore several problems which it is urgently necessary for the surgeon to solve.

Conclusions.

1. Gastric and duodenal ulcers are primarily medical diseases.

2. The majority of ulcers will heal by an adequate medical treatment, if it be thoroughly employed at a reasonably early stage of the malady.

3. The patient must for the rest of his life obey the dietetic and other rules laid down after he has been treated, otherwise he is liable to a relapse, especially if the treatment has not been employed at a comparatively early stage of the disease.

4. An uncomplicated ulcer should not be subjected to operation until it has been proved incurable by medical treatment.

5. If proved incurable by medical treatment, either as to the healing of the ulcer or the prevention of a recurrence, an operation is indicated with the reservations mentioned.

6. We expect surgery, in addition to healing or removing the ulcer, so to alter the gastric mechanism that recurrence is impossible; but since this result is at present uncertain, the gastric contents should be examined after every operation, and unless achlorhydria is established, the case should be handed back to the physician for medical treatment.

7. It is essential that greater attention should be paid by medicine to the treatment of dyspepsia and the early diagnosis of ulcer; when this malady is recognized an adequate medical treatment should be at once instituted.

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HARE-LIP AND ITS TREATMENT.

BY

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THIS paper is based on a considerable number of cases of hare-lip which have come under my care since early in 1920, when I was elected to the staff of the Royal Manchester Children's Hospital, and represents an attempt to set down such facts as I have been able to ascertain regarding the condition.

ETIOLOGY AND INCIDENCE.

As regards the cause, I have been able to find out very little except to confirm the fact that in a certain number of cases heredity plays a part. I regret that in the early cases I did not go fully into the family history, but for some years now I have carefully inquired of the parents as to whether any relatives have had a similar condition.

Out of 60 cases in which the history has been fully examined I have been able to trace a family history in 11. In only one of these 11 cases was it the parent—in this case the father—who had a hare-lip. More commonly it was an uncle or aunt or more distant relative who had been similarly afflicted. In two cases a relative had a cleft palate but not a hare-lip, and since the two conditions are so closely associated this is ranked as a family history. Of the 11 cases with family history the relative or relatives affected were on the father's side in 7 cases, and on the mother's in 4.

A certain number of mothers, when questioned, attributed the condition to a fright or shock during pregnancy. While somewhat sceptical about this, yet the more one inquires into these cases the less does one feel inclined to ignore the possibility of pre-natal impressions having an effect on the developing foetus. Shocks or impressions occurring in the later periods of pregnancy need not be considered, since the formation of the lip is completed at the eighth week of intrauterine life.

The histories of some of the cases where the mother has attributed the condition to a shock are perhaps worth mentioning.

1. In the case of a second child with no family history, the mother attributed the hare-lip to a fright at about two months caused by a dog jumping at her and banging her in the abdomen.

2. In the case of another second child with no family history, the mother told me that when she was between one and two months pregnant a man fell in a fit before her and cut his lip.

3. Hare-lip and cleft palate occurred in a first child, with a family history of cleft palate on the mother's side, but not of hare-lip. I am told that in the early months of pregnancy the mother worried a great deal in silence whether the baby would be born with hare-lip and cleft palate; when she was told that it had both she expressed no surprise.

I have heard of other cases where the mother has been quite convinced that her baby would be born with a hare-lip, and this has afterwards come about.

4. In the case of a second child with no family history, a cock jumped on the mother's neck at about two months, and pecked her.

5. In her first pregnancy another mother was constantly seeing two children with hare-lips who lived near to her. The child was born with a hare-lip, and there was no family history.

6. A second child was born to a woman whose brother had a hare-lip and cleft palate and died in infancy, but the mother did not remember him. All the time she was pregnant she was constantly meeting a baby with hare-lip, and could not get the thought of it out of her mind.

7. A third child with no significant family history was born with a cleft palate but no hare-lip. The other children were normal. In this child there was an incomplete cleft palate: before and during the mother's pregnancy with it she had a maid with an incomplete cleft palate which was not operated on. When the child was born it was found that it had about the same degree of cleft palate as the maid.

I am inclined to think that there must be a family history in many more cases than we can obtain it in. A considerable number of people get out of touch with their relatives, and know but little of their family histories.

In only one case have I met with two children in the same family with hare-lip. A second child with no family history had a left complete hare-lip and cleft palate, the first child having been normal. The third child was normal, but the fourth was born with a left incomplete hare-lip though with no cleft palate.

With reference to sex, the condition is much more common in males than in females. Out of 86 of my own cases which I have been able to trace 54 were in males and 32 in females. In this particular series of cases the proportions as regards sex are probably about the average, as I find that during the years 1922-28 inclusive there were admitted to the Royal Manchester Children's Hospital 253 patients with hare-lip, and of these 166 were males and 87 females. Both these groups of figures show that the condition is nearly twice as common in the male sex as in the female.

It is sometimes stated in textbooks that the condition is commonly associated with other congenital deformities, but, apart from its frequent association with cleft palate, this has not been my experience. Occasionally, however, we do find other deformities, such as talipes or naevi, and one of my cases of double hare-lip and cleft palate had at least six other congenital deformities; this, however, is quite exceptional.

My early impressions were that it was usually the first child of a family which was born with hare-lip, but on investigation this has proved to be erroneous, as out of 62 cases in which I have gone fully into this question I find that the condition was a little more common in the second child. The distribution of these 62 cases is as follows:

1st child	20	6th child	1
2nd "	23	7th "	1
3rd "	8	8th "	0
4th "	5	9th "	1
5th "	3		

We find the deformity to be much more common in the first two children, although occurring in any child in the family, but much less frequently in later children. At the same time we must remember that small families in many grades of society are more common than large ones, and, in addition, many parents having had a child born with a hare-lip or other deformity will purposely limit their family in case the other children should be brought into the world with a similar handicap.

The types met with have been the usual ones: *single incomplete*; single complete; double incomplete; *double complete*; double incomplete on one side, but *complete on the other side*.

I have had no case of median hare-lip; the condition is very much more common on the left side than on the right. A complete hare-lip is usually associated with a cleft palate, either a cleft in the alveolus or a complete cleft in the hard and soft palates. I have come across one case with a complete (double) hare-lip with prominent displaced premaxilla causing a cleft of the anterior end of the hard palate, but with the remaining portions of the hard and soft palate normally fused. This type is rare; there is a drawing of an infantile skull showing a similar condition in Berry and Legg's book on hare-lip and cleft palate (Fig. 13, p. 13).

In the incomplete varieties of hare-lip the deformity is usually not very severe and is generally easily remedied at operation. In some of the cases of double complete hare-lip the deformity is very marked; the central part of the lip and the premaxilla project forward in almost a horizontal direction from the tip of the nose, and this gives rise to what is little less than a hideous deformity.

TREATMENT.

Feeding and Pre-operative Details.

One of the main difficulties before operation is the question of feeding. In the severe cases the child is unable to suckle or to take food from a bottle, especially if there is an associated cleft palate, since the food regurgitates through the space in the lip or comes out through the nose. Some children can take food from a bottle when they have been unable to suckle from the breast, particularly if the bottle is fitted with a large-sized teat; many, however, cannot be so fed, and have to be fed with a spoon. The child is partially propped up and reclining on its side; it is then fed with a spoon into one of its cheeks. By this means the food is slowly swallowed, and the baby does not tend to regurgitate it.

The best food is the mother's milk drawn off and given with a spoon, when it can be utilized; for various reasons this can, however, rarely be done. Failing this, it is usual to give one of the reliable artificial foods or milk suitably prepared; it is my custom to keep a child on whatever food it has been accustomed to if it is thriving on it. Spoon feeding takes up a considerable amount of time, and is a tedious proceeding, but every effort should be made to get the child to gain in weight and to become fit for the operation, since an operation on a very debilitated child is likely to be fraught with disaster. Babies who are able to suckle at the breast should become accustomed to spoon feeding, as this will be the method used for at least several days after the operation.

It is my custom to operate on the lip before attempting to close the gap in the palate, and I usually defer the operation until the child is three months old. Some of the slighter cases can be operated on a little earlier if desired. At this age the child has generally a stronger hold on life; if it has been carefully fed it is in a much better condition to stand the operation—which in the worst cases is a severe one—than if it is operated on in the very early weeks of life. Moreover, the parts of the lip are a little larger and easier to handle.

Before the operation is performed the child should be in as perfect health as possible; it should be quite free from colds or cough, and as a general rule be steadily gaining in weight. There should have been no recent exposure to infection of any kind.

The best time of the year to operate is in the warmer weather of spring or summer; although one does operate on these cases in the winter, I certainly will not do so in very severe and particularly in foggy weather. It is advisable that the baby should be in the hospital or the nursing home for a few days to get accustomed to the new nurses, and vice versa. It is necessary to keep many of the children in hospital for a considerable period before operating, particularly those that come from poor and crowded homes. While waiting for the time of operation they are carefully fed, and every effort is made to get them to gain in weight.

If a child is steadily losing ground in spite of careful treatment, the operation is not likely to succeed or to help the child to pick up afterwards. Apart from the malformation many of these children are normal and bonny, but a certain number are puny and will not come on however much care is taken of them. If, in spite of careful attention and feeding, the baby is steadily going downhill, I do not think it wise to operate, as I am convinced that merely closing the lip will not make any material difference to the general well-being of the infant except in very rare cases. A few babies never become fit for operation, and gradually waste away or die of some intercurrent malady in spite of all treatment; these are, however, in my experience, few. I do not hesitate to postpone the operation if the child does not seem up to its normal condition, since it may be sickening for some illness. With attention to these pre-operative details the results are much more likely to be successful than if the operation is undertaken without preliminary care.

Operation.

The operation I have employed in practically all my cases commenced as a modification of that which is usually described as Rose's, but which has been gradually altered. This procedure, varied a little in different patients, has enabled me to bring the parts of the lip together in all types of hare-lip that I have met with. I will mention *briefly what I consider to be the most important points.*

If possible the anaesthetist and surgeon should be accustomed to working together and to know each other's methods, for the anaesthetics are not easy to give. I have to thank Dr. K. B. Pinson for anaesthetizing the majority of these patients for me.

The child is anaesthetized first with ether or a mixture; this is later changed over to chloroform given by means of a Junker's inhaler. The anaesthesia, while not being very deep, *should be sufficient to keep the child perfectly* still and free from movement; lightness of anaesthesia and any straining or struggling tend to increase the bleeding and to shock the patient. I prefer to have the child lying flat, with the head slightly overhanging the end of the table and supported on a rest, the surgeon standing behind. A thread stitch is placed through the tongue to control it, and to make any necessary sponging-out of the pharynx easier.

The lip is everted, and the reflection of mucous membrane is divided where it meets the alveolar margin; the soft parts of the face are then loosened from the underlying bone outwards and upwards for a considerable distance, chiefly by means of blunt dissection, and all the time keeping close to the bone. The ala nasi must also be separated from the bone, especially in cases where it is very flattened. The undercutting is necessary more on the outer than on the mesial side, and the amount required depends on the width of separation of the parts of the lip. Bleeding at this stage can usually be readily stopped by means of pressure with gauze pads; when one side has been loosened a pad can be packed under it while the other side is being freed. A certain amount of blood usually finds its way into the pharynx and will require to be sponged out; this should be done with the utmost gentleness, so as not to irritate the pharynx or shock the patient. The freeing of the parts of the lip is continued on both sides until they are so thoroughly mobilized that they can be brought together without any tension.

The next step consists in paring the edges of the lip and shaping the flaps so that two equalized raw edges may come together. The knife is inserted at the junction of the red margin and the skin in the cleft, and the red margin is excised, sacrificing as little of the true skin as possible. When the vermilion border of the lip is reached a very short horizontal cut is made between the skin and the border so as to turn down a little flap, which is then shaped up. This is next done on the other side, taking care to get both sides equal in length. The freshening of the edges should run well into the nostril, since in closing this it is advisable to make it less than it would be normally, for invariably some dilatation takes place after the operation.

In many cases of incomplete hare-lip we find the corresponding nostril unduly large, owing to the fact that although the skin has partially fused the deeper portions of the lip have not done so. In these it is necessary to carry the incisions into the nostril, first converting the incomplete hare-lip into a complete one; when the subsequent stitching up is done the nostril is made smaller and more shapely. When the edges of the lip are pared there is sharp haemorrhage from the coronary arteries; this is checked by Smith's clamps.

The suturing is next commenced; one stitch of fine silkworm-gut is placed in the free edges of the lip and held by Spencer Wells forceps, but not tied. The next one is placed at the upper end to shape and partly close the nostril. The third stitch is put in at the junction of the red margin of the lip with the skin, as it is most important to see that this line comes into accurate apposition on both sides. About two more silkworm-gut stitches are passed deeply into both sides of the lip and held in forceps. When all of the sutures have been placed the one at the free edge is tied; next the upper one at the margin of the nostril; thirdly, the one apposing the red margin; and finally those in between, bringing the edges into apposition. One or two fine horse-hair sutures may be required superficially to secure accurate skin approximation. A few catgut stitches are put in on the inner side of the lip, traction on the lowest suture causing its eversion and enabling these to be put in. These sutures, in addition to helping to close the gap in the lip, prevent food from getting into it and also, by restoring the continuity of the mucous membrane, prevent any fusing of the inner side of the lip with the areolar margin, thus finally leaving a free and mobile lip.

The foregoing description applies chiefly to unilateral cases, but in those of double complete hare-lip there is the further complication of the protruding pre-maxilla, which may stick out like a proboscis. I do not think the premaxilla should ever be removed, and personally have never excised it. In cases where it has been taken away there is marked flattening of the upper lip and narrowing from side to side.

In double complete hare-lip the central portion of the lip is separated by dissection from the underlying bone, and if the pre-maxilla is very prominent it is gently forced back by pressure so as to lie between the maxillae. The edges of the central portion of the lip are pared until it is V-shaped. All the red margin is removed, as no attempt is made to incorporate it in the edge of the newly constructed lip; it is finally placed between the outer parts of the lip, and the point of the "V" lies somewhere about half-way up the lip. In double complete hare-lip the lateral parts have to be very widely mobilized so as to bring them across the pre-maxilla without undue tension. The steady pressure of the newly united lip gradually forces the pre-maxilla backwards.

In all cases the lip is, if possible, made a little longer from above downwards than one wishes it to be finally, since a certain amount of contraction in the scar and subsequent shortening will take place. It is often wise to allow a little protrusion of the red margin almost in the form of a papilla to be present when the operation is completed, as this will later contract, and tends to prevent the notching of the lip which is sometimes seen.

When the operation is completed the parts are cleansed, and either dusted with dry boric powder or lightly painted over with tincture of iodine, no dressing being applied.

Post-operative Treatment.

After the operation the child is kept warm and out of draughts, and every effort is made to prevent it from getting "chesty," or catching a cold and developing a cough. It should be prevented from crying if possible, since this would make the stitches tend to cut into the lip. Usually a small dose of nepenthe is necessary when the child is coming round from the anaesthetic, and the elbows are splinted to prevent the hands being applied to the mouth. There is usually a post-operative rise of temperature to 100°, or it may go higher to 101° or 102°; usually this rapidly subsides and comes down to normal. Feeding after the operation is by means of a spoon, and the lip is kept dry and clean.

In the majority of cases healing is complete in about seven days from the operation; the sutures are taken out, some on the fifth day, and the remainder about seven days after the operation. In only one of my cases, and this an early one, did the lip break down almost completely. The child had a complete double hare-lip, and at the operation the flaps were tight and came together under tension; as the sutures were cutting into the lip they were removed in a few days by the ward sister. The left side held, but the right side gave way. A second operation six months later was again unsuccessful, and before another attempt could be made the infant developed some chest condition, probably pneumonia, at home, and died.

The scar at first is distinct, but as time goes on it becomes whiter and much less noticeable.

Altogether I have performed the operation on 82 patients, including two who had been operated on elsewhere. In one there was a complete single hare-lip which had broken down from end to end; the other had a right incomplete and left complete hare-lip and had been operated on twice previously; a very small portion of the right side was holding, the left having broken down completely. In this case there was a very wide gap in the lip, and very little tissue left to work with. By means of extensive undercutting I was able to get the parts together, and firm union followed both in this and in the previous case.

MORTALITY.

In this series I have had five post-operative deaths; I consider this death rate too high. There is sure to be a certain death rate, since a fairly severe operation is being inflicted on a very young child, and, however careful we may be, some of these infants will develop post-operative pneumonia.

The deaths were as follows, and, as will be seen, two occurred in my very early cases.

1. A bad double complete hare-lip and the sixth case in the series; operation July 6th, 1921. The patient died on the operating table just as the operation was completed. Probably the operation took a long time, and towards its termination the child became pale and died of heart failure in spite of attempts to resuscitate it. This death I regard as purely due to operative shock.

2. Double hare-lip; operation September 21st, 1921. At the termination of the operation the patient was noticed to have collapsed. He recovered for a time, but two days later died of heart failure. A post-mortem examination revealed a patent foramen ovale in the heart, and so death at an early age was inevitable.

3. Left incomplete hare-lip; operation on May 10th, 1922. The patient survived the operation, and was well for several days, unfortunately she then developed enteritis, and died nine days after the operation from this cause.

4. Left complete hare-lip; operation on April 16th, 1927. The infant afterwards developed broncho-pneumonia, and died in three days.

5. Right incomplete hare-lip; operation February 9th, 1929. A spell of very severe weather set in after the operation; the child developed pneumonia four days later, and died two days afterwards.

The last 59 cases have been operated on with only two deaths, both from broncho-pneumonia. This shows a distinct improvement on the earlier series, and with more experience in operative technique and after-treatment a further improvement may be expected.

Points which have particularly interested me in looking over these cases have been:

1. The great preponderance of the condition in males.

2. The fact that, in the cases which have come under my care, it is most common in the second child.

3. The great rarity of more than one child in a family being affected.

4. The distinct tendency in a considerable percentage to run in families. My personal view is that if the family history could be more fully investigated we should find a history in a larger number than at first appears to be the case. It is curious that it is so rarely one of the parents who has had a similar condition, but more often an aunt or uncle, or more distant relation.

5. The possibility of the effects of pre-natal impressions in the first few months on the developing foetus. Personally, I feel forced to the conclusion that there must be something in this. There may be, in addition, a germ history, but I am inclined to think that any prejudice about this particular deformity on the part of the mother or coming into constant contact with others who have it may influence the foetus in its earliest stages.

EXCRETION UROGRAPHY.

*A Preliminary Note on a New Method of Radiological Demonstration of the Urinary Tract.**

BY

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(With Special Plate.)

THE radiological demonstration of the hollow viscera by filling the lumen with opaque medium is a method that has found wide application in surgery; in fact, it can be assumed that there are few cavities or potential cavities which remain beyond the scope of this method of examination. Taken collectively, the accepted methods fall into two main groups. First, the artificial filling of the lumen with a radiographically demonstrable medium introduced from without, frequently under a small head of pressure. This is seen in the present method of pyelography via the ureteric catheter, which has marked so great an advance in renal diagnosis. The second group depends on the production of a radio-opaque secretion to demonstrate the excretory passages of the gland. While imposing very definite limitations in application, and difficulty in finding a suitable non-toxic yet selective excretory substance, this method offers an advantage in showing a picture naturally by instrumentation. Graham's epoch-making work in cholecy-stography, employing an organic combination of a cholagogue (phenolphthalein) with a radio-opaque [illegible]

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has demonstrated the possibility of this method, and whilst superficially it would appear that the urinary tract offers an obvious field for the application of this method, only recently have attempts in this direction been attended with any measure of success. Probably the satisfactory results which have attended the transvesical method in the majority of cases have discouraged the pursuit of an excretion method.

The earlier work on this subject is associated with the name of Roseno.[1] Attempts had been made by Osborne, Sutherland, Rowntree, and Scholl[2] in 1923, using the oral administration of 20 grams of sodium iodide. Satisfactory cystograms alone were obtained. Rosenstein and von Lichtenstein[3] obtained, in only a few cases, with the help of pneumo-radiography, an exact picture of the kidney pelvis. Also the attempts of Volkmann and Hrynt-chaks[4] were unsatisfactory. The latter worked with not less than fifty preparations, and made 150 animal experiments. The problem remained thus until Roseno conceived the idea of combining intravenous administration of sodium iodide and urea with subsequent radiology of the urinary tract. After preliminary experiments on dogs, the dosage and time of exposure were established, and pyelographic pictures were obtained in a series of eighty cases.[5] The dose required was large. Roseno used the iodide equivalent of 38 grams of iodine, and while we are aware that equally large doses have been used intravenously in the treatment of syphilitic conditions,[6] an iodide idiosyncrasy must be very carefully excluded. Repeating Roseno's method, we were able to obtain a faint yet definite delineation of the urinary pelves and ureters; the generalized tingling, slight headache, and constitutional reaction occasionally associated with the injection, however, do not recommend the method as a routine procedure. Still, quite serviceable pictures can be obtained by this method, especially in those cases where an obstructive lesion delays emptying of the renal pelvis. Roseno claims that the test has value as an indication of renal function: normally secreting renal tissue will give an early dense shadow, while one with poor function will give a faint shadow late, or none at all. To avoid the disadvantages of the intravenous method Ziegler and Köhler,[7] following up the earlier work of Rosenstein and von Lichtenstein,[3] gave sodium iodide and urea (10 grams of each in milk) by the mouth, and obtained pyelographic pictures at various times up to four hours, after half an hour's compression of the desired ureter with an abdominal pad. Our results from this method in a small number of cases (six) were not satisfactory, although, with good radiography and a thin patient, the outline of the renal pelvis and calyces could be obtained. The compression was not without objection, both to the patient and in obviating one of the advantages of the excretion method—namely, the value of obtaining a view of untouched urinary tract.

Recently the difficulties which surround excretion pyelography have been considerably cleared by the work of Swick,[8] Binz, and Raeth. The observers attempted to obtain an outline of the gall-bladder after intravenous administration of selectan-neutral (an iodo-pyridine). The gall-bladder failed to show, but the kidney shadow came out so well that further work was devoted to this end. Selectan-neutral proved uncertain, and, as nausea, vomiting, and headache so often followed its use, a more innocuous compound was sought. Sodium-glycin was introduced in place of a methyl group, and "uro-selectan"* was obtained.

This preparation has proved satisfactory. It is harmless even in large quantities (3 grams per kilo of body weight is tolerated by the guinea-pig); it is soluble up to 50 per cent.; it contains 42 per cent. iodine in organic combination, and is excreted unchanged from the kidneys in sufficient concentration to give good radiographic shadows in fact, it can be almost completely (95 per cent.) recovered from the urine. We have recently had the opportunity of testing this substance clinically, and recognize in it a very valuable method, both in the elucidation of the clinical case and in the new field which it opens out for the investigation of the pathological anatomy of the upper urinary tract.

*This drug will shortly be procurable in this country.

Technique.

The technique is as follows. The dry greyish-white powder is dissolved in 100 c.cm. of warm distilled water, the solution filtered twice and sterilized in a water-bath for twenty minutes. A deep reddish-brown clear solution results, which, after cooling, is ready for intravenous injection. For an adult male, 40 grams of uroselectan form a satisfactory and easily tolerated dose. This allows 0.65 gram per kilo of body weight, and although much more than this can be given without ill effect, we find that this scale gives satisfactory results. An iodide idiosyncrasy is sought beforehand by the administration of potassium iodide, and by painting a portion of the skin with iodine on the day before injection. The solution can be given through a single puncture into the median basilic vein by means of a large Record syringe (50 c.cm.), and although we have not always been successful in preventing slight leakage into the tissues at the point of puncture, no ill effects of this accident have been noted beyond a little local irritation and tingling. No thrombosis followed injection. In this respect it differs markedly from experiences with the intravenous administration of tetraiodo-phenolphthalein. Following injection, generalized tingling may be noted, but frequently no abnormal sensations are recorded by the patient.

Injection is best carried out on the *x*-ray table, and the first picture taken five to ten minutes later. So far the best results have been obtained by using 15 × 12 films, with the Potter-Bucky diaphragm, but with no compression, using ten seconds' exposure. By this means a view of the whole tract is obtained, and a valuable comparison is obtained between the two kidneys. Pictures are taken at half an hour, one hour, and two hours from the time of the injection, the bladder being emptied just before each exposure in order that its shadow may not obscure the lower part of the ureter. If the renal function is normal, a shadow of the whole excretory urinary tract is obtained half an hour after injection, and is maintained for several hours. If the renal function is subnormal, a corresponding loss in density of the shadow is noted. In severe degree of renal impairment a shadow is only obtained after six to twenty-four hours or not at all. If the renal shadow is absent, then either no kidney is present on that side, or it is inactive, or very severely damaged by disease. Such results are seen in pyonephrosis, advanced renal tumour, or in long-obstructed infected kidneys. Findings of this character demand further cysto-scopic elucidation. Yielding as it does so comprehensive a grasp of the urinary condition present both functional and anatomical, we believe that excretion urography will come to occupy a prominent position in urological investigation.

Indications.

More and more in urological work does the need to [illegible] routine pyelography obtrude itself. Just as cystoscopy has risen from an occasional procedure to an essential part of routine urology, so we are coming to [illegible] more frequent employment of pyelography as [illegible] to gain a complete knowledge of each [illegible] the surgeon often feels that there is a double [illegible] bladder with its [illegible] in his hands.

It is fortunate that, at this point, a method is put forward which not only promises to give at a glance a view of the excretory passages in their physiological state, but which also may be of value as an index of differential renal efficiency. It is to be expected that in a large number of cases excretion urography will be performed before the patient objects to cystoscopy or pyelography by the instrumental method. More cogent indications are impassible obstruction of the urethra or of the ureters, severe haemorrhage, multiple urinary fistulae, "thimble bladder," in the case of small children, or in cases of implantation of the ureters into the bowel. In prostatic hypertrophy with intravesical projection rendering ureteric catheterization both difficult and inadvisable the intravenous method will also find a place.

Contraindications.

Cystoscopic pyelography will still remain the method of choice in the investigation of mild haematuria where the origin of the haemorrhage must be sought, and a distension pyelogram obtained, to exclude early renal neoplasm.

Another contraindication to intravenous pyelography will be advanced renal destruction, with either latent or manifest uraemia. The only death following this method occurred in a girl, aged 10, who had bilateral renal insufficiency from pyelonephritis, and a blood urea of 92 mg. per cent. before the injection.[7] Iodine idiosyncrasy and hyperthyroidism are contraindications, as also is acute inflammatory renal disease.

We have used this method on a series of patients suffering from varying degrees of urologic disease, typical examples of which are here instanced. We regard the exclusion of latent uraemia by blood urea examination as an important preliminary. None of our patients has shown the slightest reaction following the injection. The urine has been examined at intervals following the test. No evidence of irritation of the urinary tract has been found, and, although it has been used in chronic inflammatory disease, no increase in pus cell or albumin content has been noted. No increased frequency or pain on micturition has been present in our cases. A constant feature has been the raising of the specific gravity of the urine during the time of excretion; this often rises to 1040. Von Lichtenberg and Swick[8] suggest that this fact may be used as a test of renal function. Further work, however, is required on this point.

Conclusions.

1. A method of *urography is described* whereby a picture is obtained of *the whole* urinary tract without instrumentation, *provided both* kidneys retain in some degree their excretory function.

2. This method also offers a differential test of renal function.

3. The procedure is harmless; over 200 cases have been recorded without any disagreeable sequels.

4. The results are easily obtained, and of good quality, leaving in most cases no doubt as to the condition present.

5. The method is advocated as one of real value in routine urology, provided certain contraindications are observed.

6. The method promises to be of great value in elucidating the pathology of surgical disease of the kidney, especially hydronephrosis. Further work is indicated in this direction.

CLINICAL NOTES.

Our first attempts at excretion pyelography were carried out in November, 1929, and although the shadows obtained of the renal pelves were sufficient to be of some clinical value, they were too faint to bear reproduction. It was only when uroselectan became available and was employed that pyelograms capable of reproduction were obtained. The following cases and the accompanying pictures (see Special Plate) therefore illustrate the use of this drug, which we have employed in seventeen cases.

CASE 1.

A man, aged 43, complained of fixed pain in the left loin. No urinary symptoms were present. The urine was normal to chemical and microscopical examination. He was given 40 grams of uroselectan, dissolved in 100 c.cm. of water, intravenously. No abnormal sensations were experienced by the patient, beyond a feeling of heat immediately after the injection. The first radiogram, taken ten minutes later, shows a normal left renal outline with the renal pelvis lightly outlined by the drug. Nicely cupped calyces could be seen. The right pelvis showed the early overfilling which Roseno[7] describes as probably due to the diuretic effect of the drug. Fig. 1 shows the appearance at the end of a quarter of an hour. Further pictures were taken after half an hour, one hour, and two hours, and show the drug being excreted in considerable quantity at each of these times. The urine was examined microscopically before the test, and thirty and sixty minutes after the injection. It was quite clear to macroscopic examination, and on no occasion was anything pathological found. The urine remained acid throughout, and rose to a maximum specific gravity of 1034 half an hour after the injection. No urinary symptoms followed the examination, and the patient remained ambulatory throughout. We regard the evidence in this case as sufficient to exclude any renal source of pain.

CASE 2.

A woman, aged 27, complained of attacks of left renal pain, with pyrexia, since October, 1928; also of frequency of micturition—by day hourly, by night twice. The urine was acid, specific gravity 1010; trace of albumin; pus and epithelial and red blood cells present on microscopic examination. Culture shows a moderate growth of *Bacillus coli*. Cystoscopy shows oedema of both ureteric orifices. Indigo-carmine: right efflux good concentration in six minutes; left orifice gives no colour in eight minutes, and only a very poor colour in seventeen minutes through a ureteric catheter. Urine obtained from the left ureter shows the same findings as above, with a urea content of 1 per cent. under fasting conditions. She was given 40 grams of uroselectan, dissolved in 100 c.cm. of distilled water, intravenously. The radiogram taken eight minutes later shows a hydronephrotic left pelvis with distension of the calyces, and a normal right pelvis and ureter. The left ureter did not appear. Fig. 2 shows the appearance a quarter of an hour after the injection. Pictures taken after half an hour, one hour, and two hours show progressive fading of the shadows of the right pelvis and ureter, while the left pelvis remains opaque and clearly shown throughout. At no time was the left ureter seen. Urine, obtained 45 minutes after administration of the drug, was acid; sp. gr. 1038; trace of albumin. Pus cells, epithelial cells, and red blood cells were present as before, but not in increased numbers.

The early appearance of pelvic shadows seems to indicate the presence of satisfactory secreting renal tissue on both sides, while the prolonged retention of the drug in the left pelvis, with early hydronephrotic appearance, suggests obstruction at the pelvi-ureteric junction. On the strength of the above findings we propose exploring the left kidney with a view to performing a plastic operation.

CASE 3.

A woman, aged 26, was quite well until August, 1929; then she had a severe attack of haematuria which lasted two days. There has been gradual loss of appetite and weight since. Recently she has had pain on micturition, and marked frequency by day and night, with pain in the left renal region. Examination showed an anaemic spare woman. Both kidneys were palpable, not lobulated or tender, the left somewhat larger than the right. The left ureter was palpable crossing the left iliac fossa.

X-ray examination showed an enlarged left renal shadow only. The urine was acid, and contained a cloud of albumin and pus cells, epithelial cells, and occasional red blood cells. Culture showed a scanty growth of *Streptococcus faecalis* and coliform bacilli. The specific gravity was 1006. Tubercle bacilli were present in a twenty-four-hour specimen. Blood urea 40 mg. Cystoscopy showed a contracted bladder (capacity 4 oz.), and this, combined with acute cystitis, rendered a view difficult. The ureteric orifices were retracted and displaced; the mouths of two diverticula were seen above the right. A ureteric catheter could not be introduced into either orifice. No indigo-carmine was seen in twenty-five minutes, although slight staining of the urine appeared later. An intravenous injection of 40 grams of uroselectan was given, and was followed by no ill effects beyond tingling and a feeling of heat. X-ray examination a quarter of an hour later showed very marked dilatation of the whole of the left ureter, slight dilatation of the renal pelvis, and loss of cupping of the calyces. The shadow was good, even at this early time. No pelvis or ureter was seen on the right side. Films were taken at half an hour, one hour, two hours, four hours, and twenty-four hours. The drug was seen outlining the left renal pelvis and ureter in each of these films in diminishing density, but at no time was any seen on the right side. Fig. 3 shows the film taken at one hour. Urine examined after the investigation showed no increase in the leucocyte or red cell content, and the specific gravity during the test rose only to 1016.

The above evidence suggests an obstruction to the lower end of the left ureter, with hydro-ureter and early hydronephrosis, while the right kidney appears to have a very low excretory function probably due to extensive tuberculous disease. Contrary to what one would have expected on clinical grounds, the left kidney is the more active organ, as shown by the early appearance of the drug on this side. We propose exploring the lower end of the left ureter with a view to dilatation of the vesical orifice, and ascertaining if the left kidney remains uninfected.*

*This has been done. The left ureter was explored, and found to be grossly dilated; failing to obtain urine by aspiration, the ureter was incised to admit a ureteric catheter. Indigo-carmine appeared here in five minutes, and tubercle bacilli and pus cells were found in the urine collected. The patient died twelve days later. Dr. H. F. Brewer, Pathologist to the hospital, makes the following report: "Autopsy shows death from generalized tuberculosis. *Kidneys*: the right was entirely destroyed, and consisted of a number of closed areas containing caseous material. The left in its upper pole had a circular caseous area about one inch in diameter, which was in communication with the pelvis of the left ureter. The remainder of this kidney, except for congestion, appeared normal. Sections of the functioning kidney tissue were natural except for hyperaemia and some slight cloudy swelling of the epithelial cells of the tubules. The glomeruli were normal. The urine in the bladder at the post-mortem examination showed no increase in pus or red blood cells as compared with the findings a month previous to death. No casts were present. The post-mortem examination indicates that the remaining functioning renal tissue has suffered no acute damage from the use of uroselectan."

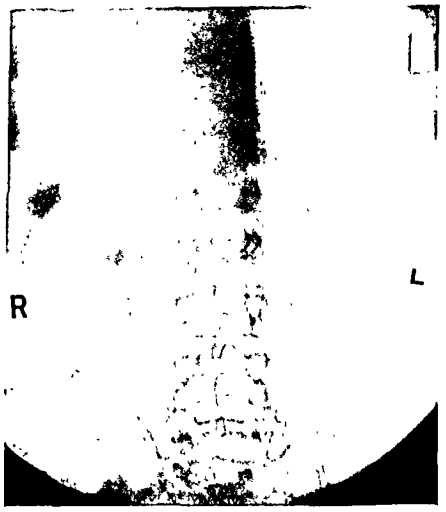


FIG. 1.

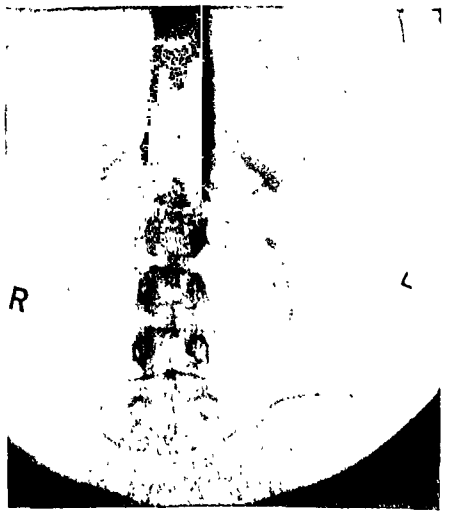


FIG. 2.

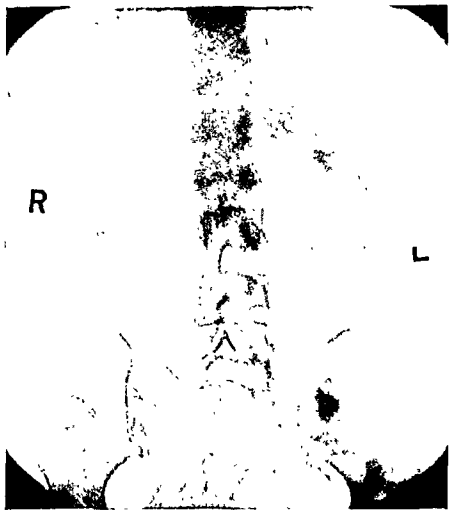


FIG. 3.

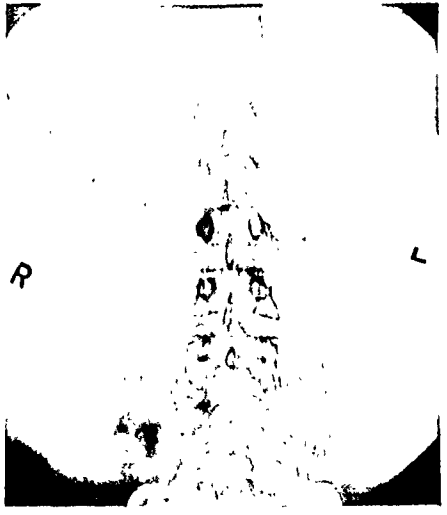


FIG. 4.

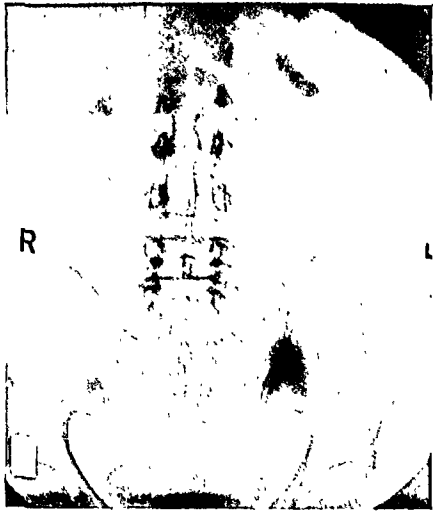


FIG. 5.



FIG. 6.

N. H. LINDSAY: FOUR CASES OF FRACTURED PELVIS.

FIG. 1.

FIG. 2.

FIG. 3.

FIG. 1.—Case I. Symphysis pubis wired. Nothing else to note.
FIG. 2.—Case II. Fracture of left ischium in three places, symphysis to be drainage tube.
FIG. 3.—Case III. Right acetabulum driven into pelvis. Fracture of right side of pelvis
FIG. 4.—Case IV. Transverse fracture of right pubic bone with upward displacement of right side of pelvis at symphysis pubis and fracture of right ischium adjacent to acetabulum. Fracture of right pubic bone below the

FIG. 4.

ARNOLD K. HENRY: THE HINGED BONE-GRAFT

FIG. 1.

FIG. 2a.

FIG. 2b.

FIG. 1.—Child's foot hinge-grafted two and a half years previously for extreme calcaneo-valgus deformity due to paralysis. The arrow points to the hinge in the lateral graft.
FIG. 2a.—Ankle joint hinge-grafted fourteen months previously for deformity. The hinge in the lateral graft is shown by the arrow.
FIG. 2b.—The lateral hinge is shown with the strong

CASE 4.

A boy, aged 17. Sudden onset in July, 1929, of left renal pain, with temperature 101°. Albumin, blood, and pus were present in the urine. Culture showed staphylococci. Blood urea 23 mg. The urine from the right ureter was normal; that from the left contained pus cells. No tubercle bacilli were seen. The bladder was normal. Indigo-carmine—good concentration from the right in five minutes; none seen from the left in twenty minutes. He was given 40 grams of uroselectan intravenously. Half an hour later a definite picture of the right renal pelvis and calyces was obtained. Fig. 4 shows the appearance after one hour. Exposures were taken at one hour, two hours, and four hours; at no time was any shadow seen on the left side. Cystoscopic pyelography showed a large pyonephrosis on the left side, completely replacing the renal tissue. Fig. 4 agrees very closely with a right pyelogram obtained by the cystoscopic method. It is significant that the uninfected side excreted the drug after half an hour in sufficient quantity to give a shadow, while the infected side failed to show a shadow in any of the radiograms, thus illustrating the depressing effect of sepsis on the renal function.

CASE 5.

A man, aged 28, who for three years has suffered from right renal colic. No frequency; never haematuria. Examination shows tenderness in the right loin only. The urine is straw-coloured, acid, and the specific gravity is 1012; albumin is present. Microscopic examination showed a few pus cells and red blood cells. Cultures were sterile. Blood urea was 31.5 mg. per cent. X-ray examination showed a pyriform oxalate calculus in the right renal pelvis.

After the usual radiological preparation, 40 grams of uroselectan were injected intravenously. Fig. 5 shows the condition a quarter of an hour later. The left renal pelvis and renal outline are shown clearly to be normal. The right pelvis is hydronephrotic, and in the negative the calculus is seen lying within the shadow of the pelvis. The depth of renal tissue and the early appearance of the drug in the right pelvis indicate that the stone has so far caused little interference with excretory function. Pyelolithotomy confirmed the above findings. During the excretion of the drug the specific gravity of the urine rose to 1035, but subsequent examination showed no change in the abnormal constituents already present.

The advantage, in the cases of uninfected calculi, of obtaining all the necessary evidence without recourse to instrumentation, is self-evident.

CASE 6.

A man, aged 30, who had recently undergone excision of a urethral stricture. The cystoscope could not be passed owing to a fold. There was no obstruction to micturition. Intravenous pyelography showed normal renal pelves half an hour after the administration of the drug.

CASE 7.

This patient had nephrostomy performed in October, 1929, for infected right hydronephrosis and incipient uraemia, the left kidney being congenitally undeveloped. The left kidney excreted only two to three ounces per diem, and concentrated urea only to 0.4 per cent. Nephrostomy reduced the blood urea from 95 mg. per cent. to 44 mg. per cent. A ureteric catheter could not be passed into the right pelvis from the ureter, and a satisfactory pyelogram was not obtained via the nephrostomy tube. The patient was given 40 grams of uroselectan intravenously. An irregular ill-defined shadow began to appear after half an hour, and was more intense in two hours, but no shadow was seen on the left side. Unfortunately the patient (who was an outpatient) could not stay for further x-ray examination.

CASE 8.

A boy, aged 7, who for twelve months has had attacks of symptomless haematuria. Cystoscopy shows no vesical cause for the haematuria. Indigo-carmine—good colour from right in five minutes, poor from left in fifteen. The urine collected from each ureter contains many red blood cells with epithelial cells. A few red blood cell casts were occasionally seen. X-ray examination was negative. Blood urea was 45 mg. per cent. The blood count shows very marked eosinophilia (23 per cent.). A blood Wassermann test was positive (++); the father's Wassermann reaction was also positive (++). The stools and urine showed no evidence of paracytic cysts or ova. The condition is considered to be one of chronic syphilitic nephritis, as cystoscopic pyelograms show no abnormality. The patient was given 16 grams of uroselectan in 40 c.cm. of distilled water. A film taken a quarter of an hour later shows a little drug in the bladder only. A film at twenty-five minutes shows the right pelvis outlined, whilst the left pelvis began to show only after an hour. The right pelvis still showed faintly after four hours. The findings were similar to those obtained by cystoscopic methods.

Two normal patients were used as controls—one a youth aged 19, the other a boy aged 12. In each case the pelves were seen after fifteen minutes.

CASE 9.

Fig. 6 shows the result obtained after thirty minutes in a woman, aged 23, whose right ureter has been transplanted into the rectum for epispadias, with vesical incontinence.

In conclusion we wish to express our thanks to Dr. Wylie, radiologist to the hospital, for the use of his department, and to Miss Kreckeler, our radiographer, for her very able co-operation. We would also like to thank Dr. H. V. Morlock, assistant physician to the hospital, for his helpful interest and advice.

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Since this paper was written Mr. Frank Kidd has published examples of the use of this drug in the current number of the British Journal of Urology.

THE HINGED BONE-GRAFT.

BY

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(With Special Plate.)

THREE years ago I described in this *Journal* a method of splinting unstable feet by means of hinged grafts, which combined stability with a degree of useful movement.[1] The results have been so entirely satisfactory that a further description is desirable.

The grafts are made from osteo-periosteal strips implanted into bony grooves, cut in the back of each malleolus, and extending on either side of the foot to a point just beyond the mid-tarsal articulation. Connivance during convalescence at slight movements of plantar flexion and dorsiflexion of the foot secures the formation of a hinge in each graft just distal to the tip of the malleolus. An internal living splint—like the hinged cage-splint used externally for loose knees—is thus incorporated with the ankle.

I have employed the method in two kinds of case: (1) for patients with calcaneo-valgus deformity due to paralysis; (2) for complete foot-drop or "dangle-foot." Before grafting, any fixed deformity in the paralysed foot must, of course, be corrected by manipulation or tenotomy.

Paralytic Calcaneo-valgus Deformity.

Apart from hinge-grafting, the operations devised to cure this deformity have either failed to stand the test of time or have spoilt the shapeliness of the part. A tenodesis will stretch; transplanted tendons are inadequate, and astragalectomies make malovely ankles. Fig. 1 is an x-ray picture of a foot hinge-grafted two and a half years previously for an extreme calcaneo-valgus deformity. The girl, when shown in the Surgical Section of the Congress held during the centenary celebrations of the Cairo School of Medicine, could stand and hop on the grafted foot, and could move it in a vertical plane. There was no lateral instability of any kind. (One of the two hinges is clearly seen in the radiograph.) A second patient was operated on shortly after the first, with a satisfactory result.*

"*Dangle-foot.*"

Many operations have been devised for this disabling condition. Some are unsatisfactory; Jones and Lovett regard arthrodesis as a method "to which at best but an

* A third patient, but with an associated fixed deformity, has recently been hinge-grafted after correcting the fixed equinus component by tenotomy.

imperfect functional result," and "contraindicated in young children." The end-results, too, of tenodesis that I have seen have been mediocre, while other procedures are either mutilating or less simple of performance than the operation of hinge-grafting.

Makers of artificial limbs realize the disadvantage of a foot fixed immovably to the leg, and they provide limbs with a slight degree of movement at the ankle-joint. I believe that some mobility is equally desirable in the living foot, and that while bony fixation at right ankles to the leg is good, a stable foot with a few degrees of movement in the vertical plane is better. This can easily be got, in the most unstable feet, by means of hinged grafts.

Figs. 2*a* and 2*b* show *x*-ray pictures of a foot hinge-grafted fourteen months ago; the whole lower limb was paralysed by a stab wound of the cauda equina. The foot is at a right angle to the leg, and the hinge grafts give a range of about 5 degrees of movement in the vertical plane, which allows the leg to rock naturally on the foot when the patient walks. The rest of the limb is stabilized by means of a skeleton splint. It is particularly important in "dangle-foot" to bring the grafts across the mid-tarsal joint.

The Operation.

The following points are worth noting.

The Position of the Patient for Operation.—The prone position is best; this gives access to the backs of both malleoli, and allows the graft to be cut from the opposite tibia after flexing the knee (Fig. 3).

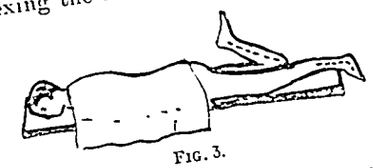


FIG. 3.

Skin Incision.—Time may be saved by making the three skin incisions—one extending to the foot from behind each malleolus, and one over the opposite tibia—in succession at the beginning of the operation. The scalpel is then discarded, and a second scalpel is used for the deep dissections. Side-curtains are fixed to the neighbouring wounds behind the ankle by means of Michel clips, to avoid a double encumbrance of towel forceps.

The Graft Bed.—Medially the tibialis posterior, and laterally the peronei, are displaced from their grooves, which are deepened by a gouge to form beds for the grafts; each groove must cross the mid-tarsal joint. The grafts are held in position by stitching the tendons over them: four stitches suffice for each graft. I do not permit either my own skin or the patient's to come in contact with the outer surface of my gloves. By this precaution I avoid the elaborate game of skill in which wound, graft, and sutures are treated as untouchable, and time is saved.

The Grafts.—I cut the osteo-periosteal strip, which is outlined by a scalpel, with a chisel of the same width as

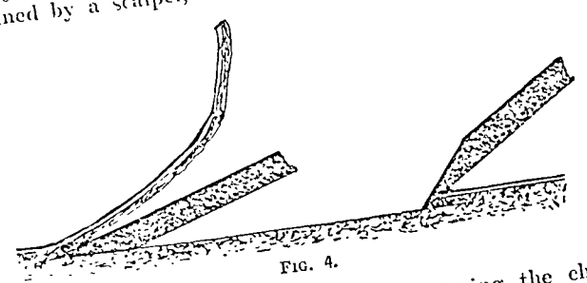


FIG. 4.

the subcutaneous face of the tibia—entering the chisel, bevel up, to the required depth, and then using it, bevel down, to shave off the strip (see Fig. 4). Then, holding the strip with tissue forceps by the four corners, I divide it longitudinally with straight scissors into two equal grafts. It does not seem to matter whether the graft has the pliability of wet paper or the spring of a hazel twig; the result is the same—a hinge, just distal to the malleolus, is ultimately formed in either case. The patient whose radiograph is shown in Fig. 2*a*, where the hinge is clearly seen, was grafted with tough, springy grafts, while in the girl's foot (Fig. 1) the grafts were flaccid.

Skin Closure.—Time is again saved, and contamination from skin is avoided by postponing the closure of all three wounds till the end of the operation. Michel clips are used instead of sutures, since the clips provide no path for infection. Rutherford Morison's invaluable thick layer of sterile boric powder is applied as a dressing.

After-Treatment.

The foot is bandaged for a week at right angles to the leg in an ordinary soft bandage; this permits the small degree of movement that produces the hinge in each graft. The Michel clips are then removed and the bandage reapplied. If there is any tendency to foot-drop or lateral deviation, or if the patient is unlikely to co-operate by remaining in bed, the limb is fastened to a long back splint, with the foot at right angles to the leg. A month after operation a plaster casing that extends above the knee replaces the bandage or the splint, and holds the foot in the same position. The patient is made to stand beside his bed on the plaster casing for increasing periods of time. The casing is removed two months after the date of operation, and the patient is encouraged to walk.

The Advantages of Hinge-Grafting.

1. The stability given by these bony hinge grafts improves with use; they do not stretch like tendons that are fixed or transplanted.

2. The after-treatment is simple: final and satisfactory function is obtained within three months—a time which compares favourably with the long period of care and re-education required after transplanting tendons.

3. If relevant muscles can still contract, the hinges allow movements of dorsiflexion and plantar flexion.

4. Hinge-grafting does not—like astragalectomy—disfigure the ankle.

5. It gives excellent results in "dangle-foot."

6. For talipes calcaneo-valgus it is the method of choice —not, I submit, another poor best among a disheartening array of forlorn hopes, but a thoroughly satisfactory treatment of the deformity.

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FOUR CASES OF FRACTURED PELVIS.

BY

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(*With Special Plate.*)

THE interesting features about the following cases are the manner in which the lesions were produced, illustrating the different types of fracture caused by varying types of violence, and the fact that all four patients were admitted to hospital within a fortnight of each other.

CASE I.

T. D., a railway guard, aged 48, was admitted to hospital on January 17th, 1930, with a fracture through the symphysis pubis with rupture of the bladder. It was an incomplete fracture produced by compression violence. The patient fell from a station platform, and was caught between the platform and the running board of a moving train.

The following symptoms were exhibited. Extreme pain on compressing the iliac crests; inability to move the lower limbs without causing severe pain, but no evidence of nerve lesion; urgent desire for micturition; passage of a catheter withdrew a few drops of blood-stained urine.

The same day, after *x*-ray examination, the bladder was explored and the pubic symphysis exposed. A linear tear, a quarter to half an inch in length, at the junction of the anterior surface of the neck of the bladder and urethra was found and closed. The left superior ramis of the pubis was displaced downwards and backwards, being separated from the right superior ramus by about two inches. The displacement was corrected by manipulation and the fragments wired in position. A catheter was passed and tied in. Micturition was normal within forty-eight hours.

Further treatment consisted in the application of a stout pelvi binder and nursing on fracture boards.

CASE II.

R. M., a painter, aged 38, was admitted on January 22th, 1930, with a fracture through the floor of the acetabulum and right pubic bone. It was an incomplete fracture produced by compression violence. The patient fell from a ladder on to his right hip. When admitted he was suffering from shock and severe pain in the right hip and groin.

Examination showed that active movement of the right leg was possible but extremely painful. There was no tenderness on pressing the iliac crests together. The right leg was in a position of marked external rotation, full extension, and slight adduction. There was marked flattening over the right great trochanter and relaxation of the ilio-tibial tract, but no palpable abnormality. Shortening to the extent of one inch was present. There was no sign of injury to pelvic organs or nerves.

CASE III.

T. C., a window-cleaner, aged 60, was admitted on January 24th, 1930, with a fracture of the left ischial tuberosity. It was an incomplete pelvic fracture due to direct violence, and was produced by a fall on to the buttocks from an 18-foot ladder.

The lower limbs appeared normal in position and movements, but the latter caused pain in the region of the left sacro-iliac synchondrosis. Marked tenderness was present on pressing over the left sacro-iliac joint, and also per rectum in the region of the left ischial tuberosity. There was no sign of injury to the pelvic viscera, vessels, or nerves.

CASE IV.

B. W., collier, aged 42, was admitted on February 4th, 1930, with a fracture through the superior and inferior rami of the pubis on the right side and through the ilium on the same side, lateral to the sacro-iliac articulation; it was a complete fracture of the pelvic ring.

This patient was caught by his clothes in a revolving shaft, lifted in the air, and then violently dashed to the ground. On examination the right leg was held in a position of slight flexion and external rotation, with some flattening over the greater trochanter on that side. There was severe pain about the pelvis on moving the lower limbs, but no loss of function in the hip-joints. Compression of the iliac crests also caused severe pain, and slight crepitus could be elicited. Shortening of the right leg up to one inch was present.

Treatment of the foregoing cases consisted in proper immobilization of the injured areas by the use of sand-bags, where necessary, and tight binders. In Cases iii and iv extension was applied—in the former to both legs, in the latter to the right leg, counter-extension being maintained by raising the foot of the bed.

I am indebted to Mr. Fuller, Mr. Mumford, and Mr. Terry for permission to publish these cases.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CHLORETONE POISONING.

A RECENT paper by Professor J. J. van Loghem of Amsterdam[1] recalls to my memory the following case of chloretone poisoning which I met in my practice.

One morning about two years ago I was called to attend a Dutch lady who had crossed the Channel the night before and had taken Mothersill's remedy against sea-sickness. Her only complaint was that she had to lie in bed, for when she got up she had a feeling of having lost her balance and was unable to walk straight; when she tried she had a sensation as though she was walking on glass. She had no sickness or any other gastric symptoms. On clinical examination I found dilated pupils, all the well-marked signs of cerebellar disturbance, and the gait typical of a vestibular affection. Owing to her nervous condition she had a rapid pulse, but otherwise there was no evidence that any system except the central nervous system was affected.

After she had rested in bed for about twenty-four hours she was completely restored to her normal health. The only treatment I gave her was to administer a sedative and an aperient.

There was no doubt in my mind that the patient's symptoms had been brought about by an overdose of chloretone, which is the principal ingredient in Mothersill's remedy. I believe that 4 grains of chloretone are present in each powder. The dilatation of the pupils may, I think, have been due to the action of the scopolamine, which, according to Dannenberg,[2] is present in Mothersill's remedy. Chloretone poisoning is rare. Dr. W. Essex Wynter[3] and Dr. Donald Core[4] described cases in 1913. Two patients treated by the former showed signs of incoordination, vertigo, dullness of sensation, a sense of effort in movement, and mental confusion. The latter treated three patients in whom mental symptoms—incoherence of thought and speech passing to dullness and almost imbecility—supervened.

[1] *Nederl. Tijdschr. v. Geneesk.*, 1930, 74 I 5, p. 568.
[2] *Zeit. f. Hals, Nase und Ohren Heilkunde*, 1923-29, 22, 123.
[3] *Lancet*, May 17th, 1913, p. 1275.
[4] *Ibid.*, May 31st, 1913, p. 1557.

London, N.W.8. HERMAN S. N. MENEO.

AUTO-BLOOD-TRANSFUSION.

IN his interesting article in the *Journal* of November 30th, 1929 (p. 1006), on auto-blood-transfusion in two cases of ruptured tubal pregnancy, Mr. H. B. Butler mentions Burch's four personal cases of auto-transfusion, one of which was after splenectomy, when much blood had been lost. The following case came under my observation while house-surgeon in the Glasgow Royal Infirmary in 1925.

A young man, aged about 26, who had been a patient on the medical side suffering from splenomegaly with anaemia, was brought to Mr. Kay's wards for splenectomy. The operation, performed under splanchnic anaesthesia and chloroform, was one of much difficulty owing to adhesions, as well as to the great size of the spleen.

I was instructed to stand by, scrubbed up as for assisting, and when the spleen was removed it was handed to me to invert over a beaker containing some sodium citrate solution. The shrinkage of the spleen as the blood ran out—about 1½ pints—was very marked. By the time it had ceased to run a senior assistant had the preparations ready for transfusing it back to the patient, while the surgeon finished closing the abdomen. The patient made an excellent recovery.

I am indebted to Mr. James Taylor, F.R.C.S.Ed., honorary surgeon, Glasgow Royal Infirmary, who performed the operation, for permission to record this case.

TENA GRAY, M.B., Ch.B.,
Hall Tutor in Surgery and Extra-Surgeon to the Out-Patient Department, Glasgow Royal Infirmary.

HYPERPYREXIA IN MEASLES.

THE following case of hyperpyrexia in the course of an attack of measles seems to me to be of more than usual interest.

On the morning of March 23rd I was called to see a child, 2 years old, suffering from measles. The rash was developing, and I noticed nothing unusual about the attack. The following morning, however, the father asked me to come at once as he thought the child was in a fit. I accompanied him to the house, and found the child in an apparently dying condition. Her skin had a pale slate colour; she had no convulsions and no rash. Every now and then she emitted a long-drawn sigh. When I took her temperature the mercury went up to 110° F.; it might have gone higher, but that is the limit registered by my thermometer. I at once put the child in a tepid bath and rapidly cooled the water down, letting it get quite cold. The temperature soon came down to 101° F., and I then put the child back in her cot and covered her with a light blanket. The temperature remained under 102° F., and she made an uninterrupted recovery. On the day following the attack of hyperpyrexia the rash appeared again and a week after the date when I was first called in the temperature was normal and the child seemed well. There were no other complications throughout the illness.

Manchester. E. VIPONT BROWN, M.D.Lond.

Reports of Societies.

TREATMENT OF GENITAL PROLAPSE.

AT a meeting of the Section of Obstetrics and Gynaecology of the Royal Society of Medicine on March 21st, with the president, Mr. ARTHUR GILES, in the chair, Professor FLETCHER SHAW read a paper on the treatment of genital prolapse.

Professor Shaw remarked that there was now general agreement that the uterus was held in position by the pelvic floor, and that prolapse of this organ, or of the vaginal walls, could only occur if the four tissues were damaged or weakened. The rational treatment for prolapse, therefore, was to repair and strengthen them by colporrhaphy. Professor Shaw gave a short history of the operation, recalling the fact that Donald commenced to treat prolapse of the uterus in this way in 1883, since when the operation had been almost the sole method of treatment of this condition in the Manchester school. As the result of investigating a series of cases treated from

three to seven years ago, he had received 293 replies to a questionary, which showed that there had been no recurrence in 282, or 96.2 per cent. The speaker pointed out that many patients who had been made comfortable with a pessary when young, ceased to be so after the menopause, when muscular atrophy weakened the supporting structures. Colporrhaphy was frequently performed in women over the age of 60 to 70 with excellent results. If the pelvic floor, after this operation, underwent the strain of labour, there was the possibility of recurrence, but most patients did not show any signs of it if time was given for the tissues to dilate. For many years the Manchester school had treated genital prolapse in young and old, parous and nulliparous, by colporrhaphy alone, with complete satisfaction. Professor Shaw described the operation by means of diagrams and a cinematograph film, and commended it as the rational treatment.

Mr. ARTHUR E. GILES, in a paper on the effect of hysteropexy upon subsequent pregnancy, and of pregnancy upon a previous hysteropexy, described his method of performing this operation. Three sutures of stout silk were passed through the anterior surface of the uterus as low down as possible, and through the peritoneum, muscle, and fascia. This left the body of the uterus free to extend in pregnancy, and no complication resulted. Of 1,424 hysteropexies, 765 were performed in married women, aged 40 or under; of those patients who had been traced, 107 had become pregnant, there being in all 139 pregnancies which had terminated in 110 deliveries at full time, and 24 miscarriages; in five instances the results had not been recorded. On an analysis of the miscarriages it was concluded that in no case was the operation responsible. The results of the labours were: natural labours, 50 cases; forceps delivery, 10 cases; induction for contracted pelvis, 2 cases; Caesarean section, 2 cases; and in two instances the results were not known. As regards the effects of pregnancy on a previous hysteropexy, out of 67 cases after a full-time confinement, 2 showed a return of the displacement. In 189 cases where pregnancy had not occurred the uterus had remained in good position in 179, and there had been recurrence in 10.

Mr. T. G. STEVENS agreed with Professor Fletcher Shaw as regards the treatment of prolapse, there being, he added, no need to open the abdomen in order to cure most cases of this condition. In about 2 per cent. of cases he had found it necessary to perform hysteropexy, or Gilliam's operation, on account of persistent retroflexion. This addition was, however, strictly to cure the retroflexion, which he believed was associated with backache of a severe character in some cases. He deprecated the teaching of those who often performed hysteropexy in addition to colporrhaphy as being likely to lead to a misuse of the former operation in inexperienced hands.

Mr. L. C. RIVETT rejected the suggestion that it was held at the Chelsea Hospital that hysteropexy alone would cure prolapse. The combination of a plastic vaginal operation with hysteropexy fulfilled what he considered the chief desideratum—namely, to make the patient comfortable. Sir EWEN MACLEAN described a case in which, after hysteropexy followed by pregnancy, the fundus was found to be anchored low by a thick band, the foetus being accommodated in a sacculation of the posterior wall. Dr. JAMES YOUNG thought hysteropexy was anatomically unsound, because it could not support the prolapsed bladder and vagina, nor prevent downward descent of the cervix. Plastic repair operations, if satisfactorily performed, rendered hysteropexy unnecessary, and eliminated the risk of abdominal section being required. He doubted the existence of such a low mortality as that in the experience of Mr. Giles and Professor Fletcher Shaw. Mr. CLIFFORD WHITE advocated plastic vaginal operations, but reported two deaths from pulmonary embolism. In his opinion hysteropexy was bound to prevent the proper expansion of the bladder. He emphasized the great discomfort of an abdominal as well as a perineal incision being made on the same occasion.

The president, Mr. ARTHUR GILES, replying, agreed with Professor Fletcher Shaw as to the badness of hysterectomy as the treatment of prolapse, but deprecated amputation of the cervix in every case, maintaining that hysteropexy rendered this generally unnecessary. When hysteropexy was performed for prolapse, it was combined with plastic vaginal operations also.

Hydatidiform Mole with Pulmonary Infarctions.

A communication was read from Dr. J. Eastcourt Hughes and Professor Cleland of Adelaide, South Australia, relating to a married woman, with two children, who was admitted to the Adelaide Hospital after two weeks' vaginal haemorrhage, following a period of amenorrhoea. Progressive weakness, shivering, marked shortness of breath, and an abdominal lump which rapidly increased in size, had been noticed four days before admission. The temperature was 98°, the pulse rate 104, and there was some cyanosis. The abdominal tumour nearly reached the xiphisternum, but showed no characteristic of pregnancy other than a uterine souffle. A rapid increase in cyanosis ensued, with drowsiness, culminating in death. At the necropsy the uterus was found to contain a hydatidiform mole; the lungs showed a considerable area of collapse, and the alveoli were filled with red blood cells, as in multiple infarctions of the lungs. Large masses of syncytium were found in the alveolar capillaries in these areas, and the spleen contained a small syncytial mass. Death was due to collapse of areas of the lungs with infarction from extensive flooding of the pulmonary circulation with masses of foetal syncytium.

PSYCHIATRY IN AMERICA.

AT a meeting of the Section of Psychiatry of the Royal Society of Medicine, on April 8th, with the President, Sir ROBERT ARMSTRONG-JONES, in the chair, two members who have recently visited the United States and Canada, Dr. EDWARD MAPOTHER and Dr. A. A. W. PETRIE, gave their impressions of American psychiatry.

Dr. Mapother said that during last August and September he had visited ten principal university cities in the United States, and also Toronto and Montreal. American psychiatry was not a single entity, any more than European psychiatry. There was no less independence between American States in his respect than between European countries. There was no federal unity in this matter. No general law existed, nor anything official comparable with the Board of Control as a nation-wide authority. The nearest approach to any unifying organizations were the national committees of mental hygiene of America and Canada. Four outstanding factors in America as he saw them were: (1) the enormously rapid growth of population, with consequent institutional shortage; (2) the extent to which official provisions at public expense were supplemented by bequests and donations, above all from such sources as the Rockefeller Foundation and the Commonwealth Fund; (3) the degree in which the American psychiatrist was master in his own house, a strange thing to a visitor from this "lawyer-ridden land"; (4) the far wider diffusion and higher level of psychiatric education of all kinds in America. The resultant of these factors was a greater tendency in America to look upon mental disorder as a problem to be solved rather than as a burden to be borne. The replacement of the static mind of the lawyer by the experimental spirit was one of the great guarantors of the future in America. The psychiatrist in America was allowed to manage his own affairs. In the most advanced States, Massachusetts and New York, the commissioner at the head of the Department of Correction, which carried out functions like those of the Home Office in penal matters, was a psychiatrist. In Maryland the commissioner for mental diseases had authority to transfer any person from prison to mental hospital. In the first two States mentioned all psychiatric provision was in the hands of a State department; there was no duplication, as here, between the local authority and the Board of Control, and the commissioner for mental diseases had powers beyond those which the Board of Control exercised. He had access to the governor of the State, and through him to the legislature, without any Minister or department intervening. The commitment law varied in different States from the extreme of legalism to the fundamental medical conception. Advanced medical opinion in the States was moving in favour of the total abolition of the judicial

authority in commitment procedure, and in Maryland the judicial order had been completely dispensed with; the patient could be committed for detention—not merely temporary detention—on the certificate of two medical practitioners. Actions for illegal commitment were no commoner than elsewhere, and hardly ever successful. As for psychiatric education, in at least ten American universities comprehensive courses of psychiatry were given in each of the four years of medical training. Many American students, however, went to Vienna for education in psychiatry, though in neurology Queen Square, London, was looked upon as the best centre in Europe. Dr. Mapother's general impression as the resultant of the four factors he had named was that in psychiatry America was chiefly interested in development, and England in maintenance. American arrangements seemed unfinished, like everything that was growing, and occasionally crude. In mentioning a few individual hospitals, he instanced Bloomingdale, near New York, as comparable in structure and maintenance with the registered hospitals in England. The Phipps Psychiatric Clinic, Baltimore, was comparable with Maudsley, but not State-supported, nor providing in any considerable measure for the poor. It was here, and at Boston Psychiatric Clinic and Cornell Clinic, New York, that he saw the best out-patient departments of his tour. He criticized some details in the interior arrangement of institutions, especially the "neo-lavatorial" style of decoration in the observation wards, excellent, no doubt, for washing-down purposes, but not easy to reconcile with a homelike atmosphere. As for staffing arrangements, the accepted proportion of doctors to patients was 1 in 150. Such a ratio would double the number of medical officers in the county mental hospitals of London. Salaries were about the same as in England; in view of the scale of American incomes Dr. Mapother thought this involved a lower status. Finally, speaking as one who had had glimpses of psychiatry in ten European countries, he felt that the psychiatric future was more secure in America than in Europe.

Dr. A. A. W. PETRIE said that he had started on his tour with some insular prejudices, and found that a number of them had to be distinctly modified. In America he found departures from British methods, some advantageous, others disadvantageous, still others merely ways of doing things differently. The chronic patients in the large State general hospitals were no better dealt with than in England. Overcrowding existed in many places, especially in the chronic sections in Chicago and Manhattan, New York. The new admission hospital sections impressed him favourably. The "diagnostic corridor" in the new admission centre in New York was fitted up for all the various consultants, and enabled them to see their patients under good conditions. The nursing staff was divided sharply into nurses and attendants, according to preliminary education, but the methods of training attendants were exceedingly poor. Hydrotherapy was very good, occupational therapy well developed, and gymnasium classes more usual than in this country. Out-patient departments were generally in operation in the American mental hospitals, an advantage not only from the point of view of the patient, but from that of the staff, who were thus kept in touch with the early manifestations of the disease. At Bloomingdale, New York, 70 per cent of the cases were received as voluntary; elsewhere the percentage was much smaller. Opinions varied as to what was the best size for a hospital, the accommodation ranging from 2,000 in Massachusetts to 10,000. The psychiatric clinic had been greatly developed, and served as a reception unit. The Phipps Clinic was attached to Johns Hopkins, a similar clinic in Philadelphia to the University of Pennsylvania, and, in New York, to the New York State Department. The length of residence in Phipps was rather less than two months. The cost of a case in a clinic was roughly about £10 a week.

Sir ROBERT ARMSTRONG-JONES, from the chair, said that it was not easy to speak of American psychiatry without paying a warm tribute of admiration and respect to the work of Dr. Benjamin Rush, who was educated in Edinburgh and London, who knew St. Luke's and Bethlem, and who began his work as a member of the Society of Friends in the Pennsylvania State Hospital for the insane. He and Dr. Thomas S. Kirkbride were pioneers in the humane and sympathetic treatment of the insane in America. They were contemporaries of Tuke in York, Pinel in France, and Connolly at Hanwell. They began their work about 1751, and continued it until 1813. The name of Dorothea L. Dix, the "Florence Nightingale of psychiatry," should also be recalled. The president added that he believed that the United States had no general lunacy code, and therefore no uniformity in dealing with the insane, for each State could build its own asylums and hospitals and levy its own taxes. The supervision of the asylums was also a matter for each separate State, and was carried out by the governor or by the State legislature. Certification was different in America from what it was in England. In six States a jury decided the question of insanity; in six States there was a permanent commission for each county, which decided whether a case was to be custodial or temporary and for early treatment. In over thirty States either one or two doctors swore before a justice or magistrate as to insanity, and the judge ordered detention on the medical certificate. The receiving places in America were: (1) the Government asylum—he believed there was only one, near Washington, for soldiers and sailors; (2) the State asylums or hospitals, county or municipal; (3) incorporated hospitals, such as those provided by religious bodies; (4) private asylums, the result of private enterprise; and (5) out-patient departments of general hospitals, or perhaps beds in such institutions.

Dr. KUHN, an American medical practitioner, while protesting that American psychiatry was not all of one pattern, and must not be judged as a single entity, remarked that in certain respects America could learn from Great Britain, for he knew nothing in America comparable with the work of the Tavistock Square Clinic.

HIGH BLOOD PRESSURE.

AT a meeting of the Harveian Society of London, on April 10th, an address was delivered by Sir THOMAS HORDER on the subject of high blood pressure.

Sir Thomas Horder said that the largest group of these cases which presented themselves to the physician was that in which the diagnosis was definitely arterio-sclerosis. These patients came at various stages of their disease, and their symptoms were protean, including shortness of breath, heart consciousness, true or "false" angina, sometimes chronic uraemia or renal insufficiency, haemorrhages, and thrombosis. The next largest group consisted of those in whom arterial tension was easily demonstrated and symptoms had developed, the two being associated in the mind of the patient and of his doctor, and yet critical examination revealed no certain organic changes in the blood vessels, heart, or kidneys. There was a third smaller group in which the renal element was so dominant that the patients were spoken of as suffering from nephritis. Some of the highest blood pressures occurred in this group, especially in women. These people nearly always died from uraemia. Disregarding the first and third of these groups, Sir Thomas Horder said that the second group of what he called hyperpietics could be subdivided. First of all there was a group of plethoric patients, chiefly males, often of sedentary habit, with obesity and here it was a little tempting to suggest that in some of these hypertensions, even if due to the presence of toxic principles in the blood stream, was at first compensatory in the direction of increasing metabolism and elimination. A second small group consisted of patients in whom a genous poisonous agents from outside—were dominant, of these poisons alcohol was by far the commonest, and this group chiefly consisted of persons who were drinking too much and had high pressures in consequence. A third group consisted of menopausal hyperpietic women. One of the most established experiences in medicine was to watch a woman entering the phase of hyperpiesis in the forties, and afterwards gradually—sometimes abruptly—returning to the range of normal pressures. It was the view that the discomfort of the menopausal state was due to hypertension. Some believed that the flushing and sweating, the vasomotor disturbance, and nervous irritability were actual effects of the hypertension, but this was difficult to establish. At one time he thought a systolic pressure of 175

was the limit above which a woman at the climacteric should be considered the subject of organic arterial disease. He had ceased now to say what degree the systolic pressure in a woman who had marked menopausal symptoms must reach for disease of the cardio-vascular system to be diagnosed. He believed there were a few men who, later in life than women, went through such a state, and with it a period of hypertension; but a relative and temporary hyperpiesis occurred sometimes at puberty, chiefly in boys, concerning whose hearts there was often some discussion, who had tiresome sexual difficulties, and whose brachial arteries, a certain school of cardiologists declared, were thickened, though he had never been able to ascertain how that was estimated. Some of these boys had strained their hearts, and possibly the hypertension might be a compensatory feature. Yet another subgroup of hyperpieties consisted of the nervous class. What was often called high blood pressure might in their case be termed high nerve pressure, because there was a close dependence between these two things. In many of these patients the mere knowledge that their pressure was high sufficed to keep it high. These were knowledgeable people, and talked in terms of blood pressure rather than of primary sensation. They were victims of their nervous system rather than of their circulation, a prey to emotional strains which might be ended by the time they sought advice, but the circulation took a long time to readjust itself. Against a postulated final group he put certain questions. Was there such a thing as essential hyperpiesis? Were there patients in whom high blood pressure was present for the whole or a considerable part of their lives, independent of the menopause or of structural changes which could be demonstrated, or of any adequate toxic factor? Was hypertension the expression of an endocrine disturbance, and was it the pituitary gland which was in a state of dysfunction? He supposed the favoured doctrine with regard to hyperpiesis in general was that somewhere in the body there was a "dug-out" of focal sepsis, or possibly diffused sepsis—for he had often wondered whether too much attention was concentrated on focal sepsis, dental or tonsillar, when perhaps the whole of the upper respiratory tract or some length of intestine might be responsible. An earlier generation of medical men, who had no sphygmomanometers, said of these persons that they had gout, and possibly that diagnosis was as wise as the eternal search for focal sepsis. There were waves of hypertension which came to complicate the course of these cases. What was the meaning of these exacerbations? Patients known to be high blood pressure subjects might go for a long time not complaining of any symptom, and then the hour arrived when the condition seemed to speed up.

As to prognosis, hypertension was always, of course, of serious significance until organic disease had been excluded, and even then it was a condition to be treated with respect. Nothing, except cancer, seemed to alarm the lay mind so much as a "stroke," and the lay mind had a right instinct in this as in other respects. With some of the groups he had mentioned, such as the epochal cases and nervous cases, and cases where there was a definite cause like alcohol, a favourable view might be taken, but he disliked especially those cases in which careful investigation failed to reveal anything, just as he disliked cases of angina in which there were no physical signs. To discover hypertension at the earliest possible moment was, of course, of great service to the patient. It might not be possible to change the temperament, but the patient's outlook could be modified in such a way as to diminish stresses and strains, and occasionally a man might be made a philosopher before some crippling catastrophe thrust philosophy upon him. It was well to practise reassurance, because, if the patient accepted it, it was a therapeutic measure. In other conditions, such as cancer, reassurance did no more than bring mental comfort, but in high blood pressure it had a definite effect on the condition itself. It was well to explain to the patient that he was not suffering from a disease, but that his pressure was an expression of something wrong for the time being, and might even be not a bad thing, as an effort of nature to adjust the circulation. It was well not to alarm the patient by taking readings too often. He was never quite satisfied that these patients should be vegetarians; omitting stimulants and extractives, he allowed them butcher's meat two or three times a week. He did not believe that copious amounts of fluid were good, for they cast a strain on the kidneys; blue pill and salines might be useful. Warm baths—neither hot nor cold—were to be advised. The use of drugs to lower tension was undoubtedly disappointing; iodine and iodides perhaps headed the list of useful drugs, with nitrites for occasional use, and, paradoxical as it might seem, he used digitalis in a number of cases with advantage, for some of these patients needed cardiac tonics. Before writing a programme of treatment he bore in mind five factors: (1) the heart, to assess what it was doing; (2) the kidneys, and the question of secretory function; (3) the arteries, whether organically diseased; (4) the nervous system, especially the emotional and mental state; (5) the tissues, whether toxic in the microbic or metabolic sense, or affected by some exogenous chemical substance like alcohol.

Dr. GEOFFREY EVANS asked whether there was a difference between functional and organic hypertension except in so far as it was presumed that in the former there was merely a change in function and in the latter a change in function with a change in structure. There was in this complaint a pathogenic agent which simultaneously caused a change in function and in structure, one or other change predominating in the particular case. Dr. J. F. HALLS DALLY said that high blood pressure was a symptom of a good many causes; until the underlying factors were known it was difficult to formulate scientific treatment. It was necessary to adapt the diet to the minimum metabolic needs of the individual, cutting down the bulk of each meal, limiting the meat with the idea of avoiding fermentation and putrefaction if there was any tendency to intestinal stasis. He combated the adage that a man was as old as his arteries; many people did extremely well although their arteries were like gas-piping. The crux of the problem rested with the kidney, and he drew a sharp distinction between the patients with no evidence of renal dysfunction and others in whom there was such evidence; the prognosis was much worse with the latter.

Dr. A. H. DOUTHWAITE referred to the need for bringing down the pressure in those cases which had periodical rises, resulting in symptoms lasting for weeks, especially in the sallow thin type, often overlooked and labelled neurotic. Two lines of treatment held out hope—periodical venesection and the injection of acetylcholin; in hyperpiesis without marked arterial change this drug brought about a semi-permanent fall in the blood pressure. Dr. ADOLPHE ABRAHAMS said that the boys at puberty in whom, Sir Thomas Horder had suggested, high blood pressure was compensatory to heart strain, might perhaps be unmasked cases of renal disease. The whole subject would be much easier if high blood pressure was always correlated with symptoms, but some persons with very high pressures complained of nothing. Hypertension must not be always regarded as connoting arterio-sclerosis; there must be many cases of arterio-sclerosis with low pressure. Dr. GILBERT ORMIE referred to his experience in a milling town in the North of England where he found definitely in men between the ages of 40 and 46 something which appeared to be a menopause, with a very distinct rise in blood pressure. It continued for about two years, and to a large extent was influenced by the administration of bromides and sodium bicarbonate; he always advised a morning dose of saline. A frequent symptom was a chronic headache, exacerbated by the noise of the mills. In patients who did not die, the blood regained more or less normal tension. Dr. R. COVE-SMITH spoke of the difficulty of fixing a definite standard; perhaps each individual had his own normal. He thought digitalis was indicated in some cases of arterio-sclerosis, particularly if a load was falling on the heart, for the myocardium was the most important factor in maintaining circulation.

Sir THOMAS HORDER replied that he made no rigid distinction between "functional" and "organic"; the terms were misused and lacked exact significance. He still thought it was a good dictum that a man was as old as his arteries, but he applied it to that steady progressive thickening of the vessels which led to apoplexy; otherwise it might be said that a man was only as old as his capacity for repair.

Reviews.

SURGERY OF THE TONSILS.

As an objective of surgical attack, the tonsil has in the last ten or fifteen years become of vastly increased importance, due largely to the recognition of the part it plays in the production of focal sepsis. There are also the local conditions which arise and the relation of the tonsils to tuberculosis of the cervical glands, but all this would scarcely justify the lordly volume on *Tonsil Surgery*,[1] by Dr. ROBERT FOWLER, unless he had something fresh to say. His justification is that he has made a very complete study of the anatomical relations of the tonsil, a matter which has been strangely neglected considering the frequency with which tonsillectomy is now performed.

In a series of splendid anatomical plates Dr. Fowler shows that the tonsil is not in direct relation to the superior constrictor of the pharynx, but is separated from it by the palato-pharyngeus. This muscle spreads out behind and sends a slip, which he calls the tonsillo-pharyngeus, somewhat analogous to the salpingo-pharyngeus, to be directly attached to the tonsil. This accounts for the frequency with which muscle fibres are found on the capsule of excised tonsils. The nature and production of the tonsillar capsule, whose very existence has been denied, is carefully described, but it is sufficient to say that everything relating to the anatomy and embryology of the tonsil is to be found in this book. This is accomplished and illustrated in so fascinating a manner that dismay at the prospect of another work on the tonsil is soon changed to gratification. There is a comprehensive review of the various methods, whether by guillotine or dissection, of removing the tonsil. The author is not an outspoken partisan of any particular method, but the book does form an eloquent plea for more precise operating with avoidance of unnecessary haemorrhage and damage to the pharyngeal muscles and mucous membrane. In connexion with this he quotes Dr. George Fetterolf as follows: "The result is that many incomplete operations are performed, and more tonsils are added to that long and shameful list of those which have 'grown again.'" These are words which must carry great weight when the frequency of secondary and even tertiary operations is borne in mind. There is no need to labour this point, except to emphasize the extreme value of this magnificent volume to all who practise these operations.

To those who are satisfied with their technique, with its anatomical basis, and with their results, this book has no message. It will prove invaluable to those who wish to clarify their anatomical knowledge, to improve the details of operative technique, and to obtain uniform results.

ARTIFICIAL PNEUMOTHORAX.

THE Practice of Pneumothorax,[2] by Drs. F. DUMAREST and P. BRETTE has appeared in a third edition, with an addition to its subject-matter under the title of "La collapsothérapie chirurgicale." The book is now double the size of the first edition, published in 1918, and this steady growth, and reappearance, are the best witnesses of its merit. It will be read with interest and advantage by even experienced collapsotherapists, if we may be allowed to coin an even more formidable word than the authors have in their title, while for those who are at the beginning of their career in tuberculosis work it will be found to be an excellent companion volume to our English work on the subject by the late Clive Riviere.

The first 200 pages deal with the ordinary artificial pneumothorax, its induction, maintenance, and complications. Then follows a short account of oleothorax and pleural lavage. The next section, on thoracoscopy and the cauterization of pleural adhesions, is also short. The next twenty pages deal with after-results, and contain a most excellent *vue d'ensemble* in which Burnand's wise words, "le pneumothorax ne dispense pas de la cure," serve as a text. Following this are two chapters on the mode of action of collapse and the indications and contra-indications for its use. Ten pages only, alas! are allowed for bilateral pneumothorax, and the last forty deal with surgical methods and thoracoplasty. The book finishes with a series of illustrative *x* rays and a full bibliography.

There is a humility about the whole work which makes it far more convincing than if the subject was treated in a dogmatic manner, which so often obscures real value by irritating the argumentative reader. Most reviewers of technical works, however greatly they may admire the book under discussion, are tempted to tell the authors how much better their work would have been if it were laid out and balanced differently. In this case the temptation must be resisted, since the ordering of the different sections has obviously been done with great care and thought. One mild criticism may, however, be made—namely, that the authors have been rather parochial in their description of apparatus. One would like to see, for instance, a mention of Dr. Parry Morgan's excellent instrument with its double manometer, or among the portable ones Heaf's, and of Clive Riviere's inducing cannula and trocar. But this is a trivial matter; it is an excellent book.

ANATOMICAL ILLUSTRATION.

THE seventh edition of Dr. SOBOTTA'S *Atlas der deskriptiven Anatomie des Menschen*,[3] Part 1, reaches a very high standard in the technique of anatomical illustration. It would hardly be possible, indeed, to surpass in perfection the 349 figures which comprise the essential part of this volume. Anatomical illustration is a specialized art, which demands for its successful execution a compromise between realistic representation and diagrammatic clarity. The more vague and ill defined the tissues and organs, the more must realism be sacrificed to the lucidity of conventionalization. Thus, as this atlas shows, osteological figures may be very faithful reproductions of the actual appearance of bones. The illustrations of muscles, especially those whose outlines are not sharp and clear in the real (such as the facial muscles) are much less true to life, while the ligaments are necessarily represented in a still more schematic manner. It may be said that no anatomical illustration can completely escape the artificiality of a schematic diagram, but it seems that, except in one single instance, the artist of Sobotta's *Atlas* has carried realism in his figures to the highest point without in any way detracting from their clearness. The exception noted is to be seen in Plates 1, 2, and 3, where the subcutaneous bursae are pictured as clean-cut sacs such as they only appear under pathological conditions.

The new edition is enriched by the addition of *x*-ray illustrations of the skeleton taken from Grashey's *Atlas*, and the accompanying text showing the normal variation in the dates of the appearance of secondary centres of ossification is of great value. This atlas cannot but be of the greatest assistance to the student of anatomy, and it is equally certain that it will provide a means of rapid revision of anatomical structures and relations for the practising clinician.

PSYCHOLOGY.

IN a book the English translation of which is entitled *The Psychology of the Infant*[4] Dr. SIEGFRIED BERNFELD deals with the development of the child from what he terms "the trauma of birth" to "the trauma of weaning." It might be thought difficult to find enough relevant material to fill over 300 closely printed pages with a study of the psychology of the child during the short period from birth to weaning. This work, however, makes it evident that an intensive study of these early days of child life brings into

[1] *Tonsil Surgery*. By Robert H. Fowler, M.D. Philadelphia: F. A. Davis Company. 1930. (7½ × 11, pp. 283; 102 figures. 10 dols. net.)

[2] *La Pratique du Pneumothorax Thérapeutique et de la Collapsothérapie Chirurgicale*. Par F. Dumarest et P. Brette. Préface du Professeur F. Bezançon. Troisième édition de *La Pratique du Pneumothorax Thérapeutique*. Paris: Masson et Cie. 1929. (Med. 8vo, pp. xiii + 409; 54 figures, 30 plates. 50 fr.)

[3] *Atlas der deskriptiven Anatomie des Menschen*. Von Dr. med. J. Sobotta. I Abteilung. Siebente Auflage. München: J. F. Lehmann. 1930. (Post 4to, pp. viii–278; 342 figures. Bound, M.27.)

[4] *The Psychology of the Infant*. By Siegfried Bernfeld. Translated by Rosetta Hurwitz. Library of Educational Psychology. London: Kegan Paul, Trench, Trubner and Co., Ltd. 1929. (Demy 8vo, pp. xi + 309. 15s. net.)

the foreground many problems of fundamental importance and profound interest which merit the fullest discussion. Dr. Bernfeld has adopted Freud's contributions to developmental psychology as the basis of his monograph, and he has made it his special aim to demonstrate their fruitfulness for the understanding of facts established from other sources, and for the development of the fundamental ideas of other schools. Especially interesting to the general psychologist will be the inferences the author draws from the objective behaviour of the child as to the characteristics of its phenomenal world. In common with the *Gestalt* school Dr. Bernfeld rejects the older conception of "original chaos," and believes that at an early age the perceptions of the child are of the adult kind, in the sense that it perceives structures and their relation to itself, modified by memories of its personal experiences. This is an interesting and able work—a definitely useful addition to psychological literature.

Pleasure and Instinct,[5] by Mr. A. H. B. ALLEN, is an eminently clear and readable monograph on the much discussed problem of the nature of pleasure and "unpleasure." The subject-matter is divided into six parts, dealing in turn with the principal theories of pleasure-pain, sensory pleasure and unpleasure, pleasure and unpleasure in relation to the main instincts, the psychological nature of pleasure and unpleasure as compared with sensation, pleasure and desire, and the psychology of values. Since this work amplifies some of the most important aspects of general psychology, the student will find it useful to read in conjunction with his textbook.

An Introduction to Individual Psychology,[6] by Miss ALICE RAVEN, is a contribution to popular psychology based in the main on the teaching of McDougall. On the practical side the writer would appear to have been influenced by the "power" psychology of Adler, and throughout this work she aims to keep before the mind of the reader the idea of a positive and courageous attitude to life. Those who wish to acquire an elementary knowledge of the human mind from the standpoint of dynamic psychology will find this little book interesting and helpful.

CLINICAL PAEDIATRICS.

WE have received from the publishers three further volumes of *Clinical Pediatrics*,[7] a series of monographs appearing under the general editorship of Dr. R. S. HAYNES. Vol. 16, on *Diseases of the Skin in Infancy and Childhood*, is by Dr. HOWARD FOX, professor of dermatology and syphilology in New York University. It is intended as a practical guide for medical practitioners who have not made a special study of skin diseases; and emphasis is, accordingly, laid on clinical description, differential diagnosis, and treatment, rather than on etiology and pathology; the scheme of classification is frankly a compromise. Vol. 17, on *Prepubescent Syphilis*, is by Dr. PHILIP C. JEANS, professor of paediatrics in the Iowa University School of Medicine, and Dr. JEAN V. COOKE, associate professor of paediatrics in the Washington University School of Medicine. Here again the authors' object is to present their subject—syphilis in children—from the standpoint of the practitioner and student of medicine. The work is based upon personal experience during sixteen years, during which time more than 1,500 syphilitic children were studied and treated. Vol. 18, on *Heart Disease in Infancy and Childhood*, is by Dr. CHARLES H. SMITH, professor of clinical diseases of children, Columbia University, and his colleague Dr. LUCY P. SUTTON. As is only natural, a large part of the text is devoted to rheumatic fever and its effects on the heart of the growing child. A chapter on electro-cardiography is contributed by Dr. GERTRUDE H. B. NICOLSON. Each of these three volumes is well printed and copiously illustrated. We understand from the publishers that two more monographs may be expected to complete the series, and that the catalogue price of the set of twenty volumes will be £16, making the net cost of each volume 16s.

[5] *Pleasure and Instinct*. A. H. Bullton Allen. The International Library of Psychology, Philosophy, and Scientific Method. London: Kegan Paul, Trench, Trubner and Co., Ltd.; New York: Harcourt, Brace and Co. 1920. (Demy 8vo, pp. ix + 336. 12s. 6d. net.)

[6] *An Introduction to Individual Psychology*. By Alice Raven. Cambridge: Heffer and Sons, Ltd. 1929. (Cr. 8vo, pp. ix + 145. 3s. 6d. net.)

[7] *Clinical Pediatrics*. New York and London: D. Appleton and Co. 1930. Vol. 16: *Diseases of the Skin in Infancy and Childhood*. By Howard Fox, M.D. (6½ × 10, pp. xxix + 372; 110 figures.) Vol. 17: *Prepubescent Syphilis*. By Philip C. Jeans, M.D., and Jean V. Cooke, M.D. (6½ × 10, pp. xxi + 295; 96 figures.) Vol. 18: *Heart Disease in Infancy and Childhood*. By Charles Hendee Smith, B.S., M.D., and Lucy Porter Sutton, M.D. (6½ × 10, pp. xvi + 259; 97 figures.) 48s. the three volumes.

NOTES ON BOOKS.

THE revision of the sixth edition of BORRADAILE'S *Manual of Elementary Zoology*[8] consists in minor alterations of the text and of some of the figures. We have already directed attention to the comprehensiveness of this work, which has been found of special service to medical students.

The Interns Handbook[9] is an interesting pocket volume compiled by members of the Faculty of the College of Medicine of Syracuse University. Its purpose is to tell the newly qualified practitioner, who is entering on a house appointment, what to do and what to prescribe. The volume deals in a brief and competent manner with the usual subjects, such as treatment of poisoning, clinical examination, clinical pathology. It also includes matters that are less frequently described. For example, it tells the intern how to prepare a patient for x-ray examination or treatment, and there is a short but useful chapter on special diets. The most novel feature, however, is two lists—a physicians' drug list and a pharmacy list. These lists are remarkably short, their purpose being to clear the hospital pharmacies of many expensive "nostrums" and "specialties." The preface contains some interesting aphorisms concerning the use of drugs, of which the following are examples. "To anyone familiar with drug prescribing in hospitals it is not amazing that in the last decades drug nihilism has flourished despite a great increase of scientific knowledge of pharmacology and its therapeutic application." "Drug therapy will become rationally flexible only by prescribing fewer drugs, whose actions are fully known to the prescriber." The book strikes us as an interesting and useful attempt to rationalize clinical treatment. Its production is certainly evidence of a happy spirit of co-operation among the staffs of the College of Medicine and of the hospitals which collaborated in its production.

Winter Sport in Europe,[10] by Mr. BECKET WILLIAMS, is a collection of personal impressions of various centres in Austria, France, Switzerland, and Scandinavia, with notes of resorts in several other countries. These impressions are prefaced by brief accounts of the countries themselves. While the book has introductory value as a compact guide it is marred by superficial digression and by an execrable style. The section about Austria is not free from misspelling. Most of the photographs have been supplied by railway companies and travel bureaux.

[8] *A Manual of Elementary Zoology*. By L. A. Borradaile, Sc.D. Sixth edition (second impression revised). Oxford Medical Publications. London: Milford, Oxford University Press. 1930. (Cr. 8vo, pp. xvi + 693; 473 figures. 16s. net.)

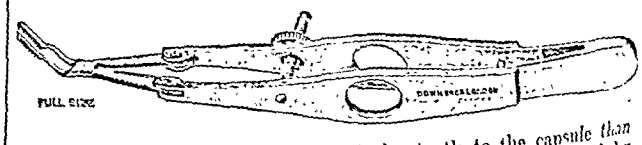
[9] *The Interns Handbook*. By Members of the Faculty of Medicine, Syracuse University. Under the direction of M. S. Dooley, M.D. London: J. B. Lippincott Company. 1929. (Fcap. 8vo, pp. xix + 254. 12s. 6d. net.)

[10] *Winter Sport in Europe*. By Becket Williams. London: G. Bell and Sons, Ltd. 1929. (Cr. 8vo, pp. vii + 256; illustrated. 7s. 6d. net.)

PREPARATIONS AND APPLIANCES.

A MODIFIED CAPSULE FORCEPS.

DR. G. F. ALEXANDER (Scarborough) writes: Failure is apt to occur in the course of a capsulectomy owing to the teeth of the forceps refusing to bite into the capsule, this being specially the case in hypermaturity, from toughness of the capsule or fluidity of the cortex. While the teeth should be as sharp as possible, they materially tend to bite into the capsule the more vertically they are inclined to it.



A more vertical inclination of the teeth to the capsule than is possible with the usual pattern of forceps is obtained by setting them on short primary arms, which in turn are opened and closed by long secondary arms. The latter are given a ring grip, and provided with a screw stop to limit the range to which the teeth can separate to a distance not exceeding 4 mm. The heels of the short arms are not only separated to the extent of 1 mm., but are raised 1 mm. above the level of the teeth, so that they cannot possibly grasp the iris.

The forceps illustrated have been made to my design by Messrs. Down Bros., St. Thomas's Street, S.E.1.

POST-GRADUATE MEDICAL EDUCATION.

SCHEME FOR A HOSPITAL AND MEDICAL SCHOOL IN LONDON.

IN January, 1921, Dr. Addison, the first Minister of Health, appointed a Post-Graduate Medical Committee, under the chairmanship of the Earl of Athlone, "to investigate the needs of medical practitioners and other graduates for further education in medicine in London, and to submit proposals for a practicable scheme for meeting them." That committee presented its report within four months, and a full account of its findings and recommendations appeared in the *British Medical Journal* of June 25th, 1921 (p. 942). Its clear statement of the situation brought to light two outstanding defects in the provision made in London for post-graduate education. The first defect—lack of adequate provision for instruction in public health and cognate subjects, and for research in preventive medicine—was remedied in 1922 by the establishment of the London School of Hygiene and Tropical Medicine, which was made possible by a munificent gift from the Rockefeller Foundation. The second defect still remains. There is no hospital and medical school in London exclusively devoted to providing practical courses for doctors in this country, from the Empire overseas, and from other countries, who wish to refresh their knowledge or to get instruction in new developments of medicine, surgery, and obstetrics, or to participate directly in the clinical practice of the hospital.

This in brief was the position confronting the Post-Graduate Medical Education Committee, which was set up in July, 1925, "to draw up a practicable scheme of post-graduate medical education centred in London." Mr. Neville Chamberlain, who appointed this second committee, himself presided over it for four years, and Mr. Arthur Greenwood, his successor as Minister of Health, became in turn its chairman last summer. The other members were Sir George Blacker, Sir John Bland-Sutton (who resigned in November, 1926, and was succeeded by Lord Moynihan), Sir Robert Bolam, Dr. H. G. Dain, Lord Dawson of Penn, Mr. H. L. Eason, Sir Thomas Horder, Professor Hugh MacLean, Sir George Newman, Dr. John Parkinson, Mr. H. J. Paterson, Sir Arthur Robinson, Sir Humphry Rolleston, and Mr. A. E. Webb-Johnson. Of these, Sir George Newman was the only member who had served also on the Athlone Committee.

As announced in our last issue (p. 709) the report of the Post-Graduate Medical Education Committee was issued on April 9th, and simultaneously the Minister of Health informed the House of Commons that the Government had accepted its recommendations for the organization of a British Post-Graduate Hospital and Medical School. A report of Mr. Greenwood's speech appears in our Parliamentary Notes this week. In an explanatory memorandum issued officially to the press it has been stated that the Government "is satisfied, after careful consideration, that the scheme put forward by the committee is a practicable scheme, indeed, probably the only practicable scheme in sight. . . . They are much impressed with the importance of securing without avoidable delay the advantages of a proper system of post-graduate medical education in London, not only from the domestic, but also from the imperial and international point of view."

REPORT OF THE POST-GRADUATE MEDICAL EDUCATION COMMITTEE.

The committee's report,[1] a printed document of 38 pages signed by all the members, opens with a few words about the obvious need for the continued education of medical practitioners, and then briefly outlines the inadequate provision hitherto made in this country for supplying that need. Mention is made of the early effects, under the leadership of Sir Jonathan Hutchinson, at the long defunct Medical Graduates' College and Polyclinic, and a tribute is paid to the pioneer work done during the past eleven years by the Fellowship of Medicine and Post-Graduate Medical Association—work which "undoubtedly emphasized the need for a post-graduate hospital in London." A short section on the present urgency of the problem gives examples of recent practical discoveries and additions to knowledge, in order to show the importance of increasing such facilities as already exist for post-graduate medical education.

"Apart from these major and specific advances, it is of the utmost benefit both to practitioner and patient that practitioners in their daily work should have at their command an up-to-date knowledge of continuous technical progress which is being made in such matters as co-ordination of clinical and pathological methods, administration of anaesthetics, taking and examining specimens of blood, and numerous forms of minor surgery. Further, the trend and development of relations between medicine and the well-being of the people has brought about in this and other countries a series of general and local Acts of Parliament establishing social medical services for the purpose of promoting industrial welfare, coping with domestic problems of sanitation and personal hygiene, and reducing incapacity for work caused by sickness. A new need has thereby been created for the medical practitioner to appreciate what may be called social aspects of medicine, and to qualify himself to participate in the working of social medical services."

Need for a Hospital and School in the Metropolis.

After signifying general agreement with the recommendations arrived at as a result of the full and authoritative inquiry made by Lord Athlone's Committee, the report explains the outstanding need for a post-graduate hospital and medical school in London, from three points of view: (*a*) its imperial and international value, (*b*) its national value, and (*c*) its special value to the country doctor. In regard to (*a*) it says:

"A properly organized post-graduate hospital and medical school, such as the Earl of Athlone's Committee had in view, with a staff of visiting experts including acknowledged leaders in medicine and surgery, would attract, and should be of immense value to, students from the Empire and abroad who at present have no means of taking advantage of practical work accomplished in this country. The provision of effective post-graduate teaching in London is therefore not in any sense a narrowly national problem."

In regard to (*b*)—further scientific training of practitioners in this country after they have qualified—the committee agrees with its predecessor as to the undesirability and impracticability of attempting to teach undergraduates and post-graduate students in the same school.

"Yet the knowledge and experience possessed by the undergraduate at the moment when he qualifies needs to be supplemented, after his qualification, by post-graduate instruction. There are obvious and inevitable limitations to undergraduate teaching in medicine, not only because the curriculum cannot be further loaded, but also because it is impossible to give to the young student that degree and kind of participation in direct medical treatment of the patient which alone can complete the competence of the practitioner either in general practice or as a specialist. Further, a British Post-Graduate Hospital and Medical School established in London would have an important influence in bringing about a closer interrelation than exists to-day between the twelve hospitals in London having medical schools with great resources of experience in the science and art of medicine and the development of medical skill."

Under (*c*) it is pointed out that if further post-graduate teaching in London could be made easily accessible to the country doctor, great benefit should result to the doctor, and through him to his patients.

"It is still the case throughout the rural parts of Great Britain, and even more in other countries within and beyond the Empire where populations are sparser, distances greater, and communication more difficult, that the country doctor must usually do his work in some degree of isolation. The problem is how to keep him in touch with new developments in medicine and surgery. In this country he leaves his hospital on graduation with a training as prolonged and complete as it is possible to attempt with a large body of students. But once he has become absorbed in practice he has few opportunities, even though he is fortunate enough to join the staff of a local hospital, to keep his knowledge up to date. There is a great need of short and highly concentrated refresher courses for such men. In this country an experiment on a small scale has been and is being made by arranging such courses in certain centres for practitioners isolated in rural areas whose practices consist in part of work under the National Health Insurance Acts. These courses, few and restricted in scope and duration as they are, have been greatly appreciated by the practitioners who have taken part in them.

"It is an example and an example only, of the value of a British Post-Graduate Hospital and Medical School that recourse to its facilities might fairly be expected to maintain and increase the efficiency of medical service provided for over sixteen and a half million men and women in Great Britain under the National Health Insurance scheme, if year by year a certain proportion of

[1] Cmd. 3585. London: H.M. Stationery Office. 1930. 9d. net.

the seventeen thousand insurance practitioners, particularly those who are remote from any important hospital centre, could be given a chance of taking carefully planned refresher courses."

The committee then proceeds to examine the nature and conditions of "a practicable scheme" for the establishment of a post-graduate hospital and school centred in London. In dealing with the problem it arrived at the scheme which it recommends after considering and ultimately deciding that it could not support various alternate methods. The schemes considered but not recommended were (1) the building and maintenance of an entirely new institution; (2) the conversion of an existing voluntary hospital having a medical school; and (3) the conversion of an existing voluntary hospital not having a medical school. The grounds for rejection in each case are carefully stated. In regard to (3) the committee acknowledges the prolonged and laborious collaboration which the authorities of the West London Hospital undertook with it, and explains at length the reasons which eventually induced it not to recommend conversion of that institution into the British Post-Graduate Hospital and Medical School.

At the moment when the committee was endeavouring to find means of removing the difficulties in the way of an arrangement with the West London Hospital—the only practicable scheme which had up to then presented itself during more than three years of deliberation—another alternative emerged during the early months of 1929. This new element in the situation was the rapid progress through Parliament of the Local Government Bill, with its clauses relating to the transference, on April 1st, 1930, of the functions of Poor Law authorities to county councils. Accordingly, from the beginning of 1929 onwards the committee had before it a new and increasingly definite prospect that the London County Council would shortly be a local authority charged with the duty of providing and maintaining public accommodation for the sick poor in London.

The Hammersmith Scheme.

In studying the possibility of converting one of the public hospitals at that time controlled by boards of guardians, but now by the London County Council, the committee kept in mind the principle that any scheme in order to be practicable must present favourable conditions as regards time, money, and opportunity for the establishment without undue delay of a post-graduate hospital and medical school on a proper scale and at a proper rate. The number of such public hospitals is nearly thirty, and in considering a scheme on this basis special attention was devoted to six hospitals, and finally the choice was narrowed down to two—at Lewisham and at Hammersmith. In the end the Hammersmith Hospital, situated in Ducane Road, Shepherd's Bush, on a site of 14 acres, was unanimously chosen. This institution was built in 1905 and now has 400 beds, the in-patients averaging 356 throughout the past year.

The general advantages of a scheme based on the conversion of the Hammersmith Hospital are discussed in relation to finance (capital cost and cost of maintenance), and in relation to medical and administrative conditions. The hospital is readily accessible, and the capital cost of converting it to the new purpose, so far as can be judged, should not exceed £250,000. As regards the cost of maintenance of patients, the prospective annual charge at the Hammersmith Hospital, after its conversion, is estimated at £100,000, but some part of the charge at a public hospital would be recoverable from patients or persons liable to maintain them, and the balance would naturally and properly be a charge on the rates, in the same way as the present cost of maintenance of patients at this and other public hospitals. The population in the area served is already dense and is still increasing, and the committee is satisfied that abundant facilities for clinical instruction can be provided. Moreover, the London County Council would be in a position to assign cases to this hospital drawn from a total of 127,000 patients in the other public hospitals transferred to its control on April 1st under the Local Government Act, 1929.

The committee believes that the conversion of the Hammersmith Hospital into the British Post-Graduate Hospital and Medical School will not give rise to any difficulty as regards the position and responsibilities of the medical staff of the institution as it now stands. The five officers forming its resident medical staff became, on April 1st, members of the medical staff of the London County Council, and the Council could offer them similar appointments at other institutions. The consulting staff, 15 in number, are engaged on simple contracts, also *terminable*, as far as may be thought necessary, is a matter easily susceptible of agreement with the governing body of the institution.

It is recognized that the elaboration of a proper system of government for a British Post-Graduate Hospital and Medical School, based on the conversion of a public hospital, will not be free from difficulty. Provision would have to be made for the government, both of the medical school as an educational institution, and of the hospital as a public institution (of which the L.C.C. would be the governing body) for the treatment of sick persons. The working out of administrative details should, in the committee's view, be reserved until the scheme is not only accepted but *within sight of translation into effect*. A considerable part of the 14 acres is at present clear, and the site as a whole leaves ample room not only for building the medical school, but also for such additions to the number of beds and such expansion of the educational side of the organization as may be called for by growing demands upon it.

The committee therefore unanimously reports that it has drawn up a practicable scheme of post-graduate medical education centred in London by making the following recommendation:

> "That the British Post-Graduate Hospital and Medical School, comprising a hospital with 400 beds, a medical school, and residential facilities for post-graduate students, should be established, on a site which will permit of its future expansion as its services to the science and art of medicine and to the public are developed and recognized, by means of the conversion of a public hospital, the Hammersmith Hospital, in which the 400 beds initially required are already available. The residential facilities for students should be provided in part at the hospital, but mainly at a separate hostel in the medical and social centre of London."

THE GOVERNMENT'S DECISION.

In order to ensure the realization of this scheme, the Government has decided to contribute from public funds a maximum capital sum of £250,000 for building and equipping the medical school, in addition to providing for annual grants towards the maintenance of the school through the University of London as a recognized school of that university on the lines already applied to comparable institutions of university rank. These contributions will be the taxpayer's share of the cost of the scheme.

The Government is in agreement with the view of the committee that the cost of maintaining the Hammersmith Hospital when it forms part of the British Post-Graduate Hospital and Medical School should continue to be borne by the ratepayer, by whom it would have to be borne in any event as part of the public hospital provision for the people of London under the Local Government Act. This contribution will be the ratepayer's share of the cost of the scheme.

The Government has not, however, felt justified in calling further upon the taxpayer as such to give financial support to the building of the proposed residential hostel. But, as was stated by Mr. Greenwood in reply to Mr. Chamberlain's question in the House of Commons on April 9th, the Government understands that an appeal will shortly be made to the public for assistance in the establishment in London of a residential institution, to be called "London House," for the use of students from the Dominions not only in medicine but in other arts and sciences. Such an institution would, in the Government's view, secure the object aimed at by the Post-Graduate Medical Education Committee in recommending the provision of a hostel. The Government is in full sympathy with the movement, and looks forward with confidence to the success of the appeal when it is made, as crowning a scheme to which the taxpayer, the ratepayer, and the general public will be contributing their appropriate shares.

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SATURDAY, APRIL 19TH, 1930.

A NATIONAL POST-GRADUATE CENTRE.

"It is a reproach to London, as everybody must be growing tired to be told, that it has not got a post-graduate medical school worthy of it." These words, true enough nine years ago, are truer still to-day. London with its unrivalled material has never risen to the occasion. Before the end of the last century it became clear that the provision of facilities for post-graduate study was a pressing problem, and since then so many additions have been made to existing knowledge of curative and preventive medicine and surgery that the need for improving and increasing such facilities as exist has grown apace. Since 1919 the Fellowship of Medicine has done all that could be done with the means at its disposal; but, lacking a hospital and any kind of institute, this pioneer work has necessarily been, in large part, that of a bureau. Great credit is due to the Fellowship for its persistent efforts to keep post-graduate education alive in the largest city in the world.

In 1921 a committee under the chairmanship of the Earl of Athlone was set up by Dr. Addison when Minister of Health. The ground was rapidly surveyed and proposals were submitted, but the chief recommendation, for "a school attached to a hospital centrally situated in London devoted solely to post-graduate medical education, as a school of the University," has remained unfulfilled. In 1925 Mr. Neville Chamberlain appointed a second committee with a single clear-cut reference: "To draw up a practicable scheme of post-graduate medical education centred in London." This representative committee thus started at the place where its predecessor left off, and now at long last its report has appeared, and the scheme it unanimously puts forward is accepted and blessed by the Government. The contents of the report are summarized at page 745, and the statement by the Minister of Health will be found in our Parliamentary Notes. The "practicable scheme," finally arrived at, after weighing many alternatives, is for the establishment of a British post-graduate hospital and medical school comprising a hospital with 400 beds, a medical school, and residential facilities for students, by converting the Hammersmith Hospital at Shepherd's Bush. This modern institution, now under the control of the London County Council, has the 400 beds needed at the outset. To complete the scheme a fully equipped medical school will have to be built on the 14 acre site, and a hostel for graduate students established in central London. The Government, impressed with the urgency of the need and the feasibility of the plan, has pledged itself to contribute from public funds a capital sum of £250,000 for building and equipping the post-graduate school, and beyond this to provide annual grants towards its upkeep through the University of London. The cost of maintaining the hospital will fall, as at present, on the ratepayers. For the hostel money will have to be found by way of a public appeal.

A great step forward has thus been taken. A comprehensive and practicable scheme has been framed, a site and money have been found, and if the several parties to the undertaking work harmoniously with one goal in view, the capital of the British Empire will become in time a world-centre of post-graduate medical training. It is a great conception, and, when realized, it should have a vast influence in raising the standard of medical practice. The site chosen, though accessible, is not perhaps as central as could be wished, but it is fully large enough to contain the school buildings and to allow of additions to the existing hospital. Two matters of importance that will have to be gone into without delay are the services to which the present 400 beds should be allocated, and the staffing of the hospital; in particular, the arrangements for the teaching staff of school and hospital will need very careful and detailed consideration before the plans are finally settled. The Athlone Committee suggested that for the proposed centre of post-graduate education in London it would be advisable to enlist the services of clinical teachers from the undergraduate medical schools to a certain extent; but how this might be brought about has never been fully discussed. It is obvious that by one means or another the new hospital and school must enlist first-rate teachers of the highest standing. Nothing short of the best will do. Another appointment vital to the success of the scheme is that of the Dean of the school. This pivot position of organizer-in-chief should be held by a man who has had large clinical experience, and is thoroughly familiar not merely with the requirements of candidates for higher degrees and diplomas but also with the needs of general practitioners in this country seeking suitable refresher courses from time to time.

We are glad to note that an essential point made by the Athlone Committee—that the central post-graduate school of medicine, when established, should be a school of the University of London—has been recognized and accepted by the Government. And while on that point the hope may be expressed that the British Post-Graduate Hospital and Medical School may never be regarded as standing in isolation—a self-contained and self-sufficing unit. The London School of Hygiene and Tropical Medicine must, of course, be linked up with it; and affiliation should be effected between it and some of the special hospitals which for years past have been taking their share in graduate education. In this work of co-ordination the personality of the Dean of the new school will count for much. Under the administrative arrangements proposed by the Athlone Committee "the great special hospitals would be closely associated with the central hospital . . . and their post-graduate courses would be organized in connexion with the programme of work at the centre." Such appears to be the opinion also of the later committee, which says: "It is convenient to assume for the present purpose that post-graduate instruction for students in special branches of medical and surgical practice . . . will in the main be provided at hospitals other than the post-graduate centre itself; but that whatever external instruction can thus be arranged, the centre will not be complete unless it includes at the least as part of its own structure special departments for the study of tuberculosis, venereal diseases, ante-natal and post-natal conditions in women, and radiology." The provision of a suitable out-patient and casualty department at the Hammersmith Hospital is rightly held to be "an inevitable part of the cost of converting" that institution into the British Post-Graduate Hospital and Medical School.

The scheme now put forward and approved by the Government gives a framework into which a great

deal remains to be fitted, and the next stage will call for the exercise of tact and good will. We hope that in the working out of details those who have drawn the outline will give further service to the cause they have at heart—namely, "to secure that London should offer to the post-graduate medical students of Great Britain, the Empire, and the world, both the best instruction and the most cordial welcome which a great centre for the teaching and practice of medicine should provide."

THE BOARD OF CONTROL

THE Mental Treatment Bill came before the House of Commons on report on April 11th, but the debate had to be adjourned owing to hostile criticism of certain of its provisions by members on the Government benches, and only the first two clauses were under discussion. So far the debate has mainly centred on the retention of the Board of Control and its share in the administration under the bill; the clauses dealing with changes in its constitution have still to be considered. It will be recalled that the Royal Commission held that it would be undesirable that the Board of Control should lose its identity by being merged in the Ministry of Health, provided that the Minister had an effective general control over the policy of the Board. With this we heartily agree, and the Minister of Health may be congratulated on his resistance to attempts on the part of his supporters to alter the measure in a direction thus rejected by the Royal Commission. That body was satisfied that the criticisms to which the Board had been subjected were to a large extent ill-informed, and that where criticism was justified the cause was to be found rather in defects in the existing system than in any want of zeal on the part of members of the Board. In so far as the changes adopted in the bill tend to strengthen the Board by an increase of its staff and by a widening of its powers there can be general approval on the part of the medical profession. But whereas in other parts of the bill the tendency is to adopt a more enlightened and understanding and a less stereotyped and official attitude, even in some respects in advance of that recommended in the report of the Royal Commission, it is regrettable that in formulating the functions and constitution of the Board of Control both the Royal Commission and the framers of this measure seem to have been unduly inspired by bureaucratic ideals and to have failed to follow the best lights.

Under the bill the Board of Control promises to become a mechanical business department of the Civil Service, with its well-known methods and attributes so little admired by the outside public, and to cease to be an expert advisory body primarily concerned with problems calling for a living sympathy and a personal touch with those engaged in the actual remedial or organizing work or those themselves undergoing treatment all over the country. Unfortunately, this is the deliberate intention of the Government. Miss Lawrence, the Parliamentary Secretary, said in committee, "we desire to make the machine comparable to the existing machinery of the Ministry of Health and all other Civil Service departments. That is to say, we shall have the chief officials engaged mainly in Whitehall . . . the organization of the Department of Public Health will be brought into lines very completely resembling the other main departments of public health," and again, "we desire to make this a department modelled on the perfectly familiar lines of Civil Service administration, the senior officers mainly at Whitehall, with their assistant officers going round the country, and with their inspectors also going round the country." Surely this is a deplorable ideal to set up in relation to a problem such as the House is dealing with. This is indeed "bureaucracy" where it is not wanted. It seems, too, to be based on a misapprehension of the present mode of working of the Board. Miss Lawrence spoke as though all the affairs of the Board were conducted by the chairman and one member of the Board, ignoring the weekly meetings of the Board as a whole. Be that as it may, under present arrangements the senior members of the Board have direct knowledge of the persons and circumstances they are dealing with; under the new plan the Board is to be "engaged mainly in Whitehall." The senior Commissioners will rely for their knowledge on reports from a subordinate grade of visiting commissioners and inspectors. What sort of relations can develop between those in charge of institutions and doing the actual technical work on the one hand and such a body as this on the other, with the members of which the former may have no personal acquaintance and access to whom will be through a subordinate body of officials? What kind of intimacy with the problems and difficulties of the work will such a body be able to acquire? How can it avoid the dead touch of officialdom?

A similar bias seems to sway the Government in its attitude towards the amendments put down by Dr. Fremantle, which propose a larger medical element in the Board and to permit the inclusion of lay members who would bring their experience and services to the work without remuneration and so without expense to the public. The proposal to include at least two medical practitioners in the Board, one acquainted specially with medical administration and one representative of medical science, requires no special recommendation to those who adopt the modern attitude towards the whole of this question as primarily a medical one. What we want to get rid of is Miss Lawrence's idea of the need for a hierarchy of standard pattern and procedure. The Royal Commission expressly stated that the Board of Control has discharged its duties in a manner deserving of great commendation. Yet the Minister, in opposing these proposals as to personnel, proclaimed that the bill is a deliberate attempt to get away from the existing Board. It would seem that he is not content to remedy the defects in the present machinery, but wishes to remove those who have well and faithfully discharged their duties. Had the framers of this measure looked further afield they would have found that where in method and outlook psychiatry is most advanced, as in America—the impressions derived from a visit to which country were so well described by Dr. Mapother in his paper read last week before the Section of Psychiatry of the Royal Society of Medicine—there also are found the greatest elasticity and freedom from bureaucratic methods as well as full reliance on medical direction and control. But nearer home it is only necessary to look at Scotland, where a high standard of development in psychiatric organization is associated with the least possible pressure of formal officialdom. Let us hope that even at this late hour something may be done to infuse into this part of the bill some of that spirit of modernity and elasticity which illumines its other provisions.

THE BUDGET.

THE Chancellor's annual account of his stewardship of the nation's finance over the past year and of his proposals for the coming year deservedly attracts almost universal interest. Much of the attention is no doubt due to the popular appeal of the dramatic element in its closely guarded secrecy and in the gigantic amounts of money involved as well as to the occasional hopes and more frequent apprehensions that post-war Budgets have aroused. A less obvious reason for such interest lies in the fact that each Budget marks a definite stage in the development of the national financial scheme, and in doing so cannot fail to affect taxation for many future years. Presumably financial policy can be shaped by a series of annual remissions all directed to one purpose, but in practice such opportunities very rarely come to a modern Chancellor, and the shaping of policy is in fact effected by impositions rather than by remissions. As Mr. Snowden has proved for himself this year, a tax which is personally obnoxious may have to be retained—at any rate for a time—because he cannot dispense with its immediate pecuniary results. Circumstances very often put an additional restriction on a Chancellor's freedom of action. When additional money is required it is usually required at once, at least well within the financial year which has started by the time he puts forward his proposals. If new machinery of taxation is required it cannot be set up until the scheme has been approved by Parliament, and even then the wheels will probably move with a good deal of friction and with exasperating slowness for some months, and possibly—as in the case of the Lloyd George land duties—encounter legal and other obstacles which prevent its progress. There are indications that although Mr. Snowden's immediate problem was of such a magnitude as to absorb all his available resources, he has not been unmindful of the desirability—from his political standpoint—of commencing some tentative provision for the needs of next year. The position of a Chancellor who finds that a continuance of taxation on the present basis will produce a deficit next year of £42,264,000 is far from enviable. True the position is not really as bad as that because of the petrol tax provision in anticipation. That fund stands at about £16,000,000, but even when that—less some provision for 1931 and 1932—is brought in, the deficit approaches £30,000,000. Mr. Snowden proposes to discard the remains of the betting tax and to allow the safeguarding duties to expire automatically during the year. These duties are not to be confused with the more important McKenna duties, which are retained, but with the sword of Damocles suspended over their heads. Obviously the raising of an additional £30,000,000 of taxation in the current financial year places the Chancellor in the difficulty mentioned above. the sum is too great to be dealt with by setting up a new tax, even if some ingenious mind could devise one which Parliament could be induced to accept. Compelled to follow the trail blazed by his predecessors, he has turned his steps to the income tax. Probably Mr. Snowden's well-known reputation as a determined supporter of direct taxation will have reduced the surprise if not the chagrin of those taxpayers who in the aggregate will have to find this year the £21,000,000 additional income tax and the £7,500,000 additional super-tax which the increase of the standard rate to 4s. 6d. in the £ and the proposed adjustments of the surtax rates are designed to bring into the Exchequer. By these increases, coupled with increases in the scale of the death duties, practically the whole of the gap between anticipated expenditure and anticipated revenue is closed. The small increase in the beer duty is in comparison negligible, especially as it seems designed not to raise the price of beer to the consumer. By means of a modification introduced into the graduation scheme, the smaller income tax payers will be compensated for the increase in the standard rate. At present each taxpayer has a portion of his income free from tax—the amount so free depending on marriage, the number of children, etc.—and pays 2s. in the £ on the next £225. In future that "slice" of income will be £250 and will still pay tax at 2s. in the £. Obviously some taxpayers will be better off under the new scheme, and all will receive some compensation. As an illustration it was stated that, assuming the whole income to be "earned," an unmarried person will pay no more unless the income exceeds £582, and in the case of a married man with three children the corresponding limit is £882. To those we may perhaps add the example that a married man with two children in receipt of an earned income of £1,500 will pay an additional £14 thereon. The sum may not seem large in comparison with what such a taxpayer is already liable for, about £160, but it is one the payment of which cannot be made without additional drain on those savings which the "earners," from the very nature of their income, especially desire to make. Towards the close of his speech Mr. Snowden announced that he was laying plans for the setting up of a scheme for securing in future years some portion of the enhanced value of land created by the community; presumably he had in mind more particularly those outlying lands near large urban areas which improved public transport facilities are bringing into the building estate market. The introduction of the necessary bill at a later date may cause an amount of political excitement and argument that will put in the shade the more sober comment on the present Budget proposals. These, as so often is the case, will probably be accepted in the spirit in which the average British citizen makes the best of a bad job, doing his duty as a taxpayer without fuss or fury, thankful that it is no worse, and hoping, though faintly and without much real expectation, for better things in years to come.

PUERPERAL INFECTION IN INSTITUTIONS

IN a recently issued report on puerperal infection in maternity hospitals[1] Dr. A. S. M. Macgregor, medical officer of health for Glasgow, describes, and inquires into the causes and effects of, three outbreaks of puerperal sepsis that have occurred in late years in Glasgow maternity institutions. In the first outbreak (November, 1925) there were ten cases of puerperal fever and two of erysipelas, in the second (from February to June, 1928) there were fifty-four cases of puerperal sepsis representing 19 per cent. of the 289 women delivered within that period; and in the third (occurring between April and May, 1929) there were six cases of puerperal sepsis. The three outbreaks were severe in character, rapid in their spread, and in relation to the number of patients exposed to risk, extensive in their incidence. It was not always easy to determine how the infection was introduced and to follow the exact sequence of events, but there was enough evidence to show that a specific infection is likely to spread fairly easily under the average conditions obtaining in maternity institutions. On the other hand, the history of a year's experience of the incidence of puerperal infection in a small institution of twenty beds, where eight definite cases occurred without any grouping suggestive of case-to-case infection, or immediate transference of infection, points to the occurrence of cases of septic infection which, if recognized and promptly isolated, do not apparently give rise to other cases. The two administrative problems

[1] Edinburgh: H.M. Stationery Office. 1930. 9d. net.

are to keep infected parturient women out of hospital wards, and to prevent the subsequent spread of infection among other patients. As far as the first problem is concerned, the difficulty is to find an effective criterion of presumed infection. Dr. James Young of Edinburgh has suggested that the "clean" or "booked" case untouched prior to admission should have its own institution, and that the "suspected" case—namely, the case that has been subjected to certain kinds of intervention before admission—should be provided for in a different institution. According to Dr. Macgregor the inadequacy of this proposal is in the fact that cases subjected to manipulative intervention do not necessarily become septic, while in others infection may occur after a single vaginal examination, or even if there has been no intervention at all. It is, he believes, doubtful whether a water-tight administrative system based on segregation of patients in different institutions in accordance with the degree of intervention before admission, would be a practical or even a satisfactory way of meeting the difficulty. The methods adopted for the prevention of the spread of infection from patient to patient will depend on the view that is taken of the mechanism of propagation. In the largest of the three outbreaks recorded in the report under review the infection continued and recurred over a long period, in spite of the vigilance of the staff and the observance of all the obvious precautions. There was therefore every reason to believe that the transmission of the disease was due, not to some temporary or accidental defect of technique, but rather to some more continuous and radical cause. Dr. Macgregor's own conclusions are, that propagation occurs more probably by way of the hands of the attendants, or by instruments, swabs, dressings, and utensils, than by actual infection of the staff and their conversion into carriers of the specific organisms; he agrees, however, that it is reasonable to assume the latter mode of infection in some cases. Granted this view of the mechanism of propagation, the practical problem is whether the details of the conduct of labour in institutions are capable of improvement, and whether standards of management are sufficiently high to reduce to a minimum the occurrence and spread of septic infection. Whatever view may be held about the practicability of separating "clean" from "suspected" cases, it is obvious that in both groups the chances of case-to-case transmission of infection must be rendered as slight as possible. The very fact that the introduction of infected patients, or a patient likely to become septic, into a maternity hospital is generally held to be dangerous, is in itself a criticism of the technique at present employed, and suggests the need for reconsidering the methods of conducting maternity cases so as to raise the average standards to a point where the chances of infection are reduced to a minimum. It may be noted that in the outbreaks recorded by Dr. Macgregor there was no conclusive evidence of a relation between the presence of haemolytic streptococci in the throats of the nursing staffs and the incidence of infection. On the other hand, the cases recorded by Mr. W. W. King in his paper on throat infections and puerperal fever (*British Medical Journal*, March 22nd, p. 533) suggests that there is at least a prima facie case for the existence of such a relation in certain epidemics. Much further investigation will be necessary before all the factors that may be concerned in the spread of puerperal infection are discovered. It may be, as Dr. J. Parlane Kinloch suggests in an introduction to the report under review, that even the precautions proposed by Dr. Macgregor and Mr. King will be found inadequate, and the solution of the problem will demand in addition drastic changes in the administration, size, and arrangement of maternity hospitals.

TROPICAL DISEASES EXHIBIT AT ANTWERP.

THE Antwerp Exhibition will be opened by the King of the Belgians on Saturday, April 26th. The Tropical Diseases Section, in the British Government Building, has been organized under the auspices of the Exhibitions Branch of the Board of Trade, and is under the direction of a committee, of which Major-General Sir Wilfred Beveridge is chairman. The exhibit has been designed to impress upon the general public the importance of knowledge of health matters to those who live under tropical conditions. It also depicts certain dangers and the means by which they may be combated. A complete outline of thirteen important tropical diseases is presented by means of serial illuminated pictures, illustrating the causation, manifestations, treatment, and prevention of each disease. Above each series are placed enlarged photographs of work which has been carried out in connexion with the disease under consideration. Above these photographs are illuminated statistics showing the beneficial results to the community of such preventive treatment. The organisms responsible for various tropical diseases—protozoa, helminths, and bacteria—are demonstrated by colour photomicrography in six specially constructed viewing cases. Some of the diseases are dealt with in greater detail in six cases prepared and lent by the Liverpool School of Tropical Medicine, and several excellent wax models of the insect vectors of diseases are shown. Enlarged photographs have been prepared of men who have laid down their lives in the investigation of diseases prevalent in tropical countries; this exhibit indicates the special dangers attaching to research work in yellow fever and typhus. A model of the new London School of Hygiene and Tropical Medicine, taken in conjunction with the Liverpool School exhibit, emphasizes the fact that the importance of education in tropical medicine is recognized in this country. The care of those suffering from tropical diseases is largely in the hands of the Seamen's Hospital Society, which has prepared an exhibit illustrating the admirable work done by their hospitals. Two small historical exhibits are shown dealing with plague and leprosy in olden times. In the "Manson" exhibit the memory of the "Father of Modern Tropical Medicine" is honoured; to him and to Joseph Chamberlain the country is indebted for much of the progress that has recently been made in tropical medicine, evidence of which is displayed vividly at Antwerp. The Wellcome Museum of Medical Science has been responsible for the detailed organization of the whole exhibit, and also for the preparation of all transparencies, photomicrographs, and statistics.

CARCINOGENICITY OF OILS.

THE investigations carried out under the auspices of the Manchester Committee on Cancer on the carcinogenic factors in mineral oils, and on the possibility of manufacturing non-cancer-producing oils of adequate lubricating power are still proceeding, and in addition studies are being made of the cancer-producing properties of some animal and vegetable oils. We are glad to learn from the committee's report for the year ended October 31st, 1929, that two of the largest oil-producing companies in the world have recognized the importance of work designed to discover a safe lubricating oil at reasonable cost, and are now assisting the committee's scientific staff in its investigations. During the past twelve months tars have been prepared with the temperature of the furnace tube ranging from 500° to 950° C., in order to ascertain at what temperature carcinogenic compounds are formed in commercial tar and shale retorts. From studies of the relative activity of tars so obtained it appears that carcinogenic compounds begin to be formed between 500° and

to 300° C., and that the maximum yield is at a temperature between 800° and 900° C. In the course of earlier work, recorded in our issue of June 15th, 1929 (p. 1093), the scientific staff succeeded in preparing a pure synthetic tar containing the carcinogenic principle in such concentration that a 5 per cent. solution was more effective in producing cancerous growths than shale oil, the most dangerous of all commercially used oils. By continued investigations on the same lines it has now been able to prepare tars which are at least 100 times as powerful as shale oil. Furthermore, it is trying to determine the chemical constitution of a few apparently pure, or almost pure, compounds that have been isolated from such tars. In the course of studies designed to discover the effect of increasing the *frequency of application of carcinogenic* agents, it has been found that if the number of applications made each week is increased from two to five, tumours appear more quickly, and their incidence rises considerably, the rise being relatively greater the weaker the agent under investigation. Thus it appears that the carcinogenic potency of shale oil is increased approximately fourfold, and of natural petroleum oils about fifty-fold, by increasing the number of applications made each week from two to five. Such findings suggest that the carcinogenic activity of petroleum oils is much nearer that of shale oil than had previously been imagined. Applying their standard test for the determination of carcinogenicity, the scientific staff found that olive oil, neats-foot oil, and sperm oil were non-cancer-producing. They have reason to believe, moreover, that natural skin fat is an important factor in the prevention of experimental cancer. Thus, if lanoline—a natural animal fat—is applied to the skin in the interval between synthetic tar applications, the development of tumours is substantially delayed. If it is applied twice as often as shale oil cancer does not appear, but if the applications are alternate the protection afforded by the lanoline is much less marked. Yet another of the committee's investigations concerns the amount of sulphuric acid necessary to produce detoxication of oils, and under its auspices work is being done to ascertain the minimal amount of acid that can be used safely to render an oil harmless.

THE CAMBRIDGE UNIVERSITY APPEAL.

THERE must be few old Cambridge men who do not look back to their university days as some of the happiest in their lives. Therefore, when their Alma Mater pleads for assistance in extending the educational facilities she offers there can be little doubt about the response of her sons. A scheme has been prepared for providing a new university library, and for endowing some of the scientific studies fundamental to agriculture, medicine, and the health and development of the Empire and its industries. The scheme will cost no less than £1,179,000; but in 1928 the International Education Board of New York (founded by John D. Rockefeller in 1923) made the magnificent offer of £700,000 towards the scheme, provided that the university obtained £479,000 from other sources, and that the scheme was treated "as a unit." Towards this sum the university has managed to provide £250,000 for the library; the Ministry of Agriculture and the Empire Marketing Board have promised £84,000, and the Royal Agricultural Society £1,000. A committee, with Lord Melchett as chairman, has raised £53,000, and the Cambridge University Association has collected £21,000. The balance still required is therefore £70,000, and towards this senior resident members of the university and the staffs of Girton and Newnham have promised £10,000. An appeal is now addressed to non-resident Cambridge men to make up the deficit of £60,000, so that the munificent benefaction of the International Education Board may be earned. In addition to the provision for the university library, for agriculture, and for physics, the scheme contemplates endowment for the study of biochemistry and biophysics, of mycology and bacteriology, of physiology and of zoology. The appeal claims the attention, therefore, of all Cambridge medical graduates, who cannot fail to be willing to contribute, according to their means, towards wiping out the deficit. The Cambridge Graduates' Medical Club, of which Sir Humphry Rolleston is president, passed a resolution, on March 27th, expressing entire sympathy with the objects of the appeal, and commending it to the notice of all members of the club. Contributions should be sent to the Treasurer of the University, University Offices, Cambridge.

METHYL CHLORIDE POISONING.

RECENT reports of cases of methyl chloride poisoning[1] due to escapes or leaks in domestic refrigerator systems have suggested the possibility that in other such cases the diagnosis may have been missed. The 29 cases, with 10 deaths, that occurred in Chicago two years ago were all at first attributed to food poisoning[2]; in a further series of 75 non-fatal cases reported by Dr. H. M. Baker in the issue of the *American Journal of Public Health* dated March, 1930, the symptoms of poisoning were believed to be due to influenza. The individuals composing this series were workmen employed either in the manufacture of refrigerators, generally in ill-ventilated situations, or in attending to them in houses, stores, etc. Vertigo, staggering gait, drowsiness, ptosis, visual disturbances, nausea accompanied often by vomiting, and insomnia, were prominent; and, the gas being excreted slowly, its effects were cumulative. To render the use of methyl chloride foolproof Dr. Baker suggests that it is necessary to have safety devices not depending for their efficacy on the co-operation of the workmen, who refuse to believe that an inodorous gas can be dangerous. In the same issue of the *American Journal of Public Health*, Messrs. Connolly, Claffy, and Acherly, of the Department of Health, Chicago, make straight for the human factor complicating the problem: "People have taken toxic gases into their homes without question, because they have felt that the makers of the equipment would not knowingly expose the public to undue danger." On this act of simple faith they make the laconic comment: "All refrigerators in common use are toxic." The ideal solution, they suggest, would be to find a non-toxic refrigerant that could be used at the temperatures and pressures desired. They add, however, that "the discovery of such a refrigerant is not likely to occur in the near future because all gases, except the mixture we call air, are toxic in some concentrations." After describing the difficulties of control, they conclude that the greatest safety would lie in placing the system containing the refrigerant inside a second gas-tight system ventilated to the outside air. The widespread extension of mechanical refrigeration as a method of preventing putrefactive changes in food is creating new and serious problems that are worthy of close attention on the part of public health authorities.

In our advertising columns this week will be found an advertisement for an Assistant Medical Secretary to the British Medical Association. Applications must be received not later than the first post on Monday, May 12th, and the Council will proceed to election at its meeting on June 4th.

THE annual oration before the Medical Society of London will be delivered on Monday, May 12th, by Sir Arthur Keith; the subject of the oration is "Modern medicine and evolution."

[1] *British Medical Journal*, February 22nd and March 1st, 1930.
[2] Kegel, A. H., McNally, W. D., and Pope, A. S.: Methyl Chloride Poisoning from Domestic Refrigerators. *Journ. Amer. Med. Assoc.*, August 3rd, 1929, 93, 353.

Nova et Vetera.

THE EARLY HISTORY OF THE MANCHESTER MEDICO-ETHICAL ASSOCIATION.

BY

ROBERT GIBSON, M.D.,

PRESIDENT OF THE ASSOCIATION.

My review of the Manchester Medico-Ethical Association extends from the foundation up to 1882. It was founded on October 28th, 1847, and is the second oldest medical society in this city, the Manchester Medical Society having been founded in 1834. The objects of the association were the same then as to-day—namely, to maintain the honour and interests of the medical profession and to promote good fellowship among its members. On foundation day seventy-three gentlemen became members by act of signature, which, considering the time, was a large membership.

It was the first society of its kind in the country, and was, during the next few years, followed by ethical societies in many parts—namely, Macclesfield, Rochdale, Liverpool, Salop, Halifax, Cork, Belfast, and even as far away as Australia. From these various places the secretaries received requests for a copy of the rules in force in Manchester to help guide them in the formation of their societies.

It is difficult for us to realize what practice was like in those early days, so it is difficult to understand the activities of a society such as ours if judged by present-day activities. The Medical Act was not passed until 1858, and there was no register of medical men until 1859. The result was that many who laid claim to the title of surgeon or physician, or both, had no qualification for assuming such a title. It will be evident, then, that quacks flourished, and this society spent much time and money in trying to combat the evil of quackery. A solicitor was retained by the society to guide it in its efforts against quackery, and prosecutions were undertaken, sometimes with, but many times without, success. Reference to the daily papers of those times gives one an illuminating idea of the blatant and ridiculous claims of these quacks. Members of the medical profession, and of this society in particular, were forbidden to meet such quacks in consultation, but the fact that one of the officials of this association had to be asked to resign because he continued to meet them shows that they had a fairly strong hold on the public.

This society did all in its power to fight the evil, and in one report we read that: "The offensive and polluting nature of a class of quack advertisement appearing in certain Manchester newspapers having been brought to the notice of your committee, they have issued upwards of 2,000 copies of a very able address entitled *Hints to Newsreaders*." In this tract the public was urged to prevent the admission of such objectionable matter into their columns. Their attention having been brought to the subject by this movement, the proprietors of one of the journals made such alterations as, in some measure, mitigated the evil complained of. Chemists and druggists prescribed for and even visited the sick. In one report we find the committee remonstrating with the Manchester Board of Guardians because it had appointed a druggist to treat cases of diarrhœa without medical supervision. Pupils or apprentices in medicine practised before qualifying. These apprentices exhibited the testimonials received from their teachers, and even advertised them in the daily press.

Homœopathists as a class were looked on with great disfavour by our predecessors. A few of these homœopaths were qualified, but this society did not hold it to be ethical for any qualified man to consult with them. It was looked on as a form of quackery, and therefore taboo. This attitude was upheld by the *Lancet* and the *British Medical Journal* of the day. In the *Lancet* we read: "There can be no alliance between legitimate medicine and homœopathy. Any attempt to associate the two is fraught with danger to the public." The *British Medical Journal* wrote: "All honour to the Manchester Medico-Ethical Association for making so honourable a declaration. Indeed, ethical societies must declare before the profession that the man who meets the homœo-quack at the bedside shall be excluded from consultation by his brethren." Sir B. Brodie, one of the leaders in medicine, wrote on the same subject that medical men should never be induced by good nature, or any motive of self-interest, to appear to give their sanction to a system which they know to have no foundation in reality; to join with homœopaths in attendance on cases of either medical or surgical disease would be neither wise nor honest.

Such, then, was the attitude of this society in the fifties, but in the late seventies we find the subject of homœopathy again came up, and though a long and acrimonious discussion took place it was agreed that it was ethical to consult with any one if he were qualified to practise medicine. It was pointed out that no one body of medical men had any right to exclude another body of equally honest practitioners, even though they practised homœopathy, because medicine was not an exact science, and there might be good even in homœopathy.

Professional misunderstandings seem to have been more frequent in the early days than to-day. Indeed, it was one of the intentions in the formation of this society that such could be in great part overcome by bringing men together, as misunderstandings often arose from want of knowledge of each other, and frequently disappeared when personal relationship had been established without intervening gossip and busybodies. After the publication of the rules of this society men were in the habit of referring to them to settle their differences, and frequently the help of the secretaries was asked for in these disputes, mostly with the happiest of results. In cases that could not be settled by the secretaries the committee would form itself into a jury to try the case, but this only obtained after the aggrieved doctors had signed an undertaking that they would abide by the decision. Not only members, but even non-members, would carry their grievances to the secretaries for help.

A matter for which we must give the greatest credit to the secretaries was the compiling of a directory or register of medical men living within a radius of twenty miles of Manchester. I would have you ponder on the amount of work that this must have entailed. After printing it was circulated to all medical men within the area, and also to magistrates and registrars as a guide for them in their work. At least one supplement to this register was published, but compulsory registration became law with the passing of the Medical Act of 1858, and so relieved the secretaries from this onerous task.

During the first ten years of this association we find continued agitation to get the life assurance companies to pay for the medical reports on prospective clients. Previous to 1847 it appears that the client had to pay for the medical examination—a most unsatisfactory state of affairs. This must appear strange to men doing this type of work to-day. During the first year the secretaries circulated over a hundred companies in their endeavour to get them to pay for the report. Only fifteen agreed to pay, but most of them did not even reply to the circular. Then a circular was sent to medical men asking them to refrain from supplying the form without payment, but this procedure met with less response than the circular to the companies. A personal canvass of practitioners was next tried, but this also was unsatisfactory, as not half would agree to exact the fee from the company. However, the committee was not to be gainsaid, and by continued perseverance it obtained the condition which we enjoy to-day.

Another subject which came up for discussion by the committee was the appointment of medical officers to the hospitals or charity institutions of the city. In looking through one of the daily papers of the early fifties I came on an advertisement of several surgeons who were applying for the post of honorary surgeon to the Manchester Royal Infirmary. The letters of application were there as well as the testimonials given them by their teachers. This I was unable to understand until I found, in the life of Dr. Joseph Jordan, that medical officers were appointed by the governors. I take it that governor and subscriber are synonymous terms. Personal canvass was allowed, but as it was impossible to call on all the governors the help of the press was asked for, or, rather, paid for. So we find that on election day the male governors of the institution met in the town hall and the female governors in the

nation's room at the infirmary. A vote was taken, and the successful candidate was he who topped the poll. It is recorded that over 500 people voted at Dr. Jordan's election – there were four candidates. It is also recorded that the excitement was intense, resembling a parliamentary election. Dr. Jordan's expenses were £620.

It can be seen that such a method of appointment was not for the good of the institution, and as a result of representations it was changed, so that a subcommittee of the hospital, on which the medical men were represented, interviewed the candidates and made recommendation to the full board. In 1868 there was talk of appointing a medical officer of health for Manchester, so the town council was memorialized on the subject, but "it was feared that as the salary offered is no more than would be paid to a responsible clerk in a warehouse, it is likely that the benefit from the appointment will not be apparent for some time." In the next year we find that the appointment has been made, but the committee deplores the salary which is being paid. A medical officer of health for Salford was appointed the same year. In the later seventies provident dispensaries seem to have occupied a lot of the committee's time, but there are no records in the annual reports are not illuminating.

I have explained some of the ways in which this association looked after the interests of the medical profession of the day, but by far the greatest labour involved was that undertaken by the parliamentary subcommittee. Recently, when the rules of the association were under revision, a recommendation was made that this committee should not come up for yearly election as had obtained in the past. Our former esteemed member and colleague Dr. James Holmes strongly objected to such a course, holding that the parliamentary subcommittee was one of the most important committees and ought to come up for yearly election. After reading about the work of this committee in the past, I can quite see how difficult it was for an old member to recognize that the functions of such a body had been taken over in great part by the British Medical Association. Before 1858 this subcommittee was constantly in touch with members of Parliament and high officers of State regarding proposed medical reform. Thus we read in the 1852 report:

"Believing that it is the intention of the Government to bring before Parliament some measure of medical reform, it was thought expedient to petition the Home Secretary that in any bill introduced adequate provision be made for suppressing the practice of medicine and surgery by unqualified persons."

Such, then, was the main topic of controversy for the next six years. When eventually the 1858 Act was passed it was hailed with enthusiasm, but was not looked on as a perfect measure by any means. The power to prosecute the unqualified practitioner seemed to be there, but it was found, when tested in the law courts, to be sadly lacking in its scope. Consequently, after a few reverses the quacks, who had to a certain extent moderated their claims, became more bold, and it was not possible to do much with them. The disappointment of the qualified practitioner was keen, in particular that of the members of this society who had taken so much trouble, both by petition and personal interview with officials, to try and get a measure which would be of some help to them. The conditions under which they worked became so bad that a public meeting was held in the town hall in 1871 to protest against the Act. At the meeting Sir James Bardsley, president of the Medico-Ethical Association, presided. It was recommended (1) that there be one portal for admission to the profession; (2) that there be more direct representation of the general body of practitioners on the General Medical Council; (3) that a public prosecutor be appointed. It was felt that the association ought also to send forward a memorial, and this was done. The amending bill that was introduced was not considered satisfactory, so the whole profession rose against it, and it had to be withdrawn.

Another subject dealt with by this subcommittee was the question of death certificates. Before the introduction of the *Medical Register* death certificates were accepted from quacks, druggists, and others; with the setting up of the *Register* this was almost wholly altered. It also presented a petition to Parliament on the inadequate remuneration of the medical officers in the Army and Navy. This was entirely successful. The Vaccination Act, the Coroners Bill, the bill regulating the qualifications of pharmaceutical chemists, and other minor Acts came up for discussion. It is recorded that they met on eighteen occasions in one year. Court fees came up for discussion, and it is interesting to note the decision that mileage should be charged at the rate of 3d., but if the medical witness had to stay overnight there should be an extra charge of 2s. 6d. for a bed. The tariff was published in 1865, and from the first was a great success; the demand for it was so great that it ran through two editions very quickly. In the 1866 report the committee records its delight that, contrary to expectations, the profession had been almost unanimous in its commendation of the work. Telegrams were received from London asking for copies, to decide questions in the courts of law. Many instances have come to light where difficulties in the payment of fees have been smoothed over, and several of our new members have assigned the issuing of the tariff as their reason for joining us. The commendation from the medical press was general. The *British Medical Journal* wrote:

"We have now before us the result of their labours, and, on the whole, we think it highly creditable to their discrimination and judgement. We trust the tariff may be an assistance to our Manchester brethren in enabling them to obtain a due reward for their labours, and to avoid ruinous competition with one another."

From this short account of some of the past activities of our association it will be gathered that it was a very active body of earnest men, working together for the good of the profession of which we are members. Many of the benefits for which they strove we to-day enjoy; indeed, we look on them as commonplace, little thinking that our predecessors had to work hard to get them.

LOCAL AUTHORITIES AND HOSPITALS.

THE KING'S FUND MEMORANDUM.

Last year the King Edward's Hospital Fund for London published a memorandum on the relations between voluntary and municipal hospitals, with special reference to the situation caused by the passing of the Local Government Act, 1929, and some comment on it appeared twelve months ago in the *Journal* of April 6th (p. 659). That memorandum was based on the principle that in order to secure the most efficient service for the sick there should be co-operation, and not competition and overlapping, between the rate-supported and the voluntary hospitals. The latter are an essential factor in the hospital service of this country, and co-operation is required not merely in respect of the maintenance of the voluntary hospitals, but for the sake of the efficiency of those which are maintained by the councils of counties and of county boroughs.

It is therefore important that all those concerned in the management of voluntary hospitals, and all members of local authorities responsible for council hospitals, should fully appreciate the nature and extent of both the old and the new powers of local authorities relating to the provision of hospital accommodation. As a help towards this the King Edward's Fund has now issued a "Memorandum on the powers and duties of local authorities in the matter of hospital accommodation under the Local Government Act, 1929," which has been prepared by Mr. A. M. Trustram Eve. It is an important document, which should be carefully studied by all those for whom it is intended. It sets out in one of its sections the administrative requirements of the Act of last year with reference to the exercise of transferred Poor Law functions, and to the survey which the Act requires county councils to make as to complete provision for dealing with infectious diseases in their areas; but these matters have already been explained so fully in our columns that they need not be further referred to here. The memorandum sets out the legal position with reference to the powers and duties of local authorities for the provision of accommodation for the sick, the recovery of the cost of maintenance and treatment, and the exercise of the powers of providing hospital accommodation by payments by local authorities to voluntary hospitals and other institutions. In each

Belgium.

[FROM OUR CORRESPONDENT.]

Reform of the Medical Curriculum.

In the course of its consideration of proposed legislation to regulate the various academic degrees, the Chamber of Representatives approved a series of changes in the medical curriculum, which is now to extend over a minimum period of seven years. The first three of these will be devoted to the study of natural science and preliminary medical subjects, including anatomy, embryology, histology, physiology, and physiological chemistry. Students proposing to graduate in medicine, surgery, and obstetrics will devote the last four years to clinical work, certificates of satisfactory progress being required before admission to the four examinations which are part of the programme of this period. One year is ordinarily to be spent in a resident appointment in a hospital; failing this, special certificates are required of attendance during four months each at clinics of each of the three principal subjects of medicine, surgery, and obstetrics, and also at one or more of the clinics dealing with accessory subjects. The whole of this attendance at clinics must extend over twelve months at least, no more than two being attended simultaneously, and medicine and surgery being studied during different parts of the year. For the licence in dental science similar preparatory work has to be undertaken in natural science and medical subjects; this is followed by two years devoted to general and special pathology, pharmacology, and dentistry. Candidates for the higher degrees in medicine or dentistry have to present a thesis embodying research, which is eventually discussed with a panel of examiners; they have also to deliver an address on some subject chosen by the examiners. Women are eligible for academic degrees and enjoy the full privileges attached to them, with the exception of certain public duties from which they are precluded by the law or by regulations.

Insanitary Housing.

A ministerial circular has been issued calling attention to the law relating to the sanitary measures required in the case of unhealthy dwellings. The Government desires burgomasters to arrange for joint action by private owners and societies controlling cheap residential property in order to bring about the progressive abolition of insanitary housing. Among the police duties entrusted to communal authorities by law is the maintenance of healthy conditions in public places, streets, and buildings. This includes such preventive work as the adoption of all necessary precautions against accidents and the scourge of epidemic diseases. From the point of view of hygiene, the numerous steps which can be taken by these authorities comprise the cleansing of the streets and dwelling places, removal of rain water and factory drainage, suppression of the sources of infection, the filling up of ditches and pools, and the prohibition of a variety of conditions which endanger the public health. The legislative details involved can be included, as a rule, in general communal regulations, but it is also strongly urged that the more important ones shall be made the subject of definite enactments appropriate to the special needs of particular localities. Societies concerned with the detection of unhealthy homes are required to act in close collaboration with the communal authorities, to concert active measures, and to submit only such comprehensive proposals as take account of all contingencies.

Campaign against Buboes in the Congo.

Dr. Van Nitsen has provided a scheme for an anti-bubo campaign on the following lines. A travelling hospital, under the charge of a doctor, will be established at the centre of the area to be dealt with. The staff will be sent from it in all directions, so as to get rapidly into contact with the whole of the population. Careful examination will be made of the natives, and anyone who shows signs of lesions or has a suspicious history will be subjected to treatment. He will then receive a metal disc carrying a serial number corresponding to one in the register, where will be entered the medical history and the treatment undertaken. Severe cases can be removed by means of the travelling hospital. The first course of treatment is directed to patients with contagious wounds, in order to abolish the [illegible] their infecting others. The hos[illegible] travels to a second area, and [illegible] returning to the first one after three months. In this way it will be possible to detect any persons who have escaped the first investigation, and to complete the treatment of others. All the areas will be visited in turn every six months, and thus infected persons will be cured by successive courses of treatment.

Massage Training for the Blind.

As the result of concerted action by the four Belgian universities, there has come into existence, under the control of the State and of members of the medical profession, a central school in which specially selected blind men and women will receive a complete course of training in massage. A first-class diploma, valid for the whole country, will be awarded both to those who have their sight, and also to blind students at this school, if they acquit themselves well during their training and obtain a minimum of 50 per cent. marks in an officially organized examination, which will be conducted by representatives of the various organizations interested. There is also to be set up an association of certificated blind practitioners of massage, similar to the one in England, and responsible for the supervision of these licentiates, their progress, and the defence of their interests generally. It is highly probable that this new departure will receive the support of the public authorities, for it will enable a number of blind persons to become useful and independent citizens, and will, consequently, reduce the financial and social obligations of the State and of the communes.

Belgian Association of Medical Women.

A section for medical women has been established in connexion with the Belgian Federation of University Women, with an initial membership of sixty. It is affiliated to the International Association of Medical Women, which has the three following objectives: (1) to provide for the co-operation of medical women in questions relating to international hygiene; (2) to obtain for medical women in different countries possibilities of communicating with each other, and of advancing their mutual interests throughout the world; (3) to give to medical women opportunities of meeting at fixed intervals to discuss problems concerned with the health and well-being of humanity.

Scotland.

Sir James Mackenzie Memorial Lecture.

THE first James Mackenzie Memorial Lecture, under the auspices of the James Mackenzie Institute for Clinical Research at St. Andrews, was delivered on April 8th by Professor John Hay, M.D., of Liverpool University. Provost Boase, St. Andrews, presided. Professor Hay considered that James Mackenzie would rank with Sydenham, Stokes, Graves, Addison, and Bright. Since his death in 1925, it had become possible to estimate his influence to some extent. The quest of his life was to understand the mechanism and prognostic significance of symptoms. For that purpose he observed every patient carefully over many years, keeping detailed records and making frequent analyses of his findings. The significance of pain was a subject that occupied a great deal of his time and thought. The results of his study of the pulse were published in 1902, and this book, which formed a landmark in cardiology, made Mackenzie's reputation. His observations aroused much interest in Germany and in America. At the age of 54 he took up practice in London as a heart specialist. During the war he was asked by the Government to give his assistance in organizing a special branch of the medical service. It was manifest at the time that organic and functional diseases of the heart had not been clearly differentiated; thousands of fit men were being rejected at home and in France, and military hospitals were becoming congested with cases of so-called heart disease. The scheme devised by Mackenzie, in collaboration with Sir Thomas Lewis, has done much to

spread a more accurate knowledge of disorders of the heart among members of the medical profession. In 1918 Mackenzie left Harley Street, and at the age of 65 began work in St. Andrews, where he founded the institute for clinical research that now bears his name. Mackenzie believed that future progress in medicine depended largely upon those who studied the symptoms of early phases of disease, and it was this belief that led him to give up consulting practice in London and to start the institute in St. Andrews.

Edinburgh Post-Graduate Courses in Medicine.

The programme of post-graduate courses to be held at Edinburgh during the summer of 1930, in connexion with the University and the School of Medicine of the Royal Colleges has now been issued. A course on obstetrics, gynaecology, and diseases of children will be held from July 14th to August 9th, it includes clinical midwifery and clinical gynaecology, obstetrical and gynaecological anatomy, physiology and pathology, diseases of children, child welfare, and ante-natal clinics. The fee for this course is ten guineas. A general practitioners' course will be held from August 11th to September 6th. This course will extend over four weeks, for which a fee of ten guineas is charged, the first or second fortnight may be taken separately at a fee of six guineas. It includes instruction in applied anatomy, clinical medicine, infectious diseases, clinical surgery, and clinics on gynaecology, diseases of children, diseases of the eye, diseases of the ear, nose and throat, and dermatology. There will also be afternoon classes on bacteriological diagnosis, morbid anatomy, radiology, ultra-violet ray therapy, etc. Concurrently with the latter a general surgical course will be given at similar fees. This course will include applied anatomy, general surgery, special instruction upon the diagnosis of renal disease, abdominal surgery and attendance upon surgical operations, surgical clinics, demonstrations of surgical pathology, radiology and similar subjects. Special classes for small numbers will be held upon such subjects as the pathology of the nervous system, vaccine therapy, medical chemistry, diseases of the blood, x-ray physics, etc. Attention is also drawn in the programme to some extended courses which are held during the summer, autumn, and spring terms, upon diseases of the throat and nose, ophthalmology, venereal diseases, surgical pathology, and clinical medicine and clinical surgery. Application for enrolment in the various classes should be made to the secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

Gogarburn Institution for Mental Defectives.

The first two blocks of the Gogarburn Certified Institution for Mental Defectives, which is under course of erection by the Edinburgh District Board of Control, were formally opened on April 4th by the Right Hon. William Adamson, M.P., Secretary of State for Scotland. Colonel Young, chairman of the Edinburgh District Board of Control, who presided, said that the District Board of Control had purchased, in 1913 and 1926, the estates of Gogarburn and Kellerstain, extending to 419 acres. The present buildings, and much other work approaching completion, would be handed over to their successors. During recent years, a long list of cases had been awaiting treatment, and over 100 of the most urgent would be admitted to the present buildings. About 20 similar blocks would be erected to accommodate 1,040 patients. In paying a tribute to the work of the district board Mr. Adamson said that the present institution was really a collection of cottage homes, a striking improvement on the large forbidding prison-like structures of the past. The operation of the Act of 1913 for dealing with the problem of mental deficiency had been interrupted by the war and by the difficulties that followed it, but he thought that progress was now being made. The number of cases of mental defect must be ascertained at as early an age as possible. Town and county councils were provided by legislation with machinery for ascertaining mental deficiency, and this work would be divided among several of their committees. For example, the defective child in a special school would be dealt with by the education committee until it reached the age of 16, when it would come under the supervision of another committee. It was important that careful provision should be made in each case when the responsibility of the education committee ceased. Treatment in institutions, Mr. Adamson said, was not necessary in all cases, for many children after attending a special school could lead useful active lives in the community. The most urgent need in Scotland at present was additional institutional accommodation; its provision would remove one of the chief difficulties of the problem of mentally defective adults, who could now obtain a healthy happy home, where they would have a chance to develop themselves as far as their faculties allowed. Care in institutions would also prevent women who were mentally affected from having children which they were incapable of bringing up, whether these children were defective or normal. It would also save many men and women from misery and crime. He regarded the work of the Gogarburn institution as of the greatest national importance. The Gogarburn Mental Defective Colony is situated about three miles west of Edinburgh, and is the first colony in this country to be built under the Mental Deficiency Act of 1913. It will accommodate over 1,000 patients, who will be drawn from Edinburgh and the South-east of Scotland. Sufficient ground is available for ensuring proper segregation and for the employment of the inmates in agricultural and other outdoor pursuits. Every house in the colony, which is designed as a village, has accommodation for 50 patients, under the supervision of a housekeeper. The main entrance of each building is placed on the north side, thus allowing of unrestricted verandahs on the south. Four dormitories and two day rooms with kitchen and staff accommodation are provided. Special care has been taken to make the rooms attractive to the patients.

Election of Edinburgh University Chancellor.

At a meeting of the General Council of the University of Edinburgh, held on March 31st, a committee was appointed to recommend a candidate for nomination for the chancellorship, rendered vacant by the death of the Earl of Balfour. The election will take place on May 7th. Dr. Morgan, convener of the business committee of the council, referred to the late Lord Balfour's services to universities. Lord Balfour, he said, took an early interest in Edinburgh University, where he founded the Balfour Lectureship in Philosophy in 1895. On the death of Lord President Inglis in 1891 Mr. Arthur James Balfour, as he then was, was elected to the chancellorship, at the beginning of a period of great reform. The Universities (Scotland) Act of 1889 had just been passed, and the commissioners appointed under it were issuing ordinances that were remodelling the educational and administrative systems of the Scottish universities. By his services at that time, and during the thirty-nine years of his chancellorship, Lord Balfour had helped to consolidate the position of the University.

Smoke Abatement in Scotland.

The annual report of the executive committee of the Scottish Branch of the National Smoke Abatement Society for the year 1929–30 states that public opinion is now awakening to the importance of securing a purer atmosphere. During the past winter the weather of Glasgow and the West of Scotland was comparatively free from fog, and in consequence there was a low incidence of respiratory disease except during February, when fog prevailed. Observations were made by Mr. Harris, chemist to the Glasgow corporation, upon the amount of ultra-violet light reaching the city. If these records are continued they will form, it is thought, a useful index of smoke pollution, and will enable comparisons to be made with other parts of the country. Early legislation on the lines of the Public Health (Smoke Abatement) Act of 1926 is recommended for Scotland. The report also states that Scottish firemen are attending classes held by the society for instruction in the most economical methods of fuel combustion producing the minimum of smoke. Pure air, it is pointed out, is as essential to health as pure water, milk, and food, and may be obtained if reasonable precautions are taken.

England and Wales.

A Poor Law Hospital.

REDHILL Hospital, Edgware, though not one of the largest, is one of the newest, most fully equipped, and most completely organized, of the Poor Law hospitals. It was opened by Mr. Chamberlain, then Minister of Health, in December, 1927, having been planned on the most modern lines and built and equipped in the most up-to-date fashion by the Hendon Board of Guardians. It may now be said to be the chief hospital for the treatment of acute medical and surgical cases in its neighbourhood, and, together with the Hendon Cottage Hospital, supplies the needs of a large area. It has an extensive maternity department, with an ante-natal clinic. It makes large provision for dental treatment, for treatment by massage and radiant heat, and it has very active radiological and pathological departments. It is approved as a complete training school for nurses. The second annual report of the hospital has been issued by the Hendon Board of Guardians in the form of a pamphlet by Dr. J. Nissen Deacon, the medical superintendent. The pamphlet gives a very interesting account of the activities of the hospital during the year 1929, and includes well-arranged statistical tables showing the extent and variety of the work undertaken in the several departments and the results attained. There is a useful appendix of regulations relating to the admission of ordinary, paying, and maternity patients, the ambulance service, the visiting of patients, x-ray charges, and the training of nurses. This publication is particularly interesting and valuable at the present time as showing the kind of work that is being done in the best type of Poor Law hospital, and the way in which such a hospital is being used by patients and practitioners in its neighbourhood. It may usefully be noted by those who are interested in the problems raised by the transfer of the administration of institutions of this kind from boards of guardians to the councils of counties and county boroughs.

New Health Centre for Willesden.

The Minister of Health (Mr. Arthur Greenwood, M.P.) visited Willesden, on April 8th, to open the new health centre of the Willesden Urban District Council in the rapidly growing district of Stonebridge Park. Mr. Greenwood said that any local authority which set an example of progressiveness in public health service had his warm commendation. For many years Willesden had taken a serious view of its duties in this respect. It had looked after the two most important factors in the health of the race—namely, the well-being of the mother and of the child. He paid a high tribute to Willesden's indefatigable medical officer of health (Dr. G. F. Buchan), to whose annual reports he stood indebted. Dr. Buchan had rightly stressed the importance of the problem presented by maternal mortality. Motherhood was the most dangerous of occupations. It was not merely that 3,000 mothers lost their lives annually in child-bearing, but an uncounted number of those who survived suffered permanent incapacity, and this was probably reflected in the lives of children subsequently born. Whatever might be the cause of this persistent mortality, a good deal of it could be alleviated if the expectant mother would go to the maternity centre. Women were still too reluctant to take advantage of the specialized knowledge which was available. In Willesden, said the Minister, the service which had been developed was a credit to the locality, and the real value of the new clinic would be not merely in the treatment which took place in it or in connexion with it, but in what it stood for and the new attitude it suggested towards individual and communal health. In spite of many difficulties, some of them encountered in his own department—though before his own period of office—Willesden had pursued a definite and constructive policy, and while he himself might not always in the future agree with what Willesden set out to do, he would never question the outstanding sincerity of its authorities and their desire to serve their people. In some further speech-making, Councillor W. A. Hill, chairman of the urban district council, claimed that the new clinic was the "last word," at all events so far as small clinics were concerned; and Councillor William Bolton, chairman of the health committee, who said that the circle of health services in Willesden was not yet complete, announced that the council had taken over from the Middlesex County Council what had formerly been a hospital for small-pox cases, and this would be used as a maternity hospital, for women referred from the clinic and others needing hospital service.

The new clinic is a building in the Harrow Road, all on the ground level, with every department intercommunicating, and with space for extensions. It is designed to house all the multiple activities which constitute a health service, and there is spacious provision for ante-natal and maternity care, and for the regular examination of children from birth to school-leaving age. The other departments include those for orthopaedics, "artificial sunlight" treatment, eye cases, ear, nose, and throat cases, and dental examination and treatment. There is to be linked up with the clinic a service of consultants for further advice in difficult cases, and a hospital service where beds are necessary. The building includes a large reception hall, where health lectures are to be given. The equipment of the clinic, while not over-elaborate, appears to be efficient for the purpose of each department, and alike in the architecture and interior decoration there is a pleasing freshness and homeliness about the arrangements.

The Royal Institute of Public Health.

The congress this year of the Royal Institute of Public Health will be held at Portsmouth, from June 4th to the 9th. The scientific work will be arranged in five sections: State medicine and municipal hygiene; naval, military and air (including tropical diseases); industrial hygiene; women and children and the public health; and tuberculosis. The subjects to be discussed include: the reduction of preventable disease, national health and the Local Government Act of 1929, heredity in relation to the nation's problem of mental deficiency, problems of the sea-faring doctor, the health of the worker to-day, the voluntary worker in relation to the public health service, the slum child, and sun treatment in England. Arrangements are being made for visits to the Treloar Cripples' Hospital and College at Alton; King George's Sanatorium for Sailors, King Edward VII Sanatorium, Midhurst, Portsmouth dockyard, and the Isle of Wight. The congress banquet will be held at the Queen's Hotel, Southsea, on June 5th, and there will be a service in the cathedral on Whit-Sunday morning, June 8th. The usual arrangements are being made as regards reduced railway fares, and the sanctioning of the expenses of delegates from local authorities. Further information may be obtained from Dr. T. N. Kelynack, the Royal Institute of Public Health, 37, Russell Square, W.C.1.

The Midwifery Service.

The council of the Midwives Institute has set up a joint committee, consisting of representatives of associated bodies, with the object of securing united action and prompt decision in regard to measures for improving the midwifery service in this country. Members have been nominated by the Association of Inspectors of Midwives, the Association for Promoting the Training and Supply of Midwives, the College of Nursing, the Incorporated Midwives Institute, and the Queen's Institute of District Nursing. In a memorandum issued by the committee, agreement is expressed with the report of the departmental committee on the training and employment of midwives[1] so far as it relates to legislation in accordance with the proposals for a comprehensive and national maternity scheme. These proposals refer to medical attendance and examination during and after confinement, and to the responsibilities of midwives for ante-natal and post-natal care and nursing. The committee also agrees with the provision for professional service supplemented by maternity benefit, and with the recommendation that institutional arrangements should be made for confinement in special circumstances or for reasons of personal convenience, but it disapproves of any legislation transferring

[1] Report of the Departmental Committee on the Training and Employment of Midwives. H.M. Stationery Office, London. 1s. (See *British Medical Journal*, September 28th, 1929, p. 592.)

the control of the profession to a Government department, on the grounds that independency is essential to the maintenance of professional standards and necessary for the efficient operation of a national maternity scheme. In regard to the reorganization of a controlling body, it considers that the Central Midwives Board, or special body exercising control over midwives, should retain the duties connected with the training, penal work, examinations, and government of the profession, and that this body should continue to represent the Government, the local authorities, the Judiciary service, and the medical profession.

Ireland.

Poor Law Relief in the Irish Free State.

A JUDGMENT of pa[illegible] matters to Poor Law medical officers has recently been delivered by Mr. Justice Meredith, who held that persons who were destitute and permanently resident in the area were entitled, as a right to receive relief from the public rates of the Poor Law union in which they were resident. It has long been held that the decision of the Minister for Local Government and Public Health was final in complaints of the alleged refusal of relief to persons in a number of cases which came before the Dublin Union Commissioners. In giving judgment Mr. Justice Meredith said that the plaintiffs were the guardians of poor persons for whom provision had been made by the Act of 1847. It was the duty of the Commissioners as guardians, under the mandatory section providing for relief, to place the destitute poor either in workhouses, if there was room for them in the institutions, or upon outdoor relief; they were empowered to declare rates for the purpose. Costs were given against the Commissioners, who intend to appeal to the Supreme Court.

Alleged Illegal Detention in a Mental Hospital.

Mr. Justice O'Byrne recently made an order staying further proceedings in an action for illegal detention brought by a former patient against Dr. J. O'C. Donelan, resident medical superintendent, Grangegorman Mental Hospital, Dublin, on the ground that it was frivolous and vexatious. It appeared in the evidence that the plaintiff, Patrick Moore, had been detained in the hospital from May 6th to June 28th, 1927, in pursuance of a committal warrant, issued by the District Justice in the Dublin Metropolitan Court, and that this warrant had not been invalidated.

Correspondence.

THROAT INFECTIONS AND PUERPERAL SEPSIS

SIR,—I am indebted to Dr. James Young (April 5th, p. 665) for his valuable criticism of my paper on throat infections as an etiological factor in puerperal sepsis. It is satisfactory to find that he agrees with the proposition therein set out, even if he prefers to flirt with the subtle suggestion that the attendant's throat must have been primarily infected from some parturient woman. This supposition of the probable sequence of events is not supported by our observations in the wards for puerperal sepsis in the special block in connexion with, though remote from, the Joseph Hospital. There the incidence of haemolytic streptococci in the throats of the resident and nursing staffs is no higher than elsewhere.

Dr. Young makes a good point against me when he cites the low death rate in certain maternity hospitals as evidence that throat spraying and the so-called "antigenic infections" are not factors of importance in the etiology of puerperal sepsis. But too much can be made of it. The same type of argument was brought against the use of masks and gloves in operating theatres a few years ago, and before that against the use of anti-septics. It is so with every advance. In this connexion I am sincerely indebted to Dr. A. S. Garden for his timely contribution to the discussion, published also on April 5th (p. 655). An outbreak of puerperal sepsis due to haemolytic streptococcal infection was traced to a carrier nurse, and ceased immediately she was removed from the wards. Here is practical proof, from an independent source, of the danger and the remedy. One must account hospitals fortunate into whose midst fate has not cast a carrier.

Dr. Young has misunderstood my statements in regard to the incidence of haemolytic streptococcal infections in spontaneous and operative deliveries respectively. I see no reason for his presumption that some of the cases were admitted for sepsis and some for obstetric reasons. All the cases under review were sent into the hospital because they were septic, so that Dr. Young's faulty assumption has led him to the incorrect inference that I was comparing cases of different orders. My discussion concerned the quota of these septic cases (spontaneous and operative) which were infected by haemolytic streptococci. My inference from the type of labour preceding the onset of sepsis from this organism is clearly stated—"Handling is not of itself a factor in the spread of the disease"—that is, puerperal sepsis caused by haemolytic streptococci.

The figures, of course, bear no relationship to the incidence of puerperal sepsis in spontaneous as against operative deliveries in general. They refer to one type of delivery in reference to the type of labour in a series of cases of puerperal fever caused by different organisms—

I am, etc.,

W. W. KISO.

[illegible]

ANÆSTHETICS IN MIDWIFERY.

SIR,—I am loath to enter into the correspondence on the above topic, but I feel that the letter from Dr. Rowland in your issue of April 12th (p. 718) calls for comment. I presume that when Dr. Rowland talks about "slowing down and sometimes suspending the normal uterine contractions," etc., he is referring to chloroform as the anæsthetic; and, if so, he is undoubtedly correct. I would, however, if I had ever conducted a labour where gas and oxygen has been used for each pain, and a little ether added as the head is being born. I read a short paper on this method at the Annual Meeting of the British Medical Association in Manchester last year, and there pointed out that a labour conducted with this type of analgesia [illegible] anæsthesia for the delivery of the head entailed—so far as I could see—no risk to either mother or child, and in my opinion the pains were not slowed up, but when extra oxygen was given my impression was that they were accelerated. With added experience, I am quite convinced that the method I have described is at present the best means we have of alleviating the pains of labour—and there is no doubt in my mind that these pains should be alleviated. Surely we have advanced from the time when a lady of rank, one Euphame Macalzean, was charged with seeking the assistance of Agnes Sampson for the relief of pain at the time of the birth of her two sons, and was accordingly buried alive on the Castle Hill of Edinburgh!—I am, etc.,

H. EDMUND G. BOYD.

[illegible]

INJECTION TREATMENT OF VARICOSE VEINS.

SIR,—Dr. Criteell's observations (March 29th, p. 613) on pain after puncturing a vein are interesting, but he does not say how long after the puncture the pain comes on. In my own experience no pain is caused by the needle entering or perforating the vein wall; and since some time, from a few seconds to a few minutes, elapses while the vein is being emptied of blood before the injection is made, any pain arising from the puncture of the wall should be easily observed. Every care is taken to prevent contamination of the tissues by the solution, but sometimes, when the piston of the syringe is working loosely, a small quantity of solution might possibly get into the vein wall. if the skin does not wipe it off. No immediate pain has been noticed in these cases. The pain that Dr. Hector and I refer to and utilize begins very definitely a certain time after the solution is injected, and varies with its strength after dilution with blood. It does not seem to

have been noticed before, and certainly not utilized, and its observation has helped to convert a haphazard method into an orderly one.

In view of the fact that the use of sodium chloride is usually regarded as painless, it occurred to me to try it in solutions of greater strength than those generally employed. It is clear from these trials that the pain again varies with the strength of the solution. It is, however, usually less severe than the pain following injection of salicylate, and is of a different character. The sensation is more tingling than burning, and its distribution is less definitely localized. Both solutions may cause cramp-like pain. True cramp of the muscles is seldom seen, though forcible stretching of them eases the pain somewhat. Thus 25 per cent. and 30 per cent. saline are easily guidable in medium to large veins, and 20 per cent. saline is guidable in small to medium ones. Ten per cent. salicylate in any strength of saline over 15 per cent. is "on the strong side," and 2½ per cent. is too weak. A good average guidable solution for those who prefer saline to salicylate is 25 per cent. saline with 5 per cent. salicylate. From trials now going on it seems that in veins of comparable size, and always allowing as far as possible for any escape of solution into the deep anastomotic veins, 30 per cent. saline is "about as painful" as 20 per cent. salicylate, and 30 per cent. saline with 5 per cent. salicylate is "about as painful" as 35 per cent. salicylate. I agree with Dr. Crivelli that the risk of necrosis is greatly diminished with practice, a fact which somewhat limits the facilities for teaching the work to students.

If others would publish their technical details, giving in general the local characters and the sizes of veins, the strengths of solutions used, and the number of injections required for each case, it would be possible to arrive at an approximate standard solution and dosage for the painful but guidable method of injection.—I am, etc.,

Aberdeen, April 7th. G. H. COLT.

GEOGRAPHICAL DISTRIBUTION OF RHEUMATIC FEVER.

SIR,—In his recent Milroy Lectures[1] Dr. Alison Glover has advanced the hypothesis that rheumatic fever is a "specific infectious disease conveyed by a droplet infection." He makes, however, no reference to the geographical distribution of the disease. In the preface to the first part of the special report on rheumatic heart disease in children,[2] one of the proposals was that "further investigations" should be made of the geographical distribution of the disease. In the second report,[3] although this proposal is mentioned as one of the references, there is no further allusion to the subject. It might be thought that this reference was afterwards regarded as of no importance, but nearly all the books on medicine say something about geographical distribution, and that of Hirsch—published in 1886—has been much quoted on the subject. Dr. Reginald Miller[2] has stated that "there has been no recent inquiry into this question [of geographical distribution], and material for any accurate world map of rheumatism is probably not available." Dr. Carey Coombs[4] writes that "broadly it is found in temperate climates only," and adds, "the data on which a reliable opinion [of the geographical distribution] could be founded are not yet available."

May I point out that the geographical distribution of rheumatic fever may have a very important bearing on the ideas of the causation of the disease. If it was found that overcrowding, sore throats, damp houses, and houses near streams were common in those parts of the world where rheumatic fever did not occur, there might be occasion for the revision of some of the hypotheses that have been advanced as to the cause of the disease. Further, may I point out that I have given[5] a large amount of evidence to show that rheumatic fever does not occur in the Tropics, where the above-mentioned conditions are common. Overcrowding in houses and in schools, sore throats, damp houses, and houses near streams are not rare in the Tropics; on the other hand, in tropical latitudes there is hardly any water-borne sewage—until recently there was none—and no brown rats (*Rattus norvegicus*), save a few in some of the bigger ports. In temperate climates brown rats in a house are usually a sign of a broken drain; and I suggest that it will be found that a broken drain is the most common concomitant of rheumatic fever, though whether the rat or its flea is the carrier of the disease is a matter for investigation.—I am, etc.,

J. TERTIUS CLARKE,
late Medical Officer and Health Officer, Perak, F.M.S.

Harrow, April 8th.

[1] *Lancet*, March 8th, 1930.
[2] First Report of the Special Subcommittee on Rheumatic Heart Disease in Children, *Supplement, British Medical Journal*, July 3rd, 1926.
[3] Second Report of the Subcommittee, *Supplement, British Medical Journal*, April 16th, 1927.
[4] Carey Coombs: *Rheumatic Heart Disease*, 1924, p. 20.
[5] Clarke, J. T.: The Pathogenesis of Rheumatic Fever in its Climatological Relationship to a Possible Insect Carrier, *Proc. Roy. Soc. Med.*, 1928, xxi (Section of Epidemiology and State Medicine), p. 1004.

OESOPHAGEAL OBSTRUCTION IN CHILDHOOD.

SIR,—I should like to make just a few comments on Dr. Sheldon's reply (March 22nd, p. 568) to my letter published in your issue of March 8th (p. 467). I had suggested that, on the published details, there was considerable doubt about the diagnosis of some of the cases which he and Dr. Ogilvie had reported in their paper on this subject, and I hoped that he would be able to state that further facts were available in support of their diagnosis. Apparently this is not so, and he is content to rely upon the close similarity between the clinical picture of those cases which had a proved stenosis (shown post mortem) and those which had not. I feel sure he will agree with me that a similarity of symptoms does not necessarily denote identity of pathological findings. The symptoms of oesophageal obstruction from any cause are so constant that I should be grateful to him if he would tell me how he can distinguish between those due to congenital stenosis and those due to spasm or achalasia, even with the help of an *x*-ray examination. They must have a close similarity, or his colleagues at Great Ormond Street would not have fallen into the error of diagnosing some of his cases as cardiospasm.

Dr. Sheldon says he is "in complete agreement" with me "about the value to be placed upon a skilful oesophagoscopy." I place so high a value upon this procedure that I do not consider the diagnosis has been established until it has been carried out. I am glad he agrees with me, and I hope he will tell me how many of his cases were proved in this way.—I am, etc.,

London, W.1, April 7th. C. C. BEATTY.

DEATH DURING SPINOCAIN ANAESTHESIA.

SIR,—Our debt to Mr. Hudson for reporting in the *British Medical Journal* of April 12th (p. 693) a case of death during spinocain anaesthesia will be still greater if he will kindly supplement the statement with a few further details.

How many cubic centimetres of spinocain were injected in this case, and how much, if any, cerebro-spinal fluid was mixed with this in the syringe? Will he tell us how soon after the injection, and to what angle, the head end of the table was lowered? Was the patient's condition, prior to the operation, one that inevitably carried a high risk with it—for example, had he carditis or intestinal obstruction? What was the upper level of cutaneous anaesthesia achieved? At what level of the vertebral column does he usually inject for abdominal operations?

I hope he will forgive me for troubling him for these details, but I feel that they are important, as spinocain is a new anaesthetic still on trial in many hands.—I am, etc.,

A. WILFRID ADAMS, M.S., F.R.C.S.

Clifton, Bristol, April 13th.

BED FOR DENTAL EXTRACTIONS.

SIR,—Sir William Willcox, in the address on dental sepsis, of which you gave an abstract in your issue of March 29th (p. 605), lays stress upon the importance in certain cases of the patient being kept in bed continuously until all the septic teeth have been extracted. The wisdom of this procedure has undoubtedly been proved by the rarity of any harmful reaction following the extractions in the large number of cases I was privileged

to see with him during the time I served on the staff of St. Mary's Hospital. Unfortunately, however, there are a very large number of patients who come "on their own," or are referred to us by their medical advisers, who neither know nor have been told of the importance, at least as a precautionary measure, of following this practice. It is clear that the onus is on the medical adviser; for if the suggestion comes from a dentist it is often not accepted, nor is the same weight attached to the opinion of the medical practitioner if it be given after the consultation with the dentist as when it is given independently. This is, I have found, especially true in cardiac cases, the gravity of which patients do not seem to realize, nor indeed did I until I had bought experience. I have previously urged this matter elsewhere, but not in medical journals. I have had many opportunities of noticing the astonishing difference between the manner in which a patient in ill health reacts even to such a "safe" anaesthetic as nitrous oxide if given to him at home in bed and when he has come to me.—I am, etc.,

London, W., April 5th. W. H. DOLAMORE.

QUININE IN ALBUMINURIA.

SIR,—Are there any contraindications to the use of quinine in pregnancy? If so, is albuminuria one? An indirect answer may be afforded by the following history of a man whom I advised, before I had discovered that his urine was heavily loaded with albumin, to take quinine, and whose renal condition under this regime seemed to clear up completely.

A mine surveyor, aged 28, married, with two children, presented himself six years ago for insurance examination. He had aortic regurgitation, and admitted to having had three attacks of rheumatic fever, the first when he was 3 years of age. In addition I found splenic enlargement indicating latent malaria. I told him that it was doubtful if he would be accepted, except on a heavy premium, and in view of his splenic enlargement I advised him to take five grains of quinine daily. When I got home I examined his urine and found that it was heavily loaded with albumin. Accordingly I wrote advising him that it was useless to proceed with his proposal.

Three months later, passing through his district, I thought I recognized him at a distance, but his appearance was quite different, not till he spoke to me was I sure of his identity. He had the appearance of a perfectly healthy man, and had put on over a stone in weight. Needless to say, I was astonished, and asked if I might again examine his urine. It was entirely free from albumin.

I followed him up for a time; he kept quite well, and then went to a mine in another part of the country. Just over a year ago, travelling through his new district, I was accosted by him joyfully at the station; he said I had saved his life. If I had, I had done so accidentally.

Though in the course of twenty years' experience I have never noted any damage to the kidney as the result of prolonged quininization I don't whether, had I known about this patient's albuminuria, I should have advised him to take quinine. His history and symptoms, together with the albuminuria, had led me to believe that his kidneys had suffered permanent damage. In malaria albuminuria is uncommon, and when it occurs it is transient.

This case, as I have already implied, has only an indirect bearing on the administration of quinine to patients with albuminuria of pregnancy, but it suggests that where the renal disorder is not permanent, or is brought on by some combination of causes, one or more of which may be temporary, quinine is not necessarily contraindicated. Cautious and deliberately prolonged treatment may justifiably be undertaken, the intramuscular route being preferable at the beginning.—I am, etc.,

N. Rhodesia, March 15th. W. M. HEWETSON.

DOSE OF MERCUROCHROME BY THE MOUTH.

SIR,—May I ask if medical men who have had actual experience of giving mercurochrome by the mouth would be good enough to communicate their results, and mention the dose they have employed? There have been statements in the American literature recently to the effect that 300 mg. (5 grains approx.) have been given thrice daily, and in consequence chemists are receiving prescriptions for doses which create misgivings. It seems possible that some of the organically combined mercury in the compound may be converted into an ionized or inorganic form, on passing through the system, and hence prove dangerous—either promptly or by cumulative effect. It has been stated further that the chemical is administered in keratin-coated capsules. May I mention that keratin, as commonly employed, is useless as an "intestinal coating," and it would be helpful if medical men with experience of its administration would say definitely whether it is important that mercurochrome should be dispensed in such a manner as to withstand the acidity of the stomach.—I am, etc.,

London, W., April 5th. W. H. MARTINDALE.

Obituary.

JOHN MACKIE WHYTE, M.D.,

Consulting Physician, Dundee Royal Infirmary.

WE regret to announce the death, on April 10th, of Dr. J. Mackie Whyte of Dundee. He had been in failing health for some time, and retired from active practice five years ago.

John Mackie Whyte was born in 1853, and received his medical education at Edinburgh, where he graduated M.B., C.M. in 1882; in the following year he obtained the diploma M.R.C.S.Eng., and in 1897 he proceeded M.D. with honours. After further studies at Göttingen and Vienna, and a year as demonstrator in anatomy in the University of Edinburgh, he began his long association with Dundee in 1884 as resident in the Royal Infirmary there. A year later he took up private practice in that city, and became in turn pathologist, visiting physician for 29 years, and subsequently consulting physician, to the Royal Infirmary. On the establishment of a medical school at Dundee he was appointed lecturer in clinical medicine at University College, and he continued to teach there for some twenty years. He also lectured on clinical medicine in the University of St. Andrews, and was an examiner in medicine to the University of Edinburgh. He published a number of valuable studies, the most elaborate being his report in *Brain*, in 1898, on four cases of Friedreich's ataxia, in which he reviewed fully the available literature.

Dr. Whyte was an active member of the British Medical Association, and held office as president of the Dundee Branch in 1905. He was also for a time president of the Forfarshire Medical Association. He was a keen supporter of the volunteer movement, and for many years was medical officer to the 1st Volunteer Battalion of the Black Watch. During the war he held a commission in the R.A.M.C., serving in Aberdeen and the Dundee War Hospital; he was later placed in charge of the medical side of the 58th General Hospital in France, with the rank of major. He was a justice of the peace for Dundee. Dr. Whyte, whose daughter, Mrs. Cameron, is a member of the medical profession, leaves behind him a high reputation for sound clinical judgement and devoted loyalty to the interests and traditions of his profession.

HERBERT JAMES HOTT, M.D.,

Late Senior Warden of the Apothecaries' Society, and Chairman of the Bromley Division, British Medical Association.

WE regret to record the death, on April 3rd at Midhurst, of Dr. H. J. Hott, for many years senior partner in the oldest medical firm at Bromley, Kent. He was the third of four Hotts who, in unbroken descent, have practised in that town during the past 125 years and taken a leading part in the public and social life of the district.

Herbert James Hott was born on September 10th, 1852, at the old house in High Street, Bromley, where his father was in practice, and, following the family tradition, he decided to become a doctor. Entering as a student at St. Bartholomew's Hospital in 1869 he was awarded a senior scholarship in medicine, surgery, and midwifery, and in 1873 won the Kirkes gold medal for clinical medicine. He then went for a year with some of his fellow students to Aberdeen, graduating M.B., C.M. at the university with highest honours in 1874, and obtaining the M.R.C.S.Eng. and L.S.A. diplomas. He proceeded

M.D.Aberd. in 1878. Meanwhile, after holding resident appointments, he had joined the family practice and was at once appointed medical officer to the Bromley Cottage Hospital, afterwards becoming surgeon to the Police and the Post Office. In 1909 his son Dr. Cyril Ilott joined the firm, and he himself retired in 1926 after fifty years of general practice, during which time Bromley grew from a small country town into an important suburban borough. From beginning to end of his active professional life Dr. Herbert Ilott was assiduous in keeping abreast of new work in clinical medicine, surgery, and obstetrics. He read the medical journals every week and always had some new monograph or textbook in hand. Yet with this and the claims of a large practice he found time to associate himself with educational, religious, and benevolent organizations, and to help in many other good causes. In youth he had been an ardent entomologist, and throughout his life was devoted to fly-fishing. He was an old liveryman of the Apothecaries' Society of London, serving in recent years as Junior Warden and Senior Warden, but declining on grounds of health to be nominated for the office of Master. He took little part in medical politics, though he followed the course of events, and his local colleagues found him a trusted counsellor in professional difficulties. In 1923–24 he was chairman of the Bromley Division of the British Medical Association, of which he had been a member since its formation. Herbert Ilott was a wise and skilled practitioner: an all-round doctor of the best type, devoted to his work and to his patients; an upright English gentleman and the kindliest of friends.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

British Post-Graduate Hospital and Medical School

IN the House of Commons, on April 9th, Mr. CHAMBERLAIN asked the Minister of Health whether he was in a position to state what action the Government proposed to take on the report of the Post-Graduate Medical Education Committee.

In his reply, briefly reported in the *British Medical Journal* of April 12th (p. 709), Mr. GREENWOOD said:

In view of the public interest in this matter I hope that the House will permit me to make a statement which exceeds the usual limits of a reply to a question. The committee was appointed by my predecessor. He was, as Minister of Health, its chairman, and I succeeded him. The report will be in the hands of members to-day. The proposal of the committee is *that, in order to remedy the most serious outstanding defect* in the existing provision for the education in medicine of post-graduate students, a British Post-Graduate Hospital and Medical School should be established in London. The organization of the British Post-Graduate Hospital and Medical School recommended by the committee consists of an existing public hospital, the Hammersmith Hospital, with 400 beds in modern wards, which on April 1st became the property of the London County Council under the Local Government Act, 1929, a medical school in conjunction with the hospital, and a residential hostel on a site in Central London. The committee estimates that the financial provision required to establish and maintain the British Post-Graduate Hospital and Medical School, apart from the cost of the maintenance of the beds in the public hospital—which in its view should remain, as it *is now, a charge on* the ratepayer—will be as follows. First, a capital sum not exceeding £250,000 for building a medical school, which, together with the hospital, will form the main part of the new organization and for providing educational equipment. *Secondly, the sum necessary to maintain the* medical school as a recognized school of the University of London. Thirdly, the capital cost of building the residential hostel. The Government has accepted the recommendations of the committee as to the organization of the British Post-Graduate Hospital and Medical School. It is much impressed with the importance of securing without avoidable delay the advantages of a proper system of post-graduate medical education in London, not only from the domestic but also from the imperial and from the international point of view. The Government will accordingly be prepared to contribute from public funds a maximum sum of £250,000 for building and equipping the medical school as an integral part of the scheme recommended by the committee, and to make provision for grants through the University of London towards the maintenance of the school on the lines already applied to comparable institutions of university rank. The Government earnestly hopes that it may secure the co-operation of the London County Council and of the University of London in the scheme as recommended by the committee, and it is entering into communication with those bodies on the subject. The Government understands that an appeal will shortly be made to the public for assistance in the establishment in London of a residential institution, to be called "London House," for the use of students from the Dominions, not only in medicine but in other arts and sciences. It is also part of the proposed scheme that "London House" shall offer accommodation to a limited number of British students domiciled in Great Britain and Northern Ireland in order to furnish collegiate association between them and students from the Dominions. Such an institution would, in fact, secure the object aimed at by the Post-Graduate Medical Education Committee in recommending the provision of a hostel. The Government is in full sympathy with the movement, and it looks forward with full confidence to the success of the appeal when it is made as crowning a scheme to which the taxpayer, the ratepayer, and the general public will be contributing their appropriate shares.

Mr. CHAMBERLAIN: I am sure that the statement which the right hon. gentleman has just made will give profound satisfaction as soon as its full implications are appreciated. In congratulating him upon the final success—which I am sure he will agree is largely due to the very distinguished body of surgeons and physicians constituting the committee—may I ask him whether the hospital which has been chosen is considered to *have a sufficient* number of beds for the purpose for which it is required, and whether, if not, there is room for extension in future, if it is considered desirable?

Mr. GREENWOOD: Yes, Sir. The scheme envisaged by the committee makes provision for a larger number of beds than is now available at Hammersmith. The committee was unanimous in its choice of Hammersmith, and there is sufficient available ground for extension and the number of beds to make the hospital effective.

Mr. MARLEY asked whether it was proposed that colonial students, as well as students from the Dominions, would be able to reside at "London House," as there were post-graduate students from Africa taking courses in tropical medicine.

Mr. GREENWOOD: If I used the term "Dominions" narrowly I am sorry. The hostel will be available for students from all parts of the British Commonwealth. In answer to Miss Rathbone, Mr. Greenwood said that men and women would both be included in the scheme.

Mental Treatment Bill

REPORT STAGE.

The House of Commons considered, on April 11th, the Mental Treatment Bill as reported with amendments from a Standing Committee. On Clause 1, power to receive voluntary patients, Dr. VERNON DAVIES moved to omit "*for mental illness*" in the opening phrase of the bill, which runs: "Any person who is desirous of voluntarily submitting himself to treatment for mental illness."

Colonel WEDGWOOD intervened to ask why he had not been permitted to move the omission of the clause in order to debate whether the persons to whom it was related were really voluntary boarders or whether they were compelled to become boarders by the fear of being certified.

Mr. HOLFORD KNIGHT remarked that the clause created an entirely new category of persons, and suggested that the House should first debate whether that category should be created.

The SPEAKER said he could not depart from his action in calling upon Dr. Davies. The House had taken a decision on the general principle during the second reading. There were plenty of amendments on which the question raised by Colonel Wedgwood could be debated.

Dr. DAVIES then proceeded to move his amendment. He said the bill was not a Lunacy Bill, but was intended to get patients in the earlier stage of mental illness to submit themselves to treatment. There was in the mind of the general public a horror and shame at the name "lunacy." The further the House could keep away from any association with lunacy the more successful the bill would be. For the first time Parliament was attempting to deal with mental illness in the same way that it dealt with physical illness. Mental disorder or mental illness consisted of a variety of different diseases, and it was quite unnecessary to say that a name must be given to it in the bill. The Lunacy Act, which dealt with patients who were certified, never mentioned mental illness or lunacy. Under the first clause of the present bill any person who desired voluntarily to submit himself to treatment had to make written application to that effect. Nowhere was any form laid down in which that application was to be worded.

A patient might say, "I, feeling that I am worried, nervous, anxious, and cannot sleep, wish to apply for treatment." That would cover the ground sufficiently and take away from the patient the idea of mental trouble. But if a man in signing an application form had to say "I desire to submit myself to voluntary treatment for mental illness," he might think, "I will not run the risk," and his family would try to prevent him.

Mr. CHARLES WILLIAMS seconded the amendment.

Mr. GREENWOOD (Minister of Health) said Clause 1 did not invent a new category of patient. Voluntary patients had been known to the Lunacy Act for half a century. Under the Act of 1890 they were received into private institutions. The only object of the clause was to enable such persons to be treated in mental hospitals and not approved places. It was necessary to define what kind of treatment was contemplated, and there was nothing derogatory in describing in a Bill the plain facts about a person's illness. Nothing could be less objectionable and more neutral than the term "mental illness." Unless those words were kept in, the clause would not convey its object. There was a difference of medical opinion on this point.

Captain CROOKSHANK pointed out that during the discussion in committee, Dr. Fremantle had intimated that the Royal Medico-Psychological Association considered that if the words were inserted in the Bill this would keep out certain patients who otherwise might receive treatment. It was left to the Minister to decide who it was best able to give them. It appeared that a division was going to be taken, especially as the Government alone failed.

Dr. VERNON DAVIES urged that voluntary treatment when physical treatment was required should be given in a mental hospital. The amendment was negatived without a division.

Mr. KINLEY then moved to substitute the Minister of Health for the Board of Control as the authority to approve hospitals, nursing homes or other places or persons for the purposes of Clause 1. The question of control was of fundamental importance. Mr. Kinley said the amendment was of fundamental importance. Mr. Kinley said the amendment was of fundamental importance. Mr. Kinley said the Home Secretary upon his proposal would decide whether the bill would the House upon his proposal would decide whether the bill would be of value to the public. The Board of Control should have nothing whatever to do with this new service from beginning to end. During the Board was allowed to come in that service would be doomed to failure. The who had drafted the bill were ignorant of the attitude of general public towards mental institutions as they at present exist and towards those who control them. The public learned to dread the very name of asylum and of all with it. The Board had only itself to blame that while 22,000 persons on the average had left asylums in England and Wales during several thousand suicides must be added to like 30,000 ally relapsed they should by the same conditions as passage of the bill to prevent within the change of people that the control had decided that the worthy of altered. The until it first of all vested in it had ascertained that asylums every twelve months. He was tions had been made into the ing to the Ministry of Health mental institutions that arrangement should be made That was entitled to have the Parliament entitled to have the highest direct or indirect contact with the new mental service and the bill.

Mr. MESSER WOOD said there was not a word in the report of the Royal Commission to substantiate the reckless statements which had just been made. Mr. Kinley ought not to take advantage of his privileged position as a member of Parliament to make charges which were not made before the Royal Commission. It was unfair to men who endeavoured to do their work with sympathy and efficiency. To place voluntary boarders under the Ministry of Health would duplicate machinery and set up two administrative staffs. Voluntary boarders were under the jurisdiction of the Board now, and there had been no complaints concerning their treatment. He contended that the House could not accept the amendment, but he hoped the Minister would retain the lay element on the Board of Control to inspire greater public confidence in its operations.

Colonel WEDGWOOD said the House must reserve liberty to attack public departments. The proposal at issue was not merely to take out the words "Board of Control" and substitute "Ministry of Health," but to decide whether voluntary boarders should go to a lunatic asylum or to other institutions free from the taint of connexion with lunacy. It was true there were not at present enough of these institutions, but if the Ministry of Health was in charge of the matter institutions would be built sooner or later by the local authorities to deal with this particular class of case. Till there were such institutions, free from the lunacy taint, the people would volunteer for treatment under Clause 1. The fear of being sent to a lunatic asylum was the dread of people on the borderland. They feared perpetual incarceration, where they always had to obey orders, where their complaints did not count, and where there was no hope of getting out except by the decision of some expert. When authorities were dealing with poor people there was a very thin line between what was voluntary and what was coercive. The House was adopting a proposal which it knew to be wrong simply because members' brains were deadened by doctors and experts, who knew much better what was good for people than people knew for themselves. There ought not to be the possibility of any British citizen, if not quite insane, being locked up without being able to state his case to a court of law, and without having some appeal against the decision of two doctors.

Dr. MORRIS-JONES said the Board of Control dealt with thousands of people not one of whom was mentally normal, and it had done its work extraordinarily well. It was unfortunate that in 1913 the Board had been given its present name, because British people did not like the word "control." Sir Maurice Craig, who at one time had been much against the Board of Control, was now of opinion that it was fitted to undertake the supervision of all mental patients, including those in the early stages of illness. The final conclusion of the Royal Commission in 1926 was that the Board had discharged its duties in a manner deserving of great commendation, but had been handicapped by factors beyond its control. The present bill was to remedy those handicaps. Dr. Morris-Jones said he was amazed at the way the Board was constantly assailed on all sides. He had great hopes in the present clause. Medical men would make great use of it and would encourage patients to take voluntary treatment and so avoid serious mental disorder later on. Every successful doctor was an optimist. Gloomy doctors, as a rule, went their rounds on foot.

Mr. GREENWOOD said the clause under discussion did not represent the views of bureaucrats or experts, but the conclusions of a Royal Commission, which was neither expert nor bureaucratic in composition. The voluntary boarder had existed under the law for a considerable time. Nearly one-half of the entrants to registered houses and hospitals were people who went up voluntarily. It might appear surprising that any person should go to a mental hospital voluntarily, but times had changed, and statistics showed that they did so. During 1929 there were admitted to registered hospitals 569 certified patients and 662 voluntary patients. Into licensed houses 974 certified patients were admitted and 757 voluntary boarders. The amendment did not ask the House to abolish the Board of Control or to supersede it by the Ministry of Health. That would require a bill amending drastically the principal Act of 1890. The amendment asked that the Ministry of Health should be directly responsible for certain aspects of mental illness while retaining the Board of Control for the major portion of responsibility for mental health. That would mean that in most cases the medical visitor of the Board of Control and the medical visitors of the Ministry of Health would go into the same institutions. Moreover, a man might to-day be a voluntary patient and next week incapable of volition. He might then fall within the category of persons certified as of unsound mind. What were they to do about people who oscillated between one category and another? It was perfectly open for a local authority to organize the institution under its control so as to provide specially for voluntary patients. It was inaccurate to assume that there was nothing for the voluntary patient except the mental hospital, though in a numerous of cases at present it was either that or nothing. On the whole he would rather have the mental hospital than nothing. Finally, he would say that, whether the supervision remained under the Board of Control or whether Parliament decided that it should come under the Minister of Health, the Ministry would be equally responsible. On practical grounds the House ought not to accept Mr. Kinley's amendment.

Mr. WOMERSLEY asked whether the Minister would accept an amendment giving local authorities a right of appeal to the Ministry of Health against any direction by the Board of Control.

Mr. GREENWOOD replied that on that matter he stood where he did during the committee stage.

Mr. MCSHANE said that when there was any complaint against the Board of Control it was impossible for members to get a grip upon it. If this bill passed, the House would have less control of the Board, whereas he, as a socialist, wished to have a closer control of every department.

Mr. BECKETT said that during his six years as a member of Parliament he had taken up many cases with the Board, and he could not remember a single one in which he felt satisfied that the Board had done the right thing, or in which its correspondence had been fair, honest, and candid. He cited a case of what he alleged to be erroneous certification in Gateshead, and said that in this case he had been able to trace the lies, the malevolence, and the libellous statements of the Board of Control. He had been able to take the case to the Minister, and by threats of publicity to get an apology. Whenever people got into the charge of the Board it sought to detain them by every excuse. The Board was permeated by the worst type of charity organization mentality.

Dr. VERNON DAVIES hoped that Mr. Beckett had given the Minister of Health warning before making a deliberate charge against the Board of Control and instancing a specific case.

Mr. BECKETT said the case had occurred in 1929. He had taken it up with Sir Kingsley Wood, who had made representations to the Board.

Dr. VERNON DAVIES said the Board could not answer for itself, and the Minister should have been informed so that the charge made could have been met on the floor of the House. Dr. Davies went on to say that he could not agree with Mr. Kinley's amendment. The bill as it stood was lowering the Board of Control by making it a department of the Ministry of Health. Some members had a wrong idea of the functions of that Board. It could almost be described as a judicial body. It acted as judge on all documents or medical certificates, and was the guardian of the liberty of the subject. When members of the Board went round mental hospitals and other places they did not certify, but simply examined cases. They saw that patients got out as quickly as possible, and that no one was being detained unnecessarily. To reduce the Board in status as it was being reduced under this bill by placing it under the Minister of Health was to weaken its position. There was no more difficult department of State with which to deal than the Ministry of Health. At the present time the Board of Control, being appointed by the King, was in a superior position, separate and distinct from the Civil Service, and in the interests of the people of the country it should be kept in that position.

The House then divided on Mr. Kinley's amendment, which was rejected by 205 to 18.

Mr. ERNEST WINTERTON moved to add at the end of the subsection dealing with reception of voluntary patients the words:

"But unless the said voluntary patient is of unsound mind within the meaning of the Lunacy Acts, 1890 to 1922, he shall not be received or lodged as a patient, either rate-aided or paying, in a public mental hospital (asylum)."

Mr. FENNER BROCKWAY seconded the amendment. He said that within an institution it was impossible to guarantee that there would be no communication and no contact between various classes of patient. He knew there were laws in these institutions about segregation, but association would take place, and the effect was bound to be bad in borderline cases. His friends wished to see a positive and constructive medical health service developed under public authority and under the control of the Ministry of Health.

Miss LAWRENCE said the persons to whom the clause referred could not be taken against their will into a lunatic asylum. They had to apply to the person in charge of a particular institution to be received into that institution. These people were sane; they were not certified, and no one could send them anywhere. They would go to institutions which dealt with all classes of cases between lunacy and the mildest forms of mental worry. The doctor best qualified to look after the very mild cases was a man with experience in the advanced stages of the disease. Anyone who attempted to draw a line between melancholia and the depression which might lead to melancholia was still under the old absurd delusion that lunacy was an affliction from the devil. People had been going into general institutions for voluntary treatment. They now flocked to Edinburgh and to the private institutions, and to the private practitioners who were allowed to take people into their houses.

Dr. VERNON DAVIES said the number of voluntary patients had increased lately because relatives had been afraid of certification, and because medical men had refused to certify on account of the financial and legal difficulties which might ensue. He himself sympathized with the amendment. The worst thing which could happen in an early case would be for the patient to find himself in an asylum. Parliament must exert pressure on local authorities to supply voluntary general hospitals which were not mental hospitals. Under the new Local Government Act a borough or county authority could establish convalescent homes for these early cases with no asylum environment. At present there was no place for many of those who were anxious to receive the benefit of the measure.

Dr. FREMANTLE supported Dr. Davies. He said they could not draw a hard-and-fast line between curable and incurable mental disease. They might as well try to institute separate institutions for curable and incurable heart disease. Nature was so recuperative that they could not say that a case which was supposed to be incurable would not show a sudden and unexpected improvement. Medical men looked forward to a time when local authorities would have institutions in which people seeking rest might go for treatment, and ultimately to a time when mental sickness would be treated as part of general sickness. The number of experts on the staffs of mental hospitals was limited. The authorities could not suddenly devise new institutions, because there were not experts to run them. To have a new set of institutions all over the country would not be practicable within twenty or thirty years. The amendment would refuse help to people who required seclusion and quiet by forbidding them to go into county asylums, however well and kindly they might be managed. He knew that in his own county of Hertfordshire the mental institution had the confidence of the great mass of people, and that many would be delighted to avail themselves of it.

The amendment was then negatived.

Colonel WEDGWOOD moved to omit from Clause 1 subsection 2, which deals with the reception as a voluntary patient of a young person under the age of 16, on the written application of the parent or guardian, accompanied by a medical recommendation. Colonel Wedgwood said this established a dangerous principle. In cases where money was involved in the guardianship a judicial investigation was desirable before a young person was taken into an institution. In a borderline case, like that of a sexually precocious child, how was the Board of Control to know better than the doctor or the parents whether that child should be locked up?

Mr. GREENWOOD said the bill provided the best conceivable kind of protection.

The amendment was withdrawn, and the committee passed to Clause 2, which deals with the notice of reception, death, or departure of voluntary patients, and with provisions as to the discharge of patients.

Colonel WEDGWOOD moved to amend the subsection dealing with the decision on the incapacity of a patient to express himself as willing or unwilling to continue to receive treatment. His amendment provided that after the word "incapable" there should be inserted "in the opinion of a magistrate." He said it was the business of the judiciary to be responsible for incarceration, and not the business of doctors. A magistrate's certificate took some of the responsibility off the doctors, who were only responsible for the state of the person's health. That a magistrate could be seen, and could possibly support the patient against the doctor, was something of a safeguard, and should be preserved in the law. The bill would leave in the hands of the doctor, or of the superintendent in charge of the institution, a vital power to decide whether a temporary boarder was to become more or less a permanent inmate of the place. He could be transferred from Clause 1 to Clause 5 without a decision by anyone except the superintendent. The question whether a person was capable of "expressing himself willing or unwilling" was one which a magistrate could decide much more easily than he could decide many cases of certification.

Mr. GREENWOOD said there was a clash of principle on this amendment. He favoured the exclusion of magisterial interference to the largest possible extent. The Royal Commission had reached the same opinion after full consideration. Mental disease was in no wise different from physical disease except in the question of personal liberty. Even there the difference was more apparent than real. In a case of highly infectious disease where was the liberty of the subject? If Parliament could get rid of judicial interference, and get away from the stigma of certification, they would help these unfortunate people. The Royal Commission had also desired to get away from the use of any judicial authority, but elaborated a procedure which could not have been distinguished from certification, and therefore the Government had cut it out.

Dr. MORRIS-JONES said the intervention of a magistrate in these cases was harmful. He spoke not only as a medical man, but as a magistrate. In Scotland for over seventy years there had been no magisterial intervention in these cases; neither was there any in Ireland. He suggested that Parliament should follow these examples.

Colonel WEDGWOOD said he understood that the Royal Commission had urged that the appeal to the judiciary should be strengthened, and that the magistrate was not good enough. In the clause Parliament was taking away from the magistracy an opportunity in which it could be far more useful than in certification.

The amendment was then defeated by 192 to 30, and, the debate having lasted practically the whole of the parliamentary day, Mr. GREENWOOD moved its adjournment, to which the House agreed.

The Government had proposed to secure the reports of the twenty-three clauses in the bill and four schedules, and also the third reading of the bill on April 11th. Actually discussion was only carried to a point midway in Clause 2. It is understood that the Government, although disappointed at the development of obstruction to the bill from its own side of the House, is still confident of securing the passage of the bill, and will assign time for the purpose after Easter.

MEDICAL NOTES IN PARLIAMENT.

Medical Officers of the Chief Medical Officer of the Board of Education

Replying to Dr. Vernon Davies on April 6th, Sir C. Trevelyan said that it was a practice of long standing for the Board of Education to recommend for the Board's medical staff persons who had been approved by the Civil Service Commissioners as the result of competitive examinations. The practice was followed in the case of the Board's medical officers, and he was aware of the fact that certain doctors of various qualifications had been appointed by the Civil Service Commissioners. He would call their attention to the matter.

Radium Treatment at Hull

Sir Lancelot Spratt, on April 10th, asked the Lord Privy Seal whether the Government, in view of the fact that the Hull Corporation had decided to provide radium treatment for the people of Hull, would consider the question of making a grant to the Hull Royal Infirmary for the purpose of providing radium treatment for the people of Hull.

Mr. W. W. Fraser, medical officer of health for Hull, said that the Hull Royal Infirmary had expressed a desire to purchase a radium unit. The Hull Royal Infirmary had agreed to be responsible for the radium. As a result they would have to pay a grant of £5,000 for the purchase of radium for the Hull Royal Infirmary, which would be administered by the Hull Royal Infirmary.

Mr. Morrison, Minister of Health, said he did not think that the special circumstances that required this special treatment was desired to extend.

Dr. Haden said the question was thinking of those people who did not have the means to pay. It was also proposed to make a nominal charge. The matter fully with the Ministry of Health.

Mr. Morrison said that a question of Landing out radium.

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Mr. Paling said that in the clause seems to make some provision for this treatment would be available the hands of the Royal Infirmary acted with the Royal Infirmary. The clause was

Accommodation for Mental Patients.

Answering Mr. Kimber on April 3rd, Mr. Greenwood said there were in England and Wales forty-four local authorities under the Lunacy Act, 1890, and one under local Act, which had accommodation in excess of that required for patients who belonged to their own area, and the total number of beds in excess was 5,242. Most of this surplus accommodation, however, was occupied by patients received under reception contracts from other local authorities who had insufficient accommodation or did not own a mental hospital. Private institutions under the Lunacy Act had sufficient vacant beds to meet normal requirements. In the case of mental deficiency institutions there was no accommodation in excess of normal requirements.

Mr. Kimber further asked the Minister of Health the average number of patients in institutions under the Lunacy Act jurisdiction of the Board of Control.

Mr. Greenwood replied that in institutions under the Lunacy Act the average number of patients to each member of the resident medical staff was (a) in county and borough mental hospitals, 290; (b) in registered hospitals, 61; and (c) in licensed houses, 25. Most of these institutions had, in addition to their resident staff, a number of visiting consultants. In mental deficiency institutions the average number of patients to each member of the staff, resident and non-resident, was 111.

Mr. Greenwood also told Mr. Kirby that in 1929 the number of patients who died in institutions for the insane under the Lunacy Acts was 9,775, compared with 8,747 in 1928 and 9,292 in 1927. In institutions for mental defectives 220 died in 1928, compared with 222 in 1928 and 209 in 1927. These latter figures did not include deaths in Poor Law institutions approved under the Mental Deficiency Act, 1913.

In answer to Mr. Sorensen, Mr. Greenwood stated, on April 3rd, that in England and Wales there were 16 institutions registered under the Mental Deficiency Acts, but were in widely different stages of development. There were at present 16,592 patients. The cost of colonies for mental defectives was under consideration by a committee, whose advice must have a bearing on the provision of further accommodation.

Indian Medical Degrees

On April 13th, Mr. Bann in reply to Mr. Freeman, said that he had nothing to add to his reply of March 20th with regard to the action of the General Medical Council in withdrawing recognition of Indian medical degrees in India. Mr. Freeman asked if Mr. Bann was aware of the widespread indignation which the matter had aroused, and if anything could be done to expedite its consideration. Mr. Bann replied that he was certain the Government of India was fully aware of the importance of the matter, and was dealing with it as expeditiously as it possibly could. Mr. Freeman asked if it was in the power of India to withdraw similar recognition of English medical degrees in India. Mr. Bann asked for notice of the question.

Cutaneous Disinfection of Hides and Skins

In reply to Dr. Salter on April 2nd, Mr. Shakespeare said a full account of the results of the British Leather Manufacturers Research Association on the disinfection of hides and skins from anthrax would probably be published in a scientific journal, though some account was given in the monthly publication of Annual Report of the Ministry of Health for 1928-29. He was considering whether some advance statement should be issued.

Health Organization of the League of Nations

Miss Lawrence, on April 5th, told Mr. Foot that the Health Organization of the League of Nations included the Health Committee, of which a medical officer of the Ministry of Health was a member, and the Health Section of the Secretariat. The latter included British nationals, but they were not appointed as representatives of this country.

Royal Army Medical College

Mr. Shaw, replying on April 1st to Dr. Vernon Davies, said that the maximum number of students who could be trained at one time at the Royal Army Medical College was 62 officers and 24 other ranks. The estimated cost of the College including the vaccine department, as shown in the Army Estimates, was £33,590 in 1927, £36,890 in 1922, and £37,223 in 1923. The vaccine department was working to its full normal capacity.

Causes of Rejection of Recruits for the Army

Mr. Shaw, replying to Mr. Hastings, said that the main physical defects which caused the rejection of recruits for the Army by the examining medical officers were diseases of the middle ear, defects of many teeth, defects of lower extremities, defective vision, disease of the heart, insufficient weight, flat feet, and pulmonary defects. Information was not available to show the physical defects for which recruits were rejected by recruiting authorities other than medical officers.

Expenditure incurred by the Scottish Health Department

Mr. Lennox on March 28th, told Mr. J. Welsh that the estimated net expenditure to be incurred by or on behalf of the Department of Health for Scotland during the year ending March 31st, 1930, was £3,160,000. The combined expenditure incurred by the Government Board for Scotland, the National Health Insurance Commission (Scotland), and the Highland and Islands Medical Service Board in the year 1913-14 was £674,000. The estimated expenditure of the Department on housing during 1929-30 was £1,652,000.

Grants for Medical Research

On April 3rd Mr. Perkins told Dr. Forgan that the annual grant-in-aid of the Medical Research Council was £149,000. He had no reason to think that was inadequate. It was by no means the only contribution made by the State to medical research.

Notes in Brief

Mr. Shaw states that the only laboratory other than that of the experimental station, Porton, where experiments on living animals are conducted in connexion with chemical warfare is the physiological laboratory, Cambridge.

Imports of milk from outside the British Isles are subject to examination for tubercle bacilli under the Imported Milk Regulations. There is no examination of imported cream for this purpose.

Mr. Shaw told Dr. Salter, on April 2nd, that the number of persons killed on the highways during 1923 by mechanically propelled vehicles was 5,339 in England and Wales, and in Great Britain 6,016.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE latest date for the receipt of applications for the Chair of Bacteriology at University College Hospital Medical School (salary £1,200) is May 15th.

Dr. A. F. MacCallan has been recognized as a teacher of ophthalmology at Westminster Hospital Medical School, and Mr. S. G. Scott as a teacher of radiology at the London Hospital Medical College.

Dr. H. D. Wright has tendered his resignation as Reader in Bacteriology at University College Hospital Medical School as from August 31st, in view of his appointment to the Chair of Bacteriology in the University of Sydney.

The Prime Minister will be the principal guest at the graduation dinner to be held on Presentation Day, May 14th, at the Fishmongers' Hall, and the annual service for members of the University will be held at Westminster Abbey on that day at 5.30 p.m.

Mr. F. S. Read, B.A., has been appointed Warden of the University Union as from April 1st.

Lecture Programme.

Two lectures on some biological aspects of the human skin will be given at St. Thomas's Hospital Medical School by Dr. H. Leslie-Roberts on May 1st and 2nd, at 5.30 p.m. Dr. S. E. Dore will preside at the first lecture.

A course of six lectures on the early history of generation and comparative anatomy will be given by Professor F. J. Cole, F.R.S., at University College, Gower Street, W.C.1, on May 7th, 8th, 14th, 15th, 21st, and 22nd, at 5.30 p.m. Professor G. Elliot Smith will take the chair at the first lecture.

Professor J. A. Gunn will give three lectures on pharmacological reactions of involuntary muscle at King's College, Strand, W.C., on May 7th, 8th, and 9th, at 5 p.m. The chair at the first lecture will be taken by Dr. Philip Hamill.

The treatment of uterine cancer by radiations is the subject of a course of three lectures to be given at the London (R.F.H.) School of Medicine for Women, Hunter Street, W.C.1, on May 12th, 13th, and 15th, at 5.30 p.m., by Dr. A. Lacassagne of the Pasteur Laboratory, at the Institute of Radium, Paris. Professor Dame Louise McIlroy, D.B.E., will preside at the first lecture.

Six lectures on special sense physiology will be delivered by Dr. R. J. Lythgoe at University College, Gower Street, W.C.1, on May 15th, 20th, 22nd, 27th, 29th, and June 3rd, at 5 p.m.

Admission to the lectures, which are addressed to students of the University and others interested in the subjects, is free, without ticket.

UNIVERSITY COLLEGE.

Bayliss-Starling Memorial Scholarship.

This scholarship has been founded by old students, friends, and admirers in commemoration of Professor Sir William Maddock Bayliss and Professor Ernest Henry Starling. The annual value of the scholarship is about £120, with exemption from tuition fees, and it is tenable at University College, London. The scholar will be required to follow a course of study approved by the Jodrell Professor of Physiology, involving a training in the principles of and methods of research in physiology and biochemistry. Candidates must send their applications to the Secretary of University College not later than Wednesday, May 14th.

LONDON HOSPITAL MEDICAL COLLEGE.

Open entrance scholarships, of the value of £100 each, have been awarded to H. J. Barrie and H. B. Tipler.

UNIVERSITY OF BIRMINGHAM.

THE Clinical Board of the Faculty of Medicine has arranged a course of post-graduate demonstrations on Tuesdays and Fridays, from 3.30 to 5 p.m., commencing at the General Hospital on Tuesday, April 29th, and at the Queen's Hospital on Friday, May 2nd. The course will be given by members of the medical and surgical staffs, and will include demonstrations on medical, surgical, and gynaecological cases. One demonstration, on a Tuesday, will be given at the Children's Hospital, Ladywood Road. The fee for the course is £2 2s. Detailed time tables and tickets of admission can be obtained at each hospital.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

A QUARTERLY Council meeting was held on April 10th, when the President, Lord Moynihan, was in the chair.

Fellowship.

The following members of twenty years' standing were elected to the Fellowship: Ernest Edwin Ware, senior surgeon, Hospital of St. *John and St. Elizabeth*; *Frederic Wood Jones, Professor of* Anatomy, Melbourne University.

Diplomas.

Diplomas of Membership were granted to Messrs. A. H. Baker, W. W. Gerrard, C. C. Kapila, J. I. Rerrie.

Diplomas were granted jointly with the Royal College of Physicians in Tropical Medicine and Hygiene to 30 candidates.

Prizes and Appointments.

The Jacksonian Prize for the year 1929 was awarded to Mr. D. H. Patey, F.R.C.S., of the Bland-Sutton Institute of Pathology of the Middlesex Hospital, for his dissertation entitled "The pathology, diagnosis, and surgical treatment of diseases of the salivary glands." A certificate of honourable mention and honorarium was awarded to Mr. Reginald T. Payne, F.R.C.S., chief assistant to the Surgical Unit at St. Bartholomew's Hospital for his dissertation. It was decided that the subject for the Jacksonian Prize for 1931 shall be "The surgery of the sympathetic nervous system."

The John Tomes Prize for 1927–29 was awarded to Mr. Evelyn Sprawson, Member and Licentiate in Dental Surgery of the Royal College of Surgeons of England, for his original work in connexion with the chemical and microscopical structure of enamel and investigations in connexion with dental pathology.

Miss Lilian Eleanor Tracey of the London School of Medicine for Women was appointed Begley Student for the ensuing three years.

The President reported that he had appointed Mr. G. E. Gask as the next Thomas Vicary Lecturer. The President also reported that Dr. Harvey Cushing would deliver the Lister Memorial Lecture on Wednesday, July 9th.

Primary Fellowship Examination in Australia.

A letter of February 27th from Mr. Alan Newton, Honorary Secretary of the College of Surgeons of Australasia, was read, stating that the members of the Council of the College are unanimously in favour of the scheme for holding a Primary Fellowship Examination in Australia, as defined in paragraphs 1 to 15 of the report of the Nomination Committee, dated December 9th, 1929, with the proviso that "Melbourne" be substituted for "Sydney" in paragraph 2; and stating that it is proposed to announce that an examination will, in all probability, be held in Australia in August or September, 1931, if at least 25 candidates present themselves for examination.

Hunterian Lectures.

Six Hunterian lectures on the anatomy of fossil man, illustrated by recent discoveries, will be delivered by Sir Arthur Keith, F.R.S., in the theatre of the College, Lincoln's Inn Fields, W.C., on May 5th, 7th, 9th, 12th, 14th, and 16th, at 5 p.m.

The Services.

DEATHS IN THE SERVICES.

Fleet Surgeon Alfred Thomas Corrie, R.N. (ret.), died at Plymouth on March 28th. He was educated at Bart's, and took the L.S.A. and L.R.C.P.Ed. in 1871, and the M.R.C.S. in 1872. Entering the Navy as surgeon on March 30th, 1872, he became staff surgeon in March, 1884, and fleet surgeon on September 8th, 1892, and retired in August, 1902. He was surgeon of H.M.S. *Pearl* in 1875, at Santa Cruz in the South Pacific, when Commodore Goodenough and two men lost their lives in a treacherous attack by natives, and was in medical charge of the boats sent to punish the outrage. He was the author of a valuable paper on Lord Howe Island, published in the *Transactions* of the Royal Geographical Society.

Colonel David Wilkie, Bengal Medical Service (ret.), died at Coolmore, Falmouth, on February 6th, aged 80. He was born on June 27th, 1849, the son of Mr. David Wilkie of Gorbals, Glasgow, and was educated at the university in that city, where he graduated as M.B. and C.M., with honours, in 1871. Subsequently he studied also at Berlin for a time. He entered the I.M.S. as assistant surgeon on April 1st, 1873, passing first into Netley, was promoted to surgeon three months later, when the rank of assistant surgeon was abolished, attained the rank of colonel on April 2nd, 1904, and retired on April 2nd, 1909. Most of his service was spent in civil employ in the North-West Provinces, now the United Provinces of Agra and Oudh; and during his five years' tour in the administrative ranks was Inspector-General of Civil Hospitals in Assam and Eastern Bengal. He received a Good Service Pension on October 1st, 1908.

Lieut.-Colonel Walter John Weston, D.S.O., R.A.M.C., died at Aldershot, on March 21st, aged 48. He was born on July 3rd, 1881, the youngest son of the late Major A. Weston, 5th Lancers, was educated at St. George's, and took the M.R.C.S. and L.R.C.P.Lond. in 1905. Entering the R.A.M.C. as lieutenant on July 31st, 1905, he attained the rank of lieutenant-colonel on October 13th, 1929. He served throughout the war of 1914–18, was mentioned in dispatches in the *London Gazette* of December 6th, 1916, and July 21st, 1917, and received the D.S.O. on June 4th, 1917.

Lieut.-Colonel Robert Oriel Cusack, R.A.M.C. (ret.), died at Hampstead, on March 11th, aged 75. He was born on February 9th, 1855, and took the M.R.C.S. and L.R.C.P.Lond. in 1877. Entering the Army as surgeon on March 6th, 1880, he became lieutenant-colonel after twenty years' service, and retired on April 16th, 1902. He served in the Manipur campaign on the North-East Frontier of India in 1891, was mentioned in dispatches in the *London Gazette* of August 14th, 1891, and received the frontier medal. He rejoined for service during the war of 1914–18.

Medical News.

IN recognition of his many years' service to the borough, as mayor and in other capacities, Dr. H. B. Brackenbury is to receive the freedom of Hornsey. It will be conferred at a special meeting of the Town Council on May 10th.

THE annual dinner of the Fellows of University College, London, will be held at the College on Wednesday, April 30th, at 7.30 p.m., in commemoration of the laying of the first stone of the college buildings by H.R.H. the Duke of Sussex on April 30th, 1827. Sir John Rose Bradford, President of the Royal College of Physicians, will preside.

THE annual provincial meeting of the Fever Hospitals Group of the Society of Medical Officers of Health will be held at the City Hospital, Little Bromwich, Birmingham, at 3 p.m. on Friday, April 28th. Professor K. Douglas Williamson, cardiologist to the hospital, will read a paper and give a demonstration on the electro cardiograph in the study of the heart in diphtheria. Suitable trains leave Paddington at 11.10 a.m., and Euston at 11.30 a.m.

AN ordinary meeting of the Medico-Legal Society will be held at 11, Chandos Street, W.1, on Thursday, April 27th, at 8.30 p.m., when a paper will be read by Dr. A. Kuyvett Gordon on the importance of the gonococcus in medico-legal investigations, which will be followed by a discussion.

THE Public Health and Housing Committee of the Essex County Council has issued invitations to the formal opening on Saturday, April 29th, at 3.15 p.m., of the new sanatorium at Black Notley, by the Minister of Health, and to the unveiling of a tablet in the King Edward VII Memorial Hall by Brigadier-General I. T. Wigan, on behalf of the Lord Lieutenant.

THE Jewish Health Organization of Great Britain has arranged a symposium on "Physical and mental aspects of the Jew," to be held at the Conway Hall, Red Lion Square, Holborn, W.C., on Sunday, May 25th, at 3.15 p.m. Sir Humphry Rolleston will preside, and the introductory papers will be read by Professor M. Ginsberg, Dr. L. Isserlis, Dr. W. M. Feldman, and Dr. E. Miller.

THE Gifford Edmonds prize in ophthalmology for the year 1930 for an essay on central scotoma, its pathology and clinical significance, has been divided between Rosa Ford, M.B., of London, and Laura M. Ligertwood, F.R.C.S., of Edinburgh.

THE Fellowship of Medicine announces that from April 22th to May 23th an intensive course in diseases of the throat, nose, and ear will take place at the Central London Throat, Nose and Ear Hospital. A four weeks' comprehensive course in psychological medicine will begin on April 23th at the Maudsley Hospital, Denmark Hill; in addition to lectures and demonstrations, the different forms of clinical instruction at the hospital will be open to those enrolling for the course. From April 22th to May 11th an afternoon course, under the direction of Dr. Eric Pritchard, will be given at the Infants Hospital, particularly for those engaged in infant welfare work; there will be clinics at the hospital and at other centres of interest. This course is limited to sixteen, and early application is desirable. From May 5th to 31st an afternoon course in dermatology will be given at St. John's Hospital comprising clinical instruction in the out-patient department, and lectures at 5 p.m. on certain dates; classes in pathology can be arranged if desired. From May 12th to 24th an all-day course will be given at the City of London Hospital for Diseases of the Heart and Lungs. Other courses in May include one for the M.R.C.P. examination, comprising evening lectures and demonstrations in ophthalmology, May 13th to July 4th; an afternoon course in ophthalmology at the Central London Ophthalmic Hospital, May 19th to June 13th; and one in diseases of children at the Hospital for Sick Children, May 26th to June 7th, if a minimum of twelve is obtained. An intensive course at Queen Mary's Hospital, Stratford, E.15, May 26th to June 7th, will consist of instruction in medicine, surgery, and in the special departments. Detailed syllabuses of all courses, including the general course, can be obtained from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE course on diseases of the nervous system will be held at the National Hospital, Queen Square, W.C.1, from May 5th to June 27th. The course will consist of thirty-two clinical lectures and demonstrations at 3.30 p.m. each week-day except Wednesday and Saturday, instruction in the out-patient department on each week-day except Saturday at 2 p.m., and seven pathological lectures and demonstrations on Mondays at 12 noon. The fee for the course will be £6 6s. A course of eight lectures on the anatomy and physiology of the nervous system will be arranged on Fridays at 12 noon if there are enough applicants; fee £2 2s. A course of twelve clinical demonstrations on methods of examination of the nervous system will be given on Tuesdays and Thursdays at 12 noon; fee £2 2s. Applications should be addressed to the secretary, Medical School, National Hospital, Queen Square, W.C.1.

A REPORT of the proceedings of the conference on mental health held from October 30th to November 2nd, 1929, under the auspices of the National Council for Mental Hygiene in association with the joint committee of the National Council for Mental Hygiene and the Tavistock Square Clinic, has been published. The principal papers and addresses were summarized in the *British Medical Journal* of November 9th, 1929 (p. 863). Among those who attended the conference, which represented every branch of social work, were visitors from India, Australia, Tasmania, the United States, Canada, South Africa, and students from the International League of Red Cross Societies. The joint committee hopes to raise a substantial sum from the sale of this report for the work of the National Council and the Tavistock Square Clinic. Copies are obtainable at all booksellers, price 2s.

IN memory of the late Sir Baldwin Spencer, who was professor of zoology in the University of Melbourne, it has been decided to place a bronze medallion in the zoology library in the University. Mr. Paul Montford has been commissioned to prepare this medallion, and old students of Sir Baldwin Spencer are invited to contribute towards the cost, which will be 100 guineas. Donations should be sent to Sir Thomas Lyle, Lisbuoy, Irving Road, Toorak, S.E.2, Victoria, Australia.

AT a meeting of the Royal Sanitary Institute, on May 2nd, in the Town Hall, Tunbridge Wells, discussions will take place on "The maternity home as a health asset," and "Can the slum be abolished?" The chair will be taken at 5.30 p.m.

WE are informed that owing to the death of Professor Brailsford Robertson, editor of the *Australian Journal of Experimental Biology and Medical Science*, it has been found impossible to issue Part I of that periodical for 1939. A double issue, comprising Parts I and II, will be published in June.

SIR JOHN MARNOCH, K.C.V.O., Regius Professor of Surgery in the University of Aberdeen, has been appointed Deputy Lieutenant of the County of the City of Aberdeen.

THE annual congress known as the Journées Médicales de Lille will be held at Lille on May 24th and 25th.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to **The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.**

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The **TELEPHONE NUMBERS** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9961, 9962, 9963, and 9964* (internal exchange, four lines).

The **TELEGRAPHIC ADDRESSES** are:

EDITOR OF THE *BRITISH MEDICAL JOURNAL*, *Aitiology, Westcent, London.*

FINANCIAL SECRETARY AND BUSINESS MANAGER (Advertisements, etc.), *Articulate Westcent, London.*

MEDICAL SECRETARY, *Mediocrity Westcent, London.*

The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bicuspid, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh).

QUERIES AND ANSWERS.

MISSED LABOUR.

DR. H. JULYAN HOYTE (Elizabethville, Katanga) writes: An elderly woman came out to Katanga in 1927, was married the same year, and in March, 1928, went to a nursing home for her confinement. I am told that labour commenced about full term and after a normal pregnancy, but ended after continuing for some hours. Following this the foetal movements ceased, and nothing further took place for two months, when labour was induced, and she was delivered of a macerated foetus. She is again pregnant, and I should be glad to be informed whether a repetition of the former experience is probable. If so, what line of treatment should be adopted?

INFANTILE SEBORRHOEIC ECZEMA.

"E. B.," answering the query of "M.B., Ch.B." (March 15th, p. 524), suggests that the 9 months' old child should be weaned entirely. The bowels should be kept open by a daily dose of syrup of figs, prune juice, or, if these are not effectual, by liquid paraffin. The head must be kept covered with muslin, which is changed frequently, and the child's arms be lightly splinted with cardboard to prevent scratching. Zinc ointment and ung. hyd. ammon. dil. will then probably be all that is necessary if the starch and sugar intake is regulated in the diet.

INCOME TAX.

Allowance for Cars.

"C. H." has for some years kept two cars—"a good one, and a cheap one." The car which formerly fell under the first category has now become too old for reliable service and the cheaper car was sold in March, 1929, for £120 (its written-down value then being £191), and a new car bought for £445. What can he claim?

*** (1) Obsolescence allowance: as an expense of the practice during the year ended March 31st, 1929, £191 − £120 = £71. (2) Depreciation allowance for 1930-31 on £255 (the written-down value of the original "good" car) plus £445—that is, 15 per cent. on £700=£105. A point to be watched in future is that obsolescence allowance should be claimed when the old car is sold and a new (cheap) one bought. The amount to be claimed, if that transaction takes place in 1930-31 will be £255−£38=£217, less the amount of the allowance received on purchase of the new car, say £20, net claim £197, or the cost of the new car, whichever is the less.

Bad Debts.

"H. H. C." explains that in 1929 his gross bookings amounted to £3,600 and his allowable expenses to £1,000. Of the £3,600 booked, £400 is still outstanding, and £320 is probably irrecoverable. What is his liability?

*** In our opinion £3,600−£320−£1,000=£2,280, but the Revenue authorities usually object to round-figure estimates of bad debts in terms of percentages. The Income Tax Act of 1918 provides for an allowance for "doubtful debts to the extent that they are respectively estimated to be bad." The word "respectively" is held—and probably correctly held—to imply a valuation of each outstanding debt separately. We therefore advise "H. H. C." to reconstruct his statement of claim to the deduction of £320 for bad and doubtful debts on the separate valuation basis, and file a list of the separate amounts (not names) with the local inspector of taxes; he may then realize that the amount so claimed is admissible.

Motor Car Renewal.

"J. M. C." bought a 10-h.p. car for £300 in 1922. In 1929 he sold it for £55, and bought a smaller car for £145. What relief is he *entitled* to?

*** He can deduct as an expense of the year 1929 the actual out-of-pocket expense—that is, £145−£55=£90, and no more. It is a pity our correspondent did not claim depreciation allowance in the past; he could not have lost by it, and, in fact, would have gained.

LETTERS, NOTES, ETC.

GLASS PERMEABLE TO ULTRA-VIOLET RAYS.

WITH the following extracts from a long letter sent by Mr. G. L. Pilkington, in reply to Dr. Dyson (March 22nd, p. 576), we must bring the correspondence on this subject to a close: Dr. Dyson adopts the fallacy of quoting experiments with a mercury vapour lamp as a means of assessing the value of natural sunlight. The energy of sunlight is concentrated in the region of the longer wave-lengths, whereas that of the mercury vapour lamp is concentrated in the region of the shorter wave-lengths, and as many of the materials are far more permeable to the longer ultra-violet radiations than to the shorter, surely this factor of energy distribution, which Dr. Dyson ignores, is as important as the factor of intensity of radiation. The figure "one-sixth of the body," quoted by Dr. Dyson from the work of Hill and Eldinow, represents not the minimal area necessary to produce a minimal response, but the area necessary to produce a maximum response—a very different matter. His statement that "Less than this, they proved, not only did not increase its power, but actually decreased it," is puzzling; we can find no reference to such a phenomenon in the literature, and it is difficult to understand how any stimulus to the skin that does not reach a threshold value could possibly result in a depressant action. In any case, the experiments under discussion, valuable as they are in relation to phototherapy, are not necessarily strictly applicable to heliotherapy. The shorter rays of the mercury vapour lamp have a rapid lethal effect on the surface cells of the skin, and the cells which are killed are coagulated, and thus the permeability of the skin is rapidly reduced. The ultra-violet portion of sunlight, however, has a comparatively insignificant lethal effect, and so this barrier of coagulated cells is not formed and maximum absorption of the rays occurs. Furthermore, the effective depth of penetration of sunlight would be greater than that of radiations from the mercury vapour lamp.

PREVENTION OF DENTAL DISEASE.

MR. J. MENZIES CAMPBELL, D.D.S., F.R.S.Ed. (Glasgow), in the course of a letter, writes: Are the results obtained by school dental clinics commensurate with the vast sums of money that is spent on them? And, if not, how can such money be spent to better advantage? It has long been held that the only means for reducing the incidence of dental caries is by careful brushing of the teeth and the filling of carious cavities. At present in Great Britain alone there are over 14,000 dentists attending to the teeth of the people, yet all this specialist treatment has not reduced to any appreciable extent the incidence of dental caries. Dental services, public and private, have not yielded sufficiently satisfactory returns; symptoms alone have been treated, but the causes have not been found and removed. The recent work of Mrs. Mellanby, Howe, Toverud, and others has proved that the structure of the child's teeth depends on the food taken by the expectant mother; in other words (as I have stated in a recent publication), "the diet of the expectant mother is the alpha and the omega of preventive dentistry." This fact becomes apparent when it is realized that for several months before the child is born all the temporary and most of the permanent teeth are already present in its jaws. Not only can decay be prevented by proper attention to the mother's diet, but later it can be arrested by attending to the diet of the children themselves. I suggest that it would yield more satisfactory returns if school dental clinics were abolished and the money so saved were expended on the proper feeding of expectant mothers and children. The results would more than justify this apparently revolutionary step; not only would the incidence of decayed teeth be reduced to a minimum, but the resistance of children would be so raised against disease that money would be saved on the school medical services.

CAESAREAN HYSTERECTOMY IN OSTEOMALACIA.

IN the course of a letter referring to the article by Dr. Bethel Solomons on Caesarean hysterectomy (*Journal*, March 29th, p. 584), Dr. Janet M. C. Gray (Lewisham) reports that nearly all the midwifery in her experience has been performed in India, and, with the exception of one case, all the patients requiring hysterectomy were affected with osteomalacia. They never came under observation until pregnancy was advanced, or labour had actually commenced, and sometimes only when the uterus had ruptured and the child was dead. To patients admitted before labour had started dietetic treatment was given in hospital, and in later years tablets of the parathyroid and anterior pituitary extracts were administered, since they seemed to have a marked influence on the severe pain of the disease. Dr. Gray states that she performs Caesarean hysterectomy at full term, removing the uterus, since pregnancy rapidly increases the pains and deformities of osteomalacia. She adds that this disease is almost as common in the United Provinces among the Hindus as among the Mohammedans, the Hindu women in this part of the country keeping strict purdah.

MEDICAL TREATMENT IN NORTHERN BRITISH COLUMBIA.

MISS F. H. EVA HASELL, organizer of the Church of England Sunday School caravans in Western Canada (Dacre Lodge, Penrith, Cumberland), writes: While visiting isolated British settlers in Northern British Columbia (including the Peace River district) last summer, I found 500 people living south of François Lake cut off from any medical attention during the winter months, and 1,000 people north of the Peace River in similar circumstances. I interviewed the Minister of Health for British Columbia on the matter, who said he had been trying for a year to get doctors for those parts, but had failed. He is willing to accept a British doctor (man or woman), but can only offer them a subsidy of £80. The settlers would provide board and lodging. I will guarantee £50 for expenses out, and would be glad to receive all applications and give information.

POSITIVE SPUTUM IN ACUTE MILIARY TUBERCULOSIS.

DR. W. E. ROPER SAUNDERS (Chester-le-Street) writes: It is often stated that, even if a specimen of sputum is obtainable in acute miliary tuberculosis, it is usually negative for tubercle bacilli. Particulars are given, therefore, of a case in which a child, aged 3 years and 4 months, had a positive sputum. The illness commenced in January with cough. Rhonchi were audible, and the case was considered to be one of bronchitis. The symptoms did not, however, improve, and the temperature began to swing daily from 99° to 103° F. A sputum test on February 28th proved to be positive. When examined on March 8th generalized rhonchi were present, but at the extreme apex of the right lung mobility was slightly impaired, with impairment of the percussion note, and a few fine rales were audible in the same area. Death occurred on March 18th.

SCREW-CAP BOTTLES.

THE rustless white enamelled screw caps used in the U.G.B. medical bottle service are described and their advantages set out in the spring number of the *Bottle and Glass Container Bulletin*, issued by the United Glass Bottle Manufacturers, Ltd., 40-43, Norfolk Street, Strand, E.C.2.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 43, 44, 45, 46, 47, and 50 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 48 and 49.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 164.

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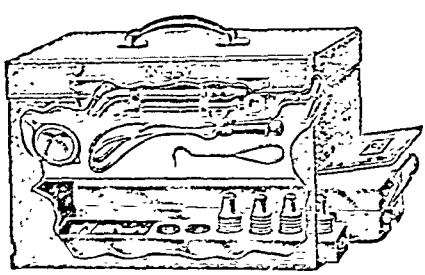
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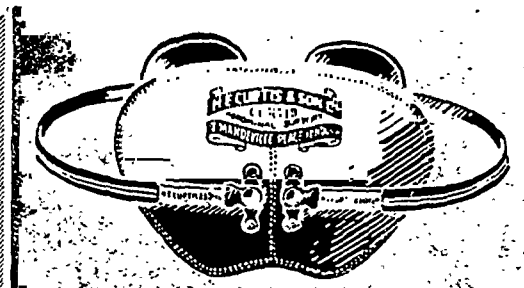
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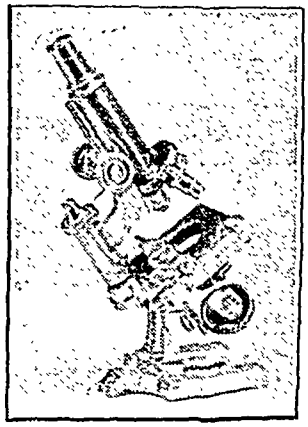
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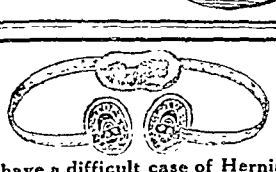
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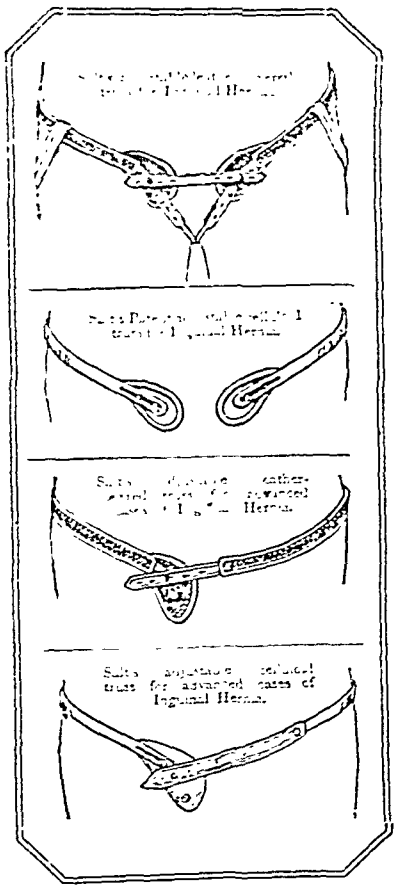
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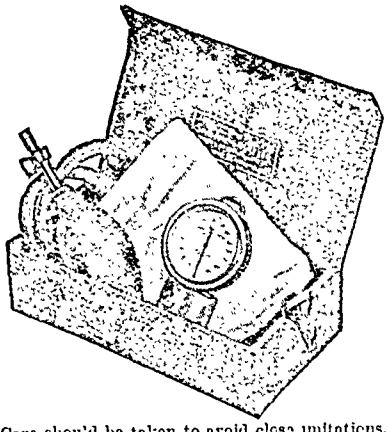
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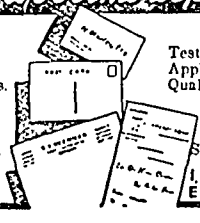
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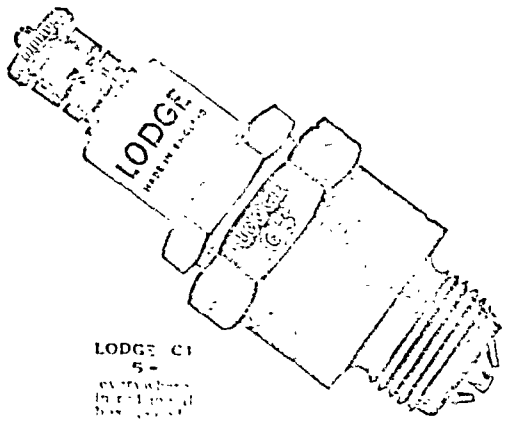
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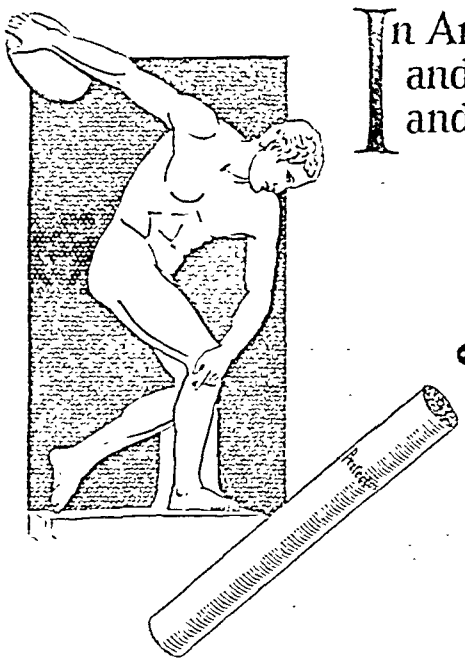
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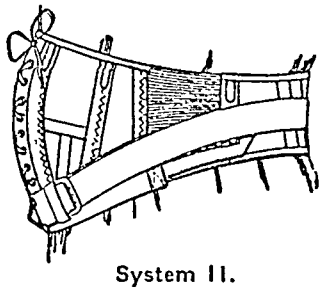
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(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**

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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received for treatment.

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The First Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. Both sexes are admitted.

The climate is mild and the surroundings beautiful. Apply: The Secretary,

Telegrams: Castle, Ruthin. Telephone 66, Ruthin. Ruthin Castle, North Wales.

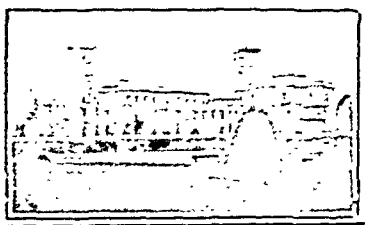
BOWDEN HOUSE,

HARROW-ON-THE-HILL.

A NURSING HOME OPENED IN 1911 FOR THE INVESTIGATION AND TREATMENT OF FUNCTIONAL NERVOUS DISORDERS OF ALL TYPES.

Nervous breakdown. Thorough clinical and pathological examinations. Psychotherapeutic treatment. Occupation and recreation suited to the individual case.

PARTICULARS FROM THE MEDICAL SUPERINTENDENT. Telegrams and Telephone: HARROW 0345.



King Edward VII Convalescent Home for Officers of the Navy, Royal Marines, Army, and Air Force.

TERMS:
4 6 and 6 guineas
per week.

Illustrated prospectus on application to the Matron, or to the Secretary, Lord Roberts Memorial Workshops, 122, Victoria Street, S.W.1.

Patients can be met at Ventnor Station by motor conveyance on application to HOUSE GOVERNOR, OSBORNE HOUSE, EAST COWES, ISLE OF WIGHT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1820, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: [illegible] Telephone: NORTH 6888

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover
For further particulars, apply to the MEDICAL SUPERINTENDENT.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "[illegible], London." FOR THE TREATMENT OF MENTAL DISORDERS. Telephone: RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy. Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

THE RESIDENTIAL TREATMENT OF ALCOHOLISM & DRUG ADDICTION

RENDLESHAM HALL

(Postal Address)—WOODBRIDGE, SUFFOLK.

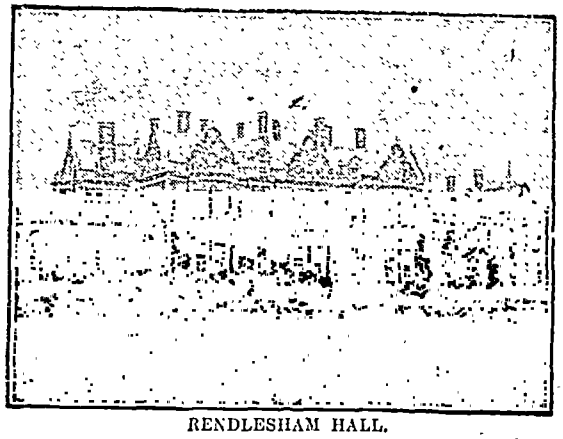
Rendlesham Hall, which is open to receive patients, is essentially a Sanatorium. Its daily life and routine are that of an ordinary comfortable holiday or health resort, or of a large country house. Each patient has all the privileges of a guest consistent with the prescribed medical treatment.

Rendlesham Hall has 45 bedrooms, and about 450 acres of gardens and park. It has also a private nine-hole golf course, tennis and croquet lawns, and bowling green.

Illustrated Booklet, giving particulars as to terms, etc., can be had on application to the

RESIDENT MEDICAL SUPERINTENDENT.

Telegrams and Telephone: Wickham Market 16.
(Toll Call from London.)



RENDLESHAM HALL.

To those desiring to be near London—

The Mansion, Beckenham Park, Beckenham, as carried on for the last twenty years, is available. Booklet and particulars from the Resident Medical Superintendent.

Telephone: BECKENHAM 1648. *Telegrams:* NOROTORIUM, BECKENHAM.

Proprietors: The Norwood Sanatorium, Limited.

THE ROYAL EARLSWOOD INSTITUTION

FOR MENTAL DEFECTIVES, REDHILL, SURREY.

(FORMERLY THE EARLSWOOD ASYLUM.)

FOR THOSE REQUIRING CONTROL with EXPERT SUPERVISION, and needing SPECIAL TRAINING in useful Occupations, SCHOOLS, FARMING, and various TRADE WORKSHOPS.

ALL outdoor games. EXCELLENT BAND by Male Staff. Telephone:
Apply to the Secretary, Mr. H. STEPHENS, 14-16, Ludgate Hill, London, E.C.4. Central 5297.

ALCOHOLISM, DRUG HABIT, NEURASTHENIA, etc.

BAY MOUNT, PAIGNTON.

ESTABLISHED 1922. *'Phone*: PAIGNTON 5110.

A comfortable, private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line, 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The treatment is the outcome of many years' experience, and besides removing all craving for drink or drugs, it has a tonic action on the system and the general health is improved. *Alcohol and drugs reduced gradually, without suffering.*

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms, Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

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DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—

F. S. D. HOGG, M.R.C.S., &c., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

ALCOHOLISM

DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. Carver, M.D., D.P.M. Fees moderate.

Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of [illegible]. For terms, apply to the Resident [illegible] W. W. HORTON, M.D. Nat. Tel. [illegible]

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A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders.

Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Batheaston 8189.

Tel. & Telegrams: "Haynes, Brentwood, 45."

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 26 min.—Apply, Dr. HAYNES.

ALCOHOLISM, OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent).

'Phone: Chislehurst 451. *Telegrams*: "Masters," Chislehurst.

STRETTON HOUSE,

Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

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CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well-appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

Station: Clapham Common Tube. *Telephone*: Brixton 0494. Apply, Miss THWAITES.

BOREATTON PARK,

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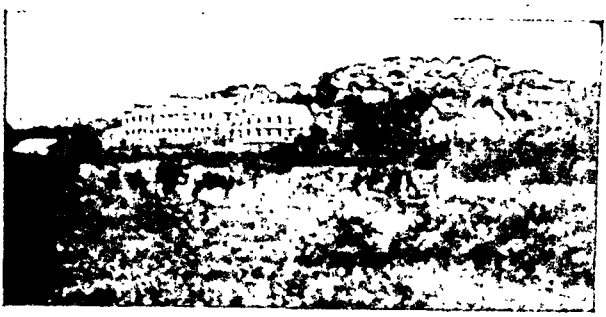
A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

Apply for particulars to Dr. SANKEY.

MUNDESLEY SANATORIUM



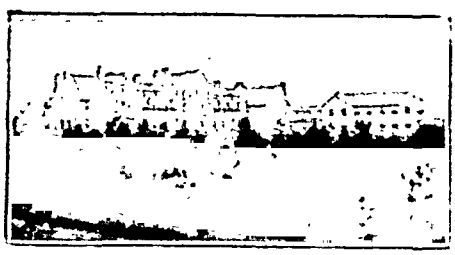
Specially built for the treatment of Tuberculosis. Spacious public rooms recently completed in a new central building. Aspect S.S.W., on a carefully chosen site. Pure, bracing air. High sunshine record. Heliotherapy. Arc-light treatment. One mile from the coast. Electric light throughout. X-ray installation. Full day and night Nursing Staff. Wireless (head phones) throughout.

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L. WHITTAKER SHARP, M.B (Camb.).
ANDREW MORLAND, M.B (Lond.).

Apply, Mr. D. C. FORD, Secretary,
The Sanatorium, Mundesley, Norfolk.

TOR-NA-DEE SANATORIUM
MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

WILDBAD—
in the Black Forest

Germany—1,400 to 2,500 feet above sea-level.
CURATIVE SPRINGS 93-99° F.
for hundreds of years have proved beneficial for gout, rheumatism, sciatica, nerve troubles, etc. Rejuvenation; all modern curative methods, Sport, Mountain Railway, Beautiful woods.

Information from the "Badeverwaltung" or "Kurverein."
EXCELLENT TROUT FISHING.

LINFORD SANATORIUM,
RINGWOOD, NEW FOREST, HANTS.

Established 1898 for the treatment of Tuberculosis. Radiators and Electric Light throughout. Hot and cold water and shower bath in nearly all rooms. Powerful X-ray Plant. Ultra-violet Rays. Full Nursing Staff. All forms of treatment available. Farm of 120 acres, including 40 acres of wood. Herd of Tuberculin-tested Guernsey cows kept. Resident Physicians—Arthur de W. Snowden, M.D., B.Ch.(Cantab.), A. G. E. Wilcock, M.R.C.S., L.R.C.P., Colin Cassidy, M.B., B.Ch (Cantab.).

PENDYFFRYN HALL SANATORIUM
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Established 1899 for the treatment of Tuberculosis. Miles of carefully graduated walks through pine-clad hills, with sea and mountain views. Modern treatment, including SANOCRYSIN, ARTIFICIAL PNEUMOTHORAX, etc. X-ray plant, electric light, central heating, wireless. Full day and night nursing staff. On L.M.S. Main Line to Holyhead, 4¼ hours from London. Resident Physicians: Dennison Pickering, M.D.(Cantab.), F. W. Godbey, M.D., D.P.H.; Matron: Miss H. Rennardson, S.R.N.

For particulars apply to the Secretary, Pendyffryn Hall, Penmaenmawr, N. Wales. ('Phone, 20.)

NORDRACH-UPON-MENDIP SANATORIUM
FOR THE TREATMENT OF PULMONARY AND OTHER FORMS OF TUBERCULOSIS
WAS OPENED IN JANUARY, 1899.

Patients are received for open-air, inoculation, or operative treatment. There are X-ray and ultra-violet ray installations. Full nursing staff. The Sanatorium stands in gardens and private grounds of 65 acres, at an elevation of 862 feet above sea-level, surrounded by woods and moorland. The patients' rooms are heated by hot-water pipes and electrically lighted. Fees 4, 5, and 6 guineas per week.

Physicians: ROWLAND THURNAM, M.D., JAMES HENDERSON, M.B., Ch.B.Glas.

For full particulars apply to *The Secretary*, Nordrach upon-Mendip, Blagdon, Bristol. *Telegrams*: Nordrach, Blagdon. *Telephone*: Blagdon 23.

EPILEPSY.

Attendance at School is a necessary part of the satisfactory treatment of Epilepsy in Children.

COLTHURST HOUSE SCHOOL

meets all the requirements of children of middle-class parentage. Extensions, made necessary by the success of the school, have created several vacancies. Only bright and intelligent boys and girls are eligible for admission.

Apply to the Medical Superintendent.
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A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, *including Post-Encephalitic* conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,
Dr. MARY R. BARKAS, M.D., D.P.M.

FUNCTIONAL NERVOUS DISORDERS.

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RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent:*
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Telephone: Nuneaton 241.

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Telephone: Clissold 1648.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST ROLLINS, Resident Physicians.

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Beautifully situated 600 feet above sea-level. Facing south, completely sheltered from north and east. 21 miles from Edinburgh.
All modern Baths, Douches, Massage, and Electrical Treatment. Ultra-Violet Radiation.
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Every kind of Bath. Plombière Lavage.
Every kind of Massage. Ultra-violet Light.
Every kind of Electricity. Diathermy.
Every kind of Diet.
High Frequency. Electric Lift.
Prospectus from Secretary. *Tele.* 341.
Resident } W. JOHNSON SMYTH, M.D.,
Physicians } L. T. ROSE-HUTCHINSON, M.D.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.
Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone*: 2708.

Grove House, All Stretton,

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A Private Home for the care and treatment of a limited number of ladies mentally afflicted. Climate healthy and bracing.
Medical Superintendent: Dr. MCCLINTOCK.

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(ITALY—near Turin, Milan, Genoa, and the Riviera)

THERMAL AND CLIMATIC RESORT OF ROMAN FAME.
HOT, SULPHUR, NATURAL, RADIO-ACTIVE MUD BATHS.
OPEN ALL THE YEAR ROUND.

Cure of most unusual potency for ARTHRITIS—RHEUMATISM —GOUT—SCIATICA—SPRAINS—DISLOCATIONS—ETC.,

GRAND HOTELS DES THERMES

(All under one roof)
Running Water in every room—Private Baths—Apartments.

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Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 300 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

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For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

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Most Modern Equipment for Treatment by Electrotherapy, Radiant Heat, Ultra-violet Ray, Diathermy, Ionisation, etc. Medicated Baths. Radioactive Mud Packs. Manipulative Surgery. Massage.
Treatment under Medical Supervision only, and according to the instructions of patients' own medical adviser.
Equable Climate—Mild and Sunny.
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TREFRIW WELLS.

is the richest Sulphur-iron Spa known —the waters contain Iron as Ferrous-sulphate—the dosage never exceeds one ounce—and they are wonderfully curative in cases of Anæmia, Neurasthenia, Neuritis, Sciatica, Rheumatism, Nephritis, Mucous Colitis, and Kindred Ailments.

PERFECTED SYSTEM OF HOME TREATMENT.

The waters are scientifically bottled in absolutely natural Spa condition, without any alteration, and supplied through the post, so that the actual Spa Cure may be taken by patients at home just as beneficially as at the Spa.
Full particulars from Manager of the Pumproom and Baths, Trefriw, Caernarvonshire, N. Wales.

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Specially built for the Open-air Treatment of Tuberculosis, and opened in 1901. Bracing mountain air. Elevation 860 ft. above sea-level. Sheltered situation in pine wood. Graduated walks. Electric light throughout building and in shelters. Central heating. Fully equipped X-ray Plant. Inoculation Treatment available for patients—24 beds. Trained Nurse on duty all night. Terms £4 6s. 8d. to £6 6s. *inclusive p.w.* Med. Supt.—FELIX SAVY, M.B., Ch.B. For particulars apply to the Secretary.

Home for Invalids requiring REST, CARE, or SUPERVISION. Large house and beautiful garden of nearly 8 acres; own produce; gravel soil. Car, etc. Special care to Chronic Patients.—"Duncroft," Staines, Middlesex.

AUTOMOBILE ENGINEERING TRAINING COLLEGE,

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(Day and Residential.)

Founded specially to TRAIN BOYS of good education for the Automobile Industry. The curriculum combines an essentially practical modern works' experience with training in administration. Appointments for qualified Students. Candidates will be accepted for Probationary Term commencing April 24th. Syllabus from ASSISTANT REGISTRAR.

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Specialises in
CAREERS FOR GIRLS.
List and Prospectus from Principal.
Special Terms to Medical Men.

POST-GRADUATE MIDWIFERY.

Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

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EDINBURGH POST-GRADUATE COURSES IN MEDICINE

IN CONNECTION WITH THE UNIVERSITY AND ROYAL COLLEGES, 1930.

The POST-GRADUATE COURSES to be held this year will comprise:

(1) A GENERAL PRACTITIONERS' COURSE from August 11th to September 6th.

(2) A GENERAL SURGICAL COURSE from August 11th to September 6th.

The inclusive fee for these Courses will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 14th to August 9th. Fee £10 10s.

In addition to the above, the following Special Courses have been arranged:

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SURGICAL PATHOLOGY. Mr. Wade, F.R.C.S.Ed., and Others. May 15th. Fee: £4 4s.

OPHTHALMOSCOPY. Drs. Bedford, Inglis Scott, and Patterson. May 20th. 12 Meetings, three weekly. Fee: £3 3s.

CLINICAL MEDICINE. Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY. Surgical Staff of Royal Infirmary. Fee: £3 3s.

DISEASES OF EAR, NOSE AND THROAT. Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.

DENTAL DISEASES. Mr. Alex. Fleming, F.R.C.S.Ed., Ward 10, Royal Infirmary. Minimum number 5. Fee: £10 10s.

DISEASES OF EAR, NOSE AND THROAT. Dr. Douglas Guthrie. The Class will meet twice weekly at the Ear and Throat Dispensary, Cambridge Street. Fee: £4 4s.

DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

PATHOLOGY OF THE NERVOUS SYSTEM. Drs. J. J. Bonar and James K. Slater. Minimum number 6. Fee: £3 3s.

EXAMINATION OF THE BLOOD. Dr. Alex. Gosset. Fee: £3 3s. VACCINE THERAPY. Dr. A. Sutton Smith. Fee: £3 3s.

MEDICAL CHEMISTRY. Dr. C. P. Stewart. Fee: £4 4s.

X-RAY PHYSICS AND ELECTRO-TECHNICS. Mr. J. Norman Kemp, B.Sc., A.I.C. Fee: £3 3s.

Full particulars can be had on application to the Secretary, Post-Graduate Courses in Medicine, Provost's New Buildings, Edinburgh.

ROYAL WESTMINSTER OPHTHALMIC HOSPITAL

MEDICAL SCHOOL.

(FOUNDED 1816)

Telephone: MUSEUM 2407. BROAD STREET, HOLBORN, W.C.2. (Near British Museum Station.)

The Hospital has just been re-built and has 85 beds, including fourteen private rooms for paying patients. The new building has been specially designed for clinical teaching and post-graduate study.

Classes for the D.O.M.S. Examination commence May 1st.

Out-patients are seen daily at 1 (Sat. 11). Operations at 2 (Sat. 12) and at 5 p.m.

Qualified practitioners are registered and may join at any time. For particulars apply to the Dean or Secretary at the Hospital.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

INSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE will be delivered during the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Institute of Medical Department of Dr. Bokart, on THURSDAY AFTERNOONS at 5 p.m., as under:—

	SUBJECT.
APRIL 24th. Sir Almroth E. Wright, M.D., F.R.S. (Principal of the Institute)	"Twelve years' work on Immunisation of the Blood in vitro."
MAY 1st. Prof. John McCleary, M.D. (Professor of Physiology, University of London)	"Absorption from the Alimentary Canal."
MAY 8th. W. E. Gye, M.D. (Pathologist, Medical Research Council)	"The Action of Antiseptics on the Virus of Tubercle Tumours."
MAY 15th. Leonard E. Hill, M.B., F.R.S. (Director D.P., of Applied Physiology, National Institute of Medical Research)	"The Physiology of Diving."
MAY 22nd. Prof. C. A. Lovatt Evans, F.R.S. (Jodrell Professor of Physiology, University College, London)	"Studies on the Investigation of the Physiology of the Heart."
MAY 29th. Sir Thomas Lewis, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. Gask, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. C. L. W. Harrison, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

M.D. THESIS

(Camb., Edin., Glasg., Durh., &c.)

SKILLED COACHING, GUIDANCE, and ADVICE From Specialist Tutors, in conformity with the Regulations of the various Universities. Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 12, Wellbeck Street, London, W.1.

F.R.C.S. (Edin.).

A TUTORIAL CLASS, with Museum Demonstrations, for the next Examination will commence shortly. Correspondence tuition if desired.—FRED. GRAHAM, M.D., F.R.C.S. (Edin.) Surgeons' Hall, Edinburgh.

Medical and Dental Students.

Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims., Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 327, Oxford Road, Manchester.

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Society of Apothecaries of LONDON.

EXAMINER IN MIDWIFERY.

Candidates must be Teachers at a recognized Medical School.

Applications to be received by April 30th, 1930.

Water Lane, Queen Victoria St., London, E.C.4. FRANK HAYDON, Secretary.

Society of Apothecaries of LONDON.

BIO-PHYSICAL ASSISTANTS EXAMINATION.

The first Examination for Part I will take place on Monday, June 23rd and subsequent days. For regulations apply to the REGISTRAR, Bio-physical Assistants' Office, Apothecaries' Hall, Water Lane, Queen Victoria Street, E.C.4.

Doctors attending Post-Graduate Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421

Preliminary Examinations.

The COLLEGE OF PRECEPTORS holds Preliminary Examinations for Medical and Dental Students in London and at Provincial Centres in March, June, September, and December. For Regulations, apply to the Secretary, College of Preceptors, Bloomsbury Square, London, W.C.1.

LONDON SCHOOL OF HYGIENE AND TROPICAL MEDICINE.

(University of London.)

Tropical Medicine and Hygiene.

The School provides two courses yearly, each of 20 weeks. The next course commences on September 30th, 1930. Composition fee, to include hire of microscope, etc., £34 5s.

Diploma in Public Health.

The next course of study, covering a period of 12 months, commences on October 1st, 1930, and is so designed that students wishing to do so can proceed to the new academic diploma instituted by the University of London.

The composition fee of £54 covers the cost of the necessary practical work and instruction in infectious diseases, etc.

Diploma in Bacteriology.

The course of study, covering one academic year, commences early in October. Composition fee, £47 15s.

Epidemiology and Vital Statistics.

Special three-monthly advanced courses. Fee £5 5s.

Applications for prospectuses and for other information should be addressed to the Secretary, Keppel St. (Gower Street), London, W.C.1.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

(University of London.)

The SUMMER SESSION will open on MONDAY, APRIL 28th.

The MEDICAL COLLEGE and DENTAL SCHOOL of the LONDON HOSPITAL are fully equipped to meet modern requirements. The Hospital contains 839 beds, and is the largest General Hospital in England.

SCHOLARSHIPS and PRIZES. — Entrance Scholarships are offered in Science. Entrance Scholarships are also offered in Anatomy and Physiology and Pathology to Students of the Universities of Oxford and Cambridge. Numerous prizes are awarded in all subjects of the curricula.

A Prospectus giving full particulars may be obtained from the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Mile End, E.1.

LONDON SCHOOL OF DERMATOLOGY,

ST. JOHN'S HOSPITAL FOR DISEASES OF THE SKIN,

LEICESTER SQUARE, W.C.2.

Conducted by the Honorary Staff of the Hospital, together with the Physicians in charge of the Dermatological Departments of the London Teaching Hospitals. Lectures and Demonstrations every Tuesday and Thursday, at 5 p.m., from October to March, and four times weekly during May. Clinics daily at 2 p.m. and 6 p.m., Saturdays, 2 p.m. only. Pathological Laboratory for Instruction or Research Work.

For further particulars, fees, etc., apply to J. E. M. WIGLEY, M.B., Dean.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

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ADVANCED MEDICINE COURSE.

A Course in Clinical Medicine, Pathology, Morbid Histology and Biochemistry, suitable for M.D. and M.R.C.P. Examinations, will be given commencing on *May 13th, 1930.*

A similar Course will be held from September to October, 1930.

Further particulars may be obtained on application to the Dean (H. WILLOUGHBY LYLE, M.D., F.R.C.S.), King's College Hospital Medical School, Denmark Hill, S.E.5.

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J. & J. PATON, Educational Agents, 143, Cannon St., London, E.C.4. Tel.: Mansion House 5053.

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New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in *September*, 1925. Prospectus from Head Master.

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

Examining Board in England

BY THE
ROYAL COLLEGE OF PHYSICIANS OF LONDON AND THE
ROYAL COLLEGE OF SURGEONS OF ENGLAND.

PRE-MEDICAL EXAMINATION.

This Examination will commence on *Tuesday*, July 15th, 1930.

FIRST EXAMINATION (OLD REGULATIONS)

This Examination will commence on Tuesday, July 15th, 1930.

SECOND EXAMINATION (OLD REGULATIONS).

This Examination will commence on *Thursday*, June 26th, 1930.

FIRST EXAMINATION (NEW REGULATIONS).

This Examination will commence on Thursday, June 26th, 1930.

THIRD OR FINAL EXAMINATION.

This Examination will commence on Monday, June 30th, 1930.

DIPLOMA IN LARYNGOLOGY AND OTOLOGY.

Part I of this Examination will commence on Monday, June 16th, and Part II on Monday, June 23rd, 1930.

DIPLOMA IN PSYCHOLOGICAL MEDICINE.

Part I of this Examination will commence on Monday, June 2nd, and Part II on Friday, June 6th, 1930.

DIPLOMA IN PUBLIC HEALTH.

Part I of this Examination will commence on Monday, June 23rd, and Part II on Monday, June 30th, 1930.

DIPLOMA IN TROPICAL MEDICINE AND HYGIENE.

This Examination will commence on Monday, July 7th, 1930.

DIPLOMA IN OPHTHALMIC MEDICINE AND SURGERY.

Part I of this Examination will commence on Monday, *July 7th*, and Part II on Friday, July 11th, 1930.

Particulars of these examinations, dates of entry, etc., *may be obtained from* the Secretary, Examination Hall, 8-11, *Queen* Square, London, W.C.1.

HORACE H. REW,
April 11th, 1930. Secretary.

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CONTAINS: The Medical Curriculum, Regulations of the Medical Examining Bodies, Medical Degrees, Diplomas, Fellowships, Examination Results, Courses of Preparation for Final Examinations, Diploma Examinations, Preliminary Examinations, Post-Graduate Courses, Testimonials, Terms, Etc.

Post free on application to the Secretary, at the above address.

London Lock Hospital Committee.

APPOINTMENT OF [illegible]

[illegible] £120 per [illegible] £150 per annum, [illegible] and £25 per annum [illegible] travelling [illegible] with allowance [illegible] and £5 per [illegible] attendant [illegible] Part 2 medical [illegible] Act, 1922. [illegible] under the [illegible] and other Orders [illegible] Medical Officer [illegible] returned [illegible] directors of the Society [illegible] should be [illegible] to the Director [illegible] dule, completed, [illegible] obtained upon application [illegible] before April 30 [illegible] of a stamped [illegible] addressed [illegible] JNO. ATKINSON, Education [illegible] Town Clerk.

Town Hall, [illegible], E.10.

April, 1930.

Victoria Hospital, Burnley.

(129 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months and carries a salary of £150 per annum with board, etc. This Hospital is approved by the London University for the purpose of the M.B. and M.S. Examinations.

Applications, with testimonials, should be addressed to the undersigned forthwith.

GEO. W. COOLING, Secretary-Supt.

April 4th, 1930.

University of Birmingham.

(In the Faculty of Medicine.)

CLINICAL BOARD.

POST-GRADUATE DEMONSTRATIONS, 1930.

[illegible] Centre of Post-Graduate [illegible] with the Queen's [illegible] Tuesday, April 29th, [illegible] Hospital, Birmingham, [illegible] Queen's Hospital [illegible] Medical Society [illegible] April 30th at the Queen's [illegible] Hospital [illegible] Medical Society [illegible] Medical Society [illegible] Medical Society [illegible] Services [illegible] Association [illegible] Post-Graduate [illegible]

[illegible] Post-Graduate [illegible] Hospital [illegible] Post-Graduate [illegible] Demonstrations [illegible] Medical Officer [illegible] Special Clinics [illegible] Tuberculosis [illegible] Medical Officer [illegible] Medical Officer [illegible] Medical Officer

NOTICE OF ELECTION.

THE JOINT NURSING AND MIDWIVES COUNCIL ACT (NORTHERN IRELAND), 1922.

NOTICE IS HEREBY GIVEN that an Election of Eight Members of the Joint Nursing and Midwives Council for Northern Ireland will be held in the year 1930.

1. *The day of election will be 17th day of June, 1930.*

2. (1) The following table shows the numbers and qualifications of the persons to be elected, and the qualifications of the persons entitled to nominate and take part in the election of each class of candidate.

Number of persons to be elected.	Qualifications of persons to be elected.	Qualifications of persons entitled to nominate and take part in the election.
2	Registered Medical Practitioners.	Registered Medical Practitioners practising in Northern Ireland.
4	Persons who are or have at some time been Nurses actually engaged in rendering services in direct connection with the nursing of the sick.	Registered Nurses—*i.e.*, Nurses registered on the Register of Nurses for the Sick in Northern Ireland.
2	Persons who are or have at some time been Nurses actually engaged in rendering services in direct connection with the nursing of the sick and are qualified midwives.	
Total 8		

(2) In order to be eligible for election or to be entitled to nominate for and take part in the election, a person must have the requisite qualifications on the 15th day of May, 1930.

3. (1) Each candidate for election must be nominated in writing and the nomination paper must be delivered to me by post or otherwise at the office of the Joint Nursing and Midwives' Council for Northern Ireland, 118, Great Victoria Street, Belfast, before the hour of noon on the 15th day of May, 1930. The name of more than one candidate shall not be inserted in any one nomination paper.

(2) *Every nomination paper* must state the surname and other names in full of the candidate and his or her registered address and registered qualification or qualifications. It must be signed by not fewer than six persons having the requisite qualifications for nominating the candidate, two of whom must sign as proposer and seconder respectively, and the address and registered qualification or qualifications of each such person so signing must be appended.

(3) The nomination paper must be accompanied by a consent in writing signed by the person nominated acknowledging that such person consents to be nominated, and shall be signed by two accredited persons who shall state their respective residence and profession or occupation.

(4) Any person having the requisite qualifications for nominating a candidate may nominate any number of candidates not exceeding the number to be elected.

4. Forms of nomination papers and of consent to nomination may be obtained free of charge from me on application by post or otherwise by persons having the requisite qualifications for nominating a candidate, but no such person will be entitled to obtain more nomination papers or form of consent to nomination than there are persons to be elected.

5. Any candidate for election may, before the hour of noon on the 15th day of May, 1930, withdraw his or her candidature by allowing or causing to be delivered at the office of the Joint Nursing and Midwives Council, a notice in writing of such withdrawal signed by the candidate.

6. If the number of candidates of any class who are deemed to have been validly nominated, and whose candidature is not withdrawn, exceeds the number of persons of that class to be elected, I will cause, not later than the 1st day of June, 1930, a voting paper and an identification envelope to be sent to each person qualified to take part in the election.

Dated this 11th day of April, 1930.

W. R. DAWSON,
Returning Officer.

Ayrshire (Glenafton) Sanatorium

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited from registered Medical Practitioners for the post of House Physician.

Salary £225 a year. The appointment is for a period of 12 months. Former experience in Tuberculosis and X-ray apparatus a recommendation.

Applications, with full particulars and copy of testimonials, to be sent to ROBERT WELSH, Clerk to the Glenafton Sanatorium Committee, 21, Wellington Square, Ayr, not later than April 30th.

April 16th, 1930.

The Infants Hospital,

Vincent Square, Westminster.

Applications are invited for the post of HOUSE PHYSICIAN (female). The appointment is for six months. Salary at the rate of £75 per annum, with board, residence, and laundry.

Applications and copies of testimonials should reach the undersigned by May 2nd.

ALFRED J. SMALL, Secretary.

Connaught Hospital

(100 Beds)

FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:

SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.
JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.

Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.

Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Free Eye Hospital, Southampton.

The Committee require the services of a duly qualified HOUSE SURGEON to enter on duties immediately. Salary £150 per annum, with board, residence, and laundry. Applicants must have had post-graduate experience in Ophthalmology. Applications, with three recent testimonials, to reach the Secretary by Saturday, April 26th.

Worcestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER (Male).

The above-mentioned Council are about to appoint an Assistant County Medical Officer, and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of 25 and 45 years. Special experience and qualifications in Tuberculosis will be necessary as work under the County Tuberculosis Scheme will form the chief part of the officer's duties. He should have (1) at least three years' experience in the practice of his profession; (2) spent in general clinical work a period of not less than eighteen months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases; and (3) received special training, for a period of not less than six months, in the diagnosis and treatment of tuberculosis. A Diploma in Public Health is desirable. The officer who is appointed will work under the supervision of the Chief Tuberculosis Officer.

The person appointed will be required to reside in the district assigned to him by the County Council and to devote the whole of his time to the work.

The salary will be £600 per annum, with an allowance of £140 per annum for use of his own motor car. The engagement to be subject to three months' notice on either side. The post is designated under the Local Government and Other Officers Superannuation Act, 1922.

Applications (on forms to be obtained from the County Medical Officer, 29, Foregate St., Worcester), accompanied by not more than three recent testimonials, must be received by 12 noon on April 30th, addressed to the County Medical Officer, 29, Foregate St., Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied.

Shirehall, (Sgd.) C. H. BIRD,
Worcester. Clerk of the County
April 8th, 1930. (W.99.) Council.

County Borough of Huddersfield.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH, CHIEF SCHOOL MEDICAL OFFICER, ADMINISTRATIVE TUBERCULOSIS OFFICER, MEDICAL OFFICER UNDER MENTAL DEFICIENCY ACTS, and HOSPITALS SUPT.

The Huddersfield Corporation invite applications from fully qualified and registered Medical Practitioners, who are also holders of a diploma in Sanitary Science, Public Health, or State Medicine for the position of Medical Officer of Health for the County Borough, with which is combined the other offices above mentioned.

The gentleman appointed will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be in future assigned to him.

Candidates must not be more than 45 years of age, and the salary will be £1,100 per annum

The successful applicant will be required to reside in the Borough, to devote his whole-time to the duties of the office, and not to engage in private practice.

The appointment is to be held in accordance with the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, the successful candidate being required to pass a medical examination and to pay contributions at the rate of 5 per cent. to the Superannuation Fund.

Applications, stating age, qualifications, and experience, accompanied by eight copies thereof and by eight copies of three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than Saturday, May 3rd.

Applications should also give three references other than the signatories to the testimonials.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Town Hall, J. HENRY FIELD,
Huddersfield. Town Clerk.
April 5th, 1930.

North Ormesby Hospital,

MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned not later than Thursday, April 17th.

GEORGE WATTS, Secretary-Supt.

Park Prewett Mental Hospital,
BASINGSTOKE, HANTS (H.R.A. 1,000).

JUNIOR ASSISTANT MEDICAL OFFICER

Royal Victoria Infirmary,
NEWCASTLE-ON-TYNE.

Queen's Hospital for Children,
HACKNEY ROAD, E.2.

Queen's Hospital for Children,
HACKNEY ROAD, E.2.

HOUSE SURGEON (male) for one year from 1st September, at the rate of £100 a year with board, lodging, and washing. Applicants must be registered Medical Practitioners, and must have had experience in the practice of Medicine and Surgery.

Applications, with three testimonials, must be sent in by first post on Monday, April 21st, to—

J. GLENTON BERE,
Secretary.

April 7th, 1930.

The Prince of Wales's General Hospital,
TOTTENHAM, N.15.

APPOINTMENT OF HONORARY ASSISTANT PHYSICIAN.

Candidates must be Graduates in Medicine of a recognised British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only.

Applications, stating age, qualifications, and accompanied by copies of three recent testimonials, must be sent in by first post on Monday, April 21st next, to—

J. C. BURDETT,
Director.

April 3rd, 1930.

The Prince of Wales's General Hospital,
TOTTENHAM, N.15.

Applications are invited for the post of HONORARY SURGICAL REGISTRAR (honorarium of £100 per annum).

Candidates must be Graduates in Medicine of a British University, or a Fellow or Member of the Royal College of Surgeons.

Applications, accompanied by three testimonials, to be sent on or before Monday, April 21st next, to—

J. C. BURDETT,
Director.

April 7th, 1930.

Warneford General Hospital,
LEAMINGTON SPA.

APPOINTMENT OF HONORARY OPHTHALMIC SURGEON.

W. PENNELL TOMLIN,
Secretary.

Royal Halifax Infirmary.

A. HIBBERT,
Secretary.

May 23rd, 1930.

Royal Devon and Exeter Hospital, Wonford (225 Beds).

MEDICAL APPOINTMENTS.

Royal United Hospital, Bath.

GERALD A. KENYON, Asst. Secretary.

Royal United Hospital, Bath.

GERALD A. KENYON, Asst. Secretary.

The General Hospital,
BIRMINGHAM.

A. H. LEASEY, House Governor.

The Sheffield Royal Hospital.

W. H. BOOTH,
Supt. & Secretary.

April 5th, 1930.

Central London Throat, Nose, and Ear Hospital,
Gray's Inn Road, W.C.1.

RESIDENT HOUSE SURGEON (MS.).

JOHN H. YOUNG, Secretary Supt.

Tavistock Square Clinic for Functional Nervous Disorders,
51, Tavistock Square, W.C.1.

P. C. PROFF,
Secretary.

The Gloucestershire Royal Infirmary and Fever Institution,
GLOUCESTER (CAPE 58).

F. J. SYMONS,
Secretary.

St. Thomas's Hospital.
VACANCY

St. Thomas's Hospital.
VACANCY

Harewood Hospital, Bursledon.

JOHN H. POWELL, F.C.I.S.,
Clerk to the
Governors.

Great Yarmouth General Hospital (72 Beds).

FRANK JENNINGS, Secretary.

County Borough of Bournemouth

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the above post. Preference will be given to candidates who have had experience in Tuberculosis and the Diseases of Children.

The salary will be £650 per annum, rising by annual increments of £25 to £700, with £60 per annum for travelling expenses, and will be subject to the usual deductions under the Local Government and Other Officers Superannuation Act, 1922.

The appointment, which will be subject to one month's notice and to the approval of the Government Departments concerned, will be a whole-time appointment under the direction of the Medical Officer of Health and School Medical Officer. The person appointed to the post will not be allowed to engage in private practice.

The duties will relate principally to School Medical Inspection and Treatment and Tuberculosis Clinics, but the person appointed will be expected to assist the Medical Officer of Health generally.

Personal canvassing of Members of the Council is prohibited.

Applications, on forms to be supplied from this office, should be sent to me on or before April 30th, endorsed "Appointment of Assistant Medical Officer, etc."

Town Hall, Bournemouth. HERBERT ASHLING, Town Clerk.
April, 1930.

County Borough of Sunderland.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

Applications are invited from fully qualified men and women for the position of Assistant Medical Officer for Maternity and Child Welfare.

Applicants must be registered Medical Practitioners, have had at least three years' experience in Public Health work since qualification, be able to show special experience in Ultra-violet Irradiation treatment, and hold a Diploma in Public Health.

Salary £600 per annum.

The appointment is subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical test as required by the Council for the purpose of that Act.

Applications, stating age, qualifications, and experience in Maternity and Child Welfare work, together with not more than three recent testimonials, should be delivered to the undersigned not later than Monday, April 21st, endorsed "Medical Officer."

Canvassing, directly or indirectly, until after the first selection of candidates, will disqualify.

Town Hall, Sunderland. H. CRAVEN, Town Clerk.
March 31st, 1930.

Borough of Wednesbury.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Town Council invite applications for the appointment of Medical Officer of Health, School Medical Officer, Maternity and Child Welfare Officer, and Superintendent of the Corporation's Hostel for Ailing Babies, for the Borough of Wednesbury.

Salary £800 per annum, rising by biennial increments of £50 to £900 per annum.

Applicants, *being fully qualified and duly* qualified registered Medical Practitioners, must have such additional qualifications as are prescribed in the Sanitary Officers Order, 1926.

The appointment will be made in accordance with the provisions of the Public Health (Officers) Act, 1921, the Sanitary Officers Order, 1926, and the orders and directions of the Council, and will be subject to the approval of the Minister of Health and the Board of Education.

The officer appointed will be required to devote his whole time to the duties of the position, and to reside within the Borough.

Applications, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned on or before May 5th, endorsed "Medical Officer of Health."

Town Hall, Wednesbury. N. P. LESTER, Town Clerk.
April 12th, 1930.

Lowestoft and North Suffolk Hospital, Lowestoft.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Administrative County of London.

The LONDON COUNTY COUNCIL invites applications for the position of JUNIOR ASSISTANT MEDICAL OFFICER (man or woman) in the Public Health Department, for duty at QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. Candidates must be qualified by law to practise both Medicine and Surgery in England. The salary is £500 a year, which is subject to review. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate (at present £130 a year) fixed from time to time.

In the case of women, marriage terminates contract of service.

Application forms containing full details obtainable (stamped addressed foolscap envelope necessary) from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1, to whom they must be returned by April 24th. Canvassing disqualifies.

The County Hall, Westminster Bridge, S.E.1. MONTAGU H. COX, Clerk of the London County Council.

Borough of Luton.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Luton Borough Council invite applications for the appointment of Assistant Medical Officer of Health and Assistant School Medical Officer. Salary at the rate of £600 per annum. No bonus will be paid.

The gentleman appointed will be required to devote the whole of his time to the duties, and to act under the direction of the Medical Officer of Health.

On receipt of stamped and addressed envelope, the undersigned will supply *particulars of the* appointment and application form.

Applications (on such form), accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer of Health," must be delivered to me by not later than Wednesday, April 23rd.

Canvassing is prohibited and will disqualify.

2, Upper George St., Luton. *W. SMITH*, Town Clerk.
April 12th, 1930.

City and County of Bristol.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time Assistant Medical Officer of Health. Age not exceeding 40 years. Salary £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The duties will consist principally of examination of children in the Council's Secondary, Elementary, and Special Schools, treatment in School Clinics, etc., but the officer appointed will also be required to work in all departments of the Medical Officer of Health of the City and Port.

Applications, which must be on a form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Monday, May 5th. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.

Council House, Bristol. JOSIAH GREEN, Town Clerk.
April 12th, 1930.

The Royal Borough of Kensington.

THE LOCAL GOVERNMENT ACT, 1929.

VACCINATION.

The Council of the Royal Borough of Kensington invite applications from local Medical Practitioners who are duly qualified in Vaccination work and who are willing to enter into contracts for Public Vaccination in the Districts of North and South Kensington respectively.

The duties will be in accordance generally with the provisions of the Vaccination Order, 1930, and subject to the approval of the Minister of Health, and the fees payable will be those laid down by the Vaccination Order with the exception that the payment authorised by Section 5 (1) (a) of the Order shall be 1s. 6d. instead of 1s. A copy of the Vaccination Order may be inspected at the Town Hall.

The contracts will be terminable by twenty-eight days' notice on either side.

The successful candidates will not be regarded as officers of the Council, and will not be subject to any superannuation provisions.

Applications must be delivered to me not later than Wednesday, April 23rd.

Town Hall, Kensington, W.8. HORACE RAPSON, Town Clerk.
April 1st, 1930.

The Children's Hospital, Birmingham.

PATHOLOGIST.

The Committee of Management invite applications for the above appointment.

Applicants must be registered and Members of the Royal College of Physicians.

The appointment (non-resident) is for twelve months, renewable annually.

Salary is at the rate of £400 per annum.

The successful candidate will be required to attend the Hospital from 9.30 to 4.0 p.m. (Saturdays 12 noon.)

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned by May 3rd.

By Order,
HAROLD F. SHRIMPTON,
April 14th, 1930. House Gov. & Sec.

Charing Cross Hospital.

PHYSICIAN FOR MENTAL DISORDERS.

The Council invite applications for the post of Physician for Mental Disorders. Candidates, who must have Degrees from one of the Universities recognized by the General Medical Council, and be Fellows or Members of the Royal College of Physicians of London, should send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, April 28th.

Charing Cross Hospital, W.C.2. PHILIP INMAN, House Governor.

Newcastle-upon-Tyne City Mental Hospital, Gosforth, Newcastle-upon-Tyne.

Wanted, at an early date, JUNIOR ASSISTANT MEDICAL OFFICER (single, male). Commencing salary £350, rising by annual increments of £25 to £450 per annum, with the addition of £50 on obtaining the Diploma of Psychiatry, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

Bradford Royal Infirmary.

Wanted for June 1st.

HOUSE PHYSICIAN (male).
HOUSE SURGEON (male).

Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.

There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than April 22nd.

J. J. BARRON,
April 8th, 1930. Secretary-Supt.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, April 23rd. Selected candidates will be invited for an interview Saturday, April 26th.

Cheshire Joint Sanatorium, Market Drayton.

Applications are invited for the post of RESIDENT (Male) CLINICAL BACTERIOLOGIST at the Cheshire Joint Sanatorium.

There are 240 beds, and excellent opportunity for Research.

Salary in the first instance, £400 per annum, plus board and lodging.

Applications must be made on forms which are obtainable from the Medical Superintendent, and to be returned not later than April 24th.

Royal Sussex County Hospital, Brighton. (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum, with board, residence; and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE,
Secretary-Superintendent

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** (*contd.*)	**PUBLIC HEALTH** (*contd.*)
LLYN VALE, R.S.O. (*Conference Recognised Society*)	SLATE AND DISTRICT. (*Medical Aid Association*)	LEICESTER COUNTY BOROUGH EDUCATION COMMITTEE. (*Assistant School Medical Officer—Male*)
GILFACH GOCH, GLAMORGAN. (*Conference Recognised Scheme*)	PARKALL, R.S.O. (*Medical Officer for Medical Aid Association*)	CORNWALL EDUCATION COMMITTEE. (*Assistant School Medical Officer—Female*)
LLYNFAWR, CEFNCOCH VALE, PENYGRAIG, GLAMORGAN. (*Conference Recognised Scheme*)	OGMORE VALLEY, GLAMORGAN. (*Physician (Chest), Medical Aid Society*) (*Conference Medical Scheme*)	OSWESTRY URBAN DISTRICT COUNCIL. (*Assistant Medical Officer*)
WATTON, CUMBERLAND. (*Conference Medical Scheme*)	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. (*Assistant School Medical Officer*)
MEDICAL AID SOCIETY OF ARGYLL PIERS COMMITTEE. (*Conference Recognised Scheme*)	CITY OF HULL EDUCATION AUTHORITY. (*Assistant Medical Officer (Whole-time)*)	YORKSHIRE WEST RIDING COUNTY COUNCIL. (*School Medical Inspector.*)

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE.
(*Surgeon, Base Hospital, St. Vincent and St. Lucia*)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without first communicating with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch	Town or District.	Hon. Sec. of Division or Branch
NEW SOUTH WALES (*Ad. Private Society Appointments*)	Dr. E. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Buildings, cor. Castlereagh and Elizabeth Sts., Sydney, N.S.W.	**SOUTH AUSTRALIA.** (*Locum Appointments*)	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	**WELLINGTON, NEW ZEALAND** (*Medical Officer Appointments*)	Dr. G. F. V. ANSCOTT (Hon. Sec., New Zealand Branch), English Medical Association, P.O. Box 1707, Wellington, New Zealand.
QUEENSLAND. (*Private Appointments Privately Solicited*)	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	**VICTORIA.** (*All Positions on Medical Superintendence*)	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch, British Medical Association), Medical Society Hall, Latrobe St. East, Melbourne, Victoria.	**WESTERN AUSTRALIA.** (*Contract and Locum Practices*)	The Hon. Sec., Western Australian Branch, British Medical Association, No. 7, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.
April 10th, 1933.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Hospital of St. Cross, Rugby.
(114 Beds.)

APPLICATIONS are invited for the post of SENIOR ASSISTANT HOUSE MEDICAL OFFICER (male).

Candidates must be registered Medical Practitioners, and must have had experience in Diseases of Children and in the Out-patient Department.

Salary at the rate of £150 per annum, rising at the rate of £200 per annum, with board, lodging, and laundry.

Applications should be sent to the undersigned not later than April 15th, stating whether they are prepared to accept the post of Junior if not selected for the Senior post.

The appointments are for a period of six months, but the successful candidate at the Junior will be eligible to apply for the Senior post, which is for twelve months.

The Hospital is recognised by the Universities of London and the Conjoint Board.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me immediately.

W. COCKBURN,
Supt. & Secretary.

Manchester Royal Infirmary.

ASSISTANT MEDICAL OFFICER, MASSAGE AND ELECTRICAL DEPARTMENT.

The Board of Management invite applications from registered Medical Practitioners (men and women) for the above appointment. Previous experience in the work is not essential.

The duties are to attend daily and to assist the Medical Officer in charge of the Department. The appointment is part-time (non-resident) for one year. Salary £100 per annum.

Candidates must state age, and send twelve copies of their application and testimonials to the undersigned on or before Thursday, April 24th.

By Order,
FRANK G. HAZELL,
April 7th, 1933. Gen. Supt. & Sec.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, for one year.

Candidates are invited to send in their applications to the Secretary, before 12 o'clock on Monday, May 15th, a complete list of cases of scarlet fever treated in their practice during the last 12 months.

The appointment is made from candidates on the successful completion of the test and is subject to a six weeks' trial.

Salary at the rate of £250 per annum, with board, lodging, and laundry in the Hospital, rising at the rate of £10 per annum, and on completion of a further period of six months, £10 10s. for the purpose of providing a suitable outfit, during annual leave of a maximum of four weeks.

Candidates must possess a legal qualification to practise and must have held a responsible resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, May 7th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
April, 1933. Secretary.

Bootham Park, York.

JUNIOR ASSISTANT MEDICAL OFFICER wanted at Bootham Park, a registered Mental Hospital for private patients. Male, single, not over 30. Salary at the rate of £300 per annum, with board, accommodation, attendance, and laundry. Apply, with copies of testimonials, to the Medical Superintendent, Bootham Park, York.

Hull Royal Infirmary.
(272 Beds.)

APPLICATIONS are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant 1st.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, but will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CALLESS,
April 7th, 1933. House Governor.

County Mental Hospital, STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £450, rising by £25 per annum to £700, £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £120 per annum will be charged for furnished quarters, board, laundry, and attendance.

Appointment subject to conditions of Asylums Officers Superannuation Act, 1909.

Applications, stating age, qualifications, etc., and enclosing copies of recent testimonials, to be addressed to the Medical Superintendent.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

County Borough of Bournemouth

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF ... STANT SCHOOL

Applications are invited from registered Medical Practitioners (men) for the above post. Preference will be given to candidates who have had experience in Tuberculosis and the Diseases of Children.

The salary will be £650 per annum, rising by annual increments of £25 to £700, with £60 per annum for travelling expenses, and will be subject to the usual deductions under the Local Government and Other Officers Superannuation Act, 1922.

The appointment, which will be subject to one month's notice and to the approval of the Government Departments concerned, will be a whole-time appointment under the direction of the Medical Officer of Health and School Medical Officer. The person appointed to the post will not be allowed to engage in private practice.

The duties will relate principally to School Medical Inspection and Treatment and Tuberculosis Clinics, but the person appointed will be expected to assist the Medical Officer of Health generally.

Personal canvassing of Members of the Council is prohibited.

Applications, on forms to be supplied from this office, should be sent to me on or before April 30th, endorsed "Appointment of Assistant Medical Officer, etc."

Town Hall, Bournemouth. HERBERT ASHLING, Town Clerk.
April, 1930.

County Borough of Sunderland.

ASSISTANT MEDICAL OFFICER FOR MATERNITY AND CHILD WELFARE.

Applications are invited from fully qualified men and women for the position of Assistant Medical Officer for Maternity and Child Welfare.

Applicants must be registered Medical Practitioners, have had at least three years' experience in Public Health work since qualification, be able to show special experience in Ultra-violet Irradiation treatment, and hold a Diploma in Public Health.

Salary £600 per annum.

The appointment is subject to the approval of the Ministry of Health, to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and to a medical test as required by the Council for the purpose of that Act.

Applications, stating age, qualifications, and experience in Maternity and Child Welfare work, together with not more than three recent testimonials, should be delivered to the undersigned not later than Monday, April 21st, endorsed "Medical Officer."

Canvassing, directly or indirectly, until after the first selection of candidates, will disqualify.

Town Hall, Sunderland. H. CRAVEN, Town Clerk.
March 31st, 1930.

Borough of Wednesbury.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Town Council invite applications for the appointment of Medical Officer of Health, School Medical Officer, Maternity and Child Welfare Officer, and Superintendent of the Corporation's Hostel for Ailing Babies, for the Borough of Wednesbury.

Salary £800 per annum, rising by biennial increments of £50 to £900 per annum.

Applicants, being fully qualified and duly qualified registered Medical Practitioners, must have such additional qualifications as are prescribed in the Sanitary Officers Order, 1926.

The appointment will be made in accordance with the provisions of the Public Health (Officers) Act, 1921, the Sanitary Officers Order, 1926, and the orders and directions of the Council, and will be subject to the approval of the Minister of Health and the Board of Education.

The officer appointed will be required to devote his whole time to the duties of the position, and to reside within the Borough.

Applications, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned on or before May 5th, endorsed "Medical Officer of Health."

Town Hall, Wednesbury. N. P. LESTER, Town Clerk.
April 12th, 1930.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications for the position of JUNIOR ASSISTANT MEDICAL OFFICER (man or woman) in the Public Health Department, for duty at QUEEN MARY'S HOSPITAL FOR CHILDREN, CARSHALTON, SURREY. Candidates must be qualified by law to practise both Medicine and Surgery in England. The salary is £500 a year, which is subject to review. The candidate appointed will be required to reside in the Hospital and to pay for board, lodging, and washing at the rate (at present £130 a year) fixed from time to time.

In the case of women, marriage terminates contract of service.

Application forms containing full details obtainable (stamped addressed foolscap envelope necessary) from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1, to whom they must be returned by April 24th. Canvassing disqualifies.

The County Hall, Westminster Bridge, S.E.1. MONTAGU H. COX, Clerk of the London County Council.

Borough of Luton.

ASSISTANT MEDICAL OFFICER OF HEALTH AND ASSISTANT SCHOOL MEDICAL OFFICER.

The Luton Borough Council invite applications for the appointment of Assistant Medical Officer of Health and Assistant School Medical Officer. Salary at the rate of £600 per annum. No bonus will be paid.

The gentleman appointed will be required to devote the whole of his time to the duties, and to act under the direction of the Medical Officer of Health.

On receipt of stamped and addressed envelope, the undersigned will supply particulars of the appointment and application form.

Applications (on such form), accompanied by copies of not more than three recent testimonials, endorsed "Assistant Medical Officer of Health," must be delivered to me by not later than Wednesday, April 23rd.

Canvassing is prohibited and will disqualify.

2, Upper George St., Luton. W. SMITH, Town Clerk.
April 12th, 1930.

City and County of Bristol.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time Assistant Medical Officer of Health. Age not exceeding 40 years. Salary £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The duties will consist principally of examination of children in the Council's Secondary, Elementary, and Special Schools, treatment in School Clinics, etc., but the officer appointed will also be required to work in all departments of the Medical Officer of Health of the City and Port.

Applications, which must be on a form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Monday, May 5th. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.

Council House, Bristol. JOSIAH GREEN, Town Clerk.
April 12th, 1930.

The Royal Borough of KENSINGTON.

THE LOCAL GOVERNMENT ACT, 1929.

VACCINATION.

The Council of the Royal Borough of Kensington invite applications from local Medical Practitioners who are duly qualified in Vaccination work and who are willing to enter into contracts for Public Vaccination in the Districts of North and South Kensington respectively.

The duties will be in accordance generally with the provisions of the Vaccination Order, 1930, and subject to the approval of the Minister of Health, and the fees payable will be those laid down by the Vaccination Order with the exception that the payment authorised by Section 5 (1) (a) of the Order shall be 1s. 6d. instead of 1s. A copy of the Vaccination Order may be inspected at the Town Hall.

The contracts will be terminable by twenty-eight days' notice on either side.

The successful candidates will not be regarded as officers of the Council, and will not be subject to any superannuation provisions.

Applications must be delivered to me not later than Wednesday, April 23rd.

Town Hall, Kensington, W.8. HORACE RAPSON, Town Clerk.
April 1st, 1930.

The Children's Hospital, BIRMINGHAM.

PATHOLOGIST.

The Committee of Management invite applications for the above appointment.

Applicants must be registered and Members of the Royal College of Physicians.

The appointment (non-resident) is for twelve months, renewable annually.

Salary is at the rate of £400 per annum.

The successful candidate will be required to attend the Hospital from 9.30 to 4.0 p.m. (Saturdays 12 noon.)

Applications, stating age and qualifications, together with copies of testimonials, to be sent to the undersigned by May 3rd.

By Order, HAROLD F. SHRIMPTON, House Gov. & Sec.
April 14th, 1930.

Charing Cross Hospital.

PHYSICIAN FOR MENTAL DISORDERS.

The Council invite applications for the post of Physician for Mental Disorders. Candidates, who must have Degrees from one of the Universities recognized by the General Medical Council, and be Fellows or Members of the Royal College of Physicians of London, should send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, April 28th.

Charing Cross Hospital, W.C.2. PHILIP INMAN, House Governor.

Newcastle-upon-Tyne City MENTAL HOSPITAL, GOSFORTH, NEWCASTLE-UPON-TYNE.

Wanted, at an early date, JUNIOR ASSISTANT MEDICAL OFFICER (single, male). Commencing salary £350, rising by annual increments of £25 to £450 per annum, with the addition of £50 on obtaining the Diploma of Psychiatry, together with board, furnished apartments, and laundry. The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Form of application may be obtained from the Medical Superintendent.

Bradford Royal Infirmary.

Wanted for June 1st.

HOUSE PHYSICIAN (male).

HOUSE SURGEON (male).

Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.

There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of recent testimonials, to be received by the undersigned not later than April 22nd.

J. J. BARRON, Secretary-Supt.
April 8th, 1930.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, unmarried, required for a term of not less than six months, commencing at once. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, April 23rd. Selected candidates will be invited for an interview Saturday, April 26th.

Cheshire Joint Sanatorium, MARKET DRAYTON.

Applications are invited for the post of RESIDENT (Male) CLINICAL BACTERIOLOGIST at the Cheshire Joint Sanatorium.

There are 240 beds, and excellent opportunity for Research.

Salary in the first instance, £400 per annum, plus board and lodging.

Applications must be made on forms which are obtainable from the Medical Superintendent, and to be returned not later than April 24th.

Royal Sussex County Hospital, BRIGHTON. (225 Beds.)

Required, a CASUALTY HOUSE SURGEON (male). Salary £120 per annum, with board, residence; and laundry.

Candidates must hold Medical and Surgical qualifications of the British Empire, and be duly registered under the Medical Acts. They must be unmarried, and when elected under 30 years of age.

Applications, with copies of recent testimonials, should be sent immediately to the undersigned.

L. L. W. LANCASTER-GAYE, Secretary-Superintendent

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	OLDBURY URBAN DISTRICT COUNCIL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.— WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C. By Order of the Council of the British Medical Association.
April 16th, 1930. ALFRED COX, Medical Secretary.

Hospital of St. Cross, Rugby.
(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year, Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only; at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

This Hospital is recognized by the University of London for the purpose of the M.D and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me immediately.

W. COCKBURN,
Supt. & Secretary

Manchester Royal Infirmary.

ASSISTANT MEDICAL OFFICER.
MASSAGE AND ELECTRICAL DEPARTMENT.

The Board of Management invite applications from registered Medical Practitioners (men and women) for the above appointment. Previous experience in the work is not essential.

The duties are to attend daily and to assist the Medical Officer in charge of the Department. The appointment is part-time (non-resident) for one year. Salary £100 per annum.

Candidates must state age, and send twelve copies of their application and testimonials to the undersigned on or before Thursday, April 24th.

By Order,
FRANK G. HAZELL,
April 7th, 1930. Gen. Supt. & Sec.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, on May 12th.

Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on Monday, May 5th, accompanied by copies of not more than three testimonials given specially for the purpose.

The appointment is made for six months, but the successful candidate will be eligible for re-appointment.

Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.

Candidates must possess a legal qualification to practise, and must have held a resident appointment at a General Hospital.

All candidates must be in attendance on Wednesday, May 7th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.

Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.

By Order of the Board of Management,
JAMES McKAY,
April, 1930. Secretary.

Bootham Park, York.

JUNIOR ASSISTANT MEDICAL OFFICER wanted at Bootham Park, a registered Mental Hospital for private patients. Male, single, not over 30. Salary at the rate of £300 per annum, with board, accommodation, attendance, and laundry. Apply, with copies of testimonials, to the Medical Superintendent, Bootham Park, York.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
April 7th, 1930. House Governor.

County Mental Hospital,
STAFFORD.

SECOND ASSISTANT MEDICAL OFFICER, male, single, required. Salary £600, rising by £25 per annum to £700; £50 per annum in addition if or when in possession of Diploma in Psychological Medicine. £130 per annum will be charged for furnished quarters, board, laundry, and attendance.

Appointment subject to conditions of Asylums Officers Superannuation Act, 1909.

Applications, stating age, qualifications, etc., and enclosing copies of recent testimonials, to be addressed to the Medical Superintendent.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

TWO HOUSE SURGEONS (male) required immediately. Salary at the rate of £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
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Wanted. — Assistant, indoor, in sound private Practice. Hospital and general experience. Small panel. Car. Usual bond. Photo. (returnable). Salary £7 weekly. Suitable for married man.—Address, No. 2606, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — *Outdoor Assistant*-SHIP by L.R.C.P. & S.I., just qualified, married; medals in Pathology, Anatomy, Physiology, certificates in Medicine and Midwifery. Liverpool or London preferred. — Address, No. 2612, B.M.A. House, Tavistock Square, W.C.1.

Wanted an unmarried Assistant for a large Practice in country town in Midlands. Salary commencing £300 a year, board, lodging, and motoring expenses provided. — Address, No. 2610, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant-SHIP, with view, by M.B., B.Ch.(N.U.I.), 1926; four years' experience in private and panel practice. Free now.—Address, No. 2607, B.M.A. House, Tavistock Square, W.C.1.

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Wanted. — Outdoor Assistant at a Branch Practice in Co. Durham. Motor cycle supplied. Salary £300, all found (board and furnished rooms at Surgery). Usual bond to sign.—Address, No. 2722, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for general Practice, Newcastle-upon-Tyne, male and unmarried, young and energetic. Salary £250 p.a., all found. — Address, No. 2723, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with view, in non-dispensing Practice. N. England or South Scotland. Applicant is M.B., M.R.C.P., æt. 26, hosp. exper. Capital available. — Address, No 2721, B.M.A. House, Tavistock Square, W.C.1.

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Assistant (man or woman), indoor, wanted.—Country Town, Midlands. Public Health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essen. parties. are stated. —No. 2705, B.M.A. House, Tavistock Sq., W.C.1.

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Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary £100 per annum. Full particulars may be obtained from the Secretary.

Applications and testimonials to be received by Monday, May 5th.

House Surgeon, male, wanted immediately for HUNTINGDON HOSPITAL. Salary £125 per annum and laundry. Temporary, also to Dr. GRAHAM, County Hospital, Huntingdon.

Leicester Royal Infirmary.

HONORARY SURGEON.

A vacancy will occur on June 1st for an Honorary Surgeon, consequent upon the retirement, under the Rules, of Mr. Cecil Marriott, M.Ch., F.R.C.S., Senior Honorary Surgeon. Applications are invited for the post. Past and present members of the Assistant Honorary Staff are primarily eligible for election to full Staff appointments. The Senior Honorary Assistant Surgeon, Mr. R. S. Lawson, F.R.C.S., is an applicant.

HONORARY ASSISTANT SURGEON.

Under the above announcement, a vacancy is expected for an Honorary Assistant Surgeon. Candidates should be Fellows by examination of the Royal College of Surgeons of England, or Graduates in Surgery of one of the Universities of the United Kingdom or Ireland. A grant of fifty guineas annually is made for out-of-pocket expenses. Applications (accompanied by 100 copies of testimonials) to reach the undersigned by Monday, May 12th. The appointment will be made on May 15th.

Canvassing for appointments is not allowed.

HARRY JOHNSON,
April 14th, 1930. House Gov. & Sec.

The Middlesex Hospital and MEDICAL SCHOOL, W.1.

Applications are invited for One MEDICAL REGISTRARSHIP. The Registrars are attached to Clinical Units of the Hospital and are responsible for the clinical notes, the carrying out of clinical and pathological examinations, the preparation of material for demonstration, and the co-ordination of the work in the Bland-Sutton Institute of Pathology with that in the Wards.

The appointment will be from May 16th to December 31st, and the holder is eligible to apply for re-appointment and may retain office for three consecutive years. Salary £300 per annum. He is required to attend at the Hospital daily from 10 to 5. Further particulars may be obtained from the Secretary-Superintendent, to whom applications, with not more than three testimonials, must be sent by noon on Monday, May 12th

By Order of the Board,
S. R. C. PLIMSOLL,
Secretary-Superintendent.

Salford Royal Hospital. (265 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
April 14th, 1930.

The Royal Hospital, WOLVERHAMPTON.

(Incorporated under Charter.) (300 Beds.)

There will be a vacancy for an HONORARY ASSISTANT SURGEON in January, 1931.

Applications for the post are invited and must be received on or before May 6th. Candidates must possess qualifications suitable for an important surgical position on the staff of a large modern Hospital, and must have actual experience of major operative surgery.

The appointment will be made on May 13th, but the candidate appointed will not be required to take up his duties until the post becomes vacant in January, 1931.

Further particulars on application to—

W. H. HARPER,
April 14th, 1930 House Gov. & Sec.

Royal Waterloo Hospital for CHILDREN AND WOMEN, Waterloo Road, S.E.1.

There will be a vacancy on May 1st for a HOUSE SURGEON (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Applications, with copies of testimonials, should be forwarded not later than Thursday morning, April 24th, to the Secretary at the above address, from whom further particulars can be obtained.

Addenbrooke's Hospital, CAMBRIDGE.

Applications are invited for the following posts:

(a) HOUSE PHYSICIAN;
(b) HOUSE SURGEON No. 2.

Each appointment is tenable for a period of six months, but is terminable at an earlier date by one month's written notice on either side.

The salary of each officer will be at the rate of £130 per annum, with board, residence, and laundry.

Candidates (male), who must be unmarried and [illegible] requested to forward their age, qualifications, etc., of not more than four testimonials, to the undersigned, as soon as possible.

W. H. HEAD, Secretary-Superintendent.

The Royal Infirmary, SHEFFIELD.

The Weekly Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

Board Room, JNO. W. BARNES, F.C.I.S.,
April 14th, 1930. Gen. Supt. & Sec.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £150, with board, residence, and laundry.

Candidates for the above post must be doubly qualified and unmarried, and are required to commence duties on or about May 1st.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

Leith Hospital (Incorporated).

The Managers invite applications for the following posts, from now till October 1st:

(1) JUNIOR HOUSE PHYSICIAN, and
(2) RESIDENT MEDICAL OFFICER for the Children's Wing. Board, residence, and laundry are provided.

Applications, with copy testimonials, to be sent to—

R. BEVERIDGE SMITH, W.S.,
10, Mill Lane, Leith. Hon. Secretary.

Hounslow Hospital, Staines Rd., HOUNSLOW, MIDDX. (70 Beds.)

Wanted, SENIOR MALE HOUSE SURGEON. Salary £120 per annum, with board, residence, etc. The appointment will be for six months.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent (marked "House Surgeon," top left-hand corner) to W. T. Ross, Secretary, Hounslow Hospital.

Durham County Hospital.

The post of JUNIOR HOUSE SURGEON will be vacant on April 30th. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of beds 75. Salary £120 per annum, with board and lodging. Applications, with copies only of testimonials, to be sent to the undersigned by April 23rd.

79, Saddler Street, Durham. WM. R. WILSON, Secretary.

Queen's Hospital for Children, Hackney Road, London, E.2.

CASUALTY OFFICER required on June 1st. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments. Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials on or before April 28th.

T. GLENTON-KERR, Secretary.

Worthing Hospital.

Applications are invited for the posts of Two HONORARY OPHTHALMIC SURGEONS.

Applications, with copies of testimonials, to reach the Secretary on or before the 28th inst.

THE OLDEST AND LEADING MEDICAL AGENT

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After Office Hours: EPSOM 9142.

Terms post free on application.

EASTER HOLIDAYS.

The above office will be closed from Thursday evening, April 17th, till Tuesday morning, April 22nd, except for urgent messages.

Royal Albert Edward Infirmary AND DISPENSARY, WIGAN.

Applications are invited for the position of SURGEON-IN-CHARGE of the Orthopædic Department. The holder will be required to attend the Out-patient Department one afternoon each week (Thursday), and also be responsible for the treatment of fracture cases in the Wards—these visits to coincide with one or two operation days each week as may be arranged.

A suitable honorarium will be paid, according to qualifications and experience, and to the time the holder is able to devote to the work.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned as soon as possible.

A. STANLEY BRUNT,
April 8th, 1930. Gen. Supt. & Sec.

Royal Infirmary, Blackburn. (240 Beds. Five Residents.)

THIRD and FOURTH HOUSE SURGEONS (male) required as early as possible, at salaries of £175 and £150 per annum, rising to £250, with board, residence, laundry, etc.

Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.

Royal Infirmary, Blackburn. NATHAN A. SMITH, Gen. Supt. & Secretary.

This Institution is recognized for the Surgical practice required for the F.R.C.S. Final examination.

Consumption Sanatoria of SCOTLAND.

ORPHAN HOMES OF SCOTLAND,
BRIDGE OF WEIR (near GLASGOW).

RESIDENT FEMALE HOUSE PHYSICIAN wanted for female pavilions of Sanatorium and to assist in work of Orphan Homes.

To begin duties on May 15th.

Commencing salary £200, with board, apartments, and laundry.

State details of previous experience, and send testimonials to Medical Superintendent.

Royal East Sussex Hospital, HASTINGS. (114 Beds.)

Applications are invited for the vacant post of JUNIOR RESIDENT MEDICAL OFFICER (female).

Salary at the rate of £100 per annum. The appointment is until November 14th.

Candidates must be duly registered Medical Practitioners.

Applications, stating age, qualifications, and copies of recent testimonials, should be sent immediately.

WILFRID G. KEMSLEY, Secretary.

Applications are invited for the post of RESIDENT MEDICAL OFFICER, JUNIOR (male) at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains over 100 beds, is one of the premier Provincial Hospitals in Scotland, and offers exceptional opportunities of gaining experience in all branches of the profession. Salary £100 per annum.

Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street, Dumfries, by April 21st.

Royal South Hants and SOUTHAMPTON HOSPITAL.

CASUALTY OFFICER (male, unmarried) required immediately, six months' engagement. Salary £160, with board, residence, and laundry. Apply to Secretary, Royal South Hants and Southampton Hospital.

THE MEDICAL AGENCY

(ESTABLISHED BY J. A. REASIDE IN 1893)

WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2.

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LANCS.—(Near Seaside Resort).—Middle and working-class G.P., situated in growing locality. Suitable house available. Receipts £1,065. Panel 250. Excellent scope. Premium £1,000 cash.

ESSEX.—Middle-class semi-country PRACTICE. Splendid house (5 beds), with garden, tennis court, etc. Receipts over £1,400. Panel 742. Premium £2,000.

GLOS.—Well-established middle and working-class PRACTICE. Medium-sized freehold house, with grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,500.

YORKS.—Well-established middle and working-class Town PRACTICE. Receipts approx. £1,520. Panel nearly 1,700. House to rent. Premium £2,250.

CORNWALL.—DEATH VACANCY.—Well-established NUCLEUS. Receipts approximately £600 p.a. Panel 150. Suitable accommodation available. Premium £450 or near offer.

SOUTH COAST.—NUCLEUS non-panel Practice in favourite seaside resort. Freehold house available. Receipts £500. Premium—house and Practice—£1,850.

LONDON.—PARTNERSHIP in busy Cash and Panel Practice. Receipts over £2,500 p.a. Panel nearly 4,000. Suitable house available to rent. Premium 2 years' purchase.

LONDON, S.E.—PARTNERSHIP in growing middle and working-class G.P. Suitable house available to rent. Good fees. Earnings (approx.) £3,000. Premium for 1/3 share, £3,500 or near offer.

SURREY.—Country Town PRACTICE. Suitable house available to rent on lease. Receipts £700. Panel 500. Fees 2/6 up. Premium £1,200. Alternative smaller accommodation available.

NORFOLK.—Cathedral City PARTNERSHIP in good-class non-panel G.P. Receipts over £4,400 per annum. 1/4 share now offered with view to larger share at one year's purchase. Suitable to a Physician, young, and preferably single.

LONDON, S.W.—Old-established middle-class G.P. Corner house with accommodation, to rent at £115 p.a., on lease. Panel 360. Receipts £1,050. Premium 1½ years' purchase or near offer. Scope.

LONDON, E.—Middle and working-class locality. Good-sized house to rent on lease. Branch Surgery. Receipts average £1,350. Panel 676. Premium 1½ years' purchase.

LONDON, N.—Lady Doctor's PRACTICE. Lock-up, with living accommodation if desired, held on lease. Receipts £647. Small panel. Premium £1,200, to include lease.

LONDON, S.E.—Within easy access of City and West End. Suitable house available. Separate Surgery. Receipts £1,647. Panel approximately 1,350. Premium £2,500 or near offer. Excellent scope for a young and energetic man.

LONDON, N.E.—Well-established middle-class G.P., situated in main thoroughfare. Excellent house to rent. Receipts about £1,350. Panel 700. Premium £2,000 or offer.

LONDON, E.—Lock-up SURGERY, on main thoroughfare, with excellent scope. Receipts approximately £250. Increasing panel of 574. Premium for quick sale £250 or near cash offer.

BUCKS.—NUCLEUS G.P., with excellent scope for one keen on country life. Suitable house available to rent or for sale. Receipts nearly £500 p.a. Select panel of 230. Premium £650 cash or offer.

KENT.—PARTNERSHIP in old-established G.P. Receipts over £2,200 p.a. Panel about 1,200. Premium for half share, with possible view, 2 years' purchase.

LANCS.—Good-class non-panel G.P., situated in residential district. Receipts over £1,500 (average £1,179). Suitable house available to rent or for sale. Scope for Surgery, especially Eyes and E. N. and T. work. Suitable for a F.R.C.S. Premium £1,200 cash.

EASTERN COUNTIES.—PARTNERSHIP in Town Practice. Receipts over £4,000 p.a. Panel 4,000. Premium for quarter share, with view to larger share, 2 years' purchase. Short preliminary Assistantship.

YORKS.—PARTNERSHIP in middle and working-class Town Practice. Receipts approx. £3,000 p.a. Panel over 2,000. House to rent. Premium for 1/4 share 2 years' purchase.

DERBYSHIRE.—PARTNERSHIP in old-established non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share, at 2 years' purchase.

WEST COUNTRY.—Oxford or Cambridge Varsity Graduate desired as PARTNER, with view to Succession in three or four years' time, in old-established good-class non-panel Practice, situated in country town. Receipts over £2,000 p.a. Half share is offered to well-qualified man, aged about 30, at 2 years' purchase.

KENT COAST.—PARTNERSHIP in old-established non-dispensing non-panel Practice. Fees 5/- to 1 gn. Suitable house available. Receipts nearly £3,500. One-third share for disposal, with view to half, at 2 years' purchase. Suitable only to well-qualified man of sound experience and good address.

DEVON. — PARTNERSHIP in good-class non-panel and non-dispensing Practice. Suitable to experienced man used to Letter-class practice; good at medicine and capable at anæsthetics. Receipts over £3,200. Premium for 1/4 or 1/3 share, 2 years' purchase (larger share in 2—3 years' time).

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ESTABLISHED 1868.

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MEDICAL TRANSFER AGENCY,
19, Craven Street, Strand, W.C.2.
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Telephone: Central 2680

This old-established Agency negotiates the Sale of PRACTICES and PARTNERSHIPS on reasonable terms, which can be obtained on application. No charge unless sale be effected. LOCUM TENENS and ASSISTANTS supplied free of charge to principals.

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71, TEMPLE ROW, BIRMINGHAM.
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1. WEST COUNTRY.—SEAPORT TOWN.—Residential District.)—Well-estab. upper and middle-class non-disp. PRACTICE. Receipts aver. £1,433 p.a. Panel 353, and considerable scope if desired. Good fees and house.
2. DEATH VACANCY. — WEST MIDLANDS MARKET TOWN. Lovely country. £1,200, including panel over £700. Good fees. Opposition nominal. Good house on lease, rent £48. All services.
3. MIDLANDS.—Panel and private PRACTICE. Estab. 5 years. Receipts £700, panel 456, both increasing. Appointments worth about £70 p.a. House to rent. Garage, etc.
4. WEST COUNTRY. — PLEASANT COUNTRY TOWN (10 MILES FROM THE SEA).—Agricultural and middle-class PRACTICE. Estab. 2½ years. Receipts £500 p.a. and increasing. Panel and appointments. Good house to rent or for sale. Low prem. for quick sale.
5. WEST MIDLANDS.—Well-estab. PRACTICE in Market Town and Agricultural District. Receipts £1,572. Panel 560. Appts worth £118. Good house, garage, all conveniences.
6. YORKSHIRE.—Large County Borough.—Well-estab. working and middle-class PRACTICE. Receipts over £1,500 p.a., steadily increasing. Panel about 1,700. Good house to rent.
7. DEATH VACANCY.—N. WALES COAST.—Good-class PRACTICE, estab. 5 yrs. Receipts £1,230, and incr. Small panel, not encouraged, but scope. Good mod. house, rent or pur.
8. MIDLAND COUNTY BOROUGH.—Panel and Cash PRACTICE. Receipts over £600 p.a. Panel 750—800. House to rent or can probably be purch. Garage. Excell. scope.

FINANCIAL ASSISTANCE afforded to approved applicants for the purchase of Practices or Partnerships on very reasonable terms. Full particulars on application.

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.

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Private Nursing Staff Department.

Trained Nurses for Mental and Nervous Cases can be had immediately.

Apply to Lady Superintendent,
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British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London.

Oxford Street, W.1.

Telephone: Mayfair 1783 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

Members of the British Medical Association may take advantage of a reduced scale of charges applicable to them.

The business undertaken by the British Medical Bureau is divided under the following heads:—

TRANSFER OF PRACTICES, PARTNERSHIPS, etc.

Medical Practitioners wishing to dispose of Practices, or desiring to take Partners, are advised to negotiate the business through the British Medical Bureau. Vendors may depend upon receiving introductions only to eligible and bona-fide purchasers. All information is treated in strictest confidence. Full and trustworthy information regarding Practices, Partnerships, etc., for disposal, supplied gratis to Purchasers.

ASSISTANTS AND LOCUMTENENTS.

Assistants and Locumtenents can be secured at short notice. It is the foremost aim of the British Medical Bureau to ensure that only the most Trustworthy and Reliable Locums and Assistants are sent out.

RESIDENT PATIENTS.

Medical Men wishing to receive Resident Patients should enrol their names on the books of the British Medical Bureau. A large number of Patients are placed yearly through this medium.

ACCOUNTANCY.

The British Medical Bureau has its own staff of fully qualified Accountants wholly engaged on medical work—i.e., Investigation of Practices for purchasers, Income Tax, Auditing Books & Accounts, etc.

Practices and Partnerships for Disposal. **Full particulars sent free.**

1 SOUTH OF ENGLAND.—Partnership in good-class non-dispensing Practice over £2,600 p.a., in attractive watering-place and winter resort. Panel 1,360. Large house (7 bed and dressing rooms) for sale or rent. Premium 2/5ths or one-half share 2 years' purchase. Hospital.

2 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

3 MIDLANDS.—Partnership in Practice over £6,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

4 EAST ANGLIA.—Partnership in Practice in attractive part. Panel 1,840. Nice house (4 bedrooms) to be sold or let. Share worth £1,000 p.a. at 2 years' purchase. Preliminary Assistantship.

5 DEATH VACANCY.—LANCASHIRE.—PRACTICE doing £1,200 in flourishing manufacturing town. Panel 580. House (4 bedrooms) to rent. Premium £1,000 cash.

6 LONDON, W. — Partnership in Practice about £2,000 p.a. in Western suburb. Panel 1,650. House (6 bedrooms) to rent. Premium 2/5ths share 2 years' purchase.

7 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

8 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

9 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

10 DEATH VACANCY. — DORSET. — Country PRACTICE nearly £1,100 p.a. Panel about 670. House (8 bed and dressing rooms), garden, garage, etc., to rent.

11 SOUTH OF ENGLAND. — Practice averaging £888 p.a. in first-rate country town. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

12 WEST OF ENGLAND.—Practice averaging £1,300 p.a. in an industrial village. Panel 1,169. House (5 bedrooms) for sale. Beautiful surrounding country. Premium £1,250.

13 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

14 SOUTH COAST. — Practice worth about £500 p.a. in favourite health resort. No panel or night work. Excellent semi-detached house (4/5 bedrooms) for sale. Scope. Premium £500.

15 SOMERSET. — Country Practice about £600 p.a. Panel 500. Convenient house (5 bedrooms) to rent. Premium 1½ years' purchase.

16 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale. Premium £1,050.

17 KENT AND SURREY BORDERS.—PRACTICE about £800 p.a. in growing and pleasant residential district. Choice of residence for sale. Good scope. Premium £1,200.

18 LONDON, E.—Practice about £1,400 p.a. (run chiefly from a "Lock-up" Surgery). Panel 660. Private house with ample accommodation to rent. Premium 1½ years' purchase.

19 LONDON, E. — Cash and Panel Practice £1,290 p.a. in populous area. Panel 1,630. Small house to rent. Premium 1½ years' purchase.

20 EASTERN COUNTIES. — Partnership in Country Practice of £1,800 p.a. Panel 755. Partner should be able to give anæsthetics. Premium one-half share 2 years' pur.

21 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

22 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. Panel 500. House (5 bedrooms) for sale. Good scope. Premium £1,650.

23 SCOTLAND.—Sound Practice in thriving Hospital and University Town. Income last year nearly £800. Panel about 300 (not encouraged). Modern corner house (9 rooms), garage and garden, for sale or rent. Premium to effect prompt sale £750, including book debts.

24 EAST ANGLIA.—Assistantship, with view to Partnership, in Country Town Practice. Share worth just over £1,000 p.a. offered to suitable man (aged 30—35) at 2 years' purchase.

British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
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12, Stratford Place,
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Practices and Partnerships for Disposal (continued).

25 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

26 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

27 YORKSHIRE (W.R.). — Partnership in Practice over £3,200 p.a. between Leeds and Bradford. Panel 2,100. Good house (4 bedrooms), with garden and paddock, for sale. Premium one-third share 1½ years' purchase.

28 DURHAM. — Partnership in increasing Practice over £4,600 p.a. in seaport town. Panel 2,500. Suitable house (or rooms) could be obtained. One-fourth share at first at 1½ years' purchase.

29 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West Coast. Panel 290. House (5 bedrooms), with good garden, for sale or rent. Premium £1,500.

30 X-RAY & ELECTRO-THERAPEUTICS. —Wanted, well-qualified ASSISTANT, with Junior Hospital appointment (Teaching Hospital preferred), for old-established West End Practice in London. Exceptionally good prospects.

31 W. OF ENGLAND. — Ophthalmic Practice over £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,000.

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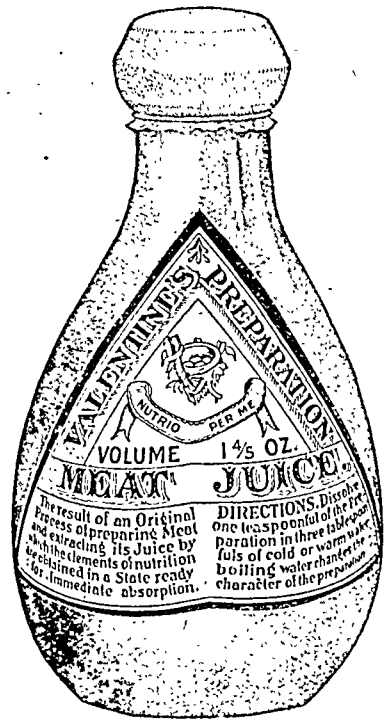
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British Medical Journal.

APRIL 26TH, 1930.

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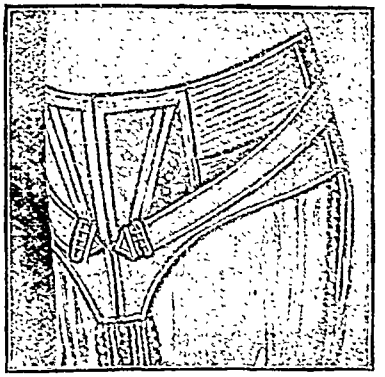
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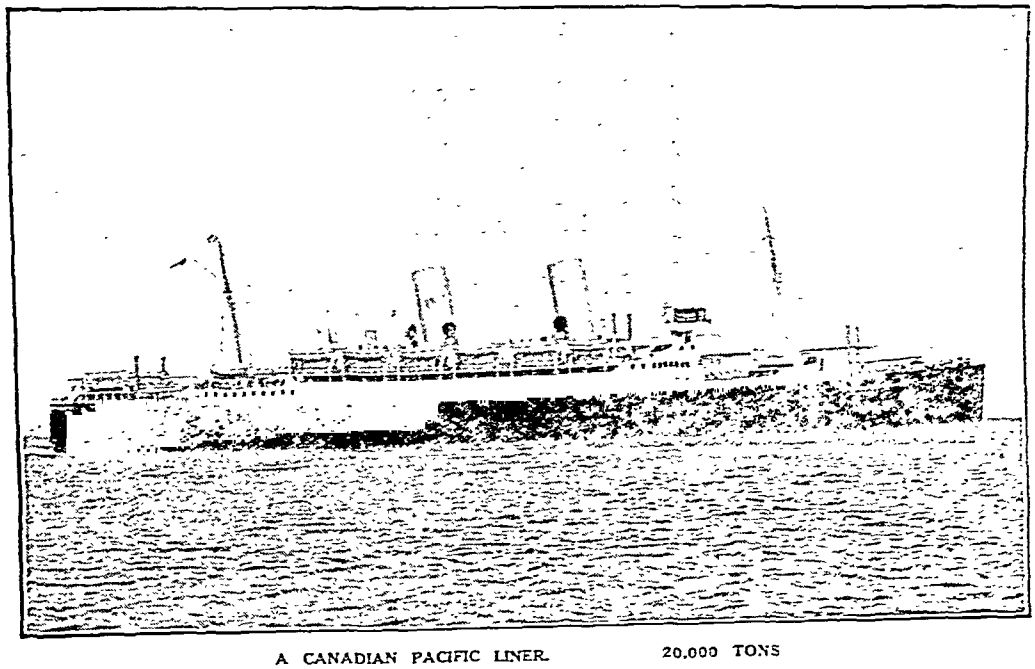
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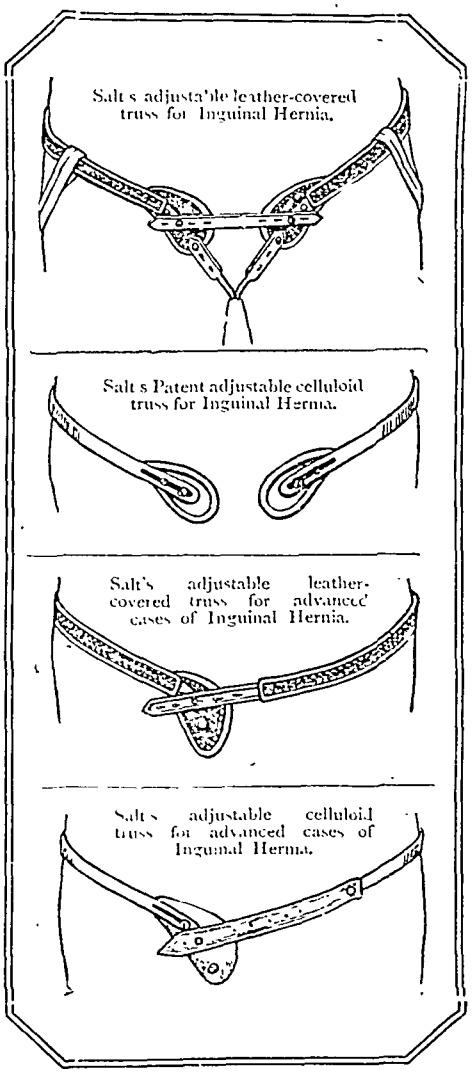
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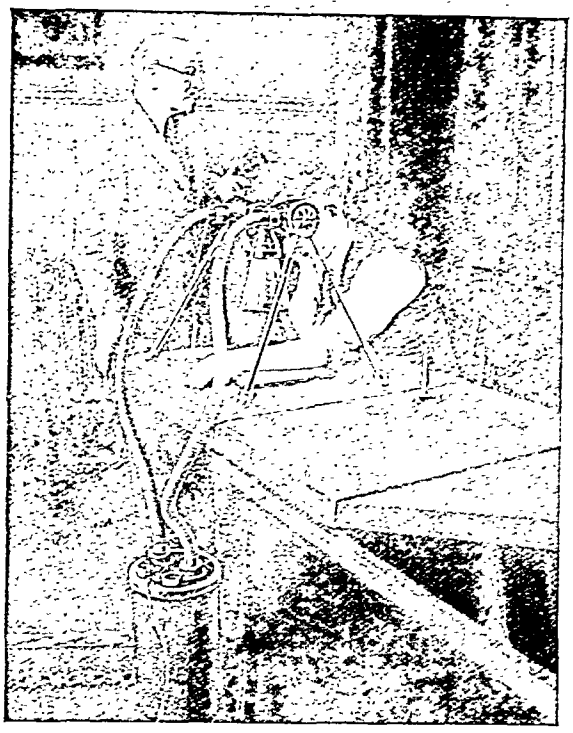
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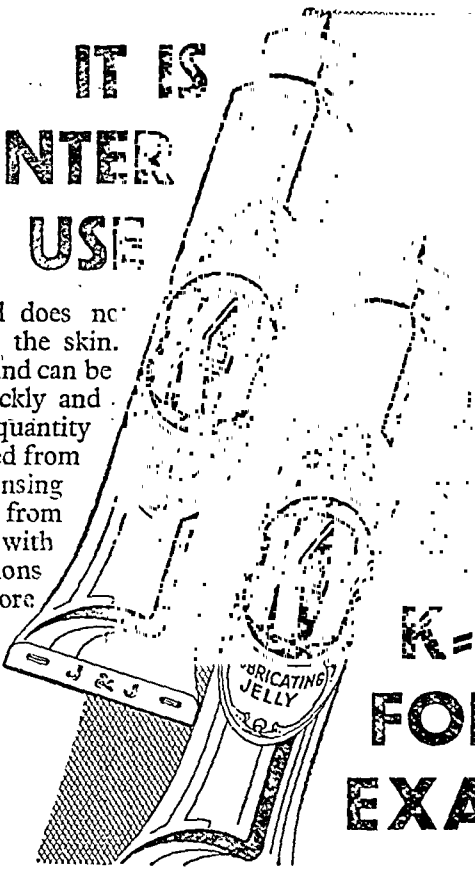
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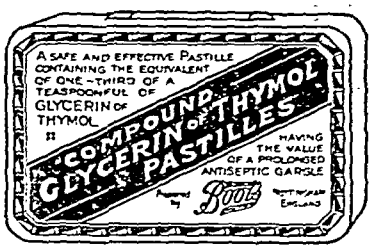
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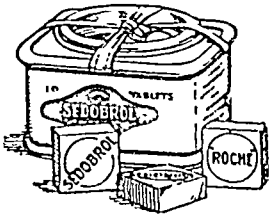
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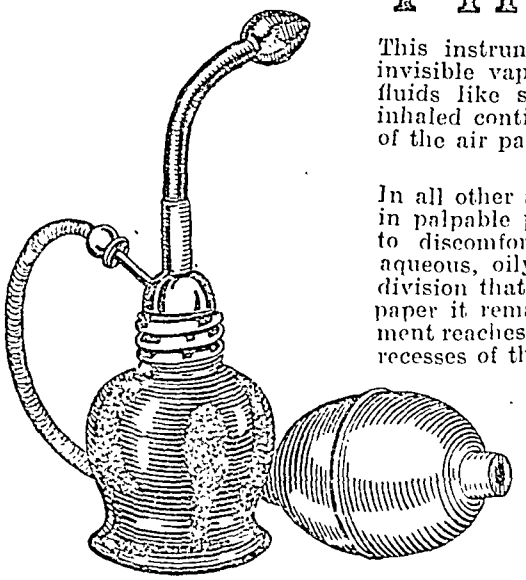
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After long and thorough investigation at the Royal Naval College, Greenwich, Dimol pulverettes are now supplied by the Admiralty for use in His Majesty's Ships and Royal Naval Hospitals.

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Pure Dextrose

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Acriflavine is an antiseptic of unusually wide application.

Originally employed as a wound dressing, it has now become the antiseptic of choice in the treatment of gonorrhœa; it is of recognised value also in dermatology, in dentistry, in ophthalmic surgery, and in general conditions of sepsis.

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Over 50 years' reputation as a useful remedy in Dyspepsia, especially when Pyrosis is a conspicuous symptom and in Diseases of the Stomach.

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Hormonigen Tablets (Hewlett's) contain the hormones of the thyroid, pituitary, ovary, and testes. Useful in Neurasthenia and all asthenic conditions, obesity, chronic cardiac cases, aplasias of the pluriglandular system, and in anæmia. If there is high blood pressure, Hormonigen sine Pituitary is indicated.

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Each tablet contains 2½ grains Sodio-Calcium Lactate with Parathyroid 1/20 grain.

These tablets have been found most valuable in the treatment of Hæmorrhage in cases so frequently found in Sanatoria, Tuberculosis Clinics, etc., and in the treatment of Strumous Children unable to extract nourishment from their food. They may be given every two or three hours.

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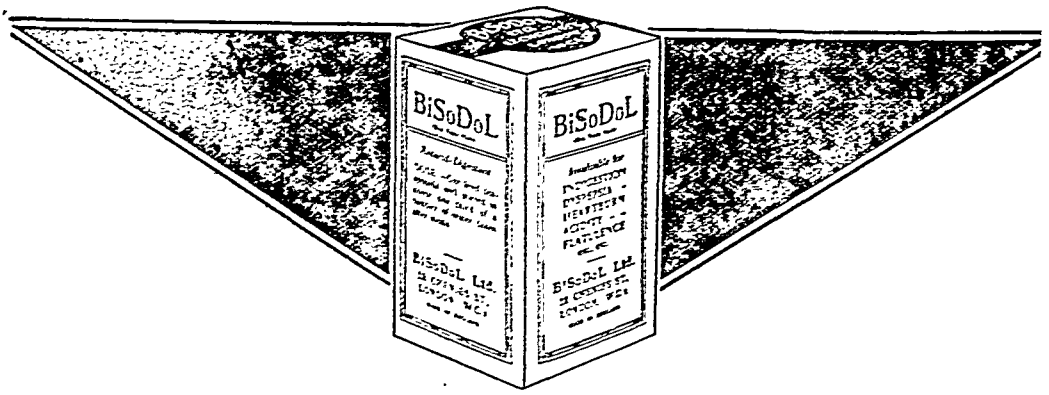
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Thyroid sicc. ... ... gr. 1/4
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This represents one average dose and is contained in one Tablet (O.T.M. 520) or in one drachm of the Elixir (O.T.M. 530).

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Milk used in the preparation of Cow & Gate is produced from the rich pastures of Somerset and Dorset where cattle are healthy and sturdy, and have never displayed those symptoms of mineral deficiency which result in "osteophagia" or wanderings to "salt licks" so often met with overseas.

The improved Cow & Gate Roller process carried out in modern hygienic factories, ensures the retention of the calcium and phosphorus salts of the original milk and preserves the balance of natural vitamins required for their assimilation by the infant. For this reason it is unnecessary to add synthetic Vitamin 'D' to Cow & Gate products.

The makers will gladly supply samples for Clinical test and any further information required, and wish to remind Members of the Medical and Nursing Professions that the Cow & Gate Laboratories are always at their disposal for experimental work in connection with Milk Foods, and that they will be delighted to arrange visits to their factories in the West of England at any time.

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Liver Products "A & H"

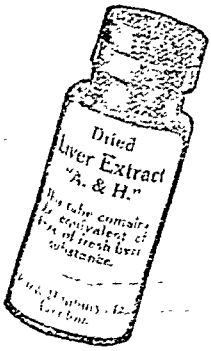
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"A. & H." Liver Products provide a convenient range to suit all requirements of liver therapy. They replace with advantage fresh liver, being much more convenient and palatable and at the same time highly active and stable.



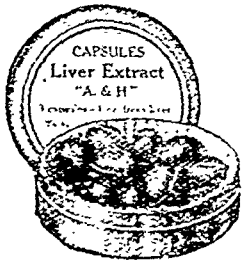
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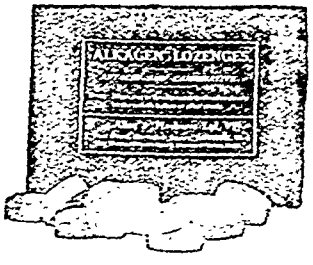
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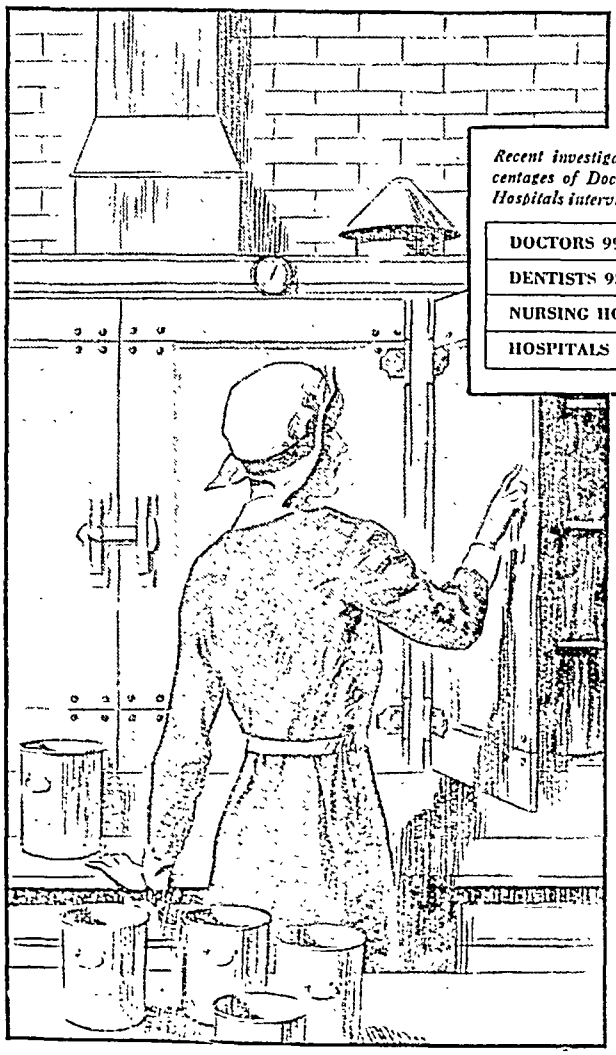
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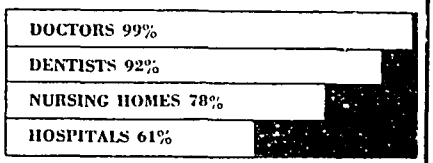
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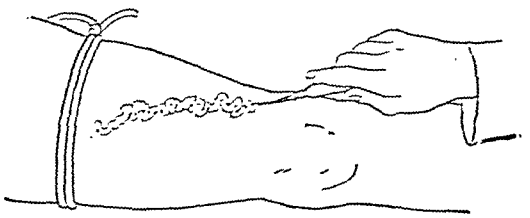
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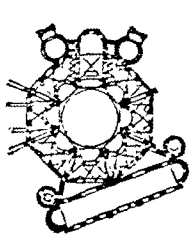
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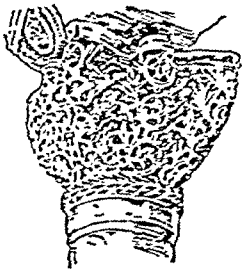
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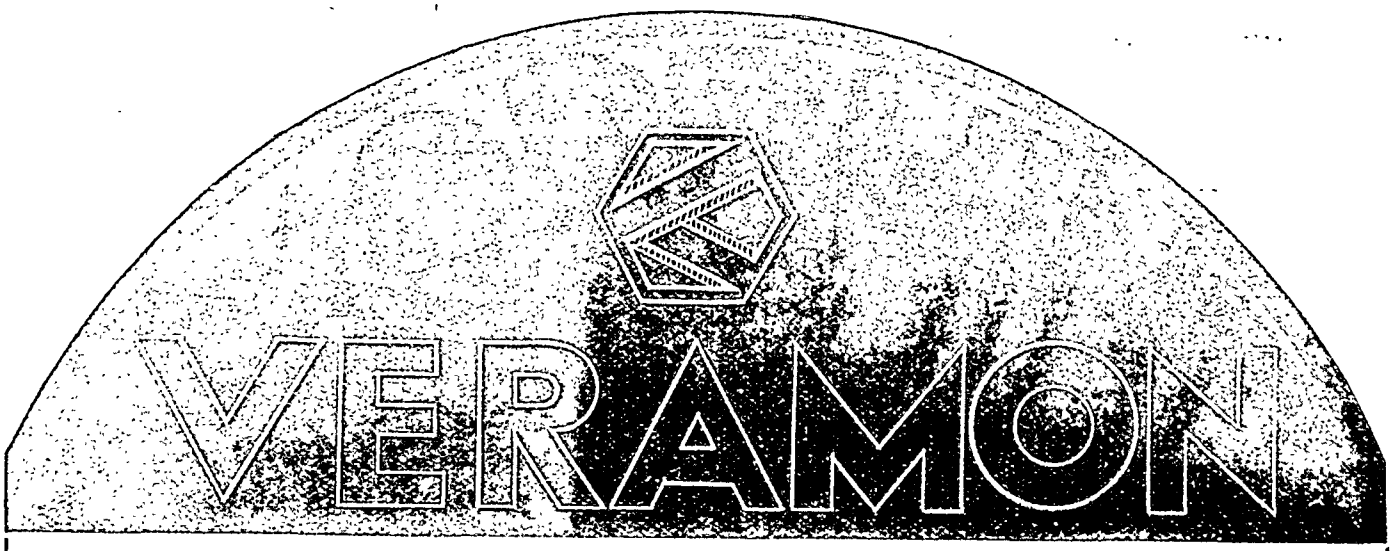
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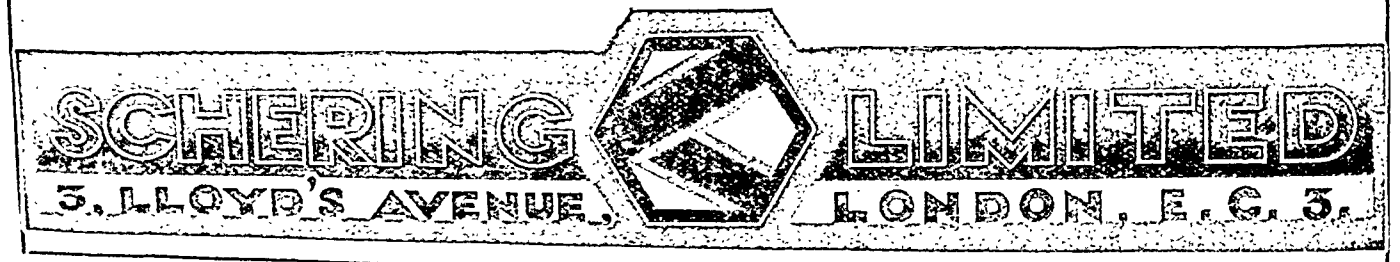
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A British Medical Association Lecture
ON
THE PRESERVATION OF A HEALTHY AND EFFICIENT CIRCULATORY SYSTEM FROM CHILDHOOD TO ADVANCED AGE.*

BY

SIR JAMES BARR, C.B.E., LL.D., M.D., F.R.C.P.,
CONSULTING PHYSICIAN, LIVERPOOL ROYAL INFIRMARY.

THERE is one point which I wish to emphasize at the outset: you cannot have a clear and comprehensive knowledge of diseases of the respiratory and circulatory systems without a good conception of physics. Time will not permit me to deal with these matters here except on broad lines, but there are several of my papers where you will find the physics in full detail.

I am more concerned with the preservation and efficiency of health than the mere prolongation of life: a sound mind in a sound body—the former can scarcely exist without the latter. When I travel outside the beaten paths of traditional medicine I do not wish you to accept anything which I say until you have proved it for yourselves. The only knowledge worth anything is that which you acquire for yourselves and make your own. Prove all things, hold fast to that which is good. Accept facts and not mere opinions, no matter by whom uttered.

The objects of the circulation are to convey oxygen and nutritive material to the tissues, and remove carbonic acid and other waste products therefrom. I look upon the circulatory system as one unit, but although we have numerous books on diseases of the heart, it is only of recent years that much attention has been paid to the distributing tubes. When in 1906 I gave the address at the meeting of the British Medical Association in Toronto on the circulation viewed from the periphery[1] it was generally considered that I had opened up a new vista. On many occasions I have dealt with the parts played by the arteries, arterioles, capillaries, and veins.[2] The old trite saying of Cazalis, that a man is as old as his arteries, should be extended—that his arteries are as old and efficient or inefficient as his endocrine glands. The part which these organs play in the maintenance of an efficient circulation is not yet fully recognized. The preventive side of medicine apart from that dealing with infectious diseases, which I believe is going to be the medicine of the future, is only slowly developing. The reason for this is that prevention does not pay the individual practitioner, and the public do not believe in paying for what may never happen. Moreover, it is not always an economic proposition: when a public health officer tells me that in his particular city he has saved so many thousands lives, and actually has the temerity to put a money value on his work, I retort that I would like him to trot them out, and let me see whether they were worth saving, and how long the saving process is likely to last. I believe that every person dying under the age of 20 is an economic failure. Nature weeds out the unfit, and enormous sums of money are spent yearly in thwarting Nature, but in the long run progress must be established and Nature gets her way. R. J. Ewart recorded in the *Eugenics Review* how a few wet summers had enormously reduced the death rate from infantile diarrhœa, but an epidemic of measles came along and wiped out all the inefficient lives that had been saved. War is dysgenic, and in the late great war millions of the fittest of the fit were killed. While our A 1 men were sacrificing life and limb the weaklings at home were propagating the race, but Nature was not going to be thwarted all the time; she came along with a world-wide epidemic of influenza and wiped out more of the weaklings than the numbers of the fit killed in the war. If you want an A 1 race you must breed it; there is no other way. You must apply genetics to the human race just as you do to the lower creation. We want children of choice, not of chance, which is the usual haphazard method in the present day. Those who cannot produce healthy children should leave the job to those who can.

There is no part of the animal economy more under hereditary influences than the circulatory system. We get our health, physique, intellectual capacity, and longevity, in fact, the harmonious working of our endocrine system, from our progenitors. I know that there are many of our profession so imbued with Lamarckian ideas that they will tell us that all children are born healthy, that their potentiality for life is equal, that their bad health depends on the environment. Such doctrines are scarcely worth refuting, as there is no such thing as equality in Nature, not even in the same family. The Mendelian laws should be widely studied and carried out. We should take lessons from horticulturists and animal breeders. The nation that produces the finest and best race is sure to win in the long run. Of course, we do not wish to raise a race of hot-house plants; every progressive race must take risks—the safety first principle never made any nation.

When we get children with healthy circulatory systems it will be necessary that we should know how to keep them not merely healthy but efficient to advanced age. Of course, the circulation of a clerk might be as healthy as that of a navvy, but it would not be as efficient, though it might wear longer. It is unfortunate that we measure the length of our existence by the number of revolutions we have had round the sun rather than by the work which we have accomplished. Before Einstein appeared on the scene it might have been argued, and was successfully argued by many ancient philosophers, that there is no such thing as time; certainly so far as our senses are concerned it is a physical nonentity. A revolution of the earth on its axis we arbitrarily divide into twenty-four parts, which we call hours, and if we are at the Equator we are being whirled round at the rate of 1,000 miles an hour without knowing it. Our ambit round the sun we divide into 365¼ days, and during this excursion we travel at least 68,000 miles an hour. The question, in my opinion, is not how many of these excursions we have had, but what have we been doing? If we be merely parasites the fewer revolutions the better for the nation. What troubles me is that many of our best and most worthy citizens after they have had sixty excursions suffer from a failing circulatory apparatus and die in the most useful period of their lives. They must be taught how to lessen this wasteful mortality, and preserve their utility to a more advanced age.

Many medical men talk very glibly of inductive philosophy, without any clear apprehension of what they mean except that they patronizingly mention Bacon as their guiding star. Bacon, in his description of his method of physical inquiry, lays down the principle by which it is to be guided, but, as Edward Caird pointed out, he exhibits no idea of connecting that method, or those principles, with self-consciousness. He usually speaks as if facts were given through the senses without any aid from reason. When physicians and surgeons speak of their experiences and trot out their thousand cases they fail to see that the mere accumulation of statistics without a guiding principle is useless; a single negative may upset a year's work. Unfortunately, the negatives are too often slipped into another category, or buried, and you hear no more about them. If we are to arrive at any sound conclusion, either by deduction or induction, the critical faculty of reason must be employed; even of our own existence we must be self-conscious. As Descartes said, *Cogito, ergo sum.*

Einstein now seems inclined to join up the electromagnetic and gravitation fields. I think in medicine we should pay a little more attention to the electro-magnetic field than we do. Supposing one stands on the crown of his head, he might not materially alter his position in the magnetic field, but he certainly would in the gravitation field. This is not a practice which I recommend except for experimental purposes. Some young men with good healthy pliant blood vessels can do so with impunity, without any risk of injuring a single cerebral capillary. We must not think that thin-walled capillaries are subjected to the brunt of the ordinary blood pressure with the addition of the weight of a column of blood five or six feet in height. Once the body is inverted the carotid

* Delivered at a meeting of the Border Counties Branch of the British Medical Association, Carlisle, February 20th, 1930.

arteries contract to a half or less of their former dimensions. Then not only is the blood supply diminished, but the increased lateral pressure in the arteries enormously increases the velocity in the arterioles, capillaries, and veins. In these small vessels the velocity and lateral pressure stand in an inverse ratio to one another, so the lateral pressure in the capillaries may be actually diminished. The question of pressure and velocity in all the capillaries of the body was fully discussed in my Toronto address.[1] In my experiments I was the first to discover that the venous blood runs more quickly up the hill than it does down it. This is a claim which no one has ever disputed. The fact is explained when it is recognized that the velocity in the veins depends on the pressure in the arteries.

The principal cause of disease of the heart in early life is acute rheumatism, and therefore if we could get rid of rheumatic fever we would materially lessen the incidence of heart disease. With this object in view an influential committee was appointed by the British Medical Association. It has been at work about three years, and has discovered that 60 per cent. of cases of juvenile rheumatism occur in damp houses; they therefore jump to the conclusion that damp houses are the cause of rheumatism. Architects have been called in, so the prevention of rheumatism is going to be a very expensive business, like most health work undertaken by clinicians. There is nothing said about the 40 per cent. who presumably live in dry houses; otherwise, on any pretext, they would have been used to swell the 60 per cent. There is no mention of the little street urchin who is badly housed, badly shod, badly clothed, badly fed, and exposed to all kinds of weather, but is not particularly prone to rheumatic fever. Too many of our specialists pay no attention to Newton's dictum, if they ever knew it, that we are to admit no more causes of natural phenomena than such as are both true and sufficient to explain their appearance.

Very many years have elapsed since I pointed out that large numbers of children under the age of puberty suffer from defective action of the thyroid gland. Consequently, in Nature's imperfect attempt to remedy the defect, we get increased growth of the lymphoid tissue, adenoids, large tonsils, and subsequent infectious diseases such as rheumatic fever. In these cases there is a defective supply of iodine with lessened calcium metabolism, and an accumulation of lime salts in the tissues. I recommend that a large lump of iodine (or its tincture) be placed in the dormitory in an open vessel near the window, so that the air entering the room may take up a fair amount. The benefit derived at many seaside resorts is partly due to the iodine in the atmosphere. In many cases this is not sufficient, and the medical attendant should exercise his educated judgement as to the amount of iodine and thyroid that should be prescribed in individual cases to prevent the onset of these diseases. Iodine is the natural stimulant to the thyroid gland, and as a rule it is best to make the thyroid do its own work, though in some cases the addition of thyroid may be necessary. The amount necessary for prevention is usually not great, and we must be careful not to overstep the mark, as I have known exophthalmic goitre to be produced by excessive doses of iodine.

Rheumatic fever is supposed to be due to some streptococcus introduced chiefly by the tonsils. Throat specialists have intervened and say the tonsils must be enucleated, so "the latest thing out" is the tonsils. The tonsils often act as a barrier to the entrance of septic organisms to the chest. The enucleation not only removes the filter-bed to the entrance by the lymphatics, but blood vessels are opened up so that infection can get directly into the circulation.

Acute rheumatism occurs more frequently in the children of the artisan class than among the very poor; among these who have had a liberal supply of milk, and have an excessive amount of lime in their fibrous tissues. In rheumatic fever milk should be cut out of the diet, and there should be substituted meat juices, soup, raisin tea or glucose, potassium and sodium salts, and, of course, salicylates. In order to prevent the heart becoming involved the blood pressure should be kept very low. It is always possible to tell when the heart is becoming infected, several days before there is any murmur, by a long dull first sound, and a perceptible delay in the transmission of the pulse wave to the wrist. In addition to the myocardium, the chief valves to become involved are the mitral and aortic. The lesion in the mitral valve[2] arises in the auricular surface about a quarter of an inch from the edge where the cusps come into violent collision, and in the aortic valves in the ventricular surface, where the cusps are driven into forcible apposition by the recoil of the aorta.

Pericarditis is also of frequent occurrence, and when there is excess of lime we get a thick honeycomb effusion which may eventually be absorbed, but when the effusion is more gelatinous and corpuscular adhesions readily take place. The way to prevent the mischief is to keep the blood pressure low, lessen the lime supply, give salicylates with a liberal supply of sodium and potassium citrates or bicarbonates, iodine or the iodides. When the acute stage is over mild exercise is desirable. Absolute rest is the modern treatment, but fortunately it is impossible to make a child a fixture. Avoid heart tonics such as digitalis—irreparable mischief is often caused thereby.

In the *Edinburgh Medical Journal*, December, 1876, I wrote an article on the effects of overwork on the heart and aorta. At that time the British workmen worked, nowadays they play, so that any stress on the heart is usually brought on in the playfields; but as any strain thus incurred is intermittent its effects soon pass away. We hear a good deal about "industrial fatigue," and some men seem to be making a living out of it, but I have not come across anything of the kind for at least a quarter of a century. If excessive strain be too frequently produced, no matter how caused, it tends to dilatation and hypertrophy of the heart, with damage to the aorta and other systemic arteries.

German beer-drinkers used to work hard and drink hard. The low alcoholic strength was sufficient to keep up a constant vasomotor paresis, and thus increase the blood vascular cavity, which was always replete; the quantities thrown out at each beat were large, the systemic blood pressure was always high, with a great disparity between it and the diastolic, so that in addition to the lateral there was also longitudinal strain in the aorta and other large arteries. This led to proliferation of the star-shaped corpuscles in the subendothelial layer of the intima of the large elastic arteries, with subsequent fatty and atheromatous degeneration. In the muscular arteries the degeneration takes place in the media. This leads to loss of elasticity, which occurs most readily when the vessels are constantly on the stretch. The free calcium ions in the blood are deposited in the atheromatous patches as calcium soaps, and afterwards the fatty acids are replaced by phosphoric and carbonic acids. We thus get calcareous plates, which may strengthen the affected parts, but still further reduce the elasticity.

The blood pressure in the arteries is merely a part, though a very important part, of the energy imparted to the blood by the contraction of the ventricles. The energy of the blood in any part of the circuit is a compound of potential and kinetic energy, of lateral pressure and velocity, and the greater the velocity in any part the less the lateral pressure in that particular part. The same considerations apply to the pulmonic circuit, except that the energy is, as a rule, not more than a third of that of the systemic system. There is an important difference as to how the energy of the right ventricle is expressed in comparison with the left. I have calculated that while the pressure in the pulmonic artery is not a third, the velocity is at least three-fourths of that in the aorta. Unlike the vena cava, the pressure in the pulmonic veins is practically always positive, so that the blood enters the left side of the heart under pressure, while it is usually sucked in, or rather driven in, by the atmospheric pressure to the right side. There is a gradual fall in the pressure gradient from the right ventricle to the left auricle, and, as the vasomotor nerve supply to the pulmonary vessels is very limited, there does not seem to be much resistance to the circulation either in the arterioles or capillaries. The blood pressure is considerably raised in the pulmonic circuit in cases of mitral stenosis, and it is in this disease that degenerative changes chiefly take place, and are as

pronounced in the pulmonic veins as in the pulmonic arteries.

A certain degree of blood pressure is essential to the maintenance of life, but the variation has a very wide range to meet the ever-varying demands of the system. What is normal blood pressure either for the individual or the species has never been, and never can be, determined, because the pressure must vary according to the calls of the organs for more or less oxygenated blood. Without a certain diastolic pressure man could not assume and maintain the erect posture.

The primary cause of arterial blood pressure, high or low, depends on the force of the ventricular contractions and the amount of blood thrown into the circulation at each stroke—two variables within fairly wide limits. According to some physiologists the limits of the output are very wide—say, two to fourteen gallons of blood passing through the two ventricles in a minute. This would be all very well for a bullock, but not for human beings. I would advise the output be kept well below this physiological maximum. The greatest toper could not pass nine gallons of beer into his stomach in a day, and, after absorption, that would keep the pump very active, but, I think, scarcely up to fourteen gallons a minute. The pressure also depends on the height of the blood column; hence, in the erect posture, the pressure on the tibial artery is much greater than in the radial raised above the head. It is therefore customary and advisable to take the arterial pressure at the level of the heart. In the healthy adult who is not subjected to much physical stress the systolic arterial pressure may range, say, from 100 to 150 mm. of mercury, while below 100 might be put down as subnormal, and over 150 as supernormal or hyperpiesis. While the heart starts the circulation the maintenance of the pressure largely depends on the resistance to the outflow through the arterioles and the capillaries. A healthy heart has a wonderfully adaptive capacity, so that its reserve force can be called upon at any time to do five or six times as much work as is required of it in ordinary quiet life. It is a self-regulating and self-repairing force pump, so that if there were less tinkering with it the gear would last much longer.

The greater the resistance or amount of work to be done the greater the force of the cardiac contraction, and the higher the lateral pressure within the arteries. If the load be too great the heart may not be able to cope with the work, and we get cardiac failure with consequent abatement of the resistance, so that the heart again may be able to adapt itself to the lessened work. A long-continued high pressure leads to hypertrophy of the heart with increase in the thickness of its walls, and perhaps in the capacity of its cavities, especially when there is a demand for an increased supply of blood; these conditions in turn maintain the arterial pressure at a high level.

As the blood leaves the heart its energy is largely kinetic, and therefore during the systolic period there must be very little lateral pressure at the root of the aorta; but if that vessel be healthy and elastic the largest portion of this energy is rapidly stored up in the walls as potential, which is paid out during the diastole of the heart, and then the blood is compressed with a force nearly equal to that which it transmitted, and this force is equally applied to all parts of the aorta, including its commencement. Thus the blood is driven through the coronary arteries when they are relaxed.

At the opening of the semilunar valves the blood has acquired its velocity head, and then the actual velocity depends on the energy or effective head *minus* the resistance to the outflow. In a large smooth-walled vessel the friction and viscosity of the blood are negligible quantities, but both come into play in the arterioles and capillaries; and the mass of blood is an impediment to its onward movement.

The greater the elasticity of the aorta, the greater the conservation of energy, and hence the pressure and the velocity become more or less uniform during the whole dia-tolic period. The velocity between any two points depends, not on the pressure, but on the difference in the pressures—the pressure gradient. The most perfect circulation is the one with a relatively small difference between the systolic and diastolic pressures, a moderately low systolic and a relatively high diastolic pressure in all the arteries. The systole of the ventricles gives out the energy during the third of a cardiac cycle, and the perfection of the circulation depends on the disposal of that energy not only in the time it is given out, but also in the intervals between the systoles. The diastolic pressure should be more than sufficient to overcome all the resistance, otherwise the blood in the main arteries would come to a standstill towards the end of the diastole. We can therefore look upon the difference between the systolic and diastolic pressures as that part of the energy which is not stored up in the walls of the arteries, and which is used in producing velocity. I think when this difference ordinarily exceeds 40 mm. of mercury there is something wrong with the elasticity of the aorta. This difference between the systolic and diastolic or mean pressure is nowadays called the pulse pressure. I know that the majority of heart specialists look upon a high pulse pressure as evidence of a very efficient circulation, but I think that such an opinion evinces gross ignorance of the physics of the circulation.

A pressure gradient of 5 mm. of mercury in a smooth-walled vein without any resistance gives a velocity of 1,120 mm. of blood in a second, but in an artery, in order to get this velocity, a fall in the pressure gradient from 150 to 100 mm. of mercury is required. With a pressure of 150 mm. and a resistance of 120 mm. of mercury you get a velocity of 640 mm. in the second. This is the kind of circulation that would suit a Methuselah, but it is not often realized.

The estimation of arterial blood pressure with one of the numerous instruments on the market is a very simple matter; hence such instruments are in very common use, and many patients think they have not been properly examined unless their blood pressure has been taken, while, if they are able to display an electro-cardiogram they think their money has been well spent. Such random observations are of very little value; it is not the instrument, but the man behind the instrument, that makes or mars the observation.

We must now consider how the arterial pressure is increased, maintained, and regulated by the resistance to the outflow. The first line of resistance is in the arterioles, which are small muscular vessels well supplied with vaso-motor nerves, and consequently readily contract on any stimulus; the resistance in the arterioles is directly as their length and inversely as the square of their diameter. Here sections, or the fourth power of their cross-friction and viscosity come into play, but not to the same extent as in the capillaries. The arterioles of the splanchnic area, of the skin, and to a less extent of the muscles, are the great regulators of arterial pressure. Often their action is reciprocal; when one set is contracted the other are dilated. The arterioles of the muscles dilate after exercise; hence after a strenuous sprint one may have violent palpitation owing to the great fall in the pressure gradient.

The principal secretory organs which stimulate the vaso-motor nerves are the adrenals and the pituitary. The thyroid, through the sympathetic, stimulates the heart's action, but it lessens the viscosity and the resistance. Both the adrenals and the pituitary, besides their specific effects, raise the blood pressure and lower carbohydrate tolerance. There are numerous pressor agents which act through the vagus or sympathetic nerves, such as digitalis squills, caffeine, strychnine, and many toxins. On the other hand, practically all the bacterial diseases lower the pressure. Hard mental work, and the stimulating effect of cold acting through the sympathetic, contract the arterioles, raise the arterial blood pressure, and increase the urinary flow.

The contraction of the arterioles of large tracts raises the general arterial blood pressure, but when those of small areas only are affected merely local effects ensue. Take a cold hand: there may be a difference of 50 mm. of mercury between the lateral pressure in the radial and in a digital artery, but when the arterioles are dilated there is a much less abrupt fall in the pressure gradient. Frequent contractions and dilatations of these vessels are

sufficient to give rise to tortuous and atheromatous radials, while the central arteries may be quite healthy. It is entirely due to the intervention of the arterioles that the capillaries are protected from the full hydrostatic effects of the blood when the body is in the erect posture.

When the limbs are dependent the potential increases, and if the arterioles be dilated from any cause the pressure in these little vessels and in the capillaries is much augmented, so that petechial haemorrhages may readily occur; but, on the other hand, if the arterioles be contracted the potential is largely converted into kinetic energy in the arterioles and capillaries.

The marvellous regulative mechanism of the vasomotor system enables the blood to be drawn from the high-pressure main—the aorta and its principle branches—to the organs or systems that immediately require it. Witness the great supply to the extremities during exercise, and to the abdominal viscera during digestion. Increase of pressure within a healthy artery improves its tone and raises its coefficient of elasticity. Owing to these facts, as well as to the intervention of the vasomotor nerves, the arteries of the lower extremities contract when they are dependent and dilate when they are raised.

The second line of resistance is in the capillaries, and here it is a compound of potential, friction, and viscosity. The larger the capillary bed the less the resistance. Perhaps not more than a third of the capillaries of the body are full at any time, but when there is great vascularity owing to dilated arterioles the inertia of the mass of blood is an impediment to its onward motion, and in the web of the frog's foot a to-and-fro movement can be seen. In these little tubes there is an enormous amount of friction of the corpuscles against one another and the walls. The resistance is, as in the arterioles, directly as the length of the tubes, etc., and here the viscosity is an important element. The extra-capillary pressure is about one-fourth of the capillary pressure from which it is derived, and is a factor in carrying on the lymph circulation.

Calcium Salts.

Lime salts play a very important role in the animal economy. Without free calcium ions life as we know it would be scarcely possible in the animal and vegetable worlds. Fortunately calcium is very widely distributed over the face of the globe, but mostly as dead inert matter, which, however, can be readily converted into soluble active forms. When I began my work with calcium in the early eighties practically the only soluble salt was the chloride, and most of my experiments were carried on with it. I think very highly of it still, though chemists have placed many more palatable forms on the market.

When, in 1910, I gave my address on the use and abuse of lime salts in health and disease,[4] I naturally referred in very eulogistic terms to Sydney Ringer's epoch-making work. To appreciate Ringer's work properly one should read it carefully, and then, by way of contrast, peruse a discussion at the Edinburgh meeting of the British Medical Association on the therapeutic uses of the calcium salts.[5] If you have the patience to wade through this discussion, then by way of a tonic I would commend to your attention a discussion at the Liverpool meeting in 1912, "On the role of the calcium salts as therapeutic agents."[6]

The lime salts are as a rule badly absorbed, and it is not what is taken into the stomach, but what is absorbed, that works good or evil. Benjamin Moore was the first to point out that calcium is absorbed by the intestinal mucosa as a calcium soap, and when it passes in by the lacteals the calcium ions are set free to play their important role in the animal economy. The stearin and palmitin form insoluble calcium soaps, which pass out by the rectum. We are now told that vitamin D increases the absorption, but we are not told the composition of vitamin D, nor what chemical combination it forms with lime. It is easy to know all that is known about vitamins, and if one acknowledges that he does not know what is not known, his patients may think him very ignorant and much behind the times. Vitamins can be bought by the ton at a very substantial price, yet no chemist, nor even a biochemist, has been able to discover their chemical composition; the nearest approach is that when some of the sterol compounds, such as ergosterol, are exposed to the mercury vapour lamp they become charged with vitamin D, and you must be careful not to overcharge lest the stuff become poisonous. It may thus turn out that vitamins are vibrations in the ether of definite wave-lengths, and a biophysicist may eventually be able to measure the wave-length and determine the dosage.

One of the earliest signs of pneumonia is the disappearance of lime from the urine; it is discharged from the blood with the fibrinous exudate into the alveoli. It is a bad omen when there is a deficiency of calcium in the blood with prune-juice expectoration. All these examinations are within "the competency of any ordinary general practitioner," and should be made within twenty-four hours of the onset of the attack. One should not wait six weeks and get a biochemist to make the discovery.

When in 1907 Blair Bell introduced his method of examining the blood for calcium, many of us examined the blood in all kinds of diseases for the lime salts. I quickly came to the conclusion that his method revealed the free calcium ions and not the fixed lime. In one gentleman aged 74 there was a large amount of fixed lime in his arteries, yet by Blair Bell's method his blood only gave an index of 0.5, or half the normal amount. I put him on a lime-free diet and gave him decalcifying agents freely, such as lemon squash and phosphoric acid. In a short time the calcium index had risen to 1.3. Blair Bell has now come to the same conclusion. I found that the lime salts increase the viscosity of the blood and lessen the velocity of the capillary circulation.

My conclusions are that the fixed lime, or that which is linked on to the molecules of albumin, increases the viscosity, while the free calcium ions in association with the suprarenal and pituitary secretions increase the tone and contraction of the arteries and arterioles, raise the blood pressure, and improve the force and efficiency of the cardiac contraction. In this latter effect the ions of potassium and sodium play an important part. The viscosity is augmented by an increase in the number of corpuscles, by cold, and by carbonic acid. The adrenaline and probably pituitary secretions lead to the retention of lime salts in the blood and tissues, while the thyroid and ovaries increase calcium metabolism, diminish the free and fixed lime in the blood, and thus lessen the viscosity; the parathyroids also increase calcium metabolism, but this is anabolic, while the action of the thyroid and ovaries is katabolic. Although we cannot show with the sphygmometer that a dose of calcium—except intravenously—materially raises the blood pressure, we have the direct evidence that decalcifying agents quickly lessen the viscosity and pressure. These agents do not always lessen the free calcium because they take up a good deal of the loosely fixed lime in the blood vessels and other tissues. Under the free use of phosphoric acid I have seen the free calcium ions increase, while coarse valvular murmurs abated and in some cases disappeared. The blood is the agent for conveying the calcium to the tissues, and from them, when it has served its purpose, to the excretory organs. The lime salts are very apt to get deposited in any part of the body which is not properly functioning. I have seen calcification in the costal cartilages of a man aged 27, produced under the care of an orthopaedic surgeon by long fixation of the chest with a spinal support. Emphysema leads to calcification of the costal cartilages, and, on the other hand, a fixed rigid chest may be the precursor of emphysema, hence the great value of mountain climbing in maintaining a good vital capacity.

Arterio-sclerosis.

However high blood pressure is brought about, it eventually leads to degenerative changes in the coats of the vessels. As the degenerative changes proceed the arteries —especially the aorta—lose their elasticity, consequently the energy imparted by the heart to the blood is not properly stored up, there is a great fall in the pressure gradient between the systolic and diastolic pressures, which leads to longitudinal straining of the arteries, the arch of the aorta gets dilated, and the muscular arteries become tortuous. The best way to prevent and lessen these degenerative changes is to maintain a low systolic and a

relatively high diastolic pressure. We may not be able to regulate the secretions of the adrenals and pituitary, but we certainly can control the high pressure effects which they produce. We can stimulate the thyroid with iodine, also supply thyroid substance, and so increase calcium metabolism.

If the degenerative changes in the aorta have not proceeded too far—and this is most readily measured by the difference between the systolic and diastolic pressures—it is really wonderful what the free and long-continued use of decalcifying agents can accomplish. I have seen aortas which were so much dilated that they could be easily felt in the suprasternal notch, and the elasticity greatly impaired, as indicated by the *loud*, clear, clanging second sound, diminish in size and the second sound become quite normal. I have seen coarse, rough valvular murmurs and cardiac intermissions permanently disappear. Healthy exercise increases calcium metabolism and lowers blood pressure, and for good health a considerable amount of exercise is absolutely essential.

Women are not so liable to arterio-sclerosis as men because their foot-ton output is not so great; they eat less, are more temperate in all things, and, as Blair Bell has shown, they get rid of a good deal of calcium at each menstrual period. When it does occur in women, apart from kidney disease, it chiefly arises in those who have borne large families and in those liable to emotional disturbances; emotion acts like suddenly turning a stopcock in a water-pipe connected with the main; it sets up waves of pressure, the chief stress of which is thrown on the aorta.

In Stokes-Adams disease the contraction of the left ventricle, although very infrequent, is powerful and fairly regular; the systolic arterial blood pressure is high and the diastolic low; there may be two or three ineffective contractions of the right ventricle between the powerful systoles of the left. In these cases you should try to increase the irritability of the cardiac muscle, lessen the remainder contraction of the ventricles, hasten ventricular diastole, and increase intracardiac pressure. To lessen the remainder contraction and hasten diastole active potassium ions are necessary, while the sodium salts should be diminished. For the maintenance of efficient cardiac contraction free calcium ions are essential. Since all agents which increase calcium metabolism do good I have found a useful combination of calcium iodide, potassium chloride, and tincture of iodine, supplemented with thyroid. There is plenty of fixed lime in the system, so what is wanted is not an additional supply but some agent to set the ions free.

I do not pay much attention to the imaginary function of the sino-auricular node as the pace-maker, nor to the stimulus which it is said to generate. This stimulus, if such exists, must be a vitamin, since it has never been isolated nor its composition determined. In very many people after the age of 50 the function of the thyroid begins to wane and the pulse becomes infrequent. I think most people with a slow infrequent pulse will find a great advantage from cutting down the lime salts, and taking a small daily dose of iodine and thyroid.

If we find a person in a dead faint we should not wait for the pace-maker to start the heart, but raise his lower extremities so as to increase the intracardiac pressure in the right auricle and ventricle. This is the best cardiac stimulant, and as the right side of the heart is more irritable than the left, it starts contraction, raises the intrapulmonary pressure which drives the blood into the left auricle. The rhythmic cardiac contraction depends on the difference in electrical potential between the ions within and without the muscle cells; more attention, therefore, should be paid to electrolytes than to an imaginary stimulus which has never been traced outside the brains of cardiologists.

As a matter of routine, in my examinations of the urine I always precipitate the lime as an oxalate. This helps me to estimate not only the activity of the kidneys but also the calcium content of the blood. In all these examinations the condition of the kidneys and the specific gravity of the urine must be taken into account.

In 1903 I was waiting in one of the operation theatres of the Liverpool Royal Infirmary to see an operation on a patient of mine. I heard a noise in the anæsthetic room, passed in, and found the anæsthetist and a nurse busily engaged in performing artificial respiration. I was informed that the patient had ceased breathing. I said that judging from his pulse and colour there could not be much the matter; that if they stopped the artificial respiration and threw a towel over the patient's mouth so as to allow CO_2 to accumulate in the alveoli he would soon start breathing. The anæsthetist mentioned that he had seen this occur in several cases when the ether had been administered by the open method.

When apnœa is established from excess of oxygen and deficient carbonic acid—which is the natural stimulant to the respiratory centre—the worst method of treatment is arterial respiration. We often see reports of inquests where artificial respiration was carried on for hours. The medical attendants get great praise for their perseverance, whereas it would be more correct to say that they deprived the patient of any chance of recovery. It is doubtful if anyone could stand two hours of artificial respiration and survive. In many diseases the free administration of oxygen establishes a partial apnœa, but we must not think that because the patient appears more comfortable we have increased his chances of recovery; on the contrary, we have deprived the heart of the assistance of the respiratory pump. The old closed ether inhaler might half-suffocate the patient, but it never induced a fatal apnœa.

Before prescribing a cylinder of oxygen one should carefully weigh the pros and cons. If one feels certain that it is going to do any good, then let him prescribe it, but it should not be ordered because it is the popular thing to do, or merely on the erroneous idea that it can do no harm. There is much more oxygen in the atmosphere than the blood can under any circumstances appropriate, but the atmosphere ought to be pure and fresh, not pre-breathed. An excellent respiratory stimulant is to play with a fan a stream of cold air on the patient's face. Before we had electric fans I used a foot-bellows.

Auricular Fibrillation.

This is a very common precursor of death, and when the fibrillation extends to the ventricles life can be measured by seconds.

There was a very interesting case of hemisystole in a woman, aged 41, admitted under my care to the Liverpool Royal Infirmary on August 6th, 1908, and she died suddenly on October 4th. I made very full notes of her case, with cardiographic tracings, which were verified at the necropsy. I did not see her for the last ten days of her life, as I was on holiday. She must have had several attacks of auricular fibrillation, which was not then usually recognized as a clinical entity, though many years previously Professor MacWilliam had experimentally produced it in animals. At that time we were examining the blood of most patients for calcium. Her blood was examined several times by my clinical assistant and the house-physician, Dr. Pantland Hick and Dr. Gerrard. On only one occasion were the free calcium ions found to be normal. The following is abstracted from the notes of the post-mortem examination made by Professor E. E. Glynn: "Heart 14½ ounces; auricles normal. Right ventricle slightly hypertrophied and dilated; valves normal. Left ventricle hypertrophied and cavity smaller than right; mucous papillæ thick; mural orifice admits two fingers, mitral cusps thickened, and a hard calcareous nodule about the size of a pea in the posterior cusp. Aortic valves normal. A section of the heart muscle stained with osmic acid showed no evidence of fatty degeneration." I said that I could see no reason why this heart should have stopped in diastole unless there was a deficiency of calcium. Accordingly Pantland Hick took 5 grams of the muscle of the right and left ventricles respectively, and macerated each in 5 c.cm. of decinormal hydrochloric acid. He then examined for calcium according to Blair Bell's method and found that the muscle from the right ventricle gave an index of 0.3, and that from the left 0.7. By this process the whole of the lime, fixed and free, was extracted so the amount of free calcium in the muscle was very scanty. This was a lesson for me from which I hope I profited.

I was the first to discover that by *plucking* Abrams's cardiac reflex of contraction I could arrest an attack of auricular fibrillation in five minutes, but this is not a cure; the reflex must be frequently repeated to prevent overloading of the right auricle and recurrent fibrillation, until the heart is well charged with calcium. To prevent repeated attacks digitalis, strophanthus, and pilocarpine can be used. The old Guy's pill to which has been added one grain of quinine sulphate answers admirably. This pill should only be continued for a short period. A tonic of

pilocarpine, strychnine, quinine, phosphoric acid, and syrup of the glycerophosphate of calcium is useful at any time. If there be any respiratory distress, pain, or insomnia we should not hesitate to give a hypodermic injection of omnopon or morphine. I have never prescribed quinidine, because I think the patient runs sufficient risks without the additional one of poisoning. In these cases there is always a deficiency of calcium, and some absorb it very badly, so you should regularly examine the urine for lime salts. Ringer's solution containing about double the usual amount of calcium chloride and two ounces of the syrup of glucose to the pint is an excellent beverage which should be drunk freely or used for diluting milk.

Enormous numbers of cases of heart disease got rapidly well after the armistice. How is it that since then not only the incidence but the mortality from diseases of the circulatory system has so increased that they have now become, in Osler's language, "the captain of the men of death"? Cardiac failure is now the medical explanation of sudden death; but why does the heart suddenly fail? It is a wonderful self-repairing pump, which can execute an enormous amount of extra work, and will not give out on slight provocation.

In conclusion, I strongly advise you to maintain a healthy and efficient circulatory system, and the heart will take care of itself. Your studies must be along the lines of biophysics and biochemistry. Look at the enormous strides which have been made in physics during the present century. If you wish to move in the van of progress you must educate yourselves; if you trust on the medical schools you are leaning on a broken reed. Associate with physicists and you will learn something worth knowing. There is one book which I would like you to read, *The Bipolar Theory of Living Processes*, by George W. Crile, the great American surgeon. Be constantly on the look-out for something true, whether new or not. "Receiving a new truth is adding a new sense," though "there are few persons to whom the truth is not a sort of insult." I have often said to my professional brethren, Do not advertise; cure your patients and they will advertise you. It has been often said, with more or less truth, young men kill their patients, old men allow them to die. I counsel you to steer a middle course and keep them alive. Not only keep them alive, but keep them for ever in your debt by the maintenance of their health. Patients are not so ungrateful as some people imagine.

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ACUTE PERFORATION OF THE STOMACH AND DUODENUM.

A CRITICAL REVIEW OF THE RESULTS OF OPERATION.

BY

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FINALITY has by no means been reached in the discussion on the best routine treatment of perforated gastric and duodenal ulcer, and it may therefore not be out of place to consider the results obtained in a series of cases in which the conditions of technique and after-treatment were constant.

The series comprises 154 cases. The method of treatment was to invaginate the perforation by two layers of suture and to strengthen them by an omental graft. At the pylorus and in the duodenum the suture line was made to lie in the transverse axis of the bowel. Immediate gastro-enterostomy was not practised as a routine, and was, in fact, only performed in three of the cases. In one patient the perforation was converted into a gastrostomy by the insertion of a tube drain. Peritoneal drainage—usually suprapubic—was employed in about one-third of the cases, and more frequently in the earlier than in the later ones. All the patients were admitted to the Manchester Royal Infirmary, and it is to the members of the honorary surgical staff of that hospital that I am indebted for the opportunity to operate upon and report these cases. The series is consecutive in the sense that it includes all those patients whose condition warranted laparotomy and on whom it fell to my lot to operate during the years 1924-27. Their number is one which may perhaps fairly be said to indicate the average results of a uniform method under present-day conditions, when early diagnosis is the rule. It is to general practitioners who make this early diagnosis that any improvement shown in modern mortality figures is largely due.

Symptomatology.

One or two features of the clinical picture merit mention. Many writers—Moynihan[1] most insistently—have emphasized the point that a rapid pulse rate is not necessary for the diagnosis of perforation, yet a normal pulse rate certainly continues to cause hesitation, which may have disastrous consequences. There may occur an actual slowing of the pulse rate, which has been ascribed by Kreckе[2] to stimulation of the vagus. In 40 of 129 cases of this series in which the pulse rate was recorded it was from 60 to 80 beats per minute. The absence of acceleration is perhaps specially evident during the "delusive interval," which occurs typically, though by no means constantly, between the fifth and twelfth hours after perforation.

Adamson, Oehlecker,[6] Morley,[3] and others have described shoulder-tip pain as a help in differentiating perforated ulcer from other acute conditions. Of 108 patients in this series in whom this point was investigated, shoulder pain was present in 74 and absent in 34. In only 52, however, was the pain at the point of the shoulder on one or both sides. In the others it occurred in the clavicular region, in the neck, or between the shoulder-blades. De Bruïne Ploos van Amstel[4] places little reliance on this symptom, and it may be admitted that it is neither constant nor pathognomonic. Yet the typical rigidity and dramatic onset may fail, as Cuendet[5] and others have pointed out. In just such cases I have found shoulder pain a useful and comforting help in deciding on laparotomy.

Continental writers have described a pre-perforation stage with severe and uncontrollable epigastric pain as its main symptom. This is regarded as an absolute indication for surgical intervention, yet Schoemaker[6] had a patient perforate on the night following a prophylactic gastro-enterostomy. In four of the cases here reported the history suggests that such a pre-perforative stage had existed. But it seems doubtful if this condition is more than an exaggeration of the ordinary "attack of ulcer" which frequently heralds perforation, as it did in 64 out of 77 cases in which a note on this point was made. In 10, perforation was the first sign of the existence of an ulcer.

One visualizes the "perforated" patient as suddenly and completely incapacitated. This is not always the case. After the onset of the excruciating pain, four of these patients walked varying distances of from eighty yards to one mile, three "walked home," one continued to work for a few minutes and then climbed down from a roof, and one drove a motor car for three miles.

Of importance in the matter of workmen's compensation is the influence of strain as a causative factor. In one patient (carcinoma of the stomach) the ulcer gave way

during a fit of coughing. Another patient, whose ulcer was in the duodenum, was in the act of lifting a heavy weight when seized with the classical pain. I have seen at least two other cases in which the relationship of effort appeared to be indisputable. This relationship has previously been described by many writers,[4] (Powers[5]), but the connexion must be immediate and undeniable before effort can be admitted as an etiological factor. It is interesting, but out of place here, to speculate on the mechanism of its action.

Sites of Perforation.

Owing to inflammatory infiltration it is not always possible to say whether a perforated ulcer is proximal or distal to the pyloric vein. Stenbuck,[3] Fermand,[7] and Cuendet have drawn attention to this difficulty. The matter is not one of merely academic interest. Many Continental writers seem to classify pyloric ulcers as gastric. This may lead to erroneous conclusions in assessing mortality, and considerable difference of opinion apparently exists on the relative dangers of leakage from the stomach and the duodenum. Iserlin states that duodenal perforations have a better prognosis; Petren and Brunner hold the opposite view. Glaessner and Rosenthal,[4] and Meyer and Brams,[10] say that there is no difference. In order to be clear on this point I have classed all those perforations at the pylorus which were not definitely in the duodenum as pyloric. All the duodenal ulcers were in the first part, and no case of jejunal perforation is included in the series. One duodenal ulcer was on the posterior wall, and one lesser curve ulcer had opened into the lesser sac—in both cases the escape of fluid was minimal. This lesser curve perforation, one duodenal, and one pyloric perforation, were the second from which the respective patients had suffered. Whether in any of them the same ulcer had given way for a second time could not be determined, but a report of Borszeky's[11] demonstrates the possibility of such an occurrence.

Mortality.

Of the 154 cases, 20 died, making a mortality of 12.9 (say 13) per cent. The lesion was in the duodenum in 100 cases (8 deaths, 8 per cent.), at the pylorus in 33 (5 deaths, 15.1 per cent.), and in the stomach in 21 (7 deaths, 33.3 per cent.). Six of the stomach cases were malignant.

TABLE I.

Time between Perforation and Operation.	Number of Cases.	Deaths.	
		Number.	Percentage.
A. *Perforated Duodenal Ulcer.*			
Twelve hours or less	81	6	7·4
More than twelve hours	19	2	10·5
B. *Perforated Pyloric Ulcer.*			
Twelve hours or less	29	3	10·3
More than twelve hours	4	2	50·0
C. *Gastric Perforations.*			
Twelve hours or less	17	4	23·5
More than twelve hours	4	3	75·0
D. *All Cases.**			
Six hours or less	75	4	5·3
Six to twelve hours	52	9	17·3
More than twelve hours	27	7	25·9

* This section shows the importance of the time factor.

In the twelve-hour groups the cases of duodenal and pyloric perforations treated without gastro-enterostomy show an almost identical mortality, between 7 and 8 per cent. Probably nearly all the pyloric ulcers were in fact duodenal. No attempt will be made here to force conclusions from small groups of case reports, but the figures support the view that gastric perforations are considerably more lethal than those in either of the other two situations—a matter of common knowledge to any experienced hospital sister. It is also interesting to note that the group of perforated carcinomata (6 cases under twelve hours) showed a better operative recovery rate than that of the non-malignant gastric perforations (11 cases under twelve hours).

The recent collective investigation into the after-history of gastro-enterostomy[12] undertaken by the British Medical Association showed the mortality in 112 cases of perforated duodenal and pyloric ulcer in which gastro-enterostomy was performed to be 13.6 per cent. Unfortunately no details are given of the stage after perforation at which operation was done, and comparison is therefore difficult.

Late Results.

Of the cases treated without gastro-enterostomy, 163 have been followed up for periods varying from eighteen months to four years and nine months from the date of operation. All those in the "quite free" class have been followed up for at least two years. Of the 163 patients, three have died, two from carcinoma of the stomach and one (duodenal) from an unknown cause. The remaining 160 cases may be classified as follows:

TABLE II.

	Duodenal.	Pyloric.	Gastric.	Total.
(*a*) Quite free from any kind of stomach trouble.	27	5	0	32
(*b*) Have or have had slight symptoms, certainly or possibly attributable to ulcer, but not justifying operation.	13	6	2	27
(*c*) Have ulcer symptoms which do or might by some be held to indicate operation.	15	10	1	26
(*d*) Have had a second operation for ulcer ...	9	4	2	15
Total	72	25	5	100

In Class (*a*) 21 patients have been free from symptoms for from two to three years, 10 have been free for from three to four years and nine months. An ulcer patient must always be liable to the risk of recurrence of symptoms, and the two-year period was taken for purposes of this follow-up for the following reason. Of 48 patients in whom recurrence took place and who stated the period of respite, in only 4 was it more than one year and nine months. It seems likely, then, that any return of symptoms after simple closure of a perforation will take place within two years.

Of the 160 patients, 65 have worked regularly since operation, 15 have been unemployed or have lost work but not on account of symptoms ascribable to ulcer, 20 have lost work on account of ulcer symptoms.

The Question of More Extensive Immediate Operations.

In this country controversy has centred on the advisability of immediate gastro-enterostomy. The question is one on which it is impossible to dogmatize. Much depends on the views of the operator as well as on the condition of the individual patient. Gastro-entero-stomy has been said to diminish the death rate in the acute stage. Radoiévitch,[13] in a thoughtful paper, says that simple closure of perforated ulcers gives a higher initial mortality—23.5 per cent. within the first twelve hours and 61.4 per cent. after that interval—than any of the more extensive procedures, including partial gastrectomy. Grey Turner and Dunhar[14] state that primary gastro-enterostomy increases the mortality, and Zachary Cope[15] uses this method less than he formerly did.

Various other advantages have been claimed for the extended operation in the acute stage, notably that it does away with the danger of stenosing the pylorus. I have been able to observe some hundreds of cases of perforated ulcer, operated upon by different surgeons, and do not remember ever having seen pyloric stenosis in the immediate post-operative period unless it had previously existed; but Rayner[16] and Radoiévitch cite indisputable cases of this complication after suture alone. Many writers have pointed out its rarity, and the elaborate methods necessary to attain occlusion of the pylorus when it is deliberately undertaken make their statements easy of credence. The fear of stenosis should not be a reason

for systematic gastro-enterostomy at the primary operation. The supervention of pyloric stenosis as a remote complication will be mentioned later.

That a short-circuit may relieve tension on the suture in large callous (especially gastric) ulcers appears probable. The technical difficulties of closure in certain of these cases are very great and time-consuming—a fact used with some force by those who press for radical measures in the acute stage.

Most British writers advise suture alone as the routine procedure (Berry, Rowlands, Legg,[14] Adams,[18] Pannett, etc.), and even the advocates of anastomosis (Mills,[19] Evans,[20] Sherren,[14] and others) point out that it is not a method for every operator. The condition of the patient has an obvious importance, though the necessity for extreme speed in operating may have been exaggerated.

But perhaps the most attractive argument for immediate gastro-enterostomy is contained in the statement that its remote results surpass those of simple closure. Dunbar, however, did not find any great permanent benefit to follow the combined operation, and it is interesting to note that its alleged unsatisfactory end-results have been advanced against gastro-enterostomy by those who favour immediate resection of the stomach (Nyström,[21] Kreuter[22]). It has also been claimed[13] that reperforation, of which three cases are here reported, would be prevented by complementary gastro-enterostomy. Platou[23] records three cases of reperforation within one year of simple closure of the original perforation.

If it had been possible to undertake the combined procedure in the 100 cases mentioned in Table II, and if they had all remained quite free from symptoms, at least 32 of them would have undergone an unnecessary gastro-enterostomy for the benefit of the remainder. Each individual surgeon's practice will be governed by the answer which he finds to the question implied in this fact: assuming the improved mass end-results, is one justified in obtaining them by submitting a considerable minority of patients to an operation which is, to them, unnecessary? It may be argued, not illogically, that one is justified. It may also, with at least equal logic, be argued that one is not justified in submitting any patient unnecessarily to an operation of which Hurst[24] has said that it is the commonest gastric disorder of the day, even though one may not take such a gloomy view of it as he does. Pannett[25] has pointed out that patients whose ulcers perforate seem prone to the formation and perforation of anastomotic ulcers, and Bolens[26] instances some striking examples of repeated perforations at the anastomotic line. (See also Riess, Ashcroft, Ehrlich, Porzelt, Butler, Robinson, and Nixon and Lowry.[27])

Should one decide that the ability of the patient to bear it should not be the sole indication for something more than mere closure of the perforation, are there any guiding factors to help one in the selection of cases? Existing pyloric stenosis, and the probability that it will occur in the process of healing, are obvious indications. The later development of pyloric stenosis certainly occurs frequently enough to demand consideration. Induration of the ulcer and chronicity of symptoms (by no means synonymous terms) are also indications, but do not point the way quite so clearly. K. P. Brown,[28] in opposition to most writers, finds that patients without previous symptoms have worse late results than those with long-standing dyspepsia. The following tables have a bearing on this point. In them are analysed 32 cases classed in Table II as quite free from stomach trouble.

TABLE III.—*Total Duration of Dyspepsia.*

	Cases.
No note	8
"Some"	5
Up to one year	5
Two to nine years	7
Perforation during first attack of dyspepsia ...	7

TABLE IV.—*Induration.*

	Cases.
No note	9
Absent	8
Present	15

The numbers are too small to allow any generalization, but it is clear that neither induration nor length of history affords an infallible guide as to whether suture alone will cure or not. It seems justifiable to suggest that, in the absence of stenosis, the selection of cases for primary gastro-enterostomy demands careful and mature judgement.

Of the more radical operations in the immediate treatment of perforated ulcer (excision or cauterization of the ulcer with or without gastro-enterostomy, sleeve resection, partial gastrectomy) I have no experience either as an operator or as an observer. The results claimed by Continental surgeons[29] seem to justify radical extirpation of an operable perforated carcinoma of the stomach if the general condition of the patient allows. Indeed, it was in such circumstances that Keetley[30] in 1902 first demonstrated the possibility of radical measures. If there is a class of non-malignant case in which the more extensive methods appear indicated in competent hands, it is that of the large indurated gastric ulcers in which faulty closure is only overcome by wide infolding, often after the expenditure of much time and with gross deformity of the stomach as a result. The mortality of suture in these cases is high, and it is conceivable that it might be reduced by the certain approximation of healthy tissues after removal of the infiltrated area. Much more rarely, extensive and callous duodenal ulcers call for similar treatment (Grimault,[31] Dunbar).

Conclusions.

1. The immediate mortality of treatment without gastro-enterostomy in 125 cases perforated for twelve hours or less was 9.6 per cent.; and in 26 cases perforated for more than twelve hours 26.9 per cent. It is suggested that these figures fairly accurately represent the average under present-day conditions.

2. In a two-year follow-up, 32 per cent. of patients stated themselves to be quite free from any kind of stomach trouble after suture without gastro-enterostomy.

3. The immediate results after suture alone in pyloric and duodenal perforations are practically identical. Secondary operation finds more frequent indication in pyloric perforations.

4. Closure must be safe. In exceptional cases safety may demand something more radical than mere suture, with or without gastro-enterostomy. If in a given case such extensive methods are unjustified, careful apposition of the edges of the perforation by suture and the reinforcement of this by an omental graft are preferable to the infolding of a wide area of stomach-wall.

5. Apart from the cases mentioned under 4, gastro-enterostomy should usually be reserved for those cases in which stenosis is either actually present or likely to result from healing. In view of the fact that in other cases it is unnecessary in one out of three, it should not be done as a routine. The presence of an unnecessary gastro-enterostomy is not without risk, and it is better to await results and do it later if it should be necessary. Its systematic performance at the time of perforation without definite indication is certainly not likely to diminish mortality.

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ON THE EXISTENCE OF A FOURTH HORMONE, THYREOTROPIC IN NATURE, OF THE ANTERIOR PITUITARY.

BY

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RECENT investigation of the endocrine function of the anterior lobe of the pituitary has disclosed results which have converted earlier reasonable expectation into demonstrable fact. It is now established that extracts of anterior lobe, prepared in different ways, can produce the following diverse effects:

1. Excessive growth leading to gigantism.
2. Inhibition of oestrus.
3. Induction of oestrus.
4. Increase in the basal metabolism rate.
5. Metamorphosis in the neotonous amphibia.

The multiplicity and diversity of these effects naturally led to the assumption than more than one anterior pituitary hormone must be responsible for them, and so it is that some have attempted to *distinguish a growth hormone* and a sex or gonadotrope hormone (Evans and Simpson, 1928), whilst others have sought to analyse the latter into a hormone that promotes follicular development in the ovary and another which induces luteinization. By some it has been assumed that the growth hormone is antagonistic to the sex hormone—the oestrus-producing agent (Evans and Simpson); and that this antagonism explains away the fact that certain extracts containing the growth hormone actually inhibit the oestrus. Others have postulated that there are two oestrus-influencing factors involved, one inciting it, the other inhibiting it. The present writers, on the basis of their own experiments, have elsewhere succeeded in reconciling certain of these apparently conflicting opinions. They postulate the existence of two gonadotropic hormones of the anterior pituitary, Rho 1 and Rho 2 respectively, and refer the difference in gonadotropic effect to quantitative and qualitative differences in the preparation of these factors in any given anterior pituitary extract. Rho 1 is the oestrogenic factor, Rho 2 the kyogenic. The first incites in the ovary the first phase of activity, characterized by the elaboration of oestrin which leads to the phenomenon of cornification of the vaginal epithelium. Rho 2 evokes the second phase of ovarian activity, characterized by the activation in the ovary of the lutein tissue which elaborates substances that evoke the nidational potencies in the uterus, and mucification, the development of high mucous epithelium, in the vagina.

Evans and Simpson have shown that the growth hormone is not contained in human placenta, whilst Wiesner and Crew have demonstrated the presence of Rho factors therein. Since it has been found possible to obtain extracts which contain both Rho factors, but which do not contain the growth hormone, and since it is possible to extract Rho factors with acid as well as with alkaline media, whereas the growth hormone is not present in acid extracts (Hewitt), it follows that the Rho factors and the growth hormone are distinct and separable.

It has been shown by Adler, Allen, Spaul, and others, that certain anterior lobe extracts invoke metamorphosis in the neotonous amphibia. The question thus arises as to which of the known hormones of the anterior pituitary is responsible for this effect, for if none of these produces metamorphosis, then it becomes necessary to postulate the existence of yet another anterior lobe hormone responsible for this phenomenon. It is established that thyroxine can induce metamorphosis, but it is most unlikely that the hormone of the anterior pituitary which produces metamorphosis is identical with this substance (Spaul). Since the feeding of large amounts of anterior lobe can promote growth in the axolotl in the absence of metamorphosis, it would seem that the metamorphic factor is not the same as the growth factor. It is of interest to note that Spaul has produced evidence which shows that there exists a different regional distribution in the pituitary of this growth factor and of the metamorphic factor.

In order to examine the question as to whether or not Rho 1, Rho 2, or the growth hormone was identical with the metamorphic factor, the following experiments were planned. To different sets of young axolotl, three in each, the following substances were administered, 0.5 c.cm. being given daily over a period of a month: (1) thyroxine; (2) extracts of human placenta prepared by the method of Wiesner (1930) containing Rho 1 and Rho 2, and known to be highly oestrogenic; (3) extracts of anterior lobe containing the growth factor prepared by the method of Evans and Simpson. Only those animals which received thyroxine metamorphosed. Since it has been shown that the presence of posterior lobe derivatives in an anterior lobe preparation leads to a retardation of the metamorphic effect, it might well be that in these extracts posterior derivatives were present, and the failure of Rho factors to induce metamorphosis might be due to a secondary cause.

But a further series of experiments permitted us to arrive at certain definite conclusions. It is to be noted that the active extracts of Spaul and others—for example, of Uhlenhuth—are prepared by boiling anterior lobe in diluted acetic acid for ten minutes. Now it had been observed that the Rho factors are completely destroyed if boiled for more than three to five minutes. In accordance with these observations we found that extracts prepared by Spaul's method and injected in various doses into immature mice proved to be inactive. In no case did cornification or mucification of the vaginal epithelium follow: though extracts prepared with acetic acid without boiling definitely activate the ovary and thus lead to significant changes in the vaginal epithelium. It follows, then, that the extracts prepared by Spaul's method do not contain the Rho factors. Boiling also destroys the growth factor, as was found by Evans; and it is of interest to note that Spaul states that the use of alkaline media is detrimental to the preparation of the metamorphic factors, though this has been shown to be the best method for the extraction of the growth factor (Evans, Hewitt, Putnam, Teel).

There would seem, then, to be no escape from the conclusion that there must be at least four hormones elaborated by the anterior pituitary—*the growth factor, two gonadotropic factors (presently called Rho 1 and Rho 2), and a metamorphic factor*, which we think provisionally should be given the name of Theta.

Since metamorphosis is produced in the neotonous amphibia by the mammalian pituitary, it follows that the theta factor *is present*, even in those forms in which metamorphosis *does* not occur. What, then, is its role?

Certain observations suggest that this theta factor is *thyreotropic* in its action, being the activator for the release of thyroid development and activity. It has been shown by Uhlenhuth and Schwarzbach that the thyroid of an animal metamorphosed by anterior pituitary undergoes that series of developmental changes which are characteristic of normal metamorphosis. Moreover, it has been noted by Allen and others that the thyroid of *hypophysectomized* animals becomes atrophied. It is true that Hoshen and Spaul have both recorded instances of metamorphosis induced by anterior pituitary extract in the thyroidless individual, but it would appear that this metamorphosis was not complete in the first author's cases, and, as Uhlenhuth has pointed out, it is not yet decided that in these experiments the thyroid was completely removed. This view is supported by certain other facts. Extracts of anterior lobe which induce metamorphosis also provoke a rise in the metabolism of the frog (Uhlenhuth). This is as would be expected if the extracts contained substances which stimulated the thyroid, or if the metamorphic factor in the anterior pituitary were thyreotropic in action. Moreover, it has been reported by Smith

that the degenerative changes in the thyroid following hypophysectomy are repaired following implantation of anterior lobe substance.

Uhlenhuth would seem to be justified, therefore, in ascribing the metamorphic effect of anterior lobe extracts to the presence of an activator of the thyroid therein. Be that as it may, our own experiments show that not only is the metamorphic factor not identical with the growth hormone—as has been concluded by Spaul—but that it also differs from the gonadotropic hormones. It may be assumed, therefore, that a fourth anterior pituitary hormone (theta) exists. Further experiments will have to show whether it is thyreotropic, as it seems to be.

INTRAVENOUS PYELOGRAPHY.

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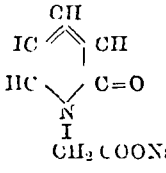
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EVER since Ehrlich in 1906 produced salvarsan, scientific workers all over the world have been looking for an antiseptic which, when injected intravenously, shall be harmless to the body tissues and yet be able to kill micro-organisms. Their ideal has never yet been realized, but many useful synthetic products have resulted from their search. Uroselectan (sodium 2 oxy-5-iod pyridine-N-acetic acid) is one of these.

For some years prior to 1928 Professor Binz and Dr. Raeth had been experimenting with an organic compound of iodine selectan-neutral, which, it was hoped, would be of use in coccal injections of the biliary and urinary tracts. Erbach, moreover, had shown that this compound, with a high molecular weight, was excreted in part by the kidneys, and naturally these facts suggested that it might throw a shadow of the urinary tract on radiographic examination.

Experiments to this end were carried out by Swick[1] in Lichtwitz's clinic, with only more or less satisfactory results. The clarity of the shadows was variable; they were not sufficiently dense for reproduction, and it was found that, whether the compound was administered by the mouth or intravenously, there was a good deal of individual variation in tolerance. Furthermore, a large number of reactions, such as headache, sickness, and vomiting, were recorded. For these reasons it was later on suggested by Swick and von Lichtenberg that sodium glycin should be substituted for a methyl group, and the solubility of the compound increased by a slight reduction of the iodine content. This work was carried out by Binz and Raeth,[2] and the compound called uroselectan was the result. The formula of the preparation is shown below.



Chemical and Physical Properties.

It is neutral, soluble in water to more than 50 per cent., and contains 42 per cent. of iodine. Its opacity to x rays is shown in Figure 1. It is an extremely stable chemical compound, which can be introduced into the blood stream in relatively large amounts. If deductions from animal experiments[3] are reliable, it is possible to give an intravenous dose of 180 grams to a man weighing 50 kilos, but for clinical purposes 40 grams is all that is necessary to produce perfectly clear-cut shadows. This amount is dissolved in 80 c.cm. of redistilled water, filtered twice, and autoclaved for twenty minutes. The result is a heavy brown solution, which, however, contains no free iodine. Experiments have been made with a view to sterilizing it by boiling, and a solution boiled for three hours has been used with no ill effects. For children the dose is proportionately smaller. Up to the age of 6 we inject 10 to 12 c.cm. of the 40 per cent. solution; from 6 to 10 years, 20 to 40 c.cm.; and from 10 to 15 years, 50 c.cm.

Technique.

The patient is prepared for the x rays in the usual way, and a preliminary radiogram is taken. The solution at body heat is then injected slowly into a vein, preferably in two equal doses, at an interval of from two to three minutes. For routine purposes radiograms are then taken, a quarter of an hour, three-quarters, and one and a quarter hours after injection.

Generally speaking, the rate of excretion bears a direct relationship to the renal function, as determined by the ordinary tests, and after a quarter of an hour in cases with a good renal function, not only is the whole urinary tract clearly visible, but there is a definite increase in the normal renal shadow. This latter is naturally more easily appreciated in the film than in a reproduction. The standard of radiographic technique demanded is high. The shadow thrown by the drug as it is excreted by the kidney is not quite as dense as that ordinarily obtained by the introduction of media through ureteric catheters, and it is therefore of paramount importance that the maximum contrast should be obtained upon the radiogram. For this reason we use a low penetrating ray such as is emitted from a tube excited by a maximum potential of 65 kilovolts peak.



FIG. 1.—1. Uroselectan. 2. Half uroselectan and half 2 per cent. urea. 3. Half uroselectan and half 4 per cent. urea. 4. 4 per cent. urea. 5. Water. 6. 20 per cent. sodium iodide.

A Potter-Bucky diaphragm fitted with a pressure band in conjunction with double intensifying screens is used, the focal plate distance being thirty inches. With a milliamperage of 60, the exposure will vary with the bulk and build of the patient, and will ordinarily be from one to five seconds. The radiograms are developed for five minutes in a standard developer heated to 65° F. precisely. The radiograms when completed are examined in lanterns of equal illuminant power. No variation from the normal procedure is permissible.

It must be pointed out that important information is obtained by comparing radiograms of a series, and any variation in the relative density of the drug-laden urine must be independent of variations in radiological technique. Several of our patients were radiographed at three-minute intervals, and in one patient radiograms were obtained at intervals of five seconds. Should such procedures become general, and the results of more than academic interest, it may be necessary to devise serial changing cassette holders working in conjunction with a Potter-Bucky diaphragm. The cinemato-radiogram may in the future give the perfect serial visualization of kidney function.

CASE I.

This case indicates clearly the results which can be uniformly obtained in a patient with a relatively normal renal function. The radiogram (Fig. 2) shows a stone clearly outlined in the slightly dilated pelvis of the right kidney. The left kidney is normal. There was in this case no need for cystoscopy, although it was carried out as a check on a new method. Fig. 3 shows the slightly dilated pelvis of a movable kidney. The outline of the upper ureter and the increased density of the renal shadow are also clearly seen.

CASE II.

The radiogram (Fig. 4), taken after operation, shows clearly a filling defect in the lower calyx of the right kidney of a youth aged 19, who was the victim of a "buffer accident." His kidney was split in front and behind to a depth of 1 cm.

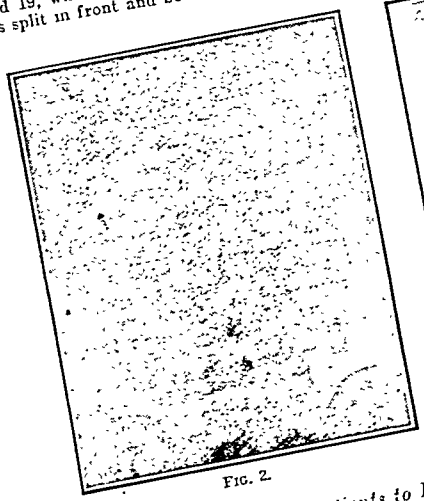


FIG. 2.

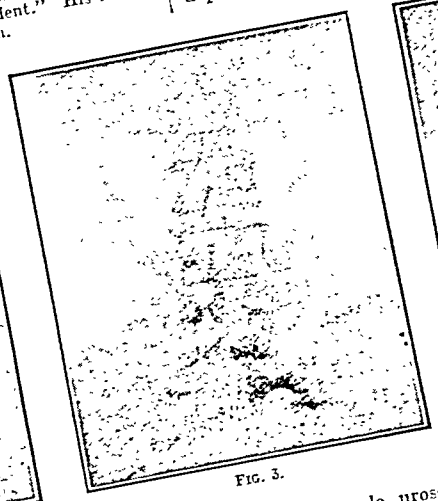


FIG. 3.

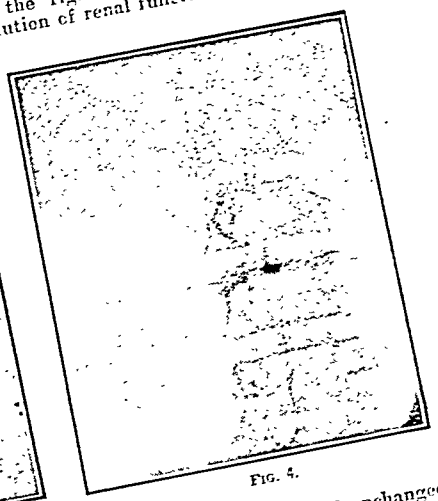


FIG. 4.

Reactions of Patients to Injection.

In our experience, and in that of others, the injections have been followed by no ill effects. Within a few minutes the pulse rate is increased by 10 to 15 beats to the minute and the blood pressure is raised 10 to 12 mm. of mercury. These both return to normal within fifteen minutes, and remain so. During this short period of raised blood pressure some patients complain of slight giddiness. Occasionally there is a transient cramp in the anterior shoulder muscles, but this is in no way distressing. A patient who was very nervous and complained of giddiness was easily able, immediately after injection, to stand up for screen examination. In one case a small quantity was injected outside the vein. From this accident no ill effects were observed. After injection no free iodine is found in the blood and urine, and in cases with a normal renal function no iodine can be found in the blood within a quarter of an hour of injection.

Experience has shown that the injection can be given perfectly safely even in cases with such a marked decrease of renal function that the dye has been retained in the circulation from twenty-four to thirty hours. The only known contraindications to its use are anuria, uraemia, and cases in which the liver as well as the kidney are grossly diseased. One death in such circumstances has been reported.[4]

General Consideration of Results.

Very often, owing to the rapidity with which the urine runs down into the bladder, the whole line of the ureter is not seen unless serial radiograms are taken. If, however, there is any blockage of the ureter from stricture within, or from pressure without, the ureter is easily visualized. Normal shadows sometimes show more dilatation than is usually visible with ordinary pyelography, probably because spasm due to the presence of a catheter is eliminated. In order to show up the lower ureter it is necessary to empty the bladder before making each routine exposure. We have not succeeded, as others have done, in visualizing on screen examination the pelvic shadow accurately enough for pyeloscopy.

Interpretation of Results.

In our series of about sixty radiograms we have noticed that the shadow of the left kidney appears slightly less dense than that of the right. This is apparently not dependent on a diminution of renal function.

As a rule, uroselectan is very rapidly excreted unchanged. We have serial radiograms taken at three-minute intervals after injection in several cases. Generally speaking, there is a satisfactory shadow after six minutes, and in fifteen minutes there is a perfectly clear outline of the whole of the urinary tract. In one case where radiograms were taken at five-second intervals all the major calyces were faintly but definitely outlined five minutes after injection. Within six hours 80 to 90 per cent. of the iodine is eliminated.

Dr. Obermer, to whom we are greatly indebted, has been unable to find any trace of free iodine in the urine of patients after injection. Fig. 5 shows the relative opacity of the urine secreted at varying intervals.

Uro-selectan is easily recovered from the urine. On the addition of hydrochloric acid it forms a heavy white precipitate when the *p*H reaches 2·8 to 3. It can therefore be used as a good test of renal function. Chemical estimation, however, is not always necessary, because, as Fig. 5 shows, the specific gravity is a very reliable guide to the amount of the drug present. It should reach between 1045 and 1050 within an hour, during which period the bulk of the drug is excreted. Whether, as a test of renal function, it is as reliable as the indigo-carmine or the urea concentration tests, remains to be seen. There exist facts which suggest that infection is much more potent in retarding its excretion than that of indigo-carmine.

Von Lichtenberg states, and our experience confirms his view, that while an advanced non-infected hydronephrosis will give an excellent though perhaps delayed shadow, a pyonephrotic and infected or a congested kidney may give no shadow at all.[5]

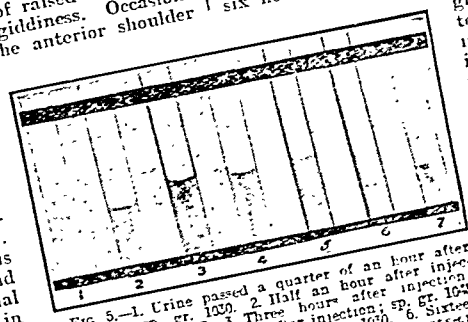


FIG. 5.—1. Urine passed a quarter of an hour after injection; sp. gr. 1030. 2. Half an hour after injection; sp. gr. 1037. 3. Three hours after injection; sp. gr. 1045. 4. Five hours after injection; sp. gr. 1030. 5. Ten hours after injection; sp. gr. 1027. 6. Sixteen hours after injection; sp. gr. 1015. 7. Twenty-one

CASE III.

The radiograms in this case (see Fig. 6) illustrate excellently how an infected kidney may fail to yield a shadow. The right kidney pelvis, which filled within a quarter of an hour, is dilated, and shows cupping of the calyces, possibly due to an infection. There is no uroselectan shadow of the left kidney, but the faint outline of multiple calculi can easily be seen. At biopsy, after operation, multiple chronic staphylococcal abscesses were found scattered throughout the renal cortex.



FIG. 6.

Finally, to assess the value of uroselectan is at the present moment impossible, but being both a reliable renal function test and a pyelographic contrast medium, it is bound to play an important part in urological diagnosis. Von Lichtenberg[6] states that in 70 per cent. of 84 cases its use eliminated the necessity of cystoscopy. From the patient's point of view this in itself is the greatest possible advantage.

In cases where cystoscopy and catheterization of the ureters is difficult or impossible its routine use will be a necessity—for example, in children, and patients with ureteral strictures or pelvic tumours which compress the ureters from without. In cases of movable kidney it is easy to estimate the degree of mobility because the patient can stand up, or, in fact, assume any position that circumstances may require.

The disadvantages are two—namely, its expense, which is considerable, and the fact that no shadow is obtained when the renal function is greatly diminished.

It is probable that in the future intravenous pyelography will invariably be carried out before the decision is arrived at that the patient must be submitted to the ordeal of ureteric catheterization.

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SWELLING OF THE FEET AND ANKLES NOT ASSOCIATED WITH ALBUMINURIA OR GROSS ORGANIC DISEASE.

PATHOGENESIS AND TREATMENT OF A COMMON SYMPTOM.*

BY

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OEDEMA without albuminuria occurs in a variety of well-known conditions, such as several of the anaemias, chlorosis, war oedema, starvation oedema, beri-beri, and varicose veins in the legs. It also not infrequently precedes the appearance of albuminuria in the early stages of some cases of nephritis and pregnancy kidney. The type of oedema which is described here, however, is one which is quite commonly met with, especially among patients of the so-called hospital class, though it is by no means confined to them. It cannot be ascribed to any of the conditions already enumerated, and is seen chiefly in adult women, in the form of "puffiness" or swelling of the feet and ankles. It is, however, occasionally met with in debilitated adult males, and even in children. In women, not always of the poorer classes, it is the cause of much misery and distress, partly for cosmetic reasons, and also because in bad cases walking is difficult or impossible, and so leads to loss of employment. Tennis and dancing also have frequently to be given up because of this symptom. The milder cases do not seek advice for this, but for associated symptoms of that state of subnormal health commonly called "debility," such as headaches, constipation, lassitude, amenorrhoea, etc. Other patients complain chiefly of swelling of the feet, and are diagnosed as cases of anaemia, and iron, tonics, and various glandular extracts are prescribed. Some of the wealthier resort to beauty parlours, where they are given massage and local hypertonic salt compresses. As a rule none of these measures appears to be very effective in affording relief for this exceedingly common symptom.

The Pathogenesis of "Swollen Feet."

There are, of course, several varieties of "puffy," swollen, or "thickened" feet and ankles which are not associated with cardiac, renal, or other gross organic disease. In some cases the swelling is due entirely to an increase in the water content of the tissues of the part, in others to excess of fat, and again in others to a combination of excess of both water and fat. There is also the variety associated with blueness of the extremities, referred to by Parkes Weber[1] under the descriptive title of "erythrocyanosis crurum puellarum." No hard-and-fast line can be drawn between these conditions in many cases, but this paper is concerned only with the enlargement of the extremities, generally the feet and legs, due to true oedema, or excess of water in the tissues.

As will be seen later, there is reason to believe that the relative frequency with which the oedema is complained of in the feet and ankles is probably due entirely to the effects of gravity, as in reality the excess of water, or oedema, is present in all the tissues of the body, though often not in sufficient amount to attract attention. During the course of the day the oedema tends to drain down to the feet, and by the evening has there collected in sufficient amount to be noticed by the patient.

The following case is typical of the disorder which is being considered here.

A lady, aged 36 years, was sent to the out-patient department complaining of pains and swelling in the feet and legs, most marked in the right ankle, which she had noticed for several months. The swelling was most prominent in the evening, and had usually almost disappeared on rising in the morning. The periods were regular, but rather scanty. The swelling was always much worse at the time of the menstrual periods. She had frequent severe headaches and a tendency to constipation. Six months ago she had lumbago, the only definite illness she remembered having had in her life. She was pale, and the complexion was "greasy" and spotty. The hands were not swollen or blue, but were clammy and sweaty. Examination of the heart revealed nothing abnormal, and there was no albuminuria. There was no obvious focus of sepsis. She was unmarried. The blood pressure, blood urea, and urea concentration were all normal. A blood examination, for which I am indebted to Dr. L. Hewlett, showed: red blood cells 5,936,000 per c.mm., haemoglobin 90 per cent., colour index 0.8. The plasma bicarbonate was 0.0278 M. (normal=0.0300 M.). The urine contained no albumin. It is clear, then, that in this case neither heart disease, kidney disease, nor anaemia provides an adequate explanation of the oedema. The latter was not sufficient to prevent walking, but it was of that degree which would have attracted the attention of lay persons.

Elsewhere[2] it has been shown that "debility," whether occurring in children or adults, is a state which is generally associated with some degree of "acidosis," which, in turn, is frequently accompanied by an increase in the water content of the body as a whole. The term acidosis was defined as a reduction of the concentration of bicarbonate in the plasma, and therefore does not necessarily imply any change in reaction (*p*H) of the blood.

It is suggested here that it is this underlying "acidosis," the exact cause of which is not known, which leads to excess of water in the tissues, and that in minor degrees of the disorder the accumulation of fluid is only sufficiently great to attract attention under the influence of gravity, and hence the frequency with which it apparently occurs in the feet and ankles alone. Taking the group as a whole, there is a considerable diminution in the plasma bicarbonate values in these waterlogged subjects, compared

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with the normal, which is probably not due to hydraemia or wateriness of the blood, as then the haemoglobin percentage would also be reduced.

It may be mentioned that a normal plasma bicarbonate may be present at the same time as a true "acidaemia," or change in reaction (pH) of the blood to the acid side of normal; and, further, that a normal reaction in the blood does not necessarily preclude an abnormal reaction in the tissues. The results of treatment in some of the cases described below, where the plasma bicarbonate was normal at the time treatment was commenced, suggests that "tissue acidosis" may have been present all the time. In the paper referred to above[2] it has been shown that the plasma bicarbonate is highest in normal adult males, and that it decreases slightly in the following groups in the order given: normal adult females (menstrual values), normal adult females (menstrual values), debilitated adult females, and normal pregnancy. It was pointed out, too, that the plasma chlorides, and the water content of the body, as measured chiefly by the frequency with which clinically apparent oedema occurred in each group, tended to increase in inverse relation to the plasma bicarbonate—that is, oedema, unaccompanied by albuminuria, was most often encountered in pregnancy, then in debilitated females, in normal women in between the menstrual periods, in normal women during the menstrual period, in debilitated adult males, and least often in normal adult males. This is certainly in accordance with clinical experience, and to some extent has been confirmed by more accurate methods.[2] These points are well brought out in Table I.

TABLE I.

Group.	No. Cases.	Average $NaHCO_3$	Average NaCl.	Water Content.
		M.	Gram %	
Normal adult males	86	0·0320	0·587	Least.
Normal adult females (intermenstrual)	31	0·0301	0·5685	+
Normal adult females (menstrual)	31	0·0291	0·591	++
Normal children	38	0·0299	0·606	+++
Debilitated children	63	0·0276	0·603	+++
Debilitated adult females	72	0·0271	0·594	++++
Normal pregnancy	68	0·0247	0·595	+++++

The type of oedema described in this paper occurs mainly in the feet, ankles, and legs, is at its maximum in the evenings, is worse after exertion and in hot weather. It may be constantly present, waxing and waning with the factors just mentioned, or may only occur under some of these conditions, disappearing apparently spontaneously for weeks or months at a time, and then perhaps recurring. It should be noted that those conditions—menstruation, exercise, etc.—which are associated with an increase in the oedema are also those usually accompanied by a decrease in the plasma bicarbonate.

Treatment.

The rationale of the method of treatment adopted in many of these cases is an outcome of the theory of the pathogenesis of the symptom outlined above. It consists in giving sufficient alkali, in the form of equal parts of potassium citrate and sodium bicarbonate, by the mouth, to raise the, and to maintain the plasma bicarbonate at, a normal level, and possibly to increase the alkalinity of the tissues—at all events, to give enough alkali to promote a diuresis sufficient in amount to remove the excess water from the tissues. The method, in fact, is the same as that described in detail elsewhere[3] for the treatment of certain cases of nephritis accompanied by oedema, without the dangers incident to the giving of large doses of alkalis in the presence of grossly damaged kidneys. For reasons of space it is not possible to give details of all the cases here, but it may be said that of the 16 treated up to date, the oedema cleared up entirely in the 16 treated up to date, the relapsed, and the oedema returned on discontinuing the treatment. Of these 6, 4 were again cured on resuming their former dose, and in 2 all further treatment completely failed to remove the oedema, though it was slightly improved in 1 of them.

It must be noted that; with two exceptions (Cases vi and vii), all the patients were attending the out-patient department for treatment, and most of them were meanwhile pursuing their usual avocations. There were therefore no control over the intake of fluid, the diet, or the amount of exercise taken. In many cases, too, the dose of medicine prescribed was not taken regularly. It is possible that the explanation for the lack of response to treatment in some of the cases may lie in one or more of the above factors; in any event it is not claimed that the treatment is always effective, but that it is so in a sufficient number of the cases to lend strong support to the correctness of the views put forward concerning the causation of the disorder.

From the practical point of view it is admitted that the treatment is tedious, clumsy, and not always effective; but, though it requires a good deal of supervision to get good results, it appears to be practically free from danger if confined strictly to the type of case under consideration. Further, estimations of the plasma bicarbonate are not necessary before or during treatment, provided there is no associated renal defect or accompanying dyspnoea or vomiting. Incidentally, it should be noted that, as in cases of nephritis with oedema treated by this method, there often occurs a preliminary increase in the oedema before final subsidence takes place.[3] Treatment, therefore, should be continued until this preliminary stage has been passed.

In detail, the treatment consists simply in giving by the mouth a mixture of 30 grains each of potassium citrate and sodium bicarbonate with 30 minims of syr. aurantii, in an ounce and a half of water, increasing the number of doses in the day according to need. It may often be necessary to give as much as 600 or 700 grains a day or more. With large doses, the strength of each individual dose may be increased to 50 grains of each ingredient per dose, thus allowing fewer doses in the day. It is probably wise to limit the intake of fluid roughly to a known amount in the twenty-four hours—say three or four pints, but no serious restrictions of fluids need be imposed. No other dietetic modifications appear to be necessary.

No untoward symptoms of any kind have been encountered in treating these cases in the manner described, except in one instance, where, for some reason unknown, the bladder became accidentally infected, and a cystitis resulted. The alkalinity of the urine appeared to favour the growth of the organism concerned, and treatment was therefore abandoned. The plasma $NaHCO_3$ was measured in these cases by the method of Van Slyke, Stillman, and Cullen,[4] the results being expressed as molar concentration.

TABLE II.

Case.	Sex.	Age	Duration of Oedema	Initial Plasma $NaHCO_3$	Maximum Daily Dose	Result
				M.	Grains.	
1	F.	32	18 yrs.	0·0270	400	Cured, relapsed, cured again.
2	F.	28	11 yrs.	0·0250	600	Cured, relapsed, failed to cure.
3	F.	25	2 yrs.	0·0224	500	Failed.
4	F.	24	1 yr.	0·0257	450	Cured.
5	F.	51	1 yr.	—	360	Cured.
6	M.	16	14 days	—	720	Cured.
7	M.	51	3 mths.	0·0237	360	Cured.
8	F.	19	3 yrs.	0·0265	1,000	Failed.
9	M.	48	4 mths.	0·0330	540	Cured, relapsed, cured.
10	F.	25	15 yrs.	0·0270	540	Cured, relapsed, cured.
11	M.	55	1 yr.	0·022	1,000	Cured, relapsed, cured.
12	F.	19	4 yrs.	0·0253	420	Cured.
13	F.	35	"Some yrs."	0·0223	480	Cured.
14	F.	23	"Some yrs."	0·0302	450	Cured, relapsed, improved.
15	F.	25	2 yrs.	—	360	Failed.
16	M.	44	10 wks.	0·0231	600	Cured.

Conclusions.

1. Analbuminuric oedema of the type described is most common in debilitated females.

2. It is generally associated with, and is probably due to, an underlying acidosis, with consequent increase in the water content of the body as a whole.

3. In many cases the symptom can be abolished by the giving of alkalis by the mouth in amounts sufficient to overcome the acidosis and promote diuresis.

4. The results of treatment confirm the thesis presented as to the pathogenesis of the disorder.

In conclusion, I should like to thank the many colleagues and friends who have helped me with the investigation of these cases, especially Dr. H. G. Close. I am indebted also to the physicians at Queen Mary's and Guy's Hospitals for sending me cases for investigation and treatment, especially to Dr. A. F. Hurst and Dr. H. French for access to Cases vi and vii respectively, and to Dr. J. A. Ryle for Case ii. My thanks are also due to Professor R. Donaldson and Dr. Arthur Davies, directors of the pathological laboratories of Guy's Hospital and Queen Mary's Hospital respectively; and, finally, to the Medical Research Council, for a grant enabling this work, which forms part of a larger investigation, to be carried out.

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3 Osman, A. A.: *Guy's Hosp. Reports*, lxxvii, 386, 1927.
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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

AFTER-HISTORY OF CASE OF GALL-STONES IN A YOUNG SUBJECT.

I. C., aged 24, was operated on at the age of 15 years for gall-stones, in May, 1920, by cholecystotomy (vide *British Medical Journal*, 1925, vol. i, p. 1126).

Following the operation she remained well till a year or two ago, when she began to experience spasmodic pain in the right hypochondrium. On August 13th, 1929, the scar became swollen and tender, and one week later the swelling burst, giving vent to green discharge containing numerous small stones. The pain subsided, but discharge of stones continued, sometimes as many as twenty at a time. She was readmitted to hospital on August 27th with a biliary fistula in the old operation scar, and with stones in the discharge.

Paramedian laparotomy showed gall-bladder adherent by fundus to site of the fistula. Cholecystectomy was performed, the subhepatic space being drained by a tube inserted through the fistula, and healing was uneventful.

Pathological Report.—Greatly thickened gall-bladder wall showed muscle hypertrophy and much inflammatory fibrosis, with cellular infiltration of subacute and chronic type. Mucosa showed abundant new formation of mucous glands.

Glasgow. G. H. EDINGTON.

MENINGITIS FOLLOWING OPERATION ON THE ANTRUM IN A PATIENT WITH COMPLETE TRANSPOSITION OF VISCERA.

THE case here recorded is of much interest, and seems worthy of publication.

A man, aged 24, seen during September, 1929, complained that he had been suffering from nasal obstruction for years, but that it had been very severe for the last two years. Examination revealed large multiple polypi on the left side. He was *x*-rayed. The films show an absent frontal sinus, but sphenoids, ethmoids, and both antra dull, especially the left.

He was admitted to hospital on October 15th, and examination confirmed the findings in the out-patient department, but also revealed the heart on the right side of the body. No other abnormality was detected.

On October 14th a Caldwell-Luc operation was carried out on the left side, and the polypi were removed through the antrum. A simple antrotomy was performed on the right side. He had an uneventful convalescence until October 21st, when he complained of headache and his temperature went to 102° F. A complete general and neurological examination was carried out, with negative findings. On October 22nd the condition was the same, except that his temperature was 100.2°, and again no other abnormality could be discovered. On the 23rd his temperature had fallen to 104° F., and he looked very ill. He was seen by the physician, who also found no other abnormality, but on account of his general condition ordered him three doses of 20 c.cm. polyvalent antistreptococcus serum at eight-hourly intervals. On October 24th he was given 50 c.cm. intravenous saline. The following day he had lung signs. The whole of the left lung, although normal to percussion, had an almost complete cutting off of breath sounds. Late that afternoon he had an epileptiform convulsion of the whole body. A blood culture was taken, and 10 c.cm. of 1/2 per cent. mercurochrome was given intravenously. By midnight he was having almost continuous epileptiform attacks, but they were gradually settling down to the left side of his face. These persisted in spite of 1/3 grain of morphine and a little chloroform inhalation. Lumbar puncture was performed. The fluid was under intense pressure, and 20 c.cm. were withdrawn. This had a few cells with intracellular bacilli resembling the influenza bacillus. He slowly sank, and died at 6 o'clock the following morning.

A post-mortem examination was carried out, with the following findings. The heart was lying on the right side. The spleen also was on the right side. The liver and appendix were on the left side. Both lungs were rigidly bound to the pleura throughout, and the large branch of the left pulmonary artery had an ante-mortem thrombus about three inches long. The brain had an area of pus over the whole of the upper part of the parietal lobe on the right side. The remainder of the brain, including the left side, was slightly congested but otherwise normal. A culture was made of the blood within the heart by Dr. Ponder, and was negative. The pus on the surface of the brain contained *Streptococcus longus*, and the thrombus was organized and infiltrated with leucocytes. We thank Dr. Ponder for the many bacteriological and microscopical examinations.

I wish to thank my honorary surgeon, Mr. J. Aldington Gibb, for permission to publish this case, and also for the following note.

"The operation performed by me was so usual and uncomplicated that the possibility of traumatic involvement never entered my head. The occurrence of two consecutive cases of erysipelas in the ward at the time may have been the source of infection. Moreover, the heating apparatus failed at the time, which inclines me to the view that this may have been an exciting cause of the onset. Mr. Mitchell, the house-surgeon, was unremitting in his care of the patient, and the post-mortem findings are his entirely, for which he deserves any credit. The case is interesting and well worthy of publication."

It was interesting to note that there was no macroscopic evidence of the disease having tracked up from the nose by a direct path, but it was completely isolated high up on the right side of the brain; also that the man was passed for the police force as perfectly fit in spite of his complete dextrocardia, and that he had done hard manual work all his life without any ill effects.

Maidstone. HUGH G. MITCHELL, M.B., B.S., D.L.O.

HERPES OPHTHALMICUS FOLLOWING CHOREA AND ASSOCIATED WITH VARICELLA.

THE following histories are rather difficult of interpretation.

A healthy-looking girl, aged 7, was admitted on December 9th, 1929, with a history of "jumpiness" for six days. Her well-marked chorea was treated with large initial doses of liquor arsenicalis, which were gradually decreased. By December 28th she had taken 424 minims, and her movements had almost stopped. On January 4th, twenty-six days after admission, she developed herpes in the distribution of the upper division of the left fifth cranial nerve, the cornea escaping. The herpes was confidently diagnosed as being due to arsenical poisoning of the fifth ganglion, a well-known arsenical symptom, though uncommon in the treatment of chorea, and also rare as the site of shingles in the child. However, in the same ward, three days later, a girl, aged 5, with acute suppurative pneumococcal arthritis of the left hip, developed chicken-pox, thirty days after admission.

Ought this second event to throw any doubt on the diagnosis of the cause of the fifth nerve herpes? There have been no further cases of herpes or chicken-pox. The patient with chicken-pox was isolated at once; twelve other patients had not had chicken-pox, and three patients had had chicken-pox. The bias of the writer's view is betrayed, for the girl with herpes ophthalmicus was not isolated.

I must thank the medical superintendent of the West Middlesex Hospital for permission to publish these cases.

Isleworth. THOS. VIDERY PEARCE, F.R.C.S.

British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

FINCHLEY DIVISION.

A LECTURE was delivered before the Finchley Division of the British Medical Association, on March 18th, by Dr. WILFRED SHELDON, who took as his subject "Rheumatism in childhood"; he dealt with the conduct of rheumatic clinics, as well as with the pathology and treatment of this and related disease.

Rheumatism in Childhood.

Dr. Sheldon remarked that there were already at least ten rheumatic clinics in London, as well as a few in the larger provincial cities, but little uniformity was evident in the procedure adopted. This variety of method facilitated the free development of each clinic, enabling it to utilize effectively the experience of others. Much of the value depended on the detection and treatment of the early mild cases in which the diagnosis of rheumatism was suspected rather than confirmed. The clinic should, however, be able to deal with the disease in all its manifestations, and should accept children with established heart disease and others who had chorea. Home visits were paid by the staffs, and environmental defects were corrected whenever possible. Close co-operation was encouraged between the clinics and the school medical service, and it was mentioned that out of 266 children at the rheumatic clinic at the Great Ormond Street Hospital, 45 (1 in 6) were attending special clinics for the physically defective. The general practitioner could use these rheumatic clinics for the supervision of children convalescent from active rheumatic disease. Such a clinic required the resources of a hospital at its disposal, and the lecturer outlined the way in which co-operation between the two institutions could proceed success-fully.

A report was then given of the work in the rheumatic clinic at Great Ormond Street Hospital. During the last two years an analysis had been made of 600 con-secutive cases, the conditions encountered being classifiable in four groups: rheumatic pains in the limbs (235 cases); a previous history of rheumatic fever or acute articular rheumatism (133); chorea (197); and rheumatic heart disease (266). The lecturer discussed these four groups in detail, and showed a chart indicating that the incidence of rheumatic pains bore some relation to the prevalence of cold and wet weather. Treatment was outlined, and it was mentioned that in cases with rheumatic pains sodium salicylate was often disappointing, though it had proved of great service in acute articular rheumatism. The external application of the liniment of methyl salicylate had been more effective, but the general health required attention, and such a tonic as a mixture of equal parts of malt and the syrup of iron iodide was valuable. Dr. Sheldon commented on the inability of patients suffering from any form of rheumatic infection to establish a lasting immunity after the attack. As regards the sequels of rheumatic fever, 93 out of 133 cases showed evidence of cardiac involvement, chorea followed in 5 cases, and pains in the limbs in 12. Only 23 children had been entirely free from rheumatic symptoms since an attack of rheumatic fever. Such figures indicated the necessity of keeping under observation for some time children who had once had rheumatic fever, and such supervision was one of the functions of the rheumatic clinic. Discussing chorea, the lecturer stated that of 197 cases of this disease, rheumatic heart disease had occurred in 52; rheumatic fever preceded 5 cases, and in 15 instances rheumatic pains in the limbs accompanied or followed it. Thus, 36 per cent. of the children with chorea had also other forms of rheumatism. There were, however, probably other factors than rheumatic infection in the production of chorea, and the sex, psychical shock, and mental stress were important. Rheumatic heart disease was found in 265 of the 600 children examined. In 36 instances its on-set was insidious, and when this was the case it tended to run a slowly progressive course, resisting therapeutic measures. An account was given of the salient points in early diagnosis, and of the production of cardiac murmurs. A chart was exhibited to illustrate changes in the mitral murmurs in 232 children during a period of a year or two. In 21 cases the murmur was proceeding to mitral stenosis, in 42 a diastolic murmur had disappeared, while in 140 there was no alteration; in 25 cases in the series the heart became normal. Figures were reported showing that in approximately one-third of the cases of rheumatic infection had developed after the symptoms of rheumatic pains, chorea, and rheumatic fever tonsils had been removed. Of 105 children with rheumatic pains in the limbs before tonsillectomy, the pains continued in 50 per cent. subsequently, while in 20 out of 95 children pre-existent chorea was unaffected by this operation. Dr. Sheldon remarked that, unless it could be shown that tonsillectomy had a definite influence in the prevention of cardiac disease, there seemed to be small justification for it merely on the ground that the child was a rheumatic subject. It seemed more probable that its value in rheumatic children was related to the degree of impairment of the general health attributable to the tonsils. In other words, tonsils should not be removed unless there was evidence that they were affecting adversely the general health. Such evidence as a history of repeated sore throat, chronic enlargement of the tonsillar glands in the neck, and the appearance of the tonsils must be taken into consideration. Their size alone was an unreliable guide, small scarred tonsils being often as injurious to the child's health as when these organs were hypertrophied.

Reports of Societies.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of the Aberdeen Medico-Chirurgical Society on April 3rd, with the vice-president, Dr. HENRY PETERKIN, in the chair, Mr. ANDREW FOWLER demonstrated two patients to show the after-results of operation for diastasis of the femur and habitual dislocation of the patella.

The first patient, a boy aged 9, had sustained an injury to his right leg in November, 1922. When admitted to hospital a month later he was found to have a diastasis of the lower end of the femur, with displacement of the epiphysis forwards and fairly firm union of the fragments in this position. At an operation in December, 1922, part of the upper fragment was removed through an external incision by chisel, and the epiphysis was levered into position. The limb was then put up in plaster flexed to a right angle, and the child was now able to walk perfectly. There was no shortening, and no deformity apart from slight genu valgum. No damage had been done to the growing end of the bone by removing a thin layer from the diaphysis.

In the second case a girl aged 12, the patella had been dislocated laterally by a fall at gymnastics five years previously. There had been frequent dislocation subsequently, and before operation the patella was found to slip over the external condyle of the femur on flexion of the knee. A marked degree of arthritis was present, with much grating. Operation was indicated on account of disability and increasing arthritis. An incision was made from two inches above the external condyle of the femur to a similar distance below the tibial tubercle, and the attachment of the ligamentum patellæ was chiselled off and the fragment was turned to a stripped area on the tibia immediately quarters of an inch internal to the original insertion of the tendon. A wedge graft was taken from the tibia and inserted into the external condyle, which was also vertical. The limb was put up in plaster at right angles. The knee was flexed. Movements were commenced six weeks after the operation, and the final result was excellent.

Dr. H. ROSS SOUTER gave the history of a case of epithelioma of the epiglottis, and demonstrated the condition after removal, in a male patient, aged 62, who had been first seen in August, 1923, complaining of discomfort in the throat for the previous two months. Examination at this time had revealed no abnormality except a string of muco-pus on the epiglottis, but a month later irregularity of the margin of the epiglottis had developed. There were

no enlarged glands, and the Wassermann reaction was negative. A section was removed for microscopical examination, and the condition was reported to be epithelioma. Low tracheotomy was performed, and the epiglottis was excised by diathermy knife and scissors. The patient had been seen at intervals since. The stump of the epiglottis was healthy, and there was no recurrence elsewhere.

Dr. Souper also described the features of a case of aspiration of a foreign body. The patient gave a definite history of having aspirated the single pip of a "seedless" orange twenty-four hours previously. There was discomfort on the right side of the chest and an asthmatoid wheeze, audible over the middle and lower lobes of the right lung. The patient was prepared for operation with atropine and morphine, and bronchoscopy was performed under chloroform and oxygen anaesthesia twenty-six hours after the aspiration. The foreign body was seen in a secondary bronchus of the right lower lobe, surrounded by pus and acutely inflamed mucous membrane. It was seized by a forward grasping forceps, and was removed with the bronchoscopy tube. There were no sequels. The points of note in the case were the very definite history of aspiration and the early onset of local inflammatory reaction. If removal had been unsuccessful, obstructive emphysema of the lower lobe would have developed, followed by obstructive atelectasis.

Dr. J. T. FRASER showed a breast removed for Paget's disease, and discussed the history of a case of renal glycosuria followed by diabetes mellitus.

GENETICS AND LIVE-STOCK IMPROVEMENT.

AT a meeting of the Royal Society of Arts, on April 9th, with Sir DANIEL HALL, F.R.S., in the chair, Professor F. A. E. CREW read a paper on genetical methods of live-stock improvement.

Never in the history of agriculture in this country, said the speaker, had the economics of breeding demanded more careful consideration than now. Costs of production were high and returns were low; arable farming was largely being replaced by grazing in order to reduce losses; sheep markets might at any time become saturated; the marketing of cereals would probably remain as unprofitable as it was at present. At this period of agricultural depression the only sound policy for the British farmer was increased live-stock production and the marketing of crops in the form of animal commodities, since, owing to the tastes of the British public, fresh animal products could not at present be affected by foreign competition. If, then, the aim of the agriculturist was to be the production of standardized and uniform animal commodities, it was necessary to consider the benefits that might be conferred upon live-stock breeding practice by the science of genetics. Discoveries in this field of knowledge had made the breeder largely dependent on information that could not be acquired on the farm, so much so that the actual value of any system of breeding could be assessed only by one versed in genetical science. On the other hand, that science could help the breeder only if he knew already the primary business of farming, had studied his policy, and had defined what he wished to produce.

The Standard of Excellence.

A definition of what the breeder wished to produce led to the construction of standards of excellence, and thus to serious difficulty. The ideal animal was one that could live, thrive, and reproduce in a particular environment as well as produce certain animal commodities. Difficulties in the way of making standards were the complex general economics of production, the inconsistency of standards, since it might be impossible to obtain in a single animal all the desired points of excellence, and the fact that the standards for males and females might be quite different. Too commonly the standards were set not by the breeder, but by the buyer, who knew little, if anything, of breeding - for example, the manufacturer of textile goods apparently regarded the sheep as a vehicle of fleece adaptable to commercial purposes; to the breeder the fleece was a protecting covering which would help his sheep to thrive, for he had to consider fertility, milk yield, and growth rate in relation to the system of husbandry and the conditions of his farm. The ideal type, then, was that which so harmonized with the conditions of husbandry that it achieved the fullest expression of its hereditary endowment, and so adequately fulfilled the destiny for which it was intended. Exact information about this destiny and habitat was necessary before any standard of excellence could be intelligently constructed.

Breeding an Ideal Type.

Breeding was a synthetic operation, but before there could be intelligent controlled synthesis there had to be analysis. Animal breeding demanded the scientific analysis of excellence, and the study of the interrelation and mode of inheritance of the various characters which in their combination constituted the ideal. It was important to recognize that the majority of the component characters in any ideal type were Mendelian dominants, and the majority of undesirable characters were recessives. It was therefore not to be expected that a mating would produce progeny of the desired standard unless the parents approached that standard; nor was it uncommon for good parents to throw bad offspring. Any culling had to be carried out as a national scheme, since the herd or flock was too small a unit when uniformity of produce was sought. Inbreeding gave such diverse results because it was the quickest means of disclosing the hidden recessives. The only sure way of improving the live stock of a country was by improving the education of the stock breeder, and by offering rewards for ability. Shows had lost much of their importance, for in them too great stress was laid on standards which had no relation to economic worthiness. The fact that pedigree was an inadequate instrument for assessing worth was not clearly recognized, and the prize was too often given to the best looker and not to the best performer. The milk-recording schemes, the pig-testing station, the wool yield test, the laying trial, and so forth, were the instruments contributing to the education of the stock breeder and the means by which he might gain adequate rewards for vision and ability. The State should take a part in building up an improved stock by the control of all sires. The general level of excellence of the commercial stock of this country was pitifully low, and there was an urgent need for breeding pedigree stock according to a genetically approved system, to grade up commercial stocks by means of pedigree sires, and to produce first crosses for certain commercial purposes by the use of two pure-bred stocks. Moreover, there was reason to believe that about 50 per cent. of infertile matings were due to genetic causes, and it was the soundest of policies to breed for fertility as well as for other qualities of economic worth. The need for improving quality and lowering the cost of production could be met by breeding for increased productivity and quality. For market production it was necessary to discard low producers and their progeny; thus, it was not generally recognized that a 1,000 gallon cow was as profitable to her owner as five 650 gallon cows. The use of a cow beef type sire for the unwanted calf of the dairy cow would bring about improvement in beef production.

The Future.

Some of the investigations which had to be carried out by breeders and geneticists working in harmonious collaboration were the definition of standards, the analysis of excellence, the purification of stocks, and the removal of the menace of sterility. At present the ideal type could be obtained only by the slow process of selective breeding, but there were indications that endocrinology might play an important part in the future. The growth of an animal might be controlled by injections of one endocrine product; fertility, fat deposition, lactation, and so forth, by others; and men would be able to control his live stock more completely and more quickly than was ever deemed possible.

Reviews.

TUBERCULOSIS IN CHILDHOOD.

TUBERCULOSIS in Childhood,[1] edited by ENGEL and PIRQUET, is entitled a handbook; it is actually a large volume (vol. i) of nearly 900 pages, with 481 illustrations. It is an important contribution to an important subject, and one which is worthy of German medicine and German printing. Pirquet's lamented death early last year was a serious loss to the book, but his place as co-editor has been ably filled by Dr. Priesel of Vienna; among the thirty odd contributors are names well known over Europe. Lord Dr. Stanley Griffith of Cambridge writes with special authority on the types of tubercle bacilli found in human lesions in Great Britain and elsewhere. The subject is one of vast extent owing to the complexity and variety of tuberculous lesions in childhood, and of very great importance; in the last twenty years there have been several really important advances in diagnostic methods with corresponding advance in knowledge of general pathology. The discovery of a safe and convenient diagnostic test by Pirquet in 1907, the investigations in morbid anatomy by Albrecht, Ghon and Kudlich, and others, with regard to the primary focus in the lung and the so-called "primary complex" of the focus with its associated glandular enlargement, and the perfection of x-ray photography of the chest, have all taken place in this period. The purpose of this book is to review, appraise, and consolidate these various additions to knowledge.

The material in the first volume falls into two main sections—pathological and clinical—although in the clinical section it is hard to prevent pathology from breaking through. In the first section one important chapter is devoted to the portals of entrance; and the result of large and carefully compiled post-mortem statistics in Vienna and elsewhere is to give the lung an overwhelming priority as the first site of lodgement of tuberculous infection. It is claimed, further, that these post-mortem findings are now being corroborated by an ever-increasing number of cases where not only tuberculous root glands but the primary lung focus itself can be seen in x-ray films. Another long and beautifully illustrated chapter is section deals with morbid anatomy, not only in the lungs and respiratory tract, but in all parts of the body. The remaining two-thirds of the book are occupied with the clinical types of the disease and their clinical features, diagnosis, and treatment. The greater part of this section is devoted to pulmonary tuberculosis, divided into three stages—primary, secondary, and tertiary. General tuberculosis and tuberculous meningitis are regarded as terminal phases of the secondary stage; while tertiary disease covers the examples of chronic phthisis, nearly all of which are found in later childhood and in adolescence. But a full description follows of tuberculosis of the skin, of the pleura and peritoneum, of the bones and joints, eyes, and ears, and there is a final chapter on the so-called parathe tuberculous lesions, erythema nodosum, phlyctenular conjunctivitis, scrofula, etc.

This catalogue of contents only indicates the encyclopædic character of the volume, which is apparently to be followed by another. The survey of this great subject has been well planned by eminent editors, and the contributors are masters of the subjects they deal with; the illustrations are excellent, and almost embarrassing in their number. The book is of great value as a complete book of reference, and as an authoritative account of the present state of knowledge of tuberculosis in childhood in all its forms.

PRACTICAL UROLOGY.

IN his Practical Urology[2] Dr. P. BAZY has rewritten and amplified a contribution made some years ago to the "Encyclopédie scientifique des aide-mémoire," on the subject of di-eases of the urinary system. It is written primarily for the general practitioner. He points out in his preface that di-eases of the urinary tract frequently demand urgent treatment, and that the practitioner may be called upon at short notice to deal with such a painful condition as retention. He requires, therefore, a manual in which he can look up at a moment's notice the treatment best calculated to relieve his patient. This information is supplied within the covers of *Urologie Pratique*, and in order that there may be no difficulty in finding it, much attention has been given to the alphabetical index. The work is divided into four parts—the first dealing with methods of examination, the second with treatment, the third with symptoms, and the fourth with troubles of micturition. The text is clearly written, and the information given is precise and practical. The aim of the author is excellent and has been in great part achieved, but after reading his book we are assailed with the usual doubts whether it is within the capacity of any busy practitioner to absorb the amount of knowledge that is provided for him by writers on special branches of medicine. Such publications as *Urologie Pratique* will be used primarily as works to be referred to in times of difficulty rather than as books to be read from cover to cover.

GROWTH AND MOVEMENT OF PLANTS.

SIR J. C. BOSE's work on the *Motor Mechanism of Plants*, which was reviewed in our issue of July 13th, 1929, has been followed by an equally interesting work on the *Growth and Tropic Movements of Plants*.[3] As in the previous work, one cannot but admire the delicacy of the author's experimental methods, which have enabled him, for example, to measure the amount of growth exhibited by a plant in the course of a few seconds. The new book is a veritable budget of fresh facts and new ideas. In regard both to the elementary phenomena of growth and to the modifications of its direction under varying conditions, which are included under the term "tropisms," the author has established the fact that, whatever stimulus may be applied, the nature of the response is invariable. It has hitherto been supposed that plants exhibit specific irritabilities; it is now shown that whether the stimulus be that of gravity, radiation within or beyond the visible spectrum, electricity or mechanical irritation, there is but one irritability of the growing organism, which responds to all in essentially the same manner. This is the main general conclusion of the author's work; but special points of interest, too numerous to mention, are to be found scattered through the book. For example, proof has been given that in the upward bending of plants under the influence of gravity, the force is exerted from above down on the upper concave aspect of the stem; and by means of a fine electric probe the sensitive layer which brings about the change of direction has been identified as that composed of statocysts or cells containing large starch grains. These observations support the theory that the weight of the starch grains is the stimulus to the geotropism. Very suggestive, also, is the incidental observation that certain cells become specially adapted for the transmission of light stimuli, by acquiring the shape of a lens.

In his preface the author justly remarks that preconceived bias has to yield to unimpeachable fact. Growth being associated, in the mind of a pathologist, with cell proliferation, one would suppose that under constant and uniform conditions cell proliferation would proceed uniformly, and the resulting increase would be represented by a straight line. The author has shown, however, that this is not so in the case of plants. The increase here is rhythmical: there is first a somewhat rapid elongation, slowing down at the acme and terminating in a partial return towards the original length. There appear, therefore, to be two phases—an elongation alternating with a shortening, the former being the greater, with an increase in length as the net result. Doubtless the author will in due time turn his attention to the conditions influencing cell proliferation, with results, let us hope, which may assist the pathologist in unravelling the subtleties of tumour formation.

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[1] *Handbuch der Kindertuberkulose.* Herausgegeben von Professor Dr. St. Engel und Professor Dr. Cl. Pirquet. Erster Band. Leipzig: G. Thieme. 1930. (Imp. 8vo, pp. xii + 889; 481 figures. M.125.)

[2] *Urologie Pratique.* Par Dr. P. Bazy. Paris: Gauthier-Villars et Cie. 1930. (Post 8vo, pp. xi + 536; 199 figures. 80 fr.)

[3] *Growth and Tropic Movements of Plants.* By Sir Jagadis Chunder Bose, D.Sc., LL.D., F.R.S., C.S.I., C.I.E. London and New York: Longmans, Green and Co. 1929. (Demy 8vo, pp. xxix + 427; 288 figures. [illegible])

DENTAL HISTOLOGY AND EMBRYOLOGY.

UNDER the title *Dental Histology and Embryology*[4] Dr. B. ORBAN, now professor of dental histology and pathology in the Chicago College of Dental Surgery, presents the results of his investigations into the nature of the dental tissues. Much of the work was done in the histological laboratory of the Dental School of the University of Vienna, and the author pays a kindly compliment to its director, Dr. Gottlieb, in the dedication of his book. In the preface criticism is invited—"for it is only through criticism that real constructive work can develop." The statement that well-developed enamel contains 3 per cent. organic substances; the conception of an enamel cuticle which is not keratinous and is destroyed by acids; the idea that the dentinal fibrils entirely fill the dentinal canaliculi; the importance ascribed to cementum as a controller of dentine calcification, and as governing the existence of alveolar bone; the omission of any reference to "sepsis" as a cause of cement hyperplasia (which is described as "a favourable reaction to irritation") or as a cause of destruction of alveolar bone (the distinction is ascribed to disuse, or to "physiological wandering of teeth")—these and other points will evoke criticism, but we think the author may be relied on to turn to good account the observations of his critics. For our part we are especially impressed by the photomicrographs showing removal of destroyed cementum, and by the method of constructing models of developing teeth, and in general by the excellence of the sections chosen to illustrate the work; dental sections are the most difficult of all to prepare. The book is a valuable addition to dental science.

NOTES ON BOOKS.

PROFESSOR R. D. RUDOLF'S *Notes on the Medical Treatment of Disease, for Students and Young Practitioners of Medicine*[5] has now deservedly reached a third edition. The previous issues in 1921 and 1923 were reviewed in our columns (1921, ii, 44; 1924, i, 327). The difficult task of keeping the text from considerable expansion while adding what is necessary about recent advances has been very successfully solved. Minot and Murphy's liver treatment of pernicious anaemia is, of course, given, and with the comment that, though it is premature to state that the disease can thus be cured, as long as the treatment is continued the blood usually keeps about the normal and the dreaded crises do not occur. In the account of Jennerian vaccination the importance of its performance in infancy is insisted upon, as the rare cases of post-vaccinal encephalitis practically all occur after primary vaccination done during the period of school life or later. The book reads easily, and conveys the fruits of long experience in clinical medicine.

DR. HUBERT HIGGINS, in his *Biological Reversion and Hippocratic Anatomy*,[6] asserts that the results obtained by osteopaths have never been satisfactorily explained by their critics. There should, however, in his opinion, be no difficulty for those who understand Hippocratic anatomy. For example, the morbid anatomy of lymph stasis of the spinal canal is, according to the author, perfectly obvious in the living, though obscure in the dead, body. "There is," he considers, "an intrinsic cellular expansion, an active hypertonicity of the connective tissue inside the vertebral canal, which, being resisted by its rigidities, exercises pressure on its contents, and also on the nerves issuing from the intervertebral foramina. The dorsal interlaminar ligaments bulge, causing definite ridges of elastic resistance, which may be exceedingly difficult to overcome. Forcible separation of the dorsal vertebrae, by bending the dorsal curve backwards over the knee, will, in suitable cases, immediately diminish, or even temporarily abolish, this abnormal intravertebral resistance." One may be excused for mistaking this for pure osteopathy.

DR. A. J. CHURY'S little monograph on diphtheria,[7] which appears to be a reprint from *Bratislavské Lékárske Listy*, is divided into four parts, devoted respectively to the epidemiology, clinical aspects, occurrence of acetonaemia in diphtheria, and active immunization. For the benefit of those not familiar with the Czech language, to whom a bibliography of 219 references may also be of use, summaries of the third part in French, English, and German are appended.

The Rev. H. G. G. HERKLOTS has gathered together a short series of *Hospital Sketches*,[8] written by various members of the Church Missionary Society who are working in Africa and the East. Missionary societies, in linking up hospitals and schools in savage districts to the Church, recall to mind the condition of Europe in the Dark Ages. The little book contains some interesting stories of the difficulties experienced among the savage races of Uganda and Nigeria, and in ancient civilizations such as the Persian and the Chinese. The value of tactful health propaganda is plain in each case.

Under the auspices of the Chadwick Trust courses of popular lectures are given every year in London and other large towns in Great Britain on almost every branch of sanitary science. Two lectures on *Sewage and Sewage Disposal*,[9] delivered last year at the Institution of Mechanical Engineers, have now been published, and can be recommended as a lucid summary of recent progress in this department of public health.

CORRECTION.

In our review of Pottenger's *Symptoms of Visceral Disease* (April 12th, p. 700) it was stated that the price had gone up by 13s. 6d. We learn from the publisher, Mr. Henry Kimpton, that this should be 3s. 6d., as the price of the previous edition was 28s.

[4] *Dental Histology and Embryology.* By B. Orban, M.D. Second edition. Philadelphia: P. Blakiston's Son and Co., Inc. 1929. (Med. 8vo, pp. xviii + 316; 291 figures. 4 dollars.)

[5] *Notes on the Medical Treatment of Disease, for Students and Young Practitioners of Medicine.* By Robert Dawson Rudolf, C.B.E., M.D.Ed., F.R.C.P. Third edition. Toronto: University of Toronto Press. 1930. (Cr. 8vo, pp. 536. 4 dollars.)

[6] *Biological Reversion and Hippocratic Anatomy.* By Hubert Higgins, M.R.C.S., L.R.C.P. London: H. K. Lewis and Co., Ltd. 1929. (Demy 8vo, pp. 135. 7s. 6d. net.)

[7] *Difteria.* By Dr. Alex. J. Chury. (Demy 8vo, pp. 153; illustrated.)

[8] *Hospital Sketches.* Edited, with an introductory chapter, by H. G. G. Herklots, M.A. London: Church Missionary Society. 1929. Cr. 8vo, pp. 81; 1 plate. 1s.)

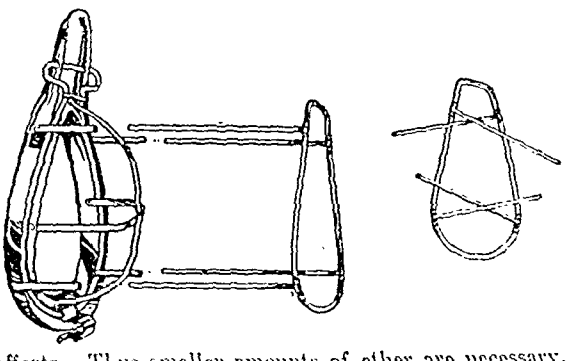
[9] *Sewage and Sewage Disposal.* By Arthur J. Martin, M.Inst.C.E., etc. London: Macdonald and Evans. 1930. (Demy 8vo, pp. 62. 2s. 6d. net.)

PREPARATIONS AND APPLIANCES.

A MODIFIED OGSTON'S INHALER.

DR. JOHN HALTON (Liverpool) writes: I have devised a modification of Ogston's inhaler which consists of: (1) a Schimmelbusch mask (modern type) to which are fixed four sockets; and (2) a wire frame, shaped in the general outline of the mask, having four 4½ in. hinged legs which fold flat. In use the mask is prepared as usual with five to six layers of gauze, the legs of the frame are fitted into the sockets, a towel is wrapped round the frame and pinned into position. Personally, instead of a towel, I use a strip of white lint, roughly 6 in. by 18 in., hemmed at one end to within 1 in. of each of its long sides. One of the legs is passed through this hem before being fitted to the mask, making the fixture more secure.

Ogston's principle is, briefly, that by means of a chamber placed round the mask more effective vaporization takes place, the heavy ether vapour is concentrated and conserved, and it is also warmed to a certain degree by the patient's own expiratory efforts. Thus smaller amounts of ether are necessary, and resultant post-anaesthetic complications are undoubtedly minimized as compared with the ordinary open method. The advantage claimed for this modification is that it folds flat and takes up no room in the anaesthetist's bag. With very little experience one finds that this method is almost ideal for the administration of long or short anaesthesias. For dental extractions, tonsillectomies, and other short operations, using a 1 in 12 to a 1 in 8 C.E. mixture, the mask is kept slightly raised for the first dozen breaths; then, as it is gradually lowered, the concentration can be rapidly increased with no discomfort to the patient. A short, quiet induction is usually obtained, and an anaesthetic period, with the mask removed, of two to five minutes, with recovery in twenty minutes, depending on the time of administration, is easily brought about. For longer operations a change over to pure ether is advisable, but one-half to one third of the usual quantity of the drug only is necessary. A metal dropper—Bellamy Gardner's—is advantageous, as opposed to the usual wick method; it enables ether to be delivered to the mask in all positions.



Messrs. Alexander and Fowler of Pembroke Place, Liverpool, have constructed this apparatus for me, and the accompanying illustration is, I think, self-explanatory.

British Medical Journal.

SATURDAY, APRIL 26TH, 1930.

A GENERAL MEDICAL SERVICE FOR THE NATION.

LAST year the Representative Body of the British Medical Association approved the report of the Council on encroachments on the sphere of private practice through the activities of local authorities and certain voluntary agencies. To many members it seemed that, valuable though this report was, the Association had still to formulate constructive proposals demonstrating how national provision for the medical care of all classes of persons might be made on lines acceptable to the profession. Indeed, at the same meeting of the Representative Body such action was, in fact, taken in a limited sphere by the adoption of the Association's National Maternity Service Scheme for England and Wales. That scheme was very well received by the interested public, and has already influenced the development of thought and of practical proposals in the matter with which it deals.

Since the autumn the Council of the Association, through a strong and representative committee, has been considering the medical service requirements of the nation in their wider aspects, and has now approved, and is submitting for the consideration of the Divisions and of the Representative Body, proposals for a general medical service. These proposals are published in the *Supplement* this week (p. 165). In reading them it is important to bear in mind, first, their derivation from and connexion with the documents already referred to, and the relation to them of the revised Hospital Policy of the Association printed in last week's *Supplement* (p. 151); secondly, that they are based to a very large extent on policies which the Association has already adopted; thirdly, that they are made not as forming a scheme which cannot be varied, but as a contribution, on lines acceptable to the profession, towards a national discussion of the subject; and, fourthly, that they are intended at least as much for the education of the public as for the serious consideration of the medical profession, and have been formulated and set out with this object in view.

The scheme is important and timely. It is becoming more generally recognized that national provision of the kind proposed is desirable, even necessary. Those who are officially responsible for legislation and administration, and those who are unofficially interested in the social services, are beginning to consider, in actual and practical detail, the methods by which such provision may be made. The State has passed beyond the stage, which occupied almost the whole of last century, in which it conceived its duties in regard to public health to be confined to dealing with general sanitation and infectious disease. It has passed beyond the stage, occupying fully the first quarter of the present century, in which it concerned itself also with the treatment of a few special conditions and with limited sections of the community. It now contemplates making complete provision for the medical care of the whole community, or at least of that large proportion which is unable to make such provision for itself. Lack of funds will probably prevent the actual establishment of a comprehensive national scheme during the next few years, but the formulation of such schemes in certain quarters and in accordance with various ideas is even now proceeding apace. These ideas are not all likely to conform with what the medical profession believes to be good, and the British Medical Association should be in the forefront, as it has been in past years, in making proposals whose operation it believes will benefit the public and preserve all that is best in professional traditions and practice. Mr. Greenwood, the Minister of Health, has promised a general survey of the social services: certainly in undertaking this survey he ought to be informed about the lines on which the medical profession would co-operate in making the services more effective in promoting and preserving the health of the nation.

Though in matters of this kind detail is important, it is the general outline of the scheme which should at present be noted. It is based upon attention to the preventive aspects of medicine as well as to its curative aspects; and includes the provision of a family doctor or general medical practitioner for everybody, together with such aid as may be required in the way of consultant, nursing, and other additional or ancillary services. It would provide all except institutional services by means of a national contributory insurance scheme, including on a compulsory basis not only all insured persons as at present defined, but all the dependants of such persons, and, by an ingenious but practical plan, all persons who have hitherto been dealt with by district medical officers under the Poor Law. In addition, it would admit on a voluntary basis all voluntary contributors under the present national health insurance system with their dependants, together with some other persons of modest means who are not now included in the system.

Contributory insurance is of the essence of the scheme; it is offered as an alternative to methods to which the great majority of the medical profession are opposed, and of which the project to create a class of whole-time salaried doctors to do domiciliary work in association with municipal clinics is the extreme example. Institutional care would be provided in another way. The committee which considered the scheme found, reluctantly (as the Royal Commission on National Health Insurance had done), that the difficulties of including this provision within the range of services rendered under a compulsory insurance scheme were insuperable: indeed, the Local Government Act of last year has added to these difficulties. Local authorities would continue to provide hospital accommodation for the community generally as supplementary to the provision made by the voluntary hospitals and the insurance scheme. It would be open to individuals to provide, by a voluntary insurance arrangement or a hospital contributory scheme, for payment required under Section 16 of the Local Government Act, 1929, or otherwise from the recipient of the hospital benefit; and of course it would still be possible for approved societies to provide for such payments by their members through an additional cash benefit. It should be noted, too, that there is contemplated an extension of hospital accommodation, in particular of the kind which has been designated, for want of a more exactly descriptive term, the "home hospital," in which the institutional provision would be efficient yet not very expensive, and where the patient, while remaining under the responsible care of his or her own family doctor, would be in more or less close connexion with the larger general hospital. These and other important features of the

scheme, however, can be appreciated only by a more detailed study of the proposed arrangements.

The discussion to which the proposals will give rise, both within the medical profession and among the public, must, if it is to be useful and effective, proceed upon the basis of a perusal of the whole document. It is a serious and very valuable contribution to the subject with which it deals, and we believe that a critical examination will show that it is only along lines such as those indicated that real progress in national health provision and administration can ultimately be made.

ROBERT BRIDGES.

IT is so long since the Poet Laureate retired from the practice of the medical profession that many members of it may have been surprised to learn from the obituary notices this week that he was a graduate in medicine; and only the veterans among us will recall the time, now fifty years ago, when he was a member of the staffs of the Great Northern Hospital and the Hospital for Sick Children, and was actively engaged in carrying out the strenuous duties of a casualty physician at St. Bartholomew's Hospital. Not only did he do so, but he contributed to the pages of the *St. Bartholomew's Hospital Reports* an interesting account of the casualty department and some most useful reflections upon its value. Dr. Bridges's experience led him to hold strong views decidedly unfavourable to indiscriminate out-patients and casualty relief, most of which he felt would be more properly and more efficiently given by general practitioners than by hospital physicians working under the conditions he described. This was not his first contribution to the *Reports*, for in 1876 he had written a suggestive paper on "A severe case of rheumatic fever treated successfully by splints." The patient was being exhausted by severe and constant pain, which yielded to no drugs, and the remission of pain, secured by applying splints to the limbs so as to prevent movement, no doubt had considerable influence on the progress of the case. Nearly half a century later his pen turned again for a moment to a subject related to medical science, when he collaborated with Dr. Cuthbert Morton in a tract on the language of anatomy—a brilliant attempt to bring order out of the terminological chaos into which British anatomy had been plunged.

Robert Bridges's first volume of verse appeared in 1873, and his last and greatest philosophical poem, *The Testament of Beauty*, was published six months ago, on his eighty-fifth birthday. Before his connexion with the practice of medicine came to an end his classical humour had found outlet in the production of a Latin elegiac poem of 558 lines,[1] in which he celebrated the history of the foundation of St. Bartholomew's Hospital and lightly treated of the members of the staff. Not long after the publication of this poem he retired, in 1882, from medical practice and gave himself up wholly to literature. His fame as a poet grew slowly, almost by stealth. Robert Bridges was a writer deeply versed in all the lore of metre and of prosody, with a mind alive to the scientific side of his art without losing the true poetic touch. He has been acceptable to critics of his own age as well as to the young poets of this century to an extent that is really remarkable. The volume *October and Other Poems*, published in 1920, included a number of war poems, some of which had been published anonymously. Those critics who agreed with a certain member of Parliament in asking that the Poet Laureate should be officially desired to "earn his butt of sack" must have been astonished when they found that the spirited ballad "Der Tag," which appeared in the *Times*, was from his pen, as well as other war ballads.

The medical profession may well feel proud that its only Poet Laureate (unlike so many of his predecessors in that office) was a great poet and a fine scholar, and that the years he spent in medicine were a vital contribution to Robert Bridges's training for the life of letters.

[1] Thomas Fletcham Roberti Bridges de Nosocomii Sancti Bartholomaei Londinensis. In quo narratur Historia Fundationis Nosocomii, Illustres ibi viri qui olim versati sunt, Laudini: *Imprimis* Hodiernus Status ejusdem Nosocomii, in cujus officina exemplaria mundentur.

SHAKESPEAREAN MEDICINE.

INTEREST in what Shakespeare knew and said about the medicine of his day has led some to read into his references to the subject a more profound or prophetic knowledge—for example of the circulation—than there are solid grounds for accepting, and his representations of contemporary men, such as his Dr. Caius, have also excited some justifiable comment. It is therefore useful to have at hand a survey of *Medicine in the Days of Shakespeare*,[1] especially when it is so attractively drawn as that which the students of arts and science at University College were fortunate enough to have presented to them in November last by Dr. Herbert R. Spencer. The lecturer is a former president of the Medical Society of London, which possessed the valuable manuscript diaries of the Rev. John Ward, vicar of Stratford-on-Avon (1662–81). Whether there is anything more than an accidental coincidence, or whether some unconscious inspiration or suggestion may have been at work, it would (to borrow the opening phrase of an otherwise mute essay writer) "be otiose to enquire"; but it so happens that two other former presidents of that same society—Sir Charles Ballance, on an occasion more years ago than need be insisted on, and Sir StClair Thomson in the Society's Annual Oration for 1915—made exhaustive collections of quotations bearing on the healing art from the Shakespearean Corpus. Dr. Herbert Spencer not only gives a broad survey of medicine in Shakespeare's time, derived from wide reading rather than from the poet's writings, but incidentally compares it with present-day conditions. Three centuries ago the healing art was one and undivided, now it is a mosaic of specialties, though this is a comparatively recent change; for, as he shows by quotations from some of his former colleagues, fifty years ago the then budding specialism was decried as a foolish and short-lived phase, a dictum synchronous with that previously, and indeed quite recently repeated, that surgery had reached finality. The physicians in Shakespeare's time paid much attention to dietetics, and Queen Elizabeth once listened patiently for five hours to a dissertation by her physician, Walter Bailey, on the questions whether slowly digested foods were preferable to those easily digested, and whether life could be prolonged by medical art. The physicians were dignified scholars with a much better position than the surgeons and the apothecaries, the latter being described by William Bullein as the physicians' "cookes." There was a curious contrast between William Harvey, who was content with prescribing a simple pill of gamboge and left £20,000, and Sir Theodore de Mayerne, who used a pill with thirty-six ingredients and left a fortune of £140,000. The status of the apothecaries, who gradually developed from the spicers, pepperers, and grocers, was greatly improved when in 1617, largely through the influence of Sir Theodore de Mayerne and Gideon de Laune, the Huguenot apothecary to Queen Anne, they were granted a separate charter constituting them a city company as the Society of Apothecaries of the City

[1] London. 1929. John Bale, Sons and Danielsson. (Pp. 27, 2s. 6d.)

of London. Although the surgeons of the time usually came of a humbler social class and received a less liberal education than the physicians, they based their practice on sound anatomical lines and were rapidly improving their position in the medical world; they not unnaturally resented the action of the physicians, some of whom also practised surgery, in prohibiting them from giving internal remedies. Ambroise Paré, who wrote treatises on medicine and midwifery, is regarded by Dr. Herbert Spencer as "the reformer of surgery and midwifery."

PULMONARY ASBESTOSIS.

DR. E. R. A. MEREWETHER and Mr. C. W. Price have carried out with commendable success an official inquiry into the effects of asbestos dust in inducing fibrosis of the lung. Their results are embodied in a report submitted by the Chief Inspector of Factories to the Home Secretary on March 17th, and laid before Parliament on March 24th. Before February, 1928, when a case of non-tuberculous fibrosis of the lungs was discovered in an asbestos worker (Seiler's case), the Factory Department of the Home Office had knowledge of only two deaths about which there was an expert opinion that the inhalation of asbestos dust had contributed to, if not caused, the fatal outcome. In the first of these, described by Dr. Montague Murray in 1906 before the Departmental Committee on Compensation for Industrial Diseases, the post-mortem examination confirmed the clinical diagnosis of extensive non-tuberculous pulmonary fibrosis; in the second, which was described by Dr. W. E. Cooke, director of the Pathological Department of the Wigan Infirmary, in the *British Medical Journal* of July 26th, 1924 (p. 147), the illness showed a progressive dust fibrosis together with chronic tuberculous infection, but the evidence for an etiological relation between inhalation of asbestos dust and fibrosis of the lung would have been stronger if tuberculosis had been absent. The inquiry by Dr. Merewether and Mr. Price was initiated when, investigation of Seiler's case having definitely excluded other industrial and infective causes of fibrosis, it became necessary to decide whether the supervention of this disease in an asbestos worker was an exceptional occurrence or evidence of a grave industrial risk. Dr. Cooke's observation that microscopical examination of sections made from the lung of his case revealed the presence of curious annular and club-shaped bodies, and clinical and pathological observations that have since then been published from Leeds, London, and South Africa, have shown that free silica cannot be regarded as the only dust capable of producing pulmonary fibrosis, and that the inhalation of silicate of magnesium, the constituent of asbestos dust, is, if anything, more effective in producing a like condition. Dr. Merewether and Mr. Price at the beginning of their investigation tried to discover how many persons in the country are constantly exposed in the course of their daily work to the influence of pure or almost pure asbestos dust. Such information was necessary in order that they might check the adequacy of the sample of workers examined, and envisage in proper perspective the problem confronting the industry. The number of exposed workers they believe to be about 2,200, and of these they examined 363, in 133 the examination including radiology of the chest. Diffuse pulmonary fibrosis attributable to the inhalation of dust was found to be present in 95 of the workers examined, representing 26.2 per cent. of the series. By distributing the workers according to the process in which each had been longest employed, and grouping similar processes together, the authors of the report were able to make certain broad generalizations about the relative effects of work in different dust concentrations. Correlating dust counts with the history and the medical and radiological features of each case, they found that the two factors of greatest importance in the development of fibrosis were length of exposure and dust concentration. Age and sex played no part. While no definite case of fibrosis clearly due to asbestos dust was found among workers with less than five years' exposure, the authors are not prepared to rule out the possibility that such cases might occur on exposure of workers to high concentrations of dust. They lay stress on the fact that for the production of generalized fibrosis a definite minimal quantity of dust must be inhaled, and that the lower the concentration the lower will be the time that elapses before fibrosis develops. If, as seems probable, this view is correct, the practical inferences are very important, for it follows that the application of measures resulting in a reduction of the concentration of dust in the neighbourhood of asbestos processes will bring about, first, a great increase in the latent period preceding the development of disabling fibrosis, and secondly, as measures for the prevention of dust are perfected, the almost total disappearance of the disease. The increased liability of silicotics to pulmonary tuberculosis does not appear to be shared by asbestos workers as a class, or even by those of them who have developed pulmonary fibrosis. In this respect, and in the mode of distribution of the fibrous tissue in the lungs and in the radiological findings, pulmonary fibrosis among asbestos workers differs from silicosis. At the same time as the report by Dr. Merewether and Mr. Price was issued Earl Russell introduced a bill in the House of Lords to extend Section 47 of the Workmen's Compensation Act, 1925 (relating to silicosis schemes), to industries involving exposure to asbestos dust, and to amend the provision concerned with medical arrangements and examinations. In our issue of March 23rd, 1929 (p. 562), we drew attention to inconsistencies in the four existing schemes applicable to groups of "dusty occupations"; this bill aims at making a general scheme to cover all industries and processes to which compensation schemes apply.

DELAYED LETHAL EFFECT OF RADIUM ON TISSUE CULTURES.

A FURTHER step in the investigation of the destructive influence of radium on certain types of new growth is reported by Dr. F. G. Spear.[1] In the *Journal* of September 14th last (p. 503) we referred to the discovery by Dr. Canti and Spear that after a short exposure of a tissue culture to gamma irradiation there was a marked fall in the number of cells in mitosis (40 per cent. that of controls), and that this was followed by an increase (160 per cent. that of controls), which compensated almost exactly for the diminution seen during the first period and subsequent to irradiation. Dr. Spear now reports experiments showing that the gamma rays have a delayed lethal effect on tissue cultures *in vitro*. While the resistance of individual cultures to irradiation was found to vary considerably, it seemed to be established that the greater the intensity of irradiation the sooner the lethal effect could be observed. When 300 mg. of radium was used at a distance of 0.5 cm. the probable life of a culture was approximately doubled if the duration of exposure was halved; with 100 mg. of radium, however, halving the exposure had a less pronounced tendency to double the life of the culture. Comparison of the action of the two doses of radium showed that the exposure of a culture to 300 mg. of radium for six hours produced a lethal effect six days (three subcultures) earlier than did exposure to 100 mg. radium for eighteen hours, though in each case the dosage was the same, amounting to 1,800 milligram hours. It was also found

[1] Report on Effects of Asbestos Dust on the Lungs and Dust Suppression in the Asbestos Industry. By E. R. A. Merewether, M.D., and C. W. Price. H.M. Stationery Office. 1930. (1s. 2d. net.)

[1] *Proceedings of the Royal Society*, B, vol. 106, 1930, p. 44.

that in each series of experiments one or two tissue cultures survived doses of 900 mg. hours and eventually recovered. It appears, then, that the delayed lethal effect following exposure to radium occurs sooner in cultures receiving greater intensity of irradiation for the shorter time.

NOISE IN HOSPITALS.

IT has been said, though doubtless with some exaggeration, that once a man living in a large city has retired for the night he has no alternative before him except to shut the windows and die of suffocation, or to keep them open and be driven mad by noise. Perhaps herein lies an explanation of the fact that though most of us survive, at least for a time, we are all, as everybody knows, mad on at least one point, even if it is only on fresh air. The problem of protecting the hospital patient, who needs both fresh air and silence and cannot be fobbed off with one without the other, has become more difficult than ever since the adoption of the modern fireproof type of construction, involving the use of rigid frameworks of steel, tile, or concrete. According to Dr. Harvey Agnew, who contributes a paper on this subject to the *Canadian Medical Association Journal*,[1] hospitals so built are veritable loud speakers, amplifying every sound and transmitting it to the farthest corners of the building. Reflection from the hard fireproof floors and propagation by the greatly increased plumbing now considered essential to hospital efficiency augment this effect. Architects, says Dr. Agnew, are now paying more attention to special features designed to minimize sound conduction. Stair wells and lift shafts are enclosed and are often placed on a side passage. The long open corridor, stretching from one end of the building to the other, is now broken at frequent intervals by self-closing doors, which help definitely in confining sounds to one unit. Crossbeams help to break sound waves travelling along the ceiling. One architect sets room doors back from the corridor line so as to break conduction along the side walls. As a material for floors, terrazzo is recommended, on account of its cleanliness and durability, though it is undoubtedly noisier than battleship linoleum or rubber. Linoleum admittedly absorbs very little sound and reflects most of the sound waves striking it, but, unlike terrazzo, which amplifies the sound of footsteps, it tends to deaden them. As an insulation against traffic sounds, cinder concrete floor-fill is more effective than ordinary concrete. It is sometimes difficult to minimize sound transmissions from the various service rooms attached to wards, the tendency to-day being to bring these as close as possible to the patients, in order to conserve the nurses' energy; but Dr. Agnew suggests that something might be done by the use of self-closing doors, or by placing these rooms "around the corner." Similarly, conversation and other noises coming from the nurses' room can be reduced by glass enclosures, by care in selecting chart-holders and tables (giving preference to rubber mounts), and by arranging a special rest room for nurses at a suitable distance from the ward. Wall insulation is important, but, even so, enough sound may be transmitted from room to room through non-insulated steam or water pipes to nullify completely the effect of expensive ceiling, wall, and door treatment. Dr. Agnew refers to the recent introduction of a plumbing silencer, designed to eliminate "water hammer." Sounds transmitted through ventilators, he says, may be reduced by covering the openings into the rooms with a "baffle," lined with good sound-absorbing material such as acousti-celotex. All machinery subject to vibration should be mounted on insulated foundations. He describes with some technical detail the treatment of ceiling and wall surfaces with certain synthetic materials designed to prevent sound transmission. Examples are dekoosto, sabinite, akoustolith, acousti-celotex, nashkote, and J-M sanacoustic tile. Hospital authorities who find that they cannot, for financial reasons, undertake the complete reconstruction of their buildings according to the plans and with the materials described by Dr. Agnew may console themselves with the reflection that a good deal of sound can be eliminated at no cost whatever. "Anyone who has required hospital care," writes Dr. Agnew, "knows that one of the most aggravating features from the viewpoint of the patient is the loud conversation, often accompanied with laughter, on the part of nurses and doctors." It is worth considering, too, that the banging of a single door may awaken a dozen patients.

[1] "The Reduction of Noise in Hospitals," *The Canadian Medical Association Journal*, March, 1930, p. 314.

THE PLACE OF THE SOCIAL WORKER.

THE relationship between the voluntary social worker and the education, public health, and public assistance departments of local authorities is a matter of considerable importance, and is likely to become of even greater concern as the last of these departments becomes more intimately associated administratively with the other two. It is somewhat unexpectedly found that it is in the area of the London County Council, the largest of the local government units, that most use has been made of the voluntary worker and that voluntary social organizations have been given the most assured position. The full extent of this work and of this recognition has never yet been comprehensively set forth, and it is peculiarly appropriate that just at this time there should be published an account of the voluntary children's care committee system in London, under the title of *The Private Citizen in Public Social Work*,[1] by Miss Hilda Jennings. The title indicates generally the scope of the volume, and there is a "foreword" by the Hon. Lady Lawrence, chairman of the Special Services Subcommittee of the London County Council, in which she says: "This book is an excellent account of the advantages and difficulties of voluntary work in a sphere in which full responsibility has been accepted by the local authority, and will be read with interest by a wide public who, it is hoped, may be inspired to help in the work." A full and continuing supply of such workers is indeed necessary, not only in London, but throughout the country, unless the sphere of service which they have hitherto occupied with great public advantage is to pass wholly into the hands of public officials in the direct employment of the local authority. Those officials would undoubtedly be quite efficient in performing much of the work, but they would necessarily be working under more strict regulations, and primarily in the interest of the community rather than in that of the individual, and so in a way that may imperil free and varied development. It is true, as Miss Jennings says, that "of late years the distinction between the State and voluntary agencies has been obscured and the social activities of Government departments greatly extended. The volunteer no longer resists the temptation to apply for State aid. There are still many persons who see in this tendency a disquieting sign of social deterioration and of diminished initiative and self-sacrifice on the part of the private citizen. In considering whether this is a true criticism the factors which have influenced the growth of the State as a social agent and the methods by which it exercises its functions must be taken into account. If it can be shown that the individual is more and not less conscious of his social responsibilities, and that the State has ceased to look with contempt on the volunteer, and has commenced to work with and through him, the extension of public responsibility may be a sign of public and private growth rather than of deterioration." This quotation indicates broadly the outlook and the argument of the book. The second chapter, on "The volunteer

[1] *The Private Citizen in Public Social Work*. By Hilda Jennings, M.A.Oxon. With a foreword by the Hon. Lady Lawrence. An account of the Voluntary Children's Care Committee System in London: London: G. Allen and Unwin, Ltd. 1930. (6s. net.)

as fellow worker with the State," is indeed an admirable essay on its subject. The author goes on to trace the growing care of "the child as future citizen," and the development of the local machinery for effecting such care. The facts revealed with regard to such development in the social and educational sphere up to the war, during the war, and throughout the period of economy which succeeded thereto, demonstrate the really astonishing degree to which the London child of to-day is guarded and helped by a combination of voluntary effort and public organization. The intimate relationship between the children's care committees and the teachers, the school medical service, other social agencies, and the London County Council itself is described. In this connexion attention may well be called here and now to the memorandum which the Board of Education issued on the initiation of medical inspection as a duty of education authorities. The Board "insisted that the new service could not be divorced from existing medical and sanitary administration, but should be regarded as an integral and vital part of the wider question of the health and physical condition of the nation. The offices of medical officer of health and school medical officer should be combined." It is much to the credit of the London County Council that it seized the opportunity to establish so effective a partnership of legislative, administrative, and philanthropic agencies in the work of social education. Many examples are given in Miss Jennings's book of the methods by which this work is done and of individual successes that have been achieved. The difficulties of voluntary workers and agencies and their potential dangers are not ignored, but the book concludes with a statement which the facts and experiences it relates seem to justify. "A society approaches its highest potential power as an agent for the promotion of the best social life only in so far as its individual members—by reason of whose social nature it exists—are conscious of the social bond and will to make it effective. If this is acknowledged there appear to be two main reasons for desiring the continuance of voluntary social work. In the first place, such work brings the individual volunteer into more intimate touch with his fellow citizens than does purely political effort directed towards Governmental activity; secondly, a wholly bureaucratic public social service involves the presentation of public social benefits with authority and an element of compulsion, whereas the use of the volunteer as the agent of society makes it possible to avoid any suggestion of external force, and to appeal for the free co-operation of the persons whose social capacity it is desired to promote. In so far as these persons voluntarily respond they, too, are raised to the status of intelligent and willing partners with the State, and the dynamic force of the social impulses of the community is thereby increased. For both reasons society gains by the social effort of the private citizen, which has a unique value precisely because it is voluntary and is based solely on his personal recognition of his social nature and obligations."

MEDICAL CINEMATOGRAPHY

THE first catalogue of medical cinematographic films to be published in this country has just been issued by Messrs. Kodak Limited. Though small—it includes the titles of but sixty films—it is well classified, its subjects being grouped appropriately under the following headings: anatomy, case records, dentistry, neurology, obstetrics, orthopaedics, physiology, ray therapy, research, surgery, veterinary science, and, of course, miscellaneous. Up to the present the cinematograph has been but little used in medical education. The valuable part it may play in medical research is admirably illustrated in the series of films prepared by Dr. Canti and his co-workers showing the growth of the tissue cells and the effects on them of irradiation, its use as a vehicle for presenting the method and spirit of scientific research was shown in the beautiful film produced by Sir Thomas Lewis and Dr. H. H. Dale on the occasion of the tercentenary of the publication of Harvey's *De Motu Cordis*. But it is in the daily routine of instructing the medical student in physiology, surgery, obstetrics, and subjects similarly capable of visual exposition, that the cinema should have an increasing use in the future. No one who has had to strain forward to watch from an awkward angle the hurried fumblings of a demonstrator in physiology; who has felt pardonable impatience as, during the hour devoted to a demonstration, the minutes have been swallowed up by some trivial detail that has gone wrong, could fail to appreciate the educational value of a cinematographic demonstration, in which the rate of projection is carefully chosen in relation to the subject, the "close-up" comes at the right moment, the command of the modern photographer, and the experiment proceeds in an ordered way to its proper conclusion. Using the method of direct demonstration it is possible, even under the best conditions, to show only those experiments that can be completed within an hour or so. The student misses altogether the kind of experiment that takes hours to perform, or he may see it only at odd moments during its progress, depending for the rest on textbook descriptions or lectures from his teachers. With the cinema much of what is at present described verbally may be demonstrated visually. In their catalogue Messrs. Kodak include a useful introduction on the general principles of cinematography, and the methods of making, editing, and projecting medical films. The films named in the list are intended for circulation exclusively within the limits of the medical profession, and the hire of these films can be negotiated only by or on behalf of medical men and women. The catalogue and full particulars about the hiring of films will be supplied to members of the profession on application to the Medical Department, Kodak Ltd., Kingsway, W.C.2.

A MACKENZIE BIBLIOGRAPHY.

IT is now five years since the death of Sir James Mackenzie, whose original mind was mainly responsible for the modern cardiology, and it is therefore by no means too soon to be presented with a *Bibliography, with Synopsis of the Original Papers, of the Writings of Sir James Mackenzie*.[1] The work, originally and piously undertaken for the sake of the staff of the James Mackenzie Institute for Clinical Research at St. Andrews, is now available for all who wish to obtain a bird's-eye view of Mackenzie's work during the last forty-one years of his active life. The summaries of papers (except those in German, which Professor K. F. Wenckebach of Vienna has abstracted) have been successfully made by Mr. W. B. R. Monteith of St. Andrews, and have been conveniently arranged under the headings of medical education and research, cardiology, miscellaneous and symptomatology.

THE Ingleby Lecture will be delivered at the University of Birmingham on May 22nd by Sir John Bland-Sutton, Bt., LL.D., Past-President of the Royal College of Surgeons of England. The title of his lecture is "The Blood Trail."

A GENERAL meeting of Fellows of the Royal Society of Medicine will be held at 1, Wimpole Street, W.1, on Friday, May 9th. Dr. John Murdoch, of the Brugmann Hospital, Brussels, will give a lecture on radium. The chair will be taken by the president of the society, Lord Dawson of Penn, at 9 p.m.

[1] *Bibliography, with Synopsis of the Original Papers, of the Writings of Sir James Mackenzie, M.D., F.R.C.P., LL.D., F.R.S.* By W. B. R. Monteith. London: W. Heinemann (Medical Books), Ltd. Pp. viii + 152. 15s.

THE PRACTITIONER'S INCOME TAX.

THE Inland Revenue authorities will shortly be expecting to receive the annual declarations for assessment, and a few notes on questions which often arise may afford some practical guidance. To avoid misunderstanding it should be stated that the notes which follow do not apply to the emoluments of whole-time employment. Such incomes are assessable under Schedule E, and are subject to somewhat more stringent rules as to the expenses allowable than general profits falling in Schedule D.

BASIS OF THE DECLARATION.

The financial year for which assessments are made is the year to the next April 5th, but tax on the income of that year is payable according to the amount of the income of the previous year, taking that year as ending at the date to which it has been customary to prepare the accounts of the practice. The date usually taken is December 31st, but it is sometimes found convenient to adopt the date from which a practice—or a share therein—changed hands. When a complete change in proprietorship takes place the proprietor for the period from April 5th to the date of change is assessable on the amount of his profits for that period, and the revenue authorities have the option of revising his liability for the previous year to bring it to the basis of *that* year. The new proprietor is assessable as having started a new practice—that is, for the period to the next April 5th on his earnings for that period, and for the year following that date on the amount of his earnings for his first twelve months; but at his own option that assessment can be reduced to the amount for the actual year. Where the change of proprietorship is partial—for example, by the withdrawal or advent of a partner—no change in the basic year is made unless all the individuals concerned elect (within three months) to have the liability dealt with as if the change were complete.

COMPUTATION OF THE AMOUNT OF PROFIT.

Receipts.

Professional men tend to regard their "income" as the amount of cash which their work brings in: a tradesman's cash profits are often absorbed by an increase in his stock-in-trade or the amount of debts owing by customers, so that he is compelled to have a more exact conception of profit. The Income Tax Acts, being of general application, must, of course, treat the professional man and the tradesman on the same footing, and it is beyond argument that what is called the "cash receipt" basis is unsound in theory, and is admissible in practice only where the circumstances can be shown to be suitable—that is, where the gross income is reasonably steady. If, for instance, the gross bookings average about £2,100, of which £150 is lost by bad debts, then the cash receipts are not likely to vary very much, and in the long run will certainly average about £1,950, so that neither the practitioner nor the authorities will suffer by adopting the cash basis. Trouble, however, is apt to arise in such a case when the practice changes hands. The purchaser's cash receipts in his first two or three years will not reflect the full value of his earnings, and the authorities will require him to adopt the "bookings" basis. So far as the vendor is concerned the cash which reaches him after he has ceased to practise is not assessable in his hands, because it merely represents the final in-gathering in cash form of past taxed income; but we have not infrequently found practitioners paying tax on such receipts, apparently because they had come to regard "cash receipts" as *ipso facto* assessable.

Assuming that for some reason the cash basis is not applicable, and that the amount of the year's bookings is to provide the starting point, it is important to remember that the Acts provide for the deduction of an estimated amount for bad and doubtful debts—not an aggregate percentage estimate, but a sum calculated by reference to the respective debts. The best way of dealing with this allowance is to make out a list of unpaid accounts—whether in respect of the year in question or of previous years—which are considered partially bad or doubtful; the amount of the anticipated loss should then be noted against each item in a separate column and the total entered. The deduction to be made will then be: (*a*) the amount of debts finally written off and omitted from the list as definitely bad, (*b*) the total reserve estimated as above, less the corresponding total for the previous year. Any amounts recovered which had been previously written off or reserved for as bad must be brought into the statement as additional receipts.

Emoluments received from appointments are in strictness assessable separately under Schedule E, but the authorities are willing to include them in the Schedule D assessment on the general income, and that course is usually more convenient.

Expenses.

It is proposed to discuss these under three heads, according to whether they are incurred: (*a*) specifically for professional purposes; (*b*) generally—that is, partly for professional and partly for private purposes; and (*c*) motor car expenses.

Specific Expenses.—Little difficulty usually arises with these expenses, which include cost of drugs and bottles, dispenser's salary, stationery and stamps, and, where a separate surgery is maintained, rent, rates, and the cost of lighting, heating, and cleaning it. The expense of maintaining the instruments, reference books, furniture, etc., used professionally is admissible; where "improvement" is effected only that part of the expense which was necessary for "renewal" can be deducted. Subscriptions to professional societies are in a somewhat peculiar position. It has been held judicially that only that part of the subscription that has been expended by the society can be deducted. Obviously that principle could not be applied in practice, and an arrangement is commonly made under which the society pays tax yearly on the unexpended balance of the aggregate subscriptions, it being understood that in such cases the individual member can then deduct the whole of his subscription in its own return.

General Expenses.—The only sound guide is that the proportion to be charged to the professional account should be reasonable. In the last resort the Commissioners of Taxes—that is, the appellate body in the locality or in London—are the final judges, but on such a point there is obvious room for difference of opinion. The main expense of this kind is represented by rent and rates; and such other expenses as lighting, heating, repairs and redecorations, cost of domestic staff, etc., frequently follow the ratio adopted. As a rough guide, half and half is often a fair ratio, except where a special site element comes into play, when the professional element may amount to two-thirds, or even more. In the normal case a point that is sometimes overlooked is that the garage is often a substantial element in rent, and is entirely professional, and that the accommodation provided for an assistant, or the surgery and waiting-room maid, or the chauffeur is similar in character. Sometimes a useful check on an estimate can be obtained by looking at the reverse side—that is, by calculating what is the amount of the balance attributed to personal accommodation, etc.—and considering whether it is a reasonable charge for the benefits obtained. Where the premises are owned by the practitioner the amount on which income tax is paid under Schedule A is regarded as a rent payable, and, of course, expenditure on repairs is also chargeable to the extent to which it applies to the professional part of the premises.

Motor Car Expenses.—These expenses need special consideration. Running costs usually give rise to no difficulty, except perhaps as to the exclusion of some amount for private use, but trouble often arises over the expense of maintaining the car equipment. Nearly always it pays in the long run to claim the depreciation allowance in preference to waiting to claim the expense of renewal when it occurs. For one thing, the advantage might just as well be claimed now instead of in the future, and, for another, the renewal cost may never be claimable—for example, the practitioner may leave the practice and find that he has lost the chance of claiming the accrued wastage of capital since the last renewal took place. If depreciation has not been claimed the expense of renewal can be regarded as a professional expense, but any improvement element must be excluded. If, for instance, a second-hand car costing £120 is replaced by a new one at a net cost of £200, only £120 of that amount can be charged for income tax purposes. If depreciation has been claimed, "renewal" expenditure cannot be claimed for the same financial year, but that ban does not apply to a claim for "obsolescence." That allowance is computed in the same manner as a renewal claim, except that the total amount of depreciation allowance received for the displaced car must be deducted. If, for example, in the case quoted above, £44 depreciation had been allowed in respect of two years' use of the second-hand car, the net obsolescence claim will be £120−£44=£76. It will be seen that the combined

depreciation and obsolescence allowances afford the practitioner fairly complete protection against over-payment of tax so far as car expense is concerned, and consequently make the agreement of the rate of depreciation a less important matter. A rate of 20 per cent. appears to be not uncommon, but in many cases the authorities object to allow more than 15 per cent. *This would be a serious matter were it not for the fact that* the aggregate allowance is equated by the "obsolescence" claim when renewal takes place.

BRITISH EMPIRE CANCER CAMPAIGN.

SIR JOHN BLAND-SUTTON, Bt., *vice-chairman, presided at the* quarterly meeting of the Grand Council of the British Empire Cancer Campaign, held on April 14th, when the following grants were approved: £2,500 to St. Bartholomew's Hospital towards the maintenance of its cancer research work for the year 1930, which will include the continuance and development of investigations into the deep *x*-ray treatment of cancer in certain sites of the body and the further study of malignant growths by slow-motion picture photography, which is now known as the "Canti film"; £950 to St. Mark's Hospital towards the maintenance of its cancer research work; £200 (making a total grant of £300) to the Yorkshire Council of the Campaign towards a special statistical inquiry carried out by it into the incidence of cancer as divulged by post-mortem investigations made at some of the principal Yorkshire, Scottish, and London hospitals. *The Council also confirmed the grant arranged by the* Finance Committee since its last meeting of £3,900 to the Middlesex Hospital towards the maintenance of its cancer research work for the year 1929–30.

The Council decided to convene an informal meeting of the scientific committees of the Campaign and some of those actively engaged in certain cancer research work in this country, for the purpose of reviewing the activities at present proceeding, and *to consider what further lines of cancer research might be* inaugurated. This informal meeting will take place shortly after the midsummer recess.

The Council approved the publication of a popular book on cancer which had been drafted by the Investigation Committee, and delegated all arrangements in connexion with the issue of the book to the Management Committee, which is responsible for the publication of the *Cancer Review* of the Campaign. This popular book will deal with all aspects of the cancer problem, and has been prepared so that it can be appreciated by the lay public.

It was reported that the British Dental Association had nominated Mr. C. H. Hawkins of Birmingham to serve as its representative on the Council, and that, Dr. Powell White having retired through illness, the Christie Hospital, Manchester, had nominated *Professor John Shaw Dunn* of the University of Manchester to serve as its representative on the Council.

ROYAL MEDICAL BENEVOLENT FUND.

DURING the first quarter of this year £2,562 has been voted in grants to 121 *applicants. Subscriptions and donations are* very urgently needed, as the number of applications received during the first three months of this year is even larger than that of last year. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, Cavendish Square, London, W.1.

At the last meeting of the committee forty-two grants were voted, amounting to £966. The following were some of the cases helped:

M.R.C.S., aged 76. Applicant suffers from advanced chronic glaucoma. He has lost the sight of his right eye, and is becoming more helpless. Applicant and his wife have no private income; he is in receipt of old age pension, £26 a year. Four married children contribute £88 towards the maintenance of their parents. Fund voted £40.

M.R.C.S., aged 59. Applicant is bed-ridden, with progressive paralysis in the legs. He was compelled to give up his practice in 1925. His savings had been invested in house property, but the income derived therefrom has fallen to £130. *He has to pay for nursing and attendance* in addition to board and lodging. Fund voted £20.

Widow, aged 55, of L.R.C.P. and S. Since the death of her husband in 1919 she has maintained herself and educated three children by keeping a boarding-house. The children have now all obtained posts. During the last two years, although the widow has been extremely hard-working and is very thrifty, the boarding-house has not brought in a profit. Rates fell into arrears, and debts were outstanding. Fund voted £40 to pay the rates.

Widow, aged 38, of M.R.C.S. On the death of her husband, who had been ill for several years with Bright's disease, she was left with £250 a year and eight children to educate. One has obtained a scholarship, Freemasons are paying part school fees for another, friends and relations are helping towards other school fees. Fund voted £25, and has asked the Royal Medical Benevolent Fund Guild to co-operate.

Daughter, aged 61, of M.D. Has been a companion-housekeeper from the date of her father's death till December, 1929, when her employer died. She has no private income, and is now staying with friends. Fund voted £26.

Nova et Vetera.

"THE SMOAKE OF LONDON."

A REPRINT OF EVELYN'S TRACT.

Fumifugium,[1] the protest against "the Smoake of London," issued in 1661 by John Evelyn, has been republished by Dr. R. T. Gunther as an Old Ashmolean Reprint. This quaint but still applicable essay is approached by several prefaces, one by the editor of the 1772 edition, who observes that *nearly half the children born and bred* in "the aer of London" die under 2 years of age, and considers their fate not less cruel than that of infants exposed in China. Then follows Evelyn's own dedication to Charles II, patron of the Royal Society, in which we get a vivid glimpse of the "pre-sumptuous smoake" rising over Whitehall and endangering the health of that intelligent and cynical monarch, while his sister, the delicate Duchess of Orleans, complains that the air irritates her breast. For she has come over from France, where, Evelyn constantly maintains, they arrange the matter of the air better. The writer then addresses the reader, expressing his indignation that man, "whose very *Being* is *Aer*," should not be able to breathe it purely, and lamenting that a noble city like London should be marred by "the avarice of a few."

Turning to his business, he discourses a little on the "nature of Aer" in a manner "conceited" in the old sense. "The Lucid and noble Aer clarifies the Blood, *subtilizes and excites it*": *and the poisoning of air is no* less fatal than the poisoning of water and meat. One feels that the ardent Evelyn would treat manufacturers, who laugh at fines for the emission of "black smoke," much as other poisoners. He dwells with rapture on the amenities of the site of London, a city whose evils are all *accidental. All its beauty is befouled by "that hellish* and dismal cloud of Sea-Coal": and its citizens breathe *a black vapour created not by mere culinary fires, but by* the tunnels of fumes emitted from the works of brewers, dyers, lime-burners, salt, and "sope-boylers." The city, he thinks, is so made to resemble "the suburbs of hell" rather than the imperial seat of an incomparable monarch. The denunciation of coal smoke that follows is written in the pungent and highly charged English of his time; his readers of this time will still sympathize with it. The year when Newcastle was besieged, he says, was a year when the orchards and gardens in the Strand bloomed and fruited like country enclosures.

After diagnosing further the deadly effects of this "thin black soot," which clogs life into more existence, and urging the College of Physicians to help him, since many patients prefer the dangers of a country empire to those of London air, he discusses his remedy, which chiefly consists in the removal of all trades that are a smoke-producing nuisance to a reasonable distance from London, five or six miles below the river, to marshy grounds where, he reasons, their corrosive blasts might even do good to the moist atmosphere. Other disagreeable objects, like slaughterhouses, might fitly join them there. But Evelyn's scheme and his corollary notion of surrounding London with a belt of pleached gardens, all sweet briers, jessamine, lavender, rosemary, gillyflowers, and other sweet odours, deserves to be read in its entirety, for if it be sometimes merely amusing, it is often very suggestive. The little tract is inspired by a civic enthusiasm, and thanks are due to another son of Oxford for its reissue at a time when smoke and smoke abatement are very much in the air.

[1] *Fumifugium*. By John Evelyn, of Balliol College, Oxford, in 1661. Now reissued as an Old Ashmolean Reprint in the year of the reforming of the Old Ashmolean Museum, which, like "*Fumifugium*," was dedicated to King Charles II, Founder of the Royal Society, Oxford: Dr. R. T. Gunther, Folly Bridge, 1930. (2s. 6d.)

Ireland.

Dublin Meeting of the British Orthopaedic Association.

A VERY successful meeting of the British Orthopaedic Association was held in Dublin at the Royal College of Physicians, on April 11th and 12th, under the presidency of Mr. R. C. Elmslie. The opening session consisted of short papers followed by a discussion. Sir William H. de C. Wheeler, who dealt with the operation of diaphysectomy, showed a patient from whom the lower third of the femur had been removed twenty-one years ago, and before the publication of the various communications on the subject by Stiles. X-ray examination showed perfect re-formation of bone; there was 3/4 inch shortening, but no limitation of movements at the knee-joint. Frank diaphysectomy was recommended for certain cases of unreduced fractures of the elbow in children; the limb should be kept in extension during the early formation of new bone. The process of repair was illustrated by lantern slides, and a recent case was shown to indicate the results which might be obtained. The president, Sir Robert Jones, Mr. McMurray, and others, discussed the paper. Professor H. S. Meade described the methods of treating fractures which he had seen employed at Böhler's clinic in Vienna; he strongly advocated the various procedures, and showed lantern slides of the results obtained. An interesting discussion followed. Mr. Bristow and Mr. Platt, who had seen Böhler at work, said that they had been impressed by his team work and the manner in which he dealt with special fractures, but they had not adopted his methods to any considerable extent. Mr. Walter Stevenson read a paper on the effects of radium emanations in softening scar tissue and reducing pain; his authoritative views on this subject were received with much interest. Mr. H. F. MacAuley described a series of cases of unusual infections of the hip-joint, and many interesting lantern slides were shown. In the discussion which followed Mr. A. B. Mitchell congratulated the speaker on the interest his communication had aroused. In the afternoon the association met at the Orthopaedic Hospital, Merrion Street, when a programme was arranged by Mr. W. S. Haughton and Dr. Stevenson; the latter demonstrated an operation for the cure of knock-knee, and showed some cases under treatment. Mr. Haughton presented about forty cases of orthopaedic interest, many of which had been operated upon successfully for the correction of old-standing deformity in the feet. The Naughton-Dunn operation had been followed by excellent results. The list of cases included congenital club feet, knock-knee, and multiple enchondromata.

The dinner of the association was held at the Shelbourne Hotel; Mr. Elmslie presided, and about fifty members and their guests were present. There was an excellent musical programme arranged by Mr. Haughton, the singing of Irish melodies by a quartette being a pleasant feature. Sir William Wheeler, proposing the toast of "The British Orthopaedic Association," asked the members to accept a most hearty welcome to Dublin. He believed that in the distant future, owing to the victory of preventive medicine, life would be indefinitely prolonged, and the surgical profession, as known to-day, would cease to exist. Orthopaedic surgeons would always remain, however, to deal with congenital malformations and deformities the result of injury. Sir William referred to the esteem in which Sir Robert Jones was held in Ireland and to the debt of orthopaedic surgery to his genius. After Mr. Elmslie had replied for the association, Mr. Bristow proposed the toast of "The Guests" in a happily worded and witty speech. Dr. Winter, president of the Royal College of Physicians, and Mr. Andrew Fullerton, president of the Royal College of Surgeons of Ireland, replied. Sir Thomas Myles and Dr. Leeper entertained the company with some amusing reminiscences. Mr. Haughton proposed "The Emeritus President, Sir Robert Jones"; this toast and the toast of "The President," proposed by Mr. Bankhart, were received with marked cordiality.

The morning session, on April 12th, was held at Mercer's Hospital, when Sir William Wheeler performed operations for genu valgum and for malunion of fractured femur. A number of cases were shown illustrating the results of bone grafting in spinal cases. A successful case of double arthroplasty of the knee-joint was presented. The programme included the demonstration of a patient, aged 85, with bony union following intracapsular fracture of the hip, and a case of fracture dislocation of the pelvis with multiple fractures of the transverse processes and coccyx without any resultant disability. The members were entertained to lunch by Messrs. Arthur Guinness, and were shown over the brewery, the largest in the world. In the afternoon a visit was paid to the St. Mary's Open Air Hospital at Cappagh, which is erected on an ideal site and is one of the most modern of its kind. The members were received by Mr. H. F. MacAuley, and many interesting cases were demonstrated. The visitors were satisfied that the treatment in this institution left nothing to be desired. Some of the members remained over Sunday in order to inspect the Countess of Wicklow Memorial Hospital at Arklow; this institution is largely for the treatment of adults in the open air. Sir William Wheeler and the local practitioners received the guests at the hospital; Sir John Lynn Thomas was present, and the party was joined by Mr. Roberts, Minister of Pensions, and Sir Lyle Webb, who were visiting Dublin on a tour of inspection. Lunch was provided by the Earl of Wicklow at Shelton Abbey. The visit to Arklow terminated a meeting which, by general consent, was a happy and instructive gathering.

England and Wales.

Home Ambulance Service.

THE committee of the Home Ambulance Service of the Order of St. John and the British Red Cross Society has issued its report for 1929. Since the committee was set up eleven years ago it has established 343 ambulance stations throughout the country from Northumberland to Cornwall. These ambulances work day and night and convey on an average over 2,000 patients every week. Nine new stations were equipped during the year. At the end of the war there was some doubt if an ambulance service could be usefully employed in civil life. The report gives an interesting comparison. It states that the casualties carried by ambulances in France and Flanders during the five battles in which British troops were engaged in 1915 were 100,000, while in 1929, when no disaster or serious epidemic occurred, the Home Service ambulances alone transported over 113,000. Reference was made, when commenting on the previous report in these columns, to the organization of a road service and mobile x-ray department. These supplementary services show a sustained and vigorous policy. The urgent need for developing a road service is indicated by the fact that during 1928 over 170,000 persons were killed or injured in road accidents. Besides providing first-aid boxes and huts along the roadside, members of the Order and the Society, skilled in first-aid work, spend week-ends and holidays at places where accidents are likely to occur. With the rapid increase in road traffic throughout the country it is the aim of the committee to enrol units in every town and village, but it emphasizes that a steady recruitment of trained voluntary workers is necessary to maintain and consolidate the results that have already been achieved.

Post-Graduate Teaching in Birmingham.

A William Withering Memorial Lectureship has been established in the Faculty of Medicine of the University of Birmingham, and this year's lecturer, Professor W. E. Dixon, F.R.S., will deliver a course of seven lectures, illustrated by lantern slides, on specific therapy, on successive Wednesday afternoons at 4 o'clock during the coming summer term. The first lecture, on May 7th, will comprise a survey of the history of medicine in the nineteenth century, leading up to the present position of the views held in respect of drug action, alkaloidal production in the animal body, and the significance of vitamins. The second lecture will deal with the mechanism of drug action as exemplified by digitalis and strychnine; and in the third lecture the specific action of the body alkaloids,

including adrenaline, thyroxine, and parathyroid secretion, will be considered. In the fourth lecture Professor Dixon will describe the ovarian and pituitary functions, and in the fifth lecture the specific action of drugs on nerves and nerve cells. The last two lectures will be devoted to chemotherapy. Members of the medical profession are invited to attend this course. On May 15th, at 4 p.m., Dr. C. W. Buckley, physician to the Devonshire Hospital, Buxton, will deliver a lecture on mineral waters in therapeutics, their scope and practical application. A course of post-graduate demonstrations will be given at the General Hospital, Birmingham, on Tuesday afternoons, from 3.30 to 5 o'clock, and at the Queen's Hospital on Fridays, from 3.30 to 5 p.m., commencing on April 29th at the General Hospital, and on May 2nd at the Queen's Hospital. The course will include demonstrations on medical, surgical, and gynaecological cases; nervous diseases; ophthalmic cases; diseases of the ear, nose, and throat; radiology; venereal diseases; and children's diseases. One demonstration on a Tuesday will be given at the Children's Hospital, Ladywood Road, Birmingham. The fee for the course is two guineas, and detailed timetables may be obtained from the clerk to the Clinical Board, the University, Edmund Street, Birmingham.

East Lancashire Tuberculosis Colony.

In 1920 the British Red Cross Society and the Order of St. John in East Lancashire began to establish, on an estate of 120 acres at Barrowmore, a sanatorium, training colony, and village settlement, primarily for ex-service men suffering from tuberculosis, but ultimately for general use. In his annual report of this institution for the year 1928–29, Dr. E. L. Sandiland, the medical superintendent, describes the active progress that is being made, with special reference to the good results obtained by occupational therapy. New admissions during the year under review numbered 160. An after-care clinic is now to be established to supervise the health of the settlers and to serve as an out-patients' department for their dependants. As the result of a gift from the British Red Cross Society the whole of the workshops are being rebuilt, and another donation has been received for constructing a new plant for making fire-lighters, which will be particularly useful for the employment of unskilled labour. Various products of the institution were exhibited at the Chester and Frodsham agricultural shows, and efforts are being made to secure a wider field for the disposal of the articles manufactured, as well as of dairy, garden, and poultry farm products. A handsomely illustrated booklet describing the Barrowmore Hall Tuberculosis Colony is obtainable from the secretary of the executive committee, Mr. L. Royle, 3, St. James's Square, Manchester. Wards are being equipped for the sanatorium treatment of acute cases and for artificial pneumothorax cases. Chalets are under construction in the woodwork department for the use of patients.

The London County Council and its Medical Officers.

The London County Council has appointed Dr. H. M. Pereira, Dr. R. H. Swindells, and Dr. Frederick R. G. Heaf to fill the vacant posts of medical superintendent at the Eastern, New End, and Colindale Hospitals respectively. The commencing salary at Eastern and Colindale is £900 a year, and at New End, £950, in each case with an unfurnished house. The number of applications received for appointment to these positions was 103. The Council has decided to appoint a consulting radiologist at a remuneration of 200 guineas a year; the work is regarded as comparable with that of the Council's consulting ophthalmic surgeon, who receives a fee to that amount. Many matters relating to the x-ray installations in the transferred hospitals have come up to the Council for decision already, and such apparatus has been or will be installed in most of the Council's general and special hospitals. In view of the importance of the work, and the necessity of ensuring that apparatus is not only suitable and efficient for its purpose but is properly constructed and adequately protected, it is considered essential that there should be facilities for the medical officer to obtain the advice of an expert radiologist. Another matter which has been under consideration by the Central Public Health Committee is the conditions under which study leave and absence for study purposes should be granted to assistant medical officers. It is proposed that in those cases in which the officer continues on duty at the hospital or institution and only requires occasional daily leave for the purpose of attending a course of instruction for a medical degree or diploma, facilities should be granted for such leave on full pay; also that leave of absence for a period not exceeding six weeks in any one year be granted to an assistant medical officer desiring to undergo a course of medical instruction at a university, such leave to be on full pay in the case of officers of five years' service, on half-pay in the case of officers of two years' service, and without pay in the case of officers of less than two years' service. It is added that all such leave must be subject to the general condition that it can only be granted so long as the work of the hospital is not likely to suffer.

Infant Welfare and Maternity Centre.

An infant welfare centre for subscribers was started about six months ago by the Association of Infant Welfare and Maternity Centres. Members are enrolled only with the consent of their private doctors. This rule was made after hearing the views of the Maternity and Child Welfare Subcommittee of the British Medical Association. Preliminary work has been hampered by lack of funds for advertisement and equipment, but an increasing membership is reported. Medical and nursing services are voluntary at present, and rooms are occupied at a nominal rent. Whether there is need for a service of this kind is expected to be apparent in the next few months. The association now controls and finances three convalescent homes for infants and children; two of these are also used as nursery training schools. Experience has shown that the most satisfactory results are obtained in small homes where the number of children does not exceed a dozen. There is an urgent need for more of these during the summer months. A grant is received from the Ministry of Health for each home, and a certain amount is recovered in fees, but the annual deficit on this work is stated in the report for 1929 to be about £1,500. Income from the publicity department, however, increased from £1,617 to £1,790. Of the 384,000 publications that were sold, over 91,000 were books and pamphlets. The association is also concerned with the provision of holidays and convalescence for mothers, and of playgrounds for children between 2 and 5. More than one-third of the vacancies registered in the infant welfare workers' employment bureau were filled during the year. The report records that sixty-three affiliated centres were enrolled in 1929. Consideration of the amendment of the constitution of the association is expected to be resumed in the course of the current year.

Venereal Diseases: Lordon Arrangements for Diagnosis and Treatment.

The arrangements for the diagnosis and treatment of venereal diseases in London under the control of the London County Council have been continued for another year. The total number of new cases from all areas attending the London hospitals which received grants in aid under the Council's scheme during the year just ended was 15,985, with 768,872 attendances. The corresponding numbers last year were 16,401 new cases and 763,535 attendances. Of the total number of new cases last year 4,931 were syphilis, 10,774 gonorrhoea, and 280 soft chancre. The number of pathological examinations made at hospitals at the request of, and free of cost to, medical practitioners in 1929 was 32,605. The grant hitherto made to the British Social Hygiene Council in respect of local propaganda work in London is to be continued under the same conditions as in previous years, except that, at the request of the Education Committee, no educational work in the form of lectures to teachers will be included, the committee being of opinion that any such lectures to teachers which may be considered desirable by them should be undertaken by the Council's own medical staff. The estimate of total expenditure for the coming year on treatment and pathological work at hospitals and on hostels and preventive homes is £107,560: of this sum 17 per cent. is contributed by nine out-county authorities which make common use of the facilities afforded by the selected London hospitals.

Scotland.

Whole-time Medical Service in Fifeshire.

On April 16th a deputation from the Fife Branch of the British Medical Association met the Public Health Committee of the new county council of Fifeshire at Cupar in regard to the proposed reorganization of public health services in this county. The deputation included Dr. Fleming (Dunfermline), Drs. Douglas and MacTier (St. Andrews), Dr. Johnstone (Leven), and Dr. Dickson (Lochgelly). Dr. Douglas said that the public health services of administration and the clinical services rendered by the family doctor should be kept distinct as far as possible. The new Act placed upon the county council the responsibility for three very important lines of activity. The first concerned children and dependants; the medical profession was generally of opinion that these should be dealt with in future under the same conditions as insured persons. In Fifeshire the medical arrangements which had already evolved under the care of general practitioners had been very satisfactory, and it was hoped that nothing would be done to disturb them. The second point which had to be considered by the county council was hospital accommodation. The third responsibility had reference to the Poor Law. This was causing practitioners in Fifeshire some anxiety, for they believed that the treatment of the sick poor should be left in the hands of practitioners, and it would be a retrograde step to place this duty in the hands of district medical officers of health. The public health officer knew nothing about the domiciliary treatment of poor persons, and it would be unfortunate if men who had been solely concerned with the prevention and administrative control of disease were to displace those who had been doing clinical work all their lives. The whole country, irrespective of class, had fought for and won the principle of free choice of doctor, and this principle must continue. Dr. Dickson (Lochgelly) said that the good effect of unification of medical services would be lost if area medical officers were to be engaged in the treatment of cases for which they had no special training. If such officers were to give domiciliary treatment to the sick poor this would lead to class distinction between Poor Law patients and other patients, which would be invidious. The practitioners in Fife were prepared to undertake all the necessary clinical work for which the county council was responsible under the new Act. The county council afterwards appointed Dr. Pratt Yule medical officer for the county, Drs. Fyfe and M'Gillivray assistant county medical officers, Dr. Leask tuberculosis officer, and Dr. Krause medical officer to supervise school children and child welfare. It was resolved to consider the statements made by the deputation before any further steps were taken.

Glasgow Slum Clearance.

A scheme for slum clearance in Glasgow, promoted by the corporation and involving the demolition of a large number of dwellings in the Calton district of Glasgow, was considered by a commission on April 15th. It was explained that this was the fifth of a series of schemes, which affected about 50,000 persons and 14,000 houses. The general death rate for the area was approximately 22.5 per 1,000, as compared with 13.8 for the city generally, while the death rate from pulmonary tuberculosis was 1.69, as compared with 0.84 for the city; the infant mortality was 141 per 1,000 births, as compared with 106 for the city generally. Dr. A. S. M. Macgregor, medical officer of health for Glasgow, gave evidence showing the urgent need for dealing with the problem of insanitary houses and areas. The clearance proposed at present affected 1,311 houses with a population of 5,151. These houses consisted of 611 houses with one apartment, 636 with two, and 61 with three apartments; 55 of the houses were occupied by more than one family; the houses regarded as definitely insanitary numbered 1,184; the remaining 127 houses, although fit for habitation, were included to make the scheme efficient. The density of population in these houses was revealed by the fact that the number of houses per acre was 105, and the population 418 persons per acre. This overbuilding had the effect of narrowing available courtyard facilities and preventing free access of light and air. Many of the houses were over one hundred years old and showed defects of age, being dilapidated in several cases and having no damp-proof courses. The total cost of the scheme is over £590,000, and, spread over a period of sixty years, is estimated to cost the municipality an increase in rating of one farthing in the pound.

Edinburgh Skin Dispensary.

The annual report of the Edinburgh Dispensary for Skin Diseases showed that 556 patients had been treated during the past year. Lord Murray, in moving the adoption of the report at the annual meeting, said that pleas were sometimes made that there was overlapping and waste among the charitable institutions of Edinburgh, but he believed that there was more than room for all of them, and he commended the work of this institution to the generous support of the citizens of Edinburgh. Dr. Robert M'Laren, medical officer to the dispensary, said that the dispensary not only made out prescriptions, but paid for their cost, and in this way the dispensary met the needs of those who could not afford to pay anything for their treatment.

Presentation to Dr. David Black.

On the occasion of his retiring from practice, Dr. David Black of East Linton was entertained recently to dinner, at Haddington, by his colleagues of East Lothian, and presented with an inscribed silver cigar box. Dr. Martine, who presided, gave an account of the changes in the medical profession of East Lothian during the past thirty-five years, and recalled how Dr. David Black, who had started practice in East Linton more than forty years ago, had built up a large country practice and had become widely popular; he had taken great interest in public work in the community, being for some time a member of the East Linton town council and latterly a magistrate. He had served for many years as a trooper in the East Lothian and Berwickshire Yeomanry Cavalry, regularly attending their annual training camp. He was a keen member of the British Medical Association, and had been president of the Lothians Division. Dr. Martine added that Dr. Black would be greatly missed, but he hoped that he would be long spared to enjoy his well-earned leisure.

India.

Eclampsia in Calcutta.

DR. GRACE STAPLETON, who is medical superintendent of the Dufferin Hospital, Calcutta, contributed to the March issue of the *Indian Medical Gazette* some statistical notes on the incidence of eclampsia in Calcutta. She quotes the paper on Indian medical statistics read by Dr. Margaret Balfour at the Congress of the Far Eastern Association of Tropical Medicine in 1927, and mentions that the eclampsia rate per thousand births in Calcutta is 41, as compared with 13.3 in Madras, and 9.7 in Bombay. There also appears to be a high case mortality in Calcutta, the percentage being 31.2 there; as compared with a figure of about 12 in the other two cities. Dr. Stapleton calls attention to the fact that in a very large majority of the cases eclampsia affected first pregnancies, and was mainly a disease of young women, aged 20 or under, the death rate among these being double that among older patients. The prognosis appears to be far more serious when fits occur in the later months of pregnancy. She concludes that a strong argument is thus forthcoming in favour of raising the marriage age and the time of consummation of marriage until physical growth has been completed. In the twelve months ending November, 1928, out of thirty-four girls, aged 16 and under, who were admitted to the Dufferin Hospital for their first confinement, no fewer than 11 (32 per cent.) had eclampsia, while others showed lesser signs of toxaemia. Emphasis is laid also on the importance of ante-natal care and systematic house-to-house visiting, so that early cases may be detected, and patients be persuaded to attend the ante-natal clinics.

Veterinary Research in India.

Part of the research work undertaken during 1928–29 by Dr. J. P. Edwards, director of the Imperial Institute of Veterinary Research, Muktesar, was an investigation into bovine piroplasmosis in Holstein stud bulls. The report of the Institute gives a brief summary of the symptoms of the disease, from which it appears that the only treatment available at present is careful nursing. Recovery is not considered to imply immunity from further attack, as serious relapses were recorded. The histological observations were not completed in time for this report, but they seemed to the investigators to consist of lymphocyte "blocks" in the smaller arteries of the principal organs. Although the bulls were inoculated against *Babesia bigeminum* and *Theileria mutans* before they were exported from South Africa, many of them were affected at the same time, shortly after their arrival in India. This appeared to indicate that the pathogenicity of the theileria parasite of India differs from that of the South African species. On the other hand, some evidence was obtained of the identity of *B. bigeminum* in the two countries. Preliminary research was also conducted on foot-and-mouth disease on the lines of Waldmann and Pape. Experiments with guinea-pigs revealed that the virus caused regular vesicle formation on the plantar pads in twenty-four to thirty hours. In addition to research on numerous diseases the Institute manufactures over a dozen different serums and vaccines; the total issue for the year was 63 million doses. No serious epidemic occurred at Muktesar, but the improvement of sanitation and drainage was the subject of a Government report.

Prevention of Malaria in the Punjab.

During the months of July, August, and September, 1928, an investigation was made by Drs. M. Yacob and K. S. Shah, of the Punjab Epidemiological Bureau, Lahore, with a view to determining the practical and financial feasibility of employing Paris green for the destruction of anopheline larvae on a large scale in the Punjab. Their report is published in the February issue of the *Indian Medical Gazette* (p. 84), and in it they state that it was found that an area treated with this larvicide remained free from anopheline larvae until the third day after its application, when very young larvae reappeared. A dilution of 1 gram of Paris green in 89 grams of road dust was sufficient to destroy all anopheline larvae in ten square yards of water surface in twenty-four hours; culicine larvae, leeches, and tadpoles were not affected. A similar experiment was made with 0.5 per cent. of Paris green, but this was found to be capable of destroying rather less than 50 per cent. of the larvae in the twenty-four hours. Laboratory experiments indicated that this larvicide does not affect the egg and pupal stages of anopheline mosquitos, nor does it prevent the adult mosquito from laying eggs. Intervals between the application of Paris green should not exceed six days. From the financial point of view the widespread use of this measure seemed to be justifiable.

Progress of Vaccination in Burma.

In seventy-three towns in Burma, during 1928–29, over ten thousand infants died from various causes before their first birthday. This information is revealed, incidentally, in a triennial report on vaccination in the province for 1926-27 to 1928-29. Parents in Lower Burma, especially those living in remote areas, are reported to be reluctant to have their children vaccinated before the end of the first year. Serious opposition to vaccination, however, occurs only in a few backward and primitive areas, but people willingly submit during outbreaks of small-pox. Evidence is accumulating of a more widespread recognition that vaccination is a means of protection, for, while the incidence of small-pox was less than in the previous triennium, the number of vaccinated cases exceeded that of the two previous periods. More than 2½ million vaccinations were performed altogether, an increase of over 100,000, about 1½ million being primary. Following the extension of compulsory Acts to rural areas the figures for both primary and revaccinations showed a steady rise up to 1928–29, which marked a record. In this year the rate of success in primary cases was 97.11. Since the last report Vaccination Acts have been extended to Shwebo and Mandalay. On the other hand, there were fewer primary vaccinations in seventeen districts, and fewer revaccinations in eighteen. These decreases are accounted for by economy in lymph supply, difficulties of communication and transport, and disinclination of the people during non-epidemic periods. It took ten days to convey lymph to the Chin Hills, where the lowest rate of success was reported: its potency was thus reduced in transit. In several districts the people were willing to have their children vaccinated, but they objected to taking them for verification to the health or inspecting officers. Lieut.-Colonel G. Jolly, I.M.S., director of the public health department in Burma, anticipates that further progress will be made throughout the province by more intensive propaganda, but he urges the need for developing a rural health service to ensure more efficient supervision.

Correspondence.

ANTIMALARIA MEASURES.

SIR,—With reference to the letter of Colonel C. A. Gill, I.M.S., in the *Journal* of April 12th (p. 718), may I point out that mosquito control is only one item of vermin control or pest control, both of which are extensively used in many countries? Such control must always cost money, but is adopted because local authorities, such as agriculturists or other inhabitants, think that the benefits are likely to exceed the expenditure. If, of course, malaria could be controlled by cheaper methods, one would be only too glad, but I doubt whether it can be done.

Owing to the scarcity of malaria and of mosquitos in England few people here take much interest in these subjects, and can easily be imposed upon by mistaken opinion. There is only one school of competent malariologists—those who do the work. But the work of mosquito control is monotonous and not very profitable to the worker, though certainly very valuable in a malaria-infested area. Many people seem to think that malaria control is responsible only for expenditure; they forget that the disease itself costs much more money.—I am, etc.,

London, S.W.15, April 17th. RONALD ROSS.

INDIAN MEDICAL DEGREES.

SIR,—In his letter (April 12th, p. 717) on the above subject Lieut.-Colonel R. H. Elliot writes that he believes it will be accepted on all sides that the General Medical Council of Great Britain is in no way actuated by hostility towards India in withholding further recognition of Indian medical degrees. Any unprejudiced and careful student of the facts in this unfortunate controversy must agree that the Council was reluctantly compelled to take the action it has done. Recent utterances by prominent Indian members of the medical profession in Bombay and elsewhere in India make it clear, however, that in their view the Council has been interfering and dictatorial, if not actually hostile.

Recently, while I was surgeon-general with the Government of Bombay, I travailed (I regret to observe, ineffectually) to convince various leaders of the independent medical profession in Bombay that the attitude of the Council was benevolent. It had no desire, I explained, to interfere in matters of medical education in India, but it could not but insist that all those registrable in Britain should be adequately trained according to British standards. If the Council could not get evidence of satisfactory training from a source on which it could implicitly rely the withholding of recognition was quite inevitable. It seemed to me, however, that in many cases I made my appeal to minds that had for various reasons insulated themselves against any current of sympathy with the difficulties of our Council in the matter.

I hope, with all well-wishers of India, that it may again shortly become possible to accord recognition to Indian medical degrees. The Council cannot, however, be expected to recede, on political grounds, from the position it has been forced to take up.—I am, etc.,

St. Raphaël-Valescure, Var, April 15th. R. W. ANTHONY, Major-General I.M.S. (ret.)

STERILITY IN WOMAN.

SIR,—*Professor Blair Bell's address on female sterility* (April 5th, p. 629) lends itself to discussion. I agree with him that curettage for primary sterility is not necessary, but I doubt whether, when reasonably performed, there is more than a negligible risk of producing tubal inflammation.

He does well to hesitate when he declares that it appears probable that about 40 per cent. of all cases of sterility in women are due to infection—apparently largely tubal infection—for he judges that cervical infection as a cause of sterility is "perhaps infrequent." I am not in a position to give any reasonable opinion as regards the cervix, but I am glad to support him in his view that the endometrium has a capacity for escaping, perhaps better expressed as overcoming, even serious infection that should put to shame those who talk and write of "chronic endometritis" as a common lesion. In my own opinion the great bulk of primary sterility is produced mechanically by tilting forwards of the cervix. Professor Blair Bell apparently includes this under the heading of "conical and hypertrophied cervices"; I prefer to name it anteflexion of the cervix; the os in such cases points precisely as it does in a case of retroversion, and indeed it is sometimes difficult, in a fat or rigid woman, to differentiate. Why, by the by, does he recommend operation for retroversion, when a Hodge pessary so easily and efficiently maintains the correct position? After the first labour, the position of the os seems to matter less, perhaps because it is more patulous.

I differ from him most when he asserts that patency tests have proved, in his experience, that 35 per cent. of cases of sterility, without physical signs or symptoms, have occluded tubes. My own positive results, under the above conditions, reach something like 95 per cent.; in fact, it is a rarity to find occlusion, or a result that suggests it, where one has no reason to expect it from bimanual examination. I must emphasize that the apparatus I use (Victor Bonney's) is tested before each procedure, and that leakage is controlled by a head of saline in the vagina. Professor Blair Bell has never found this latter necessary, but I believe I may find it very useful if he attempts to query my large percentage of positive results. It would be interesting and important to hear the views of other workers on this point. I rarely go above a pressure of 210 mm. of mercury; in a very large proportion of nulliparous women air readily passes between 140 and 160 mm. and in parous women at about 80 to 100 mm. I fail to understand Professor Blair Bell's generalization of 80 mm. for the type he is discussing. In exceptional cases, when repeated trials (at one sitting) have proved negative, I have gone as far as 230 mm. or even 240 mm. In a few of these cases I have had an immediate opportunity of inspecting the tubes; in no instance has there been any evidence of rupture. I can hardly believe that spasm of the tubes would resist a pressure approaching 200 mm. of mercury. I am of opinion, therefore, that Professor Blair Bell's high percentage of negative results is an artefact pure and simple, and that a better technique would have produced results more approximate to my own. I will not delay the argument by detailing the refinements that are necessary. In cases of relative sterility, without physical signs or history, I agree with him that in some cases "ventilation of the tubes" (as I like to call it) can produce very happy results.

Professor Blair Bell, appreciating that 14 per cent. to 20 per cent. of sterile marriages are due to the husband, insists that no woman is to be subjected to unpleasant examination or treatment for sterility *per se* until her husband has been proved. But surely he does not find it possible to test the husbands of women of hospital class. For years past, in private practice, I have endeavoured to have all husbands tested, and a small percentage has been found unsatisfactory. Within the last two years, in two such cases, to my consternation, there have been threats of suicide on the part of the husband. Since this painful experience I have continued to request, but have refrained from insisting on, examination of the husband. We can say, in the absence of marked physical signs, that a woman is absolutely incapable. On the other hand, negative tests in a man, possibly temporary, are more explicit, and may involve domestic disaster. In general, it seems unfair to deprive a sterile woman of treatment because her husband cannot (as in hospital practice) or will not (as occasionally happens in other circumstances) be investigated, when we know that in about 50 per cent. of the cases the woman is at fault and usually presents evidences of that state.—I am, etc.,

Liverpool, April 15th. H. LEITH MURRAY.

THROAT INFECTIONS AND PUERPERAL SEPSIS.

SIR,—An almost identical experience to that of Dr. A. S. Garden at Southport Maternity Hospital (April 5th, p. 666) has occurred in the Burgh Maternity Home, Kilmarnock. The particulars are as follows.

Mrs. S. was confined on March 10th. The labour was normal, but rather slow, and as her general condition was poor low forceps were applied by the private practitioner. Seven days later (March 17th) she had a rigor, the temperature rising to 102° F.

Mrs. M. was confined on March 18th. Instrumental delivery was effected by a different private practitioner. Three days afterwards (March 21st) she developed a temperature of 102° F.

Mrs. Sh. was confined on March 21st. She was attended by a third private practitioner and had a normal delivery. Seven days afterwards (March 28th) she developed a temperature of 101.8° F.

As we were at a loss to know the cause of the occurrence in an institution which for many years has been singularly free from puerperal troubles, a consultation was held with two of the local practitioners keenly interested in the matter (Drs. Frew and Peden). As a result, the staff, nursing and domestic, were submitted to medical examination without any obvious focus of sepsis being discovered. It was then suggested that the throats of the entire personnel of the home be swabbed. This was done, and in the case of one nurse haemolytic streptococci were found. She was at once taken off duty and, to date, no further abnormal temperature has been noted. It is interesting to note that the nurse in question was not present at any of the three actual confinements, but assisted in attending to the toilet of the patients afterwards.

It has now been arranged that gloves and masks are to be worn by the staff, whether assisting at confinements or performing the swabbings of the patients subsequently.—I am, etc.,

Kilmarnock, April 18th. B. R. NISBET.

CORONARY OCCLUSION.

SIR,—In the issue of the *British Medical Journal* for April 12th there are two papers on disease of the coronary arteries—one by Dr. Crighton Bramwell and the other by Drs. Herapath and Perry. In addition, there is a leading article upon the same subject. Dr. Bramwell states that syphilis does not play a significant part in the etiology of the condition, and with this opinion the leading article agrees. It is stated that Levine found syphilis to be present in only 4.5 per cent. of cases, and that he doubts whether the disease "has any direct causative influence on the production of coronary thrombosis."

One would point out that in the cases described, the criteria for the absence of syphilis are quite inadequate. The syphilologist is very well aware of the fact that a high proportion of patients suffering from syphilitic disease of the heart return a negative Wassermann reaction, and in the vast majority one may be unable to elucidate any history of that disease. Unless the hearts of patients dying from coronary disease—or with symptoms suggesting it—are examined microscopically after the method of Warthin, any opinion as to the absence of syphilis is valueless. Syphilis is essentially a disease of the cardio-vascular system, and histological post-mortem findings show that many of the symptoms which have been attributed to disease of the coronary arteries are really due to myocardial damage. The terminal branches of the coronary vessels are end arteries, and it is around these terminal arterioles that in syphilis there are found large areas infiltrated with lymphocytes and plasma cells. This progresses towards fibrosis and may result in blocking of the vessel. Severe coronary sclerosis is rare in syphilis; and where involvement of these vessels does occur, the cellular infiltration is perivascular rather than vascular. At the necropsy table, cases which exhibited anginal symptoms may show very slight, if any, coronary

sclerosis, although the fibrosis present in the myocardium may be very striking. It would seem, then, that the clinical signs described by Dr. Bramwell, and interpreted as coronary occlusion, are consistent with myocardial damage alone.

The commonest visceral lesion of syphilis is a myocarditis, which is more often than not invisible to the naked eye, and can only be demonstrated by the microscope as an infiltration by lymphocytes and plasma cells along the vessels between the muscle fibres. The favourite site for syphilitic myocarditis is just above the apex of the heart on the anterior wall of the left ventricle. The epicardium and endocardium in this area become thickened and roughened, and give rise to that transient pericardial friction referred to by Dr. Bramwell. It is in this area that aneurysm and rupture of the heart are apt to occur. The position would appear to be that although syphilis may not be a frequent causal factor in coronary thrombosis, it is a common cause of a myocarditis which gives rise to all clinical signs consequent upon occlusion of a coronary artery. In other words, a syphilitic myocarditis can cause a lesion exactly equivalent to the end-result of a coronary occlusion.

Experience would seem to show that myocarditis is the invariable accompaniment of syphilis, and that commonly there occurs along with it a perivascular fibrosis of the terminal branches of a coronary artery (usually the left). This establishes a vicious circle; and the site of the greatest fibrosis and myocardial degeneration is on the anterior wall of the left ventricle just above the apex. In a coronary vessel narrowed by obliterative endarteritis due to syphilis, thrombosis is apt to occur, resulting in sudden death or in the clinical condition described by Dr. Bramwell. I suggest, therefore, that the clinical condition to which Dr. Bramwell refers, and which is usually dubbed "coronary" occlusion," is very frequently a localized myocarditis pure and simple; that it is frequently due to syphilis; that the coronary arteries may become a seat of a later obliterative endarteritis; and that thrombosis may occur in such vessels, and when it occurs suddenly death is, as a rule, equally sudden. Dr. Bramwell rightly lays special emphasis on the frequency with which the heart condition gives rise to acute abdominal symptoms, a wrong interpretation of which may result in a useless and perhaps fatal laparotomy. The number of syphilities bearing laparotomy scars is very high; and it is significant that the operation has usually been performed two or three years after syphilis has been acquired.

Much useful information might be obtained if cases of alleged coronary occlusion coming to the post-mortem table were investigated by the histological method of Warthin, which was shown to be of such high value at the Annual Meeting in Manchester last year. The presence of a negative unprovoked Wassermann reaction and absence of a history in no way rule out the syphilitic etiology. There is no branch of medicine in which the therapeutic test for syphilis, by means of bismuth and the careful exhibition of iodides or by intramuscular sulfarsenol, has a greater value than in cases of myocarditis.—I am, etc.,

E. TYTLER BURKE,
Director of Venereal Diseases Treatment Centre, City of Salford.

April 15th.

SPINOCAIN ANAESTHESIA.

SIR,—I am interested in Dr Hudson's case of death during spinocain anaesthesia (April 12th, p. 693). I have used spinocain on many occasions, and have seen no difficulties occur when it has been administered strictly according to Pitkin's directions.

But I would not care to inject at the level of the eighth dorsal vertebra, for it seems to me that by so doing the margin of safety would be materially reduced. For high anaesthesia, if one injects between the third and fourth lumbar vertebrae, and reinjects three times, allowing four minutes before inverting the patient, it is possible to watch the spread of the anaesthesia, and to invert at a period of less than four minutes if necessary, and so limit its further action. Pitkin suggests that one can inject as high as the first lumbar vertebra "for quicker anaesthesia," but speed cannot be regarded as necessary.

Spinocain is a marked improvement on the old stovaine, the use of which was often followed by collapse of the patient. I feel perfectly happy in using spinocain on all occasions where a general anaesthetic is contraindicated—for example, operations for gall-stones, prostatectomy, and all rectal operations of long duration.

It would be a pity if one death following an injection at the level of the eighth dorsal vertebra should influence anyone against a method that affords such distinct advantages.—I am, etc.,

C. L. GRANVILLE CHAPMAN, F.R.C.S.I.

Grimsby, April 19th.

DIAGNOSIS AND TREATMENT OF PULMONARY TUBERCULOSIS.

SIR,—In his letter (April 5th, p. 653), Dr. J. R. Gillespie, who has for many years been known as a consistent advocate of tuberculin, both in diagnosis and in treatment, ranges himself alongside Dr. Weatherhead (March 19th, p. 516) in upholding the importance of subcutaneous tuberculin as a diagnostic agent. He minimizes Dr. Weatherhead's opinion of the risks involved. The latter wrote "even this" (a mouth temperature of 99.2° F.) "is running the risk of a dangerous focal reaction." How mild is Dr. Gillespie's paraphrase—"Dr. Weatherhead's statement, as I understand it, was only to the effect that giving test doses to patients whose mouth temperature runs as high as 99.2° F. involves some risk."

These two protagonists have more essential variances. Dr. Weatherhead says of the subcutaneous tuberculin test that it is "of small value on the positive side. . . . No doubt a large proportion of cases will give a positive reaction, leaving the diagnosis still in question." Dr. Gillespie, on the other hand, reports 764 cases in which the diagnosis could not be established by ordinary means, presumably including x-ray examination, and in which he used subcutaneous tuberculin as the "deciding factor." He found 454 positives, and did not hesitate, on this ground alone, to advise a course of treatment extending over at least six months. "The great bulk of those who took this advice got quite well." Dr. Weatherhead, presumably, will not be greatly surprised at such a wholesale cure of pulmonary tuberculosis diagnosed by this procedure. But they agree on the extreme importance of a negative finding. Dr. Gillespie, with admirable fairness, sets out his obvious known failures.

It can only be said that a patient who has received, to his great comfort and that of his friends, a definite assurance that he is not suffering from tubercle, and who nevertheless is within six months a frank case of open pulmonary tuberculosis, is little likely to be impressed, or comforted, by Dr. Gillespie's comparison of the efficiency of his eliminating test with that of the Wassermann reaction. And in case the opinion of the patient is regarded as of no consequence on such a matter, I should like to quote the opinion of Dr. S. Roodhouse Gloyne, who certainly speaks with commanding authority on these subjects. In a paper published in *The British Journal of Venereal Diseases*, October, 1923, he discusses the differential diagnosis and interaction of syphilis and tuberculosis in lung disease, and states: "I have refrained from discussing the tuberculin tests because I do not regard them as good tests of the activity of tuberculous disease."

Dr. F. A. Hort (April 5th, p. 663) raises two points, the first of which concerns the use of tuberculin in treatment; he asks why it is not used to any extent. In my case the answer is simply that I have not found it of any appreciable value. The other point is a request for practical detail in exploiting the psychical factor. Possibly an expert psychologist could furnish this, though it is doubtful. A doctor prescribing any treatment in which he firmly believes is consciously or otherwise exploiting the psychological factor. Every successful doctor thrives on it, wittingly or not, though methods vary widely. The use of tuberculin, in suitable hands, and particularly if the diagnosis is not too rigid, is capable of great influence in this respect.

May I add a word on Dr. Esther Carling's letter (March 22nd, p. 567) dealing with the policy of submitting debilitated patients with advanced though chronic disease

to the rigorous winter conditions of many sanatoriums? I am sure it is, as she says, futile and sometimes even cruel. Reform is highly desirable, and I trust her practical suggestions will receive the consideration they merit.—I am, etc.,

Gloucester, April 14th. W. ARNOTT DICKSON.

SIR,—The tuberculin test is certainly not infallible, but anyone who has used it extensively can hardly fail to recognize in it a most valuable adjunct to other methods of diagnosis. The test being one of immunity there is no reason why a tuberculinized individual who has developed a partial active immunity to the toxin of the tubercle bacillus should give a marked positive reaction. But he will surely react in a modified way in proportion to the amount of immunity he has developed. In a case of chronic fibroid tuberculosis where the plasma is flooded with autogeneous tuberculin, and when this toxin produces little or no toxic effect on the host, we need not expect a small quantity of injected tuberculin to have any appreciable reactive effect; the reactive phenomena are therefore minimal, but they are always present, especially if the subcutaneous test is employed. In the very acute type of tuberculous infection, particularly in young girls, where the reactive processes of the individual have been broken down completely, we cannot expect tuberculin to produce a reaction. In both of these types—the extensive chronic fibroid and the acute disseminated type of infection—we do not need the tuberculin reaction for a diagnosis. In the first type of infection physical signs and symptoms are obvious, and in the second type there is nearly always a typical *x*-ray picture.

Many years ago I used the Pirquet method; but I certainly found the result difficult of interpretation, because in this test the only guidance is a local manifestation. The tuberculin reaction is a complex, there being not only the specific element but also a purely toxic element in it, the second being probably of a protein shock nature. On the other hand, with the subcutaneous test, the picture is complete, with a local reaction, a characteristic temperature response, and the focal reaction; the last, when obtained, is certainly diagnostic of an active and progressive tuberculous lesion. I have employed the old tuberculin of Koch in diagnosis (by the subcutaneous method) in several hundred cases, and I have never yet seen mobilization of the tubercle bacilli as a result of it, although anybody who reads the alarmist literature on the subject would undoubtedly be frightened at its use.

During the war I had a curious experience. A fresh supply of the old tuberculin of Koch had been supplied to me by an English firm of manufacturers; I could not get a definite and typical reaction in cases which obviously ought to have responded thus. I became suspicious, and after a good deal of trouble I obtained from a foreign firm another supply of tuberculin, prepared in accordance with Koch's original formula, when I had no difficulty in obtaining a typical local, general, and focal reaction in those cases which had previously failed to react. A few years later I received from a well-known London physician a supply of tuberculin; he stated that he had been unable to obtain the reaction with it, but unfortunately at the time I was unable to test its properties in obviously tuberculous patients. I have no doubt that occasionally a tuberculin is encountered which, through faulty preparation, is of no value as a diagnostic agent.

Another method of real diagnostic value, which ought to be used more extensively, especially by the general practitioner who sees the case early, is the method of auto-intoxication excited by gradually increasing walking exercise. An apparently afebrile patient, in the earliest stage of tuberculosis, will often develop a sustained temperature, lasting a week or more; if the patient is carefully examined every day the transient appearance of some definite sign (a focal reaction) will clinch the diagnosis. Obviously, complete rest in bed is indicated as soon as the diagnosis is established, until the temperature and pulse have gained their normal level. I have occasionally made use of this procedure when the subcutaneous tuberculin test was contra-indicated.—I am, etc.,

[illegible], April 7th. FELIX SAVY.

*** This correspondence is now closed.

ERGOT PREPARATIONS FOR ORAL ADMINISTRATION.

SIR,—I should be greatly obliged if you would publish a correction of a statement in your article of April 12th (*p. 767*) *on preparations of ergot for oral administration.*

When referring to the examination by Elphick and myself of various samples of ergot, you stated that we found Polish ergot to contain 0.6 per cent. of the specific alkaloid. This figure should be 0.06 per cent. The error, which is due to my faulty proof-reading, requires correction because of the bearing of the facts on the future of these ergot preparations. The finding that Polish and Russian ergots, which constitute such a large proportion of the total production of this drug, contain so much less ergotoxine than the ergots from Spain or Portugal, may prove of importance in deciding the minimum amount of activity which will be permitted in extracts of ergot in the next edition of the *British Pharmacopoeia*.—I am, etc.,

London, W.C.1, April 15th. FRANK WOKES.

Universities and Colleges.

UNIVERSITY OF CAMBRIDGE.

THE following candidates have been approved at the examination indicated:

DIPLOMAS IN PUBLIC HEALTH, HYGIENE, AND TROPICAL MEDICINE AND HYGIENE, PART I.—R. J. Dyson, M. S. El-Kinani, C. O. Karunakaran, J. H. *Loots* (distinguished). Flora H. G. *Macdonald*, Ethel Morris, K. C. K. E. Raja, Joan Robinson.

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AT an ordinary meeting of the Royal College of Physicians of London held on April 14th, Sir John Rose Bradford was re-elected President of the College.

Diplomas.

The following Diplomas were also conferred, jointly with the Royal College of Surgeons, on the following candidates:

IN TROPICAL MEDICINE AND HYGIENE.—G. H. Arndt, S. Attaullah, Balkrishna, C. L. Bhola, R. C. Burgess, A. D. Cust, W. C. Davidson, Eugene Egan, A. P. Farmer, P. V. Gharpure, F. W. Gilbert, C. J. Hackett, W. R. Little, A. F. Mackay, N. M. Maclennan, W. A. Mirza, Z. Miterstein, S. K. Mitra, *C. C. Okell, G. M. C. Powell, J. T. Sorley, J. H. Strahan, W. K. Stratman-Thomas, S. H. Swift, G. E. Tilsley, E. A. Trim, L. E. Vine, *N. T. Whitehead, K. L. Wig, F. Williams.

IN C[illegible]

F. C. Wilson.

The Services.

I.M.S. DINNER.

THE annual dinner of the Indian Medical Service will be held at the Trocadero Restaurant, London, on Wednesday, June 18th, at 7.15 p.m. Major-General F. G. H. Hutchinson, C.I.E., has been invited to take the chair. Tickets and all particulars may be obtained from the joint honorary secretary, Sir Thomas Carey Evans, *M.C.* (Major, ret.), 31, Wimpole Street, W.1.

DEATHS IN THE SERVICES.

Lieut.-Colonel William Snowdon Hedley, R.A.M.C. (ret.), died at Liphook, Hants, on April 7th, aged 89. He was born on March 1st, 1841, and was educated at Edinburgh, where he graduated as M.D. in 1863, also taking the M.R.C.S. in the same year. Entering the Army as an assistant surgeon on September 30th, 1864, he became surgeon major after twelve years' service, and, after being on half pay from December 3rd, 1880, to November 29th, 1881, retired on October 14th, 1885, with an honorary step as brigade surgeon. He served in the Sudan campaign of 1885, with the Nile expedition, when he was in charge of the field hospital at Dongola, and received the Egyptian medal with a clasp and the Khedive's bronze star. During the old regimental days he served in the 1st Foot, the Royal Regiment or Royal Scots; and in the 53rd Foot, now the King's Shropshire Light Infantry.

Lieut.-Colonel William Henry Cazaly, Indian Medical Service (ret.), died at Earl Soham, Suffolk, on April 10th, aged 56. He was born on September 24th, 1873, was educated at Bart's, and took the M.R.C.S. and L.R.C.P.Lond. in 1893; he graduated as B.A. of London University in 1892, and as M.B. and B.S. in 1895; he also took the D.P.H. of the London Colleges in 1910. Entering the I.M.S. as lieutenant on June 28th, 1900, he became lieutenant-colonel on December 28th, 1919, and retired on March 14th, 1920. He took part in the war of 1914-19, serving in France and Belgium in 1914-15.

Obituary.

ROBERT BRIDGES, O.M., D.Litt., LL.D., M.B., F.R.C.P.,

Poet Laureate; sometime Physician to the Great Northern Hospital, and Assistant Physician to the Hospital for Sick Children.

ROBERT SEYMOUR BRIDGES was born at Walmer on October 23rd, 1844, and died at Chilswell House, Boar's Hill, Oxford, on April 21st, 1930. From Eton he went to Corpus Christi College, Oxford, where he made a name as an oar-man, and graduated B.A. with a second in "Greats." After leaving Oxford he travelled abroad, and then entered as a student at St. Bartholomew's Hospital. He obtained his M.B. degree in 1874, and, having served as house-physician, was appointed casualty physician at St. Bartholomew's. Later he was elected assistant physician to the Great Northern Hospital and to the Hospital for Sick Children, Great Ormond Street. Thus, unlike Keats, who was poor and yet abandoned medicine after obtaining a licence to practise, Robert Bridges, with ample means, took his profession seriously during early manhood.

His strictly medical writings were few, but in other directions his pen was not idle, and until he finally retired from practice at the age of 37 his artistic growth was steadily proceeding in the background of his professional life. He made two contributions to the *St. Bartholomew's Hospital Reports*, one a note on a case of severe rheumatic fever treated with splints, and the other a remarkable paper entitled "An account of the casualty department," published in 1872, describing the medical work of the old surgery at St. Bartholomew's, where he acted as joint "filtrator," of out-patients from 9 o'clock to 12 noon, spending (as he found) a minute and a quarter over each case. His answers to the pertinent questions that arose in his mind give a vivid picture of the old casualty department and its work half a century ago. Feeling the responsibility and difficulty of filtering some 30,000 patients a year, of whom more than two-thirds were new cases, Dr. Bridges made a system of hieroglyphic notes, checking off each case as he dismissed it, and these records formed the statistical basis of his paper. Not until 1922, forty years after relinquishing his hospital appointments, did he write again on a medical subject. On that occasion he collaborated with Dr. Cuthbert Morton in an essay on the language of anatomy, published by the Clarendon Press as S.P.E. Tract No. IX. The authors' object was "to condemn the action of those who are moving to introduce a formal Latin international terminology into the British schools of anatomy, on the false notion that it will be of service to international science." Here it may be noted that the Poet Laureate was one of the founders of the Society for Pure English, and acted as general editor of its series of tracts.

This is not the place to appraise the poetry of Robert Bridges or his services to literature at large. His last and perhaps greatest work, *The Testament of Beauty*, which appeared only six months ago, on his eighty-fifth birthday, revealed again the perennial vigour of his mind, the wide range of his sympathies, and his mastery of metrical composition. He never for a moment wrote down to the public, but gradually his fame spread to wider circles. While there is little direct relationship between his medical studies and the character of his poetry, there are many traces in his poems of a penetrating insight into human nature acquired in the practice of medicine.

Many academic distinctions were conferred on him by his own and other universities, and the Royal College of Physicians of London elected him into its Fellowship in 1900. In 1913 his position in the world of letters was recognized by appointment to the vacant post of Poet Laureate. His last honour was admission to the Order of Merit. On his eightieth birthday a group of friends and admirers (of whom the late Editor of this *Journal* was one) gave him a clavichord. Our portrait shows him seated at the instrument; it was taken by Lady Gosse and engraved by Sir Hubert Herkomer, R.A., R.W.S., R.P., R.I., R.B.A., R.E., Litt.D., LL.D., Professor of Fine Art in the University of Oxford, Slade Professor of Fine Art in the University of Cambridge, Member of the Royal Academy of Arts, Berlin, Member of the Royal Academy of Arts, Munich, Member of the Royal Academy of Arts, Vienna, Member of the Royal Academy of Arts, Rome, Member of the Royal Academy of Arts, Amsterdam, Member of the Royal Academy of Arts, Belgium, Member of the Royal Academy of Arts, Stockholm, Member of the Royal Academy of Arts, Copenhagen, Member of the Royal Academy of Arts, Madrid, Member of the Royal Academy of Arts, Lisbon, Member of the Royal Academy of Arts, Buenos Aires, Member of the Royal Academy of Arts, Rio de Janeiro, Member of the Royal Academy of Arts, Montevideo, Member of the Royal Academy of Arts, Mexico, Member of the Royal Academy of Arts, Havana, Member of the Royal Academy of Arts, Caracas, Member of the Royal Academy of Arts, Bogotá, Member of the Royal Academy of Arts, Quito, Member of the Royal Academy of Arts, Lima, Member of the Royal Academy of Arts, Santiago, Member of the Royal Academy of Arts, Valparaiso, Member of the Royal Academy of Arts, Montevideo, Member of the Royal Academy of Arts, Buenos Aires, Member of the Royal Academy of Arts, Rio de Janeiro

MALCOLM HUTTON, M.A., M.B.,
Barrowden, Stamford.

WE regret to record the death of Dr. Malcolm Hutton on April 7th, at the age of 49. Malcolm Hutton was born in Oban, Argyllshire, and studied at Glasgow University, where he took degrees in arts, science, and medicine. After qualifying he acted as house-physician at the Western Infirmary, Glasgow, and as house-surgeon at the Royal Infirmary, Maternity Hospital, and Ophthalmic Institution. In 1908 he took the diploma in public health at Manchester University, and shortly after became medical officer of health for the district of Crompton. He practised first in Shaw, Lancashire, and later in Barrowden, Stamford. From 1914 to 1916 he was secretary to the Oldham Division of the British Medical Association. Dr. Hutton is survived by his wife, who is also in the medical profession, and three daughters.

Dr. A. Vernon Davies, M.P., writes:

The tragically sudden death of Dr. Malcolm Hutton, upon the eve of his retirement from practice, has come as a shock to those who knew him. His family removed from Barrowden at the end of February, while he remained for a few weeks to introduce his successor. He had an attack of influenza, which he tried to overcome whilst carrying on his work. He went to his new home in Devonshire on March 15th, seriously ill. Acute tuberculosis of the lungs developed, and he died from heart failure in a sanatorium on April 7th.

I had the privilege of knowing Hutton as a friend and fellow practitioner in Shaw (Lancs) for twelve years; and as a friend for another eleven years. He was the senior partner in a large industrial practice. In 1914 his partner "joined up" for the duration of the war. Shortly afterwards three other medical men from Shaw joined the R.A.M.C., so that for a long time three men were left to do the work which had been done formerly by seven. During this period Hutton worked, literally, day and night, with the result that at the end of the war he was a tired man—showing evidence of the great strain he had undergone. He left Shaw in 1919 for a country practice, but, as far as I could judge, still worked very hard—although, perhaps, in more congenial surroundings. But, like so many of our profession, he was fated to die "in harness." Hutton was a man of high intellectual capacity. He held degrees in arts, science, and medicine, and a diploma in public health. The last he obtained whilst working hard in practice at Shaw. He had the dual personality of the student and of the man of affairs—a rare combination, I think, in our profession. He was a great reader of our best literature; he kept himself abreast of all recent medical knowledge and was always seeking "new worlds to conquer." He took up ophthalmology as a new line during his country practice, and yet in spite of his devotion to learning he was at all times the painstaking, practical, level-headed Scot. When he served on the local medical war committee his judicial outlook and sound common sense were of great help to his colleagues in selecting the civilian medical practitioners to supply the needs of the Army. These attributes were recognized again by his colleagues in Rutland later on when he was appointed chairman of the panel committee, and chairman of the county insurance committee. He was a worker with a very methodical mind, which enabled him to get through an enormous amount of work. Conscientious to a degree, hating "sham" and hypocrisy, yet kind and tolerant when necessary, a friend and helper of the poor and needy, and a deeply religious man, Hutton, by his outstanding personality, his skill and ability, stands out as an example of the highest type of "G. P." He has left with his friends and patients a sweet memory of affection, respect, and admiration.

MR. H. PERCY ADAMS, F.R.I.B.A., who died recently at the age of 64, was well known to the medical profession inasmuch as he had for many years given special attention to the designing of hospitals in which he was an acknowledged master. He contributed an article to the Hospital Number of the *British Medical Journal*, of June 20th, 1925, on the construction of cottage hospitals, in which he gave a full description of the Woburn Cottage Hospital designed by him for the Duke of Bedford. Mr. Adams was the architect of the British Medical Association's central headquarters in the Strand, at the corner of Agar Street, which were occupied from 1908 till the removal to Tavistock Square in 1925.

The following well-known foreign medical men have recently died: Professor JULIUS RAECKE, head of the clinic for nervous diseases at Frankfort and author of a textbook on forensic psychiatry, aged 58; Dr. HERMANN FORTIG, extraordinary professor of genito-urinary diseases at Würtemberg University and head of the dermatological clinic at Würtemberg; Dr. CARLOS IBAN DE LA SIEVRA, founder of the medico-legal institute at Santiago; Dr. LÉON BLUM, professor of medicine at Strasbourg University, aged 52; Dr. EUSEBIO A. MORALES, one of the founders of the Republic of Panama, as the result of a motor accident; and Dr. ALBERT THÉVENOD, a paediatrist of Geneva, aged 32.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT rose on April 17th until April 29th. On April 15th it was announced that the first business of the House of Commons after the adjournment will be to discuss the Ministry of Health Estimates, with special regard to the administration of the National Health Insurance Act and recent charges of laxity. Poor Law administration and task work are also to be debated.

During the debate which preceded the Eastertide adjournment of the House of Commons on April 17th Mr. Adamson announced that April 1st, 1931, would be retained as the date on which the leaving age for pupils at elementary schools in Scotland would be raised to 15 years. On the same day the House of Lords decided not to insist on its amendment restoring desertion as a capital offence under the Army and Air Force (Annual) Bill. The Commons had disagreed with this amendment.

On April 17th a new writ was authorized in the House of Commons for a by-election in the West Fulham Division, Dr. G. E. Spero, who was returned for that constituency at the General Election, having retired.

The Hours of Industrial Employment Bill, "to regulate the hours of work in industrial undertakings," was presented in the House of Commons by Miss Bondfield on April 16th.

Road Traffic Bill.

When the Road Traffic Bill was before the House of Lords Clause 36, which deals with requirements in respect of policies to be taken out by motorists against third-party risks, was amended by the insertion of a new subsection running:

(2) Where any payment is made by an authorized insurer under a policy issued under this part of this Act in respect of the death of or bodily injury to any person arising out of the use of a motor vehicle on a road and the person who has so died or been bodily injured has to the knowledge of the authorized insurer received treatment in a hospital in respect of the fatal or other bodily injury so arising, there shall also be paid by the authorized insurer to such hospital the expenses reasonably incurred by the hospital in affording such treatment to an amount not exceeding twenty-five pounds for each person so treated.

A standing committee of the House of Commons is now examining the same bill, and reached Clause 36 on April 10th. Mr. REMER moved to leave out Subsection 2, as set out above.

Mr. MORRISON (Minister of Transport) said he and the committee were agreed on the financial difficulties of the hospitals, and on the fact that they were faced with a problem in handling the accidents associated with motors. On the other hand, as one who believed that all health services should be public, he was bound to say that the only proper way to run them was on the basis of public services by public authorities. The present admitted difficulties of the hospitals might not then arise. In his view Subsection 2 was alien to the main purpose of this part of the bill, which was to ensure that the legal claim to compensation by a third party for death or injury should not be defeated by the financial insufficiency of the motorist. The subsection was illogical, and would be haphazard in effect, awkward to work, and largely ineffective. Hospital authorities would be unable to recover their expenses unless they were in a position to notify the insurer that the injured person had been treated in that hospital, and the insurance companies would probably take steps to prevent the fact of treatment in a hospital being brought to their notice. On the other hand, members of the committee were receiving numerous com-

munications, and might desire that something should be done on the lines of the subsection. He advised the committee that hospitals ran some risk of motorists inclining to decrease their contributions to hospitals because part of their insurance money could be compulsorily taken by the hospitals. The hospitals declined the obvious and logical course of establishing a legal claim against the patient because that would interfere with their voluntary character. He understood that hospitals could not claim now, but he would be disposed to give them the legal right to say that in cases arising out of street accidents they would require payment unless the person treated could not afford to pay. That was the position of the municipal hospitals under the Local Government Act of 1929, but he gathered that the voluntary hospitals did not desire it. He indicated amendments which he was prepared to accept to make the subsection more workable.

Colonel ASHLEY argued that the subsection was fair and workable.

Dr. SALTER said the larger hospitals in London were not put to greater expense by motor accidents than they were in the old days of horse traffic. Provincial hospitals were hit hard by admission of reckless drivers and others involved in motor accidents. Every day the provincial hospitals found it difficult to get payment of the cost of treating these patients.

Mr. MORRISON intervened to say that the motorist involved in an accident would get no benefit from the insurance company. Neither he nor the insurance company would be under an obligation to pay the hospital for his treatment.

Dr. SALTER said the hospitals were aware of this. The clause did not go as far as they would have liked, but it did make a beginning. The returns received by the Hospitals Association showed that the amount repaid for treatment of motoring accident cases was about one-tenth. Leeds General Hospital admitted 544 cases at a cost of £3,575, and £243 was repaid; North Staffs General Hospital spent £2,365 and recovered nothing; Bradford Royal Infirmary recovered £65 out of £1,173; Blackburn Royal Infirmary recovered nothing out of £1,003, and so on. In many of the small cottage hospitals the position was worse, and up to 33 per cent. of the beds might be at one moment occupied by cases of motor accidents. At Cardiff, in every case, patients were interviewed, and a written undertaking obtained to include hospital costs in any claim made against the insurance company, but only £130 was recovered out of £3,035. Actuarially, between 1s. and 2s. addition to the present premium would cover the new liability which this subsection would impose on the insurance companies.

Major HILLS advocated a direct levy on the motorist's licence for the benefit of hospitals. One penny per vehicle would bring in £10,000 a year.

Sir JOSEPH LAMB said the hospitals of Outer London were much affected by the question.

Mr. MORRISON remarked that the committee advanced the doctrine that every person treated in a voluntary hospital ought to pay. That was a new doctrine. Let the voluntary hospitals recognize that as a new state of things and inconsistent with the voluntary system. Even after this subsection had been carried only the minority of motor cases would be covered.

Dr. SALTER: The estimate is one-third.

Mr. MORRISON pointed out that the insurance companies and the motoring associations had not circularized members against the subsection. He could not fight for people who would not fight for themselves.

By 20 to 10 the committee voted for the retention of Subsection 2.

On the motion of Sir JOSEPH LAMB, the committee added at the end of the subsection the words:

"For the purposes of this subsection the expression 'hospital' means an institution which provides medical or surgical treatment for in-patients, and the expression 'expenses reasonably incurred' means, in relation to a person who receives treatment in a hospital, an amount for each day such person is maintained in such hospital representing the average daily cost per patient of the maintenance of the hospital and the staff thereof and the maintenance and treatment of the patients therein: provided that the subsection shall not apply to any case where a charge has been made by the hospital in respect of such treatment."

Minor amendments were made to extend the obligations of the subsection to motorists who, instead of taking out a third-party insurance, give a surety or make a deposit. Clause 36 was then added to the bill.

Radium: Application for Special Powers Approved.

Resuming a discussion in the previous week of the proposal by the Hull Corporation to become radium trustees, a Local Legislation Committee of the House of Commons had before it, on April 15th, a compromise on the subject which had been approved by the Ministry of Health. The corporation had asked for certain powers on the ground that at present the radium in its possession could not be used to its fullest advantage. The clause originally proposed by the corporation ran: "The corporation may provide and supply (with or without charge therefor) to any medical practitioner, medicines, appliances, and requisites for the care and surgical treatment of sick persons, or may contract with any person to provide and supply the same. The corporation may purchase or hire or enter into any agreement or arrangement for the use of radium, and may provide suitable appliances for its reception, storage, and use."

Mr. E. WOOLL, appearing for the corporation, said negotiations had been proceeding steadily since the committee adjourned, and the problem had been approached from a different angle. The new provision for which the corporation asked sanction was:

"(1) The corporation shall have power to make reasonable subscriptions or donations to any trustees or other body constituted for the purpose of holding, supplying, or administering radium, and on making any subscription or donation under this section the corporation may impose such terms and conditions relative to the supply, administering, and use of radium as they may think fit.

"(2) Any expenditure under this section shall not exceed in any one year an amount equal to that which would be produced by a rate of one penny in the pound on the property liable to be assessed for the purpose of the general district rate."

Mr. Wooll said this provision was approved by the Ministry of Health.

The committee approved the amended section.

National Health Insurance.

On April 15th Miss LAWRENCE told Sir F. Hall that, according to a report recently furnished by the Government actuary of the sickness and disablement benefit experience of a representative sample of the whole body of insured persons, the number of insured men per 100 who claimed sickness benefit in 1921 and 1927 was 14 and 23 respectively. The amounts expended under the Health Insurance Acts in England and Wales in 1921 and 1927, in respect of sickness benefit, were £7,176,800 and £11,818,000; of disablement benefit, £2,639,600 and £5,358,000; and of medical benefit, £9,334,800 and £8,772,500. In this connexion it was pointed out that the increase in the amounts expended on sickness and disablement benefits in 1927, compared with the corresponding amounts expended in 1921, was to some extent due to the fact that in the later of those years there were larger increases in the benefit rates under the societies' schemes of additional benefits. The cost per head of the population of England and Wales in 1921 and 1927 for national health insurance was 3s. 11d. and 4s. 8d. respectively, and of medical benefit provided under the Health Insurance Acts 4s. 11½d. and 4s. 5½d. The factors which had contributed to the increases above noted were numerous and complex, and without further and fuller consideration the Minister of Health did not think it possible to make any general statement as to the relation between those facts and the increased provision of curative and preventive treatment.

Vaccination.

In a reply to Mr. Freeman, on April 10th, Mr. GREENWOOD stated that 237,627 certificates of successful primary vaccination of children under 14 years of age and 267,044 statutory declarations of conscientious objection were received by vaccination officers in England and Wales during 1929. During the same period, among children under 14 years of age, 12 deaths occurred which were classified to small-pox and 16 deaths in which the words "vaccination," "vaccinia," or "post-vaccinal encephalitis" appeared in the medical or coroner's certificate. Eleven other cases of children under 14 years of age were brought to the notice of the department, in which death occurred within four weeks of vaccination. In at least 8 of these cases there was no reason to think that vaccination contributed in any way to the fatal issue.

Miss LAWRENCE, on April 15th, told Mr. Freeman that under the Vaccination Acts certificates of postponement of vaccination must be given in the case of infants which were not in a fit state to be vaccinated. The instructions to public vaccinators emphasized that only infants in a fit state of health must be vaccinated. The Minister of Health saw no reason, therefore, to arrange for an independent medical examination for infants before being compulsorily vaccinated.

Psittacosis.—Miss LAWRENCE told Mr. West Russell, on April 16th, that the Ministry of Health had received information of 80 cases of illness which commenced during 1930 and in which the patients had been associated with sick parrots. Thirteen of these cases had proved fatal. The Minister could not say definitely how many had suffered from psittacosis, but in nine of the cases psittacosis appeared on the certificate as a cause of death. Mr. Greenwood was satisfied that adequate steps had been taken to deal with the matter.

Silicosis.—Mr. CLYNES told Mr. Hollins, on April 10th, that the amendment of the Various Industries (Silicosis) Order to include cases of partial incapacity was dependent on the passage of the bill which the Government had introduced to amend the provisions of the Act which relate to medical arrangements for examination and diagnosis. The bill had been read a second time in the House of Lords, and it was his intention, as soon as it had passed, to take up the question of the amendment of the Order.

Fibrosis of the Lungs.—Mr. CLYNES, in reply to Mr. Morley on April 10th, said that the question of scheduling the disease of fibrosis of the lungs under the Workmen's Compensation Act was one on which further research was necessary, and at his request the Medical Research Council had set up an expert committee to institute and co-ordinate research into the subject. The committee was at work, and would proceed as expeditiously as possible, but no early results could be expected.

Deaths due to Cancer in Scotland.—Mr. JOHNSTON told Mr. F. Owen, on April 14th, that 5,291 deaths registered in Scotland in 1915 were classified as being due to cancer. In 1929 the number of such deaths registered was 7,108.

Leprosy in India.—On April 14th Mr. BENN, replying to Mr. Granville, said that he had had no reports, since the last census, of the number of lepers in India, and there was no reliable information available. The provincial Governments were all in touch with the India Council of the British Empire Leprosy Relief Association. They received grants from the association approximately in proportion to the subscriptions of each province to its central fund.

Tannic Acid Treatment of Burns.—Mr. SHORT informed Dr. Vernon Davies, on April 9th, that the conclusion reached in the report of the senior medical inspector concerning the tannic acid treatment of burns was that it was not suitable generally for the first-aid treatment of burns at a factory or workshop. It could only be properly given in works where there was a suitably equipped ambulance room in charge of a properly qualified person, and in the treatment of minor burns it had no advantage over sterilized burn dressings. In the case of severe burns it might be valuable where the patient could not be moved to hospital without considerable delay, but otherwise the protection of the burn by a simple dressing was the proper procedure. He did not, therefore, advise any modification of the existing instructions. Dr. Davies thereupon pointed out that a very large body of medical opinion totally disagreed with the advice given.

Tuberculosis in the Navy.—Mr. MOSES asked, on April 16th, what steps were taken to minimize tuberculosis as a cause of invaliding from the Navy, and whether better conditions of service were under consideration to arrest the increase of tuberculosis which was taking place. He alleged that a large percentage of engine-room artificers were being invalided for that disease. Mr. A. V. ALEXANDER replied that the incidence of tuberculosis in the Navy was not unduly high, nor was it appreciably higher among engine-room ratings than in the seaman branch. Precautions to minimize the causes of tuberculosis were under constant review.

Burntwood Mental Hospital.—In reply to Mr. McShane, on April 10th, Mr. GREENWOOD gave the following table concerning Burntwood Mental Hospital. During 1929 there was one resident medical officer to 310 patients.

Year.	Daily Average No of Patients Resident	No. of Admissions.	No. of Deaths.	Year.	Daily Average No. of Patients Resident.	No of Admissions.	No. of Deaths.
1920	882	250	111	1925	9'4	197	71
1921	890	242	106	1926	926	194	87
1922	858	223	86	1927	919	196	109
1923	868	226	81	1928	930	219	1'4
1924	902	201	72	1929	931	207	92

The number of patients in institutions for the insane and mentally defective were as follows:

Year.	In Institutions for the Insane.			In Institutions for Mental Defectives.
	Certified Patients.	Voluntary Boarders.	Total.	
1921 . .	99,751	261	100,012	11,675
1922 . .	103,071	292	103,363	13,394
1923 .	105,821	338	108,159	15,327
1924 ..	109,785	510	110,295	17,104
1925 ..	111,199	6 5	111,824	18 735
1926 ..	113,542	695	114,237	20 297
1927 .	116 375	795	117,171	21,662
1928 . .	118 327	879	119,206	22,812
1929 . ..	121 333	1,006	122,339	24,207
1930 ..	122,902	1,020	123,922	25,697

Vitacream.—Mr. GREENWOOD said, on April 10th, in reply to Mr. Hanbury, that he was aware of the sale of vitacream, which was seriously competing with genuine British cream, but he could not at present introduce legislation so that it should be sold under the designation of cream substitute, with an analysis shown clearly.

Traffic in Dangerous Drugs.—Replying to Mr. Mander, on April 10th, Mr. CLYNES said the Council of the League of Nations had not yet considered the report of the Advisory Committee on Traffic in Opium and other Dangerous Drugs. The responsibility for putting a stop to illicit traffic in drugs would rest on the Governments in countries where it took place, and he presumed the Council would wish to know what action had been taken when the report came before them.

Indian Medical Degrees.—Mr. BENN told Major Pole, on April 14th, that the Government of India made proposals for a provisional arrangement for guaranteeing Indian medical degrees, pending the introduction of legislation in the Indian Legislative Assembly to establish an All-India Medical Council, but these proved unacceptable to the General Medical Council. It had made no further proposals since the decision of the General Medical Council to discontinue recognition.

Royal Naval Medical School, Greenwich.—On April 15th Mr. AMMON, replying to Dr. Vernon Davies, said that there would normally be two courses a year at the Royal Naval Medical School, Greenwich, for acting surgeon lieutenants, but these were at present in abeyance. There were also normally two courses a year for surgeon lieutenant commanders. The maximum number of students who could be trained at any one time at the school was twelve officers and twelve ratings. The approximate amounts included in the estimates for the Royal Naval College, Greenwich, which could be attributed to the medical school, were, in 1928, £9,650; in 1929, £9,800; and in 1930, £9,800. These amounts represented the cost not only of the above-mentioned courses of instruction, for which separate figures were not available, but also of a very large amount of highly technical work of the greatest importance to the health of the Navy.

Army Rejections.—In a table supplied to Major Glyn, on April 16th, Mr. SHAW gave ratios per 1,000 candidates for Army enlistments who were rejected for the following physical defects in 1910, 1921, and 1929:

Diseases of the middle ear	6.35	11.71	50.21
Loss or decay of many teeth	55.95	35.16	26.13
Defects of lower extremities...	18.74	11.58	33.73
Defective vision	18.15	58.39	26 69
Diseases of the heart	40.38	37.87	43.53
Insufficient weight	5.34	11.89	24.50
Flat-feet	10.44	27.22	16.90
Under chest measurement	43.97	33.39	10 8

Foreign Medical Men and the Post-Graduate Hospital and Medical School.—Replying to Mr. Matters, on April 15th, Mr. GREENWOOD said that the granting of medical degrees did not rest with the Ministry of Health. Consideration of facilities whereby foreign medical men and women might secure, in connexion with the British Post-Graduate Hospital and Medical School, a British post-graduate degree supplementary to and based on recognition of the diplomas secured by them in their own countries would appear to be premature pending the establishment of the hospital and of the medical school.

Beds Available for Treatment of Phthisis in Kent.—Answering Captain Balfour, on April 17th, Mr. GREENWOOD said the average number of beds available in the year 1929–30 under the scheme of the Kent County Council for treatment of pulmonary tuberculosis was 364, of which 155 were in institutions provided by the county council. The numbers of persons suffering from pulmonary tuberculosis awaiting admission to residential institutions were 74, 60, and 72 on January 1st, February 1st, and March 1st respectively. The number so waiting had been reduced to 50 on April 1st. The proportion that number bore to the number of available beds was slightly higher than for the country as a whole, but the average waiting period in Kent was approximately one month. The county council proposed, as a temporary measure, to reduce the waiting list by the use, for suitable cases, of accommodation in the Poor Law institutions which were transferred to them on April 1st.

Chinese Eggs.—In a reply to Mr. Ramsbotham, on April 17th, Mr. GREENWOOD said that so far as he knew the imports of liquid and dried eggs from China were free from contamination, and if in good condition were without danger to the public health. They were required to be free from preservatives, and, in common with other imported foods, were subject to inspection at the port of entry, and might be seized and destroyed if found to be unsound, unwholesome, or unfit for human consumption. The value of such eggs imported from China during 1929 was £3,574,640. These eggs were mainly used by the baking trade for cake making.

Inspection of Cattle for Tuberculosis.—In a reply to Mr. Smithers, on April 17th, Mr. GREENWOOD asserted that an increasing number of local authorities are carrying out regular veterinary inspections of cattle and having samples of milk tested for tubercle bacilli, with a view to the exercise of their powers under the Milk and Dairies Act. He did not propose to introduce any further legislation on this subject at present, but was in consultation with the Minister of Agriculture and Fisheries, with a view to the issue of a circular to local authorities indicating further steps which they might advantageously take under existing powers. For this purpose he would have regard to the views of the medical and veterinary advisers of the two departments, as well as those of other members of the two professions.

Pensions Cases.—Mr. ROBERTS stated, on April 17th, that at the end of March, apart from cases of mental affliction in public institutions, approximately 4,700 patients were in hospitals belonging to the Ministry of Pensions, or in hospitals where accommodation was secured at a capitation rate. The hospital population fluctuated considerably in the year, the aggregate number of discharges, about 18,000, being slightly in excess of the number of admissions. No change in the use of the Ministry's hospital at Orpington was at present contemplated.

Notes in Brief.

On April 14th Mr. Clynes informed Mr. Mander that the decree of the French Government providing for direct limitation of the manufacture of narcotic drugs was gazetted in the *Journal Officiel* of March 25th.

Medical News.

THE Oliver-Sharpey lectures before the Royal College of Physicians of London will be delivered by Professor J. J. R. Macleod at the College, Pall Mall East, S.W.1, on Tuesday, April 29th, and Thursday, May 1st, at 5 p.m. The subject of the lectures is diabetes as a physiological problem. They are open to members of the medical profession on presentation of visiting cards.

THE annual meeting and luncheon of the Tavistock Square Clinic for Functional Nervous Disorders will be held at the Wharncliffe Rooms, Hotel Great Central, on Monday, May 5th. The Chairman of Council, Dr. H. B. Brackenbury, will open the proceedings at 12.15 o'clock, luncheon will be served at 1 o'clock, and after speeches by Sir Farquhar Buzzard and Miss Isobel MacDonald the honorary director (Dr. H. Crichton-Miller) will give an account of the year's work.

THE annual meeting of the Medical Mission Auxiliary of the Church Missionary Society will be held in the Central Hall, Westminster, S.W., on Wednesday, May 7th, at 7.15 p.m. The chair will be taken by Lord Lloyd, and among the speakers will be Dr. H. Gordon Thompson, formerly of Hangchow Hospital. Tickets of admission may be obtained from the superintendent, Loan Department, Church Missionary Society, Salisbury Square, E.C.4. A small number of reserved seats are available at one shilling each.

THE eighty-third half-yearly dinner of the Aberdeen University Club, London, will be held at the Trocadero Restaurant on Thursday, May 15th. The chairman will be Professor J. J. R. Macleod, and the guest of the club Professor Leonard Hill. The honorary secretary's address is 9, Addison Gardens, W.14.

THE annual dinner and meeting of the University of London Medical Graduates' Society will be held at the Langham Hotel, Portland Place, W., on Tuesday, May 13th, at 7.45 p.m. The President, Sir StClair Thomson, will be in the chair. Applications for tickets (price 10s. 6d.) should be sent to the honorary secretaries of the society, 11, Chandos Street, Cavendish Square, W.1.

A PUBLIC conference on by-laws under Section 5 of the Public Health (Smoke Abatement) Act, 1926, will be held under the auspices of the National Smoke Abatement Society, on Friday, May 2nd, at 71, Eccleston Square, Westminster, at 3.30 p.m. Mr. C. J. Allpass, chairman of the Greater London Regional Smoke Abatement Committee, and of the Public Control Committee of the London County Council, will open the discussion.

A POST-GRADUATE lecture entitled "Radium in cancer" will be given at the University of Sheffield, physics department, on Tuesday, May 6th, at 8.45 p.m., by Dr. J. Murdoch, chief of the department of radium and radiotherapy, Brugmann Hospital, Brussels, and director of the cancer centre of the University of Brussels.

UNDER the auspices of the British Institute of Philosophical Studies, Professor Lascelles Abercrombie will deliver a course of six lectures on aesthetic philosophy, commencing on Monday, May 5th, at 5.30 p.m. Further information may be obtained from the Director of Studies of the Institute, 88, Kingsway, W.C.2.

IN aid of King Edward's Hospital Fund for London a series of six "cross-examinations," in which various well-known persons will be charged with offences they are alleged to have committed, will be held at the London School of Economics, Houghton Street, Aldwych, each Tuesday, at 5.30 p.m., beginning on April 29th. At the first cross-examination Mr. Low, the cartoonist, will be charged with libelling politicians, Mr. A. P. Herbert taking the part of prosecutor, and Mr. W. Pett Ridge of judge. Tickets (7s. 6d., 5s., 3s. 6d., and 2s. 6d. each, or £2, £1 5s., 18s., and 12s. 6d. for the series) may be obtained from the secretary, King Edward's Hospital Fund for London, 7, Walbrook, E.C.4, or at the doors.

THE centenary of the birth of the celebrated surgeon Richard von Volkmann, who was one of the founders of the German Society of Surgery, and died in 1889, will be celebrated at Halle on April 27th, when addresses will be given by Professor Voelcker and the President of the society.

PROFESSOR FRANCIS FRASER'S address entitled "Before the Finals and After," given to senior students and recently qualified practitioners at a reception organized by the Metropolitan Counties Branch of the British Medical Association, was reported in the *Supplement* to our issue of February 22nd, and the full text has now appeared in the April issue of the *St. Bartholomew's Hospital Journal*.

THE fifty-fourth Congress of the German Society of Surgery is being held at the Langenbeck-Virchow House, Berlin, from April 23rd to 26th, under the presidency of Professor W. Anschütz of Kiel.

THE twenty-first congress of the German Roentgen Society will be held in Berlin from April 27th to 29th, when the following subjects will be discussed: intravenous pyelography, introduced by von Lichtenberg of Berlin, and the present methods of irradiation of cancer, introduced by Miescher of Zürich, Holfelder of Frankfort, and Schinz of Zürich.

THE date of the second International Paediatric Congress at Stockholm has been advanced one day, and will cover the period August 18th to the 21st. The Swedish organization committee has chosen for discussion: the biological effect of direct and indirect ultra-violet irradiation; the physiological and pathological significance of the thyme-lymphatic system; and the psychology and pathological psychology of childhood, their significance as a branch of paediatric research and teaching, and their application in medico-social work. The fee of admission is 20 Swedish crowns for regular members, and 10 crowns for members of their families. Facilities are being arranged for excursions after the congress to various places of interest in Sweden. A booklet entitled *Summer in Sweden* can be obtained from the Swedish Organization Committee.

THE library of the Royal Society of Medicine is now open until 10 p.m. every Thursday in addition to being open to this hour on Tuesdays and Fridays. Hitherto Fellows resident outside the London postal area have enjoyed the privilege of having books sent to them from the library carriage paid. This privilege has now been extended to all Fellows not resident or practising within a mile of the Society's house.

ON March 3rd, the twenty-fifth anniversary of the discovery of *Spirochaeta pallida*, the Fritz Schaudinn medal was awarded by an international committee of the Hamburg Institute for Tropical Diseases to Professors M. Hartmann of Berlin, F. d'Hérelle of Paris, and E. Bechenow of Hamburg, in recognition of their microbiological researches.

IN the April issue of *The World's Children*, a monthly journal of child care and protection considered from an international point of view, are published two articles of medical interest: "For the children of Greece," an account by Mr. H. D. Watson, of the Athens Eye Clinic, devoted mainly to the treatment of trachoma; and "In the Welsh Marches," a description of the recently developed scheme of ante-natal work in Monmouthshire. *The World's Children* may be obtained from the Weardale Press, Limited, 26, Gordon Street, London, W.C.1, price 4d.

THE April issue of the *Leprosy Review* contains an interesting article by Dr. H. W. Wade, describing the growth of the anti-leprosy campaign in the Philippine Islands. The Philippine system combines segregation of infectives near their homes, when possible, with dispensary treatment of early cases, and intensive survey and educational work. Other articles in this issue deal with work on the Gold Coast and in Norway, and there is an account of leprosy of the nose and mouth. The *Review* may be obtained from the office of the British Empire Leprosy Relief Association, 29, Dorset Square, N.W.1, price 2s.

AN article by Dr. T. Wilson Parry entitled "Holes in the skulls of prehistoric man and their significance," has been reprinted from the *Archaeological Journal*, 1922. Dr. Parry discusses the five chief causes of these holes, and gives illustrations of their incidence. The subject-matter is illustrated by numerous reproductions of photographs of such skulls.

THE Alexander Pedler Lecture for 1929, under the auspices of the Manchester Literary and Philosophical Society and the British Science Guild, was delivered by Dr. G. C. Simpson, F.R.S. In considering his subject, "Past climates," from a meteorological point of view Dr. Simpson remarked that while all meteorologists accepted certain geological evidence of radical differences in present and past climates they disagreed, as did the geologists, in explaining how these changes had been brought about. The problem of past climates was to determine what changes in the existing conditions would produce the climates which the geologists inferred from their observations. Present temperature distribution depended on the amount of solar radiation, the horizontal transfer of heat from one part of the earth to another, and on the characteristics of terrestrial radiation. How much did variation in each of these factors contribute to the observed climatic changes? Copies of the lecture may be obtained from the offices of the British Science Guild, 6, John Street, W.C.2, price 1s.

THE KING has confirmed the appointment of Dr. Lawson Gifford and Dr. Basil Mayor Wilson (superintending medical officer) to be nominated members of the Legislative Council of the Island of Jamaica.

THE late Sir Alfred Fripp has left estate of the gross value of £1,01,905, with net personalty £52,655.

DR. C. ZOELLER has recently been appointed professor of epidemiology and bacteriology at the Val-de-Grâce School of Military Medicine, Paris.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

Authors desiring REPRINTS of their articles published in the *British Medical Journal* must communicate with the Financial Secretary and Business Manager, British Medical Association House, Tavistock Square, W.C.1, on receipt of proofs.

All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863*, and *9864* (internal exchange, four lines).

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QUERIES AND ANSWERS.

GRAMOPHONE RECORDS OF LECTURES.

"A. A. H." whose auditory memory is much better than his visual memory, inquires whether it is possible to obtain gramophone records reproducing medical lectures.

INCOME TAX.

Assistant Becoming a Partner.

"SIMPLE" acted as an assistant or locumtenent for nearly two years up to November 1st, 1928, when he became a partner (one fifth share) in the firm for which he was then working as an assistant. He did not buy any share in the book debts. In December, 1928, he paid £21 11s. 2d. as his share of the firm's assessment, and a similar amount in July, 1929. He also paid £7 11s. 8d. in January, 1929, in respect of his salary as assistant, presumably for the period April 5th to November 1st, 1928. On January 1st, 1930, he paid £57 13s. 9d., being a first instalment. His "total income from April, 19 8, to April, 1929, was £601." His firm's accountant says that the £57 13s. 9d. is based on what he earned between April, 1929, and April, 1930.

*** It is, of course, impossible to see what has been assessed without knowing precisely how the amount of the payments were calculated, but the position appears to be as follows: the £7 11s. 8d. covered our correspondent's liability in respect of his assistantship, and the other payments must refer to his income as a partner from November 1st, 1928, onwards. Apparently £43 2s. 4d. (that is, 2×£21 11s. 2d.) was calculated as his share of the assessment for the period to April 5th, 1929, and £115 7s. 6d., of which he has paid half, for the year to April 5th, 1930. When he has paid the second instalment he will have accounted for his liability "on what he earned between April, 1929, and April, 1930." But the assessment, of which he has to take his share, is based on the firm's previous year, and must include all receipts, whether paid to "Simple" or other persons, or alternatively must be based on bookings. Perhaps it will be clearer if it is borne in mind that if "Simple" had retired at April 5th, 1930, he would not have been liable to tax on his share of cash received—except, of course, that he would have to pay the second instalment of £57 13s. 9d.

Expenses of Consulting Practice.

"M.B." is a married woman living at home. She inquires whether certain expenses can be deducted.

*** The part-time expense of London consulting rooms is an admissible expense, but the expense of travelling from home to town is not admissible—like the City clerk's season ticket it has to be paid for out of taxed income, as part of the expense of living away from one's work. Subscriptions to societies: these depend on whether the society has made an arrangement with the Inland Revenue department; if a list is enclosed with the account no doubt the tax office dealing with the return will make the appropriate adjustments. No special claim is necessary for the £4 allowance due to married women against the assessment on their earnings, but it is advisable to see that it is given.

LETTERS, NOTES, ETC.

A BORROWED ARM.

MR. CHARLES W. CATHCART would be much obliged if the borrower of a Beaufort artificial arm will kindly return it to him at once, addressed Charles W. Cathcart, F.R.C.S., Royal Infirmary, Edinburgh.

ACCIDENTAL EVISCERATION OF THE EYEBALL.

DR. J. K. HOWLETT (East Dereham) writes: An energetic managing director of an amateur dramatic society, while hurrying in the dark through a cloak room to get back to a rehearsal, was caught by one of a row of hat pegs on a frame stand. The peg, which was of the nature of a double-wire hook 3/4 in. in width, penetrated the orbit and performed a complete evisceration of the eyeball. Beyond some injury to the lacrymal duct, there was no other damage. I took him immediately to the Norfolk and Norwich Hospital, where Dr. A. Greene performed a Mule's operation. I found the eyeball next morning hanging on the hat peg by the optic nerve, which was severed at slightly more than an inch from the eyeball.

PNEUMOCOCCAL CEREBRO-SPINAL MENINGITIS.

DR. A. MUIR CRAWFORD (Glasgow) writes: In the *Journal* of March 22nd (p. 576) Dr. A. S. Gubb reports a case of pneumococcal cerebro-spinal meningitis in which death occurred on the second day. The record of a similar case, but of shorter duration, recently seen by me in consultation, may be of some interest. A young man, aged 23, went to bed about 11 p.m., apparently in good health, but at 2 a.m. he awoke complaining of very severe headache; he was very restless, the headache became agonizing, and at 6 a.m. he was unconscious. Four hours later, when I saw him, he was still unconscious, and during examination he had several short attacks of extreme restlessness and rigidity. The pupils were equal and slightly dilated; they reacted to light. The limbs, especially the legs, were markedly rigid, but no definite rigidity could be detected in the neck. The knee-jerks were brisk, and Kernig's sign was positive. No abnormality could be detected in the heart, lungs, or abdomen. Lumbar puncture gave vent to a turbid cerebro-spinal fluid under increased pressure; a direct smear showed many pus cells and abundant pneumococci, and on culture a pure growth of the pneumococcus was obtained. The patient died about 12 noon, approximately ten hours after the onset of symptoms.

DYSENTERY SIMULATING APPENDICITIS.

DR. BHAGWAN RATTAN (Rupar, Punjab) writes: Dr. Julius Burnford's article on missed diagnoses (February 22nd, p. 327) reminds me of a case of appendicitis in which the actual cause was discovered only when dysenteric symptoms developed. The patient, aged about 25, was brought to me with all the symptoms of appendicitis—vomiting, rigidity of right rectus with tenderness over McBurney's point, and a rapid pulse. He gave a history of such attacks occurring every third or fourth month. The symptoms subsided after palliative treatment, and he was advised to consult a surgeon. Three days later he consulted me again. He was then suffering from amoebic dysentery, and was given two courses of emetine injections of six days each twice a day. The slight pain in the right iliac fossa that had persisted after the first treatment vanished after two days' emetine injections, and he has had no more attacks of appendicitis for fifteen months. I think the recurrent attacks of appendicitis were due to an amoebic ulcer in or near the appendix.

PRECISION IN PSYCHOLOGICAL TERMINOLOGY.

DR. ALAN MABERLY (Vienna) writes: I am glad to see articles, or reports of lectures, upon psychological topics appearing in the *British Medical Journal*, but may one not look for the same clarity of thought and precision of expression that one expects when more specifically "medical" subjects are being dealt with? In your report of Dr. Campbell McClure's lecture given before the Hunterian Society (March 29th, p. 609), the statement appears that a child's "instinctive reaction to fear is to lie." Surely all careful observation goes to show that this reaction, where it occurs, is a special adaptation to a particular type of unsympathetic environment. Were we to accept it as being instinctive (together with other similar reactions), it would be difficult to disagree with other statements in the same report. But I feel impelled to protest against the use of phrases such as "without probing in the mud that exists in the unused memory of most of us." I would also submit that ridicule, if "the most powerful weapon to use against the Englishman," is hardly the most scientific, and is as little likely to deter people from seeking the aid of the irregular practitioner as to assist the medical profession to "live down its reputation for pride and prejudice."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *200*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

Intracutaneous Vaccination.

373. F. KIENSTEIN and G. HUNACUS (*Med. Welt*, October 26th, 1929, p. 1539) performed intracutaneous vaccination on 62 healthy children aged from 4 months to 1 year and 10 months, and have come to the following conclusions. They find that intracutaneous vaccination is technically more difficult, takes longer to perform, and is more painful than the cutaneous method; it requires a special assistant for keeping the child still. At least one new tube of lymph has to be used for each case. Owing to the unsuitable for wholesale vaccination. The technique it is unsuitable for wholesale vaccination. The use of a sterile lymph, which is not method necessitates the always available in vaccine institutes, since it has not yet been ascertained whether the saprophytic bacteria present in most varieties of lymph are as harmless when injected intracutaneously as they are in ordinary vaccination. The necessary dilution of the lymph must depend on its virulence, which should be accurately known. Since the character of secondary infection is greater, owing to the character of the trauma and the more elaborate procedure, than in cutaneous vaccination, the responsibility for any complication must fall on the vaccinator. Intracutaneous vaccination may be regarded as successful if an infiltration of at least the size of a pea results; as the infiltration may not reach its full development until from seven to nineteen days after vaccination, the site should be inspected during this period. Since no scars are left when the vaccination pursues a normal course, it is impossible to tell subsequently whether the person has been successfully vaccinated or not. The only advantage of the intracutaneous over the cutaneous method is the avoidance of a scar, which may be of importance in the case of women. The intracutaneous method is absolutely contraindicated in skin diseases, especially eczema, for other writers recommend it, owing to the possibility of generalization of the vaccine virus through the blood stream. The present authors agree that the employment of intracutaneous vaccination on an extensive scale is to be deprecated because the danger of complications is much greater than with the ordinary method.

Human Brucella abortus Infection.

374. A. S. GIORDANO and R. LL. SENSENICH (*Journ. Lab. and Clin. Med.*, February, 1930, p. 421) record a study of 35 cases of *Brucella abortus* infection in man, 7 of which appeared in a preliminary report in 1927. Sex does not appear to be concerned, and occupation is an etiological factor only in so far as it provides opportunities for infections. The greatest age incidence is in the second, third, and fourth decades; the youngest patient was 16 and the oldest 61. The literature records no case below the age of 8, and this apparent immunity in children parallels that observed in young calves. The authors remark that the disease occurs much more frequently in small communities, since in these there are fewer pasteurization plants, and raw milk is more generally consumed. The incubation period is unknown, and could be approximately determined in only one case, and the prodromal symptoms vary considerably. An insidious onset with fatigue, anorexia, low fever, and headache, with muscular weakness or joint discomfort, is most common; chills are not usually the initial symptom. Rarely the onset is more abrupt, and evidences of sepsis are the first signs. Arthritis may be the earliest manifestation, or the first signs. Arthritis may be attacked with the occurrence of nervous system may be neuritis. The disease may be acute or chronic; it has been suggested that this tendency to acuteness or chronicity may have a diagnostic value, separating *Br. abortus* and *Br. melitensis* infection. According to the predominant symptoms and various tissues attacked, the disease may assume one or other of the following types: septic, arthritic, neural, visceral, and glandular. Fever is the most commonly present symptom, though chills are almost as constant. Sweats, which may be mild or profuse and offensive, occur with or independently of the chills and fever. Headache, usually occipital and occurring early in the disease, is constant and extremely distressing; it may be associated with backache. Arthritis and neuritis may occur at any stage, and may be of variable duration. Apart from anorexia and vomiting, gastrointestinal symptoms are uncommon. Orchitis and oophoritis are usually present, while unusual skin lesions may occasionally be seen. Renal and cardiac manifestations are infrequent, but pulmonary symptoms are common. Except for an initial leucopenia, no blood changes are present. Early diagnosis must depend on bacteriological and serological examinations. Symptomatic treatment with rest in bed is the therapy of choice. This disease, unlike *Br. melitensis* infection, often runs an acute course, septic in type, without characteristic pyrexial undulations or relapses; it terminates in recovery without notable sequels.

Chronic Epidemic Encephalitis.

375. G. P. FRETS (*Nederl. Tijdschr. v. Geneesk.*, February 1st, 1930, p. 484) records three cases, in patients aged 29, 52, and 23 respectively, in whom the diagnosis of chronic encephalitis was made before death, though the diagnosis in two of them was at first dementia praecox or psychasthenia, and in the third a toxic psychosis due to tuberculosis. In the first patient obstinate insomnia at the onset was a striking feature; in the second a long-standing suppurative otitis media was misleading. All three patients in the late stage of their disease showed symptoms of Parkinsonism. In each case the diagnosis was confirmed by post-mortem examinations. The lesions, though slight, were definite and most pronounced in the mid-brain and nasal ganglia. The pallor and atrophy of the substantia nigra was clearly seen in all, both by naked eye and microscopical examination. Here and there a slight infiltration of the vessel walls was visible. There were collections of glia cells and changes in the ganglion cells, especially in the grey substance. The second patient also showed marked changes in the cerebral cortex. In two cases there was a calcification of the vessel walls in the globus pallidus.

Enteric Fever in Children.

376. H. MOMMSEN (*Monats. f. Kinderheilk.*, November, 1929, p. 331) records his observations on 73 cases of typhoid and paratyphoid fever in children below the age of 14 years admitted to the Frankfort University Children's Clinic from 1916 to 1928. Vigorous children were more frequently attacked than weaklings. The morbidity was greater in boys (50 cases) than in girls (23 cases). Among infants and young children paratyphoid was about six times as frequent as in older children. With the exception of one case of infection by *B. suipestifer*, all the paratyphoid cases were examples of paratyphoid B infection. The enteric fever of children is characterized by a well-marked tendency to relapses, though the general condition is often little affected during their occurrence. Pronounced bradycardia was found only in severe cases at the onset, but it might last for several weeks. In relapses the pulse has a tendency to be higher than the temperature. When convalescence was well advanced tachycardia and well-marked respiratory arrhythmia were frequently observed. The mortality was 11 per cent., four deaths occurring among the boys and four among the girls.

Surgery.

Treatment of Cardiospasm.

377. THOUGH true spasm of the cardia at the junction of the oesophagus and stomach occasionally occurs, and such mechanical factors as tumours, diverticula, torsion, and stricture of the oesophagus may produce symptoms suggesting spasm, W. RIEDER (*Deut. Zeit. f. Chir.*, January, 1930, p. 47) maintains that a true hypertrophy of the muscles of the cardia analogous to the thickened pylorus seen in the pyloric spasm of infants has never been found. In most cases the delayed or defective opening of the cardia appears to be due to some muscular inco-ordination, and is frequently associated with marked dilatation of the lower part of the oesophagus. In nineteen cases under his own observation for several years Rieder has compared the effects of various methods of treatment. All the patients were treated first by conservative means—diet, lavage, psychological methods, and anti-spasmodic drugs; though three reported subjective amelioration of symptoms after the administration of atropine and papaverine, no clinical or radiological evidence of improvement was observed. All the patients were treated first by stretching with a sound or bougie; of the seven who were not subsequently treated by operation, two still suffered from vomiting when they ate quickly, two had some difficulty in swallowing in cold weather, two were almost and one entirely free from symptoms. Since *x*-ray examinations, however, showed persistent dilatation of the oesophagus with delayed emptying in each case, none could be regarded as cured. Among the other methods of treatment tried were section of the fibres of the vagus innervating the cardia and a plastic

operation. Rieder, however, found that the best subjective and anatomical results (freedom from symptoms for at least three years and rapid emptying of the oesophagus, seen on screening) followed Heller's operation, which was performed in six cases after other methods had proved unsuccessful. In this procedure a longitudinal incision 6 to 8 cm. long is made through the muscular coats of the cardia right down to, but not damaging, the mucous membrane. Three patients were cured, one patient gave a good result without complete cure, and two others were improved. It is pointed out, however, that cure of the symptoms may precede the disappearance of radiological signs by some months, especially if the oesophageal dilatation is of long duration.

378. Pneumococcal Peritonitis.

E. FRICKE (*Amer. Journ. of Surg.*, January, 1930, p. 48) comments on the rarity of this disease, and its predilection for children up to the age of 14, the incidence being greater in girls than in boys in the proportion of five to one, and occurring generally in children of the poorer classes. The onset of the disease is acute, with nausea, vomiting, severe abdominal pain, high temperature, and diarrhoea. Cyanosis of the face and lips associated with a herpes labialis is a common symptom, also tenderness over the entire abdomen with rigidity of the muscles. The pulse is better than in most cases of generalized peritonitis. A positive pneumococcus blood culture is common. The acute stage usually ends in death in a few days, but may enter a chronic stage, when the symptoms decrease in severity, but recur after about ten days with the formation of an abscess which leads to death with marked cachexia or else breaks through the abdominal wall, most frequently at the umbilicus. Out of ten cases reported, two were adults and eight children; of these eight children six gave histories of whooping-cough prior to the pneumococcal invasion. Six of the children died following operation, and the two survivors showed a tendency to chronicity from the start; one developed metastatic foci in which pneumococci were demonstrated. Both adults were women, and one who was admitted with peritonitis following abortion was treated with pneumococcus serum and survived. Contrary to the usual theory that the bacteria enter the peritoneum by way of the genital route, it is suggested that the primary portal of entry may be in the upper respiratory passages or tonsils, the fact of the disease attacking girls more frequently than boys being attributed to lessened resistance on the part of the female peritoneum to pneumococci. Expectant treatment is advocated in cases where the encapsulation and abscess formation is not complete, but an abscess must be incised and drained. It is contended that early operation in pneumococcal peritonitis is contraindicated because in its early stages it is a systemic generalized infection and operative intervention does more harm than good. Pneumococcal serum might be more widely used in early cases.

379. Primary Carcinoma of the Ureter.

O. KNEISE (*Zeit. f. Urol.*, Heft 1, 1930, p. 10), who records a personal case in a man, aged 57, who recovered after ureterectomy, illustrates the rarity of this condition by the fact that Kretschmer had been able to collect only 35 cases up to 1924, and in a certain number of these cases the tumour was not found until the necropsy. The triad of haematuria, pain, and tumour is not always present. A diagnosis, therefore, is only easy in those cases in which part of the tumour can be seen on cystoscopic examination, or when, as in Kneise's case, a bullous oedema of the mucous membrane round the ureteral opening into the bladder rouses the suspicion of a tumour. It is much more difficult to make a correct diagnosis in those cases where cystoscopy shows nothing abnormal in the bladder and ureter, but where the symptoms of haematuria or pain, or a palpable tumour, are present. The occurrence of haematuria requires investigation by all the methods of modern urological diagnosis, and Kneise condemns the use of such meaningless expressions as "essential renal haemorrhage" or "arterio-sclerotic haemorrhage." Pain is a very inconstant symptom, and only occurs when the tumour obstructs the flow of urine and so gives rise to hydronephrosis; it is therefore, generally speaking, of renal origin. Nerve pain may also occur, especially in the sciatic nerve, being caused by pressure of the tumour on the sacral plexus; the prognosis in such cases is very bad, since they are seen too late for operation to be of benefit. Neither kind of pain is characteristic of ureteral tumours, so that their presence is only of secondary importance. It is only in the rarest cases that a ureteral tumour can be palpated, and even then its real nature is not always recognized. In most cases it is only the secondary hydronephrosis or haematonephrosis that can be felt, and the presence of a ureteral tumour has to be diagnosed by other methods. The ideal treatment consists in complete nephro-ureterectomy, but in practice it may not be possible to complete it at one sitting, and ureterectomy alone may be sufficient, as in Kneise's case, where the kidney ceased to function after removal of the ureter.

Therapeutics.

380. Bismuth Therapy in Congenital Syphilis.

J. F. COPPOLINO (*Amer. Journ. Dis. Child.*, February, 1930, p. 288) reports favourably on the use of bismuth in rather large doses in the treatment of congenital syphilis in children. He uses a suspension of bismuth salicylate, camphor, and creosote in oil, 1 c.cm. of which contains 130 mg. of metallic bismuth. After starting with smaller doses, he found that no ill effects followed the use of 65 mg. for children under the age of 1 year, and twice the dose for older children. Twenty injections were given at weekly intervals, and a blood examination was made at the beginning and end of each course. If the result was positive, the treatment was continued at once, but, if negative, four weeks' rest was allowed. The maximum number of courses administered was three, after which the patients returned every month for examination and blood tests. Coppolino emphasizes the importance of asepsis, the injections being given alternately and deeply into the upper and inner quadrant of each buttock. Care must be exercised to prevent injecting into a blood vessel. After the injection the needle is left in place while the syringe is filled with air; the passage of air through the needle clears out any bismuth which has been forced back. After withdrawal of the needle, firm pressure is applied, and the part is massaged, thus reducing the likelihood of infiltration and induration. The author finds that this treatment is most efficacious in young infants, rendering them symptom-free and serologically negative; it is less useful in the treatment of older children, and does not bring about cure. The permanency of the results obtained can only be determined after the lapse of several years.

381. Therapeutic Nutrition of the Heart.

M. LOEPER and A. LEMAIRE (*Presse Méd.*, February 15th, 1930, p. 233) have studied the metabolism of patients with cardiac disease, and emphasize the importance of appropriate nutrition of the heart. They recall the fact that the metabolic rate is increased in cardiac failure, that glycogen is utilized during contraction, and that the storage of glycogen is only accomplished by the utilization of oxygen. Oxygen unsaturation in cardiac failure hinders such storage, and acidosis follows. Sodium bicarbonate should be given to counteract this, and since there is some retention of nitrogen and salts, these elements should be restricted in the diet; the fluid intake should also be limited. Chemical analysis of heart muscle has revealed that the glycogen content of the conducting tracts is less than that of the ventricular muscle, and histological studies have indicated that the former tissues distribute glycogen to the latter. Experiments on the isolated heart have demonstrated the important parts played by calcium, sodium, and potassium ions in controlling the tone of the heart. In order that sufficient salts containing these elements shall be supplied to the heart, green vegetables must be given in adequate amounts to the patient with heart disease. It has been found also that glucose exerts a stimulant effect upon the heart, and a similar action of lipoid bodies suggests that the superior effect of preparations containing digitalis leaf, as compared with those containing the alkaloid digitaline, is due to the presence of saponine in the former. The authors assume no parallelism between animals and the human subject regarding these experiments, but they adduce clinical evidence, particularly as regards the value of sugar administration to cardiac patients. They have found that the giving of 50 grams of glucose daily assists the action of digitalis, ouabain, and quinidine; in one instance fibrillation, which had been uninfluenced by quinidine, gave place to normal rhythm after several days of glucose administration.

382. Calcium Chloride and Sodium Salicylate in Pneumonia.

As in acute infective inflammations with more or less exudation the combination of calcium chloride and sodium salicylate has proved of value, H. O. NYVALL (*Clin. Med. and Surg.*, December, 1929) was led to try it in pneumonia; calcium chloride has a remote astringent effect on the process of inflammation, while sodium salicylate has an antiseptic, analgesic, and antipyretic action. In a preliminary report the results obtained in 26 cases are given, clinical details being supplied in 9. These results were considered to be more satisfactory than those following the use of vaccines

and serums. Nyvall considers that the proper and safe dose is: calcium chloride 4 grains, sodium salicylate 16 grains, and water 5 drachms; this dosage is well tolerated, and has been used in children without reaction. The solution is injected intravenously, twice daily, through the pyrexial period; once daily thereafter until the temperature and lungs are normal, and finally three times weekly, as needed. The patients are said to feel a sensation of heat while the injection is being administered, but this soon passes off. Cases of pneumonia may be aborted if treated within the first twelve to eighteen hours with calcium chloride 8 grains and sodium salicylate 16 grains. The herpes labialis and blood-stained or rusty sputum will disappear rapidly. The crisis occurs about the fourth or fifth day, and by the sixth to the ninth day the lung has returned to normal. Throughout the illness and during the stage of resolution the lungs will be freed from rales, and the temperature will remain under 102° F. No undue prostration, dyspnœa, or cyanosis occurs, and, unless an organic lesion is present, the patients recover. In very large adults and in cases in which the usual dose of 4 grains of calcium salts does not abate the threatening œdema, the dose may be increased to 8 grains.

Neurology and Psychology.

Tumours of the Corpus Callosum.

383. After describing the anatomical and physiological considerations of the corpus callosum, and the discrepancies between the physiology and the clinical evidences of its pathological lesions, R. Ironside and M. Guttmacher (*Brain*, December, 1929, p. 442) record fourteen cases of tumours of the corpus callosum, which apparently originated in and were confined to that body. A study of these emphasizes the following groups of symptoms, which define with greater clearness the clinical picture of these neoplasms. Hemiplegic weakness with pyramidal signs on the opposite side is frequent and early. Apraxia, though greatly stressed as a physical sign by other observers, was not a prominent feature of these cases, and mental changes were often the first symptom. Apathy, drowsiness, and defect of memory are more common than in growths elsewhere, and occur with such regularity in the corpus callosum syndrome as to be characteristic. Epileptiform convulsions in the series were relatively frequent, and other involuntary actions, tremor, and choreiform movement were noted throughout the cases. The occurrence of yellow cerebro-spinal fluid in four patients is considered a point of great importance, since the examination of this fluid in most cerebral tumours gives negative results. The general symptoms of cerebral tumour were mainly in abeyance, so that the diagnosis arrived at during life, in most of the present cases, was that of cerebral vascular disease. As regards other symptoms, the pupils were unequal in seven cases, and in six some degree of aphasia was present. Papilloedema was noted in nine patients, and was constantly bilateral. Headache began early and advanced equally with the psychical changes. Vomiting was much rarer; it appeared to be always accompanied by headache, and was never an isolated symptom. The authors remark that ventriculography may be of considerable diagnostic aid, as ventricular distortion is an almost constant post-mortem finding. The diagnosis of these neoplasms is largely conjectural, and their localization to particular regions of the corpus callosum is almost impossible. They must be differentiated from cerebral conditions other than tumour, and from growths in other regions of the brain. Glioma is the most common growth of the corpus callosum; thromboses along the anterior cerebral artery are very frequently met with. Short of surgical removal, treatment by radium or deep *x* rays may result in some success. Decompression is an essential preliminary to relieve the increased intracranial pressure, to allow for oedema, and to provide a window in the bone for irradiation. Their central localization renders these growths easy of access by the rays, and no severe complications need be feared from this form of treatment.

Late Pathology of Encephalitis Lethargica.

384. F. L. Reynolds and J. K. Slater (*Journ. Neurol. and Psychopath.*, January, 1930, p. 242) record the results of an investigation, based on the study of a case, which was undertaken for two reasons: first, to ascertain whether an acute attack of encephalitis lethargica from which recovery took place gave rise to organic destruction of nervous elements with consequent changes in the neighbouring neuroglia; secondly, to gain some indication whether the progressive later manifestations of disturbance of the nervous system are to be explained by a slowly progressive lesion initiated by the acute attack. The case was particularly suitable for investigation as the patient lived some eight years after a typical acute attack. The clinical symptoms from the onset are described. After the necropsy microscopical examination of the mid-brain revealed areas of great astrocytic proliferation, the cells being mostly fibrous in type. Many of the proliferated astrocytes had regressed, and formed areas of dense gliosis. Large astrocytes were found with thick processes and nuclei rich in chromatin, and some contained two nuclei; further, throughout the areas of gliosis some of the large vegetative astrocytes occurred in pairs and small groups. Thus the stages of amitotic division were present. Among the areas in which gliosis was especially pronounced were the regions of the nuclei of the third nerves, and the nuclei themselves had been encroached upon by the astrocytic proliferation. It may be assumed that acute encephalitis lethargica is due to a virus. In the present case the virus caused damage and destruction to the tissues of the mid-brain, with consequent proliferation of the interstitial (the neuroglial) cells capable of reproduction—the astrocytes. These, after proliferation, did not pass into a quiescent or passive stage. The large cells with thick processes, some with two nuclei, are typically astrocytes in an active phase of reproduction; it may be presumed that the damage is still going on and that the process has been continuous. This supposition is supported by the widespread gliosis present at the time. The histological facts can be correlated with the clinical progress of the patient. At the onset certain prominent symptoms directed attention to the mid-brain; a lesion of the central nervous system was shown by inability to converge or to look upward, and by inequality of the pupils. Consequent upon the acute attack, astrocytic proliferation and the formation of gliotic areas occurred. Shortly afterwards the patient developed involuntary movements of the legs, doubtless due to central irritation. These symptoms indicated that a disturbance of function was continuing. Typical signs of Parkinsonism then appeared, progressed, and death occurred from inanition. The continuous proliferation was due to the persistence of the virus in the tissues; during the chronic stage the effect of the virus was less intense, but, though a partial equilibrium between the toxin and tissues was established, the infective factor predominated. Both the clinical and the histological phenomena are those of a slowly progressive disease following on an acute disturbance of function, with damage and destruction of parenchymal tissue.

Congenital Syphilitic Spastic Paraplegia.

385. L. Babonneix (*La Vie Méd.*, February 25th, 1930, p. 367) describes a form of hereditary syphilitic spastic paraplegia, occurring in older children, which was first specified as a clinical entity by Marfan in 1894. Four cases are reported of this affection; the ages of the children ranged from 10 to 15 years, and in most of them the disease had existed for only about three years. In some cases the disease commences as a spastic monoplegia, which, however, is doubtless only a first phase of the paraplegia. The symptomatology is well marked. The disease occurs without known cause late in childhood (usually after the fourth year) with a slight claudication, and is slowly progressive. Clinical and radiological examinations will eliminate such conditions as Pott's disease, spina bifida, coxalgia, and Strümpell's familial spastic paraplegia. Slowly the difficulty in walking becomes accentuated, and at the end of about a year it becomes impossible. When the disease is established, typical spastic paraplegia is seen, with the characteristic gait. The feet assume the position of equino-varus, the knees touching each other; spinal tremor and exaggerated tendon reflexes appear, but there is no retraction of the Achilles tendons, and the Babinski sign is negative. Nearly always ocular and psychic troubles are noted. The eye conditions are those characteristic of hereditary or acquired syphilis—namely, the Argyll Robertson pupil, inequality of the pupils, and interstitial keratitis. The psychic disturbances consist of arrested intellectual development, inattention, feeble memory, turbulence, and tendency to fits of anger. The Wassermann reactions of both the blood and cerebro-spinal fluid are positive, and the fluid usually shows hyperalbuminosis and lymphocytosis. There is generally also a history of syphilis in the parents. Negative signs are: an absence of strict paralysis and atrophy, of sensory or sphincter troubles, and of changes in the electrical reactions; the upper limbs and face remain unaffected. The diagnosis is very easy and can be confirmed by the late onset and *x*-ray examinations. The disease progresses very slowly and lasts for years. Treatment is very limited and often of no avail. In some cases good results have been obtained with arsenobenzol, with mercury biniodide, or with specific treatment.

Obstetrics and Gynaecology.

386. Torsion of the Uterine Adnexa.

M. GUIMBELLOT (*Bull. et Mém. Soc. de Chir.*, January 18th, 1930, p. 2) describes a case of torsion of a Fallopian tube during pregnancy. A woman, aged 27, was admitted to hospital suffering from acute abdominal pain. For ten years menstruation had been abundant and accompanied by pain which necessitated rest during each menstrual period. There had been no previous pregnancy, and when seen on September 14th there had been no period since July 2nd. The acute abdominal pain, which was situated in the hypogastric region to the right of the mid-line, was accompanied by nausea, vomiting, and slight haemorrhage. On vaginal examination a soft cervix could be felt; the uterus was enlarged, with the fundus inclined to the left side. In the right fornix a very painful mass about the size of a large orange could be felt; it was separated from the uterus, and was slightly mobile. With rest the pain subsided, but the local symptoms did not alter, and the mass did not diminish in size. An exploratory laparotomy disclosed a normal uterus of about two months' pregnancy, but a mass the size of a fist and formed by the right adnexa was found in the pouch of Douglas. The tube and ovary were completely twisted; the ovary was black and about the size of a mandarin orange, while the tube was red, congested, and very oedematous. The right tube and ovary were removed and the patient made an uninterrupted recovery, followed at term by the normal birth of a healthy child.

387. Passage of Menstrual Blood through the Fallopian Tubes.

N. CANDELA (*Ann. di Ostet. e Ginecol.*, December, 1929, p. 1501) describes the case of a woman, aged 50, who had had menorrhagia for nine months, with slight metrorrhagia; the menstrual flow had diminished slightly during the last few periods. The finding of a large hard uterus with irregular surface led to a diagnosis of myoma; this was confirmed by detection of a submucous nodule within the cavum uteri during curetting. At the subsequent operation a considerable amount of free blood was found within the pelvis and abdomen, and macroscopical and microscopical examination of the specimen showed blood free within the uterus and Fallopian tubes. Extrauterine pregnancy and other sources of pelvic haemorrhage were excluded, and the inference is drawn that the haemoperitoneum was the result of the retrograde flow of menstrual blood through the Fallopian tubes. Such a flow was favoured by the presence of a large broad-based submucous myoma, of which the wide extremity was closely applied to the os internum. No endometriomatous nodule or cyst was found in the pelvis or elsewhere, but the case is recorded as illustrating the possibility of retrograde passage of endometrial fragments during menstruation. In further support of Sampson's theory of the etiology of endometrioma, allusion is made to animal experiments by Spirito in which transuterine insufflation led to passage through the tube of pieces of uterine mucosa, and the production in the peritoneal cavity of true endometriomata.

388. Vaccine Treatment of Chronic Gonorrhoea.

A. LOESER (*Zentralbl. f. Gynäk.*, January 18th, 1930, p. 163) describes the uses and limitations of his treatment of chronic gonorrhoea in the female by subcutaneous injection of living gonococci from fresh cultures. No dangerous or septicaemic sequels have been noted in a series of nearly 1,500 cases; there is a well-marked but not very painful local reaction, but the general reaction is slight and the consequent pyrexia does not exceed 0.5°C., so that if a derivative of salicylic acid is given by the mouth at the same time the injections are suitable for ambulant treatment. In acute gonorrhoea the treatment is said to be useless, except for acute arthritis. "Open" chronic gonorrhoea in the female—that of the urethra, vulvo-vaginal glands, and rectum—is not influenced by the injections, which find their application in cases of chronic gonorrhoea of the cervix (with foci of gonococci embedded deeply in the glands) and chronic gonorrhoeal adnexal inflammation. Such cases, like that of acute arthritis, are examples of "closed" gonorrhoea, and it is only this form which responds satisfactorily to the injection of fresh living gonococci. In the case of gonorrhoeal cervicitis the closure must be rendered complete during the treatment by application of an occlusive cap to the cervix for four to five days; simultaneously, repeated intracervical insertion of a pencil of some silver preparation, to kill superficially vegetating gonococci, is required. One, two, or three injections are given during two to four weeks, and cure is reported in 60 to 70 per cent. of about 170 cases, many of which had failed to respond to diverse local and general therapeutic measures. In the great majority of cases the cervical secretion becomes free from gonococci fourteen days after the first injection; at the same time the secretion becomes scantier and less rich in leucocytes. Patients who do not respond to the treatment are usually of the heavy, obese, and pasty type. The injections are prepared by making emulsions in saline solution of living virulent gonococci recently grown on ascitic agar.

Pathology.

389. The Influence of Oxidation and Reduction on the Virulence of Herpes Filtrates.

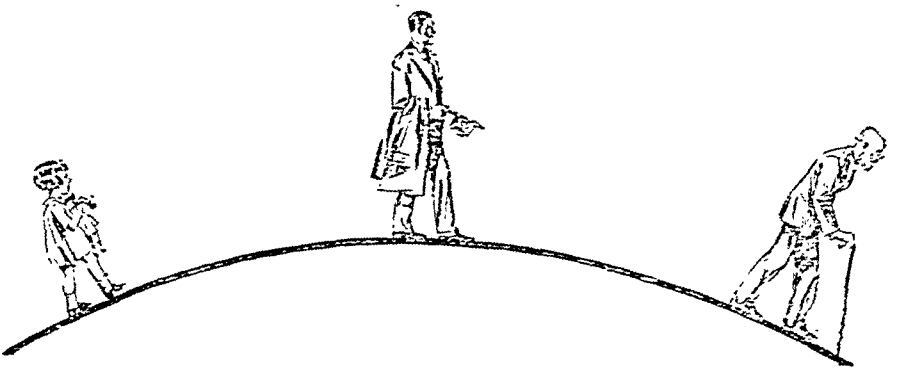
H. ZINSSER and C. V. SEASTONE (*Journ. of Immunol.*, January, 1930, p. 1) report observations suggesting that the virulence of a herpetic filtrate, which has fallen as a result of exposure to the air, may be restored by anaerobic incubation. In the first experiment the brain of a rabbit which had died of typical herpes encephalitis on the fourth day after inoculation was removed, and a quarter of it was ground up in a mortar; 100 c.cm. of Grinnell broth was added, the suspension was centrifuged, and the supernatant fluid filtered through a Berkefeld V candle. Part of the filtrate was tested immediately, and killed a rabbit in eleven days. The remainder of the filtrate was divided into two parts; one part was kept in an unsealed test-tube, the other was placed in a test-tube sealed with vaseline, after cysteine had been added in a concentration of 0.1 per cent. to assist reduction. The aerobic filtrate was tested after seventeen and twenty-four days, and proved inactive. The anaerobic filtrate tested after the same intervals killed the rabbit in five days with typical symptoms. In a second experiment a herpetic brain filtrate was divided into two portions, one being kept aerobically, the other anaerobically with cysteine. The filtrate tested immediately killed a rabbit in five days. The aerobic filtrate, when tested after eight days, was found to be avirulent; the remainder of it was therefore sealed after the addition of cysteine. This portion was tested eight, seventeen, and twenty-five days later; after eight days it was still avirulent, but after seventeen and twenty-five days it proved fully virulent. The filtrate which was sealed originally was fully virulent seventeen days after filtration. From these experiments, which the authors have been so far unable to repeat, it would appear that, under the influence of reduction, filtrates may regain their virulence after this has been lost by oxidation. The authors draw attention to Neill's experiments on the oxidation to inactivity of certain bacterial toxic agents and their subsequent reactivation by reduction, and they speculate on the possibility that the herpetic virus may be an enzyme-like cell product rather than an independently organized and living unit.

390. Transmission of Anthrax.

A. C. MARCHISOTTI and C. M. HARISPE (*Rev. Sud-Americana de endocrinol., immunol. e quimioter.*, January, 1930, p. 1), as a result of experiments on dogs and birds, came to the following conclusions. The vegetative forms of *B. anthracis* are destroyed during their passage through the alimentary canal of these animals. The spore-bearing forms, on the other hand, after being swallowed in the food, are discharged in the faeces, and their presence can readily be demonstrated by cultures. Ingestion of the flesh and viscera of animals which have recently died of experimental anthrax never gave rise to discharge of *B. anthracis* in the faeces, but cultures of the flesh and viscera of animals which had died from experimental anthrax were also negative if the flesh and viscera were exposed to a temperature of 37°C. for twenty-four hours. The process of putrefaction in this case destroyed *B. anthracis*, and sporulation did not take place. The authors conclude that carnivorous animals and birds play only an insignificant part in the transmission of anthrax among animals.

391. The Purification of Oestrin.

G. F. MARRIAN (*Biochem. Journ.*, 1929, vol. xxiii, No. 6, p. 1233) has made a quantitative study of the value of different methods of purifying oestrus-producing extracts from urine. It was found that the active principle could be obtained in the soluble fraction by treatment with 70 and 50 per cent. alcohol; it could likewise be extracted quantitatively with ether from neutral or acid aqueous solutions, but much less readily from alkaline aqueous solution. Oestrin seems to be a weakly acidic substance which can also be extracted from an ethereal solution by aqueous potassium hydroxide. Starting with 1.106 grams of unsaponifiable matter from 164 litres of urine, fractionating in turn with 70, 50, and 30 per cent. alcohol, dissolving in ether, extracting with alkali, extracting with ether from the alkaline solution after acidification, and finally extracting with alkali, the author succeeded in recovering 223,380 mouse units from an initial 309,500 units, representing about 72 per cent. of the total. The final concentrate had an activity of 1 mouse unit =0.000135 mg.



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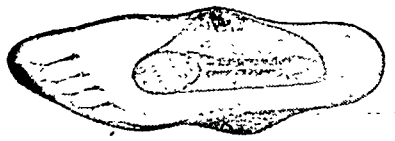
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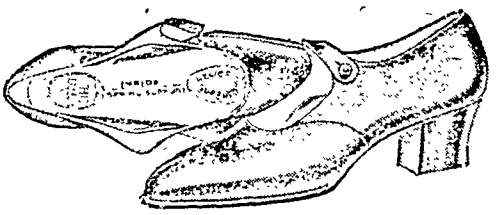
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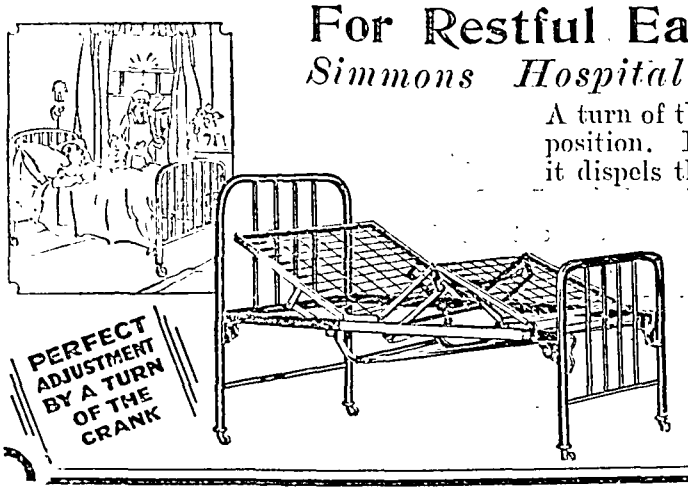
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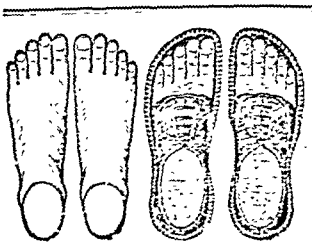
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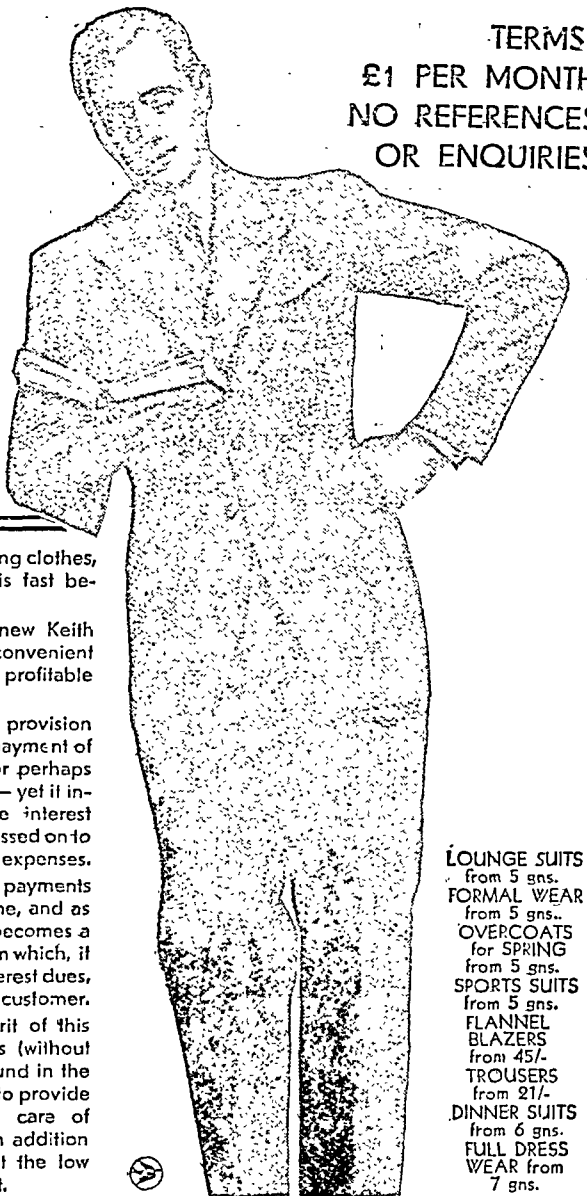
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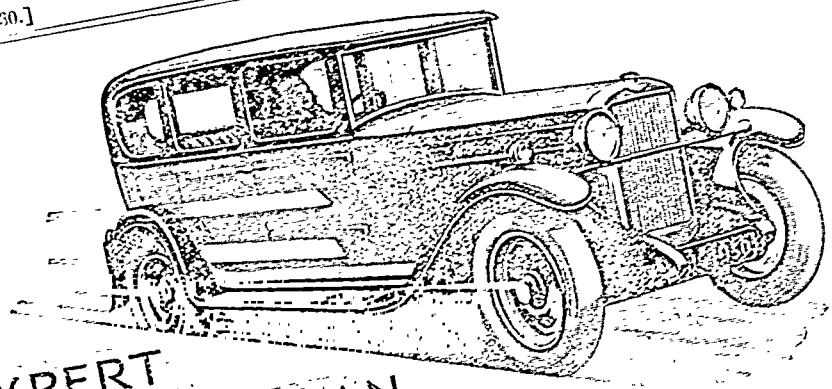
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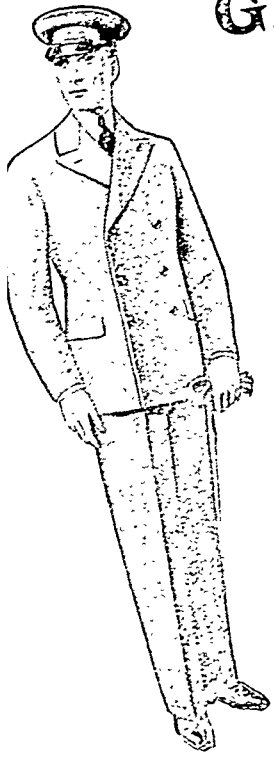
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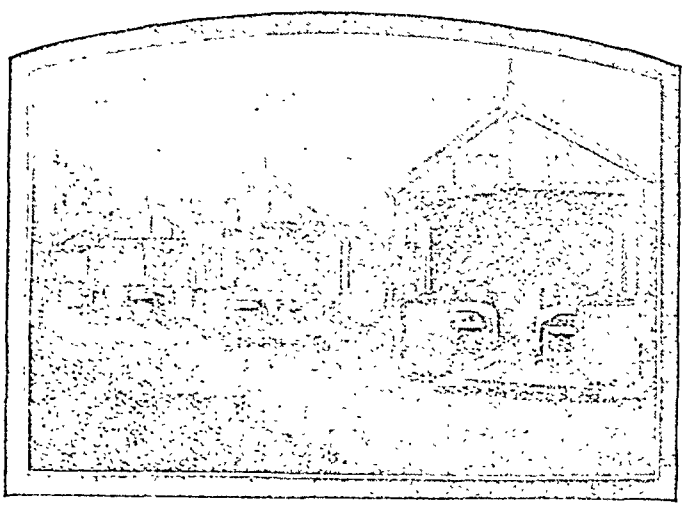
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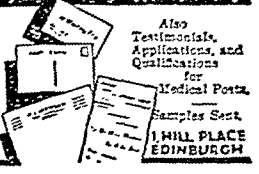
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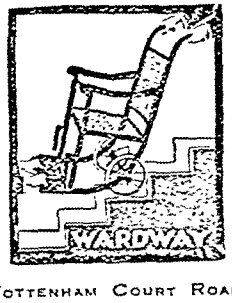
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Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

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A HOUSE *Licensed for the reception of a* limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield, Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

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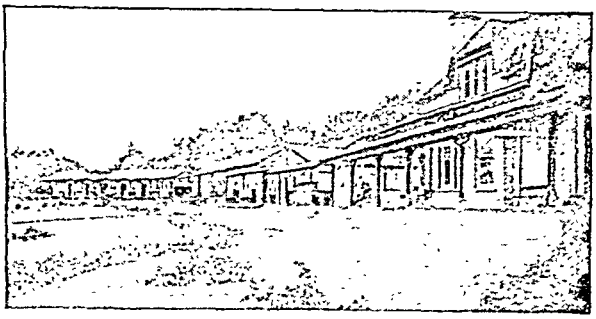
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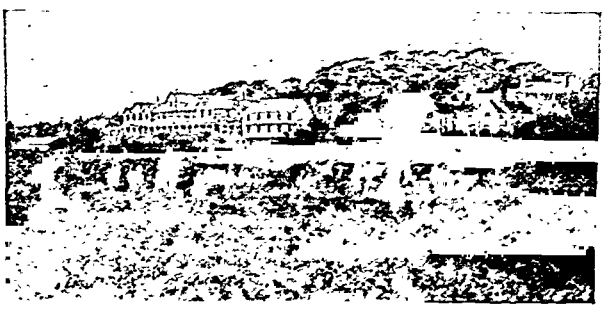
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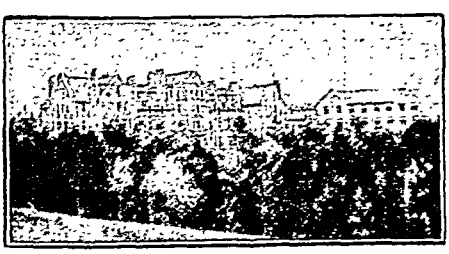
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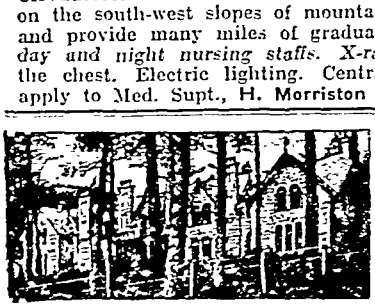
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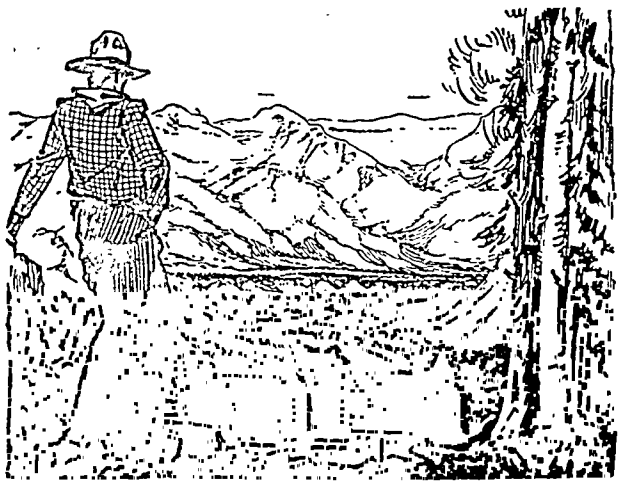
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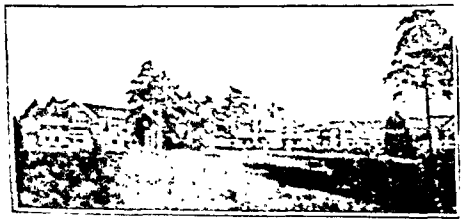
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A Course of Six Lectures on "*The Early History of Generation and Comparative Anatomy*" will be given by Professor F. J. COLE, D.Sc., F.R.S. (Professor of Zoology in the University of Reading), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAYS and THURSDAYS, MAY 7th, 8th, 14th, 15th, 21st, and 22nd, at 5.30 p.m. At the First Lecture the Chair will be taken by Professor G. ELLIOT SMITH, M.D., D.Sc., F.R.C.P., F.R.S., Professor of Anatomy in the University. Lantern illustrations.

A Course of Three Lectures on "*Pharmacological Reactions of Involuntary Muscle*" will be given by Professor J. A. GUNN, M.A., M.D., D.Sc. (Professor of Pharmacology in the University of Oxford), at KING'S COLLEGE, LONDON (Strand, W.C.2), on WEDNESDAY, THURSDAY, and FRIDAY, MAY 7th, 8th, and 9th, at 5 p.m. At the First Lecture the Chair will be taken by Dr. PHILIP HAMILL, M.A., M.D., D.Sc., F.R.C.P., President of the Therapeutics and Pharmacological Section of the Royal Society of Medicine. Lantern illustrations.

Admission free, without ticket.
EDWIN DELLER, Principal.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

LONDON HOSPITAL MEDICAL COLLEGE AND DENTAL SCHOOL.

(University of London.)

The SUMMER SESSION will open on MONDAY, APRIL 28th.

The MEDICAL COLLEGE and DENTAL SCHOOL of the LONDON HOSPITAL are fully equipped to meet modern requirements. The Hospital contains 859 beds, and is the largest General Hospital in England.

SCHOLARSHIPS and PRIZES. — Entrance Scholarships are offered in Science. Entrance Scholarships are also offered in Anatomy and Physiology and Pathology to Students of the Universities of Oxford and Cambridge. Numerous prizes are awarded in all subjects of the curricula.

A Prospectus giving full particulars may be obtained from the Dean, Professor WILLIAM WRIGHT, M.B., D.Sc., F.R.C.S., Mile End, E.1.

CITY OF LONDON MATERNITY HOSPITAL,

CITY ROAD, E.C.1.

MIDWIFERY TRAINING SCHOOL.

MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

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Special Preparations for all Surgical Qualifications.

F.R.C.S.ENGLAND. (*Primary & Final.*) CH.M.EDINBURGH.
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And all other Surgical Degrees and Diplomas.

¶ The remarkable success of Students of the Medical Correspondence College at the higher Surgical Examinations is specially noteworthy.

¶ Both at the Primary and Final F.R.C.S. England the majority of our Students are successful at the first attempt, and Candidates who have failed at these Examinations on several previous occasions get through without difficulty after going through our courses.

¶ The Surgical Tutors of the College all hold either the M.S.Lond. or F.R.C.S.England, or both, and are highly experienced teachers.

¶ The Postal Courses are thoroughly clear, concise, and up to date, and the test questions are carefully selected from those set at previous Examinations, so as to embrace all parts of the subject. By working systematically through the Course the Student is brought up to the examination standard in the minimum time, and much unnecessary reading is saved.

VALUABLE BOOK

"*How to Pass the F.R.C.S.*," *free on application to the Secretary.*

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A PUBLIC SCHOOL FOR BOYS.

Boys are regularly prepared for the First M.B. Examination, University Scholarships in Chemistry, Biology, etc.

Special facilities are offered for the teaching of Chemistry, Physics, Botany, and Zoology.

New Science Buildings, containing seven laboratories, two lecture rooms, science library, store rooms, etc., opened in September, 1925. *Prospectus from Head Master.*

LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

LEOPOLD SALZER PRIZE.

Attention is called to this CASH PRIZE of £100 to be offered on January 1st, 1931, to the author of the best Essay upon the treatment, according to the principles of Homœopathy, of INSANITY in all its forms.—For full particulars apply to the Secretary, British Homœopathic Association (Inc.), 45, Russell Square, W.C.1.

Refraction and the Ordering of

GLASSES taught by Practising Ophthalmic Surgeon in London. £2 2s. for 10 lessons.—Address, No. 125, B.M.A. House, Tavistock Square, W.C.1.

FELLOWSHIP OF MEDICINE.

"Everything for the Post-Graduate."

SPECIAL COURSES IN MAY: At St. John's (Skin) Hospital, Victoria Park Hospital (Heart and Lungs), Hospital for Sick Children, Queen Mary's Hospital (general), Central London Ophthalmic Hospital. M.R.C.P. EVENING COURSE (May/June).

For full details apply FELLOWSHIP OF MEDICINE, 1, Wimpole Street, London, W.1.
Telephone: MAYFAIR 2236.

Post-Graduate Teaching, West London Hospital.

Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

Prospectus from the DEAN, West London Hospital, Hammersmith, W.6.

INSTITUTE OF PATHOLOGY AND RESEARCH
ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of the Institute, on THURSDAY AFTERNOONS at 5 p.m., as under:—

	SUBJECT.
MAY 1st. Prof. JOHN MELLANBY, M.D. (Professor of Physiology, University of London).	"Absorption from the Alimentary Canal."
MAY 8th. W. E. GYE, M.D. (Pathologist, Medical Research Council).	"The Action of Antiseptics on the Virus of Filterable Tumours."
MAY 15th. LEONARD E. HILL, M.B., F.R.S. (Director Dept. of Applied Physiology, National Institute of Medical Research).	"The Physiology of Diving."
MAY 22nd. Prof. C. A. LOVATT EVANS, F.R.S. (Jodrell Professor Physiology, University College, London).	"Stages in the Investigation of the Physiology of the Heart."
MAY 29th. SIR THOMAS LEWIS, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

M.D. THESIS
(Camb., Edin., Glasg., Durh., &c.)
SKILLED COACHING, GUIDANCE, and ADVICE
From Specialist Tutors, in conformity with the Regulations of the various Universities.
Apply for particulars and free booklet, "Hints on writing a Thesis for the M.D. Degree," to the SECRETARY, Medical Correspondence College, 19, Welbeck Street, London, W.1.

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.
"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times." "Thoroughly physiological principles."—"Lancet." "The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."
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F.R.C.S.(Edin.).
CLASSES or POSTAL TUITION.—Full Preparatory Classes with DEMONSTRATIONS commence 6 weeks prior to each Exam. CORRESPONDENCE COURSE now, or at any time.—Particulars, H. C. OSBIS, F.R.C.S., Surgeons' Hall, Edinburgh.

Medical and Dental Students.
Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims. Chemistry, Physics, and Biology Labs. MANCHESTER TUTORIAL COLLEGE, 247, Oxford Road, Manchester.

AUTOMOBILE ENGINEERING TRAINING COLLEGE,
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(Day and Residential.)
Founded specially to TRAIN BOYS of good education for the Automobile Industry. The curriculum combines an essentially practical modern works' experience with training in administration. Appointments for qualified Students. Candidates will be accepted for Probationary Term.
Syllabus from ASSISTANT REGISTRAR.

MARLBOROUGH COLLEGE,
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Specialises in
CAREERS FOR GIRLS.
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Special Terms to Medical Men.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,
PRINCE OF WALES'S GENERAL HOSPITAL, N.15.
The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

POST-GRADUATE MIDWIFERY.
Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include deliveries of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIEDEN, the Secretary.

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(FOUNDED IN 1882.)

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Final	149
M.R.C.P.(Lond.), 1914-29	168
D.P.H. (Various) 1906-29 (Completed Exam.)	286
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Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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MEDICAL PROSPECTUS (48pp.)
CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.
Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6315.)

F.R.C.S.(Edin.)
CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Doctors attending Post-Graduate Courses in London, requiring Comfortable ACCOMMODATION with good cooking at moderate terms. Ideal position, facing Hyde Park. Send for Tariff.—Park Gate Hotel (over Lancaster Gate Tube Station), Bayswater Road, London, W.2. Telephone: Paddington 3421.

Royal College of Physicians of London.

Prof. J. J. R. MACLEOD, F.R.S., will deliver the Oliver-Sharpey Lectures on April 29th and May 1st, at 5 o'clock, at the College, Pall Mall East, S.W.1.

Subject: "*Diabetes as a Physiological Problem.*"

Any Member of the medical profession admitted on presentation of card.

By Order of the President,
H. M. BARLOW, Bedell and Secretary.

Church Missionary Society.

THE ANNUAL MEETING of the MEDICAL MISSION AUXILIARY OF THE C.M.S. will be held in the CENTRAL HALL, WESTMINSTER, at 7.15 p.m. on Wednesday, May 7th, 1930.

The Chair will be taken by
LORD LLOYD (High Commissioner for Egypt and the Sudan, 1925-9),
and the speakers will be
H. GORDON THOMPSON, Esq., M.D., F.R.C.S. (formerly of Hangchow Hospital),
Sister E. E. S. HILL (Bannu).

Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Square, E.C.4. There will be a small number of reserved seats at 1/- each.

Fiere Hospital, East London, SOUTH AFRICA.

RESIDENT MEDICAL OFFICER.

Wanted by the East London Hospital Board for the above Institution, Resident Medical Officer (unmarried) for a period of one year, with the option of extension, by mutual agreement, for a further period of one year, such agreement to be arrived at not later than four months prior to the termination of the first year.

Salary to be at the rate of £300 per annum for first year, with board, lodging, and laundry, rising £50 for second year.

The duties to be those of House Surgeon and Physician, with charge of Out-Patients, and to administer anæsthetics when called upon to do so.

The Hospital contains 114 beds (public and private) and 26 beds in Isolation Block, Dispensary with Dispenser, Out-patients' Department and X-ray Department.

Duties to commence on August 1st, 1930. One month's leave granted per annum. The usual bond to be signed.

Applications to be marked "R.M.O.," stating age and nationality, with copies of testimonials and certificate of health, to be in the hands of the undersigned not later than noon, June 25th.

P.O. Box 15, East London, South Africa. C. D. EWAN, Secretary & Treasurer.

Southern Rhodesia Medical SERVICE.

Three ASSISTANT AND RELIEVING GOVERNMENT MEDICAL OFFICERS are required for the Southern Rhodesia Medical Service. Salary £500 per annum, rising by £25 per annum to £650 per annum, with private practice. Applicants must be single, 25 to 30 years of age. Preference will be given to holders of Public Health or Tropical Medicine certificates.

Applications, with full particulars of qualifications, age, past appointments held, etc., with copies of references, should be addressed to the Official Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, from whom copies of Conditions of Appointment to the Southern Rhodesia Medical Service can be obtained.

Applications should reach the High Commissioner's Office by May 5th.

Bootle General Hospital, Derby Road, BOOTLE. (100 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON for the period ending September 30th. Salary at the rate of £150 per annum, with board, residence, and laundry. Duties to commence immediately.

Applications, stating age and qualifications, with copies of testimonials, to be sent to the undersigned.

J. A. BEARDSALL,
Secretary-Superintendent.

B.P.A. Diploma of the Society OF APOTHECARIES.

Classes are now being formed at the LONDON LIGHT AND ELECTRICAL CLINIC for the 1st and 2nd parts for above. Students please apply Secretary, London Light and Electrical Clinic, Ranelagh Road, S.W.1.

County Borough of Huddersfield.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH, CHIEF SCHOOL MEDICAL OFFICER, ADMINISTRATIVE TUBERCULOSIS OFFICER, MEDICAL OFFICER UNDER MENTAL DEFICIENCY ACTS, and HOSPITALS SUPT.

The Huddersfield Corporation invite applications from fully qualified and registered Medical Practitioners, who are also holders of a diploma in Sanitary Science, Public Health, or State Medicine for the position of Medical Officer of Health for the County Borough, with which is combined the other offices above mentioned.

The gentleman appointed will be responsible for the performance of all duties now devolving upon the Medical Officer of Health and School Medical Officer, or which may be in future assigned to him.

Candidates must not be more than 45 years of age, and the salary will be £1,100 per annum.

The successful applicant will be required to reside in the Borough, to devote his whole-time to the duties of the office, and not to engage in private practice.

The appointment is to be held in accordance with the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926, and is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, the successful candidate being required to pass a medical examination and to pay contributions at the rate of 5 per cent. to the Superannuation Fund.

Applications, stating age, qualifications, and experience, accompanied by eight copies thereof and by eight copies of three recent testimonials, and endorsed "Medical Officer of Health," must reach me not later than Saturday, May 3rd.

Applications should also give three references other than the signatories to the testimonials.

Canvassing, either directly or indirectly, will be deemed a disqualification.

Town Hall, Huddersfield. J. HENRY FIELD, Town Clerk.
April 5th, 1930.

Borough of Wednesbury.

APPOINTMENT OF MEDICAL OFFICER OF HEALTH.

The Town Council invite applications for the appointment of Medical Officer of Health, School Medical Officer, Maternity and Child Welfare Officer, and Superintendent of the Corporation's Hostel for Ailing Babies, for the Borough of Wednesbury.

Salary £800 per annum, rising by biennial increments of £50 to £900 per annum.

Applicants, being fully qualified and duly qualified registered Medical Practitioners, must have such additional qualifications as are prescribed in the Sanitary Officers Order, 1926.

The appointment will be made in accordance with the provisions of the Public Health (Officers) Act, 1921, the Sanitary Officers Order, 1926, and the orders and directions of the Council, and will be subject to the approval of the Minister of Health and the Board of Education.

The officer appointed will be required to devote his whole time to the duties of the position, and to reside within the Borough.

Applications, accompanied by copies of not more than three recent testimonials, must be sent to the undersigned on or before May 5th, endorsed "Medical Officer of Health."

Town Hall, Wednesbury. N. P. LESTER, Town Clerk.
April 12th, 1930.

City of Birmingham.

MATERNITY AND CHILD WELFARE DEPT.

Three TEMPORARY MEDICAL OFFICERS are required from July 1st to October 8th. Applications are invited from ladies who have had Obstetrical experience and an appointment in a Children's Hospital. The salary offered is ten guineas per week.

The appointment cannot be terminated within the period named.

Applicants should be sent to the Medical Officer of Health, Council House, Birmingham, on or before May 17th.

City of Birmingham.

MATERNITY AND CHILD WELFARE DEPT.

RESIDENT MEDICAL OFFICER.

A Resident Medical Officer is required on July 1st next, for a period of six months, for the City Babies' Hospital (50 beds). Salary at the rate of £150 per annum, with board and laundry. Previous experience in a Children's Hospital desirable. Apply, giving all particulars of qualifications, age, and references, to the Medical Officer of Health, Council House, Birmingham, on or before May 17th.

Worcestershire County Council.

ASSISTANT COUNTY MEDICAL OFFICER (Male).

The above-mentioned Council are about to appoint an Assistant County Medical Officer, and applications are now invited for this post.

Applicants must be registered Medical Practitioners between the ages of 25 and 45 years. Special experience and qualifications in Tuberculosis will be necessary as work under the County Tuberculosis Scheme will form the chief part of the officer's duties. He should have (1) at least three years' experience in the practice of his profession; (2) spent in general clinical work a period of not less than eighteen months, of which not less than six months have been spent in a hospital as resident officer in charge of beds occupied by general medical or surgical cases; and (3) received special training, for a period of not less than six months, in the diagnosis and treatment of tuberculosis. A Diploma in Public Health is desirable. The officer who is appointed will work under the supervision of the Chief Tuberculosis Officer.

The person appointed will be required to reside in the district assigned to him by the County Council and to devote the whole of his time to the work.

The salary will be £600 per annum, with an allowance of £140 per annum for use of his own motor car. The engagement to be subject to three months' notice on either side. The post is designated under the Local Government and Other Officers Superannuation Act, 1922.

Applications (on forms to be obtained from the County Medical Officer, 29, Foregate St., Worcester), accompanied by not more than three recent testimonials, must be received by 12 noon on April 30th, addressed to the County Medical Officer, 29, Foregate St., Worcester.

Canvassing disqualifies, and neither the names of the members of the County Council nor of the Committee will be supplied.

Shirehall, Worcester. (Sgd.) C. H. BIRD, Clerk of the County Council.
April 8th, 1930. (W.99.)

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

PARK HOSPITAL, DAVYHULME, near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of a Junior Resident Medical Officer at the above Hospital. Candidates should be unmarried. The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period. The salary is at the rate of £200 per annum, together with the usual residential allowances.

The Hospital comprises 500 beds.

Applications, accompanied by copies of not more than three testimonials, should be addressed to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than May 17th.

County Offices, Preston. GEORGE ETHERTON, Clerk of the County Council.
April, 1930.

City of Salford.

Applications are invited for the post of ASSISTANT MATERNITY AND CHILD WELFARE MEDICAL OFFICER (women) from fully qualified registered Medical Practitioners. Previous experience in this class of work is desirable, and experience in midwifery, ante-natal work, and children's diseases essential.

Commencing salary £600 per annum, subject to deductions for superannuation purposes.

Forms of application may be obtained from the Medical Officer of Health, 143, Regent Rd., Salford, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Saturday, May 10th.

H. H. TOMSON, Town Clerk.

Bradford Royal Infirmary.

Wanted for 1 or 1st.

HOUSE SURGEON (male).

Candidates must be single and legally qualified. Salary £150 per annum, with board, residence, and washing.

There are 215 beds and six resident officers.

Applications, stating age, qualifications, and previous experience (if any), with copies of three testimonials, to be received by the undersigned not later than April 26th.

J. J. BARRON, Secretary-Supt.
April 8th, 1930.

Royal Hampshire County HOSPITAL, WINCHESTER.

HONORARY OPHTHALMIC SURGEON.

Applications are invited for the post of Additional Honorary Ophthalmic Surgeon.

Candidates, who must limit their practice to Eye cases only, must be Fellows or Members of one of the Royal Colleges of Surgeons of Great Britain or Ireland, or Graduates in Surgery of one of the Universities of Great Britain or Ireland, and must be duly registered.

The elected candidate will be required to attend at the Hospital once a week, or oftener if required.

The appointment will be made subject to the statutes and rules of the Hospital, copies of which may obtained from the undersigned.

Applications, stating age, with testimonials, *limited to three in number*, should reach the undersigned not later than Saturday, May 3rd.

Winchester. HERBERT MASLEN,
April 16th, 1930. Secretary.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
April 21st, 1930.

Stockton and Thornaby Hospital,
STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). *Salary £150, with board, residence, and* laundry.

Candidates for the above post must be doubly qualified and unmarried, and are required to *commence duties on or about May 1st.*

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

Burton-on-Trent General INFIRMARY.

HOUSE SURGEON.

The Committee require the services of a duly qualified Second Resident House Surgeon (male).

Salary £150, with board, residence, and laundry.

Applications, with copies of testimonials, to be sent to the undersigned.

The Infirmary, E. W. THORNLEY,
Burton-on-Trent Secretary.

Clayton Hospital, Wakefield.
(General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £200 per *annum, with board, residence, and laundry.* The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, *and accompanied by three recent* testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

Hounslow Hospital, Staines Rd., HOUNSLOW, MIDDX.
(70 Beds.)

Wanted, SENIOR MALE HOUSE SURGEON. Salary £120 per annum, with board, residence, etc. The appointment will be for six months.

Applications, stating qualifications, age, and experience, and enclosing two copies of testimonials, should be sent (marked "House Surgeon," top left *hand corner*) to W. T. ROSS, Secretary, Hounslow Hospital.

Bristol Eye Hospital.

Applications are invited for the post of JUNIOR HOUSE SURGEON. Single man required. For particulars apply to the Secretary.

Applications and testimonials to be received by Monday, May 5th.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and *nationality*, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
April 17th, 1930. Secretary.

Derbyshire Royal Infirmary, DERBY.
(General Hospital—338 Beds.)

Applications are invited for the combined post of OPHTHALMIC HOUSE SURGEON and RESIDENT ANÆSTHETIST.

Candidates must be qualified and registered *under the Medical Acts.*

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per *annum, with apartments, board, etc.*

There are 40 beds for Ophthalmic cases and a large Out-patient Department.

Applications, with copies of testimonials, to be sent to the undersigned.

WALTER BANKS,
April 24th, 1930. Supt. & Secretary.

North Riding Infirmary, MIDDLESBROUGH.
(General Hospital—150 Beds.)

Wanted, THIRD HOUSE SURGEON (male), to take up duties as early as possible. Salary at the rate of £125 p.a., with board, residence, and laundry. Six months' appointment.

Candidates will be eligible for the higher appointments as they become vacant.

Applications, stating age, nationality, and previous experience, with references (copies), should be sent forthwith to the undersigned.

CHARLES POSTGATE,
Secretary-Superintendent.

North Ormesby Hospital, MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be *eligible for the post of House Surgeon in due* course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the *undersigned at once.*

GEORGE WATTS, Secretary-Supt.

St. Thomas's Hospital.

VACANCY.

The appointment of a SENIOR ASSISTANT MEDICAL OFFICER in the Venereal Department. Salary £675 per annum.

Applications, with testimonials, and full Academic record, to be forwarded to Lt.-Col. A. P. B. IRWIN, Secretary and Clerk to the Governors not later than Wednesday, April 30th.

Royal United Hospital, Bath.

Wanted as soon as possible, a HOUSE SURGEON and ASSISTANT HOUSE SURGEON. Salaries £150 and £100 per annum respectively.

The appointments will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, together with three recent testimonials, should be addressed to the undersigned.

GERALD A. KENYON, Acting Secretary.

Royal United Hospital, Bath.

Wanted, a *HOUSE PHYSICIAN. Salary £120* per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, *and of British nationality.*

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

Southern General Hospital, GOVAN, GLASGOW.

JUNIOR ASSISTANT MEDICAL OFFICER, male, wanted. Commencing salary £275 per annum, with board, laundry, and apartments. Applications, with copy testimonials, to be lodged with the Medical Superintendent not later than April 29th.

Charing Cross Hospital.

PHYSICIAN FOR MENTAL DISORDERS.

The Council invite applications for the post of Physician for Mental Disorders. Candidates, who must have Degrees from one of the Universities recognized by the General Medical *Council, and be Fellows* or Members of the Royal College of Physicians of London, should send in their applications, together with copies of three recent testimonials, to the undersigned not later than Monday, April 28th.

Charing Cross Hospital, W.C.2. PHILIP INMAN, House Governor.

Bolingbroke Hospital, Wandsworth Common, S.W.11.
(121 Beds.)

HOUSE SURGEON (male) required. The appointment is for six months. Salary £120 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned as soon as possible.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Peterborough and District MEMORIAL HOSPITAL. (154 Beds.)

Applications are invited from fully qualified male Practitioners for the post of RESIDENT HOUSE PHYSICIAN.

The appointment will be for a period of six *months. Salary £120 per annum, with board,* residence, and laundry.

Applications, stating age, qualification, and experience, with copies of recent testimonials, *to be sent immediately to the undersigned.*

FRANK A. C. TAYLOR,
Secretary-Superintendent.

Royal Buckinghamshire Hospital AYLESBURY.

Applications are invited for the post of *RESIDENT MEDICAL OFFICER (male)* for six months. To commence duty as soon as possible. Salary £200 per annum, with board, residence, and laundry. Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned at once.

M. W. BROWN, Secretary.

The Northern Infirmary, INVERNESS.

Wanted immediately for the new Infirmary, HOUSE PHYSICIAN, fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, *qualifications, and experience*, with copies of recent testimonials, to be sent before April 30th next to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, *Inverness.*

The Sheffield Royal Hospital.

There are vacancies for *male residents—one* to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. The Hospital is a Medical School, with 340 available beds, and there are twelve *Resident Medical* Officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry.

Applications should be forwarded at once to—

W. H. BOOTH,
April 5th, 1930. Supt. & Secretary.

King Edward Memorial Hospital, Ealing, W.13.

Applications are invited for the following appointments:

One SENIOR HOUSE SURGEON (male). Salary £150 per annum.

One JUNIOR HOUSE SURGEON (male). Salary £100 per annum.

With board, residence, etc.

Appointments are for six months in first *instance.*

Applications, stating age, qualifications, *etc.*, should be made at once to the Secretary-Supt.

Newcastle-upon-Tyne Eye HOSPITAL.

The post of JUNIOR HOUSE SURGEON, *non-*resident, will shortly be vacant. Salary £150 per annum, lunch provided. Apply, stating age, qualifications, and Ophthalmic *experience*, with copies of testimonials, to the undermentioned.

CHARLES E. V. UPTON, Secretary.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	OLDBURY URBAN DISTRICT COUNCIL. *(Deputy Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	BELFAST COUNTY BOROUGH EDUCATION COMMITTEE. *(Assistant School Medical Officer—Male.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*
NEATH AND DISTRICT. *(Medical Aid Association.)*		

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.
April 23rd, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Connaught Hospital
(100 Beds)
FOR WALTHAMSTOW, WANSTEAD, AND LEYTON, Orford Road, E.17.

Applications are invited for the undermentioned posts:
SENIOR RESIDENT HOUSE SURGEON (R.M.O.) (male). Salary £150 per annum.
JUNIOR RESIDENT HOUSE SURGEON (male). Salary £100 per annum.
Appointments to date from May 1st, and to be for a period of six months, with board, residence, and laundry provided.
Applications, with three testimonials (or copies), should be sent to the Secretary, to reach him not later than April 16th.

Victoria Hospital Burnley.
(120 Beds.)

Applications are invited for the post of HOUSE PHYSICIAN (male). The appointment is for six months, and carries a salary of £150 per annum, with board, etc. This Hospital is approved by the London University for the purposes of the M.B. and M.S. Examinations.
Applications, with testimonials, should be addressed to the undersigned forthwith.
GEO. W. COOLING, Secretary-Supt.
April 8th, 1930.

Consumption Sanatoria of SCOTLAND.

ORPHAN HOMES OF SCOTLAND, BRIDGE OF WEIR (near GLASGOW).

RESIDENT FEMALE HOUSE PHYSICIAN wanted for female pavilions of Sanatorium and to assist in work of Orphan Homes.
To begin duties on May 15th.
Commencing salary £200, with board, apartments, and laundry.
State details of previous experience, and send testimonials to Medical Superintendent.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A RESIDENT MEDICAL OFFICER is required at the COUNTRY BRANCH HOSPITAL, TADWORTH COURT, TADWORTH, SURREY, on May 12th.
Gentlemen are invited to send in their applications to the Secretary, before 12 o'clock on Monday, May 5th, accompanied by copies of not more than three testimonials given specially for the purpose.
The appointment is made for six months, but the successful candidate will be eligible for re-appointment.
Salary at the rate of £250 per annum, with board-residence in the Hospital, laundry allowance at the rate of £10 per annum, and, on re-election for a further period of six months, £18 18s. for the purpose of providing a substitute during annual leave of a maximum of four weeks.
Candidates must possess a legal qualification to practise, and must have held a resident appointment at a General Hospital.
All candidates must be in attendance on Wednesday, May 7th, at 4.45 p.m. precisely, to appear before the Joint Committee, if required.
Forms of application and copies of the rules may be obtained from the Secretary, at the Hospital.
By Order of the Board of Management,
JAMES McKAY, Secretary.
April, 1930.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

The Royal Infirmary, SHEFFIELD.

The Weekly Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election on for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.
Board Room, JNO. W. BARNES, F.C.I.S.,
April 14th, 1930. Gen. Supt. & Sec.

Royal Infirmary, Blackburn.
(249 Beds. Five Residents.)

THIRD and FOURTH HOUSE SURGEONS (male) required as early as possible, at salaries of £175 and £150 per annum, rising to £200, with board, residence, laundry, etc.
Applications, with copies of testimonials, stating age, nationality, experience, etc., to be sent at once to the undersigned.
Royal Infirmary, NATHAN A. SMITH,
Blackburn. Gen. Supt. & Secretary.
This Institution is recognised for the Surgical practice required for the F.R.C.S. Final examination.

Royal Waterloo Hospital for CHILDREN AND WOMEN,
Waterloo Road, S.E.1.

There will be a vacancy on May 1st for a HOUSE SURGEON (male) at the above Hospital. The appointment is in the first instance for a period of six months. Salary at the rate of £100 per annum, with board and residence. Application, with copies of testimonials, should be forwarded not later than Thursday morning, April 24th, to the Secretary at the above address, from whom further particulars can be obtained.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.

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ASSISTANCIES.

Wanted. — Indoor Assistant in general Practice in London. Usual duties. A side line could be cultivated with a man possessed of special knowledge (not essential). Salary £250, progressive, to a suitable man. Usual bond. R.C. preferred, but not essential. — Address, No. 2808, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for general Practice, Newcastle-upon-Tyne, male and unmarried, young and energetic. Salary £250 p.a., all found. — Address, No. 2725, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, male, preferably single, young, energetic, for panel and private Practice (no clubs), mostly working-class. Northern Town.—Address, No. 2803, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Indoor Assistant in S. Wales, male, single; must be sober; able to drive a car an advantage; healthy district, work light. Suit a newly qualified man. State age and essential particulars, with photo, returnable. Address, No. 2833, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, male, for private and panel Practice in Birmingham. Single. Salary commencing £250. — Address, No. 2836, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—An Assistant, male, single, to take entire charge of a Branch Practice. £250 per annum, all found.—Apply to Dr. MCWILLIAMS HENRY, 20, North Parade, Halifax.

Wanted.—Full-time Assistant, male, 30/35. Must be well qualified and experienced. State age and other essential particulars.—Address, No. 2805, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Male married Assistant for large Industrial Practice near Manchester. Commencing salary £300 p.a., and free house. Send particulars.—Address, No. 2834, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Outdoor Assistant in private and panel Practice in West England. Good opportunity for keen active man anxious to acquire share. Protestant. Particulars and references.—Address, No. 2839, B.M.A. House, Tavistock Square, W.C.1.

Wanted. Assistant in mixed Practice on Tyneside (country). Post suitable for a woman. Usual bond.—Address, stating full particulars, No. 2822, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship or LOCUMS by Woman Doctor well experienced in all branches of Practice.—Address, No. 2824, B.M.A. House, Tavistock Square, W.C.1.

Woman part-time Assistant, view partnership, wanted by Woman Doctor to work up branch mixed Practice. Possibly live over surgery. Paddington district. Midwifery essential.—Address, No. 2814, B.M.A. House, Tavistock Square, W.C.1.

Wanted, an Assistant (Outdoor) in a Mining Practice in Glamorgan. Usual bond. Salary £350 per annum, with furnished rooms, light, and attendance.—Address, No. 2826, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Gentleman to assist in Midland Practice, with or without view. Outdoor. Must be single. Work light and plenty of time for reading. State particulars, including nationality. Salary £100.—Address, No. 2821, B.M.A. House, Tavistock Square, W.C.1.

Wanted, for Colliery Practice, Yorkshire, male ASSISTANT, British, abstainer, married or single. Suit recent Graduate. Usual bond. Commencing salary £250, indoor, single man.—Essential particulars, photograph, to SANDFIELD, Warmsworth, Doncaster.

Wanted. — Assistantship, with view, in non-dispensing Practice. N. England or South Scotland. Applicant is M.B., M.R.C.P., æt. 26, hosp. exper. Capital available. — Address, No. 2721, B.M.A. House, Tavistock Square, W.C.1.

Assistant (man or woman), indoor, wanted.—Country Town, Midlands. Public Health, private, panel. State age, height, religion, and full particulars. Only letters replied to where essen. parties. are stated. —No. 2603, B.M.A. House, Tavistock Sq., W.C.1.

Experienced and energetic ASSISTANT of good address wanted, with view to partnership or succession, in large general Practice in first-rate Yorkshire town. Income about £3,000 p.a. Full panel. Applicant should have ample capital. — Address, with testimonials and photograph (if possible), No. 2809, B.M.A. House, Tavistock Sq., W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted. — Dispenser for the TOTTENHAM and EDMONTON DISPENSARY (746, High Road, Tottenham); hours of opening 10 a.m. to 1 p.m., and 6 p.m. to 7.30 (Thursday evenings and Sundays excepted). Applications, with statement of qualifications and experience, and copies of testimonials, to be sent to the Hon. Sec., Mr. L. J. WASTELL, 810, High Road, N.17.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in *Bacteriological Laboratories of the LONDON* COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary-Dispensers, Nurse-Dispensers, and Chauffeuse-Dispensers.—Write, wire, or 'phone Central 3679, THE RELIANCE BUREAU FOR DISPENSERS, 12, Holborn Viaduct, E.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BORSROM, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

Lady, 20, requires Post as SECRETARY. Fully trained and experienced. Good references.—Miss PAGE, Littlecote, Linksway, Northwood, Midx.

Man or Woman Doctor wanted, Northern British Columbia, amongst British Settlers. Subsidy £80 per year, board, lodging, expenses out found. — Apply, EVA HASELL, Dacre, Penrith.

Medical Man, accustomed to sole management of Practices, etc., would undertake MEDICAL WORK of any description (part-time or otherwise). Experienced, energetic (abs. miner). Highly recom. Terms mod.—No. 2818, B.M.A. House, Tavistock Square, W.C.1.

Required by large Company for service in the Tropics, One ASSISTANT MEDICAL OFFICER, with special training in Eye work. Preferably ex House Surgeon or Physician. Starting salary £850 per annum, with free furnished bachelor quarters. Provident Fund. Agreement for one year, extendable to three by mutual consent. Free first-class passages out and home. Applicants must be of British parentage, single, and unattached. Ladies not eligible.—Address, with copies of testimonials (not returnable), No. 2602, B.M.A. House, Tavistock Square, W.C.1.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Young Lady desires post as SECRETARY to Medical Man. Fully qualified. Good testimonials. Medical experience.—Apply, E. HEALE, 81, Barn Hill, Wembley Park. 'Phone: Wembley 5168.

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Wanted. — Locum Tenens, June 24th—July 28th. Mixed Practice, small insurance, small country town, Midlands. Possibly two midwifery cases. Good house, large garden. Seven guineas per week.—Add., No. 2605, B.M.A. House, Tavistock Sq., W.C.1.

Doctor, Scotsman, with small Practice in London (Kensington), would like to hear from Doctor practising at Seaside with view to exchanging Practices for month or more during summer.—Address, No. 2815, B.M.A. House, Tavistock Square, W.C.1.

Locums. — *Experienced and* reliable middle-aged Doctor, had own Practice, desires HOLIDAY LOCUMS. Now free. Terms 6 gns. p.w. London pref.; if country, where car and driver available. Good refs.—Add., MEDICUS, 24, Colville Rd., Bayswater, W.

For Reliable Locums and Assistants
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PARTNERSHIPS.

Lancs. — Partnership (2/5th share). Receipts £3,000. Panel 3,000. Nice freehold house. Price, house and share, £3,000, part by instalments. Share of drugs, instruments, etc., £400.—MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, Brown Street.

Lancs Town, near Manchester.—PARTNERSHIP in old estab. Practice. Cash receipts over £2,000 p.a. Panel 2,000. Scope for surgery. Good house, 3 reception, 5 bedrooms. Garage and garden. Rent £65 p.a. Premium—1/2 share—£1,500.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership (with or without preliminary assistantship) in growing London suburb required by Woman Doctor with special experience in women's and children's diseases.—Address, No. 2837, B.M.A. House, Tavistock Square, W.C.1.

Yorkshire.—Partnership in excellent PRACTICE, near large town. Cash receipts 1929, £3,354, Panel 2,100 and appointments, £134. Good house, 2 reception, 4 bedrooms. Garage, garden, and tennis court. Premium—1/3rd share (to be increased later)—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

PRACTICES.

Wanted by experienced Practitioner, at the end of September, PRACTICE, with good panel, in W. Midlands. *Income £1,200—£1,600. House with garden essential.* Ample capital. Full particulars in confidence.—Address, No. 2807, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately, Practice £1,200—£1,500, good panel and some scope. House to rent, with garden and garage if possible. Suburb or provin. town near coast pref. Death vacancy or retiring Practice consid. —No. 2332, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Practice in London. Must have panel of at least 1,500. Capital available. Write in strict confidence. —Address, No. 2835, B.M.A. House, Tavistock Square, W.C.1.

Wanted immediately.—Liverpool, Southport, Birkenhead, or Wirral.—Middle-class PRACTICE or PARTNERSHIP with panel. Income £1,600 upwards. Good house essential. Capital available.—Address, No. 2811, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—In North or East Riding, Lincs. or Norfolk, Country PRACTICE doing £700—£1,000. Good small house essential.—Address, No. 2825, B.M.A. House, Tavistock Square, W.C.1.

Wanted by retired Service man, Country PRACTICE £700 to £1,000. Good house and social amenities essential.—Address, No. 2827, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Mixed Practice *(preferably in Lancashire) doing from* £1,500—£2,000. Ample capital available. No agents.—Address, No. 2820, B.M.A. House, Tavistock Square, W.C.1.

Aberdeenshire.—Old-estab. unopposed Medical PRACTICE for Sale in country district within easy reach of town. Good house and garden.—For full particulars address, No. 2817, B.M.A. House, Tavistock Square, W.C.1.

Birmingham Residential Suburb. —Particularly desirable high-class PRACTICE of long standing, easily increased. Small panel. Most desirable house, in excellent position, with beautiful garden, on fairly long lease. Ill health sole reason for selling. — Apply, SHAKESPEARE & VERNON, 83, Colmore Row, Birmingham.

Cardiff area.—Mining, up-to-date town, nice country. Cottage Hospital. Motor cycle ample (essential). Expenses small. All cash. House, rent or sell. Premium 1½ years' purchase. Salary £7 if sell six weeks. Photo., full particulars. — Address, No. 2832, B.M.A. House, Tavistock Square, W.C.1.

Cheshire Town, near Manchester. —Old-estab. PRACTICE. Average cash receipts £838. Panel 800. Good house, 2 reception, 6 bedrooms. Garage and good garden. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Dublin.—For Disposal, good SURGERY PRACTICE in working-class, middle-class district. Intro. given. Aver. receipts last two years £1,2 0. Practice capable further development. Reasonable offer considered.—Addr., No. 2828, B.M.A. House, Tavistock Square, W.C.1.

For immediate Disposal through illness, a small mixed PRACTICE in Sheffield. Panel 1,000, could be worked up. —Address, No. 2810, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Old-established PRACTICE, with Branch Surgery, in industrial Lancashire town. Panel 1900. Average income £1,850. Capable of much greater extension. Really room for two men. Practice well known to us and can be recommended.—Apply to HOUGH, HOSEASON & Co., Ltd., Manchester.

For Sale.—Old-established PRACTICE, Chelsea. Panel about 600. Total income about £500 p.a.; scope for increase. Owner specializes Harley St. Can no longer manage both. Prem. £900. 'Phone Sloane 1721 or No. 2831, B.M.A. House, Tavistock Sq., W.C.1.

For immediate Sale. — Long established MEDICAL PRACTICE of the late Dr. Heron, at Markinch, Fife, together with the house.—For particulars apply to T. M. HEPON, Solicitor, Mayfair, Arthur Square, Belfast.

For Disposal.—*A good Practice* is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

London, S.E.—Cash Practice for Sale in leading main thoroughfare. Estab. over 3 years. Panel a out 1,0 . Cash takings average £5 p.w. Premium £275 for prompt cash sale, to include drugs, furniture, etc.—Address, No. 2813, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town. — Excellent non-panel PRACTICE, owner going South. Nice house, good position, £60. Receipts £1,200, last year £1,500. Price £200 or offer, part deferred. — MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester.—Middle-class PRACTICE in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Nucleus.—County Town.—Particularly suitable to Woman Doctor. Established 5 years. Panel 270. Prospects excellent. Suitable house for sale. Full particulars on application. — Address, No. 2544, B.M.A. House, Tavistock Square, W.C.1.

North London.—Promising Cash and Panel NUCLEUS for Sale. Private takings average £2 10s. weekly. Panel over 80. Lock-up Surgery at low rent. Reasonable premium. Owner leaving London. — Address, No. 2830, B.M.A. House, Tavistock Sq., W.C.1.

Nucleus. — London, North. — About £200 p.a., plus possibility of appts. £150. Has been neglected and only worked in evenings. Little industry, minimum fee 5 gns. Visiting fees 3/6 to 5/-. Small panel. House, with 8 rooms, kitchen, scullery, etc., to rent. Vendor would let off part only, if preferred. Premium £200 or near offer.—Apply No. 2648, PERCIVAL TURNER, Ltd., 4, Adam St., Strand, W.C.2.

North-West Coast. — Old-estab. mixed PRACTICE. Cash receipts 1929, £1,129. Panel 520. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice—1½ years' purchase. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Old-established Practice for sale, six miles south of Charing Cross. Receipts £600. Panel 400. Good Partnership introduction, six to twelve months. Vendor retiring.—Address, No. 2823, B.M.A. House, Tavistock Square, W.C.1.

South Yorkshire. — Old-estab. PRACTICE. Cash receipts £2,555. Panel 2,505. Modern house, specially built, in an acre of ground. Garage and large garden. Beautiful country. Premium 1½ years' purchase, part by arrangement. Vendor retiring. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Seaside Resort, Lancs.—Ladies' PRACTICE in very pleasant district. Roomy flat, with lawn in front, rent £104. Receipts about £1,000, with much scope. Panel 1,260. Price £1,650.—MANCHESTER MED. & SCHOLASTIC ASSOCIATION, 6, Brown Street.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

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Pretty gardens, with tennis lawn, in all about three-quarters of an acre. Also adjacent plot, having 160 feet road frontage, covering about quarter of an acre. Vacant possession.

HARRODS have received instructions to offer the above by Auction (unless previously sold privately) as a whole or in lots, at Harrod's Estate Sale Rooms, S.W.1, on Thursday, May 8th, 1930, at 2.30 p.m.

Solicitors: Messrs. HULBERT, CROTE & HULBERT, 4, Broad Street Buildings, Liverpool Street, E.C.2.

Illustrated Auction particulars, with Conditions of Sale and Orders to View, may be obtained of the Auctioneers, Harrod's Ltd., 62-64, Brompton Road, S.W.1, or the Surrey Office, West Byfleet.

Wanted.—Part-time Consulting ROOM, with use of waiting room, Gower Street, Bloomsbury, or district. Full particulars.—Address, No. 2801, B.M.A. House, Tavistock Square, W.C.1.

A commodious modern Bungalow, 10 good light rooms, ground: 1, 2 acre, electric light, central heating, etc., very suitable for a Doctor, occupying prominent corner position in pleasant populous district 12 miles N.E. of London. No resident practitioner. Extensive building programme rapidly progressing, and a large Practice should be made very quickly. Freehold available for £100 cash and balance on mortgage. Cost over £2,000 originally.—Write OWNER, R. T. MORGAN, 129, Minories, E.C.3.

Cavendish Square.—One or TWO BEDROOMS to LET, or Bedroom and Sitting Room, furnished, in Doctor's house near Cavendish Square. Part-time use of consulting room can be arranged if desired.—Address, No. 2829, B.M.A. House, Tavistock Square, W.C.1.

Consulting Room, first floor, adjoining Harley Street. Vacant after Easter. Residence if required. Good service.—Address, No. 2230, B.M.A. House, Tavistock Square, W.C.1.

Doctor, having large country house, south-west, offers BEDROOM and SITTING ROOM, permanent let, board, attendance, use of garden. Convalescent considered.—Address, No. 2812, B.M.A. House, Tavistock Square, W.C.1.

Part-time Consulting Room wanted, in Harley Street, with plate and attendance. Must be moderate.—Address, No. 2816, B.M.A. House, Tavistock Square, W.C.1.

Piccadilly. — Consulting Rooms in Dental Surgeon's Office. Exceptionally well equipped and furnished, fitted for Ophthalmic and Sunlight work. Receptionist, service, light, telephone, all inclusive, £10 per month. —No. 2804, B.M.A. House, Tavistock Sq., W.C.1.

Queen Anne Street.—To be Let, large light CONSULTING ROOM, just vacated by Dental Surgeon after many years' occupation. Small secretary's room. Also part-time Consulting Room. Low rents.—Address No. 2528, B.M.A. House, Tavistock Square, W.C.1.

Rooms to Let over Chemist's shop, large and convenient, best business position. Suitable for Oculist.—BRICE & SON, Chemists, High Street, Uxbridge.

To be Let.—Harley Street.—Large light basement CONSULTING ROOM. Reasonable rental. Also large Room suitable as laboratory.—Address No. 2819, B.M.A. House, Tavistock Square, W.C.1.

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For Sale.—Electrical Apparatus, including Motor Generator Set, A.C. Lindelli Alarm Clock Suitable for small treatment room. Address, No. 2802, B.M.A. House, Tavistock Square, W.C.1.

1925 Rolls Royce Enclosed Drive LIMOUSINE, complete with Triplex Glass throughout, Sun Visor, Bumpers Front and Rear, Nos Tyres, Spot Light, Barker Wheels, Electrical and mechanical condition. £545. Inspection invited, and exchanges considered.—Messrs. Wood & Ltd., 196, Shaftesbury Avenue, W.C.1. Phone, Temple Bar 5179.

APPOINTMENTS.—Contd.

Middlesex Hospital, W.1.

A vacancy is hereby declared for the office of HONORARY ASSISTANT DENTAL SURGEON to the Hospital. Applications, which should be accompanied by testimonials, are invited to be submitted on or before Monday, May 12th. Candidates must be qualified registered Medical Practitioners and Licentiates in Dental Surgery of the Royal College of Surgeons of England.

By Order of the Board.
S. R. C. PLIMSOLL,
April 25th, 1930. Secretary-Supt.

Victoria Hospital, Blackpool.
(132 Beds.)

HOUSE SURGEON (JUNIOR), male, six months. Salary £120 per annum, with residence, board, and washing.

Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, not later than April 30th, and endorsed "House Surgeon," to—

JOHN HACKING, Hon. Secretary.

Kent and Canterbury Hospital,
CANTERBURY. (120 Beds.)

HOUSE PHYSICIAN (male) required, to commence duties June 1st. Six months' appointment. Salary £125 per annum, plus board, residence, and washing. Applications, accompanied by testimonials, and stating age, qualifications, etc., should be forwarded to the undersigned by May 2nd.

W. T. SOUTHWOOD,
Superintendent & Secretary.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the appointment of ASSISTANT SURGEON to the Ear, Nose, and Throat Department. Intending candidates, who must be Fellows of the Royal College of Surgeons of England, should submit, to the undersigned, applications, stating age, and accompanied by copies of three recent testimonials, on or before May 31st.

The present Temporary Assistant Surgeon is a candidate for the appointment.

REGINALD R. GARRATT, Secretary.

Medical Scottish Prisons Service.

The post of ASSISTANT MEDICAL OFFICER (part-time) of BARLINNIE PRISON, GLASGOW, is vacant. Inclusive salary £100 p.a. Appointment is for one year and may be renewed annually thereafter. Further particulars may be obtained on application to the Prisons Department for Scotland, 11, Rutland Square, Edinburgh, to whom applications should be sent on or before May 1st.

Liverpool and District Hospital
FOR DISEASES OF THE HEART.

HOUSE PHYSICIAN (male or female) required for period of six months from July 1st. Salary at rate of £52 per annum, with board and residence (private sitting room).

Applications, not later than May 10th, to Miss LEWIS, Secretary, 14, Cook Street, Liverpool.

Royal South Hants and
SOUTHAMPTON HOSPITAL.

CASUALTY OFFICER (male, unmarried) required immediately, six months' engagement. Salary £160, with board, residence, and laundry. Apply to Secretary, Royal South Hants and Southampton Hospital.

Royal Asylum, Montrose.

Wanted, ASSISTANT MEDICAL OFFICER, male. Salary £325 (three hundred and twenty-five pounds) per annum, without deductions, with board, lodging, and laundry. Applications, stating age and qualifications, with testimonials, to be sent to the Physician-Supt.

Sanatorium A.M.O. wanted at NORDRACH-UPON-MENDIP SANATORIUM, BLAGDON, BRISTOL, from about the middle of June. Previous experience essential. Interviews in London before May 15th.

City and Port of Plymouth.
ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Men for the post of whole-time Assistant Medical Officer of Health to the City and Port of Plymouth. The chief duty of the officer will be to act as Port Medical Officer.

Applicants should not be more than 35 years of age.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum, and the appointment will be terminable by three months' notice on either side.

The possession of a Diploma in Public Health, or in Tropical Medicine, or a qualification in State Medicine, will be considered an advantage.

The person appointed will be required from time to time to assist in the general Public Health work of the City, and in the various Sub-Departments of the Public Health Department. He will act under the general supervision of the Medical Officer of Health, and carry out any duties delegated to him from time to time.

Forms of application are not provided, and applicants should send a statement of their professional qualifications and experience, together with copies of not more than three recent testimonials, to the undersigned on or before Saturday, May 10th. Envelopes must be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify the applicant.

A. T. NANKIVELL, M.D., D.P.H.,
Town Hall, Medical Officer of Health,
Stonehouse. City and Port of
April 17th, 1930. Plymouth.

Leyton Education Committee.
APPOINTMENT OF TWO SCHOOL NURSES.

Applications are invited for the appointment of Two School Nurses in connection with the work of the School Medical Service.

Candidates should be State registered nurses and under 40 years of age.

Previous experience in school nursing and additional qualifications will be a recommendation.

Salary at the inclusive rate of £150 per annum, rising by annual increments of £10 to a maximum of £220 per annum, together with allowances of £5 per annum for travelling and £5 per annum for uniform.

The successful candidates will be required to pass a medical examination, and the appointment will be subject to the Local Government and Other Officers Superannuation Act, 1922.

The persons appointed will work under the direction of the School Medical Officer.

Application forms, which should be returned to the Director of Education, duly completed, before April 30th, may be obtained upon application to him, on receipt of a stamped addressed foolscap envelope.

Education Offices, JNO. ATKINSON,
Town Hall, Leyton, E.10. Town Clerk.
April, 1930.

Manchester Royal Infirmary.
CENTRAL BRANCH.
Roby Street, MANCHESTER.

JUNIOR HOUSE SURGEON AND CASUALTY OFFICER (Lady).

The Board of Management of the Manchester Royal Infirmary invite applications for the above appointment.

Applicants must be registered and hold a Medical and Surgical qualification.

The appointment is subject to one month's notice, in writing, from or to the Board, and is tenable for an indefinite period from May 12th. Commencing salary £100 per annum, together with board and allowance for laundry.

Applicants must state age and qualifications, and send twelve copies of their application and testimonials to the undersigned by 9 a.m. on Monday, May 5th.

By Order,
FRANK G. HAZELL.
April 17th, 1930. Gen. Supt. & Sec.

Royal West Sussex Hospital,
CHICHESTER. (111 Beds.)

The Board of Management invite application for the post of JUNIOR HOUSE SURGEON, male. Salary £150 per annum, with board, residence, and laundry.

Applications, stating age, with three recent testimonials, should reach me not later than May 2nd.

Particulars as to duties will be forwarded to candidates on receipt of their application.

HERBERT S. AYLMORE, Secretary.

Metropolitan Borough of HAMMERSMITH.

TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Tuberculosis Officer and Assistant Medical Officer of Health for the borough of Hammersmith.

The salary attaching to the appointment is £450 per annum, rising by annual increments of £50 to a maximum of £1,000, but in fixing the commencing salary regard will be had to the qualifications and experience of the gentleman appointed.

Candidates must be qualified to hold an appointment as Tuberculosis Officer in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, and must also possess the Diploma of Public Health.

The gentleman appointed will be required to devote his whole time to the duties of the office. The chief duties will be in connection with tuberculosis, but the successful applicant will also be required to assist in the general work of the Public Health Department under the supervision of the Medical Officer of Health.

The appointment will be subject to the provisions of the Council's Superannuation Scheme, and the successful applicant will be required to pass a medical examination.

Applications on forms to be obtained from the undersigned, accompanied by copies of not more than three recent testimonials, must be delivered at the Town Hall, Hammersmith, W.6, in envelopes, endorsed "Tuberculosis Officer," not later than May 12th.

Canvassing will be a disqualification.

HUGH ROYLE, Town Clerk.

City and County of Bristol.

ASSISTANT MEDICAL OFFICER OF HEALTH.

The Council invite applications for a whole-time Assistant Medical Officer of Health. Age not exceeding 40 years. Salary £500 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922.

The duties will consist principally of examination of children in the Council's Secondary, Elementary, and Special Schools, treatment in School Clinics, etc., but the officer appointed will also be required to work in all departments of the Medical Officer of Health of the City and Port.

Applications, which must be on a form provided for this purpose, should be accompanied by not more than three recent testimonials, and must be received by the undersigned not later than Monday, May 5th. Envelopes should be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify.

JOSIAH GREEN, Town Clerk.

Council House, Bristol.

April 12th, 1930.

Hospital of St. Cross, Rugby.

(114 Beds.)

Applications are invited for the posts of SENIOR and JUNIOR RESIDENT MEDICAL OFFICERS (males).

Candidates must be registered Medical Practitioners, and must be prepared to begin duties on May 1st. Salary for the Senior post at the rate of £150 per year. Junior at the rate of £100 per year, with board and residence in the Hospital.

Candidates are requested to state whether they are prepared to accept the post of Junior if not selected for the Senior office.

The appointments are for a period of six months only, at the end of that time the Junior will be eligible to apply for the Senior post, which then becomes vacant.

The Hospital is recognized by the University of London for the purpose of the M.D. and M.S.

Applications, stating age and qualifications, with copies of three recent testimonials, should be sent to me immediately.

W. COCKBURN, Supt. & Secretary

County Mental Hospital, CHESTER.

JUNIOR ASSISTANT MEDICAL OFFICER (male, single) wanted. Salary £350 per annum, with four annual increments of £25, together with furnished apartments, board, washing, and attendance. The last three increments are conditional on holding the Diploma in Psychological Medicine and for which a further £50 per annum is paid. Three months' study leave (D.P.M.) may be granted during the second year.

The appointment is subject to the provisions and privileges of the Asylums Officers Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to reach the Medical Superintendent on or before May 8th.

County Borough of Croydon.

PUBLIC ASSISTANCE DEPARTMENT.

APPOINTMENT OF RESIDENT ASSISTANT MEDICAL SUPERINTENDENT.

Applications are invited for the appointment of Assistant Medical Superintendent at the MAYDAY ROAD HOSPITAL.

Applicants should have held resident Hospital appointments and be experienced in Surgery, and the duties will include visiting of one of the Royal Colleges will be deemed an additional qualification. Candidates may arrange appointments by writing or by telephone (Thornton Heath 2380) with the Medical Superintendent, to see the Hospital and obtain further information as to duties, etc.

The gentleman appointed will be required to reside in the rooms provided for him at the Hospital, and will be given full board and attendance.

Salary £500 per annum. Emoluments valued at £140 for purposes of superannuation.

Applications, on forms to be obtained from the undersigned, together with copies of three recent testimonials, should be delivered to me at the address mentioned below not later than 12 o'clock on Friday, May 2nd.

Public Assistance Offices, Mayday Road, Thornton Heath, Surrey.

J. M. NEWNHAM, Town Clerk.

Royal Chest Hospital,

City Road, E.C.1.

(Royal Northern Group of Hospitals.)

Applications are invited for the following posts, vacant on May 1st:

RESIDENT MEDICAL OFFICER. The appointment is for six months, when re-election is required. Salary at the rate of £150 per annum, with board, residence, and laundry.

HOUSE PHYSICIAN. The appointment is for six months. Salary at the rate of £100 per annum, with board, residence, and laundry.

Applications, with copies of testimonials, should be sent to the undersigned, from whom forms of application, rules, and further particulars can be obtained.

GILBERT G. PANTER, Secretary.

Royal Northern Hospital, N.7.

Royal Manchester Children's HOSPITAL,

OUT-PATIENTS' DEPARTMENT, Gartside Street, MANCHESTER.

Wanted, for the Out-patients' Department, a SENIOR MEDICAL OFFICER (non-resident). He must be doubly qualified and on the *Medical Register*, and shall devote his whole time to the service of the Charity. Particulars of the duties can be obtained of the Secretary. Salary £300 per annum. The appointment is for one year, with a view to extension to a further period.

Applications, stating age and experience, and accompanied by copies of not more than five testimonials, to be sent to the undersigned at the Hospital, Pendlebury, Manchester, on or before May 6th.

By Order,
W. M. HUMPHRY, Secretary.

The Royal Eye Hospital,

St. George's Circus, Southwark, S.E.1.

HOUSE SURGEON and ASSISTANT HOUSE SURGEON required at the above Hospital. The appointment is in the first instance for a period of six months, with board and residence at the rate of £150 per annum: House Surgeon at the rate of £150 per annum: Assistant Surgeon at £100 per annum. Candidates must be registered Practitioners. Applications, with copies of three recent testimonials, should be sent to the Secretary at the Hospital not later than Monday, May 5th.

F. E. D'ALTON, Secretary.

Bristol Royal Infirmary.

Applications are invited for the post of HOUSE PHYSICIAN to Dr. A. T. Told. Salary at the rate of £60 per annum, with board, apartments, and laundry. Candidates, who must be duly qualified, to send in their applications, stating age, together with copies of not more than three testimonials, to the undersigned.

ELLIS C. SMITH, F.C.I.S., Secretary & House Governor.

Roxburgh County Council.

Wanted on June 2nd, LOCUM TENENS for Clinical Tuberculosis Officer, to take medical charge of 30 bed Sanatorium and domiciliary duties. Salary £10 10s. per week and travelling expenses. Apply, stating age and experience, to Dr. OLIVER, County Medical Officer of Health, County Rooms, Newtown, St. Boswells.

Park Prewett Mental Hospital, BASINGSTOKE, HANTS. (1,450 Beds.)

JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male).

Candidates must be registered and unmarried. Age not exceeding 35 years. Experience in the treatment of Mental Diseases and having been a House Surgeon in a General Hospital will be considered additional qualifications.

The appointment is subject to the provisions of the Asylums Officers Superannuation Act, 1909.

Salary £350, rising to £450 per annum, with board, furnished apartments, laundry, and attendance, valued for superannuation purposes at £180 per annum. An additional £50 a year is payable for the possession of a Diploma in Psychological Medicine.

Applications must be made on the prescribed form obtainable on request, from the undersigned, to whom applications must be addressed foolscap envelope, from the Medical Superintendent, to whom applications must be sent (marked A.M.O.), accompanied by three recent testimonials, on or before Saturday, May 3rd.

County Borough of Oldham.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH AND CLINICAL TUBERCULOSIS OFFICER.

Applications are invited for the post of Assistant Medical Officer of Health and Clinical Tuberculosis Officer for the above Borough.

Applicants must have special experience in Tuberculosis work.

The gentleman appointed will be required to devote the whole of his time to these duties and act under the direction of the Medical Officer of Health, and will be required to reside within the Borough.

Salary £750 per annum.

Applications, upon forms to be obtained from the Medical Officer of Health, Town Hall, Oldham, must be returned to him, accompanied by not more than three recent testimonials, not later than May 7th.

Canvassing in any form will disqualify.

JAMES B. WILKINSON, Town Hall, Medical Officer of Health.

Oldham.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY ASSISTANT PHYSICIAN.

Candidates must be Graduates in Medicine of a recognized British University, Fellows or Members of the Royal College of Physicians of London, and engaged in the practice of Medicine only, stating age, qualifications, and experience.

Applications, accompanied by copies of three recent testimonials, must be sent in by the first post on Wednesday, April 30th next, to—

J. C. BURDETT, Secretary.

April 17th, 1930.

Merthyr General Hospital, MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at the above Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed to the Secretary, Hon. Medical Staff, Merthyr General Hospital.

Applications are invited for the

post of RESIDENT MEDICAL OFFICER (male) at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains about 120 beds, is one of the Premier Provincial Hospitals in Scotland, and offers an especially good opportunities of training. Experience in all branches of the profession. Salary at the rate of £100 per annum for the first six months and £150 per annum for the second six months.

Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street, Dumfries, not later than

The Royal Infirmary, SUNDERLAND. (290 Beds.)

Wanted June 1st, HOUSE PHYSICIAN (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS, House Governor & Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of *HONORARY SURGEON*, for which a present Honorary Assistant Surgeon is a candidate. In the event of his election, there will be a vacancy for an HONORARY ASSISTANT SURGEON, for which applications are also invited.

Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, *or* Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver surgical courses of Lectures to the Nurses, and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, May 22nd. Candidates must attend the meeting of the Medical Council on Friday, May 23rd, at 4.30 p.m., and prior to that date call upon and *send copies of application and testimonials to each member thereof*. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, attend a meeting of the Board at 5 *p.m. on Tuesday*, May 27th, when the election will be made.

H. A. MADGE, Secretary.

Leicester Royal Infirmary.

HONORARY SURGEON.

A vacancy will occur on June 1st for an Honorary Surgeon, consequent upon the retirement, under the Rules, of Mr. Cecil Marriott, M.Ch., F.R.C.S., Senior Honorary Surgeon. Applications are invited for the post. Past and present members of the Assistant Honorary Staff are primarily eligible for election to full Staff appointments. The Senior Honorary Assistant Surgeon, Mr. R. S. Lawson, F.R.C.S., *is an applicant*.

HONORARY ASSISTANT SURGEON.

Under the above announcement, a vacancy is expected for an Honorary Assistant Surgeon. Candidates should be Fellows by examination of the Royal College of Surgeons of England, or Graduates in Surgery of one of the Universities of the United Kingdom of Ireland. A *grant of fifty guineas* annually is made for out-of-pocket expenses. Applications (*accompanied by 100 copies of testimonials*) to reach the undersigned by Monday, May 12th. The appointment will be made on May 14th.

Canvassing for appointments is *not* allowed.

HARRY JOHNSON,
April 14th, 1930. *House Gov. & Sec.*

London Jewish Hospital,
Stepney Green, E.1.
General Hospital. (108 Beds.)

Applications are *invited* for the following posts:—

RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board and residence. Appointment for six months.

JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence. Appointment for six months.

Applications, with copies of three recent testimonials, to be sent to the Secretary on or before Friday, May 16th. The successful candidates will be required to take up their duties on June 1st.

London Jewish Hospital,
Stepney Green, E.1.
General Hospital. (108 Beds.)

Applications are invited for the post of HONORARY REGISTRAR in the Ear, Nose, and Throat Department. The holder will be required to attend the Out-patient Department on Monday and Wednesday mornings, and to deputise for the Honorary Surgeons in the Department, and to perform operations when necessary. Applications, enclosing copies of three recent testimonials, should be forwarded to the Secretary at the Hospital on or before Friday, May 16th.

County Council of the West
RIDING OF YORKSHIRE.

MIDDLETON IN WHARFEDALE SANATORIUM.

The County Council of the West Riding of Yorkshire invite applications for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (male, unmarried) at the Middleton in Wharfedale Sanatorium, near Ilkley (300 beds). Salary £350, with board.

Further particulars and form of application can be had from the undersigned, by whom [illegible] together with copies of not [illegible] testimonials, must be [illegible] later than May 12th.

J. CHARLES McGRATH,
Clerk of the County Council.

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Applications are invited for the post of JUNIOR HOUSE SURGEON (male and unmarried). Salary at the rate of £125 per annum, with board, residence, and laundry.

The successful candidate will be expected to commence duties on May 15th.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded immediately to the undersigned.

FRANK JENNINGS, Secretary.

Hospital of St. John and
ST. ELIZABETH,
60, *Grove End Road*, N.W.8.

Applications are invited for the post of RESIDENT HOUSE PHYSICIAN (male). The appointment will be for six months from June 1st. Salary at the rate of £100 per annum, with full board. Applications, together with three testimonials, should reach the undersigned not later than April 28th.

F. DUDLEY HOBBS, B.A.,
April, 1930. Secretary.

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S. W. County. — Seaside Resort. About £600 p.a. Panel about 600. Fees 5/6 to 5/6, and up. Good house, 2 recep., 5 bed., garden, garage, etc., to rent.—No. 8558.

Kent.—Over £1,100 p.a. Panel 460. Appts. over £400. Opposition slight. Little midwifery. Fees 3/6 to 7/6. Good house, 6 beds., garden, etc.—*No. 8636.*

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London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8634.

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Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent *house and garden to rent.*—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

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13 LONDON, W. — Partnership in Practice about £2,600 p.a. in Western suburb. Panel 1,650. House (6 bedrooms) to rent. Premium 2/5ths share 2 years' purchase.

14 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

15 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 530. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

16 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. *Well-built house (6 bedrooms) to rent.* Premium one-half share 2 years' purchase. Scope for Surgery.

17 DEATH VACANCY. — DORSET. — Country PRACTICE nearly £1,100 p.a. Panel about 670. House (8 bed and dressing rooms), garden, garage, etc., to rent.

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31 EAST ANGLIA.—Assistantship, with view to Partnership, in Country Town Practice. Share worth just over £1,000 p.a. offered to suitable man (aged 30—35) at 2 years' purchase.

32 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

33 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

34 DURHAM. — Partnership in increasing Practice over £4,800 p.a. in seaport town. Panel 2,500. Suitable house (or rooms) could be obtained. One-fourth share at first at 1½ years' purchase.

35 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West Coast. Panel 290. House (5 bedrooms), with good garden, for sale or rent. Premium £1,500.

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55 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

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60 NEAR BIRMINGHAM.—Partner required *in middle-class Practice over £2,000 p.a., in good residential town.* Panel 280. House (8 bedrooms), garden, and garage, for sale or rent. Premium one-half share 2 years' purchase.

61 HAMPSHIRE. — Partnership in Practice about £2,100 in good residential district. Panel 607. Premium one-third share 2 years' purchase.

62 MIDLANDS. — Practice averaging over £1,700 p.a. in important Town. Panel 1,570. Specially built house (4 bed and dressing rooms) to be sold. Scope for increase. Price £2,250.

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9. DUNDEE.—Well-established PRACTICE in good residential area, offering large scope particularly for panel and midwifery. Income last year over £750 and increasing. Very well situated house, with ample accom. Price £2,800 or can be rented. Prem. £750 or near offer.
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12. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, producing £2,500 p.a., including panel of 1,804, and appts. worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
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14. WITHIN 40 MILES OF LONDON.—In a thriving Riverside and Hospital town (pop. over 40,000).—Old-established mixed-class and increasing PRACTICE worth over £2,300 last year, including panel of 1,600 to 1,700. House contains professional accommodation, 2 reception 4 bedrooms, bathroom, etc. Small garden and garage. Rent on lease £60 p.a. Premium £3,650, to include good book debts of £500, drugs, etc., and consulting room and surgery furniture.
15. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £[illegible] p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (3/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, 1 bathroom, etc.) Large garden and garage. Water laid on and gas part installed. Rent £50 p.a. Premium £1,400. Excellent sport.
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17. SURREY.—In a beautiful residential district within 40 miles of London (good train service) a small mixed-class PRACTICE worth about £600 p.a. and offering scope. Select panel of 200. Charming house with ample accommodation in very pretty grounds (tennis court, etc.) of 1¼ acres. Price, freehold, £3,500. Premium 1½ years' purchase.
18. SOUTH-WEST OF ENGLAND.—Old-established and increasing PRACTICE in pretty district 5 miles from Hospital town and within 10 miles of the sea. Income last year £1,489, including Union, etc. (£105) and panel of 780. Railway station near. Detached house (professional rooms, 2 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Rent on lease £45 p.a. Premium £2,100.
19. WITHIN FIFTY MILES OF LONDON.—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 538, and appts. worth about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Elec. light. Price for freehold £3,000. Premium £1,050. Exceptionally good educational facilities for boys.
20. LARGE UNIVERSITY CITY (WEST).—Good-class old-established non-dispensing PRACTICE worth last year £1,274, including select panel of about 350. Visits up to 21/-. Very little midwifery. Good house in best part of City, overlooking park, with ample accommodation. Vendor's freehold, but will be let on lease. Premium only £1,200.
21. PARTNERSHIP.—In a most desirable outlying residential suburb a suitable Partner (University Graduate, experienced, 30 to 35 years of age and married preferred) can acquire a share (producing at first about £1,200 p.a., but larger might be considered, with further shares up to a third at arranged intervals) in an old-established good mixed-class Practice, averaging over £10,000 p.a. Very good house, with ample accommodation, garden, etc., on rental. Premium 2 years' purchase. Short preliminary assistantship essential.
22. SOUTH-WEST OF ENGLAND.—GOOD HOSPITAL TOWN.—A one-half share in an old-established mixed-class PRACTICE is offered owing to the retirement of the Junior Partner. Gross cash receipts average £2,300 p.a., including good appts. Small panel. Low expenses. Commodious house, with garden and garage, rent £70 p.a. Premium 2 years' purchase. Vendor on staff of Hospital, and scope for surgery.
23. YORKS.—LARGE TOWN.—Very old-established middle and working-class PRACTICE, offering exceptional scope for increase. Income for last year £1,500, including panel of over 1,700. Visits 4/6 to 5/-. Conveniently situated house, with 2 reception, 4 bedrooms, etc. Rent on lease £56 p.a. Premium £2,250.
24. SOUTH DEVON.—PARTNERSHIP.—Attractive Town close to sea.—A half share in very old-established and rapidly increasing mixed general Practice. Average cash receipts last 3 years £2,727, last year £3,521. Panel of 1,130. Fees 3/6 to 21/-. Good house in its own grounds with ample accommodation. Price freehold £1,900, £1,200 on mortgage. Prem. £2,300. Cottage Hosp. and good scope for major surg.
25. PARTNERSHIP.—OXON.—Delightful residential district, near good town.—A one-third share (to commence with) in an old-established good mixed-class Practice, averaging for the past three years £1,540, and offering good scope. Panel of nearly 1,000. Fees 3/6 to 21/-. Choice of two houses at rentals of £100 and £50 p.a. Sport of all kinds. Premium 1 year's purchase.
26. LONDON, S.W.—Old-established middle-class PRACTICE, producing over £1,000 p.a., including small panel of 380. Fees 2/6 to 7/6. Mid. lately refused. Good corner house, with ample accommodation. Rent on lease £115 p.a. Premium 1 year's purchase.
27. MANCHESTER DISTRICT. — Old-established middle and working-class PRACTICE, worth last year about £700, including panel of 590, and capable of increase. Expenses small. Well-situated house, with 6 rooms in addition to professional rooms. Large garden. Price, freehold, £850. Moderate premium accepted.
28. SOUTH-WEST OF ENGLAND.—POPULAR COAST TOWN.—A one-third share in an old-established PRACTICE, having good surgical scope. Gross cash receipts average £4,200. Panel of 1,800. Suitable house available, on rental. Premium £2,250.
29. CAMBS.—Old-established Country PRACTICE, near good town, averaging for the past three years over £1,200 p.a. Panel of 870. Visits 5/- upwards, medicine extra. About 30 cases of midwifery from 2 to 3 gns. Nice house, with 2 reception, 6 bedrooms, etc., and garden. Rent on lease £80 p.a. Premium £1,800.
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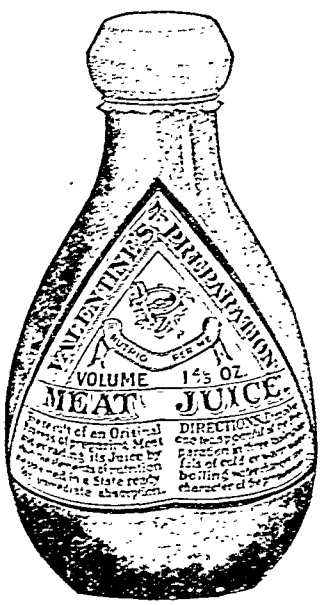
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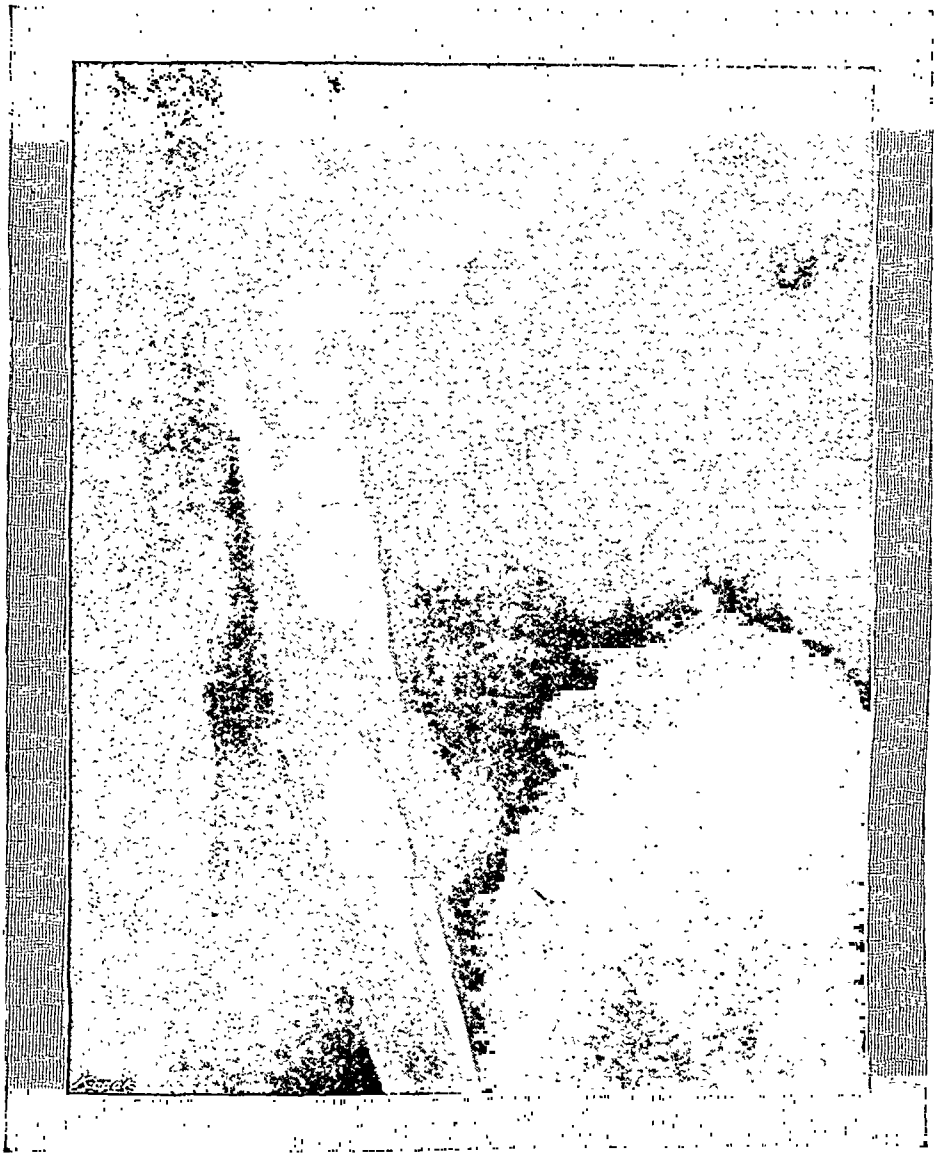
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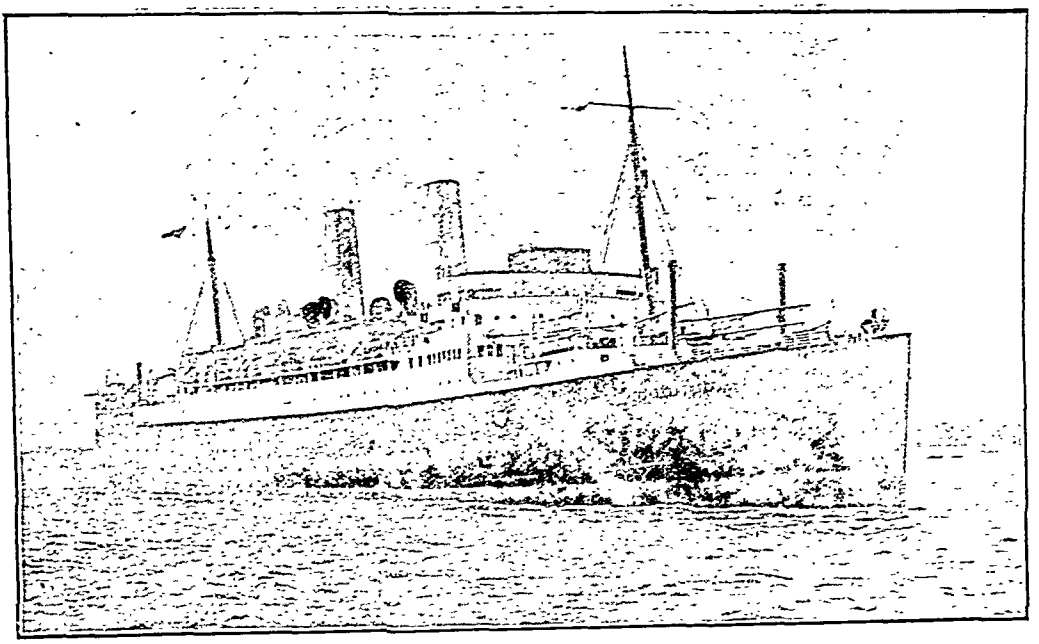
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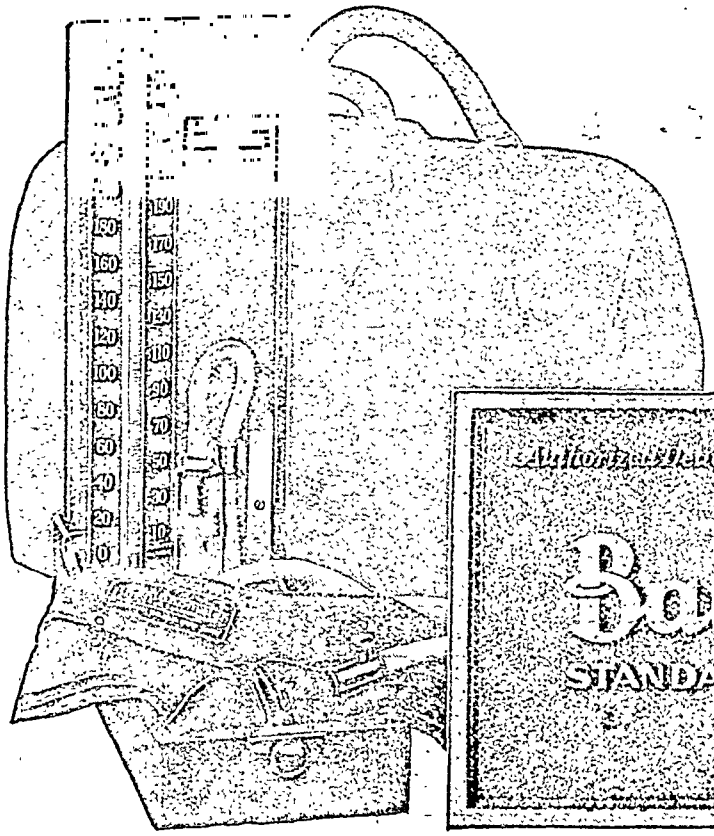
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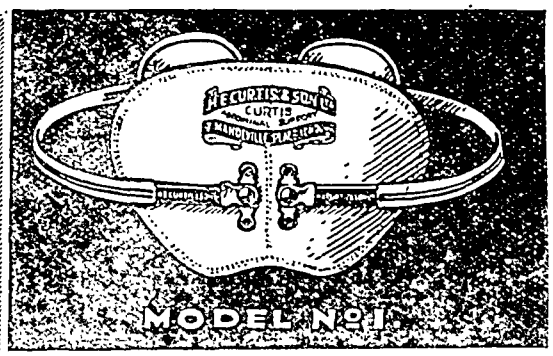


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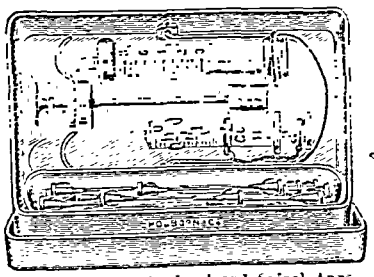
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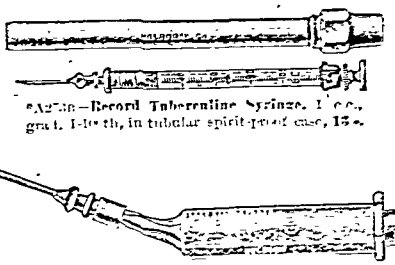
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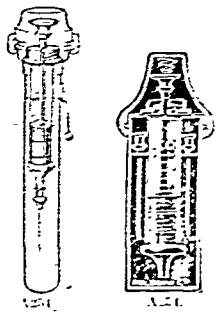
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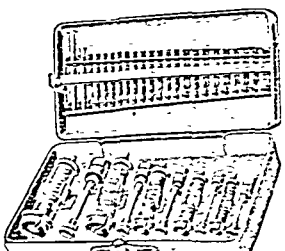
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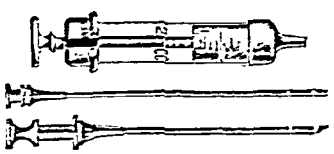
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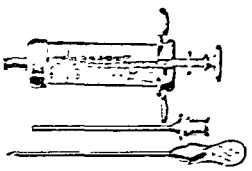
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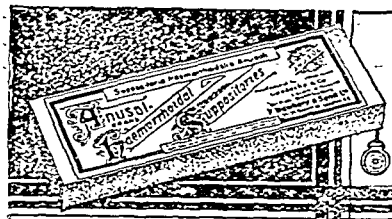
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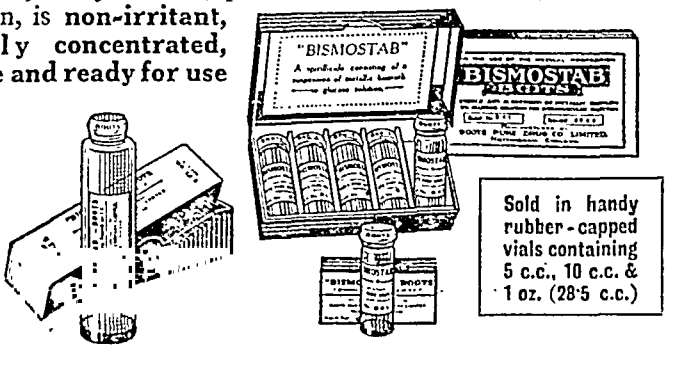
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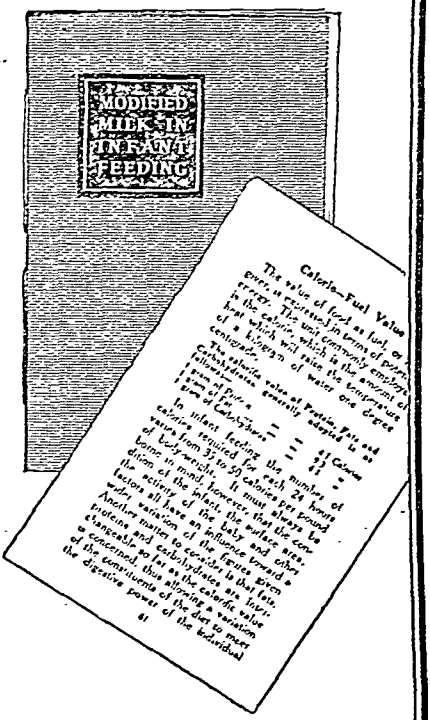
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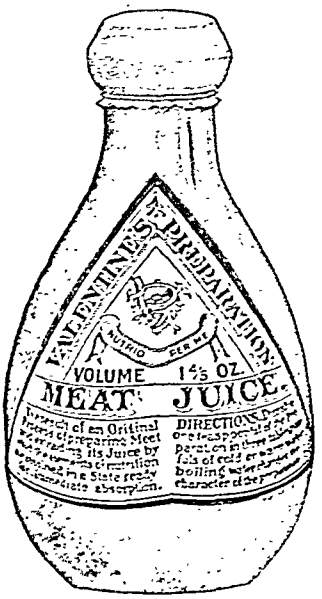
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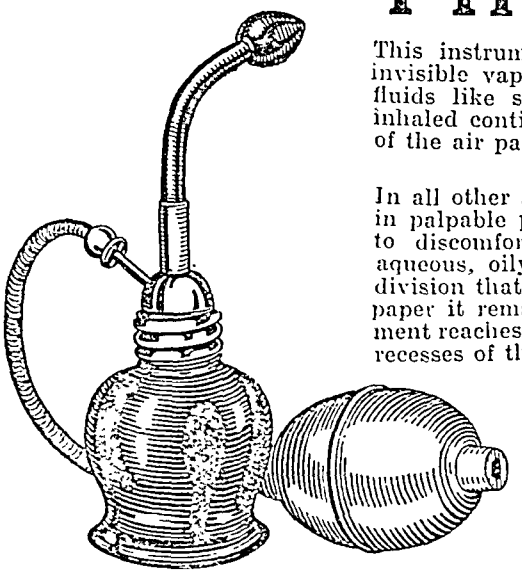
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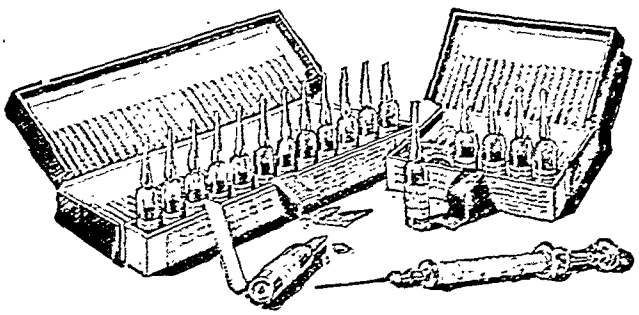
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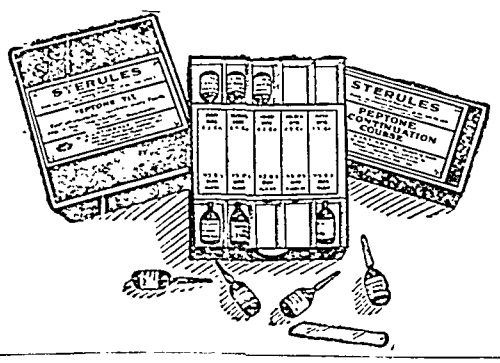
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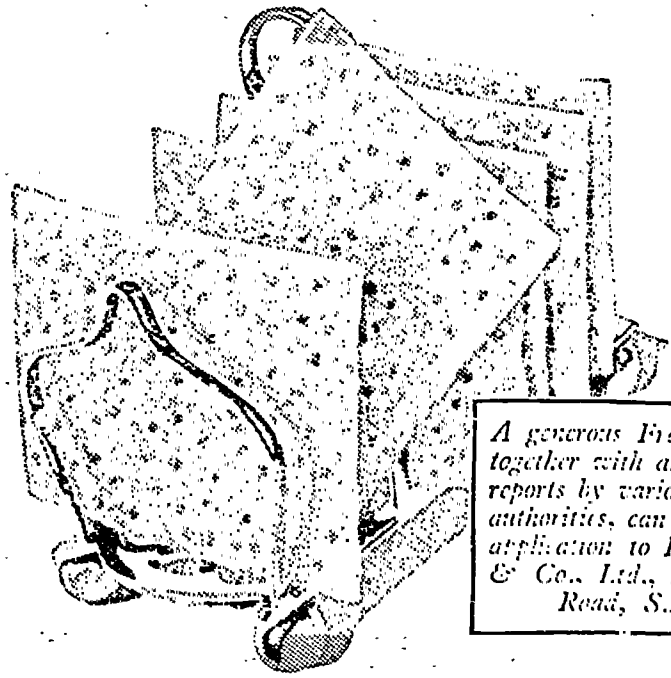
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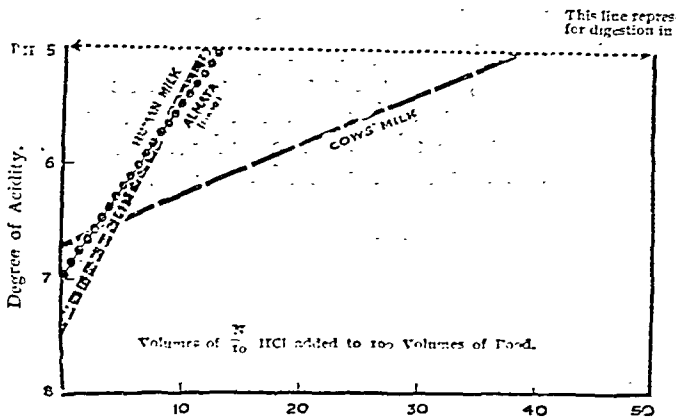
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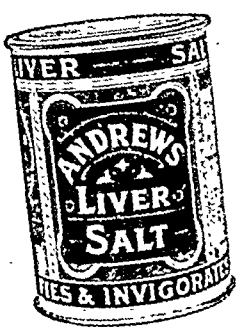
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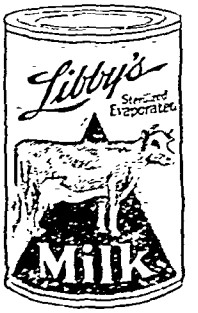
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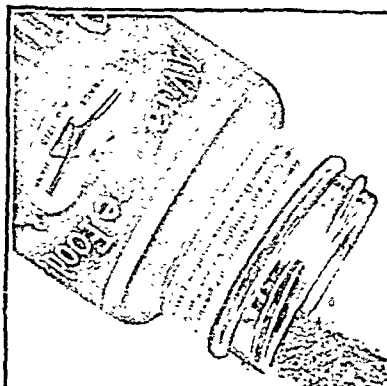
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DATE: A.D. 527—565 (Justinian Emperor)

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A Lecture
ON
TREATMENT OF MAMMARY CARCINOMA BY RADIATION.*

BY
SIR G. LENTHAL CHEATLE, K.C.B., F.R.C.S.,
SURGEON TO KING'S COLLEGE HOSPITAL.

THE two objects of this article are, first, to describe how pathological observation shows that the whole of the breast itself should be radiated in carcinoma of that gland, and, secondly, to describe the method I adopt in delivering interstitial radiation to a breast containing carcinoma. Before embarking on these two subjects it is essential to make some observations on radiation of carcinoma in general.

Biological Effects of Radiation.

Treatment of carcinoma by radiation is in an exceedingly tentative and experimental state. All careful workers upon the subject deplore exaggerated hopes of success in all examples of carcinoma.

The energy discharged from a needle containing 1 mg. of radium element is terrific. At present we are judging our results from the effects of doses that may be a great deal too large and administered for too long a period at a time. If little or no result is detectable from a given dose, larger doses are employed, when, for all that is at present known, smaller doses frequently delivered in short periods at frequently repeated intervals might be more successful.

If Moppett's observations on x rays of different wave-lengths are correct they open up the question whether x rays may eventually prove of greater value than radium. Moppett has isolated wave-lengths that retard and those that stimulate growth. A proper manipulation of the wave-lengths of x rays that retard growth may replace all other forms of radiation therapy.[1]

Boveri said that "normal cells produce malignant cells under the influence of x rays and radium and malignant cells in the same way (by means of x rays and radium) produce cells that are no longer able to live."[2] Radium emanation may also possess wave-lengths differing in the effects they induce. Boveri's statement would make the treatment of even a localized carcinoma a matter of anxiety were it not for the fact that the induction of carcinoma by means of radiation requires small doses spread over a very long period of life.

The success which external radiation has at present attained has been gained when the disease has been comparatively superficial and not deeply infiltrating, and also in the treatment of highly radio-sensitive tumours. Success of interstitial radiation has been attained when the carcinoma has been strictly limited to a localized area. In some instances, however, when these necessary provisions have been present, disappointments after external and interstitial radiation have arisen and damped the ardour of even the most enthusiastic practitioner. The failure in these instances may depend upon the error of underestimating the extent of the area that should be radiated. There are many other factors about which knowledge is at present incomplete; these are so little within our conception that all forms of radiation are thereby placed in a highly speculative position. When all the essential factors are known it must be hoped that they can be successfully applied or overcome as may be.

There remains the reverse side of the picture—namely, the application of radiation to those carcinomata that have spread to such a degree that the disease is no longer localized in the immediate area in which it began, but has spread more extensively in that area and has also reached other parts of the body. All means of radiation are at present unable to prevent the death of a patient in whom a carcinoma has reached these stages.

At this point it would be well to describe shortly what is meant by (1) external and interstitial radiation, and (2) the radio-sensitivity or radio-resistance of tumours.

*Delivered to the Yorkshire Branch of the British Empire Cancer Campaign, February 4th, 1930.

External and Interstitial Radiation.

The method of external radiation is the application of the source of radiation at a distance from the affected parts. The source of external radiation may be either x rays or radium. External radiation can be delivered by the so-called *radium bomb*. On the Continent, where treatment by means of radium bombs has been compared with that by x rays, opinion on the whole does not consider that one method possesses greater sterilizing powers than the other, and that x rays are more generally and more cheaply available.

The method of interstitial radiation is the direct application of the source of radiation to the tissues so that it is in actual contact with them. The source of interstitial radiation is either radium element or its emanation. The interstitial application of x rays is at present impracticable.

Radio-Sensitivity.

The radio-sensitivity of a tumour is manifested by its regression after a given dose of external radiation. When rapid regression of a tumour occurs in these circumstances it is a radio-sensitive tumour. From this point of view the treatment of highly radio-sensitive tumours would be solved were it not for the fact that these tumours are usually the most malignant, and therefore are accompanied by wide and rapid diffusion over the body. Lympho-sarcoma, carcinoma of the base of tongue, tonsil, and nasopharynx, and certain types of breast carcinomata belong to this category.

The rapid disappearance of a lymphosarcoma of the mediastinum or a transitional-celled carcinoma in the lymphatic glands of the neck after external radiation does not depend on the method of radiation so much as on the great radio-sensitivity of these tumours. Certain tumours that are not highly radio-sensitive regress under external radiation provided they are superficial and not too deeply infiltrating. The explanation of this fact is that the whole of these tumours is so close to the source of radiation that their resistance is overcome. Examples of squamous epithelioma and rodent ulcer come in this category. A highly radio-sensitive tumour will regress whether it be superficially or deeply situated, provided all its cells are within the range of external radiation. The cells of radio-sensitive tumours which cannot be reached by external radiation—that is, metastatic growths—are more likely to be inaccessible to interstitial radiation and also to the process of excision.

A tumour is described as being radio-resistant when it exhibits little or no signs of regression after it has been subjected to a given dose of external radiation. The subject of my paper—namely, carcinoma of the breast—as a rule belongs to this category. Nearly all malignant tumours, whether radio-sensitive or radio-resistant, regress on interstitial radiation, the reason being that the tumour cells of radio-resistant tumours are so close to the source of radiation that their resistance is overcome. External and interstitial radiation may induce the same changes or a modification of the same changes in the tumour, or the effects of an interstitial radiation may be more destructive in action.

Reaction of Surrounding Tissues.

While it is certain that the regression of a tumour after radiation depends on the effect of radiation on the tumour cells, there is also a considerable body of evidence that yet another factor involved is to be found in the reaction of the tissues in which the tumour lies. Dr. W. Cramer was the first to point out that the changes in the stroma which follow on radiation play an important part in the process which leads to the regression of the growth.[3] More recently J. C. Mottram has adduced experimental evidence bearing on this point.[4] He subjected transplanted tumours growing in mice to a dose of radiation known to be sufficient to produce regression of this tumour. He then transplanted these radiated tumours in gradually increasing intervals after radiation (one, two, three, four, five days, and so on) into fresh mice. He found that the tumours which had been removed and transplanted one or two days after radiation grew almost as well as a normal non-irradiated tumour, but if the irradiated tumours were

removed and transplanted after a longer interval their growth in the new mice was at first much less active, and eventually they failed to grow altogether. This experiment shows that it was the prolonged presence of the radiated tumour cells in the organism of a radiated mouse which contributed to the lethal effect of radium. He attributed the effect on the organism of the host to an effect on the blood vessels. Other evidence which may be quoted is that of Russ, who showed that preliminary radiation of the skin inhibits the growth of a tumour subsequently transplanted underneath the irradiated area. Moreover, it is claimed that the dosage of radiation necessary to render the malignant cells of a transplantable tumour inert *in vitro* is much greater than that required to produce regression of the same transplantable tumour *in vivo*.

When it is considered that a trespassing malignant epithelial cell possesses no blood supply of its own, and that its maintenance depends upon the amount of nourishment it can obtain from the tissues into which it has trespassed, then the metabolic, biological, and trophic changes in these tissues may be of vast importance. The detrimental effect upon the radiated tissues in which the malignant epithelial cells are present has been ascribed either to deprivation of blood supply or to the constricting effect of cicatricial tissue that kills the epithelial cells by the pressure it exerts. There are many reasons that appear to me to render these explanations untenable. I will mention only one which seems to me to show that normal tissues can resist, at all events temporarily, the extension of rodent ulcer. The lines at which rodent ulcers often become arrested correspond to the boundaries of nerve areas.[5] There is no mechanical, blood vascular, or lymphatic vascular arrangement that can arrest growth at these boundaries.

At present the precise relationship of this clinical observation to the failure of radiated tissues to allow the growth of transplantable tumours in them is not clear. The only merit of calling attention to the point is that it is another example of some inexplicable power possessed by the tissues of being able to resist the invasion of a growing epithelial tumour. I may say here that Dr. Cramer has produced experimental evidence that coincides with my clinical observations.[6]

RADIATION OF THE BREAST.

I will pass on to the first object of my paper and show how all my pathological investigations impress upon me the importance of exposing the whole breast to radiation, and not only that part of it containing the palpable lump. It appears to me illogical to radiate the axilla, subclavicular and supraclavicular regions, and intercostal spaces without radiating the whole breast itself. Clinical evidence alone cannot be trusted to indicate the area occupied by carcinoma in the breast. The only clinical feature that can possibly act as a guide to the area that should be radiated in the breast is the lump of disease in the gland.*

The lump in the breast consists of two parts that vary enormously in proportion to each other in different examples, and most frequently there is no clinical guide as to which of the two is predominant. The two parts consist of the primary epithelial neoplasm within ducts or ducts and acini, and the secondary epithelial invasion that has taken place from these sources. Frequently the lump consists chiefly of epithelial cellular invasion and a small area only of the primary growth. On the other hand, although the lump may be large the chief mass of it may consist of the primary epithelial neoplasm contained within normal but distended boundaries of ducts or ducts and acini. Even when the lump chiefly contains epithelial cells that are invading the connective tissue in the breast outside its ducts and acini, the primary epithelial neoplasia confined within normal boundaries may be more extensive than is generally supposed. It would be fatal if radiation failed to include all the primary epithelial neoplasia within its sphere of action as well as all the invading cells.

*Fallibility of clinical signs also applies to the axillary regions in fat and thin women. In thin women the failure to detect enlarged lymphatic glands in the axilla is an indication of importance that they may be free from carcinoma. It is not an infallible test, however, for, as I have pointed out, the axillary lymphatic vessels at the point where they pass over the upper limit of the first rib may contain carcinoma when all the lymphatic glands in the axilla are free from the disease. It is a rare condition.

Schimmelbusch's Disease.

At this point I must draw your attention to "Schimmelbusch's disease," unfortunately called by most people "chronic cystic mastitis." It is an important disease, because about 20 per cent. of all carcinomata begin in this lesion, which may be present in areas widely separated from each other in different parts of a breast.

The complete disease—that is, when carcinoma ensues—manifests itself in three decades in the patient's life. The first stage begins in the late 20 and early 30 years of life, and consists of a specific and typical desquamative epithelial hyperplasia. In this stage there is only the formation of cysts. The second stage corresponds to the late 30 and early 40 years of life; the desquamative process now begins to change, and when completed has actually changed into a benign epithelial neoplasm. At the end of this stage papillomatous tumours and tumours devoid of connective tissue elements fill and distend the affected ducts and acini. The third stage has been reached when usually at one part only the epithelial neoplasia has passed into the state of carcinoma, from which epithelial cells invade tissues outside the normal boundaries of ducts and acini. This fatal alteration in the nature of the epithelial neoplasia begins in the late 40 and early 50 years.

Schimmelbusch's disease may be confined to a small area of terminal ducts and their acini, or it may involve the whole tract of only one large duct, all its branches, and their acini. Moreover, two or more areas may be affected microscopically in the same breast. Clinical evidence of the extent of the area occupied by this disease is unfortunately very obscure and untrustworthy. From many points of view Schimmelbusch's disease is of practical importance in its relation to the area of a breast that should be radiated. It is true that it conforms to the usual experience in carcinoma of the breast in general—that is, that carcinoma as a rule appears in only one part of a breast, although epithelial cells may escape from the primary epithelial neoplasia in ducts and acini from many foci in that part.

I have specimens of only three breasts suffering from carcinoma arising in more than one segment. In two of these this multicentric origin occurred in Schimmelbusch's disease situated in widely separated parts. In the breast of the remaining specimen there is no sign of Schimmelbusch's disease.

Reasons for Radiating the Whole Breast.

It may be urged that, if carcinoma so commonly begins in only one part, why should it be so essential to radiate the whole breast? There are three reasons. First, it is impossible to say how far the escaped epithelial cells have disseminated in the breast; secondly, there may be other unknown parts of the gland which may contain epithelial neoplasia still confined within normal boundaries, and which in the course of time may end in carcinoma; and, thirdly, upon clinical examination alone it is rarely possible to know whether the carcinoma began in Schimmelbusch's disease.

It might be argued that, carcinoma having occurred in one place, epithelial neoplasia is not likely to become malignant in another. Dr. W. Cramer was the first to show that when a tar carcinoma has been removed from one part of a tarred cutaneous surface, a fresh focus of carcinoma may rapidly appear in another part that was previously not carcinomatous; and Dr. A. Leitch has shown that a limited application of tar which produces no immediate result may be followed at a long interval by carcinoma. These experiments convince me that it is not safe to leave in the breast an epithelial neoplasm that may be or may become malignant. From what I have said about the decades of life in which the sequence of events occur in the complete Schimmelbusch's disease, it can be understood that the occurrence of carcinoma in another focus of Schimmelbusch's disease in the same breast may take a considerable time in developing. Everything points to the necessity of radiating the whole gland, and not only the part that is clinically carcinomatous.

The remaining point that arises is that if radiation of the whole gland is indicated when Schimmelbusch's disease has ended in carcinoma, then why not radiate the whole of all cystic breasts as a preventive measure? I agree that if radiation is proved to be a successful form of treatment in epithelial neoplasm which is not malignant, the answer to this question would be that a complete radiation of all cystic breasts would be a wise precaution.

I have five breasts that bear upon the necessity of radiating the whole and not a part of the breast in carcinoma of that gland. The five breasts are rare examples of the disease. In all of them the whole epithelium of the breast in all the larger ducts, their branches, and their acini, has undergone epithelial neoplasia of a malignant-looking type. In the first specimen the whole of the epithelial neoplasia has undergone regression, and there is no microscopical evidence of carcinoma in the gland. The breast was thin, yet there was no clinical evidence of any pathological change in it.

The second specimen was also a thin breast. The whole of the epithelial neoplasia which looked malignant had undergone regression, except at one part where carcinoma had occurred and spread to a lymphatic gland in the axilla. The state of this lymphatic gland was the only clinical evidence that there was anything wrong with the breast.

In the third specimen the epithelial neoplasia has not undergone regression at any part, and from one duct, its branches, and its acini, epithelial cells have escaped and become diffuse over one quadrant of the gland, and also have heavily involved the rest of the body. The epithelial neoplasia, which affected the whole gland, gives all the morphological appearances of being of a highly anaplastic type. The extensive widespread diffusion of its cells confirms the morphological appearances. Clinical evidence of the carcinomatous part was abundant. There was no clinical evidence of the pathological state elsewhere in the breast.

In the fourth and fifth specimens the whole of the breast epithelium has been replaced by carcinoma, and the morphological appearances suggest that the whole of the epithelium of the breast has become carcinomatous. There was also widespread diffusion over the body, although the morphological appearances were not of so highly an anaplastic type as that in the third specimen.

There are many early examples in which radiation of the part of the breast that contains the lump would probably include the epithelial neoplasia in the terminal ducts and acini as well as the mass of invading cells that have escaped from it. There are no clinical signs that can indicate to the operator whether he is or is not dealing with such a localized distribution of disease.

Many examples occur in which radiation of the part of the breast that contains the lump would certainly not include either a dangerous-looking epithelial neoplasia in ducts and acini or the cells that have invaded the connective tissue of the breast outside them. For example, the lump in the breast illustrated in Fig. 1 was clinically recognizable as being a large one, and the enlarged glands in the axilla confirmed its carcinomatous state. There was no clinical evidence of extension of the dangerous-looking epithelial neoplasia in the ducts and acini that extended to the limits of the breast in the opposite direction. The epithelial neoplasia inside these ducts and acini has undergone gelatinous (colloid) degeneration, and there are also carcinomatous cells in the connective tissue outside them.

It may be said that it is exaggerating matters to found a system of radiation upon advanced cases of this kind. The answer to such a criticism would be: first, that there are no clinical signs by which a localized carcinoma can be distinguished from one that is diffuse; secondly, for all that is known the extent of the disease may have been always widespread and the lump a later manifestation: thirdly, evidence of wide extension is detectable only by microscopical examination; fourthly, there is no general correlation between the extent of the area occupied by the disease and the size of the lump or the length of time it has been noticed.

Clinically Undetectable Tumours.

I pass on to another clinical type of carcinoma of the breast which will arise in treatment by interstitial radiation. The example is as follows.

The woman was 42 years old, and a tumour she had noticed in her right axilla had been removed and proved microscopically to be carcinoma in a lymphatic gland. The woman was fat, and there was no clinical sign of a tumour in the breast. The right breast and the rest of the axillary glands were removed, and microscopical sections were cut of the whole breast. At the margin of the gland the carcinoma was discovered after many whole sections of the breast had been cut and examined; it conformed to the general contour of the gland, and malignant-looking epithelial neoplasia also occupied a wide tract in the affected duct and its branches.

In this particular instance the tumour in the breast could not be detected by clinical examination. It was discovered during a complete microscopical examination of whole sections. Belonging to this clinical type are those instances in which enlarged axillary lymphatic glands lead to the detection of a very small primary tumour in the breast after a careful clinical examination. Radiation of the breasts belonging to this type may be considered from the following point of view. The rapid and wide diffusion of the growth indicates the presence of a highly anaplastic tumour, and therefore probably one that is radio-sensitive and would regress under external radiation. I should regard this particular clinical type as being an example in which treatment by external radiation should be first attempted, for the following reasons. The cases are inoperable from the point of view of cure. Sometimes breasts belonging to this clinical type weigh 3½ pounds. Interstitial radiation of these breasts would necessitate a dose that might be constitutionally dangerous as well as difficult to apply, and there is the clinical indication that the tumours belong to the radio-sensitive type.

A hard, solid, defined lump beside the nipple, and making it lean to one side, is generally a sign that the chief part of the breast is occupied by carcinoma. The following case is of practical importance.

The woman, aged 42 years, was married; she complained of an intermittent spontaneous discharge of blood from the nipple, beside which was a lump pushing it to one side. Whole microscopical sections proved that the lump beside the nipple was a metastasis from a carcinoma originating in the terminal ducts and acini at the outer margin of the gland, the presence of which was not indicated by any clinical signs. There was also a dangerous-looking papilloma, the cells of which were still confined within normal boundaries in the main branch of the duct leading into the carcinomatous epithelial neoplasm in its terminal branches and acini. This was the source of the metastasis beside the nipple and the haemorrhage from that structure. The complete radiation of this breast could have offered the only chance of success by means of that treatment.

Paget's Disease of the Nipple.

The evidence revealed by the systematic examination of whole microscopical sections made from the underlying breast in Paget's disease of the nipple proves that carcinoma can be present in breasts without causing a lump or any sign of its presence, and without any axillary lymphatic glandular involvement. A proportion of breasts underlying Paget's disease of the nipple contain no carcinoma, but, so far as my experience goes, they all somewhere contain a dangerous-looking epithelial neoplasm, sometimes in a large duct and at other times in distended terminal ducts and acini in two or more parts of the breast. The only wise plan is to subject the whole of all breasts suffering from Paget's disease of the nipple to interstitial radiation if they are to be radiated at all. I am speaking of the treatment of the underlying breast only in Paget's disease of the nipple. I do not know whether the cutaneous disease is affected by radiation. External radiation by means of *x* rays was quite unsuccessful in one case of mine.

Radiation versus Radical Operation.

The axillary, supraclavicular, and intercostal regions and the subcutaneous tissue of the chest should be radiated in every case, however localized to the breast the disease appears to be. The radical removal of an operable carcinoma of the breast will always be safer than an inadequate radiation of the gland. By the radical operation the whole of the carcinomatous area will be removed with certainty, and so will all potentially dangerous epithelial neoplasia that may exist elsewhere in the breast. There are, indeed, many observers who believe that in the present state of knowledge and experience the surgeon who embarks upon interstitial radiation only of a breast in which carcinoma is possibly completely removable, is taking upon himself a great responsibility. This statement will meet with general agreement. On the other hand, the treatment of carcinoma of the breast by means of radium will be of

comparatively little use unless it is completely successful in the sterilization of the earliest phases of carcinoma in that gland. I have begun my investigations in this subject by buying radium of my own and using it in a tentative manner upon those patients with early carcinoma who refused excision and those who were physically unfit on account of age or decrepitude for an operation of great magnitude. The results of five cases I have been able to treat so far support the conviction of Mr. G. L. Keynes,[7] who believes that interstitial radiation is the operation of choice in the treatment of early carcinoma of the breast. So far as my experience has gone—and it has lasted only a few months—the tumours in the breast have melted away and have left no signs of their previous existence.

Secondary deposits in tissues outside the breast sometimes seem to be more obstinate in their resistance to interstitial radiation. It may not be that they are more radio-resistant. Their failure to disappear may be due to inefficient radiation. Radiation of secondary deposits is not so practicable, nor is it always possible to radiate safely and at the same time efficiently. The evidence thus gained may in the course of years lead to decisive conclusions. The final treatment by radiation will emerge after experience gained by the use of external radiation alone, of interstitial radiation alone, and by the combined use of external radiation and interstitial radiation.

Before considering the definite treatment of a carcinoma of the breast by means of radiation, the question arises whether a preliminary test of its radio-sensitivity by means of external radiation should be made. In the first place, if a tumour regresses rapidly after external radiation there is no need to consider the application of interstitial radiation, and excision is definitely contraindicated. The disease being highly radio-sensitive indicates that it is also highly anaplastic, and has therefore spread beyond all reach of surgical procedures. On the whole, the fact that so few carcinomata of the breast are radio-sensitive suggests that it would be wasting valuable time (about three weeks) to subject them to this preliminary test.

INTERSTITIAL RADIATION OF BREAST TUMOURS.

The present aims of interstitial radiation by means of the radium element are as follows: (1) To arrange the needles so that a small dose can be delivered evenly over the whole gland for a comparatively long time. (2) To arrange the needles so that the dose of radium element they contain cannot damage the skin to a great degree. Damage cannot be avoided in all instances. (3) To examine the blood before treatment so that the result of the examination may act as a standard by which subsequent changes may be estimated during treatment. The relevant data are the number of lymphocytes and polynuclear leucocytes, the shape, size, and number of red blood corpuscles, and the amount of haemoglobin. (4) The x-ray photograph of a chest may indicate the extent to which it may be involved by metastases.

The most difficult object to attain is the uniform distribution of the dosage. The breast is often a very mobile gland, and needles inserted with the breast in one position may be entirely disarranged when the breast assumes another position. The best method I find of controlling this disadvantage is to support a mobile breast in position while the needles are being inserted. An assistant holds it up in position by means of his thumbs and forefingers. Afterwards, if the breast is not kept in position by the needles themselves, it is controlled by means of carefully applied strapping.

The size of the breast affords another problem in interstitial radiation. A breast weighing 2½ to 3½ pounds consists chiefly of fat, and the glandular elements may be scattered in branches of connective tissue that are widely separated from each other by adipose tissue, or the gland may be more compact and an enormous collection of fat may surround it. There are no clinical means by which the arrangement can be discovered. The dosage of radium element to so large an area might be more than the blood could tolerate with safety unless it were administered piecemeal. In inoperable carcinoma of this kind I have adopted either this piecemeal treatment or I advise treatment by external radiation, hoping that the tumour may be radio-sensitive

Technique of the Method.

At the present moment I possess 80 milligrams of radium element, distributed in twenty-nine needles varying in length. The radium element is distributed as evenly as possible throughout their whole lengths. Their filtration is 5 mm. of platinum.

3 needles	8¾ cm.	of active length	containing	5 mg.	each.
6 ,,	7 cm.	,,	,,	4 mg.	,,
7 ,,	6 cm.	,,	,,	3 mg.	,,
7 ,,	4½ cm.	,,	,,	2 mg.	,,
6 ,,	3 cm.	,,	,,	1 mg.	,,

I make a great point of first fixing the ultimate position of the three longest needles. They are always inserted as the central needles of the bottom layer. They are too long

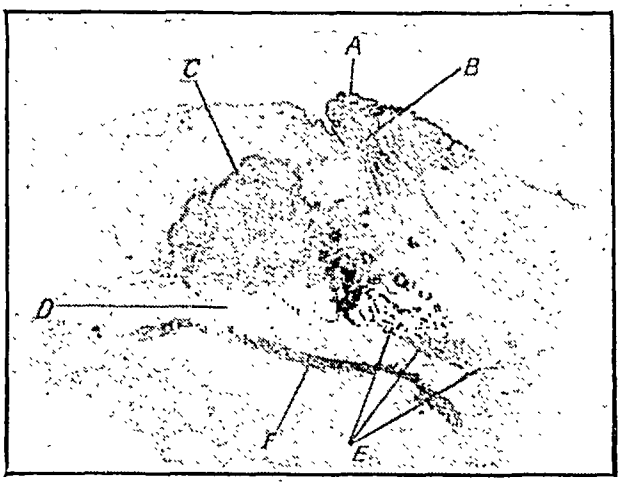


FIG. 1.—Whole microscopical section of an inoperable carcinoma of the breast. A, The nipple. B, The final position of the top of the radium needle inserted through the centre of the nipple. The radiation from this needle will include the disease if it has spread into the lymphatic vessels around the ducts or in the muscular walls of the ducts. In this specimen these regions are free from disease. C, The lump that was clinically obvious. D, The submammary connective tissue. E, The epithelial neoplasia contained in ducts and acini which looked malignant and in parts had undergone gelatinous (colloid) degeneration. F, The pectoralis major.

and slender to place in position without the aid of trocar and cannula. I have three of the latter. I introduce them and keep them in position while I insert the rest of the bottom layer of needles. All the needles in the bottom layer are inserted parallel to each other in the posterior part of the breast, so that subsequent radiation will include the posterior part of the breast, the submammary connective tissue, and upper fibres of the pectoralis major muscle.

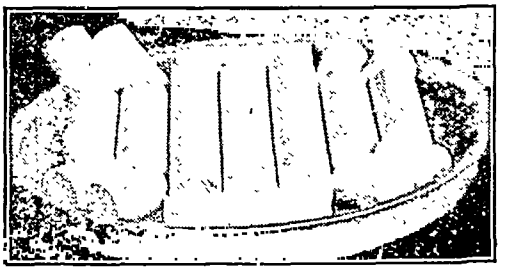


FIG. 2.—The arrangement of the bottom layer of needles in large inoperable case of carcinoma of the breast.

In the next layer the needles are arranged parallel to each other and at right angles to the bottom layer. Whether three layers of needles are inserted depends upon the size of the breast. The centre of the nipple is perforated by a needle which is left in such a position that the situation of its eye corresponds to the base of that structure. Special attention is paid to the lump by passing additional needles through it and around its circumference. Lastly, the three long needles are passed into the three cannulae, which are then withdrawn, leaving the needles in position.

In order to help me gauge the number of needles and the position they should occupy I adopt the following method. I measure the circumference of the breast and mark the measurement on a clay surface. I have twenty-nine cylindrical blocks of wood which correspond in length

and circumference to the area of radiation of each of my needles. The size of these blocks of wood represents an area of 1 cm. in all directions. By arranging these blocks of wood I can estimate very nearly the number of needles I shall require, their position, and their distances from one another.

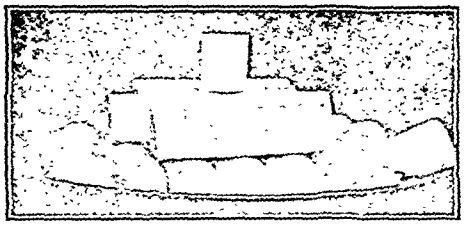


FIG. 3.—The second tier of needles arranged at right angles to those in Fig. 2, and the position of the needle in the central position among the upper ducts.

Figs. 2 and 3 represent the position of the needles in a recent attempt I have made to radiate the whole of a large breast that contained an inoperable carcinoma. The breast was so large that all my needles were employed upon the breast alone. The disease that had spread into other regions was radiated at a later time. As experience proceeds I am more and more tempted to fix the position of the needles by a preliminary insertion of cannulae. Fig. 2 represents the distribution of the bottom layer of the blocks, and Fig. 3 the distribution of the upper layer and the position of the needle inserted via the nipple (see B, *Fig. 1*). The blocks representing the distribution of the needles to the tumour in the breast are not shown.

Turning to interstitial radiation alone in the treatment of an excisable carcinoma in the breast, the problem seems to me to resolve it-elf into two chief questions: (1) Can a whole breast be efficiently radiated by this method? (2) Will time prove whether the regressions of the tumours are permanent?

Turning to the treatment of an excisable tumour, there can be no doubt that the properly conducted operation removes the disease, the breast, and a great deal more tissue than is necessary if the disease be completely limited to the breast, a state of affairs that is unrecognizable clinically. So far as subsequent microscopical examinations, together with clinical histories, can prove the existence of such localized carcinomata, I consider that tumours of this kind have been completely excised.

Finally, I desire to pay my tribute of gratitude to the pioneer work of Mr. G. L. Keynes,[7] to which I have already alluded, and to the work of the staff of Westminster Hospital.[8] I owe Dr. W. Cramer my thanks for his kind assistance in the experimental evidence contained in this article.

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THE MECHANISM AND TREATMENT OF PROSTATIC OBSTRUCTION.*

BY

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THE French urologist Leguen recently remarked that in the domain of urology the mechanical element plays an unimportant role, and that it is to the dynamic element that we must devote our attention if we wish to understand why an organ has ceased to function satisfactorily. There is no better example of this than that supplied by a study of the pathology of hydronephrosis. For years we have been trying to explain cases of hydronephrosis mechanically, and often we have been sorely puzzled because, although we could find a mechanical obstruction to the passage of urine in a great number of cases, there were others in which, search as we might, no obstruction could be discovered. Abnormal renal vessels, adhesions around the ureter, and ureteric strictures were pressed into the service without avail; there still remained cases of hydronephrosis that could not be explained. And then, with a change in our mental attitude and an increase of refinement in our methods of examination, it became apparent that the structural alterations in the kidney, known as hydronephrosis, might be the effect of a disordered function of that organ. By pyeloscopy it was shown that a disturbance of the peristaltic reflex, that propels the urine from calyces to pelvis, and pelvis to ureter, might lead on to the development of a hydronephrosis, and that, in the words of Leguen, dynamics rather than mechanical obstruction explained its etiology.

It has occurred to me that it might be interesting to apply the lesson that we have learnt from hydronephrosis to the study of *prostatic obstruction. Is it possible that* in addition to the mechanical there is also a dynamic or neurogenetic factor in the causation of retention following prostatic enlargement? The subject is too intricate to allow of its full discussion in this short paper, but it will nevertheless be of interest to touch on a few salient points. As an introduction it will be advisable to deal first with the mechanical theory of prostatic obstruction.

The Mechanical Theory.

On one point all authorities agree—namely, that no relation exists between the degree of enlargement of the prostate and the severity of the symptoms it occasions. Formerly an attempt was made to explain this anomaly by blaming the middle lobe. It was said that when retention was caused by a prostate which on rectal examination felt only slightly enlarged, the retention was the result of a hypertrophied middle lobe that was pressed down on the internal meatus in the manner of a ball-valve. But a more careful study of cases of prostatic obstruction has shown that the middle lobe is of less importance than was formerly supposed, and that in a great many cases of retention it does not exist. Moreover, as Swift Joly has pointed out, the type of micturition that occurs when an undoubted ball-valve exists, say, in the shape of a pedunculated papilloma growing at the bladder neck, is quite different from that observed in cases of prostatic obstruction. In these true ball-valve cases micturition is either impossible or else unimpaired: there is never, as with prostatic enlargement, only a moderate degree of difficulty.

The ball-valve explanation of retention being unsatisfactory it is necessary to find another. Many theories have from time to time been put forward, but to my mind the most satisfactory is that published by Swift Joly in the *Proceedings* of the Royal Society of Medicine of 1923-24. This theory aims at explaining the retention that follows enlargement of the prostate by the ordinary laws of hydrostatics, but in order that it may work two conditions must be present. The first condition that must be satisfied is that there exists an intravesical projection of the growth which raises the internal meatus above the level of the bladder base; the second, that the tissues are sufficiently *soft and free from infiltration to allow of their being* moulded by slight alterations of intravesical pressure. Granted these conditions, Swift Joly explains retention by the action of urinary pressure on the intravesical projection. He points out that the increase of pressure caused by contraction of the bladder is exerted at right angles to its walls. It is therefore directed downwards and inwards towards its axis—that is to say, towards the

* A paper read before the West Lancashire Branch of the British Medical Association.

urethra. This pressure can be resolved mathematically into two components—a horizontal and a vertical, the horizontal acting at right angles to the course of the urethra and the vertical parallel to it. The horizontal component is directed from all sides towards the upper part of the urethra and tends to close this tube. In Swift Joly's words, "It has exactly the same effect as if an elastic band was stretched round the intravesical projection of the prostate, and the amount of compression that the urethra sustains is directly proportional to the tension and thickness of the band, and inversely proportional to the resistance of the prostatic tissue to distortion." The constricting force, of course, depends on two factors—namely, the intensity of the intravesical pressure and the size of the intravesical projection.

So far we have considered the intravesical projection in its simplest form—namely, as a cone-shaped swelling with the urethra opening at its apex. But this is not the usual form of intravesical prostate. As a rule the urethra opens into a hollow in the cone, which Joly aptly likens to the crater of a vulcano. Now since there is fluid on each side of the rim of this crater the constricting force is partially balanced by the presence of the fluid within the crater itself. It is therefore only the closed urethra below the level of the crater that is subjected to the full action of the constricting force. For this reason the effectiveness of an intravesical projection in causing retention depends on the height of the closed portion of the outlet (see Fig).

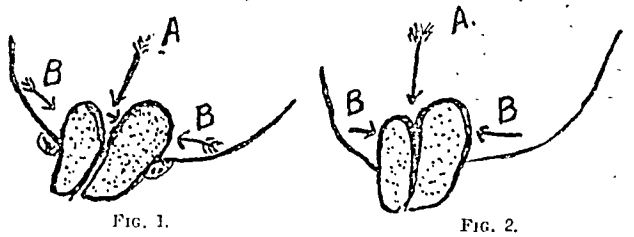


FIG. 1. FIG. 2.

Swift Joly's Theory of Prostatic Obstruction.

FIG. 1.—Intravesical projection, open variety.

FIG. 2.—Intravesical projection, closed variety. A, Longitudinal component acting along urethra. B, Transverse component acting across and compressing the urethra.

Swift Joly's ingenious theory of the mechanism of prostatic obstruction explains many of the anomalies we encounter. It helps us to understand why the size of the prostate is of so little importance compared with its form, and it does this without having recourse to a middle lobe. It also shows that it is the height of the intravesical projection that is the important factor in the production of difficulty, and more particularly the height of the "closed" portion of the projection. If the lobes of the prostate are separated by such deep clefts that much of the intravesical projection remains open, the greater part of it will be ineffective and little difficulty will result. If the bladder outlet is surrounded by a continuous ring of prostatic tissue and is easily closed by lateral pressure the difficulty will be great.

Will Joly's mechanical theory of prostatic obstruction explain all the cases we meet with in practice, or will it be necessary, as Legueu asserts, to fall back on a dynamic factor? Before attempting to answer this question it will be advisable to describe as briefly as possible the dynamic theory of prostatic obstruction.

The Dynamic or Spasm Theory of Obstruction.

As long ago as 1902 Janet called attention to the fact that the act of micturition is subject to certain inhibitions that may be regarded as normal. It is well known that to a man with the penis in a state of erection micturition is impossible. This is not due to the fact that the prostate is congested and swollen (there are many conditions associated with congestion of the prostate in which micturition is only slightly interfered with), but to a spasm of the sphincters and an inhibition of bladder contraction. In addition to this genital inhibition there exists also a reciprocal inhibitory action between the bladder and the rectum. A loaded rectum causes difficulty in micturition, and, conversely, a distended bladder difficulty in defaecation, the action being through the central nervous system, and not, as has sometimes been supposed, by direct pressure. These reciprocal inhibitory actions are normal phenomena, and serve to illustrate how easily micturition may be rendered difficult or impossible by the action of afferent impulses on the centres in the cord. Li Virghi, who is the chief exponent of the dynamic theory, has made use of these inhibition phenomena to explain the difficulty in micturition that is associated with an enlarged prostate. To him the enlarged prostate is the starting point of afferent impulses which produce reflex spasm of the internal sphincter. According to his view the retention produced by prostatic enlargement could be cured by any procedure that threw out of action the sphincter, even if it left the prostate *in statu quo*.

When we examine this spasm theory critically we find it difficult to accept as a complete explanation of the retention caused by prostatic enlargement. In the first place, the retention of hydronephrosis, with which we started, does not provide a true parallel to that which accompanies enlargement of the prostate. In the case of the kidney no mechanical explanation of the dilatation of the renal pelvis is available, whereas for the bladder we have a satisfactory theory of obstruction. Moreover, as Joly has pointed out, a persistent spasm of the bladder sphincter should lead to organic changes in that structure which have not been found to be present. The spasm theory is merely an attempt to provide an explanation of certain anomalies for which we have already obtained a satisfactory explanation along mechanical lines.

But although spasm cannot alone be responsible for the retention of prostatic enlargement, it may still be regarded as a contributory factor in its production. Everyone who has had under his care a patient showing signs of prostatic obstruction must have been struck by the wide variations that occur from time to time in the severity of the symptoms. Not only does the difficulty of micturition vary at different hours of the day, but it is subject to periods of improvement and aggravation. It is probable that the vascular state of the prostate accounts for some of these fluctuations, and that the increased difficulty that is usually noted on rising in the morning is due to congestion following long repose in the recumbent position; but it is unlikely that changes in vascularity are alone responsible for all the variations in the severity of the symptoms. A medical patient of mine told me recently that he had found that there existed a definite connexion between the hydrogen-ion concentration of his urine and the frequency and difficulty of his micturition. He found that he could obtain relief when suffering from increased frequency by taking large quantities of alkalis. In his opinion an acid tide was the cause of his nocturnal frequency, and in order to combat it he took 20 grains of sodium bicarbonate before retiring to rest. If his observations are correct, the most likely explanation of the phenomenon is that the more highly acid urine provoked a spasm of the sphincters. That spasm may be a factor in the causation of symptoms is also supported by the experience of some urologists that a temporary improvement in the micturition of a prostatic may be obtained by the instillation of cocaine or novocain into the posterior urethra. Warm baths may also act by relaxing spasm as well as by diminishing prostatic congestion. It is also possible that the amelioration in symptoms that sometimes follows the use of such treatment as diathermy applied through a rectal electrode, moderate doses of x rays, and high-frequency currents is the result of an action on the spasm rather than on the size of the prostate. Certainly in those cases that have come my way which have responded to these measures I have never been able to detect any alteration in the appearance or dimension of the prostate after treatment.

The most probable explanation of retention in cases of prostatic enlargement is therefore that there exists a constant mechanical factor in the enlargement of the prostate, a variable one in its state of vascularity, and a third variable neurogenetic factor in the tendency to spasm of the internal sphincter. With this working hypothesis in our minds we will now turn to the question of treatment.

Treatment.

The treatment of any disease, if it is to be rational, must be based on a clear appreciation of its pathology. It is for this reason, and because I have the impression that although prostatic surgery has made great progress during the last twenty years it runs the danger of becoming too stereotyped, that I have discussed at some length the mechanics and dynamics of retention. There is a tendency in some quarters to regard the fact that the gland is enlarged as the all-important point, and as a consequence its removal as the primary object of treatment. In my opinion this view of prostatic enlargement and its treatment is a narrow one, and I shall try to look at the subject from a slightly different angle.

A patient with commencing prostatic obstruction is not unlike one with mitral stenosis. The bladder, like the heart, responds to the obstruction by hypertrophy of its walls. For a time complete compensation may be maintained. There is always, however, the danger that a gradual dilatation may occur, or else that some accident may precipitate a complete breakdown in function. For this reason the patient who is suffering from mitral stenosis or prostatic obstruction must be put on a careful regime, and kept under constant medical supervision, so that the earliest signs of dilatation may be detected, and the accidents that are likely to aggravate his troubles guarded against as much as is possible. It is therefore dilatation of the bladder and embarrassment of the kidneys, rather than enlargement of the prostate, that should preoccupy the medical man who is called upon to look after a patient with an enlarged prostate.

Fortunately, the man with prostatic obstruction is in a better position than the sufferer from mitral stenosis, in that his lesion is amenable to surgery, and a failure to intervene when this is indicated is a fault in treatment even more disastrous than that of intervening when it is not strictly necessary. To some medical men the surgery of prostatic trouble is synonymous with the word "prostatectomy," for the success of that operation has so impressed us that we tend to regard it as the beginning and end of treatment. Now, although for a large number of our patients total removal of the obstructing gland is the best and possibly the only measure available, there are others who neither require, nor should be subjected to, this ordeal. It is therefore our duty to avoid the temptation to fall back on a stereotyped treatment and to sort out those cases which can only be cured by prostatectomy from those that are amenable to less drastic measures.

To furnish a complete catalogue of the types of prostate that may cause obstruction would be to expand this paper to impossible lengths. However, it will be a sufficient approximation to the truth if we divide obstructing prostates into six big groups, the first five of which are glandular in origin, and the last fibrous.

1. Cases showing considerable enlargement of the lateral lobes.
2. Cases in which there is a marked intravesical projection of the so-called middle lobe.
3. Cases that are a combination of 1 and 2.
4. Cases in which cystoscopy reveals an obstruction of the bladder neck by smaller masses that in all probability originate in the subcervical and subtrigonal mucous glands described by Albarran.
5. Malignant prostates.
6. Fibrous bar formations.

It is obvious that no standardized treatment can be meted out to such varied needs, and that, in the hackneyed words of the textbooks, each must be treated on its own merits. Of malignant prostates I intend to say nothing, except that the chief indication is to deal with the obstruction and to treat the growth by means of radium. For Classes 1 and 3, where the total enlargement is considerable, prostatectomy is usually indicated, since any other measure is likely to produce an effect that is temporary or incomplete. In Class 2 total prostatectomy may also be the operation of choice, but I have had cases in which a permanent cure has been obtained by removing only the enlarged middle lobe and leaving the rest of the prostate *in situ*. It will be remembered that, according to Joly's theory, it is the height of the closed portion of the intravesical projection that is the determining factor in causing obstruction. For this reason it is of great importance in such an operation to remove not only the free portion of the middle lobe that projects into the bladder but also a V-shaped segment at its base. If the projection is a large one this is best done by open operation, and in order that the V may be cut right down to the beginning of the urethra without causing haemorrhage, a cold cautery knife may be used with great advantage. If the projection is inconsiderable the whole operation may be done by means of a large electrode working through an operating cystourethroscope.

Cases belonging to Class 4, in which cystoscopy reveals the presence of glandular elevations on the posterior portion of the vesical outlet, are particularly suitable to perurethral methods. Perhaps there are no patients in the whole of genito-urinary practice that have been a greater puzzle to the surgeon who is not an expert in cystoscopy and urethroscopy than those belonging to Classes 4 and 6. They complain of all the symptoms that are usually associated with prostatic enlargement, and yet, when examined per rectum, no increase in the size of the gland can be detected. It was for this type of case that the French invented the term "prostatisme sans prostate", but the name is a bad one, for although rectal examination may reveal no enlargement, cystoscopy always shows changes at the vesical outlet. The region to which the cystoscopist must pay chief attention, if he is to find the clue to diagnosis, is the posterior half of the internal meatus. Normally, when viewed through a cystoscope the sphincteric margin presents a regular, slightly concave outline in its upper and lateral parts, but below, where it merges with the trigone, it lacks definition. In other words, the shape of the normal margin is that of a horseshoe stood up on its points. In the type of case we are considering the posterior portion of the margin (that which lies between the horseshoe points) instead of being concave is convex. This is due to the existence of a definite ridge which marks off the surface that slopes down into the urethra from that which merges with the trigone. This ridge is present whether it be glandular as in Class 4, or fibrous as in Class 6, and the steeper the slope down into the bladder the more likely is there to be difficulty in micturition. A differentiation between Classes 4 and 6 may be difficult, but in the fibrous type of "bar" the thickening of the posterior lip is smooth and uninterrupted, and the distance between it and the verumontanum diminished. Other points useful in differentiating fibrous from glandular bars are the frequency in the former of a history of old prostatitis, and the commencement of the trouble at an earlier age than is usual with prostatics. A urinary infection is frequently associated with it.

There can be no doubt about the importance of being able to recognize these cases of prostatic "bar." The surgeon who fails to diagnose them, and attempts by suprapubic operation to carry out an enucleation, finds that he has set himself an impossible task. After a vain struggle to find an enucleable layer he is finally compelled to dig the gland out piecemeal with scissors. And yet, if the condition is recognized before operation and suitable measures employed, the results of treatment are excellent. In the glandular type the ridge is best destroyed by diathermy, applied either through an operating cysto-urethroscope or else by means of the diathermy punch. In the fibrous type the same treatment may be used, but not infrequently the condition yields to such simple measures as dilatation of the bladder neck by means of bougies, instillations into the posterior urethra, and prostatic massage. In any case, whether dilatation or diathermy be used, the patient is saved all the distress of a major operation, and his sojourn in hospital is cut down from a month to a week.

An objection may be raised that although these cases of obstruction from minor forms of enlargement exist, they are so rare that total prostatectomy is the only operation that need be considered. In my experience this is not so, for on looking through my records I find that an increasing number of cases of prostatic obstruction are becoming amenable to perurethral methods of treatment. It is for this reason, and because of the excellence of the results obtainable at a minimum cost to the patient, that I have insisted that the treatment of prostatic obstruction has

become too stereotyped. A distrust of tinkering and a desire to be thorough is characteristic of British surgery, but the mortality rate of total prostatectomy is still too high to allow of our being content with our present position.

Another argument, in addition to that of "tinkering," has been urged against operations that do not entail the complete removal of the prostate—namely, that some 11 per cent. of seemingly innocent enlargements contain foci of malignancy. But this argument presupposes that prostatectomy eliminates the possibility of subsequent malignant disease, which it does not. Enucleation leaves behind sufficient prostatic tissue to allow of a recurrence of malignant disease, and although the risk may be diminished by the operation, it is never eliminated. Moreover, the increased danger of prostatectomy more than counterbalances any slight addition to the risk of malignant disease that a partial operation may have entailed.

Conclusions.

In the foregoing paper I have attempted to make a broad survey of the mechanism of prostatic obstruction and to pick out some of those points which have appeared to me to be of importance. I have tried to shew that whilst a dynamic theory may account for the retention of a hydronephrosis, spasm of the vesical sphincter is a contributory rather than a primary factor in the causation of a prostatic retention. The explanation of retention that I have found most satisfying is that there exists a constant mechanical obstruction acting along the lines suggested by Swift Joly which is supplemented by the variable factors of congestion and spasm.

In discussing treatment I have emphasized the importance of treating each type of prostate on its own merits, and have called attention to the value, in selected cases, of such operations as the removal of a middle lobe and of perurethral diathermy.

PUERPERAL SEPSIS.

AN INVESTIGATION REGARDING CONTAGION, AND THROAT CARRIERS OF THE STREPTOCOCCUS HAEMOLYTICUS.

BY

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THE respective parts played in the production of puerperal sepsis by contagion and infection from throat carriers of haemolytic streptococci have been investigated at the Princess Mary Maternity Hospital, Newcastle-on-Tyne. Outbreaks of pyrexia and definite sepsis occurring from time to time among "clean" cases, caused much anxiety and demanded investigation.

In addition to its own booked cases, the hospital receives patients from a very large area, sent in by doctors on account of puerperal sepsis, difficulties arising during or immediately after labour, abortions, and so on. Many of these cases, when admitted, are "suspect" as regards infection, and many are frankly septic. The figures for 1929 were: puerperal sepsis, 108; "suspect," 302; abortions, 280. Patients requiring Caesarean section are not included, nor are those patients suffering from pyelitis and other medical conditions which were admitted during pregnancy from the ante-natal department, or sent in by doctors. Many of the "abortion" cases were septic or developed temperatures after admission.

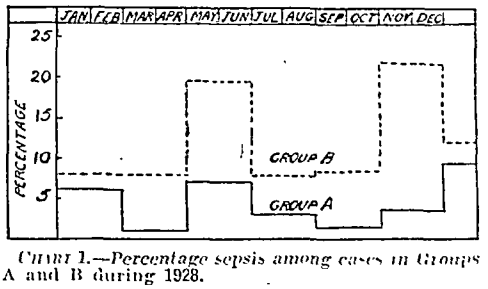


CHART 1.—*Percentage sepsis among cases in Groups A and B during 1928.*

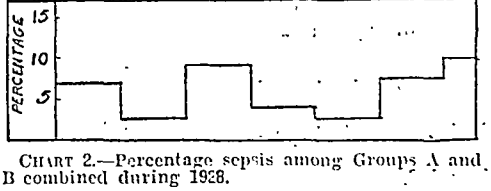


CHART 2.—Percentage sepsis among Groups A and B combined during 1928.

The existing system had certain obvious defects. (1) All cases, whether suspect or septic (except Caesarean sections) were delivered in the labour ward. (2) The isolation department, consisting of 9 beds, was unequal to the demand made upon it. In consequence septic cases occasionally, and suspect cases as a rule, were nursed in the general wards. Precautions were taken to isolate them as much as possible from the other patients.

The following changes were effected on May 1st, 1929. (1) A room was set apart where each patient, on admission, was examined and classified as "clean," "suspect," or "septic." (2) The operating theatre was converted into a labour ward for suspect and septic cases, the labour ward being reserved for clean cases only. (3) The isolation department was increased by 15 beds, making a total of 24, by including one of the general wards in that department. The isolation of suspect and septic cases, their nursing staff, baby room, and annexe, was complete. Improvement was noticed at once.

The terms "septic," "suspect," and "clean" must be clearly defined.

Septic.—This term is too limited in its application, for inflammation may be afebrile and extragenital; therefore such conditions as pyelitis, inflamed breasts, vaginal discharges, bronchitis, discharging sinuses, boils, and all patients admitted with high temperatures, must be regarded as infective.

Suspect.—This term is usually applied to patients admitted in labour who have been examined, or on whom attempts have been made to deliver with forceps before admission; it may be used too loosely. Many patients sent in by doctors have not been examined before admission and are not suspect. The responsibility for their safety rests with the hospital.

Clean.—These patients have no infective process, either local or general. The majority quoted in the results had been admitted from the ante-natal department, but a number had been sent in by doctors. They consist of two groups:

Group A patients are normal medically and obstetrically, and have had the routine vaginal examinations and possibly a forceps delivery or perineal repair.

Group B patients are handicapped by one of the following conditions:
Medical: Disease of the heart, lungs, kidneys, ductless glands.
Surgical: Loss of blood, antepartum or post-partum.
Obstetrical: Induction of labour, internal version, plugging, manual removal of placenta.
Anatomical: Slight degrees of pelvic contraction.

Group A cases are the most reliable, and Group B cases the most sensitive index of the efficiency of a hospital routine.

A study of cases which are already suspect or septic has very little value in such an investigation. The following standards were established before analysing the results.

1. Cases in Groups A and B were delivered in hospital after the twenty-eighth week of pregnancy, and, with only a few exceptions, at term.

2. Only notifiable temperatures were recorded—for example, 100.4° F., sustained for twenty-four hours, or occurring twice in twenty-four hours (excluding the day of delivery). Temperatures were recorded up to the twenty-first day if residence in hospital after the routine tenth day.

3. The [illegible] was made either by direct clinical evidence or by a process of exclusion; thus all temperatures not definitely diagnosed as due to some extragenital lesion were attributed to sepsis.

The accompanying charts show the incidence of septic temperatures for Groups A and B, independently and combined. The results are based on two-monthly records, the average number of cases in each record being as follows. In 1928: Group A, 167; Group B, 37. In 1929: Group A, 173; Group B, 36. The percentage sepsis among the two groups during 1928 is shown in Charts 1 and 2. On May

1st, 1929, the new routine was put into operation. This included, in addition to the foregoing, the immediate isolation of any hitherto "clean" case which showed the least evidence of temperature or genital or extragenital inflammatory process. The percentage sepsis for Groups A and B during 1929 is given in Charts 3 and 4. In Chart 5 is shown a comparison of Groups A and B combined

(*b*) Rigid isolation and intensive nursing of suspect and septic cases.

(*c*) Immediate isolation of any "clean" case which shows the least evidence of a genital or extragenital inflammatory process.

(*d*) Provision of a separate nursing staff for the extern department.

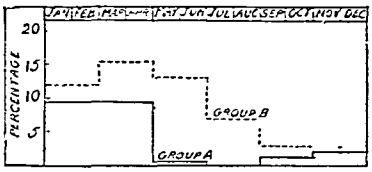


CHART 3.—Percentage sepsis among cases in Groups A and B during 1929.

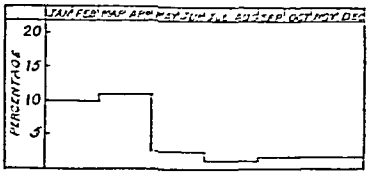


CHART 4.—Percentage sepsis among Groups A and B combined during 1929.

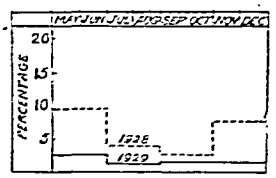


CHART 5.—Comparison of incidence of sepsis among Groups A and B combined during the periods May-December, 1928 and 1929.

for the periods May to December, 1928, and May to December, 1929.

The beneficial results can be given numerically as follows: for the periods May to December, 1928 (old routine), and May to December, 1929 (new routine).

	1928.		1929.	
	Total.	Sepsis.	Total.	Sepsis.
Group A cases	679	24 = 3.5%	657	6 = 0.9%
Group B cases	155	23 = 14.8%	135	7 = 5.2%
Group A and B combined ...	834	47 = 5.6%	792	13 = 1.6%

Suspect Cases.—It is obvious that "clean" cases benefit by being strictly isolated from suspect and septic cases; the latter two also benefit by getting more intensive supervision and nursing. This is proved by the observations recorded in Charts 6 and 7, which show the incidence of septic temperatures among the suspect cases. Analysis of a series of typical suspect cases, the majority being sent in by doctors, affords further proof of this contention. These included cases of accidental haemorrhage, placenta praevia, contracted pelvis, failed forceps, prolonged labour, and malpresentations. These showed improvement under the new routine as follows:

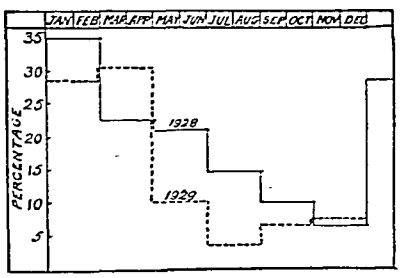


CHART 6.—Percentage sepsis among suspect cases during 1928 (continuous line) and 1929 (broken line).

	Total.	Sepsis.
May–December, 1928	209	26 = 12.4 %
May–December, 1929	204	14 = 6.9 %

It is interesting to note that a new routine was established in the extern department. Prior to July 1st, 1929, nurses, irrespective of their hospital duties, were called to attend district cases. From July 1st, 1929, a special district staff was organized, under the direction of a district sister. The results as regards notifiable pyrexias believed due to sepsis were:

	Total.	Sepsis.
July–August	113	4 cases.
September–October	114	1 case.
November–December	99	0 case.

Conclusions.

1. Outbreaks of pyrexia and sepsis in maternity hospital practice are due to contagion.

2. These can be prevented by (in addition to ante-natal care) the following:

(*a*) Examination and classification of cases on admission to hospital.

THROAT CARRIERS OF THE HAEMOLYTIC STREPTOCOCCUS.

The precautions regarding the prevention of contagion had been in force for two months when this second investigation was started. This was fortunate, since otherwise any observations made would have been most *misleading and inconclusive. From July 1st to October* 31st, 1929, some general observations were made which helped to decide the way in which the matter could be most effectively investigated.

1. Cultures were taken from the throats of residents, students, or nurses who had delivered "clean" cases. One nurse in the labour ward and two students were reported positive, and were at once suspended, although the nurse was allowed to do dressings, provided she wore a mask. A further series of positive reports on the indoor staff, and the fact that the entire outdoor staff were reported positive, made it clear that wholesale suspensions would entail either closing the hospital or seriously curtailing its work. It was also obvious that the wearing of masks by the district staff would produce alarm and arouse comment. It was therefore decided not to wear masks, but to take the following precautions: (*a*) all carriers were warned against coughing on their hands, instruments, dressings, or patients; (*b*) they gargled with boric lotion thrice daily, and their throats were painted once daily with 90 grains of resorcin in 1 ounce of glycerin.

2. The result of this treatment was fairly satisfactory. After five days treatment was suspended for two days, and a second culture was taken. If this was positive treatment was resumed, while if it was negative a confirmatory report was made after fourteen days. The second and third reports were usually negative; several, more resistant, were positive at the second report, had further treatment, and were negative at the third, while in two cases the reports were persistently positive, in spite of a continuance of treatment.

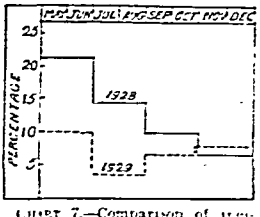


CHART 7.—Comparison of incidence of sepsis among suspect cases during the periods May-December, 1928 and 1929.

3. A patient developed a septic dermatitis on the buttocks. The student who delivered her was positive and had a bad throat. The nurse in attendance was also positive. Cultures taken from the pustules showed the presence of *non-haemolytic streptococci*. The patient's throat was negative, and she had no sign of genital sepsis. The student may have been the infecting agent, but the fact that the patient was an epileptic suggested other possible means of infection.

4. False deductions may be made unless every possible source of error is eliminated. A nurse (positive) was associated with a series of cases of non-notifiable temperature and mild genital sepsis. Certain of her colleagues who were interested in these observations indicated privately that it was not her throat but her careless technique which was responsible for the bad results.

5. One nurse, known to be positive, developed an acute throat, and the culture which was taken at that time was negative.

6. The possibility of attendance on septic cases being the means of infecting a nurse's throat was considered. Two nurses who had been in constant attendance in the isolation department for six months were negative, and the sister in charge, who entered the department positive, was after three and a half months' residence found to be negative. In neither instance was antiseptic treatment of the throat carried out.

7. These preliminary observations showed that throat carriers of haemolytic streptococci are extremely common, and that the organism in that locality is very susceptible to treatment and other hazards of its existence. This last is proved by a later observation, which showed that fifteen nurses reported positive in November were negative in January without any local treatment being used, while six nurses reported negative in October were positive in January.

The known prevalence of the organism, and the rarity and trivial nature of the temperatures which occurred among the clean cases following the established precautions regarding contagion, made it clear that a conclusive test must be made which would leave no vestige of doubt regarding the reputed danger of throat carriers to parturient women.

There were two weak links in the chain of evidence to date: (1) positive carriers had been submitted to an antiseptic throat routine; and (2) only those who delivered the patients had been examined—not the dressers.

To make the test conclusive it was necessary: (1) That all the nursing staff should be examined. (2) That all antiseptic treatment of the throat should be discontinued. (3) That only clean cases, Groups A and B, should be investigated. (4) That no masks should be worn.

The test lasted from November 1st to December 31st. The entire staff—doctors, students, and nurses—were examined. Of the 50 persons from whom swabs were taken, 34 (68 per cent.) were positive.

A record was kept of the work done by each person reported to be positive. This was easy as regards deliveries, but it was a little difficult to keep a complete list of all dressings done by the nurses. The officially recorded number of patients dressed by "carriers" is certainly an underestimate.

Clean cases were delivered or dressed by "carriers" as follows:

Deliveries.—Hospital: total deliveries 183; by carriers 102. District: total deliveries 99; by carriers 47. The district sister-midwife (positive) assisted at nineteen of these deliveries, while the district medical officer (positive) delivered with forceps, or repaired lacerations, on twenty-six occasions.

Dressings.—Hospital and district 478. This number represents individual patients dressed by carriers, but as only 282 patients are under review, it will be clear that a number of patients were dressed by more than one carrier.

Results—Indoor.

Chart 4 shows that the incidence of sepsis in hospital during November and December was the same as during the previous four months. The detailed statistics are as follows:

	Sepsis.
Group A cases:	
September–October, 1929	1.1 %
November–December ,, ...	2.1 %
Group B cases:	
September–October, 1929	2.8 %
November–December ,, ...	nil
Combined Groups A and B:	
September–October, 1929	1.4 %
November–December ,, ...	1.6 %

The three cases of sepsis among the 183 clean cases delivered in hospital were analysed. All three were trifling, and the temperatures were notifiable on 1, 1, and 2 days respectively.

Case 1.—One day's pyrexia. Delivered by a positive and dressed by negative.

Case 2.—One day's pyrexia. Delivered by a negative and dressed by two positives.

Case 3.—Two days' pyrexia. Delivered by a negative; dressed by two negatives.

Throat and vaginal cultures were taken from the patients in Cases 1 and 3. It is significant that all were negative except the vaginal culture in Case 3, which was positive.

The total district deliveries for September–October, 1929, numbered 114: sepsis 0.8 per cent. The total for November–December was 99: sepsis *nil*.

It will be seen that the excellent record resulting from the precautions regarding contagion was not in any way affected by this exposure to *presumed gross potential infection*.

The suspect department afforded a certain amount of material for this investigation. During November and December 19 suspect cases were delivered by carriers and showed no ill effects.

Conclusions.

It is possible that an individual with an acutely septic throat may cause puerperal sepsis by coughing on his or her hands, dressings, instruments, or patients. Any attempt to obtain positive proof of this would be on a par with observations regarding the results of vaginal examinations made with fingers suffering from whitlows, or of surgeons with septic throats coughing into abdomens at laparotomies.

The sum total of the combined investigations indicate:

1. That outbreaks of fever or definite sepsis in maternity hospital practice are due to contagion, and are preventable.

2. That throat carriers of the *Streptococcus haemolyticus* are very prevalent, and that apart from a negation of surgical and aesthetic principles—for example, coughing on hands, instruments, dressings, or patients—they are *not* a danger to parturient women.

In carrying out these observations special thanks are due to the matron, Miss Ferlie, and her nursing staff, and to Drs. Ind, Cover, and Blaiklock for their valuable and most willing assistance.

THE MECHANISM OF REFERRED PAIN IN DYSPEPSIA:

*ITS REFLECTION ON THE RESPIRATORY AND CIRCULATORY SYSTEMS.**

BY

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THE term "dyspepsia" is here employed literally to mean a group of symptoms associated with abnormal digestion produced by any cause. Pain is a symptom in many cases, by no means in all. Though the cause of the dyspepsia may vary within rather wide limits the pains tend to conform to a few types or mixtures of types. It is well known that the pains of ulcer, inflammation, or ulcerated cancer may strongly resemble each other; as a result the nature of the pain and its site have little or no value in differential diagnosis. The timing of the pain, too, is of limited significance, early and late pain being regarded as due to a higher and lower lesion respectively. This similarity of pain brought about by so very different lesions raises the thought that the nature of gastric pain is not understood.

There has been controversy on the mechanism of gastric and other visceral pain for many years; several theories have been advanced, but no single one has met with general acceptance. This article describes a modification of the theory propounded by the late Sir *James Mackenzie*.[1] The observations on which it is based have extended over some years, and their accuracy is proved by the finding that the signs can be predicted from the symptoms.

The current theories to explain pain in gastric disease fall under two main heads:

1. *That the pain is felt in the affected viscus.* This is the popular theory; physician and patient speak of a pain in the stomach. The pain is regarded as being due to: (*a*) the action of hydrochloric or other acid on a sensitive mucosa or exposed submucosa; (*b*) abnormal contraction of the smooth muscle of the wall of the viscus; (*c*) stretching of the sensory nerves in the wall of the viscus; (*d*) stretching of the nerves or muscles of the supporting structures. There is abundant clinical and experimental evidence for each of these being a factor.

2. *That the pain is not felt in the viscus but is referred to some other structure.* It is of interest to us that one of the earlier propounders of this theory was a professor of physiology at the Bristol Medical School,[2] but his views were never widely known. The main upholders of this theory were Mackenzie and Head. Mackenzie considered that stimuli passed from the stomach via the lower dorsal sympathetic fibres to the corresponding spinal segments;

*The substance of a lecture delivered to the January meeting of the Bristol Medico-Chirurgical Society.

these segments became irritable after a time and then picked up normally subliminal stimuli, which were referred to the periphery as ordinary painful sensations. Most of us have experienced a demonstration of this theory—the throbbing of a septic finger or tooth socket. The subliminal sensation of the neighbouring pulsating arteries becomes perceived as a painful throb so long as the corresponding spinal segment is kept on the *qui vive* by irritation of the sensory nerves in and around the septic focus.

Mackenzie described areas of cutaneous hyperaesthesia related segmentally to the various viscera. In the case of the stomach he states that the segments affected are the lower dorsal. He refers also to muscular hyperalgesia, but is vague as to its site, and is content to call it epigastric. It was found that the systematic investigation of cutaneous hyperaesthesia was not of great help in the diagnosis of gastric conditions. On concentrating on the hyperalgesic muscles it was found that the cases fitted into patterns—certain groups of muscles were repeatedly found to be hyperalgesic. It is considered that these muscles are frequently spasmodically contracted, because the tension of the muscle is greater than that found in a relaxed normal, and greater than that of the other side of the body when pain is unilateral. At times, especially in the intercostal muscles, which lend themselves to this observation, it can be seen that the muscle is shorter than that of the unaffected side. It is granted that proof of spasm is not always complete.

It was soon seen that the muscles which became hyperalgesic were those classed under the muscles of respiration; in dyspeptics complaining of pain a section of the respiratory musculature has consistently been found to be hyperalgesic and often spasmodically contracted. The most frequently affected muscles are the abdominal recti and obliques, the anterior scaleni, the interchondrals, the lower intercostals, the triangularis sterni, and the diaphragm. In cases of dyspepsia showing present or recent pain some, or all, of these muscles have been found to be hyperalgesic, and pressure upon them has produced more or less severe pain; it is often found that pressure on one or more of them will reproduce the pain for which the patient seeks advice. This finding appears to be significant, for if pressure upon a fifth left interchondral or triangularis sterni reproduces the pain felt after food, it is unnecessary to throw the blame directly upon abnormal acidity or peristalsis.

Further support emerges from the examination of the dyspeptics who do not complain of pain. The common type labelled "hepatic" shows flatulence; feeling of weight and vague distress after food; inability to eat some or all fats, milk included; often inability to eat potatoes, however they are cooked; often showing a small or absent liver dullness and telangiectases about the diaphragmatic origin. This type seldom experiences pain of any severity, and muscular hyperalgesia is little marked or absent. Thus, when pain is present hyperalgesia, with or without spasm, of some of the respiratory muscles is found. Pressure on these muscles will frequently elicit the pain when absent and intensify it when present. When pain is not a symptom of any importance no hyperalgesia is found. The deduction follows that gastric pain is referred to some of the respiratory muscles, and that the visceral sensation of the stomach is perceived as weight or vague discomfort.

The findings are derived mainly from inspection and palpation. Instrumental demonstration is not necessary. The suspected muscles are gently palpated, and, if found to be hyperalgesic, the tone is compared with a similar muscle free from pain. The diaphragm cannot be palpated. Evidence of diaphragmatic involvement is obtained from the amount of diminution of air entry at the bases of the lungs, measurement of the expansion of the lower thorax, degree of phrenic trunk tenderness (nerve palpated by pressing directly backwards between the two heads of the sterno-mastoid muscles), and direct observation with the fluorescent screen. The anterior scaleni are palpated against the transverse processes of the cervical vertebrae by dipping behind the sterno-mastoids. The triangulares are reached by hooking the finger upwards and outwards in the angles between the xiphisternum and chondral margins

The value of the hyperalgesia of the individual muscles or groups of muscles in the diagnosis of the site of the lesion is not great. In oesophageal and gastric disease the left side is more affected; in duodenal and gall-bladder disease the right side. Usually both sets are involved, but one side predominates, and this would be expected, for strict localization of lesions to one viscus is rare in the patient though common in the textbooks.

The exact cause of this reflection of gastric pain upon the respiratory musculature cannot be given with any certainty. There is no direct path over which a reflex like that of a tendon reflex could pass. An indirect path is known via the sympathetic nerves to the dorsal segments. We may accept Mackenzie's hypothesis of segmental irritability due to bombardment by impulses carried by the rami communicantes. Assistance from animal experimentation is not likely to be of very great help in demonstrating such a reflex path, for the animals do not use their thoracic respiratory muscles so much as man does—thus, one can straddle the thorax of a winded horse without much discomfort.

Another explanation becomes possible when the actions of the individual muscles are reviewed. It is generally accepted that disease of the abdominal viscera is usually accompanied by a protective immobilization, or spasm, of the overlying muscles; this is regarded as an attempt to rest or shield the part. Such a defence would involve the rectus and oblique muscles in disease of the upper abdominal viscera. Immobilization of these would diminish abdominal respiration, and, more important, would occasion a drawing down and fixation of the thorax. The thoracic respiratory muscles would have to labour against this load, the more so because of the diminution of abdominal respiration. It may readily be understood that these muscles might become fatigued and show the pain and spasm of fatigued muscles. A closer review of the muscles most affected shows that these muscles are regarded as having double function—they are inspiratory and expiratory. This appears to be significant; granted the overwork, then the muscles which work double time become the most fatigued. It is too early, and anyhow foolish, to be dogmatic in pressing this theory of muscular ill-balance: it is my impression that the severity of thoracic muscular hyperalgesia is proportional to the degree of defence in the upper abdomen.

The significance of this involvement of the respiratory musculature was not grasped for some years, but when one adds to the clinical findings the results of certain experiments, it appears astonishing that disorders of respiration are not even more frequent than is claimed. Thus, distension of the stomach, or a painful stimulus such as cold, occasions prolonged elevation and diminished expansion of the diaphragm[3]—perhaps the most important respiratory muscle. A stimulus to the stomach produces an expansion of the left side of the chest with eversion of the lower ribs; this impedes the action of the diaphragm,[4] and is perhaps a partial explanation of the left-sided preponderance of hyperalgesia in gastric disease. Increased intra-abdominal pressure, from gas or fluid, puts the diaphragm under stretch and diminishes thoracic expansion.[5] It would appear that any interference with the stomach will result in widespread upset of the respiratory muscles.

It is therefore not surprising that dyspeptics suffer from respiratory disorders, but it is rather surprising that complaint of such disorder is relatively uncommon. Shortness of breath is not often volunteered, possibly because the dyspeptic is frequently underfed, and does not engage in any work entailing exertion; the clerk will work for months with dyspepsia, but the labourer will give up in a week or so. Some do complain of shortness of breath, and occasionally it is the most noticeable symptom. A majority, when questioned, state that shortness of breath is present, and a large proportion of the cases state that exertion, as well as food, intensifies the pain. One can readily convince oneself of the frequency of shortness of breath in dyspepsia by timing the duration of voluntary apnoea; after a few deep breaths the patient is instructed to take as large an inspiration as possible and retain it as long as he can. Voluntary apnoea lasts about sixty seconds in the average healthy adult, but longer times are

acquired by training. *In painful* dyspepsia periods of five to twenty seconds are usually found. In a small proportion of the cases the respiratory symptoms so overshadow the other symptoms that cardiac disease is suspected by patient and physician.

It is well known that the dyspeptic often thinks himself to be suffering from disease of the heart. How often do we find ourselves saying: "That is not your heart, but your stomach"? It is sometimes noted that the patient is still sceptical, especially if he is a physician or has a smattering of medicine derived from the lay manuals. He feels a pain where he knows his heart to be (due to left triangularis or fifth left interchondral), he is short of breath on exertion, he often experiences disordered action of the heart or palpitation, and sometimes has distinct syncopal attacks. Is he to blame for suspecting his heart to be wrong?

On careful consideration the patient is in the right. The cardiologists have thrown the blame of heart disease on every part of the heart and vessels, but have, so far, failed to remember that the heart and vessels—the circulatory system of the present day—are but a half of the vascular pump. The heart and vessels can pump blood onwards efficiently if healthy and if blood is supplied to them, but the heart, by itself, cannot get blood to pump. The auxiliary pump is the respiratory musculature, which derives, or sucks, blood from the great venous cisterns to the right auricle. When the respiratory pump is thrown out of action the heart will stop, unless the body is in the horizontal position, for then respiratory suction is not necessary. The climber who falls on the rope soon succumbs to syncope, as the rope throws the respiratory pump out of action; the laboratory rabbit suspended in a vertical position dies of syncope in a few minutes, for the weight of its abdominal viscera and the poor tone of its abdominal respiratory muscles prevent respiration. It was noted above that the lower animals have little or no thoracic respiration.

We have seen that the dyspeptic frequently shows respiratory disability; he does not use his abdominal muscles because they increase his distress; he cannot use his thoracic muscles because they are painful. He has two causes for shortness of breath—his respiratory movements are inadequate to aerate his blood, and his respiratory pump fails to supply the heart properly with blood.

Another reflection of this referred pain in dyspepsia is seen in the cases which show anginoid pain, or pain which must be regarded as *identical with angina pectoris*. Such cases are not uncommon. Numerous observers have described the dyspeptic symptoms of angina, but few the anginal symptoms of dyspepsia.

The explanation of the syndrome angina has produced as big a literature as dyspepsia, for though not so common it is much more spectacular. Time forbids a long excursion into the various theories of its causation; in brief they are: disease of the proximal part of the aorta with pain radiating into the upper dorsal segments; disease of the coronaries with anoxaemic cramp of the myocardium; Briscoe's conception of fatigue of the respiratory muscles owing to a change over from youthful thoracic to elderly abdominal respiration; vaguer nervous mechanisms. Evidence for and against all these theories is abundant. It is not my object to deny that each or all of these may not be causes of anginal pain, but to point out the possibility that *these lesions may also result from the cause which* produced anginal pain.

When we consider the limitation of effort; the pain when effort is not limited; the immobility of the whole of the respiratory musculature, perceived as a sensation of a vice-like grip; the pallor and breathlessness; the absence of evidence of circulatory failure in the early stages; the dyspeptic symptoms—we have enough evidence to constitute a case for the dyspeptic etiology of angina, at least in some cases. In dyspepsia one can select a perfect sequence of cases to show all steps upward from simple pain after food, through the effort syndrome, to true anginal pain. The group showing this pain have recovered, up to the present, when the condition has been treated as a failure of the respiratory pump due to dyspepsia. It is admitted that the number showing severe pain of this kind is few, but a large number have shown milder degrees. The importance of the vascular lesions is not denied, and it may well be found that after a time the vascular lesion may become the chief one; it is contended that the vascular lesion may be produced by the angina. Proof for this contention is not complete, but there is some evidence; Cunliffe Shaw, Manouélian, Stopford, and H. Todd[6] have shown that prolonged irritation of the nerves of a part is followed by vascular degeneration in the territory supplied by these nerves. Is it not possible that the prolonged irritation of the sympathetic fibres proceeding from the abdominal viscera, and the sensory nerves supplying the hyperalgesic muscles, may cause vascular degeneration in the areas supplied by these nerves? It appears suggestive that the segments postulated to be concerned in gastric pain by Mackenzie are the same as those which are blamed by the upholders of some of the neurogenic theories of angina.[6]

It should be noted that hyperalgesia of the muscles of respiration is not limited to patients who suffer from painful dyspepsia. Similar hyperalgesia is found in subjects suffering from fatigue of respiration from purely respiratory and circulatory causes.

Summary.

1. Pain of some of the upper abdominal viscera is shown to be referred to some of the muscles of respiration.
2. This respiratory muscular hyperalgesia may interfere with the respiratory pump and the supply of blood to the right auricle.
3. It is considered possible that some cases of pain resembling angina pectoris are due to this factor, and that properly directed treatment may result in cure in the early stages.

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[4] Ibid., p. 752.
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CHRONIC HYPOGLYCAEMIA.

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CHRONIC HYPOGLYCAEMIA is regarded by most clinicians as a rare phenomenon of scientific rather than of practical importance, but, as I have met with a fasting blood sugar of 70 mg. per cent., or less, in more than 200 patients during the past five years, it cannot be so uncommon as is generally assumed. Unfortunately there is no characteristic sign to draw attention to hypoglycaemia, as glycosuria does to hyperglycaemia, but in most cases the history and symptoms are sufficient to suggest a diagnosis if the possibility of its presence is borne in mind. It will, I hope, help others to recognize chronic hypoglycaemia more frequently if I classify and discuss my cases, most of which had been treated for a variety of symptoms without success until the abnormal condition of their blood was discovered.

TABLE I.

Age.	No.	Sex.		Heredity.	Chronic Infection.	Faeces.				Urine.				Blood.	
		Male.	Female.			Entero-colitis.	Enteritis.	Colitis.	Normal.	Sugar.	Acetone.	Albumin.	Calcium Excess.	Calcium Low.	Calcium Normal.
0-10	44	27	17	31	27	31	4	4	5	20	28	3	3	3	3
11-20	19	10	9	12	8	9	4	5	1	12	7	2	5	5	4
21-30	32	18	14	12	7	11	11	5	5	20	10	5	8	10	11
31-40	32	15	17	7	6	13	7	9	3	17	6	7	4	11	9
41-50	35	27	9	5	15	16	13	1	6	18	4	5	12	13	7
51-60	19	11	8	1	2	6	6	5	2	7	2	3	4	4	7
61-	18	14	4	1	6	9	4	4	1	10	1	3	7	6	6
	200	122	78	69	71	95	49	33	23	107	58	28	43	52	57

AGE AND SEX.

The age of my patients ranged from under 1 year to over 70. Classified in decades (Table I), the highest proportion falls within the first ten years; in the next ten years there is a striking diminution, but in the following period the incidence increases again and is maintained at a fairly constant level up to the age of 50. Every age period, excepting 31 to 40, shows an excess of males, and the whole series gives a ratio between the sexes of about two to one. It is therefore clear that chronic hypoglycaemia is not limited to any particular age or sex, and that, although a low blood sugar figure appears to be most commonly associated with symptoms calling for treatment in children, no period of life is exempt.

HEREDITY.

Breeding experiments with mice, which Mr. Howard and I have been engaged upon for some years, have indicated that a naturally occurring hypoglycaemia is a hereditary character transmitted in accordance with Mendel's theory. It is interesting, therefore, to find that in my series of cases a history of symptoms suggesting a hypoglycaemic complex was obtained among blood relations in 35 per cent. The proportion of cases giving such a history was highest in the first ten years and steadily diminished with advancing age, falling from 70 per cent. in the first decade to 5 per cent. in the seventh. Such a distribution suggests either that the family history of parents is more reliable than adults give of themselves, or that heredity plays a greater part in the hypoglycaemia of early life than of later years.

Evidence of the transmission of a chemical abnormality is naturally more difficult to obtain in human beings than in animals, but in 48 of my cases of chronic hypoglycaemia, distributed in nineteen families, experimental proof has been possible. A low blood sugar figure was found in one of the parents of affected children in 36 instances, two patients were uncle and nephew, cousins were similarly affected in two families, and a daughter, mother, and grandmother in another. The last is particularly interesting, as it indicates that, given suitable conditions, the abnormality may appear in at least three successive generations.

CHRONIC INFECTION AS A CAUSE.

Although animal experiments and human histories both suggest that heredity is a predisposing cause of chronic hypoglycaemia, it is probable that an exciting agent is necessary for the development of the condition as a rule, and maybe is the sole cause in some cases. In my experience the most common exciting cause is a chronic infection, which, in the early years of life, is often located in the tonsils, antrum, or middle ear, and later in life is often met with in the mouth, but at all ages is most frequently found in the intestine. Comparatively few patients with chronic hypoglycaemia are free from gastro-intestinal disorders; long-standing constipation is common, but frequent and offensive stools are not unusual, especially in children, and some patients have distension, flatulency, and heartburn. Even when no complaint is made, examination of the faeces very commonly reveals abnormalities of digestion and absorption. The analyses in my cases have pointed to a chronic intestinal catarrh involving both the large and small intestine in over 47 per cent.; in another 24 per cent. the upper intestinal tract was mainly affected, and in 16 per cent. the large bowel was chiefly concerned. Experiments upon animals have demonstrated that the injection of a poison having a specific action on the liver, such as hydrazine phosphate, is followed by a fall in the blood sugar level,[1] and it is possible that chronic infection may act similarly as an exciting cause of hypoglycaemia by interfering with the functions of a liver already more or less inefficient congenitally. Further, since a chronic catarrh of the upper intestine is generally associated with an infection of the bile and pancreatic ducts, the consequent disturbances of the functions of the liver and pancreas may contribute to the production of a low blood sugar in that type of case. Whatever the explanation may be, I find that patients with chronic hypoglycaemia and intestinal disturbances do not improve satisfactorily unless the bowel condition is successfully treated.

THE URINE.

At first sight it is rather strange that sugar should have been found in the urine of 53 per cent. of my cases, in spite of the fact that the blood sugar level was invariably subnormal and never attained a percentage at which glycosuria might be expected. In 19 cases the sugar proved to be pentose, laevulose, pseudo-laevulose, or lactose, but in the majority it was found to be entirely, or almost entirely, dextrose, thus indicating abnormal permeability of the kidneys for that sugar. The low renal threshold for glucose was possibly accounted for in some instances by a low calcium content of the blood[2] produced by an excessive loss of lime through the walls of the large intestine,[3] or by way of the kidneys; but as dextrose was discovered in the urine of 18 patients whose blood calcium proved to be within the normal range, a deficiency of lime salts was evidently not the only explanation. In 46 cases where the urine was found free from sugar, the presence of an excess of dextrins pointed to there being defects of carbohydrate metabolism due to faults in the functions of the liver or pancreas.

Albumin was rarely encountered in the urine, only 13 per cent. showing traces; these traces could usually be accounted for by an associated oxaluria, probably produced by abnormal fermentative changes in the contents of the upper intestine.[4] When I first drew attention to the chemical abnormalities occurring in children suffering from cyclical vomiting, in 1923,[5] I pointed out that the alkali reserve is apt to be reduced and that acetone is very frequently present in the urine. Subsequent experience has confirmed these observations, and also shown that acetonuria is not uncommon in other conditions where chronic hypoglycaemia is a feature. Acetone was discovered in the urine of 29 per cent. of the cases in the present series, and it is worthy of note that it occurred with diminishing frequency as the ages of the patients increased, falling from 65 per cent. in the first decade to 6 per cent. in the seventh. Sugar was found in the urine with the acetone in 74 per cent. of the cases, and when acetone was present alone the patients were usually children. The cause of the acetonuria is no doubt essentially the same as in chronic hyperglycaemia, although the mechanism of its production is different. In both the acetone arises from defective oxidation of fat owing to a deficiency of available sugar, but in hyperglycaemia the deficiency is due to inability of the tissues to use the abundance of sugar present in the circulation, whereas in hypoglycaemia the supply in the blood is insufficient, the power of the tissues to store and utilize sugar being normal.

SYMPTOMS.

The cases with a low blood sugar coming under my care fall into two main groups: (1) those where the hypoglycaemia was definitely part of a symptom complex of which complaint was made (128 patients); and (2) those where the condition of the blood was discovered incidentally in the course of examinations for some other purpose (72 patients). The character of the symptoms in the first group varied considerably, and, while some apparently resulted directly from the low sugar content of the blood, others were more probably attributable to the effect of fundamental pathological changes, of which the hypoglycaemia itself was an expression. The distinction is, however, of theoretical rather than of practical importance for treatment bringing about a permanent rise in the blood sugar has been found to ameliorate the symptoms in either case. This group can be best considered in sub-divisions corresponding to the prevailing clinical features.

Cyclical Vomiting of Children.—The more important results obtained in the investigation of 32 cases of this type are summarized in Table II. These confirm the conclusions I reached nearly seven years ago, but I may draw attention to a few points of particular interest. The most important is the evidence these figures furnish of the hereditary nature of the condition, there being in 73 per cent. of the cases a history of similar symptoms occurring in a blood relation, but not necessarily in an immediate relative. The percentage of cases (55) with evidence of a chronic infection is also striking, but even more remarkable is the very high percentage (84) which, on analysis of

TABLE II.

Symptom.	No.	Age Incidence.	Sex.		Heredity.	Chronic Infection.	Faeces.				Urine.				Blood.	
			Male.	Female.			Entero-colitis.	Enteritis.	Colitis.	Normal.	Sugar.	Acetone.	Albumin.	Calcium Excess.	Calcium Low.	Calcium Normal.
Cyclical vomiting	32	0-9	17	15	23	17	21	2	4	5	15	20	2	2	0	0
Bilious attacks	13	14-61	4	9	6	1	6	5	2	0	9	5	1	2	2	2
Pregnancy, vomiting	6	23-35	0	6	3	0	1	3	2	0	4	6	3	3	2	1
Recurrent headache	23	12-50	8	15	8	10	9	6	5	3	13	5	5	6	4	8
Neurasthenia	11	21-35	5	6	3	0	7	2	2	0	2	1	0	2	4	2
Convulsive attacks	7	40-72	5	2	0	1	3	3	1	0	2	0	0	1	1	4
Lack of energy	35	9-75	30	6	10	13	19	8	7	2	24	7	1	7	15	8
Life insurance	24	20-38	23	1	9	4	8	6	4	6	22	3	2	6	9	10
Routine examination	48	9-67	30	18	7	25	21	14	6	7	16	1	14	14	15	22
	200		122	78	69	71	95	49	33	23	107	58	28	43	52	57

the stools, were found to be suffering from chronic catarrh of the intestinal tract. Early prophylactic treatment for the children of hypoglycaemic parents and recognition of the part chronic infection and toxic absorption play in the production of cyclical vomiting are, I believe, the essentials for success in dealing with a very troublesome complaint.

Recurrent Bilious Attacks.—Sporadic "bilious attacks," usually precipitated by indiscretions of diet, are too well known to call for comment, but the severe recurrent attacks, coming on at short intervals and incapacitating the subject for a day or two, of which the 13 patients comprising this group complained, are a very different matter. All the patients were beyond the age when cyclical vomiting occurs, but in several instances there was a history of attacks in childhood, and a family history of vomiting or of bilious attacks in 46 per cent. Evidence of chronic infection, apart from the intestine, was much less common than in the preceding group, but analysis of the faeces revealed a possible source of toxaemia in the alimentary tract in every case. Nine of the 13 patients passed sugar in their urine, but further examination showed that this consisted mainly of laevulose, pseudo-laevulose, or pentose in 7. Acetone was discovered in the urine of 5 cases (38 per cent.), a much smaller proportion than was found in the children suffering from cyclical vomiting (94 per cent.).

Pernicious Vomiting of Pregnancy.—Four of the 6 patients in this group were sent to me after labour had been induced, as the persistent presence of sugar and acetone suggested they were suffering from diabetes, but the discovery of a subnormal blood sugar disproved the diagnosis. In 2 the glycosuria was probably accounted for by a low percentage of calcium in the blood, and in the other 2 the sugar proved to be a mixture of laevulose and lactose, with a very slight excess of glucose. The remaining patients came with intractable vomiting, both had low blood sugars, and both were excreting acetone in their urine, but neither was passing any sugar. Three patients gave a family history of a hypoglycaemic complex; 4 had children who suffered from cyclical vomiting and were proved to have low blood sugar figures. Evidence of an abnormal condition of the intestinal tract was found in all the cases.

In spite of differences, possibly attributable to the ages of the patients and the character of the diet, the recurrent bilious attacks of adults, the pernicious vomiting of pregnant women, and the cyclical vomiting of children, have so many points in common that it would seem probable their etiology and pathology are similar, if not identical. The fundamental defect is almost certainly in the liver, and, in most cases at least, is inherited. Occasionally it is so severe as to cause symptoms at an early age, but, as a rule, it is only brought into prominence at a later stage by the cumulative effects of an acquired infection, an unsuitable diet, or a growing foetus which overstrains the defective hepatic functions. Hypoglycaemia, although a constant feature and undoubtedly the cause of the acetonuria in some instances, is mainly important as an index of the severity of the liver deficiency to which it is related.

Recurrent Headaches.—The cases falling in this category are of two types—one where the attack recurred at intervals measured by days or weeks, the other where the headache, which was of a less severe character, was of daily occurrence and was particularly prominent in the morning or after an unusual strain. The former is probably akin in origin to a recurrent bilious attack, the latter appears to be a direct effect of the low sugar content of the blood, and can be prevented by a light meal or a dose of glucose, in the morning before rising. Both varieties were met with at all ages between 12 and 50, but a morning headache was more common in middle life. A hereditary basis appeared to be present in 35 per cent. of the cases; a chronic infection was discovered in 46 per cent., and 87 per cent. were shown by analysis to have affections of the intestinal tract. Thirteen patients excreted sugar in their urine, and 5 acetone as well. The urine of 6 contained an excess of calcium, and all but one of these were found to have oxaluria and to be passing traces of albumin.

Neurasthenia was the diagnosis with which 11 patients, subsequently found to have a low blood sugar, came to me, but as they rapidly improved when the hypoglycaemia was treated, and the intestinal disturbances from which they all suffered were corrected, it appears probable that their symptoms were connected with the deficiency of sugar in their blood. A family history suggesting a hypoglycaemic complex was obtained in only 27 per cent. of the cases in this group, and no exciting cause in the form of a chronic infection was discovered in any. On the other hand, the proportion (64 per cent.) suffering from chronic catarrh of the whole intestinal tract was remarkably high.

Convulsive Attacks.—Four of the cases coming under this heading were believed to be suffering from mild epilepsy; 2 had been diagnosed as having Ménière's disease, and one was reported to be a victim of secret alcoholic excess, although he was actually a total abstainer. The attacks of inco-ordination of movement from which they suffered were proved to be associated in every instance with a pronounced hypoglycaemia, and were prevented by raising the sugar content of the blood artificially. There can be little doubt, consequently, that there was a direct connexion between the symptoms and the low blood sugar level. The attacks developed rather late in life in all the cases, the youngest being 40 and the oldest 72 years of age. No family history bearing on the condition could be obtained from any of the patients, but all were found to be suffering from abnormalities of digestion and absorption, which may have been the exciting cause of the hypoglycaemia.

Lack of Energy.—Mild hypoglycaemia does not give rise to noteworthy symptoms unless there is some complication; if the patient complains at all, he usually says he lacks energy and is very easily tired. On inquiry, it is often discovered that consecutive thought is difficult, and work requiring concentration can only be performed with great effort. As a rule, the symptoms are most pronounced in the morning and diminish as the day advances, especially if small frequent meals are taken, as many patients have learnt from experience. Most of the 33 patients with hypoglycaemia of this type seen during the past five years were sent to me as diabetics, owing to their lack of energy and the discovery of sugar in their urine. A smaller number came on account of digestive troubles, which were held responsible for their lassitude, but, although that may have been a partial explanation in some instances, the history of many, and the response of all to symptomatic treatment for hypglycaemia, indicated the low blood sugar as the more important factor. As a whole the group contained a high proportion (75 per cent.) of cases exhibiting evidence of affections of the upper intestine, and comparatively few (6 per cent.) were found to have normal faeces. A hereditary factor in the production of the hypoglycaemia was suggested by the histories of 23 per cent.

Life Insurance.—A previous application for life insurance is usually presumptive evidence that the applicant considers his health is normal, and this was so with the 24 patients we are now considering who had been rejected on medical grounds. Careful inquiry disclosed, however, that most of them had experienced symptoms which could be reasonably attributed to a deficiency of sugar in the blood, and in some instances these symptoms dated back to early childhood. Twenty-two of the cases had been rejected by the insurance examiners for glycosuria and two for albuminuria. Blood examinations showed no evidence of renal disease in either of the latter, and the albuminuria was probably of the "cyclical" type. The glycosuria in the other cases was evidently dependent upon a low renal threshold for glucose, which was associated with a subnormal percentage of calcium in the blood in 9. The presence of traces of acetone in the urine of 3 patients indicated defects of fat and carbohydrate metabolism. Evidence of heredity was obtained in 37 per cent. of the cases. Analysis of the stools gave normal results in slightly over 25 per cent.—a higher proportion than in any other group.

Routine Examination.—Routine examination of the blood revealed 48 cases of chronic hypoglycaemia; the majority were sent to me for the elucidation of obscure disturbances of digestion or metabolism, but 6 came for treatment for obesity, 4 had gall-bladder affections, 2 were suffering from pernicious anaemia, one was found to have cancer of the pancreas, and a child was examined on account of delayed development. Evidence of heredity as a causative factor of the hypoglycaemia was found in only 15 per cent. of this group, and the positive cases were nearly all children. Chronic infection as a possible exciting cause was present in 52 per cent., and affections of the intestinal tract in 86 per cent. One-third of the patients passed sugar in their urine, but this was associated with acetone in only one instance. Albumin was found in the urine in 29 per cent.—a higher proportion than in any other group, which is possibly accounted for by the relatively large proportion discovered to be excreting an excess of calcium in the form of oxalate crystals.

The case of cancer of the pancreas mentioned in the last group is of interest since it is one of the few in which conclusive evidence was obtained that the hypoglycaemia was entirely dependent upon an abnormality of the pancreas. Theoretically hypoglycaemia may arise in two ways: either from an inadequate supply of sugar to the blood by the liver, or from an abnormal removal of sugar from the circulation consequent upon excessive formation of the pancreatic internal secretion, but it is not easy to distinguish in practice. A differential diagnosis is sometimes possible from the clinical characters of the case, for hyperinsulism is usually characterized by a comparatively rapid onset and progressively increasing faintness or severe hunger between meals; it is promptly relieved by food, and occurs in a previously healthy person, who is practically always an adult. Hypoglycaemia due to hepatic defects is, however, common in children as well as in adults; it is generally associated with a more gradual onset, less definitely related to meals, and of a milder and more chronic character, which may be connected with an infection or other exciting cause, and may be hereditary. As a rule, a reliable diagnosis can only be made if the results of analyses of the blood and excreta are taken into account. The character of the symptoms, and the analyses made in my cases, have suggested a hepatic origin for the hypoglycaemia in the majority; hyperinsulism appeared to be an additional factor in some where there was an infection of the upper intestine, and in only a small proportion could the low blood sugar be attributed entirely to an excessive formation of insulin by the pancreas.

Whether a chronic hypoglycaemia gives rise to symptoms demanding treatment or not depends largely upon the manner of its production and the conditions associated with it. I have met with patients whose blood sugar frequently dropped as low as 40 mg. per cent., yet they appeared to be healthy; on the other hand, patients with appreciably higher blood sugar figures suffered from symptoms which seriously interfered with their comfort or occupations. The explanation of the difference seems to be that in the latter the hypoglycaemia had developed comparatively suddenly, possibly as the result of some intercurrent infection which, besides depriving the tissues of their accustomed supply of sugar, affected them in other ways; whereas the former had been used to a low blood sugar all their lives, since their history pointed to the existence of the disability from early childhood, and there was in most cases a family history as well. A congenitally low blood sugar figure usually causes no serious inconvenience so long as the patient's defective metabolism is not subjected to any extraordinary strain, but severe physical or mental exertion rapidly causes collapse, while ketosis, sickness, and other symptoms due to an insufficient supply of available carbohydrate develop from causes which would have little or no effect upon a normal individual.

TREATMENT.

The treatment employed in this series of cases has been the same in principle as I have described in previous papers.[4] Increasing experience of chronic hypoglycaemia has emphasized the etiological importance of acquired infections and intestinal disorders; and as greater attention has been paid to their detection, and more efficient measures for dealing with them have been adopted, there has been a corresponding improvement in the results. Where dietetic treatment alone has been possible owing to the absence of any discoverable cause, the immediate effects have been satisfactory, but, since it has usually been found that a recurrence of the symptoms followed when the treatment was discontinued, it is evident that an artificial increase in the blood sugar brought about by feeding with glucose, or a diet rich in carbohydrate, has only a palliative effect, as our experience with hypoglycaemic mice has also demonstrated. Observations on these animals have shown that they do not interbreed readily, but that they can be induced to do so by mixing a daily dose of glucose with their food. At first all the progeny were either born dead or only survived a few days; then, as the glucose feeding was continued, some lived for a week or two, later, the death rate diminished, and successive families lived for progressively longer periods, until eventually the mortality was no greater than in the families of normal mice. No matter how long the parental feeding with glucose was continued, however, all the offspring had a low blood sugar and were sterile, and when the administration of glucose to the parents was discontinued they ceased to produce living families. These experiments also demonstrated that, although glucose feeding did not eliminate the cause or influence the transmission of the hereditary defects from which the parents suffered, it prevented the premature death of the offspring and increased their expectation of life. Clinical experience and other experiments with animals have likewise shown that early prophylactic treatment of the descendants of hypoglycaemic parents prevents the development of serious symptoms, and has a beneficial effect on their general health.

There is still much to be learnt about all abnormalities of carbohydrate metabolism, and particularly about those associated with an unusually low blood sugar level, but opportunities for investigation are by no means rare, as the number of cases I have met with in a comparatively short period indicates. I hope this paper may be the means of directing the attention of others to what is, I believe, a matter of considerable clinical importance.

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FLAVINE IN PERINEAL DRESSINGS.*

BY

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THE success of plastic operations on the vagina depends largely on the nursing and after-care received by the patient. Though it is comparatively easy to adopt an adequate operative technique it is sometimes difficult to ensure the healing of the wound by first intention.

The circumstances which may interfere with healing are obvious. The suture line is never dry, being made wet by discharge from the cervix, by menstrual flow, by micturition, and by perspiration. The part is not only constantly wet, but it is bathed in organisms; cervical discharge is never sterile. The skin is always liable to contamination during defaecation, while the urine of many patients subjected to this operation is infected with the *Bacillus coli*. This last circumstance I have found most troublesome of all. The repeated wetting of the wound by infected urine (of which some drops always ascend to the vagina if the patient be recumbent) is, I believe, the most common cause of sepsis following vaginal operations. The infected discharges cause catgut to separate early and silkworm-gut to cut out. Taking these circumstances into consideration it would appear extraordinary that such a wound ever heals by first intention.

I have used a variety of treatments and dressings, pre-operative and post-operative, the common object being to disinfect the vagina before operation, and afterwards to cleanse the wound after each micturition by swabbing with a mild antiseptic and then to apply a dry dressing. I have tried mercury biniodide, eusol, milton, saline, picric acid, iodine, and flavine in water, and I have come to the conclusion that to wash a clean wound with a watery solution of any antiseptic is bad surgery, and that a perineal wound must above all else be protected from urine.

In one of the hospitals to which I am attached patients who have had vaginal operations are allowed to pass water twice only in twenty-four hours, and then in a kneeling position. The woman kneels over a small chamber, her forearms resting on a pillow laid across her thighs. It is difficult to persuade a private patient to adopt this procedure. I have even tried keeping the perineum dry by allowing micturition only through a small funnel held directly below the urethra, but with varying results. The straightforward cases did very well; others gave trouble, one or more stitches giving way too soon, and healing was completed by granulation, the result being more or less imperfect.

My troubles culminated in a case in which I had done a Fothergill's repair, and on the twelfth day I returned from a Sunday's excursion to find that the lady had had a severe secondary haemorrhage; the city had been searched for help, and after some delay a colleague had kindly come to the rescue and packed the vagina. The haemorrhage was due, of course, to sepsis. On removing the pack the bleeding recommenced, and, finding nothing to tie, both colporrhaphy wounds being laid bare in their upper parts and the raw surfaces oozing, I cast about in my mind for some antiseptic lubricant which would clean up the infection and would not dislodge clots in the vessels when withdrawn. I thought of an emulsion of flavine in paraffin, which I had seen used in prophylactic disinfection of the abdominal wall after laparotomies. I irrigated the vagina to get rid of the offensive clot, then packed with gauze soaked in the emulsion. I was amazed at the speed and completeness with which the sepsis cleared up and the wounds healed.

Since that time, two and a half years ago, I have used this emulsion of flavine in paraffin as a routine dressing in all perineorrhaphies, to my great comfort and success. I use it as a protective dressing. As a rule I wait for twenty-four or forty-eight hours, so as to allow the natural sealing of the wound by serum, then at latest on the third day, the day on which aperient is given and before the bowels are opened, I start dressing with a narrow strip of gauze about three inches long, soaked in the emulsion, applying it by means of a forceps laid upon the colpoperineorrhaphy wound. A little of the emulsion enters the vagina and protects the colporrhaphy wounds higher up. The dressing is renewed after each micturition. The results have been most happy. When operating now for the cure of prolapse I know that with reasonable nursing the wound will heal by first intention, and that the ultimate result will approximate very nearly to the immediate result obtained when the patient leaves the table.

I have also used this emulsion to my satisfaction as a perineal dressing after craniotomy in cases where previous futile attempts to deliver by forceps had caused great bruising of the vulva. It is made up at a strength of 1 in 1,000, though probably in greater dilution it would be equally effective.

* Abstract of a paper read before the North of England Gynaecological and Obstetrical Society at Liverpool, October 25th, 1929.

FLAVINE IN GENERAL SURGERY.

BY

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THE three following cases illustrate the value of flavine as a bactericide and as an antiseptic in general surgery.

Traumatic Moist Gangrene of Arm.

On October 25th, 1929, a native woman, aged about 24 years, was brought by canoe to Mongu from Libonda, on the upper Zambesi River about three days away, suffering from moist gangrene of the right arm. The history of this case was that, about two months previously, the woman ran into her finger a piece of wood, which she removed with a needle. The hand swelled up and, as she described it, became rotten. When I saw her there was massive necrosis of the limb, extending up to the junction of the lower and middle thirds of the right arm, where a line of ulceration had formed, revealing necrosed bone. Above the area of ulceration the gangrenous process was extending through the tissues of the arm, which were oedematous and greenish-black in colour, from which very fetid yellow pus was oozing copiously. The skin on the inner side of the arm was involved right up to the axilla. The patient was greatly debilitated, and looked very toxic.

Amputation through the shoulder-joint was impracticable owing to the high involvement of the skin on the inner side of the arm, and the patient's condition would not have tolerated such a formidable procedure as an interscapulo-thoracic amputation. I did a guillotine amputation of the arm a handbreadth below the joint, cutting through living tissue as much as possible, ligated the vessels, and treated the stump as an open wound, using flavine (1 in 1,000) dressings only. The result was dramatic, the foul sloughing tissue becoming bright red, and clean within four or five days. The patient is making an excellent recovery, the temperature since the operation having been absolutely normal.

Traumatic Moist Gangrene of Leg.

On May 17th, 1928, a male native, aged about 35 years, was brought to Mongu for treatment, suffering from spreading moist gangrene of the right leg and thigh. The history of the case was that three months previously, when proceeding to seek work, the patient developed a small sore on the dorsum of the right foot, on the Lui River, three or four days from Mongu; he could not say if the sore was due to an injury or not. The foot became swollen, rotted, and dropped off at the ankle-joint; the disease spread up the leg, which fell off at the knee-joint.

When I saw him about 3 or 4 inches of the lower end of the femur were protruding; the bone was black and necrosed, and a necrosed patella was adherent to the muscles, which were a greenish-yellow pultaceous mass, from which a horribly offensive yellowish pus was freely exuding. The gangrenous process was

extending, and the skin of the thigh was very oedematous and undermined. Amputation through the hip-joint was suggested, but this he declined, and the case looked absolutely desperate. He was intensely toxic, in great pain, and his condition was so bad that I felt some other line of treatment should be adopted to relieve him. Morphine hypodermically was given nightly, and the limb was dressed twice daily with flavine (1 in 1,000). As in the previous case recorded, the result was highly dramatic. Within three or four days the gangrenous process had ceased, the greenish-yellow tissue became a bright red granulating surface, and the necrosed end of the femur and the patella dropped off. He made a complete recovery, and left the hospital with what looked like a neat conical amputation stump.

Traumatic Hernia of the Spleen.

On October 24th, 1929, a native woman, aged about 25 years, was brought to me for treatment. The history was that on the previous day, near Kalabo Station, she had been stabbed in the abdomen with an assegai. Examination revealed a big portion of the spleen protruding through a wound in the left hypochondrium. The protruding organ was strangulated and dusky in colour.

The operation of choice would probably have been complete splenectomy, but as the woman had been already carried in a canoe for twenty-four hours, and assistance was very inadequate—a nurse and a native orderly—I decided to remove only the damaged part of the organ.

The abdomen was opened under general anaesthesia, the strangulated portion of spleen was ligated and excised, a drain was inserted, and the abdominal wound closed and dressed with flavine (1 in 1,000). There was a slight temperature and some distension for two or three days, with a purulent discharge from the upper edge of the wound, which seemed to come from a localized abscess. Apart from this, progress was uneventful, and the woman is nearly ready for discharge from hospital. To complicate matters, respiration failed in the middle of the operation, and artificial respiration had to be employed, with consequent protrusion of intestine, which did not make things any easier.

I thought that this case, owing to the rarity of the condition, might be of some interest. Lejars says that Vanverts has collected 29 cases, of which only 6 have occurred during the last twenty-five years.

I am indebted to Dr. P. H. Ward, P.M.O., Northern Rhodesia, for permission to publish this paper.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

CURE OF THROMBOPENIC PURPURA BY LIVER.

THE patient (aged 23) whose case is recorded below gave a history that ten years ago, after an operation for tonsils and adenoids, he bled very profusely, and was thought to be a bleeder. He also stated that there were blood blisters inside the mouth on January 31st, 1929, that there was then a little bleeding inside the mouth, but that this improved, and then, on February 20th, became worse. Previous treatment had been by injections of collosol calcium and of haemoplastin.

He was examined on March 2nd, 1929. Blood was oozing from the margin of the gums in both the upper and lower jaws, and there were numerous petechiae on the mucous membrane of the mouth, and in the skin around about the shoulder girdles, and a small number of petechiae elsewhere. The urine contained a small amount of urobilin, no albumin, no blood, and no sugar.

A blood count (by Dr. Clarke) showed: red blood corpuscles 4,940,000 per c.mm.; white corpuscles 12,500; haemoglobin 86 per cent.; colour index 0.87. *Differential count*: polymorphonuclears 80 per cent., lymphocytes 12.5 per cent., large mononuclears and transitionals 1.5 per cent., cosinophils 6 per cent. The red cells were apparently normal; platelets practically absent. Bleeding time and blood coagulation time were not tested, but the films showed almost complete absence of platelets.

He was put on treatment by liver as for pernicious anaemia, and also given liquor arsenicalis. On March 6th the bleeding began to diminish, and by March 11th it had ceased entirely.

Examination on June 28th showed that platelets were present in normal numbers. His liver was reduced to half the amount.

At the present time he seems fit and well, and does regular work on his father's farm. He has slight and occasional bleeding from his gums, but no blood blisters. He takes a cooked liver meal once or twice a week.

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HERPES OPHTHALMICUS COINCIDENT WITH VARICELLA IN ADULTS.

IT is now a well-established fact that herpes zoster may be followed in eight to twenty days by an outbreak of chicken-pox in contacts who have not previously suffered from varicella. Bokay in 1892 reported nine cases of this type, where the possibility of infection from other sources could be excluded. Parkes Weber has described a series of cases, and Le Feuvre made an analysis of fifty cases illustrating the singular connexion between the two diseases. Ker reported that in eighteen months three out of seven appearances of herpes zoster in his wards had been followed by chicken-pox, otherwise quite unexplained.

The cases here described were admitted to St. Mary, Islington, Infirmary, Highgate, within a short time of one another. They are interesting in that both eruptions were present at the same time, the varicella eruption becoming manifest six days after the first signs of the herpes; moreover, chicken-pox is unusual in adults, and one of our patients was over 80 years old.

Case 1.—A man, aged 69, noticed on December 6th, 1929, a small pimple over his left eye, which gradually became worse. He was admitted on January 11th with well-marked herpes ophthalmicus on the left side, the rest of the skin being quite clear. The next day an eruption, having the typical appearance and distribution of varicella, appeared. Recovery was uneventful, except that there was scarring from both the herpes and the varicella to an unusual extent. There were no further cases, as the patient was isolated from the beginning.

Case 2.—A man, aged 80, had on December 19th, 1929, what he described as a cold in his head with irritation of his left eye. He did not feel very well, and attended a general hospital on December 26th, from which he was sent on to us. On admission, seven days after the onset of the disease, he had a well-marked herpes ophthalmicus on the left side, with a rash that was typical of varicella in appearance and distribution. He was isolated with the previously mentioned case, and had an uneventful recovery.

In neither case had the patient suffered from a previous attack of chicken-pox, and the question of a recent exposure was investigated and proved negative. There was no possibility of the eruption being due to drugs, as the patients had had no treatment prior to admission.

We wish to thank Dr. W. R. M. Turtle, medical superintendent, for permission to publish these cases.

B. BARLING, M.D.Lond.
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St. Mary, Islington, Infirmary.

TORSION OF THE GALL-BLADDER.

THE following case of torsion of the gall-bladder is of some interest, and is reported on account of its comparative rarity. One case is cited in Rose and Carless's *Manual of Surgery*, but no other is described in any of the several textbooks consulted.

The patient was a married woman, 77 years of age.

Previous History.—The left breast had been removed for carcinoma four years previously; apart from this she had been in good health until the onset of the symptoms, which was sudden, with severe pain in the right side of the abdomen just below the costal margin, and increasing in intensity. Five minutes after the pain commenced there was a feeling of nausea, followed by vomiting, first of undigested food, and later of bile. There were as many as ten such attacks of vomiting, but no jaundice was present.

Condition on Examination.—The temperature was 98° F. and the pulse 84, regular, and of fair tension and volume. The respirations were 20. The abdomen was protuberant, and there was fullness in the upper part of the right hypochondrium. In this region there was a very tender, painful pyriform swelling, which extended for 3 inches below the costal margin; it was 2 inches in width, and moved on respiration. A diagnosis of acute cholecystitis was made.

Operation.—An upper right-sided paramedial exposure was performed, when a very enlarged dark plum-coloured gall-bladder revealed itself with a definite mesentery 1½ inches long by 1¼ inch broad; the organ was twisted about its base in a clockwise direction through 180 degrees. Cholecystectomy was performed, and the gall-bladder was found to contain one large stone. Convalescence was uneventful.

I have to thank Mr. C. H. Larer for permission to publish this case.

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SUDDEN DEATH FROM INJURY TO THE CEREBRAL PEDUNCLES.

THE following very unusual case of sudden death from trauma seems worthy of record.

A middle-aged, healthy, well-built man was riding his bicycle in a gale. A sudden gust of wind caused him to lose control of his cycle and he fell off, striking his head against the pavement. He was picked up dead, and taken to Addenbrooke's Hospital, Cambridge.

Post-mortem examination revealed a fissured fracture of the anterior fossa of the skull of minor degree, and, in addition, the cerebral peduncles had been cut almost clean through, presumably by impact against the dorsum sellae. No other abnormalities were found.

I am indebted to Dr. J. F. Gaskell for permission to record this case.

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Reports of Societies.

THE CURATIVE ACTION OF DIGITALIS IN TOXAEMIA.

AT a meeting of the Section of Medicine of the Royal Society of Medicine, on April 25th, presided over by Dr. R. A. YOUNG, a communication was made by Professor W. E. DIXON and Dr. G. N. MYERS on the curative action of digitalis in toxaemia.

Professor DIXON explained that the large-scale animal experiment which was recorded in the paper arose out of an attempt to determine whether digitalis was or was not of any value in pneumonia. Clinicians were divided on the point, some stating that the use of digitalis rendered the patient more liable to die, and others that it increased the probability of cure. On the experimental side there was exactly the same division of opinion, about half the research workers stating that as a result of their observations digitalis had been shown to be of value in pneumonic and infective conditions, and the other half that it had no value whatever. A suggested explanation of the difference was that investigators had been so engrossed in studying the action of digitalis on the heart that no other action had been recognized or expected. It was impossible to give animals pneumonia and to ensure their death in the absence of exceptional measures, and therefore in these experiments, which were with guinea-pigs and rabbits, resort was made to the use of a toxin, nearly all the mortality in pneumonia being attributable to toxaemia. The diphtheria toxin was chosen for the purpose of the experiment, because the minimal lethal dose was so definite. The experiments showed consistently that if a reliable tincture of digitalis were given the animals survived subsequent injections of bacterial toxin, even if the amount of toxin was three times the minimal lethal dose, while the control animals, which had had the toxin without the previous digitalis, invariably died. The same effect was obtained when the toxin was injected first, provided that the injection of the digitalis was not too long delayed. It was also found that the glucosides from digitalis and strophanthin (from *S. kombé*) exerted some life-saving effect, though not to the same extent as that given by digitalis, while *g*-strophanthin, or ouabain, which was official in the *United States Pharmacopoeia*, and was used for the standardization of tincture of digitalis, had no action of this type. This last substance was an ideal control, because it was absolutely valueless. It acted on the heart like digitalis, but had none of its life-saving properties. Animals which received ouabain died even a little more readily than those which had received the toxin alone. Strophanthin, if given for a sufficiently long time, acted nearly as well as digitalis, the treated animals surviving and the controls dying. The effect of toxin on the animals which had received digitalis was different from that on normal animals, in that while the former responded by a decided leucocytosis, in the latter the leucocytosis was never a decided feature, and might be absent. Experimental and clinical evidence showed that toxins generally killed by causing circulatory failure associated with enormous dilatation of the splanchnic vessels and a progressive fall in blood pressure, a condition which was not due to the depletion of the suprarenal glands.

In brief, the result of the experiments was to show that if digitalis was given to the animals first, large quantities of toxin could be given, and the animals would survive, and that, even if the toxin were given first and the digitalis injected not too long afterwards, animals which ordinarily would have died under the dose of toxin could almost certainly be kept alive. How did the digitalis act? It appeared that it was of benefit in these shock conditions because it was retained by the tissues of the vascular system. It seemed as though, when an animal was under digitalis, there was little or no place for the absorption of toxin. Digitalis had to be administered for many days before perfect action was obtained, and this fact suggested that the drug occupied some portion of the cardiac structure to which the toxin normally attached itself; at all events, if digitalis were first given, and had time to act, the toxin was without effect, but if the toxin were injected first, subsequent digitalization, if delayed, might be too late to be effective. If this suggestion was valid, then the life-saving properties of digitalis in toxaemia were not explained by the known beneficent effects of the substance in cardiac disease, so well exemplified in auricular fibrillation and mitral regurgitation.

The subsequent discussion took the form of questions addressed to the authors. Dr. PARKES WEBER asked how the doses employed in the experiment corresponded with what would be necessary in the human adult, and remarked that when digitalis was recommended seriously for pneumonia it was recommended in very large doses. Professor DIXON said that he could not answer this definite question, but the more digitalis that could be introduced into the vascular system the better. Dr. KINGSTON BARTON asked whether it was possible to make use of digitalis as a preventive, on the analogy of building up the resistance to infection by means of substances containing vitamin A. Professor DIXON replied that, as in the case of vitamin A, unless there was a deficiency of a given constituent, no advantage was to be gained by taking more. Dr. NORMAN MYERS, in reply to a question as to whether electrocardiographic observations made on these animals showed an inversion of the T wave, said that with guinea-pigs there must be heavy digitalization to secure a change in the T wave; the digitalis in these experiments had to be given in slow progressive fashion, otherwise the toxic effects of the drug would appear. Large amounts of digitalis were required to produce inversion of the T wave, and in these experiments the phenomenon was not recorded.

Dr. R. A. YOUNG, from the chair, said that this communication was encouraging because it led one to believe that drugs and other such means might have an effect upon the toxins of bacterial bodies. It had become customary to imagine that the only chance of influencing toxins was by antitoxins. Some balneologists, however, had recently claimed that their waters exerted an antitoxic or at any rate a detoxicating effect in certain bacterial infections, and the present work suggested further lines of inquiry. It was also interesting to find pharmacologists confirming and extending belief in drugs; so often their work had tended to shatter beliefs previously held.

Ganglionectomy in Chronic Arthritis.

At the same meeting Dr. L. G. ROWNTREE, chief of the division of medicine, Mayo Clinic, gave a cinematograph demonstration of the value of ganglionectomy in certain cases of chronic arthritis. The cases selected were those of arthritis deformans, but without marked osseous change, and the sympathetic ganglions which controlled the calibre of the blood vessels were removed. In some instances the second, third, and fourth lumbar sympathetic ganglions were excised, in others the last cervical and the first two dorsal. Only 18 cases had been so treated out of many hundreds which came to the clinic, and the speaker was careful to point out that the treatment was not a panacea. Patients with cold and clammy hands and feet and with marked sweating were preferred. The best results were obtained in the hands, feet, ankles, and wrists; good

results in the knees and elbows; and less marked improvement in the shoulders and hips. In properly selected cases the treatment was followed by excellent results. Dr. Rowntree showed two reels of cinematograph film illustrating the patients before the operation was performed and the gradual recovery of function of the joints: conspicuous sequels were the disappearance of the pain, swelling, and deformity, the return of function to the joint, and the increase of muscle tone. The operation presented no difficulty after the field had been exposed; the ganglia were as apparent as stripes in clothing, and could be removed *en bloc* without difficulty. The operation for the upper extremity was not at first undertaken, as there was some uncertainty as to what exposed should be done. Then a posterior approach was attempted through the ribs, exposing the last cervical and the first and second dorsal, and the result was quite successful. In the operations for the lower extremity, using the abdominal method of approach, there had been some disturbance of intestinal function in two cases. The operation was of considerable magnitude and should be attempted only by a neurological surgeon. The first of this series of eighteen cases now dated back for four years; in the others the operation had been performed during the last year. The improvement in walking and the use of the feet and hands was well indicated in the films.

INDICATIONS FOR ELECTROTHERAPY.

AT a meeting of the Manchester Medical Society, on April 2nd, at Manchester University, with the president, Professor ALBERT RAMSBOTTOM, in the chair, Dr. R. SHAFFER read a paper entitled "Some aspects of electrotherapy," his object being to direct attention to some less well-known conditions in which this treatment was valuable.

Dr. Shaffer said that the cases considered had been treated in the electrical department of the Manchester Royal Infirmary. The first group consisted of 65 patients with lacerations, septic wounds, and cellulitis, who had been treated with zinc ionization. A case of osteomyelitis of the tibia which had been discharging for nine months had healed after two months' other treatment still had a raw which after twelve months' ionization. A burn in the leg area of 1½ in. diameter healed in three months under ionization. The speaker remarked that the sequels of cellulitis and whitlows usually caused much disability, owing to the matting together of tendons and joints in the resulting scar tissue. The treatment of these conditions was a triumph of electrotherapy, and consisted of diathermy, chlorine ionization, massage, and movements. many joints had thus been rendered useful which would otherwise have been greatly impaired as regards earning power. In 27 cases treated thus to loosen scar tissue there had only been one failure. A burned wrist took eighteen months to heal, and, naturally, was stiff and useless owing to the resulting scar tissue; three months of ionization treatment produced an efficient joint. Insurance societies would be saved large sums in compensation if physiotherapy were utilized for such injuries and their sequels, since the permanent disability would be greatly diminished. Similarly, much pain and incapacity would be prevented by the correct treatment of injuries in the region of joints other than those of bone. The persistence of pain and stiffness which caused such disablement was due to adhesions in and around the joint. By means of diathermy, radiant heat, massage, and early movements the patient would be saved much time and trouble, and the earlier such treatment commenced the better. There were 36 patients with chronic pain and stiffness after trauma, which had existed for an average of some months; most of them were discharged fit for work in about two months. An interesting use of faradism was the treatment of the early stages of flat-foot. A series of graduated contractions served to exercise the small muscles of the foot without strain, and, as they became more developed, they took more of the load, thus resting the over-stretched ligaments. If the joints were stiffened the foot required preliminary treatment with diathermy and manipulations. There were 25 cases of this kind, and the average treatment for 22 lasted ten weeks; the remainder persisted for five to six months before they were fit for discharge.

Diathermy was a method utilizing an alternating current of very high frequency, made to oscillate between two plates. Because of its frequency, 600,000 per second upwards, the nerve endings were not stimulated and chemical changes did not occur. The sole effect was the production of heat, which thus occurred in the tissues. The beneficial effect of diathermy was due to this deep heat. In treating any form of visceral congestion, diathermy was a logical procedure, since the deep heat produced would cause an increase in the effluent blood; this was obviously superior to any form of hot external applications. On this principle Dr. Eaton Stewart of Boston had been treating cases of lobar pneumonia with diathermy, and had reported striking successes. The total number of cases recorded in his book was 254; of these 219 patients recovered and 35 died, representing a mortality of 13.8 per cent. The following points of importance were noticed in this series, which included cases from six different seasonal epidemics and all the types of pneumonia. In 95 per cent. of these cases the temperature began to drop by lysis. Of those in which treatment commenced before the third day only two patients died, one being an old diabetic with pulmonary abscess. There was no constant change in the number of respirations, but their character was markedly improved and pain was diminished. A few hours' sleep usually followed each treatment. The cyanosis was constantly and markedly improved in every patient treated. Dr. Walsh of Tennessee had also reported a number of patients, 95 being treated with diathermy with a mortality of 12.4 per cent., and 59 being used as controls with a mortality of 20.3 per cent.; 122 were negroes and 32 whites. Dr. Shaffer went on to suggest that the use of diathermy in pneumonia, depending as it did on physiological principles, was worthy of investigation in this country. His own experience of this method in chest diseases was as yet limited to a few cases of chronic bronchitis, but the relief obtained was most gratifying.

Empyema complicated by Pneumothorax.

Dr. G. JESSEL read a paper on a case of empyema with perforation of the bronchus and partial pneumothorax. Having briefly referred to cases of spontaneous pneumothorax due to bronchiectasis and pulmonary tuberculosis that he had recently met with in his own practice, he described a case occurring in a patient with empyema. Perforation of a bronchus was briefly mentioned in most textbooks as a complication of empyema, but few details had apparently been recorded.

A youth, aged 17, with a history of previous good health, was suddenly taken ill in February, 1929, with what appeared to be influenza. Pneumonia was subsequently diagnosed, and after several weeks his doctor referred him to the local tuberculosis officer. He was admitted on August 7th, 1929 to the Peel Hall Pulmonary Hospital for investigation; his weight was then 6 st. 2 lb., the evening temperature 99°, and the pulse 102. The expectoration was profuse. The right lung was dull on percussion and the breath sounds weak, with many crepitations in front; tactile vocal fremitus was present, but no splash or coin sound was heard. Microscopical examination of the sputum showed cocci arranged in chains, but no tubercle bacilli. Dr. Davey of the Public Health Laboratory, Manchester, inoculated two animals and identified the organisms as haemolytic streptococci. A skiagram showed a dense homogeneous opaque shadow with the upper margin horizontal at the level of the fourth rib in front, merging with the cardiac and diaphragm shadows. Above and to the outer side was a clear pocket bounded externally by the chest wall, and with its inner margin concave outwards midway between the chest wall and mediastinum. Above and to the inner side of the clear area was a shadow of moderate and uneven density extending to the apex of the lung. The heart was not apparently displaced. The sputum gradually diminished in amount, and the general condition improved. On September 5th he complained of headache and pain in the right side of the chest. Next day his temperature rose to 100.6° and he coughed up half a pint of thick pus. His temperature then became normal and he felt better. The physical signs at this time were defective movement of the right side of the chest, tactile fremitus present all over; percussion dull especially at the base, with weak breath sounds and a few crepitations over the lower lobe, but no breath sounds audible over the lower lobe. He was discharged from hospital on September 25th much improved.

but subsequently he had a relapse and died. Although the pus found an outlet through a perforation of a bronchus, this proved to be insufficient, and the speaker thought it was arguable that resection of ribs should be performed in these cases as in ordinary cases of empyema.

A Form of Progressive Muscular Atrophy.

Dr. W. J. S. REID described a series of five cases, which he had seen during the past ten years, of progressive muscular atrophy of the atonic atrophic type, in which syphilis seemed to be the only etiological factor. The condition began in the small muscles of the hand, spreading to the extensors of the wrist and then to the shoulder girdle. No sensory changes were discovered at any time and no other signs of neurosyphilis. One patient had shown signs of bulbar paralysis, which was very unusual. The pathology was discussed, the speaker's opinion being that the cases were meningo-myelitic in origin. All had positive Wassermann reactions in the cerebro-spinal fluid, but Dr. Reid believed the essential point in diagnosis was an increase of the cell count. Treatment was successful in every case in arresting the condition. The speaker commended the intravenous injection of silver salvarsan, followed at once by lumbar puncture and the withdrawal of as much fluid as possible. The good effect of this procedure might, he added, be due to an increased entry into the cerebro-spinal system of the arsenical remedies, but, possibly, to the puncture alone. The condition was a subacute inflammatory condition, and therefore lumbar puncture alone might be expected to lead to improvement. Emphasis was laid on the occurrence of these cases which clinically revealed a picture akin to that of lead palsy; every care should be taken to exclude syphilis. When this infection was the cause the progress of the condition could be arrested in practically all cases.

CHORDOTOMY FOR PAIN.

AT a meeting of the Section of Surgery of the Royal Academy of Medicine in Ireland, on April 4th, with the president, Mr. R. ATKINSON STONEY, in the chair, Mr. A. A. MCCONNELL read a paper on *chordotomy for pain*.

Mr. A. A. McConnell described four cases in which the antero-lateral tract of the spinal cord was divided for intractable pain. One patient had post-herpetic neuralgia of the tenth thoracic nerve, and another had arthritis of the hip; the third suffered from cancer of the bladder, and the remaining one from sarcoma of the pelvis. In each case the pain was abolished, but the cancer patient died twelve hours after the operation; her general condition was bad, owing to prolonged pain and sepsis. Mr. McConnell concluded that this operation should be considered in all cases of intractable pain below the shoulder girdle, and should be performed at an earlier stage than was usual at present.

Dr. F. C. PURSER, referring to one of Mr. McConnell's patients whom he had seen, said that this patient had been much racked with pain, and was not a very good subject on whom to test sensation. The sense of pressure pain was not lost, but greatly diminished. The sense of vibration was also tested, and at the tenth rib the patient appreciated vibration perfectly well on both sides. At the iliac crest there was no sensation at all on the right side. Below the iliac crest vibration was occasionally felt, if it was extremely strong, on the left side, but was not felt at all on the right. The PRESIDENT mentioned that he had assisted Mr. McConnell at his first operation in 1925. There was a certain amount of difficulty in defining the exact position of the cord, but with experience and practice he felt that this would disappear. Mr. McConnell's results were extremely satisfactory, in spite of the fact that some of the cases had been left too long before the operation to gain as much advantage as they might have done had it been performed earlier. Mr. H. STOKES thought that in some cases loss of the sense of pain might be a disability.

Mr. MCCONNELL, in reply, said the operation was usually simple, but not always; it could be made more simple by opening the arachnoid separately from the dura. He agreed that loss of pain might be a disability in some cases. In the limbs the patient lost pain, but did not lose the sense of touch, and this was, to some extent, a protection. He would not operate in any case in which there was any prospect of relief by other means.

Clinical Cases.

Dr. R. R. WOODS showed a girl, aged 17, with an obscure condition of the tongue, which had been present as long as she could remember. The tongue was a good deal larger than normal; its edges were stripped of papillae, and a series of deep fissures ran radially from the centre to the edges, best seen when the tongue was pointed downwards. The whole appearance was as if the edges of the tongue had been combed with a sharp comb with teeth set far apart. There were indentations for the teeth round the edges, which were inclined to protrude between the teeth when the mouth was shut. The Wassermann reaction was faintly positive. After a provocative dose of novarseno-benzol (which was followed by a rigor) the Wassermann reaction was plus 2. Dr. Woods asked: Was the condition pathological or was it a congenital abnormality? If pathological, what was the condition? Had it any connexion with the Wassermann reaction? Was the Wassermann reaction absolutely reliable in such a case? The PRESIDENT said he did not consider the tongue to be of a syphilitic type; the slight development of fringes on the under part caused him to think that the condition was congenital. Mr. F. GILL reported that he had recently seen a similar case in a man, aged 22, in which the condition was more marked. He had heard of another case in a girl, and thought the condition was a congenital abnormality.

Dr. T. G. WILSON exhibited a specimen of hairy or dermoid polypus of the nasopharynx, removed from an infant aged 6 months; the growth was about the size of a marble, reddish in colour, and of an elastic consistency. It had been causing increasing respiratory obstruction since the child was a month old. Dr. Wilson also showed another similar growth which he had exhibited at the Section of Pathology six weeks previously. This second hairy polypus had produced intermittent attacks of asphyxia by acting as an imperfect ball-valve at the entrance to the larynx. It had been removed when the infant was some twelve hours old. In both cases recovery was uneventful. Dr. Wilson emphasized the rarity of the condition, and stated that these were the first two cases to be described in Ireland. The PRESIDENT, referring to the name "hairy polypus," said that the growth appeared to be bald, but he supposed there were follicles in the wall; he suggested that these polypi might develop hairs if they were allowed to persist into adult life.

Mr. H. F. MACAULEY demonstrated a boy, aged 6, from whom he had removed a large ganglioneuroma of the left superior cervical ganglion, which appeared as an indefinite swelling of the upper third of the neck, with a large arterial trunk overlying it and pulsating forcibly directly under the skin. Convalescence was uneventful, except for the fact that it was accompanied by the presence of Horner's syndrome, due to the removal of the portion of the cervical sympathetic trunk involved in the growth. Mr. MacAuley reviewed the literature of the ten other cases described. The PRESIDENT said that this was an extremely rare case. It was curious that the tumour was so difficult to palpate in spite of its large size, but he supposed that the difficulty was due to its deep situation and the comparatively soft tissue of which it was composed. Dr. W. D. O'KELLY remarked that he had seen four such cases, but pathological information on the subject was limited owing to the rarity of the condition. Mr. A. A. MCCONNELL referred to a somewhat similar case which he had seen some years ago in a boy, aged 5, who had a lump at the base of his neck, just above the clavicle. There were no symptoms referable to the sympathetic, but at the operation a lump was found intimately connected with that structure. During removal the sympathetic was divided above and below, and a typical Horner's syndrome developed. The tumour proved to be a fibroma, and no nerve cells were found in it. Mr. McConnell thought, however, that clinically it was a true ganglioneuroma. Mr. MACAULEY, replying, said that he had traced 51 cases of this condition, but they were apparently scattered, no one observer having seen more than two cases.

Reviews.

HUMAN PHYSIOLOGY.

ERNEST STARLING died in 1927. The loss to physiology was great; but he left us a record of brilliant experiment and of constructive thought. He left also his *Principles of Human Physiology*.[1] It is difficult for a reviewer of the present generation to contemplate the book without thought of the man. His personality was amazing. It was manifested in his research work as in all his human relations. It was manifested also in his teaching, in his lectures both to specialists and to medical students, and it penetrated, even, the almost impersonal barriers of a student textbook. He felt the obligation of a teacher to convey to his students the faith—not merely the works of the faith. His students remembered him, and the memory gave assurance that the study of physiology had been of service to them though they should never again consciously apply its principles or practise its arts. Not to many is this power given in wide degree. The student passes on; the teacher is forgotten; by so much is the power of knowledge dissipated. Starling completed the power edition of his book only a little while before his death. Already the demands of the press and the progress of knowledge have had to be met by a new and extensively revised edition. Authorship has passed to Professor LOVATT EVANS. We may rejoice in this succession, not only because it was the express wish of Professor Starling, not only because it continues the association of the book with University College, London, but also because of its assurance of continued authority. Starling left us a model of the classical textbook. The present author has preserved it and even more fully established it as a work of incomparable qualities. A detailed review of the text would be out of place, were it possible. The book is, however, too well known to require other than formal introduction. The present edition has been most extensively revised, and this is as it should be. When authorship passes on, there arises the opportunity for a more drastic revaluation to the times of the written word than, by the nature of things, a writer can bring to his own original work. An independent point of view demands some readjustment in the perspective of the old. Professor Lovatt Evans has accomplished his difficult task with complete success. Every chapter bears some sign of having been weighed judicially and remodelled to the better proportion of the whole. Elimination of matter now redundant, insertion of new material whose importance has grown in recent years, reorientation of argument for the better progress of the story, have all contributed to a book which will have few competitors. The qualities of authority, understanding, and vitality combine to preserve *Starling's Principles* as a completely satisfying work.

French physiologists are now embarked upon an ambitious enterprise. Under the general direction of Professor G. H. ROGER and the editorship of Professor LEON BINET an exhaustive Treatise on Physiology is in course of publication. It is intended that, within the next two years, the work should be completed in a library of eleven separate volumes. Already five of these—each of them a considerable volume exceeding 500 pages—have made their appearance, so that the project may be said to be well launched. In a general preface, Professor Roger defines those principles of physiology and those movements of recent thought which, in his opinion, should determine the scope, form, and proportions of a treatise of the dimensions projected. He emphasizes, in the first place, the close liaison which has always been and must always be maintained between physiology and practical medicine. For that reason the study of functional disorder will form an integral part of the work, justifying the full title of "Physiology: Normal and Pathological." For the rest Professor Roger accepts "function" as the foundation for the classification of physiological observation and deduction, outlines the levy which the subject makes upon other experimental sciences, emphasizing, in particular, the contribution of chemistry and physical chemistry, and claims the right to appropriate experimental psychology as a branch of physiology. Until the complete treatise is available it will not be possible to assay the measure of success which has attended the pursuit of these principles. It may, however, be said that the names of the thirty or so contributors to the treatise give ample assurance that the work will be fully representative of French, and, to a less extent, of Belgian schools of physiology. The five volumes already issued cover the subjects blood, lymph, and immunity; the internal secretions; muscle and animal heat; reproduction and growth; and the hepatic function and excretion. There remain—in press or in preparation—volumes upon general physiology; digestion; respiration; circulation; and (two) the nervous system. Of those published, only volume viii is before us: it is entitled "Muscle Physiology: Animal Heat."[2] Professor Lapicque is responsible for the general physiology of muscle, and succeeds in presenting a clear though highly detailed story. A rather elaborate chapter on chronaxie is added by Professor Bourguignon, while interesting discussions of fatigue and of locomotion are contributed by Professor Chailley-Bert. The problem of animal heat is surveyed in a comprehensive manner by Professor Lefevre, and the discussion is extended to the questions of fever and of temperature control by Professor Gautrelet and by Professor Binet. This part of the book is prefaced by an admirable summary of the physical laws of heat, mechanics, and energetics from the pen of Professor Weiss. Brief sections on bone by Professors Leriche and Policard, and on bio-electricity and bio-luminescence by Professor Strahl complete a volume which extends to more than 700 pages. The names of the authors cited above make an impressive catalogue of authority. A perusal of the weighty but generally entertaining text suggests that each contributor has engaged himself upon his task with care, discrimination, and vision. It is not possible to make any estimate of the relation of volume viii to the rest of the treatise. The fact, however, that within the volume itself there is little evidence of serious overlapping or incompatibility of treatment of related subjects by different authors gives promise that the work, as a whole, may be something more than a mere collection of monographs.

SICK CHILDREN.

THERE is room for a *Textbook on the Nursing and Diseases of Sick Children*,[3] written from an English standpoint, and the present work is well fitted to fill the gap. It has been produced by a small team of physicians and surgeons connected with the Hospital for Sick Children, Great Ormond Street, with the collaboration of the sister tutor at that institution, all writing under the able editorship of Dr. ALAN MONCRIEFF. The subject-matter of the book falls into two parts—a description of nursing methods as applied to children, and an account of the commoner diseases and disorders of early life, written specially to meet the needs of nurses and welfare workers. The teaching on both aspects of the subject is clear, detailed, and accurate, and is illustrated where necessary by some useful diagrams and photographs. The sections on nursing, indeed, could be read with advantage, not only by nurses, but by doctors. On the other hand, the utility of the chapters describing the medical and surgical diseases of children is less obvious. They are admirably written, and written with a reasonable degree of simplicity, but they seem to contain more information than a nurse, with her rather sketchy knowledge of anatomy and pathology, can appreciate. Is it really necessary (or advantageous), for instance, that a nurse should know the varieties of congenital malformation of the alimentary canal or the names of the myopathies—Hoffmann paralysis and the chief types of the myopathies? Will it make her a better nurse, or will it not rather make

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[1] *Starling's Principles of Human Physiology*. Fifth edition, revised and revised by C. Lovatt Evans, D.Sc., F.R.C.P., F.R.S. The Chapters on the Central Nervous System and Sense Organs revised by H. Hartridge, M.D., Sc.D., F.R.S. London: J. and A. Churchill. 1930. (Roy. 8vo, pp. xv + 1309, 545 figures. 21s.)

[2] *Traité de Physiologie*. Tome viii. Physiologie Musculaire; Chaleur Animale. Paris: Masson et Cie. 1929. (Sup. roy. 8vo, pp. 732, 134 figures. Paper cover, 95 fr.; bound, 110 fr.)

[3] *A Textbook on the Nursing and Diseases of Sick Children*. Edited by Alan Moncrieff, M.D., B.S., M.R.C.P. (Lond.). London: H. K. Lewis and Co., Ltd. 1930. (Demy 8vo, pp. xii + 550, 15 text-figs. 15s. net.)

her consider herself an amateur doctor? The authors, we suppose, would reply that the General Nursing Council, incredible though it may seem, does actually expect a nurse to possess this sort of information, for they give in an *appendix* the questions set at the State examinations for sick children's nurses during the last two years. We gather from these that a nurse may be asked what she knows of keloid, syndactyly, Hirschsprung's disease, dermoid cysts, and acetonaemia, or that she may have to give an account of the varieties of osteomyelitis with a description of their constitutional symptoms and local signs. So long as such questions are set it will be necessary for a candidate to get up enough information to enable her to deal with them, and certainly any nurse who has a fair knowledge of the contents of this book can face with equanimity even the examiners of the Nursing Council.

MEDICAL EXAMINATION FOR INSURANCE.

An author is unfortunate who, having something of importance to say, is unable to say it in good concise English. That Dr. PATERSON MACLAREN's book, *Medical Insurance Examination*,[1] meets a need is shown by the issue of a second edition. But his involved style is made even more irritating by his inveterate habit of splitting infinitives. Moreover, his desire for thoroughness has led him to introduce into his book masses of detail which must be known to every medical practitioner; and he takes credit to himself for trebling the space devoted in the previous edition to certain knotty problems in insurance work. Judicious use of the pruning knife would have shortened his 600 pages, and probably made them more readable. It is a pity, perhaps, that more use is not made by British offices of the mass of material that must be in their possession for the purpose of assessing lives. It has been left largely to American and Canadian companies to try to establish numerical ratings for almost every abnormal condition. At the same time, as Dr. MacLaren points out, striking a balance of the credit and debit points of the proposer is done *subconsciously* by every painstaking medical examiner. In the American system a vague summing up of impressions is replaced by a definite judgement on each impairment. If these vague impressions produce satisfactory results to all concerned, British proposers and examiners may well be thankful at being saved from the intricacies of the American medical report. From the scientific point of view it is another matter.

Among the conditions which arouse questionings in assessing lives at the present time are renal glycosuria; functional, or, as Dr. MacLaren prefers to call it, extra-renal albuminuria; rheumatic fever; pleurisy; high blood pressure; and over- or under-weight. About all these conditions it is by no means easy from Dr. MacLaren's book to discover what is the orthodox opinion, if any; but from the rating tables appended to each chapter it is possible to find out the importance attached to them by American and Canadian offices. In the section on hyperpiesis Dr. MacLaren calls attention to the great variations which may occur in the blood pressure at the functional crises of life, even in a quite healthy individual; so that in order to label a case of high blood pressure as "persistent" at least three readings should be taken on different days and at different hours. Where such procedure is practicable, he states that a systolic reading of 12 mm. Hg above the average for the age should be the maximal variation allowed without loading. Some latitude, however, appears to be allowed to persons who are 20 per cent. overweight. Their pressure may be 4 mm. over that of persons of average weight. A persistent systolic pressure above 155, with a persistent diastolic above 100, calls for an extra premium at any age. Many examiners, we believe, do not take so strict a view; but whether their lenity is based on ignorance of the American figures, or different English experience, we do not know. In discussing renal glycosuria, Dr. MacLaren quotes MacLean's view that persons with this condition should be accepted at normal rates, and McCrudden's statement that three patients had been observed over periods of nearly thirty years. From the ratings of the different companies it would appear that MacLean's view is by no means universally adopted. In loading for acute rheumatism the American offices seem to incline to leniency.

Apparently Dr. MacLaren's object is to plead for the universal adoption of some such method of rating lives as is used in America, whereby the amount of risk in various diseases and disabilities may be assessed, and met by various methods of loading. He is concerned because under present methods sheep of very diverse grades are herded into the same fold. He thinks that there is a great future for an insurance company which, taking only 100 per cent. lives, could quote rates far below the present scale. And in an appendix he supplies a draft "confidential report" and "personal statement" of such fullness as should frighten away any proposer, and cause the examiner to treble his fee.

MECHANO-THERAPY.

DR. MARY MULLINER in her book on *Mechano-Therapy*[2] does not profess to treat the subject in a comprehensive way. She writes in the preface: "The larger part of the author's practice, aside from hospital clinics, has been in corrective hygiene, with less of the distinctively orthopaedic work, hence the emphasis placed upon correct posture. . . ." This must be borne in mind, otherwise the reader will be surprised to find only scant reference to the treatment of fractures and injuries, while other branches of the subject are dealt with adequately.

In describing certain manipulations Dr. Mulliner advocates a technique which would not find general acceptance in this country. For example, if in effleurage the hand is moved "back and forth over the skin" as she advises, the movement would be devoid of the profoundly soothing effect obtained by Mennell and others in unidirectional—that is, centripetal—stroking. Again, to practise vibration of the arm for its stimulating effects on the patient would have far too exhausting an effect on the operator to justify its use. Vibration having a sedative effect of great value is described by Cyriax in *Elements of Kellgren's Manual Treatment*, and, properly performed, this treatment can be maintained without fatigue for long periods. The effect of rapid arm circumduction, Dr. Mulliner says, is to draw the arterial blood by "centrifugal force" away from the chest. This is a crude, mechanistic theory of the complex sequence of changes which occur in the circulation in blood and lymph vessels in a limb during passive rotation. It is comforting to find that the author stresses the fact that respiration is a normal reflex. Although this may seem obvious, it is often lost sight of by enthusiasts, who, by many and various breathing exercises, would tend to make respiration a voluntary process.

Briefly, this textbook is a helpful addition to existing works on the subject. Readers on this side of the Atlantic, however, will find the author's phraseology irritating. Here are two typical examples: "Knowledge of anatomy pays big dividends" (a point which some of our anatomical teachers might well question!); and on page 212: "The pains of neuralgia come and go. Those of neuritis never let up." Such expressions are all very well in a topical journal; they are out of place in a serious textbook.

AMERICAN MEDICAL WAR HISTORY.

AT the recent annual meeting of the Carnegie Trust for the Universities of Scotland, Lord Sands, who presided, described an American report, copies of which had been received by the Trust, as being shorter than the *Dictionary of National Biography* but larger than the Holy Scriptures. The same might be said of volume iii of the history of The *Medical Department of the United States Army in the World War*.[3] They do things thoroughly in the United States, and it is no surprise to find that this volume,

[1] *Medical Insurance Examination*. By J. Paterson MacLaren, B.Sc., M.D., C.M. Second edition, greatly enlarged. London: Baillière, Tindall and Cox. 1929. (Demy 8vo, pp. xx + 646. 30s. net.)

[2] *Mechano-Therapy*. By Mary Rees Mulliner, M.D. Philadelphia: Lea and Febiger. 1929. (5½ × 8¼, pp. x + 265; 57 figures. 2.75 dollars net.)

[3] *The Medical Department of the United States Army in the World War*. Prepared under the direction of Major-General M. W. Ireland. Vol. iii: Finance and Supply. Washington: Government Printing Office. (Sup. roy. 8vo, pp. 935; 50 figures. 3 dollars.)

which deals with finance and supplies, should be an exhaustive chronicle of the means and measures adopted for dealing with a unique situation. While this book might at first be dismissed as merely a dull weighty tome, it is far from being so. Much that is interesting emerges during even a cursory perusal of its pages. As the British Army profited by its experience in the South African war, so the United States War Department benefited greatly by the lessons learned on the Mexican Border in 1916. It is obvious that during the first years of the great war the American Army Medical Department was most carefully watching the development of events in Western Europe, and had not been blind to the difficulties and experiments of the various warring nations. Furthermore, the department realized the magnitude of its task and "started big." In spite of this, the original estimates had to be revised from time to time, and the close of the war found the department with large contracts which had to be cancelled. Simplicity and standardization best describe the means employed to keep the army supplied with medical necessities. The great distance from the seat of war and the shortage of shipping were outstanding difficulties. Motor ambulances and other vehicles and appliances had to be taken apart and boxed to fit them into the small space allotted on board ship. As the equipment of a thousand-bedded hospital occupied 39,000 cubic feet of space and weighed 120 tons, it is easy to realize the difficulties of assembling, packing, storing, and shipping all this material overseas. While the book will be mainly consulted for reference purposes it may at the same time be read with interest. It contains a wealth of detail and is obviously written with a scrupulous regard for accuracy. Inspired as it is with the authority and considered opinions of an official department, it is a mine of valuable information, which not only serves as an important historical record of the past, but will be a useful guide to medical departments in the future.

NOTES ON BOOKS.

UNDER the title of *The Physiology of Oral Hygiene and Recent Research*,[1] Dr. SIM WALLACE brought together a number of papers and lectures expressing his views on the functions of the saliva and the causation and prevention of dental diseases, and a new edition has now appeared. In the author's view the function of saliva is to promote oral hygiene and dental diseases are all of local origin—lack of oral cleanliness. As our readers must be well aware by now, Dr. Wallace finds little of value in the work of Mrs. Mellanby. Unfortunately, a series of collected papers tends to prolixity, and here there is no exception. But that does not do away with the fact that *Oral Hygiene* is a contribution to "the other side of the question."

Professor A. GROTJAHN'S fascinating work on *Doctors as Patients*[2] contains as its subtitle indicates, the descriptions of doctors' illnesses described by themselves. The book is divided into three parts. The first which consists of extracts from medical autobiographies, includes accounts of acute infectious diseases, nervous and mental disorders, surgical affections, senescence, and the approach of death, by such well-known writers as Cardan, Trendelenburg, Ebstein, Naunyn, Billroth, Pirogow Kussmaul, Lorenz, Nothnagel, and Wundt. The second part, in which the descriptions are taken from medical journals or textbooks deals with a similar variety of conditions, such as oxyuriasis (Heubner), cerebral thrombosis (Fowell), asthma (Trousseau), myotonia congenita (Thomsen), and various sexual disturbances by anonymous writers. The third part, which in our opinion and that of Professor Grotjahn, is the most valuable part of the work, consists of descriptions given at the writer's request by his medical acquaintances of various illnesses, such as those already mentioned and numerous others, such as cholelithiasis, renal colic, duodenal intubation, anaesthesia, migraine, otitis media, real and imaginary pregnancy and delivery. The object of the work is to emphasize the importance of the psychological aspects of the doctor's calling, which tends rather to be neglected in medical education, and to inspire the young practitioner, with a feeling of sympathy for his patient by a vivid presentation of what the doctor himself has to undergo when illness overtakes him.

[1] *The Physiology of Oral Hygiene and Recent Research*. By J. Sim Wallace, D.Sc., M.D., L.D.S. Second edition. London: Bailliere, Tindall and Cox. 1929. (Demy 8vo, pp. xi + 228. 10s. 6d. net.)

[2] *Aerzte als Patienten. Selbstbiographien und Krankengeschichten in ärztlichen Selbstbetrachtungen*. Von Professor Dr. med. A. Grotjahn. Leipzig: G. Thieme. 1929. (8½ × 5½, pp. viii + 274. M.18, paper cover; M.19 bound.)

Dr. R. FLETCHER MOORSHEAD'S book, "*Heal the Sick*,"[1] will appeal chiefly to members of the Baptist faith. It is a detailed account of the history of the Medical Mission Auxiliary of the Baptist Missionary Society, of which Dr. Moorshead is medical secretary. He is a firm believer in linking up hospital and school with mission work.

Two of the three striking plays now published in a single volume[2] by JAMES BRIDIE, *The Switchback* and *The Sunlight Sonata*, have been produced by the Repertory Theatres of Birmingham and Glasgow. Each play recalls a predecessor at some point, yet each is sharply original. In *Switchback* the exactions of medical etiquette, as represented by Sir Anthony Craye, and the gross publicity imposed by Lord Pascal, the newspaper proprietor, and by Burmeister, the financier, combine to wreck the work and the soul of the honest idealist, Dr. Mallaby, who in the end refuses all reparation and departs to forget the ugly conditions of modern life among the dust of Palmyra. The author is, we believe, a member of our profession, but there are passages in this vigorous play which medical readers may find a little unreal. In *The Sunlight Sonata* Beelzebub and the seven Deadly Sins dispute with the three Christian Graces the disreputable sons of some typical members of the Glasgow bourgeoisie. Here the element of fantasy, uniting with the bitterness of the social attack, reminds one occasionally of Strindberg, though the admirable dialect of Beelzebub is sardonic in an entirely Scots manner. The brief scene called *The Pardoner's Tale* sets the Chaucerian story in a ruined changehouse on the road between Edinburgh and Perth. Here on a dark and windy night come three wild young men to find death in a sinister room. This macabre piece is written with extraordinary intensity. The peculiarly bitter tang of eighteenth century Edinburgh dissipation is well conveyed; and the lament of Philip Macgillivray, the Highland medical student, who looks like "a debauched Galahad," over the ironies of death, is hot and cold like a poem by Villon. A mediæval passion, strangely matching an extremely modern quality of mockery, gives James Bridie's work much dramatic value.

[1] *Heal the Sick*. By R. Fletcher Moorshead, M.B., F.R.C.S. London: The Carey Press. 1929. (7½ × 5, pp. xii + 224; illustrated. 2s. 6d. net.)

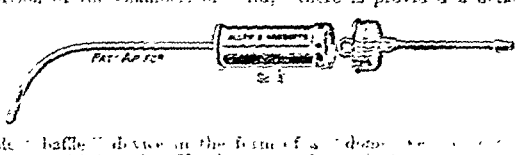
[2] *The Switchback*; *The Sunlight Sonata*; *Pardoner's Tale*; *The Sunlight Sonata*. A farce-mortality. By James Bridie. London: Constable and Co. Ltd. 1929. (Cr. 8vo, pp. xi + 156. 7s. 6d. net.)

PREPARATIONS AND APPLIANCES.

A LARYNGEAL MUCUS EXTRACTOR.

DR. A. B. RUTAH, Enugu, writes: I desire to introduce a new pattern of "mucus extractor" for use in obstetrics, by means of which mucus can be extracted by suction from the mouth of the infant in a more cleanly and hygienic manner than heretofore, and without any risk of the mucus reaching the mouth of the operator. This new pattern has already been given a thorough trial in the Rotunda Hospital, Dublin, where it is now being used with the full approval of the Master.

The whole instrument is preferably made entirely of nickel-plated or other metal, and comprises two portions of tubing—a proximal portion fitted with a suitable mouthpiece, and a distal portion, perforated near its outer end and suitably curved to fit comfortably into the mouth of the infant. Both portions being connected by an intermediate chamber. This intermediate chamber is formed in two portions, which can readily be taken apart for cleaning purposes. Within the upper portion of the chamber, or "lid," there is provided a detachable "baffle" device in the form of a "dome" [illegible] disc, provided with a U-tube [illegible] the centre of the "dome" and is made so [illegible] lower portion of the suction tube while the [illegible] adjacent to the surface of the "dome" and a hole above its upper surface. This "dome" is adapted at its periphery to co-operate with or dip into an annular recess formed at the top of the lower portion of the chamber by the position therein of a conical annulus or ring. An effective trap of "baffle" is thus provided, which will prevent any mucus reaching the chamber from passing up the suction tube to the mouth of the operator since should any mucus tend to rise in the chamber it is thrown down by the conical annulus in the upper part of the chamber, and also by the dome now occupying the top.



It may also be pressure to state that since this extractor has been used at the Rotunda it has been uniformly satisfactory.

This new instrument is made and supplied by Messrs. Allen and Hanburys Ltd., 49 W. [illegible] Street, London, W.1

British Medical Journal.

SATURDAY, MAY 3RD, 1930.

ACUTE POLIOMYELITIS.

An exhaustive review of the epidemiology of acute anterior poliomyelitis in recent years has been published in the February and March numbers of the *Monthly Epidemiological Reports* of the Health Section of the League of Nations. The article includes a general description of the past history of poliomyelitis and a detailed account of its incidence and mortality in various countries within the last two decades, and is illustrated by spot maps of important epidemics in England, Belgium, Holland, Sweden, and Rumania from 1926 to 1929. It should prove of the utmost value as a sequel to the masterly survey made by the late R. Bruce Low fifteen years ago.[1]

As is well known, Scandinavia, where epidemic manifestations were first noted, has suffered more than any other European country. The first serious outbreak occurred in Sweden in 1881, nearly 100 years after Michael Underwood published the earliest medical description of infantile paralysis under the heading "Debility of the lower extremities." Several epidemic foci were reported in Norway in 1894, and since then many epidemics have occurred in these two countries, the most important being in 1905 (1,199 cases) and in 1911–13 (9,018 cases). The great majority of the outbreaks of poliomyelitis in North America have occurred in the Northern States of the Union, and, as Bruce Low observed, the diffusion seems to have followed a course generally from east to west. A severe epidemic occurred in the State of New York in 1907, when 2,500 cases were reported. Between 1905 and 1909 the number of persons attacked in the United States was estimated at no fewer than 5,400. Another very serious outbreak followed in 1916, with upwards of 13,000 cases. During the past quarter of a century the incidence has fallen most heavily on the United States, but the distribution of the disease is world-wide. In northern countries it seems to have existed from far remote times, as is suggested by characteristic deformities of skeletons found in the cemetery at Herjolfsnes in Greenland, occupying the site of a native colony that had wholly disappeared; it is apparently represented also in an Egyptian stele of the eighteenth dynasty preserved at Copenhagen. Though the disease is much rarer near the Equator than in temperate climates, yet in the Northern Hemisphere it is most prevalent during the warm months. It exists also in the Southern Hemisphere, notably in Patagonia, South Africa, and Australia, and in New Zealand, where 1,018 cases with 123 deaths occurred in the epidemic of 1916, and 1,257 cases with 166 deaths eight years later. Whereas its incidence in northern latitudes reaches the highest point during August and September, in the south the peak occurs between December and May, the months corresponding to our summer and autumn. The case mortality has varied much in different countries and in different years, the disease being far more virulent in Sweden, the United States, and Canada, for example, than in Saxony or Rumania. "The average death rate from all forms is 12 to 13 per cent. Variations from this figure in different countries are apparently due not to any difference in the gravity of the disease, but to different methods of compiling statistics." In most epidemics a difference has been noted in the incidence of the disease in town and country, but there has been no constancy in the comparative prevalence of poliomyelitis in urban and rural populations. Though notification has been compulsory in England and Wales for some years past, many cases are never notified and estimates of incidence can only be approximate.

As regards the portal of entry of infection, the experiments carried out by Landsteiner and Levaditi many years ago proved that the virus was present in the tonsils or pharynx at the onset of the disease. Subsequently the part played by tonsillectomy in the development of acute anterior poliomyelitis was emphasized by Aycock and others, especially as the period which elapsed between tonsillectomy and the attack of poliomyelitis tallied with the incubation period of the disease. It is more likely, however, that the action of tonsillectomy is merely that of a wound which facilitates the entrance of the virus of poliomyelitis, as it does that of scarlet fever or other infections. The nature of the virus remains unknown, and the part played by the streptococcus described by Rosenow and others in the etiology is more than doubtful. The disease has been reproduced by intraperitoneal or intracerebral inoculation into the monkey and rabbit, but the virus is very quickly attenuated by passage through these animals. It has not been proved, however, that the substances inoculated contained the pathogenic organism; they may have contained the toxin alone. It is not certain whether the disease is transmitted by direct contact, or through the agency of fomites or of foodstuffs such as milk, or through other channels. Experimental evidence suggests that the virus is emitted and gains entry through the mucous membrane of the throat and nose. There is at present no biological test by which an early diagnosis of the disease can be made; its recognition has to be based on the clinical symptoms, and the diagnosis is only finally established on the occurrence of the paralysis.

Convalescent serum for the prevention or treatment of acute anterior poliomyelitis has been employed since 1910, when Netter, using the meningeal route, claimed good results from its use at the beginning of the illness, before the first symptoms of paralysis had appeared. The drawbacks to the method are: first, the difficulty of making a diagnosis before the appearances of paralysis, and, second, the difficulty of obtaining convalescent serum. Moreover, the absence of controls in all epidemics treated by this method deprives it of a firm scientific foundation. Serums have also been prepared by immunizing horses with material from the spinal cords of infected monkeys, or with the pleomorphic streptococcus isolated by Rosenow in the tonsils and central nervous system of poliomyelitis patients; but their value in the treatment of the disease is not yet firmly established.

[1] Cmd. 825. Supplement to Annual Report of Local Government Board, 1913–14. Appendix No. 5.

LIGHTING AND WORK.

THE lighting of a factory or workshop is a matter for the special care of every employer and works manager, since it has an important bearing both on the health, safety, and efficiency of the worker and on the general output of work. The Home Office, through a departmental committee, has studied this subject extensively since 1913, and has issued several reports. These are summed up in Welfare Pamphlet No. 7, on "The lighting in factories and workshops," of which a new edition is now issued.[1] The document is a short

[1] The Lighting in Factories and Workshops. Third edition. Welfare Pamphlet No. 7. London: H.M. Stationery Office. 1930. (Pp. 25, 4d. net.)

and an effective presentation of the subject, which should be studied by every doctor connected with works as well as by the controllers of those establishments. The effect of lighting upon the industrial worker is material. Eyestrain and headaches are certainly caused by bad light. It has not been possible to trace specific cases of eye disease to this cause, save possibly in the instance of miners' nystagmus; but there are few conditions more mentally irritating than those associated with bad light, whether this is due to insufficiency or glare or confusing shadows. A worker continuously subjected to such adverse conditions cannot give the best work of which he is capable. Further, bad light is undoubtedly a factor in the incidence of accidents. A statistical investigation carried out by the committee shows that accidents of certain types occur more frequently during winter months, when the daylight hours are short. It is obvious that proper illumination of dangerous parts of machinery is an essential factor of safety.

Light is just as much a tool of the worker as any mechanical implement. Delicacy of work demands delicate tools, and light appropriate to the work is an essential tool: it is no less necessary in the coarser work than in the fine. Two forms of lighting must be considered—the general lighting of the shop sufficient for the safe movements of the worker, and the specific lighting of the benches or of the machinery used. Indications of the minimum requirements for floor lighting are given for different types of shops and passages. Bench lighting will also vary with the type of the work; it must be high where detail is fine. One of the most necessary precautions is the safeguarding of the eyes against glare. It has been a common practice in the past to attach new and powerful lamps to old fittings which were designed to carry totally different forms of illumination. For example, naked gas-jets have been replaced by incandescent mantles with a view to better lighting, but the effects are bad and wasteful unless care is taken to provide efficient reflectors. Worse effects follow when high power gas-filled electric lamps, with their great intrinsic brilliance, are substituted for the old carbon lamps without altering the small shallow reflectors which were appropriate for the carbon lamp. In these new and powerful appliances are to be found most satisfactory and economical forms of lighting, provided always that they are used with sense.

Of all forms of illumination there is none better than natural light. To secure the advantage of this the windows of factories should be large and well placed, and they should reach to the ceiling of the shop. It is essential that the windows should be cleaned frequently, otherwise the best efforts of the architect and builder will be nullified. Through a recent study of the output of hand compositors in printing offices it has been shown that if the artificial illumination is sufficiently strong (about 20 foot candles) the daylight standard of output may be reached. Obviously, the ideal to be aimed at, if only on the ground of economy, is good natural lighting, and every worker would probably prefer this even to the best artificial source of light. Under artificial illumination of a lower intensity, such as may commonly be found in factories, production drops. The following examples of this are given: in linen weaving, under artificial light, production fell off by approximately 11 per cent.; in silk weaving, a correspondingly fine process, 10 per cent.; in cotton weaving, where coarse material is used, 5 per cent. Such losses as these can be remedied. The advice of an expert illuminating engineer may be valuable, but often the remedies are quite simple and inexpensive.

At the Home Office Industrial Museum, in Horseferry Road, near Westminster Abbey, the lessons of this pamphlet may be seen demonstrated in such fashion that they are certain to carry conviction. This museum is an excellent piece of work, and its value is not sufficiently appreciated. It is open every weekday, and parties may have demonstrations arranged for them. Where workmen, from an innate conservatism, are inclined to resist innovations there is nothing more calculated to secure their speedy conversion than a visit to this museum.

PSITTACOSIS.

In the comprehensive study of psittacosis compiled by Drs. R. Hutchison, R. A. Rowlands, S. Levy Simpson, and Professor H. M. Turnbull, which was published in the *British Medical Journal* of April 5th (pp. 633–646), the suggestion was made that a filterable virus might be responsible for this condition. In support of this view were cited the investigations carried on at the London Hospital by Drs. S. P. Bedson, G. T. Western, and Levy Simpson. The Health Organization of the League of Nations has now issued an illustrated memorandum[1] on the history and etiology of the disease, and the same conclusion as to its causation is reached, Nocard's bacillus (*B. psittacosis*), and other bacteria which were formerly suspected, being regarded as not concerned in their usual form, though it is agreed that the filterable virus is very closely connected with the group of the typhoid and salmonella organisms. This conception helps to explain the partial resemblance of the clinical symptoms to those of enteric fever, and the incipient agglutination of the blood of some psittacosis cases to bacilli of the typhoid group. The disease is probably a genuine septicaemia, often complicated by toxaemia; the toxin seems to have a special affinity for the nervous centres, which are strongly affected in the hypertoxic forms. This memorandum gives a detailed account of the history of the recognition of psittacosis, the sources of infection, the symptomatology, and prophylaxis. The duration of the incubation period is stated as being generally 8 to 15 days, but it may be shorter, more rarely longer; the onset is abrupt. In favourable cases the symptoms begin to subside about the tenth day. In fatal cases (35 to 40 per cent.) there is often a crisis about the fourth or fifth day; the nervous symptoms predominate; there is pronounced drowsiness, high fever, and great prostration; the pulse rate increases; and death supervenes from cardiac weakness, sometimes even before the pulmonary symptoms have reached their maximum. In other cases death does not take place until the tenth or twelfth day of the illness, with symptoms of cardiac weakness and broncho-pneumonia, or from pulmonary oedema. Uraemia may also be the cause of death. There is often a relapse at the moment when the temperature begins to fall. Among the practical steps recommended for adoption by A. Roubakine, whose name is appended to the memorandum, are restriction of the admission to European countries of parrots and parrakeets, together with prohibition of the importation of parrots' wings, and all parts of their dead bodies. The organization of a competent veterinary service is advised, and it is suggested that bird shops should be classed among the unhealthy premises. A final proposal is that psittacosis should be included in the list of compulsorily notifiable diseases. The Argentine outbreak of July and August, 1929, is not regarded as the initial focus of the recent

[1] League of Nations. Epidemiological Report. R.E. 137. Geneva, April 15th, 1930. London: Constable and Co. Ltd. 6d.

"epidemics" in America and Europe; it appears to have followed the importation of a consignment of sick parrots from the Amazon district in Brazil.

The proposal for restricting the importation of parrots has already been adopted by the Ministry of Health. A circular issued on April 28th states that the Minister is satisfied that for the protection of the public health it is necessary to prohibit for the present the importation into this country of parrots and all birds of the parrot species. With this object regulations have been made and will take effect on May 20th. The regulations do not forbid the importation of any parrot which is proved to the satisfaction of the medical officer of health to be required for purposes of medical or veterinary research, or which is consigned to the Zoological Society of London or to a person specially authorized by the Minister to import parrots otherwise than for sale. A parrot is defined as a bird of the species Psittaciformes, and includes any of the birds commonly called parrots, parrakeets, lovebirds, macaws, cockatoos, cockatiels, conures, caiques, lories, and lorikeets. Masters of ships must notify the Customs and Excise officers of any parrot on board a vessel approaching a port in England and Wales. If the parrot is diseased or is associated with cases of human illness the medical officer of health may forthwith cause the bird to be destroyed or otherwise disposed of to his satisfaction. Although no case of psittacosis has so far been reported in Scotland, corresponding regulations have been made by the Department of Health prohibiting the importation of all birds of the parrot species into Scotland as from May 20th.

SLEEP IN HOSPITALS.

THE Central Bureau of Hospital Information (19, Berkeley Street, W.) has just published in tabular form the replies received from the authorities of 63 provincial general hospitals to a questionary designed to elicit information about the time at which work starts in the wards, and opinions on the desirability of adopting a procedure whereby patients would not be disturbed until 7 a.m. From a study of the figures it seems that in general the present routine is somewhat as follows: In most of the hospitals the day nurses start duty at 7 a.m., and as the night nurses do not go off till 8 or 8.30 the duties of the two staffs overlap for a period of one to one and a half hours. Work begins in the wards of 45 of the hospitals from which replies were received before 6 o'clock, and in the remainder at 6 o'clock or later. Between the beginning of work and breakfast there is an interval varying up to two and a half hours, but in most cases it is from half an hour to one hour. The hour fixed for the visits of the honorary medical staff varies in these hospitals from three to six and a half hours after the beginning of work, but in the majority the interval is four to five hours. The routine thus appears to be pretty uniform, but there are sharp differences of opinion about the desirability of effecting a change. The authorities favouring a retention of the present system try to justify their preference by reasons that fall roughly into three groups. They state, first, that there is no hardship in the present arrangement, though they concede that very sick patients should receive special consideration; secondly, that the proposed change would not allow a sufficient interval between the time at which work starts and the hours fixed for the visits of the medical staff; and, thirdly, that most of the patients are accustomed to early rising. It would be interesting to know how, under existing arrangements, the most careful consideration could ensure that some patients should be awakened and not others; our own experience is that as soon as activity begins in the ward patients are liable to be disturbed, whether the staff wishes them to go on sleeping or not. Unless, therefore, special wards are set aside for patients needing extra sleep we cannot see how the existing routine can fail to inflict hardship on, at any rate, a proportion of the patients in the ward. We find it difficult to consider seriously the suggestion that the visit of the honorary medical staff must take place at some fixed and immutable hour, to which the times set aside for all other activities in the ward must be adapted. Those who have watched the performances of Grock may recall the great moment when, his stool being too far from a grand piano, he exerts himself stubbornly, but without success, to put things right by moving the grand piano up to the stool. We cannot but feel that the honorary staffs, while grateful for the consideration shown to them by the authorities administering their hospitals, would be the first to say, "Move the stool, Sirs, move the stool." We must concede the truth of the statement that most patients are accustomed to early rising; so, however, are they to working hard for eight hours a day, and no doubt to all kinds of practices which, while appropriate to them when they are in health, might be harmful in time of sickness. A number of hospital authorities suggest that some patients would not appreciate a later waking hour, as they settle down to sleep at 8 p.m.; but we cannot help wondering what consensus of opinion would be obtained if the Central Bureau of Hospital Information or some other body invited patients themselves to state whether they find the existing procedure desirable, and, if not, what changes they would propose.

THE WORLD OF THE BLIND.

THE mental make-up of the blind man has received the attention of not a few scientists and psychologists, and for the most part their conclusions do not endorse the more fantastic sensibilities with which he has been credited. But there have been few records that seek to show us how the blind man registers his impressions of the world about him. Perhaps the best of those that have been published is H. G. Wells's story, *The Country of the Blind*. There has now been issued a book by Professor Pierre Villey on *The World of the Blind*.[1] The author lost his sight at the age of four and a half years. In his complete darkness "no visual impression could come to awaken sleeping memories." Yet he so far overcame his disability that he now holds the Chair of Literature at Caen University, and his book has been awarded a prize by the French Academy of Moral Science. He records with delight the complete transformation in the circumstances of the blind. In former times they were credited with almost occult faculties, but their real abilities were neglected. Now they can receive a culture adapted to their needs and lead a useful existence. But the prejudice of the public dies hard. There is still the idea that behind sightless eyes and a face without animation everything is dulled, that the intelligence, the will, the sensations, and the faculties of the soul are numbed and, as it were, stupefied. The purpose of the author is to show how false is this impression. He complains that many who have investigated the mind of the blind have not distinguished between loss of sight and loss of other powers. There are blind and blind. Many are blind because of constitutional disease—tuberculosis, syphilis, and congenital and inherited defects. Disabilities arising from these general causes are not properly to be ascribed to the blindness. If the accident which has destroyed the sight was confined to the eye itself and its immediate surroundings, and has not touched the brain, the integrity of the intelligence is safe. Professor Villey agrees with Aristotle, who said that sight was the most important of all the faculties for the needs of animals, but that for intelligence hearing was the more necessary. "It is hearing which serves as the real bond between minds. In

[1] *The World of the Blind*. A Psychological Study. By Professor Pierre Villey. Translated by Alys Hallard. London: G. Duckworth and Co., Ltd. 1930. (7s. 6d. net.)

manual work, the deaf man who sees is superior to the blind man. From the intellectual point of view, I am convinced that the position of the blind man who hears is preferable to that of the deaf man." He reviews in several chapters investigations that have been made on the intelligence of the blind. He agrees that there is no truth in the alleged substitution of senses in the blind—that is, the compensatory increase of sense of hearing and touch. Tested with the aesthesiometer the blind man shows no greater acuity of perception than the sighted. "A singular thing, even, is that the forefinger of the blind—that is, the reading finger and the one that is exercised the most—is less sensitive than the other fingers. Also, a given noise is not noticed by a blind person at a greater distance than by a person who sees." Professor Villey's summing up of the discussion of what sort of spatial images are formed in the mind of the blind is good. "He has what I should style a veritable *tactile sight*. The word *sight* is the only one which renders these apparitions which spring up in the brain, free from all conscious muscular impressions, from all representation by fingers and hands. They are less rich, certainly, less complex, and considerably less extensive than visual images, but, like them, one and many at the same time, are perceived, in their entirety and also in detail, by the inner eye of consciousness." The attitude that normal folk should hold to the blind he thinks may be summed up thus: "On the door of one institution for the blind are these words: 'Visitors are requested not to utter any expressions of pity.' The director of that school is certainly a psychologist." The book is dedicated to the memory of Sir Arthur Pearson, who, himself blind, did a great work for the blind of all countries.

APTITUDE TESTS FOR MEDICAL STUDENTS.

THE present Chairman of Council of the British Medical Association some years ago, when giving his presidential address to the Metropolitan Counties Branch entitled "The Psychologist in Public Life" (*Journal*, July 30th, 1921), pointed out that it was desirable to gauge as accurately as possible four things: attainment, intelligence, aptitude, and character, and that an attempt at the measurement of each of these had, in fact, been made. Dr. Brackenbury then stated that "success with the exact measurement of aptitude, though considerable, has not been so ample as with the measurement of intelligence," that "clearly, the higher we go up in the vocational scale the more the measurement required becomes one not of mere aptitude but of character," and that "to estimate the varieties of excellence of character, and to investigate the causes of super-excellence, may be of at least equal national or public importance as to detect or to measure its defects." After referring to the often unsatisfactory character of what are known as testimonials, or certificates of moral character, he continued: "How much more valuable would be the report of a scientific investigation by a skilled psychologist standardized by reference to a recognized scale, especially if such a report were universally required for entrance into any of the professions or for the holding of any position of responsibility or trust. . . . Seriously, it is quite possible that what is now true of the measurement of intelligence may some day be true of the measurement of character, and then the exact method would be preferable to the happhazard and the omission of certain important bodies of public persons from these tests would be unjustifiable." It is interesting to note that—of course in America—an attempt is being made to-day to apply these principles and methods to entrants to the medical profession. The problem as presented to the deans of the medical schools of the United States is certainly one calling for careful consideration. For the year 1929–30 there were 13,569 applicants for admission, and of these only 7,019 could be accepted. The problem is to select the best seven thousand. It is inevitable that a large proportion of the most promising students apply to some half-dozen of the schools with the highest reputation, but this makes the problem of selection for the other schools all the more serious. Apart from social or family pressure in a number of individual cases, the means of selection have hitherto usually been: (1) the number of terms of pre-medical study already followed, (2) attainment in pre-medical subjects. Though, as might be expected, the latter of these is more reliable than the former, neither is at all satisfactory in view of the "mortality in the last five graduating classes in medical schools. In these classes more than one-fifth of all those who began work in the freshman year were unable to complete the four-year course." The elimination of the feeblest students begins even in the first year. For the past two or three years an attempt to apply systematic "scholastic aptitude tests" of ability to pursue successfully a medical course has been made to a large number of entrants, and the results of this attempt are set out in an article in the *Journal of the Association of American Medical Colleges* for March last. The details of the tests are not given; it may be that after all they were tests of attainment and of intelligence rather than of real aptitude. In any case they seem to have resulted in the discovery of a better criterion than those previously applied. "The relative efficiency of the three criteria mentioned are: number of entrance credits, 22 per cent.; pre-medical grades, 48 per cent.; scholastic aptitude scores, 63 per cent." The result of combining the last two criteria is said to be 74 per cent. A further criterion combined with these—an interview definitely directed to certain points and marked accordingly, with more than one member of the school staff—may obviously be of much value. But as long as we have men of slow mind and men of quick mind, and as long as we have many personal characteristics in addition to scholarship which make for success in the medical profession, so long will all these tests fail in a number of cases. Perhaps one of the really valuable suggestions made in the reported discussion on this subject was that the deans of the institutions should themselves be subjected to the "scholastic aptitude" test, and that, provided they made a score of over 12 per cent., they should be continued in office!

SIR EDWARD POLLOCK.

THE obituary notices of the late Sir Edward James Pollock which have appeared in the daily press remind us of the well-nigh forgotten fact that he was a member of our profession, who practised for several years in London before he was called to the Bar and joined that other profession which had afforded opportunities of distinction to several members of his family. Sir Edward Pollock was not the only one of the descendants of that remarkable saddler of Charing Cross (of whose sons one became Chief Baron and another a Field-Marshal) to adorn the medical profession. Fifty years ago George Pollock of St. George's Hospital was one of the last representatives of the pre-Listerian tradition of surgery. Another contemporary Pollock, Arthur Julius, was physician to Charing Cross Hospital, and a member of the next generation was W. Rivers Pollock, obstetric physician to Westminster Hospital, whose comparatively early death as a remote result of thrombosis of the inferior vena cava was widely deplored. The third generation of medical Pollocks is represented by his son Humphrey Rivers, who practises in Kensington. Sir Edward had reached the age of 89. He was the ninth son of the Chief Baron, whose family of twenty-four children included various well-known men. He became M.R.C.S. in 1853, L.S.A. in 1855, and F.R.C.S. in 1858. He practised, but soon after he became a Fellow he paid a prolonged especially in ophthalmic surgery, in London for a time,

visit to the United States. On his return he gave up medical practice and decided to read for the Bar, to which he was called by the Inner Temple in 1872. In 1897 he was appointed one of the three official Referees of the Supreme Court, and retained the post until 1927, when he was eighty-six years of age. He had no reason to regret his change of calling fifty-five years before. As we noted on the occasion of his death last year, that most distinguished jurist, Viscount Finlay, of Novar, was also a member of our profession, although it seems that he never practised. His name disappeared from the *Medical Register* years ago, unlike that of Sir Edward Pollock, which appeared in the latest issues of the *Register* and of the *Medical Directory*.

ROCKEFELLER MEDICAL FELLOWSHIPS.

THE Rockefeller Medical Fellowships for the academic year 1930-31 will shortly be awarded by the Medical Research Council, and applications should be lodged with the Council not later than June 1st, 1930. These Fellowships are provided from a fund with which the Medical Research Council has been entrusted by the Rockefeller Foundation. Fellowships are awarded, in accordance with the desire of the Foundation, to graduates who have had some training in research work in the primary sciences of medicine or in clinical medicine or surgery and are likely to profit by a period of work at a university or other chosen centre in the United States before taking up positions for higher teaching or research in the British Isles. In special circumstances the Fellowships may be tenable at centres of research not in America. A Fellowship held in America will have the value of not less than £350 a year for a single Fellow, with extra allowance for a married Fellow, payable monthly in advance. Travelling expenses and some other allowances will be paid in addition. Full particulars and forms of application are obtainable from the Secretary, Medical Research Council, 38, Old Queen Street, Westminster, S.W.1.

TUBERCULOSIS CONFERENCE.

THE sixteenth annual conference of the National Association for the Prevention of Tuberculosis will be held, from July 3rd to 5th, in the Great Hall of the House of the British Medical Association, Tavistock Square, W.C.1. It is proposed on this occasion to devote special attention to the effects on the tuberculosis campaign of the Local Government Act, 1929. Sir George Newman will open the discussion on this subject, and will be followed by Dr. John Parlane Kinloch, Chief Medical Officer of the Department of Health for Scotland. The conference is open to all interested in tuberculosis, on payment of a fee of one guinea, for which is supplied also a copy of the report of the proceedings. Reduced railway fares to London will be available, and sanction has been given to the reasonable expenses of delegates from local authorities who will be attending the conference. Inquiries should be addressed to the secretary of the National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, W.C.1.

INTERNATIONAL VETERINARY CONGRESS.

FROM August 4th to 9th, the eleventh international veterinary congress will be held in London at the Central Hall, Westminster, and it is anticipated that over a thousand delegates will attend from the Dominions, Colonies, and foreign countries. Many matters of importance to medical science in general will be discussed—for example, foot-and-mouth disease, vaccination against tuberculosis, veterinary science in relation to public health (with special reference to production and distribution of meat and milk), variola in domestic animals, control of dissemination of anthrax by animal products, vaccination against rabies, anthelmintics, and control of trypanosomiasis. The congress will be opened by the Minister of Agriculture on August 4th, and meetings will occupy the entire week. For the entertainment of delegates a number of excursions and social functions have been organized, including a conversazione at the Natural History Museum, a reception at the Guildhall, and a banquet by the Government.

LEPROSY IN THE BRITISH EMPIRE.

THE annual report for 1929 of the British Empire Leprosy Relief Association, which is entitled *The Fight Against Leprosy*, is in many ways a model of what such publications should be. A clear account is given of the prevalence of leprosy, and of the efforts being made to eradicate it in different parts of the Empire. Perusal of the report gives a vivid impression of the amount of specialist knowledge at the service of the association, the active and extensive research which is being conducted, and the sound lines on which treatment is being administered in various localities. The hopefulness of the whole campaign is made clear, as is also the immediate importance of increasing the financial endowment so that still greater progress may be made in the next few years. The valuable quarterly periodical of the British Empire Leprosy Relief Association is supplied without charge to workers in the mission field, and to others who are concerned with the fight against this disease; grants are made to assist missionaries of all denominations in treating leper patients, and curative drugs are supplied. In contrast with the success achieved by the Indian branch, which was inaugurated by the Marquess of Reading during his Viceroyalty, the British possessions in Africa are still seriously hindered by lack of funds in their efforts to deal effectively with the leper problem. Since there is no possibility of money being raised locally in that continent on anything approaching the Indian scale, assistance in this respect must necessarily come from Great Britain.

DR. ROSS MITCHELL, whose literary skill is known to our readers through his series of articles on Winnipeg, contributes to the April issue of the *Canadian Medical Association Journal* an interesting paper on the remains of William Harvey. "It would seem," he says in conclusion, "a fitting thing to restore to its former appearance the church which enshrines the remains of one whose name shines brightest in the annals of British medicine." In an editorial note Dr. Nicholls commends the project for restoring the tower of Hempstead Church, Essex, of which an account appeared in our issue of December 7th last. Subscriptions to the Harvey Memorial Fund may be sent to Dr. Arnold Stott, 58, Harley Street, W.1.

AT the Imperial Agricultural Research Conference held in 1927 it was recommended that each research institution of the Empire should forward all its publications on preservation and transport of food to the Low Temperature Research Station of the Department of Scientific and Industrial Research at Cambridge, which would, in its turn, issue from time to time indexes of the literature on food investigation, consisting of elaborated titles of useful publications. The second of these indexes, compiled by Agnes Elisabeth Glennie, B.Sc., has just appeared (H.M. Stationery Office, 1930, 2s. net). It contains carefully classified references to the relevant literature in English, French, German, Italian, and other languages, and includes brief abstracts of papers appearing in periodicals from all parts of the world. The Department of Scientific and Industrial Research proposes to issue each year one volume, consisting of two numbers, dated March and September respectively, and to include in the first number of each volume a brief review of the previous year's progress in the subject.

EXAMINING BOARD IN ENGLAND.

REVISED REGULATIONS FOR THE CONJOINT DIPLOMAS.

A NEW edition of the regulations governing the professional examinations for the licence of the Royal College of Physicians of London and the diploma of Member of the Royal College of Surgeons of England embodies certain important alterations which come into force on July 31st next. The chief of these relates to the conditions under which graduates of foreign universities recognized by the Examining Board in England—universities in fifteen European countries and the United States—are to be admitted to the examinations. Hitherto such graduates have been required, provided certain conditions are fulfilled, to take the Final Examination only, but in future they will have to pass the First Professional Examination (anatomy, physiology, and pharmacology and materia medica), and subsequently to complete twelve months of hospital practice in a recognized medical school and hospital in this country before being admitted to the Final. The undergraduates of such universities are required to complete the full curriculum of 33 months for the Final Examination at a recognized medical school and hospital in this country, after passing the First Examination in accordance with the regulations.

Some new special regulations affect candidates who hold a practice qualification granted in India, other than the degrees of Bachelor or Doctor of Medicine and Surgery in one of the Indian universities which have been recognized by the Royal Colleges. Such candidates are required to pass a recognized preliminary examination in general education, to pass the First Professional Examination, and, after passing Section I of that examination, to complete two years' practice in a recognized medical school and hospital in this country. Those who have taken a curriculum of not less than five years in a recognized medical college (as distinct from an unrecognized medical school), and hold a qualification, come under the same conditions as the preceding, except that exemption is granted from Section II (pharmacology and materia medica) of the First Examination, and only twelve months of hospital practice (instead of two years) is required. Other conditions attach to candidates who have completed the curriculum at a medical school or completed a part of the curriculum at a recognized medical college, but have not obtained a qualification in India.

Members of recognized universities in the British possessions, having passed an examination at their universities and completed the required curriculum, are admissible to the Final under the same rules as have hitherto applied to all recognized universities outside this country, including foreign universities; and candidates holding the diploma of the National Board of Medical Examiners of the United States come into the same category. The regulations for members of English, Scottish, and Irish universities remain substantially unaltered.

Among relatively minor changes is a recasting of the regulation which lays it down that the course of study for the First Professional Examination may be commenced before Part II (Biology) of the Pre-Medical has been passed, but that not less than three terms of study of anatomy and physiology must be completed after such examination. The new regulation runs:

> The study of anatomy and physiology will not be recognized until Part I of the Pre-Medical Examination has been passed, and not more than two terms of such study will be recognized before Part II of the Pre-Medical Examination has been passed.

Among the prescribed courses which candidates must have attended before being admitted to the Final is the addition of a course of instruction in practical pharmacy, a subject transferred from its former place where it preceded the taking of Section II of the First Examination. In its new place it is the fourteenth of the courses for attendance at which the candidate for the Final will be required to produce certificates. The course may, however, be taken before the First Examination is passed.

A copy of the regulations and synopses may be obtained from the Examining Board (8–11, Queen Square, Bloomsbury, W.C.1).

Diploma in Gynaecology and Obstetrics.

The regulations for the new Diploma in Gynaecology and Obstetrics (D.G.O. R.C.P. and S. Eng.), the first examination for which will be held in October next, have also been issued by the Examining Board in England. Those eligible for admission to examination must have held a degree in medicine and surgery recognized by the Board, or a qualification registrable in this country, for not less than three years. The subjects of the examination are gynaecology and obstetrics (including pathology, histology, and bacteriology in relation to these subjects), and ante-natal, post-natal, and infant welfare work. The examination is written, oral, and clinical, but only those candidates are admitted to the clinical who satisfy the examiners in the written and oral. A form is issued on which particulars have to be given and certified as to resident appointments in the gynaecological and obstetrical department of a recognized general hospital, in a gynaecological hospital, or a maternity hospital, or as to registrarship or clinical assistantship held in such institutions, together with particulars as to regular attendance, with responsible care of patients, at recognized ante-natal, post-natal, and infant welfare clinics during twelve months. It is added that these conditions of study may be modified in the case of a candidate who has carried out original investigations or written a thesis on some subject in gynaecology or obstetrics, or whose studies have extended over a prolonged time without fulfilling the exact conditions set out; but exemption will not be granted from any part of the examination.

England and Wales.

A Hunterian Evening.

SEVERAL interesting circumstances marked the annual meeting of the Hunterian Society of London, which was preceded by a dinner, at Simpson's Restaurant in Cheapside, on April 28th. One of these was the reading of a letter from Dr. Gustave Monod stating that he and Dr. Ferreyrolles, who were recently made honorary members of the society, had started a fellowship of similar character in Paris. The French society had taken for its legend "*Au carrefour de Cos*," signifying that under the inspiration of Hippocrates its members would take their stand where all the roads of medicine met, ready to investigate all methods of treatment, whether or not they were taught in the schools. The first president would be Dr. Ferreyrolles, who had one of the most unbiased minds in the French profession, and his presidential address would be on the philosophy of Chinese medicine. A standing invitation was given to members of the Hunterian Society who might be visiting Paris to consider themselves members of the French body. The Hunterian Society sent a message of greeting to its Parisian offspring. Another event of the evening was the presentation to the society by Dr. Irwin Moore, its treasurer, of an excellent copy of the famous picture at The Hague, "The School of Anatomy," by Nicholas Tulp, after Rembrandt, and also the presentation by the same donor of a number of books for the library, including the first edition of Culpeper's *Pharmacopoeia*, dated 1653. The Royal Society of Medicine possesses what has hitherto been thought to be the first edition, dated 1654, but Dr. Irwin Moore was assured that the one he now gave to the society was an earlier print. The society then proceeded to the election of its officers, and Professor A. W. Sheen was unanimously voted to the presidency, the first time that a president has been chosen from outside London. A hearty vote of thanks was accorded to the retiring president, Dr. Ernest Young, and to Mr. W. E. Tanner, who is relinquishing the honorary secretaryship.

The remainder of the evening was occupied with a cinematograph demonstration by Mr. Mortimer Woolf illustrating the operation of cholecystectomy. A two-reel film, the admirable production of the medical department of Kodak Limited, showed every detail of the operation as conducted by Mr. Woolf, including the placing of the patient in position, with the air pillow under the lower ribs so as to bring the liver and other organs nearer to the surface, the division of the rectus sheath, the picking up of the peritoneum, the displacement of the liver by traction and adequate exposure of the gall-bladder, the division of the peritoneum at the neck of the gall-bladder, continued into the small omentum, the insertion of forceps into the foramen of Winslow, a blunt dissection exposing the junction of the cystic, common, and common hepatic ducts—a crucial step in the operation—the isolation of the cystic duct, with two ligatures placed around it, the exposure of the cystic artery, the suturing of the peritoneum

over the common bile duct, and all the manipulations preceding and following the removal of the gall-bladder. The film also showed the exploration of the rest of the abdomen. A hole was found in the great omentum and the band was excised; the appendix also was found to be thickened, and was removed. In the course of some discussion following the exhibition Mr. Ivor Back said how much he had been impressed by the technique of the operation as demonstrated, but he thought Mr. Woolf would agree that he was exceptionally fortunate in his patient, who was a very thin person, whereas a large proportion of gall-bladder cases were in extremely stout persons, rendering the operation proportionately difficult. He himself was faced continually with the impossibility of performing—as was his ambition—the classic operation, and he could only remove as much of the gall-bladder as possible by stripping it down from the fundus. He frequently performed a partial cholecystectomy, leaving the neck of the gall-bladder, which afterwards formed a "fibrous blob." In reply to various points, Mr. Mortimer Woolf said that the time taken over the operation was roughly forty-five minutes. He was no advocate of rapid operations, though he agreed that no time should be wasted. One speaker had questioned his procedure in first removing the gall-bladder before exploring the rest of the abdomen. But, after all, this was an operation definitely for the removal of the gall-bladder, and he thought it preferable to undertake that procedure first, for one never knew whether the condition of the patient would permit of continued manipulation, and if the secondary thing were done first the surgeon might be faced with the necessity of closing the wound with his real objective unattained. He added that in the particular case shown the patient had suffered from severe attacks of what appeared to be cholecystitis. He believed that such attacks might occur, and at first clear up completely without giving rise to thickening of the gall-bladder walls or to formation of stone, and while he agreed that the gall-bladder certainly should not be removed without justification, he thought it wise to bring about removal before any catastrophe occurred, and, indeed, it was his view that intervention might well take place earlier than was customary in these cases. In addition to frequent attacks of cholecystitis, the patient had an enlarged cystic gland and other signs of inflammation. The gall-bladder when opened showed a definite polypoid mucous membrane. He agreed that, owing to the type of patient, the case was easier than many which presented themselves for operation, but on that account it lent itself admirably to the classic operation which it was desired to show by cinematograph for the purposes of surgical teaching.

Sanatorium Treatment of Tuberculosis.

The new county sanatorium at Black Notley, Essex, was opened on April 26th by Mr. Arthur Greenwood, Minister of Health, who commented on the declining death rate from all forms of tuberculosis since the end of the war. Although the death rate from tuberculosis in 1929 was 44 per cent. less than in 1918 about 36,000 people, he said, died every year from tuberculosis in England and Wales. It was not one of the diseases that could be cured by ordinary medical treatment, but he thought that, if every possible effort was made, it would be eradicated from this country. Sanatoriums could not provide assistance of a permanent nature, as patients, on leaving them, returned to unfavourable conditions. It seemed a little short-sighted for money to be devoted to the building and maintenance of sanatoriums when next to nothing was done to provide proper after-care treatment. He hoped that attention would be given to this problem. The Essex County Council was to be congratulated on having made special provision for the needs of women, as the incidence of tuberculous disease among young women in the county was higher than it ought to be.

The new sanatorium, which has a site of 25 acres, has been built to provide accommodation for women and children suffering from pulmonary tuberculosis and for children suffering from non-pulmonary tuberculosis. The general level of the ground slopes gradually towards the south, and the various buildings are laid out with a south-east aspect. Two children's pulmonary pavilions, one for boys and one for girls, have been erected, each accommodating 25 beds. Similar provision has been made in the two adult pavilions. An isolation pavilion contains 6 single bed wards, and two surgical pavilions, fitted with adjustable sun blinds, each accommodate 31 patients. All the pavilions have wide verandahs. The south walls of the two classrooms in the school block are formed by large folding doors, which allow the maximum of light and air. For the recreation of patients a cinematograph apparatus and a loud speaker have been installed in the King Edward VII memorial hall, which has seating accommodation for 200. In addition, four tennis courts have been laid out for the use of patients and staff. The total cost of the sanatorium, including site, buildings, services, and equipment, is approximately £100,802.

Birmingham Hospitals Centre.

A handsomely illustrated booklet has now been issued describing the scheme for establishing a large hospital centre on 150 acres of land situated north-west of the university buildings at Edgbaston, the freehold having been presented by Messrs. Cadbury Brothers, Ltd., to the City of Birmingham. A general hospital of 740 beds is to be erected, each unit of 60 being complete with all the necessary services. Seven operating theatres will be provided, and arrangements are being made for open-air treatment and the various special departments. A block accommodating 100 beds will be erected for paying patients, 50 of these beds being placed in single rooms. The new medical school of the university will occupy the south part of the site, and the cost of its maintenance will be borne by the university authorities. The scheme is being actively and generously supported by the existing hospitals of Birmingham, including the General and Queen's Hospitals. The estimated cost of the whole undertaking is about £1,250,000, and an appeal is being made to the city to ensure the construction of a medical centre which in size, equipment, general convenience, and economical arrangement will be in the front line of hospital progress.

St. Bartholomew's Hospital: New Block.

In connexion with the public appeal on behalf of St. Bartholomew's Hospital a pamphlet has been written by Mr. A. F. Shepherd, giving an account, in the form of a descriptive tour, of the new extension, which comprises six operating theatre suites and 250 surgical beds. The opening chapter is headed by three lines written by the late Poet Laureate, Dr. Robert Bridges:

> Hardly can I, who so many years eagerly frequented
> Bartholomew's fountain, not speak of things to awaken
> Kind old Hippocrates.

Historical notes follow indicating the gradual growth of the hospital during the past 200 years. Emphasis is laid on the strict economy that has been observed in providing the very necessary new buildings without stinting the equipment required for first-class surgery and nursing, or depriving the patient of every possible safeguard, comfort, and convenience. Details are given of the many ingenious devices by which these facilities have been rendered possible, and there are numerous hints of the scientific developments which have caused the medical treatment of the present day to be so vastly ahead of that of only a few years ago.

The Harrison Chemical Prize.

At the recent annual general meeting of the Chemical Society the prize and plaque to perpetuate the memory of Edward Frank Harrison, director of chemical warfare during the war, was presented to Reginald Patrick Linstead, D.Sc. This prize is awarded every three years to the chemist, not over 30 years of age, who is judged by a committee consisting of the presidents of the Chemical Society, the Society of Chemical Industry, the Pharmaceutical Society, and the Institute of Chemistry to have made the most meritorious original contributions to chemical science during the previous five years. The president of the Chemical Society, Professor J. F. Thorpe, in presenting the prize, said that it was seldom that a research worker within the age limits demanded by the trust was found to have struck out an original line of investigation for himself; usually he was content to elaborate and extend the research problems on which he had been trained. Dr. Linstead, however, had done some important and original

work on substances exhibiting tautomerism (the property in some chemical bodies of behaving in different reactions as if possessed of two or more different constitutions), and had supplied a method whereby the close and quantitative study of some of these fundamental phenomena could be effected. Professor Thorpe added that the prize was founded to commemorate an exceptional man, who gave his life for his country just as surely as if he had been on the field of battle, and he hoped that Harrison's high sense of service and devotion to duty would be an example to all who won or competed for this prize. It may be recalled here that Harrison was associated with the *British Medical Journal* for some years, and undertook the series of analyses of proprietary articles afterwards collected and published by the British Medical Association in the two volumes *Secret Remedies* and *More Secret Remedies*, now out of print. He also gave admirable evidence on behalf of the Association before the Select Committee on Patent Medicines.

Welsh Board of Health.

The Minister of Health has decided to restore the chairmanship of the Welsh Board of Health, and has appointed to the post Mr. John Rowland, C.B., C.B.E., M.V.O., a member of the Board and Deputy Controller of Insurance. The Board will henceforth consist of three members: Mr. John Rowland; Dr. Llewelyn-Williams, medical member; and Mr. Howell E. James, Administrative Officer for Public Health and Finance.

Central Midwives Board.

At the April meeting of the Central Midwives Board for England and Wales it was agreed to send a letter to the town clerk of Birmingham approving a continuance of the present arrangements for the training of midwives until the autumn, when the pupils of Dudley Road and Selly Oak Hospitals would be expected to attend the course of lectures at Birmingham University. In reply to a letter from the West Derby Guardians, the Board stated that the question of the administration of anaesthetics to patients in the final stages of childbirth was not within its jurisdiction; as long as the training rules and instructions were carried out the Board was satisfied, but it asked to be informed if any steps to the contrary were taken. The Pharmaceutical Society invited the Board to join with it and the Disinfectant Manufacturers' Association in the preparation of a specification for a standard preparation of lysol for medical purposes, but the Board, while agreeing that such action was desirable, decided that it was not a body expert in the subject-matter to be discussed, and on that account could not take part in the proposed conference.

Scotland.

Aberdeen Chair of Medicine.

THE regius chair of medicine in the University of Aberdeen, rendered vacant by the resignation of Professor Ashley Watson Mackintosh, has been filled by the appointment of Leybcurne Stanley Patrick Davidson, B.A., M.D., F.R.C.P. The appointment is made by the Crown on the recommendation of the Secretary of State for Scotland. The new professor is the second son of Sir Leybourne Davidson of Huntly Lodge, Aberdeenshire; he was born in 1894, and from Cheltenham College went to Trinity College, Cambridge, where he took the B.A. degree. He began to study medicine at Edinburgh in 1911, but his medical course was interrupted by the war, and he served for three years with the Gordon Highlanders. Being severely wounded, he was invalided out of the Army, and resumed his medical classes at Edinburgh, where he graduated M.B., Ch.B., with first-class honours, in 1919. On taking the M.D. degree in 1925 he was awarded a gold medal for his thesis. Having acted for a time as resident in the Royal Infirmary he became assistant in the bacteriology department of the University, a post which he held for three years. In 1927 he was appointed assistant physician to the Royal Infirmary of Edinburgh, and lecturer in systematic medicine in the University. Since 1926 Dr. Davidson has been engaged in research work under a grant from the Medical Research Council. He has published numerous papers on subjects connected with bacteriology, gastro-intestinal disorders, and disorders of the blood, and lately brought out, along with Emeritus Professor Gulland, a book on pernicious anaemia, presenting recent views on the pathology and treatment of this disease.

At the meeting of the general council of the University of Aberdeen on April 19th Professor Ashley W. Mackintosh, who has just resigned the chair of medicine, was appointed the general council's assessor to the Aberdeen University Court, in succession to the late Dr. John Scott Riddell. At the same time the council placed on record its appreciation of the work of Dr. Scott Riddell, who, besides being a distinguished surgeon, scholar, administrator, and writer, had taken a distinguished part in the life of the community.

Haddington Cottage Hospital.

The new cottage hospital at Haddington was opened on April 24th by the donor, Mr. John Vert of Pendleton, Oregon, U.S.A. Provost Andrew Phail, who presided, recalled that the scheme for the establishment of a cottage hospital at Haddington had been initiated at a meeting held in January, 1927, and the committee had thereafter appealed for a sum of £7,000, the estimated cost of a hospital to provide ten or twelve beds. A site had been offered by Mr. Henry Vetch of Caponflat, and Mr. Horsburgh, a native of East Lothian, now resident in the United States, had promised a subscription of £1,000. Thereupon Mr. John Vert, a native of the town of Haddington, who was now staying in the United States, had promised £7,000, provided that a like sum was raised for the endowment of the hospital. Having seen the plans of the proposed building, Mr. Vert had offered a further sum of £1,000, and his gift had ultimately been raised to a total of £10,000. A satisfactory response had also been made to the endowment fund, and it was expected that the running expenses of the hospital would be met in the ratio of one-third each from the endowment fund, payments by patients, and annual subscriptions; the chairman appealed to the public to do their part. Mr. Vert, in declaring the hospital open, expressed the hope that the institution would prove of lasting benefit to the district. The hospital is to be known as the Vert Memorial Cottage Hospital. It occupies a picturesque site on an eminence overlooking the town of Haddington and the valley of the Tyne, and has been built largely from material taken out of the neighbouring mansion house of Amisfield, which was recently demolished. It will contain two public wards of five beds each, two private wards, a maternity ward, and administrative quarters.

Edinburgh Hospital for Women and Children.

The annual meeting of the Edinburgh Hospital and Dispensary for Women and Children, and the Elsie Inglis Memorial Maternity Hospital, was held in Edinburgh on April 16th. The report showed that 659 patients had been treated in the Bruntsfield Hospital for Women and Children, and 923 in the Elsie Inglis Hospital. The ordinary income of the two institutions was £12,314 and the expenditure £14,328. Miss Gertrude Herzfeld, F.R.C.S., said that a supply of radium was urgently required by the Bruntsfield Hospital. A large grant of radium had been made to Edinburgh, but the whole of it had been devoted to the Royal Infirmary. The supply required by the hospital would cost about £2,000.

Ireland.

Public Health Administration in County Galway.

THE Minister for Local Government has advised the County Galway Board of Health that the appointment by the county council of Dr. E. O'Beirne as county medical officer of health from April 1st is an opportunity for correlating the executive control of the sanitary services with the arrangements for the treatment of tuberculosis in the county. For that purpose the Minister recommends that the board should appoint Dr. O'Beirne as chief tuberculosis officer. Having regard to the extent of the county and the comprehensive nature of the public health services, it is suggested that the board, instead of appointing a tuberculosis medical officer under Dr. O'Beirne,

should apply for authority to appoint an assistant county medical officer of health, who, in addition to duties under the tuberculosis scheme, would carry out work in connexion with school medical inspection and co-operate in the administration of the sanitary laws in the county health district. The usual remuneration for this position is at the rate of £550 per year, rising by increments to £650, with the usual travelling expenses. In the course of a long discussion it was stated that the county council appointed Dr. O'Beirne county medical officer of health, but made it a condition that he would carry out the duties of tuberculosis medical officer until after the health conference in June. Dr. O'Beirne said that the county council accepted his resignation as tuberculosis medical officer as from March 31st. After that date he could not accept responsibility for the services in the sanatorium, but he would assist as far as possible. If an epidemic occurred in Ballinasloe he could not possibly look after the tuberculosis scheme and carry out his duties as county medical officer of health. The matter was adjourned for a fortnight.

Promotion of Medical Dispensary Officers.

The Department of Local Government and Public Health has informed Kilkenny County Board of Health that it declines to sanction the transfer of Dr. J. A. Fitzgerald from Tiscoffin to Dysartmoon dispensary district, as he was appointed to Tiscoffin only last September. It points out that the intention of Section 5 of the Local Authorities (Officers and Employees) Act, 1926, is to enable the local authority to transfer officers with approved service to more desirable positions, and that it should operate in favour, other things being equal, of senior officers. The department desired to be informed why Dr. Ryan of Castlecomer, an officer of over eleven years' service, was passed over. It was decided to inform the department that Dr. Fitzgerald had several years' experience on Atlantic liners, and as he had successfully passed the examination of the appointments commissioners, the board requested sanction for his transfer.

Court Fees.

During the hearing of a recent action for damages against the Dublin United Tramways Co. before Judge Roche, K.C., evidence was given by Dr. E. P. Eustace, Dublin. On decree being given for £75, counsel for the plaintiffs asked for expenses, including expenses for the doctor. Counsel for the defendants held that the doctor's fee should be £1 11s. 6d. Mr. Justice Roche stated that the evidence of Dr. Eustace had been of great help to him and he would allow a fee of £3 3s., which he thought was little enough in the circumstances. On defendants' counsel repeating their contention the judge remarked that although this case did not come under the Workmen's Compensation Act, he would allow Dr. Eustace a fee of £3 3s. as he held he was entitled to it.

Correspondence.

ACUTE PERFORATION OF THE STOMACH AND DUODENUM.

SIR,—Mr. Graham Bryce's admirable critical review of the results of perforated gastric and duodenal ulcers (April 26th, p. 774) will have been read with interest by many of us who have had the opportunity of treating large numbers of these cases, and with his main conclusions most of us will be in substantial agreement, notably his opinion that the addition of a gastro-enterostomy to an operation for the closure of a perforation should be reserved for cases in which stenosis is present or likely to result from healing. This opinion is fortified by the fact that 32 per cent. of his patients remained quite free from stomach symptoms two years after suture without gastro-enterostomy. These results seem to me very striking and exceptionally good, and therefore to be accepted with caution as a guide for treatment.

An experience of close on 200 cases has brought me to conclusions similar to those formulated by Mr. Bryce, but the results of treatment differ considerably from his. My experience, based on following patients for a number of years, is that the great majority of cases of duodenal perforation treated by suture alone ultimately suffer from gastric symptoms, of varying severity it is true, but definitely due to stenosis or recurrence of ulceration or both. I would suggest that conclusions based on a two-year follow up are not a reliable guide. It may take years for stenosis to become effective. In one of my cases 13 years and in another 12 years, elapsed before the patients sought advice on account of symptoms due to stenosis. Another factor to be taken into account is the remarkable variation in the intensity of the symptoms provoked by duodenal ulcer, so that conclusions based on a temporary absence of symptoms are apt to be fallacious.

The claim is sometimes made that the reaction following perforation may lead to the healing of an ulcer. It may be so, but a scar with fibrosis remains and is prone to break down or to contract slowly till effective stenosis is produced. A further important factor is often forgotten—namely, that duodenal ulcer is often double and sometimes multiple. The anterior ulcer which perforates is in many cases accompanied by a symmetrical ulcer on the posterior wall which may, and often does, give rise to trouble later on.

The significance of the late results is really this: What influence, if any, should they have on the treatment carried out at the original operation for perforation; and, secondly, at what stage, if any, are patients treated by closure alone and free from symptoms also free from further danger, and are they good insurable risks? My own experience would lead me to say that while gastro-enterostomy is hardly ever necessary to assist immediate recovery in a case of perforation, patients who have been treated by closure alone should be regarded as likely to have further symptoms, at some time or other, and are probably never free from the possibility of such recurrence. From the point of view of life insurance they are bad risks.

On the other hand, cases in which gastro-enterostomy has been done along with closure of the perforation have given, in my hands, much better late results than those treated by closure alone. Lastly, cases submitted to a late gastro-enterostomy for stenosis and recurrence of ulceration have done extremely well. The legitimate conclusion seems to be that gastro-enterostomy may advantageously be added to the closure of a duodenal perforation if the operator is perfectly confident that it will in no way prejudice the immediate recovery of the patient. Otherwise, it should be deferred until demanded by symptoms later on, when it may be relied on to give relief.—I am, etc.,

Edinburgh, April 28th. J. W. STRUTHERS.

ETIOLOGY OF CYSTITIS.

SIR,—The following observations regarding the etiology of cystitis may be of interest to readers of the *Journal*.

1. Five groups of 12 young rats—6 males and 6 females—were fed on diets containing animal protein (casein) in amounts ranging from 0 to 80 per cent. of the whole diet; the diets were deficient in vitamins A and C, but contained a sufficiency of vitamin B, inorganic salts, and fats. Four of the rats died early in the course of the experiment and were excluded. At post-mortem examination of the remaining 56, cystitis *without accompanying urinary calculus* was found in 12—an incidence of 21.4 per cent. Of these cases, 8 were females and 4 males; the condition being thus twice as common in the female sex. Its distribution among the five groups was as follows:

	No. of Animals receiving diet.	Incidence of Cystitis.	
		Males.	Females.
Animal Protein in Diet:			
0 per cent.	11	0	0
20 „	12	1	1
40 „	11	0	4
60 „	12	1	1
80 „	10	2	2
Total	56	4	8

Cystitis was therefore significantly commoner in animals whose diet contained 40 per cent. or more of animal protein.

2. In a second series of 60 rats, fed on the same diets but in which vitamin A was provided as cod-liver oil, no cystitis occurred.

Hitherto in my work on the experimental production of urinary calculus I have encountered cystitis frequently, but almost always in association with stone in the bladder. Occasionally stone has been found without cystitis; but never, in an experience which amounts to well over 200 cases of experimentally produced urinary calculus in rats, have I so consistently encountered cystitis without stone.

It seems likely, therefore, that diets rich in animal protein and poor in vitamins A and C provide conditions favourable to the genesis of cystitis. I emphasize the importance of vitamin C, having observed some ten years ago[1] that congestion of the vesical mucous membrane—a condition known to predispose to cystitis—may be an early manifestation of deficiency of this vitamin.

In view of these observations I venture to predict that in the treatment of cystitis the exclusion of animal protein from, and the provision of an abundance of vitamins in, the diet of sufferers are likely to be attended with beneficial results.—I am, etc.,

R. MCCARRISON,
Colonel I.M.S.

Pasteur Institute, Coonoor, South India, March 27th.

OVARIAN CYST OR ASCITES.

SIR,—It will be agreed, I think, that the differential diagnosis between an ovarian cyst and ascites is not always easy. I should like to draw attention to a physical sign which is obtainable in a case of ovarian cyst, and which I have found to be very useful and reliable.

In the type of case to which I refer the signs on which one usually relies are masked or absent. For instance, the abdomen is much enlarged, but the shape may not be typical of either condition. The shifting dullness of movable fluid is not obtainable. One or both flanks are dull on percussion, and there is no resonance in front, except in the epigastrium. There is a fluid thrill over the greater part of the abdomen. The diagnosis lies between a large collection of free fluid and a large, slack ovarian cyst. Such cases are not very uncommon.

To elicit the sign, the fingers of the two hands are pressed—one hand on either side of the lower abdomen—firmly and steadily backwards towards the lumbar spine. In the case of an ovarian cyst the pulsation of the abdominal aorta can be felt. Presumably the tension in the cyst, caused by the pressure of the fingers, permits the transmission of the pulsation. This sign can be accentuated—and also be made evident to onlookers—by inserting one end of a flat ruler (or a long pencil) under the fingers of one of the hands pressing on the abdomen. The free end of the ruler will then show the pulsation magnified.

I have never been able to obtain this sign in a case of pure ascites.—I am, etc.,

A. J BLAXLAND.

Norwich, April 26th.

THE TEPID BATH IN THE TREATMENT OF MEASLES.

SIR,—Dr. Vipont Brown's account of the life-saving bath in his case of measles with hyperpyrexia (*Journal*, April 19th, page 739) and the consequent disapearance of the rash raises the question of bathing as a routine and prophylactic measure. Twenty-five years ago my children had measles during an epidemic of a severe type. From the onset until the temperature became normal I had them bathed twice daily—some common salt and soda being added to the water, the temperature of which was just over 100° F. I was encouraged by the results to adopt this treatment—in the teeth of much opposition when most parents thought that a child with measles should not be washed at all. I have never seen anything but increased comfort to the patient, and a rapid appearance—and disappearance—of the rash and high temperature.

Incidentally, I do not insist on the bedpan in those children who cannot use it satisfactorily; there is less fatigue and a better evacuation in the normal posture. The routine toilet of the ears, eyes, and throat includes for the ears the use of peroxide, and, if there is debris, syringing with isotonic saline; protargol 2 per cent. and castor oil for the eyes; and glycothymolin and salt gargles three times a day. Eye-shades are worn, and no reading is allowed. All these precautionary measures are continued from the beginning of the illness until the temperature is normal. Sunlight and air in plenty are admitted to the room, which is kept at a temperature of 60° F.

I have just had 35 cases in a boarding school for the daughters of educated parents. I was fortunate enough in having no broncho-pneumonia, and no eye or ear trouble, and, perhaps, more fortunate still in having only one parent objecting to the baths; this parent, curiously enough, had a child at another school, where more conservative methods were adopted, the measles being followed by mastoid infection and broncho-pneumonia.

One of my middle-aged nurses said: "They seem to get well very quickly with your new bathing treatment." Is it new? I hope, and think, not.—I am, etc.,

H. ANGELL LANE, M.R.C.S., D.P.H.

Battle, April 19th.

[1] *Indian Journ. Med. Research*, 1919, vol. vii, p. 279.

TREATMENT OF GASTRIC AND DUODENAL ULCER.

SIR,—I have read with much interest in the *Journal* of April 19th the excellent lecture by Dr. Charles Bolton. I think its value would have been much enhanced if he had followed up his former work on causation, and differentiated between gastric and duodenal ulcers and the better known hyperchlorhydria. I dealt with this subject in an address in 1925, which I am afraid is now out of print; however, I wish to make the following supplementary remarks, which he can accept for what he considers their value.

The symptoms of hyperchlorhydria and duodenal ulcer are much the same, though I think in the former the vagotonia is much less. It is well to have some sign to indicate when an ulcer has occurred, and the sign on which I place a considerable amount of reliance is the presence of peptone in the urine. If one takes a little urine passed an hour or two after a meal and floats it on the top of Fehling's solution in a test tube, the presence of a pink ring at the junction of the two fluids indicates peptone. If there be any serum-albumin in the urine, which is the exception rather than the rule in these cases, a reddish-brown ring forms, which can scarcely be confounded with that of peptone. Moreover, serum-albumin, globulin, and albumose are precipitated by picric acid, but not so the peptone of which I am speaking. Some will say that it is not peptone but albumose, and that it is of no clinical importance, as it has been found in scarlet fever, measles, pneumonia, empyema, advanced phthisis, acute yellow atrophy of the liver, and phosphorus poisoning. I think any medical man can discriminate between these diseases and duodenal ulcer. It really does not matter what chemists call it so long as it acts as an indicator of intestinal ulceration. The position of the ulcer can be determined by the symptoms.

Whether the case be one of hyperchlorhydria or duodenal ulcer always order night and morning one or two glasses of hot water, followed by concussion of the fifth and second dorsal spines, and often also of the seventh cervical spine when the stomach is not emptying itself quickly. After the seance at bedtime the patient gets one or two tablespoonfuls of olive oil. Sodium bicarbonate neutralizes the acid, but its value is lessened by the fact that it stimulates the further production of hydrochloric acid; chalk is a better antacid. Sodium chloride should only be allowed in small quantities. To stimulate the healing of the ulcer, if such exists, I often order the iodide of calcium with the syrup of the hypophosphate of calcium; one-tenth of a grain of parathyroid night and morning is also useful. To make the hyperacidity more or less harmless kaolin is beneficial. It is well not to use the laxative kaolin, as phenolphthalein in the urine gives a pink ring with Fehling's solution. For a laxative, the old white mixture is about the best and paraffin the worst.—I am, etc.,

JAMES BURR.

Hindhead, April 22nd.

HARE-LIP AND ITS TREATMENT.

SIR,—As one intensely interested in this subject, may I be allowed to comment upon a few points in Mr. Gilbert Warburton's article in your issue of April 19th (p. 732)?

Mr. Warburton fails to stress the prime importance of obtaining sound muscle union; indeed, his description might easily be misinterpreted as indicating a closure in two layers, skin and mucous membrane, though the muscle layer is included, no doubt, in his silkworm-gut sutures, "passed deeply into both sides." Buried catgut sutures for muscle approximation occasionally become infected and work out through, and to the detriment of, the skin suture line. For some time I have employed with satisfaction the end-on or vertical mattress suture introduced from the mucosal aspect of the lip and taking up, in its outer loop, a good bite of the muscle. This relieves the skin sutures of any duties other than that of skin approximation and so tends towards the production of a better skin scar.

Anaesthesia for these cases should be provided by some means which keeps the anaesthetist and his apparatus as clear of the surgical field as is possible; which maintains a perfectly clear airway throughout the operation and prevents with certainty the inspiration of blood through the glottis; and which distorts the parts under treatment as little as possible. The single soft tube intratracheal method, introduced by Magill and capable of application to even the smallest infant, seems to me to be ideal, and has rendered my own operations completely free from anaesthetic and post-anaesthetic anxieties. It provides the additional advantage of carrying away from the operator's face the anaesthetic-laden expirations, while it allows of maintenance of anaesthesia at a particularly light level, with a corresponding rapid return of all reflexes at the end of the operation.

Extensive separation of soft tissues from bone, with its concomitant disturbance of muscle attachments, should not be necessary if the bony parts are moulded into reasonably good position. It is just as important to mould the premaxilla of the unilateral complete cleft into correct alignment as it is to deal with the more obviously displaced premaxilla of the bilateral complete cleft, and, in this connexion, there is much to be said in favour of the preliminary alveolar wiring practised by many American surgeons.

In a smaller series of cases, I have been impressed, as has Mr. Warburton, by the frequency with which the condition has been attributed to pre-natal impressions or accidents, almost invariably timed within the first eight to ten weeks of the pregnancy. I am similarly driven to the conclusion, in spite of personal scepticism, that this connexion represents something more than coincidence.—I am, etc.,

London, W.1, April 23rd. T. POMFRET KILNER.

ANTIMALARIA MEASURES.

SIR,—Sir Malcolm Watson, who is at present away from England, will doubtless reply to Lieut.-Colonel C. A. Gill's letter (April 12th, p. 718), but there are certain parts of it on which I would wish to comment.

Colonel Gill seems to suggest that malariologists are wrong in assuming that they have the key to the solution of the malaria problem in the discovery of the role of the mosquito in the transmission of the malaria parasite. It may, however, be asserted absolutely that this discovery does provide the key, and, although the role of the mosquito was demonstrated thirty years ago, this key may still be of value if properly used.

If the malariologist thinks with Colonel Gill that the "difficulties, administrative and financial," are insuperable, there does not seem much hope of preventing malaria; but if he has the courage and persistence which were so characteristic of Manson and Gorgas, and still are, I am glad to say, of Sir Ronald Ross and Sir Malcolm Watson, perhaps these great difficulties will not be found to be "insuperable." The difficulty is not so much administrative or financial as it is to find the man who can persuade the administrator that mosquito reduction is possible, that it can be done without great cost, and that the expenditure gives a most lucrative return. Although in certain areas all mosquitos can be destroyed, the so-called old school does not ask more than that the number of certain kinds of anophelines shall be kept under control in certain limited areas; and if this view is presented to the administrator he will, whether government or private, in my experience, get over the financial difficulty and ask for further advice when he finds that he has achieved an economy.

It is not said by the so-called old school that "social and economic conditions are of no importance," but they think that improvements of a social, economic, educational, medical, and public health character will take some time to act, and that they will come quickly when mosquito prevention has taken place.

In one case in Singapore there was much malaria in a street whose inhabitants were a respectable class of Chinese, and though the social, economical, and educational character was fairly good, the disease in the street was not prevented until some seepage water in the grounds of Government House just behind this street was put below the surface.

Perhaps one of the most important things that Sir Malcolm Watson has demonstrated is that, before work in malaria prevention is commenced, study of the kind of anopheline present must be made and its habits known. If measures which would eradicate the anophelines which come from a lowland swamp are adopted for a ravine-stream breeder failure will result. The measures to be adopted must vary with the species found.

But perhaps the most serious statement in Colonel Gill's letter is "that the old school have endeavoured to establish their viewpoint by means of unsubstantiated claims regarding their successes." How unsubstantiated? Has Colonel Gill not heard of the Panama, or of the saving of Port Swettenham as a port? Are the claims to these successes unsubstantiated? All through the Malay Peninsula there are examples of success, not only those of Sir Malcolm Watson, though his methods have been used. Many health officers and private practitioners have reduced the amount of malaria by mosquito reduction in several towns and many estates, and there must be some hundreds of rubber estates in Malaya which have found mosquito reduction to have been a financial economy. A notable case is the Gunong Pulai dam near Singapore. This is in an area which those who had had experience knew would teem with *A. maculatus* as soon as the jungle was opened. Anti-malaria work was carried out with such success that there was practically no fever. A hospital provided in anticipation for thirty beds never had more than three patients, and the health of the coolies was so good that it was possible to reduce their wages, with resultant large economies.

It has been demonstrated over and over again that expenditure on mosquito eradication, and even reduction, when properly carried out has resulted in better health, and therefore in the greater economic value of the population.

Colonel Gill has put up a "logically illogical position," but I think that logically his position is unsound and that his views rather than those of Sir Malcolm Watson will do harm to the health and welfare of the Empire.—I am, etc.,

J. TERTIUS CLARKE,
Harrow, April 22nd. Late Medical and Health Officer, Perak.

QUININE IN ALBUMINURIA.

SIR,—I had a male patient under my care in Teheran, similar to the case described by Dr. Hewetson in the *Journal* of April 19th (p. 761).

The diagnosis was chronic nephritis ("large white kidney"), and many methods of treatment were tried without effect. Finally, as he had a moderately large spleen, quinine in large doses was given. The quantity of urine rose at once from under 500 c.cm. to 1,000, 1,500, and 1,700 c.cm. The oedema disappeared and the man left hospital shortly afterwards with only a faint trace of albumin and a rare cast. He was afebrile throughout his stay, and his blood picture was that of a simple anaemia with no haematozoa.

I never knew quinine, given by whatever route or in whatever dose, to cause premature emptying of the uterus,

but I saw not a few pregnant women die of malaria who had abstained from taking it. Indeed, I took to issuing a warning in the public press at the start of every malaria season.—I am, etc.,

London, N.W.1, April 22nd. A. R. NELIGAN, M.D.

DOSE OF MERCUROCHROME BY THE MOUTH.

SIR,—In the *Journal* of April 19th (p. 761) Mr. W. H. Martindale asks medical men to communicate the results they have obtained from the oral administration of mercurochrome. He also asks for information concerning the dose employed.

I have been using mercurochrome put up in 100 milligram capsules for the last six months, and have given as many as three, three times a day—that is to say, a total daily dosage of 900 milligrams. As a rule, however, I do not go beyond 600 milligrams, and with this dose have never noted any toxic effects. The stools are deeply stained, and the urine becomes rose-coloured and bacteriostatic.

It is always a difficult matter to assess the value of urinary antiseptics, and, although I am favourably impressed with the drug, I am not yet in a position to give detailed information concerning its efficiency.—I am, etc.,

London, W.1, April 25th. KENNETH WALKER.

STERILITY IN WOMAN.

SIR,—Mr. Leith Murray's letter (April 26th, p. 798) referring to Professor Blair Bell's address on female sterility raises several important points. Particularly in the hospital class, there is a definite risk of domestic disaster in the small percentage of cases where, owing to the proved occlusion of tubes or the entire absence of spermatozoa, the doctor can hold out no hope of conception. In their own words, it is the "fault" of one or other partner. The very word "fault," after probably many years of hopeful expectation and disappointment, has a harmful psychological effect. In such cases I always avoid the suspicion of arrogant omniscience, and point out that in many cases the doctor has proved to be wrong, and that hope should not be entirely banished. I have never come across cases of threatened suicide such as Mr. Leith Murray's, but I can easily understand them. I do not think that any difference should be made between private and hospital practice in strongly recommending examination of the semen before subjecting any woman to treatment.

Mr. Leith Murray's figures concerning the negative results of insufflation agree with my own rather than those of Professor Blair Bell. In the absence of palpable abnormality, I can remember only two cases in a long series where the tubes were found to be occluded. I, also, flood the vagina with saline in order to eliminate the possibility of unnoticed leakage, as abdominal auscultation is an uncertain test. The question of curettage in this connexion is important. In most cases I am convinced that a careful dilatation is the important factor, and I confine myself to a light stroke of a sharp curette, anteriorly and posteriorly, to eliminate the possibility of gross thickening of the endometrium, which is rare. The drastic removal of a healthy endometrium, which is often undertaken, appears to me quite purposeless, and leads to those cases, not very rare, where the patient continues to be sterile, but now has a leucorrhoea, constant, slight, but very annoying.

I hope that Professor Blair Bell will reply to Mr. Leith Murray's query as to why he recommends operation for primary retroversion rather than the use of a Hodge pessary. In my hands the latter has been generally futile, except in cases of subinvolutional retroversion. Where all other measures have failed I have used the old Alexander-Adams operation in several cases, pregnancy resulting in a satisfactory proportion.—I am, etc.,

JOHN S. M. CONNELL.

April 27th. Honorary Gynaecologist, Midland Hospital, Birmingham; Visiting Gynaecologist and Obstetrician, Hollen Hospital.

ETIOLOGY OF DENTAL CARIES.

SIR,—I am glad that Professor Mellanby is able to confirm the conclusions derived from Mrs. May Mellanby's experiment—namely, that vitamin D or ultra-violet irradiation is essential for good bone and tooth calcification, for the protection of the abraded or carious tooth by arrest of caries, and the protection of the pulp by secondary dentine. But the problem is how to reconcile these conclusions with other important observations. It is not obvious that more completely calcified enamel will resist caries better, enamel caries being due to the solution of the calcium in the acid which results from the fermentation of stagnant carbohydrate; and no one has yet found a tooth so impregnably calcified that it can resist artificial caries *in vitro*. Neither is it obvious that numerous interglobular spaces in defective dentine would seriously accelerate the carious process in an uncleansed carious cavity. Secondary dentine protects the pulp from infection, no doubt; but it does not protect the tooth against caries. Nor has anyone yet proved that the recalcification of dentine which takes place in arrested caries is the cause of the arrest. It may be a result of arrest. It is also a much rarer phenomenon than is the production of secondary dentine.

Dr. E. W. Fish has produced cogent evidence that the block of dentine which lies between the carious cavity or abraded surface and the pulp is incapable of any vital reaction, and that in its recalcification, when this occurs, it plays as passive a part as a denture which becomes, in certain circumstances, coated with a dense muco-calcareous deposit. We have to suppose, therefore, that other influences making for the defence of the teeth are closely associated with the calcification-promoting factor in vitamin D. I find that a body bath of ultra-violet light rapidly removes the extreme sensitiveness associated with active cervical caries. These observations surely point to the conclusion that irradiated ergosterol promotes some other function in addition to that which produces calcification.—I am, etc.,

F. TALBOT,
London, W.1, April 22nd. L.D.S., M.R.C.S., L.R.C.P.

AMPUTATIONS AND ARTIFICIAL LIMBS.

SIR,—Your report of the discussion on the above subject at the Section of Surgery of the Royal Society of Medicine is exceptionally interesting, especially to those who recognize the value of the opinions of Mr. Muirhead Little in his book on amputations and of the surgeons at Roehampton who have enjoyed such opportunities of noting the after-results of thousands of amputations. Artificial limb makers will especially welcome an opportunity of noting the effect of amputations in war cases and comparing them with similar operations in civilian cases. This applies with emphasis to the point raised as to the value of Syme amputations, and the Stokes-Gritti and other operations through the knee or ankle joints. It was probably impossible for the surgeons to give definite statistics as to the number of these cases which required reamputation during the succeeding ten years, but in civilian cases the problem is very different.

In war cases the Syme amputations were largely due to gangrene from frost-bite, and in the knee-joint amputations there were complications from sepsis. Added to this, the original amputations were often hurried, involving subsequent operations. In civilian cases, on the other hand, practically the only complication to be dreaded is in cases of tuberculosis, and at the present day the trouble is generally eradicated in the amputation. Thus we find in our records as artificial limb makers of very wide and long experience that, taking a hundred cases of Syme amputation, not a single case had to undergo reamputation, and the wearers of the limbs can undertake arduous duties—on railways, at the docks, in building operations, etc.—and continue to wear the limbs for ten, twenty, or more years without any difficulty.

With reference to the amputations at the knee-joint providing an end-bearing stump, the same experience has been obtained, and the power to take pressure on the extremity encourages the wearer to engage in tasks which involve long periods of walking or standing. In all these

cases we consider it essential that the stump shall fit snugly in the socket at the extremity, as in limbs which permit of a loose movement of the stump, either in the socket or on the end-bearing, there would be danger of trouble from resultant friction. We consider that, even in the war cases, some of the trouble has been from imperfectly fitted limbs or from alteration in the stump after the artificial limb is applied, and that the number of these cases is now very small.

In conclusion, we must endorse the opinion that the co-operation and advice of the operating surgeon is of the very highest value to the limb maker, and that it is by consultation together that the most perfect results are attained.—We are, etc.,

London, W.C., April 26th. W. R. GROSSMITH LTD.

TESTS FOR COLOUR VISION.

SIR,—The centenary of Hickman again draws attention to the fact that there is no means in this country by which a man who has made a scientific discovery can establish his facts. Men who consider themselves authorities say of an unknown worker, "Who is he to tell us we are wrong?" and refuse to examine the facts.

When I took up the subjects of vision and colour vision over forty years ago I found a mass of misstatements in the textbooks. Having been appointed on the International Code of Signals Committee of the Board of Trade to advise on a test for colour-blindness I read a paper embodying a large number of new facts before the Royal Society. Criticism was almost confined to my statement that the wool test was very defective; as a matter of fact it allows 50 per cent. of dangerously colour-blind to escape detection, and of those rejected by it about 50 per cent. are practically normal sighted. The Royal Society then wrote to the Board of Trade offering to appoint a committee to decide on the best test for colour-blindness. After three years they recommended the wool test, and I lost my position at the Board of Trade. I could then obtain no proper hearing until Devereux Marshall took up the question in the *British Medical Journal*, and a committee of the Ophthalmological Society agreed with me. The Royal Society still remained unconvinced and refused to examine the facts; but I have to thank the Board of Trade for its honourable behaviour in this matter. I was appointed special examiner in 1920.—I am, etc.,

Board of Trade, S.W., April 21st. F. W. EDRIDGE-GREEN.

The Services.

NAVAL MEDICAL COMPASSIONATE FUND.

A QUARTERLY meeting of the directors of the Naval Medical Compassionate Fund was held on April 24th, when Surgeon Rear-Admiral Arthur Gaskell, C.B., O.B.E., K.H.S., Medical Director-General of the Navy, was in the chair. The sum of £180 was distributed among the several applicants.

THE GILBERT BLANE MEDAL.

IN announcing the award of the Gilbert Blane Medal to Surgeon Commander J. F. H. Gaussen, R.N., on April 12th, it should have been stated that the medal is awarded annually to the medical officer who obtains the highest aggregate marks at the examination for promotion to the rank of surgeon commander.

DEATHS IN THE SERVICES.

Brevet-Colonel John Francis Bateson, late of the R.A.M.C. and of the Coldstream Guards, died at the Manor House, Great Chevercsty, Devizes, on April 12th, aged 71. He was born at Liscard, Chester, on February 17th, 1859, and was educated at Harrow and at Edinburgh University, where he was in the Rugby fifteen, and graduated as M.B. and C.M. in 1881. He also took the M.R.C.S. in 1884. Entering the Army as surgeon in 1885, he was seconded for service with the Egyptian Army from 1893 to 1895, was transferred to the Coldstream Guards as surgeon major in 1900, became surgeon lieutenant-colonel in 1905, and retired in 1913. He served throughout the South African war, 1899–1902, when he took part in operations in Natal, including the actions at Elandslaagte, Reitfontein, Lombard's Kop, and Laing's Nek, and the defence of Ladysmith; in the Transvaal, including actions at Belfast and Lydenberg; and in Cape Colony; was mentioned in dispatches in the *London Gazette* of February 8th, 1901, and July 29th, 1902, and received the Queen's medal with six clasps, and the King's medal with two clasps. He also rejoined for service in the war of 1914-18.

Obituary.

FREDERICK EDWARD WYNNE, M.B., CH.B., D.P.H.,

Medical Officer of Health for Sheffield, and Professor of Public Health in the University of Sheffield.

BY the death of Dr. Frederick Edward Wynne the medical profession loses a man of great ability and outstanding personality. An Irishman by birth, he was the son of the Bishop of Killaloe. He was educated at Trinity College, Dublin, and took the degrees of B.A., M.B., Ch.B., and B.A.O. in 1894. After a short assistancy in the Midlands, he settled in Leigh, Lancashire, in 1896, and remained in general practice in that town until September, 1909, when he was appointed the first full-time medical officer of health for the borough of Leigh.



Photo Lafayette, Manchester.

He took his D.P.H. at the University of Manchester in 1910. In December, 1911, he was appointed medical officer of health for Wigan. From 1914 to 1917 he held a temporary commission as captain in the R.A.M.C., and saw service in Egypt and Palestine. On leaving the Army he returned to Wigan, and remained there until 1921, when he was appointed medical officer of health for the city of Sheffield and professor of public health in the University. Both these appointments he held at the time of his death.

Professor Wynne was a man not only eminent in his professional capacity, but of wide sympathies and varied interests. He was a writer of distinction, both on medical and on general subjects. Apart from his contributions to the purely medical press, he was for many years a correspondent on medical subjects to the *Manchester Guardian*. He was also a contributor of many non-medical articles to that newspaper, these being in the nature of essays on various aspects of Lancashire life which came under his observation, and which were written with great charm and sympathy. He also wrote several novels. In 1908, during Miss Horniman's tenure of the Gaiety Theatre, Manchester, he had a play produced at that theatre entitled *Subsidence*, which dealt with certain aspects of the destruction of surface property through the subsidence of the land beneath it caused by mining. Outwardly somewhat reserved, he showed to his intimates great charm of manner, kindliness of disposition, and a high standard of integrity. He was a widely read man and a good classical scholar. Impatient of anything in the nature of a sham or of vulgar pretence, which offended his somewhat critical and fastidious temperament, he was able to express himself with an asperity to which his literary style gave an edge. His writings were invariably drawn from subjects which came within the field of his own observation and experience. His was not an imagination that could create worlds of its own; but he could write about the world he knew with rare sympathy and discrimination. *Fortune's Fool* is the story of a young man of high ideals and ambitions, dragged by a drunken wife through the slough of club practice and sixpenny work to final tragedy. In it he deals with some of the most unfavourable aspects of medical practice (largely abolished through the coming of the National Insurance Act) with exceptional vividness. His play *Subsidence* drew a fine picture of an outwardly unsympathetic type—an elderly Lancashire farmer who clings to his farm, where his father and grandfather had worked before him, though he is warned of its inevitable ruin through the workings of the colliery beneath his land, and comes to his death in the waters of the local "flash"—a term used for rapidly spreading surface water due to colliery subsidence. In *A Mediterranean Mystery* he drew on his army experiences; and his impatience of shams was shown in his last novel, *Digby's Miracle*, the story of a

young medical man who is tempted by the prospect of money into the production of a sham miracle in connexion with a supposed holy well, and his subsequent repentance. Besides being a writer, he was a lecturer of great distinction and charm, and his lectures were marked by the same quality as his writings.

For many years Professor Wynne took an active part in the affairs of the British Medical Association, and served both Divisions and Branches in various capacities. He was a member of the Executive of the Leigh Division, 1907–8, and representative of the Division in the Representative Body, 1905–6 and 1909–12. He was a member of the Lancashire and Cheshire Branch Council, 1909–14, member of the Executive Committee of the Wigan Division, 1912–14, honorary secretary, Wigan Division, 1913–14, and member of the Executive Committee of the Sheffield Division, 1922–28. He also served on the Public Health Committee of the Association for five years, and on its Superannuation Subcommittee in 1923–24. At the Annual Meeting of the Association in Portsmouth in 1923 he held office as vice-president of the Section of Public Health, and at the Manchester Meeting last summer he opened the discussion on health propaganda, from the administrative point of view, in the Section of Medical Sociology.

He was not 60 years of age at the date of his death, which occurred after a short illness; and the news must have come as both a shock and a surprise to many of his friends. He leaves a widow and three sons. The eldest son is in the Air Force, the second is in the Navy, and the third in the Army. His many friends will feel their lives the poorer for his departure.

J. S. M.

A Sheffield colleague writes: Dr. Wynne had made a deep impression on the City of Sheffield and its health services. He was greatly interested in the prevention of overcrowding, and gave his strong support to the re-housing schemes which the corporation has been carrying through for some time. He was a man of outstanding ability and original thought, and did not hesitate on occasions to express views which he knew might not meet with general acceptance. He was for many years president of the Irish Medical Society, and it was a delight to listen to his able speeches at their annual dinner on St. Patrick's Day. Dr. Wynne was the soul of geniality and kindness, and his loss will be deplored by all who knew him.

SEAGHAN P. MacENRI, M.D.,

Professor of Ophthalmology and Otology, University College, Galway.

DR. SEAGHAN P. MACENRI died recently at his residence at Taylor's Hill, Galway. He was born in co. Sligo sixty-eight years ago, and was educated at Trinity College, Dublin, and St. Vincent's Hospital, Dublin, graduating M.B. in 1886, and proceeding M.D. in 1888. For a period he lived in London, where he was ophthalmic surgeon to the Italian Hospital, to the London School Board, and to the London County Council schools; medical officer for out-patients, Miller General Hospital, Greenwich; physician to St. Mary's Orphanage, Blackheath; surgeon to the London Metropolitan Police; and clinical assistant to the Royal Westminster Ophthalmic Hospital and the Royal Ear Hospital, London.

Dr. MacEnri gave up his large practice in London (where he was better known as John Patrick Henry) to return to Ireland and throw himself into the Irish Ireland movement. For a time he was head professor at the Leinster School of Irish, and afterwards head professor at Connacht College, Spiddal, in the foundation of which he played a prominent part. University College, Galway, had the benefit of his experience and profound knowledge in two spheres, for he filled the posts of professor of ophthalmology and otology and also of lecturer in modern Irish. He was a member of the governing body of the College and of the Senate of the National University of Ireland. A fine linguistic scholar, he was the author of several popular manuals for Irish students, including "An Modh Direach," "An Réalt Eolais," "Udhacht an Stiocaire," "Bás Ghofraidha Uí Dhomhnaill," and "A Handbook of Modern Irish," all of which were most helpful to students acquiring a knowledge of Irish. He also edited the works of the late Michael Breathnach. Because of his impartiality and his dissociation from politics, he was elected president of the Gaelic League some years ago, but was unable to continue in that position owing to the strain of various other duties. In 1917 he married Jane Louisa Little, who survives him with one son and two daughters.

FRANCIS L. A. GREAVES, O.B.E., F.R.C.S.,

Senior Honorary Surgeon and Honorary Surgeon Ear, Throat, and Nose Department, Derbyshire Royal Infirmary.

THE news of the sudden death, on April 16th, of Mr. Frank Greaves at the age of 55, came as a shock to a wide circle of friends and medical colleagues. He had tried recently to curtail some of his professional activities on account of his health, but he was actively engaged in hospital and consulting practice until a few weeks ago, when he went away for a rest and holiday.



Francis Ley Augustus Greaves was born at Derby on July 4th, 1874. The son of a medical man, Dr. C. A. Greaves, who held the post of honorary physician to the Derbyshire Royal Infirmary, Frank Greaves entered St. Thomas's Hospital, where, after a distinguished career as a medical student, he obtained the diploma M.R.C.S., L.R.C.P. in 1897, and was appointed house surgeon. In 1898 he became assistant house-surgeon, and in the following year house-surgeon, to the Derbyshire Royal Infirmary, which institution he was still serving at the time of his death. In 1902 he obtained the diploma F.R.C.S.Eng., and the same year was appointed honorary surgeon to the Royal Infirmary. Three years later he inaugurated the ear, throat, and nose department, acting as honorary surgeon in this specialty and also as honorary surgeon in the general surgical departments. As an officer in the Territorial Force, he went on active service at the outset of the war; and later his surgical abilities were fully employed as acting lieutenant-colonel in charge of surgical divisions of the 26th and 74th General Hospitals in France, for which services he was awarded the O.B.E. (Military Class) on demobilization. Apart from his work at the Derbyshire Royal Infirmary, Greaves held the following honorary posts in the district: consulting aural surgeon to the Derbyshire Hospital for Sick Children; consulting surgeon to the Whitworth Hospital, Darley Dale, and to the Ripley Cottage Hospital.

He had a large consulting practice, both as a throat specialist and in general surgery, for more than twenty years, and was held in the highest esteem by the profession in and around Derby. His hospital work was of a very high standard; his outstanding experience being in the surgery of the thyroid gland and the treatment of fractures. He was always an enthusiastic worker for the Derby Medical Society, and his life and work did much for the scientific side of medicine. He was a warm supporter of the British Medical Association, and was vice-president of the Section of Surgery at the Annual Meeting at Nottingham in 1926. When he died he had just finished a year in office as chairman of the Derbyshire Division. He contributed articles to the *British Medical Journal* on surgical subjects.

In 1906 he married Constance May Rice, who, with their son, survives him.

JOHN GARDNER, M.R.C.S., L.R.C.P.,

Consulting Surgeon, Montagu Hospital, Mexborough.

We regret to record the death of Dr. John Gardner, which took place suddenly from cardiac embolism, on April 16th, at his home near Hartley Wintney, to which he had retired after relinquishing his practice at Sutton Valence. He was born at Bolton-le-Sands, Lancashire, on May 17th, 1867, and was educated at the Friends School, Lancaster. After becoming a member of the Pharmaceutical Society he took up the study of medicine, first at the Sheffield Medical School, where he was a student under Dr. Christopher Addison, and then at University College Hospital, London. After obtaining the diplomas M.R.C.S., L.R.C.P. in 1899 he began practice at Bolton-on-Dearne, Yorks, but shortly joined a partnership in the neighbouring town of Mexborough, where for upwards of twenty years he led a most strenuous life in a busy colliery district, being surgeon to the Montagu Hospital and the Great Northern Railway Company; he took a special interest in the work of the St. John Ambulance Brigade. The strain of the war years, when he was called upon to undertake a large amount of the operative work at the hospital in addition to his large practice, began to tell on his health, and he showed signs of myocardial degeneration. He was advised to give up his work in Mexborough and to seek a sphere less laborious. So much was his work at the hospital appreciated by his colleagues and the Hospital Committee that he was elected consulting surgeon to the hospital, and presented with a scroll recording the honour when he retired from the staff. After a year's rest he resumed practice at Sutton Valence, near Maidstone, and was appointed medical officer to the public school there. Here again his ability made him a very popular country practitioner, with the inevitable result of hard work, and a final breakdown in health; he was compelled to retire from practice two years ago after an attack of coronary embolism.

John Gardner was of the best type of general practitioner—conscientious, painstaking, thoroughly sound in his work, modest, kindly, and sympathetic. He was beloved by all who knew him, and his patients were his friends. In each of the places where he was in practice he identified himself with the local social life. Possessed of a good bass voice he was always willing to help at local concerts and festivals, and sang in the church choirs. He was president of the Mexborough Choral Society, and it gave him great pleasure to take part in the various musical festivals which are a feature of the Yorkshire choral societies. He was for several years churchwarden at Mexborough.

At the funeral service, on Easter Monday, at Sutton Valence, the church was filled with between two and three hundred of his patients and friends, who had come, some from Yorkshire, to pay their last tribute. He leaves a widow and two daughters. Two of his brothers are in the medical profession—Dr. T. H. Gardner, chairman of the Wandsworth Division, and Dr. H. Gardner, honorary radiologist to the Wilson Hospital, Mitcham.

We regret to record the death, in his seventy-fourth year, of Dr. JOHN MACKINNON, which took place at the Broadford Hospital, Isle of Skye, on April 18th, following a motor accident. John MacKinnon received his medical education in Edinburgh, where he graduated M.B., C.M. in 1894, and won the medal in anatomy. After spending two years as an assistant in a Yorkshire practice, he went to South Africa, where he remained till 1915. He had an extensive practice in Somerset East, Cape Colony, and the surrounding district. During the Boer war he placed his professional services at the disposal of the British authorities, and was present at several skirmishes. In the great war he became a captain in the R.A.M.C., and saw service in Malta, Palestine, and Egypt from 1915 to the end of the war. Afterwards he retired to his native Isle of Skye, where he practised in the parish of Strath. He is survived by a widow, a son, and a daughter.

The following well-known foreign medical men have recently died: Dr. VARIOT, an eminent Paris paediatrist and honorary senior physician to the Hôpital des Enfants Assistés; Dr. RAPP, honorary professor of medicine at the faculties of Lyons, Geneva, and Strasbourg, and corresponding member of the Académie de Médecine; Dr. HENRI BRIN, professor of clinical surgery at the Angers School of Medicine; Dr. FRIEDRICH ROLLY, emeritus professor of special pathology and treatment, and director of the medical polyclinic at Leipzig University, aged 56; Dr. THOMA TOMESCO, professor of pathology and therapeutics at Bucarest; Dr. WALTHER FELIX, professor of anatomy and director of the anatomical institute at Zurich, aged 70; Professor LENDRICH, a hygienist of Hamburg; Dr. RICHARD MILLS PEARCE, general director of the division of medical education of the Rockefeller Institute since 1920, aged 55, of heart disease; and Dr. LAURENCE KINSMAN MCCAFFERTY, a prominent New York dermatologist, aged 39.

Universities and Colleges.

UNIVERSITY OF LONDON.

THE following candidates have been approved at the examination indicated:

DIPLOMA IN PSYCHOLOGICAL MEDICINE.—C. J. C. Earl (*with special knowledge of Mental Deficiency*), B. Sennock (*with special knowledge of Psychiatry*).

ROYAL COLLEGE OF PHYSICIANS OF LONDON.

AN ordinary quarterly comitia of the Royal College of Physicians of London was held on April 24th, when Sir John Rose Bradford, the President, was in the chair.

Fellowship.

The following Members of the College were elected to the Fellowship:

Ralph Henry Crowley, M.D.Lond., Charles Hunter, M.D.Aberd., Leonard George Joseph Mackey, M.D.Birm., Edward Burton Gunson, M.D.Ed., William Wilson Jameson, M.D.Aberd., Arthur John Scott Pinchin, M.D.Lond., Adolphe Abrahams, O.B.E., M.D.Camb., Alan Worsley Holmes à Court, M.D.Sydney, Thomas Archibald Malloch, M.D.McGill, Arthur Peregrine Thomson, *M.C.*, M.D.Birm., Graham Selby Wilson, M.D.Lond., Henry Wallace Jones, M.D.Liverp., James Calvert Spence, *M.C.*, M.D.Durh., William Brown, M.D.Oxf., Archibald Edmund Clark-Kennedy, M.D.Camb., Hugh Reginald Dutton, I.M.S., James Purdon Martin, M.D.Pe.T., Macdonald Critchley, M.D.Bristol, Arthur Salusbury MacNalty, M.D.Oxf.

The following were nominated Fellows by the Council under By-law xxxviii (*b*):

Walter Ernest Dixon, M.D.Lond., F.R.S.; John James Rickard Macleod, M.B.Aberd., F.R.S.

Membership.

The following candidates were admitted Members of the College:

Anthony Dominic Abdullah, M.B.Sydney, Edward William Anderson, M.D.Ed., Leonox Gordon Bell, M.D.Manitoba, Charles Allan Birch, M.D.Liverp., Edward John Cronin, M.B.New Zeal., John Nathaniel Cumings, M.B.Lond., Amar Nath Dugga, M.B.Punjab, John Lawrence Howland Easton, M.B.Camb., Phyllis Victoria Lillia Epps, M.D.Lond., Florence Margaret Gamble, M.D.Lond., Stanley Jack Hartfall, M.B.Leeds, Albert Joseph Hawe, M.B.Liverp., Catherine Mary Hext, M.B.Lond., Thomas Alexander Alfred Hunter, M.B.Camb., Simon Kin, M.B.Lond., Isabella Louise Hamilton Livingstone, M.D.Lond., Murdo Mackenzie, M.B.Lond., Lucy Margaret Theodora Masterman, M.D.Lond., Swithin Pinder Meadows, M.B.Lond., Thomas Morton, M.B.Lond., George White Pickering, M.B.Camb., Max Michael Posel, M.B.Lond., Charles Frank Shelton, M.D.Lond., William Arklay Steel, M.D.St. And., Arthur Goronwy Watkins, M.D.Lond., Henry Yellowlees, O.B.E., M.D.Glasg.

Appointment of Representatives.

Sir John Rose Bradford was appointed to represent the College at the jubilee celebrations at the University of Manchester on May 23rd, 1930.

Dr. R. A. Young was appointed representative of the College at the sixteenth annual congress of the National Association for the Prevention of Tuberculosis to be held July 3rd–5th, 1930.

Dr William Hunter was appointed to represent the College on a committee of the People's League of Health to consider the cause and eradication of bovine tuberculosis.

The late Poet Laureate.

By a resolution of the College the President was asked to convey a vote of condolence to the family of the late Poet Laureate, Dr. Robert Bridges, O.M., who was a Fellow of the College.

Licences.

Licences to practise were conferred upon the following 142 candidates who have passed the Final Examination in Medicine, Surgery, and Midwifery of the Conjoint Board and have complied with the by-laws of the College:

M. Ata Ullah, H. B. Bagshaw, G. N. Bailey, *A. H. Baker, J. E. G. Baker, A. N. Barker, F. Bartholomew, G. R. Bashford, D. A. Beattie, D. H. Bolton, A. E. Bowling, Mabel Brewster, R. O. Brooks, *C. C. Bryson, A. Burkhardt, C. E. Burridge, G. G. Cameron, S. N. Chopra, D. S. Chowdhary, J. F. Contes, A. F. H. Cole, Charlotte A. G. Conway, J. H. Conyers, Margaret E. Cook, H. Coorland, H. D. Crousn, H. Curtis, A. L. d'Abreu, C. M. Dell, W. J. D'Rosario, P. G. Dowdell, J. C. E. Dusseau, J. J. Eapen, R. E. M. Fawcett, Sheila J. Ferguson, F. H. H. Finlaison, R. H. Fish,

E. D. Forster, E. V. Frederick, J. D. J. Freeman, †W. W. Gerrard, P. R. Graves, S. R. Gunewardene, H. C. Halge, C. J. K. Hamilton, D. Hay, Geraldine J. G. Hayes, Columba M. D. Heathcote, J. Henry, J. R. Hindmarsh, Cicely L. Hingston, S. W. Holmes, Ethel D. Hopper, L. H. Howells, K. N. Irvine, O. Ive, L. A. Jacob, M. M. St. G. Johnstone, E. G. M. Jones, C. Jotikasthira, *C. C. Kapila, N. F. Kendall, J. D. Kersbaw, S. Lal, F. P. L. Lander, *Grace Law, R. H. Leaver, L. Z. Levy, G. S. R. Little, J. B. Lloyd, H. Lwow, H. G. McComas, S. McDonald, W. McKissock, R. W. Malim, [illegible] P. Markby, J [illegible] F. Murray, F [illegible] C. L. Oakley, G. L. Ormerod, M. Owen, P. M. Oxley, C. H. Pauli, D. D. Payne, M. Phillips, F. E. Pilkington, J. R. F. Popplewell, J. O. Poynton, [illegible]

[illegible]

K. M. Seeda†, M. H Shah, Ursula Shelley, Edna F. Sheridan, L. Silman, S Silman, Phyllis F. L Simon, J. G. Sleigh, Edith M. P. Smith, P. Somasunder, B. Southwell, G. H. G. Southwell-Sander, T. M. Spilhaus, J. K. Stanger, R. W. Stenhenson, B. P. Sur, F. H. Taylor, G. Taylor, J. N. Vasudeva, L. H. Wharton, J. C. G. Whitelaw, D. A. Williams, Rose E. Williams, F. S. Winton, Joyce B. Woods, G. R. H. Wrangham, W. Young.

* M.R.C.S. previously granted.

SOCIETY OF APOTHECARIES OF LONDON.

THE following candidates have passed in the subjects indicated:

SURGERY.—R. P. Davies, M. Halperine, J. E. R. Heppolette, C. G. Muller, E. G. Nair, L. J. Pearson.

MEDICINE.—J. Britanischski.

FORENSIC MEDICINE.—J. S. Bury, H. Glynn, J. M. L. Love, A. W. B. Wiggins.

MIDWIFERY.—E. C. Dymond, G. R. Germany, E. G. Nair, C. Seeley, G. Wilsker.

The diploma of the Society has been granted to Messrs. J. S. Bury, E. G. Nair, and L. J. Pearson.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

PARLIAMENT reassembled on April 29th. On that day the Royal Assent was signified to the Army and Air Force Annual Act, and the House of Lords commenced a second reading debate on the Coal Mining Bill. The same day the House of Commons went into committee on the Estimates for the Ministry of Health. The debate, which was chiefly on medical topics, was eventually adjourned. On the following days the Commons debated the changes of taxation which are proposed in the Budget.

The Parliamentary Medical Committee will meet again on May 13th. The British Medical Association scheme for a national medical service is likely to be examined at an early meeting of the Labour Party Committee on Health Policy.

Ministry of Health Estimates.

In committee of the House of Commons, on April 29th, the vote for the salaries and expenses of the Ministry of Health was considered. Mr. GREENWOOD made a statement with regard to the increase in claims for sickness benefit. He said that the report of the Government actuary had made it quite clear that further examination had to take place into this problem. On receipt of the report the National Health Insurance Joint Committee decided to extend the scope of the investigation, and the whole problem was now under the close attention of the officers, administrative and medical, of the insurance departments in all parts of the United Kingdom. When the investigation had proceeded sufficiently far the Approved Societies' Consultative Council would be brought into consultation, as would be the Insurance Acts Committee of the British Medical Association. Out of their investigations and deliberations he hoped that they might get some clearer notion of what lay behind this very large increase in the claims for benefit. He was convinced that there was no simple explanation of the increase. Precisely the same problem had arisen in other countries which had a fairly well-developed scheme of sickness insurance. In those countries the claims had, in recent years, shown a most extraordinary increase. In Germany, for example, the increase in 1929 over 1924 was as large as 70 per cent. He did not wish to be too definite as to the cause of the increase, but in this country the prolonged trade depression had been one important contributory factor. Another factor, the value of which it was difficult to assess, was that people to-day were undoubtedly seeking medical advice earlier than they used to; in fact, the public had been urged repeatedly not to delay treatment, but to obtain it at the earliest possible moment. In so far as the increase of sickness was due to this reason, it was an increase which was to be welcomed, for it meant, in the long run, an economy in the funds of the insurance societies. There were and would be cases where, owing to laxity, either of certification or of administration, persons were in receipt of benefit who were not properly entitled to it. A new regulation was to be issued very shortly which would enable effective disciplinary action to be taken where it was proved beyond doubt that a medical practitioner had failed to exercise reasonable care in the use of certification. With a view to getting more precise knowledge of this situation two separate tests were being conducted. In the first place, an analysis was being made of about 80,000 cases referred to the regional medical officers by a large number of societies all over the country during 1929. It was hoped that when this analysis was complete they would obtain from it a good deal of information not at present available. Secondly, with the object of obtaining more precise knowledge as to the standard which was applied by different medical practitioners in interpreting who was "incapable of work," an investigation would be made very shortly covering a large number of persons in receipt of benefit at a particular date. By those means it was hoped that information would be forthcoming which would enable the Government to bring about a more uniform standard of certification throughout the country. He had decided to make permanent provision for the collection of statistics of the kind to be found in the report of the Government actuary.

Dealing with the health services, he said that maternal mortality was still with them. Out of the detailed investigations of the special committee which Mr. Chamberlain had appointed to consider this complex problem new light, he believed, would come. He hoped the committee would issue an interim report in a month or two. The recommendations of the other committee were under consideration by the Government with a view to devising a scheme of maternal service which would have due regard, on the one hand, to maternity benefit under the National Health Insurance Acts, and, on the other, to the service provided by the local authorities under the Maternity and Child Welfare Acts. With regard to tuberculosis, the experience of village settlements and the principles on which their successful working depended had been brought to the notice of certain local authorities where the conditions seemed favourable to the establishment and maintenance of similar settlements. Even if settlements were provided for all tuberculosis patients for whom they would be appropriate, there would still be a number of people for whom after-care would be required. He hoped that local authorities, as the next move in the campaign against tuberculosis, would consider and experiment in methods of after-care. Less than three weeks ago he announced that the Government had agreed to make a contribution up to £250,000 for the building of a medical school in connexion with the proposed post-graduate hospital and school. The Government contribution was for the buildings, but increased grants would in future be given when the school became a recognized school of the University of London. The scheme had received unanimous approval in both the lay and medical press. He had since communicated with the London County Council and the University of London to get their co-operation, and he hoped in a very short time to have completed the next step by the appointment of a committee representing all the interests concerned to consider the complex problems of planning, finance, and administration. This was perhaps the most important single step which had been taken in the interests of public health since the passage of the original Health Insurance Act, because not only would it be a centre for post-graduate teaching for other parts of the Empire, but it would enable the general practitioners of this country, including 16,000 panel doctors, to have a chance, which they did not enjoy to-day, of keeping in touch with the rapid developments and changes taking place day by day in the art and science of medicine.

Dr. VERNON DAVIES asked if the total expense of the post-graduate courses would be borne by medical men themselves.

Mr. GREENWOOD said he hoped that a certain amount of provision would be made to assist them. Turning to the outbreak of psittacosis, he said that up to the present there had been 112 cases, of which 22 had been fatal. Most, although not all, of the cases had been attributable to parrots from South America. Apparently all birds of the parrot type were liable to the disease. A comprehensive report was in preparation, but meanwhile events had made it imperative that action should be taken under the Public Health Acts to prohibit the importation of parrots for the time being. The new Order would come into operation on May 20th, which gave sufficient time to warn people who might be on the point of importing parrots. He hoped that the public would realize that the course taken was a reasonable one. When circumstances permitted the order would be withdrawn.

Sir KINGSLEY WOOD said that Mr. Greenwood had not shown a sufficient grip of the situation as a result of the information supplied by the Government actuary with regard to the national health insurance scheme. During the seventeen years in which the scheme had been in operation £100,000,000 had been spent on medical treatment and attendances, nearly £500,000 had been disbursed each week in cash benefits, nearly £2,250,000 was being spent on drugs, and some 15,000 members of the medical profession gave 60,000,000 attendances each year to insured persons. The report of the Government actuary was surprising when one recalled the great improvement in national health generally. Yet the Insurance Controller stated that the record in relation to sickness and disablement claims constituted a challenge to all responsible for the welfare of the scheme. One was driven to the conclusion, by reading the reports of the approved societies and the statement

of the Government actuary, that there was a good deal of lax certification. He did not disguise the difficulty of the panel doctor, but it was very remarkable that directly cases were referred from the panel doctor to the regional medical officer, some 55 to 65 per cent. declared off the funds. That called for further explanation from the medical men concerned. This laxity of certification was undoubtedly due, in a considerable degree, to the fact that under the altered conditions only a few days' notice was necessary for a panel patient to change his doctor. The medical men themselves had admitted that there was considerable danger in that direction.

Mr. RHYS DAVIES said that charges had been made against the doctors of excessive certification. If an insured person went to a doctor and said he was not well, no medical man could challenge his statement. It was not that sort of thing of which the societies complained. The allegation was that a young man, wishing to build up a practice successfully and quickly, condescended to the issuing of certificates in competition with other doctors. Whether that allegation could be proved or not he could not say. The Minister of Health was right in making further investigation by way of medical examination. He understood that it was proposed to take a group of societies and conduct a medical examination very shortly.

Mr. MELLER said that if the debate brought home to the doctors a realization of their duties it would have performed a useful purpose. Whatever else might emerge from the proposed inquiry it would be found necessary to go back to the old system under which patients changed their doctors. After subsequent debate, which will be reported next week, the debate on the vote was adjourned.

Medical News.

THE biennial dinner of the Royal Society of Tropical Medicine and Hygiene will be held at the May Fair Hotel, Berkeley Street, Piccadilly, on Thursday, May 22nd. The Marquess of Reading has consented to be present.

DR. J. MURDOCH, Chief of the Department of Radium and Radiotherapy, Brugmann Hospital, Brussels, and Director of the Cancer Centre of the University of Brussels, will give an address entitled "What can we expect from radium in the treatment of cancer?" at the Medical School, Leeds, on Wednesday, May 7th. The chair will be taken at 3.30 p.m. by Mr. J. F. Dobson, professor of surgery in the University of Leeds, and tea will be served after the meeting. Medical practitioners are cordially invited, and those who are able to attend are asked to inform the British Empire Cancer Campaign (Yorkshire Council), 47, Park Square, Leeds, before May 6th.

A SPECIAL meeting of the British Institute of Radiology will be held in the Reid-Knox Memorial Hall, 32, Welbeck Street, on May 8th, at 6 p.m., when Dr. J. Murdoch of the Brugmann Hospital, Brussels, will speak on the problem of dosage in radium therapy. The annual meeting of the Institute will be held on May 15th, at 8.30 p.m., and, after completion of the general business, Dr. Peter J. Kerley will read a paper on the pathology of early pulmonary tuberculosis as revealed by *x* rays. On the following morning a visit will be paid to the Westminster Hospital Radium Annexe in Fitzjohn's Avenue, Hampstead, and in the afternoon, at 5 o'clock, there will be a meeting for medical members, when reports will be received and cases discussed. Further information may be obtained from Dr. Stanley Melville, British Institute of Radiology, 32, Welbeck Street, W.1. The eighth general meeting of the Society of Radiographers will be held in the Reid-Knox Memorial Hall on May 14th, at 7 p.m., when Mr. C. H. Holbeach will read a paper on the planning of an *x*-ray department.

THE annual meeting of the Invalid Children's Aid Association will be held at 18, Carlton House Terrace, on Tuesday, May 6th, at 5 p.m., with Viscount Goschen in the chair. The speakers will include Viscount Burnham, Dr. F. E. Fremantle, M.P., the Rev. Pat McCormick, and Mr. R. C. Sherriff.

THE annual provincial meeting of the Society of Medical Officers of Health will be held at Harrogate on Friday, May 16th, at 4 p.m., when there will be a discussion on rheumatism in its public health aspects. In the evening the members will be entertained at dinner by the mayor and corporation. Those who intend to be present are asked to notify the executive secretary, 1, Upper Montague Street, W.C.1, at once, when they will receive official invitations from the town clerk of Harrogate.

AT a meeting of the Zoological Society of London on May 6th, at 5.30 p.m., Colonel A. E. Hamerton will read a paper on trypanosomiasis in relation to man and beast in Africa. A paper by Dr. S. Zuckerman has been received by the society; it deals with the general nature and homology of the menstrual cycle in the primates.

THE Fellowship of Medicine announces that a four weeks course in dermatology will begin at the St. John's Hospital, Leicester Square, on May 5th, comprising clinical instruction every afternoon and evening, and four special lectures a week, with special work in practical pathology if required. A course in preparation for the M.R.C.P. examination will continue from May 13th until July 4th, consisting of lectures on Tuesday and Friday evenings at 8.30 o'clock in the lecture room of the Medical Society of London, Chandos Street, Cavendish Square, with a lecture-demonstration in general medical ophthalmology on one afternoon, and two special ophthalmic demonstrations. The subjects of other special courses during May are as follows: diseases of the chest at the Victoria Park Hospital, May 12th to 24th, the whole of each day being occupied by demonstrations, lectures, and operations; ophthalmology at the Central London Ophthalmic Hospital, each afternoon from May 19th to June 7th; diseases of children at the Hospital for Sick Children, every morning from May 26th to June 7th; and medicine, surgery, and the specialties at the Queen Mary's Hospital, Stratford (with special reference to tuberculosis), from May 26th to June 7th. Copies of all syllabuses and information on post-graduate work are obtainable from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A SERIES of six lecture-discussions on the difficult child as a medical, social, and psychological problem, will be delivered by the officers of the Child Guidance Clinic of the Jewish Health Organization at Toynbee Hall, Commercial Street, E.1, on Mondays and Thursdays at 5.15 p.m., starting on May 19th. Dr. Emanuel Miller will open the course with a lecture on the general nature and scope of the problem and its treatment, and at the following sessions Dr. Noel H. M. Burke will lecture on the management of a clinic, Miss Beatrice H. Robinson on the functions of the social worker, Mr. M. Fortes on the endowment and education of the difficult child, Dr. Burke on physical factors, and Dr. Miller on the role of the psychiatrist. Tickets (price 1s. 6d. each for the course) may be obtained from the secretary, Jewish Health Organization of Great Britain, 19, Dorset Square, N.W.1.

A POST-GRADUATE course will be held at the Royal Chest Hospital, City Road, on Wednesday afternoons during May, at 3.15 o'clock. On May 7th, Dr. James Maxwell will speak on bronchial carcinoma, and on the following Wednesday there will be a demonstration of cases in the wards by Dr. Barty King. Dr. Saxby Willis will lecture on bronchiectasis on May 21st, and Dr. Ernest Fletcher will deal on May 28th with the electro-cardiographic diagnosis of heart disease.

THE French Orthopaedic Society will hold its twelfth annual meeting at the Faculty of Medicine in Paris on October 10th, 1930, under the presidency of Dr. Albert Monchet of Paris. The subjects chosen for discussion are coxa vara of adolescents, to be opened by Dr. Huc of Paris; and obstetric palsies of the upper extremity, to be opened by Dr. André Rendu of Lyons.

NATIONAL Baby Week will be held this year from July 1st to 7th, attention being concentrated particularly on the need for a National Maternity Service scheme, the better provision of nursery schools, and the promotion of the study of parentcraft. A conference will be held in London on the first three days to discuss the relation between housing and child welfare; infant mortality during the last twenty-five years; the variations in young child mortality in different areas; the relation between the orthopaedic and child welfare centres; and the care of the pre-school child in industrial and rural areas. Further information may be obtained from the secretary, National Baby Week Council, 117, Piccadilly, W.1.

THE first International Congress for Experimental Phonetics will be held at Bern from June 10th to 15th.

THE fourth Congress of the French Societies of Oto-neuro-ophthalmology will be held at Brussels from June 6th to 8th, under the presidency of Professor H. Coppez of Brussels, when the following subjects will be discussed: (1) disturbances of associated movements of the eyes, introduced by Professors Di Marzio and Fumarola of Rome; (2) laryngeal paralysis, introduced by Professors Terracol, Euzière, and Pagès of Montpellier. Further information can be obtained from the general secretary, Dr. Velter, 38, Avenue du Président Wilson, Paris XVIe.

THE forty-fifth German balneological congress was held at Bad Elster under the presidency of Geheimrat Strauss from April 8th to 13th, when the three principal subjects for discussion were the action of iron in mineral springs, the effect of mud baths, and the diet of patients in spas. Next year's congress will be held at Bad Ems at the beginning of April.

THE fourth Congress of the World League for Sexual Reform will be held in Vienna from September 14th to 21st. Further information can be obtained from the Institut für Sexualwissenschaft, In den Zelten 10, Berlin, N.W.40.

AN extensive field of research in vocational guidance is outlined in the report for 1929 of the National Institute of Industrial Psychology. Most of this research has developed since 1924, when the institute started to give vocational guidance in London elementary schools. The statistical results of this experiment, in which twelve hundred children took part, are now being completed. Additional grants have enabled the institute to make experiments of this nature in Fife and in Birmingham. From these and related investigations reports have been prepared for publication on a variety of mechanical and intelligence tests. A special inquiry into vocational tests for motor drivers promises to be of much value in view of the wide adoption of such tests by other countries. Attention has been paid to the organization of blind workers, and means have been devised to assist them in overcoming their feeling of isolation. Progress is also reported in the branch of vocational selection which is engaged in studying the problems involved in choosing candidates for higher administrative positions. In 1929 the membership of the institute increased from 1,318 to 1,430. Fees for factory investigations rose from £15,200 to £16,400; there was a deficit, however, of £558 for the year. Contributions amounting to £13,933 were received for the appeal fund. The report records that the executive committee has approved the constitution of the Scottish Division of the institute at Glasgow.

A NEW *ophthalmoscope will be demonstrated* by Mr. E. F. Fincham at a meeting of the Optical Society to be held at the Imperial College of Science and Technology, South Kensington, on Thursday, May 8th, at 7.30 p.m.

THE issue of *La Medicina Ibera* for April 19th contains an illustrated description of the fourth international Congress of Urology recently held at Madrid, with portraits of the principal speakers, including Sir John Thomson-Walker, president-elect of the next congress, which will be held in London in 1932.

Drs. Levaditi and Sazerac of the Institut Pasteur, Paris, have been awarded the John Scott prize for their introduction of bismuth into the treatment of syphilis.

BY transferring its business establishment from No. 50a to No. 50, Albemarle Street, the publishing house of John Murray has returned to its original business premises which were acquired in 1812, forty-four years after the foundation of the firm. "No. 50" is associated with the first meeting of Scott and Byron, and has been a centre of literary social life for generations. It is now given over entirely to business purposes, but the staircase and drawing room will remain unaltered.

THERE has recently been an increase in the incidence of diphtheria in Geneva as compared with the rest of Switzerland. From 1912 to 1921 the average number of cases notified was 150 to 250 cases annually, the two highest figures being reached in 1914 (244) and 1921 (238). After 1921 there was a progressive and very marked fall, the minimum being reached with 50 cases in 1926. In 1927, however, a rise in the numbers occurred, and became more pronounced in 1928 and 1929.

THE parchment of the Royal Humane Society has been awarded to Dr. Arthur D. Symons, medical officer of health for Shrewsbury, for diving into the Severn and saving a four-year-old boy.

AT an inquest recently the coroner, Dr. F. J. Waldo, stated that in fifteen verdicts of death accelerated by anaesthesia, ether had been given in twelve instances, chloroform in two, and ethyl chloride in one. He had been informed that his suggestion that all ether used should be examined by an analytical chemist, certified as pure, and kept in amber-coloured bottles away from the light, had now been adopted. He added that for several years past he had urged that all anaesthetic cases coming before a coroner should be utilized in connexion with research work, and that coroners should co-operate with experts with a view to the prevention of such accidents.

THE Board of Education has published in pamphlet form a revised list of certified special schools for blind, deaf, defective, and epileptic children in England and Wales, and also institutions recognized by the Board as providing higher education for such children, together with a list of nursery schools. The various institutions are grouped according to type and arranged in counties, details being given of the available accommodation in each. Copies of the list may be obtained from H.M. Stationery Office, price 9d.

THE late Sir William Milligan, consulting surgeon to the Manchester Ear Hospital, who died in December last, has left estate of the gross value of £293,470, with net personalty of £273,056. He bequeathed his medical library to the University of Aberdeen. Dr. George White Drabble of Walton-on-Thames, who died in January, has left unsettled property of the gross value of £475,005, with net personalty of £466,923.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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QUERIES AND ANSWERS.

TREATMENT OF TACHYCARDIA.

"W. D." asks for suggestions for treating a medical practitioner, aged 50, who is suffering from very frequent tachycardia; he describes it as a flutter, the heart tumbling over itself. He feels faint at times. The condition is made worse by smoking and heavy meals. All ordinary remedies have been tried except digitalis. If this is advised, what doses should be given? He now smokes only one pipe a day, and is certainly better.

ALASSIO.

DR. E. E. MAPLES (St. Saviours, Jersey) asks if any reader can give him information regarding the sanitation, water supplies, and general health—especially as regards contagious diseases—of Alassio (Italy).

*** In a letter on sanitation on the Riviera (*British Medical Journal*, January 11th, p. 91) Colonel C. R. Kilkelly wrote very favourably about Alassio.

BUCCAL ULCER.

DR. VAL MACDONALD (Melbourne) writes: In reply to the inquiry of "R. D." (February 8th, p. 267), as the result of much experience I can confidently recommend the following treatment: soak a pledget of wool in pure hydrogen peroxide (10 volumes solution) and place it in contact with the ulcer for two or three minutes; repeat twice or thrice daily. This takes all the burning pain away rapidly, and is more effective in cleaning and promoting healing than any of the usually prescribed caustics, etc., which damage healthy tissue. Then, as a regular mouth wash, prescribe collosol argentum 5j to 3xx water; I use either Crooke's or the Anglo-French preparation. In many of these mouth conditions I am inclined to believe there is a vitamin B deficiency; to supply it I usually prescribe bemax, and it has helped me to obtain some very good results.

INCOME TAX.

Motor Car Transaction: Accommodation.

"G. H. S." raises two points: (1) In January, 1929, he bought a second-hand car for £65 cash; in January, 1930, he bought a new car for £162 10s., receiving an allowance of £65 for the old car—cash value, say, £45. What can he claim? (2) He pays £300 a year for bedroom, sitting room, and consulting room, with all board and attendance. How much is allowable as professional expenses?

*** (1) "G. H. S." has altogether invested £162 10s. in his motor car equipment. The renewal cost claim is of doubtful validity, and would be small (£10, but debars him from the depreciation claim for 1930–31. That claim is, say, 15 per cent. on £162 10s., and, in our opinion, he should claim that allowance only. (2) We can only say that the amount is what represents a reasonable allocation of the £300 between personal and professional use; at a guess, perhaps, £100 would be a reasonable sum for the latter.

Sale of Practice.

"QUEX" sold his practice for a definite sum, two-thirds of which was to be paid at the date of transfer and the remaining one-third in half-yearly instalments. Does this affect his income-tax liability?

*** No. The sums in question are payments of capital; they cannot be deducted by the payer from his gross receipts and are not assessable in the hands of the recipient.

Account for Less than a Year.

"A. C." explains that A and B were in partnership, and made up their accounts to April 30th in each year. B died in December, 1928, and C joined as a new partner with A as from January 1st, 1929. The new partnership is to be treated as a "continuing" practice. If no change in proprietorship had taken place the liability for 1929-30 would have been determined by the profits of the year to April 30th, 1928. In fact, two accounts were made up in 1928—the first for the year to April 30th and the second for the eight months to December 31st, 1928. The assessment for 1929-30 is being fixed on the amount of the profit for the eight months to December 31st, 1928, plus one-third of the profit for the twelve months to April 30th, 1928. The bulk of the firm's accounts are rendered in May and November, and the amounts received in June and December. Consequently, the last eight months of the calendar year contains the great bulk of the year's receipts, and the proposed basis is unfair to the individuals concerned. What can be done?

*** The Finance Act, 1926, Section 34 (1) (*b*) provides that if more accounts than one have been made up to dates within the year preceding the year of assessment, the Commissioners of Inland Revenue shall decide what period of twelve months shall be deemed to be the year for which profits are to be computed. The meaning is clear, and no right of appeal is given. Consequently, the decision to adopt the year to December 31st as the basis of computation must hold good—it is, in any case, the nearest approach possible to the year to April 5th, 1929—that is, the financial year preceding the year of assessment, and prima facie the year to December 31st will be adopted in future. It remains, however, to ascertain the true profit of that year, and the root difficulty—and the point at which the unfairness enters into "A. C.'s" case—is the application of the cash basis. If each of the two periods in question were computed on the basis of the bookings, less an allowance for probable bad debts, the trouble would be avoided. Unless C has bought a share in the former firm's debts, it seems probable that it will be necessary to discard the cash basis for the 1929 and future accounts; if so, and provided that the present hardship is a substantial one, perhaps the best way out of the difficulty is for the accounts to April 30th, 1928, and December 31st, 1928, to be restated on the "bookings" basis. Of course, neither B's executors nor A will be liable in addition to account for tax on cash collected for bookings prior to May 1st, 1927.

Car Transactions.

"E. G. S." bought a 10.9 h.p. car in 1926 for £215, and sold it in 1929 for £50, buying a 7.8 h.p. car for £154. He has not claimed depreciation.

*** The only claim he can make is to treat the actual out-of-pocket expense of replacement as a professional charge against the gross income of the year in which the exchange was effected—that is, to deduct £154–£50=£104, as an expense incurred in March, 1929. As the car is used 75 per cent. for professional and 25 per cent. for private purposes, the net deduction to be made will be £78. It would have been better for "E. G. S." if he had claimed depreciation.

"J. G. C." bought a car in February, 1925, for £180 and sold it in 1928 for £33, buying another car for £260. He was allowed a deduction for income tax purposes of £180–£35=£145. He has now bought a car for £293, receiving £125 for the older one. What is he entitled to deduct? No claim for "depreciation" has been made.

*** The amount of the renewal cost is £260–£125=£135, and only that sum can be deducted as an expense for tax purposes. The excess of the cost of the new car over the original cost of the car displaced (£293–£260=£39) represents improvement of the equipment, and is disallowed as capital expenditure. Depreciation and renewal expenditure cannot be claimed for the same year. If this year no renewal takes place we advise "J. G. C." to claim depreciation then; he will receive a part of the total allowance sooner than by waiting to claim renewals, and an obsolescence claim *can* be made simultaneously with depreciation, provided that the amount of depreciation allowed is deducted in calculating the obsolescence.

"D. A. L." inquires "whether depreciation can be included as a professional expense and at what rate," also "what constitutes professional running expenses."

*** The depreciation allowance is not strictly a professional expense, but is an additional deduction from the gross amount of the assessment to arrive at the amount on which tax is payable. Now that profits are no longer computed on a three years' average basis, however, the distinction is not of great importance. The usual rate of depreciation given appears to be 15 per cent., though 20 per cent. is sometimes allowed, perhaps where the "wear and tear"—which alone is the statutory reason for the allowance—is unusually heavy. Replacement expense cannot be claimed as a deduction in computing liability for a year for which a depreciation allowance is claimed. Seeing that "D. A. L." replaced his car last year, we suggest that he should claim that cost as a professional expense in calculating his profits for 1929, and defer his depreciation claims until 1931-32 and future years.

LETTERS, NOTES, ETC.

TRAUMATIC PROPTOSIS IN A PEKINGESE DOG.

SURGEON REAR-ADMIRAL C. M. BEADNELL, R.N.(ret.), writes: On April 10th my two dogs, a Pekingese and an Airedale, had a difference of opinion, and before we could intervene the smaller dog had managed to get most of his head inside the mouth of the larger one. When we had separated them the Pekingese stood with his head to the ground, clawing frantically at his face and squealing loudly. It was then discovered that the right eye had completely proptosed and lay hanging at the top of the cheek. My wife held the dog's head while I, with a clean handkerchief rinsed out in fresh milk, seized the eyeball and applied a sudden, firm, equable, backward pressure over the socket. I felt the eyeball return into the orbit with a distinct jerk, caused probably by the superadded atmospheric pressure. The little patient protested vociferously, but the moment the eyeball was *in situ* he ceased crying out. For the rest of the afternoon he was somewhat depressed, but he ate a good dinner. For three days there was perceptible exophthalmos, due presumably to post-ocular extravasation, with conjunctival injection and an outward squint. During this period vision was also impaired on the injured side, for the dog cocked his head in looking at objects, so as to bring the sound eye into action. The only treatment was daily syringing with weak argyrol. Six days after the accident the eye was perfectly normal.

THE CERVIX DURING COITUS.

DR. C. P. BLACKER, honorary medical secretary, Birth Control Investigation Committee, writes: The observation by Dr. Jay recorded in the *Journal* of August 10th, 1929 (p. 284), is so important that I would ask the following question: Is it quite certain that the portion of the sheath which had been torn away was fixed in the cervical canal and not in the upper portion of the vagina? The muscles of the pelvic floor form a sphincter round the vagina, and it is the spasmodic contraction of these muscles that is responsible for vaginismus. In the event of the orgasm of the man having preceded that of the woman, and of a spasm of these muscles having followed, the attempt to remove the sheath by the ordinary process of traction would result in the semen being caught up in a tight ball at the distal end of the sheath, which would be effectively locked in the upper portion of the vagina. It is not obvious how the muscular conformation of the uterus would allow of spontaneous cervical dilatation. The forced dilatation of the cervix, in response to the pressure of a foreign body in the cavity of the uterus, falls in a quite different category from the spontaneous dilatation of a sphincter muscle that is devoid of muscular attachments to surrounding bones (such as occurs in relation to the orbicularis oris).

BRITISH-MADE INSTRUMENTS.

SIR JOHN CORCORAN, director of the National Union of Manufacturers, writes: May I ask for the hospitality of your columns to emphasize how desirable it is that our large voluntary hospitals should be equipped with British instruments? Although it may be taken for granted that the members of our hospital committees and the subscribers to hospital funds are patriotic men who appreciate the dire need of our home industries in the present conditions of unemployment, it is a lamentable fact that foreign surgical and electro-medical instruments, etc., are still to be found in many of our institutions. It is safe to say that in the majority of these cases the responsible authorities have no knowledge of the facts, as in too many instances in which foreign appliances are factored by British firms some pains are needed to elucidate the position. I trust, however, that once this matter has been ventilated our hospital committees will ask the firms who quote prices for their equipment to give full particulars in their tenders of the factories in which the work will be carried out, so that they can satisfy themselves that the goods they purchase are not only sold by British firms but are indisputably manufactured in this country. The leading British manufacturers can be trusted to produce the very best instruments, so that in the long run this should not involve any extra cost, and even if in some cases additional money has to be provided at the outset, the purchasers will have the satisfaction of knowing that by their patriotic action they are helping the classes on whom they depend for the maintenance of the institutions they administer so faithfully.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 50, 51, 52, 53, 56, 57, and 58 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 54 and 55.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 207.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

392. Meningococcal Meningitis.

M. P. BOROVSKY (*Amer. Journ. Med. Sci.*, January, 1930, p. 82) records his observations on 190 consecutive cases admitted to the Cook County Hospital, Chicago, from April, 1927, to September, 1928. 132 (69.5 per cent.) occurred in males and 58 in females. The ages ranged from 3 months to 62 years; 94 were under 14 years of age. Headache, vomiting, and fever were found in every case, and nuchal rigidity. Kernig's and Brudzinski's signs were present in all, except infants under 1 year of age, in whom these two signs were inconstant. Convulsions appeared in 12 cases, petechiae in 23, herpes labialis in 19, strabismus in 24, and ptosis in 4. Deafness was the outstanding sequel; although it was recorded in only 10 cases, this number was considerably increased on re-examination some months after discharge from hospital. The type of deafness, which in 8 was bilateral and in 2 unilateral, was complete loss of hearing due to nerve involvement; recovery or even slight improvement never occurred, although none of these patients died. Only 4 had suppurative otitis media, 2 in patients who recovered and 2 in fatal cases. One patient developed iritis, one chorio-retinitis, one parophthalmitis, and one encephalitis in convalescence from the meningitis. The mortality was 48.9 per cent.; it was highest under 1 year (87.5 per cent.) and over 50 years (100 per cent.), and lowest between 10 and 12 years, when no deaths occurred. The average amount of serum given intrathecally was 162 c.cm., the largest amount 495 c.cm. in 18 days with 15 c.cm. intravenously, and the smallest amount 15 c.cm. intrathecally and 15 c.cm. intravenously. Intravenous serum was administered to 68 patients, 39 of whom recovered, a mortality of 57.3 per cent., which is considerably higher than in cases treated intrathecally only. Cistern puncture was performed in 12 patients, 4 of whom recovered after two or three punctures. A serum rash occurred in 26 cases, in 17 of which intravenous treatment had been given. Of 61 patients who were re-examined from 2 to 16 months after discharge, 34 (55.7 per cent.) were entirely free from complaints, while the rest suffered from deafness (16 cases), lumbar pain (8 cases), vertigo, generalized weakness, aching of the legs, or impaired mentality.

393. Agranulocytosis following Antisyphilitic Treatment.

C. AUBERTIN and R. LÉVY (*Ann. de Méd.*, February, 1930, p. 151) state that it is now incontestable that blood disorders, particularly agranulocytosis, follow antisyphilitic medication; 28 cases have been collected from the literature. The sexes were about equally divided, contrasting thus with the predominance of females in Schultz's disease. The ages ranged from 11 to 50; the greater number, however, occurred between 20 and 40, the period in which the most active specific treatment is employed. Most of the patients were robust, and, apart from syphilis, showed no pathological abnormality. The previous duration of the syphilitic infection varied; in some cases it was recent, but in others the haematological symptoms did not appear for many years after the initial chancre. The blood changes rarely occurred during the first series of treatments, but most usually in the second and third; if arsenobenzol was the drug employed the provocative injection seemed to lie between the fourth and eighth, and in doses between 0.3 and 0.9 gram. A few cases showed some previous signs of intolerance, such as vomiting and fever. The interval between the causal injection and the onset of the agranulocytosis varied greatly; usually it ranged between one and eight days, but in some cases it was prolonged to two or three weeks. The apparent onset is frequently abrupt and marked by chills, fever, intense malaise, and dysphagia; it may be preceded by a prodromal phase of one or two weeks, in which there is lassitude with headache. The agranulocytic syndromes may be classified in three groups: uncomplicated, complicated, and abortive. The first group is uncommon and resembles Schultz's disease. It is marked by an infectious condition, sometimes associated with icterus, and accompanied by bucco-pharyngeal lesions of an ulcero-necrotic type. The blood shows a very marked leucopenia with a complete or almost complete disappearance of the granular elements, but no notable anaemia, no signs of a haemorrhagic diathesis, no diminution in the platelets, and no abnormal forms. The second group may be subdivided into cases in which a simple or haemorrhagic purpura is superimposed on the agranulocytosis, and those in which an acute anaemia, thrombopenia, and haemorrhagic signs are present. In the abortive forms the absence of granular elements is not so marked, and a hypo-polynucleosis rather than an agranulocytosis exists. Short notes of cases of each type are given. The prognosis is grave and the disease usually terminates fatally; cure is rare, being more common in the abortive types. The *chief drug* which causes agranulocytosis is arsenobenzol with its derivatives (the benzol group is known to be particularly haemotoxic), but other arsenical salts and the bismuth salts are also causative agents.

394. Influence of other Infections on Whooping-cough.

M. ERLICH (*Arch. de Méd. des Enf.*, November, 1929, p. 656) remarks that in children suffering from whooping-cough who contract another infectious disease, such as influenza or measles, the symptoms of pertussis become modified or even completely disappear. As it has long been known that vaccination can arrest the paroxysms, Erlich has been in the habit for some years of vaccinating children, especially infants, suffering from whooping-cough during the first stage of the disease. While in some instances it had no effect, and in others merely attenuated the disease, in five out of seventeen cases the disturbance produced by vaccination—namely, the fever, oedema, and formation of pustules—cut short the disease when it was fully developed. The results were much less satisfactory in cases of revaccinations—that is to say, in older children; this being probably due to the slighter degree of vaccinal reaction. Erlich also describes the case of a boy, aged 4 years, almost simultaneously attacked by whooping-cough and meningococcal meningitis. He ceased coughing a few days after the onset of meningitis, but had a recurrence of cough, though no longer of a paroxysmal character, when the symptoms of meningitis had disappeared by the eighteenth day; complete recovery followed. The diagnosis of whooping-cough was confirmed by the presence of two other cases in the same ward.

395. Polyneuritis in Mumps.

F. C. A. THIRIET (*Thèses de Nancy*, 1922–29, No. 414) records a personal case in a man aged 27, and has collected ten others from the literature relating to patients aged from 4½ to 55 years in whom an attack of mumps was followed by polyneuritis. The symptoms were principally motor, but were accompanied by some sensory changes. The condition is usually one of moderate severity, and complete recovery ensues in a period ranging from two to six months. The initial lesion appears to be situated at the level of the spinal roots.

Surgery.

396. Traumatic Asphyxia.

W. R. LAIRD and M. C. BORMAN (*Surg., Gynecol. and Obstet.*, March, 1930, p. 572) review the literature of 132 cases of traumatic asphyxia with notes of five additional cases observed by them. The condition follows severe compression of the thorax and abdomen with complete or partial cessation of respiration for varying periods, as in crushing by panic-stricken crowds, compression by elevators or between vehicles, mine accidents, and the use of machinery in industry and transport. Clinically the purple discoloration of the skin of the face, neck, and upper chest due to numerous minute ecchymoses, and the vivid blood-red conjunctivae resulting from subconjunctival haemorrhage, lozenge-shaped in distribution, are characteristic features. Unconsciousness or convulsions may be present, and unsuspected fractures, especially of the vertebrae, may escape detection unless a thorough *x*-ray examination is made. The possibilities of associated abdominal and intrathoracic lesions must be borne in mind. It has been shown that cyanosis may be produced without change in the oxygen content of the blood, and the cyanosis present in this condition is probably due to capillary and venous dilatation and engorgement. In order to avoid confusion the authors suggest that the term "traumatic asphyxia" should be applied to those cases presenting the typical syndrome in which there has been squeezing compression of the chest and upper abdomen with cessation of respiration for an abnormal length of time; "traumatic cyanosis" should be used when local cyanosis in an extremity follows local trauma or pressure; and "epileptic cyanosis" be applied to that rare condition which is sometimes observed in the face, neck, and upper chest during an epileptic attack.

397. Pott's Disease and Intraspinal Tumours.

L. BÉRIEL and J. ROUSSET (*Journ. de Méd. de Lyon*, March 5th, 1930, p. 141) point out that, while the differential diagnosis between Pott's disease and intraspinal tumour is as a rule definite and clear, in certain instances such is not the case, and even with minute and careful clinical and radiological examinations an exact diagnosis is impossible. In practice, variations in the appearance of the lipiodol injected and in the analyses of the cerebro-spinal fluid can only furnish uncertain presumptions, and the whole key of the diagnosis rests on the evidence of spinal lesion, of Pott's osteitis, or its negation. All clinical effort should, therefore, be centred on an examination of the spine at the point where the compression has been localized. These cases, difficult of diagnosis, may be divided into two groups: those in which tumours may be mistaken for Pott's disease, and the converse. Four cases illustrating the first group, and three instances of the second one, are recorded. The authors maintain that in all doubtful cases laminectomy should be performed. Cases in which Pott's disease is mistaken for tumour are only those in which the disease does not occur in its usual form, but as a circumscribed tuberculous osteitis constituting an intraspinal tumour formation in the form of a tuberculoma or an abscess. In such cases the gravity and fatal prognosis arise not from the osteitis but from the medullary compression, and an operation would be indicated even if a correct diagnosis was made. As early an intervention as possible is always indicated in intraspinal tumours; hence, in such cases of tumour as have been mistaken for Pott's disease, operation should be performed at once. To delay would be prejudicial to the patient. The authors believe that it is preferable to err on the side of excessive intervention rather than on that of undue delay.

398. Torsion of the Omentum.

E. DABASY (*Rinascenza Med.*, February 15th, 1930, p. 85), who reports an illustrative case, states that there are about 144 cases on record of this condition, which was first described by Oberst in 1882. It is usually found in connexion with a hernia. There may, however, be free torsion of the omentum within the abdominal cavity in the absence of any visible cause; and, lastly, torsion of the omentum may occur in connexion with other abdominal or pelvic diseases. According to Wolff and Schuhmann, in 90 per cent. of the cases torsion of the omentum is associated with hernia, while in only 8.7 per cent. has free torsion in the abdominal cavity been found. The age at which torsion of the omentum is most likely to occur is between 30 and 35 in subjects in a good state of nutrition. The symptoms may simulate those of cholecystitis or acute appendicitis. The results of the torsion may be peritonitis, intestinal haemorrhage, embolism, and thrombosis. Treatment consists in resection of the necrotic part of the twisted omentum. Dabasy's patient was a lad, aged 19, admitted to hospital with the diagnosis of perforated appendicitis after five or six days' illness. Laparotomy showed diffuse appendicitis, necrosis of the omentum, and chronic appendicitis. Death occurred twenty-four hours after resection of the necrotic portion of the omentum and the appendix.

399. Congenital Obliteration of the Bile Ducts.

L. COLE and C. H. WHITTLE (*Brit. Journ. Child. Dis.*, October–December, 1929, p. 258), who record two illustrative cases in male infants aged 5 months and 8 weeks respectively, state that, though the cause of congenital obliteration of the bile ducts is unknown, two theories have been advanced to explain it. The first view, which was maintained by John Thomson, is that there is a primary lesion of the ducts with secondary involvement of the liver; while the second view, held by H. Rolleston, is that there is a primary cirrhosis of the liver with subsequent changes in the gall-bladder and ducts. Jaundice, which is the most prominent symptom, generally appears a few days after birth, but sometimes the onset is delayed until much later. Usually it deepens steadily until the skin assumes the greenish hue of prolonged obstructive jaundice. Sometimes there is a transient remission in the depth of the jaundice. A tendency to haemorrhage from the skin and mucous membranes is present in a high percentage of cases. Nutrition is unexpectedly good in the early stages as a rule, and there is often a normal gain in weight for several weeks; later, emaciation and dehydration may become extreme. The liver is much enlarged, unusually firm in consistency, and smooth. Palpable enlargement of the spleen is present in some cases. Death often occurs during the first few weeks, but some children may survive for many months. Ladd has recently reported cases in which choledochoduodenostomy and cholecystotomy were performed with success.

Therapeutics.

400. Bone-marrow in Anaemia from Haemorrhage.

W. BORCHARDT (*Deut. med. Woch.*, March 28th, 1930, p. 521) records the results of his experiments on young dogs in which anaemia had been artificially produced by the removal of about half their blood. In the first series some of the animals were fed with rib-marrow, others with marrow from the long bones. Control animals received a corresponding amount either of fat or of liver extract. The basal diet in each case contained a sufficiency of iron (5 mg. per cent.). Only the animals receiving the red rib-marrow showed a definite increase of weight, and their haemoglobin formation was more rapid than that of the others. In the next series the experiment was repeated, but the iron content of the diet was reduced to 1.4 mg. per cent. The result was similar but more striking, the dogs receiving the rib-marrow regaining their haemoglobin far more quickly than the others. In order to find out if possible the nature of the substance responsible, animals were then fed with (1) dried rib-marrow which had been heated for six hours at 100° C.; (2) residue from dried rib-marrow after extraction by acetone and petroleum ether; (3) the (iron-containing) ash from dried rib-marrow; and (4) the lipoids extracted from the marrow. The heated preparation proved just as active as the original substance, the extracted (lipoid-free) marrow was also active, but the ash and lipoid extract had no influence on haemoglobin formation, as compared with the control animals. The author concludes that the oral administration of red bone-marrow has a favourable influence on the regeneration of blood after haemorrhage, but that further research on patients will have to show what types of human anaemia respond to this treatment.

401. The Diuretic Action of Theobromine.

P. SAVY and P. DELORE (*Journ. de Méd. de Lyon*, March 5th, 1930, p. 155) deprecate the tendency to an indiscriminate use of theobromine as a diuretic, and give a critical analysis of the pharmacodynamic and clinical facts concerning this drug. Theobromine, as well as caffeine, is a xanthine derivative and the therapeutic properties of these bodies are manifested in different degrees according to the number and position of the methyl radicals in the xanthic nucleus: theobromine and its derivatives are dimethylxanthines, caffeine is a trimethylxanthine. The former are principally diuretics and secondarily cardio-tonics, while the converse is the case as regards caffeine. After discussing the various actions attributed to theobromine, the present authors state that its diuretic properties are due to an increase in the renal circulation and in the filterable part of the blood; direct epithelial action is doubtful. The dosage varies with different authorities, but 2 grams is recommended as an average dose; in computing the dosage account must be taken of the patient's weight, which is often considerably increased by the anasarca. The employment of theobromine for different types of nephritis is critically discussed. Widal and Javal, and Bellon have established the elective action of the drug on the elimination of chlorides and the increase of the urinary chlorides following its administration. Savy and Delore consider that it is a dechloridizing agent and that its use should be limited to nephrites with oedema accompanied by chloride retention. The cases should not be too advanced, and the treatment should be combined with a chloride-free diet. In other forms of nephritis its administration is of no benefit and may even be harmful. In cirrhotic anasarca, inflammatory effusions (notably pleurisy), hypertension, obesity, and gout it is also ineffective. In cardiopathies its diuretic action is only apparent when it is combined with digitalis. In acute nephritis and in acute exacerbations of chronic nephritis the drug is absolutely contraindicated. Short notes are given of the following derivatives of theobromine: theocine or theophylline, injectable theobromine or allyltheobromine, and diuretine, the double salicylate of theobromine and sodium.

402. Treatment of Diphtheria Carriers.

M. LISBONNE, P. DEVÉZE, and LABRAQUE-BORDENAVE (*Paris Méd.*, March 8th, 1930, p. 234) record their observations on fourteen diphtheria carriers treated by insufflations of a powder consisting of 1 to 2 grams of the neutral oxyquinoline sulphate in 100 grams of bismuth carbonate, the insufflations being made once or twice daily. The diphtheria bacilli disappeared in four to ten days in all except one case, in which they were still present after sixteen days, but subsequently disappeared spontaneously. Although the number of cases is small, the authors think their results are sufficiently encouraging for the method to be tried on a large scale.

Dermatology.

403. Early Cases of Elephantiasis Nostras.

F. WIRZ (*Derm. Woch.*, March 8th, 1930, p. 336), who records an illustrative case, remarks that most of the extensive literature on elephantiasis nostras deals with the late stages of the disease; early cases, however, are not so rare as this would suggest. During the last three years Wirz has seen eight examples among about 5,500 skin diseases of all kinds in the women's department of the Munich University skin clinic, as well as two cases in consulting practice. The cases of elephantiasis seen in the clinic were more numerous than those of pemphigus, Darier's disease, mycosis fungoides, and other skin conditions regarded as rare. In most of the patients the lesions of elephantiasis were on the face; in three the disease had started round the mouth, in two round the nose, and in another two the external ear was affected. In only two cases, both in women, were the legs affected, in one the right and in the other the left. The most characteristic feature in all the cases was the occurrence of sudden local thickening and redness of the skin, usually accompanied by fever. Treatment consisted in the application of ichthyol ointment and tincture, followed by grey ointment, but most importance was attached to an energetic protein therapy in the form of terpichin, aolan, and the patient's own blood injected every second or third day. Complete recovery followed in each case.

404. Erythema Nodosum.

H. RATTNER (*Arch. Derm. and Syph.*, February, 1930, p. 206), who records an illustrative case, states that "nodal fever," usually known as erythema nodosum, is a mildly infectious disease, commonest in the spring and autumn, and with an incubation period of about fourteen days. Prodromes may be mild or intense, the eruption is definite and uniform, and convalescence, though usually uneventful, may be fraught with danger. The infection is most frequent in young women. Many regard the condition as associated with tuberculosis. Since the experimental evidence for this theory is small, it has been suggested that the condition is an acute infectious disease with the special likelihood of tuberculosis developing in the period of post-febrile debility. In Rattner's patient, a woman aged 26, the lesions were situated on the breasts, chest, and upper part of the arms. Physical and *x*-ray examinations of the chest were negative, and a blood culture was sterile, but no tuberculin test was performed. Recovery was uneventful. V. BOGANOVITCH (*Arch. Dis. Child.*, February, 1930, p. 56) records five cases, in children aged from 3½ to 7½ years, in whom an attack of influenza was followed by erythema nodosum. In view of the fact that several French writers, such as Poncet, Pons, and Landouzy, regard erythema nodosum as tuberculous in nature, it is noteworthy that in each case the Pirquet test was negative. Boganovitch comes to the conclusion that influenza was the predisposing if not the exciting cause of the eruption.

405. Benign Aponeurotic Sclerema.

C. AUDRY and J. GABRAT (*Ann. de Derm. et de Syph.*, February, 1930, p. 161) describe a pseudo-sclerodermic syndrome, first isolated in 1902 by Buschke under the name of "scleroedema of adults"; the designation "benign aponeurotic sclerema" seems to the authors to be more appropriate, since true oedema is absent, the fascia is chiefly involved, and the disease is seen in children as well as adults. It is of marked benignancy, being distinguishable from the sclerodermas by the absence of pigmentary and angioneurotic phenomena, and of trophic disturbances and mutilations, by the fact that the hands and feet escape, and by the marked involvement of the aponeuroses. The case is reported of a man, aged 68, who had for some months presented a pseudo-sclerematous condition of the fascia of both legs and knees, and of the lower external parts of the thighs, extending to the buttocks posteriorly. The epidermis of the legs was red and cracked, but there were no other symptoms, such as pigmentary or atrophic troubles. Latent syphilis was suggested by a weak positive Wassermann reaction of the blood, and the positive reaction of the cerebro-spinal fluid; moreover, rapid cure followed the exhibition of potassium iodide and arsenical treatment. Sellei distinguishes two types of this affection. In one there is progressive induration of the deep subcutaneous tissue, the aponeuroses, and muscles; in the other the aponeuroses and muscles are affected. Most frequently the induration commences on the neck, and extends to the face, back, and arms, the hands always remaining unaffected. Sometimes the lower limbs are first attacked, with extension to the buttocks but with no involvement of the feet. Occasionally the disease is slightly painful, the pain occurring usually at night, and being increased by the warmth of the bed. Occasionally also the movements are rendered stiff and difficult. The etiology of the disease is still unknown; it may be due to pyrexias, infections, or possibly syphilis. The pathogenesis is also uncertain; the histological changes do not show typical degeneration, and the symptoms point to disorders in the functioning of the endocrine glands. The usual tendency to recovery indicates that the glandular lesions are transitory and curable. The authors suggest that this disease may be classed with the different varieties of so-called rheumatic cellulitis.

Obstetrics and Gynaecology.

406. Heart Disease and Pregnancy.

F. S. HONE (*Med. Journ. of Australia*, January 4th, 1930, p. 2) considers that the problem of pregnancy in patients with heart disease is essentially threefold, comprising (1) the advisability of marriage, (2) the advisability of pregnancy, and (3) the question of terminating pregnancy. He refers to the older discussions about the relative dangers of the various valvular lesions, but considers that a decision for or against marriage should be based more upon effort tolerance, the presence or absence of symptoms, evidence of recent progress of the disease, and the economic aspect. The final decision should be made by the patient when the exact position has been explained to her. While heart failure in pregnancy occurs in about one in seven of patients with valvular disease, Gammeltoft has shown that signs of cardiac insufficiency arise in about the same proportion of apparently normal patients. A history of failure, with or without pregnancy, the presence of associated pelvic or renal disease, and a poor response to exercise tests are strong contraindications against pregnancy. With regard to the termination of pregnancy, the author believes that decision is most difficult after the early months and later when the child is viable. This question is dealt with more fully by W. A. VERCO (ibid., p. 6). He insists upon the careful observation of cardiac patients during pregnancy, and believes that much difficulty may be avoided by sufficient rest and suitable dietetic and medicinal treatment. Labour should be induced if orthopnoea supervenes, when pulmonary oedema or a pulse rate of over 100 persists, and when a distinct forcible apex beat is present outside the mid-clavicular line in aortic regurgitation. The use of forceps in parturition saves exertion on the part of the patient, and is to be recommended in most cases. Ether anaesthesia is advisable unless there is pulmonary oedema, in which case chloroform should be employed. The author remarks upon the danger of circulatory failure after delivery, and suggests that adequate digitalization and the application of firm pressure to the upper abdomen are valuable preventive measures.

407. ACCORDING to W. D. REID (*Amer. Journ. Obstet. and Gynecol.*, January, 1930, p. 63) there is a considerable difference in the published statistics of the mortality of cardiac patients who are pregnant. Cardiac disease was alleged as the cause of nearly 20 per cent. of the total maternal mortality during a four-year period at the Boston Lying-in Hospital, and of 28 per cent. of the deaths at the Faulkner Hospital, Boston. Analysis of 830 cardiac patients who were pregnant, reported in the literature, showed a mortality of 5.1 per cent., while the cardiac deaths constituted 8.1 per cent. of the deaths from all causes during pregnancy and parturition. The combined statistics from the Boston Lying-in Hospital, New York Lying-in Hospital, and the Robinson Memorial, Boston, show 45,320 deliveries, 280 deaths from all causes, and 42 deaths from cardiac disease, the cardiac mortality amounting to 10 per cent. of the deaths from all causes. Reid suggests that the difference in various published statistics is due to the majority of recent observers classifying their cardiac patients according to the degree of insufficiency of the heart rather than according to the structural lesions diagnosed. He concludes that pessimism regarding the prognosis of all cardiac patients who are pregnant is not justified by facts.

408. Prevesical Abscess in Pregnancy associated with Asthma.

F. CHATILLON (*La Gynécol.*, November, 1929, p. 651) reports a case of a woman suffering from the asthma of pregnancy who developed a metastatic abscess in the cave of Retzius. The history of her first confinement showed that the patient had an attack of cyanosis, with dyspnœa and expectoration, immediately after delivery. Several hours later her condition became normal. For the four succeeding days similar attacks supervened, with a gradually diminishing dyspnœa. The patient left the hospital on the eighth day and had no further symptoms. The diagnosis made was an acute œdema of the lung superimposed on a previous bronchitis. Eighteen months later the patient became pregnant again, and immediately after conception attacks of asthma began. For five

weeks she was treated in a private clinic and became much better, but immediately she returned home the asthmatic crises started again. During the attacks there was intense dyspnœa without expectoration. The patient was then admitted to hospital. Nothing abnormal was discovered in the heart or nervous system, and *x*-ray examination of the lungs was negative. The Wassermann and Besredka tests were negative. All treatment had but a transitory effect on the asthma. The patient then developed broncho-pneumonia, and as she recovered from this the dyspnœic crises disappeared. Two days after her recovery the patient complained of pain in the lower part of the abdomen anterior to the gravid uterus. After administration of opium she felt better and was allowed to get up; but a week afterwards pain above the symphysis was complained of, and the labia were found to be œdematous. Four days later puncture of a swelling above the symphysis revealed pus, and a transverse incision released 200 c.cm. of pus lodged in the prevesical space of Retzius. The pus was liquid, homogeneous, and odourless; cultures were sterile. For ten days recovery progressed well and the wound almost healed, but on the twelfth day the right labium was swollen and tender; on incision 20 c.cm. of yellowish pus were withdrawn, cultures being sterile. The patient left hospital twelve days later in a good state of health. There were no dyspnœic crises during this period, and the pregnancy had advanced to the eighth month. After her discharge she had an occasional slight asthmatic attack. A month later she returned to hospital and had a normal and rapid confinement. Since that time no attacks of asthma had occurred, and the patient was in good health. Although pneumococci were not found in the pus to confirm the diagnosis, Chatillon considers that the suppuration in the cave of Retzius was due to a metastasis from the broncho-pneumonia. The crises of coughing had, in all probability, caused small lesions of the vessels, with ensuing extravasation and secondary infection.

409. Pregnancy after Malaria Treatment of General Paralysis.

R. GLAS (*Zentralbl. f. Gynäk.*, December 21st, 1929, p. 3458) records the case of a single woman who, at the age of 35, was treated for general paralysis of the insane by artificial malarial infection; seven years later, during an interval between asylum treatments, she became pregnant. Twin children, one of whom survived for twenty-nine hours, were born after a brief labour, which was so far from painless that ethyl chloride inhalation was required during the end of the second stage. The patient died on the ninth day of acute septicæmia, caused probably by self-infection. Several totally painless labours, one with forceps extraction, have been reported in general paralytics. Strassmann has recorded the birth of a healthy child after malaria treatment of a general paretic who had previously had two miscarriages; Weissmann has reported the birth of two healthy children after similar treatment of a patient who had been sterile during sixteen years of married life. Varying opinions are held with regard to the unfavourable influence (seemingly apparent in the present case) of pregnancy on the dementia of paretics, and with regard to the justifiability of artificial termination in them of pregnancy or fecundity.

Pathology.

410. Eosinophilia during Liver Treatment.

E. MEULENGRACHT and S. HOLM (*Ugeskrift for Laeger*, January 2nd, 1930, p. 7) report observations on 54 patients fed on liver, in connexion with 37 of whom differential blood counts were made. The patients were classified according as they were given raw liver, fried liver, liver extract, or intermittent or mixed liver treatment. In the first class, 22 patients were given raw calf's liver, the initial daily dose being usually 200 or 300 grams, and the later dosage being the same or somewhat less. With only a few exceptions eosinophilia set in quite suddenly, after about four weeks, and reached high figures (20 to 40 per cent., and in one case 74 per cent.). This condition persisted as long as the raw liver was eaten, even when this dietary was maintained for over a year and a half. The eosinophilia developed at the expense of the neutrophil cells, which dwindled in numbers both absolutely and in relation to the other cells. Four control patients, not suffering from pernicious anaemia, but given 250 grams of raw calf's liver, developed a high degree of eosinophilia after about four weeks. In the second class, in which fried calf's liver was given, there was one patient with pernicious anaemia with three controls; practically no eosinophilia was observed in any of these four cases. In the third class, among the 12 patients with pernicious anaemia and one control case who received liver extract corresponding to 200 to 600 grams of whole liver, little or no eosinophilia developed. In the fourth class, in which intermittent or mixed liver treatment was given, it was observed that the eosinophilia could be correlated with the periods when raw liver was given; it disappeared when the other forms of liver medication took the place of the raw liver. The authors conclude that eosinophilia is, so to speak, "a casual by-product" of treatment with raw liver, occurring independently of the curative action of raw liver on pernicious anaemia. They think this eosinophilia is a harmless phenomenon.

411. The Identity of Typhus and Mexican Typhus Fever Viruses.

H. MOOSER and C. DUMMER (*Journ. Exper. Med.*, February, 1930, p. 189) record evidence suggesting that the specific organism of Mexican typhus or tabardillo is identical with *Rickettsia prowazeki*, the causative organism of typhus. If the tabardillo virus is injected intraperitoneally into guinea-pigs it gives rise to a scrotal swelling; examination reveals the presence of small [illegible] in the tunica vaginalis. The same microscopical picture is seen in the tunica vaginalis of [illegible] intraperitoneally with an emulsion [illegible] *rickettsia prowazeki*. Careful comparison [illegible] *prowazeki* in the louse's gut and the tabardillo virus in the tunica vaginalis of inoculated guinea-pigs were indistinguishable in form, staining, or mode of intracellular multiplication. Further experiments showed that it was possible to infect lice by feeding them on monkeys inoculated with a strain of tabardillo. Similarly, lice subjected to rectal inoculation with an emulsion of tunica vaginalis from guinea-pigs infected with tabardillo became infected with rickettsiae. It would appear as if the tabardillo virus behaved in the same way as the true typhus fever virus. All attempts to separate the tabardillo virus from *Rickettsia prowazeki* in mammals and in lice have failed, and the authors therefore conclude that the two viruses are identical.

412. Specificity of Soluble Streptococcal Toxins.

G. F. and GLADYS H. DICK (*Journ. Amer. Med. Assoc.*, December 7th, 1929, p. 1784) report an investigation of the specificity of the soluble toxins produced by haemolytic streptococci. Recently confusion has arisen because some workers in applying the neutralization test for identification of streptococcal toxins have found cross-neutralization between scarlet fever toxin and erysipelas antitoxin. It had been assumed that although the soluble toxins produced by various haemolytic streptococci were different, they still had certain common factors which were not specific and which overlapped. The present authors conclude that the soluble toxins produced by scarlet fever and by erysipelas haemolytic streptococci are immunologically specific and distinct. They found that no direct relation was demonstrable between spontaneous immunity to scarlet fever and spontaneous immunity to erysipelas toxin. An attack of scarlet fever does not confer immunity to erysipelas, nor does artificial immunization with scarlet fever toxin produce immunity to erysipelas. Erysipelas streptococci yield considerably weaker toxins than scarlet fever streptococci. Erysipelas antitoxin produced by immunizing against toxin from a single strain of erysipelas streptococci neutralizes the homologous toxin and toxins specifically from other strains of erysipelas. It does not neutralize scarlet fever toxins. Scarlet fever antitoxin obtained by immunizing a horse with toxin from one strain of scarlet fever streptococci neutralizes the homologous and other scarlet fever toxins, but does not show any cross-neutralization with erysipelas toxins.

413. Chemistry of the Lipoids of Tubercle Bacilli.

R. J. ANDERSON and E. G. ROBERTS (*Journ. Biol. Chem.*, January, 1930, p. 529) cultivated a strain of bovine tubercle bacillus on the Long synthetic medium, and after three months conducted a series of extractions to determine the amount of lipoid substance present. The bacilli were first extracted at room temperature for ten weeks with alcohol-ether solution. The extract was treated with acetone, and the bacterial residue was extracted with chloroform. By this means the lipoids, which constituted 13.4 per cent. of the dried bacterial bodies, were separated into three fractions—a phosphatide fraction, an acetone-soluble fat fraction, and a chloroform-soluble wax fraction. The bacterial residue still contained a large amount of fat or wax-like material, which could only be removed after drastic treatment with alkali or acids; the figure of 13.4 per cent. does not therefore represent the total lipoid content of the organisms. Preliminary tests indicated that the phosphatide fraction was antigenic when inoculated into rabbits, and gave a positive precipitin reaction with serum from tuberculous cattle. Besides the lipoid bodies, a polysaccharide was extracted which appeared to consist of both simple and complex sugars; it constituted 1.09 per cent. of the dried bacterial bodies.

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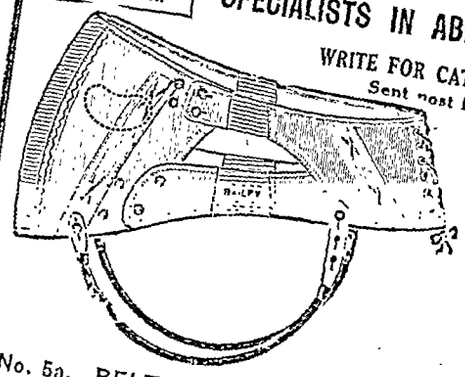
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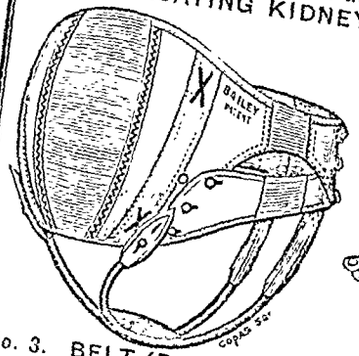
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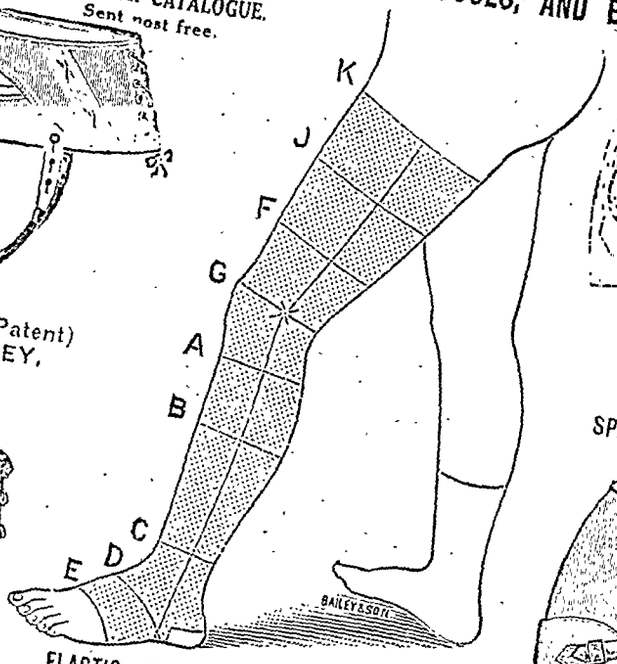
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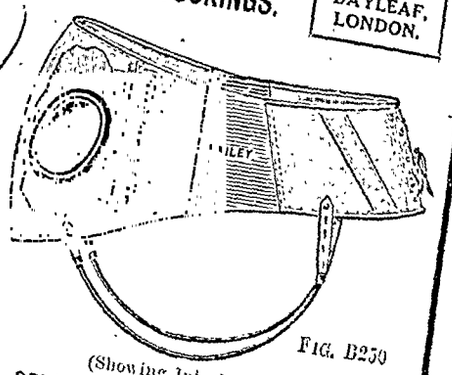


FIG. B250
(Showing Interior of Cup.)
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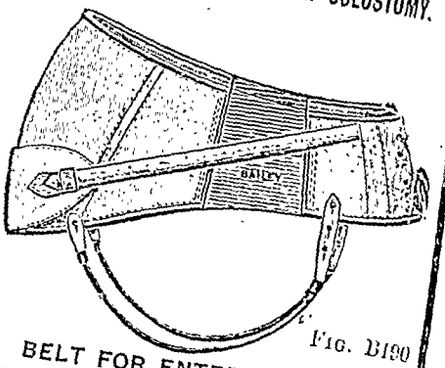
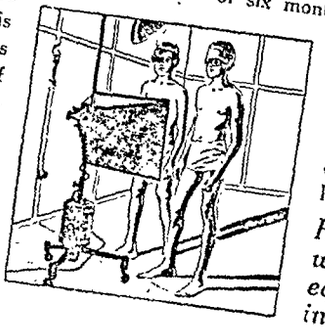


FIG. B190
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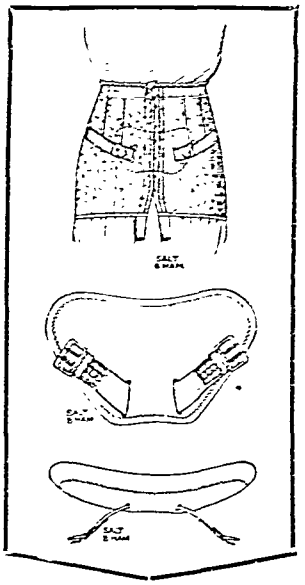
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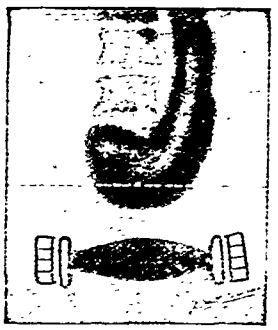


Fig. B shows same stomach radiographed 15 mins. later, the patient having lain upon a couch, the bottom feet of which were raised 9". The Belt was then applied, the patient allowed to walk about 5 or 6 minutes, and the radiograph taken in the upright position.

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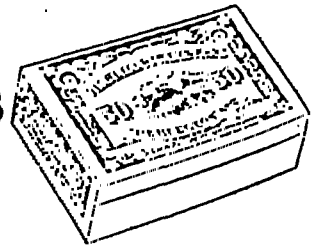
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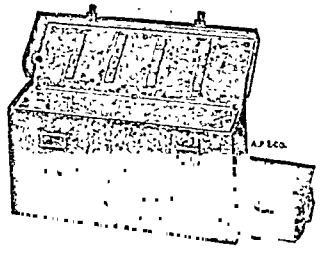
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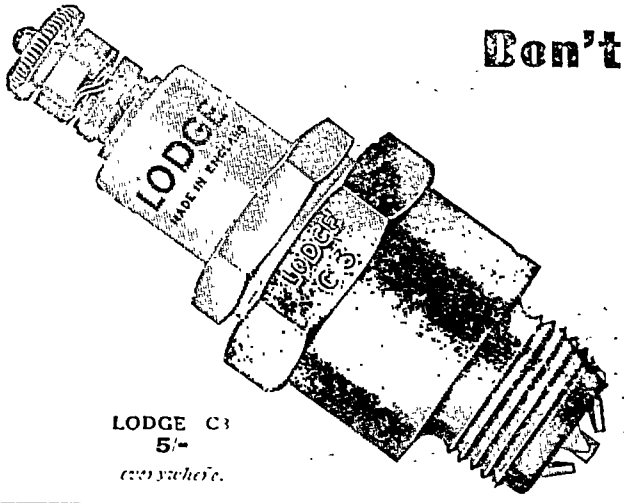
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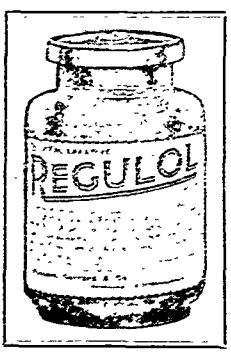
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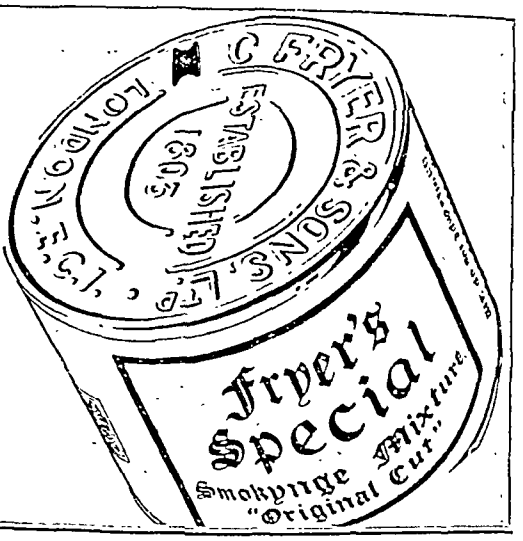
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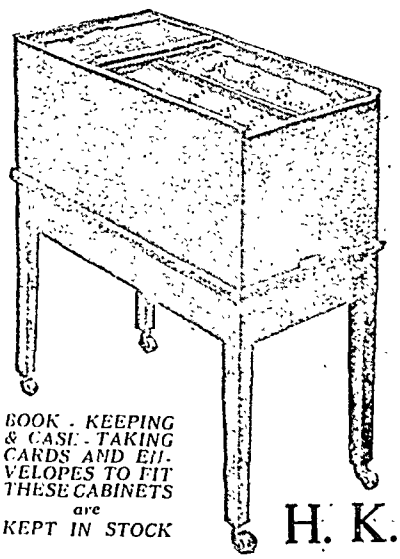
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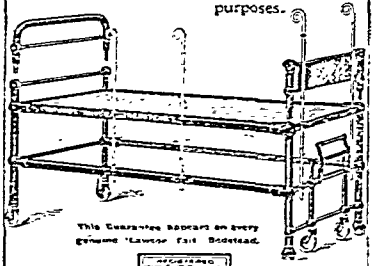
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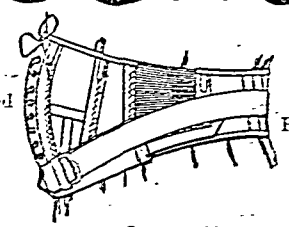
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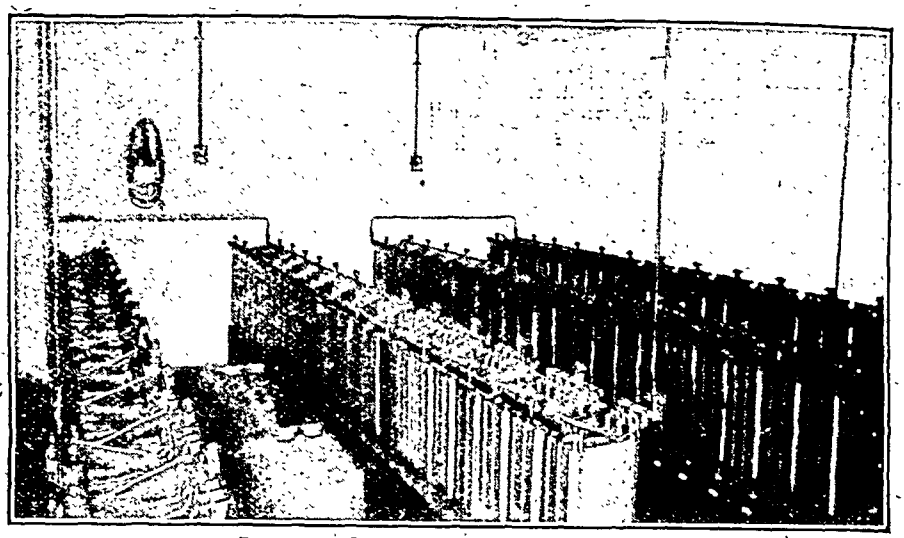


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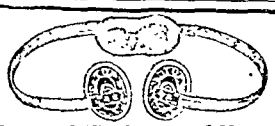


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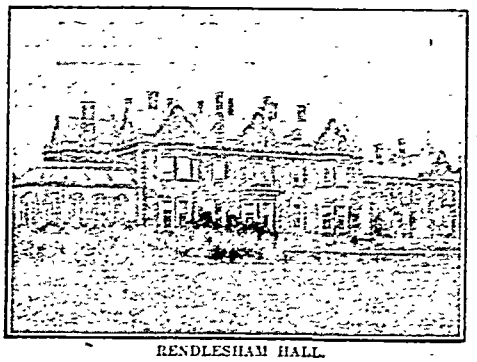
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The Devon Mental Hospital,

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The Committee of the above Hospital have accommodation for the reception of PRIVATE PATIENTS of both sexes, in special wards, which are healthily situated, with extensive views of the Exe Valley and surrounding scenery. The Hospital is fully equipped with Operating Theatre and X-ray departments, and has facilities for Ultra-violet Light treatment and modern Hydrotherapy.

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FOR THE UPPER AND MIDDLE CLASSES ONLY.

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MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. Milk, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for handicrafts, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

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For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

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FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

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Telephone: RODNEY 4841—2.

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Terms:

(*a*) **£5 a week, but in case of patients with a legal settlement in the County of London a less sum may be charged according to means.**
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Terms include (with rare exceptions) all forms of treatment, for which exceptional facilities exist—there being a staff of consultant specialists and the central laboratory of London County Mental Hospitals being attached to the hospital. Inquiries of EDWARD MAPOTHER, M.D., M.R.C.P., F.R.C.S., Medical Superintendent.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

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A prospectus and full particulars can be obtained from the Medical Superintendent.

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A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

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This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

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A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods.

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CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: Dr. Hubert James Norman, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

FENSTANTON,

CHRISTCHURCH ROAD,

STREATHAM HILL, S.W.2.

A Private HOME for the Care and Treatment of a limited number of Ladies with Mental and Nervous Disorders. Separate accommodation for Voluntary Boarders. Large Mansion with 12 acres of ground. (*See Medical Directory*, p. 2190.) Apply J. H. EARLE, M.D., Resident Physician. Telephone: Streatham 8430.

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NORTH QUEENSFERRY, near EDINBURGH.

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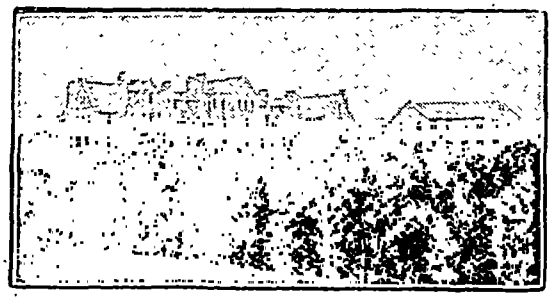
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(2) A GENERAL SURGICAL COURSE from August 11th to September 6th.

The composite fee for each Course will be £10 10s. for the four weeks, or £6 6s. for either the first or second fortnight.

(3) A COURSE IN OBSTETRICS AND GYNÆCOLOGY AND DISEASES OF CHILDREN, from July 14th to August 9th. Fee £10 10s.

In addition to the above, the following *Special Courses* have been arranged:

SUMMER TERM.

SURGICAL PATHOLOGY.—Mr. Wade, F.R.C.S.Ed., and others. May 15th. Fee: £4 4s.
OPHTHALMOSCOPY.—Drs. Graham, Ligertwood, and Paterson. May 5th. 12 Meetings, thrice weekly. Fee: £5 5s.
CLINICAL MEDICINE.—Medical Staff of Royal Infirmary. During May. Fee: £3 3s.

SUMMER, AUTUMN, AND SPRING TERMS.

CLINICAL SURGERY (including Radiology).—Surgical Staff of Royal Infirmary. Fee: £4 4s.
DISEASES OF EAR, NOSE, AND THROAT.—Staff of Ear, Nose, and Throat Department, Royal Infirmary. Minimum number 5. Fee: £10 10s.
VENEREAL DISEASES.—Mr. Lees, F.R.C.S.Ed., Ward 5a, Royal Infirmary. Minimum number 5. Fee: £10 10s.
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DURING THE PERIOD OF THE GENERAL COURSES (AUGUST-SEPTEMBER).

PATHOLOGY OF THE NERVOUS SYSTEM.—Drs. F. E. Reynolds and James K. Slater. Minimum number 6. Fee: £3 3s.
EXAMINATION OF THE BLOOD.—Dr. Alex. Goodall. Fee: £3 3s.
VACCINE THERAPY.—Dr. A. Nimmo Smith. Fee: £3 3s.
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Further particulars may be had on application to the Hon. Secretary, Post-Graduate Courses in Medicine, University New Buildings, Edinburgh.

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Special Classes for Pre-Medical and Dental Exams., Matric., and Prelims.
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FOR PRACTITIONERS AND MEDICAL STUDENTS
will be given at the Clinic beginning May 19th, 1930.

	4.45 p.m.	5.45 p.m.
Mon., May 19.	**R. G. GORDON**, M.D., F.R.C.P. Royal United Hospital, Bath. The Significance of Psychological Insight in Diagnosis and Treatment.	**J. R. REES**, M.D., Deputy Director. The Nature and Scope of Psychotherapy.
Tues., May 20.	**W. J. ADIE**, M.D., F.R.C.P. National Hospital, Queen Square. Differential Diagnosis of Post-encephalitic and Functional Conditions.	Treatment: Physical, Environmental, Re-educational.
Wed., May 21.	**JOHN FREEMAN**, M.D. St. Mary's Hospital. Toxæmia in Relation to Functional Disorder.	Persuasion: Suggestion: Conscious Adjustments.
Thurs., May 22	**W. LANGDON BROWN**, M.D., F.R.C.P. St. Bartholomew's Hospital. The Biology of the Endocrine System.	The Use of Mental Analysis: Methods of Working: Free Association.
Fri., May 23.	The Function of the Endocrines. **H. CRICHTON-MILLER**, M.D., Hon. Director.	**Dr. KARL B. MARTIN.** Freiburg. The Treatment of Mind and Body (1)
Sat., May 24.	2.30 to 5 p.m. *Suggestion and Hypnosis, with Practical Demonstrations.*	*The Treatment of Mind and Body (2).*
	4.45 p.m.	**5.45 p.m.**
Mon., May 26.	**W. LANGDON BROWN**, M.D., F.R.C.P. St. Bartholomew's Hospital. The Interaction of the Endocrine System with the Gonads.	**Dr. KARL B. MARTIN.** Freiburg. The Treatment of Mind and Body (3)
Tues., May 27.	Psychoneuroses associated with the Endocrines.	**H. CRICHTON-MILLER**, M.D., Hon. Director. Hysteria: Theory and Practice.
Wed., May 28.	**MAURICE B. WRIGHT**, O.B.E., M.D. The Psychology of Freud and Psychoanalysis (1)	Anxiety States: Theory and Practice.
Thurs., May 29.	The Psychology of Freud and Psychoanalysis (2) **JAMES YOUNG**, M.D.	Insomnia as a Symptom of Maladjustment.
Fri., May 30.	Jung's Analytical Psychology and its Relationship to other Schools of Thought	Dream Interpretation.
Sat., May 31.	2.30 to 5 p.m. *Demonstration of Intelligence Testing by* **Miss C. A. SIMMONDS**, M.A., Hon. Psychologist.	

8.15 p.m. each evening: **Description of Cases, with Discussion**, by Members of the Clinic Staff.

FEE for the Course — Medical Graduates £2 2s. 0d.
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Tickets for the Course to be obtained in advance from the Hon. Lecture Secretary at the Clinic.
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INSTITUTE OF PATHOLOGY AND RESEARCH
ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture Room of the Bacteriological Department of the Institute, on THURSDAY AFTERNOONS at 5 p.m., as under:—

	SUBJECT.
MAY 8th. W. E. GYE, M.D. (Pathologist, Medical Research Council).	"The Action of Antiseptics on the Virus of Filterable Tumours."
MAY 15th. LEONARD E. HILL, M.B., F.R.S. (Director Dept. of Applied Physiology, National Institute of Medical Research).	"The Physiology of Diving."
MAY 22nd. Prof. C. A. LOVATT EVANS, F.R.S. (Jodrell Professor Physiology, University College, London).	"Stages in the Investigation of the Physiology of the Heart."
MAY 29th. Sir THOMAS LEWIS, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

STAMMERING, SPEECH DEFECTS.
BEHNKE METHOD. Estab. 1882. Cases, non-resident, treated at 39, Earl's Court Square, S.W.5, and in residence, in the Summer holidays, at Miss BEHNKE'S house on the Chilterns.
"Pre-eminent success in the education and treatment of stammering and other speech defects."—"Times."
"Thoroughly physiological principles."—"Lancet."
"The method is scientifically correct and perfectly effective."—"Guy's Hospital Gazette."
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CONSULT—
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39, WELBECK STREET, W.1.

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Diploma in Laryngology, Otology, and Rhinology.
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All Higher Medical and Surgical Degrees and Diplomas.

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University of Birmingham.

(Faculty of Medicine.)

WILLIAM WITHERING MEMORIAL LECTURESHIP.

A Course of Seven Lectures (illustrated by lantern slides) on "*Specific Therapy*," will be delivered by W. E. DIXON, M.A., B.Sc., M.D., F.R.S. (Pharmacological Laboratory, Cambridge), in the Large Theatre of the Medical Faculty Buildings, Edmund Street, during the Summer Term, 1930, on the following dates at 4 p.m. viz.: WEDNESDAYS, MAY 7th, 14th, 21st, and 28th, JUNE 4th, 11th, and 18th.

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

Church Missionary Society.

THE ANNUAL MEETING of the MEDICAL MISSION AUXILIARY OF THE C.M.S. will be held in the CENTRAL HALL, WESTMINSTER, at 7.15 p.m. on Wednesday, May 7th, 1930.

The Chair will be taken by LORD LLOYD (High Commissioner for Egypt and the Sudan, 1925-9), and the speakers will be H. GORDON THOMPSON, Esq., M.D., F.R.C.S. (formerly of Hangchow Hospital), Sister E. E. S. HILL (Bannu).

Tickets of admission may be obtained from the Superintendent, Loan Department, Church Missionary Society, Salisbury Square, E.C.4. There will be a small number of reserved seats at 1/- each.

Sanatorium A.M.O. wanted at NORDRACH-UPON-MENDIP SANATORIUM, BLAGDON, BRISTOL, from about the middle of June. Previous experience essential. Interviews in London before May 15th.

UNIVERSITY EXAMINATION POSTAL INSTITUTION

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M.R.C.P.(Lond.), 1914-29	168
D.P.H. (Various) 1906-29 (Completed Exam.)	286
F.R.C.S.(Edin.), 1918-29	43
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Preparations for Medical Preliminary, and Chemistry, Physics, Anatomy, Physiology, and final subjects for the Conjoint Board; M.B.(Cantab., etc.); also D.P.M., D.O.M.S., D.T.M. & H., D.L.O., L.M.S.S.A., etc. Numerous successes.

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MEDICAL PROSPECTUS (48pp.)

CONTENTS:—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations Suggestions for the Special Diploma Examinations. Refresher Course. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6513.)

County Borough of Oldham.

PUBLIC HEALTH DEPARTMENT.

ASSISTANT MEDICAL OFFICER OF HEALTH AND CLINICAL TUBERCULOSIS OFFICER.

Applications are invited for the post of Assistant Medical Officer of Health and Clinical Tuberculosis Officer for the above Borough.

Applicants must have special experience in Tuberculosis work.

The gentleman appointed will be required to devote the whole of his time to these duties and act under the direction of the Medical Officer of Health, and will be required to reside within the Borough.

Salary £750 per annum.

Applications, upon forms to be obtained from the Medical Officer of Health, Town Hall, Oldham, must be returned to him, accompanied by not more than three recent testimonials, not later than May 7th.

Canvassing in any form will disqualify.

Town Hall, Oldham. JAMES B. WILKINSON, Medical Officer of Health.

City of Salford.

Applications are invited for the post of ASSISTANT MATERNITY AND CHILD WELFARE MEDICAL OFFICER (woman) from fully qualified registered Medical Practitioners. Previous experience in this class of work is desirable, and experience in midwifery, ante-natal work, and children's diseases is essential.

Commencing salary £600 per annum, subject to deductions for superannuation purposes.

Forms of application may be obtained from the Medical Officer of Health, 145, Regent Rd., Salford, to whom they must be returned, accompanied by copies of not more than three recent testimonials, not later than Saturday, May 10th.

H. H. TOMSON, Town Clerk.

UNIVERSITY OF LONDON.

A Course of Six Lectures on "*The Early History of Generation and Comparative Anatomy*." will be given by Professor F. J. COLE, D.Sc., F.R.S. (Professor of Zoology in the University of Reading), at UNIVERSITY COLLEGE, LONDON (Gower Street, W.C.1), on WEDNESDAYS and THURSDAYS, MAY 7th, 8th, 14th, 15th, 21st, and 22nd, at 5.30 p.m. At the First Lecture the Chair will be taken by Professor G. ELLIOT SMITH, M.D., D.Sc., F.R.C.P., F.R.S., Professor of Anatomy in the University. Lantern illustrations.

A Course of Three Lectures on "*Pharmacological Reactions of Involuntary Muscle*" will be given by Professor J. A. GUNN, M.A., M.D., D.Sc. (Professor of Pharmacology in the University of Oxford), at KING'S COLLEGE, LONDON (Strand, W.C.2), on WEDNESDAY, THURSDAY, and FRIDAY, MAY 7th, 8th, and 9th, at 5 p.m. At the First Lecture the Chair will be taken by Dr. PHILIP HAMILL, M.A., M.D., D.Sc., F.R.C.P., President of the Therapeutics and Pharmacological Section of the Royal Society of Medicine. Lantern illustrations.

Admission free, without ticket.

EDWIN DELLER, Principal.

UNIVERSITY OF LONDON, UNIVERSITY COLLEGE.

FACULTY OF MEDICAL SCIENCES.

An Examination for the following will be held in June next:

1. BUCKNILL SCHOLARSHIP, value 160 gns.
2 and 3. TWO EXHIBITIONS, value 55 gns. each.

Intending candidates should apply to the undersigned for particulars and entry forms as early as possible, and not later than June 2nd, 1930.

University College, London (Gower St., W.C.1). C. O. G. DOUIE. Secretary.

University of London.

A Course of Three Lectures on "*Treatment of Uterine Cancer by Radiations*" will be given by Dr. A. LACASSAGNE (of the Pasteur Laboratory, Institute of Radium, Paris) at the LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN (Hunter Street, W.C.1.) on MONDAY, TUESDAY, and THURSDAY, MAY 12th, 13th, and 15th, at 5.30 p.m. At the first Lecture the Chair will be taken by Professor DAME LOUISE MCILROY, D.B.E., M.D., D.Sc. (Professor of Obstetrics and Gynæcology in the University). Lantern illustrations.

Admission free, without ticket.

EDWIN DELLER, Principal.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF PHYSIOLOGY tenable at Middlesex Hospital Medical School. Salary £1,000 a year. Applicants are informed that there is also at the School a University Professor of Biochemistry responsible for teaching this branch of Physiology.

Applications (12 copies) must be received not later than first post on June 12th, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

Borough of Hyde.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Town Council of the Borough of Hyde invite applications for the position of part-time Assistant Medical Officer. The person appointed will be expected to assist the Medical Officer of Health in the discharge of the duties of the following offices:

1. Medical Officer of Health for the Borough.
2. Medical Superintendent of the Infectious Diseases Hospitals.
3. Police Surgeon.
4. School Medical Officer.
5. Maternity and Child Welfare Officer.

Experience in Ante-natal work is essential.

The salary of the Assistant Medical Officer will be £300 per annum.

The person appointed will be required to devote approximately half his or her time to the duties of the said office.

Applications (with copies of recent testimonials), endorsed "Assistant Medical Officer," must be sent to me at the Town Hall, Hyde, not later than noon of Wednesday, May 14th.

Canvassing members of the Council is prohibited.

Dated this 29th day of April, 1930.

Town Hall, Hyde. THOS. BROWNSON, Town Clerk.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	OLDBURY URBAN DISTRICT COUNCIL. *(Deputy Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH.**	YORKSHIRE NORTH RIDING COUNTY COUNCIL EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address: B.M.A. House, Tavistock Square, W.C.
April 30th, 1930.

By Order of the Council of the British Medical Association.
ALFRED COX, Medical Secretary.

Leicester Royal Infirmary.

HONORARY SURGEON.

A vacancy will occur on June 1st for an Honorary Surgeon, consequent upon the retirement, under the Rules, of Mr. Cecil Marriott, M.Ch., F.R.C.S., Senior Honorary Surgeon. Applications are invited for the post. Past and present members of the Assistant Honorary Staff are primarily eligible for election to full Staff appointments. The Senior Honorary Assistant Surgeon, Mr. R. S. Lawson, F.R.C.S., is an applicant.

HONORARY ASSISTANT SURGEON.

Under the above announcement, a vacancy is expected for an Honorary Assistant Surgeon. Candidates should be Fellows by examination of the Royal College of Surgeons of England, or Graduates in Surgery of one of the Universities of the United Kingdom or Ireland. A grant of fifty guineas annually is made for out-of-pocket expenses. Applications (accompanied by 100 copies of testimonials) to reach the undersigned by Monday, May 12th. The appointment will be made on May 14th.

Canvassing for appointments is not allowed.

HARRY JOHNSON,
April 14th, 1930. House Gov. & Sec.

Merthyr General Hospital,

MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

London Jewish Hospital,

Stepney Green, E.1.
General Hospital. (103 Beds.)

Applications are invited for the following posts:

RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board and residence. Appointment for six months.

JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence. Appointment for six months.

Applications, with copies of three recent testimonials, to be sent to the Secretary on or before Friday, May 16th. The successful candidates will be required to take up their duties on June 1st.

London Jewish Hospital,

Stepney Green, E.1.
General Hospital. (103 Beds.)

Applications are invited for the post of HONORARY REGISTRAR in the Ear, Nose, and Throat Department. The holder will be required to attend the Out-patient Department on Monday and Wednesday mornings, and to deputise for the Honorary Surgeons in the Department, and to perform operations when necessary. Applications, enclosing copies of three recent testimonials, should be forwarded to the Secretary at the Hospital on or before Friday, May 16th.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

West London Hospital,

Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY SURGEON, for which a present Honorary Assistant Surgeon is a candidate. In the event of his election, there will be a vacancy for an HONORARY ASSISTANT SURGEON, for which applications are also invited.

Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver surgical courses of Lectures to the Nurses, and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, May 22nd. Candidates must attend the meeting of the Medical Committee on Friday, May 23rd, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but may privately send copies of their applications and testimonials to each member thereof, and, if so notified, attend a meeting of the Board at 5 p.m. on Tuesday, May 27th, when the election will be made.

H. A. MADGE, Secretary.

North Ormesby Hospital,

MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

Frere Hospital, East London, SOUTH AFRICA.

RESIDENT MEDICAL OFFICER.

Wanted by the East London Hospital Board for the above Institution, Resident Medical Officer (unmarried) for a period of one year, with the option of extension, by mutual agreement, for a further period of one year, such agreement to be arrived at not later than four months prior to the termination of the first year.

Salary to be at the rate of £300 per annum for first year, with board, lodging, and laundry, rising £50 for second year.

The duties to be those of House Surgeon and Physician, with charge of Out-Patients, and to administer anæsthetics when called upon to do so.

The Hospital contains 114 beds (public and private) and 26 beds in Isolation Block. Dispensary with Dispenser, Out-patients' Department and X-ray Department.

Duties to commence on August 1st, 1930. One month's leave granted per annum. The usual bond to be signed.

Applications to be marked "R.M.O.," stating age and nationality, with copies of testimonials and certificate of health, to be in the hands of the undersigned not later than noon, June 25th.

P.O. Box 15, East London, South Africa.

C. D. EWAN, Secretary & Treasurer.

Southern Rhodesia Medical SERVICE.

Three ASSISTANT AND RELIEVING GOVERNMENT MEDICAL OFFICERS are required for the Southern Rhodesia Medical Service. Salary £300 per annum, rising by £25 per annum to £650 per annum, with private practice. Applicants must be single, 25 to 30 years of age. Preference will be given to holders of Public Health or Tropical Medicine certificates.

Applications, with full particulars of qualifications, age, past appointments held, etc., with copies of references, should be addressed to the Official Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, from whom copies of Conditions of Appointment to the Southern Rhodesia Medical Service can be obtained.

Applications should reach the High Commissioner's Office by May 5th.

Applications are invited for post of RADIOLOGIST AND PHYSICIAN in Charge of X-ray, Massage, and Electrical Departments, KIMBERLEY HOSPITAL, SOUTH AFRICA. Salary £900 per annum, without board and quarters. Whole-time appointment for two years, and successful candidate may not enter into private practice within Kimberley Divisional area for a further period of two years. First-class passage money to South Africa will be refunded on completion of one year's service. The commencement date of service reckoned as from assumption of duties at Kimberley.

Applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be sent to H. CHAPLIN & COMPANY, 101, Leadenhall Street, London, E.C.3, not later than May 15th. Successful applicant must be prepared to assume duty within two months of receipt of cable from Kimberley Hospital or advice from H. CHAPLIN & COMPANY.

Wanganui Hospital, NEW ZEALAND.

Applications are invited for the post of RADIOLOGIST. Appointment for five years; passage paid. Salary £1,000 p.a. Private practice not allowed. Live out. Replies, in first instance, to No. 2910, B.M.A. House, Tavistock Square, W.C.1.

Huddersfield Royal Infirmary. (200 Beds.)

Male HOUSE SURGEON required to commence duty May 16th, or as early as possible. Salary £150 per annum, with board, residence, and laundry. Appointment till September, subject to renewal for six months. Applications, with testimonials, from qualified candidates to the Secretary.

Lowestoft and North Suffolk HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Warwickshire and Coventry JOINT COMMITTEE FOR TUBERCULOSIS.

MEDICAL SUPERINTENDENT OF THE WARWICKSHIRE KING EDWARD VII MEMORIAL SANATORIUM, HERTFORD HILL, near WARWICK. (195 Beds.)

Applications are invited from male qualified and registered Medical Practitioners for the post of Medical Superintendent of the Warwickshire King Edward VII Memorial Sanatorium, Hertford Hill, near Warwick. The person appointed must devote the whole of his time to the duties of the office, and must have had special practical experience in the treatment of tuberculosis in sanatoria, dispensaries, and otherwise, and must be thoroughly acquainted with modern methods of diagnosis and treatment.

In addition applicants must have held the appointment of Tuberculosis Officer or Medical Superintendent with the approval of the Minister of Health, or who, subsequent to qualification:

(1) have had at least three years' experience in the practice of his profession;
(2) have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases; and
(3) have received special training, for a period of not less than six months, in the diagnosis and treatment of tuberculosis.

The salary is at the rate of £800 per annum, plus unfurnished house, including fuel, light, and laundry, valued at £100 per annum, but not board. The salary will be subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922; in addition, motor car allowances in accordance with the Committee's scale and reasonable travelling expenses are paid.

The appointment is also subject to a satisfactory medical examination by one of the Committee's independent Medical Referees.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications, marked "Medical Superintendent," with copies of not more than three recent testimonials, must be received by me not later than Monday, May 26th.

Applicants must not be over 40 years of age.

Canvassing, directly or indirectly, will be considered a disqualification.

L. EDGAR STEPHENS, Clerk of the Joint Committee.

42, Warwick Street, Leamington.
April 28th, 1930.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

PARK HOSPITAL, DAVYHULME, near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of a Junior Resident Medical Officer at the above Hospital. Candidates should be unmarried. The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for re-appointment for a further period of six months at the end of that period. The salary is at the rate of £200 per annum, together with the usual residential allowances.

The Hospital comprises 500 beds.

Applications, accompanied by copies of not more than three testimonials, should be addressed to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than May 17th.

County Offices, Preston.
April, 1930.

GEORGE ETHERTON, Clerk of the County Council.

County Council of the West RIDING OF YORKSHIRE.

MIDDLETON-IN-WHARFEDALE SANATORIUM.

The County Council of the West Riding of Yorkshire invite applications for the appointment of RESIDENT ASSISTANT MEDICAL OFFICER (male, unmarried) at the Middleton-in-Wharfedale Sanatorium, near Ilkley (300 beds). Salary £350, with board.

Further particulars and form of application may be had from the undersigned, by whom all applications, together with copies of not more than three recent testimonials, must be received not later than May 12th.

County Hall, Wakefield.
April, 1930.

J. CHARLES McGRATH, Clerk of the County Council.

Metropolitan Borough of HAMMERSMITH.

TUBERCULOSIS OFFICER AND ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited for the appointment of Tuberculosis Officer and Assistant Medical Officer of Health for the Borough of Hammersmith.

The salary attaching to the appointment is £750 per annum, rising by annual increments of £50 to a maximum of £1,000, but in fixing the commencing salary regard will be had to the qualifications and experience of the gentleman appointed.

Candidates must be qualified to hold an appointment as Tuberculosis Officer in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, and must also possess the Diploma of Public Health.

The gentleman appointed will be required to devote his whole time to the duties of the office. The chief duties will be in connection with tuberculosis, but the successful applicant will also be required to assist in the general work of the Public Health Department under the supervision of the Medical Officer of Health.

The appointment will be subject to the provisions of the Council's Superannuation Scheme, and the successful applicant will be required to pass a medical examination.

Applications on forms to be obtained from the undersigned, accompanied by copies of not more than three recent testimonials, must be delivered at the Town Hall, Hammersmith, W.6, in envelopes, endorsed "Tuberculosis Officer," not later than May 12th.

Canvassing will be a disqualification.

HUGH ROYLE, Town Clerk.

City and Port of Plymouth.

ASSISTANT MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Men for the post of whole-time Assistant Medical Officer of Health to the City and Port of Plymouth. The chief duty of the officer will be to act as Port Medical Officer.

Applicants should not be more than 35 years of age.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum, and the appointment will be terminable by three months' notice on either side.

The possession of a Diploma in Public Health, or in Tropical Medicine, or a qualification in State Medicine, will be considered an advantage.

The person appointed will be required from time to time to assist in the general Public Health work of the City, and in the various Sub-Departments of the Public Health Department. He will act under the general supervision of the Medical Officer of Heath, and carry out any duties delegated to him from time to time.

Forms of application are not provided, and applicants should send a statement of their professional qualifications and experience, together with copies of not more than three recent testimonials, to the undersigned on or before Saturday, May 10th. Envelopes must be endorsed "Assistant Medical Officer of Health."

Canvassing will disqualify the applicant.

A. T. NANKIVELL, M.D., D.P.H., Medical Officer of Health, City and Port of Plymouth.

Town Hall, Stonehouse.
April 17th, 1930.

County Borough of Preston.

THE PRESTON INSTITUTION, FULWOOD.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £104 per annum, with board, lodging, etc. Candidates must be duly qualified and registered under the Medical Acts.

The appointment is for six months commencing on June 1st.

Duties include work in any wards of the Hospital in the Institution as required, and also in the Sharoe Green Maternity Home adjoining.

Applications, endorsed "Junior Medical Officer," should be made by letter, accompanied by copies of three testimonials of recent date, and should reach me on or before noon on Thursday, May 15th.

Town Hall, Preston.
Thursday, May 15th.

ALFRED HOWARTH, Town Clerk.

Newcastle-upon-Tyne Eye HOSPITAL.

Wanted immediately, JUNIOR HOUSE SURGEON, non-resident. Salary £150 per annum, lunch provided. Apply, stating age, qualifications, and Ophthalmic experience, with copies of testimonials, to the Secretary.

British Medical Journal,

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Wanted. — Indoor Assistant, gentlemen, young, single, abstainer, Protestant, loyal, and keen on work, for general and panel Practice in Colliery district, West Riding. Motorist. Usual bond. State age, height, and essential particulars.—Address, No. 2902, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, North of Scotland, for July, August, and September. Able to drive car; male, single, keen. Photograph and testimonials. Scotch Graduate preferred. 4½ guineas p.w.—No. 3004, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Male Assistant, single, for a general Practice in best part of clean Midland City. Salary £300 per annum, indoor. Must be pleasant, reliable, and loyal to principal.—Address, enclosing photo., No. 2926, B.M.A. House, Tavistock Sq., W.C.1.

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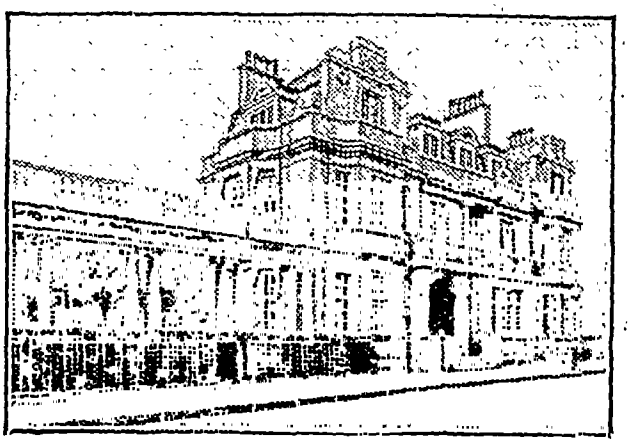
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Really nice class Practice in exceptionally good residential district, Croydon, at present over £1 0 p.a. Rapid increase assured. Price £550. Good house, tennis lawn, garage. Freehold £2,750.—Address, No. 2935, B.M.A. House, Tavistock Square, W.C.1.

To Let over shop, High Street, Deptford, THREE ROOMS, first floor. Suit Doctor or Dentist. Self-contained, sep. entrance in side road, bold corner; rent £100 per annum inclusive.—Apply, A. CURTIS, 109, High St., Deptford, S.E.8.

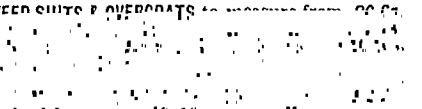
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For Sale.—Hanovia Quartz SUN LAMP, brand new. 10 volt D.C. Cost £25; will accept 18 guineas.—Address, No. 2930, B.M.A. House, Tavistock Square, W.C.1.

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Remittances must accompany all orders. Apply at the office, B.M.A. House, Tavistock Square, W.C.1.

APPOINTMENTS.—Contd.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES. (140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male). Salary £150, with board, residence, and laundry.

Candidates for the above post must be doubly qualified and unmarried, and are required to commence duties on or about May 1st.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned as early as possible.

J. WILKINSON, Secretary.

Walsall General Hospital.

The Committee invite applications from men for the post of SENIOR HOUSE SURGEON. Salary £200 per annum.

Candidates, who must be registered under the Medical Acts, must have had previous experience in Surgery and administration of Anæsthetics, and produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications, stating age, qualifications, and nationality, must be received by the undersigned not later than first post Tuesday, May 13th.

WALTER FRANCOMBE, Secretary.

April 28th, 1930.

Derbyshire Royal Infirmary, DERBY.

APPOINTMENT OF HONORARY ASSISTANT SURGEON for the Ear, Throat, and Nose Department.

The Board of Management invite applications for the office of an Honorary Assistant Surgeon, who will have complete charge of the Ear, Throat, and Nose Department. He must not practise any other branch of Medicine or Surgery, either in or out of the Infirmary. Candidates must hold the diploma of one of the Royal Colleges of Surgeons of the United Kingdom, or be a Graduate in Surgery of one of the Universities of the United Kingdom. Application and testimonials (not more than three) must be forwarded to arrive not later than 10 a.m. on Thursday, May 15th.

Canvassing, either directly or indirectly, is prohibited.

By Order,
WALTER BANKS,
Supt. & Secretary.

May 1st, 1930.

Derbyshire Royal Infirmary, DERBY.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management invite applications for the office of Honorary Assistant Surgeon to the Infirmary. Candidates must hold the diploma of one of the Royal Colleges of Surgeons of the United Kingdom, or be a Graduate in Surgery of one of the Universities of the United Kingdom.

Application and testimonials (not more than three) must be forwarded to arrive not later than 10 a.m. on Thursday, May 15th.

Canvassing, either directly or indirectly, is prohibited.

By Order,
WALTER BANKS,
Supt. & Secretary.

May 1st, 1930.

Leicester Royal Infirmary. (450 Beds.)

THIRD RESIDENT ANÆSTHETIST.

Applications are invited for this post. Appointment for six months, with possibility of renewal. Salary £250 per annum, with board and residence. Applications from qualified women will be considered.

Applicants should give particulars of special experience in the administration of Anæsthetics and enclose copies of testimonials, with particular reference to anæsthetic work, to the House Governor and Secretary, by first post on May 12th. Duties to commence May 24th.

Clayton Hospital, Wakefield. (General Hospital—110 Beds.)

Two HOUSE SURGEONS (male) required immediately. Salary at the rate of £200 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, stating age, qualifications, and experience, and accompanied by three recent testimonials, to be sent to the undersigned, from whom further particulars may be obtained.

H. J. LANCASTER,
Gen. Supt. & Secretary.

Liverpool Maternity Hospital.

REGISTRAR required, duties to commence July 1st next. The post is non-resident, and carries with it an honorarium of £100 per annum.

Applications, stating age, qualifications, and experience, together with copies of testimonials, should be sent to the Hon. Secretary of the Medical Board, Liverpool Maternity Hospital, Oxford Street, Liverpool, on or before May 23rd next.

Liverpool Maternity Hospital.

HOUSE SURGEON required for six months commencing July 1st next. Salary at the rate of £90 per annum, with board, residence, and laundry. Previous experience as House Surgeon essential. Membership of a Medical Defence Society is a condition of appointment.

Applications, stating age, qualifications, and experience, together with copies of testimonials, to be sent to the Hon. Secretary of the Medical Board on or before May 23rd next.

St. John Ophthalmic Hospital, JERUSALEM.

The office of REGISTRAR of the above Hospital will be vacant in June next. Candidates (of either sex) should apply for full particulars to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, London, E.C.1.

Surrey County Council.

MENTAL HOSPITALS COMMITTEE.

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male) in the Surrey County Mental Hospital Service. Commencing salary, which will be subject to statutory deductions under the provisions of the Asylums Officers Superannuation Act, 1909, will be £350, rising by annual increments of £25 to a maximum of £450 per annum, together with apartments, board, laundry, and attendance, valued for superannuation purposes at £150 per annum. The person appointed will also be paid, in addition to his salary, the sum of £50 per annum, if he holds the Diploma of Psychological Medicine. The appointment will be subject to termination by one calendar month's notice on either side.

Applications, accompanied by copies of three recent testimonials, and enclosed in an envelope endorsed "Junior Medical Officer," must reach me not later than 12 noon on Wednesday, May 14th.

DUDLEY AUKLAND,
Clerk to the Committee.

County Hall, Kingston-upon-Thames.
April 29th, 1930.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male), at the DUMFRIES & GALLOWAY ROYAL INFIRMARY. The Institution, which contains over 100 Beds, is one of the premier Provincial Hospitals in Scotland, and offers exceptional opportunities of gaining experience in all branches of the profession. Salary at the rate of £100 per annum for the first six months and £150 per annum for the second six months.

Applications, with testimonials, to be forwarded to the Treasurer, Dumfries & Galloway Royal Infirmary, 84, Irish Street, Dumfries, at once.

St. Albans and Mid Herts HOSPITAL AND DISPENSARY, Church Crescent, ST. ALBANS.

Applications are invited for the post of FEMALE RESIDENT HOUSE SURGEON. Salary £150 per annum, with board, residence, and laundry.

The post will become vacant on or about May 15th next.

Applications to be sent to the Secretary, St. Albans and Mid Herts Hospital, No. 38, St. Peter's Street, St. Albans.

April 28th, 1930.

District Infirmary, ASHTON-UNDER-LYNE. (General Hospital, 200 Beds, mainly Surgical.)

Wanted, a HOUSE SURGEON, preferably with experience of Ophthalmic work. Six months' appointment, renewable. Salary at the rate of £150 per annum, with board, residence, and laundry.

The Resident Staff comprises a Resident Surgical Officer and three House Surgeons.

Applications, with testimonials, to be sent at once to the undersigned.

FRANK OLIVER,
Gen. Supt. & Sec.

April 22th, 1930.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified Medical Women for the following posts: HOUSE PHYSICIAN, OBSTETRIC ASSISTANT, THREE HOUSE SURGEONS. Appointments for six months from July 1st next. Salary at rate of £50 per annum, with board, residence, and laundry.

Applications, with copies of three testimonials, should be sent to the Acting Secretary by Tuesday, May 27th.

JEAN R. MURRAY, Acting Secretary.

The Lady Chichester Hospital, HOVE. (For Neurological and Early Psychiatric Cases.) (50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty immediately, with board, lodging, and laundry, and an honorarium at the rate of £50 per annum.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton.

Wanted by the Parish of South RONALDSHAY AND BURRAY, a MEDICAL OFFICER and PUBLIC VACCINATOR, to commence duty on or about June 30th. Population last census 2,101. Liberal allowance from Parish. Good private practice. Apply, with copy of testimonials, to GEORGE ESSON, Parish Clerk.

Woolwich and District War MEMORIAL HOSPITAL,

Shooters Hill, London, S.E.18.

General Hospital. (122 Beds.)

The Board of Management invites applications from suitably qualified male candidates, for appointment as HOUSE SURGEON for a period of six months. In addition to his surgical duties he will have care of the Maternity Unit of 8 beds.

An honorarium of £125 per annum will be paid in respect of this appointment, plus board, residence, and laundry.

Applications, accompanied by copies of not more than three recent testimonials, should be sent to the undersigned, to reach him not later than first post on Wednesday, May 14th.

EDWIN RADFORD,
Secretary-Superintendent.

Salford Royal Hospital.

(263 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE, Gen. Supt. & Secretary.
April 28th, 1930.

The Royal Hospital, WOLVERHAMPTON.

(Incorporated under Charter.)

Wanted at once, HOUSE PHYSICIAN. (Owing to illness).

The Hospital contains 240 beds, the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice. Candidates must be registered under the Medical Acts.

The appointment is for six months, with a salary at the rate of £150 per annum. Board, furnished rooms, and laundry provided.

Application, with copies of testimonials, to the undersigned.

W. H. HARPER,
Wolverhampton. House Governor & Sec.
April 28th, 1930.

Tavistock Square Clinic for FUNCTIONAL NERVOUS DISORDERS,

51, Tavistock Square, W.C.1.

Applications are invited for the post of DIAGNOSTIC PHYSICIAN (male) to the above Clinic. Candidates should be Fellows or Members of the Royal College of Physicians of London, and should have some special interest in the Psychoneuroses, though the physician appointed will not be expected to carry out treatment.

Applications should be delivered before Saturday, May 10th, to the undersigned, from whom further particulars of the appointment and the honorarium offered may be obtained.

D. G. POOLE,
51, Tavistock Sq., W.C.1. Secretary.

Walsall General Hospital.

The Committee invite applications from men for the post of SENIOR HOUSE SURGEON. Salary £200 per annum

Candidates, who must be registered under the Medical Acts, must have had previous experience in Surgery and administration of Anæsthetics, and produce three recent testimonials.

The appointment will be for six months.

The Hospital contains 100 beds and is equipped in all Special Departments.

Applications must be received by the undersigned not later than first post Tuesday, May 13th

WALTER FRANCOMBE,
April 26th, 1930. Secretary.

Weymouth and District General HOSPITAL, WEYMOUTH.

Wanted, HOUSE SURGEON, fully qualified (male), for June 1st. Salary £180 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and copies of testimonials, should be sent to the undersigned not later than May 13th.

MORRIS LODGE, Hon. Sec.

MR. HERBERT NEEDES,

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Royal Manchester Children's HOSPITAL,

OUT-PATIENTS' DEPARTMENT,
Gartside Street, MANCHESTER.

Wanted, for the Out-patients' Department, a SENIOR MEDICAL OFFICER (non-resident). He must be doubly qualified and on the *Medical Register*, and shall devote his whole time to the service of the Charity. Particulars of the duties can be obtained of the Secretary. Salary £300 per annum. The appointment is for one year, with a view to extension to a further period.

Applications, stating age and experience, and accompanied by copies of not more than five testimonials, to be sent to the undersigned at the Hospital, Pendlebury, Manchester, on or before May 8th.

By Order,
W. M. HUMPHRY, Secretary.

The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SYMONS,
April 17th, 1930. Secretary.

The Royal Infirmary, SHEFFIELD.

The Weekly Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment will terminate on June 30th next, but the officer selected will be eligible for re-election or for one of the other twelve House appointments. The salary attached to the post is £80 per annum, rising after six months' service to £100 per annum, together with board and residence. Applications, together with copies of testimonials, to be sent to the undersigned immediately.

Board Room, JNO. W. BARNES, F.C.I.S.,
April 14th, 1930. Gen. Supt. & Sec.

County Mental Hospital, CHESTER.

JUNIOR ASSISTANT MEDICAL OFFICER (male, single) wanted. Salary £350 per annum, with four annual increments of £25, together with furnished apartments, board, washing, and attendance. The last three increments are conditional on holding the Diploma in Psychological Medicine and for which a further £50 per annum is paid. Three months' study leave (D.P.M.) may be granted during the second year.

The appointment is subject to the provisions and privileges of the Asylums Officers Superannuation Act, 1909.

Applications, stating age and qualifications, together with copies of three recent testimonials, to reach the Medical Superintendent on or before May 8th.

The Sheffield Royal Hospital.

There are vacancies for male residents—one to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. The Hospital is a Medical School, with 340 available beds, and there are twelve Resident Medical Officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry.

Applications should be forwarded at once to—

W. H. BOOTH,
April 5th, 1930. Supt. & Secretary.

The Northern Infirmary, INVERNESS. (108 Beds.)

Wanted immediately for the new Infirmary, HOUSE PHYSICIAN, fully qualified and registered, male, unmarried. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age, medical school, qualifications, and experience, with copies of recent testimonials, to be sent before May 15th next to Mr. ROBERT GILBERT, Hon. Secretary to the Institution, 20, Church Street, Inverness.

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London, S.W. — £2,000 p.a. Non-panel. 12 mids., 5 gns. up. Visits 5/- mostly, and up to 10/6 or over. Large house and garden to rent.—No. 8655.

Eastern Suburb. — £2,500 p.a. Cash and panel, great scope. 1/2 share for sale. Panel 1,550. Small flat available or house on easy terms.—No. 8619.

Northants Country. — Partnership or Assistantship with early view. 1/2 share of £1,200 p.a. Panel over 550. Unusual scope and ultimate succession. Single man preferred.—No. 8622.

Exeter. — Death Vacancy. — £875 p.a. Panel 800. Clubs £120. Very little mid. House, 4 bed., 2 attics, 2 recep. Sep. surgery. Rent £60 or sell.—No. 8613.

Cambs.—Over £800.—Old-estab. unopposed. Panel 475. Appts. £90. Fees 3/6 to 7/6. Large house, 5 bed., and garden, at low rent.—No. 8654.

Hants.—Semi-rural. — Average £972 p.a. Small panel. 20/30 mids. Visits 3/6 to 15/-. Modern house, 2/3 reception, 5/6 bed., tennis, etc.—No. 8653.

S. Wales. — Death Vacancy. — £700 p.a., largely colliery. Panel 700. Small house, low rent or price. Premium £700 or near.—No. 8651.

Lancs Town.—£2,500 p.a. Panel 1,800. Ins. £120. Two houses available, with 5 bed., etc. Good opportunity for two friends.—No. 8645.

Berks. — About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or more. No mids., ample scope. Small house, with surgery.—No. 8641.

S. W. County. — Seaside Resort. About £600 p.a. Panel about 600. Fees 3/6 to 5/6, and up. Good house, 2 recep., 5 bed., garden, garage, etc., to rent.—No. 8638.

Kent.—Over £1,100 p.a. Panel 460. Appts. over £400. Opposition slight. Little midwifery. Fees 3/6 to 7/6. Good house, 6 beds., garden, etc.—No. 8636.

S. Wales. — Colliery Practice £2,600 p.a. Panel 2,445. Contract work about £1,200 p.a. Worked from Surgery. House available.—No. 8610.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8634.

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

London, S.E. — Residential. — Over £600 p.a. Panel 400. Appointments £20 p.a. Visits 3/6—10/6. House, 5 bed., etc.—No. 8621.

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel 1,500. Appts. £280 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250.—No. 8608.

South Coast Resort.—1/2 share of £1,400 p.a. Good-class Practice. Panel £100 p.a. Appt. £150 p.a. Fees 5/- to 20/-. No mids. Good house and garage.—No. 8607.

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S. WALES.—DEATH VACANCY.—Receipts about £700 p.a. Panel 600. Large colliery. Excellent scope. Small house to rent at £52 p.a., or would sell. Premium for Practice, £600 cash.

SOMERSET.—Small PRACTICE situated in delightful country near Taunton. Receipts nearly £1,800. Panel 500. Long Partnership introduction would be entertained or Assistantship with view. Premium open to offer.

KENT COAST.—PARTNERSHIP in old-established non-dispensing non-panel Practice. Fees 5/- to 1 gn. Suitable house available. Receipts nearly £3,500. One-third share for disposal, with view to half at 2 years' purchase. Suitable only to well-qualified man of sound experience and good address.

WALES.—Middle-class non-dispensing G.P. Excellent freehold house. Receipts average £1,455. Panel nearly 400. Premium 1 year's purchase.

KENT (near Elstree).—NUCLEUS G.P., with small panel. Highly suitable to semi-retired Practitioner. Excellent scope. Premium for house, Practice, fixtures, and fittings, £1,450. Part can remain on mortgage.

N. WALES.—DEATH VACANCY.—Good-class PRACTICE situated in Seaside Health Resort. Large house for sale or to rent at £85 p.a. Receipts approx. £1,200 p.a. Small panel. Premium 1 year's pur.

GLOS.—Well-established non-dispensing G.P. situated in good-sized town. Receipts £820. Panel 550. House to rent or for sale. Premium £1,050. A long Partnership introduction would be considered. Suitable for either sex.

DEVON.—PARTNERSHIP in good-class non-panel and non-dispensing Receipts average £1,200 p.a. Panel nearly 600. House to rent, good at medicine and capable of anæsthetics. Receipts over £3,200. Premium for 1/4 or 1/3 share 2 years' purchase (larger share in 2—3 years' time).

BERKS.—PARTNERSHIP, with view to Succession, Country Practice. Receipts average £1,120 p.a. Panel nearly 600. House to rent. Premium for half share 2 years' purchase. Suitable only to single man.

LANCS.—(Near Seaside Resort).—Middle and working-class G.P., situated in growing locality. Suitable house available. Receipts £1,005. Panel 250. Excellent scope. Premium £1,000 cash.

GLOS.—Well-established middle and working-class PRACTICE. Medium-sized freehold house, with grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,700.

YORKS.—Well-established middle and working-class Town PRACTICE. Receipts approx. £1,520. Panel nearly 1,700. House to rent. Premium £2,250.

CORNWALL.—DEATH VACANCY.—Well-established NUCLEUS. Receipts approximately £500 p.a. Panel 150. Suitable accommodation available. Premium £450 or near offer.

SOUTH COAST.—NUCLEUS non-panel Practice in favourite seaside resort. Freehold house available. Receipts £500. Premium—house and Practice—£1,850.

LONDON.—PARTNERSHIP in busy Cash and Panel Practice. Receipts over £2,500 p.a. Panel nearly 4,000. Suitable house available to rent. Premium 2 years' purchase.

LONDON, S.E.—PARTNERSHIP in growing middle and working-class G.P. Suitable house available to rent. Good fees. Earnings (approx.) £5,000. Premium for 1/3 share, £3,500 or near offer.

SURREY.—Country Town PRACTICE. Suitable house available to rent on lease. Receipts £700. Panel 500. Fees 2/6 up. Premium £1,200. Alternative smaller accommodation available.

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(FOUNDED 1880.)

12, Stratford Place,

Tele. Address: Triform, Wesdo—London. Oxford Street, W.1. Telephone: Mayfair {1782 1783

The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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2 DEATH VACANCY. — NORTH DEVON. —PRACTICE about £700 p.a. in beautiful country district. Panel about 400. Fishing, hunting, shooting. House for sale.

3 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium.

4 NOTTINGHAMSHIRE. — Country PRACTICE averaging £1,070 p.a. Panel 700. Good house (6 bedrooms), garage, and 1½ acres ground, to rent. Great scope. Premium 1½ years' purchase.

5 KENT. — Partnership in Practice about £4,000 p.a. in good residential district. Panel about 1,100. House (6 bedrooms), with nice garden, for sale. Scope for surgery. Premium for a 5/24ths share 2 years' purchase.

6 SOUTH OF ENGLAND. — Partnership in non-dispensing Practice £3,600 p.a., in attractive watering-place. Panel about 1,800. Great scope. One-fourth share now and up to one-half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

7 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,080. House (5 bedrooms), with electric light, for sale. Premium 1½ years' purchase.

8 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house for sale. Scope. Premium 1½ years' purchase.

9 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £775.

10 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

11 LONDON, E.—Practice of £1,269 p.a. in populous suburban area. Panel 1,480. Small house (3 bedrooms). Premium, to include lease of house, £2,100.

12 ITALY. — Season Practice in famous City. Average receipts last 3 years £563. Up-to-date Hospital. Premium 1 year's purchase.

13 LONDON, E.—Cash and Panel Practice of about £850 p.a. (£320 from panel). Well-situated house (3 bedrooms) to rent. Considerable scope. Premium £1,150.

14 NURSING HOME in favourite Town on Kent Coast. Net profit about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

15 DEATH VACANCY.—LONDON, S.E.—PRACTICE of between £900 and £1,000 p.a. in outlying suburban district. Panel 420. Well-situated house (8 bedrooms), with good garden, etc., for sale.

16 BIRMINGHAM.—Practice over £1,200 p.a. in residential suburb. Small panel. Particularly nice house to rent on lease. Premium 1½ years' purchase.

17 LONDON, S.W.—Partnership in Practice over 4,000 p.a. in suburb. Panel 4,700. House, with 3 bedrooms, to rent. One-fourth share at 2 years' purchase. Preliminary Assistantship.

18 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

19 S.W. OF ENGLAND.—Partnership in good-class non-dispensing Practice over £2,600 p.a., in attractive watering-place and winter resort. Panel 1,360. Large house (7 bed and dressing rooms) for sale or rent. Premium 2/5ths or one-half share 2 years' purchase. Hospital.

20 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

21 MIDLANDS.—Partnership in Practice over £6,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

22 EAST ANGLIA.—Partnership in Practice in attractive part. Panel 1,840. Nice house (4 bedrooms) to be sold or let. Share worth £1,000 p.a. at 2 years' purchase. Preliminary Assistantship.

23 DEATH VACANCY.—LANCASHIRE.—PRACTICE £1,200 (including £380 from panel) in flourishing manufacturing town. House (4 bedrooms) to rent.

24 LONDON, W. — Partnership in Practice about £2,000 p.a. in Western suburb. Panel 1,650. House (6 bedrooms) to rent. Premium 2/5ths share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

25 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

26 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope for increase. Premium £2,100.

27 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

28 DEATH VACANCY. — DORSET. — Country PRACTICE nearly £1,100 p.a. Panel about 670. House (2 bed and dressing rooms), garden, garage, etc., to rent.

29 SOUTH OF ENGLAND. — Practice averaging £888 p.a. in first-rate country town. Panel 997. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

30 GLOUCESTERSHIRE.—Practice averaging £1,300 p.a. in an industrial village. Panel 1,169. House (5 bedrooms) for sale. Beautiful surrounding country. Premium £1,250.

31 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

32 SOUTH COAST. — Practice worth about £500 p.a. in favourite health resort. No panel or night work. Excellent semi-detached house (4/5 bedrooms) for sale. Scope. Premium £400.

33 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 650. Centrally situated house in excellent position for sale. Premium £1,050.

34 KENT AND SURREY BORDERS.—PRACTICE about £800 p.a. in growing and pleasant residential district. Choice of residence for sale. Good scope. Premium £1,200.

35 LONDON, E. — Cash and Panel Practice £1,290 p.a. in populous area. Panel 1,630. Small house to rent. Premium 1½ years' purchase.

36 EASTERN COUNTIES. — Partnership in Country Practice of £1,800 p.a. Panel 755. Partner should be able to give anæsthetics. Premium one-half share 2 years' pur.

37 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

38 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. Panel 500. House (5 bedrooms) for sale. Good scope. Premium £1,500.

39 SCOTLAND.—Sound Practice in thriving Hospital and University Town. Income last year £788 (including £150 from panel (not encouraged). Modern corner house (9 rooms), garage and garden, for sale or rent. Premium to effect prompt sale £750, including book debts.

40 EAST ANGLIA.—Assistantship, with view to Partnership, in Country Town Practice. Share worth just over £1,000 p.a. offered to suitable man (aged 30—35) at 2 years' purchase.

41 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

42 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

43 DURHAM. — Partnership in increasing Practice over £4,800 p.a. in seaport town. Panel 2,500. Suitable house (or rooms) could be obtained. One-fourth share at first at 1½ years' purchase.

44 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West Coast. Panel 290. House (5 bedrooms), with good garden, for sale or rent. Prem. £1,350.

45 X-RAY & ELECTRO-THERAPEUTICS.—Wanted, well-qualified ASSISTANT, with Junior Hospital appointment (Teaching Hospital preferred), for old-established West End Practice in London. Exceptionally good prospects.

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48 SOUTH COAST. — Small Practice in fashionable Health Resort. Earnings 1929, £550. Very good house (6 bedrooms), with large garage and garden, for sale.

49 EASTERN COUNTIES. — Country PRACTICE of £835 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

50 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

51 LONDON, S.W.—Practice of nearly £800 p.a. in suburb easy distance of Charing Cross. Panel 830. House for sale or rent. Ample scope. Premium £1,100.

52 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

53 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750.

54 SOUTH MIDLANDS. — Practice about £450 p.a. in industrial district, close to first-rate town. Panel 100. Nice house (5 bedrooms), with garage, to rent. Considerable scope. Premium £550.

55 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

56 YORKSHIRE.—Seaside Town.—PARTNERSHIP in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

57 ESSEX.—Partnership in Practice nearly £1,800 p.a in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

58 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

59 EAST ANGLIA.—Country Practice within easy distance of two favourite seaside resorts. Cash receipts average £1,748 p.a. (over £900 from panel). House (5 bedrooms) to be sold or let. Scope for increase. Premium £2,300.

60 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first rate town. One-third to one-half share at about 1½ years' purchase.

61 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 20. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. Educational facilities. Premium £1,000.

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2. SOUTH OF ENGLAND.—SEAPORT TOWN.—PARTNERSHIP.—Third share to commence with, and guaranteed for a year or two to produce £800 p.a. in a well-established and steadily increasing mixed-class Practice worth last year nearly £2,350, including panel of 1,950. Visits 3/6 to 7/6. Very little midwifery. Suitable house with large garden. Price for freehold £1,850, or might be rented. Premium £1,600.
3. LONDON, EAST—OUTLYING SUBURB.—Old-established middle and working-class PRACTICE, producing nearly £1,300 last year, including panel of 1,480. Very little midwifery. Expenses low. Small house, with reception room, 3 bedrooms, and good professional accommodation. Rent on lease (16 years to run) £50 p.a. Premium £2,100.
4. NORTH DEVON.—DEATH VACANCY.—Old-established mixed-class PRACTICE in beautiful district, producing about £700 p.a., including panel of 400. Good scope for increase, and also for Surgery. Suitable house for sale. Sport of all kinds. Reasonable premium.
5. NORTH LONDON.—Recently established PRACTICE, offering ample scope, as neighbourhood developing. Receipts for last 12 months over £500 p.a. Fees chiefly 5/-. Premium £775.
6. CITY CONSULTING [illegible] for the past 12 months nearly £600 and 10/6 and 21/-. One appointment worth o be transferable. Two good rooms, with communicating passage and own front door, in perfect order. Rent £200 p.a. Illness reason for sale. Moderate premium.
7. FAVOURITE SUSSEX COAST TOWN.—Small middle-class PRACTICE, non-panel, and averaging nearly £400 p.a. Visits 3/6 to 7/6. No midwifery. Suitable freehold house. Garden. Coach-house and stabling. Price £1,300. Premium £400. Vendor retiring.
8. LINCS.—Very old-estab. easily worked Village PRACTICE, averaging £1,335 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.
9. SUSSEX.—Unopposed Village PRACTICE, old-established, in delightful surroundings, producing about £1,100 p.a., including panel of 545 and capable of considerable increase. Exceptionally charming residence, standing in 3½ acres of well-laid-out garden, tennis court, etc., and containing lounge hall, 2 reception, 7 bedrooms (3 fitted h. and c. water basins), dressing and 2 bathrooms, etc. Central heating. Electric light. Garage. Price for Practice and house £5,000.
10. MANCHESTER.—PRACTICE is situated in a growing district offering very large scope. Income about £1,700 p.a., including panel producing £450. Fees 3/6 upwards. Excellent detached house, well situated, with 3 reception, 5 bedrooms, etc., all in good order. Price £1,800. Premium 1½ years' purchase.
11. HANTS.—COUNTRY PRACTICE.—Very old-established, situated in most attractive district near Sussex Border. Receipts average over £800 p.a. Panel of 480. Detached house in half an acre of garden, 2 reception, 5 bedrooms, etc. Rent £55 p.a. Hunting, golf, etc., and first-class schools within reach. Premium £1,300.
12. LONDON, EAST.—PARTNERSHIP.—A one-half share is for disposal in an old-established chiefly working-class and panel Practice, averaging about £2,800 p.a. Panel of 3,600. Visits 2/6 to 5/6. Very suitable small house, with 3 bedrooms, bathroom, etc. Garden. Rent on lease £50 p.a. Premium £2,500.
13. KENT.—Within 40 miles of London.—In a town of 100,000, a well-established middle and working-class PRACTICE, worth last year £850, including panel of 200. Visits 3/6 upwards. Mids. from 3 gns. (20 cases yearly). House, with good accommodation. Rent on lease (15 years to run) £65 p.a. Premium £1,200. Practice equally suitable for Medical Man.
14. LONDON, SOUTH-WEST.—Very old-established non-residential PRACTICE, averaging about £4,000 p.a. Panel of 1,500, but large scope for more. Fees 2/6 upwards. Suitable house or flat can easily be obtained to meet purchaser's requirements. Rent of surgery on long lease £100 p.a. Premium 1½ years' purchase.
15. YORKS.—In a clean and thriving manufacturing town, an old-established Homœopathic and partly Allopathic PRACTICE, held about 50 years by Vendor who is retiring. Cash receipts for the past three years average £2,400 p.a. Patients middle and better class. Midwifery refused. Good house available, rent £100 p.a. Premium only one year's purchase, part down and balance by arrangement.
16. SURREY.—Attractive residential district within 20 miles.—Mixed-class PRACTICE producing about £700 p.a., but capable of much increase, as neighbourhood is developing. Panel of 500. Fees 2/6 upwards. Very nice house, with 3 reception, 3 bedrooms, and three acres of garden. Rent on lease £165 p.a. Smaller house available if desired. *Premium £1,200.*
17. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, producing £2,500 p.a., including panel of 1,804, and assets worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
18. SOUTH OF ENGLAND.—LARGE SEAPORT TOWN.—Old-established mixed general PRACTICE. Average income nearly £1,900. Panel of 2,500. Fees 2/6 to 7/-. No mids. No Assistant kept. Well-situated house, with good accommodation. Rent on lease £120. Prem. £3,300.
19. *WITHIN* 40 MILES OF LONDON.—In a thriving Riverside and Hospital town (pop. over 40,000).—Old-established mixed-class and increasing PRACTICE worth over £2,500 last year, including panel of 1,600 to 1,700. House contains professional accommodation, 2 reception, 4 bedrooms, bathroom, etc. Small garden and garage. Rent on lease £60 p.a. Premium £3,650, to include good book debts of £500, drugs, etc., and consulting room and surgery furniture.
20. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £904 p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (3/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, bathroom, etc.). Large garden and garage. Water laid on and gas plant installed. Rent £50 p.a. Premium £1,400. Excellent sport.
21. PARTNERSHIP.—WEST MIDLANDS.—The Third share (with increase to half in 4 years and eventual succession if desired) is offered in very old-established mixed-class Practice in small town, largely residential, in midst of agricultural district of exceptional beauty. Cash receipts average £2,367 p.a., including panel of 1,084. Opposition not strong. Expenses light. Choice of two houses (small) which can be bought for £600 or £700. Premium 2 years' purchase.
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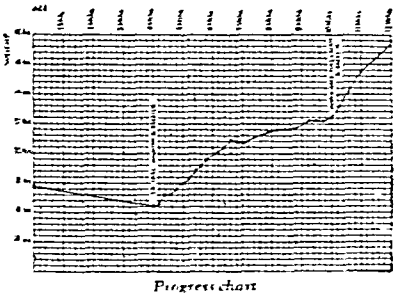
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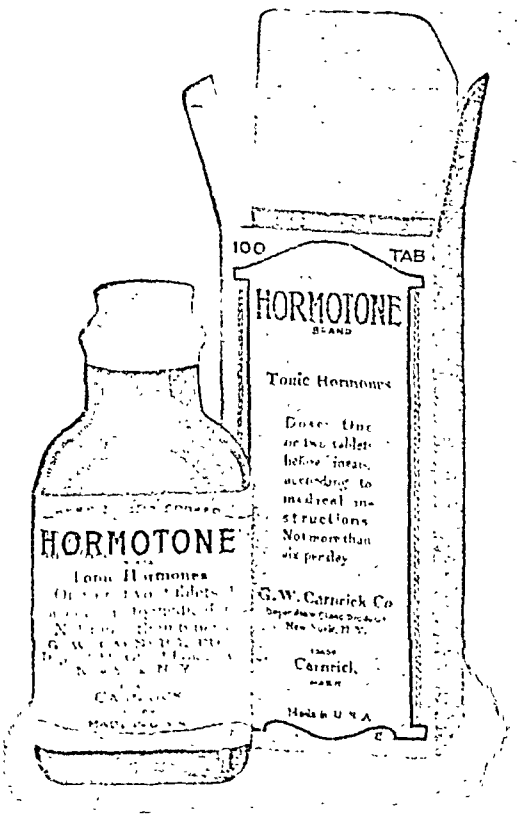
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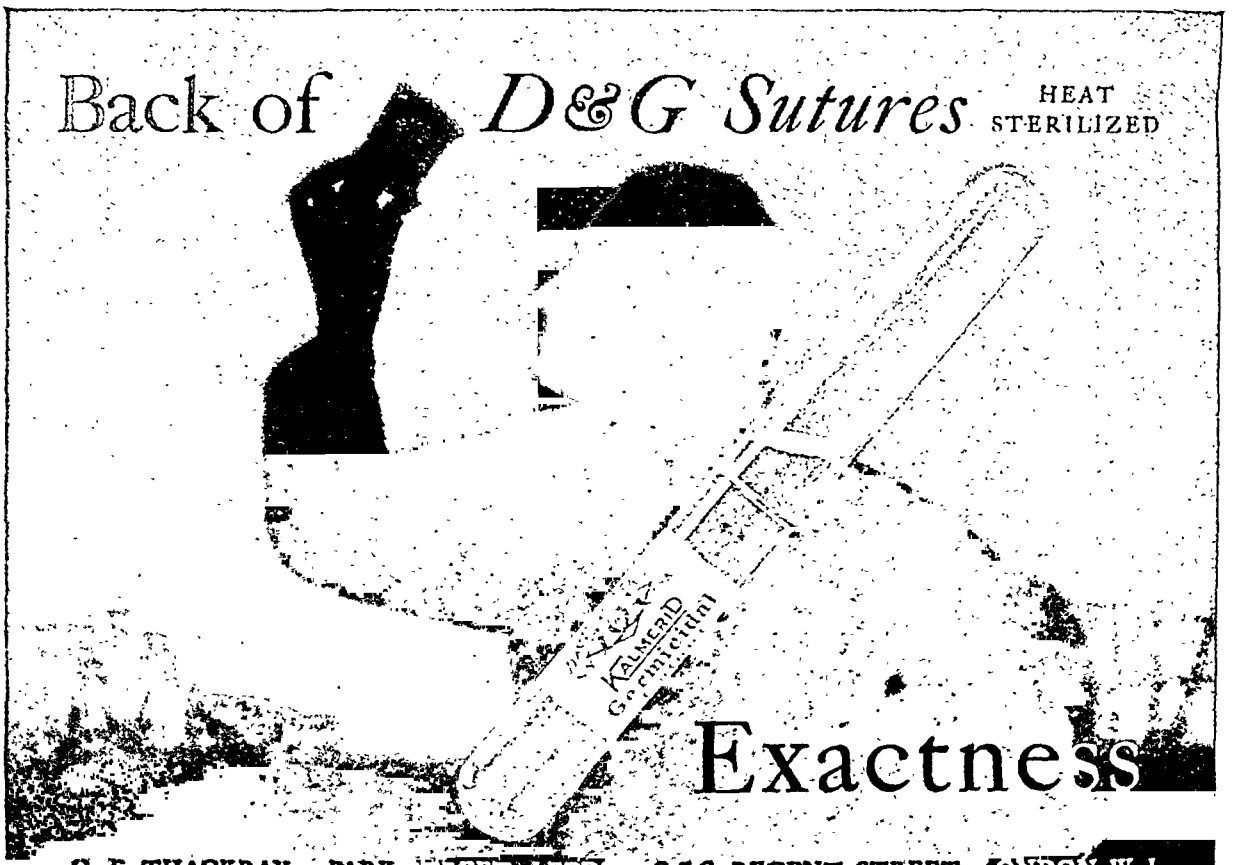
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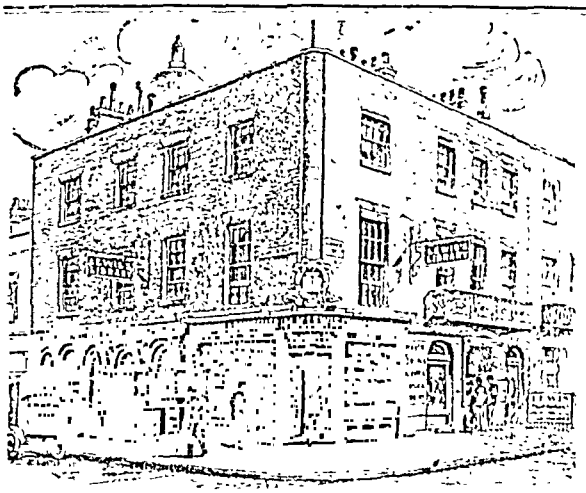
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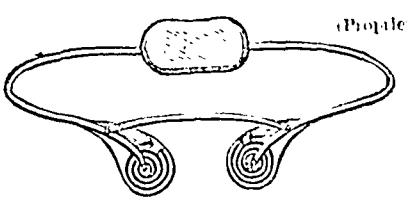
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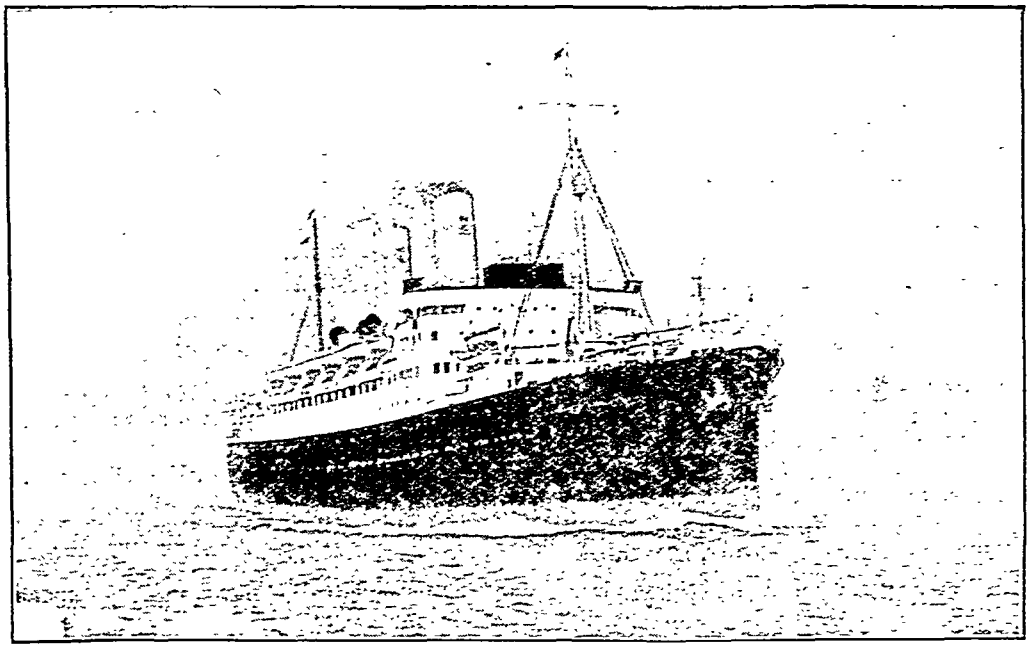
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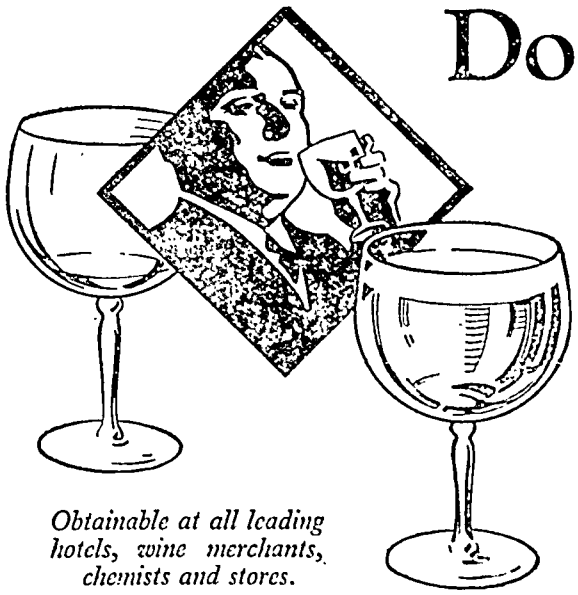
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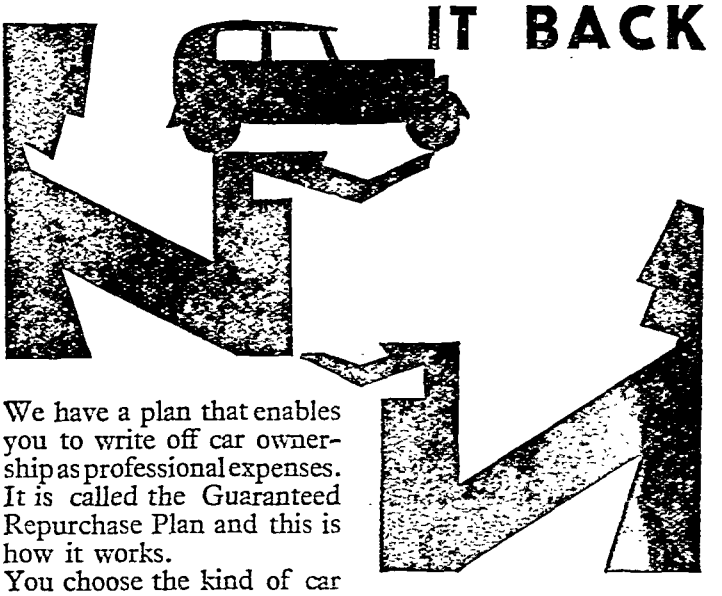
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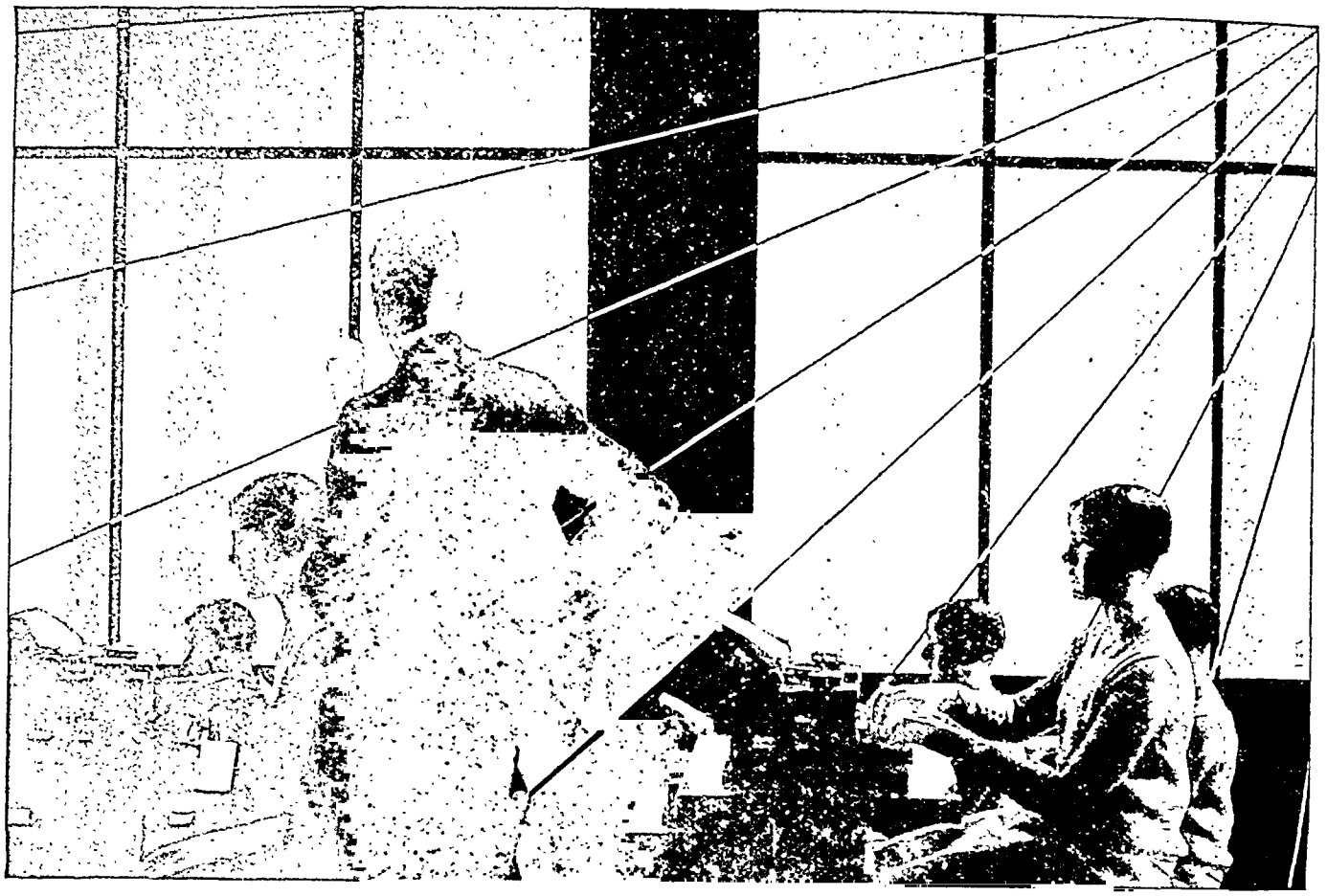
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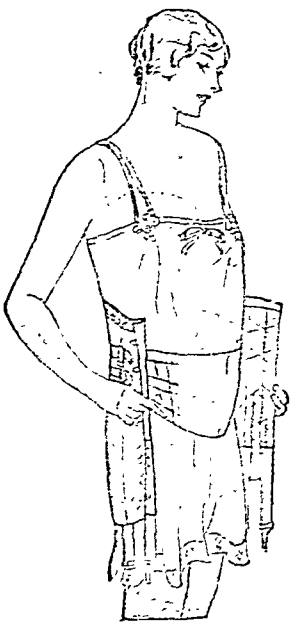
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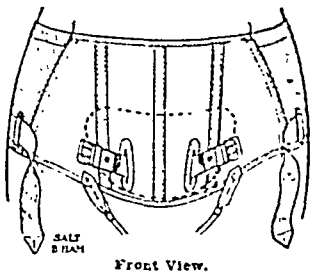
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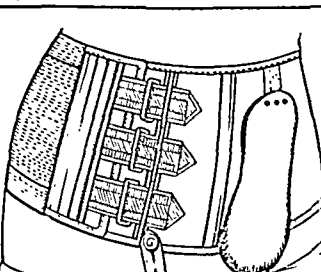
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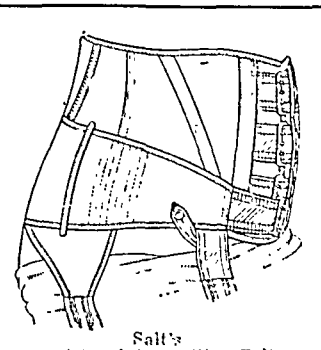
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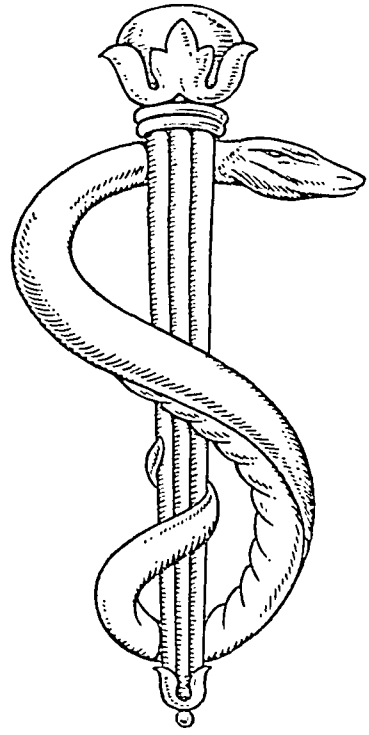


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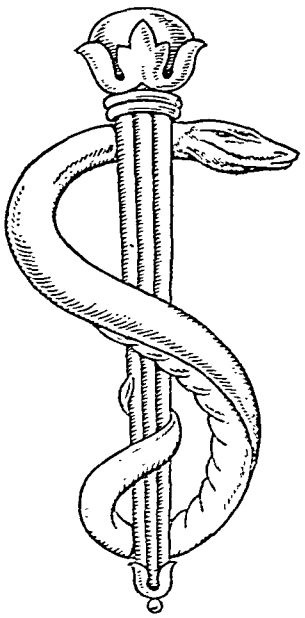
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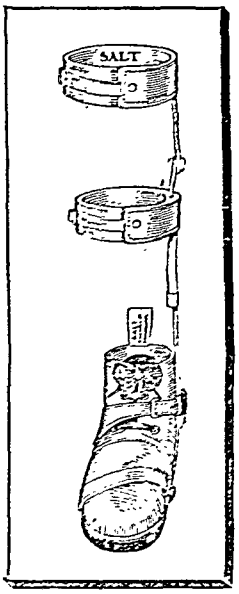
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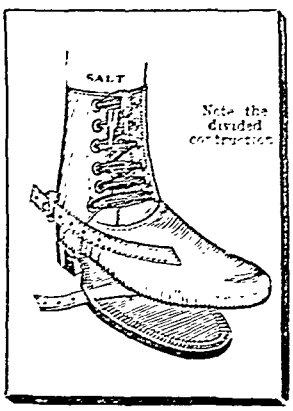
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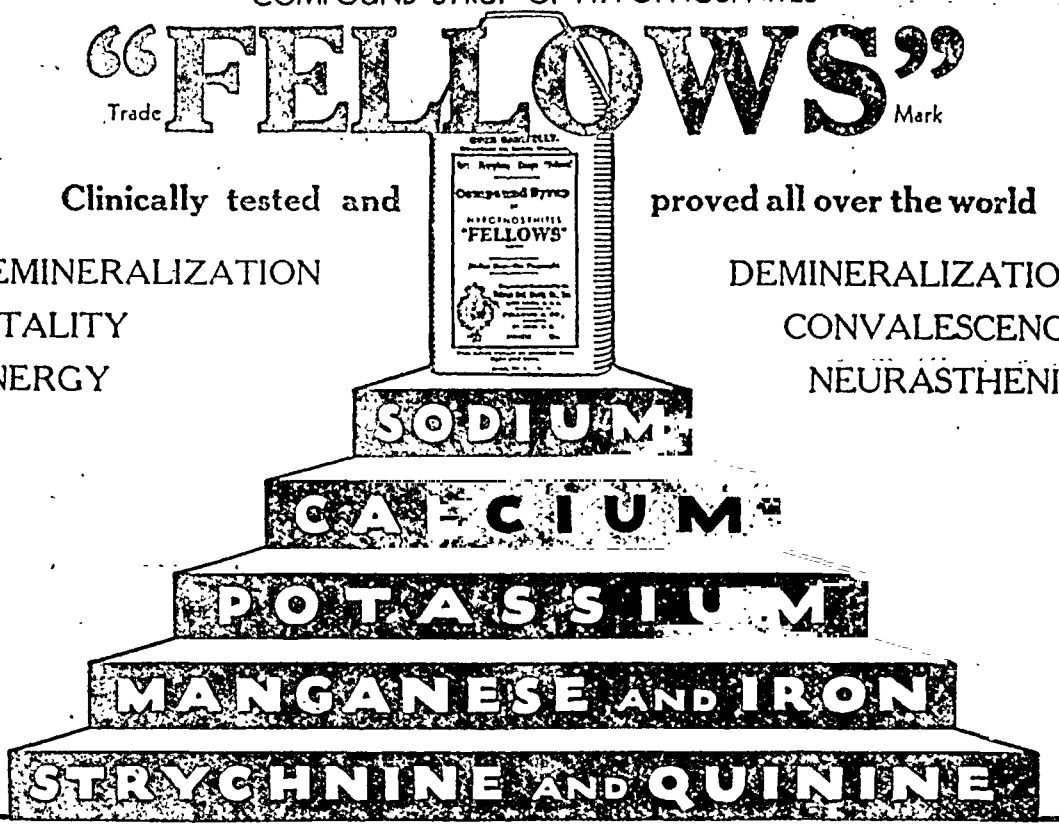
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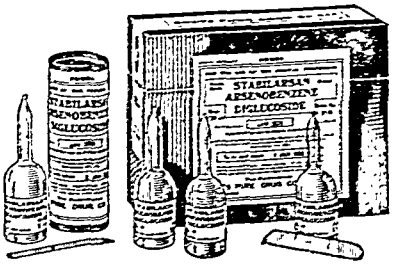
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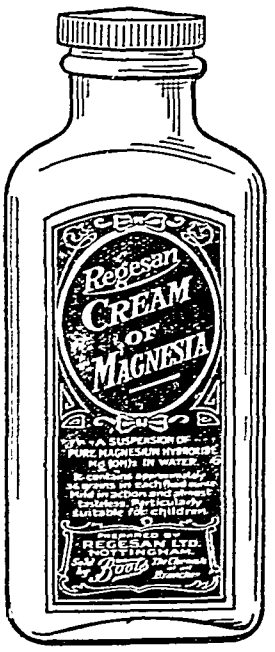
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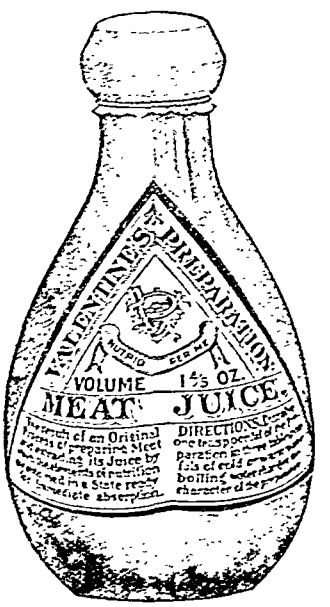
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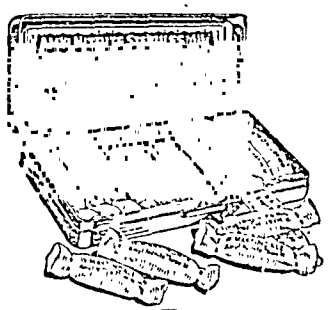
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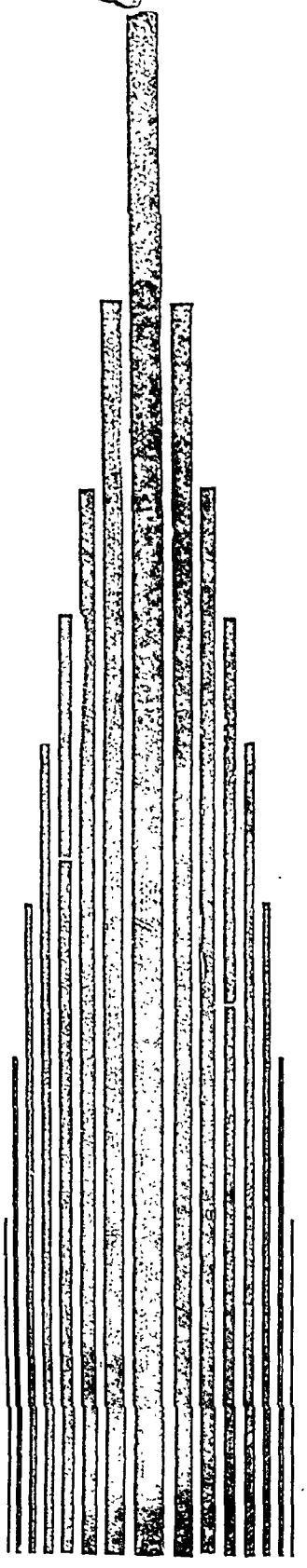
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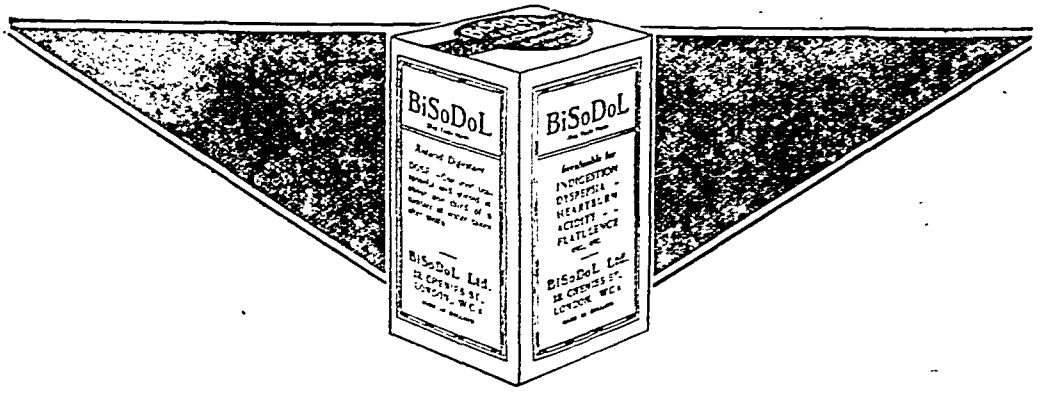
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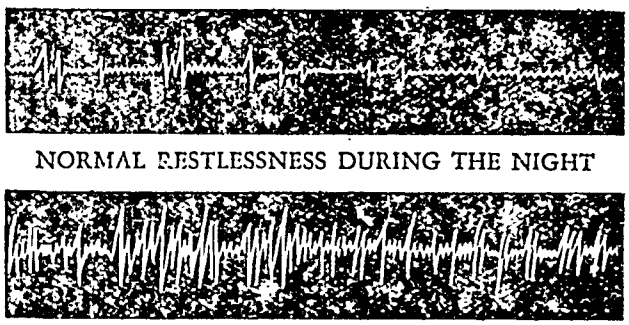
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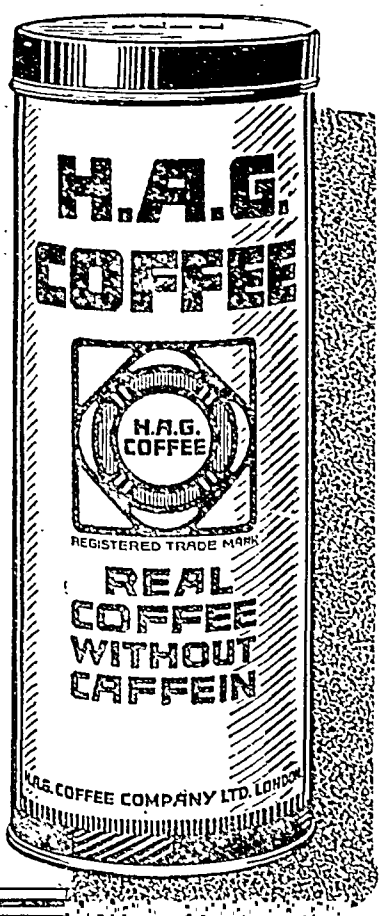
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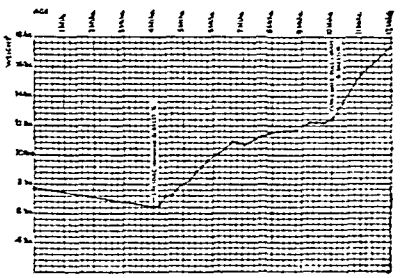
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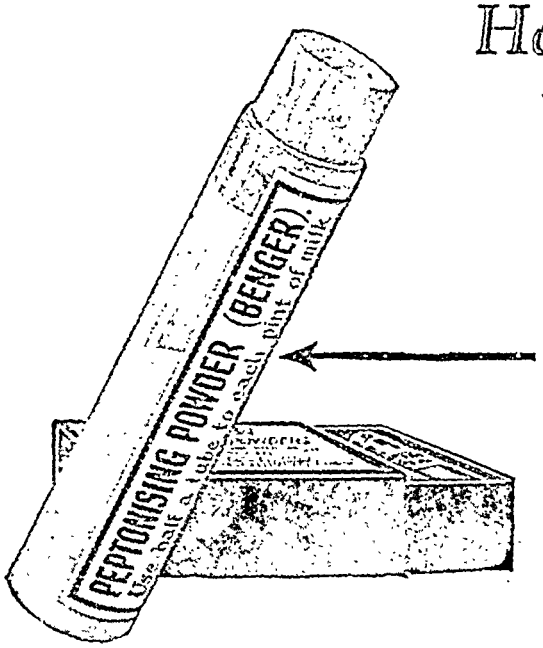
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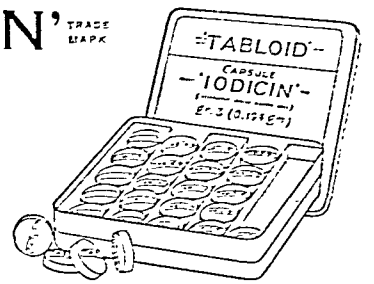
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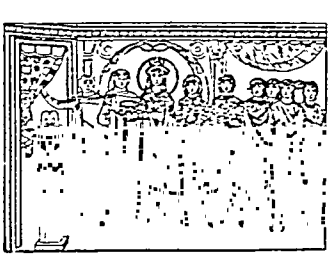
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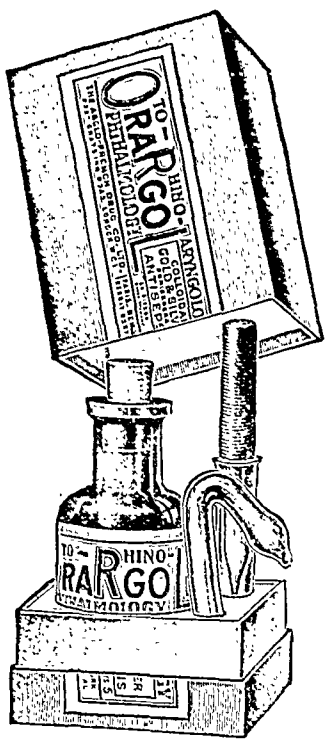
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Remarks
ON
EARLY SIGNS OF CARDIAC FAILURE OF THE CONGESTIVE TYPE.*

BY
SIR THOMAS LEWIS, M.D., F.R.C.P., F.R.S.,
PHYSICIAN TO UNIVERSITY COLLEGE HOSPITAL.

To the student of cardio-vascular disease the ability to form a broad estimate of the way in which the general circulation is carried on under various circumstances is of paramount importance. When a patient seeks advice, and disease of the heart is suspected or is present, one question should stand prominently in the foreground, namely, What is the capacity of the heart for work? The answer to this question dominates both prognosis and treatment to an extent that forces other considerations well into the background in most cases of chronic heart disease. Innumerable tests have been, and continue to be, devised to answer this question; they are based mainly upon pulse and blood pressure readings taken in various circumstances of posture, exercise, etc. One danger of these tests is that, as they are frequently presented by means of formulae, they are apt to create an impression of scientific accuracy that they are far from possessing. Experience of such tests has convinced me that they have little practical value, and, tending as they often do to becomes rules of thumb, they likewise become most undesirable. Recently, numerous attempts have been made to estimate cardiac output in terms of fluid volume; while these methods have a significance in physiology, they have as yet found no application in clinical work, and are unlikely to find such application for many years to come.

Cardiac capacity in patients is to be gauged rather by a close study of the symptoms arising out of exercise and by the early signs of congestion; by simple methods that can be grasped and applied by practitioners; methods which for these reasons, as well as for their proved worth, stand unrivalled in practical everyday work.

If, in speaking of heart failure, we are to include not only the terminal phenomena but also all the earlier manifestations that may be linked transitionally with them, then we shall review, if only briefly, the main results of cardiac muscle weakness in its different grades. It has been held, and not without justification, that cardiac failure can be of two distinct forms, namely, that manifesting itself chiefly by the well-known symptoms belonging to the anginal group, and that manifesting itself first in breathlessness, and continuing in its natural development to profound engorgement of the venous system. It is not proposed to cover all this ground, but to deal only with failure of the second type, a type that ends in what is often spoken of as "loss of compensation" or "decompensation," two terms which, in my view, should be abandoned, since, in so far as they retain their original meaning, they infer (and infer unnecessarily) far more than can be proved, and since they conceal the essence of the situation; I prefer and advocate the term "congestive failure."

When congestive failure develops gradually, the symptoms and signs of this condition come insidiously, and the order of their appearance is definite. The main symptom is breathlessness. All men and women, however athletic, become breathless on exercise: the first indication of cardiac failure of this type manifests itself in a limitation of the field of response; an active subject notices breathlessness or unusual breathlessness on undertaking some customary act of vigorous work. As this failure progresses, the same breathlessness continues to be experienced, but it is experienced in response to an amount of work that decreases as time passes. This progression may be more or less continuous, spread over months or years, or it may occur in definite steps: this latter is by far the commoner. In grading cardiac breathlessness I do so in the first instance, not by the degree of distress it occasions, but by the amount of physical effort that brings obvious breathlessness into being. Breathlessness occurs on walking quickly or uphill, on walking on the flat, on walking slowly short distances: later it begins to be present when at rest: these are the grades. *It is in the last two stages that the early signs of actual venous congestion appear, and as congestion increases, breathlessness at rest becomes more obvious and more distressing.* Thus the complete course from health to gross heart failure is displayed by the cardinal symptom, breathlessness, graded in its degree from normal breathlessness on active exertion to constant distress when the body rests completely. These grades of breathlessness are ascribed to various deficiencies in the flow of aerated blood through the brain: at first the deficiency is confined to those exercises in which normally the cardiac output is much above resting value; at last there is a deficiency in the physiological quantity of blood expelled by the heart while the body is at rest. It is then that blood begins to collect on the venous side and the patient begins to manifest signs of congested veins, and, associated with these, such signs as enlargement of the liver, cyanosis, a high-coloured scanty urine, ascites, dropsy of the lower members, and the signs of congested and oedematous lungs. Of paramount importance, however, are the signs in the veins: that is so because they are usually amongst the earliest that can be detected: for that reason every medical student should make a full study of them.

Direct measurement of venous pressure has been much used in my wards in past years, and gives in my experience a good idea, within its limits, of the patient's state; it presents, in repeated readings, clear indications of the patient's course. But it is obvious that this method cannot come into wide use, so for many years I have striven to displace it by simple bedside tests that may be applied by any thoughtful and good observer. In arriving at the clinical methods now used in my department, actual manometric determinations of venous pressure have formed important and frequent guides. After describing quite briefly the manometric method, and having illustrated the simple hydrostatic principles involved, the bedside signs that have been found of value will be discussed.

Measures of Venous Pressure.

To measure pressure in the veins more than one device has been employed. A simple piece of apparatus (after the original plan of Moritz) consists of a manometer connected to a wide needle by rubber tubing, the whole filled with a solution of sodium citrate to prevent clotting. The needle is driven into a vein, and the height at which the fluid comes to rest in the manometer measures the venous pressure in centimetres of citrate solution. This, broadly described, is a method of accuracy. A vertical measure, taken from the meniscus to the point at which the vein is punctured, tells the pressure *in the vein at that point.* The measure serves also as a gauge of pressure in the right auricle, provided that no local impediment to the stream exists in the venous stem between the point chosen and the right auricle, the veins being widely patent, and provided that the level of the venous point chosen relative to the heart is known. For if the vein chosen is in the arm, and the arm is raised, the pressure in that vein will fall, or if the arm is lowered it will rise, correspondingly. Since the position of the punctured point, relative to the general system of veins, will vary in different circumstances, it is customary to choose some standard point of reference, and the point we have chosen in patients lying supine is the lower border of the manubrium sterni. If the needle is passed into the median basilic vein of a normal subject so postured, the fluid column in the manometer will usually come to rest level with the sternum, or a few centimetres below, or, less commonly, a centimetre or two above it. Thus, if the punctured vein lies level with the sternum, the meniscus will come to rest at or about the level of the puncture, and, as the arm is depressed, it will not move appreciably relative to the sternum, but the column will

* The gist of a lecture delivered before the Portsmouth Division of the British Medical Association on December 23rd, 1929.

reach above the vein by the amount the arm is lowered (Fig. 1). The venous reservoir thus behaves much like a simple reservoir. In this the surface of fluid lies at a given level, and there the pressure is atmospheric or zero. In the depths of the reservoir pressure is greater, and it is greater by the amount of the vertical column of fluid that extends from any given point to the surface of the fluid.

We may speak of the zero (or atmospheric) pressure level of the fluid in the venous system in much the same sense, and that level is near the lower border of the manubrium sterni in normal subjects. This point of reference is chosen because it represents approximately the level of zero pressure whether the body is horizontal or vertical, or in any intermediate position. It is likewise true of the flaccid body that the pressure in veins lying at different levels below the sternum is greater, and at levels above the sternum is less, than atmospheric pressure. Thus, normally, all veins which lie higher than the manubrial point are collapsed, all which lie below it are distended. If, therefore, we can gauge the precise level at which the veins collapse we have a gauge of the filling of the venous reservoir and of general, or to be more exact of right auricular venous, pressure. A simple and old test of venous zero level is to watch the veins on the back of the hand or at the elbow. These, when the arm hangs limply by the side, are swollen; let the arm be lifted in its flaccid state, while the veins are watched, and, in normal resting people, these will flatten as the hand comes to the height of the manubrium. The arm must be lifted passively; it must not lift itself, for active movement brings the muscles of the limb into play, and these press upon the veins and disturb the test. Another and better gauge is to place the subject upon his back, the head resting upon pillows (Fig. 2). The sternal jugular veins are then usually to be seen as swollen vessels in the neck, but, as they are traced upwards, the swelling ends; it ends at a point that represents atmospheric pressure in the veins, and in normal people this is at a point of the neck that is level with the sternum, or a little higher or a little lower.

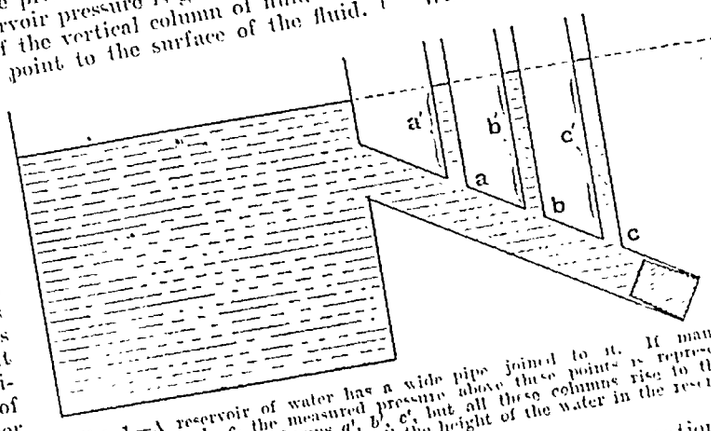


FIG. 1.—A reservoir of water has a wide pipe joined to it. If manometers are attached at *a*, *b*, *c*, the measured pressure above these points is represented by the increasing size of the columns *a'*, *b'*, *c'*, but all these columns rise to the same zero level (Z.L.). All indicate equally well the height of the water in the reservoir.

It is necessary to be sure that the swelling ends where it seems to in the external jugular, and that the vein is not merely running deeper in the higher part of its course. To find out, press a finger lightly on the vein below and it will at once fill in its length and show its whole superficial course. The natural swelling of the neck veins will extend perhaps a third of the way to the jaw, more or less, according to the inclination of the neck to the body. Lift the foot of the couch and in the neck the blood tide advances; lift the head of the couch and it recedes. In these acts think of the surface of the venous pool as you would think of the level of fluid in a long pan of water, lifted at one end or at the other; watch the rise and fall so that you may recognize the surface and know its general level (Fig. 3).

The venous zero level rises to various heights in congestion. Where pressure is raised a little the column is seen to [illegible] in the neck of the supine subject as high as the [illegible] of the sterno-mastoid muscle or beyond this [illegible] unmistakably above the sternal level on both sides of the neck. Where pressure is greater, the veins are swollen to the jaw. Note especially that it is not the anatomical point reached in the neck that matters, but the vertical distance above the sternum. The former is affected by the inclination of the neck to the body, etc.

Where pressure is higher still, the veins remain swollen throughout the neck when th head and shoulde are lifted off t bed. The gauge remains unaltered; it is the vertical height to which the swollen veins extend, or may be raised above the sternum without collapsing. The veins are never full in the neck in a normal unclothed person standing easily in ordinary circumstances in the erect posture; in conspicuous congestion they run the length of the neck like cords.

Thorough familiarity with these phenomena and with the very simple hydrostatic principle involved is an essential matter. It is to be observed that the venous system with its many tributaries is treated as a system of simple and open tubes. The tests should be carried out deliberately, with due precautions; more especially is it to be ensured that no article of clothing or tense muscle can press upon the veins between the point of observation and the heart. The subject must be stripped, and the parts concerned must be rendered flaccid, and must be so placed that their position i favourable to venous emptying Sometimes the veins of the ne are at first tense, presumab because their passage through t deep fascia of the neck la freedom; a little passive movem of the head will then open up the way and truer estimates will be obtained. Veins swollen on one side only point to local obstruction of their immediate outlet and have no value from our present standpoint; often such swelling can be released by a little rotation of the neck; the vein that has the lowest pressure is alone to be used as an index of general venous pressure.

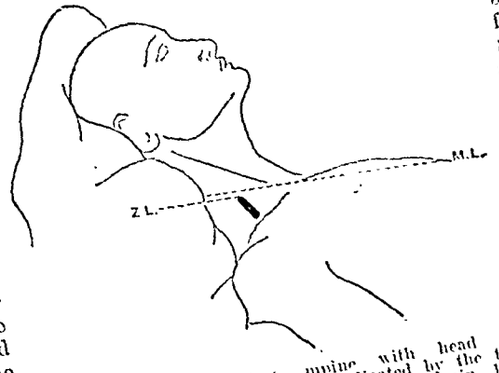


FIG. 2.—Normal subject supine with head on pillows. The zero level (Z.L.), indicated by the top point of swelling of the external jugular vein, lies a little below the manubrial line (M.L.).

A rise of venous zero level in the neck so gauged may be confirmed by gentle palpation of the visible veins, to estimate the tension within them.

The gauges of venous zero level, somewhat less accurate perhaps than manometric readings, are quite exact enough for clinical work, and should be used in part or in whole as a routine in cases of real or suspected disease of the cardio-vascular system. The tests in the neck are preferred to those in the hand or arm, for several reasons. Thus there is less likelihood both of obstruction to, and of muscular emptying of, a cervical vein than there is of a limb vein, since the course is shorter and muscular flaccidity is more readily ensured along this course. Another and important reason is that sclerosis of the veins of the arm is not infrequent; and sclerosis must not be overlooked, as it interferes seriously with collapse; it is readily identified by feeling the emptied vessel. In the legs, the veins, by middle life, and especially the more visible ones over the ankles, are usually sclerosed. In most cases venous pressure in the leg is most difficult to ascertain clinically. In general it may be said that the tests are the more reliable the nearer the vein is to the heart.

I have dealt so far with estimates of the venous zero level by the method of visible collapse. This is the usual method, but there are instances in which no suitable vein in the neck is visible, and here another method is adopted.

The Venous Pulse as an Index.

Not infrequently the position of the venous pulse forms the most reliable sign of normal or raised pressure. A venous pulse at the root of the neck is a normal phenomenon in the supine subject; it is not pathological even if free. In young people this venous pulse commonly shows a great excursion, and is often, though erroneously, regarded as abnormal or is confused with arterial pulsation. To be able to distinguish between the two with certainty is important; it is not difficult, yet there are few who have learnt the ways. In many subjects venous pulsation is obvious at a glance, because it involves superficial veins such as the external jugular, and is evidently within them; in others, and especially those in whom no superficial veins are visible, discrimination is required. Venous pulsation, in the supine and where there is no congestion, involves usually the lower part of the neck along the line of the carotid sheath and subclavian vessels; it is occurring in the internal jugular and subclavian veins, and therefore has a main distribution not dissimilar to that of the chief arteries, but, owing to large tributaries in the subclavian triangle, it is here more diffuse and superficial than is pulsation of the arteries.

The commonest large pulsation in the neck comes from the internal jugular. It frequently extends to and moves the lobe of the ear, and is then usually mistaken for carotid pulsation, a serious mistake to make. Venous pulsation is rarely or barely palpable, while a visible arterial pulse is always felt; the testing finger should be laid as lightly as possible on the pulsating skin, lest by deep pressure the beating of an underlying artery is made perceptible. Venous pulsation is a complex and fluctuating, or a slow and welling movement; it does not jerk sharply to a sustained thrust as does an artery. Such in general are the signs of venous pulsation in the uncongested. In the congested they are modified; more especially the field of venous pulsation is displaced. That is so because *the maximal venous pulsation occurs in veins on the point of collapse*; it is imperceptible in collapsed veins or in veins tightly distended. Thus, in the normal supine subject, the venous pulse occurs in the lowest veins of the neck, for these are just full; it is unseen or lacks prominence in the higher veins of the neck, and that is true of all the cervical veins when the subject is erect. The same change of posture renders carotid pulsation more distinct and brings it particularly into prominence in the carotid triangle, where the artery is most superficial. When much congestion is present and the subject is supine, the veins of the neck are often too tense to pulsate; tip the patient into a more erect, or bring him to a completely erect, posture, and the level of zero venous pressure falls in the neck veins, the tide recedes, and near its margin there appears abundant pulsation. In these patients venous pulsation is often extensive, spreading to the veins of the upper arm and even forearm, and in these parts the association between pulsation and a condition of filling bordering on collapse is often displayed very clearly. Here sometimes, but more frequently in the neck, the level of pulsation is seen to alter with respiration, usually changing to a point nearer the heart in inspiration, because then the venous pressure falls. If this respiratory movement interferes with estimates it can be suspended.

It will be seen from what has been said that the level of maximal venous pulsation approaches closely to the level of zero venous pressure; thus it can be used to confirm the estimate of the point of collapse; it forms the solo gauge when large superficial veins are absent or invisible; in fact, this is the chief bedside value of visible venous pulsation. When veins pulsate freely above the level of the manubrial line they are overfull. Again from this standpoint a thoughtful examination is desirable, for the cervical veins may be overfull, not only because the venous system as a whole is replete with blood, but temporarily because pressure in a part of it is raised by muscular action. Thus, in many normal subjects, if they lean forward as they sit, prominent pulsation appears in the jugular veins; that is so because pressure is exerted in this posture on the abdominal reservoir and blood is displaced to the neck. It can be so displaced artificially in subjects in the supine posture by pressing with the hand on the abdomen; the act tends to flood the neck and to increase pulsation in it. The degree of flooding so occurring is sometimes helpful in estimating the amount of blood held in the abdomen, and in helping to determine the sizes and positions of the cervical veins. Lastly, it is to be said that in congestion the venous pulse tends to lose its fluctuating character, becomes more sustained, and sometimes becomes plainly palpable. In such patients, where the distinction between arterial and venous pulses is sometimes less easy, and depends mainly upon the distribution of the pulse and upon actual visibility or otherwise in superficial veins, the remaining signs of a congested venous system are always manifest.

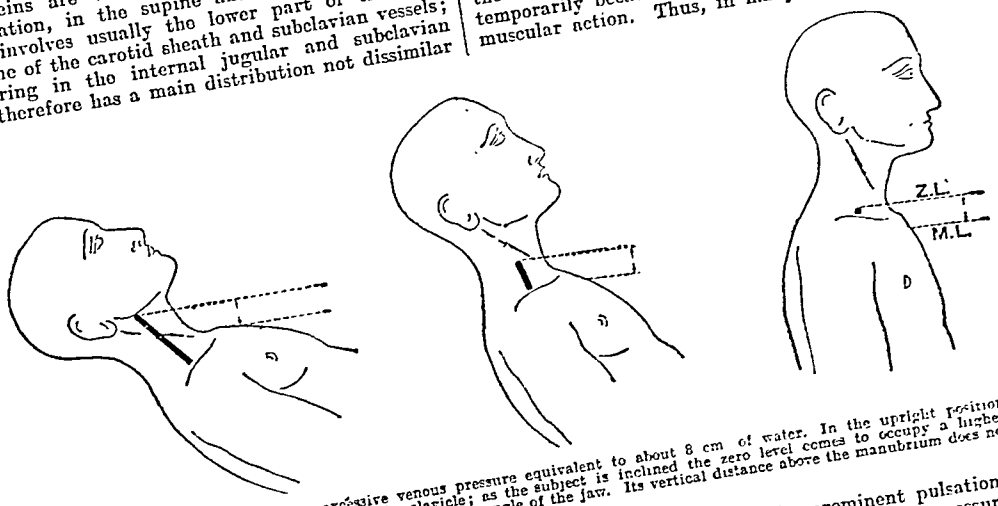


FIG. 3.—A diagram illustrating excessive venous pressure equivalent to about 8 cm. of water. In the upright position the zero level may be just a little above the clavicle; as the subject is inclined the zero level comes to occupy a higher and higher position in the neck until it reaches to the angle of the jaw. Its vertical distance above the manubrium does not change much.

Other Signs of Congestion.

Of the remaining signs associated with venous congestion I propose to say nothing except of those found in the liver, for here also important early signs are found. The firm smooth margin of a congested liver is generally palpable; it is felt at varying levels between the rib margin and the navel, and eventually may be even lower than the last. Failure to palpate the edge of a congested liver is usually the result of beginning to feel the abdomen at too high a level; the whole hand should first be placed, flat and transversely, across the abdomen, well below the navel with gentle yet firm pressure, and gradually worked

upwards until resistance is first felt. If the patient then breathes in and out freely the moving edge of the organ is rarely missed. Percussion is also most helpful; I prefer to use it in the mid-line and of moderate intensity; normally, in these circumstances, the abdomen is resonant to the midriff, for the thin margin of the liver, where it crosses the intercostal angle, fails materially to modify the note, unless the liver edge lies low. Using these methods, early congestion of the liver is generally detectable without difficulty, unless the abdominal wall is unduly thick or tense.

The signs in the veins and in the liver I have emphasized for a chief reason—namely, because they are displayed in early stages of congestion. When the full and classical signs of failure are present, it requires neither close observation nor much discrimination to know it. The diagnosis of early congestion is more difficult, and in the long run it is much more important. It can be accomplished by careful study of the veins and of the liver, and by these means only. Experience teaches that to rely on a single sign is precarious. Compare this sign and that, and confident recognition of the patient's state grows as these signs fall together to form a harmonious picture. Thus, on finding unquestionable evidence of engorged veins in neck, or neck and arms, we look at once at the liver; if we find equally unquestionable evidence that this organ is normal, we know that we are dealing with a local obstruction of the veins. Incidentally, in this connexion observe that veins so obstructed cannot be induced to pulsate. Suppose, however, that in cardiac failure the evidence derived from the veins is indistinct, that there is some doubt whether their pressure exceeds the normal or does not—and this doubt will come to the most or the least experienced observer according to the type of patient under examination—then distinct though slight enlargement of the liver becomes a most important evidence. Generally speaking, enlargement of the liver in its several degrees goes hand-in-hand with engorgement of the veins. In general, the liver does not enlarge before the rise in pressure in the veins can be detected, neither does a distinct venous engorgement manifest itself without the liver edge descending appreciably. There may be cases of difficulty where, owing to fascial obstruction of the upper veins, or enlargement of the liver from causes other than congestion, or failure of the liver to enlarge in congestion owing to cirrhosis, a discord appears. There is also the case in which engorgement of the liver has been present for a very long time; in such, even if the signs of increased pressure in the veins greatly decline, the size of the liver may not decrease much or at least proportionately. But in most instances harmony is found and brings an element of certainty in estimating the degree of failure, and this is so even in regard to early diagnosis. To correlate, and to see accord, in estimating signs is of the utmost consequence, and in this connexion I would emphasize another and most important correlation. *Patients who suffer from general congestion of the venous system are without exception breathless, either at complete rest or upon very slight exertion.* If, therefore, a subject is thought on examination to manifest the early signs of venous stasis, and yet it is clear that breathlessness is not experienced even with quiet or moderate exercise, the opinion first formed must be revised; for it is incorrect. Moreover, there is a perfectly clear relation, constant within narrow limits, between the degree of breathlessness and the pressure in the veins; the relation is so clear that *if it is established that a patient has no congestion of the venous system and is yet breathless in bed, then that breathlessness is not primarily cardiac in origin.* The proper use of this knowledge will save a very large number of serious diagnostic blunders; all that is required is that the point of venous collapse should be proved to occur in any cervical vein at or below the level of the manubrium.

In conclusion, I would repeat that an understanding of cardiac failure of the congestive type is obtainable only by those who truly appreciate the manner in which the symptoms on the one hand and the signs on the other become linked together; the subjective and the objective manifestations are part and parcel of one process, and are dependent on the same fundamental causes, namely, loss of cardiac reserve.

Those who desire efficiently to manage chronic cardiac cases should observe and consider very carefully how little is really gained, and how seldom there is any gain, by repeated auscultation of the heart sounds. Signs so obtained rarely change, they are not signs that indicate improvement or deterioration; but the symptoms and signs upon which emphasis has here been laid do change frequently in one or two directions. They form the chief indications of the course the patient is pursuing and will pursue, for they tell how the blood is circulating in the body generally under various conditions and speak of the capacity of the heart to do work. Those in charge of cardiac patients will do well to acquaint themselves fully with the very definite and sensitive symptoms and the clear signs of early failure here discussed, and to familiarize themselves with the venous manifestations as these occur both in disease and in health.

To understand the phenomena one by one as they are written down and explained is not difficult; to think that such understanding can be brought at once into full play in practical work is to underestimate the situation and to fail in the application; a full grasp and working knowledge can be attained only by diligent observation and thought in which the abnormal is accurately weighed against and considered with the normal.

MYELOMATOSIS, OR BENCE-JONES PROTEINURIA.

BY

A. MACBETH ELLIOT, M.D.

IN November, 1845, Dr. Watson sent a specimen of urine to Bence-Jones, with the question "What is it?" written on a tag of paper. Within a few hours Bence-Jones received a second specimen of urine, this time from Dr. MacIntyre. Both specimens were from the same patient, a man who had been under Watson's care since the previous May. MacIntyre had been called in as consultant.

The man, a well-to-do grocer aged 47, had been ailing for over a year. When first seen by MacIntyre he was thin, emaciated, sallow, pale; his expression was that of suffering, though when not in pain he was cheerful. Pressure along the spine produced little discomfort, but if the pelvis was pressed he complained of severe pain. The arms and legs could be moved freely without any discomfort. Bence-Jones saw the man alive once only, but he received many samples of his urine. The man died on January 2nd, 1846.

In 1847 Bence-Jones read a paper before the Royal Society. After repeated tests and much deep thought, he had arrived at the following conclusions concerning the peculiar deposit in the patient's urine: (1) that the precipitate was an oxide of albumin, and he was satisfied that it was the hydrated deutoxide; (2) that the peculiar characteristic of this hydrated deutoxide was its solubility in boiling water, the precipitate thrown down with nitric acid disappearing on boiling to reappear on cooling. In 1850 MacIntyre published his clinical notes on the case. In the *Dublin Journal* of 1846 Dalrymple had given a full pathological report of the case under the title of "mollities ossium."

I have been unable to trace any further report of a similar nature till the year 1889, when Kahler pointed out the difference between this condition and osteomalacia. Bradshaw, in 1897, described a case, and reported further on it in 1906. Moffat wrote fully on this disease in 1905, and since then there have been various cases reported.

Martin Solon, in his *Traitement d'albuminurie* (Paris, 1838), notes that in one of his cases he came across the peculiar fact that when the patient's urine was treated by nitric acid or heat there was a precipitate which disappeared on boiling; he should therefore be credited with having been the first to draw attention to this peculiar urinary deposit, since apparently it was the same as that found by Watson and MacIntyre.

In October of 1925 a woman was brought up from the country to see me; I was told that it was a case of acute

rheumatoid arthritis of some two years' standing. The following is the history previous to October and subsequently.

The patient was aged 42; both her father and mother were alive and healthy. She had three sisters living, all healthy. She had been married for eighteen years, and had three boys, aged 7, 10, and 15, in perfect health. She had a miscarriage three months after marriage, and another in 1922. As a child she fell and hurt her head, and in 1922 was thrown off her bicycle and injured her knees. She has had no other illness whatever, and was always active in habits. Her periods, which began at 16, were profuse, lasting up to ten days. She was never constipated, and had always been pale.

In 1925, on getting out of bed, her back suddenly "locked," the slightest movement causing agony; she was treated for lumbago for six weeks. As there was no improvement she entered a nursing home, where massage, ionization, radiant heat, and x rays were all tried, with slight benefit for a time. She then returned home, and carried on as well as she could. In 1924 she strained her back when lifting heavy boxes, and the pains became worse.

General Appearance.—Well covered, flabby; intense pallor. While under examination patches of erythema appeared at the root of the neck, spreading up over the left side of the face; also on legs and abdomen. Double dentures. Heart sounds normal, area of dullness increased to right. Blood pressure 160/90. Lungs, a few scattered rales. Liver and spleen not palpable and not enlarged to percussion. No enlarged lymphatic glands found. Abdominal walls flaccid, no glands felt, no tenderness. Knee-jerks slightly increased, especially the left; no tremors, no extensor reflexes; no tenderness of tibiae, and no oedema. All joint movements were free and painless, and there was no evidence of creaking. She complained of pain in the small of her back, radiating to the left shoulder; during the few previous weeks the pain had shot down both thighs. She never had pain in her arms or head. Turning of the body was obviously painful. She first pushed her body up by fixing her elbows, and turned the body slowly, keeping her spine rigid. The tenth, eleventh, and twelfth dorsal vertebrae seemed fixed. There was no tenderness along the spinal column even after strong pressure; no tenderness along the ribs, but a considerable degree along the iliac crests. There was marked hyperaesthesia to gentle stroking with cotton-wool over the right dorsal and lumbar regions, but not to firm pressure.

On first seeing her, three things struck one: her intense pallor, her fixed expression, and her peculiar gait. With joints fixed she advanced by swinging her body first to the right and then to the left, using the hip-joints alternately as pivots. She asked that she should not be assisted in any way, as she had learned how to move with the least pain and discomfort. There was marked pulsation in the left side of the neck. Her expression was one of constant watchfulness, full of such anxiety as is seen in the early stages of tetanus. Her mind was perfectly clear.

A provisional diagnosis of spondylitis deformans was made, and she was advised to enter a nursing home for further examination.

A specimen of urine showed a faint trace of albumin, not clearing up on the addition of acetic acid; there were no casts, blood, or sugar. A few days later Dr. Herbert Lucey sent me the following report on her blood and urine.

Blood.—Haemoglobin 54 per cent.; red cells, 2,500,000 per c.mm.; colour index, 1.08; white cells, 9,375 per c.mm. Differential count: polymorphonuclears 65 per cent., large mononuclears 2 per cent., lymphocytes 31 per cent., eosinophils 2 per cent. No abnormal red cells seen. Wassermann reaction negative. Tubercle complement fixation test negative. Clotted blood showed hydraemia, marked excess of plasma.

Urine.—Clear; albumin present, estimated at 0.6 per 1,000; no sugar. Centrifuged deposit contained no pus, blood, or casts.

Sir Thomas Horder saw her with me, and suggested that it was a case of Bence-Jones albumosis. Dr. Stanley Melville took x-ray films, and wrote: "I wonder if it may not be a condition of myelomatosis, in which case one ought to find Bence-Jones protein in the urine. The only thing against this is that there are not the multiple fractures that are usually associated."

I still inclined to spondylitis, with considerable endocrine disorganization. During the past few months the patient had noted that she was some two inches shorter in stature.

A further letter from Dr. Stanley Melville put spondylitis out of court. He wrote: "The x-ray picture is unlike one of spondylitis deformans, the latter is in the nature of a sclerosis, whereas the present is an osteoporosis with loss of bone tissue. I am still of opinion that the condition is one of disease of the bone marrow."

It was obvious that no improvement was taking place; the pains became worse, and she was less inclined to try any movement. Further examinations on November 5th resulted as follows.

Blood.—Haemoglobin, 0.45 per cent.; red cells, 2,120,000 per c.mm.; colour index, 1.07; white cells, 6,600. No abnormal red cells were present.

Urine.—Protein: heat shows fair cloud; the proteins present are albumin, globulin, and proteose. Bence-Jones reaction is negative. An occasional hyalo-granular cast in the deposit. Range of function as gauged by urea concentration and specific gravity (Calvert's modification of MacLean's urea concentration test): Maximum concentration of urea 2.4 per cent., minimum 1.066. The maximum concentration is fair and the range of function good. The maximum specific gravity 1012, minimum 1006. The maximum cent.; maximum concentration is fair and the range of function good. The kidneys are working efficiently, though there may be some kidney damage, as shown by protein present and occasional casts.

Towards the end of the month her condition grew gradually worse. The bowels became irregular, she had a prolonged and very profuse period, and bronchial catarrh supervened.

On December 4th the blood picture was as follows; haemoglobin 34 per cent.; red blood corpuscles 1,670,000 per c.mm.; colour index 1; white blood corpuscles 6,875 per c.mm. Slight irregularity in size of the red cells was noticed.

On December 22nd a blood count showed: haemoglobin 34 per cent.; red cells 1,330,000 per c.mm.; colour index 1.1; white blood corpuscles 10,000 per c.mm. Marked anisocytosis was present.

Examination of the urine on the same day resulted as follows: Total protein greatly increased, including albumin, globulin, and proteose. No evidence of Bence-Jones reaction. Numerous granular casts and leucocytes present.

In January she developed a broncho-pneumonia, which ran for over three weeks, leaving her with a harassing cough, but even this disappeared towards the end of the month. Early in February the kidneys ceased to function, the urine became scanty, and she died.

Many examinations of the urine had been made during the previous months; occasionally there was a Bence-Jones reaction. During her November, December, and January periods she had very severe menorrhagia.

Dr. Lucey's further report on the urine is as follows:

"A coagulum certainly appeared at a low temperature (55° C.), but did not apparently dissolve on further heating. When the urine was diluted twenty times it did not form a ring with strong hydrochloric acid, which Bence-Jones proteose is said to do—a reaction known as Bradshaw's. The following procedure was then carried out: The urine was heated in the water-bath at 58° C. for half an hour, and a dense coagulum ('A') formed at this temperature, and was allowed to settle. The supernatant fluid was then pipetted off and filtered. The clear filtrate was again heated at 72° C. A second dense coagulum ('B') due to albumin appeared. The temperature was raised to boiling point, and this coagulum was removed by filtration. Some of the first coagulum ('A'), was then added to the final filtrate and heated. It dissolved, but did not reappear on cooling. You will see that the urine did not give a complete Bence-Jones reaction. I have little doubt, though, that this peculiar proteose was present as the coagulum that appeared at 58° C., and that the tests for it were affected by the salt content and albumin present."

Permission was given to hold a partial necropsy. This was done by Drs. H. J. B. Fry and Herbert Lucey.

Dr. Lucey's Report.

"With the exception of a thin eggshell covering of bone, through which the finger could be easily pushed, the bony structure of the bodies of the lower dorsal and all the lumbar vertebrae was replaced by a soft dark red growth, which reached down to but did not infiltrate the dura mater. The intervertebral discs were intact. The growth also involved both ilia, which were much thinned and very fragile, and secondary deposits were found in the sternum and some of the viscera. Microscopical examination of the growth showed that it consisted almost entirely of plasma cells, with practically no stroma. Here and there a larger type of cell, probably the megalokaryocyte, could be seen, but there were no multinucleated giant cells such as are found in a myeloma of a limb bone. The condition was one of myelomatosis. The kidneys showed marked degenerative changes of their tubular epithelium."

Dr. Fry's Report.

"The necropsy showed a marked myelomatosis affecting the sternum, the spinal column, and the pelvis. As far as one could tell the long bones were not affected. The spine from the lower thoracic region to the sacrum showed a sort of fenestrated condition of the bodies of the vertebrae, so extensive was the infiltration. The iliac bones also showed widespread deposits. There was a tiny hypernephroma in the cortex of the left kidney. Apart from wasting, the abdominal viscera were quite healthy, and no growths were present. The lungs and heart were also free from disease. Histologically the growth was a myeloma of the plasma cell type. The hypernephroma of the left kidney was an isolated condition, and not related to the general disease. The Bence-Jones albumosuria which was found by Dr. Lucey was a part of the general myelomatosis."

Here is the case of a woman apparently in perfect health. On rising one morning she is gripped by a sudden intense

pain across the back. Lumbago was the obvious diagnosis; but after six weeks, though easier, the pain was still there, and no line of treatment gave any permanent relief. The weeks became months, and the first year passed into the second. The final months may have been interesting—clinically; they were painful to watch, and emphasized our hopelessness to help. A noteworthy feature was that never once did she realize that she would not recover; she was continually making preparations for going home.

An *x*-ray film taken within four months of the onset gave no evidence of any bone alteration; true, it was not a very good film. There was no fracture of any of her bones; but in this disease the long bones are not usually invaded. She had marked uterine fibroids, which accounted for the severe menorrhagia throughout life. But this cannot be taken as a predisposing cause. What was the cause of the initial lumbar pain? Was it a coincidence—a true attack of lumbago?

In comparing the notes of this case with those taken by MacIntyre in 1845-46 the similarity of the symptoms between the two is very marked. Sex is the chief difference. Myelomatosis is said to occur more frequently in men than in women.

Bence-Jones protein is found in other conditions, but only in a few; its appearance in any urine will naturally call attention to one of them. The fact that it precipitates at between 40° and 58° C., and disappears on boiling, may escape general observation unless a careful watch is kept for it. Many urines with this unusual peculiarity may have been examined and nothing particular noted. The source of this peculiar protein is still a matter of conjecture. Ottenberg, Gies, and Rosenbloom maintain that it is an osseo-albumoid.

THE TUBERCULIN TREATMENT OF ASTHMA.

BY

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THE multiplicity of methods advocated by various authorities for the treatment of asthma is an eloquent testimony to the complexity of the problem. A method which may give complete success in some cases may be quite valueless in many others not obviously different in any essential particular, and hence it is impossible to write of a "cure" which shall be applicable with certainty even to a majority of sufferers from this complaint.

We are therefore reduced to the employment of many different methods, empirically selected, and of which in most instances the mode of action is imperfectly, if at all, understood. Of these methods, one in particular, the subcutaneous injection of increasing doses of old tuberculin, has been under critical trial in the out-patient department of the Royal Chest Hospital for a period of two years, with results which appear to be worthy of record.

The method was introduced by Professor Storm van Leeuwen as a result of his observation that a considerable number of asthmatic patients were sensitive to tuberculin as shown by the cutaneous test. There was no suggestion that the asthmatic state was the result of sensitization to the protein of the tubercle bacillus, and the beneficial results of tuberculin therapy were ascribed to a non-specific desensitization. In a paper published over a year ago, T. M. Ling[1] reported good results following upon the use of this method in a series of twenty-four children. The initial dose was 0.1 c.cm. of a 1 in 1,000,000 dilution, but the maximum dose was not stated. The results showed two "cures" and fifteen cases improved, and Ling was of opinion that the method was of definite value in the treatment of asthma.

A series of nine cases was also reported by Simpson and Stone[2] a year ago. They found that in four of these cases the patients derived considerable benefit from this method of treatment, and they outlined a simple scheme of dosage. It is noteworthy also that in none of their cases did they obtain a positive skin reaction, a finding which makes the rationale of the treatment a little difficult to understand.

The cases about to be described in the present series presented themselves for treatment at the Royal Chest Hospital during 1928. Thus all have been under observation for more than one year, and several for nearly double this period.

Difficulty was at first experienced in the selection of cases, for it is notorious that some forms of asthma will derive benefit from almost any form of treatment, whereas others appear to need one particular method to bring about a similar result. The obvious explanation of this discrepancy is that many widely different factors can produce asthmatic attacks in a suitably disposed individual, and that not all cases prove responsive to the same exciting stimulus.

In many cases there would appear to be some exciting factor in the home or place of occupation. It is necessary, therefore, in order to gauge the effect of one particular line of treatment, that the patient's routine life should not be disturbed. In other cases a predominant part is played by a septic focus, situated usually in the throat or nasopharynx. It is obviously an elementary principle that such foci should be eradicated in all cases if a permanently successful result is to be obtained, and this procedure was adopted as a routine. Only such cases as did not derive appreciable benefit from this treatment were considered suitable for tuberculin. In addition, routine protein sensitivity tests were performed, with, on the whole, disappointing results; a few positive reactions were obtained, chiefly to the epidermal group, and attempts were made when possible to relieve the condition by avoiding contact with the offending substance, with, as a rule, but scant success. In these cases, also, the failures were passed on and regarded as suitable for tuberculin. No attempt was made at specific desensitization.

The patients were therefore carefully selected, and consisted only of the more severe cases in which routine methods had failed, or were unlikely to afford relief. The total number accepted for tuberculin treatment during the year was thirty-six, and it is the object of this communication to describe the results of treatment in these cases. Of these thirty-six patients, twenty were males and sixteen females; the ages varied from 5 to 49 years, and twenty-one were under 14 years of age when treatment commenced.

A preliminary intradermal test was performed in every instance, after making every effort to exclude the presence of a tuberculous lesion anywhere in the body. The routine test consists in the intradermal injection of 0.1 c.cm. of a 1 in 1,000 dilution of old tuberculin, freshly prepared, in normal saline. The reaction is at its maximum in forty-eight hours, but readings had to be taken on the subsequent out-patient afternoon, so that the interval which actually elapsed in this particular series of cases before the results were read was three days. It was considered that the delay in reading the results made only a negligible difference to the recorded size of the reactions, and they were accordingly noted in the usual manner. The essential feature of a positive intradermal tuberculin test is an area of swelling, erythema being of little significance. The results were as follows:

Negative reactions	24
Positive reactions	8
Strongly positive reactions	4
Total	36

There was a considerable preponderance of negative reactions, a result not in accord with the original observations of van Leeuwen, but nevertheless corresponding closely with the result obtained by me in a separate series of 103 apparently non-tuberculous subjects, of whom 74 were found to yield negative and 29 positive reactions. The objects of this routine preliminary test were, first, to investigate the basis on which the test was originally founded, and, secondly, to furnish an indication as to the appropriate strength of the initial subcutaneous dose. As was to be expected, modifications in technique had to be

introduced from time to time, and the method about to be described is that which appeared to be suitable for the majority of patients, although it cannot be said that a routine standard method was employed in every case.

The material for injection consists of decimal dilutions of old tuberculin contained in rubber-capped bottles, the dilutions ranging from 1 in 1,000,000 to 1 in 100. The size of the initial dose depends upon the result of the intradermal test. With very marked reactions it is advisable to commence with 0.1 c.cm. of the 1 in 1,000,000 dilution; with weaker reactions, a similar quantity of either 1 in 100,000 or 1 in 10,000 dilution, according to the degree of swelling in response to the intradermal test; while with negative reactions it is quite safe to commence with 0.1 c.cm. of the 1 in 1,000 dilution. In all cases the injections are given weekly at first, and the doses are cautiously increased, care being taken to avoid even local reactions, as it is stated that an overdose may precipitate an attack of asthma. The usual method of increase when the weaker dilution—from 1 in 10,000 to 1 in 1,000,000—are being employed, is to follow the initial 0.1 c.cm. with 0.2, 0.4, and 0.6 c.cm., proceeding thence to 0.1 c.cm. of the dilution immediately stronger. This course is followed until the 1 in 1,000 dilution is reached, and at this stage there are usually obvious signs of improvement in favourable cases. The interval between the injections is now increased to two weeks, and the dose is increased by 0.1 c.cm. at each attendance until a maximum of 0.5 c.cm. is attained. This dose may be repeated at monthly intervals as often as necessary. It will be seen that the exact length of the course must vary with the strength of the original injection, but it must also be understood that the exact details are susceptible of considerable modification to meet individual requirements.

When the selected initial dose is 0.1 c.cm. of 1 in 1,000 dilution—that is, in those patients who are not sensitive to tuberculin—the same dose is injected weekly for six weeks, and is then increased by increments of 0.1 c.cm. to 0.5 c.cm., this dose being repeated fortnightly as long as may be necessary.

It sometimes happens that patients lose their symptoms readily under this treatment long before the highest stated dose is reached. In such cases it is not necessary to increase the dose to this extent, but the maximum dose should not be less than 0.1 c.cm. of the 1 in 1,000 dilution. On the other hand, some patients, while showing definite improvement, do not completely lose their symptoms when receiving 0.5 c.cm. of the 1 in 1,000 dilution. In these cases the dose may be cautiously increased with benefit. The maximum dose which has been given in this series is 0.4 c.cm. of the 1 in 100 dilution. This course should only be followed in cases where it is clearly indicated, as no benefit is gained, and the patients are actually not so well, when the optimum dose is exceeded. It is essential that the course of treatment should be prolonged, the minimum satisfactory period being six months.

The results of this form of treatment in the series of thirty-six cases can be classified as follows:—

(*a*) *Satisfactory Result.*—A period of between one and two years is much too short to enable the term "cure" to be applied. The cases included in this group have been strictly observed, and, after the first few injections, have been completely free from attacks and without any symptoms of respiratory embarrassment. The group, therefore, consists of those cases which have obtained the maximum possible benefit. Of the original thirty-six cases, no fewer than seventeen are classed in this group, all being still under observation, and this result agrees closely with van Leeuwen's observation that 50 per cent. of his cases were cured by this method.

(*b*) *Improvement.*—This group includes all cases in which there was a definite diminution in the number of asthmatic attacks, yet without complete relief of symptoms. In many of the cases the record was spoilt by only one or two attacks in the course of the year, and it must be remembered that all of the cases selected for treatment had previously suffered severely from the disease. Twelve cases are included in this group, making a total of twenty-nine patients who derived benefit from this course of treatment.

(*c*) *Failure.*—The criteria which determine inclusion here are obvious, and the remaining seven cases come under this heading. No patient was made worse by the treatment, their last state being as their first.

A glance at the accompanying table will make clear the relationship between tuberculin sensitiveness and the result obtained.

	Result.		
	Satisfactory.	Improved.	Failed.
Intradermal test:			
Positive	4	4	4
Negative...	13	8	3
Totals	17	12	7

It can be seen that, although the figures in each group are small, the proportion of successes is actually greater in the non-sensitive group, whereas in the cases which were sensitive to tuberculin the results are evenly spread throughout the three groups. From this it may be safely argued that sensitiveness to tuberculin plays no part in the production of the result, and that, in fact, the success of the treatment depends upon a non-specific desensitization.

In passing, it may be mentioned that the age of the patient made no difference to the result, although it was noted that in adults the relief of symptoms was sometimes delayed.

Conclusions.

Tuberculin treatment is of value in a considerable number of cases of asthma which prove resistant to other therapeutic methods. It can be used in spasmodic asthma in patients of any age, and in careful hands is without harmful effect upon the patient. To ensure success it is essential that the course should be prolonged, and, if necessary, it may be repeated. The results recorded compare very favourably with those of other and more complicated methods of treatment, and appear to justify its more general adoption, particularly in cases which do not yield readily to simple routine measures.

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MUSCLE EXTRACT IN THE TREATMENT OF ANGINA PECTORIS AND INTERMITTENT CLAUDICATION.

BY

M. S. SCHWARTZMAN, M.B.

SUCCESSFUL results in the treatment by muscle extract of angina pectoris, particularly of the variety known as "angine d'effort" (Vaquez) or angina ambulatoria (Wenckebach) were reported some time ago by Professor J. S. Schwartzman of Odessa.[1] These results have since been confirmed in Russia and Germany. Among other observers, Fahrenkamp and Schneider of Stuttgart published gratifying results relating to the treatment of some hundred hospital heart cases with anginal syndrome. I have been trying this treatment for a few months now with very promising results, which I hope to be able to publish in full in due course. The underlying considerations on which the method of treatment of angina pectoris by means of muscle extract is based are as follows.

A peculiar phenomenon was described by Professor Schwartzman in 1927,[2] occurring invariably with a hypotonic heart muscle, as in infectious diseases, anaemia, cachexia, chronic pulmonary tuberculosis, starvation, heart failure, etc. If the patient is made to contract any muscle group, one notices muffling of heart sounds, shortening of the systole, diminution of intensity or even disappearance of systolic murmurs, if any; all this being the result of diminution of the amplitude of the cardiac contraction. The inhalation of amyl nitrite, injection of adrenaline, and the immersion of hands in hot water tended to abolish this phenomenon. This heart reflex was thought to bear a certain resemblance to what happens in an attack of angina pectoris, in which the coronary angiospasm might be accompanied by a muscular spasm.

It has been further observed that a few preliminary muscular exercises would likewise abolish the phenomenon. The fact is known to every cardiologist that anginal pain sometimes disappears as the patient continues his effort. One such patient, who at necropsy was found to have extensive sclerosis of the coronary arteries, was accustomed to exercise vigorously "to work off the pain" when the attack began.[4] Heberden described the most striking case of this type. Hence arises the assumption that some sort of antispastic substance is at work during the contraction of active skeletal muscle. Such substances obtained from skeletal muscle of a healthy young animal might counterbalance the spasm in angina pectoris. Their deficiency in the muscular system, on the other hand, would be an important factor in production of the anginal syndrome.

Reid (quoted from *Recent Advances in Cardiology*, by Terence East and Curtis Bain, p. 20) seems to approach this idea when he states that angina pectoris occurs when there is a failure of a depressor mechanism, which in moments of strain should lighten the load of the heart. He suggests that there are peripheral changes, which lower pressure by inhibiting the vaso-constrictor tone, so that in moments of stress in healthy individuals there is actual vaso-dilatation. In angina pectoris these mechanisms fail, and the strain on the aorta becomes too great. Such depressor mechanisms might be put into action by means of the above-mentioned antispastic substances. Since I intend to publish soon a detailed account of results obtained by me with muscle extracts in angina pectoris, I shall confine myself at the moment to the following illustrative case.

A man, aged 58, with no children and no history of venereal disease, had been suffering for six years from pain starting from the substernal region and spreading upwards towards both arms. This pain appeared on walking, and compelled the patient to stop for a couple of minutes, after which he could continue for another period. He could walk without pain for about 100 to 200 yards. Under the most favourable circumstances, including good weather, he could only walk half a mile.

On examination it was found that the heart was slightly enlarged to the left. The second aortic sound was accentuated, and the blood pressure was 170/100. The pulse was 84, and the radial artery was tortuous. On screening, the heart was shown to be enlarged, and the aorta considerably so. An electro-cardiogram (June, 1926) recorded obvious inversion of the T wave in leads 2 and 3, but the blood had a negative Wassermann reaction and the lungs were normal.

Treatment by daily injections of a muscle extract* was started on January 27th, 1930, and continued until February 17th. After the third injection improvement of sleep was noticed, and after the sixth injection the sensation of constriction around the chest became diminished. By the time that the twelfth injection had been given the patient was able to walk two and a half miles with no sensation of pain. The general condition is now much improved and he is definitely stronger, there being no discomfort on exertion, except immediately after meals. Treatment was stopped for ten days, but the improvement was maintained; it was restarted on February 27th, and is being continued twice a week. The walking ability is still two and a half miles at the patient's normal pace.

In view of the striking resemblance of angina pectoris to intermittent claudication (which is rightly termed by some angina cruris) I have felt justified in treating cases of intermittent claudication by the administration of muscle extract—a method not hitherto attempted, so far as I know. Whatever the pathological variety of this condition may be—(1) angiospastic or vasomotor (Oppenheim); (2) arterio-sclerotic (Charcot, Erb); or (3) thrombo-angiitis obliterans (Buerger)—it is the vaso-spastic factor in all three varieties which I thought might be influenced by the extract. This research is still in progress, but the encouraging results obtained so far seem to me to justify this publication.

The following are some of the cases under treatment.

CASE I.

An unmarried solicitor's clerk, aged 40, with no history of venereal disease or alcoholism, but smoking twenty cigarettes a day, complained of severe crampy pains in both legs on walking, chiefly in the thighs; these were first noticed in April, 1929. After walking a distance of forty yards the onset of the pain compelled him to stop, but when he had rested for a minute or two the pain disappeared and he could continue walking. Restriction of smoking, rest, and medicinal treatment failed to alleviate the pain. As the result of reducing treatment he lost 2 st. in weight, but the condition was unchanged. He was admitted to Westminster Hospital under Sir James Purves-Stewart on January 28th, 1930.

On examination no abnormality was discovered in the digestive or cardio-respiratory systems. The blood pressure was 165/90. The knee-jerks were brisk, and the plantar reflexes flexor in type. The posterior tibial arteries were faintly felt on both sides, but neither dorsalis pedis artery was palpable. Movement of the right leg against resistance caused blanching of the big toe. The urine was normal and the Wassermann reaction negative. Radiographic examination of both legs revealed no arterial calcification.

Injection of muscle extract was started on January 30th, and while at the Westminster Hospital the patient had eleven injections. After the fifth he was able to walk a distance of 120 yards; with subsequent injections this was increased up to half a mile. He is now able to walk without pain; at the end of half a mile there is slight leg weariness, but no pain. His legs feel firmer, his general condition is improved, and he has resumed work. The pulse is now easily palpable in the dorsalis pedis arteries, and the blood pressure has fallen to 130/90. There is no blanching of the big toe on exercise against resistance. Treatment is still being continued three times a week.

CASE II.

A widower, aged 63, with no history of alcoholism or venereal disease, and a moderate pipe-smoker, complained of pain for about nine months and leg weariness on walking. The pain was localized to the calf muscles, and he was compelled to slow down or even to stop entirely. The distance which he could walk without pain ranged from 200 to 500 yards.

On examination the eyes and cranial nerves were found to be normal, the reflexes brisk, there was no clonus, and the plantar reflexes were flexor in type. Superficial and deep sensations were normal. The skin on the legs was bluish in colour, and the feet were rather cold. The pulse in the posterior tibial and dorsalis pedis arteries was palpable. *X*-ray examination revealed extensive calcification of the arteries down to the ankles. The heart was enlarged, half an inch outside the mid-clavicular line, and the second aortic sound was ringing. On screening the aortic arch was seen to present a bulging dense shadow, and the descending aorta was distinctly visible in the second oblique position. The radial artery was tortuous, and the blood pressure was 170/90. The liver was not palpable, the urine was normal, and the Wassermann reaction negative. The appetite was normal, and the bowels acted regularly.

After eight injections of muscle extract the patient noticed that the leg weariness and pain had decreased, and the legs felt stronger. After the twelfth injection the pain and tiredness had ceased. The treatment is still being continued at longer intervals.

CASE III.

A married manual worker, aged 52, with five children; there was no history of alcoholism or venereal disease; he was a moderate smoker—ten to twelve cigarettes a day; he complained of pain in the muscles of the calf, which "got hardened on walking." He had to stop for a time after proceeding for about 100 yards, and then could continue again for about the same distance. He had a sensation of cold in both legs. This condition had lasted for two years.

On examination the pupils and jerks were normal, and there was no evidence of any lesion in the nervous system; the toes, particularly on the right foot, had a bluish tint, and the pulse in the posterior tibial and dorsalis pedis arteries was not felt. Radiograms showed no calcification of the vessels, but the heart was slightly enlarged to the left; screening revealed enlargement of the aorta, both ascending and descending portions being seen to pulsate. The blood pressure was 150/80, and the Wassermann reaction was negative. The administration of iodides and bromides for more than a year had no effect.

Injection of muscle extract was started in February, but no change was registered until the eleventh injection, after which the patient began to walk better, feeling less pain and tiredness. After the sixteenth injection with an increased dose he could walk 300 yards. He was admitted to the London Jewish Hospital, and after ten more injections could walk 900 yards without inconvenience; at the end of this distance he feels pain in one leg only; he is still under treatment.

In conclusion, I wish to express my gratitude to Sir James Purves-Stewart for his interest and encouragement in this work, and for permission to carry out the treatment on his patient at the Westminster Hospital. I wish also to acknowledge my indebtedness to Dr. G. Konstam, assistant physician to the London Jewish Hospital, for permission to treat one of his patients.

*The work is still in its experimental stage in so far as the dose, concentration, and method of preparation of the muscle extract are concerned, and the preparation has not appeared on the market yet; it is hoped that it will be obtainable in a short time.

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TREATMENT OF TUBERCULOUS KNEES BY THE CAUTERY.

BY

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TUBERCULOUS knee-joints are not seen so frequently as they were thirty years ago; this is no doubt due to the advance of science and to better housing, sanitation, open spaces in crowded cities, better choice of food, and plenty of fresh air and sunlight. But still the disease does exist, and will do so for many years to come.

In the early days tuberculous joints were blistered, strapped with mercurial ointment, and partly rested, with very indifferent results. In these later days such joints are mostly kept at rest, extension being applied for long periods; many excellent results follow, but the treatment has to be continued for a very long period. It is to expedite the cure of these cases that I venture to advocate the cautery, which is occasionally mentioned in textbooks, though I have never seen its application described.

One of the greatest advocates of this mode of treatment was Professor Syme of Edinburgh. In his observations on clinical surgery, which were published in 1851, he mentioned the extraordinary and apparently almost magical effect which is produced in certain forms of articular disease by the actual cautery; this form of treatment had been introduced into Great Britain little more than thirty years previously for the purpose of counter-irritation, and is one of the most valuable curative means employed in the practice of surgery. Syme took every opportunity of emphasizing the advantage derived from its employment, but for many years his efforts produced little effect, and the proposal was often scouted as no less shocking to humanity than degrading to the profession. He describes a case of strumous knee, and adds that in such cases the actual cautery, if properly applied before suppuration has taken place, may be regarded as very nearly, if not absolutely, a certain remedy. We have, however, no description of his method of applying it, and he was operating before the days of aseptic or even antiseptic surgery.

I have been using the actual cautery for the cure of tuberculous knees for a period starting in 1890; my list comprises eight patients, both knee-joints being involved in two cases.

The typical case to choose is one in which the synovial membrane is chiefly involved, there being a pulpy thickened swelling, with perhaps some fluid, lateral luxation, limited movement forwards and backwards, and pain; there must be no grating or evidence of bone implication. In other words, the earlier the case is taken in hand the more certain is the chance of permanent cure with perfect movement.

The operation is simple. Three incisions are made with the cautery on either side of the knee from before backwards; one below the level of the knee-cap, one in a line with the middle of the knee-cap, and one above, on each side of the knee. The incisions must not meet in the middle line of the knee either before or behind. The cautery must completely divide the skin and must expose the fat; at this point the incisions gape laterally, and burning of the fat is evidenced by the smell. The application of sterile gauze wrung out in hot sodium carbonate solution (1 drachm to the pint) takes all the pain away, and, covered with wool, is an excellent dressing until all the scabs have peeled off, which takes about ten days.

The wounds are dressed daily until all the scabs have disappeared, when zinc and red precipitate ointment can be applied on alternate days. After ten days the knee is gently bent once a day. A back splint is useful during the first fortnight, after which the joint is allowed to move, resting on a pillow. The wounds heal in about six weeks. It is surprising how soon the swelling subsides and the joint becomes of normal size. The patient is able to walk without support in about twelve weeks; the slight support of a bandage may be utilized, but it is not really necessary. The result is the production of six silk-like scars and a very thin knee, with perfect movement.

I have a series of ten knees dating from 1887 to the present time; in eight a complete cure resulted, but in the other two I had to amputate. The two cases needing amputation were badly chosen for cautery treatment, as it was found that the ends of the bones were seriously affected, which is a contraindication. After amputation both patients did well.

Case 1.—My first patient was a girl, aged about 12 years, who had both knees affected. In 1887 I began to treat her with rest, back splints, strapping with compound mercury ointment, and blisters, with periods of resting from treatment, except for a back splint. In 1890 Mr. Jacobson of Guy's Hospital advised the use of the cautery before proceeding to excision; it was accordingly applied to both knees under chloroform in April, June, and August of that year, and as the symptoms had not sufficiently abated it was employed for the last time in June, 1891. The reason for the repetition of the applications was that the cautery incisions were not taken through the skin, as was done the last time. Then came a long period of healing and absolute rest, with the result that by the end of that year she was walking again, and her improvement continued steadily. Thirteen years afterwards Mr. Jacobson reported as follows:

"I have to-day, May 12th, 1903, seen the patient. The cure after this long interval is sound and complete. There is not a trace of thickening or abnormality about the synovial membranes, the movements of the joints are smooth and complete, and the cautery scars are quite sound, thin, and supple."

Case 2.—This patient was a boy, aged 11 years, who, after being treated in several hospitals, came under my care in 1902; his knee was swollen and pulpy, giving the false impression of fluid in the joint. I applied the cautery, the operation being attended with a great deal of shock, an injection of strychnine being necessary, and for a few minutes a pause in operating; the case was subsequently uneventful; the wounds healed, and the patient left the hospital in a Bavarian splint. He has since passed into the marines, in which he served for several years, and is in perfect health at the present time.

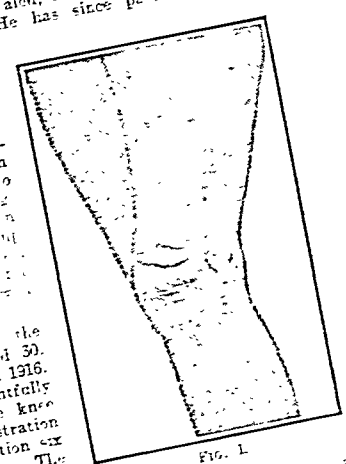


FIG. 1.

Case 3.—A girl, aged 16, who had chronic swelling of one knee with pain and limitation of movement, came under my care in 1906. She was treated for two years with rest and strapping etc. The cautery was then applied, and the patient was up and about exactly six weeks later. She has since played tennis for her county, and is perfectly well to-day.

Case 4.—In this case the patient was a woman aged 30. The cautery was applied in 1916. The wounds healed uneventfully in eight weeks, and the knee became perfect. The illustration (Fig. 1) shows the condition six months after the operation. The rein enlargement is due to pregnancy.

Case 5.—This patient, a woman aged about 22, was seen in 1916. Splints and strapping were tried for some months, then the cautery was applied, and the wounds healed uneventfully with excellent results.

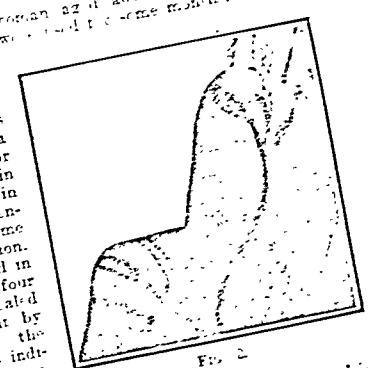


FIG. 2.

Case 6.—The patient was a woman, aged 24, with a history of swollen knees for two years. When seen in July, 1929, she had fluid in both knees, much thickening, lateral luxation, some pain, and limited flexion. One knee was cauterized in July, the other about four weeks later; both healed with perfect movement by November 14th. In the illustration (Fig. 2, is indicated the range of movement, as well as the position of the scars.

These cases, with the two previously quoted which required amputation, make eight patients with ten knees treated. With the later experience of avoiding those cases in which the bone is affected, I think the history of these patients is worth considering, since it indicates a quicker way of curing these very slow and troublesome cases.

THE USE OF STRIPS OF HERNIAL SAC AS FASCIAL (LIVING) SUTURES.

BY

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SOME years ago (1925), while operating for old-standing oblique inguinal hernia in a man of 57 with weak and lax inguinal musculature, it was my intention to reconstruct the canal by using strips of fascia lata after the method introduced by Gallie and Le Mesurier.[1] Having dissected out and removed the sac, which was unusually long and thick, I was struck by the possibility of using strips cut from the sac itself, in the same manner as strips of fascia lata or of aponeurosis of the external oblique muscle.

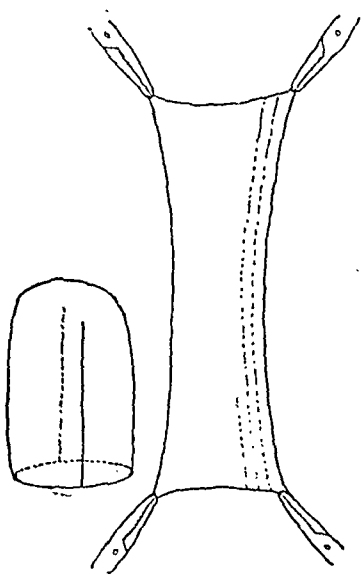


FIG. 1.

In this first case the method adopted was to slit the sac up on either side to within about one inch of the *fundus*, so that the sac when opened out became a rough rectangular sheet measuring about eleven inches by two and a half inches (Fig. 1). From this sheet strips a quarter of an inch wide were cut, and the operation was completed by two rows of sutures, following Gallie's technique.

This case proved completely successful, and I have now used the procedure in a large number, with some modifications in the method of cutting the strips, as illustrated in Figs. 2 and 3. Where a strip the length of the opened-out sac—that is, almost twice the length of the intact sac—would be considered too short, strips may be cut as in

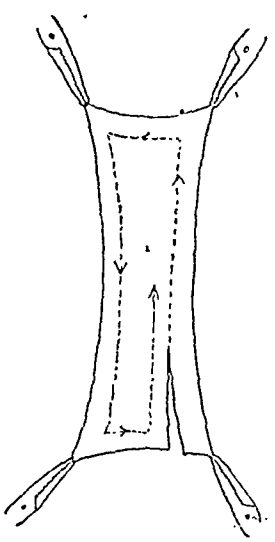


FIG. 2.

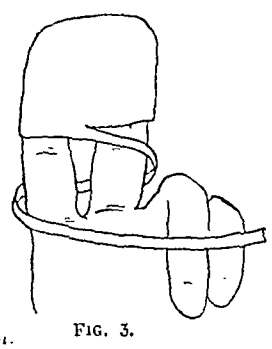


FIG. 3.

Fig. 2, where the whole s[illegible] so far s[illegible] to one or more long ribbons as required. [illegible] sac cut in spiral fashion. In this m[illegible] e of the cases unde[illegible]ied by the assistant's fingers, or may[illegible] retcher or two pairs of long artery [illegible] long strips, suitable for continuous [illegible], but smoking twenty cigarettes a day. moderate size if desired, [illegible]mpy pains in both legs on walking were first noticed in April, 1929. large sac type of hernia th[illegible]ty yards the onset of the pain necessary. The width of the strips ca[illegible] the thickness of the sac; in a la[illegible] may be as much as half an inch sufficiently strong suture.

This procedure may be employed (1) as an alternative to the use of fascia lata or of the aponeurosis of the external oblique, or (2) in conjunction with the latter; in a recent case the sac was so small that, when cut in spiral fashion, only one rather weak strip about twelve inches long resulted, and two supplementary strips of external oblique aponeurosis were used.

So far, I have carried out this method only in cases of oblique inguinal hernia. There are obvious limitations to its use, and rarely would a sac of ample size be present in direct and femoral hernias.

REFERENCE.

[1] *Brit. Journ. of Surg.*, 1924-25, xii, 283

UNDULANT FEVER DUE TO BRUCELLA ABORTUS:

ISOLATION OF THE ORGANISM FROM THE URINE.

BY

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AND

MAJOR J. B. A. WIGMORE, M.B., M.R.C.S., L.R.C.P., D.T.M. AND H., R.A.M.C.

UP to the present seventeen cases of human infection with *Brucella abortus* have been reported in England. In only one of these[1] was the causal organism recovered, in this instance from the blood. The remaining sixteen were diagnosed by agglutination reactions only. It seems appropriate, therefore, to record another case of *Br. abortus* infection, the first in this country in which the organism has been isolated from the urine.

The patient is a lady, aged 53, resident in Manchester. Except for a brief visit to Switzerland ten years ago, she has not left the British Isles during the past twenty years. In April, 1929, she spent ten days holidaying in Ludlow, returning to Manchester on April 22nd. During the second week of May she complained of pain in one ankle, and was feverish and shivery at night, but in the mornings felt better. On the morning of May 13th she was definitely unwell, and her temperature was found to be over 102° F. The febrile attack lasted until May 29th, when the temperature, previously gradually declining, remained normal for twenty-four hours, but on the next day it commenced to rise again. Relapses, of the duration shown, followed the original attack: May 31st to July 16th; July 20th to August 2nd; August 4th to August 7th; September 14th to September 18th; November 2nd to November 27th; December 9th to December 31st. The relapses are counted from the first recorded rise of temperature to the last day that the evening temperature was above normal.

At the beginning of the first relapse the physician in charge, Dr. Florence Robinson, sent specimens of blood, urine, and faeces for examination. Agglutination tests for the typhoid group were negative, and on Professor Shaw Dunn's suggestion the serum was put up against *Br. abortus*, with a positive result. Two blood cultures (June 4th and 10th) were negative. Professor Murray saw the patient in consultation on June 10th, and the case was regarded as probably one of infection by *Br. abortus*, although the causal organism was not isolated.

During the afebrile interval following the fourth relapse the patient came to London, and on November 2nd another relapse commenced. One of us saw her in consultation on November 8th. The general condition was strongly suggestive of undulant fever. She was restless, sleepless, and despondent almost to tearfulness. The temperature fluctuated usually between 101° and 103°, and once reached 104°. Nevertheless there was little prostration, and the efforts of the nurse in charge were necessary to prevent the patient from rising at night and wandering about the house. The pulse rate was from 80 to 90. Tenderness was marked over the splenic area, but there was a difference of opinion as to whether or not the spleen was palpable. The tongue, which had been covered with a silvery fur at the beginning of the relapse, was then clean except for some persisting patches. One ankle was painful and tender. The bowels were loose, and dark offensive motions, free from any trace of mucus or blood, were passed, sometimes as many as six in the day. Obstinate constipation had been a feature of the five previous attacks. On November 10th a red papular rash appeared rather thickly over the body and limbs; rashes of various types are, of course, not uncommon in "Malta" fever. At this stage the tongue had become quite clean, and the appetite was good.

Catheter specimens of urine were taken for culture on November 11th and 12th. The first was sterile. Of the second sample 10 c.cm. were added to each of twelve tubes containing 10 c.cm. of glucose

CASE I.

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broth, and incubated for forty-eight hours at 37° C. Two of the tubes showed cloudiness. Subculture of these on agar plates gave a growth of circular, convex, translucent colonies which microscopically showed small Gram-negative organisms distinctly more bacilliform than *Br. melitensis*. They did not ferment any sugar, and gave an alkaline reaction in litmus milk.

This organism was agglutinated by serums prepared from three undoubted strains of *Br. abortus*, with end-points as follows:

1. Swine strain of *Br. abortus* . ... up to 1 in 2,500
2. "*Abortus* No. 5" ... . up to 1 in 1,250
3. "Bang" (Oxford strain) ... .. up to 1 in 500

It is important to note that these serums were prepared by injecting rabbits with living cultures. The standard agglutinating serum of Oxford (prepared from dead cultures) did not cause any agglutination. The organism was not agglutinated by serums prepared from two undoubted strains of *Br. melitensis*, but it is significant that a serum prepared from a strain of *Br. paramelitensis* gave an agglutination up to 1 in 500.

A serum was prepared by injecting a rabbit intravenously with increasing doses of living cultures of the organism under examination. This serum agglutinated thirteen different strains of *Brucella*, the highest end-point (1 in 1,250) being given by the swine strain of *Br. abortus*.

The patient's blood serum agglutinated twenty-two different strains of the *Brucella* group, giving titres up to 1 in 250 with *Br. melitensis* and *Br. paramelitensis* strains, and up to 1 in 2,500 with the swine strain of *Br. abortus*. Using the standard agglutinable cultures of Oxford, and of the Royal Army Medical College, the *Br. abortus* cultures agglutinated up to titre, but the *Br. melitensis* cultures did not agglutinate up to more than half the full titre.

An autogenous vaccine was prepared and its administration commenced after the last relapse. Up to the time of writing (March 28th, 1930) the patient has remained free from any further symptoms of the disease.

The strain of *Br. abortus* isolated from this patient grew readily from the urine in ordinary media, and in the absence of an atmosphere of CO_2. This, together with the result of the agglutination tests given above, suggests that it belongs to the swine variety.

REFERENCE.

1 Nightingale and Wilson (1929) *Lancet*, ccxvii, 113.

A CASE OF BRUCELLA ABORTUS INFECTION.

BY

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AND

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UNDULANT fever due to the organism which sets up epizootic abortion in cattle, goats, sheep, and swine has been described as "a disease of the future," and also as a possible addition to the lengthening list of occupational diseases, for it has its highest incidence among those who have direct contact with cattle, live or dead. In 1924 and 1925 ten cases only were recorded in the United States, but in 1928 and the early months of 1929, when physicians had become more widely aware of the disease, over a thousand cases were brought to light during the first year when the disease was systematically sought.

The case about to be described is the second reported to have occurred in Wales and the fifteenth or sixteenth recorded in Great Britain. Possibly, however, the number of cases recorded is not a true measure of the incidence of human infection. It has been suggested also that there is a real extension of the disease in most countries, coincident with more frequent and widespread epizootic of abortion among cattle; in this connexion may be cited cases recently reported from New Zealand by Gilmour and Ludbrook and by L. J. F. Bull.

Wilson and Nutt investigating the mixed milks from herds in Cheshire, Lancashire, Derbyshire, Staffordshire, and Northumberland established the presence of *Br. abortus* in 8.8 per cent. of the samples. Although the mortality is very low (about 2 per cent.) and permanent impairment of health apparently rare, incapacity is often of long duration, many cases being ill for one or even two years. The record of the following case may therefore prove of interest, especially as it exemplifies many salient signs and symptoms of the disease.

On January 6th last one of us was called to see a farmer, aged 53, who had lived all his life in the same locality in Pembrokeshire. He definitely became ill on January 2nd with headache, backache, and nausea, but for a week prior to that he had felt vaguely unwell, getting very fatigued and having to lie down in the afternoons. When first seen he had a temperature of 103°, with a pulse of 95. He had a violent cough, and complained of much headache, restlessness, and insomnia. The heart sounds were rather poorly defined, and the breath sounds were defective at the right base. He was bringing up a type of copious white sputum, which led to the suspicion of some degree of pulmonary oedema. At this time the case was thought to be influenza.

During the days immediately following the temperature remained at 102°, with a relatively slow but feeble and intermittent pulse. The blood pressure (85 125) seemed much below what one would expect in a plethoric man of his age. There was a trace of albumin in the urine. The patient complained of very heavy drenching morning sweats and severe pains in the calves of the legs. There were no definite rigors, and no mention was made of any peculiar odour of the perspiration.

On January 12th the spleen, which was rather soft, could just be palpated below the costal arch. This observation, along with the history of insidious onset, the comparative (though not complete) absence of upper respiratory catarrh, and the fact that no one else in the house had developed influenza, led to a suspicion of paratyphoid, and a blood specimen was sent to the Beck Laboratory. Serum from this, of the tenth definite day of illness, was tested for agglutinative power by the Dreyer technique against *B. typhosus* and paratyphoid A and B, with negative results even in low dilutions.

In view of the companion of the patient and the knowledge that *Br. abortus* infection in man may be acquired from cattle, a further agglutination test with *Br. abortus* (Oxford emulsion) was made, and strong agglutination found up to a dilution of 1 in 2,500. This is well beyond the limit of any non-significant response, and indicated past or present infection by this organism. As cases of "undulant fever" are found to give positive agglutination also with *Br. melitensis*, the organism of Mediterranean fever, the serum was also tested with an emulsion of the latter obtained from Messrs. Burroughs Wellcome and Co.; this test proved positive to a dilution of 1 in 2,500 also.

It is still a moot point whether the two organisms, *Br. abortus* and *Br. melitensis*, are to be regarded as identical or whether they represent two closely allied species. Their clinical effects on the human subject appear to be similar, and both organisms have been shown to produce abortion in the cow. It may be significant that *abortus* cases have been studied chiefly from cow-borne infections, whether direct or through cow's milk, whereas our knowledge of *melitensis* cases comes chiefly from infections arising through goat's milk. It may well be that passage of the organism through the cow and the goat respectively may produce slight serological differences in organisms originally identical.

In the case under consideration there have been no opportunities of isolating the organism, and therefore no agglutinin absorption experiments have been possible. The very definite serological reactions, however, coupled with the very complete clinical picture and the history of the environment and circumstances of the patient, would seem to have established beyond reasonable doubt that this illness was due to infection by *Br. abortus*.

Further inquiries made in the patient's locality brought out evidence that: (*a*) epidemic abortion was especially rife among cattle in the village where the patient lived, (*b*) a cow of the patient's was had "lost their calves" during the preceding six months; (*c*) he last had a cow abort about three weeks before he definitely became ill, into that cow he had inserted pessaries manually in to help to clear her up."

The further clinical course may be summarized thus:

On January 14th the temperature in the evening was down to 100°, with pulse of 84. The cardiac condition had improved and the spleen could only just be felt. Signs were still complicated of there were still had rales at both bases, and pneumonic of the breath sounds were impaired at the right base. On January 15th the chest signs were more pronounced, the temperature was 101°, and the pulse 84. It is was very rare in the [illegible]. On the

night of the 16th he was reported to have been very restless, dyspnoeic, and feverish all night. On January 17th he suddenly coughed up several "gushes of slimy liquid yellow stuff like beaten-up eggs," and it was suspected that a pulmonary abscess or empyema might have formed and ruptured into a bronchus. The patient stated that the dyspnoea eased markedly after this event. When seen at 8 p.m. the temperature was 102°, pulse 84, respirations 30. There was no marked change in the chest signs, and there was still complaint of heavy sweats and pains in the calves.

On January 22nd the temperature was down to 99°. The appetite was good, and the general aspect remarkably good considering the severity of the illness. On the 25th the temperature was 98°, pulse 60, respirations 20; there were still rales at the bases, but no splenic enlargement and no sweats or pains in the legs. Since then there has been no recrudescence of the fever.

This case would appear to have exemplified several outstanding characteristics of the disease as observed in the extensive American outbreaks. The "afternoon fatigability," headaches, and especially backaches, during the stage of onset; the enlarged spleen, the peculiar heavy sweats, the severe pains in the calves of the legs, the relative bradycardia, myocardial involvement, and low blood pressure—all these features figure very prominently in Bierring's detailed description of 150 cases of the disease studied by him in Iowa between 1926 and 1929. In the American descriptions there is no special mention of pulmonary complications, but oedema of the lung is described by Carmichael Low and by Wheeler and Jack as being a frequent event in the closely allied Malta fever.

It is characteristic that only one member of the household was affected. "The disease, though epizootic among cattle, is remarkably discrete among human beings," so that "the typical case is generally the only one in a district, and multiple cases in one house have only once been encountered." (Charles and Warren.)

The mode of transmission is also of interest. Most of the cases previously recorded in Great Britain would appear to have been due to the drinking of infected milk, but here infection would seem to have been due to manual contact with the vagina of the infected cow. The subsequent route of the infection may have been through the unbroken skin of the hand rather than by ingestion of food soiled by the imperfectly cleansed hand; Hardy experimentally infected guinea-pigs more readily through the shaved unabraded skin than through the alimentary tract.

The question of prophylaxis is naturally an important and a thorny one if the disease should really prove to be more common than has been thought hitherto. Most recent writers seem to regard direct contact infection as being much more important than milk-borne infection, and they look to the veterinarian for the first steps towards the eradication of the disease among cattle. In France the disease among cattle is already notifiable. Hardy sums up the prophylactic aspect of the problem thus:

"A conservative attitude is justified since it appears obvious that the disease is not a new one, but one newly recognized. Deaths are very few, serious sequelae are infrequent, and acute suffering is unusual, but there is now occurring an undetermined and probably severe economic loss. In preventing this, the live-stock and dairy industries will apparently be concerned, and a prematurely attempted eradication of contagious abortion would prove both ineffective and disastrous. . . . Much economic waste, and even impairment of human health through decreased consumption of milk, may be avoided by acting wisely and quietly."

We wish to thank Mr. Watson, veterinary surgeon at Haverfordwest, for information regarding the prevalence of epizootic abortion among cattle in the locality concerned.

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NOTE ON A FURTHER CASE OF UNDULANT (BR. ABORTUS) FEVER OCCURRING IN SCOTLAND.

BY

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CONSIDERABLE attention has recently been directed towards the possibility of infection of the human subject by *Br. abortus*. The organism is known to be responsible for widespread disease among cattle, while its presence in milk as sold to the public has been repeatedly demonstrated. It may also be noted that the present precautions and requirements in the production of "graded" milks provide no efficient safeguards against the dissemination of this organism, even in milk of the highest class. The question of spread of the disease from animals to man is thus one of considerable importance in relation to public health.

In view of this it may be of interest to record the history and bacteriological findings of a case which recently occurred in the private practice of one of us (W. H. W.). The diagnosis rests on the evidence provided by the serological reactions of the patient's serum, but, as in the case in Glasgow described by Cruickshank and Cruickshank,[1] the presumption is very strong that *Br. abortus* was the causative organism.

History and Clinical Course.

A technical chemist, aged 34, residing in Edinburgh, was seen on January 7th, 1930, when he reported to be medically examined for life assurance. He was found to have a temperature of 102° F., though he felt well. He stated that on January 1st he had had a shivering attack at 1 p.m., but had been able to carry on his work up to the time of examination. After January 7th he was seen daily. Each day about 1 p.m. he had a shivering attack, which passed off after sweating in the evening. The fever was distinctly undulant in character, the diurnal rise increasing and diminishing in a regular way. The temperature chart showed a marked periodicity, waves of five to seven days' duration being noted. The evening temperature, taken in the axilla, varied from 98.4° to 102° F. Sweating was not excessive. For a few days at the commencement of the condition cough was present, occurring only in the afternoon and evening when the temperature rose. The patient thereafter had no particular complaint. He never looked ill, and was always bright and cheerful. At this time Dr. Guy, city tuberculosis officer, seen in consultation, considered that the condition was not tuberculous.

Treatment was symptomatic, the diet being fluid while the fever continued. Cold sponging gave much comfort. Quinine sulphate and quinine hydrochloride were given in doses of 10 grains three times a day. The quinine appeared to have no influence on the height of the temperature, but following its use the onset of the daily rise was delayed from 1 p.m. till 6 p.m. The fever continued till February 16th; since that date it has not recurred, and the patient is again at work after a satisfactory convalescence.

Bacteriological Findings.

The patient's serum, submitted for examination approximately four weeks after the supposed onset of the condition, did not agglutinate *B. typhosus*, *B. paratyphosus* A, or *B. paratyphosus* B. In view of the history, further reactions were carried out with available strains of *Br. abortus* and *Br. melitensis*. The serum agglutinated strains of both organisms in high titre. The emulsions used in these reactions were suspensions in 0.85 per cent. saline of living organisms from forty-eight-hour agar slope cultures.

The results were as follows, final readings being made after eighteen hours in each case.

Strain.	End Titre.
Br. abortus (Bang)	1 in 3,200
Br. abortus (Hog)	1 in 1,600
Br. abortus (Barker)	1 in 3,200
Br. abortus (T)	1 in 6,400
Br. melitensis (stock strain)	1 in 3,200
Br. melitensis (Group II)	1 in 1,600
Br. melitensis (Arkwright)	1 in 800

Agglutinin Absorption.

Absorption of the serum by *Br. abortus* (Bang) removed agglutinins for all strains of *Br. abortus* and *Br. melitensis*. Absorption by the three *Br. melitensis* strains removed only agglutinins for these strains, the same high agglutination titres for *Br. abortus*

being noted after absorption as before. The results of the direct agglutination tests and the agglutinin absorption reactions clearly indicated a *Br. abortus* infection.

Blood Culture.—15 c.cm. of the patient's blood withdrawn on February 5th at the commencement of an evening rise of temperature gave completely negative results.

Urine.—A centrifuged deposit of urine (February 5th) which gave negative results on culture was inoculated subcutaneously into a guinea-pig. The animal was killed after twenty-one days. The post-mortem appearances showed nothing abnormal, and no organisms could be cultivated from the lymph glands at the site of inoculation, the liver, spleen, or heart blood. The guinea-pig's serum agglutinated *Br. abortus* (Hog) in a dilution of 1 in 80, and the *Br. melitensis* strains in dilutions of 1 in 20 to 1 in 40. These findings are inconclusive, normal serum effects being probably sufficient to account for them.

Prior to the onset of the attack the patient had not been in the habit of drinking an unusual quantity of milk. During December, 1929, he visited a farm three times, but did not partake of any milk there. On December 12th he visited Lancashire and had porridge with milk and a glass of milk at Preston, while later in the day he drank milk in Manchester. He returned to Edinburgh the following day. It is of interest that Wilson and Nutt (1926)[2] reported that 8.8 per cent. of mixed milk samples obtained in Manchester contained *Br. abortus*. The source of infection in this case, however, remains obscure.

Points of interest in the case are:

1. The patient had no close association with cattle, and was not in the habit of drinking unusual amounts of raw milk.

2. The apparent physical well-being of the patient even in presence of severe pyrexial attacks.

3. The clean-cut results of agglutinin absorption reactions, pointing definitely to an infection with *Br. abortus*.

4. Spontaneous disappearance of symptoms after the relatively short period of six weeks from the onset of the illness.

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A CASE OF ABORTUS FEVER IN NORTHERN IRELAND.

BY

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THE literature on the subject contains records of seventeen cases of *Br. abortus* infections in man in the British Isles. Sixteen of these have been reported from England and Wales and one from Scotland. The case I wish to record is the second known to have occurred in Northern Ireland, a previous one having been reported to the Ulster Medical Society in February, 1930. An inquiry conducted by the Ministry of Agriculture of Northern Ireland in 1928 revealed the fact that contagious abortion in cattle is widespread in the country and is a very important disease. This being so, it seems remarkable that more cases of *Br. abortus* infection in man have not been recognized in Northern Ireland, which is so largely agricultural.

A farm labourer from County Down, aged 42, was admitted to the Royal Victoria Hospital, Belfast, on January 19th, 1930, as a possible surgical emergency. He gave a history of indefinite malaise about three weeks previously. This had lasted about a week, after which he had fairly severe abdominal pain, with headache, fever, and some diarrhoea. On examination he had considerable flushing of the face with a definite bluish tinge about the lips; the tongue was dry and coated, the breath foul. There was general abdominal tenderness, most marked in the lower half of the abdomen, and an enlarged and tender spleen. The lungs showed some patches of dullness with prolonged expiration about the level of the eighth rib posteriorly. The optic discs were rather hazy in outline. The heart, central nervous system, and urine showed nothing of note. There was a moderate degree of pyrexia (100° F.). The case seemed to be one of enteric infection, but the Widal reaction was negative for *B. typhosus* and *B. paratyphosus* A and B. A radiogram of the chest revealed nothing abnormal.

The patient was transferred to a medical ward for further investigation. The temperature chart showed pyrexia up to about 102° F. in the evening, with a fall of three to four degrees in the morning. A further Widal reaction on January 24th was again negative for *B. typhosus* and *B. paratyphosus* A and B. The lung signs had by this time cleared up, but the spleen remained enlarged and tender. The patient's serum was then put up against *B. typhosus* (O), *B. paratyphosus* C, and *Br. abortus*. Agglutination occurred with *Br. abortus* to a dilution of 1 in 250.

After the initial severe symptoms the patient felt quite well except for moderate sweating in the evening when the temperature rose. Physical examination revealed nothing abnormal except the enlarged spleen, which diminished in size as the illness progressed. A blood count in the fourth week of illness showed: red cells 5,200,000 per c.mm., haemoglobin 99 per cent., white cells 7,300. There was a slight relative lymphocytosis.

In the account of the disease given by Dalrymple-Champneys[1] enlargement of the spleen is stated to be fairly constant, but in the cases reported by Wordley,[2] Bloxsome and Davey,[3] and Norman and Robert Cruickshank[4] no enlargement of the spleen was found. The case reported here showed marked enlargement of the spleen, which gradually diminished as the fever subsided. In Nightingale and Wilson's[5] case no mention is made of the spleen, but probably there was no enlargement noted.

Agglutination of Patient's Serum.

January 26th: 1 in 25 (++); 1 in 50 (++); 1 in 125 (±); 1 in 250 (trace).

February 2nd: 1 in 25 (++); 1 in 50 (−); 1 in 125 (±); 1 in 250 (++); 1 in 500 (++); 1 in 1,250 (−).

February 13th: 1 in 25 (−); 1 in 50 (++); 1 in 125 (++); 1 in 250 (++); 1 in 500 (++); 1 in 1,250 (trace).

It will be noted that the two latter tests show a proagglutinoid zone.

Various attempts were made to isolate the organism. A blood culture incubated at a lowered oxygen tension for eight days was sterile. Samples of bile were obtained by a duodenal tube and plated out on Conradi, blood agar, glycerol agar, and in glycerol shake agar tubes. No growth of *Br. abortus* was obtained from any of these. A catheter specimen of urine inoculated on the same media was sterile.

That this is a case of *abortus* fever seems proved by these facts. There was a febrile illness somewhat resembling an enteric infection, but with no agglutination of the paratyphoid-typhoid organisms by the patient's serum. The patient's serum agglutinated *Br. abortus* in fairly high dilution, and also the patient's occupation brought him into association with cattle.

I am indebted to Dr. S. B. Boyd Campbell, physician, Royal Victoria Hospital, for his kind permission to publish these notes, and to Dr. J. S. Campbell for his advice in carrying out the bacteriological investigations.

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A CASE OF UNDULANT FEVER.

BY

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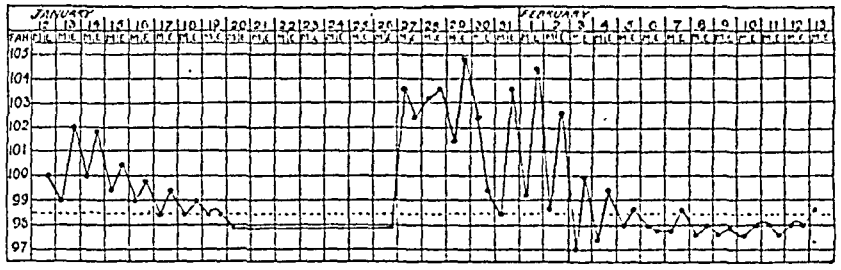
CHESTER.

THE following account of a case of undulant fever appears worthy of record in view of the diagnostic difficulty and its clinical interest.

A cotton merchant, aged 39, was seen by me on January 12th of this year. He had pyrexia, slight soreness of the throat, constipation, and a white-coated moist tongue, but no other symptoms. During the following seven days his temperature, after reaching a maximum of 102°, fell gradually to normal. As his wife had recently been under treatment for bronchial catarrh succeeding a febrile cold, and as a throat swab yielded a growth of streptococci, the case was diagnosed as a febrile cold associated with a streptococcal throat.

After a few days' apyrexia the patient went to Llandudno for a change, but returned in a hurry with a temperature which

rapidly rose to a maximum of 104.6° on January 29th. The throat had cleared and there was now an entire absence of symptoms except constipation. The striking feature of the case at this time was the general well-being and the alertness of mind despite the temperature—a state of affairs contrasting strongly with the ordinary typhoid picture. The pulse was disproportionately slow in comparison with the temperature. The blood gave a positive Widal reaction for *B. typhosus* up to a dilution of 1 in 150, but was negative for *B. paratyphosus* A and B; in view of the clinical picture I was, however, reluctant to accept a diagnosis of typhoid fever.



At this point I became aware of two facts of which previously I had been ignorant—namely, that the patient kept a herd of Jersey cows, more or less as a hobby, and that he had had cases of *abortus* fever in the herd. One heifer had recently aborted after 7½ months' gestation, and the milk from this animal had been used in the house. On February 4th Dr. Cohen of Liverpool was called in consultation; he agreed that the case was one of undulant fever, and that the possibility of typhoid fever might be ignored, the Widal reaction being modified probably by repeated war-time T.A.B. inoculation.

A further blood test was now performed by Dr. Grace of the Chester Royal Infirmary, with the following results. On three occasions the serum gave an agglutination to *B. typhosus* up to a dilution of 1 in 300; *Br. abortus* was agglutinated twice up to a dilution of 1 in 200; and *M. melitensis* up to a dilution of 1 in 200, using the standardized agglutinable emulsions supplied by the Medical Research Council. A blood count showed: red cells 4,500,000 and white cells 3,750 per c.mm.

The second period of pyrexia lasted for nine days, and up to date (February 13th) there has been an apyrexial period of eight days. The urine and faeces were not examined bacteriologically, nor was a blood culture made. The spleen was not enlarged, and there was no sign of spots or any kind of rash.

The most striking features of the case were the disproportionate slowness of the pulse, the mental alertness, and the state of general well-being despite the high temperature.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

SURGICAL EMPHYSEMA FOLLOWING DENTAL TREATMENT.

THE occurrence of surgical emphysema of the face and neck as a sequel of dental treatment would seem to be an incident worthy of being placed on record.

On the evening of February 13th I was called to see a young married woman, aged 24, who was complaining of pain and swelling on the left side of her face and neck as far down as the clavicle. On examination I found that the left side of the face from the orbit downwards, and the left side of the neck as far down as the clavicle in front, and the scapula behind were slightly swollen, and on palpation were definitely crepitant, indicating the presence of air under the skin. I learned that a few days before she had had a small apical abscess of the left lateral upper incisor tooth drained through the nerve cavity by her dentist. She had the nerve cavity treated with antiseptics on several occasions, and in the afternoon of the day on which I saw her she had the cavity cleaned and filled. While the dentist was drying out the cavity with hot air she felt a sudden pain just below the left eye, and said her face felt as though it had been blown up by a bicycle pump. Presumably, when the dentist blew the air into the cavity, he must have occluded the opening of the cavity with the end of the instrument, and in this way forced the air up the nerve channel; from this it escaped through the infra-orbital foramen under the skin, and from there spread down the cheek and into the neck. The air took about four days to absorb.

Winchester. C. B. S. FULLER, *M.C.*, M.D., M.R.C.P.

UTERINE FISTULA.
WITH NOTES ON THE TREATMENT OF FISTULAE AND SINUSES.

I DO not know whether the following method for marking out the track of a sinus or fistula has been previously described. It is specially useful for anal fistulae and other similar conditions in which it is extremely difficult to follow all the windings of the track.

The sinus or fistula is first well syringed with sodium bicarbonate solution, 1 drachm to the pint, in order to remove all pus. Aqueous methylene blue solution is then forced in by a syringe, gauze being held tightly round the nozzle in order, as far as possible, to prevent the solution coming back past the nozzle. If the methylene blue solution is forced in properly, all the walls of the sinus or fistula will be coloured dark blue, and it is the easiest thing in the world to follow the track. If, then, everything blue is removed one may be certain that one has cleared out the whole track.

An interesting case I had recently illustrates a further use of this method.

A young woman on whom I had twice performed Caesarean section had some sepsis of the abdominal wall after the second operation. A small abscess formed, which was opened, and the patient left the hospital soundly healed. Seven months later she came back with a small sinus in the middle of the scar, from which she complained that there had been a profuse discharge of blood for three days recently. The bleeding had then stopped. Thinking that it was a stitch abscess I anaesthetized her, and after forcing in methylene blue proceeded to open up the sinus. A piece of silk, firmly attached, was found in the sinus. Knowing that the only silk used at the last Caesarean section was that employed in suturing the uterus, I proceeded to make a vaginal examination to determine the position of the uterus. I then found that methylene blue was coming out of the vagina. The uterus was found to be adherent to the anterior abdominal wall opposite to the opening of the sinus. It had doubtless been anchored there by the sepsis following the last Caesarean section.

The case was then clear—the sinus was a uterine fistula. Subsequent inquiries revealed the fact that she was menstruating at the time of the discharge of blood from the sinus; so this was obviously menstrual blood. I removed the uterus, and the patient left the hospital with a sound abdominal wall.

W. F. BRAYNE, M.B., Ch.B.,
Mandalay, Burma. Lieut.-Colonel I.M.S.

Reports of Societies.

ETHYLENE ANAESTHESIA.

AT a meeting of the Section of Anaesthetics of the Royal Society of Medicine on May 2nd, with Dr. R. E. APPERLY in the chair, the subject of ethylene anaesthesia was discussed.

Dr. R. J. CLAUSEN said that, although previous investigations had been recorded, the use of ethylene anaesthesia dated from 1923, when Luckhardt of Chicago reported cases. References were more frequent in the literature of the United States and Canada than in that of this country, but the subject was dealt with in a paper by Fairlie of Glasgow at the Annual Meeting of the British Medical Association last year (*Journal*, November 16th, p. 891). The gas, the chemical formula for which was C_2H_4, was colourless, with a characteristic smell, part of which might be due to impurities. It was highly inflammable, and, when mixed in suitable proportions with air, oxygen, or nitrous oxide, was explosive. The speaker's own experience included 371 administrations, 92 of which were for dental extraction, and most of the others in gynaecological cases. With few exceptions McKesson's gas apparatus was used. The longest duration of anaesthesia was two hours twenty-five minutes; in four other cases it was over two hours. The preparation and premedication of the patient followed

the ordinary hospital routine, but the use of preliminary hypnotics was desirable. The technique of administration was the same as that for nitrous oxide, and the same machine might be used. The time of induction was short, probably shorter than with nitrous oxide. The quick and sudden onset of the anaesthesia, with relaxation, had often been commented on by surgeons. The type of anaesthesia resembled that of nitrous oxide, but was deeper and smoother, and the pulse and respiration were as a rule slower. The colour was better, since the oxygen percentage employed was considerably higher, but should an oxygen 'shortage occur, cyanosis might not be so obvious as with nitrous oxide. The maintenance rate for oxygen naturally varied fairly widely in different cases, and to some extent at different stages of the administration. The usual range was from 10 to 15 per cent. as shown on the dial, which on his machine apparently represented from 15 to 30 per cent. of oxygen, the usual amount used being in the neighbourhood of 20 per cent. The consumption of gas averaged about 60 gallons an hour, entailing an oxygen consumption of about 2 ft. per hour, which would bring the cost per hour for hospital use to about 3s. 3d. A 150 gallon cylinder had sufficed for 200 minutes' anaesthesia. Ether had been used, but in small amount, in nearly all abdominal operations in order to give adequate relaxation. Probably with care, and by giving a heavier premedication and longer time for induction, this might be more often dispensed with; but small amounts of ether were as a rule notably more effective with ethylene than with nitrous oxide. In an abdominal operation 3 ounces of ether would be considered a large quantity, and he had exceeded this on only twelve occasions. In 26 abdominal cases, which had lasted for one hour or over, without spinal or local anaesthesia, the amount used had averaged just over 2½ ounces, the duration of anaesthesia averaging 82 minutes. For many minor gynaecological procedures, and for operations for conditions such as hernia, ether should not be required, while for abdominal operations in debilitated persons or those with shock, the amount needed was very small. While he would not claim that some cases under ethylene might not have done better under other anaesthetics, in no case had it been necessary to abandon ethylene for another method. Recovery was quick, almost as quick in the first place as with nitrous oxide, though much longer time was taken for complete elimination of the gas after consciousness had returned. The anaesthesia was followed by quite a prolonged period of analgesia. Convalescence was as good as with nitrous oxide. Although there had been a certain number of deaths in this series, none of them could be attributed to the anaesthetic. One baby which had been delivered by Caesarean section died six hours after delivery, apparently from non-expansion of the lungs, although it had cried quite loudly when born. The drawbacks to the method were the smell, the haemorrhage, and the risk of fire. He dealt with the smell by means of an exhaust pipe leading the expired gases away from the patient, and preferably outside the theatre. Previously to the use of this contrivance the surgeons and theatre staff had protested that they were gassed. The smell of the gas could also be avoided by using a closed circuit with carbon dioxide absorption. Liability to bleeding was somewhat increased with ethylene anaesthesia, even in the absence of any congestion or cyanosis. Many patients, however, bled freely when under ether or even chloroform, so that he did not think ethylene should be condemned on that ground. Finally, there was the danger of fire or explosion, which certainly forbade the use of ethylene in the neighbourhood of naked lights, the cautery, and the diathermy apparatus. Most of the fires and explosions in the United States had been due to such causes, or to static electricity, a phenomenon not met with to anything like the same extent in this country. The only special precaution he had taken was to put a little water into the breathing bag to lessen the remote possibility of static sparks. With reasonable skill and care there should be no chance of ignition from outside.

Mr. C. L. HEWER reported that he had given about 130 administrations. The advantages over nitrous oxide were the better relaxation and the fact that a higher percentage of oxygen could be given. Against this advantage had to be set the drawback of inflammability, the tendency to nausea and vomiting, and the smell. The reason why the textbooks described the smell as faint and ethereal was that when ethylene was freshly prepared in the laboratory it could hardly be smelt at all, but after being kept for 24 hours it gave the characteristic acetylene-like smell which was so unpleasant, and which must be due to an impurity. If the smell could be eliminated ethylene could be used with much more freedom. It was not a drawback, however, from the patient's point of view, for after two breaths he did not notice it, and had no remembrance of it on recovering consciousness.

In the brief discussion which followed Dr. J. BLOMFIELD said he had had a limited experience of the method, and found the smell very unpleasant; Mr. MAGILL remarked that ethylene had no particular advantages, while the smell was certainly objectionable. In reply to a question about his exhaust pipe, Dr. CLAYSEN said that the one he used was long enough to lead from the table to the door or window, but even if it reached only as far as a corner of the theatre the smell was hardly noticeable in a theatre of fair size. He quite agreed that nitrous oxide with a little ether gave much the same effect, but he was of opinion that ethylene with a little ether gave much better results than nitrous oxide with a fair amount of ether.

THE PERINEAL ROUTE IN THE SURGERY OF THE PROSTATE.

IN the Section of Urology of the Royal Society of Medicine, on April 30th, with Mr. F. A. G. JEANS in the chair, an address was delivered by Professor HUGH H. YOUNG, clinical professor of urology, Johns Hopkins University, on the advantages of the perineal route in the treatment of various diseases of the prostate.

Professor YOUNG, after paying a tribute to British urology, said that he had not chosen the subject of his address with any object of persuading British urologists that perineal prostatectomy was superior to suprapubic. The position of suprapubic prostatectomy was too widely accepted and standardized for him to assail it, but it was possible that, owing to the great success which had followed surgery by the suprapubic route, the value of the perineal route in certain conditions had been overlooked. More attention might advantageously be given to operations upon the prostate through the perineum. One of the great reasons why in the early days the perineal route came to be disregarded was the persistence for many years of the practice of median perineal incisions. Operation for stone involved a median incision, which damaged important anatomical and physiological structures, and led not infrequently to serious haemorrhage and continuing incontinence. Perineal prostatectomy thus came to be voted dangerous as an operation, and unsatisfactory in its results. In reaching the prostate from the perineum it was very important to avoid certain structures, and the speaker indicated, with the help of diagrammatic lantern slides, how it was possible to work at the back of the bulb, to avoid entering the sphincter, or unduly damaging the muscular structures, and to penetrate the rectum. One advantage which might be urged for the perineal route was that the anaesthesia was very easily obtained by single injection through the sacral canal. The position of the patient on the operating table was important. One trouble with many operations on the prostate through the perineum was due to the fact that inadequate or imperfect position had been obtained. He had seen operations conducted on a flat table, with no adequate elevation. He exhibited a special table which he had had constructed, and which gave the desired elevation, but added that any usual table could be modified to serve this purpose. The former median incision had given place to a lateral incision, and through an oblique incision on one side the surgeon was now able to perform a much less haemorrhagic and destructive operation. It was important to recognize the landmarks, to avoid injury to the transverse perinaei muscles, and to pick up and divide properly the recto-urethralis muscle. Having divided the muscle close to the urethra, it was easy to push back the rectum. He had used many kinds of incisions, which he illustrated, but the most useful was

the inverted V. In his view, with the perineal operation and with this incision, very much less tissue was dragged through the sphincter, and the sphincter remained in a much more normal condition than after the suprapubic operation. In a fair proportion of cases, operating by way of the perineum, the surgeon encountered calculi which lay external to the hypertrophied portions and beneath the normal prostate. He believed that in many such cases these were not recognized or removed by the suprapubic method; by the perineal method they could be seen and removed completely. Having removed the prostate, or the stone if any was present, the surgeon was prepared for whatever method of treatment might be desirable. His own method was to put in a rubber bag, which had a tube in the centre of it, and could be filled with water or air. This was introduced by a special instrument, pushed into the bladder, and blown up so as to form a tractor which would stop haemorrhage, the bladder being drained by the tube in the centre. This did away with all gauze packing, and afforded good drainage, though it took rather longer to close the wound.

Professor Young exhibited a table of the 58 deaths which he had had out of 1,571 prostatectomies conducted by this method, an operative mortality of 3.6 per cent. The principal causes of death were pneumonia (15), uraemia (7), pulmonary embolism (7), and sepsis (7). Pulmonary embolism was much more common than it used to be, as was evidenced by the figures from, among others, the Mayo Clinic. A study of the necropsies in his own cases showed that the embolism in practically all came from the femoral vein. It had been suggested that the tendency in surgery in recent years to place the patient in a sitting position, especially with the development of new beds in which the back part was elevated, and the knees also were raised, caused a tendency towards stasis in the femoral vein region. Sepsis played an important part in mortality, a larger part than was shown by the figures, for some of the pulmonary embolism cases might be associated with sepsis. About 50 per cent. of the patients had some cardiac lesion, *yet only 8 per cent. of the deaths could be attributed to* the heart. Another table indicated the speaker's fluctuating experience with regard to mortality over a period of twenty years. There were short periods of years when the operative mortality was extremely low or down to *nil* (in one recent period of three years there had been 198 consecutive operations without a death), but the publication of such figures had the result that less favourable cases were sent to him, and therefore the mortality went up again, perhaps even to 5 per cent.

The operation *per se* could not be said to be a serious one, but the complications involved, and the fact that many of the patients were of advanced age, and were veritable "museums of pathology," impaired the results; in both suprapubic and perineal prostatectomies, however, it had been unquestionably demonstrated that the aged could be operated on successfully, and that large masses of material could be removed through operations in regions where haemorrhage was a great danger, with a resultant mortality that was very low. One very important thing to bear in mind in prostatic surgery was the fact that from 20 to 25 per cent. of the individuals who presented themselves with symptoms of "prostatism" had carcinoma. In the Mayo Clinic this figure was 22 per cent. In about one-half of these cases carcinoma was associated with hypertrophy. Fortunately the condition could be recognized early if medical practitioners could be persuaded to include the prostate in routine examinations. There was a remarkable selective affinity between carcinoma and hypertrophy; the posterior lobe of the prostate was seldom involved in hypertrophy, but carcinoma almost always developed in the posterior portion. The operation he had advocated was curative in a large percentage of cases if there was any chance of cure at all. Several patients after such an operation had now been well for from twelve to eighteen years, and, moreover, had urinary control. The speaker said he wished more surgeons would attempt radical operations for carcinoma of the prostate. In cases where the disease had progressed so far that a radical operation for the carcinoma was impossible, and there was retention, he preferred to resect the lateral and median portions of the prostate, knowing that, while the carcinoma was not being eradicated, the obstruction was relieved; he believed that the result was far superior to simple suprapubic drainage. He had applied radium in such cases through the rectum. Urological opinion had been against operative intervention in cases of tuberculosis of the prostate and seminal vesicles; but many years ago, as the result of an extremely careful study of the cases at Johns Hopkins, he became convinced that the abstention policy was wrong, so as far back as 1900 he had been performing an operation which he described in detail, the most important point being the removal of the deeper-lying portions of the vas deferens. The incision was made through Dénonvillier's fascia. Another condition in which the perineal route might justify itself was diverticulum of the posterior urethra. An occurrence which also required urgent perineal prostatic surgery was traumatism of the posterior urethra, and yet another condition only operable, he believed, through the perineum, was recto-urethral fistula; Professor Young described a procedure here which had been successful in 19 cases. In conclusion, he spoke of the value of the phenolsulphonephthalein test, by far the most accurate means of determining the condition of the kidneys and the operability, not only in prostatic cases, but in urinary and surgical cases generally so far as the kidneys were concerned. He added that he was a great believer in intravenous therapy, particularly with mercurochrome, in pyelitis and stasis developing after perineal prostatectomy. He was convinced that intravenous therapy had a great future, since it was possible to bring about by its means the stimulation of antibodies and the serum defence reactions.

The time taken by Professor Young for his lecture was extended by the wish of the meeting. At the close there was no time for discussion, but a very hearty vote of thanks was accorded to him.

CRESOLURIA.

AT a meeting of the Section of Anatomy and Physiology of the Royal Academy of Medicine in Ireland on April 11th, the President, Professor W. R. FEARON, gave a demonstration of the use of external solvents in indicator work, and read a paper on cresoluria. He said that from a specimen of urine which gave an intense crimson colour with concentrated hydrochloric acid, resembling closely the characteristics of urorosein (indole acetic acid), it was found possible to remove small quantities of cresol by distillation. The colour was found to be due to a condensation between cresol and indoxyl, the condensing cresol being either the ortho or the meta form. Pure para-cresol produced colour under the same conditions. The significance of ortho- and meta-cresoluria, as distinct from para-cresoluria, was discussed, and the suggestion was made that these cresols had been formed in the organism from para-precursors by a process similar to the formation of homogentisic acid. Professor W. J. JESSOP asked if the use of strong nitric acid instead of hydrochloric acid would make the production of the pink colour which the President had demonstrated more easy, especially if crude hydrochloric acid was used. He had been working on the production of urea nitrate in urine, and by adding an equal amount of hydrochloric acid to the urine had produced a pink colour, which in many cases was evanescent. He wondered if this was due to the cresols present and if one might expect to obtain the pink colour more easily with nitric than with hydrochloric acid. Dr. A. R. PARSONS said he had frequently used the test for indigo blue in the past, but had never been able to get any very valuable information from it. He thought this test had fallen very much into disuse, mainly for want of an oxidizing agent. He had formerly used a solution of bleached lime, but this did not keep for long, and therefore was not always available when wanted. He had found that when homogentisic acid was added to sulphuric acid a red colour almost like that demonstrated by the President was obtained. The PRESIDENT, in reply, said that nitric acid could be used, but it was extremely easy to overdo the test when using it. He was interested to hear that homogentisic acid produced the red colour, because it showed that this acid took part in the reaction.

Reviews.

RADIUM THERAPY.

WHEN a subject is new or in a state of flux it commonly happens that writers with insufficient experience of its problems rush into print, with the result that the general reader, already perplexed, is faced with the added difficulty of trying to sift the wheat from the chaff. Something of this kind has happened in the production of books on radium therapy, and in the circumstances it is incumbent on the reviewer to choose from among the many works now appearing on this subject those which may be commended to the notice of the medical practitioner. *Radium in General Practice*,[1] by A. J. LARKIN; *Radium and Cancer*,[2] by DUNCAN C. L. FITZWILLIAMS, and *Die Radiumtherapie*,[3] by F. GUDZENT, all attain the necessary standard of merit, and it is pleasing to note that they reflect some uniformity of opinion, though the German author differs considerably from the authors of the American and English books in his method of approaching the subject.

Radium in General Practice forms a complete guide to radium therapy, including its application in general conditions and dermatology. Only nineteen pages are devoted to the important, if theoretical, physics of radium and to the very practical question of mechanics, an allowance which we think might be increased with advantage. In the rest of the book diseases are considered under separate headings, and the author, having given a short description of their pathology, describes the appropriate method of applying radium in their treatment. In America needles, seeds, and metallic surface applicators are used extensively; occasionally the author mentions the use of massive doses at a distance (bomb therapy), but the Columbia paste applicator, so popular in this country and France, apparently does not find favour in the United States. At the end of each section there is an extensive bibliography consisting mainly of American references. The adoption of the term "β-ray screen" in this book for a screen which cuts off beta rays, hard and soft, is a reminder that the nomenclature at present used in this connexion lacks uniformity, a defect which could easily be remedied. Such terms as "unfiltered" and "unscreened" might well be abandoned, because if we ignore the slight radio-activity of certain waters no radium used in medicine is entirely unscreened.

Radium and Cancer is also written entirely from the clinical aspect, the space devoted to the physics, mechanics, and biology of radium treatment being relatively small. As the title implies, the book limits itself to a consideration of new growths, and does not deal with other applications of radium therapy. Mr. Duncan Fitzwilliams describes each screen by its metal and thickness, and this method, though rather clumsy, is definite and informative, and as such to be preferred to the indefinite term "filtered." The procedures considered are chiefly those demanding the use of needles and tubes, but Columbia paste applicators are frequently advocated for surface and distance irradiation. Numerous individual case reports add to the interest of the text, but many of these cases are so recent that the ultimate results must remain in doubt. The work is very clearly illustrated, and though it shows evidence of rapid composition it gives a fair representation of what may be expected from the technique with which it deals. Errors are few, but even if the physical aspect of the subject has to be condensed such a statement as "One per cent. of radium disintegrates in 25 years," which ignores the well-known logarithmic law of degeneration, can scarcely be passed. The subtitle of Mr Fitzwilliams's book is "Curietherapy," a term which also appears in the text. We do not consider this a good choice, for while the Curies deserve all the credit for the first isolation of radium it must be remembered that the previous researches of Becquerel were the real starting-point of the discovery of radio-activity, the renowned Becquerel burn being the first indication of the biological effects of radium, and that ultimately our own physicists, Rutherford and Soddy, supplied the complete interpretation of radio-activity in their disintegration theory. We prefer the descriptive term "radium therapy" for general use.

Die Radiumtherapie, the fifth volume of "Medizinische Praxis" by Grote, Fromme, and Warnekros, is a work of only 106 pages, but in this space Dr. Gudzent covers the subject in a more complete, though less extensive, manner than do the authors of the two books already noticed. More than half the space he devotes to a consideration of the physics, mechanics, and biology of radium application, thereby giving practical expression to his view—which we share—that training in the theoretical aspects of the subject cannot be too thorough if radium is to be used with intelligence. We feel, however, that he gives far too much of his limited space to accounts of the radio-active properties of the waters in certain German spas, and to the description of radio-active compresses and appliances for the irradiation of water supplies. In the chapters on technique, Gudzent describes the applicators in common use in Germany, which, in the main, resemble those used here, and discusses among other subjects the methods of administering massive doses at a distance, and mesothorium and thorium X as sources of radiation.

None of these three books deals adequately with the subject of secondary radiations, perhaps on account of its complexity and the absence of definite data, but the collaboration of a competent physicist in the writing of the preliminary chapters might have served to remedy this defect. Radium therapy is still in the experimental stage, when over-enthusiasm is likely to produce disappointment. The limits of its applicability have not been determined, and the brilliance of immediate results still tends to obscure ultimate failures. These conclusions emerge from a study of the works under review, but the authors do not sufficiently emphasize the fact that radium therapy is valuable not so much because its results are superior to those obtained by other methods of treatment, but because it is easier to apply and not nearly so likely to be followed by mutilation of the patient.

ANKYLOSTOMIASIS.

"At the present time there is no human disease which is more thoroughly understood in every respect—etiology, epidemiology, diagnosis, treatment, and control." These words are used by A. C. CHANDLER in writing of hookworm disease.[4] The author is well equipped both by his training and by experience to write on a subject of which so much has been heard during the last decade, and which has a definite bearing on the sanitary programmes of many parts of the Tropics. After a brief historical introduction there are chapters on geographical distribution, the anatomy and distribution of the adult worms, including the identification of species, the life cycle and mode of infection, epidemiology (environmental and human factors), pathology, diagnosis, treatment, prevention, and control; the relationship of hookworm larvae to ground itch and creeping eruption is described. There follows a useful appendix on technical methods. In the bibliography the author has made no attempt at complete[illegible] but he has included references to all the important contributions made within the past ten years.

One of the dangers of specialization is a tendency to exaggerate the importance of the particular subject studied, the author does not do this. His treatment of his subject is marked by studious moderation, is clear and is well reasoned. It is with some feeling of relief that we see that among natives in endemic areas infection with ankylostoma or necator does not necessarily connote imminent dissolution. Thus in Southern India, he states,

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[1] *Radium in General Practice*. By A. James Larkin, B.Sc., M.D., D.P.H. London: Milford) Oxford University Press, New York. P. B. Hoeber, Inc. 1929. (Med. 8vo, pp. xi + 201, 25 figures. 27s. net.)

[2] *Radium and Cancer*. By Duncan C. L. Fitzwilliams, F.R.C.S. London: H. K. Lewis and Co., Ltd. 1930. (Demy 8vo, pp. xiii + 172, 61 figures, 8 plates. 12s. 6d. net.)

[3] *Die Radiumtherapie*. Von Dr. med. F. Gudzent. Medizinische Praxis, Ch.M., F.R.C.S. London: J. & A. Churchill. 1929. (6 × 8½, pp. viii + 106; 55 figures. R.M 5.50.) Band V. Dresden und Leipzig: T. Steinkopff. 1929.

[4] *Hookworm Disease*. By A. C. Chandler, M.Sc., Ph.D. [London:] Macmillan and Co., Ltd. 1929. (6 × 9½, pp. xvi + 241; 22 figures. 21s. net.)

"hookworm *disease* is practically non-existent in most places, and it is in 90 per cent. of the country a negligible *public health problem.*" *Although infection with hookworms* is widespread there, a somewhat similar conclusion was reached in Sierra Leone in 1925 as a result of work *carried out by Gordon and referred to by Chandler.* The clinician who wishes to know how to diagnose and treat his cases will find the methods he requires in this book, *and the sanitary officer whose interest lies in the elimination* of infective larvae, prevention of soil pollution, and protection of the community has abundant facts and measures placed at his disposal. The most important stage of the life-history of the worm from the sanitary point of view is the infective larval one, and it is easier to feel optimistic if the infective larva migrates laterally from the site of dejection a few inches only, if its migration up the soil wall of a latrine is practically *nil*, and if its longevity tests in natural tropical conditions show over 99 per cent. larvae dead in less than six weeks. The author regards the long-distance lateral and vertical migrations and great longevity—hitherto accepted—as based too exclusively on the maximum results obtained in artificial experiments. Migration up *through* soil is easy in sandy loam, three feet being traversed, but the presence of clay interferes greatly with the migration to the surface. The thorny topic of mass treatment is discussed at some length, and the views of Lane and other opponents are given due consideration. Even those of us who dissent on principle from the adoption of mass treatment cannot fail to admit that the author makes a fair case.

The volume can be recommended to all who have to deal with the hookworm problem; it is excellently printed on good paper, and although the illustrations are mostly such as are familiar to us from the older textbooks they are adequate to the purpose of this work.

PATHOGENIC MICRO-ORGANISMS.

BACTERIOLOGY is a subject which is in a state of lively adolescence, and the appearance of a ninth edition of *Pathogenic Microörganisms*,[6] by PARK and WILLIAMS, is to be welcomed as a survey of present development. The whole field of pathological bacteriology is covered with a nice appreciation of what is established as useful in matters of technique and instructive in principles. This aspect is exemplified in the chapter on agglutinins, where serological technique is described tersely yet sufficiently to be a guide to the laboratory worker. Again, intricate detail is handled with skill and judgement when the haemolytic streptococci are discussed. It is noted that these organisms, although derived from various sources, are nevertheless indistinguishable from one another morphologically and culturally, and even when they are grouped serologically and according to their pathogenic derivation, the grouping is still inconstant and overlapping; and attempts to classify the species of the group by the absorption of agglutinins has not been entirely successful, for it has not been found possible to associate a single agglutinative type with a single named disease. The lengthy and disastrous history of "Typhoid Mary" ushers in an account of the unsatisfactory position of the treatment of the typhoid carrier. The authors have found that treatment by vaccine is unsatisfactory, and cholecystectomy is not always successful, although frequently so. In this connexion the advantages of duodenal culture are mentioned. But in New York it is being found that the known carrier, instructed in hygiene and placed on parole, is a relatively small menace to the community. The trend of the volume is the application of theory and practice to public health problems, and the text bears witness to prolonged and critical experience in large bacteriological laboratories. The original work of the authors, and of Krumwiede, whose name appears on the title-page, is mentioned in a number of places, and this is one of the signs that [illegible] is no mere compilation of the work of others, but rather a critical presentation of it. The writing is lucid and [illegible] quickly understood, and the book is well illustrated and

[6] *Pathogenic Microörganisms.* By William [illegible] Wessels Williams, M.D., and Charles Krumwiede. [illegible] Hallock Park, M.D., Anna [illegible] Rede, M.D. Ninth edition, enlarged and thoroughly revised. London: [illegible]illière, Tindall and Cox. 1929. (6 × 9½, pp. IX + 819; 216 figures. 30s. net.)

indexed. References are given in footnotes, and concern largely, but by no means exclusively, American literature. The volume forms a valuable exposition of present-day bacteriology and a most useful book of reference.

Several further volumes have been received of the third edition of KOLLE and v. WASSERMANN'S Handbook of Pathogenic Micro-organisms,[6] which is appearing seriatim, and cannot, therefore, be reviewed at length. A previous note on this publication appeared in our columns on October 12th, 1929 (p. 670). Speaking generally, the standard of these later volumes is well up to that of their predecessors. Part 36 of vol. ii contains articles on agglutination and conglutination, by Professors R. Paltauf and R. Kraus, Dr. St. Kovács, and Professor O. Streng. Dr. R. Kraus also deals with the phenomena of bacterial precipitation, and Professor C. Oppenheimer writes on bacterial enzymes. The Abderhalden test and diagnostic procedures relating to ferments are described by Professor E. Küster. Professor O. Thomsen concludes this volume with an account of blood agglutination and blood grouping. A large proportion of Part 39 of vol. iii is devoted to disinfection and sterilization, the general and physical aspects being discussed by Professor H. Reichel, and the chemical aspect by Professors E. Bürgi and K. Laubenheimer. Professor G. Sobernheim supplies an article on anthrax, while Professor K. Baerthlein writes on typhus fever. Spirochaetosis of different kinds is dealt with in Part 41 of vol. vii, which opens with an account of Weil's disease by Professors P. Uhlenhuth and W. Fromme. Other articles in this volume relate to the spirochaetal diseases of birds and rabbits. Silicosis and dengue are the subjects of an article by Professor R. Doerr, which opens Part 38 of vol. viii, while rabies is discussed by Professor J. Koch, R. Kraus, and Dr. F. Schweinburg. A careful account of acute poliomyelitis is given by Dr. K. Landsteiner. Small-pox and similar conditions are considered in Part 40 of vol. viii, the authors of the articles being Professor E. Paschen and H. A. Gins. Trachoma and other similar infections of the eyes are discussed by Professor B. Heymann and Dr. W. Rohrschneider. Dr. B. Lipschütz writes on molluscum contagiosum, warts, and condylomata. Part 37 of vol. x is largely devoted to technique, and includes articles on methods of examining animals, the bacteriological investigation of water and air, tissue culture procedures, and related topics.

[6] *Handbuch der Pathogenen Mikroorganismen.* Begründet von W. Kolle und A. v. Wassermann. Dritte, erweiterte Auflage. Jena: G. Fischer; Berlin und Wien: Urban und Schwarzenberg. 1929 und 1930.

THE ADOLESCENT.

A HOST of books have been written on the subject of adolescence—the period through which we all have to pass and on which we look back with sentimental regret or abhorrence as the case may be, but which still seems to escape our understanding. Drs. SCHWAN and VEEDER have added another to the number and have concentrated on the study of the adolescent's conflicts and escapes.[7] Many books on this subject owe their wide appeal to the fact that they lay down a simple and straightforward system, to which, in the view of the pedagogic ladies who for the most part are the authors of this kind of work, it is necessary to force the adolescent to conform; and if, as generally happens, the result is disaster, that is, naturally, the fault of the adolescent. The chief virtue of the work under review is that it suggests no such system. The adolescent is treated as an individual and his difficulties are discussed from both the physical and the mental aspects. Although they acknowledge the stimulus given to psychological thought by Freud's teaching, the authors are not psycho-analysts, and consider that many things besides sex present difficulties *virginibus puerisque*. Their general view of the psychology of puberty they state as follows: "Adolescence must be looked upon as a dynamic period in which as a result of the rhythm of growth the individual seeks as a biological necessity a position of independence. In this inherently necessary struggle or search he runs against a group of obstacles both within himself, as a result of his earlier experiences,

[7] *The Adolescent: His Conflicts and Escapes.* By Sidney I. Schwab, M.D., and Borden S. Veeder, M.D. New York and London: D. Appleton and Co. 1929. (5½ × 8½, pp. 365. 10s. 6d. net.)

and in the constitution of society as it exists at the given moment. These may be grouped together as environment. This struggle between the urge from within and the environment is the adolescent conflict." Altogether this is a useful book, and if it contains no strikingly original ideas, it is at least free from fads and unsupported theories.

THE ROMANCE OF CHEMISTRY.

IN the preparation of science for the popular palate it seems sometimes to be thought necessary to introduce something of a comic or flippant atmosphere into a subject. By doing so Professor JAMES KENDALL, in his book *At Home Among the Atoms*,[1] suggests that he has introduced a "human" element into the study of chemistry, a subject which might otherwise be repellent to the ordinary reader. Surely Professor Kendall must be wrong in this surmise. Gone are the days when none but students toiled laboriously through comparatively uninteresting details of experiments until they reached the sketchy threshold of Mendelejeff's periodic system, where some sort of order began to appear in chaos. The discoveries of the present century have rendered chemistry intensely interesting; and Professor Kendall himself disproves the idea that it is necessary, in order to attract the public, to label a chapter on chlorine with the fatuous title, "Gentlemen prefer Blondes," or to call oxygen "the working girl." The fascinating paths through which he leads his reader from substances to elements, atoms, and protons and electrons, until he reaches what he is pleased to call Bohrville, are marred only by the occasional irruption of these facetiæ. We refuse to believe that these things are necessary. Otherwise Professor Kendall has produced a most readable and understandable little book on a subject on which clear writing for the untrained mind is difficult; and the brief historical descriptions which he introduces of such men as Priestley and Dalton are excellent. We hope that in the second volume he promises, dealing with the kinetic-molecular theory, Professor Kendall will eschew much of what is described on the book cover as humour, and rely on the intrinsic interest of his subject, and the clearness of his powers of exposition.

NOTES ON BOOKS.

DR. SUNDELL has a panacea for rheumatism, and has written a book of 88 pages on *Rheumatism: A Study of its Nature and Cure*.[2] The panacea is the pyretic treatment, which, by the application of moist heat, induces pyrexia and sweating. Such treatment is undoubtedly of great value in many cases and is not particularly new, but it has led Dr. Sundell to some surprising and sweeping generalizations which, having a germ of truth in them, are none the less misleading. He states that the essential nature of all forms of rheumatism, acute and chronic, is the same, that all forms of rheumatism have a subnormal temperature, a dry skin, and a strongly acid sweat! His insistence on the importance of failure of secretion of lactic acid is a welcome change from the widespread belief in uric acid as the villain of the piece. His chapter on regional diagnosis does not seem to make for clarity of conception, and there is certainly very little novelty to be found in this compilation of symptoms and their significance.

The *Book of Diets*[3] of the McGuire Clinic gives details of the standard diets used in St. Luke's Hospital, Richmond, Virginia, for a variety of medical and surgical conditions. Some such standard list must be prepared, of course, as a matter of routine organization by every hospital or other centre where any considerable number of in-patients are treated. The advantage of publication lies in the fact that information is made available whereby the practices followed by different institutions may be compared with one another to their mutual advantage. The diets described in the present report conform to the well-recognized standards. They are not all applicable, as they stand, to medical treatment in Great Britain, since a good number of the articles of food mentioned are American patent preparations, not available here, though doubtless their English equivalents can be found easily enough. It is a little startling to see raw oysters figuring as the only type of fish allowed in "Post-operative diet No. 2," but no doubt oysters are cheaper, and hospitals far wealthier, in America than in Europe.

The Chemistry and Bacteriology of Public Health,[11] by C. L. DUNN and D. W. PANDYA, is based on the teaching for the first part of the diploma of public health of the University of Lucknow, a course which is recognized as qualifying for Part I of the diploma of the Conjoint Board of England. It contains everything necessary for the practical teaching of the subject as well as serving as a practical handbook for medical officers of health working in laboratories. The scope of the book is wide—wider, perhaps, than is usually needed by students in this country. Nowadays, however, when the D.P.H. is required for many colonial appointments, and when many Indian and Empire students attend courses in Britain, it will be of considerable use to both teachers and students.

The *African Dispensary Handbook*,[12] by Dr. CLEMENT CHESTERMAN of Yakusu in the Belgian Congo, has been written for the use of native medical assistants in Africa. Realizing the rapid development of the auxiliary native medical service in this continent, the author has endeavoured to bring together in a single volume all the instruction and guidance these educated native assistants are likely to require, for this, as he points out, may well be their only book. Accordingly, its subject-matter is divided into four sections; the first consists of clinical notes on medical diseases, the second is on surgical diseases and minor surgery, the third deals with dispensing and the English and French pharmacopœias, while the fourth section is given to laboratory notes and to the equipment of African dispensaries. It is clear that a vast amount of information must be compressed into a small compass with so ambitious a programme as this, and it may be said at once that Dr. Chesterman has succeeded in his endeavour to produce a satisfactory *multum in parvo* on tropical medicine. The book contains a great deal of useful and up-to-date information on a large variety of medical and surgical subjects, while an elementary knowledge of anatomy, physiology, and so forth, is assumed. Writing a foreword for the book, Sir Andrew Balfour points out that it may possibly be regarded as somewhat advanced for the immediate needs of those for whom it is intended, adding that this, if a fault, is one in the right direction. This is a sound criticism, but carries with it the corollary that here is a vade-mecum for ready reference that should be of real service to medical men and others who may have to practise medicine and surgery, for one reason or another, in Africa. To these the book may be cordially recommended.

Mr. J. JAMES, in *Dental Local Anæsthesia*,[13] the thirteenth volume of *Outlines of Dental Science*, deals with the practical aspects of the subject in a brief but clearly written work. Perhaps the chapter on contraindications might have been extended with advantage—for example, the section relating to the heart conditions that must be regarded as a bar to the use of certain anæsthetics. The author rightly insists on the value of injection anæsthesia in conservative dentistry.

The Naval Blockade 1914–1918,[14] by Lieutenant LOUIS GUICHARD of the French Navy, which has been translated and edited by Mr. CHRISTOPHER TURNER, throws a light on national psychology. Though at the time economically but little affected, Germany was obsessed by the feeling that she was a besieged fortress, and accordingly launched her first declaration of submarine warfare, announcing that from February 18th, 1915, any hostile merchant vessel encountered in British or Irish waters, including the English Channel, would be sunk without regard to crews or passengers. On January 19th, 1917, hoping thereby to strike a victorious blow at this country, Germany declared unrestricted submarine warfare from February 1st. In doing so, there were two errors in psychology: first, an underestimation of the vigour of the allied counter-stroke, and, secondly, in not allowing for the attitude of the United States. The result was that on April 6th war on Germany was declared by the United States, and Germany's chief resource was completely dried up.

[1] *At Home Among the Atoms*. By James Kendall, D.Sc., F.R.S. London: G. Bell and Sons, Ltd. 1929. (Cr. 8vo, pp. xv + 270; 65 figures. 7s. 6d. net.)

[2] *Rheumatism: A Study of its Nature and Cure*. By Charles E. Sundell, M.D. Lond., M.R.C.P. Lond. London: Southern Literature, Ltd. 1929. (Cr. 8vo, pp. x + 88; illustrated. 4s. 6d. net.)

[3] *Book of Diets*. Bulletin McGuire Clinic and St. Luke's Hospital, Volume iii, No. 1, January, 1930. Second edition, revised. Richmond, Va.: Published quarterly by the Staff. (Sup. roy. 8vo, pp. 43.)

[11] *The Chemistry and Bacteriology of Public Health*. By C. L. Dunn, C.I.E., D.P.H. Lond., Lieutenant-Colonel I.M.S., and D. D. Pandya, D.P.H. Camb., Rai Bahadur, Calcutta and London: Butterworth and Co. 1929. (8½ × 5½, pp. xii + 412. 12s. 6d. net.)

[12] *African Dispensary Handbook*. By Clement C. Chesterman, O.B.E., M.D. Lond., M.R.C.P., D.T.M. and H. Camb. London: The Christian Literature Society for India and Africa. 1929. (Cr. 8vo, pp. xii + 372, 13 plates. 6s.)

[13] *Dental Local Anæsthesia*. By John James, L.D.S. R.C.S. Eng. *Outlines of Dental Science*. Vol. xiii. Edinburgh: E. and S. Livingstone. 1929. (Cr. 8vo, pp. ix + 127; 35 figures. 7s. 6d. net.)

[14] *The Naval Blockade 1914–1918*. By Lieutenant Louis Guichard, French Navy, attached to the Historical Section of the French Ministry of Marine, Doctor of Law. Translated and edited by Christopher R. Turner. London: P. Allan and Co. Ltd. 1930. (Roy. 8vo, pp. xv + 334. 15s. net.)

DIABETES AS A PHYSIOLOGICAL PROBLEM.

OLIVER-SHARPEY LECTURES BY PROFESSOR J. J. R. MACLEOD.

THE first of two Oliver-Sharpey lectures on diabetes as a physiological problem, by Professor J. J. R. Macleod, M.D., F.R.S., Regius Professor of Physiology, Aberdeen, was delivered at the Royal College of Physicians of London on April 29th.

Professor Macleod said he proposed to describe some researches which had been going on in his former laboratory at Toronto during the last few years, and which had, he thought, a direct clinical application. He would relate in the first lecture the clinical history of certain depancreatized animals, and in the second lecture he would turn to the more general question of the control of the secretion of insulin, and the application which he thought this work might have to changes occurring in man.

Depancreatized Dogs.

Two dogs in his laboratory had been kept alive by treatment with insulin for four years after complete removal of the pancreas. The animals remained in excellent condition throughout the whole of the time of observation. Death occurred, in one case on the fifth day and in the other on the sixth day, after discontinuing insulin. There could not be the slightest doubt that both dogs would have survived to the full span of normal life had insulin treatment been continued, and he regretted now that that plan had not been followed. The reason for stopping the insulin for a number of days was to determine the intensity of the resulting diabetes by observing, among other things, the respiratory quotient. It was intended that this observation should be made on the third and fourth days. Unfortunately, a serious fire broke out in the laboratory on the third day, and it took all that day to repair the damage to the respiratory apparatus. The dogs being apparently in perfect condition, it was decided to postpone the respiratory observations to the fourth and fifth days, although the workers knew that they were incurring grave risk of losing the animals from coma. They expected, however, to guard against this by treatment with insulin immediately any definite symptom, such as vomiting or drowsiness, presented itself; these symptoms developed too late to enable the animals to be saved.

The animals showed some very interesting conditioned reflexes. One of them used to salivate very profusely when the attendant, who was quite accustomed during the day to enter the room frequently for other purposes, took up the hypodermic syringe to inject the insulin. The dog knew that the injection of insulin was to be followed by the giving of food, and the lecturer had never seen a conditioned reflex so well established. Both dogs were fat; they increased in body weight during the four years they were under observation. One of the dogs was used during the earlier part of the period for work on the problem of the assay of insulin. This was a difficult problem to work out, and it had been hoped to devise some method by which insulin could be expressed in units of its antidiabetic power, instead of in units of its power to lower the blood sugar, which was the present basis of assay. That, however, for various reasons, did not prove to be a satisfactory method.

Diet of Depancreatized Animals.

Before these two particular dogs came under observation, experiments had been made on several others to determine how long insulin would keep them alive. The first animals were treated with insulin and fed exclusively on meat containing a moderate amount of fat. Although the diabetic symptoms remained completely suppressed, these animals did not thrive; they lost weight seriously, and had to be destroyed after a month or so. It was perfectly evident that they were not assimilating enough food. To overcome this difficulty it was decided to give cane sugar, administering with it a sufficient amount of insulin to take care of the extra carbohydrate. The animals rapidly improved, gaining in weight; two of them were kept alive for eight months, but they could not be kept alive longer. After eight months—and in the case of other dogs after a shorter time—peculiar symptoms of jaundice made their appearance, and nothing could be done to save the animals. The post-mortem examinations in all the five animals which succumbed in this way showed a very fatty liver, the hepatic cells becoming so distended with fat that destruction resulted. It was also noted with animals treated with sugar and insulin alone that the faeces contained very large amounts of undigested muscle fibre and were loaded with fat. It was concluded that the failure of these animals to live must have been due to the absence of any pancreatic juice. The pancreas having been removed, there were no ferments to digest either protein or fat, bacteria alone being available for this purpose. It was decided to mix with the diet of meat and cane sugar considerable quantities of raw pancreas, in the hope that some would pass through the pylorus with its enzymes untouched, and so bring about pancreatic digestion. When this was done the animals regained perfect condition, and the faeces were practically normal. From that time onwards there was no difficulty in keeping the depancreatized animals alive so long as they were placed on treatment with insulin, and on a diet composed of meat, cane sugar, and raw pancreas.

About two years ago at Toronto the use of very easily digested foodstuffs was investigated—casein, for example, with lecithin, instead of fat—with considerable quantities of sugar. Two or three animals were kept alive indefinitely, and Professor Macleod was under the impression that it was possible, as some French observers had maintained, to keep certain animals alive without any pancreatic juice being secreted into the intestine. He did not think, however, that that was the case with all animals. In that connexion it was an interesting possibility that the animals which could survive without raw pancreas were those in which small nodules of pancreatic tissue remained in the walls of the duodenum. One of his research students some years ago had made a very careful microscopic search for the presence of these pancreatic nodules in the duodenal wall and found them in 50 per cent. of the animals he examined. Some of these animals were normal dogs, and others were depancreatized. The pancreatic nodules lay near the ducts; sometimes there might be several of them, usually there was only one. It was difficult to see the duct connexion in every case, but he imagined that there was really such a connexion. If such was the case, this pancreatic tissue would be discharging into the duodenum itself some pancreatic enzyme which might make all the difference in connexion with the survival of the animals. These pancreatic nodules never contained islets of Langerhans. He was aware that there had been some clinical applications of this work, but he did not think it was sufficient to justify the administration of pancreas to the patient in this way.

Pregnancy of a Depancreatized Animal.

Continuing the record of the two dogs which formed the subject of his lecture, Professor Macleod said that in the year after its depancreatization one of them became pregnant; no unfavourable symptoms followed, and no change was made in the diet or in the insulin administered. It was ultimately delivered of six puppies, three being born alive and three dead. Two puppies were left with the mother, and all went well until the day after the birth, when the keeper reported that the dog was behaving in a peculiar fashion and refusing to suckle its puppies. On examining the dog he found signs of hypoglycaemia; the animal showed great excitement, dilated pupils, and so forth. The administration of sugar was quickly followed by recovery. The interpretation which he put upon the circumstance was that the removal of milk in feeding the puppies had lowered the blood sugar to such a level that hypoglycaemic symptoms supervened. Nothing was changed except the giving of sugar immediately the symptoms appeared, otherwise the diet and insulin dosage were kept constant, and the dog returned to normal. This raised an interesting point in connexion with milk fever, which was fairly common in cows. Shortly after this observation it was reported that Swedish observers had seen milk fever associated with very low blood sugar in cattle. The lecturer was doubtful whether milk fever in cattle was always due to hypoglycaemia. There seemed to be a profound disturbance also in the casein metabolism. One very impor-

tant thing was that during the whole of the pregnancy the carbohydrate balance of the dog scarcely changed. That was important, because it indicated that in this animal at least no significant amount of insulin could have been secreted into the maternal organism by the foetus.

In the case of the other dog, the interesting point was the glucose equivalent, which indicated that after complete removal of the pancreas no organ or tissue of the body assumed any power which allowed the animal to deal with carbohydrate. Had there been any vicarious functioning of other organs in this respect the carbohydrate balance in this and several other animals would have been perceptibly altered during the period of observation. In the dog the utilization of glucose, instead of increasing as pregnancy went on, actually, if anything, decreased. There was no evidence that the foetal insulin had in any way benefited the maternal organism. He was aware that that was at variance with one or two clinical observations, particularly some recent important work by Dr. Lawrence at King's College, in the case of a diabetic woman. There were, however, two points of difference between these experiments on dogs and the observations of Lawrence. In the first place, the dogs were completely depancreatized, whereas the patient was in possession of some pancreatic tissue, and, in the second place, the dogs were receiving much more insulin, plus carbohydrate, than the patient. In the light of what was now known, it seemed quite possible that the remaining healthy islets of the mother's pancreas were stimulated to secrete more insulin, and the generation of new islets occurred as pregnancy advanced. It must be admitted that the case brought forward by Lawrence lent support to the view that the foetal secretion of insulin might reduce the symptoms in a diabetic mother.

Value of Insulin in Animal Experiment.

It was curious that there were comparatively few complete records of the whole course of diabetes in depancreatized dogs. The animals had been observed for short periods in order to prove or disprove some hypotheses, but the method had not been very extensively used. It seemed to him that more investigations should be made of this condition, and in this experiment the workers were fortunate, having insulin, in being able to make observations under very much better conditions than had previously been the case. In the previous use of dogs it was necessary to observe the diabetes after the very severe abdominal operation of removing the pancreas. During the period of observation, therefore, the animals were suffering from surgical shock for the week or two in which they survived. They were not merely diabetic, but were recovering from the effects of operative procedure. By using insulin it was possible to get the animals into an excellent bodily condition before the diabetes was experimentally produced by the withholding of the insulin. It was soon discovered that animals behaved; some survived only a few days after the removal of the insulin, others might live for weeks. The two dogs to which he had referred survived removal of insulin for only five and six days, and during that time the diabetes was very intense. Two days after the removal of the insulin the ketonuria was already quite marked. And, more important still, in connexion with the whole subject of diabetes, the relationship between the glucose excreted and the nitrogen excreted was far beyond the usual limits. The collapse of these animals occurred with great suddenness. They died within an hour of the onset of drowziness. The muscle glycogen in both animals was found to be lowered a little; the liver glycogen was considerably reduced, but he had never observed an entire absence of glycogen in a diabetic animal. There was always some glycogen in the liver if the analysis was made immediately. Glycogen was not a storage material for carbohydrates; it was a necessary step—an obligatory intermediate stage—in the carbohydrate metabolism, and Professor Macleod had never yet seen a liver that was completely glycogen-free.

In contrast with the observation of diabetes in fattened animals, the lecturer said that it seemed important to study the course of diabetes in very lean animals which had no excess of body fat. The full results of an observation undertaken by Soskin at Toronto could not conveniently be given in a lecture, but would be published in the *Journal of Nutrition*. It appeared from his tables that when a large amount of protein was being metabolized, some of the sugar failed to be utilized by the organism; the larger fraction of it was excreted. Towards the end of prolonged diabetes in an emaciated animal the respiratory quotient might rise considerably, quite independently of the giving of sugar. Surely this indicated that the animal was relatively making use of more carbohydrate than the amount of this substance which it was producing from other sources—in other words, carbohydrate utilization was running ahead of the new production of sugar.

Tests for Diabetic Remedies.

The only test that the laboratory worker could apply to a remedy offered for diabetes was the ascertainment of its effect on a depancreatized animal. To watch its effect on the blood sugar of a normal animal was useless. It was quite misleading to commend to the medical profession, as a remedy for diabetes, a certain substance solely on the basis that it lowered the blood sugar in a normal animal; the only test was whether it was able to maintain a depancreatized animal in a normal condition. The question still remained how long that normal condition should continue before the substance could be accepted as a remedy. It had been considered that if the animal were kept alive for more than two or three weeks a claim might be made for the antidiabetic power of the substance concerned, but the lecturer's observations had shown that an animal might be able to live for over a month without any treatment. He thought that these experiments by Soskin sounded a note of warning in judging of the reputed antidiabetic power of any remedy. It was not too much to say that before acceptance the remedy should have been able to keep the animal alive for some period like eight or ten months. Whenever a substance had been sent to him for testing he had always endeavoured to ascertain whether it had similar antidiabetic influence to insulin when given to depancreatized animals, and invariably the results had been negative. He had never yet received a sub-tance having anything approaching the action of insulin.

It followed from what he had said that the diabetic organism still retained the power to utilize carbohydrates, although this power was loss. The deterioration in different animals was variable, and it varied even in the same animal from day to day. He would go so far as to state that no foodstuff could be utilized as fuel until it had become converted into carbohydrates. It might be that as yet it was not possible to identify the particular type of carbohydrate; it might not always be muscle glycogen, though most of it was, but there might be in addition a small fraction not at present identifiable by chemical methods.

ROYAL MEDICAL BENEVOLENT FUND.

At a recent meeting of the committee forty-five grants were made, amounting to £975 10s. The following were some of the cases helped.

M.B., F.Ch., aged 51. She started in general practice three months ago, and spent her last penny in buying up the furniture, etc. The rent had been guaranteed by friends for a time. All went well with the practice increased, but the Last broke down in health. Fees owed £5 from tuberculosis. Sanatorium treatment is necessary. Fees owed £5 case will be considered.

M.D., B.S., aged 35. She has had four resident hospital appointments since qualifying last year. Fund voted £25. Further consideration will be given.

M.B., B.S., aged 45, married. Has been suffering from diabetes since 1927; pulmonary tuberculosis developed in 1929. In the past she earned that he gave his services in the case of a friend. Fund voted £25. Case on the books of the Fund on request.

Widow, aged 52, of M.B., Ch.B. Husband served in R.A.M.C. in the He then died of double pneumonia at the age of 49. The widow is left without means and a log of 7 to educate. Fund gave an emergency grant of £5 immediately and a further grant of £25 and will also help as regards the next six months. The R.M.B.F. Could will also help as regards the

Widow, aged 38, of M.B., Ch.B. Husband died recently of tuberculosis. She has been left with practically no means and a boy of 5 education of the boy. The widow previously helped in order to educate. Fund voted a grant of £25 and will also help as regards the at the age of 50, leaving the widow practically penniless and a boy of 5 to educate. Fund voted a grant of £25 and will also help as regards the

Subscriptions and donations are urgently needed in order that the activities of the Fund may be continued and applicants given the help they need. Cheques should be forwarded to the Honorary Treasurer, Royal Medical Benevolent Fund, Chandos Street, Cavendish Square, W.1.

British Medical Journal.

SATURDAY, MAY 10TH, 1930.

UNDULANT FEVER IN GREAT BRITAIN.

REPORTS in our present issue of five cases of undulant fever, occurring in England, Wales, Scotland, and Ireland, testify to the widespread interest in the incidence of this disease—an interest that has undoubtedly been stimulated by Dr. W. Dalrymple-Champneys's recent report[1] issued by the Ministry of Health. Four of the cases were diagnosed on the basis of the agglutination reaction. From the comparatively brief duration of the disease—three to seven weeks—from the mildness of the symptoms, and from the absence, except in one case, of relapses, it is probable that these were due to infection with the bovine type of *Br. abortus*. The fifth case, reported by Colonel W. P. MacArthur and Major J. B. A. Wigmore, presents features of considerable interest. The patient was ill for eight months, and experienced six relapses. The diagnosis was made not only from a positive agglutination reaction, but by cultivation of the causative organism from the urine. The fact that it grew in the absence of CO_2, and that though it was agglutinated both by a serum prepared against a porcine strain and by one prepared against a bovine strain of *abortus* the former was effective at a higher titre, led the authors to conclude that the organism was probably of the porcine type. This conclusion must for the moment be regarded as provisional. Its independence of the presence of CO_2 excludes for all practical purposes the bovine type of *abortus*; but simple agglutination does not suffice to distinguish it from *Br. melitensis*, for many strains of the porcine type of *abortus* are agglutinated by a bovine *abortus* and by a *melitensis* serum to a titre often higher than that registered against the homologous organism. The severity of the infection, the presence of a papular eruption, and the cultivation of the organism from the urine—a finding which is not uncommon in Mediterranean fever, but which appears to be rare in *abortus* fever—suggest very strongly that the infection may really have been due to *Br. melitensis*. Until further biochemical and serological tests have been made, it would be as well to maintain an open mind as to the exact classification of this bacillus. In any case the finding is of great interest, because, so far as we know, neither *Br. melitensis* nor the porcine type of *Br. abortus* has ever been isolated in this country.

The clinical symptoms of the infection caused by the bovine type of *abortus*, which appears to be the common type in Northern Europe, are well enough known to exclude the necessity of recapitulation. It may be remarked, however, that the fever by no means always runs an undulant course, and it is only the severe cases which manifest the frequent tendency to relapse that is so characteristic of Mediterranean fever. In the majority of cases the symptoms are mild, and are often insufficient to confine the patient to bed. It is not until the temperature is taken, and is found to be 102° or 103° F., that the real nature of the infection is suspected. There is, as Hasseltine[2] remarks, probably no other condition in which the apparent well-being of the patient contrasts so markedly with the record of the thermometer. In early typhoid the pyrexia is accompanied by severe debility, while in early pulmonary tuberculosis the general symptoms of disease are often present without any marked elevation of the temperature.

In the diagnosis of undulant fever the simplest method is to test the patient's serum for agglutinins to *Br. abortus*. In order that information might be obtained of the true frequency of the disease it is highly desirable that all Widal serums should be tested against this organism. The extra trouble involved would be very slight. The coagglutination between the three types of Brucella organisms is so marked that there is no necessity for using more than one suspension. Preferably a bovine *abortus* strain should be chosen, and a formolized suspension, killed by heat at 60° C. for one hour, prepared. The serum should be titrated fully, because a pro-zone phenomenon is not uncommon with organisms of this group, and the tubes should be incubated at 55° C. for eighteen hours. A positive reaction at 1 in 100 or over, in the presence of suggestive clinical symptoms, may be taken as practically diagnostic of the disease.

As has been emphasized on more than one occasion, the disease is primarily one of animals. In this country infection appears to occur either by the consumption of heavily infected cow's milk or by direct contact with aborting animals. The frequency of *abortus* infection in cows is known to be high, but no exact figures of its incidence are available. There is, moreover, little or no reliable information about the incidence of Brucella infections of goats and swine. The time seems to be ripe for the institution by the Ministry of Agriculture of a commission of inquiry into the distribution of the disease in animals, and into the value of the various methods that may be used in its prophylaxis.

[1] Ministry of Health Reports on Public Health and Medical Subjects, No. 56. H.M. Stationery Office. 1s. 6d. net. See *British Medical Journal*, November 2nd, 1929, p. 817.
[2] *Journ. Amer. Med. Assoc.*, December 21st, 1929, p. 1964.

CAUSES OF NEO-NATAL DEATH.

"THE first quarter of an hour after birth is the most dangerous period of life. Its mortality is as great as that of any subsequent month. No single discovery in medical science or improvement in practice could do more to save lives than would measures to avoid the losses that now occur within a few minutes after birth." With this quotation from Yandell Henderson's paper on the prevention and treatment of asphyxia in the newborn,[1] Dr. J. N. Cruickshank opens his report on the causes of neo-natal death,[2] based on an investigation carried out on behalf of the Medical Research Council at the Glasgow Royal Maternity and Women's Hospital.

Five more or less distinct periods of the child's existence—namely, the embryonic, the foetal or antenatal, the intra-natal, the neo-natal, and the infantile—have to be considered separately. For the purpose of this investigation Dr. Cruickshank made a detailed study of only the intra-natal and neo-natal periods, and his report includes a close discussion of the post-mortem findings in 800 infants who died within twenty-eight days of birth. In 540 cases (67.5 per cent.) of this series death was regarded as being due to conditions associated with delivery—namely, asphyxia livida neonatorum, asphyxia pallida neonatorum, congenital atelectasis, prematurity, or birth injury. Asphyxia livida neonatorum is an exaggeration of the asphyxial congestion which is present in some degree in all infants at birth; asphyxia pallida neonatorum is a state of shock and is often associated with some form

[1] *Journ. Amer. Med. Assoc.*, February 25th, 1928, p. 583.
[2] Medical Research Council. Special Report Series No. 145. Child Life Investigations. The Causes of Neo-Natal Death. H.M. Stationery Office. 1930. 1s. 6d. net.

of birth injury, of which intracranial damage and the haemorrhage that results therefrom are specially important. In many of the cases prematurity was due to ascertainable causes, such as maternal disease, toxaemia of pregnancy, accidental ante-partum haemorrhage or haemorrhage from a placenta praevia, the use of ecbolic drugs, or accidental or deliberate violence; in a large proportion of cases, however, no cause for the premature labour could be found. In the etiology of neo-natal death prematurity is important, inasmuch as it accentuates the effects of asphyxia and atelectasis, and leads also to a greater tendency than there is in the mature infant to the development of certain complications and di-eases of this period—for example, pneumonia and sepsis. In 238 cases (29.7 per cent.) Dr. Cruickshank found that the cause of death was some infective condition acquired either before, during, or after delivery; but in these cases also prematurity and the persistence of asphyxia and atelectasis were important predisposing factors. The common portals of entry for neo-natal infection were the skin and respiratory tract, the gastro-intestinal tract and the umbilical stump only rarely serving as the source of infection. In view of the popular misconception that a large proportion of neo-natal deaths are due to developmental anomalies, it is noteworthy that Dr. Cruickshank found such conditions in only twenty-two cases (2.75 per cent.). Many cases so recorded on account of their cyanosis are, he believes, really cases of asphyxia livida neonatorum. The presence of congenital syphilis was definitely established in less than 1 per cent. of the cases; but other studies and observations have shown that the children of syphilitic mothers are often born prematurely and are particularly prone to develop sepsis neonatorum.

Preventive measures advocated by Dr. Cruickshank include the provision of increased facilities for antenatal examination and treatment, both at clinics and in hospitals, and of a much greater number of beds for the indoor treatment of obstetrical cases; improvement in the education of medical students, graduates, and midwives; improved hygienic and housing conditions, and the avoidance of overcrowding in maternity institutions; the establishment of special clinics for the treatment of cases of maternal syphilis or, alternatively, their treatment at maternity and child welfare centres instead of at the ordinary clinics for venereal diseases; and, finally, the application of physiological methods to the study of the newborn child and neo-natal diseases. In an appendix on asphyxia neonatorum and allied conditions Dr. Cruickshank sums up the main points in the treatment as follows: (1) The avoidance of all violent attempts at resuscitation. (2) Absolute rest, warmth, and quiet. (3) The immediate toilet of the air passages so as to remove mucus, meconium, and liquor amnii. (4) The supply of a mixture of oxygen and carbon dioxide (5 per cent. of the latter) in regulated doses. (5) Reduction of intracranial pressure by withdrawal of cerebro-spinal fluid in certain cases, particularly those with signs suggestive of intracranial bleeding and those in which the intracranial pressure by withdrawal of cerebro-spinal fluid in advance of an adequate fluid intake by means of gavage until the infant is able to feed from a bottle. (7) The toilet of the skin and accessible mucous membranes, and the exposure and movement involved in bathing, should be avoided until normal breathing, colour, and sucking power are attained. Perhaps the commonest error is failure to distinguish between asphyxia livida neonatorum, which is a true asphyxia demanding for its treatment the establishment of pulmonary respiration, and asphyxia pallida neonatorum, in which the predominant element is shock and failure of circulation, due in the majority of cases to birth injury and requiring a treatment in some ways analogous to that applied to surgical shock. In a communication to this *Journal* (December 15th, 1928, p. 1109) Mr. Aleck Bourne summed up the needs of infants in white asphyxia as "warmth, the head kept low, brandy dropped into the mouth—not for any reflex stimulation, which is impossible, but because some alcohol may be absorbed by the mucous membrane—and possibly some stimulant hypodermic, such as ether, coramine, or adrenaline." The very worst treatment for the infant in this state was, he suggested, artificial respiration, whether by violent massage or squeezing of the chest, abdomen, and loins, or by direct mouth-to-mouth insufflation, the only effect of which was, in his view, inflation of the stomach through the oesophagus, and so still further embarrassment of the heart. Such, however, is the tyranny of nomenclature that the practitioner will tend automatically to resort to artificial respiration in the treatment of any condition to which the name "asphyxia" is applied. There is much to be said, therefore, for Mr. Beckwith Whitehouse's contention that the term "white asphyxia" should be eliminated from all textbooks and substituted by the term "foetal shock."

CONGESTIVE HEART FAILURE

CLINICAL medicine has been described as an art aided by applied science. The nature of such conditions as auricular fibrillation has been elucidated by instrumental observations and experiments in the laboratory, but data so derived have then been correlated with some feature such as the character of the pulse, which can easily be recognized at the bedside. A beautiful illustration of the interdependence of clinical observation and experiment, methods, and incidentally of their respective advantages and limitations, appears in Sir Thomas Lewis's lecture on heart failure of the congestive type published in this issue at page 849. He points out that while the manometric method of measuring venous pressure, which has been extensively employed in his wards, cannot be widely adopted in ordinary practice because its application entails puncture of the vein, clinical investigations extending over many years have led to the discovery of bedside tests which give the same information and can readily be carried out by any careful observer. Lewis's account of the signs of congestive heart failure —a phrase he prefers to "loss of compensation" or "decompensation"—shows how much may still be learned from a careful study of the venous manifestations not only in cases of loss of cardiac tone, but in persons enjoying normal health. Thus, distension of the external jugular veins and a venous pulse at the root of the neck are normal in the supine subject, and the latter is not pathological even when it shows a considerable excursion. Clearly, then, for the recognition of changes pointing to cardiac failure it is important to be familiar with the normal variations in the state of the veins due to the influence of posture.

The main symptom of congestive heart failure is breathlessness unusual to the individual; this breathlessness may increase progressively or, as is commonly, by definite stages, at first being induced by such exertion as walking uphill, but passing as dyspnoea at rest, which becomes more distressing as venous engorgement advances. While in such cases little can be gained by repeated auscultation of the heart—for signs so obtained rarely change, nor do they indicate improvement in the state of the circulation

or the reverse—the venous phenomena and the condition of the liver provide evidence of the greatest value in the detection of the early stages of congestive heart failure. As the degree of engorgement in the venous system increases, distension of the veins extends higher and higher up into the neck, and eventually it persists when the head and shoulders are lifted from the supine position. This rise of the venous zero level, which in the normal subject is near the lower border of the manubrium sterni, should be investigated as a routine in all cases of suspected cardio-vascular disease, for though the gauges of venous zero level are perhaps not as accurate as manometric estimations of the venous pressure, they give results exact enough for bedside diagnosis. It is important to distinguish the normal pulsation of the veins at the root of the neck in the supine subject from that which occurs in venous engorgement. In cases of congestive heart failure the veins may be too tense to pulsate if the patient is in the supine position, but their pulsation can be brought out by raising him to the erect position, whereby the level of zero venous pressure is lowered and the pulsation may spread to the arms and even to the forearms. Usually enlargement of the liver does not precede distension of the cervical veins, but appears and advances synchronously with this phenomenon.

Sir Thomas Lewis insists on the importance of correlating these signs and of not trusting to any one sign in the diagnosis of early congestive heart failure. Thus, distension of the veins on one side of the neck points to local obstruction; but the association of an enlarged liver with distended veins is significant in the diagnosis of early congestion. Similarly, from the fact that general venous engorgement is always accompanied by breathlessness, either at complete rest or upon very slight exertion, it follows that if in a case thought to show early signs of venous stasis breathlessness is absent, the opinion first formed must be revised. Sir Thomas Lewis, clearly though he sets out his arguments and deductions, does well to warn us that their practical application is not as easy as might be supposed. This demonstration of what careful clinical study may reveal will be regarded by many readers as an interesting corollary to the paper on research in medicine which he contributed to our issue of March 15th last.

SIR JOHN BLAND-SUTTON.

The Story of a Surgeon,[1] by Sir John Bland-Sutton, is not only an account of the author's professional career and experiences, it is a brief history of surgical progress during the past fifty years and of the questions which from time to time came into the foreground. It would be well if a book of this kind were published by a leading surgeon in every generation, for without such accounts we are in danger of forgetting momentous events in the history of surgery which should have their lessons for succeeding generations. How many among us to-day realize the prolonged struggle that was made by conservative surgeons and gynaecologists of the mid-nineteenth century against the development of abdominal surgery, especially such proceedings as oöphorectomy? In overcoming this resistance Bland-Sutton took an active share, and his works and writings largely determined the result. Convinced that Lawson Tait was in the right he supported his contentions, but he admits that "Tait was a quarrelsome fellow, rough and rude," and that his statistics were certainly unreliable. When in the same year, 1896, Bland-Sutton was appointed surgeon to the Chelsea Hospital for Women, and to the Middlesex Hospital, his work spoke for itself, and to him is largely due the recognition accorded to the advance of abdominal surgery in England which dates from that period. Better known is the opposition which Lister's doctrines had to overcome in London. Of this Sir John writes: "The opposition to the gospel of antiseptics was astounding—almost unbelievable." At the Middlesex Hospital "Hulke openly sneered at antiseptics, but discreetly used carbolic lotion. The senior surgeon, Nunn, openly laughed at antisepsis." When the author was appointed assistant surgeon, forty-four years ago, he soon incurred the displeasure of his colleagues by his zeal for abdominal surgery, especially in regard to pelvic operations on women. His interest in this field was started by his work in the prosectorium of the Zoological Society, as a result of which he published an article on cysts of the ovaries in animals, which brought him into communication with Alban Doran and Lawson Tait. Further researches culminated in the Jacksonian Prize Essay of 1882 on diseases of the ovaries and uterine appendages. Though surgery has been his object in life, the early interest in comparative anatomy and pathology never flagged, and a great part of the charm of this book arises from the fact that its author is a lover of Nature. Sir John has obviously laid to heart the Shakespearian dictum that "Home-keeping youth have ever homely wits." His nimble wit has no home moss upon it, for he has taken his holidays far afield for many years, and wherever he has been he has stored up knowledge of the peculiarities of men and beast and bird, and recounted them with humorous appreciation of this strange world. It is surprising to note that at the beginning of the war the rank and duties of a captain R.A.M.C.T. (which rank he had held since 1906) were all that the authorities saw fit to offer to such a brilliant and famous surgeon. At the 3rd London General Hospital he rose in course of time to the rank of major. A work more worthy of his abilities was found for him in the organization of the War Museum now housed in Lincoln's Inn Fields. In 1918 he went as correspondent of the *Morning Post* across the Atlantic in order to collect for the public some records of the dangers and difficulties surmounted by the convoy service. Even here his surgical skill was called for, and he was equal to any emergency, from the castration of the bosun's cat to abdominal section. In fine, Sir John strikes us as one

> "That ever with a frolic welcome took
> The thunder and the sunshine."

Almost at the same moment as his book came from the publishers we received the April number of the *British Journal of Surgery* bearing the imprint on its cover, "Birthday Number dedicated to Sir John Bland-Sutton." The frontispiece is an excellent reproduction in colours of the portrait of Sir John in his robes as President of the Royal College of Surgeons of England, from the painting by John Collier which now hangs in the entrance hall of the College. All those who have seen the portrait will agree that it is a life-like presentment. The dedication is as follows: "To Sir John Bland-Sutton, Baronet, first President of the Association of Surgeons of Great Britain and Ireland, this number of the *British Journal of Surgery* is dedicated, on the occasion of the seventy-fifth anniversary of his birth on April 21, 1855." The commemorative issue is worthy of the occasion: it is full of good matter, well presented, and admirably illustrated. There was a time early in his career when it seemed doubtful if Bland-Sutton would stick to pure science and the study of comparative pathology, or become one of the leading operating surgeons of his time. He decided, fortunately for his many patients and the art of surgery, in favour of the latter course; but he has never ceased to be interested in zoology and comparative anatomy and pathology, and his occasional papers on these subjects in the columns of the *British*

[1] *The Story of a Surgeon*. By Sir John Bland-Sutton, Bt., F.R.C.S., with a preamble by Rudyard Kipling. London: Methuen and Co., Ltd. 1930. 12s. 6d. net.

Medical Journal have always been welcomed by our readers, who will join with us in wishing him many happy returns of the recent anniversary, and many further signs of his ability to charm us with discussions on the nature and the ways of living things, and the lessons to be learned from the post-mortem room.

HEALTH OF THE NAVY.

THE Admiralty continues to accelerate publication of its statistical reports of the health of the Navy; and the appearance of the report for the year 1928, little more than six months after that for 1927, encourages a hope that the 1929 report may be published before the end of the present year. The ratio of disease and injury shows progressive decrease. In a total force of 90,620 the ratio was 445.99 per 1,000 in 1928, as compared with 479.05 in the previous year; and though last year's influenza epidemic will probably be found to have increased the ratio in the next report, the comparison with the five years' average should remain satisfactory. The average daily sick list was 19.44 per 1,000, compared with 20.55 in 1927; and the 646,211 days of sickness represented 7.11 days per head of the total force, a decrease of 0.66 in comparison with the five years' average. This figure of slightly more than one week's sickness for each individual may have some interest for those who are responsible for the payment of sickness benefit in civil life. The lowest sick rate was in the Atlantic fleet; the highest in the Irregular list. During the year 1,037 persons were "finally" invalided, a ratio of 11.41 per 1,000, representing a decrease of 4.23 on the five years' average, and of 2.39 as compared with 1927. Twenty-eight of the 1,037 were invalided on account of having refused surgical operation; and it is interesting to speculate on what happened to the two patients with appendicitis who declined operation, and on the motives of the man with insufficient teeth who refused dental treatment, and of the man who preferred to carry multiple corns and hammer toes with him into civil life. The chief causes of invaliding were diseases of the eye (in the majority of cases errors of refraction), pulmonary tuberculosis, diseases of the ear, wounds and injuries, and diseases of the heart. Neurasthenia accounted for 38 invaliding, and 37 of the invalided had "deformities of the limbs." The 202 deaths in the force represented a rate of 2.22 per 1,000. Of this total rate 0.58 resulted from injuries, burns, and scalds; 0.21 from tuberculosis; 0.16 from pneumonia; 0.16 from diseases of the intestine; 0.15 from suicide; 0.12 from drowning; and 0.12 from organic heart disease. Tuberculosis, therefore, still maintained its place as the chief medical cause of death; and while the eleven cases of drowning were less than half those of the previous year, the cases of suicide were doubled—namely, fourteen. In 19,000 vaccinations and revaccinations there were 3,400 failures, and 394 of the vaccinated required nearly a week's treatment each for cow-pox. Three cases of small-pox occurred, all on the China station, with one death. Only three cases of enteric fever were recorded, with one death. There were four cases of paratyphoid. The 6,175 cases of venereal disease, while representing a decrease in case ratio of 8.19 as compared with the five years' average, showed an increase of 1.07 relative to 1927. The Africa station had the highest ratio, the Atlantic fleet the lowest. The total number of days lost from this cause was 142,779, and the average number of men sick daily was 390. The 3,798 acute gonorrhoeal cases were cured on the average in nineteen days. The preventive measures adopted in the Navy are described in the report under the headings: lectures, early diagnosis and treatment, physical and recreational training, and local disinfection. For the last-named procedure no prophylactics have been found superior to calomel cream and potassium permanganate. Dental treatment was required by 96.3 of the finally entered recruits in 1928, as compared with 95.67 per cent. in the previous year. An examination of 983 ratings serving in H.M.S. *Ramillies* showed that 36 per cent. were dentally fit, 59 per cent. required surgical treatment, and nearly 5 per cent. required denture work. Lectures on the care of the teeth are delivered at training centres; and very few cases of neglect, it is stated, are now met with among the younger personnel. To similar lectures at other shore establishments and on some of H.M. ships, at which attendance is voluntary, is attributed a marked diminution in the number of ratings suffering from dirty and neglected mouths. At the Royal Naval Medical School, Greenwich, research work was continued in 1928 on the development of antitoxin immunity. The whole of the hospital school was Schick-tested; and as the result of the use of prophylactics clinical diphtheria ceased to appear, and the carrier rate dropped. In fact, according to the report, it seemed as if the prophylactic procedure adopted had finally banished diphtheria from Greenwich Hospital School, where for years it had caused a 4 per cent. morbidity. In accordance with the recommendation of the Joint Medical Services Committee, the report furnishes information on the incidence of tuberculosis in relation to tropical service and to tropical diseases. The information does not seem particularly noteworthy. It is more interesting to learn that among the 153 cases of pulmonary tuberculosis which occurred during the year, in only eleven was a definite tuberculous family history obtained.

EPHEDRINE.

EPHEDRINE is a drug that in recent years has established and increased its importance very rapidly, and to-day is finding extensive and varied clinical applications. The history of the introduction of ephedrine into therapeutics is curious in that the drug was known for a long time before it received serious attention, but once it attracted notice its virtues were recognized very rapidly. The plant ephedra had been used in Chinese medicine for no fewer than 5,000 years, and the alkaloid was isolated as long ago as 1885. Some of the pharmacological actions of ephedrine were recognized at that date, and as a mydriatic it found a place in Merck's catalogue in 1896. The more important actions of ephedrine were not recognized until 1924, when Chen and Schmidt made a fresh analysis of its actions and showed that these resembled those of adrenaline, but that ephedrine possessed two important advantages—it was active when given by mouth, and the action produced was much more prolonged than was that of adrenaline. Western medical science took a long time to recognize the virtues of ephedrine, but this neglect has since been fully atoned, and the volume of literature devoted to this drug since 1924 has been embarrassingly large. Chen and Schmidt have performed a useful service in summarizing this great mass of information in one of the well-known Medicine Monographs. The bibliography at the end of the monograph is the best testimony of its need, for it contains about 400 references concerning the drug. The great majority of which are recent. The authors give a full account of the evidence concerning the chemistry, pharmacological action, and therapeutic uses of ephedrine. They conclude that those of its actions which are of therapeutic importance are sympathetico-mimetic. The chief of these actions are the pressor action on the circulation, the production of vaso-constriction in mucosa, and the relief of bronchial spasm. On the other hand, many of the pharmacological actions of the drug differ from those produced by adrenaline—for example, it stimulates isolated gut muscle, it stimulates the central nervous system, it does not depress secretions, and it has only a slight action on the basal metabolic rate. The outstanding therapeutic effect produced by ephedrine is the relief of asthma.

[1] Chen and Schmidt: *Ephedrine and Related Substances*. Medicine Monographs. Baltimore: Williams and Wilkins Company, February, 1930.

Miller in 1925 discovered its value for this purpose, and references are given to about 30 authors who have obtained favourable results. The action of ephedrine is slower and less dramatic than that of adrenaline, but it produces relief in about 20 to 30 minutes when given by mouth, and administration two or three times a day often suffices to keep patients free from attacks. The drug has also been used with success in the treatment of hay fever both when given orally and when used as a nasal spray. Nasal sprays of ephedrine (3-5 per cent.) produce almost immediate shrinkage of the engorged nasal mucous membrane, and this effect has been found favourable in the treatment of colds, and also has been utilized in nasal surgery. The action of the drug in raising the general blood pressure has been found useful in spinal anaesthesia, and it is claimed that its use can prevent a fall of blood pressure in this condition. It has also been used with varying success in a large number of other conditions, including various skin diseases and dysmenorrhoea.

MEDICAL EDUCATION IN AMERICA.

THE fourteenth series of *Methods and Problems of Medical Education*,[1] which the Rockefeller Foundation has since 1924 brought out and generously distributed to interested departments and teachers, is mainly devoted to accounts of the methods of recording observations. In this instalment the first of the three articles is by Dr. Charles L. Scudder and Dr. Nathaniel Allison, who reproduce all the sheets, forms, and charts which might possibly be employed for the record of any kind of fracture at the special department for the treatment of fractures in the Massachusetts General Hospital, Boston. This fracture service, established in 1911, is most carefully and elaborately organized, special attention being directed to following up the cases. In his description of the Department of Public Health and Preventive Medicine at the Peking Union Medical College Professor John B. Grant begins with some historical remarks, starting with Pettenkofer, and later on quotes with appreciation Sir George Newman's opinions on the general practitioner's part in preventive medicine. The instruction at the Peking Union Medical College is outlined, and the field-work of the clerkships is supplemented by an appendix giving the forms used for drawing up reports. In the remaining article Drs. Benjamin Hoyer and A. Graeme Mitchell set out the details of the record system at the Children's Hospital, Cincinnati, Ohio. The fifteenth instalment of this series[2] contains an account of Albany Medical College, which is the medical department of Union University, New York. A general account of the department is given by the dean and associate professor of medicine, Dr. Thomas Ordway, and after a description of the hospital by its superintendent, Dr. J. G. Copeland, the features of the fourteen departments of the medical college are set out, with many illustrations by the professors in charge. The Albany Medical College was incorporated in 1839, became part of Union University in 1873, was organized for teaching on a university basis in 1915, and in 1927 was provided with a new school building and a reconstructed hospital. The original hospital, opened in 1851, was very small, but the new hospital, with its eight floors, has 525 beds, and is connected to the medical college by corridors. There is a single department for physiology and pharmacology, a separate one for biological chemistry, and one for pathology and bacteriology. In his account of the Department of Communicable Diseases Dr. A. Sautter, clinical professor of dermatology and contagious diseases, briefly discusses the relative advantages of the cubicle system and of the separate corridor plan in the treatment of communicable diseases. The teaching of radiology, previously consisting of one hour's lecture, followed by the presentation of problem cases which are solved by the students, on one day a week throughout the third year, has been extended; in the fourth year, groups of four students will spend three hours on four days in each week for six weeks in various aspects of radiological work.

[1] *Methods and Problems of Medical Education* (Fourteenth Series). New York: The Rockefeller Foundation. 1929.
[2] Ibid. (Fifteenth Series).

SQUINT IN CHILDHOOD.

IN the last annual report of the school medical officer for the county of Lanark[1] there is a contribution by Dr. Ernest Thomson on squint in children. During a period of three and a half years some 1,800 children were referred to him for examination by the school medical officer; of these no fewer than 510 were squinters. Records were kept of the progress of these children under treatment. For various reasons only 383 were straightforward cases of ordinary convergent squint. At the end of the period under review the results of treatment were as follows: 73 children passed the severe test of being completely free from squint at the time of last examination, which varied from 4 to 24 months after the first examination. These children had straight eyes whether the glasses were on or off, but it is not suggested that relapse would not occur if the wearing of the spectacles were to be given up. A second group of 110 children showed no detectable squint so long as the spectacles were being worn, though the squint would return if the glasses were removed, and also during illness or excitement. There were indications that many of these children would eventually attain the state of the first group. A third group of 102 cases consisted of those in which the squint was noted as improved or lessened in degree. The fourth group, also of 102 cases, showed no improvement in the state of the squint. It was found that well over half the children in this group did not fulfil the conditions for successful treatment, because either the squinting eye was amblyopic or the spectacles were not conscientiously worn from morning till night. Others were of the alternating type, a condition which is notoriously difficult to cure. The moral drawn from these observations is twofold: the earlier a squint is treated optically the better are the results; imperfectly carried out treatment is little better than no treatment at all. The true ideal, unattainable perhaps, is prevention of the occurrence of squint by the examination of all children for errors of refraction at an early age.

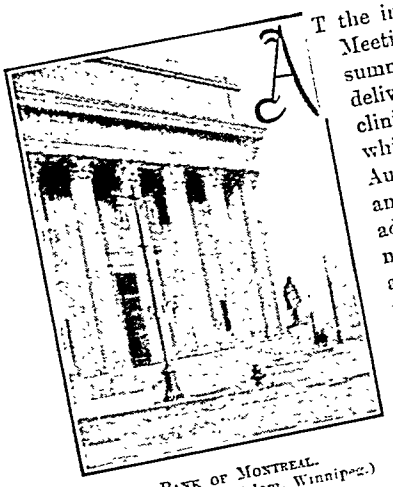
[1] Annual Report of the School Medical Officer of the County of Lanark Education Authority for the year 1928 29.

CONGRESS FOR SEX RESEARCH.

As previously announced, the second International Congress for Sex Research will be held in London in the House of the British Medical Association, Tavistock Square, from August 3rd to 9th next. The preliminary programme provides for general meetings, to be held in the mornings, at which problems of present interest will be treated in a number of reviews by prominent workers. The afternoons will be devoted to discussions on the general papers, and sectional meetings. The following are some of the subjects which will be discussed at the general meetings in the mornings: puberty and maturity; problems dealing with the physiology of the sex glands; hormone therapy. The rulings laid down by the committee restrict membership to professional biologists engaged in research on, or teaching in accredited institutions, anatomy, anthropology, botany, medicine, physiology, psychology, sociology, veterinary science, or zoology; to members of the medical profession now practising or who have practised. All British scientists or medical men who wish to take part in the congress are invited to apply to the congress secretary, Department of Animal Genetics, King's Buildings, the University, Edinburgh.

WE regret to announce the death on May 5th, after a short illness, of Dr. H. J. B. Fry, pathologist to the Research Institute of the Cancer Hospital, London.

NINETY-EIGHTH ANNUAL MEETING of the British Medical Association, WINNIPEG, 1930.



BANK OF MONTREAL.
(Photo by P. McAdam, Winnipeg.)

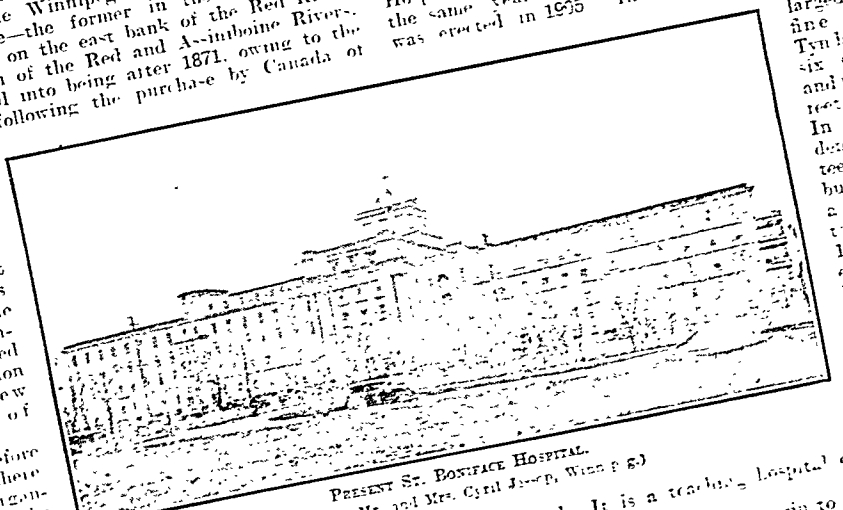
AT the invitation of the Canadian Medical Association the ninety-eighth Annual Meeting of the British Medical Association will be held at Winnipeg next summer, under the presidency of Professor W. Harvey Smith, who will deliver his inaugural address on Tuesday, August 26th. The scientific and clinical business of the meeting is being organized in fourteen Sections, which will hold their sessions on Wednesday, Thursday, and Friday, August 27th, 28th, and 29th, the mornings being given up to discussions and the reading of papers, and the afternoons to demonstrations and special addresses. The names of the Officers of Sections, with other preliminary notes, are published in this week's *Supplement*, and further details of the arrangements will appear from time to time in later issues. Members who propose to take part in the meeting should write at once for particulars about the journey by sea and land to the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1. We publish below the fourth of a series of historical and descriptive articles on Winnipeg and its institutions, contributed by Dr. Ross Mitchell; the first appeared on January 4th (p. 32), the second on February 15th (p. 300), and the third on March 22nd (p. 556).

THE HOSPITALS AND NURSING SERVICES OF GREATER WINNIPEG.

ST. BONIFACE HOSPITAL.

Two hospitals in Greater Winnipeg stand out with respect to age and size: the Winnipeg General Hospital and Hôpital St. Boniface—the former in the west end of Winnipeg, the latter on the east bank of the Red River, opposite the junction of the Red and Assiniboine Rivers. Hospitals were called into being after 1871, owing to the influx of settlers following the purchase by Canada of Rupert's Land from the Hudson's Bay Company, and the coming of Lord Wolseley's expedition to quiet the disturbances incident to the change of government necessitated by the creation of the new province of Manitoba.

Even before that date there had been organized care of the sick. At midnight on June 30th, 1844, four sisters of the Grey Nuns of Montreal arrived at St. Boniface in a bark canoe. Almost from the time of their arrival they entered upon their duties of teaching orphans and caring for the sick. Their proper title is Les Sœurs de la Charité de l'Hôpital Général de Montreal, but from their costume they are commonly known as the Grey Nuns. In 1871 they had managed to acquire sufficient funds to build a hospital which would accommodate four patients. In 1877 they acquired a large house which could accommodate ten patients. The demand for beds increased so rapidly that ten years later the corner stone of the present hospital was laid. The first building was of brick, and measured 80 feet by 40 feet. In 1893 a transept 140 feet by 50 feet was added. St. Roch's Hospital for infectious diseases was established in the same year. A south wing 223 feet by 35 feet was erected in 1905. In 1917 the central part of the building was enlarged. It has a fine front of Tyndall stone, is six stories high, and measures 167 feet by 52 feet. In 1927 a residence for fourteen interns was built. In 1928 a nine resident to accommodate 166 nurses was erected, and in 1929 a still further addition to the hospital was made. At the present time the hospital contains six hundred beds, and is completely equipped. It is a teaching hospital of the University of Manitoba.



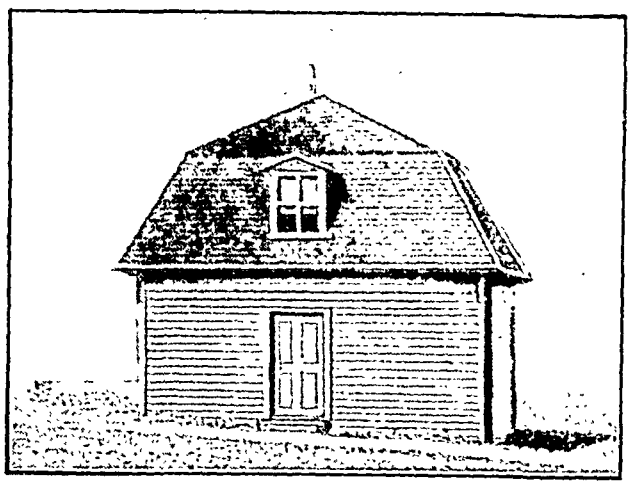
PRESENT ST. BONIFACE HOSPITAL.
(Photo by Mr. and Mrs. Cyril Joseph, Winnipeg.)

The Grey Nuns owe their origin to the Venerable Marie-Marguerite Dufrost Lajemmerais (Madame d'Youville) and the Rev. Louis M. Normand du Faradon, one-time Superior of the Seminary of St. Sulpice of Ville Marie, now Montreal. The order was founded in 1738, when the first city of Canada was little more than a village nestling on an island at the edge of a limitless wilderness.

THE WINNIPEG GENERAL HOSPITAL.

The Winnipeg General Hospital is junior to St. Boniface Hospital only by a short time. In 1871 a meeting was called by Lieutenant-Governor Archibald, and among those who attended were the Hon. A. G. B. Bannatyne, the Hon. Alfred Boyd, and Dr. J. H. O'Donnell. At this meeting a Board of Health was formed, and steps were taken to begin hospital work immediately.

On December 13th, 1872, the Winnipeg General Hospital was organized, but it was not until May 14th, 1875, that provincial letters of incorporation were taken out, a step rendered necessary by an appeal to the Provincial Government for assistance.



FIRST ST. BONIFACE HOSPITAL (1871).

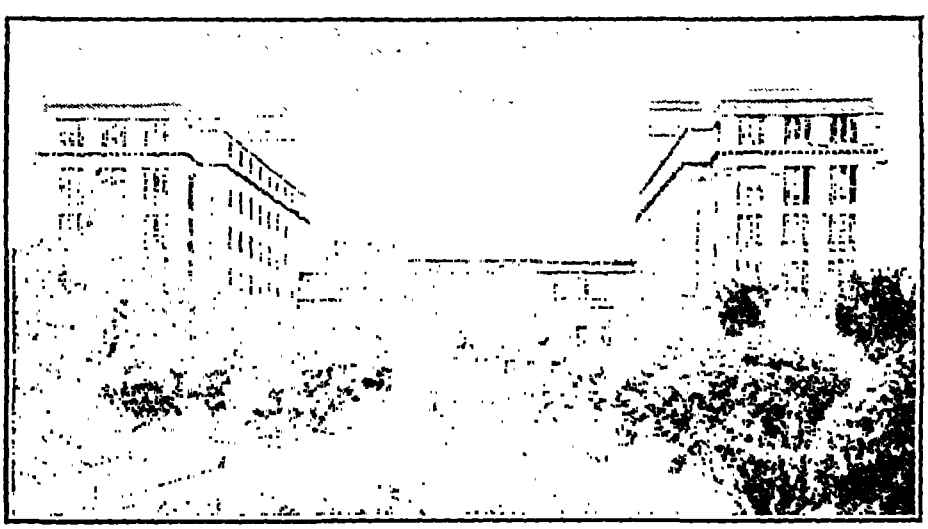
The first building occupied by the hospital was situated on the north-west corner of McDermot and Albert Street. This building had been occupied only two or three months when the hospital was moved to a house somewhere in the rear of the present Bank of Montreal, and afterwards to one on Notre Dame Avenue, owned by the late Dr. Schultz. From there it was moved to the bank of the Red River at a point south of Broadway on the present location of the Canadian National Railway. In 1875 the hospital was removed to Main Street North, to property owned by the late Hon. John Norquay. The sixth move was to a home owned by the hospital between Bannatyne and McDermot, close to the present location on land donated by the late A. G. B. Bannatyne. This location was selected with a view to placing the institution in that portion of the city which would most centrally meet the needs of the future, and the site chosen proves the wisdom and forethought of those responsible for the conduct of the Winnipeg General Hospital in the early days. The buildings erected accommodated sixteen public ward patients and four private patients, and had a small operating room.

With the beginning of the C.P.R. construction the large influx of settlers soon made the need for much greater accommodation apparent, and while arrangements were being made to collect funds for extensions the hospital was moved to the Dominion Government Immigration Hall on Point Douglas Common. It was decided that the lot that had been donated to the institution by the late A. G. B. Bannatyne and A. McDermot was not large enough, and this was exchanged for a block to the west of Olivia Street, and the adjoining block was purchased from the executors of the McDermot Estate for $5,000.00. On this a building costing $65,000 (£13,000) was erected and formally opened in 1884. The preponderance of males among the patients showed that Winnipeg was still a pioneer city, the proportion of males to females being ten to one.

A Nurses' Home and Maternity Department were added in 1888, and the Isolation Hospital was built in 1892. The growth of the city soon made further accommodation absolutely necessary, and in 1897 arrangements were made for the erection of a surgical wing, which was opened in 1899, and in 1904 a wing was erected at the east end of the medical building and the administration portion was remodelled.

In 1906 Bannatyne Avenue in front of the hospital was diverted to form a crescent so as to increase the site of the hospital, and the vacant square to the north was converted into a park, which provides a pleasant recreational area for convalescent patients. The full tide of immigration into the West between 1910 and 1912 was reflected in the expansion of the General Hospital at that time. New buildings, shown in the illustration, and providing accommodation for 250 beds, were completed in 1913.

The Winnipeg General Hospital was the first Canadian hospital to organize a social service department. This was in 1910. In 1919 a psychopathic ward was opened, and in 1922 an additional nurses' home. The first graduating class of nurses wrote their examinations in 1889. Since that time over 1,100 nurses have graduated from the hospital training school. The Medical College, which houses the Medical Faculty of the University of Manitoba, lies immediately to the west, and is connected with the hospital buildings by an underground passage. The General Hospital is practically the University hospital, and during its fifty years' existence more than 850 graduates in medicine have passed through its halls. These largely provide the medical service for Western Canada.



WINNIPEG GENERAL HOSPITAL.
(Photo by Mr. and Mrs. Cyril Jessop, Winnipeg.)

The hospital has accommodation for 700 beds. There is a large private service open to the patients of any reputable physician or surgeon in the community, and a public service under the care of the honorary attending staff, numbering thirty-two. The department for out-patients is very large, and an honorary staff of forty-five doctors minister to their ills.

THE TUBERCULOSIS CENTRAL REGISTRY AND CLINIC.

Up to the present the fight against tuberculosis in Manitoba—with the exception of King Edward Hospital, Winnipeg, for advanced cases, to which reference is made elsewhere—has been directed from the Manitoba Sanatorium at Ninette, 160 miles west of Winnipeg. In 1929 it was decided that since nearly half of the population of the province lies within a radius of ten miles of the Winnipeg City Hall, a Central Registry and Diagnostic Clinic should be established in the city. A brick building immediately to the east of the Winnipeg General Hospital

was put based, and is being remodelled. It will be connected by an underground passage with the General Hospital. When alterations are completed the structure will be used as a diagnostic clinic and a registry of all types of cases of tuberculosis and tuberculosis suspects in the province.

Misericordia Hospital.

Third in point of size among the hospitals of Winnipeg is Misericordia Hospital. It is under the direction of the Institute of the Sisters "de Misericorde," which was founded in Montreal on May 1st, 1845, and canonically approved on January 16th, 1848. The objects of the Institute are to help in the moral rehabilitation of the unfortunate victims of a deceitful world, and to rescue, nurse, and bring up the poor forlorn children. Its motto is "Misericordia derelictis." In 1893 a House of the Institute was established in Manitoba. Four sisters were brought out. Shortly after their arrival they bought land on Broadway, where they intended to lay the foundation of a permanent establishment. Unforeseen circumstances compelled them to abandon that site, and a new site was secured at the foot of Sherbrooke Street, close to Maryland Bridge over the Assiniboine. In 1900 the first part of the present structure was completed.

In 1907 the hospital was enlarged, and in 1912 the Asile Ritchot was built at St. Norbert to give shelter to 100 babies. In 1916 a training school for nurses was established, and the hospital, which at first had received only obstetrical cases, became a general hospital. In 1927 a large fireproof addition fronting on Wolseley Avenue was built. It contains splendidly equipped operating rooms and laboratories as well as wards, which bring the total capacity of the hospital to 225 beds.

The Children's Hospital.

In 1905 the idea of starting a hospital exclusively for children was brought before the Local Council of Women. A committee of four was chosen, with power to add to their number. It was decided to open a hospital for children in a locality where the death rate was highest, and, until the venture had shown its value, to solicit no funds, but to raise them by their own personal efforts and the efforts of their friends. By running a tea-shop, bazaars, literary teas, selling paper violets on the streets, and in other ways these women finally secured sufficient funds to enable them to rent a large house. On February 6th, 1909, the hospital was opened with one baby patient, one superintendent one maid-of-all-work, and a full staff of honorary physicians and surgeons. In that year 282 children were admitted and 546 new patients treated.

With the need of a hospital for the exclusive treatment of children established, a site of three and a half acres was procured on Aberdeen Avenue, overlooking the Red River. The present hospital was erected, and was opened for patients in November, 1911. It was formally opened in July, 1912, by H.R.H. the Duke of Connaught, and he and his consort became patrons of the hospital.

In 1916 a complete laundry unit was built, and in 1918 a nurses' residence. In 1925 the Shriners' Hospital for Crippled Children established a unit for the treatment of twenty patients by running one ward of the hospital. In 1928, by an addition, accommodation was provided for thirty-two. At the present time the hospital can accommodate 133 patients. The out-patient department is splendidly equipped with quartz lamps and other apparatus for phototherapy, supplied by the Kiwanis Service Club.

The Bureau of Child Hygiene.

Adjoining the Children's Hospital is the Milk Dispensary owned by the City of Winnipeg and under the direction of the Bureau of Child Hygiene, a division of the Health Department. In 1912, the year prior to the institution of the Bureau of Child Hygiene, the death rate of infants under 1 year was 207 per 1,000 live births. In 1928 the infant death rate was 63. The Bureau has three distinct services: the babies' clinic, milk dispensary, and visiting nurses. In the milk dispensary are prepared by trained dietitians the modified feedings prescribed by the clinic, the Children's Hospital, and private physicians. The clinic is open daily, except Sundays, from 9 a.m. to 5 p.m., for consultations, advice, and the weighing of babies. The nurses number fourteen—thirteen district nurses and one in attendance at the clinic.

Grace Hospital.

Grace Hospital was organized in 1904 by the Salvation Army in order to care for unfortunate girls and to provide accommodation for maternity patients. It was incorporated in the same year by special Act of the Manitoba Legislature, and for a time work was carried on in a rented house on Young Street. In 1905 the corner stone of the first section of the hospital at the corner of Preston and Arlington Streets was laid by the Hon. R. P. Roblin, Premier of the province. In 1911 the hospital was considerably enlarged, and in 1927 a fully modern building, of fireproof construction, four stories in height, and fronting on Arlington Street, was opened by Lady Willingdon, wife of the Governor-General of Canada. The three lower floors contain wards and nurseries, while on the fourth floor are waiting rooms, labour rooms, and operating rooms with the latest equipment. With this addition Grace Hospital now contains 149 beds for patients, and also accommodation for sixty girls, as rescue work among the unfortunate has always been part of the work of the Salvation Army.

Victoria Hospital.

Victoria Hospital, on River Avenue in Fort Rouge, was built in 1912 by the late Dr. Thomas Beath. A few years previously Dr. Beath had built and operated a hospital on Bannatyne Avenue near the Winnipeg General Hospital. This structure, a wood[illegible] building, was later used for a short time by the [illegible] Winnipeg as a hospital for infectious diseases.

Victoria Hospital is [illegible] stories in height, of reinforced concrete and brick [illegible]ction, and has accommodation for 103 adult patients [illegible]6 babies in the five floors used for hospital purposes. [illegible] nurses' home, a solid brick building, adjoins the [illegible], while across River Avenue is the Annex, a brick [illegible]ted building. This provides quarters for the [illegible] home and for hospital attendants. The hospital is [illegible]general, and accepts all cases which are not contagious [illegible]infectious. It is an "open" hospital in which any [illegible]-tered physician of good standing may attend his cases. Dr. Beath was managing director until 1919, when [illegible]resigned on account of ill health. The present direction of the hospital is vested in a board of directors, with Dr. J. P. Thomson as managing director.

St. Joseph's Hospital.

St. Joseph's Hospital, Winnipeg, conducted by the Sisters of St. Joseph, is situated on the corner of Salter Street and Pinkham Avenue, North Winnipeg; it was built in 1918, and operated as a private hospital until June, 1923, when it was taken over by the Sisters of St. Joseph of Toronto, and immediately converted into a general hospital of fifty beds; in September of the same year a training school for nurses was opened.

In January, 1927, a new unit containing operating rooms and private and ward accommodation was opened and a staff of attending doctors was formed for the departments of surgery, medicine, gynaecology, obstetrics, and eye, ear, nose, and throat. A radiologist and pathologist have since been appointed. In the same year an out-patient department was opened. The training school for nurses is under the direct supervision of the Sisters of St. Joseph, and is affiliated with the King George and King Edward Hospitals for communicable diseases.

The Order of the Sisters of St. Joseph was established at Le Puy, France, October 15th, 1650, by Mgr. Henri de Maupas, Bishop of Le Puy. In 1836 the first American foundation was made from the community at Lyons, France; and on October 7th, 1851, the first Canadian foundation was made at Toronto, Ontario. The special purpose of the Congregation of the Sisters of St. Joseph is the instruction and Christian education of youth, and the direction of charitable works, such as orphanages, hospitals, and homes for the poor and aged.

THE MUNICIPAL HOSPITALS.

The municipal hospitals, comprising King George Hospital for acute communicable diseases, King Edward Hospital for advanced pulmonary tuberculosis, the Small-pox Annex, nurses' home, power house, and superintendent's residence, are grouped in the south end of the city in a twenty-five-acre park, triangular in shape, with the Red River forming the base of the triangle. King George Hospital has 200 beds, King Edward Hospital 100 beds, and the Small-pox Annex 30 beds.

Hospital service as a civic utility dates back to January, 1911, when the old Beath Hospital, on Bannatyne Avenue near the General Hospital, was purchased to provide for the cases of scarlet fever prevalent at that time. Five months later a temporary building for cases of advanced pulmonary tuberculosis was opened. This building was located on the site in the Riverview district mentioned in the previous paragraph. In July, 1912, King Edward Memorial Hospital was ready for occupancy, and in February, 1914, King George Hospital was opened. H.R.H. the Duke of Connaught opened the King Edward Memorial Hospital and laid the foundation stone of the King George Hospital on July 11th, 1912.

Sixteen training schools in Manitoba, Saskatchewan, and Ontario send their student nurses to the municipal hospitals of Winnipeg for training in infectious diseases nursing. Medical students from the University of Manitoba also receive instruction here. The high standard reached by Winnipeg hospitals may be judged by the fact that all the hospitals come in the fully approved list of hospitals drawn up by the American College of Surgeons.

MOUNT CARMEL CLINIC.

The Mount Carmel Clinic is the most recent of Winnipeg's institutions for ministering to the sick. Located in a fine brick building on the west bank of the Red River at Selkirk Avenue, east of Main, it is well situated to serve the adjacent thickly settled district. The clinic is maintained by voluntary contributions, and renders aid to the sick poor without distinction of race, creed, or nationality. It contains the latest equipment for diagnosis and treatment.

WINNIPEG HEALTH DEPARTMENT.

Winnipeg has reason to be proud of its health department, which for a number of years has been under the direction of Dr. A. J. Douglas. As late as twenty-five years ago typhoid fever was prevalent and swelled the death rates. From 1904 onward energetic steps were taken to stamp out the disease, with the result that for the last ten years very few cases have developed within the city. The steps taken included an extensive campaign of education as to the means whereby the disease is transmitted, insistence upon sewer connexions, the abolition of outdoor privies, and the building of an aqueduct ninety-six and a half miles in length to bring a supply of purest water from Shoal Lake, an arm of the Lake of the Woods. The fight against other communicable diseases has been waged with equal vigour. Reference is made elsewhere to the municipal hospitals, which provide accommodation for sufferers from diphtheria, scarlet fever, tuberculosis, small-pox, and other communicable diseases. The Bureau of Child Hygiene, mentioned earlier, comes under the survey of the Health Department. The death rate for the City of Winnipeg for the year 1927 was 8.29 per 1,000 population, and not the least among the factors which keep the death rate at a low figure is the Health Department.

THE VICTORIAN ORDER OF NURSES.

The Winnipeg Branch of the Victorian Order of Nurses, an organization which extends across Canada, is particularly strong and efficient. It has existed in Winnipeg for twenty-nine years, and has grown with the community. The staff consists of a supervisor and twelve nurses. The Order also has a list of women who can act as helpers in the home when the mother is ill. The nursing service of the Victorian Order is divided into two classes—district and hourly. In district nursing the fees charged for visits are on a sliding scale according to the patients' ability to pay, though the size of the fee does not regulate the service. One of the objects of the Order is to foster a spirit of independence and self-respect among its patients. In hourly nursing a fixed rate per hour is charged. This service is run on a self-supporting basis, and is in no way a charity. In times past the Winnipeg Branch has also done industrial nursing—that is, assuming the nursing care of the employees of large departmental stores and other organizations. While at the present this work is not being carried on, the Winnipeg Branch is prepared to resume it when conditions warrant.

In connexion with the district work the Victorian Order carries on an educational campaign, through pre-natal and post-natal clinics, a "well baby" clinic at St. James's, and home nursing and mothercraft classes.

The Victorian Order Dental Clinic is a boon to those who cannot afford to pay the full charges of a dentist. Some fifty dentists of the city generously give their services free to this clinic.

The headquarters of the Winnipeg Branch are in the Medical Arts Building, itself a splendid monument of medical enterprise and co-operation.

THE MARGARET SCOTT NURSING MISSION.

This mission is called "The Margaret Scott Nursing Mission of Winnipeg," in acknowledgement of the unselfish and self-sacrificing labours of Mrs. Scott for many years in ministering to the physical and spiritual needs of the sick poor of this city. It is supported by a society formed to perpetuate the work of Mrs. Scott, who, happily, is still living, though in delicate health. The Mission was organized a little over twenty-five years ago. The nurses' home is at 99, George Street, in the east end of the city, close to the Red River. The Mission is undenominational and ministers to the sick poor without making any charge. In 1928 the visits made numbered 27,864, of which a great proportion were to female patients, as maternity nursing forms a large part of the work. The nurses are usually twelve in number, including six student nurses from the Winnipeg General Hospital and two student nurses from the Children's Hospital, who come to the Mission for two months' experience in district nursing.

LONDON AND COUNTIES MEDICAL PROTECTION SOCIETY.

ANNUAL MEETING.

THE annual general meeting of the London and Counties Medical Protection Society was held at the society's offices, Victory House, Leicester Square, W.C., on April 30th, under the chairmanship of the president, Sir JOHN ROSE BRADFORD.

The annual report announced a substantial increase in membership: 805 new members were elected during the past year, 298 of whom were in the first year of their registration. The number of members on December 31st last was 11,856. During the year 1,079 applications for advice and assistance were received; in the majority of cases satisfactory results were obtained without litigation, and the issue of most of the cases in which litigation occurred was satisfactory. The report of the solicitors stated that there had been no spectacular litigation. In again issuing the warning that *x*-ray photographs should be taken in all cases of suspected dislocation or fracture, the solicitor added a further warning against placing reliance upon *x*-ray photographs taken by radiographers as distinct from the qualified radiologist; the medical practitioner might be running a grave risk in relying upon such photographs in the event of trouble arising.

Sir JOHN ROSE BRADFORD, from the chair, dwelt upon the financial strength of the society. The income had increased during the year by more than £600, and the expenditure was materially less than in the previous year. It had been possible to transfer the substantial balance of £4,562 to the accumulated funds. In total the assets of the society now reached a very large sum indeed, and its financial stability was thoroughly demonstrated. He paid a warm tribute to the members of the council and officers and staff for their excellent services.

The report and accounts were adopted, Sir John Rose Bradford was unanimously re-elected president, Dr. C. M. Fegen treasurer, and the vice-presidents and retiring members of the council were also re-elected, with four additions to the

list of vice-presidents—namely, Dr. R. L. Guthrie, Dr. C. O. Hawthorne, Dr. E. Farquhar Murray, and Mr. E. B. Turner—and two new members of council to fill vacancies—namely, Mr. H. W. Carson and Mr. H. Stubbs. Dr. Hugh Woods and Mr. A. G. R. Foulerton were re-elected general and financial secretaries respectively.

Dr. R. GUILBARD urged that there should be more young general practitioners on the council, and, especially with the increasing demands on the insurance practitioner in relation to the Ministry and to the bodies charged with insurance administration, that more men or women engaged in insurance practice should be included.

Dr. C. M. FLUX, chairman of the council, replied that every effort was made to ensure that the council was representative of every branch of medical practice. Three out of the twelve elected members were insurance practitioners, and certainly three of the vice-presidents had had considerable experience in that field, and in one case this was continuing. The council had to deal with many cases in which insurance practice was concerned, and was well aware of the pitfalls which beset the practitioner. Where the practitioner had been in conflict with the law in the society had very often been of great assistance in maintaining his rights. As for an accession of young practitioners to the council, it was with a view to making it possible for them to serve—men to whom the time involved in such frequent attendance was an important consideration from the financial point of view—that the society some years ago decided to remunerate the members of the council to the extent of one guinea for each of the fortnightly or weekly attendances.

The meeting concluded with two votes of thanks, one, proposed by Dr. FLUX, to the solicitors of the society, Messrs. *Le Brasseur and Oakley, for their skilled and unstinted help* in many difficult and contentious cases, and the other, proposed by Dr. OWEN FOWLER, to Sir John Rose Bradford, for his advice and assistance on the many occasions on which it was sought and for the prestige which his name and authority gave to the society.

Scotland.

Department of Health for Scotland.

THE first annual report of the Department of Health for Scotland, which succeeded the Scottish Board of Health on January 1st, 1929, has just appeared.[1] This report of 230 pages, to which further references will be made in later issues, is divided into twelve chapters dealing with the following subjects: housing and town-planning, slum clearance, *general sanitation, food supply, maternity* service and child welfare, school health administration, infectious diseases, Highlands and Islands medical service, national health insurance, *pensions*, Poor Law, welfare of the blind, and miscellaneous. The salient event of the year was the passing of the Local Government (Scotland) Act, 1929, effecting many important changes in the finance and organization of Scottish local government. In preparation for these changes, which take place on May 16th next, much preliminary work has been done in the Department, and a series of circulars have been issued for the guidance of the new authorities dealing broadly with policy in the health services and the Poor Law.

Work of the Blind in Scotland.

On April 28th the Secretary of State for Scotland opened a recent extension of the workshops of the Aberdeen Asylum for the Blind. These had been erected at a cost of between £4,000 and £5,000. Mr. Adamson said that this institution had been founded 112 years ago when Miss Christina Cruik-bank left the sum of £8,000 for the benefit of the indigent blind in the counties of Aberdeen, Kincardine, and Banff. In 1890 special provision was made by the State for the education of blind and deaf children aged 5 to 16; in 1918 the age was raised to 18. This was the charter of the blind child, as the Blind Persons Act of 1920 had been the charter of the blind adult, providing the old age pension at 50 instead of at 70, and making local authorities responsible for the welfare of blind persons. For forty years blind children had been receiving a good education, and many of them had made excellent use of their opportunities. In the last ten years institutional accommodation for blind persons in Scotland had increased by over 50 per cent.; in that period the State had made grants in Scotland amounting to £165,000. Including what had been spent on old age pensions and by local authorities, blind persons had received a total of £1,055,000 between 1920 and 1928. The blind to-day were therefore better cared for in every way. In 1929 there were 8,500 persons on the central register of the blind. An encouraging fact was that in the last nine years the number of blind children of school age had *fallen from 339 to 285*; it was still more encouraging that the number of those under 5 had fallen from 38 to 11. This might be regarded as a triumph of preventive medicine; it was worthy of note that at the present time there was not a single blind child *in the county or city of Aberdeen* or in the counties of Banff and Kincardine. Most of the credit was due to those who were concerned with maternity and child welfare. The question of training and employment of the blind was perplexing; there were three difficulties: employment after training, the need for new industry, and the disposal of goods. Mr. Adamson thought that the co-operation between the managers of the four institutions for the blind in Scotland showed promise of *fruitful results*.

Edinburgh School for Mentally Defective Children.

The new St. Nicholas School in Gorgie Road, Edinburgh, erected by the Edinburgh Education Authority to accommodate a hundred mentally defective children, was opened on April 30th by Mr. W. W. M'Keehnie, secretary of the Scottish Education Department, under the presidency of Councillor P. H. Allan, chairman of the Education Authority. Mr. M'Keehnie said that this was an open-air school of a kind hitherto unknown in Scotland. At the present moment there were 5,400 physically defective and 3,600 mentally defective children in Scottish schools. The number of these young patients had doubled in the last fifteen years, simply because the local authorities had become more aware of the extent of this problem, thanks to the development of the school medical service. Edinburgh had made an important contribution to this work, for at the present moment it was dealing with over 1,000 such children in about twenty centres. The work of the education authorities was the basis of future provision, and the foundation of preventive work for defectives. The school occupies an area of about two and a half acres; it is a one-story building, planned round an inside courtyard. The sides of the classrooms have glass doors which can be adjusted so that they open on wide verandahs; ventilation is a special feature. There are five classrooms, each accommodating twenty pupils, in addition to a manual instruction room, cookery room, dining hall, and medical inspection room. The total cost, excluding cost of the site, was over £12,000.

Edinburgh Foot Clinic.

At the annual meeting of the Edinburgh Foot Clinic Mr. C. W. Cathcart, F.R.C.S., who took the chair, referred to the work that had been done since the clinic came into existence in 1924. The report showed that the number of treatments during the year amounted to 8,515, compared with 7,819 in the preceding year. There was a waiting list at the end of the year of 1,791 names, and patients had to wait some three months before they received attention. This period, the committee hopes, will be reduced as soon as funds permit an increase in the number of operators. It is pointed out that although the operators give their services free, the annual expenditure exceeded the income for the year by £36. The chairman mentioned that chiropody as a minor surgical specialty had made great progress both in preventive and in remedial treatment. It was stated by Councillor Mrs. Morison Millar that an attempt was being made to include chiropody in the services rendered under national health insurance.

Edinburgh Deaconess Hospital.

At the thirty-fifth annual meeting of the Church of Scotland Deaconess Hospital, Lord Sands, chairman of the Board of Management, in presenting the annual report, referred to the recent death of Dr. J. W. L. Spence, who was radiologist to the hospital for many years. During the year 750 in-patients and 6,703 out-patients were treated. The ordinary income was £6,955, and the ordinary expenditure £5,618. Dr. Haig Ferguson, president of the Royal College of Surgeons, said that the hospital was doing admirable work in training nurses for the mission field.

[1] Cmd. 3529. Edinburgh: H.M. Stationery Office. 3s. 6d. net.

England and Wales.

The Tavistock Square Clinic.

THE annual meeting and luncheon of the Tavistock Square Clinic for functional nervous disorders took place on May 5th under the chairmanship of Dr. H. B. Brackenbury, Chairman of Council. At the business meeting a report was presented evidencing increasing work under conditions of very great pressure. The number of new cases attending the clinic during the year was 625, a large increase on previous figures, and the total number of cases which had been under treatment during the twelve months was over 900. The medical staff now numbers 40, of whom 21 are full physicians of the clinic, and 14 clinical assistants. Progress was reported with regard to an extension scheme comprising an Institute of Medical Psychology, which would be a demonstration and research unit to further the prevention and early treatment of nervous breakdown; this scheme was expounded in the *British Medical Journal* of October 26th last (p. 774).

More than 300 sat down at the luncheon, when addresses were delivered by Dr. W. J. Adie (in the absence of Sir E. Farquhar Buzzard), Miss Ishbel MacDonald, daughter of the Prime Minister, and Dr. H. Crichton Miller, honorary director of the clinic. Dr. Brackenbury mentioned that Dr. J. R. Rees, the deputy director, was at Washington, attending the International Congress of Mental Hygiene, which was being opened that day by President Hoover, and a message of greeting and good wishes was cabled to the congress from the meeting. Dr. Adie said that he welcomed the opportunity of telling a lay audience what he and many of his colleagues thought of the present lack of adequate facilities for treating patients suffering from functional diseases of the nervous system, the need for institutions where physicians trained in special methods could treat their patients in a suitable environment, and the excellent work which the Tavistock Square Clinic was doing in that connexion. Again and again he had been forced to tell hospital patients suffering from functional nervous disorder that he was unable to provide them with the treatment they needed, and that he did not know where they could obtain it. Things were now a little better, because he could send them to Tavistock Square, but the clinic could not accommodate them all. Many patients suffering from a functional condition were convinced that some form of physical treatment would cure them, with the result that bizarre and magical methods were supplied and resorted to, while, on the other hand, patients whose symptoms were due to physical disease might say that they knew it was all "nerves," ask for treatment by mental suggestion or analysis, and fall into the hands of some ardent but ignorant psycho-therapeutist for a long course of unnecessary and perhaps harmful mental treatment. It was because he knew that these errors were carefully guarded against at the Tavistock Square Clinic, and that psycho-therapeutic treatment was not indiscriminately given, that he and his colleagues recommended the institution with great confidence. Miss Ishbel MacDonald, in an admirable little speech, referred to the preventive aspect alike of modern medical treatment and of social legislation. The clinic, she said, was doing valuable work in readjusting to society those who, somehow, had got into the wrong groove. She wished there were more such clinics where sympathetic understanding and treatment were available, and that they were supported by homes where during their period of restoration patients might be kept away from their ordinary surroundings, which were often unfavourable.

Dr. Crichton Miller, in some account of the year's work, expressed a welcome to Dr. Brackenbury in the chair. A year ago Dr. Bedford Pierce, soon after he had accepted the position of chairman of the clinic, was made a member of the Board of Control, and felt himself obliged to resign the chairmanship. Dr. Brackenbury brought to the chairmanship the prestige of many years' notable work for the British Medical Association, and his name was one to conjure with in the medical profession all over the country. It was one of the most flattering things that had ever happened to the clinic, said Dr. Crichton Miller, that Dr. Brackenbury should have accepted the chairmanship. The year's work at the clinic might be described as "growth without expansion." Two years ago the number of attendances for treatment was 4,000; during the last twelve months it was 7,500, and the waiting list was a sore difficulty. What was wanted was not so much extension of the clinic as multiplication of it, but the present lack of space meant that it was impossible to take on more staff and consequently impossible to train more doctors. He added that an increasing number of cases came from two interesting sources. One of these was the hospitals, which sent many cases of neurosis, and the other was the courts. Mr. Clarke Hall and other metropolitan magistrates sent to the clinic a large number of child or adolescent offenders, and in dealing with them the clinic felt that it was fulfilling a very important function.

Small-pox and London Council Schools.

A regulation of the London County Council provides, *inter alia*, that children who reside in a house in which any person is suffering from infectious disease shall be excluded from school for any period which may be prescribed. This part of the regulation, however, is to be suspended. In the areas in which small-pox is most prevalent the problem of supervising contacts is becoming a matter of some difficulty, and after consultation with the Ministry of Health and the medical officers concerned, it is considered advisable, in order to facilitate the task of supervision and to prevent spread of the disease, that children in whose homes small-pox occurs should be allowed to attend school under daily observation by the school medical service whilst the children remain in good health. It is believed that, by keeping the children under daily observation in school, disease can be detected in its early stages, whilst contacts who absent themselves from school during the period of observation can be reported at once to the borough medical officer, who is thus kept informed of cases which may possibly be developing small-pox. In schools which are not under special observation these measures are not possible, and it has sometimes happened that children suffering from a mild attack of small-pox have attended school while the rash has been out for some days. The new procedure has been designed to prevent as far as possible such cases being overlooked, and will only apply in the case of the present very mild type of small-pox. During the first ten weeks of the present year 1,528 cases of small-pox were notified and confirmed, of which 491 were in children attending council schools. No vaccinated school child developed small-pox, and generally the children reported were suffering from a mild type of the disease. The recommendation agreed to by the Council on the proposal of the Education Committee was that the operation of the regulation

> "so far as it relates to the exclusion from school of children or pupils residing in a house in which any person is suffering from any infectious disease, be suspended, in order that, in those schools which can be kept under daily observation by the school medical service and where the borough medical officer of health concurs, children living in houses from which cases of small-pox have been removed may be permitted to attend school, whilst in good health, subject to the discretion of the school medical officer."

Presentation to Dr. A. Brown Ritchie.

Dr. A. Brown Ritchie, the first medical officer appointed by the Manchester Education Committee, retired on April 23rd, after serving for nearly twenty-seven years. Before his appointment he had been engaged in general practice in Manchester and had been secretary of the Manchester Division of the British Medical Association, and was actively concerned in the arrangements for the Annual Meeting in Manchester in 1902. On April 15th, Dr. Ritchie was the recipient of a presentation from the members of his staff. Dr. H. Herd, senior assistant in the department, expressing regret at Dr. Ritchie's retirement, emphasized the fact that he had never forgotten to deal with those under his orders as members of one professional brotherhood. His essential kindness of disposition had endeared him to all with whom he came into touch. Mr. E. D. Telford, surgeon to the residential cripples school, testified to Dr. Ritchie's tact as an administrator and to his readiness to allow the special research work of his assistants to be published under their own names in his reports. Dr. Ritchie has also received presentations from

the combined staffs of the education office, and from the teachers in the special schools for physically and mentally defective children. It may be recalled that his appointment to the post of school medical officer was made a few years before the official institution of school medical inspection, and at a time when few of even the more progressive local authorities had begun to realize the necessity for this kind of work. After the passage of the Act authorizing normal medical inspection Dr. Ritchie was enabled to conduct a more systematic scheme, and since 1907 further development has been rapid. The first staff in 1909, which comprised four full-time assistants and five nurses, has been increased to nineteen full-time assistant medical officers, four full-time specialists, eight full-time dentists, sixty-two nurses, and five masseuses. The first clinic was opened in 1915, and there are now nine in full working order. Manchester also possesses five residential schools for cripples, pre-tuberculous or other delicate children, and also one for epileptic children, which is unique in this country; the medical control of all of these has been in Dr. Ritchie's hands.

Royal Sanitary Institute.

The annual congress of the Royal Sanitary Institute will be held this year at Margate, under the presidency of Lord Cornwallis, from June 21st to 28th. A large number of representatives of the American Public Health Association are expected to take part in the proceedings. Sir Andrew Balfour will preside over the section of preventive medicine, Sir Thomas Neill over that of the National Health Insurance Services, and Lady Howard de Walden over the section of maternity and child welfare and school hygiene. Among the subjects to be discussed are: psittacosis; maternal mortality; health authorities and midwifery; the county district medical officer and the Local Government Act, 1929; food in relation to dental hygiene; slum clearance and housing; and midwifery and health visiting in rural areas. The congress lecture will be delivered by Dr. O. Charnock Bradley, principal of the Royal (Dick) Veterinary College, Edinburgh, who will speak on diseases of domestic animals from the human angle. Further information may be obtained from the secretary of the Royal Sanitary Institute, 90, Buckingham Palace Road, S.W.1.

Correspondence.

AMPUTATIONS AND ARTIFICIAL LIMBS.

SIR,—The condemnation of the late results of Syme's amputation of the leg by some of the speakers in the discussion on amputations in their relation to artificial limbs in the Section of Surgery of the Royal Society of Medicine (reported in your issue of April 12th, p. 693) came as somewhat of a shock to me, for I have long considered the amputation as one of the best in surgery from a practical point of view. I feel, however, that there is no gainsaying the deliberately expressed opinion of a surgeon who has had so much experience of war pensioners as Dr. Langdale-Kelham, who speaks with no uncertainty of the supervention of stump troubles after the lapse of ten years. It may be presumed that he was referring to cases seen at Roehampton, in which amputation had been performed for war injuries, such as frost-bite gangrene or severe sepsis. It has occurred to me that an inquiry into the remote results of Syme's amputation in civil practice would be interesting, and might possibly reverse the verdict pronounced on these stumps in the hospitals of the Ministry of Pensions.

The artificial limb makers seemed to me to be likely to have information in their possession which might affect the decision, and I therefore wrote to some of the London firms of longest standing and experience, asking them to tell me if their experience in civil life supported the condemnation of the Syme stump after the lapse of ten or more years from the date of amputation. I received answers to my inquiries from some of the best known and longest established artificial limb makers, and in no case do these answers support the condemnation of the Syme stump. One of the firms has put the case so clearly that with your permission I will quote its letters. The first reads as follows:

"We have to state that all the members of our staff are unanimous that they have no recollection of troubles such as you mention with regard to amputation through or just above the condyles of the femur or Syme's. We cannot recollect a single instance of this nature. We have noticed a rather excessive shrinkage of these stumps, but this had no bad effect from the limb-maker's point of view."

In reply to a further inquiry the same firm wrote:

"In reply to your letter we confirm that the remarks made in our last letter to you apply to civilian cases only, and not to war pensioners. We have quite a number of customers who have been wearing artificial feet for Syme's amputations for 19 years or more, some for 29, 30, and even 40 years, and although from the aesthetic point of view we do not like the amputation, as it is very difficult to conceal the fact that a limb has been lost, especially in the case of a lady, we are bound to state that, considered as an amputation only, it is in our experience an entirely successful one, and, as we have already stated, we have no recollection of any stump trouble such as you mention."

There would seem to be two sides to the shield, which are very different. The speakers at the Royal Society of Medicine have confined their attention perhaps to the military side. My limb-making correspondents speak only of the civil. Each is probably giving a correct account of his own side.

In frost-bite gangrene and in the cases of severe sepsis which were too plentiful in the late war, surgeons, with the laudable desire of saving all they could, often amputated only a little above the line of demarcation or the obviously infected tissues. Although many such stumps healed apparently soundly, they did not consist of normal tissues, but of badly nourished and badly innervated bones and soft parts, and the late results have been such as Dr. Langdale-Kelham and others referred to in the discussion.

I venture to think that it would be little short of a calamity if civil surgeons were to be guided exclusively by military experience, and if such a useful proceeding as Syme's should be abandoned in favour of a higher amputation. A good Syme is about the only stump upon which a patient can jump "barefoot." I have seen one such, who had lost both feet, jump from a chair on to the floor "barefoot," obviously without any inconvenience. I would also put in a plea, but with less fervour, on behalf of Carden's amputation of the thigh in non-septic cases; for the longer the stump the better the control of the artificial knee-joint.—I am, etc.,

London, S.W., May 1st. E. MUIRHEAD LITTLE.

GLANDULAR FEVER.

SIR,—The unusual number of cases of glandular fever which I have seen personally in the course of the last few weeks suggests that an extensive epidemic is in existence.

In children, the features have agreed with the usual characteristics. There are one or two days of malaise followed by rapid and marked enlargement of the cervical glands. Other glands may or may not be enlarged. In the fauces there is usually some reddening and the tonsils may be definitely enlarged, but signs of sepsis or exudation are slight or entirely absent, except in patients with previous tonsillitis. The cervical glands may be uncomfortable, but their size is out of proportion to the degree of tenderness or to the general symptoms. Lymphocytosis has been present in most cases, the total number of leucocytes and the percentage of lymphocytes both being increased. I have not seen a case with haematuria this year.

In adults the swelling of the glands has been less marked, as is usual. They may be quite painless and thus be completely overlooked. Moderate lymphocytosis has been present. The pyrexia may persist for several weeks, long after all constitutional symptoms have subsided.

Occasionally the blood shows a polynuclear leucocytosis. The glands in these cases are usually more tender, and after persisting for two or three weeks they may suppurate. I do not think that I have ever seen suppuration occur in a case with lymphocytosis at the onset.

The main trouble in glandular fever is the long period

of depressed health which not uncommonly follows the acute attack. For six months or more subsequently the patient is often "below par," and may be somewhat anaemic. The glands may remain palpable for several months, but finally disappear entirely.

There are many doubtful points in regard to glandular fever. The incubation period is usually between five and twelve days, but possibly may be longer; evidence is not sufficiently extensive. The duration of infectivity is even more uncertain; provisionally it may be said to last until (1) the temperature has been normal for one week; (2) the greater part of the glandular swelling has subsided and there is no tenderness; and (3) the fauces are clear. The degree of infectivity is not high. I have never seen an obvious case of infection in a hospital ward. If one child in a family is affected it is unusual, though by no means unknown, for the other children to catch it. On the other hand, susceptibility to mass infection is very high. If two or three cases occur in a school, probably nearly all the other children will have it in various degrees of severity, mostly mild. Many points with regard to the lymphocytosis are also uncertain. Sporadic cases usually exhibit this to a greater degree than occurs in epidemics in schools and institutions. There is no characteristic eruption; indeed, rashes of any type are rare, though various macular and erythematous eruptions are seen occasionally.

In addition to these cases of glandular fever, I have recently seen several cases of "unexplained pyrexia" in adults with no glandular enlargement and no lymphocytosis. There is certainly no evidence to connect these with glandular fever. They are not enteric nor, one may add, psittacosis. They differ from "influenza" in the fact that the temperature is out of proportion to the constitutional symptoms, which are slight and transient. The pyrexia may persist for several weeks, finally settling without complications. It may be by chance that I have seen several cases of this latter type within a short period, but of the existence of an epidemic of glandular fever I feel little doubt.—I am, etc.,

London, W.1, May 5th. H. LETHEBY TIDY.

PSITTACOSIS.

SIR,—In an editorial on psittacosis in the *Journal* of May 3rd (p. 831) it is stated that:

"... Nocard's bacillus (*B. psittacosis*), and other bacteria which were formerly suspected, being regarded as not concerned in their usual form, though it is agreed that the filterable virus is very closely connected with the group of the typhoid and salmonella organisms. This conception helps to explain the partial resemblance of the clinical symptoms to those of enteric fever, and the incipient agglutination of the blood of some psittacosis cases to bacilli of the typhoid group."

The conception in question, which is the purely personal view of Dr. Roubakine, is entirely unsupported by evidence, and seems to us unnecessary. Our investigations have shown that this disease is due to a filterable virus, and that neither the bacillus of Nocard nor any other of the salmonella group plays any part whatever in its etiology. Incidentally the idea that this disease was due to a filterable virus did not, as your article would suggest, come from the clinical side, but was the outcome of laboratory work. These observations have received ample confirmation both in America (Krumwiede, McGrath and Ollenbusch) and in Germany (Levinthal, Elkeles, Pesch). Nocard's hypothesis was based on such flimsy evidence that it scarcely needed refuting. Only once in the history of this disease has *B. aertrycke* (*B. psittacosis*) been isolated from a human case, and the fleeting and low-titre agglutinations for different members of the typhoid and salmonella groups occasionally met with were never taken seriously by competent bacteriologists. We are at a loss also to understand why a typhoid state necessarily implies infection with *B. typhosus* or one of its near relatives. Surely the typhoid state is met with in a number of diseases—influenza, typhus fever, uraemia—and no one thinks of making a member of the typhoid group responsible for the clinical picture in these cases. We recognize, of course, that Dr. Roubakine is entitled to evolve any hypothesis that he cares to, but we feel that it is unfortunate that a journal of the standing of the *British Medical Journal* should give support to such a flight of the imagination by incorporating it, without a single word of criticism, in an editorial article.—We are, etc.,

S. P. BEDSON.
London Hospital, May 5th. G. T. WESTERN.

UNSUSPECTED TRICHINOSIS.

SIR,—Eight cases of trichinosis have occurred within the last ten days in the cooked meat department of a bacon factory in this town. The first case to be diagnosed was that of a youth who called at his panel doctor's surgery on his way home from work, with a swollen face, marked oedema of the lids, headache, and pains in the limbs; his temperature was 102°, but the urine contained no albumin. He stated that there were three or four more workers in his department similarly affected. The doctor was struck by the similarity of the symptoms to those of a case reported in the *Journal* of April 5th (p. 650), and by the fact that he was a worker in a bacon factory, and reported the case immediately to the public health authorities.

An investigation into the series of cases is being carried out, and has entirely confirmed the first diagnosis. Two patients gave a history of sickness before the appearance of oedema, and one of definite abdominal pain. All have had a marked eosinophilia of from 75 to 22 per cent. Active trichinae have been seen in the stools of two cases admitted to hospital, who also show temperatures with an evening rise to 103.4° and a morning fall to 99 to 100°, with more abdominal pain and intense, widespread pain and tenderness of voluntary muscles. All but one of the patients have owned to the "tasting" (to a greater or lesser degree) of a certain preparation which has been made only for three to four weeks, which contains—prior to the final scaling of tins and sterilization in a high-powered steam retort—a certain proportion of uncooked sow-meat.

The investigation is still continuing, but the practitioners and authorities concerned feel that the presence of this outbreak should be made known in view of the possibility of trichinosis showing itself in other areas.—I am, etc.,

Bradford-on-Avon, May 5th. JEAN MURRAY.

STERILITY IN WOMAN.

SIR,—I am obliged to Dr. Leith Murray for his discussion of some of the points in my address. I suppose nothing ever written, or likely to be written, on this subject will do otherwise than lend itself to discussion. I am glad, therefore, to find that we are in agreement on certain matters. In respect of those in dispute, I venture to think the explanation of the differences of opinion is not difficult.

Dr. Leith Murray lays stress on anteflexion of the cervix—a condition which is identical with what is often called cochleate uterus—as a cause of sterility. This lesion was not mentioned specifically by me, but was included in the general statement about many congenital lesions being amenable to surgical intervention. I did not intend it to be considered among the conical and hypertrophied cervices. As indicated in my address, I had not space to go into all these matters in detail. I agree with Dr. Leith Murray that this is a cause of sterility which is fairly common. In many cases, however, it is not only the cervix which is at fault, but also the uterus and genitalia which may be underdeveloped. For many years, whenever I have performed anterior hysterotomy, as I usually do for the relief of the dysmenorrhoea often associated with this condition, I have also, if the uterus be not too underdeveloped, performed posterior cervical section in order to make pregnancy more probable, and I do this even though the patient be unmarried, in case she should subsequently find a husband.

I cannot enter here into a discussion as to the value of Hodge's pessaries. Let it suffice for me to say that no one has taught more assiduously than I have done the importance of the position of the uterus being rectified, and of a Hodge pessary being inserted, in all cases in which a *nulliparous* woman complains of symptoms which may be attributable to the position of the uterus, to test whether

this is so or not before any question of operation is considered. For the reasons briefly indicated in my address—and there are other strong and obvious reasons—where it appears that pregnancy is being prevented by the position of the uterus, I prefer operation.

Now, with regard to the frequency of infection as a cause of sterility, I stated, with statistical reservations, that this may be estimated to be about 40 per cent. of all cases. This is probably a conservative figure when all sterile patients, with and without obvious pelvic lesions, are taken into account. Many observers place it much higher—Semlukoff (1926), indeed, found in a series of patients that there was impermeability of the tubes in 65 per cent.; and a reviewer of his paper states that this figure "agrees roughly with that of other observers." Again, I must draw attention to the possibility of statistical fallacies in small groups of patients, and to the variants that might occur in different districts—seaports, country, and so on. The figure—40 per cent.—that I have mentioned is, however, very little higher than the number of occlusions noted (35 per cent.) in our series of 62 cases without definitely observable lesions at the Royal Infirmary. These results were kindly collected for me by my registrar, and they accord, as already stated, with the findings of other workers.

Dr. Leith Murray's statement that he has observed tubal patency (positive test) in 95 per cent. of what he believes to be a series of cases similar to my own is undoubtedly interesting, for no one else has, so far as I know, reported so high a figure; mine, as already mentioned, is 65 per cent. But Dr. Leith Murray does not tell us whether a radiograph was taken to prove the passage of air in all of his cases. I have reason to believe that this precaution was not observed. All my patients were so tested. This is one of several reasons why I do not attach much importance to Dr. Leith Murray's figures. He adds: "I must emphasize that the apparatus I use (Victor Bonney's) is tested before each procedure"; but in what way he does not state. I, too, emphasized this point, for there are many junctions that may leak, and I described how it was done—a matter of some moment. In passing, I may remark that Mr. Bonney's apparatus is identical with the one which I always employed long before his method was described, and I am under the impression that I mentioned this after the publication of his account. I believe that I was the first in this country to practise the principles of Rubin's method, which I saw in America in 1921; but I am afraid I considered my apparatus too simple and obvious to warrant description in the medical press.

Dr. Leith Murray writes a good deal about the question of the pressure that may be employed. I merely stated that the air usually passed through patent tubes at about 80 mm. of mercury, and that it was not advisable to go beyond a pressure of 200 mm. of mercury lest rupture occur. Further, if the air does not go through at a pressure of 200 mm. of mercury, or even at a little less, the tubes are almost certainly abnormal, although we believe that we have encountered spasm of the musculature which temporarily prevented the air from passing. In these circumstances it is wise to repeat the test if there is any doubt, as I think I made clear.

I am sorry that Dr. Leith Murray should impugn our technique, for in doing so he implies that he alone of all those who have practised the method is capable of accuracy, since his figures, I believe, are unique. It is, therefore, incumbent on me to show that this is not necessarily so. I have already indicated that the omission of radiography may have led him into a false position; but there is something more which should have been quite obvious to anybody who had studied my address—namely, that since our negative cases—that is to say, those in which tubal occlusion was demonstrated by inflation and radiography—were submitted to operation, we had further proof of the accuracy of our findings, and this did not apply, I take it, to Dr. Leith Murray's so-called positive results. Our findings, then, were proved by radiography and operation; his findings by some subjective method not disclosed. I have often said to my assistants during these operations, "It is very interesting how accurate our tests have proved to be." I have on one occasion only operated upon a patient in the circumstances recorded when a negative result had been reported and found the tubes patent. In this case one test only had been made by a new house-surgeon. Practically all the cases recorded in my address were inflated by a house-surgeon or registrar. I think that great credit attaches to them for their proven accuracy.

There is another point in regard to Dr. Leith Murray's figure of 95 per cent. of positive results, and it is this: when I spoke of the absence of physical signs and symptoms I referred only to the pelvis, as the context shows, because a large number of patients suffering with sterility are the subjects of what I may call "hormonic insufficiency." Such cases should be treated on their merits, and not necessarily be inflated, for the tubes would nearly always be patent. This is not, of course, to say that a woman with thyroid insufficiency may not have tubal occlusion, but still the point is that many cases are inflated in which the woman is suffering from a constitutional disturbance, and these naturally should not be regarded as positive results so much as diagnostic errors. It may be said, then, that the percentage of positive results (patent tubes) will be in inverse ratio to the differential diagnostic ability of those concerned, especially when the husbands are not taken into account. From this point of view my percentage of occluded tubes (35 per cent.) is lower than I could wish. Still, in some cases in which sterility is due to constitutional disturbances, inflation must be practised to exclude coincidental tubal occlusion.

Lastly, Dr. Leith Murray discusses the very important procedure of the examination of the husband, concerning the possibility and wisdom of which he is not an advocate. If he had questioned any of my registrars or house-surgeons during the last few years, when inflation has been practised at the Royal Infirmary, he would have learned that in a considerable proportion it has been found possible to examine the semen of the husband. A matter of this sort depends, of course, largely on the degree of co-operation between the surgeon and his staff. It is nearly always possible in private practice. I frankly disagree with Dr. Leith Murray that a woman should be subjected to the unpleasant procedure of inflation without the husband being examined, if at all possible. Moreover, he does not seem to recognize the fact that failure to do so depreciates his positive-test percentage to the extent of 20 per cent. Women have enough to bear in regard to procreation without being penalized in respect of sterility, for, as Schwarz (1925) concisely states, the position in regard to female sterility is that the husband is directly, or indirectly by infecting his wife, responsible for about two-thirds of all cases. As to the possibility of untoward events in regard to husbands of mental instability, much might be said; but for practical purposes I would regard such occurrences as being largely due to want of perspicacity on the part of the surgeon in not recognizing the type of man with whom he had to deal. It is always possible to avoid domestic disharmonies and stripping a man of his masculinity. Besides, we know that in the male, as in the female, infertility may be temporary, and great use can be made of this knowledge if it be properly applied.

I regret the length of this letter prevents my referring to other points of interest which have not been mentioned. —I am, etc.,

Liverpool, April 29th. W. BLAIR BELL.

THE TEACHING OF ANATOMY.

SIR,—The Arris and Gale Lecture by Mr. McAdam Eccles published in the *Journal* of March 1st (p. 373) is interesting; one feels thankful that the facts therein dealt with have been brought to the notice of the profession by a teacher of such eminence. May I be permitted to offer the following observations on some of Mr. Eccles's remarks?

Some thirty years ago it was my good fortune to have been introduced to the study of human anatomy by Dr. R. J. A. Berry, then lecturer on anatomy in the New School of Medicine in Edinburgh, and subsequently professor of anatomy in the University of Melbourne. I can hear him telling us that the term "internal abdominal ring" was a very good one, except for the following facts: (1) it was not internal; (2) it was not abdominal; (3) it was

not a ring. I can see him showing us the small dimple in the peritoneum lateral to the deep epigastric artery, explaining to us what point of the fascia transversalis lies immediately in front of it and what had happened at that point, and what was the meaning of that dimple. He used almost the identical words of Mr. McAdam Eccles in expounding to us what happened in Pott's fracture, and told us time and again that human anatomy concerns the living and not the dead. I can hear him emphasizing precisely the same points in connexion with the lateral movements of the ankle-joint.

Out in these parts my students sometimes take umbrage when they come to me with some statement in some book or other and ask me about it, because at such times it is my habit to tell them that I am not in the least concerned with such matters, and that the best thing for them to do is to refer to the "book" lying on the dissection table. Again, they sometimes get wearied at my insistence that it is a matter of great misfortune that we cannot dissect the living body, but I try to relieve the monotony of such a remark by pointing out how greatly blessed they would be if only we could dissect alive one of my colleagues, believed by them to be a very severe examiner, but in actuality one of the best fellows alive. Moreover, they sometimes get wearied by my repetition of the many changes in abdominal relationships from that given in books if the stomach happens to be distended; in this country the surgeon is fairly often called upon to deal with abdominal injuries in people with stomachs distended by a meal topped with large draughts of the local small beer.

The really cogent criticism made by Mr. McAdam Eccles is the divorce of the anatomist from the clinical application of his work. It is not always the case that he gets ready help from the clinician and from the radiologist. For seven years now I have been trying to get radiograms of fractures of the clavicle, of the humerus, and of the femur to enable me to help my students to understand what is happening and why it is happening. For seven years I have been trying to get my students to understand the meaning of the great omentum and of the enteric mesentery and of the transverse mesocolon. I have not received a single radiogram, and there never has been a single opportunity of showing the students the limitation of some inflammatory process to some particular region of the abdomen. It is greatly to be hoped that the protest of Mr. Eccles may do something to help us to a happy issue out of at any rate one of our afflictions.—I am, etc.,

HODGKINSON LACK,
March 27th. Department of Anatomy, University College, Rangoon.

INSTITUTIONS TRANSFERRED UNDER LOCAL GOVERNMENT ACT.

SIR,—One of the promises of the Local Government Act, 1929, was the disappearance of the Poor Law and of the type of service and institution which the mind and experience of the public associated with the Poor Law. Clause 5 of the Act was drawn with the particular design of promoting this disappearance. It permitted councils to declare that as soon as possible all assistance which could be given otherwise than as poor relief would be so given. The Council of the British Medical Association gave strong support to this clause, its intention being the same as that of the Minister—to do everything that could be done to release the service given from the so-called taint of the Poor Law.

There is a definite danger that proceedings taken under this clause will have an effect directly opposite to that desired by the Association. Either under the clause or by appropriation, councils are declaring that they will administer *some* of the transferred institutions under the Public Health Act, 1875, and are placing these *selected* institutions under the Public Health Committee or some such existing committee, leaving a remainder of the transferred institutions under the administration of the Public Assistance Committee.

There are thus being set up two types of institution in each area, one of which will be called public hospitals, the other will be poor relief institutions, and the two types will be under separate administration. I believe this is not to be so in London, but in the counties and county boroughs it will be the usual result of action taken under Clause 5. We shall thus have with us institutions of the old Poor Law type, but still more definitely set apart from the public hospital class than was the case under the Poor Law. We shall see much of the work of the guardians in raising the status of their institutions undone, and the result will be the exact opposite to that at which the Act aims and the public desires.

Nothing seems to be more clear than that *all* the transferred institutions should be under one control and organized into one service. All the transferred institutions are institutions for the sick. This is the crucial point of the matter. Anyone who cares may assure himself on this point. Let him go into one of the institutions to-day and ask to see an able-bodied pauper; he will not find one. All the inmates are more or less in a state of unhealth from one cause or another: the distinction between chronic cases and acute cases is a vicious one from the point of view of scientific medicine, and all who know the facts are aware that a very large proportion of the so-called chronic cases in the Poor Law institutions were and are so because there is neither personnel nor equipment for their proper investigation and treatment.

The Council of the Association would be doing a much-needed service to the public and to medicine if it supported the view that the service to the sick of the nation should be *one* and organized as *one*. At present it is supporting action which cuts right across this vital point.—I am, etc.,

K. W. MONSARRAT,
Liverpool, May 2nd. Member of the Public Assistance Committee, Lancashire County Council.

REMUNERATION FOR RESEARCH AND INVENTION.

SIR,—In the Annual Report of Council of the British Medical Association for 1929-30, under the section dealing with medical ethics,[1] the Council devotes itself to the consideration of the ethics of remuneration and reward for research and invention, and expresses the opinion that, in view of the fact that a new system of limited and controlled patients is under consideration, it seems desirable that a more general and fundamental statement of the ethical position of the profession in this relation should now be made. Then follows the recommendation:

> That the Representative Body express the opinion: That it is ethically undesirable for a registered medical practitioner who makes an invention or discovery in the medical field to derive financial benefit from the sale of the rights of such invention or discovery, or from royalties for the use of these.

In my view this recommendation is based upon a complete misconception of the object and working of patenting. Not only does it tend to deprive an inventor of the legitimate rewards for his work, but, by discouraging the prosecution of research, it constitutes an actual disservice to the British public and humanity in general. The patent law is framed, not in the interests of the patentee, but of the public. It is designed to secure the maximum of knowledge and improvements in the public domain, and it only gives to the inventor a short monopoly in compensation for his work. Medical research, like other branches of scientific investigation, is very expensive, and takes up much time. Without some means of remuneration all medical research, except such as is carried out by public institutions or specially endowed from public funds, would become impossible. Moreover, such an embargo acts as a great obstacle to the prosecution of research by manufacturers of medicinal chemicals and appliances. Unless these are given a temporary monopoly in the results of their work, which otherwise could be exploited by competing firms who have had no expense in connexion with it, they have no incentive to engage in research at all. For these reasons many valuable discoveries which would have been of great service in the relief of sickness and pain can never see the light, others are stillborn, and many are probably never even conceived. If the patent law is of service to the community in regard to mechanical and chemical inventions it

[1] *Supplement*, April 19th, 1930, pp. 130, 150.

is equally so in regard to medical inventions, and full use should be made of it to stimulate and encourage discoveries in the medical field.

The suggestion of "dedicated patents" is in my opinion equally misconceived and useless. It deprives the inventor of the just rewards for his work, and therefore discourages invention nearly as much as complete prohibition of medical patents. The Medical Patents Trustee would obviously be compelled to grant licences to *all* manufacturers desiring them. Such licences would be of little value to any one firm, and they would seldom be sought. In most cases, therefore, the invention would fail to find commercial support.

It will be observed that the Council's recommendation is of a sweeping character; there is no saving clause as to country. The registered medical practitioner is to be considered as acting unethically if he or she derives financial benefit from the sale of the rights of such invention or discovery, or from royalties from the use of these in any country whatsoever, including countries which cannot be affected by the pronouncements of the Representative Body of the British Medical Association. But the foreign medical practitioner will not be debarred from holding medical patents and exercising his legal rights of monopoly profit and interest in this country.

The term "invention or discovery in the medical field," which forms an essential definition in the Council's recommendation, is not all-embracing. How are we to classify an invention or discovery of a new form of matter by a registered medical practitioner (who is perhaps working in conjunction with a research chemist) which is primarily intended for application in the arts, but which on further research, or with slight modification of an "intermediate" compound—in itself a discovery—is capable of medicinal application? How, for instance, are we to classify a newly discovered substance capable of and intended for use in the arts as a solvent, which, with or without additional invention or discovery, is also found to act as an efficient vermifuge? In short, are we to abolish in this country the possibility of effective co-operation between research workers who are registered medical practitioners and research or manufacturing chemists?

With regard to certain inventions and discoveries, particularly in the case of appliances capable of use clinically or in the laboratory, in lieu of patenting to protect the interests both of inventor and manufacturer, recourse is often had to registration of design or trade mark, usually in the name of the manufacturer. Is it also intended to declare this procedure unethical where the inventor (or associate inventor) is a registered practitioner?

The existing patent law secures by its operation the maximum of knowledge and the transference of the benefits of such knowledge to the public, and it only gives the inventor a short monopoly in compensation for his work. The dependants of the inventor must still be considered as having the right to benefit and profit by his discoveries. Or is the proverbially "poor and needy inventor" to be doubly victimized by reason of the fact that he is a private practitioner and thus eternally deprived of all chance of making provision for himself or for his dependants either in sickness or in old age? For this, and this alone, will be the ultimate outcome of the Council's recommendation, if adopted.

Happily there is a simple way of circumventing the danger inherent in the proposed recommendation and at the same time reducing it to naught. The registered medical practitioner concerned, anxious to protect his discovery and to secure his own and his family's interests, need only assign his invention *ab initio* to a nominee.—I am, etc.,

Hendon, N.W.4, April 25th. MYER COPLANS.

BED FOR DENTAL EXTRACTIONS.

SIR,—Mr. Dolamore's letter in your issue of April 19th (p. 760) raises some very important points. I think nearly all medical practitioners will heartily endorse his principle of "bed for dental extractions."

The practice of giving ether or chloroform to patients in an upright position in a dental chair and then sending them home sick, shocked, and bleeding is a relic of barbarism which should be completely done away with. The more obvious disadvantages of working in the surgery are: (1) the patient is usually not properly prepared, and (2) the operation is rushed, with the all too frequent result that teeth are broken, alveolar margins splintered, gums torn, and bleeding insufficiently checked before the patient comes round. Undoubtedly, therefore, all extraction operations requiring more than a single application of nitrous oxide should be done in the patient's house or in a nursing home.

It is difficult to see, however, why the "onus is on the medical adviser." Surely it is only rational that the dental surgeon who is to perform the operation should also be responsible for the general arrangements, preparation of the patient, and the after-care, just as is the case in any other branch of surgery. One cannot imagine a surgeon casually turning up to perform an operation, having made no arrangement except to fix the time, yet it is by no means uncommon for an anæsthetist to arrive at the time arranged by the dental surgeon and find nothing at all prepared.

It is not always realized that dental extraction can be something more than a minor operation, and may require a prolonged anæsthesia. It should have the same careful arrangements as a surgical case. The dentist, having examined the patient and decided what he is going to do, should consult the doctor (and anæsthetist if employed) with regard to time and place of operation, give the patient full instructions about preparation, and send a nurse beforehand to fix up an operating table, provide towels, hot water, etc., prepare and warm the bed, and give any premedication required.

In any operation which is likely to be prolonged the anæsthetic should never be administered with the patient upright in a chair, but in a prone position on a table (not a bed) placed conveniently for the light. Induction should be deliberate and the further course maintained by means of a vapour delivered through a tube *per os*, or more conveniently through the nose. In this way a smooth, even, light anæsthesia can be carried on indefinitely without periodic interruption from the anæsthetist, enabling the dentist to do his work unhurriedly with frequent swabbing so that he can see as well as feel what he is doing, with the minimum of trauma and the least possible risk to the patient. The operation can be carefully completed, septa broken down, splinters removed, and sockets cleaned. The patient may then be lifted into bed to recover.

There are two reasons usually put forward by those who prefer the upright position: (1) that otherwise teeth, stumps, or fillings escaping from the forceps may be swallowed or find their way into the trachea; (2) that much better leverage can be obtained in this way. The first seems to be an exaggerated danger and much less likely to happen than collapse under the anæsthetic. It can be totally eliminated by giving the vapour through the nose and packing the mouth with gauze, periodically replaced as it becomes saturated. The second is only of importance when the operator has to work in a hurry, and does not arise when the patient is properly prepared and anæsthetized.

All patients should have atropine, which keeps the mouth dry, and adults should have a little morphine. There is then no need to abolish the reflexes and less risk of inhalation of foreign material. One cannot too strongly deprecate the use of a mask or cloth placed over the mouth, since this must be periodically removed, the resulting anæsthesia being alternately deep and light; and one reason why dental surgery is so frequently hurried is the instinctive desire on the part of the dentist to do as much as possible before the mouth is again closed.

In spite of the cordial relations that exist in individual cases there is in general a want of co-operation between doctors and dentists. Far too often patients consult dentists on their own and extractions are carried out of which the doctor is completely ignorant until he is consulted about subsequent complications. We do not see enough of each other's work. Meetings at which both doctors and dentists could be present would probably help us to understand each other's problems.—I am, etc.,

Dundee, April 27th. A. H. MACKLIN.

TRAUMA AND SEPSIS IN THE CAUSATION OF ANAEMIA.

SIR,—A short time ago I received a letter from the Ministry of Pensions in which the following statement occurred: "It cannot be admitted that either traumatism or sepsis has been established as a cause of leukaemia." In an exhaustive article on leukaemia in the eighth volume of *Spezielle Pathologie and Therapie innerer Krankheiten*, edited by Kraus and Burgsch, von Domarus, speaking of traumatism, says: "One cannot maintain that up to the present there is any existing observation showing with sufficient certainty the supposed connexion" (between trauma and leukaemia). And further on: "That an injury can make a till then latent leukaemia so much worse that the patient may become conscious of his illness, and in certain cases the illness may in consequence of the injury lead to an earlier death, cannot be doubted."

On the subject of sepsis von Domarus is more definite, as the following quotation from the same article shows: "At least it cannot be denied that among the many clinical observations that have been made to date there are many points which even to the most sceptical suggest a connexion between leukaemia and infection." And in a later passage he supports his argument by calling attention to the myeloid metaplasia especially of the spleen associated with sepsis.

The Ministry of Pensions is undoubtedly correct in stating that *it has not been established* that either traumatism or sepsis is a cause of leukaemia, the cause and nature of which are as yet entirely unknown, but I would be glad if those of our profession with experience of the disease would express in the *Journal* their views on the statements of von Domarus. The view of the Ministry of Pensions has more than an academic interest, but at present I am concerned only with the scientific aspect of the case.—I am, etc.,

Kensington, W., April 29th. HAROLD H. SANGUINETTI.

ANTIMALARIA MEASURES.

SIR,—It would be very regrettable if, as Colonel Gill declares, the claims of the old school of malariologists are discouraging further research in the field of malaria, for it must be conceded that present methods may be somewhat expensive, and occasionally have proved impracticable. Every worker in the Tropics looks hopefully for the discovery of a drug with which the disease can be cured—that is to say, the patient rendered free of the parasite in all its stages by the administration of a few doses. But, until such time as knowledge makes further advance possible, it would be foolish to scrap what we already know, with nothing to take its place.

Discouragement of those working with such methods as are already known will serve no useful purpose, and may so impress the laity as to do a lot of damage; it is to be hoped that the modern school, which has as yet produced nothing tangible, will not generally adopt the attitude of Colonel Gill, who goes so far as to accuse the old school of making "unsubstantiated claims regarding their successes," and appears to consider all antilarval work useless. Even the layman will hardly swallow this, and such overstatements will hardly shake the confidence of those working on antilarval lines.

Antilarval measures appear to have been but little tried in the past in India; certainly nothing was done in Assam, the most malaria-ridden province. A few spasmodic efforts were made in other provinces, and these unfortunately were notorious failures, thus throwing India back a generation. Antilarval methods cannot uhually be employed in a haphazard fashion, but require for prospects of success that a thorough study should be made of existing conditions, more especially of the carriers and their habits; the results achieved in Malaya were based on the correct differentiation of anopheles species by the entomologists. It is only very recently that India has been in a position to begin operations, for at the time of the earlier experiments much confusion existed regarding the various species, and there was not one whole-time entomologist employed on the subject in the whole of India, consequently failure was not surprising.

Assam has thoroughly tried out the use of quinine, and all those best in a position to judge agree with Sir Malcolm Watson in considering it valueless for the control of malaria. Until such time as the modern school can offer something more promising than quinine and improvement in economic conditions—the latter a very doubtful factor—it is unreasonable to depreciate methods which, *pace* Colonel Gill, have in other countries been efficacious, and, judging by their partial success already in Assam, promise more in the future.—I am, etc.,

London, S.W.15, April 29th. R. A. MURPHY.

COITUS IN PREGNANCY.

SIR,—The part played by the husband in the causation of albuminuria and eclampsia has, so far as I am aware, never been considered or discussed. Over 50 per cent. of these cases occur in young or recently married primiparas—namely, at a time when sexual intercourse is most frequent. Albuminuria is a common sequel of excessive sexual intercourse. In parts of England the belief is commonly held that to ensure easy labour sexual intercourse should continue as usual, and doubtless it does so continue in the majority of first pregnancies. Recently attention was drawn in the *Journal* to the fact that during the war the incidence of eclampsia in Germany was considerably lessened, the reason assigned being scarcity of protein in the diet; the fact that the husbands were absent at the front during practically the whole pregnancy is equally worthy of consideration. It seems probable also that the husband often plays a considerable part in the production of puerperal sepsis; many labours are started prematurely by a drunken and vigorous husband forcing sexual intercourse.

As far as I can gather, albuminuria and puerperal sepsis are far rarer in the animal than the human world; the only practical difference in the two pregnancies is that coitus does not take place in the former and it does in the latter. Some information might be gained on this point from medical missionaries working on the west coast of Africa, as among West African tribes whose ceremonial includes the Bundu a woman is taboo for sexual intercourse from the time she misses her monthly period until the period reappears or she has weaned a child—about twenty months.—I am, etc.,

F. W. COTTON, Lieut.-Col. R.A.M.C.

Wyndham, West Australia, Feb. 11th.

Obituary.

SIDNEY COUPLAND, M.D., F.R.C.P.,

Consulting Physician, Middlesex Hospital.

DR. SIDNEY COUPLAND died at his residence, Wootton Ridge, Boar's Hill, Oxford, on April 29th, at the age of 80. Born December 3rd, 1849, he was the third son of the late W. N. Coupland of Streatham. From Hove House School, Brighton, he went to University College, London, and obtained the M.R.C.S. diploma in 1871. He graduated M.B. with honours at London University in 1873, taking the M.D. degree in the following year. Soon afterwards he became attached to the Middlesex Hospital, and was appointed assistant physician, becoming full physician and being elected F.R.C.P. in 1880.

Dr. Coupland was a keen clinician, and spent many hours in the wards teaching and keeping detailed notes of his cases. His assumption of the duties of full physician was marked by his diagnosis of stone in the kidney of a young girl and the successful performance of nephrolithotomy for the first time in this country by Henry Morris. The next twenty years were fully occupied by a series of appointments in the medical school, where he successively held the offices of tutor, lecturer in practical medicine, pathologist, and lecturer in pathological anatomy, and then lecturer in systematic medicine. All these duties he carried out with characteristic energy and thoroughness, at the same time contributing liberally to medical literature. Dr. Coupland was honorary secretary to the Pathological, Clinical, and Epidemiological Societies before their amalgamation, and was subsequently a Fellow of the Royal Society of Medicine.

Among his early publications were: Goulstonian Lectures on Anæmia (1881), "Malignant Endocarditis" (*Med. Times and Gazette*, 1882), "Salicylate of Soda in Rheumatism" (*Lancet*, 1882), and "Cold Bath Treatment of Enteric Fever" (1884). In connexion with the Royal Commission on Vaccination, he contributed the reports on small-pox outbreaks in Dewsbury, Leicester, and Gloucester (1892-95). During this period also Dr. Coupland, jointly with Dr. Sturges, published *Natural History of Pneumonia* (1899), the articles "Abdominal Tumours," "Intestinal Obstruction," and others in Fowler's *Dictionary of Practical Medicine* (1889), and edited Dr. Wilson Fox's *Treatise on Diseases of the Lungs* (1891). In 1898 he resigned his position as physician to Middlesex Hospital on his appointment as a Commissioner in Lunacy, which he held until 1921. The duties of this office were continuous and exacting, and the only extra effort permitted was the delivery of the Harveian Oration in 1915.

In his early days Sidney Coupland was of a shy and retiring disposition to a degree that certainly interfered with his success as a consulting physician, but his amiability and enthusiasm in work endeared him to the students of his time, who found him always accessible and helpful. Nicknames are a token of affection, and the sobriquet "Kidney Soupland" was inevitable in association with his notable achievement in connexion with the first nephrolithotomy.

A full, useful, and distinguished career is now completed: first as a diligent and distinguished student in the days when facilities for learning were not available as they have become since; then twenty years as a hospital physician with invaluable opportunities for benefiting humanity and advancing the practice of medicine; followed by a still longer period in the service of the State—all ably and willingly performed, leaving a residue in the evening of life for quiet contemplation and the encouragement of those who follow.

Dr. Coupland married in 1880 Bessie, daughter of the late Thomas Potter, of Great Bedwin, Wilts, who survives him, with one son, who is Beit Professor of Colonial History at Oxford.

EDWARD LAW, M.D.,

Formerly Surgeon to the London Throat Hospital

Dr. EDWARD LAW, who retired from practice in 1918 and died last week at the age of 77, was a much respected figure in medical London for many years. He was by birth a Yorkshireman, but most of his medical education was obtained at the University of Edinburgh, where he graduated M.B., C.M. in 1877, and M.D. in 1880. He studied otology in Vienna and established himself in practice in London. He was originally on the staff of Golden Square Hospital for Diseases of the Throat, but along with the late McNeil Whistler, Edward Woakes, and George Stoker he assisted in founding the London Throat Hospital in Great Portland Street, and confined his public activities to that institution, where for many years he was on the staff. A distinguished member of the British Medical Association, he was vice-president of the Section of Otology at the Annual Meeting in London in 1895, and of the Section of Laryngology at the Meeting in 1902 at Manchester. He presided over the Section of Otology when the Annual Meeting was again held in London in 1910. He was also president of the Otological Section of the Royal Society of Medicine in 1909.

Law was highly esteemed in every circle in which he moved. The estimation in which he was held by those under whom he studied in Vienna is shown by the fact that Professor Gruber entrusted to him the task of translating into English his work on diseases of the ear, and that Professor Politzer included him among the four distinguished friends to whom he dedicated his great *Lehrbuch der Ohrenheilkunde*. It will be agreed that an exceptional delicacy of touch enabled him to apply in practice his great sympathy with sufferers and his intense objection to causing pain. He was very conservative in his treatment, and attracted many patients who would have proved intolerant of other hands. Among those who consulted him were some of the highest in the land.

Like many of his fellow Yorkshiremen Edward Law expressed his opinions with a degree of downrightness which belied his kindness of heart. It might be said that he was without guile, and that "you always knew where you were with him." His geniality and his sincerity endeared him to his many warm friends, and called for respect from those who only knew him at a greater distance. He had the talent for making friends and keeping them. One who knew him has expressed the opinion that he was "a friend to many and an enemy to none." With this the writer is in entire agreement.

J. D.-G.

DAVID DICKIE, D.S.O., F.R.C.S.Ed.

Surgeon to the Northern Infirmary, Inverness.

WE regret to record the death, on April 29th, of Mr. David Dickie, who for several years had been surgeon to the Inverness Northern Infirmary. He was born in 1880, and received his medical education at Glasgow and the Royal College of Surgeons, Edinburgh. He graduated M.B., Ch.B.Glas. in 1903, and three years later obtained the diploma F.R.C.S.Ed. After holding the appointments of senior resident to the Royal Hospital for Sick Children, Glasgow, and senior resident medical officer to the Maternity Hospital, Glasgow, he became surgeon to out-patients at the first of these institutions and to the Western Infirmary, Glasgow; he was also assistant to Professor Munro Kerr, thus obtaining a wide surgical experience. He served with distinction as a surgeon specialist in France and Italy during the war, and was awarded the D.S.O. In 1920 he was appointed surgeon to the Northern Infirmary, Inverness, and he was also surgeon specialist to the Northern Area under the Ministry of Pensions. He was a member of the British Medical Association. He contributed articles on surgical subjects to the *British Journal of Diseases of Children* and to the *British Dental Journal*.

Mr. Dickie had built up a widespread consulting surgical practice in Scotland, his operative skill winning the implicit confidence of his professional brethren. Owing to ill health he found it necessary to resign his position on the staff of the Northern Infirmary, very much to the regret of the directors and his colleagues there. His frank, cheery nature endeared him to his numerous friends and patients, and his surgical knowledge was the means of saving many lives. He is survived by his widow, with whom deep sympathy is felt.

THE LATE DR. F. E. WYNNE.

PROFESSOR EDWARD MELLANBY, M.D., F.R.S., sends the following tribute:

Dr. F. E. Wynne came to Sheffield as medical officer of health in succession to Dr. Harold Scurfield nine years ago, and during this period it has been my great privilege to be on close terms of friendship with him and his family. I should not like the opportunity to pass without testifying to my appreciation of this friendship and expressing my admiration of his many fine qualities. It is seldom that anyone is blessed with so many gifts as those possessed by Dr. Wynne. He was a man of high culture, of great sensibility, with a keen appreciation of "all things bright and beautiful," and he had withal a distinctive power of grasping the relative importance of matters of practical interest. In addition, he was endowed with the means of expressing himself both by the spoken word and in writing to a degree possessed by few. His knowledge of English literature was profound, and to me one of the greatest treats I have experienced has been to listen to Wynne discussing Wordsworth, Byron, Trollope, and many other poets and writers. Of modern writers he particularly admired George Moore, and especially his book *The Brook Kerith*. He made a practice of reading aloud to his family, and on many occasions an invasion of his home in the evening has revealed him in this act. He was not content, however, to be merely an admirer of good literature, for he himself had great gifts in this line. His work as a doctor and administrator of public health prevented his full development as an author, but anybody who reads his novels,

particularly *The Mediterranean Mystery* and *Digby's Miracle*, can appreciate that in other circumstances he could have been a first-rate writer. In his earlier years he wrote a play that was good enough to be produced by Miss Horniman in Manchester; of its merits I can say nothing, but it had the misfortune to be produced when the great war started, and thus was lost. For many years Wynne acted as medical correspondent to the *Manchester Guardian*, and it is well recognized that the articles on medical topics for the laity appearing in that newspaper reached a much higher standard than those usually found in the lay press. With Wynne's work as a public administrator I am not sufficiently familiar to write. He was a man of strong views, and he had unlimited moral courage to guarantee their expression to the discomfort of many people. Possibly as an administrator he was too idealistic and too intolerant of anything of the nature of a placebo. He was a whole-hogger for preventive medicine, and was dreadfully impatient of much in the present-day treatment of disease, especially as it often has to be applied by the general practitioner in the form of a bottle of medicine. His impatience in this respect was without doubt the reason why he gave up practice and entered the public health service. It will be clear that a man with such great gifts, associated with charm of disposition and a kind nature, had a friendship to offer which will always remain a pleasant memory.

DR. WILLIAM STANLEY GEORGE, who died on April 12th, was a prominent medical practitioner in Hampstead, where he won wide popularity. He was born in 1885 and received his medical education at Guy's Hospital, where, in 1912, he graduated M.B., B.S.Lond. and obtained the diplomas M.R.C.S., L.R.C.P.; seven years later he proceeded M.D. After holding house appointments at Guy's Hospital he obtained a commission in the R.A.M.C. and acted as anaesthetist to the 42nd Stationary Hospital. At the end of the war he returned to Hampstead, where he built up a large practice, taking an active part in the work of the British Medical Association. He was chairman of the local Division in 1924, and for many years represented it on the Branch Council; at the time of his death he was a member of the Executive Committee of the Division. In 1922 he was elected to the Hampstead Borough Council, and for two years served as chairman of its Public Health Committee; he was the chairman of the Establishment Committee when he died. He leaves a widow and three children.

DR. THOMAS ARCHER COLT, O.B.E., who died on April 23rd, after an operation, at the age of 78, was a brother of the Rev. Sir Edward Dutton Colt, Bt., to whom he was heir-presumptive. He received his medical education at Bristol and University College, London; in 1879 he obtained the diplomas M.R.C.S.Eng. and the L.R.C.P. and L.M.Ed. He commenced practice in Portsea and Southsea more than fifty years ago in partnership with the late Dr. A. N. Garrington, and for thirty years he was Poor Law medical officer for Portsea. During the war he was in charge of the Branksmere Auxiliary Hospital, Southsea, and was created O.B.E. Dr. Colt was a member of the British Medical Association, and had been chairman of the Portsmouth Division. He retired from practice about eight years ago owing to almost total blindness. He was twice married, and leaves a widow and family.

The death of Miss M. B. WILLIAMSON, assistant secretary of the Royal Society of Medicine, deprives a great organization of a woman to whom the successful development of the society during the last thirty years is very largely due. Miss Williamson first worked as a temporary assistant in the late nineties until she was taken on the permanent staff in 1904. Under the guidance of the then secretary (the late Sir John MacAlister) she soon proved to be an invaluable member of the staff. During the difficult times in the society's history, immediately before and after 1907—the year in which the Royal Medical and Chirurgical Society became the Royal Society of Medicine—she was the right hand of the secretary and honorary officers. In 1911, when the building at 1, Wimpole Street was being erected, and in 1912, when the arduous task of transferring the property of the society from 20, Hanover Square and installing it in the new house had to be faced, she was the life and soul of the organization. Again, when many of the staff and honorary officers were on active service, her unflagging energy and cheerfulness enabled her to undertake and perform with amazing efficiency tasks which might well have discouraged and deterred a less ardent spirit. From 1920, when Sir John MacAlister's health broke down and until his retirement in 1925, Miss Williamson was able to supplement his failing powers to such good effect that the work of the society did not suffer. In 1925 the council passed a special resolution of gratitude and appreciation of her fine service, and later in that year it was by her hand that the memorial portrait of Sir John MacAlister was unveiled. Miss Williamson's vast knowledge of the history of the society, of the manifold details in its working, her outstanding powers of organization, and her devotion to the society which it was her delight to serve, were all offered to his successor as loyally as they had been to Sir John. She was a little woman of abounding energy and vitality, her sense of duty was nicely balanced with a sense of humour, and with a great dignity there went a kindliness that endeared her to all those who had the privilege of working with or for her. Her powers were preserved in all their fullness up to the beginning of the short illness which caused her death, and the last words she spoke were of the society which had been the object of her lifelong service. She was known to nearly every Fellow, and her loss will be felt as that of a personal friend by many hundreds of those associated with the society.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week completed the report stage of the Budget resolutions. The second reading of the Consumers Council Bill, which provides for the investigation and control of prices, was the business of the Commons for May 8th. The House of Lords had arranged to take the committee stage of the Workmen's Compensation (Silicosis) Bill on May 7th. No date has yet been named for the resumed debate on the Mental Treatment Bill in the House of Commons.

The Parliamentary Medical Committee proposes to discuss rheumatism on May 13th.

Ministry of Health Estimates.

In the debate on the Ministry of Health Estimates—reported in part on page 845 of last week's issue—the chief topic under discussion was the recent report of the Government actuary on the increase in sickness benefit under the National Health Insurance Act.

Sir DONALD MACLEAN said that he did not deny that advantage was taken in many quarters of the facilities for getting sickness benefit, but after the year 1926 there was a decline in the vitality of millions of people. What was required was an intensive internal examination into the whole problem by all the sub-departments concerned. The Minister of Health's announcement on post-graduate schools dealt with one of the most important projects undertaken for many years. Recently a commissioner appointed by the British Medical Association made a tour of Australia and New Zealand. He would give a quotation from a letter which he received from the immediate past-president of the British Medical Association:

"On my visit to Canada and my recent tour to the Branches of the British Medical Association in New Zealand and Australia—notably the Congress at Sydney as well as at Brisbane, Melbourne, Tasmania, Adelaide, and Perth, and again in Ceylon, Bombay, and Cairo—I was profoundly impressed by the constantly reiterated inquiries as to the prospects of the establishment in London of well-organized facilities for post-graduate study and research. I believe the scheme submitted will go far to meet this urgent demand from our medical colleagues throughout the Empire—at home as well as overseas—and that in its fuller developments it will constitute London, what she should long ago have become, a world medical centre for post-graduate work of the highest standard."

DR. MORRIS-JONES said that he was sorry the Minister did not mention vaccination. That would have to be faced. There were also international obligations associated with it. A short time ago, when we had an epidemic in this country, our neighbour across the Channel raised difficulties about people arriving from this

country. At present the administration of the law with regard to vaccination was almost farcical. If it was the opinion of the Government that vaccination should be compulsory it ought to be made compulsory. If the Government did not agree in that sense, steps ought to be taken to abolish compulsory vaccination. He spoke of the effect of the Local Government Act of 1929 on men and women who had given voluntary services on public bodies. In his own municipality there was the case of a parish doctor who had been on the county council since the beginning of that authority. Under the Act that doctor had to take the choice of resigning an appointment which he had held for thirty of forty years or resign his membership of the local authority. Such people knew that if they gave up their appointments and continued to serve in a voluntary capacity on the public authorities they would lose all superannuation payments, towards which they had contributed over a series of years, as well as the State contribution. He hoped that the Government would find a way of redressing this anomaly. Turning to the claims under the National Health Insurance Act, he agreed with Mr. Rhys Davies that the main cause of the increase was the industrial depression since the war. There were amendments of the National Health Insurance Act whereby persons who were unemployed were still able to retain their rights to medical benefit. From his experience as a medical man he found that enforced idleness was bound to cause more sickness. The man who was working was much healthier than the man who was not working. There was also increased illness as a result of the war, even among those who did not participate as combatants. Many insured persons had suffered from the bombing that took place in London. Hundreds of people in the county of London were directly or indirectly suffering as a result of the experiences which they went through at that time. There was another reason for the increased claims. He agreed with Mr. Rhys Davies that 99 out of every 100 national health insured persons were honest, but that 1 per cent. were malingerers. He had persons who had come to him, as a medical practitioner under the Act, and said: "We have been paying long enough." One person said: "We have been paying to Lloyd George for years, and it is time that we got something out of it." The giving of medical certificates was a very difficult matter. Medical men were neither worse nor better than any other class of human creature, and were confronted day by day with very great difficulties under this Act. One member had suggested in the debate that a young medical man, newly qualified and anxious to build up a practice, would be rather keen to please his patient, and therefore he would possibly give a certificate when it was not really required. Such cases were very rare. It was extraordinarily difficult to tell when a man was or was not capable of work. One of the most difficult things in the world was to prove that a man was not ill. He hoped the Minister of Health would be able thoroughly to overhaul and reorganize the whole scope of the national health insurance service in this country. He hoped the Government intended before long to bring before the House a scheme to enlarge the whole service of national health insurance, co-ordinating its numerous branches and bringing within its scope women and children and dependants.

Dr. MORGAN, as one who administered the Act every day, said that from the medical point of view there was no general laxity of certification on the part of the medical profession. There was no general malingering. People were getting to have a knowledge of their rights, and were demanding them more and more. Certain societies and their agents had tried to excite a feeling against the medical profession for what they thought was laxity. They forgot that, at the same time, the insured person was being educated in his rights against approved societies. He knew now what he was entitled to, and that when he was ill he could receive the benefits for which he paid. What was more, his employer was much more keen now that his employee should come under the Act and get its benefits. A larger number of the population were taking advantage of the Act, but they were ill, and the plea that the increase was due to malingering or laxity on the part of the doctor was not true. The Insurance Act was not brought into existence for the sake of the approved societies, the doctors, the chemists, or the State, but for the benefit of the insured person, and the individual insured person had enough to suffer. There was equality of payment, but not of benefit. A man might have registered in Manchester, become unemployed, go to London, choose another doctor, and get ill. Then there was a whole series of performances to go through, sending certificates to Manchester, and so on, before he could get the benefit. The whole system was riddled with anomalies to the disadvantage of the person for whose benefit the Act was introduced, and because approved societies wanted to hide the charges against themselves for their administration of the Act they levelled charges against other people. The sooner somebody in the country called for a league of insured persons and made them pay, say, a penny a month to see they got their benefits and rights under the Act, the better it would be. They required to be protected not only from the doctors, but from the chemists, the societies, and the State. The sooner that was done the sooner, too, would be brought about the changes recommended by the minority of the Royal Commission—hospitals, convalescent treatment, dental treatment, and eye treatment—not only for those who happened to be in favoured rich societies, or favoured rich occupations, but all insured persons. He was sure, from discussion with medical men all over the country, that there was no malingering on the part of the insured person and no lax certification on the part of the doctors.

Dr. FREMANTLE said they were much relieved to hear that the question of excessive claims for insurance benefit was under further examination. Mr. Rhys Davies had suggested that the experience of the first three months of this year indicated that this phase was coming to an end, but he (Dr. Fremantle) doubted whether such a steady rise going on year after year would terminate so quickly. Among both medical men and insured persons there were a certain number who had less conscience than others. Ordinary human beings tried to get the most out of a State service. No one was more responsible for this attitude towards national insurance than Mr. Lloyd George, who managed to send the cry "ninepence for fourpence" throughout the country. Now the disadvantages of it were prevailing on the insurance scheme. Let them contrast that with the old system of the friendly societies, which induced a spirit of loyalty among the members. Then there was a tendency among the members to make the best of things and come on the funds as little as possible. They had to try to encourage the old spirit which formerly attached to friendly societies. They had to cultivate the spirit of loyalty with friendly societies on the one hand and with medical men on the other in order to get through the difficulty. It was no use trying to coerce any body of professional men, most of all medical men, because they had always got the whip hand in the end. They alone understood the technicalities, and it was necessary to work with them. The Ministry of Health had been extraordinarily sympathetic towards medical men. A medical practitioner whose action was called in question could submit his case, first of all to the judgement of the regional medical officer, and then to a jury of medical men. This would have the greatest effect upon medical practitioners. It was suggested that medical men were too lenient in these cases because they did not want to let their professional down. But the last thing medical men wanted to do was to cover up the misdeeds of those who were letting them down. According to the opinion expressed by the British Medical Association, which represented two-thirds of the medical profession there were a few doctors doing bad work, but these men would be bad under any system. The chief difference between private and insurance practice was that there were penalties in the latter if doctors did not thoroughly examine their patients and were inclined to give certificates for sickness benefit without discrimination. Two particular cases of excessive prescribing had been brought to the notice of the Ministry of Health and had been referred to the referees. In one case the referees upheld the decision of the Minister, but not in the other. It was shown, however, that excessive prescribing did exist. Some of those who wished to support the idea of giving benefit at any price had taken the line that medical men were justified in prescribing to any extent so long as they were doing what they considered best for their patients. The ordinary doctor had been brought up to be fairly regardless of cost in prescriptions, dressings, equipment, and so on, in the hospital, but it was a very different matter when one had to provide these things for himself in private practice. The natural tendency was for a man to use these things without regard to cost, and that tendency must be restrained, without damaging the effect of the service. The only way to do that was to take the profession generally into confidence and get their co-operation. He believed that good machinery had been devised now which would ensure this. He did not believe there was any real increase in sickness among the people. Some of the best and most useful health work done throughout the country was done by voluntary societies and voluntary hospitals, and he hoped that every effort would be made to encourage these schemes in the future administration of local government and of the health services of the country, not least in connexion with the post-graduate hospital. That last scheme had been warmly commended on every side, though, he thought, a little without regard to the difficulties that there must be in enlisting the voluntary skill and experience and efficiency which were at present associated with the medical schools in London and elsewhere in the country. He hoped this new post-graduate hospital would manage in some way to enlist the sympathies and efforts of all the thirteen medical schools in London.

Mr. PERRY appealed to the Minister of Health to sanction the inclusion in additional insurance benefits of treatment at British spas for rheumatism and allied diseases. The British Spas Federation had drawn up a scheme for the consideration of the Ministry and the approved societies. They had come to an agreement with the British Medical Association in regard to the scale of fees under which exactly the same medical service and treatment now given to private patients would be available for insured persons.

Miss LAWRENCE, Parliamentary Secretary to the Ministry of Health, replying to the debate, said that insurance claims had risen steadily from 1921 to 1922, which was the peak year. The number of claims had not been analysed for the two later years, but the figures were dropping now in the earlier months of this

year. It was very remarkable that the duration of sickness had hardly risen at all, but there had been an increase in the number of claims in respect of short illnesses. She asked the committee not to pass any rough-and-ready judgement on this mass of confused statistics. The actuary's report, which had been issued, was one of the most valuable things that either the medical profession or the approved societies had ever had. The Ministry proposed to follow up the report and to give the information year by year. The approved societies and the medical profession had now rather changed their minds, and were inclined to think that a somewhat longer delay before which a patient might change his doctor was necessary. The British Medical Association and the Council of Approved Societies had drawn up a scheme under which they would be able to review the case of any one of their professional brethren.

Dr. MORGAN: Will the hon. lady consider the possibility of a doctor who is unpopular, not for medical reasons, being dealt with unjustly by his colleagues who differed from him not medically, but for other reasons?

Miss LAWRENCE said she thought that the general medical opinion of the district was acceptable for correcting any eccentricity in a medical man.

Sir KINGSLEY WOOD asked if Miss Lawrence would give a little more information to the committee about the new regulation in relation to the penalization of doctors.

Miss LAWRENCE said that the British Medical Association, the Conference of Panel Committees, and the Consultative Council of Approved Societies had agreed that where there was anything abnormal in a doctor's certification a committee should be chosen from the panel doctors in his own area to review the case.

Mr. MCSHANE: Is it not true to say that every one of those doctors who are going to sit in *judgement* is an *interested person*?

Miss LAWRENCE said that was so in a sense. The panel practitioners in a district have a common interest in maintaining the professional prestige of their brethren, and they also have a pecuniary interest in not cutting down too much the fees of any member of their body. They would report to the Minister, who would have in reserve the usual powers, where a case was proved, of deducting something from the remuneration of the practitioner concerned.

Captain GUNSTON: Would the hon. lady say what action is going to be taken if it is found that a doctor has behaved wrongly? Is he going to be debarred from practice?

Miss LAWRENCE said the usual method was to make a certain deduction from the remuneration of the doctor concerned.

Mr. T. LEWIS: Will the approved societies or insurance committees have any part in this review?

Miss LAWRENCE: No. It has been agreed that it shall be the panel doctors in the locality who will investigate such matters.

As previously reported, the debate was adjourned.

On April 29th Miss LAWRENCE, replying to Sir F. Hall, said that, according to a report recently furnished by the Government actuary of the sickness and disablement benefit experience of a representative sample of the whole body of insured persons, the number of insured men per 100 who claimed sickness benefit in 1921 and 1927 was 14 and 23 respectively. The amounts expended under the Health Insurance Acts in England and Wales in 1921 and 1927 in respect of sickness benefit were £7,176,800 and £11,818,000 respectively; of disablement benefit, £2,689,600 and £6,368,000 respectively; and of medical benefit, £9,394,800 and £8,772,500 respectively. In this connexion it was pointed out that the increase in the amounts expended on sickness and disablement benefits in 1927 as compared with the corresponding amounts expended in 1921 was, to some extent, due to the fact that in the later of those years there were larger increases in the benefit rates under the societies' schemes of additional benefits. The cost per head of the population of England and Wales in 1921 and 1927 for national health insurance was 13s. 11d. and 18s. 8d. respectively, and of medical benefit provided under the Health Insurance Acts 4s. 11½d. and 4s. 5½d. respectively. The factors which had contributed to the increases above noted were numerous and complex, and without further and fuller consideration the Minister of Health did not think it possible to make any general statement as to the relation between those facts and the increased provision of curative and preventive treatment.

Indian Medical Degrees.

On May 5th Mr. BENN told Mr. Freeman that a proposal for the constitution of an inter-university medical board consisting of representatives of the Government of India and their universities pending the establishment of an all-India council, was made to the Government of India by a conference of Indian universities last October. It was referred to the General Medical Council, whose executive committee adopted, on February 24th, a resolution stating that it was unable to accept the proposal as furnishing a satisfactory method of supplying the Council with authoritative information on medical qualifications in India, and with the necessary guarantee [illegible] Mr. Benn, in a further reply to Mr. Freeman, who asked if it was proposed to revive the competitive examinations for admission to the Indian Medical Service, said the Government of India proposed to send him their considered views, which he expected shortly.

Housing (Scotland) Bill.

A Standing Committee of the House of Commons, on May 6th, began consideration of the Housing (Scotland) Bill. Clause 1 provides that on a report by the medical officer of health, or on other information, a local authority may, if it is satisfied that an area is an unhealthy area, pass a clearance resolution. Dr. ELLIOT moved to leave out the provision that the authority should act on the report of the medical officer or on other information, in order that all available sources of information should be open to the local authority. Several members urged that sanitary inspectors as well as medical officers should be entitled to present reports to local authorities. The Government took the view that the amendment would weaken the bill and would play into the hands of authorities that were laggard in slum clearance. The amendment was rejected.

National Health Insurance.

On May 1st Mr. GREENWOOD, replying to Mr. Hayday, said that the total of the surplus funds of approved societies and branches under the Health Insurance Acts was ascertained by quinquennial valuations. The results of the last completed valuations were summarized in the report of the Government actuary, dated November 25th, 1926. That report stated that the total surpluses amounted to £42,413,319, from which amounts totalling £26,619,161 were certified for distribution in additional benefits in the ensuing quinquennium; of this distributable surplus £13,345,000, or about one-half, was applied by the societies and branches concerned in providing increases of the statutory cash benefits, and the remainder for the provision of various treatment benefits. The most important of these benefits, and the annual sums made available for them during the period of the schemes (including the State grant), were: *dental benefit*, £2,900,000; *ophthalmic benefit*, £470,000; hospitals, £324,000; convalescent home treatment, £235,000; *medical and surgical appliances*, £142,000.

Mr. Greenwood, on May 6th, also told Mr. Hayday that the total number of persons in Great Britain entitled to benefits under the National Health Insurance Acts on December 31st, 1920, was approximately 15,200,000. The corresponding number on December 31st, 1929, was 17,800,000, of whom about 880,000 had ceased by reason of age to pay contributions under the Acts and to be entitled to sickness and disablement benefits. The number of insured persons who, up to December 31st, 1929, had ceased to be entitled to sickness and disablement benefits by reason of the reduction of the age limit from 70 to 65 was estimated to be about 650,000. These persons continued to be entitled to medical benefit and to any additional benefits in the nature of treatment after attaining 65.

Psittacosis.—Mr. GREENWOOD told Mr. Hacking, on May 1st, that in twenty-four cases of illness commenced during March and two during April patients had been associated with sick parrots. In the present state of knowledge of psittacosis it was not possible to say definitely how many persons were in fact suffering from that disease.

First Aid at Coal Mines.—Mr. B. TURNER, in reply to Mr. T. Williams on May 6th, said that the new regulations regarding first aid at coal mines were compulsory, but he had received no complaints concerning collieries which had failed to carry them out. The regulations, which only came into operation a month ago, involved big changes, amounting at some collieries to a complete reorganization of first-aid work. In some instances it had not yet been possible for this [illegible] be carried out in full, but the matter was [illegible] attention of H.M. inspectors, who would see [illegible] unnecessary delay.

Pensions.—Mr. F. O. ROBERTS, on May 5th, told Major Cohen that up to date about thirty cases of material doubt or difficulty in pension claims outside the seven years' limit had been or were being referred to independent medical consultants. Of these, fifteen had so far been considered, with results unfavourable to fourteen claims and favourable in one. On the same day Mr. Roberts told Major Leighton that about 217 grants had been made, since the passing of the Act, under special sanction to officers and men who had unsuccessfully appealed to the independent tribunal established by the War Pensions Act, 1919. He stated that up to the end of March approximately 225,000 appeals had been made to the Entitlement Appeal Tribunal, including appeals by disabled officers and men and by widows and dependants. Of these, about 55,500 were allowed; the number disallowed, including appeals withdrawn or lapsed, was about 169,000.

Notes in Brief.

Grants recommended by the Development Commissioners and approved by the Treasury, include £65,000 (in addition to £35,000 sanctioned previously) for rebuilding the Royal Veterinary College [illegible] and £4,250 for the extension of the laboratory at the Cambridge [illegible] Department of Animal Pathology.

[illegible] Benn states that, so far as he is aware, no annual contribution [illegible] intermade by the Central Government towards the upkeep of [illegible] we habitutions in India. Public health is a transferred subject, [illegible] Channel der is one for the provincial Governments.

Universities and Colleges.

UNIVERSITY OF OXFORD.

At a congregation held on May 1st the following medical degrees were conferred:

D.M.—R. A. Walsh.
B.M.—R. G. Macbeth, M. G. Pearson.

UNIVERSITY OF CAMBRIDGE.

At a congregation held on May 3rd the following medical degrees were conferred:

M.B., B.Chir.—J. Foster, T. D. W. Fryer, C. J. M. Dawkins.
B.Chir.—T. O. Garland.

Dr. W. E. Dixon, F.R.S., has been reappointed Reader in Pharmacology for five years.

ROYAL COLLEGE OF PHYSICIANS OF IRELAND.

At the monthly meeting of the President and Fellows held on May 2nd the following members were duly admitted Fellows of the College: Norman McIntire Falkiner, Edward Thomas Freeman, David Gray, Victor Ormsby McCormick.

Narayan Bhawan Kotak, F.R.F.P.and S.Glasg., having passed the necessary examination, was admitted a Licentiate in Medicine and a Member of the College. Norman Ward Rawlings, L.M.S.S.A.Lond., was, after examination, admitted a Licentiate in Midwifery of the College.

On the recommendation of the Committee of Management of the Irish Conjoint Board of the Royal Colleges, the courses of instruction given at the London School of Hygiene and Tropical Medicine were accepted by the College as satisfying the requirements of the Conjoint Examination for the Diploma in Public Health.

Medical News.

THE next session of the General Medical Council will commence at 2 p.m., on Tuesday, May 27th, when the President, Sir Donald MacAlister, Bart., K.C.B., M.D., will take the chair and give an address. The Council will continue to sit from day to day until the termination of its business.

THE annual dinner of the West London Medico Chirurgical Society will be held at the Trocadero Restaurant, Piccadilly, on Thursday, June 12th.

THE annual summer dinner of the Glasgow University Club, London, will be at the Trocadero Restaurant, Piccadilly, on Friday, May 30th, at 7.30 p.m., with Robert S. Rait, C.B.E., LL.D., principal and vice-chancellor, in the chair. Any Glasgow University men who, though not members of the club, desire to attend are requested to communicate with the honorary secretaries, 62, Harley House, N.W.1.

THE annual medical missionary breakfast of the Medical Prayer Union will be held on Wednesday, May 21st, at the Refectory, University College, Gower Street, W.C., at 8 a.m. An address will be given by Dr. John Kirk of University College, London, late of Kwangtung, China. An intimation of intention to be present will be welcomed by the honorary secretary, Dr. Tom Jays, Livingstone College, Leyton, E.10.

THE Manchester Royal Infirmary Old Residents' Club will hold its triennial dinner in Manchester on Saturday, October 25th. Particulars will be circulated to members in due course, but it is hoped that old residents who have moved far afield will start making the necessary arrangements to be in Manchester for that week-end.

A MEETING of the West Kent Medico-Chirurgical Society will be held at the Miller General Hospital, Greenwich, S.E.10, to-day (Friday, May 9th), at 8.45 p.m. The president, Dr. T. E. White, will take the chair, and deliver an address entitled "Reminiscences and reflections." A smoking concert will follow.

A QUARTERLY meeting of the Royal Medico-Psychological Association will be held on Thursday, May 22nd, at the British Medical Association House, Tavistock Square, W.C., when Dr. Nathan Raw will preside. Dr. A. A. W. Petrie will open a discussion at 3 p.m., on American psychiatry and the practical bearing it may have in the application of recent Local Government and mental treatment legislation.

FROM May 13th until July 4th the Fellowship of Medicine will hold an evening course for the M.R.C.P., consisting of lectures by experts in their particular branches of medicine and demonstrations in medical ophthalmology. Unless otherwise stated, the lectures will be delivered at the Medical Society of London, 11, Chandos Street, Cavendish Square, on Tuesdays and Fridays, at 8.30 p.m. Dr. J. W. McNee will lecture on May 13th on "Recent views on diseases of the liver and biliary tract," and on May 16th on "The structure and functions of the spleen in relation to its diseases." On May 12th, at 10 a.m., Dr. Stanley Wyard will give a demonstration in the out-patient department at Bolingbroke Hospital, and on May 15th Mr. Herbert Paterson will demonstrate operations and ward cases at 2 p.m. at the London Temperance Hospital; no fee is charged for these demonstrations. From May 12th to 24th there will be a whole-day course at the City of London Hospital for Diseases of the Heart and Lungs. From May 19th to June 7th a course at the Central London Ophthalmic Hospital will consist of instruction in the out-patient department and theatres, including special lecture-demonstrations. A two weeks' comprehensive morning course will be held at the Hospital for Sick Children from May 26th to June 7th; a minimum entry of twelve is required, so early application is desirable. From May 26th to June 7th there will be an all-day course at the Queen Mary's Hospital, Stratford, with especial reference to tuberculosis. Copies of all syllabuses and information on post-graduate work are obtainable from the secretary of the Fellowship, 1, Wimpole Street, W.1.

THE twenty-first anniversary of the Men's Union of the Manchester Union was celebrated on May 1st, when honorary membership was conferred on Lord Crawford and Balcarres (Chancellor of the University), Lord Hewart (Lord Chief Justice), Mr. Arthur Greenwood (Minister of Health), Professor A. H. Burgess (President of the British Medical Association), the Dean of Manchester, the Lord Mayor of Manchester, and Mr. C. P. Scott.

AT the annual general meeting of the St. Pancras Division of the British Medical Association, to be held in the London School of Hygiene and Tropical Medicine (Keppel Street, Gower Street) on Tuesday next, May 13th, at 9 p.m., Dr. R. G. Canti will show his cinematograph film of the growth of living tissue.

A CONFERENCE of the British Hospitals Association will be held in Newcastle on June 18th, 19th, and 20th, when there will be an exhibition of plans of recent hospital construction, including furniture and administrative appliances.

DR. ALBERT E. BRINDLEY, medical officer of health for Derby, who is retiring, was entertained to lunch in the Friary Hotel, Derby, on April 26th. At the lunch he was presented with a silver tea-set from his past and present professional staff. Several of his former colleagues attended the function, and Dr. Nash (Hounslow), his first assistant, spoke of the affection and respect in which Dr. Brindley was held by his old friends. Dr. A. R. Laurie (Derby) paid tribute to the work which Dr. Brindley had done in Derby since his appointment in 1907, and said that it would be difficult for anyone to follow in the footsteps of so able a chief. Dr. Brindley briefly responded.

IN connexion with the inauguration of the new museum of hygiene at Dresden this month, an international exhibition of hygiene will open in that city on May 17th, and continue until the beginning of October. The exhibits will illustrate methods of training the public in hygiene, both personal and national; dietetics; general physical culture; mental and occupational hygiene; the campaign against insect carriers of disease; and hospital administration. Inquiries should be addressed to the business manager at the office of the exhibition, Lennestrasse 3, Dresden-A.1.

THE fifteenth French congress of legal medicine will be held in Paris from May 26th to 28th under the presidency of Dr. Dervieux, when the following subjects will be discussed: Sudden death, introduced by MM. Hégen Gilbert, Laignel-Lavastine, and De Lavit; traumatic osteomyelitis, introduced by MM. Leroy and Muller; and criminality in modern society, introduced by M. Costedoat. Further information can be obtained from M. Vernis, 19, Quai de l'Horloge, Paris, VI.

THE Victoria Home for Crippled Children at Bournemouth, conducted by the Shaftesbury Society, is being extended to accommodate twenty more children, and the Russell Cotes School of Recovery at Parkestone is being enlarged to receive an additional thirty boys and girls selected by school medical officers in Greater London.

AS the result of the consumption of the infected flesh of a circus bear, 75 cases of trichinosis have recently occurred at Stuttgart.

AN association of Belgian surgeons has recently been founded under the presidency of Dr. De Beule.

THE clinical report of the Tsan Yuk Hospital and of the Maternity Bungalow of the Government Civil Hospital, comprising the work of the school of midwifery of the University of Hong-Kong for the year ending April, 1929, has been reprinted from *The Caduceus* of November, 1929, in pamphlet form.

PROFESSOR KARL KISSKALT of Munich has been appointed by the Turkish Government director of the Central Institute for Hygiene at Angora.

DR. G. T. LAFORA, an eminent Madrid neurologist, has been nominated president of the Spanish Medico-Chirurgical Academy.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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The address of the Irish Office of the British Medical Association is 16, South Frederick Street, Dublin (telegrams: *Bacillus, Dublin*; telephone: 62550 Dublin), and of the Scottish Office, 7, Drumsheugh Gardens, Edinburgh (telegrams: *Associate, Edinburgh*; telephone 24361 Edinburgh)

QUERIES AND ANSWERS.

FLEA INFESTATION.

"PULEX," since moving into an expensive modern flat (one in a "converted" group), has been flea-tortured; skin irritation and insomnia are becoming habitual. Scrupulous hygiene, antiseptic soaps and lotions, and insect powder are unavailing. The fleas seem to breed in and under the flooring, which is old, with many deep cracks. Advice is asked regarding prophylaxis and actual treatment of the floors.

TREATMENT OF TACHYCARDIA.

DR. F. J. ALLEN (Cambridge) writes: Calcium lactate, 15 grains per diem, has almost completely banished this trouble in my case, although it had existed about twenty-eight years. Digitalis increased the trouble; possibly it confirms the habit in some cases of so-called "functional" tachycardia, and renders it incurable. If used at all, it should be tried at first in very small doses, after giving calcium lactate a fair trial.

INCOME TAX.

Loss on Subletting a House.

"L. G. S." took a lease of some premises in 1921 with a view to entering into partnership with a practitioner in the town. The partnership negotiations fell through, and he was unable to sublet the house, except for a smaller rent than he has to pay. He is now in practice elsewhere; can he claim any allowance for the amount of the annual loss in rent?

*** The loss does not arise in the carrying on of his present practice, and we see no ground on which he can legally claim any allowance. In a recent case it has been held that profits from letting unfurnished property cannot be brought into taxation except under Schedule A, and the same principle would apply to losses. Schedule A contains no provision for giving relief in such a case as this.

THE ETERNAL COLD QUESTION.

"TIMOCLES" writes from Australia: There is just a chance that "H. H.," who complains of great liability to catch colds during the winter (January 18th, p. 133), may owe part of his trouble to hypersensitiveness to some dust. For some years I have investigated and treated large numbers of patients suffering from asthma, hay fever, and vasomotor rhinitis. In more than half of these I have been able to detect definite hypersensitiveness to some pollen, epithelium, or dust, and, as a rule, desensitization has greatly improved their symptoms. But I have been struck by the way in which many volunteer the information that since desensitization they have been free from colds, whereas many stated that before treatment the slightest draught was a menace to them. This improvement is not due to suggestion, because I never promised anything in this direction, and was, in fact, surprised to hear of it. Of course, in the case of "H. H." it is very unlikely that it is a factor, but as he says he would like to explore every hopeful avenue, I offer it for what it is worth. I would suggest testing with house dust from his own bedroom, feathers, horse hair, dog hair, cat hair, orris root, kapok, linseed, and a few likely grass pollens, especially timothy rye and plantain. It is essential to use good reagents for tests. Occasionally some particular food seems to be responsible. If any of these give definite reactions he should rigorously avoid the substance indicated and, if necessary, be desensitized. If he fails to react to any it might be worth trying tuberculin, if he reacts to Pirquet's test with old tuberculin. As a last resort I would suggest a complete change of environment, if possible. I assume, of course, that the nose has been thoroughly examined by a competent rhinologist.

LETTERS, NOTES, ETC.

TREATMENT OF MAMMARY CARCINOMA BY RADIATION.

Correction.

SIR G. LENTHAL CHEATLE points out an important error in his article on this subject published in our issue of May 3rd. The sixth line of the second column of page 810 should read: "is 0.5 mm. of platinum"; not, as printed, "is 5 mm. of platinum."

TESTIMONIAL TO SIR RONALD ROSS.

WE printed on February 22nd (p. 356) a list of those whose donations had been received during November, December, and January last in response to the appeal on behalf of the Ross Award Fund printed in the *British Medical Journal* of May 11th, 1929. Further contributions have been received during February, March, and April from the Penang Gazette Press, Ltd. (£654), the Railway Institute at Ebute Metta, and from Mrs. H. P. Benson, Lieut.-Colonel D. E. Crawford, W. C. Penny, T. M. Rayne, Lieut.-Colonel Temple, and F. R. Welch, amounting in all to £708 6s. 7d. The total sum subscribed, with interest, was £13,675 19s. 11d. on May 1st. Donations should be sent to Lloyds Bank, Ltd., 110, High Street, Putney, S.W.15.

CONFERENCE ON BIRTH CONTROL.

THE conference held on April 4th to discuss the giving of information on birth control by public health authorities passed the resolution submitted to it (*British Medical Journal*, April 19th, p. 755) in an amended form, which reads as follows: "That this conference calls upon the Minister of Health and public health authorities to recognize the desirability of making available *medical information on methods of birth control* to married people who need it."

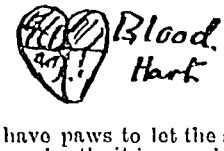
IRRADIATED ERGOSTEROL.

DR. F. N. MOOS (Bombay), in the course of a letter on the above subject, writes: The more one reads of vitamin D the more one is convinced of the limited knowledge we still have of this "accessory food substance." It is premature, therefore, to employ a principle of doubtful utility to improve a standard natural product such as milk. If we are to accept Dr. Coward's statement that fresh milk contains hardly any vitamin D, then the logic of irradiating milk to concentrate the same active principle for use as an antirachitic measure in infants is unsound. Apart from these considerations, reports on the dangers of indiscriminate use of highly concentrated irradiated milk products cannot be overestimated. Idiosyncrasy undoubtedly plays an important part, and it is a well-known fact that a certain type of infant cannot tolerate cod-liver oil in any form. Especially during the summer months toxic and other symptoms of gastro-intestinal derangement are known to follow a minimum quantity of a vitamin D product. Every mother in the tropics knows that dermatitis, eczema, and boils result from the use of cod-liver oil. Manufacturers should arrange for clean, fresh, and wholesome food products, in quality as near as possible to that of natural food. The addition of a therapeutic or prophylactic principle for special cases should be left in the hands of the medical attendant. To sell a concentrated prophylactic or therapeutic product for general use is against all principles of dietetics. Why has the vitamin D factor long been advocated alone as a prophylactic measure? The calcium-phosphorus ratio as a determining factor in rickets has been well recognized. If the public craze goes as far as calcium-phosphorus I dare say commercial houses will soon arrange to adjust the percentage of calcium and phosphorus to meet all requirements.

"HOW MAN IS MADE."

DR. W. H. DU PRÉ (Coleford) sends us the MS. of a little essay on physiology by a boy of 10, which he thinks may be worthy of a wider public. The author heads his paper, "How Man is Made," and illustrates it with three lively anatomical drawings, one of which we reproduce below at the appropriate place.

"A man contains two eyes a Mouth and two ears, if a Dockter to feal your pulce he would cattch hold of your hand, if he wanted to tell your temperature he would put it in your mouth or under your arm. There is blood vesels all over your lungs and right at the back is the back bone, and there are bones right from your back bone to the front they are called Ribs. Some time your hart moves so it can move every where but other time it stays at the same place and goes up and down. A hart is like this:



In your hand you have paws to let the swet out of your bodey, it is best then to have a barth, it is very bad for you if all your paws are filled up, you would mostly be dead after a bit."

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 47, 48, 49, 52, and 53 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page *219*.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

414. Paroxysmal Ventricular Tachycardia.

M. B. STRAUSS (*Amer. Journ. Med. Sci.*, March, 1930, p. 337) records an analysis of 65 cases of paroxysmal ventricular tachycardia, 63 being collected from the literature and 2 being personal cases. This disease can only be recognized definitely by means of the electro-cardiograph, and even with this aid several criteria are necessary for diagnosis. There must be evidence that the impulses producing the tachycardia arise within the ventricles, in which case the form of Q R S complexes will be distinctly abnormal. The identification of independent auricular waves, occurring at a slower rate than the ventricular ones, points to a ventricular origin of the tachycardia. If in the interval between paroxysms the ventricular complexes are normal and there are isolated premature ventricular complexes of the same shape as those of the paroxysm, the diagnosis can be made certain. Additional evidence is obtained if the onset and termination of the tachycardia bear the same relation to the slow rate as do isolated premature systoles, and if there is a slight irregularity in the rapid rate, which is not found in other forms of paroxysmal tachycardia. Of the cases studied, 60 per cent. occurred during the fifth and sixth decades of life, and slightly over two-thirds of the patients were males. No common single etiological factor could be discovered, but 83 per cent. of the cases occurred in patients suffering from organic heart disease, and of these 60 per cent. had been treated with digitalis prior to the onset of the tachycardia. Heart failure, either of the congestive or anginal type, was present when the tachycardia was first noted in 45 cases; auricular fibrillation was present in 21, and auricular flutter in 2. The administration of quinidine, usually the sulphate, is the only measure that has proved successful in terminating ventricular tachycardia. Doses as high as 7.5 grams daily have been given, though maintenance has been possible with 0.2 gram daily. Dosage must be adjusted to the individual case, repeating the administration in increasing amounts every few hours until the paroxysm is controlled, or alarming symptoms appear. No bad effects have been recorded due to the exhibition of this drug in this condition. In the absence of organic heart disease the prognosis is good.

415. Sudden Death from Latent Diphtheria in Infants.

LESNÉ and WAITZ (*Le Nourrisson*, January, 1930, p. 32) record two illustrative cases in infants, aged 1 month and 3½ months respectively, who died suddenly without any prodromal symptom in the course of diphtheria which was detected only by bacteriological examination. They point out that the possibility of sudden death adds considerably to the gravity of any prognosis given in the case of diphtheria in young children. Of 560 children under 2 years of age admitted to Lesné's hospital in the first six months of 1929, 52 developed diphtheria, which in 27, or 9.3 per cent., was detected only by bacteriological examination (occult diphtheria). Of the 52 patients, 17 died, and 10 of these from occult diphtheria. The sudden deaths, which numbered 5, consequently represent 30 per cent. of the total mortality; 3 of the 5 deaths occurred in the course of occult diphtheria. The authors add that, in the absence of clinical signs of diphtheria, considerable care should be taken in applying the term "carrier" to an infant in whose throat diphtheria bacilli are found. When diphtheria bacilli are found in an infant's nasopharynx in association with any symptoms affecting the respiratory tract or general condition, antitoxin should be given, and the improvement in the condition will show the active part played by the diphtheria bacilli.

416. The Electro-cardiogram in Coronary Disease.

M. H. NATHANSON (*Amer. Heart Journ.*, February, 1930, p. 257) has analysed the electro-cardiographic findings in 60 patients with coronary disease. The diagnosis in these cases rested upon post-mortem findings, or upon a characteristic clinical picture, and the analysis was limited to those cases in which significant electro-cardiographic changes were observed. The most frequent abnormality was inversion of the T wave, this being found in 88 per cent. of cases. The Q R S portion of the ventricular complex was widened and notched in 13 per cent. That extensive fibrosis is the most likely pathological condition to cause permanent interference with intraventricular conduction, and that such fibrosis is nearly always due to coronary sclerosis, are facts in accord with this finding. Minor notching of Q R S occurring in Leads I and II was found to be frequently indicative of myocardial damage. Low voltage electro-cardiograms were recorded in 15 per cent. of cases, as against 0.3 per cent. among general medical material. In the few instances where there was prolongation of the P R interval, bundle-branch block coexisted. In 18 per cent. of cases extrasystoles were observed, while auricular fibrillation was recorded in only 6.6 per cent., signs of congestive failure always accompanying this irregularity. Definite or slight left ventricular preponderance was frequent (60 per cent.), this being in keeping with the common association between coronary sclerosis and hypertension. Only two patients showed slight right ventricular preponderance. The author concludes that myocardial disease is indicated by the presence of T-wave inversion in significant leads and by widened notched Q R S complexes with bundle-branch or arborization block. Other conditions which may cause T-wave inversion and which must be excluded are aortic valvular disease, hypertension with left-sided enlargement, post-diphtheric heart, and myxoedema heart. The lesser electro-cardiographic abnormalities, such as minor notching, depression of the T wave, and low voltage, are suggestive, though not pathognomonic, of coronary sclerosis.

417. Alcoholism and Nervous Diseases.

J. HAGELSTAM (*Nordisk Medicinsk Tidskrift*, March 1st, 1930, p. 122) publishes statistics and clinical records of isolated cases to show the effect of prohibition and all its consequences on the health of certain sections of the community. Total prohibition was introduced in Finland in June, 1919, and the following ten-year period, during which total prohibition was officially maintained, is compared with the previous ten-year period, 1908-18, by Professor Hagelstam, whose figures deal with the Maria Hospital in Helsingfors, of the medical department of which he was the chief until July 1st, 1927. In the first decade, during which the yearly admissions rose from 1,400 to about 2,000, the proportion of cases of alcoholism did not exceed 1 per cent. In the second decade the proportion of these cases rose from 6 (0.5 per cent.) in 1922 to 66 (3.3 per cent.) in 1928. The cases of acute ethyl alcohol poisoning were relatively rare; in the six year period 1913-19 there were 15 cases of acute ethyl alcohol poisoning, and as many as 41 cases of poisoning with methyl alcohol or denatured spirits, 16 of these cases terminating fatally. Not infrequently the first outbreak of delirium occurred in hospital in patients who had been admitted for some other manifestation of chronic alcoholism, such as epilepsy or polyneuritis. During the six-year period 1923-28 there were as many as 35 cases of alcoholic polyneuritis admitted, whereas in earlier years the few and isolated cases of polyneuritis seen could in most cases be traced to some infectious origin. Among the 2,200 patients admitted in 1923 there were 92, or about 4 per cent., in whom excessive abuse of alcohol was noted as a cause of disease. Among these patients there were 23 with more or less severe disturbances of the nervous system (neuritis in 7 cases, epileptic convulsions in 9, and delirium in 7).

418. A Possible Factor in the Incidence of Post-vaccinal Encephalitis.

O. REISCH (*Wien. klin. Woch.*, January 23rd, 1930, p. 103) reports two fatal cases of encephalo-myelitis, verified at necropsy, which occurred after vaccination in a series of 233 persons, mostly between the ages of 5 and 10, vaccinated for the first time in October-November, 1929, and all living in the same Tyrolese valley. At the same time six other children were taken ill six to twelve days after vaccination, with severe local reaction and general symptoms, headache, vomiting, pyrexia, and occasionally delirium; all these also had irregular twitching of muscles of various parts of the trunk and extremities, generally involving small or large muscle bundles rather than whole muscles. These myoclonic contractions were particularly evident in the abdominal wall. The facial muscles were little affected and the contractions did not interfere with voluntary movements; further neurological examination in these cases was negative. Examination of about 300 other healthy children, unvaccinated and vaccinated recently or some years previously, all living in the same district, showed that similar myoclonic contractions were present in a large proportion, the percentages among the vaccinated and unvaccinated being about the same. The myoclonic contractions sometimes continued for days or weeks, were generally not associated with other symptoms, and subsided without treatment. They were

differentiated from mild or subsiding chorea by the fact that in the latter the facial muscles and distal parts of the limbs are more frequently affected, and the contractions tend to involve whole muscles rather than fasciculi. Reisch suggests that the occurrence in his district of a large number of cases with irregular myoclonic contractions and no other symptoms may possibly be due to a mild widespread epidemic affection of the central nervous system, and that the two fatal cases and six comparatively severe cases of involvement of the central nervous system which occurred almost simultaneously in the same comparatively isolated community may be due to an exacerbation produced by vaccination. He urges that further investigations of possible epidemic myoclonic conditions, as well as neurological examinations of series of vaccinated persons elsewhere, should be undertaken, in order to test this factor in the etiology of post-vaccinal myelo-encephalitis.

419. Dyspnoea in Influenza.

J. LEVESQUE (*Bull. Méd.*, February 15th, 1930, p. 109) records two illustrative cases in hitherto healthy children, aged 3 years and 12 months respectively, who were suddenly attacked by severe dyspnoea; the voice was only slightly affected, and the cough was somewhat hoarse. The unusual feature in these cases, which appeared at first to be examples of laryngismus stridulus, was the long persistence of the dyspnoea, resembling diphtheria; this disease, however, was excluded by laryngoscopic and bacteriological examination. Treatment in such cases consists in the administration of antispasmodics, preferably gardenal, in doses of 3 to 5 cg. below the age of 1 year, and 5 to 8 cg. above that age, three or four times a day, the application of mustard plasters or hot compresses to the neck, and a steam tent.

Surgery.

420. Late Post-traumatic Lumbago.

ACCORDING to F. ODY (*Rev. Méd. de la Suisse Romande*, February 25th, 1930, p. 79) there is, in addition to traumatic lumbago due to muscular laceration, articular subluxation, and bony lesion of the vertebral column, also a group termed "accidental lumbago," attributable to changes in the nerve trunks at their exit from within the spinal canal. The syndrome "lumbago" is confused then with the neuralgic syndrome of "neurodochitis"—an infective or traumatic inflammation of a rigid bony canal giving passage to a nerve which is compressed by inflammatory infiltration or strangulation. In the lumbar region the articular groove may be better termed an articular canal, by reason of the thickness of the vertebral pedicles. The fifth lumbar articular groove has attracted special attention because of the compression it may undergo in the course of sacralization of the fifth lumbar vertebra. The nerve trunk lying in the articular groove is surrounded by fatty tissue, and is liable to inflammatory sclerosis. Ody cites the case of a lad, aged 19, who had suffered from lumbar pain for several years; it had been latterly diagnosed as Pott's disease. The lumbar vertebrae were immobilized in plaster for five months without any improvement. When 9 years old the patient had slipped when pulling a loaded sleigh, which passed over his lumbar region. He suffered very severe pain but continued at work until night, when his legs became so weak that he could not stand. The pain appeared to increase after immobilization, and radiated over the right side from the axillary line to the buttock. The reflexes were normal and there were no motor or trophic changes, but there was hyperaesthesia from the middle line between the first and fourth lumbar spines down to the mid-gluteal region. A skiagram showed lumbar scoliosis with angulation due to collapse of the body of the second lumbar vertebra on the right side and definite diminution of the space between this vertebra and the third. The bony outlines were obliterated by an osteophytic outgrowth forming a bridge on the right side between the two lumbar vertebrae. Lipiodol injections revealed an impassable obstacle in the epidural space, but the subarachnoid space was free. Laminectomy of the first three lumbar vertebrae was performed: the epidural fat was found to be sclerosed and very adherent to the subjacent dura, which projected slightly into the wound. The articular apophyses of the second and third lumbar vertebrae were then resected, and similar dense sclerosed fatty tissue was found to be filling the articular groove, compressing the nerve trunk, from which it was dissected with difficulty down to the transverse process of the third lumbar vertebra, where the fatty tissue appeared to be normal. The corresponding posterior root ganglion was partially removed for examination, and the wound was closed. The ganglion cells showed degenerative changes with evidence of scar formation in the surrounding tissue. The hyperaesthesia and pain disappeared immediately after the operation, and the patient left hospital in four weeks; all the vertebral movements were then free and painless, and there was no paresis of the thigh muscles. Ody remarks that Sherrington has shown that at least three spinal nerve roots must be divided before complete cutaneous anaesthesia occurs in a given area. In the case reported severe pain and disability occurred from compression of one nerve root.

421. Epigastric Hernias associated with Gastric Lesions.

F. PAPIN (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, February 20th, 1930, p. 131) describes three cases in which operation for epigastric hernia failed to give relief, because another lesion had been overlooked. These hernias are often accompanied by severe gastric disturbances, of which the etiology is obscure. In the first case a very obese woman, aged 49, had a small epigastric hernia, and had suffered for two years from colic without any vomiting. The hernial sac contained omentum. Healing was uneventful, but the pain persisted; skiagrams showed no abnormality except that the transverse colon was fixed near the greater curvature in the form of an inverted V, and it was thought that there might be a lesion of the colon or mesocolon. A second laparotomy revealed an adhesion of the old scar to the middle of the transverse colon, which was quite normal; further exploration revealed a typical callous ulcer as large as a five-franc piece at the lesser curvature. A man, aged 52, had a successful operation for epigastric hernia, but without relief of the pain, which continued and became associated with vomiting and progressive emaciation. Laparotomy showed a large tumour, which was removed easily, and proved to be an epithelioma. Pyloro-gastrectomy was performed, followed by Billroth's gastro-jejunal anastomosis; the patient remained well for four years, but now shows signs of recurrence. A man, aged 57, was operated on for an epigastric hernia which had existed since childhood, but the symptoms were not relieved. The passage of a duodenal tube while fasting gave vent to a fluid containing fragments of undigested food, and skiagrams showed a very definite deformity of the pyloric antrum. At the operation a large cylindrical epithelioma was found. Papin insists upon the necessity of skiagraphic examination, followed, if necessary, by an exploratory laparotomy, before undertaking the radical cure of epigastric hernias. In 1921 Mandl recorded forty cases of operation for epigastric hernia, among which were fifteen cases of gastric or duodenal ulcer. Chemical analysis showed hyperacidity in one case only. Skiagrams indicated a lesion in the majority of cases, but in two patients exploratory laparotomy was necessary to establish the diagnosis.

422. Pneumatosis Cystoides Intestinalis.

A. BURHANEDDIN (*Zentralbl. f. Chir.*, March 15th, 1930, p. 647), who records an illustrative case, remarks that pneumatosis cystoides intestinalis is a fairly rare disease, as he has been able to find only about 100 cases on record. The etiology has not yet been satisfactorily explained; three theories have been suggested—namely, a mechanical, a bacterial, and a clinical—but none of them have thrown full light on the essence of the disease. Burhaneddin's case was that of a man, aged 35, suffering from an extreme degree of pyloric stenosis secondary to gastric ulcer, atrophy of the liver, ascites, and dilatation of the whole portal system. On laparotomy numerous gaseous cysts were found extending along 3 metres of the intestine. Resection of the stomach (Billroth II) was performed, and recovery followed. The dilatation of the veins of the portal system and the hepatic atrophy and ascites indicate that the pneumatosis cystoides in this case was of mechanical origin.

423. The Hour of Death after Operations.

S. FREY (*Forsch. und Fortschr.*, March 20th, 1930, p. 124) investigated the time of death after operation in 500 cases which had occurred in recent years at the Königsberg Surgical Clinic. The series contained only those cases in which there was an interval of at least twenty-four hours between the operation and death, and consisted of persons of all ages and both sexes. He found that 185 of the total 500 deaths occurred in the day between 6 a.m. and 6 p.m., and 315 in the night between 6 p.m. and 6 a.m.; 158 of the latter group of patients died between 6 p.m. and midnight, and 157 between midnight and 6 a.m. The highest mortality (7 per cent.) was between 11 p.m. and midnight, and the lowest (1.6 per cent.) between 2 p.m. and 3 p.m. The mortality, therefore, in the evening, night, and early morning was decidedly higher than that during the day, the highest death rates occurring in the hours just before and just after midnight. This higher mortality admits of two explanations. The first is that the rest period in which the activity of the

organs and intensity of the vital processes are decidedly diminished occurs during the night; it is therefore conceivable that the association of the natural remission of the systemic functions imposed upon the functional disturbance caused by the disease and the operation is responsible for death. A more likely explanation, however, is that the sick person is unable to obtain this period of rest, since an increased demand is being made upon him, and that the loss of this rest period is the cause of death occurring in the night or early morning.

424. Acute Pancreatitis.

R. COLP (*Annals of Surgery*, March, 1930, p. 392), who describes acute pancreatitis as a severe abdominal catastrophe which is attended with a grave prognosis, analyses 54 cases, of which 3 were secondary to operation. Of the 51 cases, 85 per cent. presented pathological evidence of cholecystitis or cholelithiasis; at the operation the gall-bladder was found to contain stones in 28 cases, was enlarged in 9, and thickened in 4. Symptoms of gall-bladder disease were recorded in 50 per cent. of cases, with typical attacks of right upper abdominal pain, sometimes radiating to the shoulder, and accompanied by nausea and vomiting. The pain in acute pancreatitis was always intense, the average patient being desperately ill and in advanced shock, while four cases were in apparent collapse. Diagnosis is difficult owing to the variable symptoms and conditions found, and in most cases must be made by exclusion, though an abdominal puncture and aspiration of the typical oily beef juice exudate may be useful in suspected cases. Treatment must be surgical and should aim at the removal of the toxic protein products, to relieve pancreatic tension and lessen glandular necrosis; a cholecystostomy is usually indicated, and the 17 cases in which it was done showed the lowest mortality of 35 per cent. The prognosis is grave; of 46 operated cases, 23 survived, 17 making an uneventful recovery. Necropsy in 17 cases showed that death was due to the actual destruction of the pancreas, 16 dying from pancreatic necrosis. In 6 cases the entire pancreas had completely sloughed, and was lying in an abscess cavity.

425. Intestinal Polyposis.

J. GOTTESMAN and D. PERLA (*Amer. Journ. Med. Sci.*, March, 1930, p. 370) report two cases of multiple polyposis of the intestine, and comment on the etiology of this condition, which they conclude is attributable to long-standing chronic irritation. Their first patient was found to have multiple fibromatous polyposis associated with intestinal tuberculosis; in the second case there was a long history of chronic ulcerative colitis preceding the appearance of polyposis, some of the growths showing signs of early malignancy. The authors remark that it has been estimated that about 40 to 50 per cent. of intestinal adenomata become malignant; the view is held by some that in each case of intestinal carcinoma there has been previously a benign tumour.

Therapeutics.

426. Choline Hydrochlorate in Tuberculosis.

F. LEUBET and G. PERY (*Journ. de Méd. de Bordeaux et du Sud-Ouest*, March 10th, 1930, p. 187) state that all cases of progressive tuberculosis with a low general condition and without spontaneous tendency to improvement show a marked decrease in the blood cholesterol and sometimes also in the blood sugar, a disequilibrium which is evidence of a deep humoral trouble. In support of this statement the blood sugar and chol sterol estimations in 65 cases are given. As a result of these observations the authors have employed choline in the treatment of tuberculosis, and claim to have obtained most favourable results in all forms of the disease, even in advanced cases. The treatment is unattended with danger in the doses prescribed, and the results are better the earlier it is instituted. Of 25 cases, 17 of which are recorded, clinical cure resulted in 7, and even in the fatal cases (some with intercurrent affections) a manifest improvement, which lasted for the duration of the treatment, was noted. Following administration of the drug there is a lowering of the temperature (in the majority of cases to normal), a return of the appetite and sleep with a re-establishment of the digestive functions, a noticeable disappearance of constipation, a rapid gain in weight, and a subjective sense of euphoria. The blood cholesterol is greatly increased, and the blood sugar-cholesterol ratio returns to normal. The authors employ subcutaneous injections of 2 cg. of choline hydrochlorate in 1 c.cm. of distilled water every two days without any discontinuance, even during menstruation in females, on which it has no effect. The importance of *continuous* treatment is emphasized. As an adjuvant, cachets each containing 1 gram of pure cholesterin are given daily with the meals (or a parenteral injection of an oily solution twice a week), or 1.5 grams of glycerophosphate of lime, or lecithin daily; of these the lime salt is to be preferred. Symptomatic treatment is reduced as much as possible, but rest and climatic and dietetic therapy are employed.

427. Lysed Typhoid Vaccines.

J. CARONIA (*Amer. Journ. Dis. Child.*, January, 1930, p. 1) claims that, in addition to over 1,000 recorded cases, several thousand cases of typhoid fever have been successfully treated in different parts of Italy, within the last ten years, by means of lysed vaccines. To a culture in a liquid medium of various strains of Eberth's bacillus, a 2 to 3 per cent. volume of typhoid convalescent blood is added. The culture is then incubated at 37° C. until complete or nearly complete lysis of the bacteria is obtained. The clear portion of the liquid is separated from the sediment, carbolized, and used as vaccine. For intravenous injection the dose is 0.5 to 1 c.cm., and for intramuscular or subcutaneous injection 1 to 3 c.cm. The dose is progressively increased and is given every alternate day, or every third day up to the appearance of defervescence. Caronia states that intravenous injections frequently cause resolution by crisis, while lysis generally follows subcutaneous or intramuscular injections. In almost all cases the lysed vaccine prevents a fatal outcome; the average duration of the disease is shortened from 30 to 40 days to 15 to 20 days; the number and severity of complications are reduced and recurrences are fewer; and no new risks are entailed by the employment of the vaccine. A small proportion of failures are reported. Caronia suggests that the action of the lysed vaccine is a rapid desensitization of the body tissues to the protein of Eberth's bacillus, analogous to the slower process of natural healing.

428. Treatment of Leprosy.

R. G. CROSBIE (*Brit. Journ. Derm. and Syph.*, March, 1930, p. 125) reviews the present methods of treatment in leprosy in the hope of clearing up some of the confusion that has arisen and of laying down general guiding principles. Since nerve tissue is most susceptible to the invasion of the *Mycobacterium lepræ*, and skin manifestations do not occur till later, the importance of deciding what constitutes an early nerve case is obvious. These present isolated hypopigmented patches associated with loss of light touch sensation along the cutaneous distribution of one or more of the important nerves, such as the ulnar or peroneal. A few macules or erythematous patches, without any nodule formation, constitute an early skin case, but when once there is nodule formation the case falls into the category of late skin leprosy, while the presence of perforating ulcers, claw-hand, facial paralysis, and loss of pressure sense constitute late nerve leprosy. The most uniformly good results follow the injection of hydnocarpus oil and 4 per cent. creo-ote, or "alepol," or the ethyl esters of hydnocarpus oil. Potassium iodide, in gradually increasing doses until 240 grains are reached, and diminished or withheld according to the severity of the reaction, is beneficial in strong healthy adults with but few bacilli demonstrable; it must be cautiously used, since it is one of the most powerful drugs available for producing a reaction. Protein shock resulting from the injection of 5 c.cm. of milk intramuscularly, or of T.A.B. intravenously, has been used extensively of late, and, judiciously applied, may cause rapid subsidence of the leprotic infection. No one drug has precedence as regards value, but the author considers that modern therapeutics can effect a cure in early cases and bring the late infective cases to a stage of non-infectivity.

429. Complications Provoked by Thyroid Medication.

S. A. HOLBØLL (*Ugeskrift for Læger*, January 30th, 1930, p. 109) remarks that even though the introduction of physiologically standardized thyroid preparations, and the frequent control of their effects by measurements of the basal metabolism, have reduced the number of cases of hyperthyroidism following thyroid medication, it still not infrequently provokes disturbing signs and symptoms. He tried to determine the frequency of these phenomena, and to ascertain if they included processes which could be accurately measured. Of the 30 patients treated for adiposity, 7 were men and 23 were women. Their ages ranged from 22 to 50 years, most of them being between 30 and 45. They were for the most part from 30 to 50 per cent. over-weight; in no instance was there any definite endocrine abnormality, and cases of myxoedema, diabetes, ovariectomy, hyperplesia, and anaemia were excluded. The fasting diet on which these patients were kept represented 1,200 calories; while 25 of the 30 were given thyroid extracts, the remaining 5 were treated by dieting alone, and thus served as controls. In 10 (8 women and 2 men) of the 25 cases symptoms of thyroid poisoning appeared

towards the end of the third or fourth week; they included tremor, palpitation, nervousness, and increased perspiration. The thyroid medication was discontinued, and in every case all the symptoms disappeared after two to three weeks. All the patients lost weight; but while the average loss of weight of the 5 controls was only 5.4 kilos, that of the thyroid-treated patients was 10 kilos. The pulse rate of the 5 controls remained unchanged or became slower, but it rose in all the cases treated with thyroid, the average increase being 24.5 beats per minute. In the 10 cases of hyperthyroidism this rise was 33 per minute; in the remaining 15 cases it was only 18.8. While the blood pressure remained unchanged or fell a little in the 5 controls, it rose in 9 of the thyroid-treated patients, 4 of whom also showed a marked fall of haemoglobin in the blood. The rate of sedimentation of the blood cells was unchanged in the 5 controls, but it was hastened to a pathological degree in 10 of the 25 thyroid-treated patients, who showed other well-known manifestations of thyroid poisoning. Holböll concludes that by watching the rate of sedimentation during treatment with thyroid extracts, it is possible to ascertain early whether they are well tolerated or not; for if the rate of sedimentation increases during such treatment, there is a very considerable likelihood of the patient developing signs of hyperthyroidism sooner or later. On the other hand, when the rate of sedimentation remains normal, it may be assumed that the dose of thyroid extract is not too big.

430. Measles Prophylaxis by Adults' Serum.

J. D. VAN CLEVE (*Arch. of Ped.*, February, 1930, p. 124), as the result of the study of the literature and his own observations, comes to the following conclusions. Immune measles goat serum or antistreptococcus measles antitoxin is the best to use because it can readily be obtained in large quantities and be standardized. Convalescent serum is equally good, but is not so easily procurable, and there is always the possibility of injecting tuberculous or syphilitic serum. The serum of adults who have had measles in childhood is not so efficacious, but, where other kinds are not available, is of value for protecting young and ill-nourished children, and for modifying the disease in older patients without the risk of complications. In the case of children under the age of 4, especially those who are rickety, tuberculous, or delicate, a relatively large dose (15 c.cm.) should be given. In older children and adults a smaller dose may be given, sufficient to modify the disease, since serum protects only for four to six weeks, while the modified cases have a lasting immunity.

Laryngology and Otology.

431. Staphylococcal Laryngitis.

R. Y. MATHEW (*Med. Journ. of Australia*, January 11th, 1930, p. 34) records four cases, in children aged from 15 months to 4 years, of staphylococcal laryngitis simulating laryngeal diphtheria. Tracheotomy was performed in each case, but only one recovered. The evidence against diphtheria was the absence of response to diphtheria antitoxin and the absence of membrane in the trachea. Moreover, the higher temperature, the repeated failures to find *B. diphtheriae* in cultures from the throats and tracheotomy tube, the repeated findings of *Staphylococcus aureus* in cultures, and the growth of the organism from a patch of broncho-pneumonia and pericardial fluid after death, supported the view that the condition was a primary infection of the larynx with highly virulent staphylococci.

432. Treatment of Acute Mastoiditis.

G. O. CUMMINGS (*Med. Journ. and Record*, March 19th, 1930, p. 306) discusses the symptomatology of acute mastoiditis and the question when operation is necessary. Mastoiditis is practically always secondary to middle-ear disease, and very rarely follows trauma or a direct infection from the blood stream. Anatomically three varieties of bone have been found at operation: the cellular or usual type; the diploic or non-pneumatized, which is rather rare; and the sclerotic, which results from the new bone formation caused by chronic mastoiditis. Pathologically also three types are found: the coalescent (the usual), in which a breaking down of intracellular walls with the formation of pus and granulation tissue occurs: the haemorrhagic, wherein there is intense inflammation of the intracellular walls with but little tendency to the formation of pus or granulation tissue; and the chronic or sclerotic type. Clinically the coalescent type is the most frequent and produces the greatest variety of symptoms. Among these, tenderness on pressure over the mastoid is the most important finding. Persisting tenderness over the tip after prolonged treatment indicates operative intervention. Occasionally in infants swelling and redness may occur over the mastoid, and may disappear under medical treatment; in older children and adults it practically always indicates the necessity for operation. The ear drum usually presents no diagnostic characteristics; the nature and amount of the discharge are of greater value. Much discharge suggests extensive necrosis of the mastoid and the need for surgery. Bacteriological and *x*-ray examinations give definite information. Infrequently signs of meningeal irritation (termed meningismus in contrast to meningitis) occur and demand immediate operation. All acute ear infections with temperature, pain, and mastoid tenderness do not demand operation, and other measures may suffice. The principal object of a mastoidectomy is to save life, and an operation should not be advised unless it is deemed safer to operate than to refrain. Operation should be postponed for four or seven days after the onset of mastoid symptoms, unless the mastoiditis is of a fulminating type. This delay gives an opportunity to determine whether the disease will yield to conservative measures, and it allows the tissues (mastoid) to build up a certain resistance to infection, when the operation can be more safely performed. Seven hypothetical cases are described to illustrate the proper course to be adopted in various conditions.

433. Otogenic Reflex Cough.

A. PAGANO (*Arch. Ital. di Otol., Rinol. e Laryngol.*, December, 1929, p. 736) states that reflex cough arising from the ear is fairly frequent, as is shown by the fact that Fox noted it in 15 out of 86 patients. Guder examined 111 men and 89 women, with the following results. In the men he produced a cough by stimulation of the left ear in 12, of the right ear in 11, and of both ears in 4; while in women the cough was produced by stimulation of the left ear in 5, the right in 8, and both ears in 2. Reflex cough was found to be most frequent between the ages of 10 and 20, being met with only once before 10 and twice after 60. Pagano carried out observations on 200 subjects, 105 of whom were males and 95 females; 60 were perfectly healthy, while 140 had various diseases of the ear and upper respiratory tract. The ages of the patients ranged from 6 to 71 years. Stimulation of the external auditory meatus by the introduction of a probe gave rise to a cough in 43 cases, 24 of whom were females and 19 males: in 16 by stimulation of the right ear, in 19 of the left, and in 8 of both ears. Stimulation of the tympanic membrane with a probe produced a cough in 3 healthy subjects, and in 16 suffering from diseases of the ear and upper respiratory tract. Pagano concludes that otogenic cough is found in about 21 per cent. of all cases, being somewhat more frequent in females than in males. The presence of lesions in the upper respiratory tract is not necessary for the production of the cough, although they favour its occurrence. The patient's state of nervous excitability may have a certain importance in the production of the cough. Stimulation of the tympanic membrane produced a cough in only 9.5 per cent.

Obstetrics and Gynaecology.

434. The Times of Ovulation and Conception.

FROM observations at laparotomy in 118 patients, in about one-third of whom menstruation was irregular and in the remaining two-thirds of whom the menstrual cycle was regular and of twenty-three to forty-five days, K. OGINO (*Zentralbl. f. Gynäk.*, February 22nd, 1930, p. 464) concludes that ovulation takes place during the five days' period which extends from the sixteenth to the twelfth day before the expected date of commencement of menstruation. This rule is not affected by irregularity of the menstrual cycle in the individual, or its variation in duration from patient to patient. Apparent exceptions to the rule are due either to (1) severe endometrial disease, in which the uterine mucosa is refractory to the action of the corpus luteum hormone, or to (2) destruction of the developing corpus luteum from mechanical injury or as a result of disease—a premature menstruation follows. Ogino believes that the differing opinions which have been put forward concerning the time of ovulation are due to reckoning from the beginning of the last rather than the expected beginning of the next menstruation. The time of fruitful coitus is as a rule from the nineteenth to twelfth days before an expected menstruation; this comprises three days before the ovulation time and the five days of the latter. After the eleventh day preceding menstruation conception is impossible; during the period between the twenty-fourth and twentieth days preceding menstruation, coitus, owing to the comparatively short period of survival of the human ovum, is only fruitful in exceptional cases. In correspondence with these views, cases are mentioned in which there has been coitus before or during the ovulation period,

thus reckoned, and pregnancy has followed without an intervening menstruation; pregnancy without post-nuptial menstruation does not occur if coitus takes place during the days of the menstrual cycle which follow ovulation.

435. Contraindications to Radiotherapy in Pelvic Tumours.

J. L. FAURE (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, January, 1930, p. 43) records two cases in which cystic or papillary epithelial tumours of the ovary increased in size after radiotherapy. A 2-para, aged 45, complained of profuse menstruation; a fibroid was suspected, and radiotherapy was ordered. The first application was followed by increase in size of the abdomen; the second by fatigue, further increase in size, and a suspicion of ascites; while after the third treatment the abdominal swelling was so marked and ascites so evident that the abdomen was opened. A uterine fibroid was found, flanked on either side by an ovarian tumour, partly cystic and partly papillary. The uterus and both lots of appendages were removed. In the second patient an abdominal tumour, thought to be a uterine fibroid, increased in size despite radiotherapy. The abdomen was opened and a left papillary ovarian tumour, adherent to the uterus and broad ligament, was discovered and removed. There was spread of the growth to the right side, and the patient died some months later. Faure mentions two other cases similarly treated without benefit, and concludes that in certain cases where the diseased cells are not destroyed they are stimulated; in certain cases benign epithelial ovarian tumours may become malignant. He advises strongly against the radiotherapy of pelvic tumours unless it is absolutely certain that the tumour is a fibroid growth of the uterus uncomplicated by the presence of an ovarian tumour.

436. Late Effects of Eclampsia.

K. KOHDS (*Zentralbl. f. Gynäk.*, March 15th, 1930, p. 666) analyses the after-history of 32 eclamptic patients in whom, three to eighty-five months after discharge from hospital, the blood pressure and the fundus oculi were examined, and the renal function was investigated by diuresis, urea concentration, and other tests. At the time of discharge none had abnormally high blood pressure, but one half had small amounts or traces of albumin in the urine. The re-examinations showed that in no case were signs of chronic nephritis present, as indicated by increase in the non-protein blood nitrogen, high blood pressure, cardiac hypertrophy, and haematuria. Nineteen patients, however, showed some cardio-renal abnormality, and, after deduction of cases of comparatively recent eclampsia in which future improvement was possible, 8 showed signs of degenerative chronic nephrosis. Of the 10 patients in whom the history pointed to nephropathic conditions preceding their eclampsia, 9 showed morbid renal conditions at re-examination. More than one-half of the patients reported severe headache, faintings, excitability, timidity, and/or loss of memory—a finding which is similar to that of Nevermann, who inferred that slight organic cerebral changes often follow eclampsia. A similar "follow-up" of 19 cases of pre-eclampsia showed that 14 had albuminuria, a pathological urinary sediment, hyperpiesia, and impaired renal function—alone or in combination. In all these cases morbid renal conditions appeared to have antedated the pre-eclamptic pregnancy toxicosis. Three of these patients were found to have chronic nephritis. The general conclusion is drawn that pregnancy brings considerable danger to the kidneys of those who have already had kidney trouble, and that such subjects should be much more carefully supervised during pregnancy than is commonly the case.

437. Volvulus of the Healthy Adnexa.

THOUGH for a number of years volvulus of the healthy adnexa has been considered a very rare event, L. MICHON (*Gynécol. et Obstét.*, February, 1930, p. 103) believes that it occurs more frequently than is thought, and reports five cases of this condition. A distinction must be made between torsion of the entire adnexa and that of the tube alone. In most cases the tube only is twisted on the mesosalpinx, the ovary lying outside the torsion and being absolutely healthy. In other cases the entire adnexa are involved, and both the tube and ovary are included in the volvulus. Much rarer are cases of torsion of the ovary alone. The most frequent site of the torsion is at the uterine insertion of the tube, but one or more centimetres of the organ may be free and the volvulus be situated at its middle portion. The torsion is usually very marked—three or four turns of a spiral—and is rarely less than 360 degrees. The affected organ is very often greatly increased in volume; in one of the present cases the piece removed weighed 420 grams. The tube, as a rule, contains coagulated blood, which sometimes forms a veritable infarct. Often the termination of the oviduct cannot be seen, being obscured by adhesions, but sometimes it is clearly visible. The volvulus may be accompanied by an effusion of blood, but this rarely forms a true haematocele. The condition of the opposite adnexa should be noted; these are generally perfectly healthy, though the tube may be abnormally long and attached to an equally long meso-salpinx. The diagnosis that the adnexa involved are healthy can be made on certain presumptions: the previous integrity of the genital apparatus (this, more common in children and virgins, can be confirmed histologically), by the volume and consistency of the uterus, and by the normal condition of the opposite adnexa. The symptoms are very variable. Some cases present an acute symptomatology, simulating appendicitis or torsion of an ovarian cyst; others are subacute; while others are more or less chronic and may be mistaken for salpingitis. As regards the etiology of this condition, Michon believes that three factors should be considered: the congenital anatomy of the adnexa, such as an abnormal length of the tube; localized adhesions; and the state of the sympathetic system of the tube. The existence of peristaltic and antiperistaltic movements in this organ is well known, and it is suggested that these torsions may be due to a physiological disorder of the peri-tubals. Operation is the only treatment, and the affected part should be removed. If the tube alone is involved the ovary should be conserved. A case is reported of tuberculosis of both tubes and torsion of the left one; double salpingectomy was performed, with subsequent cure.

438. The Zondek-Aschheim Reaction in Chorion Epithelioma.

F. SCHULTZE-RHONHOF (*Zentralbl. f. Gynäk.*, March 8th, 1930, p. 578) mentions a series of 79 cases in which the Zondek-Aschheim test was performed to clear up diagnostic difficulties when early uterine or extrauterine pregnancy was suspected: the result was fallacious in one instance only. He holds that it is essential to adhere to the original technique, using five test mice. The test was positive in two patients with hydatidiform mole, and in four suffering from chorion epithelioma; the author attaches considerable prognostic importance to the test in both diseases. Histories are recorded of patients in whom the Zondek-Aschheim test gave negative results after removal of a hydatidiform mole; of patients in whom the test remained negative and clinical findings satisfactory after the operative extirpation of a chorion epithelioma; of a woman in whom the test remained positive between operation for chorion epithelioma and death three and a half months later; and of a patient whose reaction became less well marked after x-radiation and apparent regression of a metastasis following operation for chorion epithelioma. Schultze-Rhonhof remarks that the intensity of the Zondek-Aschheim reaction in cases of chorion epithelioma — in which trophoblastic tissue is abundant but pregnancy absent—points to production in the placenta of the hormone concerned.

Pathology.

439. Experimental Infection and Avitaminosis C.

L. BAJ (*La Clin. degli Organi di Movimento*, January, 1930, p. 477) has investigated experimental scurvy and the changes which arise in the manifestations of the deficiency when these are complicated by infection. The experiments were made on guinea-pigs, and a condition of scurvy was produced by an exclusive diet of corn and dried cereals, a diet absolutely free from vitamin C. Adult animals of about the same weight were chosen and are considered in four groups. (1) Those on scorbutic regime and not subjected to treatment; these all died with pronounced scorbutic symptoms. (2) Animals on the scorbutic diet and injected, some subcutaneously, others intraperitoneally, with *Staphylococcus pyogenes albus*; these showed on post-mortem examination not any or only slight symptoms of scurvy. (3) Animals on a normal diet and infected with *Staphylococcus pyogenes*; these all died with severe pyaemia. (4) Animals on the scurvy diet, with marked scorbutic symptoms, and later receiving staphylococcal infection: these showed aggravated symptoms, and death was hastened; there was no evidence of any retrogression of the scorbutic condition. The serum of the scorbutic animals was found to have a slightly raised calcium and phosphorus content. The author finds that in experimental scurvy from avitaminosis C the most constant and evident symptoms are those affecting the bones. In animals on a scorbutic diet and infected with the staphylococcus the phenomena of suppuration are dominant and the changes in the bones are less important, but the infection does not arrest the scorbutic condition, and the infection of these animals is of a more severe type than in animals under ordinary diet. The absence or less degree of avitaminotic

symptoms in the animals infected with staphylococcus may be due to the formation by the micro-organism of a substance possessing antiscorbutic properties.

440. Separation of Typhoid from Dysentery Bacilli by Motility.

J. SCHUBERT (*Zentralbl. f. Bakt.*, March 4th, 1930, p. 18) describes a method for the rapid separation of typhoid from dysentery bacilli by making use of the property of motility. The principle of the method is to inoculate a tube of semi-solid medium with the organism to be tested, and follow the rate of growth down the tube; the motile typhoid bacilli grow rapidly down through the medium, whereas the non-motile dysentery bacilli grow only on the surface. To follow the rate of growth downwards it is advisable to incorporate in the medium a fermentable sugar, and a suitable indicator to detect the formation of acid. The medium that the author recommends consists of a mixture of five parts of nutrient agar, containing 0.3 to 0.4 per cent. agar, and one part of 15 per cent. nutrient gelatin; 2.5 per cent. of glucose is added, and the reaction brought with soda to *p*H 7.4 to 7.6. The medium is coloured with watery blue, 1 c.cm. of a 1 per cent. aqueous solution being added to every 100 c.cm. Test-tubes are filled so as to contain a column of medium 10 to 12 cm. in height. Inoculation is made by pushing the charged platinum loop half-way into the surface of the medium. Incubation is performed at 37° C. After eighteen hours tubes inoculated with the typhoid bacillus are coloured blue for about 5 cm. from the surface; those inoculated with the paratyphoid bacilli are coloured the whole way; while those inoculated with dysentery bacilli show merely a surface coloration.

441. Effects of Vitamin A Insufficiency.

R. MCCARRISON (*Indian Journ. Med. Research*, January, 1930, p. 693) records certain observations with regard to the effects of insufficiency of vitamin A, in association with other food faults, on the thyroid gland and mucous membrane of the respiratory tract. Experiments were carried out on 23 rats, which were fed for twelve months on a diet chiefly lacking in vitamin A, but also in vitamins C and D and in certain mineral elements. The manganese content was relatively high. The iodine content was not determined, but, as the components of the diet were derived from an iodine-rich soil, it was assumed that iodine was not lacking in them. After the animals were killed examinations were made of the thyroid gland and trachea. No anterior or lateral enlargement of the gland was noted, but in 5 rats a backward growth of the posterior borders had occurred so that they met behind the trachea. In 15 animals proliferative changes in the tracheal mucous membrane were seen, and abnormal distension of the follicles of the thyroid had occurred in 11 of these. Keratinization of the tracheal epithelium was occasionally observed, but the proliferative changes predominated. These appeared to be the result of a chronic protracted inflammatory reaction, in which varying numbers of mononuclear cells pervaded the subepithelial layer of the mucosa, polynuclear cells being comparatively rare. In some cases the thickening of the mucosa which was thus produced was slight, but in some the membrane was thrown into polypoid or villiform elevations which greatly reduced the lumen of the trachea. These masses closely resembled the hypertrophied, hyperplastic adenoid tissues (adenoids) so frequently found in badly nourished children. The changes in the thyroid gland consisted in distension of a large proportion of the follicles with colloid material and frequent distortion of their shape, secretory activity being present in parts of the gland not affected by follicular distension. McCarrison states that these observations may be pertinent to other problems. Among these are: the possible relation of faulty food containing an insufficiency of vitamin A to adenoids, and the possible relation of insufficiency of vitamin A to iodine metabolism and goitre-formation.

442. Carotinaemia.

R. RUMMO (*Rif. Med.*, January 20th, 1930, p. 96) regards the carotinoid pigments as the most important of the lipochromes so widely diffused throughout the vegetable kingdom and more recently recognized as occurring in milk, butter, eggs, corpus luteum, fat, and in blood serum. The higher animals cannot produce carotine synthetically, but obtain it ready made from vegetables. Carotine is an unsaturated hydrocarbon ($C_{40}H_{56}$) with a strong affinity for oxygen, being transformed into colourless xanthophyll. In pure orm it appears in small variable crystals, slightly soluble in alcohol, but most soluble in chloroform, benzol, and carbon disulphide; it gives two characteristic absorption bands in the spectrum, but is inactive to polarized light. Clinically cases of carotinaemia or hypercarotinaemia are reported in which the whole body is jaundiced, the urine a dark amber colour, the stools contain bile, and the sclerotics are untinted; the blood serum shows the pre[illegible] of an excess of carotine. The condition has been reproduced by giving a diet rich in carrot; the patients are not really ill, and the condition quickly disappears by living in the fresh air. The cutaneous coloration in some cases of pernicious anaemia, diabetes, xanthelasma, and tuberculosis is possibly due to diminished organic oxidation, whereby the carotine is not completely destroyed and accumulates in the tissues and in the blood; it is suggested that perhaps the straw pallor of cancerous patients is caused by carotine, and that the hyp[illegible] on the def[illegible] relation between carotine and vitamin A; potato and maize are equally poor in this pigment and in vitamin A, whereas bone marrow, butter, and yeast extract are equally rich in both these substances. Experimentally produced avitaminosis A (dogs and rats) can be cured by the administration of small doses of carotine.

443. Epidemiological Types of Dysentery Bacilli in Denmark.

K. BOJLÉN (*C. R. Soc. de Biologie*, February 28th, 1930, p. 613) during the years 1926 to 1929 isolated dysentery bacilli from 732 cases of dysentery in Denmark. Of the strains recovered, 537 proved to be of the Kruse E-Sonne type, 193 of the Flexner type, and 2 of the Shiga type. Schmitz's bacillus has not yet been found in Denmark. No clinical difference was noticed between infections due to Sonne's and those due to Flexner's bacillus. In order to find out whether the biochemical reactions of strains of bacilli isolated from a given epidemic were constant, as many strains as possible were collected at intervals from the same patient; and, during the course of any epidemic, strains were collected from as many patients as possible. In all, 2,216 strains were isolated. It was found possible to classify the Sonne type into four different epidemiological groups on the basis of xylose and maltose fermentation. Group A was negative to xylose and positive to maltose; Group B was negative to xylose and positive to maltose, but maltose was not fermented for three to six days; Group C was positive to xylose and to maltose; Group D was also positive to xylose and to maltose, but maltose was not fermented for three to six days. The Flexner type was divided into two main groups on the basis of sucrose fermentation. The sucrose-negative group was subdivided into five subgroups on the basis of sorbite and l-arabinose fermentation and the production of indole. The sucrose-positive group was divided into four subgroups on the same series of tests. Serologically the sucrose-positive differed from the sucrose-negative strains, and within each of these groups there were serological subgroups. The author is satisfied that the different types he describes are epidemiologically constant.

444. Chronic Lymphatic Leukaemia.

E. PRIESSNER (*Wien. klin. Woch.*, February 6th, 1930, p. 170) refers to the difficulty of fixing the type of chronic lymphatic leukaemia in those cases where there is abundant myeloid growth, myelocytes and even myeloblasts appearing in the peripheral blood; he raises the question whether these cases should be regarded as mixed myeloid and lymphatic leukaemia, or whether the myeloid element indicates the occurrence of metaplasia. In a series of typical cases of chronic lymphatic leukaemia the myeloid elements generally showed a marked nuclear shift to the left; the degree of this shift is demonstrated in a table showing the ratios of unsegmented to segmented forms, the normal ratio being about 0.1. In the first eight cases, all of which showed a marked left-handed shift, there is a lowered absolute leucocyte count, which expresses a high degree of bone-marrow activity, such as occurs in the severest septic infection; contrasting with infection leucopenia with left handed shift there is often a high eosinophil value. In the three last cases, which showed no left-handed shift, there was no leucopenia, the white cell count being about normal or slightly lowered.

445. Determination of the Coagulation Rate of the Blood.

C. FLANDIN and A. TZANCK (*Bull. et Mém. Soc. Méd. des Hôp. de Paris*, February 7th, 1930, p. 192) advocate the following procedure for determining the rate of coagulation of the blood. A syringe for the removal of blood is filled in the usual way and then emptied, leaving only a thin film of blood spread over the inner wall of the syringe, which is now laid upon the table; the fluid blood collects on the lower part of the tube, and by turning the syringe over the blood is moved to the opposite wall. This movement is repeated every thirty seconds until at a given moment the blood remains fixed, and the coagulation is definite. To verify this a little water is aspirated into the syringe; in place of the total haemolysis obtained with fresh blood, a clot is floated in the water. The coagulation takes place normally at the second minute. Clotting occurring within a minute and a half is abnormally accelerated; a delay of more than four minutes is certainly pathological, and if delayed beyond six minutes the blood may be regarded as incoagulable.

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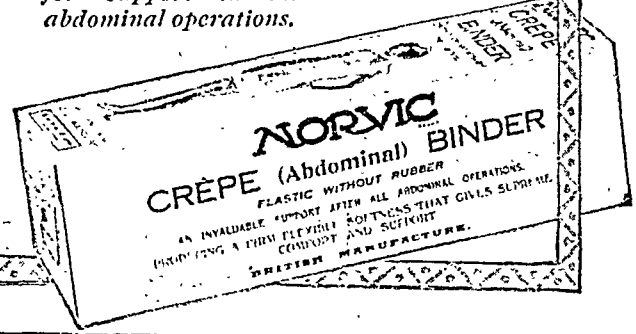
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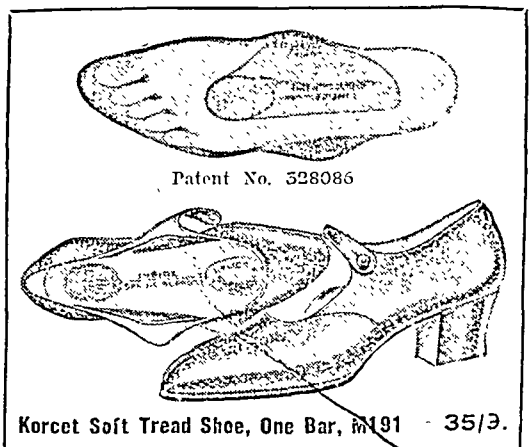
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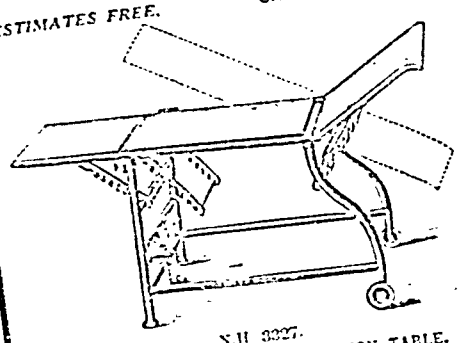
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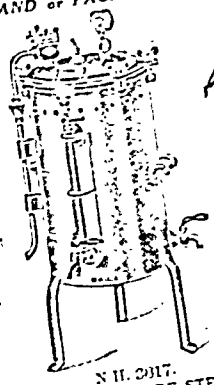
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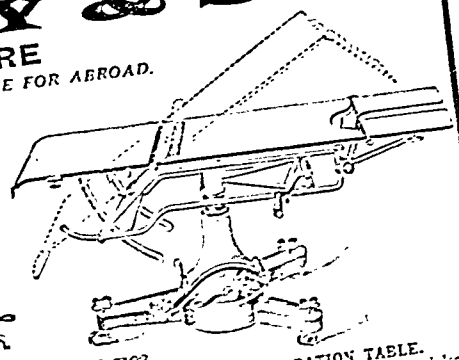
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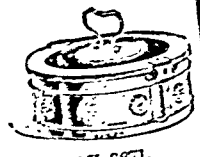


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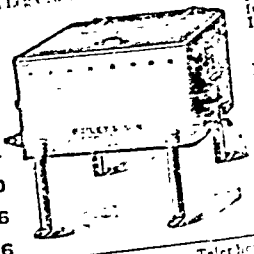
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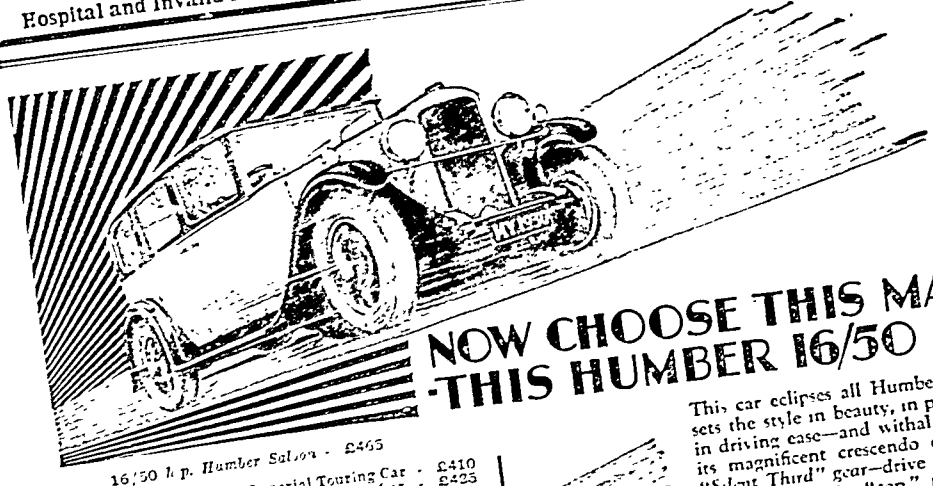
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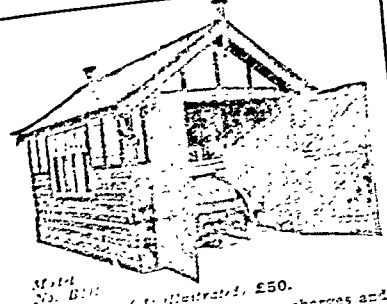
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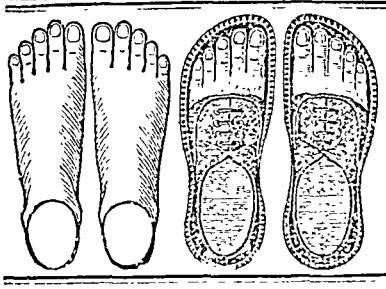
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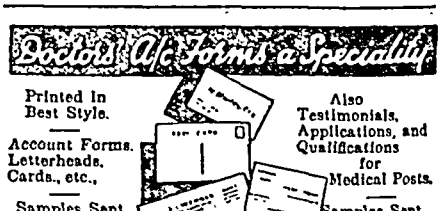
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CLAPTON, LONDON, E.5.

Telephone: Clissold 1642.

PRIVATE HOSPITAL for Ladies and Gentlemen suffering from Mental and Nervous Disorders. The hospital is situated in nine acres of pleasure grounds. Both voluntary and patients under certificates received. For further particulars apply Dr. GERALD JOHNSTON and Dr. ERNEST BOLLISS, Resident Physicians.

THE LAWN, LINCOLN.

A registered Hospital situated in large grounds near the Cathedral receives VOLUNTARY BOARDERS and PRIVATE PATIENTS of both sexes for treatment of Mental and Nervous Disorders, including Post-Encephalitic conditions. Special facilities for Psychotherapy in co-operative cases.

All particulars may be obtained from the Resident Medical Superintendent,

Dr. MARY R. BARKAS, M.D., D.P.M.

STRETTON HOUSE,

Church Stretton, Shropshire.

A PRIVATE HOME for the treatment of Gentlemen suffering from Mental or Nervous Illness, including the allied disorders of Alcoholism and the Drug Habit. All types of early Mental or Nervous cases are received without certificates as Voluntary Boarders. Bracing Hill country. See *Medical Directory*, p. 2138.—Apply to Medical Superintendent. Telephone: 10 P.O., Church Stretton.

CLARENCE LODGE,

CLAPHAM PARK, LONDON.

Situated in 3½ acres of secluded gardens.

HOME FOR TWELVE MENTAL PATIENTS (LADIES).

Well appointed private house. Home comforts and Trained Nursing Staff. Eminent Mental Specialist Visiting Physician.

Station: — *Telephone:* Brixton 0494. Clapham Common Tube. Apply, Miss THWAITES.

WYE HOUSE, BUXTON.

For the treatment of Ladies and Gentlemen mentally afflicted. Voluntary Boarders received. Situated 1,200 ft. above sea-level, facing S.; 14 acres of grounds.—For terms, apply to the Resident Medical Superintendent, W. W. HORTON, M.D. Nat. Tel. 130.

SMEDLEY'S

Unrivalled suites of Baths for Ladies and Gentlemen, including Turkish and Russian Baths, Aix and Vichy Douches, Massage and Plombières Treatment, an Electric Installation for Baths and other Medical purposes, Dowsing Radiant Heat, D'Arsonval High Frequency, Diathermy, Nauheim Baths, New Soapless Foam Baths, etc. Special provision for invalids. Milk from our farm of 200 acres. Large Winter Garden. Night Attendance. Rooms well ventilated and all bedrooms warmed in Winter. A large Staff (upwards of 60) of trained Male and Female Nurses, Masseurs, and Attendants.

Telegrams: "SMEDLEY'S, MATLOCK." 'Phone: No. 17.

For Prospectus and full information please write MANAGER, M.J.

GREAT BRITAIN'S GREATEST HYDRO

Resident Physicians: G. C. B. BABBINGTON, M.B., B.Ch., B.A.O. (R.U.I.), R. MACLELLAND, M.D., C.M. (Edin.).

MATLOCK

BRIDGE OF ALLAN HYDRO

(Allan Water Hotel), Stirlingshire.

Most Modern Equipment for Treatment by Electrotherapy, Radiant Heat, Ultra-violet Ray, Diathermy, Ionization, etc. Medicated Baths. Radio-active Mud Packs. Manipulative Surgery. Massage.

Treatment under Medical Supervision only, and according to the instructions of patients' own medical adviser.

Equable Climate—Mild and Sunny.

Medical Superintendent: Dr. W. C. HOFFMAN.

Telegrams: "Braillin, Bridge of Allan" Telephone: Bridge of Allan 148. Hotel.

ALCOHOLISM, DRUG HABIT, NEURASTHENIA, etc.

BAY MOUNT, PAIGNTON.

ESTABLISHED 1922. 'Phone: PAIGNTON 5110.

A comfortable, private HOME, charmingly situated, overlooking Torbay, near Torquay. Main line, 3½ hours from Paddington. Both Ladies and Gentlemen admitted as voluntary patients. The treatment is the outcome of many years' experience, and based upon removing all craving for drink or drugs, it has a tonic action on the system and the general health is improved. Alcohol and drugs reduced gradually, without suffering.

FUNCTIONAL NERVOUS DISEASES AND NEURASTHENIA are also treated with excellent results. Cases with insomnia, depression, etc., do especially well.

Exceptionally good climate and ample and varied amusement. Moderate, inclusive terms. Prospectus, etc., from STANFORD PARK, M.B., Ch.B., Res. Med. Supt., Bay Mount, Paignton.

INEBRIETY

ECCLESFIELD, ASHFORD, MIDDLESEX.

(*Use private address to secure secrecy*) Telephone: 152.

Beautiful large Residential Home, with 50 acres of park land, attached to R.C. Convent, and under the care of the Sisters. Established 1923. Most successful MEDICAL and PSYCHOLOGICAL TREATMENT for LADIES. Every home comfort, and bright happy social amusements. Splendid results proved by the numbers of former patients who return to the Home for holiday visits. *Medical Superintendent:* J. YOUNG SCOTT, M.B., Ch.B.

INEBRIETY DALRYMPLE HOUSE, RICKMANSWORTH, HERTS.

For the treatment of GENTLEMEN under the Act and privately. Estab. 1883 by an Association of prominent medical men and others for the study and treatment of alcohol and drug abuse. Large secluded grounds on the bank of the River Colne. Full-sized billiards, tennis, croquet, bowls. Golf (Moor Park, Sandy Lodge) close by. For particulars apply to—F. S. D. HOGG, M.R.C.S., L.R.C.P., Resident Medical Supt. Telephone: 16 RICKMANSWORTH.

SHAFTESBURY HOUSE,

FORMBY-BY-THE-SEA, nr. LIVERPOOL.

For the care and treatment of a limited number of Ladies and Gentlemen suffering from NERVOUS or MENTAL breakdown. Voluntary Boarders received. Psychotherapy in suitable cases if desired. Terms moderate. Apply, RESIDENT PHYSICIAN. Tel.: No. 8 Formby.

ALCOHOLISM,

OTHER DRUG HABITS, AND TROPICAL AILMENTS

THE HARE NURSING HOME

As founded and established by the late Dr. FRANCIS HARE, for 20 years Med. Supt. of The Norwood Sanatorium, and author of "Alcoholism," etc.; for the treatment of ALCOHOLISM, other Drug Habits, Insomnia, Neurasthenia, Functional Nervous Disorders, TROPICAL Ailments, etc.

"THE OLD HILL HOUSE," CHISLEHURST, KENT.

Terms moderate. Quiet and pleasant situation. *Ladies and gentlemen admitted for treatment.* For Prospectus, etc., write or 'phone: WALTER E. MASTERS, M.D., M.R.C.S., D.P.H., Barrister-at-Law (Resident Medical Superintendent).

'Phone: Chislehurst 451. *Telegrams:* "Masters," Chislehurst.

Tel. & Telegrams: "Haynes, Brentwood, 45"

Littleton Hall, Brentwood, Essex.

Large grounds, 400 ft. above sea. HOME for Ladies Mentally afflicted. Voluntary Boarders received. Stations: Brentwood and Shenfield 1 mile. Liverp'l St. 25 min.—Apply, Dr. HAYNES.

CITY OF LONDON MENTAL HOSPITAL, DARTFORD, KENT.

PRIVATE PATIENTS are received at a weekly charge of TWO GUINEAS and upwards.

Voluntary BOARDERS can now be admitted.—Apply to the MED. SUPERINTENDENT.

ALCOHOLISM

DRUG ADDICTION & NEURASTHENIA

CALDECOTE HALL, NUNEATON.

At this beautifully situated country mansion residential Treatment of the above afflictions is carried out on the most modern scientific principles, both physical and psychological, under the supervision of the Res. Med. Supt., Dr. A. E. Carver, M.D., D.P.M. Fees moderate.

Further particulars from the Central Sec., 40, Marsham Street, London, S.W.1.

In cases of urgency 'phone NUNEATON 241.

HOME FOR FEEBLE-MINDED.

BRUNTON HOUSE, LANCASTER.

This well-appointed private establishment overlooks Morecambe Bay, and possesses extensive gardens and grounds, with tennis and croquet lawns. Varied scholastic and manual instruction. Individual attention given by experienced staff under Lady Matron. For terms, apply, Dr. W. H. COURTAULD, Med. Supt.

BOREATTON PARK,

BASCHURCH, SALOP.

A first-class Country Mansion adapted for the reception of a limited number of Ladies and Gentlemen mentally afflicted.

Large gardens, deer park, private golf links, fishing. Grounds extend to over 200 acres.

Voluntary Boarders accepted.

Apply for particulars to Dr. SANKEY.

ST. ANDREW'S HOSPITAL
FOR MENTAL DISORDERS,
NORTHAMPTON

FOR THE UPPER AND MIDDLE CLASSES ONLY.

President: THE MOST HON. THE MARQUESS OF EXETER, C.M.G., A.D.C.

Medical Superintendent: DANIEL F. RAMBAUT, M.A., M.D.

This registered Hospital is situated in 120 acres of park and pleasure grounds. Voluntary Boarders, persons suffering from incipient nervous and mental disorders, as well as certified patients of both sexes, are received for treatment. Careful clinical, biochemical, bacteriological, and pathological examinations. Private rooms with special nurses, male or female, in the Hospital or in one of the numerous villas in the grounds of the various branches can be provided

WANTAGE HOUSE.

This is a Reception Hospital in detached grounds, with a separate entrance, to which patients and voluntary boarders can be admitted. It is equipped with all the apparatus for the most modern treatment of Mental and Nervous Disorders. It contains special departments for hydrotherapy by various methods, including Turkish and Russian baths, the prolonged immersion bath, Vichy Douche, Scotch Douche, Electrical bath, Plombières treatment, etc. There is an Operating Theatre, a Dental Surgery, an X-ray Room, an Ultra-violet Apparatus, and a Department for Diathermy and High Frequency treatment. It also contains Laboratories for biochemical, bacteriological, and pathological research.

MOULTON PARK.

Two miles from the Main Hospital there are several branch establishments and villas situated in a park and farm of 650 acres. *Milk*, meat, fruit, and vegetables are supplied to the Hospital from the farm, gardens, and orchards of Moulton Park. Occupation therapy is a feature of this branch, and patients are given every facility for occupying themselves in farming, gardening, and fruit-growing.

BRYN-Y-NEUADD HALL.

The seaside house of St. Andrew's Hospital is beautifully situated in a Park of 330 acres, at Llanfairfechan, amidst the finest scenery in North Wales. On the North-West side of the Estate a mile of sea coast forms the boundary. Voluntary Boarders or Patients may visit this branch for a short seaside change or for longer periods. The Hospital has its own private bathing house on the seashore. There is trout-fishing in the park.

At all the branches of the Hospital there are cricket grounds, football and hockey grounds, lawn tennis courts (grass and hard courts), croquet grounds, golf courses, and bowling greens. Ladies and gentlemen have their own gardens, and facilities are provided for *handicrafts*, such as carpentry, etc.

For terms and further particulars apply to the Medical Superintendent (Telephone No. 56, Northampton), who can be seen in London by appointment.

THE COPPICE, NOTTINGHAM.
HOSPITAL FOR MENTAL DISEASES.

This Institution is exclusively for the reception of a limited number of Private Patients of both sexes of the Upper and Middle Classes at moderate rates of payment. It is beautifully situated in its own grounds on an eminence a short distance from Nottingham, and from its singularly healthy position and comfortable arrangements affords every facility for the relief and cure of those mentally afflicted. Voluntary Boarders received without Certificates.

Tel.: 64117. *For terms etc., apply to the Medical Superintendent.*

HAYDOCK LODGE,
NEWTON-LE-WILLOWS, LANCASHIRE.

'Phone: 11 Ashton-in-Makerfield.

For the reception and treatment of PRIVATE PATIENTS of both sexes of the UPPER AND MIDDLE CLASSES either voluntarily or under Certificate. Patients are classified in separate buildings according to their mental condition.

Situated in park and grounds of 400 acres. Self-supported by its own farm and gardens, in which patients are encouraged to occupy themselves. Every facility for indoor and outdoor recreation. For terms, prospectus, etc., apply MEDICAL SUPERINTENDENT.

COURT HALL, KENTON, EXETER,
SOUTH DEVON.

For the care and treatment of Ladies suffering from Mental Diseases. Limited to eight patients. Telephone: Starcross 19.

CLIFFDEN, TEIGNMOUTH, in connection with Court Hall, for early and convalescent cases. Cliffden is a large well-appointed house, with lovely views of the South Devon Coast. It is beautifully situated in grounds of 19 acres. The gardens are very attractive, and there is a *private road to the beach.*

Resident Physicians: BERTHA M. MULES, M.D., B.S.; ANNIE S. MULES, M.R.C.S., L.R.C.P.

Telephone: *Teignmouth* 289.

BELVOIR NURSING HOME,
ASTON-ON-TRENT, DERBY.

FUNCTIONAL NERVOUS DISORDERS & CHRONIC MEDICAL CASES.

The Home, a Georgian mansion, 14 miles from Nottingham and 6 miles from Derby, is for both sexes. In addition to the methods of general medicine, Psycho-Therapeutic treatment is used extensively in suitable cases. Certifiable cases are not received. Electrical treatment, Radiant Heat, X-ray, and Ultra-violet Light is available in the Nursing Home. Billiards, tennis, etc. Fees from 5 to 12 guineas per week; for Chronic Medical Cases from 3 guineas a week. For further particulars apply to—

Dr. E. M. DOUGLAS-MORRIS, ASTON, DERBY. *Telephone*: Shardlow 16.

CHISWICK HOUSE.

A Private Mental Hospital for the Treatment and Care of Mental and Nervous Disorders.

Now removed to:

CHISWICK HOUSE,
PINNER,
MIDDLESEX.

Telephone: PINNER 234.

A modern country house, 12 miles from Marble Arch, in beautiful secluded grounds.

Fees are from 10 guineas per week.

Voluntary Patients received for treatment.

DOUGLAS MACAULAY, M.D., D.P.M.

WONFORD HOUSE HOSPITAL,
EXETER, DEVON.

Telegrams: Exeter 2642. *Telephone*: Exeter 2642.

A registered Hospital for the treatment of patients of both sexes suffering from Nervous and Mental Disorders, situated in beautiful country within a mile and a half of the City of Exeter.

Hard and grass Tennis Courts, Croquet Lawn, Cricket Field, and all indoor amusements, Dancing, Concerts, Wireless, Billiards, Badminton. Occupational treatment.

The patients are carefully graded, and accommodation provides for the separate treatment of early recoverable and convalescent patients.

Voluntary and certified patients are received *for treatment.*

A prospectus and full particulars can be obtained from the Medical Superintendent.

BARNWOOD HOUSE,
GLOUCESTER.

A REGISTERED HOSPITAL for the CARE and TREATMENT of LADIES and GENTLEMEN suffering from NERVOUS and MENTAL DISORDERS. Within two miles of the G.W. Railway and L. M. & S. Railway Stations at Gloucester, the Hospital is easily accessible by rail from London and all parts of the United Kingdom. It is beautifully situated at the foot of the Cotswold Hills, and stands in its own grounds of over 280 acres. Voluntary boarders of both sexes are also received for treatment.

Special accommodation for Lady Voluntary Boarders is also provided at the MANOR HOUSE, which has its own private grounds and is entirely separate from the main Hospital.

For particulars as to terms, etc., apply to—
ARTHUR TOWNSEND, M.D., Resident Supt.
Telephone: No. 7 Barnwood.

CHEADLE ROYAL,
CHEADLE, CHESHIRE.

This registered Hospital for MENTAL DISEASES, with its seaside branch Glan-y-Don, Colwyn Bay, is for the treatment and care of PRIVATE PATIENTS of the UPPER and MIDDLE CLASSES. Voluntary Boarders received.

For terms, etc., apply to the Medical Superintendent, J. A. C. ROY, M.B., who may also be seen in Manchester by appointment.

Telephone: 481 GATLEY.

THE GRANGE,
near ROTHERHAM.

A HOUSE Licensed for the reception of a limited number of ladies suffering from Nervous and Mental disorders. Both certified and voluntary patients received. This is a large country house, with beautiful grounds and park, 5 miles from Sheffield. Station: Grange Lane, L. & N.E. Railway, Sheffield. Telephone: No. 40030 Ecclesfield. Resident Physician: GILBERT E. MOULD, L.R.C.P., M.R.C.S.

THE MOAT HOUSE,
TAMWORTH, STAFFS.

Established 1816. For the TREATMENT of a few LADIES suffering from NERVOUS and MENTAL DISORDERS. Voluntary patients received. For terms apply to Proprietor and Licensee: Dr. LOWSON. Tel.: 108 Tamworth.

RUTHIN CASTLE

(FORMERLY DUFF HOUSE, BANFF.)

The first Private Hospital in the United Kingdom to be fully provided with a whole-time specially qualified Staff of Doctors, Analytical Chemists, Bacteriologists, Radiologists, Nurses, Dietists, Masseurs, and Masseuses, and a full equipment of Laboratories, X-rays, Electrocardiographs, Artificial Sunlight, and Medical Baths.

The Hospital is equipped for the diagnosis and treatment of any form of ill-health, except Mental and Infectious Diseases. The fees are inclusive

The climate is mild and the neighbourhood beautiful. Apply, The Secretary,

Telegrams: Castle, Ruthin. Telephone 65, Ruthin. Ruthin Castle, North Wales.

THE OLD MANOR SALISBURY

A Private Hospital for the Care and Treatment of those of both sexes suffering from MENTAL DISORDERS.

Extensive grounds. Detached Villas. Chapel. Garden and dairy produce from own farm. Terms very moderate.

CONVALESCENT HOME at BOURNEMOUTH standing in 9 acres of ornamental grounds, with tennis courts, etc., which Patients or Boarders may visit by arrangement, for long or short periods

Illustrated Brochure on application to the Medical Superintendent, The Old Manor, Salisbury. Telephone 51.

CAMBERWELL HOUSE, 33, Peckham Road, London, S.E.5.

Telegrams: "PSYCHOLIA, LONDON." FOR THE TREATMENT OF MENTAL DISORDERS. *Telephone:* RODNEY 4731—4732.

Also completely detached Villas for mild cases, with private suites if desired. Voluntary Patients received. Twenty acres of grounds. Hard and Grass Tennis Courts, Bowls, Croquet, Squash Racquets, and all indoor amusements, including Wireless and other Concerts. Occupational Therapy, Physical Drill, and Dancing Classes. X-ray and Actino-therapy, Prolonged Immersion Baths. Operating Theatre, Dental Surgery, and Ophthalmic Dept. Chapel. Senior Physician: **Dr. Hubert James Norman**, assisted by three Medical Officers, also resident, and Visiting Pathologist. An illustrated Prospectus may be obtained upon application to the Secretary.

HOVE VILLA, BRIGHTON. — CONVALESCENT BRANCH OF THE ABOVE.

NORTHUMBERLAND HOUSE,

GREEN LANES, FINSBURY PARK, N.4.

Telegrams: "SUBSIDIARY, LONDON." *Telephone:* NORTH 0888.

A PRIVATE HOME for the treatment of patients of both sexes suffering from Mental Illnesses.
Conveniently situated four miles from Charing Cross. Easy of access from all parts.
Six acres of ground, highly situated, facing Finsbury Park.
Voluntary Boarders received without certificates. Private suites. Convalescent Home, Kearsney Court, Dover.
For further particulars, apply to the MEDICAL SUPERINTENDENT.

PECKHAM HOUSE, 112, Peckham Road, London, S.E.15.

Telegrams: "Alleviated, London." Telephone: Rodney 4741—4742.

The above House, which was established in 1826, is an Institution for the care and treatment of persons suffering from mental diseases and nervous disorders. Both certified patients and voluntary boarders are received. Separate houses for treatment and accommodation of special cases adjoin the Institution. There is a seaside branch, Kearsney Court, near Dover, to which patients may be sent for treatment or on holiday. Motor and carriage exercise is provided as required. Patients can avail themselves of a course of physical drill. Tennis courts. Entertainments, dances, and indoor amusements held throughout the year.

Illustrated prospectus and further particulars can be obtained from the Medical Superintendent.

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850 feet above sea-level.

STONYCREST NURSING HOME.

(Registered)

For MEDICAL, SURGICAL AND CONVALESCENT CASES.

RESIDENT MASSEUSE.

Apply, Miss OLIVER. *Tel.*: Hindhead 27.

DORSET HOUSE,

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A Woman Doctor's well-run PRIVATE HOUSE, where intensive treatment is provided for Ladies and Girls suffering from Nervous and Functional Disorder. A special feature is made of Occupational Therapy. High situation, overlooking Clifton Downs. Large gardens. Terms from £5 5s. a week.

Apply, ELIZABETH CASSON, M.D., D.P.M.

BAILBROOK HOUSE,

BATH.

A PRIVATE HOME for the care and treatment of persons with mental and nervous disorders. Voluntary Boarders received in the Villas. Large Mansion on outskirts of Bath, with 20 acres of grounds (see *Medical Directory*, page 2134).

For terms apply to SAMUEL J. GILFILLAN, O.B.E., M.B., C.M.Edin., Resident Physician. Telephone No.: Bathaeton 8189.

FUNCTIONAL NERVOUS DISORDERS.

CALDECOTE HALL, NUNEATON.

RESIDENTIAL TREATMENT of the most modern kind is carried out under the personal direction of the Resident Medical Superintendent in this beautiful Country Mansion. Fees are moderate. *Full particulars from the Resident Medical Superintendent:*

A. E. CARVER, M.D., D.P.M.
Telephone: Nuneaton 241.

BETHLEM ROYAL HOSPITAL, LAMBETH ROAD, S.E.1.

(For the reception and treatment of cases of nervous and mental disease)

Tel.: RELIANCE 2182.

President:
LORD WAKEFIELD OF HYTHE, C.B.E., LL.D.
Treasurer: SIR LIONEL FAUDEL-PHILLIPS, Bart.
Physician-Superintendent:
J. G. PORTER PHILLIPS, M.D., F.R.C.P.
Assisted by Physicians, a Pathologist, and a staff of Visiting Consultants.

In view of the imminent transfer of the Hospital to its new site at Monks Orchard, Eden Park, Beckenham, Kent, for the time being admission to the present Hospital can only be considered in exceptional cases.

For further particulars apply to the Physician-Superintendent.

Bishopstone House, Bedford.

PRIVATE HOME for MENTALLY AFFLICTED LADIES. Ten only received. Apply, Medical Officer or Mrs. PEELE. *Telephone*: 2708.

TOR-NA-DEE SANATORIUM
MURTLE DEESIDE ABERDEENSHIRE.



Medical Director: David Lawson, M.D., F.R.S.E.

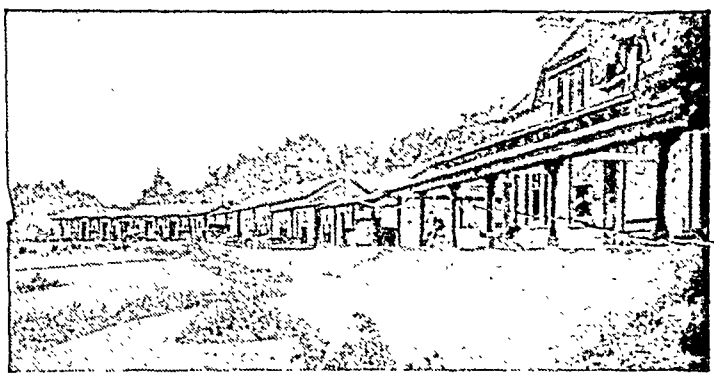
FULLY EQUIPPED WITH EVERY MODERN APPLIANCE FOR THE DIAGNOSIS AND TREATMENT OF ALL FORMS OF TUBERCULOSIS & ALLIED DISEASES.

Physician Superintendent J. M. JOHNSTON, M.B., D.P.H., etc.

Full particulars and Prospectus on application to the Secretary.

Inclusive Terms: SEVEN GUINEAS A WEEK.

THE COTSWOLD SANATORIUM



Specially built in 1898 on the Cotswold Hills, seven miles from Cheltenham, for the treatment of Pulmonary and all other forms of Tuberculosis on Nordrach lines. Aspect S.S.W., sheltered from North and East, elevation 800 feet. Pure bracing air. **Special Treatment** by artificial **Pneumothorax** (X-ray controlled), **Tuberculins**, and **Ultra-Violet Rays** is available, when necessary, without extra charge. **X-ray** plant. Electric light. Radiators, hot and cold basins, and Wireless in all rooms.

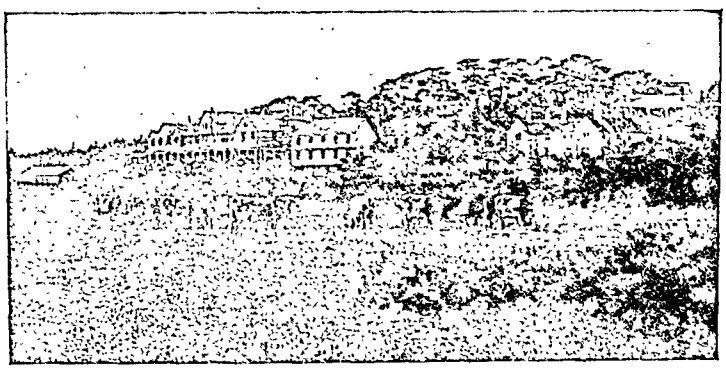
Full day and night Nursing Staff.

Resident Physicians: ARTHUR H. HOFFMAN, M.D., and G. A. HOFFMAN, M.B.

Apply: The Secretary, The Cots... Cranham, Gloucester.

Telephone: 41 WITCOMBE. *Telegrams:* "...BIRDLIP."

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Specially built for the treatment of Tuberculosis. **Spacious public rooms recently completed in a new central building.** Aspect S.S.W., on a carefully chosen site. Pure, bracing air. High sunshine record. Heliotherapy. Arc-light treatment. One mile from the coast. Electric light throughout. X-ray installation. Full day and night Nursing Staff. Wireless (head phones) throughout.

Resident Physicians:

S. VERE PEARSON, M.D.(Camb.), M.R.C.P.(Lond.)
L. WHITTAKER SHARP, M.B.(Camb.).
ANDREW MORLAND, M.B.(Lond.).

Apply, Mr. D. C FORD, Secretary,
The Sanatorium, Mundesley, Norfolk.

VALE OF CLWYD SANATORIUM

This Sanatorium is established for the treatment of TUBERCULOSIS of the LUNGS and the PLEURAL CAVITIES. It is situated in the midst of a large area of park-land at a height of 450 feet above sea-level, on the south-west slopes of mountains rising to over 1,800 feet, which protect it from north and east winds *and provide many miles of graduated walks with magnificent views.* Average rainfall 29.57 per annum. Full day and night nursing staffs. X-ray plant. Every facility for Artificial Pneumothorax, and for operations on the chest. Electric lighting. Central heating. Home farm. Clean milk from T.T. Herd. For particulars apply to Med. Supt., **H. Morriston Davies**, M.D., M.Ch.Cantab., F.R.C.S., Llanbedr Hall, Ruthin, N. Wales.



KINGUSSIE, N.B.

THE GRAMPIAN SANATORIUM.

Situated in the upper Speyside district of Inverness-shire. One of the highest inhabited districts in Britain—"The Switzerland of the British Isles." Bracing and dry mountain climate. Well sheltered Sanatorium specially built for the Open-air Treatment of Tuberculosis. Opened in 1901. Elevation 860 ft. above sea-level. Electric light throughout buildings and in rest shelters. Central heating. Fully equipped X-ray Plant. All forms of treatment available, including Artificial Pneumothorax, and Ultra-Violet Rays for surgical cases of Tuberculosis. Terms: £4 6s. 8d. to £6 6s. per week inclusive, no extras.

MEDICAL SUPT.: FELIX SAVY, M.D. *For particulars apply to the Secretary.*

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Easily Travelled



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LAKE LOUISE

LAKE LOUISE in the Canadian Rockies, is one of the most beautiful sights in the World!
Snow-crowned peaks enclose it, where it lies 630 feet above the railway. A glacier drops into the far end, and in its glacial-green waters are seen, changing every moment, those lovely reflections that have made it the most-photographed spot on earth.
Pony trails lead away through silent, primeval forests to Lakes in the Clouds, Paradise Valley, Moraine Lake, and a score of other excursions. Swiss guides take you mountain-climbing. Smooth motor roads invite you to Banff, Yoho Valley, the Kicking Horse Trail.
And for accommodation there is the superb Chateau Lake Louise, with swimming, dancing, tennis.
Lake Louise is one of the 35 places on our "Across Canada" Tour—a seven-week trip through the Rockies to the Pacific Coast and back. Some of the other places are Quebec, Montreal, Ottawa, Toronto, Niagara, Winnipeg, Banff, Calgary, Vancouver, Victoria, Windermere Valley and Nipigon.
The Tour starts July 25th, sailing by the DUCHESS OF YORK. Special train detailed to party, kept waiting while you are sightseeing. "All in" price includes steamship, railway, and sleeping car fares, hotels, meals, drives, transfers, guide and gratuities.
And then from June 27 to August 15 we have 11 shorter tours, from 19 to 26 days, visiting some of the principal sights of Eastern Canada—some of them including New York.
Or "Go-as-you-please" holidays? We will gladly prepare itineraries, short or long.
We have just issued a beautiful little book with 32 coloured illustrations, e.g. Holidays in Canada. Shall we send you a copy of it? Ask about Booklet Tour C12.

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BRITISH MEDICAL ASSOCIATION MEETING
WINNIPEG, AUGUST, 1930.

Return by Cunard

The alternative return routes for the official Tours A1, B1 and C1 will pass through Minneapolis, Rochester (Mayo Clinic), Chicago, Philadelphia and New York.

Tours A1 and B1.

Arrive in New York Sept. 3rd.
Leave New York 11 p.m., "Mauretania," Sept. 3rd. Due Southampton Sept. 9th.
Leave New York midnight, "Tuscania," Sept. 5th. Due Plymouth Sept. 13th, or London Sept. 15th.
Leave New York 11 a.m., "Scythia," Sept. 6th. Due Galway and Cobh (Queenstown) Sept. 14th; Liverpool Sept. 15th.

Tour C1.

Arrive in New York Sept. 17th.

Leave New York by "Lancastria," Sept. 19th (midnight). Due Cobh (Queenstown) and Plymouth Sept. 27th. Due London Sept. 29th.

Leave New York by "Laconia," Sept. 20th, 11 a.m. (via Boston). Due Belfast Sept. 28th. Due Liverpool Sept. 29th.

Approximate cost of Tours:
Tour A1—£109/17/6. Tour B1—£121/19/2 (if travelling Saloon "Mauretania" approximate additional cost £30). Tour C1—£170/5/-.

Further information and full details of the Tours may be obtained from the Financial Secretary and Business Manager, B.M.A. House, Tavistock Square, London, W.C.1.

PENDYFFRYN HALL SANATORIUM

PENMAENMAWR.

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THE SPA OF VITTEL (Vosges)

announces that a Medical Representative will attend at Cook's Head Office, Berkeley Street, W.1, on May 12th till May 16th, to give information regarding the waters and cures to persons interested. Enquiries welcomed.

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INSTITUTE OF PATHOLOGY AND RESEARCH

ST. MARY'S HOSPITAL, LONDON, W.2

A Course of Lectures on PATHOLOGICAL RESEARCH IN ITS RELATION TO MEDICINE has been arranged for the SUMMER SESSION. These Lectures will be given in the Lecture *Room of the Bacteriological Department of the Institute*, on THURSDAY AFTERNOONS at 5 p.m., as under:—

	SUBJECT.
MAY 15th. LEONARD E. HILL, M.B., F.R.S. (Director Dept. of Applied Physiology, National Institute of Medical Research).	"The Physiology of Diving."
MAY 22nd. Prof. C. A. LOVATT EVANS, F.R.S. (Jodrell Professor Physiology, University College, London).	"Stages in the Investigation of the Physiology of the Heart."
MAY 29th. Sir THOMAS LEWIS, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

These Lectures are open to all Members of the Medical Profession and to all Students in Medical Schools without fee.

VICTORIA SANATORIUM

(an entirely British Sanatorium), DAVOS (GRISONS), SWITZERLAND. Terms from £5 a week. Medical Supt.: BERNARD HUDSON, M.D.(Cantab.), M.R.C.P., Swiss Federal Diploma.

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Director of Bacteriological Laboratories: E. GOODWIN RAWLINSON, M.D., D.P.H.Oxon.
Director of Chemical Laboratories: ALAN WEST STEWART, D.Sc., A.I.C., Public Analyst for the County of Berks, Oxford, Paddington, etc.
Lecturers on Public Health, etc.: ALBERT E. THOMAS, M.A., M.D.Oxon., D.P.H.Oxon., Barrister-at-Law, Medical Officer of Health for the Borough of Finsbury; CECIL W. HUTT, M.A., M.D.Camb., D.P.H.Oxon, Medical Officer of Health for the Borough of Holborn, Examiner for the D.P.H., Conjoint Board of Physicians and Surgeons, London; GEOFFREY E. OATES, M.D.Lond. (State Medicine), D.P.H.Camb., Barrister at-Law, Medical Officer of Health for the Borough of Paddington.

The Course of Instruction can be commenced at any time.

The Principal will be pleased to interview intending candidates for the purpose of advice.

Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.
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Royal Medico - Psychological ASSOCIATION.

The Examination for the GASKELL PRIZE AND MEDAL and [illegible] CERTIFICATE IN [illegible] will be held at the HOSPITAL, WAKEFIELD, on Friday, May 30th, 1930, and on Saturday, May 31st, 1930.

Applications for entry to either Examination to be sent to the Registrar, St. Andrew's Hospital, Northampton, before Saturday, May 17th.

There is no fee for entrance to the GASKELL PRIZE EXAMINATION. The entrance fee for the [illegible] in Psychologic [illegible] payable to the Registrar.

DANIEL F. RAMBAUT, Registrar.
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Continuous Clinical Instruction daily from 10 a.m. to 4 p.m.—Post-Graduates may enrol at any time for any period from 1 week to 3 months.—Special facilities for "Study Leave," and for those wishing to take a course under the "Grant-aided Scheme for Post-Graduate Study by Insurance Practitioners."—Anæsthetic Courses.—Clinical Assistantships.—Annual Membership Tickets at Special Terms available for General Practitioners who wish to attend the Hospital Practice at irregular intervals.

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Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

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(Faculty of Medicine.)

WILLIAM WITHERING MEMORIAL LECTURESHIP.

A Course of Seven Lectures (illustrated by lantern slides) on "*Specific Therapy*," will be delivered by W. E. DIXON, M.A., B.Sc., M.D., F.R.S. (Pharmacological Laboratory, Cambridge), in the Large Theatre of the Medical Faculty Buildings, Edmund Street, during the Summer Term, 1930, on the following dates at 4 p.m. viz.: WEDNESDAYS, MAY 7th, 14th, 21st, and 28th, JUNE 4th, 11th, and 18th.

Members of the Medical Profession are invited to attend.

J. C. BRASH, M.A., M.D., Dean.

University of Birmingham.

POST-GRADUATE LECTURES, 1930.

LECTURE ON SPA TREATMENT.

A Lecture (illustrated by Lantern Slides) will be delivered on THURSDAY, MAY 15th, at 4 o'clock, in the MEDICAL LECTURE THEATRE (Edmund Street Buildings), by CHARLES W. BUCKLEY, M.D., M.R.C.P., Physician to the Devonshire Hospital, Buxton.

Subject: "*Mineral Waters in Therapeutics—their Scope and Practical Application.*"

Members of the Medical Profession are invited to attend.

UNIVERSITY OF CAMBRIDGE

Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

University of Cambridge.

E. G. FEARNSIDES SCHOLARSHIP FOR CLINICAL RESEARCH ON THE ORGANIC DISEASES OF THE NERVOUS SYSTEM.

This Scholarship is open to Members of the University or of Girton College or Newnham College who are Graduates or Titular Graduates in Medicine, or to Graduates or Titular Graduates in Arts who have passed Part II of the Natural Sciences Tripos.

Applications must be sent to the University Registrary before June 20th.

A. B. RAMSAY, Vice-Chancellor.

University of London.

A Course of Three Lectures on "*Treatment of Uterine Cancer by Radiations*" will be given by Dr. A. LACASSAGNE (of the Pasteur Laboratory, Institute of Radium, Paris) at the LONDON (R.F.H.) SCHOOL OF MEDICINE FOR WOMEN (Hunter Street, W.C.1.) on MONDAY, TUESDAY, and THURSDAY, MAY 12th, 13th, and 15th, at 5.30 p.m. At the first Lecture the Chair will be taken by Professor DAME LOUISE MCILROY, D.B.E., M.D., D.Sc. (Professor of Obstetrics and Gynæcology in the University). Lantern illustrations.

Admission free, without ticket.

EDWIN DELLER, Principal.

University of London.

The Senate invite applications for the UNIVERSITY CHAIR OF PHYSIOLOGY tenable at Middlesex Hospital Medical School. Salary £1,000 a year. Applicants are informed that there is also at the School a University Professor of Biochemistry responsible for teaching this branch of Physiology.

Applications (12 copies) must be received not later than first post on June 12th, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

University of London.

A Course of Six Lectures on "*Special Sense Physiology*" will be given by Dr. R. J. LYTHGOE at UNIVERSITY COLLEGE, LONDON (Gower St., W.C.1), on THURSDAYS and TUESDAYS, MAY 15th, 20th, 22nd, 27th, 29th, and JUNE 3rd, at 5 p.m.

Admission free, without ticket.

EDWIN DELLER, Principal.

F.R.C.S.(Edin.)

CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. *Correspondence work at any time.* Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

Royal College of Physicians of London.

CHARLES MURCHISON SCHOLARSHIP IN CLINICAL MEDICINE.

The next Examination for this Scholarship will be held at the Royal College of Physicians of London, on Tuesday, June 24th, 1930, and following days.

The Examination is open to any Student of Medicine who, subsequently to the date of his passing his professional Examination in Anatomy and Physiology for a Medical qualification, has studied for a period of not less than two and a half, and not more than five, years at a Medical School in London recognized by the Royal College of Physicians, or at the University of Edinburgh, including Medical Classes recognized by the Medical Faculty of the University, whether holding a Medical qualification or not.

The Scholarship is of the value of Twenty Guineas, and is tenable for one year.

Intending candidates are required to send their names to the Registrar of the Royal College of Physicians, Pall Mall East, London, not later than June 7th, with evidence of the duration of their Medical Studies from the Deans of their respective Schools, and evidence of the date at which they passed their Examination in Anatomy and Physiology.

RAYMOND CRAWFURD, M.D.,
Pall Mall East, S.W.1. Registrar.

THE NORTH-EAST LONDON POST-GRADUATE COLLEGE.

The Prince of Wales's General Hospital, Tottenham, N.15, and Associated Hospitals.

An INTENSIVE REFRESHER COURSE will be held from June 16th to 28th. Lectures, demonstrations, and cliniques in the various general and special departments.

The number is limited to 25.

Enquiries and applications should be sent to the Dean at the Hospital, or to the Secretary of the Fellowship of Medicine, 1, Wimpole Street, W.1.

NORTH-EAST LONDON POST-GRADUATE COLLEGE,

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The Practice of the Hospital is limited to Medical Practitioners. Particulars from T. H. C. BENIANS, F.R.C.S., Dean.

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Royal College of Surgeons of ENGLAND.

ELECTION OF PROFESSORS AND LECTURERS.

Notice is hereby given that the Council is prepared to receive applications for election to the office of HUNTERIAN PROFESSOR and ARRIS AND GALE LECTURER for the ensuing year.

Fellows and Members desirous of becoming candidates must make application, in writing, to the Secretary on or before the 4th proximo, and are requested to furnish a synopsis of the one or more Lectures which they propose to give.

S. FORREST COWELL,
May 10th, 1930. Secretary.

Royal College of Surgeons of ENGLAND.

ELECTION TO COURT OF EXAMINERS.

Notice is hereby given that the Council, on June 12th next, will proceed to the election of a MEMBER OF THE COURT OF EXAMINERS in the vacancy occasioned by the retirement of Mr. GRAHAM SIMPSON, who does not desire re-appointment.

Fellows of the College desirous of becoming candidates for the office must make application in writing, to the Secretary on or before Wednesday, June 4th.

S. FORREST COWELL,
May 10th, 1930. Secretary.

Refraction and the Ordering of GLASSES taught by Practising Ophthalmic Surgeon in London. £8 8s. for 10 lessons.—

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Syllabus from ASSISTANT REGISTRAR.

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MEDICAL STUDENTS admitted to Hospital practice, with operative Midwifery, and Obstetrical complications. Monthly or Fortnightly Courses.

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LIVERPOOL SCHOOL OF TROPICAL MEDICINE.

(UNIVERSITY OF LIVERPOOL.)

COURSES OF INSTRUCTION (lasting about three months) for the Diploma in Tropical Medicine commence on October 1st and January 6th, and for the Diploma in Tropical Hygiene on January 13th and April 23rd. (Candidates for the D.T.H. must possess the D.T.M. of this University.)

For particulars apply to the Hon. Dean, Liverpool School of Tropical Medicine, Pembroke Place, Liverpool.

M.R.C.P.(Edin.)

A REVISION CLASS in the Practice of Medicine and Therapeutics, in preparation for the July examination, will commence on May 21st.

Particulars from DONALD STEWART, M.D., M.R.C.P., Clinical Laboratory, Royal Infirmary, Edinburgh.

Borough of Hyde.

APPOINTMENT OF ASSISTANT MEDICAL OFFICER OF HEALTH.

The Town Council of the Borough of Hyde invite applications for the position of part-time Assistant Medical Officer. The person appointed will be expected to assist the Medical Officer of Health in the discharge of the duties of the following offices:

1. Medical Officer of Health for the Borough.
2. Medical Superintendent of the Infectious Diseases Hospitals.
3. Police Surgeon.
4. School Medical Officer.
5. Maternity and Child Welfare Officer.

Experience in Ante-natal work is essential.

The salary of the Assistant Medical Officer will be £300 per annum.

The person appointed will be required to devote approximately half his or her time to the duties of the said office.

Applications (with copies of recent testimonials), endorsed "Assistant Medical Officer," must be sent to me at the Town Hall, Hyde, not later than noon of Wednesday, May 14th.

Canvassing members of the Council is prohibited.

Dated this 29th day of April, 1930.

Town Hall, Hyde. THOS. BROWNSON, Town Clerk.

London Hospital, E.

CARDIOGRAPHIC DEPARTMENT.

The post of PATERSON RESEARCH SCHOLAR in this Department is vacant. The salary is at the rate of £400 per annum. Further particulars on request.

Applications should be sent to the House Governor not later than Saturday, June 14th.

E. W. MORRIS,
House Governor.

Warrington Infirmary and Dispensary.

POST-GRADUATE COURSE.

Saturday, May 24th: T. W. B. Acheson, F.R.C.S., "Bone Grafting."
May 27th: C. A. Wells, F.R.C.S., "Injuries of the Spine."
June 5th: Dr. H. A. Mitchell, "Chronic Fibrosis."
June 10th: P. G. McEvedy, F.R.C.S., "Some Cases of Rectal Carcinoma."
June 24th: Dr. P. B. Mumford, "Clinical Demonstration of Diseases of the Cutaneous Skin Glands."

The Lectures for July 1st and 8th will be arranged later. The Session runs from May to July 9th and from the middle of September to the end of October, at 5.30 p.m., in the Board Room of the Infirmary.

The Lectures are open to members of the Medical Profession, without fee.

Salford Royal Hospital.

(295 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):—HOUSE PHYSICIAN. Salary at the rate of £127 per annum.
CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, and board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments may be recognised for the English Fellowship (Final).

Forms of application, which may be obtained only by the undersigned, must be delivered at once.

By order of the Board,
GEORGE RUDDLE,
Secretary.

Royal Hospital, Salford.
May 5th, 1930.

Manchester Royal Infirmary.

OUT-PATIENT DEPARTMENT.

HOUSE PHYSICIAN (Female).
HOUSE SURGEON (Female).

The Board of Management of the Manchester Royal Infirmary invite applications for the above resident appointments. Applicants must be registered and hold a Medical and Surgical qualification. Preference will be given to applicants who have held a Hospital appointment.

The appointments are for 12 months (six months House Physician and six months House Surgeon) and the duties are wholetime, except Sundays. Salary £200 per annum.

Applications, with testimonials, and stating when free to commence duties, should be sent to the Chairman of the Medical Board not later than May 17th.

By order,
FRANK G. HAZELL,
May 1st, 1930. Gen. Supt. & Secretary.

Mansfield and District Hospital.

The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE PHYSICIAN and CASUALTY OFFICER (male).

Duties to commence on June 2nd.

The duties include charge of four beds devoted to complicated medical cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications accompanied by not more than three recent testimonials, to be sent to the undersigned.

Dated this 5th day of May, 1930.

ARTHUR H. LIMB, Secretary.

London Jewish Hospital,

Stepney Green, E.1.
(Central Hospital. (100 Beds.)

Applications are invited for the following posts:—
RESIDENT MEDICAL OFFICER. Salary at the rate of £150 per annum, with board and residence. Appointment for six months.
JUNIOR RESIDENT MEDICAL OFFICER. Salary at the rate of £100 per annum, with board and residence. Appointment for six months.

Applications, with copies of three recent testimonials, to be sent to the Secretary on or before Friday, May 16th. The successful candidates will be required to take up their duties on June 1st.

Woolwich and District War Memorial Hospital,

Shooters Hill, London, S.E.18.

General Hospital. (122 Beds.)

The Board of Management invites applications from suitably qualified male candidates, for appointment as HOUSE SURGEON for a period of six months. In addition to the surgical duties he will have care of the Maternity Unit of 12 beds.

An honorarium of £125 per annum will be paid in respect of this appointment, plus board, residence, and laundry.

Applications, accompanied by copies of not more than three recent testimonials, should be sent to the undersigned, to reach him not later than first post on Wednesday, May 14th.

EDWIN RADFORD,
Secretary Superintendent.

The Royal Portsmouth Hospital,

PORTSMOUTH.

(Five Resident Medical Officers.)

Applications are invited for the posts of HOUSE PHYSICIAN (male). Salary at the rate of £130 per annum.
THIRD HOUSE SURGEON (male). Salary at the rate of £120 per annum.
CASUALTY OFFICER (male). Salary at the rate of £100 per annum.

All officers must be qualified and will be required to commence duties on 1st. September. Appointments are eligible on completing of term for extension or other resident posts.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned on or before May 20th, from whom all particulars can be obtained.

R. WAGSTAFF, Secretary.

Bolton Infirmary & Dispensary.

SECRETARY'S OFFICE.

(233 Beds—six being Auxiliary Hospitals.)

Applications for the appointment of RESIDENT SURGICAL OFFICER, Salary £250 per annum, with board, residence, and attendance, are invited from gentlemen having a registered Medical and Surgical qualification. The appointment will be for twelve months from July 1st.

Applications, stating age and nationality, with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday, the 19th inst.

ALBERT E. BRISCOE, Secretary.

Dorset County Hospital.

APPOINTMENT OF HOUSE SURGEON.

The Committee of Management are open to receive applications for the position of House Surgeon, to take up his duties on or about June 6th.

Every candidate for the office of House Surgeon must be unmarried and possess a registered qualification to practise Medicine and Surgery from some recognised body in Great Britain or Ireland. Salary £120 per annum, with board and lodging. The appointment is for a period of not less than six months. All applications, accompanied by three recent copies of testimonials, should be sent to the Secretary, Dorset County Hospital, on or before May 20th.

Candidates must be of British nationality.

Royal Victoria and West Hants Hospital, Bournemouth.

The Board of Management will, after the expiration of one month, proceed to appoint an HONORARY ASSISTANT OPHTHALMIC SURGEON.

Applications, stating qualifications, age, and experience, should be sent to the undersigned by May 24th. Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management,
GORDON M. SAUL,
April 29th, 1930. Secretary.

Royal Victoria and West Hants Hospital, Bournemouth.

The Board of Management will, after the expiration of one month, proceed to appoint an HONORARY MEDICAL OFFICER and Two HONORARY ASSISTANT MEDICAL OFFICERS to the Gynæcological and Maternity Department.

Applications, stating qualifications, age, and experience, should be sent to the undersigned by May 24th. Canvassing, personally or otherwise, will disqualify.

By Order of the Board of Management,
GORDON M. SAUL,
April 29th, 1930. Secretary.

Bristol Royal Hospital for Sick Children and Women.

APPOINTMENT OF IN-PATIENT SURGEON AND OUT-PATIENT SURGEON.

The Electing Committee of this Institution are prepared to receive applications for the appointment of an Honorary Surgeon for In-patients and also one for Out-patients.

It is understood that the present Senior Out-patient Surgeon will apply for the post of In-patient Surgeon.

Candidates must be Fellows of the Royal College of Surgeons of England, Edinburgh, or Ireland, or of holding some other qualification, shall undertake to become Fellows within a limited period of their appointment.

Applications, stating age, training, qualifications, and experience, accompanied by not more than three testimonials, must be sent to the undersigned on or before May 17th.

REGINALD C. THOMAS,
May 6th, 1930. Secretary.

Bristol Royal Hospital for Sick Children and Women.

APPOINTMENT OF OUT-PATIENT PHYSICIAN.

The Electing Committee of this Institution are prepared to receive applications for the appointment of an Honorary Physician to the Out-patient Department.

Candidates must be Graduates in Medicine of a University in Great Britain or Ireland.

Applications, stating age, qualifications, and experience, accompanied by testimonials, must be sent to the undersigned on or before May 17th.

REGINALD C. THOMAS,
May 6th, 1930. Secretary.

Swansea General and Eye Hospital. (216 Beds.)

Applications are invited for the following resident appointments which will become vacant on June 17th next:

HOUSE SURGEON; CASUALTY OFFICER; HOUSE PHYSICIAN; salary £150 per annum; and also for post of HOUSE SURGEON to the Ear, Nose, and Throat, and Ophthalmic Departments at £200 per annum, vacant on June 1st.

Appointments for six months.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned not later than May 24th.

C. HOWELLS, Secretary.

Royal Victoria Infirmary, Newcastle-upon-Tyne.

RESIDENT ANÆSTHETIST.

The House Committee invite applications for the post of Resident Anæsthetist.

The term of appointment is for three months from Monday, May 19th, and is renewable for a further period.

Rules governing the appointment may be had on application.

The salary is at the rate of £120 per annum, with board and residence.

Applications, stating age, experience, and accompanied by two recent testimonials, should be addressed to the House Governor & Secretary, not later than Thursday, May 15th.

S. DUNSTAN,
May 3rd, 1930. House Gov. & Sec.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

Staffordshire Mental Hospital, Cheddleton, Leek.

TEMPORARY ASSISTANT MEDICAL OFFICER required for 3 or 4 months. Remuneration one guinea per diem, with apartments, board, etc. Ample opportunity for clinical laboratory research.

Applications to the Medical Superintendent.

St. John Ophthalmic Hospital, Jerusalem.

The office of REGISTRAR of the above Hospital will be vacant in June next. Commencing salary £400 per annum, rooms and board. Candidates (of either sex) should apply for full particulars to the Honorary Secretary, Ophthalmic Hospital, St. John's Gate, Clerkenwell, London, E.C.1.

Frere Hospital, East London, SOUTH AFRICA.

RESIDENT MEDICAL OFFICER.

Wanted by the East London Hospital Board for the above Institution, Resident Medical Officer (unmarried) for a period of one year, with the option of extension, by mutual agreement, for a further period of one year, such agreement to be arrived at not later than four months prior to the termination of the first year.

Salary to be at the rate of £300 per annum for first year, with board, lodging, and laundry, rising £50 for second year.

The duties to be those of House Surgeon and Physician, with charge of Out-Patients, and to administer anæsthetics when called upon to do so.

The Hospital contains 114 beds (public and private) and 26 beds in Isolation Block, Dispensary with Dispenser, Out-patients' Department and X-ray Department.

Duties to commence on August 1st, 1930. One month's leave granted per annum. The usual bond to be signed.

Applications to be marked "R.M.O.," stating age and nationality, with copies of testimonials and certificate of health, to be in the hands of the undersigned not later than noon, June 25th.

P.O. Box 15, East London, South Africa. C. D. EWAN, Secretary & Treasurer.

Southern Rhodesia Medical SERVICE.

Three ASSISTANT AND RELIEVING GOVERNMENT MEDICAL OFFICERS are required for the Southern Rhodesia Medical Service. Salary £500 per annum, rising by £25 per annum to £650 per annum, with private practice. Applicants must be single, 25 to 30 years of age. Preference will be given to holders of Public Health or Tropical Medicine certificates.

Applications, with full particulars of qualifications, age, past appointments held, etc., with copies of references, should be addressed to the Official Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House Aldwych, London, W.C.2, from whom copies of Conditions of Appointment to the Southern Rhodesia Medical Service can be obtained.

Applications should reach the High Commissioner's Office by May 5th.

County Council of Nottingham-SHIRE.

ASSISTANT MEDICAL OFFICER FOR SCHOOL MEDICAL INSPECTION AND FOR MATERNITY AND CHILD WELFARE (Woman).

Applications for the above-named appointment are invited from duly registered women Medical Practitioners who have had at least three years' experience since obtaining registrable qualifications and who hold a Diploma in Public Health.

Preference will be given to candidates with previous experience of the work, particularly as regards Mental Deficiency, Refractions, and Ante-natal work.

The salary will be at the rate of £600 per annum, with travelling expenses in accordance with the County Council Scale. The appointment will be a whole-time one. The candidate appointed will be a member of the staff of the County Medical Officer, will work under his control and direction, will be required to reside in a part of the County to be approved by him, and to carry out such duties as may be prescribed.

The successful candidate will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, to the County Medical Officer, Shire Hall, Nottingham, on or before May 21st.

K. TWEEDALE MEABY,
Clerk of the County Council.

The General Hospital, BIRMINGHAM.

Applications are invited for the following Resident appointment from May 15th:

HOUSE SURGEON. Salary £70 per annum.

Applications, giving full details of qualifications, and accompanied by testimonials (if desired), should reach the undersigned by May 13th.

A. H. LEANEY,
May 5th, 1930. House Governor.

Richmond Hospital, Dublin.

HONORARY ASSISTANT SURGEON.

Applications before May 13th, to Hon. Secretary, Medical Board.

Warwickshire and Coventry JOINT COMMITTEE FOR TUBERCULOSIS.

[illegible] SUPERINTENDENT OF THE [illegible] KING EDWARD VII [illegible] HERTFORD HILL, near WARWICK. (195 Beds.)

Applications are invited from male qualified and registered Medical Practitioners for the post of Medical Superintendent of the Warwickshire King Edward VII Memorial Sanatorium, Hertford Hill, near Warwick. The person appointed must devote the whole of his time to the duties of the office, and must have had special practical experience in the treatment of tuberculosis in sanatoria, dispensaries, and otherwise, and must be thoroughly acquainted with modern methods of diagnosis and treatment.

In addition applicants must have held the appointment of Tuberculosis Officer or Medical Superintendent with the approval of the Minister of Health, or who, subsequent to qualification:

(1) have had at least three years' experience in the practice of his profession;
(2) have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases; and
(3) have received special training, for a period of not less than six months, in the diagnosis and treatment of tuberculosis.

The salary is at the rate of £800 per annum, plus unfurnished house, including fuel, light, and laundry, valued at £100 per annum, but not board. The salary will be subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922; in addition, motor car allowances in accordance with the Committee's scale and reasonable travelling expenses are paid.

The appointment is also subject to a satisfactory medical examination by one of the Committee's independent Medical Referees.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications, marked "Medical Superintendent," with copies of not more than three recent testimonials, must be received by me not later than Monday, *May 26th.*

Applicants must not be over 40 years of age. Canvassing, directly or indirectly, will be considered a disqualification.

L. EDGAR STEPHENS,
42, Warwick Street, Leamington. Clerk of the Joint Committee.
April 28th, 1930.

City of Birmingham.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified Medical Practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General, Medical, General Surgical, Gynæcological, Obstetrical, and Children's Disease sections. There are completely equipped Pathological and Biochemical Laboratories and X-ray, Electro-therapeutic, Massage, Ultra-violet Ray and Electro-cardiographic Departments. Over 3,000 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, to administer anæsthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and [illegible]

Further particulars be obtained from the R. P. STANLEY KELMAN, Esq., M.B., F.R.C.S. (Eng. and Edin.), at the Selly Oak Hospital, to whom applications, stating age, experience, and qualifications, accompanied by copies of recent testimonials, should be forwarded not later than Wednesday, May 28th.

F. H. C. WILTSHIRE,
Town Clerk.

Leeds Public Dispensary.

Wanted, JUNIOR RESIDENT MEDICAL OFFICER. Salary £150 per annum, with board, residence, and four shillings weekly for laundry. Separate sitting room. Application, with copies of three recent testimonials, to be addressed to the Secretary of the Faculty, Public Dispensary, North Street, Leeds.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (Male).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. The duties will include work under the Maternity and Child Welfare service. Experience in this work and in the administration of anæsthetics is essential.

The appointment will be a designated post under the Local Government and Other Officers Superannuation Act, and the successful candidate will be required to pass a medical examination.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, May 26th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

W. M. ASH,
New County Offices, St. Mary's Gate, Derby. School Medical Officer.
May 3rd, 1930.

County Borough of West Ham.

WHIPPS CROSS HOSPITAL, Leytonstone, E.11.

ANÆSTHETIST.

Applications are invited for the post of Anæsthetist at the Whipps Cross Hospital, Whipps Cross Road, Leytonstone, E.11.

Applicants must have specialized in this subject, and preference will be given to those attached in this capacity to Hospitals.

The duties comprise one morning attendance weekly for dental work, for which the remuneration will be £100 per annum, and two afternoon attendances weekly for ordinary surgical operations, with the remuneration of £200 per annum.

Applications will be considered from persons able to attend for the total period required or for part of the time at a proportional remuneration.

The services of the Anæsthetist will be retained for a period not exceeding one year in the first instance, and he will be required to provide his own locum tenens during holidays and absences.

Applications, with copy of testimonials, should be made not later than May 19th to the undersigned, from whom further particulars may be obtained.

CHARLES E. CRANFIELD,
Public Assistance Offices, Union Rd., Leytonstone, E.11. Town Clerk.
April 30th, 1930.

British Red Cross Society and ORDER OF ST. JOHN OF JERUSALEM.

EAST LANCS TUBERCULOSIS COLONY, BARROWMORE HALL, GT. BARROW, *near CHESTER.*

ASSISTANT MEDICAL OFFICER (male) required. Commencing salary £250 per annum, with residence, board, and laundry. The appointment will be terminable by one month's notice. Preference will be given to candidates with experience in Tuberculosis.

Applications, marked "Assistant Medical Officer," with copies of three recent testimonials, to be sent to the Medical Superintendent at the above address before May 21st.

The Glasgow Eye Infirmary.

The Directors invite applications from registered Medical Practitioners for the post of RESIDENT ASSISTANT HOUSE SURGEON. Salary £150 per annum, with apartments and board. The post is now vacant. Applications, with copy testimonials, should be lodged with the undersigned by 16th instant.

WM. M. MOORE,
171, West Regent St., Glasgow, C.2. Secretary.
May 5th, 1930.

Darlington General Hospital. (120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, British nationality, fully qualified. Salary £125 per annum, board and residence. Applications, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

Miller General Hospital,
Greenwich Road, S.E.10.

PATHOLOGIST required to carry out the work of the Pathological Department at the Hospital. Private pathological practice is allowed, and the Hospital laboratory may be used for this purpose. The Pathologist must not accept any other appointment without the consent of the Board of Management. Salary commencing at £600 per annum. The appointment is subject to three months' notice on either side. Duties to commence if possible on August 1st next. Candidates will be expected to call upon the Members of the Honorary Medical and Surgical Staff. Applications, giving qualifications, with copies of not less than three recent testimonials, to be sent to the Secretary of the Hospital.

May 5th, 1930.

Miller General Hospital,
Greenwich Road, S.E.10.

Applications are invited for the following posts:

HOUSE PHYSICIAN (male); HOUSE SURGEON (male). Salary in each case at the rate of £125 per annum, with board, residence, and laundry.

OUT-PATIENT OFFICER (male), who is required to assist Medical and Surgical Casualty Attendance duties (except Sunday) from 9 to 1, Tuesdays 9 to 5. Salary £150 per annum and lunch.

The appointments are for six months from July 1st next. Candidates must be unmarried. There are five Resident Officers. The selected candidates will be required to attend a meeting of the Medical Staff to be held on Friday, June 6th.

Applications, stating age, nationality, qualifications and experience, accompanied by copies of not more than three recent testimonials to be sent to the Secretary as soon as possible.

May 5th, 1930.

St. Bartholomew's Hospital,
ROCHESTER. (126 Beds.)
(Rochester, Chatham, Gillingham, & District.)

The House and Finance Committee invite applications for the post of RESIDENT SURGICAL OFFICER, which will become vacant on July 1st.

Candidates must be unmarried, qualified, and registered Medical Men. It is desirable that candidates shall have previously held a House Surgeon's appointment. The post is partly administrative. The appointment is for six months, renewable for a further six months at the discretion of the Committee. Salary is at the rate of £225 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, experience, etc., accompanied by copies of three recent testimonials to reach the Secretary not later than May 23rd.

The London Female Lock Hospital,
3-5 Harrow Road, London, W.9

The Board of Management invite applications for the appointment of HOUSE SURGEON (male or female) at the Female Lock Hospital. Salary at the rate of £150 per annum, with furnished rooms, full board, and washing. Candidates who must be doubly qualified and duly registered, should send in their applications by May 24th, accompanied by copies of three recent testimonials, to the Secretary, from whom further particulars can be obtained. The appointment is for six months commencing July 1st.

By Order of the Board,
HY. J. EASON, Secretary.

Royal Halifax Infirmary.

Wanted a THIRD HOUSE SURGEON (male, unmarried). Candidates must be duly qualified and registered. (The Resident Medical Staff consists of a Resident Surgical Officer and Three House Surgeons.) The appointment is for six months. Possible promotion if satisfactory. Salary £100 per annum, with residence, board, and laundry.

Particulars of the duties may be obtained from the undersigned to whom applications, with copies of testimonials, should be sent.

A. MIDGLEY,
April 28th, 1930. Secretary.

The Royal Infirmary,
SUNDERLAND. (280 Beds.)

Wanted June 1st, HOUSE PHYSICIAN (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

St. Chad's Hospital, Birmingham
FOR PAYING PATIENTS. (100 Beds.)

RESIDENT MEDICAL OFFICER required (male or female). This post offers exceptional educational advantages. The Medical Staff consists of thirty Consulting Specialists in all branches of Medicine. Salary, £100 per annum, with furnished apartments, board (excepting vacations), and laundry.

Car holder must be fully qualified and registered, and have previously held Resident post.

Applications (marked R.M.O.), with full particulars of experience, age, etc., together with copies of recent testimonials, should be sent to the undersigned not later than May 16th.

DAVID J. RICHARDS,
House Governor.

St. Bartholomew's Hospital,
E.C.1.

OFFICE OF ASSISTANT DENTAL SURGEON.

Notice is hereby given that an Assistant Dental Surgeon to this Hospital will be appointed at a Committee of Governors to be held on Tuesday, June 17th, at 11 o'clock in the forenoon.

Candidates must hold a registrable British Medical qualification, as well as a registrable British Dental qualification.

Candidates must lodge 12 copies of their application and testimonials with the undersigned, on or before Wednesday, May 24th.

THOMAS HAYES,
May 9th, 1930. Clerk to the Governors.

St. Bartholomew's Hospital.

OFFICE OF PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, June 10th, at 4 o'clock in the afternoon, to elect a Physician to this Hospital.

Candidates, who must be Fellows of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, May 26th.

THOMAS HAYES,
May 6th, 1930. Clerk to the Governors.

Mildmay Mission Hospital,
Austin Street, Bethnal Green, E.2.

Applications are invited for the post of SENIOR RESIDENT MEDICAL OFFICER (male), which becomes vacant on July 1st. Salary £140 per annum, with board, residence, and laundry. The appointment is for six months.

Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital.

Applications, with copies of recent testimonials, should be sent to the Medical Superintendent by May 31st.

Mildmay Mission Hospital,
Austin Street, Bethnal Green, E.2.

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), which becomes vacant on July 1st. Salary £100 per annum, with board, residence, and laundry. The appointment is for six months.

Candidates must be registered under the Medical Acts, and the Mildmay Council is anxious that they should be fully in sympathy with the religious work of the Hospital.

Applications, with copies of recent testimonials, should be sent to the Medical Superintendent by May 31st.

The Sheffield Royal Hospital.

There are vacancies for male residents—one to act as OPHTHALMIC HOUSE SURGEON, the other as RESIDENT ANÆSTHETIST. The Hospital is a Medical School, with 340 available beds, and there are twelve Resident Medical Officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry.

Applications should be forwarded at once to—

W. H. BOOTH,
April 8th, 1930. Supt. & Secretary.

Ulster Hospital for Children and
WOMEN (Inc.), BELFAST.

Applications are invited for the position of HONORARY ASSISTANT SURGEON to the Hospital.

Particulars as to qualifications required may be obtained from, and applications, with copies of testimonials, should be addressed to, the Hon. Secretary to the Board of Management, on or before May 15th.

J. M. SINCLAIR,
Hon. Secretary.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of RESIDENT ANÆSTHETIST (male). The appointment will be for six months from June 1st, and may be renewed for a further period of six months, but is terminable at any time by one month's written notice on either side. Salary at the rate of £120 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, May 21st.

W. H. HEAD, Secretary-Supt.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from June 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £130 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, May 21st.

W. H. HEAD, Secretary-Supt.

Bristol Homœopathic Hospital.
(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER at a salary, of from £120 to £150 per annum, according to experience, with board, laundry, residence in the Hospital, etc., provided.

Good Surgical and general experience; man having had previous House appointment preferred.

Applications should be forwarded, with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they can commence duties, if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

Victoria Hospital, Worksop.

HOUSE SURGEON required, to take up duties as soon as possible. Candidates must be unmarried, fully qualified, and registered. Good Anæsthetic essential. Salary at the rate of £170 per annum, with furnished rooms, board, and laundry. Beds 56. There is a dispensary attached to the Hospital which is under the charge of the House Surgeon. The appointment is for six months, renewable at discretion of the Board. Applications, stating age, experience, etc., with copies of three recent testimonials, to be delivered to the undersigned at once.

JAMES BOOTHROYD, Secretary.

South Devon and East Cornwall
HOSPITAL, PLYMOUTH. (240 Beds.)

HOUSE PHYSICIAN. Salary £120 per annum, with board, residence, and laundry. Appointment is tenable for six months, and is subject to renewal. Duties to commence June 7th.

Candidates must be registered under the Medical Acts.

Applications, stating age and qualifications, together with copies of recent testimonials, to reach the undersigned by 23rd inst.

ARTHUR R. CASH.
May 5th, 1930. Gen. Supt. & Secretary.

West Suffolk General Hospital,
BURY ST. EDMUND'S. (102 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male or female). Salary £120 per annum, with board, residence, and laundry.

Applicants must be fully qualified and registered. Applications, giving particulars of experience and enclosing three recent testimonials, to be sent to the undersigned.

E. E. HARDWICKE,
May 1st, 1930. Secretary.

Bristol Royal Infirmary.

Applications are invited for the post of HONORARY REGISTRAR to the Ophthalmic Department. Candidates must be Doctors of Medicine or Graduates of one of the Universities of Great Britain or Ireland, or Fellows, Members, or Licentiates of the Royal College of Physicians of London, Edinburgh, or Ireland. Applications to be sent to the undersigned on or before May 17th.

ELLIS C. SMITH, F.C.I.S.,
Secretary & House Governor.

City of Manchester.

The Public Health Committee of the Corporation require the services of a fully qualified Whole-time WOMAN MEDICAL OFFICER, experienced in midwifery and children's diseases, to hold (under the direction of the Medical Officer of Health) consultations and infant clinics at the Maternity and Child Welfare Centres of the Manchester Corporation, and (under the like direction) to perform such other duties as appertain to the office.

The salary will be £600 per annum. A statement of the duties and conditions of office may be had on application, in writing, to the Medical Officer of Health, Civic Buildings, 1, Mount Street, Manchester.

Applications, stating age and experience, and endorsed on the envelope "Medical Officer, Child Welfare," must be sent in addressed to the Town Clerk only, and not to members of the Committee or Council, not later than *Saturday, May 24th, and be accompanied by* not more than three recent testimonials.

The successful candidate will be required *to contribute to the Corporation Superannuation Fund, and to execute their deed of service.*

Canvassing in any form, oral or written, direct or indirect, is prohibited.

Town Hall, Manchester. F. E. W. HOWELL, Town Clerk.

May 5th, 1930.

The Children's Hospital,

BIRMINGHAM. (230 Beds.)

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post.

Candidates must be qualified and registered and have held previous resident appointments at a Hospital.

The salary is at the rate of £175 per annum, with board, residence, and laundry.

The appointment is tenable for one year, and the officer is eligible for re-election for a second year.

Duties to commence on July 1st.

Applications, with certificates of registration, and not more than three testimonials, should be addressed to the undersigned on or before May 24th.

CASUALTY HOUSE SURGEON.

Applications are also invited for the post of Casualty House Surgeon.

The appointment is tenable for six months as from July 1st.

The salary attaching to the post is £75 per annum, with board, residence, and laundry.

The officer appointed takes part duty at Moseley Hall Convalescent Hospital.

Applications, giving proof of registration, and not more than three testimonials, to be sent to the undersigned.

HAROLD F. SHRIMPTON, House Governor.

Doncaster Royal Infirmary.

(185 Beds.)

SECOND HOUSE SURGEON (male) required at once. Experience in Anæsthetics essential. Appointment offers opportunity to gain good surgical experience.

THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work.

Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.

Salary, for each post, £150 per annum, with board, residence, and laundry. A New Hospital ready for occupation.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Thursday, May 15th.

J. LAWRENCE MEARS, Secretary-Superintendent.

The Willesden General Hospital,

(Incorporated), N.W.10.
(106 Beds.)

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited for the above appointment. Candidates must be duly registered under the Medical Acts, and unmarried.

Salary at the rate of £100 per annum.

Detailed applications, with copies of testimonials, to be sent as soon as possible to the undersigned.

R. J. HEARNE, Secretary.

April 19th, 1930.

The Weymouth and District HOSPITAL, WEYMOUTH.

Wanted, HOUSE SURGEON, fully qualified, male, for the first week in June. Salary £180 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and copies of testimonials, should be sent to the undersigned not later than May 17th.

MORRIS LODGE, Honorary Secretary.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications from duly qualified Medical Practitioners for a position of DISTRICT MEDICAL OFFICER for the CHARLTON RELIEF DISTRICT at a salary of £200 a year, subject to review. The appointment will not be subject to the Council's regulations in respect to the Superannuation and Provident Fund, unless the officer appointed is a transferred officer under the Local Government Act, 1929. The candidate appointed will have to reside within the district, and he will be required to attend at 99, Rectory Place, Woolwich, one hour each day—viz., from 10.30 to 11.30 a.m. He will also have to visit applicants for medical relief at their homes at any hour on receipt of a Relieving Officer's Order.

All medicines, etc., are provided by the Council.

Forms of application, containing full details, may be obtained from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1. A stamped addressed envelope should be enclosed and forms must be returned by May 14th.

Canvassing disqualifies.

The County Hall, Westminster Bridge, S.E.1. MONTAGU H. COX, Clerk of the London County Council.

Cardiff Royal Infirmary.

(Associated with Welsh National School of Medicine.)

Applications are invited for the undermentioned posts:

HOUSE SURGEON.
HOUSE SURGEON (AURAL).
CASUALTY SURGICAL OFFICER.

Salary is at the rate of £50 per annum for the House Surgeon, and £75 per annum for the H.S. Aural and C.S.O., with board and lodging. Applicants as C.S.O. should have held previous House appointments.

Appointments are for six months commencing June 20th, with the exception of the Aural House Surgeon, who would be required to commence immediately.

Application forms can be had from the undersigned and should be returned, with copies of three recent testimonials, on or before June 2nd. In the case of Aural H.S., applications should be received at the earliest possible date.

R. ARMSTRONG, Medical Supt.

May 6th, 1930.

The Royal Hospital,

WOLVERHAMPTON.
(Incorporated under Charter.)

CASUALTY OFFICER AND RESIDENT ANÆSTHETIST (male) required. Duties to commence middle of May, and will include Casualty work and administration of Anæsthetics.

The Hospital contains 240 beds, contains the usual special departments, and is recognized by the various Examining Bodies for a part of the requisite attendance on Medical and Surgical Practice.

Candidates must be registered under the Medical Acts, and unmarried. The appointment is for six months, with eligibility for further appointment for six months as House Surgeon to In-patients. Salary at the rate of £125 per annum. Board, furnished rooms, and laundry provided.

Applications, with copies of testimonials, to be forwarded to the undersigned.

W. H. HARPER, House Gov. & Sec.

May 6th, 1930.

Queen's Hospital, Birmingham.

A GENERAL HOSPITAL AND A MEDICAL SCHOOL.

There are vacancies in the following Resident posts. Salary at the rate of £70 p.a., together with board, apartments, and laundry.

RESIDENT ANÆSTHETIST.
CASUALTY HOUSE SURGEON.

Full particulars may be obtained from the undersigned, to whom applications, accompanied by three testimonials, should be sent at once.

G. HURFORD, House Governor.

May 6th, 1930.

Children's Hospital, Hampstead,

College Crescent, N.W.3. (65 Beds.)

Wanted from June 1st, RESIDENT MEDICAL OFFICER. Salary £100 per annum. Board, residence, and laundry provided. Candidates must be registered under the Medical Acts. The appointment will be for six months.

Applications, *stating age, nationality*, qualifications, and experience, together with copies of at least three recent testimonials, should be sent to the undersigned on or before May 17th.

J. B. JOHNSTON, LL.-Colonel, Secretary.

North Riding Infirmary,

MIDDLESBROUGH.
(General Hospital—150 Beds.)

Wanted, THIRD HOUSE SURGEON (male), to take up duties as early as possible. Salary at the rate of £125 p.a., with board, residence, and laundry. Six months' appointment.

Candidates will be eligible for the higher appointments as they become vacant.

Applications, stating age, nationality, and previous experience, with references (copies), should be sent forthwith to the undersigned.

CHARLES POSTGATE, Secretary-Superintendent.

Kent County Mental Hospital,

MAIDSTONE.

ASSISTANT MEDICAL OFFICER (male) required. Salary £300, rising to £400 per annum, with an additional allowance of £50 per annum for the Diploma in Psychological Medicine, together with furnished apartments, board, and laundry. Candidates must be fully qualified, single, and not more than 30 years of age.

Applications, giving full particulars, with copies of three recent testimonials, and endorsed "A.M.O." on envelope, should be sent to the Medical Superintendent of the Hospital at an early date.

Bedford County Hospital.

HOUSE SURGEON (male), fully qualified, *unmarried*, required for a term of not less than six months, commencing at once. Salary £175, with board, lodging, and laundry.

Applications, stating age, nationality, qualifications, together with three recent testimonials, to be sent to the Hon. Secretary, Hon. Medical Staff Committee, not later than the first post Wednesday, May 14th. Selected candidates will be invited for an interview Saturday, May 17th.

Longton Hospital.

Applications are invited for the post of LADY HOUSE SURGEON to the above Hospital.

Salary £120 per annum, with board, residence, and laundry, plus certain fees.

Applications, with copies of three recent testimonials, must be received not later than May 19th, addressed to the Chairman of Directors, Longton Hospital, Stoke-on-Trent, Staffs.

The Manor House Hospital,

Golders Green, London, N.W.11.
(112 Beds.)

Applications are invited for the post of JUNIOR HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating full particulars, should be addressed to the Secretary at the Hospital as soon as possible.

Royal Alexandra Hospital for SICK CHILDREN, BRIGHTON.

(100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-ray treatment. No canvassing allowed.

To commence duties middle or end of May.

Applications, in writing, accompanied by testimonials, should be sent to A. P. GRAVES, Secretary.

Weston-super-Mare General HOSPITAL. (60 Beds in use.)

HOUSE SURGEON.

The Committee require the services of a duly qualified Resident House Surgeon. Salary £130, with board, residence, and laundry. Duties to commence July 1st. Application, with copies of testimonials, to be sent to the undersigned.

LESLIE J. FURSLAND, Secretary.

North Ormesby Hospital,

MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board, residence, and laundry. There are three Residents, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with copies of three recent testimonials, should be sent to the undersigned at once.

GEORGE WATTS, Secretary-Supt.

House Surgeon, male, wanted

immediately for HUNTINGDON HOSPITAL. Salary £125 per annum and laundry. Testimonials, etc., to Dr. GROVE, County Hospital, Huntingdon.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	TONMORE VALLEY, GLAMORGAN. *(Wynabars Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. *(Grenada with Carriacou, St. Vincent and St. Lucia.)*

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(Any Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St. Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association), P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch, British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address B.M.A. House, Tavistock Square, W.C. By Order of the Council of the British Medical Association.
May 7th, 1930. ALFRED COX, Medical Secretary.

Leicester Royal Infirmary.

THIRD RESIDENT ANESTHETIST.

Applications are invited for this post. Appointment for six months, with possibility of extension. Salary £250 per annum, with board, residence, and laundry. Applications from qualified men only.

Further particulars of special course in the administration of Anæsthetics may be obtained from Dr. [illegible], with particulars of test materials, with particulars of anæsthetic work, to the undersigned, by first Post on Monday, May 12th.

[illegible] and Secretary.

Infirmary, Leicester, May 7th, 1930.

The Royal Infirmary, SHEFFIELD

The Board invite applications for the post of ASSISTANT CASUALTY OFFICER. The appointment is terminable on June 30th next, but the officer selected will be eligible for re-election for one of the other twelve House Appointments. The salary attached to the post is £200 per annum rising after six months' service to £250 per annum, together with Board and Residence. Applications, together with [illegible] of two medical referees, to be sent to the undersigned not later than [illegible].

JNO. W. BARNES, F.C.I.S., Gen. Supt. & Sec.

Royal Infirmary, Sheffield, April 14th, 1930.

East London Hospital for CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the posts of HOUSE SURGEON (male) and HOUSE PHYSICIAN (male). Vacant June 1st. The appointments are for six months.

Board, residence, and laundry is provided. Salaries at the rate of £125 per annum.

Applications with testimonials, to be sent to the undersigned not later than Saturday, May 24th.

W. M. WILCOX, Secretary.

East London Hospital for CHILDREN, Shadwell, E.1.

There will be a DEMONSTRATION OF CLINICAL CASES on Wednesday, May 14th. Tea at 5 p.m.

West London Hospital, Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY SURGEON, for which a present Honorary Assistant Surgeon is a candidate. In the event of his election, there will be a vacancy for an HONORARY ASSISTANT SURGEON, for which applications are also invited.

Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver surgical courses of Lectures to the Nurses, and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, May 22nd. Candidates must attend the meeting of the Medical Council on Friday, May 23rd, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, attend a meeting of the Board at 5 p.m. on Tuesday, May 27th, when the election will be made.

H. A. MADGE, Secretary.

Liverpool and District Hospital FOR DISEASES OF THE HEART.

HOUSE PHYSICIAN (male or female) required for period of six months from July 1st. Salary at rate of £52 per annum, with board and residence (private sitting room).

Applications, not later than May 15th, to Miss LEWIS, Secretary, 14, Cook Street, Liverpool.

Hospital for Women at Leeds.

HOUSE SURGEON wanted, to take up duties on May 16th. Appointment to terminate on October 31st. Salary at the rate of £50 per annum, with board, quarters, and laundry. Applications, with copies of three testimonials, should be sent to the Secretary, Hospital for Women, Coventry Place, Leeds.

S. CECIL HILL, Secretary.

May 5th, 1930.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, fully qualified Medical Women for the following posts: HOUSE PHYSICIAN, OBSTETRIC ASSISTANT, THREE HOUSE SURGEONS. Appointments for six months from July 1st next. Salary at rate of £50 per annum, with board, residence, and laundry.

Applications, with copies of three testimonials, should be sent to the Acting Secretary by Tuesday, May 27th.

JEAN R. MURRAY, Acting Secretary.

The Lady Chichester Hospital, HOVE.

(For Neurological and Early Psychiatric Cases.) (50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty immediately, with board, lodging, and laundry, and an honorarium at the rate of £50 per annum.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton.

Royal South Hants and SOUTHAMPTON HOSPITAL, SOUTHAMPTON.

Applications are invited for the post of ASSISTANT HOUSE SURGEON. Salary £140, with rooms, board, and laundry. Six months' engagement, commencing June 1st. Candidates, who must be male and unmarried, should apply at once to the undersigned, stating age, and enclosing copies of testimonials.

By Order,
HY. TRUSSON, Secretary.

Durham County Hospital.

The post of SENIOR HOUSE SURGEON is now vacant. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of beds 75. Salary £160 per annum, with board and lodging. Applications, with copies only of testimonials, to be sent to—

WM. R. WILSON, Secretary.
79, Saddler St., Durham.

ASSISTANCIES.

Wanted. — Indoor Assistant, gentlemen, young, single, abstainer, Protestant, loyal, and keen on work, for general and panel Practice in Colliery district, West Riding. Motorist. Usual bond. State age, height, and essential particulars.—Address, No. 2902, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, single, keen, energ., able take sole charge at times. Exper. in G.P. necessary. Priv. and panel Prac. Eng. or Scot. Protestant. Enclose photo. and tests. Good salary. Prospects. Usual bond.—Address, No. 3118, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, in a Mining Practice in Glamorgan. Usual bond. Salary £350 per annum, with furnished rooms, light, and attendance.—Address, No. 3115, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Junior Assistant, male, single, young, £300 a year, all found, in panel and private Practice on South Coast. Able to dispense and give anæsthetics. Comfortable house. Send photograph and full particulars.—Address, No. 3121, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Male Assistant (single), Rhondda Valley. £350 p.a. Recently qualified preferred. — Address, No. 3135, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, for Woman's Practice. View to Partnership later. Industrial Practice, West Riding, Yorks. — Address, No. 3130, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Outdoor Assistant, panel and private Practice in Bristol. Salary £350 p.a. to start.—Address, No. 3132, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, British, some experience. Indoor. Suit young married man, with view.—Apply personally 11 a.m. (not Sunday), Dr. RIDEWOOD, 103, Bethnal Green Road, E.2.

Wanted.—Outdoor Male Assistant, young, preferably with hospital experience, for private and panel Practice. Salary £400 p.a., rising £40 p.a. to £600 for suitable man. Give particulars and references.—No. 2939, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Assistant (married), in large Practice near Manchester. £350 and free house. Particulars.—Address, No. 3114, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistant, outdoor, young, energetic, for panel and private Practice, Newcastle-on-Tyne. Salary £400, and house free of rent and rates. — Address, No. 3193, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, non-industrial Town. Panel and private. Car provided. Dispenser kept. Photo (returnable), age, testimonials. Salary £300.—Add., No. 3138, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.-Experienced Assistant, male, for Branch Surgery, Kent. Hospital and General Practice experience preferred. Partnership offered to suitable man. —Address, No. 3137, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant male, immediately, to take almost sole charge of working-class Practice in outlying Eastern London suburb. Must have good refs. and previous experience.—Address, No. 3204, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with definite view to Partnership, by M.B., Ch.B.(Aberd.), æt. 28, single. Six years' experience panel and private. Own car. Free by arrangement.—Address, No. 3110, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — An Assistantship, London preferred, by M.B.Belfast, 1922; abstainer, keen, reliable; good anæsthetist and surgeon; experience 4 years Hospital, all types G.P.; R.C.; married, no family; good references. — Address, No. 3122, B.M.A. House, Tavistock Square, W.C.1.

Assistant required for Branch Surgery in busy London neighbourhood. Partnership offered at end of year if suitable (no capital).—Address, giving full particulars, and send photo. (to be returned), No. 3003, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted now, £250 per annum, all found. Commission on mids. Suit recently qualified man.—Address, No. 3113, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, whole day or part-time, required by Woman M.B., B.S.(1925), resident in London. Experience private and panel. N. London preferred.—Address, No. 3129, B.M.A. House, Tavistock Square, W.C.1.

Male Assistant required for June 1st, in small Cheshire Town. Hospital and some G.P. experience necessary. Throat work would be an advantage. Salary according to experience. — Address, No. 3125, B.M.A. House, Tavistock Square, W.C.1.

Messrs. R. Sumner & Co. Ltd., Manufacturing Chemists, 40, Hanover Street, Liverpool, will be pleased to hear from any gentlemen who are open to accept either ASSISTANTSHIPS or LOCUM TENENCIES.

Required for Birmingham.— Male ASSISTANT, for permanency with or without view, single, energetic. Used to panel practice and Dental anæsthetics. Salary £350 p.a. Furnished rooms, attendance. Testimonials, photographs, usual bond.—Address, No. 3119, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (*Park 0969*), Secretary, 7, Westbourne Park Road, W.2.

Dispensers supplied to Doctors at short notice, without fee. Qualified and experienced in private and panel practice. Permanency and part-time Bookkeeper-Dispensers, Secretary - Dispensers, Nurse - Dispensers, and or 'phone BUREAU FOR E.C.1.

Dispenser (Lady) desires RE-ENGAGEMENT. Thoroughly experienced. Good testimonials. Careful bookkeeper. Accounts, Parish Returns, etc. Would do two or three weeks' locum. Disengaged now.—Address, Miss DANIEL, 18, Mary Street, Taunton.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Doctor recommends Housekeeper. Intelligent and efficient. Performs all duties generously and well. — Address, No. 3206, B.M.A. House, Tavistock Sq., W.C.1.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BOTSFORD, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

Kenya Colony.—Medical Officer required for Works Settlement. Commencing salary £700 and an allowance of £120 p.a. Contract for three years. Free house, electric light and fuel. Applicants should be not over 35 and unmarried.—Apply, BRITISH MEDICAL BUREAU, 12, Stratford Place, Oxford Street, W.1.

Lady, 20, desires post as SECRETARY; fully trained and experienced. Good references.—Miss PAGE, Littlecote, Linksway, Northwood, Middx.

Lady Dispenser - Bookkeeper desires RE-ENGAGEMENT with Doctor in Midlands. Three and a half years last post in large private and panel Practice. Excellent testimonials.—Address, No. 3108, B.M.A. House, Tavistock Square, W.C.1.

Receptionist-Secretary to Doctor required by qualified Lady Dispenser, Taunton or near.—Address, No. 3202, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser (Hall) requires POST, part-time or locum, in or near London. Able to drive car.—DOROTHY KITCHEN, 18, Sinclair Mansions, Richmond Road, W.12. Phone: Riverside 5249.

Pathological and Bacteriological LABORATORY ASSISTANTS ASSOCIATION.—Pathologists and Bacteriologists requiring SKILLED CERTIFICATED LABORATORY ASSISTANTS are invited to communicate with H. GOODING, Hon. Sec., "Moelfre," 10, Holbeck Grove, Victoria Park, Manchester. No fees.

Radiographer (Sister), lengthy experience in hospital and private work, desires to ASSIST Radiologist or Doctor in Electro-therapy Practice. Willing to do holiday duty. — Address, No. 3105, B.M.A. House, Tavistock Square, W.C.1.

Typewriting.—Expert undertakes *Theses, Testimonials,* etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work—Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
The oldest and only Agent who for 40 years has supplied substitutes at short notice without fee to principals.
4, ADAM ST., Strand, London, W.C.2.
Teleg.: "Epsomian, Lond." 'Phone: Temple Bar 9311.
After Office Hours: Epsom 9142.

Cotswolds.—Comfortable HOUSE and GARDEN, with board and lodging, offered Doctor in return for taking CHARGE OF PRACTICE with quite light duties. —Address, No. 3134, B.M.A. House, Tavistock Square, W.C.1.

General Practitioner (retired, life abstainer), with large experience, undertakes LOCUM appointments. If work light, terms 5 guineas. Disengaged from middle of May to middle of June.—Address, No. 3126, B.M.A. House, Tavistock Square, W.C.1.

Holiday Exchange. — London Doctor, with very easily run Practice, large comfortable house, good situation, would CHANGE with Doctor, seaside or country, for about month.—Address, No. 3106, B.M.A. House, Tavistock Square, W.C.1.

Locums. — Experienced and reliable middle-aged Doctor, had own Practice, desires HOLIDAY LOCUMS. Now free. Terms 6 gns. p.w. London pref.; if country, where car and driver available. Good refs.—Add., MEDICUS, 24, Colville Rd., Bayswater, W.

Locum Tenens.—Experienced Practitioner requires ENGAGEMENT. No night work or midwifery. Very reasonable fees. —Address, No. 3131, B.M.A. House, Tavistock Square, W.C.1.

Locums wanted by Woman Doctor, L.R.C.P.S., L.M., D.P.H., experienced in panel and private practice; accustomed sole charge; excel. refs. Free early in June. Now near Liverpool; will go anywhere.—Address, No. 3127, B.M.A. House, Tavistock Square, W.C.1.

M.B., B.S., D.P.H., desires to do LOCUM as T.O. or ASSIST. M.O.H. June or July. Experience. General Hospital 2½ years. Tuberculosis 6 years.—Address, No. 3107, B.M.A. House, Tavistock Square, W.C.1.

For Reliable Locums and Assistants
AT SHORT NOTICE, CONSULT
British Medical Bureau
(Northern Branch),
33, CROSS ST., MANCHESTER.
Telegrams—"LOCUM, MANCHESTER."
Telephones—CENTRAL 3925; after office hours: 2549 RUSHOLME.

HOLIDAY LOCUMS.

FOR A RELIABLE SUBSTITUTE CONSULT
THE MEDICAL AGENCY.
(WILLIAM H. GRANT.)
WATERGATE HOUSE, 15, YORK BUILDINGS, ADELPHI, W.C.2. *Tel* { TEMPLE BAR 1054. RIVERSIDE 1254. *(Night Calls).*
Telegrams: "REASDE, TUBERCLE, WESTRAND, LONDON."

Medical Man, with D.M.R.E., is prepared to act as LOCUM or ASSISTANT to Radiologist or Electro-therapeutist. Total abstainer. Good references.—Address, No. 3104, B.M.A. House, Tavistock Sq., W.C.1.

PARTNERSHIPS.

Wanted.—A Share in a good-class PRACTICE, country, preferably in or near Cheltenham, to bring in £800—£1 00 p.a. Preliminary assistantship and house to rent. Advertiser has had large experience in all branches of general practice.—Address, No. 3123, B.M.A. House, Tavistock Square, W.C.1.

A Partner is urgently required in a partnership in Hospital town on South-West Coast. Receipts £5,000 p.a. Partner with capital for disposal. Easy terms to energetic man able to start almost at once. Full particulars on application.—Address, No. 3116, B.M.A. House, Tavistock Square, W.C.1.

For Disposal.—A Share in an unopposed COUNTRY PRACTICE of about £1,000 p.a. in one of the most unspoilt parts of Kent, on succession in two or three years. Splendid HOUSE, with garden, paddock, garages, etc., for sale, or to let, price to be agreed on now. Hunting, golf, shooting, fishing, boating, bathing and other sport. Suit a man fond of country life and sport.—Address, No. 3120, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Partnership in Industrial Practice, Manchester district. Panel over 3,000. Third share over £1,000. 1½ yrs.' purchase—part cash, part deferred. Would suit woman.—Address, No. 3203, B.M.A. House, Tavistock Square, W.C.1.

Lancs Town, near Manchester.—PARTNERSHIP in old-estab. Practice. Cash receipts over £2,000 p.a. Panel 2,000. Scope for surgery. Good house, 3 reception, 5 bedrooms. Garage and garden. Rent £65 p.a. Premium—1/2 share—£1,500.—BRITISH MEDICAL BUREAU, 33 Cross Street, Manchester.

Manchester.—Half Share old-established PRACTICE in nice residential suburb. Receipts £2,000, with excellent scope. Panel more than 1,500. Price 2 years' purchase, part deferred. Golf, tennis, etc.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 2, Brown Street.

Manchester.—Partnership in excellent old-estab. mixed Practice. Aver. cash receipts £3,816. Panel 3,375. Good house available, 3 bedrooms. Rent £60 p.a. Premium—1/3rd share—1½ years' purchase; part by arrangement.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

M.D., F.R.C.S., B.Sc. would like SURGICAL PARTNERSHIP in good-class Practice with hospital. Hospital experience and general. Good man, keen, abstainer.—Address, No 3124, B.M.A House, Tavistock Square, W.C.1.

Yorks.—Partnership in old-established Practice of £1,400 yearly. Panel £550 Appts. £85. House for Partner in line with Vendor. Great scope. Price half share 1½ years' purchase.—MANCHESTER MEDICAL & SCHOLASTIC ASSOC., 6, Brown St.

PRACTICES.

Wanted.—Panel and private PRACTICE in London. Income from £1,500. Large panel necessary. Ample capital available.—Address, No. 3133, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Panel and private PRACTICE £12/15/0 p.a.; large town or good industrial district. — Reliable ASSISTANT required, £200, indoor.—GRIFFITHS MEDICAL AGENCY, Trelegar Chambers, Newport, Mon.

Wanted immediately.—PRACTICE about £1,400 p.a., with scope. Good panel essential. House with garden and garage. Pleasant locality; prov. town or suburb. Retiring prac. or death vacancy consid.—No 3128, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Cash and Panel PRACTICE, Liverpool, London, Leeds, or Manchester preferred. Income over £1,000, and panel 1,200 upwards. Cash available.—Address, No. 3205, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice about £1,500 or more, London suburb, Midlands or South town. Good panel. House, with garden, on lease. Ample capital.—Address, No. 3191, B.M.A. House, Tavistock Square, W.C.1.

Wanted by experienced Practitioner, at the end of September, PRACTICE, with good panel, in W. Midlands. Income £1,200—£1,600. House with garden essential. Ample capital. Full particulars in confidence.—Address, No. 2807, B.M.A. House, Tavistock Square, W.C.1.

Birmingham residential suburb. —Particularly desirable high-class PRACTICE of long standing, easily increased. Small panel. Most desirable house, in excellent position, with beautiful garden, on fairly long lease. Ill health sole reason for selling.—Apply, SHAKESPEARE & VERNON, 83, Colmore Row, Birmingham.

County Durham.—For Sale.—Good old-established unopposed general PRACTICE, with local appointments. Panel over 1,900. Receipts approximately £2,000 per annum. Good house, and surgery with separate entrance, garden, garage for 3 cars, and garth, for sale or lease with Practice, and available for immediate occupation by purchaser. Drugs and fittings at valuation. Excellent opportunity for acquisition of a general practice.—Address, No. 3101, B.M.A. House, Tavistock Square, W.C.1.

Cheshire Country Town, near Manchester.—PRACTICE averaging £700 p.a. Panel 500. Beautiful district. Excellent modern house (freehold), 2 reception, 4 bedrooms. Tennis court, surgery, etc., separate. Premium—Practice and house—£2,000.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

For Sale.—Well-established sound industrial and middle-class PRACTICE, situated within easy reach of Glasgow, producing £1,350 p.a., including panel of 1,382, increasing. Excellent modern house, in own grounds, with good garden, garage, electric light.—Address, No. 2901, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Seaside Resort, Lancashire.—High-class, old-established PRACTICE. Good situation. Average annual receipts last 3 years £1,541. Some surgery. Scope for two men or principal and assistant. Great intro.—No. 3002, B.M.A. House, Tavistock Sq., W.C.1.

For Sale.—Old-estab. industrial PRACTICE, near Manchester, easily worked. Good introd. Aver. yearly receipts last three years £2,590, panel 2,910. Price £3,885 or near offer. Good house to buy or lease.—No. 3112, B.M.A. House, Tavistock Sq., W.C.1.

For Sale owing to Death.—General Country PRACTICE in Radnorshire. Good appointments and panel.—APPLY BURGES, SLOAN & Co., 11, Marsh Street, Bristol.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2

London, S.E.—Cash Practice for Sale in leading main thoroughfare. Estab. over 3 years. Panel about 175. Cash takings aver. £5 p.w. Very mod. premium accepted for prompt cash sale, to incl. drugs, furniture, etc.—No. 3111, B.M.A. House, Tavistock Sq., W.C.1.

Lancs Town.—Excellent non-panel PRACTICE. Receipts £1,200. Great scope for surgery. Nice house, £60, or would sell. Owner specialising elsewhere. Price £1,000 or near offer, part deferred.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Lady Doctor's Practice, Liverpool.—Cash receipts £400. Much scope. Excellent flat to rent on lease. Good introduction.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

M.B.Cambridge, late H.P., St. Thomas's, bachelor, 27, desires suitable opening, PRACTICE or PARTNERSHIP, in Southern half of England. Inc. about £1,000; scope. Panel essen. Pleasant town pref.—No. 3102, B.M.A. House, Tavistock Sq., W.C.1.

Manchester.—Old-estab. PRACTICE. Cash receipts 1922, £940. Panel 780. House, 2 reception, 5 bedrooms. Garage. Rent £70 p.a. Scope for increase. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester.—Middle-class PRACTICE in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

North Wales.—Splendid opportunity to succeed to a PRACTICE by very easy instalments. Receipts £850 p.a. (panel £350), with ample scope. Ever busy Industrial district. Please give essential particulars.—No. 3192, B.M.A. House, Tavistock Sq., W.C.1.

North-West Coast.—Old-estab. mixed PRACTICE. Cash receipts 1929, £1,129. Panel 580. Good scope. Easily worked. Good house, 3 reception, 5 bedrooms. Garage and garden. Premium—Practice—1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Practice wanted in London, N.W. district preferred. Panel about 2,000. Income £1,500-£2,000.—Address, No. 3133, B.M.A. House, Tavistock Square, W.C.1.

Sound Practice for Disposal.—Pleasant suburb of Manchester. Six months' introduction offered. Owner will sell or lease the house and surgery.—For terms and particulars, apply KNOTT & CASTLE, Solicitors, 5, Norfolk Street, Manchester.

To Purchasers.—Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St, Strand, W.C.2. Telephone: Temple Bar 9011. Telegrams: "Epsomian, London."

Woman Doctor has small working-class NUCLEUS for disposal in London, N.W.1, near Tottenham Court Road. Rent 15/- per week. Premium £70, to include drugs and furnishing.—Address, No. 3105, B.M.A. House, Tavistock Square, W.C.1.

Yorkshire.—Old-estab. Country PRACTICE. Average cash receipts £900 p.a. Panel 430. Excellent house, 2 reception, 5 bedrooms. Garage and garden. Rent £70 p.a. Premium £1,250.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Yorkshire (W.R.).—Practice of £1,600 p.a. (panel £300). Premium 1½ years' purchase. Good house, £1,000. Building Society mortgage £ 50.—EDWARD CLOUGH, Bank Chambers, North Parade, Bradford.

HOUSES, CONSULTING ROOMS

Admirably suited for Nursing HOME or Doctor's House.—Good opening.—For sale, freehold, sunny comfortable HOUSE, perfect condition, large rooms, 3 recep., 6 bed., servants' quarters and offices, tennis court, delightful garden, garage, in all 3 acres; or could be sold with less land.—COMPTON, Allington Villa, Bridport, Dorset.

Consulting Rooms to be Let.—Harley Street and district. Whole and part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

First floor Consulting Room to LET, adjoining Harley St. Good service, name plate on door, residential suite of rooms if desired.—Address, No. 3109, B.M.A. House, Tavistock Square, W.C.1.

Hove.—Exceptionally suitable for a Doctor (or excellent Nursing Home), in one of the best residential localities (WILBURY ROAD), excellent detached RESIDENCE, with four good ground floor reception rooms, eight bedrooms, garden and double garage; lately occupied by a first-class Medical Practitioner. FOR SALE, FREEHOLD, or might be Let on lease.—WINKWORTHS, F.A.I., 128, Church Road, Hove.

Portman Square (adjoining).—Large first floor unfurnished CONSULTING ROOM, with full service, plate, heating, lighting, and telephone, at moderate inclusive rental. Bedroom also if desired.—Address, No. 2909, B.M.A. House, Tavistock Square, W.C.1.

To be Sold or Let, Manchester, Cheshire-cum-Hardy, suitable Doctor or Dentist. Six bedrooms, two reception, two kitchens, all modern conveniences; all fittings, radiators. Bargain, must sell.—"ECCLESLEY," The Quadrant, Heatherfield, Totley, Sheffield.

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To Let in high-class district, Doctor's RESIDENCE, main road, South-West aspect, 3 entertaining, 7 bedrooms, garage, good shaded garden; 3 minutes station, 5 minutes West Lancs, and 15 minutes Formby Golf Clubs.

Full particulars, apply OWNER, 12, Shore Road, Ainsdale, or BOULT, SON & MAPLES, Cook Street, Liverpool.

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Showroom: 97, Swinderby Road, Wembley.

APPOINTMENTS.—Contd.

Borough of Reigate.

APPOINTMENT OF MEDICAL OFFICER AT THE MATERNITY AND CHILD WELFARE CENTRE.

The Town Council invite applications from men and women Medical Practitioners for the above appointment for one year as from June 1st next. The salary will be after the rate of £150 per annum.

The duties, which must be strictly adhered to, comprise attendance at two sessions of two hours each on Tuesday and Thursday afternoons from 2.30 to 4.30 at the Health Centre in connection with Infant Welfare; and one session of two hours each month, on Wednesdays, for Ante-natal work, commencing at 2.30. The Medical Officer to arrange for a Locum Tenens in the event of his or her inability to attend.

The other duties and conditions attaching to the appointment can be obtained upon application to the undersigned.

The regulations of the Ministry of Health of February 6th, 1930, require that the Medical Officer of an Ante-Natal Clinic shall either have held such an appointment with the approval of the Ministry prior to April 1st, 1930, or who, subsequent to qualification, has had at least three years' experience in the practice of his profession and special experience of practical midwifery and ante-natal work.

Sealed applications, marked "Medical Officer—Infant Welfare Centre," should be sent to the undersigned at the Municipal Buildings, Reigate, not later than Monday, May 19th.

Dated this 30th day of April, 1930.

ALFRED SMITH, Town Clerk.

Royal Victoria Infirmary,
NEWCASTLE-UPON-TYNE.

The House Committee of the Royal Victoria Infirmary, Newcastle-upon-Tyne, invite applications for the post of HONORARY ASSISTANT GYNÆCOLOGIST.

According to statutory provision every candidate must be registered in Medicine and Surgery.

Applications, with copies of three recent testimonials, must be sent to the House Governor and Secretary, Royal Victoria Infirmary, Newcastle-upon-Tyne, not later than Monday, May 26th.

The appointment will be made on Thursday, June 5th.

Personal canvassing will be considered a disqualification for office.

S. DUNSTAN,
May 5th, 1930. House Governor & Sec.

Hospital of St. John and
ST. ELIZABETH,
60, Grove End Road, St. John's Wood, N.W.8.

There is a vacancy for the post of Temporary ANÆSTHETIST at the above Hospital during the illness of a member of the Anæsthetist staff. Honorarium at the rate of £50 per annum. Applications must reach the undersigned, from whom further particulars may be obtained, on or before May 12th.

F. DUDLEY HOBBS, B.A.,
Secretary.

King Edward VII Hospital,
RIVELIN, SHEFFIELD.

(SURGICAL TUBERCULOSIS.) (150 Beds.)

HOUSE SURGEON required immediately. Six months' appointment, with possibility extension for a further period of six months. Salary £75 per annum, with board, residence, and laundry. Applications, with testimonials, to be sent to C. L. LEE PATTISON, Medical Superintendent.

Dundee Royal Infirmary.

RESIDENT MEDICAL OFFICER (HOUSE SURGEON) required immediately, for two to three months. Salary at the rate of £50 per annum, with board, lodging, and laundry.

Apply Medical Superintendent.

The Royal Eastern Counties' INSTITUTION FOR MENTAL DEFECTIVES, COLCHESTER.

(1,350 Patients now, and a large extension will be begun this summer.)

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male and unmarried) at the above Institution.

Commencing salary at the rate of £350 per annum, together with furnished apartments, board, laundry, and attendance. There are no Superannuation deductions. The appointment will be subject to termination by one calendar month's notice on either side.

Application, stating age and qualifications (experience as a Resident Officer in a General Hospital will be an additional qualification), with copies of three recent testimonials, to be sent to Medical Superintendent, Royal Institution, Colchester.

General Hospital, Nottingham.
(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at once at the above Institution. Candidates are desired to send applications, stating age, [illegible] and experience, together with [illegible] to the undersigned, with when they can commence duty if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

London Jewish Hospital,
Stepney Green, E.1.

CASUALTY OFFICER (male or female), non-resident, required on June 1st. Applications should be sent to the Secretary immediately, with copies of three recent testimonials. Salary at the rate of £150 per annum, with luncheon and tea. Appointment for six months. The holder, who must possess a registered qualification, will be required to attend the Out-patient Department daily (Monday to Friday) at 9 a.m.

Great Yarmouth General
HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two Resident posts)

Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £125 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

Ancoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic), male or female, to commence duty June 1st next, for a period of six months. Salary at the rate of £100 per annum.

Applications, stating age, qualifications, previous experience, if any, and full particulars, to be forwarded, together with copies of three recent testimonials, on or before May 21st, to the undersigned.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

South Eastern Hospital for
CHILDREN, Sydenham, S.E.26.

Applications are invited for the positions of ASSISTANT and RESIDENT MEDICAL OFFICERS (male). The appointments will be for six months from June 14th. Honoraria £75 and £100 per annum, with board, residence, and laundry. Ample time for reading.

Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woodfield," Daeres Road, Forest Hill, S.E.23, to be received not later than Monday, May 26th.

Doncaster Royal Infirmary.

HONORARY ANÆSTHETISTS (Two).

Applications are invited for the above posts. Attendance on three mornings or afternoons per week as desired by the Honorary Surgeons. An honorarium of £50 per annum for each appointment.

Applications, stating full particulars, must reach the undersigned by May 22nd.

J. LAWRENCE MEARS,
Secretary-Superintendent.

Derbyshire Royal Infirmary, DERBY.

APPOINTMENT OF HONORARY ASSISTANT SURGEON for the Ear, Throat, and Nose Department.

The Board of Management invite applications for the office of an Honorary Assistant Surgeon, who will have complete charge of the Ear, Throat, and Nose Department. He must not practise any other branch of Medicine or Surgery, either in or out of the Infirmary. Candidates must hold the diploma of one of the Royal Colleges of Surgeons of the United Kingdom, or be a Graduate in Surgery of one of the Universities of the United Kingdom. Application and testimonials (not more than three) must be forwarded to arrive not later than 10 a.m. on Thursday, May 15th. Canvassing, either directly or indirectly, is prohibited.

By Order,
WALTER BANKS,
Supt. & Secretary.

May 1st, 1930.

Derbyshire Royal Infirmary, DERBY.

APPOINTMENT OF HONORARY ASSISTANT SURGEON.

The Board of Management invite applications for the office of Honorary Assistant Surgeon to the Infirmary. Candidates must hold the diploma of one of the Royal Colleges of Surgeons of the United Kingdom, or be a Graduate in Surgery of one of the Universities of the United Kingdom.

Application and testimonials (not more than three) must be forwarded to arrive not later than 10 a.m. on Thursday, May 15th. Canvassing, either directly or indirectly, is prohibited.

By Order,
WALTER BANKS,
Supt. & Secretary.

May 1st, 1930.

Hampstead General and North-West London Hospital, Haverstock Hill, N.W.

APPOINTMENT OF CASUALTY MEDICAL OFFICER AND CASUALTY SURGICAL OFFICER.

Applications are invited from unmarried registered Medical Practitioners for the positions of Casualty Medical Officer and Casualty Surgical Officer, vacant on June 1st next, at the Out-Patient Department of the Hospital, Bayham Street, Camden Town.

The salary for each appointment will be at the rate of £100 per annum, together with board, residence, etc., and the term will be for six months.

Applications to be made on a form which will be supplied by the Secretary, together with copies of not more than three testimonials, should reach the Secretary not later than noon on May 17th next.

Merthyr General Hospital, MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

Hull Royal Infirmary. (272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant 20th.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
House Governor.

April 7th, 1930.

Lowestoft and North Suffolk Hospital, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

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29, York St., Baker St., London, W.1.

Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary.*

ST. LUKE'S HOSPITAL.

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19, Nottingham Place, London, W.1.
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Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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The Gloucestershire Royal INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the post of SECOND HOUSE SURGEON (male). Salary £100 per annum, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointment is for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate will be required to enter upon his duties at once.

F. J. SIMONS,
Secretary.

April 17th, 1930.

Wanted by the Parish of South RONALDSHAY AND BURRAY, a

MEDICAL OFFICER and PUBLIC VACCINATOR, to commence duty on or about June 30th. Population last census 2,101. Liberal allowance from Parish. Good private practice. Apply, with copy of testimonials, to GEORGE ESSON, Parish Clerk.

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London, E.—£2,000 a year. Panel nearly 1,900. Mids. 25/30 at 3 to 5 gns. Visits 3/6 to 5/-. Hours, with garden, on lease.—No. 8663.

N. Devon.—Death Vacancy.—About £670 per annum. Panel 417. Fees 3/6 to 10/6. Mids. 2 to 5 gns., few cases. Good house, 6 bed. and 2 attics, etc.—No. 8992.

Yorks.—Country.—About £1,000, increasing. Panel nearly £400. Visits 5/- to 12/6. Mids. 3 gns. up. House, 3 recep., 3 bed., garden, etc., £50 on lease.—No. 8660.

Kent Town.—Woman's Practice. £600 p.a. Small panel. Visits mids. 5/-. House 4 beds., etc., garden, rent.—No. 8993.

Eastern Suburb.—£1,250 p.a. Panel 1,500. Mids. 2½ to 3 gns., very few. Small house and garden on long lease.—No. 8958.

London, S.W.—£2,000 p.a. Non-panel. 12 mids., 5 gns. up. Visits 5/- mostly, and up to 10/6 or over. Large house and garden to rent.—No. 8655.

Eastern Suburb.—£2,500 p.a. Cash and patients, great scope. ½ share for sale. Panel 1,500. Small but available, house on easy terms.—No. 8919.

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S. Wales.—Colliery Practice about £2,600 p.a. Panel 2,445. Contract work £1,200 p.a. Worked from Surgery. House available.—No. 8510

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8634.

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—5 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

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3 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms), garden and garage, for sale. Premium 1½ years' purchase.

4 SURREY.—Practice of over £1,000 p.a. in rapidly growing district, easy reach of London. Panel 544. Small but picturesque house (2 bedrooms), garage and garden, for sale. Excellent scope. Premium 1½ years' purchase.

5 EAST ANGLIA.—Country Practice (held by Medical Woman) in picturesque part. Receipts average between £850 £900 p.a. Panel 600. Semi-detached house (5 bedrooms) for sale or rent. Premium 1½ years' purchase.

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11 DEATH VACANCY.—BIRMINGHAM.—PRACTICE averaging £750 p.a. Panel 380. Charming house (4 bed and dressing rooms), garage and nice garden, for sale.

12 DEATH VACANCY. — NORTH DEVON. —PRACTICE about £700 p.a. in beautiful country district. Panel about 400. Fishing, hunting, shooting. House for sale.

13 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium.

14 NOTTINGHAMSHIRE. — Country PRACTICE averaging £1,070 p.a. Panel 700. Good house (6 bedrooms), garage, and 1¼ acres ground, to rent. Great scope. Premium 1½ years' purchase.

15 KENT. — Partnership in Practice about £4,000 p.a. in good residential district. Panel about 1,100. House (6 bedrooms), with nice garden, for sale. Scope for surgery. Premium for a 5/24ths share 2 years' purchase.

16 SOUTH OF ENGLAND. — Partnership in non-dispensing Practice £3,600 p.a., in attractive watering-place. Panel about 1,800. Great scope. One-fourth share now and up to one-half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

17 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,080. House (5 bedrooms), with electric light, for sale. Premium 1½ years' purchase.

18 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house for sale. Scope. Premium 1½ years' purchase.

19 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £775.

20 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

21 LONDON, E.—Practice of £1,269 p.a. in populous suburban area. Panel 1,480. Small house (3 bedrooms). Premium, to include lease of house, £2,100.

22 ITALY. — Season Practice in famous City. Average receipts last 2 seasons £400. Up-to-date Hospital. Premium £400.

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25 BIRMINGHAM.—Practice over £1,200 p.a. in residential suburb. Small panel. Particularly nice house to rent on lease. Premium 1½ years' purchase.

26 LONDON, S.W.—Partnership in Practice over 4,000 p.a. in suburb. Panel 4,700. House, with 3 bedrooms, to rent. One-fourth share at 2 years' purchase. Preliminary Assistantship.

27 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 380. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

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Practices and Partnerships for Disposal (continued).

28 S.W. OF ENGLAND.—Partnership in good class non-dispensing Practice over £2,600 p.a., in attractive watering place and winter resort. Panel 1,360. Large house (7 bed and dressing rooms) for sale or rent. Premium 2,5ths or one-half share 2 years' purchase. Hospital. Partner should be aged 34-45 and a Graduate of Oxford, Cambridge, or London.

29 EASTERN COUNTIES.—Country Practice £1,200 p.a. in agricultural district. Panel 485. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

30 MIDLANDS.—Partnership in Practice over £2,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

31 EAST ANGLIA.—Partnership in Practice in attractive part. Panel 1,840. Nice house (4 bedrooms) to be sold or let. Share worth £1,000 p.a. at 2 years' purchase. Pre-liminary Assistantship.

32 LONDON, W. — Partnership in Practice about £2,000 p.a. in Western suburb. Panel 1,650. House (6 bedrooms) to rent. Premium 2-5ths share 2 years' purchase.

33 CARMARTHENSHIRE.—Practice averaging nearly £700 p.a. in Country Town. Panel 415. Large double-fronted house, garage, and garden, for sale. Sport. Premium 1½ years' purchase.

34 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 600. Good house (8 bed and dressing rooms), with electric light and gas, for sale or rent. Scope for increase. Premium £2,100.

35 SOUTH OF ENGLAND.—Partnership in Country Practice nearly £2,300 p.a. Small panel. Well-built house to be sold or to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

36 SOUTH OF ENGLAND. — Practice averaging £[illegible] in first-rate country town. Panel 997. Double-fronted house (4 bedroom) to rent. Scope for increase. Premium 1½ years' purchase.

37 GLOUCESTERSHIRE.—Practice averaging £1,300 p.a. in an industrial village. Panel 1,169. House (5 bedrooms) for sale. Beautiful surrounding country. Prem. £1,250.

38 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel over 1,000. One-third share at first at 2 years' purchase. Hospital appointment an advantage.

39 SOUTH COAST. — Practice worth about £[illegible] p.a. in first-rate health resort. No panel or night work. Fine semi-detached house (4-5 bedrooms) for sale. Scope. Premium £400

40 WEST OF ENGLAND.—Steadily increasing Practice carried on by Medical Woman for well over [illegible] years in first-rate town. Panel 550. Centrally situated house in [illegible] for sale. Premium £1,650.

41 KENT AND SURREY BORDERS.—Practice about £800 p.a. in growing and pleasant residential district. Charming residence for sale. Good scope. Premium £1,200.

42 LONDON, E. — Cash and Panel Practice £[illegible] p.a. in populous area. Panel 1,650. Small house to rent. Premium 1½ years' purchase.

43 EASTERN COUNTIES. — Partnership in Country Practice of £1,600 p.a. Panel 755. Partner should be [illegible] anæsthetics. Premium one-half share 2 years' purchase.

44 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable [illegible]. Premium £1,150.

45 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. Panel 500. House (5 bedrooms) for sale, [illegible] scope. Premium £1,500.

46 SCOTLAND.—Sound Practice in thriving Electrical and University Town. Income last year £788 (including £130 from panel (no[illegible] encouraged). Modern corner house (9 rooms), garage and garden, for sale or rent. Premium to effect [illegible]

47 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

48 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

49 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West Coast. Panel about 400. House (5 bedrooms), with good garden, for sale or rent. Premium £1,200.

50 X-RAY & ELECTRO-THERAPEUTICS. —Wanted, well-qualified ASSISTANT, with Junior Hospital appointment (Teaching Hospital preferred), for old-established West End Practice in London. Exceptionally good prospects.

51 W. OF ENGLAND. — Ophthalmic Practice over £900, in residential seaside resort. Semi-detached house for sale or rent. Considerable scope as Vendor has undertaken only minor operations. Premium £1,000.

52 SOUTH AFRICA.—Old-established Practice of over £1,800 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200.

53 SOUTH COAST. — Small Practice in fashionable Health Resort. Earnings 1929, £550. Very good house (6 bedrooms), with large garage and garden, for sale.

54 EASTERN COUNTIES. — Country Practice of £835 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

55 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1,400 at 2 years' purchase.

56 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

57 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750

58 SOUTH MIDLANDS. — Practice about £450 p.a. in industrial district, close to first-rate town. Panel 100. Nice house (5 bedrooms), with garage, to rent. Considerable scope. Premium £550.

59 YORKSHIRE (N.R.).—Practice of £920 p.a. in small attractive country town. Panel 450. Good house (5 bedrooms), garage, and garden, for sale or rent. Trout fishing. Premium £1,250.

60 YORKSHIRE.—Seaside Town.—Partnership in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (3 bedrooms) for sale. Premium two-fifths share £1,400.

61 ESSEX.—Partnership in Practice nearly £1,800 p.a. in rapidly developing neighbourhood. Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

62 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

63 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

64 SHROPSHIRE.—Practice averaging £600 p.a. in market town. Panel 80. Commodious house (7 bedrooms), garage, and garden. Rent £65. Beautiful surrounding country. [illegible] Premium £1,000

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LONDON, S.E.—Middle and working-class G.P. in residential locality. House to rent. Receipts approx. £1,100. Panel 600. Premium £1,500 cash.

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DERBYSHIRE.—PARTNERSHIP in old-established non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share at 2 years' purchase.

LONDON, E.—Suburban middle and working-class PRACTICE. Small house to rent on lease at low rental. Receipts average £1,265. Panel about 1,500. Premium for Practice and lease, £2,100.

S. WALES.—DEATH VACANCY.—Receipts about £700 p.a. Panel 600. Large colliery. Excellent scope. Small house to rent at £52 p.a., or would sell. Premium for Practice, £600 cash.

KENT COAST.—PARTNERSHIP in old-established non-dispensing non-panel Practice. Fees 5/- to 1 gn. Suitable house available. Receipts nearly £3,500. One-third share for disposal, with view to half at 2 years' purchase. Suitable only to well-qualified man of sound experience and good address.

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BERKS.—PARTNERSHIP, with view to Succession, Country Practice. Receipts average £1,120 p.a. Panel nearly 600. House to rent. Premium for half share 2 years' purchase. Suitable only to single man.

LANCS.—(Near Seaside Resort).—Middle and working-class G.P., situated in growing locality. Suitable house available. Receipts £1,005. Panel 250. Excellent scope. Premium £1,000 cash.

GLOS.—Well-established middle and working-class PRACTICE. Medium-sized freehold house, with grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,700.

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LONDON, S.E.—PARTNERSHIP in growing middle and working-class G.P. Suitable house available to rent. Good fees. Earnings (approx.) £5,000. Premium for 1/3 share, £3,500 or near offer.

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7. KENT [illegible] Seaside and residential Town (pop. 17,000). Old-[illegible] middle and working-class PRACTICE, averaging 3 years over £1,050 p.a. including transferable £200 and panel of 500. Visits 3/6 to 10/6. Very [illegible] House contains 8 rooms, kitchen, bathroom, etc. Price freehold £1,500, but might be rented. [illegible]

8. SOUTH OF ENGLAND.—SEAPORT TOWN.—PARTNERSHIP.—Third [illegible] with, and guaranteed for a year or two to produce a well-established and steadily increasing mixed-class [illegible] last year nearly £2,350, including panel of 1,650. [illegible]/6. Very little midwifery. Suitable house with large [illegible] freehold £1,650, or might be rented. Prem. £1,600.

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11. [illegible] ESSEX COAST TOWN.—Small middle-class PRACTICE, [illegible] averaging nearly £400 p.a. Visits 3/6 to 7/6. No [illegible] freehold house. Garden. Coach-house and [illegible] £1,300. Premium £400. Vendor retiring.

12. [illegible] desirable, easily worked Village PRACTICE, averaging [illegible] having panel and appts., producing £740 p.a. [illegible] Not much midwifery. Nearest opponent 6 miles. [illegible] 3 reception, 4—5 bedrooms, bathroom, etc. (no [illegible] £900. Good sport and schools within reach. [illegible] purchase. Cottage Hospital.

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14. MANCHESTER.—PRACTICE is situated in a growing district offering [illegible] Income about £1,700 p.a., including panel pra[illegible] £450. Fees 5/6 upwards. Excellent detached house, well [illegible] 3 reception, 5 bedrooms, etc., all in good order. Price £[illegible] Premium 1½ years' purchase.

15. [illegible] COUNTRY PRACTICE.—Very old-established, situated in [illegible] district near Sussex Border. Receipts average over [illegible] Panel of 480. Detached house in half an acre of garden, [illegible] bedrooms, etc. Rent £55 p.a. Hunting, golf, etc., [illegible] within reach. Premium £1,300.

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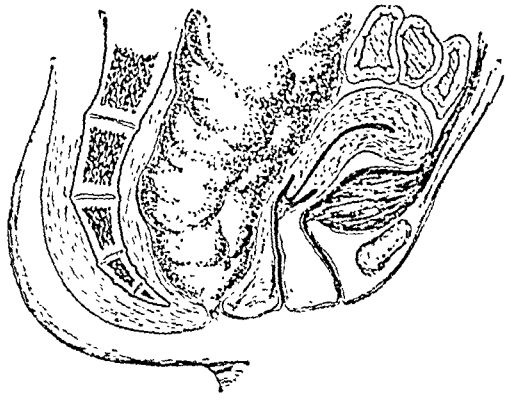
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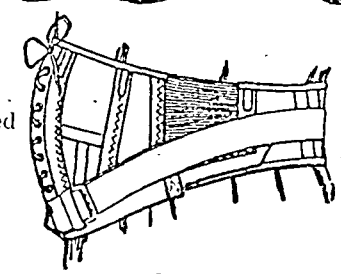
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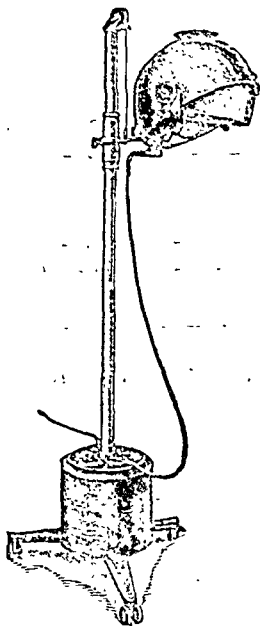
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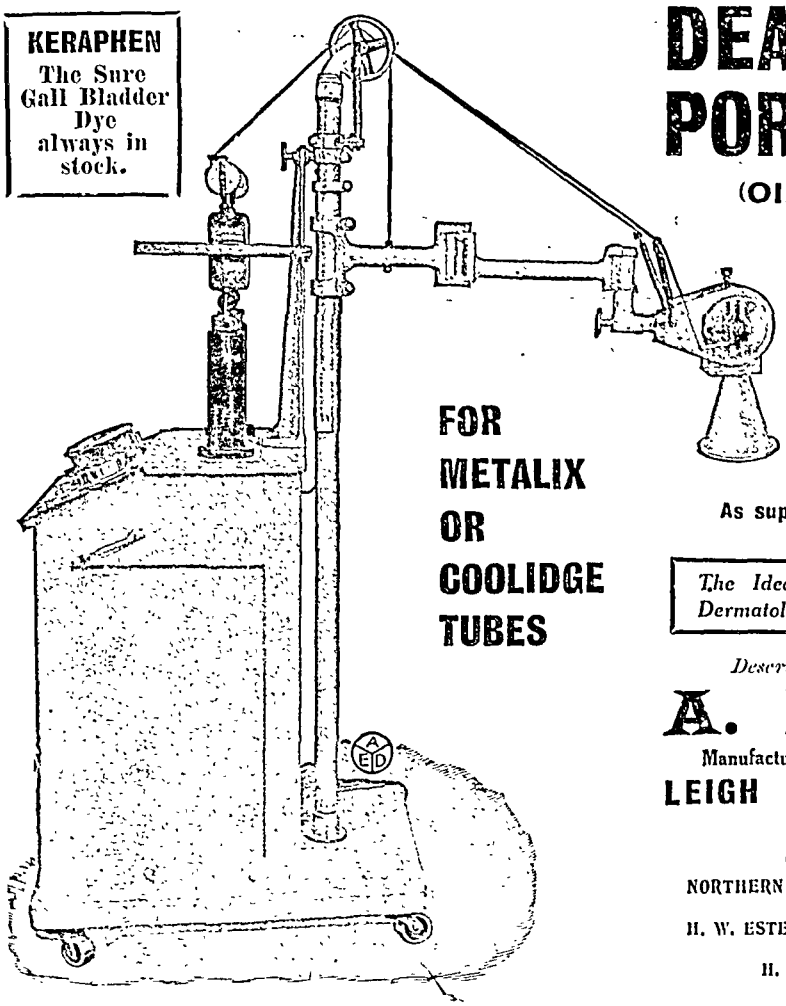
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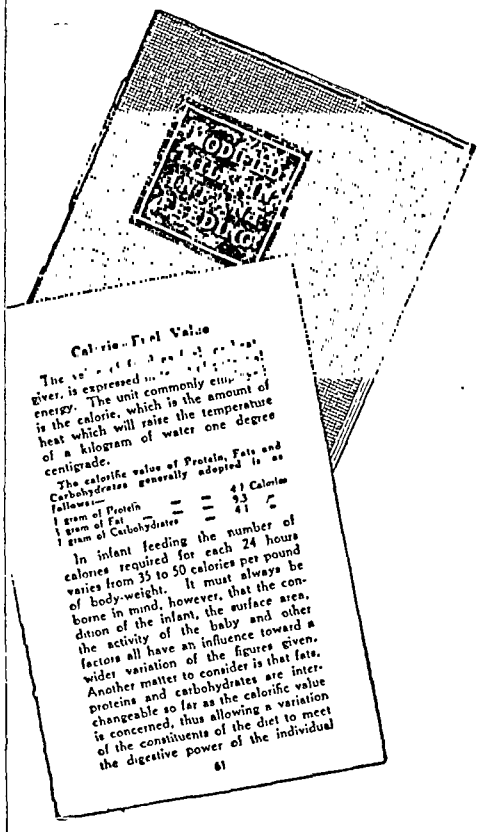
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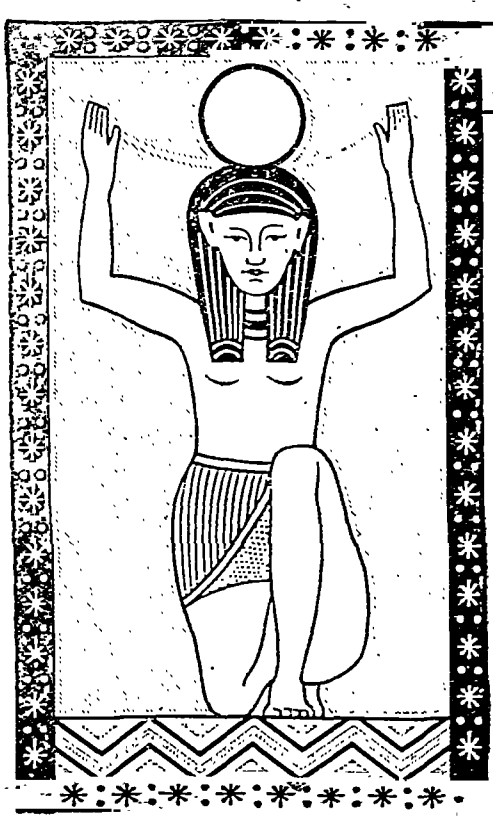
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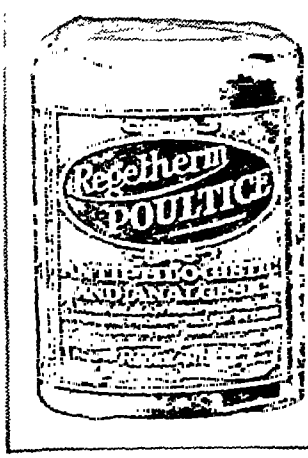
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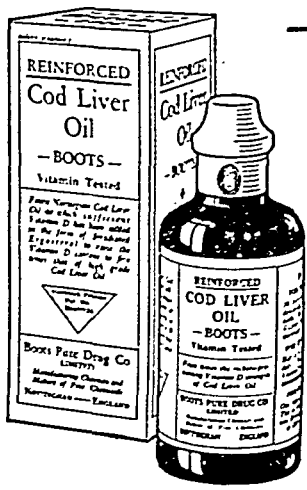
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56 THE NURSING MIRROR AND MIDWIVES' JOURNAL. APRIL 19, 1930.

The Nurses' Materia Medica.
A GUARANTEED GUIDE.
By Our Analytical Experts.

No. 16.—ROBOLEINE.

HAVING heard a good deal of the virtues of Roboleine as a good "body-builder" in cases of malnutrition, we selected a sample of this food for analysis by our experts this week, as we desired to know whether it was really as good as it was reported to be. The result has proved that its makers, Oppenheimer, Son and Co, Ltd, are justified in claiming that it contains all the vitamins at present known to medical science, and that it is an excellent digestive food. The sample analysed was found to contain the following :—

	Per cent.
Moisture	23.23
Fatty matter	4.04
Mineral matter	1.72
Phosphate as P_2O_5	0.73
Nitrogen	0.06
Equal to protein (Factor 6.38) ...	0.38
Maltose	52.00

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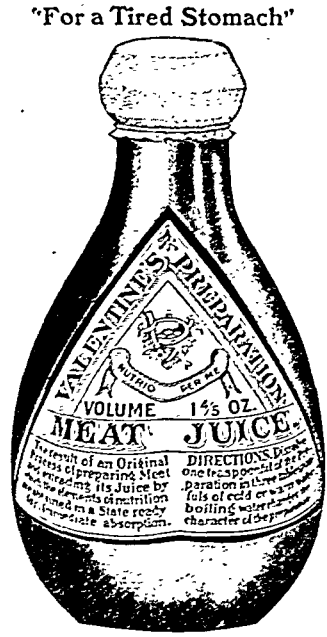
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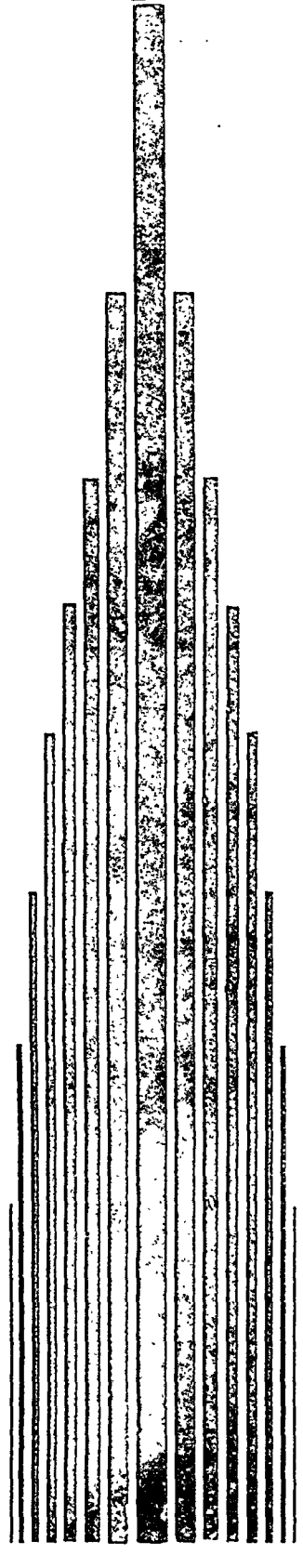
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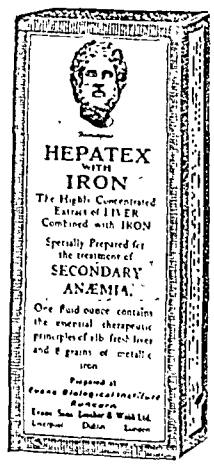
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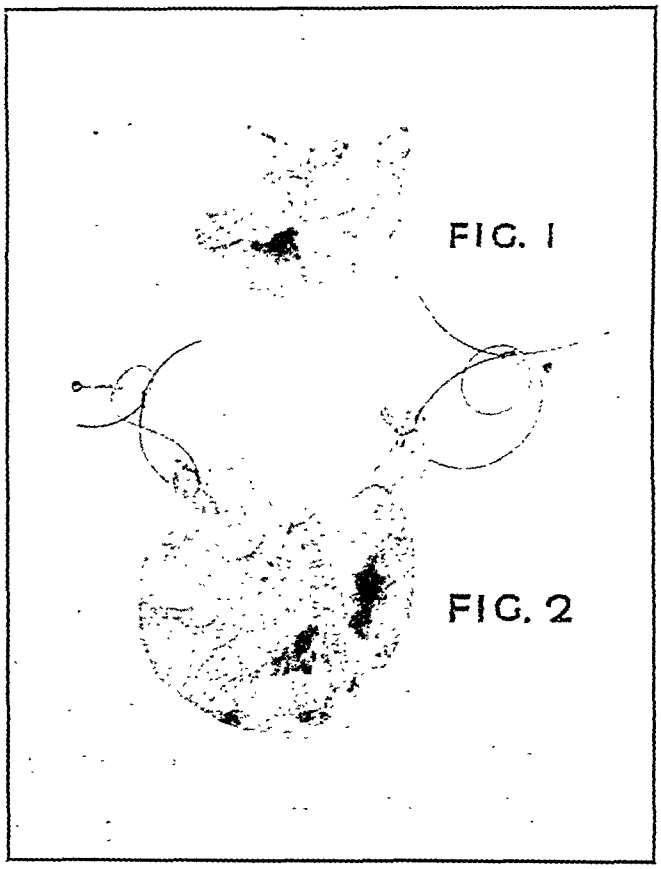


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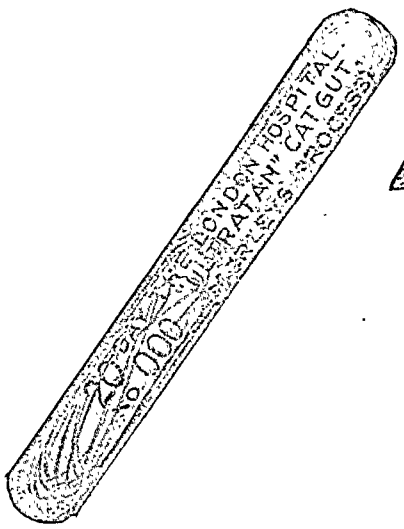
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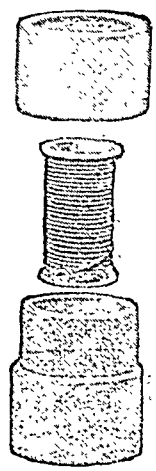
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An Oration
ON
THE INEXORABILITY OF THE LAW OF EVOLUTION AS MANIFESTED IN MODERN MEDICINE.

DELIVERED TO THE MEDICAL SOCIETY OF LONDON ON MAY 12TH, 1930,
BY
SIR ARTHUR KEITH, M.D., F.R.S.

Medical London Fifty Years Ago.

FIFTY years ago a walk round Harley Street, Queen Anne Street, and Wimpole Street provided a medical visitor from the country with quite an interesting morning. The names on the door-plates were already familiar to him; for the greater part they were those of physicians and surgeons on the staffs of our leading hospitals. The physicians were mostly general consultants, but fame, he knew, had given some of them a reputation for being particularly skilled in certain diseases. The surgeons, too, exercised their art on all parts of the body, but already specialization had taken hold and some were devoting themselves to particular disorders, such as those of the urino-genital system, or even confining themselves to definite organs or systems of the body, such as eye, ear, nose and throat, teeth, skin, and such as required orthopaedic treatment. Our visitor would also have come across the names of men who had made their reputation in the practice of midwifery and diseases of women—a specialty which in 1880 was at least a century old.

Spencer's Law of Progress.

Our country friend, if he were familiar with Herbert Spencer's law of progress*—namely, that it was merely another name for increased specialization—would have found an opportunity, in the three streets just named, of studying the application of Spencer's law to medicine. Of the 120 men who at that time had segregated themselves from the army of practitioners and taken up an abode in the three streets, some, although on the staffs of hospitals, did engage in family practice; others were not on any hospital staff, but sought prestige in practice from their place of residence; the vast majority, however, were consulting physicians, surgeons, or obstetricians, or were specialists in one branch of these three main divisions. Their numbers represent the extent to which medical specialization had spread in the year 1880.

The Rate at which Specialization is Growing.

Were our visitor to return now, after an absence of fifty years, he would be astounded at the rate at which the wheel of evolution has moved in our medical world. Familiar names have disappeared from the doors of our three streets and been replaced by others—quite as noteworthy. The brass plates have decreased in size, but greatly increased in number; a census shows that the 120 of 1880 have been replaced by 954 in 1930. While the medical population of London (and the same is true of the provinces) has only a little more than doubled its numbers in the last fifty years, the army of specialists, in the three streets already specified, has undergone an almost eightfold increase. Progress signifies that the number of young medical men who turn aside from general practice for a specialty becomes ever greater. Everyone whose name is affixed to a Harley Street door is not necessarily a specialist, but after making all allowance on this score, there are certainly seven specialists now where there was only one fifty years ago.

How specialization has sped may also be seen from the fact that the Royal Society of Medicine finds it necessary to divide its proceedings into twenty-four sections. In our three streets we should certainly have to carry the subdivision farther and recognize about thirty-five branches of special practice in place of a bare ten of fifty years ago.

Ancillary Sciences determine the Rate and Mode of Medical Progress.

When we look beneath the surface of things and try to ascertain why the face of medicine has become so changed (and we may be certain it will continue to change) we see that the cause lies not so much in what medical men themselves are doing as in what is being accomplished in certain branches of science—particularly in chemistry, physics, physiology, pathology, and biology. The application of modern chemistry to medicine has called into being at least two groups of specialists, perhaps three. Advances in physics have opened three or four new fields of medical practice—for the application of x rays, radium, light, and electricity. Biology—in which we may reckon bacteriology, immunology, and vaccine therapy—has made and is making such progress that a greater number of specially trained men become necessary as medical advisers. The technical methods of the physiologist, pharmacologist, and pathologist are being brought more and more into clinical practice, giving those skilled in their use opportunities for fresh departures in special practice.

While the impetus to specialization comes from advances made in the ancillary sciences, our progress is also determined by the trend which events are taking in general medicine and surgery. As region after region of the body has become "safe for surgery," specialization has been found to be necessary for the patient's sake as well as for the further increase of knowledge. The same is true of medicine: knowledge regarding the ailments of each system of the body becomes so extensive and the technique needed for their full elucidation has grown so elaborate that it is no longer possible for one man to be master of all. As long as knowledge continues to increase and the methods employed to become more elaborate, division of labour—specialization—must also increase.

The Direction of Progress.

Thus we see that "progress," which is another name for "evolution," has transformed the face of medicine as practised in the West End of London in the space of time easily covered by living memory. What will be its state in another fifty years? Let us see how far Herbert Spencer in 1880 could have foretold the state which medicine has actually reached in the three streets at the present time. He would have premised that the same spirit—a spirit of humanitarianism—would continue to urge medical men onwards in their attempt to relieve mankind of its load of suffering. He would have been certain, if this were so, that knowledge must increase, and with each increase must come an augmentation of specialism. But he could not have foretold the direction in which specialism would spread. Our progress has been determined not by deliberate choice but by the force of circumstances, over which, for the greater part, medical men have had no control. That is what I mean by the "inexorability of the law of evolution as manifested in modern medicine." There is behind the medical army an irresistible pressure which thrusts it forward into the future, and it must march, not as it would, but as it needs must.

Evolution as seen in Medical Schools.

I have carried you to Harley Street to give me an opening for my thesis, but now, for the better understanding of the forces involved in medical progress, let us pay a visit to one of our larger teaching hospitals. Let us suppose that after having been in practice abroad for fifty years we are paying a first visit to our old hospital. What do we find? When we left the medical school of the hospital it was manned entirely, or almost entirely, by members of the hospital staff—surgeons and physicians. There were only two exceptions—a chemist and a biologist. Now we find the departments of the school greatly increased in number, and every one of them presided over by a man who, although trained for the practice of medicine, has elected to devote himself to teaching and research in one of its basal subjects. Physiology, taught by a surgeon when we left, has now widened its scope to such an extent that it has been found necessary to have it subdivided into three branches, each in charge of an expert. What strikes us most in our modern school is the birth of laboratories; medicine has passed into a new period—the laboratory period. When we left there was only one—the dissecting room—but now we find the old school trebled in size to accommodate great rooms for the practical study of pathology, bacteriology, pharmacology, physiology, and chemistry. In place of a plain post-mortem room, in which physicians on the staff taught us how examinations on cadavers should

* Progress, its Law and Cause, *Westminster Review*, 1857. Reprinted in *Essays, Scientific, Political, and Speculative*, 1858, vol. i, p. 1.

be made, there is now a great institute of morbid anatomy over which a director presides, and has at his command a highly trained staff—all duly qualified medical men.

Evolution is at work in our Hospitals.

In the hospital itself we find ample evidence of how potent a factor the laboratory has become in our modern advance. In place of little closets annexed to certain wards, each provided with a spirit lamp, a few test tubes, and bottles of reagents, we now find suites of laboratories—bacteriological, chemical, pathological, cardiological—each requiring a highly skilled medical staff. We find the Unit System and the Team System at work—physicians, surgeons, and obstetricians, devoting their whole time to the treatment of hospital patients, to teaching and to research. Amongst the members of the hospital staff, who have still to earn an income from consulting practice, the tendency to specialize has become more marked. The special departments of the hospital have grown in number, and everywhere we see evidence of increased technical outfit—demanding increased knowledge and skill. Under the working of Spencer's law of progress our medical schools and hospitals have undergone in these last fifty years a transformation which amounts to a revolution. The main agent in bringing about the evolutionary changes has been the introduction and spread of the "laboratory idea."

Humanitarianism as an Evolutionary Force.

Let us look for a moment at the underground forces which have speeded our hospitals and schools so quickly in the direction of division of labour and of specialization. Harley Street in the olden days had to carry a heavy burden; it had to gather enough from the rich to provide itself with the means of treating the poor in hospitals and in teaching the art of medicine. The rapid increase of knowledge, particularly in the basal subjects of medicine, and more especially the introduction of technical methods of research, made it necessary to man medical schools with specialists—all of them more or less imbued with that kind of spirit which places opportunities for scientific inquiry above those which lead to augmentation of income.

The period of the missionary professor in our medical schools was a brief one. The war brought about a financial crisis in the schools, and the State began to take a hand in their affairs. This intervention was impelled by two motives. There was, in the first place, a "heart" motive—the humanitarian principle that the poor should have, of its own right, as free an access to the best available means of treatment as the rich. The second was a "head" motive—namely, that every advance in medicine brought a clear gain to the public at large—which is the State. Through State subsidies, dispensed by various Government departments, but particularly by the University Grants Committee, it became possible to staff hospital schools and certain hospital services with medical men who could devote their lives to special branches of medical knowledge. Government has provided the sinews of war, and the vanguard of the medical army presses forwards at an unprecedented pace, but neither Government nor any power can determine or regulate the direction of the advance; that depends on what happens at a thousand points along the fighting front. Of one thing, however, we can be certain: every advance made in our medical schools will have its repercussion in the Harley Street quarter of our larger cities. The initiative has passed, or is passing, from the clinician to the laboratory worker; the laboratory has become the "pace-maker" of medical progress.

The Divorce of Research from Teaching

My aim is to ascertain how far Spencer's law of progress helps us to understand developments which are happening under our eyes in our medical world. There has been an unparalleled increase in our knowledge; that has been accompanied, as Spencer postulated would be the case, by a necessary increase in specialization. In our present ranks I see a separation of duties, a division of labour, which, although I know it to be inevitable, yet fills me nevertheless with some pangs of regret. It is the separation of teaching from research. Time was when games were the pastimes of amateurs; to develop games to their highest pitch the professional became necessary. It was also so with research; it was the pastime of amateurs. Fifty years ago if a medical man had a bent for investigation he sought for a teaching post which would permit him to earn his bread-and-butter and at the same time offer him the opportunities he desired. Such a man became a source of inspiration to his students—particularly to his best students. To gain his end, and for the advantage of his subject, he was willing to offer up his wife and family as an economic sacrifice. There was in these sturdy pioneers a quality which commands our highest respect, and we shall say good-bye to the type with the utmost regret. Go it must, I fear; the imperious law of progress, which dominates science as well as sport, demands the replacement of the amateur by the professional.

Professional Research.

The introduction of professionalism into medical research has been made possible by subsidies from State as well as from private sources. That such endowments are speeding up the rate of medical progress there is no doubt; we have only to consult the pages of the annual reports issued by the Medical Research Council, or to read the address which Sir Walter Fletcher recently delivered before the British Science Guild,* to have ample confirmation of my contention. The Medical Research Council, and the Royal Society to a lesser degree, are, to borrow Sir Walter's simile, watering the tree on which the fruits of science grow. They have planted in their research orchards only such trees as have proved their bearing capacity, and the results are promising. Nevertheless, the gardeners can but tend the trees; they cannot change their nature nor alter by regulation the kind of fruit they will produce. They can but water the ground and hope in the autumn to gather a profitable crop.

The introduction of professionalism into research illustrates very well a corollary of Spencer's law of progress. This far-seeing Victorian realized that every new departure, every discovery or advance, was attended by a multitude of secondary effects. The segregation of our most gifted investigators is impoverishing the medical staffs of our universities and schools. Our best teachers desire to be relieved of the duties of their office in order that they may devote their whole time to experiment or other forms of inquiry. The gift of teaching, of inspiring young men, of collating and disseminating knowledge, is being ranked below that of the ability to research. The ultimate result of assigning an inferior position to the teacher and to the book-maker is as likely, in the long run, to impede the progress of medicine as to accelerate it.

Results of Progress on the Output of Medical Literature.

Another result is a curious one. So prolific is the output of published researches from our laboratories that a regiment of specially trained men has become necessary to deal with it and make its assimilation by the medical profession possible. How great that output has become may be seen from recent numbers of the *Quarterly Cumulative Index Medicus*—for which we are beholden to our brethren in America. There are now over 2,000 medical journals and periodicals; to index the articles appearing in these journals in the first six months of 1929, and the titles of medical books published in the same period, required 100,000 separate entries—these entries filling a volume of 1,311 pages. A friend, who has confined his researches to a small but important gland of the body, told me that the literature relating to it had become so vast that he could read only part of it. And yet the progress of medicine demands that the output will keep expanding at an ever-increasing rate, and specialization in research becomes more and more necessary.

There is no Alternative.

What, you may ask, is to be the end of it all? There is no turning back; we must press forwards. Will then our specialization reach such a growth that, like the monstrous antlers of the Irish deer, it will sap and endanger the life of the whole body of Medicine? There is a safeguard. When our specialization reaches a stage at which its upkeep passes beyond the powers of the public and private purse,

* See *Nature*, 1929, vol. cxxiv, p. 795; also *British Medical Journal*, 1929, vol. ii, p. 993.

then perforce we shall have to limit our ambitions and discover more economical methods of attaining our ends. As yet we are not within sight of such a crisis.

Co-ordination is a Necessary Constituent of Progress.

Up to this point I have been discussing the manifestations of progress as seen in the Harley Street quarters of our greater cities, in our medical schools and hospitals, and in our subsidized laboratories. In all three quarters we find medical men pressing forwards in search of new sources of knowledge, and as they press becoming subdivided more and more into separate groups. We have, in these instances, been studying only one of the factors of medical progress; there is another which Spencer perceived was equally inevitable. Specialization, if it worked unchecked, would tend to break up our medical forces and dissipate their strength in confusion. Hence we find, in the progress of our profession, just as in the evolution of the earlier animal organizations, there come into play certain unifying influences, exerted by a crude form of nervous system. An astute student of the evolution of medicine, if he had visited London in 1880, would have perceived that this nerve centre had already come into being in the form of a Department of State, situated in Whitehall—the Local Government Board. He would have found London already divided into fifty-two districts—each with a medical officer of health—controlled more or less indirectly by the nervous centre in Whitehall. All England, Wales, and Scotland had then become so divided, and a multitude of medical men, most of whom, while still continuing to attend to their patients, served also as members of a health army, and carried out a policy formulated or suggested in Whitehall.

The Process of Integration.

Unification or integration is just as necessary an ingredient of "progress" as specialization or separation. The influences which tend to bring about the unification of our medical army, like most of the inventions which alter medical practice, arise not inside our medical ranks but outside them. Before the middle of the nineteenth century it became evident to British statesmen that the country could not drift along exposing itself to plagues and pests, to contaminated water and adulterated foods, to overflowing cesspools and to drains which led nowhere. Government began tentatively by calling into being a new kind of medical specialist—the health officer. Presently it was found to be necessary to co-ordinate the activities of the men so enrolled. Even in 1880 this brain, then represented by the Local Government Board in Whitehall, was a small and simply fashioned organ. The deliberative and executive areas of its cortex were composed of laymen; eleven medical officers entered into its texture and were relegated entirely to the sensory or recipient areas. They were advisory in function at the most. No doubt the reformers who placed all our public health Acts on the Statute Book had to fight hard and long: they fought with head and heart, and deserved their victory; but, as they gained it, it never occurred to them that they were being impelled by force of circumstances, and were unconscious exponents of a scheme of evolution. Health reformation was initiated outside the ranks of our profession, but it introduced into our ranks the first step towards their unification.

We are the Slaves of Circumstance.

What I am seeking to make clear is that in all our advances we are the slaves of circumstance rather than masters of our fate. You may ask: Does not the Ministry of Health, which succeeded the Local Government Board in 1919, determine the direction in which we shall advance? Lately I listened to a speech which was broadcast by an able member of Sir George Newman's staff—Dr. T. Carnwath. In this speech the policy of the Ministry of Health was outlined. The Ministry watches how health measures, recently sanctioned by Parliament, work out in practice. Defects become apparent, the Ministry studies how they can be mended. Local authorities may apply for a special bill to meet some local need; if leave is granted, the Ministry notes the effects. If benefits accrue, then steps are taken to extend them to the whole country. The Ministry does not create its opportunities; it waits until they come, and then utilizes them for an "advance." Sir George Newman and Sir Walter Fletcher have both to wait for their opportunities. They wait patiently for them, and then when they occur apply their genius in utilizing them for the improvement of national health.

Progress implies an increasing Integration.

Every step taken by Parliament leads towards a more perfect unification of our British medical army—in which 34,000 recruits are now enrolled. We are far enough away from the angry discussions which arose in our ranks when Mr. Lloyd George successfully carried the National Insurance Act of 1911 to take a philosophical view of what then happened. We see now that it was the inevitable that happened: it was but another turn in the screw of that evolutionary movement which tends towards the unification—the integration—of Medicine. It was a continuation of that "policy" of the nineteenth century which broadened the franchise to its present limits, gave us compulsory education, established the medical inspection of schools, and more recently gave services for the welfare of mothers and babies. The Local Government Act, which brings the staffs of our hospitals more directly under a central authority, is but another turn of the same evolutionary wheel. The art of healing in its modern development is going steadily through the stages which transformed a brood of discrete independent protozoa into the co-ordinated complexity of cells which form the body of a living animal.

The Law of Evolution.

In this lecture I have been applying a law—the law of animal evolution—to the complex affairs of modern medicine. Given human nature as it is—a nature which demands, and ever will demand, that the poor must and shall have access, so far as health is concerned, to all the privileges the rich can buy, that at all costs suffering must be relieved—then medical progress must go on and follow the path already chosen. Further progress consists, in our modern interpretation, of an ever-increasing degree of specialization, and in an ever-increasing degree of co-ordination or unification. We cannot escape State control in the long run, however much we may regret the loss of personal liberty which is thereby entailed. What I would especially lay stress on is that medicine is not so free to choose its path into the future as most of us think it is. We may mould circumstances to our wills on some occasions, but in most we are carried along in the irresistible current of events. I do not mean we should, like fatalists, cease to strive to steer a course. Nevertheless in things medical, as in all mundane affairs, the main feature of the law of evolution is its inexorability.

A British Medical Association Lecture

ON

THE LOCALIZATION OF ABDOMINAL PAIN.*

BY

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PAIN felt in the abdominal area may for practical purposes be divided into (*a*) pain arising from a pathological stimulus applied in some other part than the abdomen, and (*b*) pain in which the causative stimulus arises within the abdominal cavity itself. The localization of the pain in the first class of case is not very difficult so long as one realizes the possibility of the source being in some more remote part. A thorough physical examination of the patient will usually detect disease of the spine or spinal cord, or throw suspicion on to the chest, in cases where that region is to blame.

A very real difficulty may arise in those cases in which physical examination (including radiography) reveals nothing abnormal, and yet the patient avers that he has very severe pain in the abdomen. Speaking generally, such patients must be regarded as suffering from some real abdominal disorder until every means of diagnosis has been tried. Only after a failure of these and the inability to fit in the symptoms with any known clinical

* Given before the Leeds Division on March 6th, 1930.

condition must one allow the term "psychogenic" to be applied. It is very easy to shirk a full examination by saying the patient is neurasthenic. Neurasthenia covers a multitude of errors of diagnosis; nevertheless no one doubts that some abdominal pains may have their origin in mental disease. In such cases the patient often makes much more of his pain than is warranted by his fairly good general condition, while the term "agonizing" is more frequently used to describe the pain than in the case of those patients who have serious organic disease.

The localization of true abdominal pain is one of the most difficult problems with which the physician and the surgeon have to deal. The difficulties are inseparable from the anatomical configuration and the physiological interrelation of the various viscera. Anatomically the various viscera are so close one to another that the symptoms caused by disease of the one may easily be thought to emanate from another. Moreover, the mobility of certain parts of the intestine, and the way in which inflammatory or other fluid may travel quickly from one end to the other of the peritoneal space make error more easy.

Physiologically we are hindered in our quest by the vague diffuseness of the pain which is caused by acute visceral disease, and by the puzzling way in which a very great stimulus may cause a widespread extension or overflowing of the pain from the usual area associated with a certain visceral lesion. There is in addition a frequent confusion of reflexes—for example, pyloric spasm, which gives rise to pain of the gastric type, may be a reflex effect not only of duodenal ulcer but also of appendicitis or cholecystitis; while a painful distended colon may follow not only from colitis but from acute cholecystitis. Pathological difficulties in locating pain result from the occasional occurrence of multiple lesions, either independent or interdependent. To point this moral I am accustomed to quote a case which I saw eight years ago.

A man, aged 55, had acute abdominal pain especially in the right lumbar region. He was distended and had a great amount of free fluid in the peritoneal cavity. The liver was large and there were cardiac murmurs. He died without any operation being performed. At the necropsy the peritoneal cavity was full of pus and bile; the common bile duct was filled by large stones; there was a large hydatid cyst of the right kidney; there was aortitis with a small saccular aneurysm, and the foramen ovale was patent; there was healed tubercle at both the lung apices, and the pericardium was adherent. As if this was not enough, when the intestines were opened they were found to contain a large tapeworm.

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of tith difficulties of this kind to contend with I sometimes motive—now it is that we are able to make such a large pro- a clear gain rect or approximately correct localizations of Through State su-
departments, but pains may have their origin in a patho- Committee, it became pl in solid or hollow viscera, the certain hospital services with pedicles of viscera, and the their lives to special branches stimulus for producing Government has provided the sinew these groups. In the guard of the medical army presses for, spleen, and kidney, dented pace, but neither Govern of the organ consequent determine or regulate the dir hollow viscera and tubes give depends on what happens at en they are acutely passively fighting front. Of one thing, in their walls contract very every advance made in our esentery or in pedicles will repercussion in the Harley Scrushed, pulled upon, or cities. The initiative has pass ree when irritated by in- clinician to the laboratory w inal parietes, those parts become the "pace-maker" of m a variety of stimuli in

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located. In the case of acute abdominal pain, however, the clinical examination is perforce the most important, for momentous decisions have to be taken by the practitioner on the spot, and I desire particularly to be of assistance in cases of this nature.

Most cases of acute abdominal pain may be put into one of two categories: those due to obstruction of some tube or outlet of a hollow viscus, and those due to inflammation of a viscus with or without involvement of the peritoneum. These two classes of pain I shall consider separately. Both varieties are localized by the same aids, but the importance of the various aids varies greatly in the two cases. These aids are:

Spontaneous local pain,
Tenderness (evoked local pain),
Superficial hypersensitive ess,
Pain felt at a distance (referred pain),
Pain in contiguous viscera,
The shifting of pain, and the
Clinical history.

Pain caused by obstruction of a hollow tube, preventing the outflow from a hollow viscus, may be divided into two clearly defined groups. The first is the pain due to the stoppage of a canal without any accompanying occlusion of the blood vessels. Biliary colic due to a stone stopping up the cystic or common bile duct, renal colic consequent on a small calculus becoming impacted or passing down the ureter, uterine colic due to a small polyp or blood clot in the cavity of the uterus, intestinal colic due to anything kinking or obstructing merely the lumen of the gut, and a tubal abortion, serve as examples. In all of these the blood vessels supplying the affected part are intact. Now at the onset of any of these colics one is largely dependent for localization upon the clinical history and the position of the referred segmental pain; in such cases as intussusception and tubal abortion the clinical history may suffice to point accurately to the location of the pain, while in many other cases it is a most valuable help, and it is here that clinical experience may and does prove its great worth.

The position of the pain felt at a distance—referred pain—varies according to the case. In biliary colic it is commonly epigastric and right hypochondriac, and usually it is also felt in the right subscapular region. But the pain may be referred to the left hypochondrium, and I lately had a patient whose biliary pain was only felt in that position. The pain of renal colic, apart from perinephric irritation, is felt in the iliac regions, and radiates to the groin or testicle. When the renal pelvis becomes distended loin pain is felt and parietal irritation plays a greater part. Uterine colic causes pain in the lumbar and sacral region of the spine. Small-intestine colic is referred to the epigastric and umbilical regions, while that caused by the large bowel is felt chiefly in the hypogastrium. An acutely distended bladder will irritate the parietes so that its pain is located in front; but if the distension is gradual no pain is felt anteriorly, and the patient will only complain of pain in the lumbar region.

At the onset of these colics there is usually no tenderness on deep pressure, no muscular rigidity, and only occasionally hypersensitiveness of the skin. Far from intensifying the pain, pressure will actually relieve it, and in contrast with the immobility consequent on most inflammations the patient will often turn and twist about to find relief.

An interesting referred pain is that felt in the testicle in some cases of appendicitis. It is more common with a perforated appendix, but can occur either in right or left testicle with an unperforated appendix. In some cases it may be due to a direct irritation of the nerves in the spermatic cord, but in other cases there can be little doubt that it is a referred pain, and this has made me conclude that the appendix is at least in part supplied by the tenth segment of the cord which also supplies the testicle. Whether this is so or not the importance of the fact is clear, for the confusion of renal lesions with appendicitis is thereby made more easy.

When obstructive colicky pain has continued for some hours one or both of two consequences follow: either the viscus communicating with the obstructed tube becomes distended, or inflammation extending to the peritoneum or parietes may result. In both cases local tenderness supervenes this makes localization fairly easy. An acutely ll-bladder, an acutely inflated coil of

small intestine, and a tense pelvis of the kidney are all tender on pressure, and pain in them can be accurately located. The late Sir James Mackenzie used to teach that pain in the viscera was not actually felt in them, but was actually felt in the parietes as a referred pain; this view cannot now be maintained. Pain is certainly felt in the viscera, but it is not accurately located in them without the aid of the parietes. A tense or distended viscus cries out in an unknown language, which is interpreted by the parietes when palpated, the parietes indicating the site of the pain. This point can be made clearer by considering the manipulation of a distended coil when the abdomen has been opened under local anaesthesia. If the coil is outside the body the patient experiences diffuse central pain, but can give no idea of the exact position of the coil; when the coil is pressed upon through the abdominal wall he can tell the exact site of the pain. I always compare the function of the parietes to that of a piano keyboard in relation to a tone-deaf person. Anyone who cannot tell the difference between one note and another can still tell what note is being played if he looks at the note which has been struck on the keyboard. The parietes is a keyboard which indicates the site of pain felt in the intestines and other viscera.

In those parts of the intestine which have so short a mesentery that distension of the gut drags upon the parietes pain may be more or less accurately located. Most persons have at some time or other accurately located borborygmi in the ileo-caecal region and the iliac colon. The same spontaneous location of intestinal pain is possible when gut is adherent in the sac of an umbilical hernia: when gut is merely incarcerated it may not cause spontaneous local pain, but may be tender on pressure. How often superficial hyperaesthesia occurs from visceral irritation alone I am not prepared to state, but that such hypersensitiveness does occur without parietal irritation I am quite convinced. Its frequency is, however, so inconstant that it has very little practical value. I would emphasize again the point that colic in an uninflamed undistended viscus is not usually accompanied by local tenderness on pressure.

The second obstructive group comprises cases of occlusion or torsion of hollow tubes together with obstruction of the blood vessels going to the part; volvulus and obstruction by a band serve as examples. With this group should be classed the cases of strangulation of an ovarian cyst, or of a solid viscus, since the symptoms are somewhat similar. In all these cases the blood vessels are suddenly occluded and there is a sudden onset of pain and tenderness. The pain due to irritation of nerves in the pedicle or mesentery is diffuse and does not help in localization except as between the small and large gut, but local pressure will elicit the pain, and if the viscus is near the anterior or lateral abdominal parietes spontaneous local pain will be felt.

A special case is that in which only part of the circumference of a piece of gut is strangled; here very little distension may result, and since the nerves in the mesentery are not affected the adequate stimulus for even the visceral referred pain is absent. In these cases localization depends upon the spread of inflammation to the parietes, and if, as in some cases of femoral hernia, the related part of the parietal peritoneum is almost insensitive, localization may be very difficult. Hence the common overlooking of a Richter's hernia even when gangrenous. The stoppage of blood supply to a large portion of the bowel by a mesenteric thrombosis or embolism leads to generalized abdominal pain and tenderness from the first. At the onset the pain may result from irregular peristalsis, but later it is accounted for by distension and peritonitis. Diagnosis may be possible, but accurate localization of the part involved may be, and generally is, out of the question.

To sum up: In the early obstructive lesions without vascular occlusion localization is effected by the clinical history, and the distribution of the rather vague visceral referred pain; later there supervenes local tenderness depending on distension or inflammation spreading to the peritoneum. With obstructive vascular lesions local tenderness is present from the first.

Passing to the second large group of cases causing acute abdominal pain, the inflammations, it is noteworthy that bacterial infection of the interior of a viscus may, and often does, cause no pain at all. There may be little or no pain with an infection of the ducts in the liver, and sometimes even with suppuration in the branches of the portal vein. The entire absence of pain in some cases of liver abscess is well known. Infection of the renal pelvis, and of the interior of the uterus, may be practically painless. If pain is to be caused by infection of a viscus one of three things must happen: the duct (if there be one) must become obstructed so as to bring about distension; or the inflammation must spread to the parenchyma to cause oedema and tension; or the irritation must spread to the peritoneal coat and abdominal parietes. The first two possibilities have already been considered, leaving for discussion now the localization of visceral lesions by contiguous inflammation of the abdominal parietes.

The effect of irritation of the parietal peritoneum varies greatly according to whether there is a free or scanty somatic nerve supply. Irritation of those parts of the parietes which are supplied by the lower dorsal and upper lumbar spinal nerves causes local pain, tenderness on pressure, often a considerable reflex rigidity of muscles, and sometimes a certain amount of superficial hyperaesthesia. Inflammation of those parts which have a scanty nerve supply, or a supply derived from the sympathetic system, gives few if any of these indications for localization. Intermediate in its demonstrativeness between these two areas comes the diaphragmatic area, which causes local pain when its periphery is inflamed, but when the main part is irritated merely demonstrates that irritation by distant pain felt in the acromio-clavicular region.

In discussing this question I am accustomed to emphasize these points by dividing the abdominal lining into *demonstrative* and *silent* areas. By a demonstrative area I mean one which on irritation gives rise to pain, hyperaesthesia, and muscular rigidity, which demonstrate the site of the pain. By a silent area I indicate a part in which inflammation does not provoke spontaneous pain, does not give rise to cutaneous hyperaesthesia, and never causes rigidity of the parietal muscles. Pressure on an inflamed silent area may, however, cause a certain amount of pain. This broad distinction, which I propounded eight years ago, has not yet been generally adopted, but I consider it of the first importance. In the silent area inflammation may proceed with little pain and give no indication of its presence apart from the general symptoms, unless the irritation happens to spread either to a neighbouring viscus which may betray it, or to the demonstrative area of the parietes.

From a failure to recognize this distinction many grave mistakes in the localization of abdominal pain must result; cases of deep abdominal abscess have at some time or other proved puzzling, and escaped diagnosis because they were in a silent area of the peritoneum. The best illustration of this is the inflamed pelvic appendix, which may perforate and cause local peritonitis in the pelvis without any definite localizing signs. Such cases are not infrequently diagnosed only when the pelvic abscess causes intestinal obstruction. This mistake is prevented by an early rectal examination, for local tenderness is generally to be elicited. A similar difficulty may be found in the case of an appendix which perforates behind the end of the ileum. Umbilical and inguinal hernial sacs are usually sensitive, but the femoral hernial sac is usually silent.

The demonstrative part of the parietes localizes pain in several ways. The actual spot is tender on pressure, and usually gives rise to spontaneous pain. The neighbouring muscles are tender and often rigid, there may be hyperaesthesia of the skin, and contiguous viscera may be affected.

Painful rigidity of muscles almost always indicates inflammatory irritation of the underlying peritoneum, but absence of painful rigidity does not signify absence of peritonitis, for the muscles tire after a time. Rigidity is not usual in late peritonitis. Rigidity occurs not only in the lateral and anterior abdominal muscles, but also in the quadratus lumborum, psoas, and diaphragm. An inflamed appendix lying on the psoas may be localized by putting the psoas on the stretch by extending the thigh. Diaphragmatic rigidity causes immobility of the affected part of the diaphragm on respiration. Occasionally an abscess lying against the obturator fascia may lead to oedematous infiltration of the fascia and rigidity of the

obturator internus; this may cause pain when the muscle is put on the stretch by inverting the thigh in the flexed position. When an inflamed area is in contact with the iliac vessels this may be demonstrated sometimes by occluding the femoral vessels with the finger; the increased pulsation of the iliac artery causes slight pain owing to its contiguity with the parietal peritoneum.

Cutaneous hyperaesthesia is a more common accompaniment of parietal than of visceral irritation, though I cannot agree with the view that a viscero-sensory reflex does not exist. Peritonitis in the lower abdomen, whether arising from an inflamed appendix, an infected Fallopian tube, or other cause, commonly causes hyperaesthesia somewhere below the umbilicus and above Poupart's ligament; this hypersensitiveness is more common on the right side than on the left. A narrow band of hyperaesthesia is often found just above the right Poupart's ligament in cases of appendicitis, but the same band may occur with a perforated ulcer, and occasionally with cholecystitis, so that it is likely to be due to parietal irritation in the right iliac fossa.

Pain due to irritation of adjacent viscera may be of value in localizing lesions in the silent areas of peritoneum—thus pain in passing urine, associated with frequency, may call attention to an inflamed pelvic appendix.

The shifting of a pain is often of value in localizing the lesion. Severe epigastric pain followed soon by tenderness and pain in the hypogastrium indicates an upper abdominal perforation. Severe hypogastric pain followed soon by pain at the top of the shoulder should suggest lower abdominal haemorrhage. Epigastric pain followed in a few hours by definite tenderness in the right iliac fossa usually indicates appendicitis.

The third area of the abdominal parietes—namely, the diaphragmatic—is the most interesting and the most neglected of the three. Inflammatory irritation of the central part of the diaphragm causes no pain which is felt locally, but it commonly leads to a not very acute pain felt in the acromio-clavicular region on the same side of the body. This pain is, of course, easily explained by the fact that the descending acromial and clavicular branches of the cervical plexus come from the same segments of the spinal cord as the phrenic nerve.

My interest in phrenic shoulder pain began in Mesopotamia during the war. I found that liver abscess was only accompanied by pain at the top of the shoulder when the abscess was threatening to penetrate the diaphragm. From a study of these cases I came to the conclusion that it was the diaphragm, and not the liver, which was the source of the referred pain. This led me to investigate cases of gall-stones to see if the textbooks were correct in stating that pain was felt at the top of the shoulder in such cases. Here again I found that this shoulder pain only occurred when there was inflammatory change near the diaphragm; next I found that it was a common symptom in cases of perforated ulcer of the duodenum, and from this the generalization as to its significance was easy. Similar investigations were about the same time carried out in Germany, but I did not see these till my own views were formed.

The localizing value of phrenic shoulder pain is considerable, and hardly a week passes without my finding it of use; it often gives the needed clue in unravelling a difficult case. When an abdominal lesion is accompanied by pain in the supraclavicular, supraspinous, or acromial regions it will generally be found that there is inflammatory irritation of the diaphragm on the side of the pain. There is also a correspondence between the position of the irritation and the part of the shoulder to which the pain is referred—that is, irritation of the front and back of the diaphragm causes pain respectively in the clavicular and supraspinous regions. The pain is not usually severe; it is often thought by the patient to be a rheumatic pain, and may not be mentioned unless inquiry be made; occasionally, there may be accompanying hyperaesthesia. This pain must not be confused with the subscapular pain often felt with biliary colic and other lesions. At the time of its development in the early embryo the diaphragm is in the cervical region, and only later do the heart and lungs push it down to its subsequent position; the relative positions of the diaphragmatic lesion and its referred pain are better understood by imagining that the migration has not taken place. The localizing value of such pain would then appear obvious.

Phrenic shoulder pain is of localizing value in a great variety of conditions. In three out of four cases of perforated ulcer it is present at some time or other; sometimes it comes on simultaneously with the abdominal pain, but occasionally a few hours later. With perforated ulcer the pain is generally felt in the right supraspinous fossa and acromial region, but it may be felt at the back of the neck. The general statement may be made that sudden severe right hypochondriac pain accompanied by collapse and by pain felt on the top of the shoulder is almost always due to a leaking duodenal ulcer. Pain here is seldom caused by cholecystitis, and hardly ever by uncomplicated biliary colic. The legend that gall-stone colic gave rise to pain at the tip of the shoulder arose in the days when operative confirmation of the diagnosis was not forthcoming, and has been perpetuated in the usual slack manner of textbooks from generation to generation. The clinical simulation of the one condition by the other may be extremely close.

A man, aged 41, who suffered from indigestion of no definite type, was seized with sudden acute abdominal pain on September 28th, 1922, but improved a little afterwards. When I saw him four days later, there was a tender lump at the anterior border of the liver in the region of the gall-bladder. The main feature in the case, however, was the severe pain felt all over the outer and superior aspect of the right deltoid region. The patient said the pain was so severe that he could not lie on the right arm. I thought the condition was most probably due to an inflamed gall-bladder, but at the operation I found between the liver and the diaphragm an enormous collection of bilious fluid, which came from a perforation of the duodenum.

In making a wrong diagnosis here I went against my own experience that severe shoulder pain is much more often due to a perforated ulcer than to gall-bladder conditions.

Six months ago a woman, aged 50, was seized with violent upper abdominal pain with collapse, and pain on top of the right shoulder. When I saw her, four hours later, she looked and felt *much better, there was resistance and tenderness in the right* hypochondrium, but no tenderness anywhere else in the abdomen; again I diagnosed cholecystitis with biliary colic. Four days later when I operated I found a recently sealed-up perforation of the duodenum, with a normal gall-bladder.

A medical friend of mine rang me up urgently saying he feared he had gall-stones, because he had right hypochondriac pain and pain at the tip of the shoulder. He said he thought it was gall-stones because as a student he had been taught that shoulder-tip pain meant gall-stone disease. As a matter of fact he had diaphragmatic pleurisy, and no evidence of abdominal trouble, but the case shows how erroneous teaching on this point still may be.

Phrenic shoulder pain is also of value in sudden severe intra-abdominal haemorrhage. In a young woman of child-bearing age sudden collapse with hypogastric pain and pain on top of the shoulders should lead to the suspicion of a ruptured ectopic gestation.

With peritonitis of any origin top of the shoulder pain generally indicates that the infection has reached the diaphragm.

A patient who had had an operation on the rectum developed peritonitis, which proved rapidly fatal. The day before she died she complained of pains on top of the right shoulder, which puzzled those in attendance. When told of this symptom at the necropsy I advised inspection of the top of the liver, and there, as I expected, was found a great deal of inflammatory lymph, which by its irritation of the diaphragm must have caused the pain.

Finally, attention must be directed to the important fact that even with serious advancing lesions acute pain often tends to become less acute. This may result from several factors. In the first place the stimulus may be lessened by the dilution of toxins by effused fluid, by the rupture of a distended viscus, or by the gradual localization and limitation of the lesion. Secondly, although the peripheral stimulus may be undiminished, there may be a fatigue of the reflexes which cause some of the pains. Finally, in toxic states the sensorium becomes dulled, and the patient is then no longer in a position to appreciate pain as he was in the early stages of the condition. It is often very difficult to locate the diffuse and uncertain pains of late acute abdominal disease; and the moral of that hardly needs pointing out—diagnose early.

MODERN COSMETIC PREPARATIONS.

THEIR CHEMICAL COMPOSITION, AND THE PATHOLOGICAL DEVELOPMENTS ATTRIBUTABLE TO THEM.

BY

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THE notes from which this paper is composed were made approximately a year ago; they were not intended for publication, but for my own information. A short article on cosmetics in the *British Medical Journal* of February 8th[1] stated that "information that would be gratefully received by our profession" would be that "revealing the composition of face creams of various kinds, and other secrets of the toilet." This article has prompted me to write the following paper, which will, I hope, give some of the required information. For financial reasons it has been impossible to buy many of the expensive preparations mentioned, and to have detailed analyses made; many of the formulae are therefore taken from the *Book of Receipts*[2] and from other sources mentioned in the text.

COSMETIC TREATMENT OF THE FACE.

It is of some interest to consider the cosmetic treatment of the face, as recommended by many shops, and to subject this line of treatment to a brief analysis. The majority of "beauty specialists" suggest that soap and water should not be used, but the face should be "cleansed" (*sic*) by the application of cold cream; any surplus should be removed with absorbent paper or a towel, and vanishing cream should then be applied. The toilet should be completed by the judicious use of a powder, which may vary in hue from green or mauve to pink or tan. At night the face is "cleansed" with cold cream or similar application, and a lotion or a "skin food," or both, is applied, and in many cases the lady goes to bed with a thick coating of the latter covering her face.

The superstition that soap and water are bad for the complexion probably arose in the days when toilet soaps contained an excess of alkali, and therefore did tend to irritate the skin. Nowadays, when soap-making has almost reached its zenith, it is only in exceptional cases that the skin of the face is irritated by toilet soaps. A good toilet soap does not contain more than 0.25 per cent. free alkali, an amount which does not irritate the majority of skins. Superfatted soaps contain approximately 1 per cent. of lanoline, which has the effect of counteracting any irritation caused by free alkali, and these are the best soaps for toilet use. Soaps containing coco-nut oil lather well in hard water, but the oil has an irritating effect, and these soaps should be avoided. True Castile soap is made with sodium stearates and olive oil, and is a good soap, but many of the cheaper varieties are made with coco-nut oil, and may have a deleterious effect on the skin.

"Transparent soaps are made by adding to the soap alcohol or glycerin, or sugar, to an amount that prevents crystallization, and holds the soap in a colloid state. This in no way damages its quality. Transparent soaps are usually cold made and are apt to contain an excess of free alkali, for in its absence the soap will not maintain its brilliancy. The only way to avoid this is by dissolving the soap in alcohol and resolidifying it by evaporation of the alcohol—an expensive process—so that, as a rule, only the best transparent soaps are free from an excess of alkali."—PUSEY[3]

If the patient complains that soap irritates the skin, inquiry should be made as to what soap is being used, and a superfatted soap should be ordered. In exceptional cases any good shaving soap, which is the most highly superfatted soap readily obtainable, may be recommended for cleansing purposes.

Cold Cream.

The formulae of cold creams vary considerably. The majority contain borax, and the following may be taken as typical examples:

A.	
White wax	lb.j
Liq. paraffin	Oij
Almond oil	Oij
Heat until wax is melted, then add:	
Borax	3j
Water	Oj
Misce.	

B.	
White wax	3ijss
Spermaceti	3ijss
Almond oil	3xxj
Anhydrous wool fat	3j
Melt, and add:	
Borax	3ij
Water	3x
Misce.	

H. S. Groat[4] states that "of the many formulae of this next class (that is, cold creams with an almond oil base) the following gives the most universal satisfaction:"

Ol. amygdalae dulcis	77
Lanum	15
Paraffin	18
Cera alba	18
Sodii biborate	1.5
Liq. hydrogen perox.	1.5
Ol. rosae geranii	0.2
Aq. destillata	27
Ol. rosae	0.1
Misce.	

Despite the fact that Groat's observations were made in 1915, there are many creams on the market whose formulae are slight modifications of the above. Groat also gives the two following as common formulae for cold cream:

Petrolatum liq.	120	Ol. ricini	120
Cera alba	40	Cetaceum	60
Aq.	40	Cera alba	15
Sodium biborate	1.4	Sodium biborate	1.5
Misce.		Ol. rosae, Ol. amygdalae dulc.	aa q.s.
		Misce.	

He points out that "there is a noticeable difference between cold creams made with and those made without borax"; *the former are always "whiter and fluffier and* seemingly not as greasy as the others, due to the uniting of the borax chemically with the palmitate, stearate, or fatty alcohol of the hard and soft basis." He qualifies this statement by pointing out that these reactions will occur only when the solutions are both heated to above 120° F.

There is certainly a difference in the consistency of cold creams which contain borax and those which do not, but I am advised by two authorities in chemistry that it is improbable that any chemical reactions of importance take place during the manufacture of these cold creams: in their opinion the constituents enter into that complex physical relationship known as emulsification, but in some cases a small amount of boric acid may be formed by chemical interaction.

Vanishing Creams.

A typical formula for vanishing cream is the following, which is a modification of pasta hamamelidis (*B.P.C.*):

Stearic acid	3ij
Glycerin	3ij
Sodii carb.	3iij
Aq.	3x

Melt the stearic acid and add to the hot solution of glycerin and sodium carbonate. Keep on a water-bath for one hour, stirring frequently. Add a little water from time to time to make up loss by evaporation, transfer to a water-bath, and add gradually:

Solution of witch hazel	3iv
Otto of rose	mxxx
Extract of violet	mxxx
Rose water to	lb.1

Stir until thoroughly mixed.

In this formula the stearic acid will react with the glycerin and the sodium carbonate to form stearin and sodium stearate, whilst some 13 parts of free glycerin will remain. Sodium stearate is, of course, a soap, while stearin is, to all intents and purposes, tallow.

Many other formulae are in use, but the majority contain an excess of glycerin, and a few also contain soft or liquid paraffin. It is interesting to note that, of two formulae which came to my notice, one contained approximately a drachm of casein in every ounce of the cream, while the other contained a small amount of agar-agar.

Pathological Effects Attributable to Cold Cream and Vanishing Creams.

The probable and possible ill effects of the frequent application of the preparations detailed above may be classified as: (*a*) deleterious effects caused by the chemical nature of the ingredients; (*b*) deleterious effects caused by the physical properties of the ingredients. The reader is reminded that any remarks made under these headings refer to the prolonged use of the preparations. This reservation is justifiable, because once a woman has taken the trouble to learn a beauty treatment the routine is usually carried on daily for some years.

The deleterious effects caused by the chemical nature of cold creams are slight. The creams are merely mixtures of oils, fats, and waxes, but a certain percentage of cold

creams contain liquid paraffin, which is a mixture of liquid hydrocarbons. Crude paraffin is known to have cancer-producing properties, but there is no *direct* evidence to show whether or not liquid paraffin possesses similar deleterious properties. Any irritant effect which the cold creams possess is definitely intensified by the successive application of vanishing creams, for while the stearin and the sodium stearate have but little action except to form a waxy bloom of soap *plus* tallow on the skin, the glycerin is absorbed by the skin, and, being powerfully hygroscopic, must considerably upset the metabolism of the superficial cells of the epidermis. This action is intensified by the mildly astringent action of the hamamelis, which will tend to precipitate the proteins in any cell with which it comes in contact. The glands of the skin must perforce suffer more than the cells of the epidermis, as once the creams reach the lumen of the glands the chemicals exert their action on the delicate secreting cells. In this connexion it will be remembered that the majority of rodent ulcers commence in the sebaceous glands, and it will be interesting to note whether during the next twenty years there will be a steady increase in the number of cases of rodent ulcer and epithelioma of the face in women, and whether we shall see more neoplasms of this nature in young women than is at present the case. Some patients are surprisingly susceptible to boric acid, and even a small amount absorbed through an abrasion of the skin may cause an acute generalized vesicular or scaly eruption. The boric acid in cold creams may therefore be an unsuspected source of mischief.

The physical effects of the use of vanishing and cold creams on the face are considerable. First, with the exception of the glycerin, none of the constituents are absorbed. A fatty layer is therefore left on the skin, which gives a waxy "bloom" to the cheeks and hides any defects of the skin. This is the only cosmetic value which the preparations possess. The fats block the sebaceous and sweat glands. Perspiration is interfered with, and the control of the skin temperature by the evaporation of insensible perspiration, and also the conduction and convexion of heat, is retarded. This causes the temperature of the skin to rise, and leads to a continued dilatation of the superficial blood capillaries, and eventually to the production of acne rosacea. The slight increase in temperature may also stimulate the activities of the *Demodex folliculorum*, and also of the morococcus of Unna, and any other organisms which may be present in the sebaceous ducts; as the majority of these organisms are resistant to mild antiseptics, the boric acid, etc., has but little effect on them. The formation of comedones is thus facilitated, and acne vulgaris may develop, especially if the patient is between 17 and 25 years of age.

Applications which Act by Irritation.

Of the various other cosmetic preparations on the market we may refer to "wrinkle removers" and "skin tighteners." These are of two varieties. The first variety consists of relatively innocuous ointments which may contain lard or lanoline, or both, and which have to be massaged into the skin. Their action depends entirely on the fact that massage causes contraction of the underlying muscles, and the wrinkles are thereby smoothed out. Their efficacy depends to a certain extent on the vigour with which they are applied. The second variety consists of irritant applications, and the majority of them are pernicious, as they are used chiefly by women over 45 to apply to the periorbital area, which is one of the sites of election of rodent ulcer. Two typical formulae are:

Zinc sulpho-carbolate gr.xx	Alum ... ... gr.x
Zinc oxide 3vj	Zinc sulphate... ... gr.v
Glycerin 3ij	Glycerin 3j
Rose water 3v	Tincture of benzoin 3j
Elder-flower water to Oj	Ess. of Eau de Cologne mxxx
Misce.	Distilled water to ... Oj
	Misce.

These lotions act by irritating the skin so that a reflex contraction occurs in the superficial muscles, whereby the wrinkles are obliterated. The last state of the patient who employs these lotions is invariably worse than the first, as senile changes and atrophy of the muscle fibres are hastened, and the wrinkles deepen and cannot be removed.

Lotions.

Various lotions are sold for cosmetic purposes; the majority of them are open to the same criticism as vanishing and cold creams. The following formulae are of interest.

Glycerin and Cucumber Lotion.

Beef suet	3ij
Prepared lard ...	3iv
Powdered curd soap	3iij
Borax	3j
Distilled water ...	3xviij

Strain through muslin and add:

Glycerin	3vj
Rectified spirit ...	3ss
Otto of rose... ...	mv
Oil of ylang-ylang...	mj
Essence of cucumber	3iv

Misce.

Elder-flower Milk.

Bitter almonds ...	3jss
Borax	gr.xxx
Glycerin	3ij
Elder-flower water to	Oj
Oil of ylang-ylang	mv

Misce.

Milk of Roses.

Blanched almonds...	3ij
Blanched Castile soap	3ij

Make a paste and add, previously melted together:

Spermaceti	gr.lx
White wax	gr.cxx
Almond oil	3ij

Mix; dilute with water t 19 oz., and add one ounce o essence of rose.

"*Skin Foods.*"

Various ointments are on the market and are sold "skin foods." They exert an emollient action, and th skin is stimulated by the massage with which they a applied. They are not, of course, absorbed. Care taken that they are not greasy, as it is believed th "grease makes the hair grow." The following are typic examples:

Liq. hamamelidis	5j
Ung. althcae*)	
Ung. cetacei)	āā5j
Ung. aq. rosae)	

Misce.

White wax	5jss
Spermaceti	5jss
Coco-nut oil...	3j
Wool fat	5j
Ol. amygdalae dulc.	5ij

Melt, and add:

Orange-flower water	5j
Tinct. benzoin simplex	mxij

Misce.

Like cold cream, this form of ointment softens the superficial cells of the horny layer and gives the face a smoot soft appearance, but these ointments are obviously open the objection that they tend to produce acne rosacea a acne vulgaris, and this is especially so because the "sk foods" are usually applied at night and the patient slee with her face plastered with them. It will be noticed th the last preparation contains coco-nut oil, which is de nitely a skin irritant.

Treatment.

The physician who ruthlessly forbids the use of the preparations may find his patient returning reproachful to him with an itchy red dermatitis of the face and nec and, as this dermatitis clears up as soon as she reverts her favourite "skin food," her confidence in her physici is, naturally, shaken. The explanation of the matter obvious. The normal skin does require an emollient keep the horny layer from cracking and becoming "chapped." This emollient is normally provided by the sebum manufactured by the skin itself. If, however, the sebaceous glands are continually blocked for several years with external applications they cease to function, and if the emollient applications are stopped it may take some weeks before the glands recommence to secrete. In some cases they never recover, much to the benefit of the "beauty specialist." It is therefore advisable, at the outset, to warn the patient that she may have ruined the glands of her skin by applying cosmetics, and that she may have to continue to use various creams for the rest of her life; the treatment should commence by gradually discarding the use of cosmetics, in order to give the glands time to recover. A spirituous lotion of mercury perchloride may be used for a few days to remove all traces of fats

* Ung. althcae, marshmallow ointment—a herbal remedy.

from the skin, and, as the "beauty specialist" would say, "to cleanse the pores." I suggest the following:

Hydrarg. perchlor.	... ...	gr.1/6
Glycerin	... .	3ss
Surgical spirit .	... ...	3ij
Aq	... ... ad	3i

Misce.

This lotion should be used with caution. If the patient perseveres in her refusal to use cosmetics, and avoids exposure to direct sunlight and cold winds for about fourteen days, the skin will become normal in the majority of cases, and the vicious circle engendered by the routine use of cosmetics will be broken.

The present trend of fashion seems to be that a woman considers she is looking her best if her skin is covered with a translucent layer of greasy substance. If the teachers in girls' boarding schools would prohibit the use of cosmetics we would be able to produce a race of women whose complexions were as good as those of men, but at present the possibility of this eventuality seems very remote.

The Hair.

Much ingenuity has been shown in devising shampoo lotions for the hair. The majority of these are harmless.

Hair-waving may be temporary or permanent. Either type of waving is comparatively innocuous, but as heat is employed in permanent waving fragility of the hair may result, and the patient may complain that the ends of the hair fray out, and that they break easily.

In regard to hair dyes: a considerable amount of research is being done by fully trained chemists in order to obtain a perfectly harmless dye which will be non-toxic to the patient, non-injurious to the hair, and which will "consist of two or three solutions of such a nature that, by adjusting the proportions of each, any and every possible shade can be produced."[4]

As nearly every English textbook of dermatology contains a phrase such as "the only duty of the dermatologist in regard to hair dyes is to warn his patient against their use," there is widespread ignorance in the profession on the subject. Before a dye is applied to the hair the sebum must be removed. This is usually done by washing the head, and thereafter applying an alkali—for example, sodium or potassium hydroxide or ammonia. If too much alkali is used a dermatitis of the scalp may occur, and the hair may be damaged. Leftwich[5] has shown that a solution containing 10 per cent. of ammonia decreases the tensile strength of hair by two-thirds, but that a solution containing 1.2 per cent. of ammonia has but little effect.

Dyes may be classified as being of two types: (1) those which are not absorbed into the cortex of the hair; (2) those which penetrate the cortex.

The first category includes kohl (antimony trisulphide), which was used by the Egyptians, but as the compounds of antimony are powerful irritants this preparation is no longer used. The modern form of kohl is finely ground carbon made up into a pencil with wax or paraffin. This is the common eyebrow pencil, and its use is obviously a dirty but innocuous habit. Iron sulphide is occasionally used to darken grey hairs. The hair is sponged with a solution containing ferrous sulphate; twenty-four hours later a lotion containing an alkaline sulphide—for example, $(NH_4)_2S$—is applied, and iron sulphide (FeS) is precipitated on the hairs. The alkaline sulphides have the property of dissolving keratin, and are used as depilatories; consequently, if the sulphide solution is too strong a regrettable accident may occur. A less nauseating but more dangerous way of obtaining the same result is by using solutions of lead acetate and sodium thiosulphate. It is obvious that if there are any abrasions on the skin there is a danger of absorption of the acetate, which, if the patient is pregnant, may have serious results. Lead dyes are usually sold as "hair restorers" for home use.

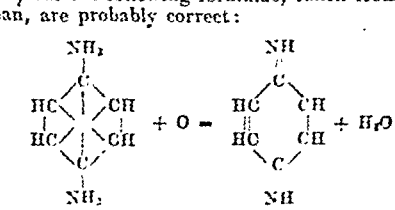
Silver dyes are also employed. They can be prepared to produce a range of shades from ash-blonde to black. The simplest method of employing these is to precipitate black sulphide of silver on the hair by the use of solutions of silver nitrate and alkaline sulphides. Another method consists in precipitating silver on the hair by the addition of a solution of pyrogallic acid to an ammoniacal solution of silver nitrate. This method is highly dangerous. Pyrogallic acid is a keratolytic, and is known to be able to cause a dermatitis in susceptible persons. An incidental disadvantage in the use of silver dyes is that some barbers use potassium cyanide to remove any traces of silver salts from the skin.

Dyes which penetrate the cortex of the hair include henna and the aniline derivatives. One can state emphatically that a pure henna dye is harmless. It produces an auburn colour, and is sometimes incorporated in shampoos. Many preparations on the market are mixed with aniline dyes, and are so compounded that any hue from light brown to black may be obtained. "Hennareng" is a mixture of henna with indigo, and is comparatively innocuous.

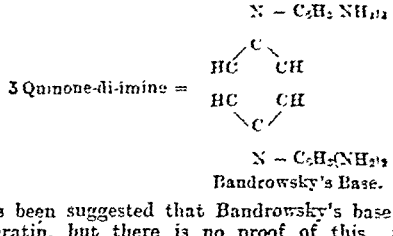
The Para-phenylene-diamine Dyes.

There now remains to be discussed a group of dangerous aniline dyes known collectively as "Para." These are used considerably, as they belong to the second category of dyes, and therefore are semi-permanent, and cannot be washed out. In addition, the hair may be waved after the dye has been applied, which for obvious reasons cannot be done after a precipitated "dye" has been used.

The dye of this class in common use is para-phenylene-diamine, which is generally used to dye the hair black. Para-toluylene-diamine and para-diamino-phenol are also frequently used in conjunction with para-phenylene-diamine to produce reddish, blonde, or ash shades. The exact chemical action of para-phenylene-diamine on the hair is unknown, but the following formulae, taken from Redgrove and Foan, are probably correct:



Para-phenylene diamine + Oxygen = Quinone di-imine + Water.



Bandrowsky's Base.

It has been suggested that Bandrowsky's base combines with keratin, but there is no proof of this. Schueller[4] has stated that quinone-di-imine is a substance which is toxic to the human skin, but that the pigment which is finally formed is non-toxic. Probably Bandrowsky's base is capable of causing toxic effects, because dermatitis of the neck occurs in susceptible persons who have worn furs dyed with these substances.

In order to achieve the oxidation of the para-phenylene-diamine the compound is mixed immediately before use with 15 or 20 volumes of hydrogen peroxide. Potassium dichromate, or potassium chlorate, mixed with a salt of vanadium is sometimes used as an oxidizing agent. To assist penetration of the hair a caustic alkali or ammonia is usually added. The dye is then applied to the hair by means of a brush, and approximately a quarter of an hour elapses before the correct colour develops. A wet shampoo is usually employed to remove any surplus dye.

So many accidents have occurred from the indiscriminate use of para-phenylene-diamine that the majority of barbers now employ a sensitization test, known as Sabouraud-Rousseau's test. The skin over the mastoid process is cleansed with alcohol, and the dye and its oxidant are applied. When the mixture has dried the area is covered with flexile collodion. After twenty-four hours the collodion is removed and the skin washed with soap and water. If the patient is sensitive to the dye a mild reaction will have occurred. Foan states that some of the leading French hairdressers advocate that this test should

also be made on the skin over the median basilic and internal saphenous veins, as experience has shown that some patients give a negative reaction behind the ear and a positive one over these last-mentioned areas. The probable explanation of this is that there has been some error in the application of the reagents to the skin behind the ear, so that oxidation has not occurred. A single application of the dye may sensitize a patient, and therefore the test should be applied on every occasion that the hair is dyed.

The toxic effects of para-phenylene-diamine may be classified as local and general. The local effects vary in intensity with the susceptibility of the patient and the form in which the dye is applied to the skin. For example, it is quite a common occurrence for a patient to come for advice with a blotchy erythematous dermatitis of the neck, and sometimes of the face, and to give a history that she tried on a series of furs in a shop. Half an hour later she noticed that her neck was itchy and red, but this soon passed off. The next day the fur was delivered, and in the full pride of possession she wore it for a short period. Within an hour or two the neck became red, itchy, and inflamed. In some cases vesicles form. The dermatitis arising from an hour's exposure to a fur dyed with "para" may, if untreated, last for as long as fourteen days. If the head has been dyed, and the patient is susceptible, an acute erythematous dermatitis of the scalp rapidly develops. Vesicles and bullae may form and rupture. The dermatitis spreads to the face and neck. The scalp may become "boggy" and oedematous, and periorbital oedema is a common occurrence. The patient commonly complains of headache, nausea, vomiting, and diarrhoea. The temperature may rise to 104°, and there may be a rigor. In very acute cases albuminuria occurs. These symptoms are due to two causes: (*a*) toxaemia caused by the acute dermatitis; (*b*) poisoning due to absorption of the dye.

The treatment is prophylactic (that is, avoid exposure to the dye) local, and general. In mild cases the dermatitis may subside if a simple calamine lotion containing 2 per cent. ichthyol is applied. In acute cases the hair should be cut as close to the scalp as possible, and calamine lotion with 1 per cent. ichthyol applied frequently on linen or gauze dressings, no oilsilk being used. It is most dangerous to attempt to remove the dye from the hair by the use of hydrogen peroxide or sodium thiosulphate, as these measures may only intensify the symptoms. I have found that the most efficient way of reducing the oedema of the eyelids is to use the following "drops":

R	Liq. adrenalin. hydrochlor.	mviij
	Sodii biboratis	gr.x
	Aq.	ad 3j

Misce. Sig.: Dilute with an equal quantity of warm water and use as "drops" for the eyes.

A third of a pastille dose of *x* rays will help to control the dermatitis. The general symptoms should be treated on the usual lines. As the majority of these cases result in legal proceedings, it is as well for the practitioner to ask the patient's permission to inform the barber who is responsible that an acute dermatitis has supervened, so that the case may be examined during the acute stage by the medical representative of the barber's insurance company.

Hair-bleaching.

Bleaching of the hair frequently precedes dyeing, for if the patient has had her hair dyed some months previously it is impossible to obtain a satisfactory coloration of hair which is grey in the proximal, green in the middle, and auburn in the distal thirds. The hair has to be made a single colour. Oxidizing agents—for example, sodium hypochlorite (which is sold as "eau de javel") and hydrogen peroxide (10 to 20 volumes)—are commonly used. The hydrogen peroxide is used in conjunction with ammonium hydroxide, as the latter removes sebum and also neutralizes any dilute sulphuric acid which may remain in the peroxide. Hydrogen peroxide has been shown by Leftwich[5] to have little, if any, deleterious action on the hair. Potassium cyanide and oxalic acid are both used as bleaching agents; their use cannot be too emphatically condemned.

Summary.

1. Various formulae for cold creams and vanishing creams have been considered and discussed. It has been shown that these may have an irritant effect on the skin, which may in time lead to the production of rodent ulcers and epitheliomata, and that these applications are prolific originators of comedones, acne vulgaris, and acne rosacea.

2. The formulae of irritant applications ("wrinkle removers") have been studied, and their effect in the production of neoplasms of the skin has been discussed.

3. Formulae for skin foods and lotions have been given, and a line of treatment for a skin ruined by the injudicious use of cosmetics has been indicated.

4. The hair dyes in common use have been briefly enumerated, special reference being made to the para-phenylene-diamine group of dyes. A brief account has been given of the signs, symptoms, and treatment of para-phenylene-diamine dermatitis.

It is my pleasant duty to acknowledge my indebtedness to Professor Dilling and Professor Hilditch of Liverpool University, and to W. E. de B. Diamond, Ph.D., for advice in regard to the problems in pure chemistry with which I have been confronted in the preparation of this paper. My thanks are also due to Mr. E. W. Lucas and Mr. H. B. Stevens for permission to publish formulae A and B and the formulae for vanishing cream, wrinkle removers, and the various lotions, all of which are taken from their *Book of Receipts*; also to Mr. H. S. Redgrove, B.Sc., A.I.C., and Mr. G. A. Foan, who have allowed me to make full use of their book *Blonde or Brunette?* the standard book on hair dyes and hair dyeing (Heinemann (Medical Books) Ltd.).

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A CASE OF RUPTURED OVARIAN PREGNANCY.

BY

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LATE OBSTETRIC RESIDENT, GUY'S HOSPITAL.

THE case here recorded provides definite proof of a pregnancy occurring in the ovary. E. W. Riches,[1] in a recent publication, relates that "Lockyer, reviewing the literature from 1910 to 1917, found records of 22 genuine cases. Prior to 1910 there were recorded, according to a German estimate, 33 cases, and according to an American estimate only 19. Since 1917 a further 29 cases have been recorded

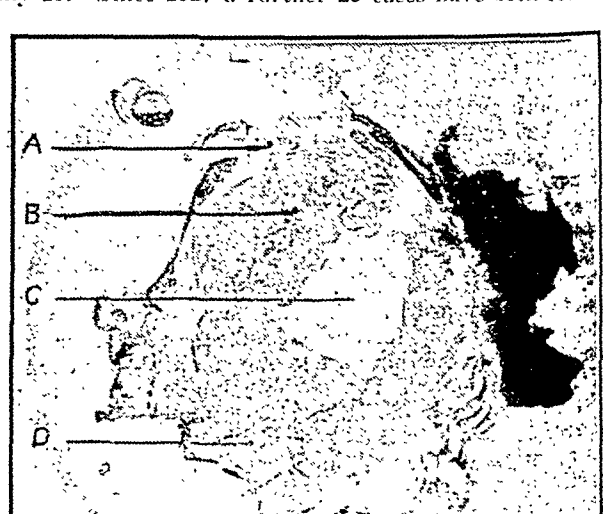


FIG. 1.—A, Corpus luteum; B, chorionic villi embedded in blood clot; C, amniotic cavity; D, blood extravasated through wall of cyst.

by various authors, making a total of 84 cases in all." This case, with Riches's, brings the total of recorded cases to 86.

N. A., aged 35 years, had had three previous normal pregnancies, her youngest child being 4 years of age. Her periods occurred at two- to three-weekly intervals, and lasted three days

A period finished on April 26th, 1928, and on May 26th she had a sudden attack of pain, simulating labour pains, in the hypogastrium and passing through to the back, and which lasted thirty-five minutes. Eleven days later, on June 6th, she experienced a second attack, which continued on and off for two days, gradually lessening in intensity till she came to Guy's Hospital and was admitted on June 8th.

On admission the temperature was 98.4° F., respirations 20, and pulse 105 per minute. The general condition of the patient was poor, the haemoglobin was 46 per cent. She complained of severe abdominal pain below and to the left of the umbilicus. On



FIG. 2.

pelvic examination there was *guarding of the abdominal muscles over the right* and tenderness in both iliac fossae. On vaginal examination the external os was found closed, the uterus was anteverted and normal in size and consistency. Through the right lateral fornix a *smooth lump the size of a tangerine orange* was felt in the position of the right ovary. A scanty clear watery discharge was present but there was no evidence of any uterine haemorrhage whatsoever. A diagnosis of ectopic gestation was made.

On June 15th the patient began to lose blood per vaginam; by the 18th however, her general condition had greatly improved, and the haemoglobin had risen to 64 per cent.

A laparotomy was performed on June 18th. On opening the abdomen through a right lower paramedian incision the peritoneum was found to contain blood clot which filled the utero-vesical pouch. The uterus, left ovary, and tubes were perfectly normal. Attached to the lateral half of the right ovary was a firm blood clot the size of a small tangerine orange. The ovary was cut across and the right half, with the attached blood clot, removed. The remaining clots were cleared out from the peritoneal cavity, and the abdomen closed without drainage. The patient made an uninterrupted recovery, and was discharged on July 9th.

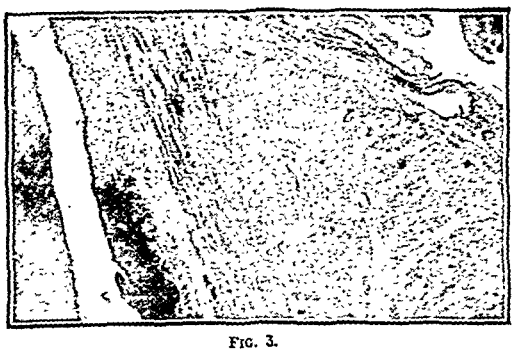


FIG. 3.

Description of Specimen.

The specimen consists of a spherical mass 5 cm. in diameter, and having half the ovary attached to its outer surface. This outer surface is for the most part smooth, and formed by a membrane in which ramify several small blood vessels. Showing through this covering is dark blood clot, and in one place (opposite to the ovarian tissue) there has occurred a rupture of the sac with haemorrhage on the exterior.

Examination of the cut surface (Fig. 1) shows quite definite ovarian tissue containing at its lower edge a recent corpus luteum. The luteal cells are thinned out over the mass of blood clot, which can, in fact, be aptly described as *haemorrhage* occurring into a corpus luteum cyst. In the centre of the clot is a somewhat irregularly shaped amniotic cavity filled with a homogeneous transparent substance, but unfortunately revealing no trace of any embryo. Dotted about in the blood clot between the wall of the sac and the amniotic cavity are several small white areas, and these, on microscopical examination, are seen to consist of typical chorionic villi (Fig. 2). Fig. 3 shows the characteristic arrangement of luteal cells and the wall of the corpus luteum in direct continuation with the wall of the cyst.

There seems to be no doubt from the specimen that this is a case of pregnancy following impregnation of a Graaffian follicle, and that the developing corpus luteum was thinned out by the growing sac. The two attacks of severe pain can be explained by a consideration of the specimen. The first doubtless occurred when the haemorrhage took place into the cyst and the gestation sac; the second when the distended cyst ruptured into the peritoneum.

I have to thank Dr. J. J. Conybeare and Mr. A. J. McNair for permission to publish this case, Dr. J. W. Shackle for preparation of the photomicrographs, and Mr. R. C. Brock for assistance in compiling the description of the specimen.

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THE ADVANTAGES OF A PORTABLE THERMOSTAT FOR BLOOD TRANSFUSION.

BY

GEOFFREY SHERA, M.A., M.B., B.CH.CAMB.,

CONSULTING PATHOLOGIST TO THE EASTBOURNE HOSPITALS AND TO THE EAST SUSSEX COUNTY COUNCIL.

REACTIONS after blood transfusion can be negligible, mild, moderate, or severe; they are generally regarded as unpleasant for the patient, but otherwise harmless unless due to some form of incompatibility, a contingency not, however, under discussion in this article. Whether a reaction after transfusion has any beneficial effect is a *moot point. Protein shock*, as we know from Vines's work,[1] does in fact shorten the coagulation time, and a brisk reaction after blood transfusion may act similarly. I know from experience that a single transfusion had a continued and most beneficial action in a case of purpura haemorrhagica in shortening the coagulation time and bleeding time and increasing the platelets, but this particular transfusion was unaccompanied by any appreciable reaction beyond a very short rigor lasting seven minutes and a rise of only 1° F. On the other hand, I have seen reactions so serious as to endanger life from the point of view of myocardial disturbance in splenic anaemia with haematemesis, in secondary anaemia, and in pernicious anaemia. After performing a number of transfusions I have come to the conclusion that these severe reactions, which are characterized by (1) pyrexia over 103° F., (2) a severe rigor lasting twenty minutes or longer, (3) myocardial disturbance, with arrhythmia and feeble pulse, requiring stimulants, and (4) prolonged after-sweating, were closely associated with failure to warm the blood sufficiently beforehand, and to keep it sufficiently warm during the transfusion. One case in particular impressed me in this way.

A man with very severe, sudden, and repeated haematemesis from duodenal ulcer required two transfusions on successive days. At the first, owing to the urgency of the situation and to help from assistants none of whom had ever seen a transfusion, the blood was kept far from warm; the result was a severe reaction, which was probably rather dangerous to the heart. On the next day, when a second transfusion was given, the blood was kept warm throughout the operation in warm water periodically and persistently renewed. The result was a reactionless transfusion with excellent results.

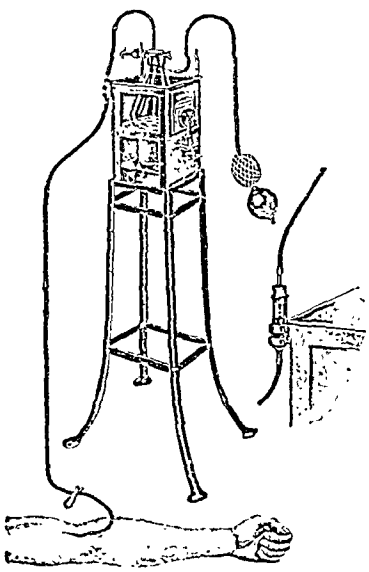
Reviewing my first fifty transfusions, I find a record of severe reactions mostly among the earlier ones, but no less than 20 per cent. showed severe rigors lasting twenty minutes or longer. In 4 per cent. there were severe and really dangerous cardiac disturbances after transfusion, associated with the rigors and prolonged for some hours afterwards. The onset of these reactions was thirty to forty-five minutes after the transfusion. Pyrexia over 103° F. occurred in 14 per cent., and prolonged after-sweating also in 14 per cent.

In practice, I found that to keep the blood at a proper temperature by adding warm water to the basin in which the flask was immersed and stirring continually was tiring to the nurses and time-wasting, necessitating the services of two people at least, sometimes more, since one became tired of holding the basin. Keynes[2] in his excellent monograph gives no very specific directions on this point, except that "the flask may be stood in a basin of warm water to keep it at body temperature." Inasmuch as, later on, he says that in certain cases—for example, of secondary anaemia, where there is a plethora of fluids—"a half to three-quarters of an hour must be occupied in giving 500 c.cm. of blood" (with which I entirely agree) —that is, forty-eight to seventy-two minutes for 800 c.cm. in a bad case—anyone who has had experience of blood warming in this way will realize the extreme irksomeness of keeping the basin at the right temperature for over an hour, not to mention the shifting of the flask, with the risk of bumping it against the basin—difficulties increased enormously in a private house.

Oswald Robertson,[3] in the classical report on "Wound Shock and Haemorrhage," commenting on this point, remarks, "the bottle is restoppered and placed in a glass jar containing water at a temperature of 106°-107° F. (41° C.). If the water is maintained at this temperature, and the bottle is occasionally agitated, the blood becomes warm in a few minutes." True enough, but keeping it at an even temperature is almost impossible by manual means with any degree of accuracy. It seemed to me, therefore, high time that a thermostat should be used —that is, an automatically regulated water-bath, such as is used in the laboratory for Wassermann tests, but adapted for this type of work.

The Thermostat.

With the collaboration of Messrs. Charles Hearson and Co. I have evolved a convenient thermostat or water-bath, which is easily portable; it is supported on a stand of the necessary rigidity and height. A collapsible stand has been, for the moment, ruled out, on account of the essential rigidity required. The stand can be introduced into the average car for transport quite easily, and the trouble of taking it to the bedside is well repaid by the convenience of having an anchor and support of just the right height.



My mode of operation is as follows. The blood is drawn into one flask and filtered into another through several thicknesses of gauze. This filtration eliminates any minute clots, which rarely, but dangerously, occur during even the best conducted bleedings. Meanwhile the thermostat has been either lighted, or the current has been turned on and the water warmed; it is a help to start with the apparatus half full of water at about the right temperature (42° C. or 107° F.). The bath has a transparent window, which is turned towards the operator, so that he can see the level of the blood. The flask is lightly clamped in, since otherwise it would rise up owing to buoyancy; the transfusion is not begun until the temperature remains constant at 42° C., which takes a few minutes. This temperature allows two degrees drop during the transit of the blood down the tube to the patient, and sufficient length of tubing is essential to comfort in working. The bath is remarkably constant, the operation of the thermostat being excellent, whether for oil or electricity. Oil is essential for general purposes and for random transport, but for installation in one building electricity is preferable. If the whole apparatus is in use when anaesthetics are being administered (a very rare occurrence, inasmuch as transfusions are usually given either before or after op tions) care must be taken to stand the apparatus away from the head of the patient.

Advantages of having a Thermostat.

1. One, if not two, assistants are dispensed with. whole transfusion can be carried out unaided if necessa
2. The blood is guarded from disturbance.
3. It arrives at the patient at the right temperat constantly throughout the transfusion, however long.
4. Reactions become negligible, assuming that the c test has been carried out properly; cardiac reactions abolished, pyrexia is reduced to practically *nil*, while ri are rare or absent, and are very mild if present.

In my experience, the case for the transfusion ther stat is so obvious as to be incontrovertible.

The apparatus is supplied by Messrs. Charles Hearson and of 27, Mortimer Street, W.1, to whom I am indebted for n help; and also by Messrs. Down Bros., St. Thomas's Street, S.

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SEPTICAEMIA OF UNCOMMON ORIGIN.

BY

D. IVAN GRACEY, M.B., B.Ch.,

LATE MEDICAL OFFICER, MALAYAN MEDICAL SERVICE.

SEPTICAEMIA due to *Bacillus pyocyaneus* is of somew uncommon occurrence. Stitt[1] states that this organ has until recently been considered rather harmless, that this view can no longer be maintained, as it frequently the sole cause of middle-ear inflammatic intestinal disorders, cystitis, and possibly at times septicaemia. Park and Williams[2] conclude that, altho ordinarily but slightly pathogenic for man, it may, un certain conditions, as in general debility, become dangerous source of infection.

B. faecalis alkaligenes is a normal inhabitant of intestinal tract, and haematogenous infection due to t organism is rare. Stitt[3] mentions that it has been isola from a few cases which resembled typhoid fever. Castell and Chalmers[4] state that it may produce a fever resembl enteric, and that vaccines have been tried in a few ca but no definite results have been obtained so far. H Zinsser and Russell[5] quote a case of severe gastro-enter due to it, but add that it cannot be considered pathoge as a rule.

The following three cases, admitted to the Pen General Hospital, present some points of unusual interes

CASE I.

A male Anglo-Indian, aged 25, was admitted on September 1 1929, with a history of irregular fever for six weeks; he been treated in another hospital for one month, but had before he was well, and his condition had relapsed. His bl was there stated to be negative for malaria. On admission temperature was 99.4° F., and the pulse 90. The heart and lu were normal. The abdomen was flaccid, but showed no tension, and the spleen was not palpable. A blood film negative for malaria. The urine contained a faint trace of albu and a few pus and epithelial cells. *B. pyocyaneus* was gr in pure culture from the blood in forty-eight hours, but cultu of the stools, urine, and sputum were found negative five d later. The Widal reaction was negative.

Cough and profuse expectoration of greenish material occur two days after admission, accompanied by impairment of reson and crepitations over the right lower lobe of the lung. There w no rigors, but the patient complained of feeling cold and shiv Distension of the abdomen and enlargement of the spleen fingerbreadths below the costal margin appeared on the fifth with severe epigastric pain. The pyrexia continued for thirty- days before the temperature finally reached normal, the high point being 104° F. Constipation was a troublesome feature. testinal antiseptics, such as salol and dimol, and colonic irrigati with sodium bicarbonate or yatren, at different periods, seemed have no influence on the course of the disease; quinine also no effect. Easton's syrup, given as a simple tonic when temperature showed signs of abating, appeared to do some go The patient was discharged fit on November 7th.

CASE II.

A married Tamil woman, aged 26, was admitted on July 6 1929, with a history of fever and vomiting for three days, pain in the lower part of the left side of the chest; she had

amenorrhoea for six months. No cause could be found for the pain in the chest; the heart and lungs were normal, the abdomen showed no tenderness, and the spleen could not be felt. The temperature was 100.6° F., and the pulse 100. The blood was negative for malaria, and the urine contained a faint trace of albumin and some triple phosphates. The uterus reached just above the level of the umbilicus, and there was no vaginal discharge.

A premature male child, which only survived two hours and weighed 1 lb. 12 oz., was born five days later. The placenta and membranes were complete; the lochia were never offensive, and the uterus involuted normally. The temperature remained high, the pyrexia being sometimes continuous and sometimes intermittent. Rigors occurred at intervals. Metastatic abscesses formed in the right thigh and left side of the neck, and were incised. Pain was again felt in the lower part of the left side of the chest, accompanied by cough and expectoration. Dullness with diminution of the breath sounds was found, but this improved for a time with an expectorant mixture and the application of antiphlogistine.

On September 4th fluid was aspirated and found to be sterile on culture. A slight leucocytosis of 12,000 per c.mm. was present. Blood was withdrawn for culture on the same date, and *B. faecalis alkaligenes* was isolated. Intravenous injections of neutral acriflavine and colloidal iodine were given, and some improvement in the temperature and general condition was noted, but only for a time. Two weeks later the patient's condition became much worse, the temperature rising to 105° F.; blood culture was repeated on September 27th; *B. faecalis alkaligenes* was again isolated and a vaccine prepared. The Widal reaction was negative. On October 16th a dose of one and a half million organisms was injected followed after four days by a dose of two million. A moderately severe reaction occurred after the first injection, and definite improvement set in. The temperature subsided gradually, and remained normal after the second injection. The patient asked to return home, and was discharged well on October 26th.

Case III.

A mail European planter, aged 22, was admitted on July 21st, 1928 with a history of pain and swelling of the scrotum for four days accompanied by high fever; he strenuously denied any venereal infection. He had had a swelling of the right knee one week previously due to an injury at football, and malaria in 1927. On examination intense tenderness and marked swelling of the right testicle was found, and, to a less extent, of the epididymis the cord was much thickened and tender. There was no urethral discharge nor sore, and a prostatic examination was negative. The temperature was 102° F., and the pulse 92. Examination of the blood and stools was negative. The urine was alkaline and contained triple phosphates, but was otherwise normal.

There was continuous pyrexia, which subsided by lysis on the twenty-seventh day. An abscess of the testicle developed two weeks after admission, and was incised under general anaesthesia. The patient felt and looked remarkably well during the course of his illness, but headache, severe testicular pain, and obstinate constipation were all troublesome as regards treatment. Dimol and hexamine were administered, but did not seem to have any appreciable effect. When the temperature had subsided convalescence was uneventful, and the patient was discharged well on September 8th, 1928.

A direct smear from the urine showed no pus cells or gonococci, and culture for *B. coli communis* was negative. Blood culture gave a pure growth of *B. faecalis alkaligenes* on July 22th, and the same organism was isolated in pure culture from the pus of the testicular abscess. The Widal reaction was positive to *B. typhosus* 1 in 200 on August 8th, and one week later showed a reduction in titre to 1 in 50. As the patient had not been inoculated against enteric this may have been due to group agglutination. The Wassermann reaction was negative.

The infection in the first patient almost certainly had its origin in the intestinal canal, and was severe and prolonged for such an organism. The second case was interesting owing to its extremely lengthy course, the isolation of the organism concerned on two separate occasions at over three weeks' interval, and the remarkable response to vaccine treatment. Infection, evidently, had been sustained prior to admission. In the case of the third patient the most striking feature was his excellent general condition throughout, in spite of a fairly severe infection. An opportunity was afforded of examining him recently, and no atrophy of the testicle was found.

I have to thank Dr. H. O. Hopkins, Government Pathologist, Penang, who carried out the laboratory investigations.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

A POSSIBLE CASE OF PSITTACOSIS.

In view of the recent outbreak of psittacosis the following case may be not without some interest.

On February 16th I was called to see a young woman, aged 32, who had been taken ill five days previously with a rigor and a sudden blinding headache, and went to bed. She was extremely prostrated, and vomited several times. Hoping she would feel better, she rose on February 14th, but grew worse, and went to bed again. When I saw her she was very ill. She then had a short, dry, persistent cough, a headache which she described as agonizing, a sore mouth, the tongue covered with thick, brownish fur, a slightly sore throat, and complete anorexia. Her face was of a peculiar yellowish pallor, eyes sunken and half shut, expression dull. The reflexes were sluggish. There had been no epistaxes, the spleen was not enlarged, and there were no adventitious sounds in the lungs. The abdomen was slightly distended; constipation was a prominent feature from the beginning, and she complained of a slight ache in the lumbar region. Insomnia was very troublesome, and remained so until late in the illness. The urine showed nothing abnormal. The temperature was 103° F., the pulse only 90, and the respiration rate normal. The temperature, pulse, and respiration ratio remained practically constant throughout.

I suspected typhoid fever, and on making inquiries as to whether she was a contact I found that she had been nursing enteric cases in Las Palmas for the past three years. She said she had only returned to England a fortnight previously, and added that she had been immunized against typhoid and paratyphoid A and B. Further questioning elicited the information that during the voyage home she had had a pet parrot in her cabin with her, and had fed and kept it clean herself. No mouth-to-beak feeding had taken place, but the bird used to perch on her shoulder; it was reported to be in good health. Agglutination tests for the colon-typhoid group on February 17th were negative in all dilutions. In view of the patient's statement about immunization, this was surprising, but it turned out that, as is common in Continental countries, she had taken the immunizing substance orally, this producing local immunity in the bowel only, and not forming agglutinins in the blood.

She grew steadily worse, was collapsed and weak, and intensely depressed. On February 19th the headache was slightly better, but the patient was so weak that she could hardly move her head on the pillow, and she seemed slightly confused mentally, taking an appreciable time before answering any question. On the same day she complained of a slight pain in the left side; the chest, however, was still clear, though the cough was as troublesome as ever, and the spleen was not palpable. On February 20th the headache was better still, but she seemed even weaker, and had developed a mask-like facies. In the evening Dr. S. C. Dyke, honorary pathologist at the Royal Hospital, Wolverhampton, was kind enough to see her with me, and found a small, dull patch at the right apex, and some crepitations could be heard. Pain in the left side was now marked, but the spleen was still not palpable. He considered the case extremely suggestive of psittacosis, but as the bird, which had been left in Liverpool, was perfectly healthy, and in view of the marked toxaemia and collapse, he suggested a possible apical pneumonia, and took blood to see if a count would confirm the finding. The white count was as follows, however, practically putting pneumonia out of court. *Total white count:* 9,100 per c.mm.; *differential count:* polymorphs 65 per cent.; lymphocytes 29 per cent.; monocytes 5 per cent.; eosinophils, none seen; basophils 1 per cent.

On February 21st the headache had gone, the temperature was down to 99° F., the dull patch at the right apex had decreased in size, and the spleen was now palpable and very tender. The improvement continued, the temperature falling by lysis, and by February 23rd the dull patch at the right apex had disappeared, the cough, which had been unproductive throughout, became much better, and the spleen was no longer palpable, though there was still tenderness in the left side. Dr. Dyke saw the patient again on February 24th, and expressed the opinion that, clinically, it was a clear-cut case of psittacosis, even though the parrot remained healthy. Agglutination tests repeated on February 27th were again negative. The temperature was subnormal on March 3rd, and did not again rise above normal, but convalescence was long-drawn-out, and marked features were profound depression, a mask-like, Parkinsonian expression, and a persistence of the furring of the tongue till late on.

I regret that I could not get permission to have the parrot in the case examined, but the question arises. Is it possible for an apparently healthy bird to be a carrier of the disease? I understand that some success has followed the injection of the serum of persons lately inoculated with T.A.B. vaccine, in cases of psittacosis, but I was unable

to find such a person, and treatment was merely symptomatic. I should be interested to know, however, if this means that persons who have had T.A.B. inoculation are themselves immune to psittacosis. If so, my patient has cause to regret her merely oral immunization against typhoid fever.

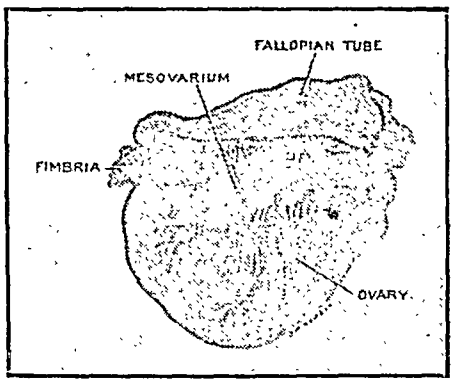
My thanks are due to Dr. Dyke for his help and his great interest in the case.

Wolverhampton. A. V. RUSSELL, M.B. Ch.B.

TWISTED OVARIAN CYST IN A CHILD.

THE occurrence of torsion of an ovarian cyst in a child aged 8 is sufficiently rare to justify its being recorded.

The history of the onset is curious. During the evening of December 6th, 1929, a thunderstorm occurred. The child, being frightened, knelt on a couch and hid her head under a pillow, thus being practically in the genu-pectoral position. Immediately she rose from this position she felt a sharp pain in the left side of the abdomen in its lower half. The pain continued throughout the night; it was aching in character, and severe enough to



interfere with sleep. The next day she was kept in bed, and after vomiting three times felt better. However, the pain shortly returned, and commenced to pass across the abdomen from left to right in spasms, a little below the level of the umbilicus. The aching pain was present between the spasms.

On the third day the pain became localized at a point opposite the pelvic brim on the right side. On the same day pain was felt also at the end of the act of micturition, and continued up to the fourth day, when the patient was seen. The bowels were opened daily without any difficulty or pain.

Four days after the commencement the temperature was 100.8° F., the pulse 126, and the respiration rate 22. The lower half of the abdomen moved very little with respiration, and there was rigidity and tenderness here, more marked on the right side than on the left. The most tender spot was opposite the pelvic brim, low down on the right side. The urine was normal. A rectal examination was not performed. A diagnosis of acute appendicitis with pelvic abscess was made, and the child was operated on at once.

The abdomen was opened through a short paramedial incision below the umbilicus, and on passing two fingers into it a tense cystic swelling the size of a large hen's egg was felt in the left side of the pelvis. This proved to be a left ovarian cyst, which was twisted twice in a clockwise direction, and was bent over towards the right side of the pelvis. The pedicle was very broad, consisting of the broad ligament and Fallopian tube. The cyst, Fallopian tube, and the greater part of the broad ligament were quite black and becoming gangrenous. After undoing the twist, the cyst was easily delivered from the abdomen, and it was removed together with the gangrenous pedicle. The appendix was then excised and the abdomen closed without drainage.

The child made an uninterrupted recovery, the temperature becoming normal by the end of the second day. She was discharged fourteen days after the operation.

There are several unusual features about this case. The first of these is the early age of occurrence; then there is the unusually broad pedicle and the fact that it was gangrenous. Another interesting feature is that the greatest pain and tenderness were on the right side of the abdomen, which, taken in conjunction with the history, exactly simulated acute appendicitis.

I wish to thank Sir Arthur Keith for his kind assistance, for the drawing of the specimen, and for his permission to use it. The specimen is now in the museum of the Royal College of Surgeons.

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F.R.C.S.,
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Reports of Societies.

MENTAL FACTORS IN ORGANIC DISEASE.

A MEETING of the Devon and Exeter Medico-Chirurgic Society was held on April 24th, with the vice-presiden Dr. J. R. HARPER, in the chair. The president, Dr. F. ROPER, read a paper on possible mental factors in organ disease.

Dr. Roper described a case of encephalitis lethargi under his care; the patient, a child, besides having be under medical observation from the time of the illne eight years ago until the present, had also been close investigated by a psychologist. One of the conclusions the exhaustive report by the latter was that "though may appear to the medical mind a heresy to suggest i yet on psychological grounds it would appear that th unhappy child took flight into encephalitis lethargica an expedient to escape from an intolerable situation. In the examination of the problem arising from th finding—the particular problem of encephalitis lethargic and the general problem of the possible influence emotional states in determining susceptibility to oth infections—Dr. Roper cited other cases from his experien which appeared to be on the borderline between t functional and the organic, and others plainly organ where, however, an emotional basis seemed extreme probable. The recent monograph by Newsholme on th subject also included many cases of these types, and t views therein contained, though highly speculative a accordingly put forward with appropriate diffidence, y opened up a vista of increased knowledge if the tests future experience should substantiate them. Persiste mental strain, especially if firmly controlled, must le eventually to fatigue phenomena, in the first place fatig of nervous tissue. If sufficiently prolonged or severe su strain might render certain changes irremediable whi at an earlier stage were fully remediable. Moreove apart from direct stimuli from nerve cells under the conditions, there were the possible effects on the rest the body tissues, both neural and somatic, of the produc of the katabolism of such cells carried to them by t blood stream. When the nursing mother was under t influence of mental strain her milk was modified, an according to some, even rendered toxic, so, similarly, mu all secretions, such, for instance, as those of the nasopharyn and often of the alimentary canal, not to mention t tissues themselves, be changed. Levaditi found that t virus of encephalitis lethargica was present in an atten ated form in the nasopharyngeal secretion of certa perfectly healthy subjects. This virus in a more virule form could attack deeper structures of epiblastic origin, f instance the brain. Was it not possible that the chang in nerve cells under strain not only rendered them mo liable to attack, but by their effects on the quality of t nasopharyngeal secretion rendered possible the exaltati of a pre-existing saprophytic virus into a virulent strai capable of attacking the immediate subject and of infecti others with similarly weakened barriers? Apart also fr these considerations of infection the work of d'Here and Twort had indicated that if cells were attacked und certain conditions by bacteria they could react by splitti off a living entity—an "enzyme" or "bacteriophage perhaps—capable of propagation and transmission. If su bodies were produced by bacterial attack, could not oth intimate attacking agents such as, in the case of ner cells, severe emotional strain, conceivably bring about like result? Dr. Roper thought that such inter-reactio between the soil and seed, as well as actual events a factors, of nervous origin and largely resulting from t individual's make-up, were not only possible, but probabl further arguments from epidemiology were adduced su porting the hypotheses. On some such lines as these might be hoped eventually to bridge the gap betwe medicine and psychology, for most psychological scho nowadays postulated a biochemical basis for even the fin mechanisms of mind. The *mens sana in corpore sano* w only a partial statement unless it implied equally *corp sanum in mente sana*.

Dr. J. R. HARPER said he had seen a considera

number of cases of encephalitis lethargica, but the majority had been of a mild nature, and no notes on the condition prior to infection had been obtainable. He described a case where Parkinsonian symptoms had developed two years subsequently to a fracture of the skull. He also quoted cases where the physical signs had cleared up entirely after the acute stage, and raised the question as to what period of time must elapse before the child could be said to have escaped the risk of Parkinsonian sequels. Dr. R. WORTHINGTON recalled the novel of the Victorian era in which the hero, or heroine, was so frequently struck down by "brain fever" at a moment of intense crisis. Although the advances of pathology and bacteriology had tended to ridicule emotional disturbance as a factor in the production of inflammatory reaction, nevertheless it was possible that there was some justification for the earlier beliefs. Dr. Worthington added that apparently the lesions produced by influenza opened this gate to the virus of encephalitis lethargica, and he asked Dr. Roper if he intended to lead up to the view that depression of nerve tissue might invite the virus from healthy tissues, and thus cause injury to the brain. For example, a blow on the head might bring about loss of vitality, and permit a staphylococcus to gain entry in the same way as osteomyelitis could be originated in the long bones by trauma. Could mere psychological depression act in the same way by preparing the soil so that a virus could attack nerve tissue? Dr. SOLLY commented on the comparative immunity of the general public to infection either by the meningococcus or the virus of encephalitis lethargica. The virus concerned in the encephalitis which followed *small-pox might be*, not a direct influence, but rather a stimulator of the causal agent of the infection. Dr. G. I. THORNTON mentioned the possible association between varicella and herpes zoster, the latter so frequently occurring during an epidemic of the former as to demand an explanation other than that of mere coincidence. In view of the recent cases of encephalitis reported as following vaccination, and the similarity in the lesions of varicella and small-pox, Dr. Thornton asked Dr. Roper if he had personal experience of the herpes association—a definite expression of nerve implication, and hence important in this connexion.

Dr. ROPER replying, said that Dr. Worthington had interpreted his views correctly as regards a psychological factor in preparing the way for the entry of virus. He had not had sufficient experience of encephalitis lethargica to express an opinion as to the question of the stage when immunity from symptoms could be guaranteed in any given case. From his own experience he was able to quote cases where mere coincidence could not explain the association of herpes during an epidemic of varicella.

PRESERVATION OF THE EYESIGHT.

AT a meeting of the Brighton and Sussex Medico-Chirurgical Society, on May 1st, with the president, Dr. W. BARRINGTON PROWSE, in the chair, Mr. C. H. BRYANT read a paper entitled "The common-sense care of the eyes."

Mr. Bryant opened by remarking that regulations provided for the systematic testing of the eyes of school children, the establishment of clinics for the treatment of minor ailments, the supply of goggles for workers in dangerous trades, and regulations for the effective lighting of workshops. The approved societies administered "ophthalmic benefit" to those certified by panel practitioners as requiring glasses. Children often showed marked optical inequality, which might be the result of trauma *in utero*, caused by the cord or foetal fists. Injury by forceps at birth should not occur, but it was not uncommon; injuries after *birth might* be avoided by the nails *being kept short*, since infants had a habit of clawing their faces. Mr. Bryant strongly deprecated the excessive looking at picture books while children were in the nursery stage, as he was of opinion that this accounted for a large number of the children who were found to be myopic when they attended school. Squints could also be attributed to this, and pictures should be placed on the nursery walls and ceiling. Squint was a surgical emergency because, if untreated, it frequently resulted in one eye becoming amblyopic. The speaker said that children should be taught the alphabet as soon as possible so that their vision could be tested; any who showed a tendency to myopia should be educated *viva voce*, and not be allowed to read; he also advocated education by means of the cinema and gramophone, which offered great possibilities. The common custom of sending the boys out to play games and then, when tired, being put to two or three hours' work, often in winter in artificial light, was deprecated from the educational point of view, and also as being very dangerous for the eyes. Myopia was incurable, and condemned the patient to wearing glasses all his life; it was advisable that optical defectives should consult a specialist before deciding on an occupation. Myopes were liable to retinal detachment, but this was rare under the age of 20, and infrequent in both eyes. Feeble illumination and faulty positions were often responsible for nystagmus and vertigo. Many modern incandescent lights and fires emanated rays which irritated the eyes, and some protection should be afforded. Even in adults bodily debility increased the liability to myopia when the eyes were excessively used for near work; for this reason bedridden invalids should not be allowed to read or do needlework too much, and it should be borne in mind that spectacles did not prevent the wearer from becoming more myopic. Glasses should fit well and be worn straight. Town dwellers would probably avoid styes, meibomian cysts, and conjunctivitis if they habitually used an eyewash, antiseptic drops, or ointment. Goggles, being a complete protection from most common eye injuries, should be worn more generally in dangerous occupations.

ABERDEEN MEDICO-CHIRURGICAL SOCIETY.

AT a meeting of this society on May 1st, with the president, Dr. CHARLES FORBES, in the chair, collections of recent pathological and anatomical specimens from various university departments were demonstrated. Dr. R. D. LOCKHART exhibited a series of dissections to show the comparative anatomy of the larynx, nasal cavity, and palate in man (foetal and adult), the seal, horse, sheep, dog, and cat, paying particular attention to the varying degree of coaptation between the epiglottis and the palate. He also showed a detachable model of the larynx, consisting of fifteen separate structures, to illustrate anatomical details and relations of importance in operative procedure. Mr. I. J. CUNNINGHAM presented a series of specimens of the intestinal tract of rats obtained during nutritional experiments on these animals fed solely on cow's whole milk and traces of metallic elements. After the animals had lived and grown on this diet in apparently normal fashion for a few months a considerable increase in the size of the stomach and caecum was noted. It was suggested that the greatly increased bulk of food necessary to support growth caused this adaptation in the gastro-intestinal tract: the condition was observed so regularly that it seemed probable that some relation between the size of the stomach and caecum to the bulk of food could be established by definitely planned experiments. Comparison of the specimens with the gastro-intestinal tract of normal animals demonstrated the degree of hypertrophy in the stomach and caecum. Dr. JOHN GRAY demonstrated two specimens of carcinoma of the thyroid gland. In one case the neoplasm arose from aberrant thyro-glossal tissue and had invaded the left vagus nerve. He then exhibited a specimen of congenital aneurysm of the base of the brain where there was evidence that the earliest haemorrhage had caused pressure on the third left cranial nerve. The first clinical sign in the case had been paralysis of the muscles of the left eye. Death had been due to extensive subarachnoid haemorrhage. Four specimens of cerebello-pontine angle tumour were also exhibited; in their symptomatology, defect of vision had been an unexpectedly early and marked feature. Professor ALEXANDER LOW showed the upper extremity of a recently discovered prehistoric skeleton where some pathological processes had resulted in synostosis of the radius and ulna. The ulna included the capitulum in its articulation with the humerus. Dr. ALEXANDER LYALL described a rapid and simple clinical method for the estimation of blood sugar. To 1.8 c.cm. distilled water in a test tube, 0.2 c.cm. blood was added, followed by 1 c.cm. picric acid, and the whole was shaken and filtered. The filtrate was made alkaline with 0.15 c.cm. of a 10 per cent. solution of sodium hydroxide, and boiled. The depth of the resulting red picramic colour could be estimated colorimetrically, and the blood sugar value read from a scale. Dr. Lyall demonstrated the method with specimens of normal and diabetic blood, and said that results by this method compared favourably with those found with the usual laboratory methods. An estimation of this type could be quite easily carried out where no laboratory aid was available.

Reviews.

PERNICIOUS ANAEMIA.

OWING to the recent great advance in the treatment of pernicious anaemia, the book[1] recently published by Dr. DAVIDSON and Professor LOVELL GULLAND of Edinburgh is very welcome. The discovery of "liver treatment," which must always be associated with the name of Whipple from the physiological side and Minot from the practical side, does not really represent a sudden break through, but the culmination of a steady attack from many sides on this very interesting disease and others which resemble it. It is for much more than the complete exposition of the new treatment that this book can be read with profit, since the whole story of slowly advancing knowledge in the past years is set out in perspective.

Pernicious anaemia is a disease which has always been of absorbing interest to clinicians ever since its original description by Combe, Addison, and Biermer. This was long before, as may be justly emphasized here, the discovery by Ehrlich in 1881 of the methods of staining blood cells, which founded the new science of haematology. So complete has been the revolution brought about by Ehrlich's staining methods that medical students, until very recently, could scarcely think of blood cells except in terms of the stains of Jenner, Leishman, or Giemsa. It is fortunate that the new methods of Doan, Cunningham, Sabin, and others have brought us back to the study of living and unstained or supravital stained cells, and in the book under review the drawings of Capell bring out the value of these newer methods clearly. With the development of Ehrlich's staining methods the histology of the whole haemopoietic system was systematically explored, and the different types of "red" and "white" cells were differentiated and given names. Thus the blood picture and the changes in the bone marrow in pernicious anaemia were gradually worked out. The part of the picture which gave rise to most discussion was the characteristic erythroblastic reaction of the bone marrow, and two schools disputed whether this reaction represented merely a great proliferation of normal red cells in response to urgent demand, or a definite disease or abnormality of the bone marrow itself. It soon became realized also that blood destruction, as proved by deposition of haemosiderin pigment in the liver, spleen, and kidneys, was an essential feature of the disease.

All these historic points are dealt with fully by the authors, and the work of Dr. William Hunter is very rightly given due credit. Hunter made one mistake, which it is easy enough to correct now, although this in no way detracts from the merit of his experiments. More recent work has shown that when blood destruction is induced experimentally anywhere in the animal body, haemosiderin is deposited chiefly in the liver, spleen, and kidneys. The sites of the haemosiderin deposits in pernicious anaemia do not therefore prove that the blood destruction occurs in the gastro-intestinal or portal tract, although they are not contrary to such a possibility. The authors deal fully with the importance of recent work on the products of blood destruction, and particularly with the question of bile pigment metabolism. It is now fully recognized, with the help of the van den Bergh reaction, that the lemon-yellow colour of the skin in pernicious anaemia is a real but latent jaundice, and during the active stages of the disease the van den Bergh reaction is always positive. With all these points cleared up an attack on the various aspects of the disease began anew. A notable advance in diagnosis, at first slowly realized by clinicians, but now come into its own, was the work of Price-Jones on the measurement of the diameters of red cells, and the development of his now well-known "curves." With this, and other methods of analogous kind, many doubtful diagnoses may at once be cleared up. Another point of diagnostic importance in pernicious anaemia is also well considered by the authors, which is fortunate, because many clinicians are still unaware of it. This is the marked "shift to the right" in the Arneth count of the polymorphonuclear leucocytes, and this work is largely due to Cooke of Wigan. In pernicious anaemia the number of polymorph leucocytes containing nuclei with 3, 4, 5, or even more lobes, is much higher than in normal blood, but it must be noted that this phenomenon occurs in sprue and a few other diseases.

It is impossible to deal in detail with all the eleven chapters in this book, and it would be invidious to try to find faults. There certainly exists no more complete account of the disease. The authors have wisely drawn their illustrations, many of them in colour, from well-known workers on various aspects of haematology, including Cooke Cappell, Cooke, McCluskie, Muir, Piney, Price-Jones, and Sheard, and the result is admirable. The book is so complete that every physician must profit by reading it, and its price (25s.) is reasonable.

[1] *Pernicious Anaemia.* By Leybourne Stanley Patrick Davidson, M.D., F.R.C.P.Ed., and George Lovell Gulland, C.M.G., LL.D., M.D., F.R.C.P.Ed. London: H. Kimpton. 1930. (Roy. 8vo, pp. xii + 293; 8 figures, 22 plates. 25s. net.)

BESREDKA ON IMMUNITY.

Immunity in Infectious Diseases[2] consists of a collection of reviews or studies on a variety of subjects, all more or less bearing on the subject of immunity, which Professor BESREDKA has published from time to time, principally in the *Bulletin* of the Pasteur Institute. The science of immunity is still in the early stages of its evolution, and in consequence, as the author points out in the preface, anything in the nature of a didactic treatise on the subject soon becomes out of date—in fact, it may even be so before it is published. Perhaps that is the reason why none of the essays here reproduced have been brought up to date, but it does not seem to be a very good one. Had these studies represented the evolution of an idea there might have been some excuse for the policy adopted by the author; but they do not, and it is hard to see what value a discussion of such a subject as "One streptococcus or many" can have which was written in 1904 and contains no reference to subsequent work, or a chapter on streptococcic serotherapy which only takes account of work published prior to 1909. The same applies to the other chapters which, with the two already mentioned, form the first half of the book. The rest of the volume is made up of Professor Besredka's more recent contributions to the subject of immunity: sensitized vaccines, oral immunization against typhoid and dysentery, the function of the skin in infection and immunity, and immunization by the cutaneous route by means of culture filtrates (antivirus). Much of this work is familiar not only to immunologists, but to clinicians also, for the use of antivirus, particularly in the treatment of coccal infections, has been a much-discussed subject in medical journals of late. Besredka's views have not met with general acceptance, and in this country the therapeutic use of antivirus has proved of little or no value in the hands of the majority who have tried it. It is true that he is able to cite a wealth of clinical evidence, coming very largely from the Latin countries of Europe, testifying to the efficacy of this form of immunotherapy, and Chapter X contains some illustrative examples. But we may be pardoned, perhaps, for thinking that some of the observations are more the outcome of enthusiasm for the method rather than a critical trial of it.

The translation leaves here and there a good deal to be desired. It is frequently too literal, and is marred by such terms as "anticolytic," which can only be understood by reference to the context. One does not speak of haemolysins being "paralysed" by serums, or of "acting on microbes with substances as anodyne as possible," though what is actually meant may be guessed. In one instance a doctor suffering from a boil on the nose, and who had tried the effect of a local application of antivirus overnight, noted next morning that his nose was no longer "incandescent"; one can imagine his relief. This book may be of some service to those who are already well grounded in the subject of immunity, and wish to acquaint themselves with Professor Besredka's views, but to the beginner it could be of little value.

[2] *Immunity in Infectious Diseases.* By A. Besredka. Authorized translation by Herbert Child, M.R.C.S., L.S.A. London: Baillière, Tindall and Cox. 1930. (Demy 8vo, pp. v.i + 364. 18s. net.)

CHEMICAL ASPECTS OF IMMUNITY.

IN preparing the new American edition of *The Chemical Aspects of Immunity*[1]—one of the series of monographs published by the American Chemical Society—the author, Professor GIDEON WELLS, follows the arrangement of the first edition published in 1925, but adds a full account of the work done during the past five years. The subject-matter dealt with in this monograph—the physico-chemical laws that govern the immunity reactions—bristles with intricate problems, and, though these are occupying workers all over the world, progress is necessarily slow. In every growing science there is a need for periodic stocktaking; facts gathered rapidly over a wide field may soon get out of hand. The value of Professor Wells's monograph is that it clears the way for further progress by assembling the established facts in an orderly and logical manner.

Among the problems on which new work has been done may be cited the influence of lipoids and carbohydrates on antigenic activity and specificity, and the manner in which antigens may be modified by chemical reagents. Progress has been achieved also in the purification of antigens and antibodies, and Professor Wells records some remarkable quantitative results. For example, purified diphtheria toxin has been obtained of which the minimum lethal dose for a guinea-pig is 0.28 microgram. Similarly, a unit of antitoxin appears to consist of a fraction of a microgram. A unit of haemolysin in pure state is only a few micrograms. Even these figures are eclipsed by those obtained in anaphylaxis, for this condition can be induced in a guinea-pig by 1/20 microgram of cristalline egg albumen. These figures are interesting and significant because they indicate one of the chief difficulties of the subject. The quantities of active substance involved are so infinitesimal that it is seldom possible to say whether an action which is produced by a substance that appears to be chemically pure may not be due to a trace of impurity present in quantities far too small to detect by chemical means. Those who are impatient at the slow progress made in elucidating the fundamental processes in immunology should remember that workers in this field have to deal with systems far more complex than those studied by the physical chemist.

"BORDERLINE" RAYS.

THE English translation of Dr. GUSTAV BUCKY's monograph *Grenz Ray Therapy*[2] is welcome, in that it gives a useful introduction to a recent development in radiotherapy. As their name implies, the Grenz or "borderline" rays occupy a position in the range of radiations between the ultra-violet and *x* rays, their wave-length being in the region of 1–3 Angström units.

To the first half of the book, devoted to physical and physiological considerations, Dr. Otto Glasser contributes a clearly and concisely written chapter on physics and apparatus, but the other chapters, notably those on the history, evolution, and guiding principles of Grenz ray therapy, are padded and somewhat involved. Similar criticism may be applied to the chapters on biological and clinical aspects of the subject, for these, too, while containing much that is of interest, are prolix and reiterative.

The chapter on the results of Grenz ray therapy in skin conditions is interesting. Without pretending to be other than tentative, it gives a list of diseases to which the method has been applied, indicates the doses used, and reports the results, whether good or bad. This, the really important chapter, occupies but twenty of the 170 odd pages of the book. Much more detail would have been of value here. Notably good results are reported in dermatitis herpetiformis, eczema of various types, rodent ulcer, naevus flammeus, and pruritus ani and vulvae. It is difficult to reconcile the results in rodent ulcer with the extremely feeble power of penetration possessed by the rays. The "half value layer" of skin for the average Grenz ray is in the region of 0.5 mm.: only 10 per cent. of the incident dose reaches a depth of 3 mm. If these initial results are confirmed by later experience, they indicate a remarkable selective action of Grenz rays on this type of carcinoma. Again, the author reports "good clinical results in six cases of tinea capitis," without depilation. The details are scanty, and only one case was followed up. The results, however, would imply a direct fungicidal action of the rays, such as is not possessed by *x* rays or thallium acetate. It is a pity that this matter, too, has not been pursued further. In a brief chapter on the treatment of internal disorders successful results are claimed in such diverse conditions as peptic ulcer, polycythaemia rubra, hypothyroidism, virilism, neurasthenia, menopausal arthritis deformans, asthma, whooping-cough, enlarged thymus, angina pectoris, myocardial degeneration, and, finally, spastic constipation. An imposing array!

In spite of the above criticisms, some of which the author discounts beforehand in a modest preface, this book, coming as it does from a pioneer in Grenz ray therapy, will be of interest and value to all interested in this form of radiotherapy.

ANTHROPOMETRY OF SCHOOL CHILDREN.

WHILE this country is notably lacking in modern statistics on the weight, height, etc., of its school children, America continues to produce many interesting studies of the "nutritional states," and the latest contribution to this subject is Dr. RAYMOND FRANZEN's *Physical Measures of Growth and Nutrition*.[3] This volume is the second of the School Health Research Monographs, and the author is director of research of the American Child Health Association. The material from which the anthropometrical analysis is made consisted of 7,509 elementary school children in seventy cities scattered over thirty-eight states. Besides crude weight and height many other measurements were made, including shoulder breadth, chest breadth and depth, girth of the upper arm, calf, and special measurements of subcutaneous tissue made possible by "subcutaneous tissue calipers." Most of the methods here described are too complicated for ordinary use—for example, in school clinics—nor does there seem to be much to be gained by such a detailed study for ordinary purposes. The first chapter is mostly concerned with showing how hopeless are the ordinary estimates of doctors in dealing with the nutritional states of children, and, in contrast, the rest of the book fairly bristles with mathematics to show how accurate such estimates can be made by measurement. The immense labour which has gone to the making of this book is of course commendable, and possibly some practical application of the results obtained will be found. For the moment the presentation of all these facts and figures is overwhelming, and the phraseology is throughout extremely difficult to follow and very "American" in style.

ANNALS OF MEDICAL HISTORY.

THE March number of the *Annals of Medical History*[4] contains seven articles dealing with very different subjects and periods, ranging from Roman architectural hygiene to the medical wisdom of Nathaniel Hawthorne, who did not "want to be a doctor and live by men's diseases." In the intervening pages there is much to interest the reader; under the heading of "Sons of Apollo" Dr. C. Jeff Miller gossips pleasantly about medical men who have written poems and verses; Dr. Carroll Camden, jun., analyses Elizabethan astrological medicine, and in much the longest article in this instalment Mr. Sonoma Cooper gives a fully annotated account of the school of Montpellier in the fourteenth century. In the article on the Irish School of Medicine, accompanied by portraits of John Cheyne on the cover and William Stokes on the frontispiece, Dr. J. Duffy Hancock devotes most of his space to the contemporaries

[1] *The Chemical Aspects of Immunity.* By H. Gideon Wells, Ph.D., M.D. Second, revised and enlarged edition. American Chemical Society Monograph Series. New York: The Chemical Catalog Company, Inc. 1929. (Med. 8vo, pp. 285. 6 dollars.)

[2] *Grenz Ray Therapy.* By Gustav Bucky, M.D., New York. Translated by Walter James Highman, M.D., New York. New York: The Macmillan Company; London: Macmillan and Co., Ltd. 1929. (Demy 8vo, pp. xii + 170, 40 figures. 15s. net.)

[3] *Physical Measures of Growth and Nutrition.* By Raymond Franzen, Ph.D. Being No. II of the School Health Research Monographs. New York: American Child Health Association. 1929. (6½ × 9¼, pp. xii + 173; illustrated. Paper cover, 1 dollar; cloth, 1.25 dollars.)

[4] *Annals of Medical History.* New Series, vol. ii, No. 2, March, 1930. Edited by Francis R. Packard, M.D. New York: P. B. Hoeber Inc.; London: Baillière, Tindall and Cox. (8 × 11¼, pp. 135–243; illustrated. Subscription in Great Britain £2 5s. per volume of six numbers.)

of Sir Dominic Corrigan, and records that, when a candidate for membership of the Royal College of Surgeons of England, the only question Corrigan was asked was "Are you the author of the essay on the patency of the aortic valves?" Dr. Hancock's contribution forms an admirable sequel to Professor Riesman's article on "The Dublin medical school and its influence on medicine in America," which appeared in the *Annals* in 1922. Another favourite subject with medical historians on both sides of the Atlantic is John Coakley Lettsom, and rightly so, for he had many points of contact with the United States of America; he was the first to send Jenner's vaccine lymph across the ocean, to Benjamin Waterhouse of Cambridge, Massachusetts, and, as recently pointed out in the *Annals* by Sir StClair Thomson, he provided Dr. Benjamin Rush with the seeds of the mangel-wurzel. In this number his relations with Jonathan Carver, the explorer of the Middle West, are set out by Dr. Victor C. Jacobsen. Among the reviews, always a pleasant feature, is an appreciative notice by Professor Thomas McCrae of Dr. Winslow's life of Hermann M. Biggs.

NOTES ON BOOKS.

The Life of Hermann M. Biggs,[7] by Dr. C.-E. A. WINSLOW, contains a captivating account of one who for the first ten years of his professional life was a pathologist, teacher, and practitioner, and then became a health administrator, with teaching and the practice of medicine as subsidiary activities. Besides being one of the foremost New York consultants in internal medicine, Biggs made the following contributions to the public health programme during his service with the New York Health Department: (1) the establishment of the laboratory; (2) the introduction of diphtheria antitoxin for prophylactic as well as therapeutic purposes; (3) the administrative control of tuberculosis; (4) the development of a scheme for the protection of child health, which included the control of midwives, the reduction of infantile mortality, the supervision of day nurses, and medical inspection of school children; (5) the promotion of rural health services; and (6) the control of venereal disease by the provision of laboratory tests for gonorrhoea and syphilis. Dr. Winslow emphasizes the point that Hermann Biggs was the most internationally minded of American health administrators. He paid frequent visits to Europe, where he took part in medical congresses, including the annual meetings of the British Medical Association. In London his fame has been perpetuated by the carving of his name on the façade of the London School of Hygiene and Tropical Medicine with those of twenty other sanitarians. Dr. Winslow's sympathetic biography is illustrated by numerous portraits of Biggs at different stages of his career and his contemporaries. A bibliography of Biggs's contributions to scientific and popular literature is appended.

We have received the entirely rewritten second edition of *Psychiatrie du Médecin Praticien*,[8] by Drs. DIDE and GUIRAUD. The book has been brought thoroughly up to date, and the authors have felt it desirable to accord more space than in the previous edition to the exposition and discussion of the most important recent contributions to psychiatry in France and other countries. The volume deals adequately with the clinical, pathological, therapeutic, and medico-legal aspects of psychiatry, and is sufficiently comprehensive to meet the needs of the student and medical practitioner. We have no doubt it will maintain the popularity which the first edition achieved.

The volume of clinical lectures by Dr. CONSTANTIN BACALOGLU,[9] professor of clinical medicine in the University of Jassy, contains 27 addresses, 16 of which are in Rumanian and 11 in French. The first lecture deals with the life of Laennec, and the second with medicine of the past compared with the present day, while the remainder are devoted to disorders of the circulatory system, especially angina pectoris, and blood, and hydatid disease. An introduction by Professor Emile Sergent of Paris is prefixed to the work.

Plant Biology,[10] by Dr. H. GODWIN, is based on lectures to first year medical students, and is intended to be a textbook primarily for their use. As principles have been selected that are likely to have a direct application to later and more specialized medical work, Dr. Godwin pays special attention to the physiology of the green plant, of bacteria and fungi, and to the chemistry of simple organic substances, as a preparation for animal physiology. Lucid and is given on such themes as crystalloids and olism of the higher plant, photosynthesis, yeasts, green algae, root, stem, and leaf. Another textbook, dealing with the economic aspects of the subject and addressed particularly to the honours student, is *Recent Advances in Plant Physiology*.[11] Mr. BARTON-WRIGHT urges the importance of research in plant physiology for its economic values, and surveys its progress from 1918 to 1929, discussing critically some of the more important papers that were published during that period in regard to the soil and water relations of the plant, transpiration, carbon assimilation, and nitrogen metabolism. The chapters of most general interest are those on respiration and the physiology of growth. Without deprecating the value of either of these books, it is possible to feel the need of a third book on the subject, with an approach neither entirely informative nor economic, but more comprehensive and synthetic in weaving plant physiology into the general scheme of biology.

A number of papers contributed by workers in the Connaught laboratories of the University of Toronto to British, Canadian, American, and French periodicals, from 1926 to 1928, are been collected and published as a third volume of studies.[12]

[7] *The Life of Hermann M. Biggs*, M.D., D.Sc., LL.D., Physician and Statesman of the Public Health. By C.-E. A. Winslow, Dr.P.H. Philadelphia: Lea and Febiger. 1929. (6½ × 9¾, pp. xv + 432; illustrated. 5 dollars net.)

[8] *Psychiatrie du Médecin Praticien*. Par M. Dide et P. Guiraud. Deuxième edition. Paris: Masson et Cie. 1929. (5½ × 9, pp. 466; 8 plates. 45 fr.)

[9] *Clinica Medicale*. De Dr. Constantin Bacalogiu. Jassy: "Presa Buna." 1929. (6½ × 9½, pp. xv + 470; illustrated.)

[10] *Plant Biology*. By H. Godwin, Ph.D. London: Cambridge University Press. 1930. (5½ × 7½, pp. ix + 265; 67 figures. 8s. 6d. net.)

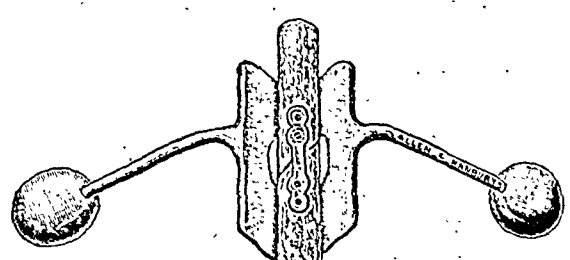
[11] *Recent Advances in Plant Physiology*. By E. C. Barton-Wright, M.Sc.Lond. With a foreword by Professor R. Ruggles Gates, Ph.D. London: J. and A. Churchill. 1930. (5½ × 8½, pp. xii + 352; 49 figures. 12s. 6d. net.)

[12] *Studies from the Connaught Laboratories, University of Toronto*. Dr. J. G. Fitzgerald, Director. Vol. iii, 1926–1928. Toronto: University of Toronto Press. 1929. (Med. 8vo, pp. 331; illustrated.)

PREPARATIONS AND APPLIANCES.

RETRACTORS FOR BONE-PLATING.

MR. MAURICE G. PEARSON, M.B., F.R.C.S. (Durban), writes: The accompanying illustration shows a pair of retractors made for me by Messrs. Allen and Hanbury's Ltd. They have been in use for the last two years, and I have found them a great convenience, particularly in plating the shaft of the femur through the anterior incision described by Henry. Owing to their slightly clawed edges, which meet behind the linea aspera,



and to their weighted outer ends, they are self-retaining. When they are in place, with the towels tucked round outside of them, they leave nothing exposed except the necessary length of bone including the fracture. The risk of infection or laceration of soft structures is minimized, and the fixation of the plate is easier because the exposure is so complete. There is no difficulty in applying them; they "stay put" until removed, and their weighted outer extremities tend to lift forward the bone and restore its natural anterior bow.

AN AUTOMATIC ASPIRATING SYRINGE.

We have received from Bayer Products Ltd. (19, St. Dunstan's Hill, E.C.3) a sample of the "Behring-venule," which is an automatic syringe designed for the withdrawal of blood and other body fluids for pathological investigation. The venule consists of a stout glass tube from which the air has been removed. It is plugged by a special indiarubber cork in which is an ingenious valve connected with a hypodermic needle sealed to a glass tube. For use the tube covering the needle is filed and broken off, the needle is inserted into a vein, and by pressure the valve mechanism is opened so that the fluid enters the container; when sufficient fluid has been withdrawn the valve automatically closes. Special venules are provided containing sterile ox bile, sodium taurocholate, citrate, or fluoride, and other agents. In another type the fluid or pus collected is led on to an agar slope. These tubes can be obtained in packages conforming to the Postmaster-General's regulations for the transmission of pathological specimens, and accompanied by a wrapper for postal dispatch. They are also issued without this packing, in corrugated cardboard cartons containing twenty or one hundred.

RADIUM TREATMENT OF CANCER.

LECTURES BY PROFESSOR MURDOCH OF BRUSSELS.

PROFESSOR JOHN MURDOCH, head of the clinic of radiology in the Faculty of Medicine at Brussels University, and editor of the *Journal belge de radiologie*, delivered two lectures in London last week, one at a general meeting of the Fellows of the Royal Society of Medicine, with Lord Dawson in the chair, when the subject was "The radium treatment of cancer," and the other at the British Institute of Radiology, with Dr. N. S. Finzi presiding.

In his lecture before the Royal Society of Medicine Professor Murdoch said that all new methods of treatment passed through periods of exaggerated acclaim alternating with periods of equally exaggerated scepticism. Some radium institutes, however, had now been sufficiently long in existence to furnish statistics of a satisfactory kind; it was remarkable how similar were the results obtained in various clinics, although the methods used were entirely different. His lecture would be confined to those types of cancer in which the technique was more or less fixed—namely, epitheliomas of the skin, cancer of the tongue, and cancer of the uterine cervix. The various forms of treatment employed included external applications at certain distances from the skin, interstitial radiation by needles, intracavital applications, and distance treatment with the radium "bomb."

Cancer of the Skin.

In cancer of the skin the superiority of radium over *x*-ray therapy had been demonstrated. The reason for such superiority, whether due to the shorter wave-length of the gamma rays, or to the fact that radium was continuously applied for several days while *x* rays were applied only for short periods, was not very clear, nor was it known whether there was any essential difference between the biological effects of *x* rays and of radium when the time of application was identical. According to some research carried out at Brussels, it seemed probable that in order to produce the same amount of biological reaction, such as the erythema dose in the case of the skin, it was necessary to apply to the tissues a much larger amount of energy in the form of gamma rays than in the form of *x* rays, the proportion was about 4 to 1.

When it was necessary to limit radiation strictly to the part, on account of possible danger to adjacent structures, interstitial radiation by needling was employed. When the lesion was larger and situated in regions easily accessible, radium tubes, disposed in a carefully calculated manner, were mounted in a mould of Columbia wax, which was adapted to the shape of the part. Cures had been obtained in about 80 per cent. of cutaneous cancers of the face and lips, and in about 50 per cent. of the deeply infiltrated varieties, these last including a large number of inoperable cases. Cancer of the skin was never too large or too far advanced for radium therapy.

Cancer of the Tongue.

Cancer of the tongue was a condition most willingly handed over to the radium therapist by the surgeon, because surgical intervention caused an extensive mutilation, or operation might be contraindicated for other reasons. Even if operation was successful, local and glandular recurrences only too often took place. Whilst treatment by radium had not completely changed the aspect of this problem, yet even a slight improvement on the surgical results was a great boon to the patient. Cancer of the tongue was not a radiosensitive variety, and the radiosensitivity of the glandular metastases was even less than that of the primary lesion. After the first treatment acquired radio-resistance was very marked, and he preferred to resort to diathermy rather than to a second treatment with radium, although such second treatment might be useful. *X*-ray therapy of the tongue involved difficult technique; there was danger that the rays might injure the salivary glands, and also produce other damaging effects. Owing to the bad results obtained by deep *x*-ray therapy, preference was given to local radium treatment.

The methods of radium therapy of cancer of the tongue had been modified considerably. The introduction of radium into the tumour itself was the method now generally adopted, this interstitial radiation being applied by needles of platinum. Capillary glass tubes with emanation had been used, but a large proportion of the beta rays passed through, and the selective action of the gamma rays was entirely lost. Although the results obtained by Janeway and Quick were interesting, the speaker did not think the method had any future. His own method was to place in the growth platinum needles 1 cm. from each other containing radium element. This needling was quite easy when the lesion had developed at the margin or back of the tongue; it was more difficult, or even impossible, when the growth was situated at the base. The results of radium treatment of cancer of the tongue at the lecturer's clinic showed that in about 50 per cent. of all cases the local lesion could be cured.

Cancer of the Cervix Uteri.

Cancer of the uterine cervix was one of the first deep cancers to be successfully treated by radium, the good results being due primarily to the anatomy of the part, which was specially favourable to the disposition of the agent. *X*-ray methods had also reached in this condition a high degree of perfection, especially in Germany. Far from being opposed to each other, the two methods were probably destined more and more to be used together in the future. Definite statistics of the cures of cancer of the cervix uteri should include only such cases as had been under observation for five years following treatment. The method used in Brussels was the intracavital one. Radium tubes were introduced into the uterus and vagina, and to this was added transcutaneous irradiation by *x* rays. The disadvantages of the inter-titial method were the difficulty of disposing the needles correctly and of judging the size of the tumour.

Before the patients were admitted to treatment they had to undergo special examinations by the surgeon and the radiologist, and they were watched for twenty-four hours before the application of radium to ensure that there was no fever; only when the temperature was normal was treatment begun; dilatation of the cervix itself sometimes caused a rise of temperature. A simple apparatus had been devised, consisting of a small tube of aluminium, the walls of which were provided with grooves to ensure drainage; this enabled the radium tube to be inserted into the uterus with the minimum of dilatation. The intrauterine tube was left *in situ* for nine days, and the tubes in the vagina for five days. The absorption of quantities of energy equal to eight times the erythema dose to the skin—the maximum dose which could be applied to the skin with safety—produced no exaggerated reaction in this region. Trans-cutaneous irradiation with deep *x*-ray therapy was applied one month after radium treatment. An apparatus of 186 kilovolts constant tension was used, with a filter of 0.5 mm. copper and 1 mm. aluminium, the rays being directed through four portals of entry. Distant radium therapy with a "bomb" of four grams of pure radium might appear to be the ideal method of treatment for cancer of the uterus, but all who had tried it had seemed to come back to the local application. Hysterectomy after radium therapy had not been followed by very good results, and his own clinic had given it up entirely.

Results in Uterine Cancer.

After quoting the report of the subcommission of experts of the Health Committee of the League of Nations on the radiotherapy of cancer, the results obtained by Heyman of Stockholm and Regaud of Paris, which showed that it was possible to cure 40 per cent. of operable cases, the lecturer furnished some provisional statistics for his Brussels centre, which, he said, however, could not be

compared with the others because the five-year period for cases treated on the established technique was not yet completed. The total cases treated in 1925 and 1926 showed three years' cure in 28.5 per cent., the cases treated in 1927 showed two years' cure in 40.4 per cent., and the cases treated in 1928 one year's cure in 45.9 per cent. In the cases of 1928 the one-year cure was obtained in 50 per cent. of those which were operable, in 47.6 per cent. of the borderline, and in 45.4 per cent. of the inoperable.

Taking the figures reported from various centres, the five years' cure after surgery was obtained in about 35 per cent. of cases, and after radium therapy, in the operable cases, in about 40 per cent. Therefore radium therapy of the cervix uteri appeared to have a slight advantage over surgery. But it must be remembered that the results with radium were likely to be improved by successive developments in the technique, whereas Wertheim's operation was stabilized. In a very large number of cases where cure was not permanent, radium therapy made life tolerable. It would be premature to decide at present whether in quite early cases there should be an operation or radium treatment.

Time did not permit the lecturer to discuss fully the value of radiation in other forms of cancer, but he mentioned that, so far, cancer of the digestive tract had not given results with radium comparable with cancer in the regions with which he had already dealt. The introduction of radium tubes into the lumen of the oesophagus had proved a failure; it was possible that here the radium bomb might be useful. Radium in cancer of the stomach and duodenum was not satisfactory, and in Brussels these conditions were operated on as early as possible. Radium in cancer of the rectum gave similarly disappointing results. An ingenious method by Neuman and Coryn of interstitial needling from outside was used only in inoperable cases, and sometimes resulted in making a case operable.

Clinic Organization in Belgium.

To obtain the best results from radium therapy in cancer certain conditions of research and treatment were indispensable. The technique of radium therapy was not quite so simple as it looked. The co-operation of a large number of workers was necessary, and no branch of medicine called for so much team work. Professor Murdoch outlined briefly the way in which the cancer campaign had been organized in his country. There were State-endowed centres of research in each of the four universities; the subsidy was calculated according to the number of patients treated. Social work—the following up of patients—over the whole country was undertaken by a special organization. The university assumed the responsibility for the medical and surgical organization. At Brussels the senior professor of surgery, who was also in charge of the general surgical clinic, delegated to his senior assistant the responsibility for the surgical and radio-surgical work in the radium clinic. One pathologist dealt with the histological side, and there was a professor of radiology assisted by two physicists and another full-time assistant who specialized in radio-biological research. The staff also included a physician. Consultations were arranged three times a week. The surgeon, the pathologist, and the radiologist saw the patients together, and decided on the best method of treatment. The speaker remarked that this organization might appear rather complicated, but it had given good results during the four and a half years of its existence. The surgeon and the radiologist had come to have a great respect for one another, and mutual and unceasing criticism prevented any one member of the staff from becoming biased in favour of his own specialty. The surgeon even showed signs of becoming an enthusiast for radiation; the physician was one of the most useful members of the team.

The Role of the General Practitioner.

Although treatment by radiation was being perfected, said Professor Murdoch in conclusion, it was reasonably certain that radium would never cure more than a percentage of the cases, and cure of cancer ought not to be spoken of until some method was discovered of dealing with metastases as effectively as with primary growth. He paid a tribute to the work of Blair Bell and his associates, and also to the researches of Todd of Bristol, in chemotherapy, but he thought that these methods could not take the place of treatment by radiation, although they might be useful adjuncts. It seemed to him that the effective co-operation of many specialists such as were available in the modern clinic was likely to lead to the best possible results. The principle of centralization, however, was far from being approved, at least in his country, by the whole of the medical profession, and this was much to be regretted, since the efforts of the centres would be in vain unless they could count upon the effective and sincere co-operation of the general medical practitioner. In order to make the work of the centres really efficient it was imperative that patients should be sent to them at the first stage of their illness. Organized cancer centres had had to go through the disappointing period when only apparently hopeless cases were committed to their care. Happily now an ever-growing number of cancer patients were being received who had a good chance of being cured, but it was very necessary from this point of view that the general practitioners should work in close co-operation with the staff of the centre. The general practitioner had the most delicate task of all—namely, early diagnosis; he must encourage his patients to be thoroughly examined at the first suspicious symptom. Although there could be a too considerable increase in the number of centres of treatment, there could never be too many cancer diagnosis clinics.

Sir Charles Gordon-Watson, who proposed a vote of thanks to the lecturer, said that those who worked with radium in this country owed to Belgium—to Brussels particularly—much of their inspiration. The measurement of dosage was the outstanding problem at the present time, and here all workers felt that they were very largely in the dark; the work of Professor Murdoch and his Belgian colleagues had had its greatest value in the development of exact and standardized methods.

Professor Murdoch, in response, said that it had been a great encouragement to find that in England men were working in the same directions as in Belgium. In Belgium they had followed with great interest and with not a little envy the admirable effort which was being made under the auspices of the British Empire Cancer Campaign. Although the means at their disposal in Belgium were limited in proportion to the size of the country, he thought the methods and results were very much the same. There as elsewhere it was necessary to combat the idea that radium was a panacea for cancer, and that it would be sufficient to acquire increasing amounts of radium to solve the problem. More radium was certainly wanted, but not all the money should be spent on its acquisition; the provision of research laboratories was equally necessary.

Measurement of Radium Dosage.

In his lecture at the British Institute of Radiology, to an audience which greatly overcrowded the hall, Professor Murdoch entered more particularly into the question of measurement. He discussed the various units of radium absorption which had been put forward from time to time, and gave the reasons why in Belgium the ingenious method brought out by Stahel in 1928 had been adopted. This was expressed in ergs per cubic centimetre for the amount of radium energy absorbed. He showed many slides illustrating the disposal of the radium tubes so as to secure homogeneous radiation, gave tables for the distribution of the energy, and explained his method of interstitial radiation by means of needles laid parallel, as nearly as possible, in the tissues. He also exhibited the wax mould in which the tubes were mounted and which was adapted to the convexities and concavities of the part to be treated. He pointed out the limitations of the "bomb" method as compared with the interstitial method for securing intense action on the growth.

A vote of thanks was proposed by Professor F. L. Hopwood, and seconded by Dr. N. S. Finzi.

British Medical Journal.

SATURDAY, MAY 17TH, 1930.

SIR ARTHUR KEITH ON SPECIALISM.

In the oration which we publish in another column Sir Arthur Keith offers a critical examination of the facts and tendencies of modern medicine. Having emphasized the present picture by contrasting it with the picture of fifty years ago, he ventures into the realm of speculation, and wonders, with native and scientific caution, what developments are to mark medicine in the future. Nor is this all. As an observer and recorder of facts Sir Arthur deservedly enjoys an established authority. Not less is his zeal in the art of interpretation. And when all things are duly considered it is hardly a matter for surprise that the author of a famous presidential address to the British Association should find in "evolution" a collective phrase for the medical happenings and movements with which he is immediately concerned. Brass plates multiply in Harley Street, young doctors incline more and more to a consultant status and practice, seven specialists grow where only one grew before, hospital staffs are enlarged and particularized, laboratories displace closets with a few test tubes in our medical schools, National Health Insurance Acts and Local Government Acts, Sir George Newman and Sir Walter Fletcher appear in due season, and each as a distinctive mark of the "progress" which is another name for "evolution."

To some ears "evolution" is indeed a blessed word, but it does not suffice for those who seek after causes, and naturally, therefore, Sir Arthur Keith turns to consider what agency or influence is responsible for the phenomena he notes and describes. This he finds largely outside the strict field of medicine. It is not the ambitions or aspirations of medical practitioners, but new knowledge and new discoveries in chemistry, physics, and biology that account for added decorative displays in solemn West End streets, and for growing complexities in our hospitals and medical schools and daily practice. And the driving force behind all these activities and movements is provided hardly at all by human choice or even by human will. It is a stern and continuing Fate which points the way and provides the imperative impulse; that is, to modify a well-known couplet, "We progress because we must and not because we will." In short, what the philosophers foresaw is now being illustrated in medicine: increase in knowledge means increase in specialization, and increase in specialization is progress, and progress is evolution, and evolution is an "inexorable law." Effectively there is no escape, and therefore the outlook, provided it is not carried so far as to approach the end of all things, is a cheerful one. A regretful sigh the orator will permit over the disappearance of the pleasing illusion known as individual liberty, and he declines to write "fatalism," at least in large letters, as the title of his philosophy. None the less, in the procession of events which have carried medicine to the present phase and will continue to carry it, he detects little more than the fateful turning of the inexorable evolutionary wheel.

With Sir Arthur Keith's chapter of facts, whether his philosophy is accepted or not, there can be no dispute. Nor can anyone question the proposition that no man can be master of all that is known in medicine or efficient in all forms of diagnostic and therapeutic technique. A reasonable ambition does not nowadays take all knowledge, or even all medicine, for its province. Yet in spite of inexorable fate, we are tempted to suggest that in life, and even in medicine, specialism may possibly err by excess. Is there not a story of an earnest entomologist who, shutting out all other interests, spent unnumbered years in the study of one particular species of beetle only to find his closing years embittered by the caustic contradictions of an equally devoted observer? And was it a wrong judgement which, in the election of a president, directed the choice of a famous philosophical society against a distinguished judge who was reported to know nothing but the law, and in favour of a learned colleague who, on repute, knew everything except the law? The general has its value as well as the particular, and man may not live on specialisms alone. However plausible the suggestion that he is not "the master of his fate," he will yet surely strive to be "the captain of his soul."

Specialism in medicine is a well-worn theme. Even those who lament it allow that at least in some degree it is unavoidable. But this is not to admit either that every practitioner ought to be a "specialist" or that every patient ought to be examined by "a team." To put the position at its lowest, someone must remain to point the way to the appropriate expert, for it seems to be granted that the wrong expert may well be worse than no expert at all. More seriously, is it not beyond dispute that in numberless daily instances what the patient needs for his personal welfare is the general competence and trained judgement of one who has learned by first-hand experience to cultivate a wide outlook on clinical situations and problems, and to know that not everything is said by physical and chemical testings, however elaborate these may be? That in particular directions and at particular times such an adviser may need expert technical assistance is quite true. But this is to reinforce his value, not to diminish it. The art of medicine is a real thing, and it means something more than figures on a dial. When the issue concerns the individual patient someone must be prepared to see the problem as a whole and to exercise authority and to accept responsibility. Even when, as sometimes happens, contributions have to be brought together from many sources, there is need for a comprehensive and consistent picture in which each item is allowed its due proportion and is placed in a correct perspective. Someone in the last resort is in command of the ship and has the duty to speak the authoritative word. The individual clinical problem calls for balance and judgement as well as for knowledge and technical skill.

Sir Arthur Keith finds further illustrations of "inexorable law" both in the teaching organizations of

the profession and in the relation of the profession to the body politic. The pressure of advancing knowledge requires laboratories instead of lecture rooms, and a division and subdivision of subjects each of which but a few years ago was deemed well within the compass of a single teacher. No one, we imagine, will quarrel with laboratory instruction or greatly regret that a certain type of lecture is suffering eclipse. The more, however, the individual field is extended the more necessary becomes the need for selection. The medical student has much to learn and only a short time in which to learn it; and the practitioner of medicine deals in very practical affairs. Our pastors and masters must realize this position; for if, as we are told, physiology in the medical curriculum can now only be covered by three teachers where formerly one sufficed, it is certain that some selection in relation to utilitarian values will have to be made so far at least as the medical student is concerned. It was a substantial grievance that led an undergraduate to write over the entrance to a famous physiological laboratory "Abandon medicine, all ye who enter here." Sir Arthur fears that the urge towards research is depreciating the status of the teacher with corresponding prejudice to the education of the student—a development which those who value the disciplinary and cultural influences of a medical training must certainly regret. What is true of the curriculum is true also of new developments having clinical aims and ambitions. Here clearly the maximum of service is with those that come into widespread use in the ranks of the profession. With some technical methods and tests a restricted field is unavoidable, but the larger the area of possible employment the more substantial the gain to the art of medicine and the greater the benefit to those who look for advice and relief. The ideal practitioner would be able to use for himself all the methods and to collect at first hand all the evidence. Admittedly this is not possible or likely to be possible. All the same, the most effective pioneer is he who can devise methods which render new knowledge applicable over a wide field.

In the concluding part of his oration Sir Arthur Keith recognizes the pressure of the inevitable in the growing contact of medicine with Government and municipal departments and with public policy and opinion. Those who think that the profession can take its proper share in these enterprises without organization and a deliberate voice may read his argument with advantage. On the whole, though not without regret, he finds us the mere slaves of circumstance. A struggle for a fancied freedom may indeed continue, but with no real prospect of success. Yet it is well to be assured that even an apostle and prophet of inexorable law is ready to encourage our dreams and to cheer us on our fateful and inevitable way.

SICKNESS BENEFIT CLAIMS.

THE provision made for sickness and disablement benefits under the National Insurance Acts on the present valuation basis is such as to reproduce in the case of men the expenditure which would have been incurred had the claims been in agreement with the Manchester Unity of Oddfellows' experience for the years 1894 to 1897, due allowance being made for the first three days. In the case of women the basis is the actual experience of certain selected societies in the year 1923, *plus* ten per cent. For the purpose of the Royal Commission on National Health Insurance an analysis was made of the sickness experience of a large number of insured persons during the years 1921, 1922, and 1923, these persons being so chosen as to give a fair representation of the whole insured population. The Government actuary has now made a new examination of the experience of the years 1924 to 1927 of a comparable group of insured persons, and has issued a report (summarized in last week's *Supplement*) on the sickness and disablement experience of a group of approved societies during the whole period of 1921-27. The results set out in the report are somewhat remarkable and disquieting, and it is stated that the experience of 1928 and 1929 does not show any real betterment of the situation.

Separate analyses have been made throughout of the respective experience of men, of unmarried women (including widows as well as spinsters), and of married women, and it is found that with respect to each of these classes claims both for sickness and for disablement benefit have been rising continuously during the seven years. In the first three years all classes were well within the provision made for them, but for the last two years in the case of men and the last four years in the case of women the expenditure has been substantially greater than the provision. Comparing 1927 with 1921 the growth is such that as regards sickness benefit the claims of men have risen by 41 per cent., those of unmarried women by 60 per cent., and those of married women by 106 per cent., and as regards disablement benefit the percentages are 85, 100, and 159 respectively. A further analysis shows that the average length of the period over which the claim lasts has not materially altered. The increase must therefore be due to the variation in the number of claimants, and it is found that in the seven years the proportion of members claiming each year has increased by about 60 per cent. among men, 75 per cent. among unmarried women, and 100 per cent. among married women; and that of every thousand married women no fewer than 430 drew either sickness benefit or disablement benefit, or both, in 1927. A further conclusion to be drawn from the analysis is that the increase of claims is most pronounced in short illnesses.

A remarkable and significant state of affairs is disclosed as the result of an inquiry into the extent to which insured persons "declared off" the funds of approved societies soon after benefit was reduced from the sickness rate to the disablement rate. Of all claimants who passed from the one rate to the other during 1927 and ceased to draw benefit before the end of that year, more than one in six went off the funds almost immediately the reduction in benefit took place. Within a month of the reduction 50 per cent., and within eight weeks 70 per cent., had found their working capacity restored. This high proportion of restored capacity after reduction in the amount of benefit is common to both sexes and to all ages, but the proportion is much higher at the younger ages than at the older, and is especially heavy, at any rate up to the age of 50 years, among married women. It is true that a large proportion of those who "declared off" while in receipt of disablement benefit had to reclaim that benefit within a year thereafter, but a considerable degree of suspicion may reasonably attach to those cases where it was found necessary to reclaim shortly after the lapse of a year had enabled the claim to be made once more at the higher sickness rate.

The important bearing of the facts disclosed in this report upon the future of national health insurance is evident. If the present rate of expenditure on sickness and disablement benefits continues, most approved societies must experience a steady decline in the surpluses available for additional benefits at subsequent valuations, and ultimately many such surpluses,

and consequently such benefits, will disappear. It is not so easy to draw the moral. In the first place, some further investigation in certain directions is necessary, and, we understand, is being undertaken. This would seem particularly desirable with reference to recent or short claims, and with regard to recurrent claims. In the next place, it would seem that the policy of most societies in using their disposable surplus wholly or mainly for increasing the amount of sick pay is a mistaken one, and that, as we have urged before, it would be much better to use it for the provision of treatment, nursing, or convalescent benefits. In the third place, it must be remembered that the insurance medical practitioner's duty is to give a certificate of incapacity only at the request of an insured person, and, of course, then only when he assures himself that actual incapacity exists. Any increase in the readiness of insured patients to ask for certificates must therefore be a predominant factor in the number of claims made. Circumstances which promote this readiness are: (1) an increased familiarity with the working of the national insurance system and the opportunities it affords; (2) any widespread system of social legislation (whatever be its justification on other grounds) which tends to lessen reliance upon individual effort, thrift, and self-help; (3) a state of economic and industrial depression, and consequently a large volume of unemployment. It can scarcely be questioned that all these factors are at work to-day. In this regard the position of a married woman is different from that of others. Usually the husband also is employed, and a portion only of the family income is suspended when the woman ceases to work. A large acquaintance with the work of insurance practice leads to the belief that the insured man would as a rule far rather be at work than in receipt of benefit; that this is true also, though perhaps to a less degree, of the bulk of insured unmarried women; but that in a large proportion of cases the married insured woman would prefer to be at home attending as best she can to domestic duties and in receipt of sickness benefit, rather than to be engaged in other employment. A special class of whom this is largely true is the young pregnant woman or woman with a young baby. In all these cases it is often extraordinarily difficult to resist the patient's claim that she is "incapable of work" even though some doubt may exist. It may, nevertheless, be true that some insurance practitioners fail to remember that the contract between the patient and her society is an insurance contract in which the premiums entitle her to certain defined and limited benefits only and do not justify any claim to things beyond these, however desirable such other things may be.

Two inferences appear to be clear: first, that there is very little actual malingering among insured persons; and, second, that there is no widespread deliberate laxity of certification among insurance practitioners. We understand that statistics are now available showing the results of the cases referred to regional medical officers in respect of each insurance practitioner in comparison with the results for the area as a whole, and it is possible that there may be some individual cases in which it can be shown that a practitioner has failed to exercise reasonable care in the issue of certificates. If so, it will only serve to emphasize the fact, now, happily, more fully recognized than it was at one time, that any wanton or culpable laxity in certification cannot be charged against insurance practitioners, and that certainly any such laxity must occupy a very small place as a causal factor in the increased claims to sickness and disablement benefits.

THE SHAFTESBURY LECTURE.

THE eighth Shaftesbury lecture, delivered to the Shaftesbury Society and Ragged School Union last week by Sir George Newman, has been published as a pamphlet, and deserves the careful attention of all who are interested in the social welfare of the country. The lecture was entitled "Lord Shaftesbury's Legacy to the Children of England," and is one of those comprehensive, eloquent, suggestive, and essentially wise surveys of certain aspects of history and spheres of social science which we have learnt to expect from the Chief Medical Officer to the Ministry of Health and the Board of Education. After an admirably condensed summary of the condition of England into which Lord Shaftesbury (then Lord Ashley) emerged in 1832, and of some of the causes which had led up to that condition, Sir George Newman enunciates the social principles on which the reformer's zeal and actions were founded, and shows how, since Lord Shaftesbury's death in 1885, "his life was his bequest and the nation has become its executor: his vision and dream has become actual and has entered into the law and custom of the English people." Lord Shaftesbury's chief concern was with the children, and he was wise enough to see that it was with them that the country's chief concern should lie; in no place and at no time has so much been done for the welfare of the young as in England to-day. Though much may remain to be done, yet this is true with regard to the child's health of body, its education, its welfare in industry, and its protection from that which is evil. Sir George Newman well points out that in all these respects it was voluntary effort, drawing its inspiration from the example of Lord Shaftesbury and others, which led the way to State or communal action. "It is sometimes complained," he says, "that this is the wrong way round, and that there ought to be no need for voluntary effort, as the State should do it all. But our English way has substantial advantages on its side. It springs from the will of the people and has their assent; it throws the onus of responsibility on the parent; and it allows full weight to be given to experiment by trial and to experience." It is to the great, and yet largely unrecognized, honour of the medical profession that in the earlier part of the eighteenth century, when complete inattention to child welfare actually threatened the life of the nation, it was they, and they alone, who roused public opinion and initiated inquiries into cause and prevention, and that, much more recently, it was they who first suggested and continued to urge that attention to the physical condition of the child at school was a prime necessity. It has become clear that the chief difficulty of relying to any very large extent on voluntary effort is its uncertain and unequal scope and operation; nevertheless, such effort retains its virtues and advantages, and it is to be hoped that it may long be used wherever it can be made applicable. In spite of all Lord Shaftesbury's advocacy and effort it remained largely true, throughout at least the greater part of his life, that the welfare of industry, and not the welfare of the worker, was the main object of the nation's concern. It is not far from the fact to say that it is only in the present century that it has become generally recognized that, as the Duke of York said not long ago, "the welfare of the worker leads to the welfare of the industry." It is possible that to-day the vast extent and rapid expansion of State social services may be tending to outstrip resources; and Sir George Newman's lecture concludes with some suggestive but unanswered questions as to the exact results of our methods of attention to the child's physical health, of education, of imposing safeguarding conditions of juvenile labour, of dealing with juvenile delinquents and offenders. In the end "the State cannot usurp the place and duty of the parent in the upbringing of his child: it

[1] London: Shaftesbury Society and Ragged School Union, John Kirk House, 32, John Street, W.C.1. 2d.

cannot engender that domestic discipline and diligence which can alone prepare the adolescent for a world where 'play-atmosphere' must be exchanged for 'work-atmosphere'; and it cannot furnish the child with the uplifting and protective moral consciousness of a happy home life. It is in the home that the first victory must be won."

CHRONIC DUODENAL ILEUS IN CHILDREN.

AMONG the factors underlying chronic duodenal ileus in adults is believed to be some congenital malformation; it might be expected, therefore, that the investigation of cases in childhood might throw some light on the etiology of this condition. A valuable contribution to this end has been made by Drs. Reginald Miller and Courtney Gage, who, in a paper published in the current number of the *Archives of Disease in Childhood*,[1] describe a series of nine children who exhibited enlargement of the stomach, with visible gastric peristalsis or other signs of obstruction high in the alimentary tract. In summarizing the scanty literature they point out that cases have hitherto been classified in three main groups: one in which the type of duodenal obstruction is severe enough to produce a megaduodenum forming a visible and palpable tumour, usually during infancy; a second, among older children, in which the condition corresponds to the adult type; and a third, in which are included cases associated with other conditions and maldevelopments—for example, disease of the mesentery, or malposition of the duodenum. In two of the cases in the series described by Drs. Miller and Gage duodenal obstruction was proved at operation to be due to arterio-mesenteric compression of the duodenum. The symptoms of chronic duodenal ileus start in early life, even from birth, and are for the most part mild. The duodenal obstruction leads to gastric stasis and secondary catarrh, so that loss of appetite is the most troublesome symptom at first, with the development of vomiting as the child gets on to solid food and is forced to eat against its will. The physical signs of obstruction are not obstrusive; chief of them are enlargement of the stomach lying across the upper abdomen, and visible peristalsis. *X*-ray examination confirms the presence of obstruction to the evacuation of the stomach, and excludes the stomach itself as the site of the obstruction. More definite radiological information as to the presence of obstruction in the duodenum is usually lacking. The cases as a whole show a tendency towards gradual recovery, and although at first the obstruction is persistent with intermittent exacerbations, later, as spontaneous improvement sets in, the obstruction becomes intermittent, and suitable dietetic treatment may lead to the cessation of symptoms. It is thought, partly on the evidence of operation in two cases, that these signs and symptoms are due to some congenital anatomical obstruction in the duodenum, but lest the diagnosis be disputed in the cases under review Dr. Miller and Dr. Gage have used the term gastromegaly as an alternative to duodenal ileus, so that the syndrome may be recognized and described by other observers under one of these headings. In very young infants diagnosis of this condition has to be made from chronic duodenal obstruction due to other causes, such as congenital atresia or stenosis of the duodenum, or cicatrization of a peptic ulcer in the newborn, a very rare condition, an example of which is reported by Dr. Miller in the same issue of the *Archives* (p. 133). In children more than a few weeks old the differentiation of gastromegaly from duodenal obstruction produced by a peritoneal band gives rise to some difficulty. Clinically, cases of the latter type seem to fall into two groups: one of cases presenting the symptoms of megaduodenum; the second, of cases with dyspeptic symptoms, usually painful and interrupted by attacks of vomiting, in which the presence of an obstructive factor may be far less easy to recognize. With regard to prognosis it appears that the power of the stomach to develop hypertrophy and overcome the obstruction is almost the deciding factor. There seems to be a tendency for gradual improvement to set in spontaneously some time after the age of 5 years, though it may be many years before the vomiting attacks cease altogether. Under treatment Drs. Miller and Gage consider first of all the medical measures. The chief indication is to give a diet which is small in volume, highly nutritious, not too rich in fat, and calculated to pass out of the stomach as quickly as possible. To prevent fermentation of the stagnant gastric contents an alkaline antiseptic such as glycothymoline is advised. Castor oil is recommended as the best aperient, and gastric lavage and massage may be required. Surgical treatment, such as gastro-enterostomy, is to be considered as a last resource, and should only be performed when gastric hypertrophy has occurred.

[1] April, 1930, vol. v, No. 26.

THE CASSEL HOSPITAL.

THE annual report for 1929 of the Cassel Hospital for Functional Nervous Disorders by the director, Dr. T. A. Ross, deals only with patients treated during the previous year, as it is now the custom of the hospital to give only every third year a full report on all patients treated since it was opened. The interest of the triennial reports with their up-to-date after-histories on practically every patient is therefore lacking, but the present report raises some very interesting questions in its comparatively brief compass. During 1928 179 patients were discharged, of whom 145 were new. Of these, 94 were classed as psychoneurotics, and 81 of them improved or became well during their stay in the hospital. Six relapsed and some have not been heard from, but 71 out of the 94 have remained well or maintained their improvement for at least a year after discharge. The percentage of recoveries in this group remains remarkably constant from year to year. Some of the cases referred to are of exceptional interest. Two patients with an obsessive-compulsive psychoneurosis improved considerably with treatment, and one of them recovered completely after discharge. Recovery in long-standing instances of this condition is rare, and definite and lasting improvement after any form of therapy is also uncommon. It is interesting to note that the obsessive fears of one of these patients were found to be of things of which he had felt his father would disapprove, and that he recovered completely soon after his father's death. As happens too often, the credit for the process of recovery which was initiated by psychotherapy was given by the patient's relations to another form of treatment altogether, in this case osteopathy. Dr. Ross thinks that the role of the latter was to find a peg upon which the patient could hang the reason for his recovery, comfortably for himself, since it saved a direct admission of the real origin of his fears. The apparently direct relationship between the father's death and the cessation of symptoms is uncommon in obsessive-compulsive psychoneuroses, and is remarkable. Compensation neuroses are everywhere regarded as an insoluble therapeutic problem. Dr. Ross describes one case and alludes to several others under his care, which have recovered in response to psychotherapy. The usual advice is to hasten the conclusion of whatever litigation is impending, and, if compensation is obtained, that it should be a permanent settlement, not open to revision. After that, one hopes that recovery will spontaneously occur, since there is presumably no more to be gained. But this line of action is slow and unsatisfactory, and not seldom fails, at least for a long time, to produce any effect, since other factors may enter and prolong the symptoms. Sometimes a lump sum looks so much like a fortune that the bene-

ficiary remains luxuriously idle. The slow "spontaneous" type of recovery is so much the rule that it is very rare to find a case in which recovery could be reasonably attributed to psychotherapy. The Cassel Hospital cases should therefore be of considerable medico-legal importance when published in extenso. The origin and treatment of spasmodic torticollis is a vexed question. The present report mentions one case in which recovery followed psychotherapy. We know of a patient of this type who recovered in response to suggestion, only to relapse, and another with typical symptoms of short duration, who recovered for no apparent reason. With other types of spasmodic neck movements, the essential basis is often clearly compulsive or hysterical, but the origin of typical spasmodic torticollis remains obscure in most instances. Enough has been said to show that the report alludes to much that is of interest to practitioners of other branches of medicine besides psychotherapy.

WELFARE OF THE BLIND.

THE most noteworthy feature of the report of the Advisory Committee on the Welfare of the Blind[1] for the past year is the return of the number of the blind upon the register. The total of the registered blind population in England and Wales is now 52,727, an increase of 12.6 per cent. as compared with 1927. The ratio of the blind to the general population shows a steady upward movement. In 1919 it was 1 to 1,451, last year it had reached the high ratio of 1 to 749. The report, in commenting upon these figures, shows that as regards blind children under 5 years old there has been no increase. In respect of the age period below 21 there has been a decrease of 163 between 1927 and 1929, and a decrease of 177 in the preceding two years. The increase is most heavy after the age of 50, and these older blind persons account for 5,263 of the total increase of 5,905. It is reassuring to learn that there has been a decline in blindness among children. The committee hopes that further inquiry will be made as to the causes of blindness in infants, for it is still infants under the age of 1 that show the greatest incidence of blindness. Some concern is also felt at the proportion of the general population whose vision is so bad as to make them "too blind to perform work for which eyesight is essential," and at the large number of persons who become blind soon after reaching middle age. Many of these cases are known to be due to accidents and industrial operations; but there would appear to be an appreciable residuum in whom the underlying causes of the loss of sight are not so clearly defined. Blindness is, unfortunately, too often the concomitant of old age, but it is not certain that this need so often be the case, and we agree with the suggestion that there may be a fruitful field for inquiry into the whole question of the care and preservation of the sight of the adult population. In view of the substantial benefits now available for the blind, there is an inducement for persons who have serious defects of vision, but who are not strictly blind within the meaning of the statutory definition, to apply for inclusion in the register of the blind. In this connexion it is urged that medical evidence of blindness, based upon the considerations set out in the Ministry's circulars, should be obtained in every case before a person is accepted as eligible for registration. Investigation into the occupations of the blind reveals a steady increase in the number of those engaged in useful work, but this advance is set off by the huge increase in the number of the unemployable blind. In 1923 and 1929 the employed blind numbered 8,235 and 9,548. The corresponding figures for the unemployable were 20,759 and 37,563, and it should be noted that this increase of the unemployable is mainly after the age of 50. It is possible for many blind persons aged 50 (or even more in some instances) to be trained for successful employment; nevertheless, experience has shown that for reasons of health and aptitude it is an economic proposition for most. For this reason the committee is of opinion that the reduction of the age limit of 50 years for a blind pension under Section 1 of the Blind Persons Act, of 1920 to 40 years would be fully justified. Note is made of the valuable survey of the blind in this and other countries carried out under the auspices of the Health Section of the League of Nations; it was reviewed in the *Journal* of October 12th, 1929 (p. 685). This survey revealed that the services for the blind in this country are, on the whole, in advance of those abroad. There does not appear to be anything in other countries quite comparable to the home teaching and visiting service which has grown up here during the past ten years and has been of such high value in the amelioration of the hard lot of those blinded late in life.

[1] Eighth Report of the Advisory Committee on the Welfare of the Blind, to the Minister of Health, 1928-29. London: His Majesty's Stationery Office. 1930. (6d. net.)

THE BRITISH ASSOCIATION IN BRISTOL.

THE British Association for the Advancement of Science, which celebrates its centenary next year in London, will meet in Bristol from September 3rd to 10th, 1930, under the presidency of Professor F. O. Bower. The annual meeting in 1932 will be held at York, and that in 1933 at Leicester. The discussions this year at Bristol are being arranged in thirteen sections, most of whose sessions will be held in the magnificent new University buildings. The list of sectional officers has now been published in the preliminary programme issued from Burlington House. In the Section of Physiology all four vice-presidents are members of the medical profession—Professor G. A. Buckmaster, Dr. Carey Coombs, Professor W. E. Dixon, and Professor J. A. Nixon. Professor Edward Fawcett and Dr. George Parker are vice-presidents of the Section of Anthropology, and Dr. R. G. Gordon is a vice-president of the Section of Psychology. At the inaugural general meeting on Wednesday, September 3rd, Professor Bower will give his presidential address to the Association on "Size and form in plants," and on September 9th Dr. R. E. Slade will give an evening discourse on "The nitrogen industry and our food supply." Professor H. S. Raper's presidential address to the Section of Physiology will deal with the synthetic activities of the cell, and Professor C. W. Valentine's, in the Section of Psychology, with the foundations of child psychology. The Sections of Engineering and Physiology will combine for a discussion on air pressure variations encountered in engineering works and their physiological effects; and the latter section will debate jointly with the Section of Psychology "In what sense can we speak of primary colours?" This will be the fourth occasion on which the British Association has met in Bristol, previous meetings having been held in 1836, 1875, and 1898.

THE KING has appointed Mr. T. P. Dunhill, C.M.G., assistant director of surgery at St. Bartholomew's Hospital, to be one of His Majesty's Honorary Surgeons in succession to Sir Alfred D. Fripp (deceased). Mr. A. J. Walton, surgeon to the London Hospital, is appointed Surgeon to His Majesty's Household in the room of Mr. T. P. Dunhill.

THE British Empire Red Cross Conference, arranged by the British Red Cross Society, will be held on Monday, Tuesday, and Friday, May 19th, 20th, and 23rd. The proceedings will open on May 19th with an address of welcome by H.R.H. The Duke of York.

DIABETES AS A PHYSIOLOGICAL PROBLEM.

SECOND OLIVER-SHARPEY LECTURE BY PROFESSOR J. J. R. MACLEOD.

THE second and final Oliver-Sharpey Lecture by Professor J. J. R. MACLEOD of Aberdeen, on "Diabetes as a physiological problem," was delivered at the Royal College of Physicians on May 1st.

The lecturer reminded his hearers that in his first lecture two days previously (*British Medical Journal*, May 10th, p. 868) he had dealt with some of the laboratory observations which had recently been made on depancreatized animals, paying attention particularly to the difference in the course of the diabetes observed in fattened and in lean animals. Diabetes was found to be very much more acute in the former type of animal, and this indicated, or at least suggested, that some of the sugar must be derived from fat. At the end of the lecture he had alluded to certain other experiments which furnished more direct proof that this was the case. He did not intend to go further into that subject, as it had been sufficiently canvassed recently in another connexion, but would turn his attention to a part of the subject which he thought would be of increasing interest in the next few years—namely, the mechanism of the control of insulin secretion.

Control of the Secretion of Insulin.

It had become evident that deviations from the normal in respect to the control of the secretion of insulin might be responsible not only for symptoms of diabetes, but also for other conditions related to metabolic disturbances, particularly in connexion with excessive corpulence, excessive leanness, and several other disorders of similar type. The subject was a difficult one to deal with, because the information was so fragmentary in nature, but he had to make the most of it. The possibilities were, of course, that the secretion of insulin in the intact animal was regulated through the nervous system or through hormones. In the case of glands having an external secretion, like the salivary glands, it was very easy to demonstrate by direct methods control over the secretion. It was known, in a general way, that certain glands—more particularly those which had to act, as it were, at short notice, like the salivary glands, already mentioned, the lacrymal glands, and the sweat glands—were under nerve control, while others, which could act more leisurely, were subject rather to control by chemical influences.

The question was in what way any manner of control over the secretion of insulin could be demonstrated. It could not be expected that the difficulty of measuring the secretion was to be overcome by chemical analysis of the blood for insulin. The methods of preparing this substance, although admirable for its isolation in a purified state, were not sufficiently quantitative to be useful for detecting changes in its concentration in the blood. The production must therefore be measured by indirect methods, and obviously the most simple of these was to observe the behaviour of the blood sugar. A biological test for insulin was that it lowered the blood sugar, and therefore if it should be found, on stimulating a nerve, for example, that the blood sugar fell, it could be at least inferred that there was an increased secretion of insulin. That method had been used quite considerably, and he projected slides which indicated the results obtained by its use.

There were other methods, however, whereby variation in the secretion of insulin could be observed. They were, frankly, more or less indirect, but, taken together, he thought they were valuable methods. It was necessary to think of their use, not only in the laboratory animals, but also, of course, in man. The lecturer proceeded to describe the methods which were, in his opinion, the most useful. In the first place, it was interesting to observe the effect of the administration of sugar, given by the mouth or intravenously. This brought about an immediate rise in the blood sugar level, and produced the so-called assimilation limit curve, which, within certain limits, always followed a particular pattern. Sometimes, however, it was observed that the curve did not respond in a normal fashion irrespective of the diabetes. For example, it was found, after sugar was given, that the curve was likely to be more marked, to rise higher, and to be maintained longer in animals which had previously been deprived of carbohydrate than in those which had received this foodstuff. That, of course, recalled the old observation on so-called "starvation diabetes." After starvation the blood sugar, upon an administration of glucose, rose much higher and remained longer at the higher level than would otherwise have been the case. This was interpreted as meaning that the secretion of insulin was dependent on the amount of pre-formed carbohydrate. The observation had been made repeatedly also in man. It was made first of all really satisfactorily by Bang, but had been repeated many times since, and various things followed from it. It was found that when sugar was injected in divided quantities intravenously in man the effect of the first injection was much more pronounced than that of the later injections, and when the solution of glucose was continuously infused into the veins the blood sugar curve at first rose, then maintained a certain level for an hour or so, and gradually came down. Constant infusion of the sugar kept up a stimulation of the islets, so that the insulin that was secreted became effective as a result in lowering the blood sugar.

The Effect of Insulin on Blood Sugar.

The above was one interesting method of testing the secretion of insulin—namely, that of observing the response to the injection of a measured quantity of sugar. Some very definite results had been obtained by that method. Another obvious method was to observe the effect of insulin itself on blood sugar. The effect of a given quantity of insulin injected into an animal under standard conditions would vary according to the amount of the insulin that was being produced by the animal itself. Taking again fasting as compared with fed animals, it was easy to see that insulin had a much greater effect on animals previously fed on carbohydrate than on those which had undergone carbohydrate deprivation. The lecturer showed curves and tables illustrating the results of experiments in his former Toronto laboratory, the curves representing the blood sugar level in response to injection of glucose in solution and of insulin in normally fed rabbits. This particular influence of insulin was also very striking in the case of man, and was a factor of importance to remember, especially when insulin was being given for the first time in a case of diabetes. When insulin was injected alone into the animal it did not produce so marked a fall in blood sugar as when it was injected along with sugar. The injection of insulin along with sugar produced at first a slight rise in the blood sugar curve, followed by a fall.

Again, the difference between the percentage of sugar in the arterial and in the venous blood could be observed. This was really a very easy test to carry out. It was not necessary actually to obtain arterial blood for the purpose, the blood from the capillaries could be taken to represent it. The method consisted of comparing the blood sugar in capillary blood with the blood sugar in venous blood. There was normally a distinct difference between the percentages of sugar in the two bloods, but when insulin was injected or when insulin was being produced in excess from the pancreas this difference became much more accentuated. Instead of being somewhere about 10 per cent. it might increase to 20 or 30 per cent. This method was probably of value because it was a little more precise than any other dependent on the examination of venous blood alone. It showed what was happening in the tissues apart from the liver.

Nerve Control of Secretion.

Such were the principal indirect methods which could be used for measuring the internal secretion of insulin, and the question now arose as to what had been found out as to control. There was some considerable evidence that nerve control of the secretion actually existed, and that it was an important method for the adjustment of insulin production and relationship to carbohydrate metabolism. That the islets were under nerve control was suggested many years ago by the work of the anatomists. Several histologists had observed that the islets were richly supplied with nerves.

With these anatomical facts in mind, some demonstrations of nerve control were attempted in the lecturer's laboratory several years ago, and he showed a tabulation of the results. A fairly constant curve represented the blood sugar in an animal kept under ether anaesthesia. Another represented the result of stimulation of the right vagus nerves at the oesophageal end of the stomach. The stimulation of this nerve for a short period produced a very definite fall in blood sugar, with immediate recovery after the stimulation was removed, suggesting that the stimulation produced an internal secretion of insulin. The results not being conclusive, the subject was further pursued, but during the vagus stimulation there was quite definitely a fall in the blood sugar level and recovery after the stimulation was removed, showing that, at least under experimental conditions, the vagus had such an effect.

In France, La Barre had achieved, by an entirely different method, results which were of extreme importance. He used the method of cross-circulation, which had been extensively adopted in France in studying these problems of physiology. He connected, for example, the pancreatic-duodenal vein of one animal with the jugular vein of another. The second animal, into which the transfusion took place, would therefore respond to insulin by showing a fall in blood sugar if insulin were present in the blood. The anastomosis was not very difficult. La Barre found, after anastomosing the vein from the head of the pancreas of a large dog with the jugular vein of a small one, that the result of transfusing blood from the normal animal into one that was diabetic consequent upon the removal of the pancreas produced a definite fall in blood sugar in the diabetic animal. The insulin in the blood of the normal animal was sufficient to have an influence on the one which had been depancreatized. When both animals were normal there was no effect on blood sugar. Presumably the insulin content of the blood in the case of the other two animals, one normal and the other diabetic, was not the same. If he stimulated the vagus nerve in the normal animal, the blood sugar came down in the diabetic animal, the stimulation evidently exciting the secretion of insulin.

So far these results merely corroborated those of other workers in demonstrating the effect of stimulation of the vagus on blood sugar, but further researches by others showed that such nerve control was stimulated by an increase in the blood sugar. Intravenous injection of glucose into the donor animal caused the blood sugar of the recipient to fall by one-third. When the vagus nerve was cut in the thorax of the donor injection of sugar into this animal did not lower the blood sugar in the recipient.

Mode of Action of Injected Sugar.

The question which next presented itself concerned the mode of action of the sugar on the vagus. Did it act on the nerve centre itself, or might it be acting peripherally, as, for example, on the terminations of the vagus in the gland cells? That was a difficult thing to test experimentally, but it was done by La Barre by using three animals, between two of which a double carotid-jugular anastomosis was established, and the pancreatic vein of one of them anastomosed with the jugular of a third animal. The result of the experiment appeared to show that the secretory activity of the islets was under the control of the vagus centre, and that this was stimulated by concentration of glucose in the blood. When it was stated that the secretion of insulin was under nerve control it did not mean that nerve control was the mechanism by which those fine adjustments of insulin which must occur from time to time were regulated. Nerve control might be only an emergency control and occur only under certain conditions, but that it occurred was quite demonstrable.

The lecturer then referred to further experiments made on this subject by Clark of Sheffield, in some work which had been published in the *Journal of Physiology*, and which showed that in rabbits, besides nerves which could excite the secretion of insulin, there were also vagus fibres which produced a tonic inhibition of the secretion. After cutting the right vagus in rabbits, the animals, for about two months following the operation, being apparently in a normal condition, responded to the injection of sugar or to the injection of measured quantities of insulin in such a way as to indicate that the inhibition had been removed from the islets. Clark's conclusion was that the vagus, in addition to containing stimulating fibres, contained also tonic inhibitory fibres, which must be assumed to be more or less active all the time. There were in Clark's researches certain things rather difficult to explain, but it was not at all unlikely that the same nerve contained both excitatory and inhibitory fibres. For example, in connexion with respiration, the respiratory centre was constantly under the influence of impulses which were inhibitory in nature, and yet it could be excited by impulses which were excitatory, but which acted only under occasional conditions.

Hormone Control.

The fact that nerve control came into play under certain experimental conditions did not mean necessarily that the variations occurring in the discharge of insulin into the blood in ordinary life were regulated in that way. Indeed, it seemed reasonable to suppose that the islets were under chemical rather than under nerve control. Certain questions in connexion with hormone control here arose. Changes in the concentration of sugar in the blood might act directly on the hormones, and it was possible that if the tension of glucose began to rise above a certain level some other ductless gland was stimulated to produce a hormone which thus acted on the islets so as to bring about the secretion of insulin.

Were there any effects suggesting that hormones other than insulin had an influence on the carbohydrate metabolism, and, if so, did they act directly on the various mechanisms concerned in the production of sugar, or indirectly by influencing secretion in the islets? He took by way of example the results of experiments on the thyroid gland. It had been known for some time that the sugar was altered significantly by thyroidectomy or by feeding with thyroid. The thyroid gland, quite conclusively, had some very real connexion with the condition of the islets of Langerhans. How the results were to be explained it was difficult to say, but the fact was demonstrable, and was one that must have a very direct clinical application. It had to be borne in mind that thyroxine also had a very profound effect on metabolism in general, and it was permissible to suppose that the influence it had on hypoglycaemia was dependent on the over-stimulation of the secretory powers of the tissues which it brought about.

The lecturer went on to refer to certain cases in which there had been a pronounced hyper-insulinaemia. He read a number of reported cases, which, he said, established the existence of a hitherto unknown disease. One case described from Toronto by Campbell and others was of a woman, aged 52, who had noticed a gradual development of vague mental symptoms accompanied by excessive sweating for a period of six years before admission to hospital. Hyperglycaemia was found on admission, but there was a very dramatic response of the blood sugar to carbohydrate administration. The authors called the case "dysinsulinism." On operation a pancreatic tumour was found which proved to be a slowly growing carcinoma. The patient during the four weeks which the record covered remained free from her previous symptoms. The lecturer described other cases. There had been further advance in the clinical study of conditions which were not diabetic in the ordinary sense, but which bordered on the diabetic. Some very interesting results had been obtained in Vienna in patients showing excessive corpulence or excessive leanness, in children with epilepsy, and in cases of progressive muscular dystrophy, in which there were perfectly definite disturbances in the amount of insulin which could be measured in the blood by the methods he had indicated. It opened up an interesting field well worth exploring.

Substitutes for Insulin.

In some concluding remarks about substitutes for insulin, Professor Macleod said that a number of these substitutes had from time to time been sent to his laboratory. He had used one test for them. Could they, or could they not, remove the symptoms of diabetes from a depancreatized animal? None of them could. It was said that synthalin did remove the symptoms of diabetes from such animals,

but in his view it only did so very slightly, and it was quite possible that the effects which it appeared to have were dependent on the undoubted damage which it did to the liver cells. The whole work on synthalin pointed quite clearly to the fact that it had no action at all comparable with that of insulin, and that it was a dangerous drug to use on account of the indisputable damage to the liver cells which it occasioned. It had interesting effects on the consumption of sugar in the muscles, but it also produced lactic acid in the organism. It was always possible that these substances might have a pseudo-diabetic effect. The same applied to myrtillin, a preparation made from plants of the myrtle family.

MEDICAL CONGRESSES, 1930.

THE following congresses and conferences on medical and allied subjects have been announced for 1930. Particulars are given below in the following order: Date, name of organizing body, place of meeting, name of person to whom inquiries should be addressed. More detailed information about these meetings is given from time to time, as it becomes available, in the news columns of the *British Medical Journal*.

May 17.—International Exhibition of Hygiene. Dresden.

May 19–21.—International Congress on Malaria. Algiers. General Secretary, Institut Pasteur, Algiers.

May 30.—Société d'Ophtalmologie. Paris. Dr. René Onfray, 6, Avenue de la Motte Picquet, Paris, VII.

June 4–9.—Royal Institute of Public Health. Portsmouth. Secretary of Institute, 37, Russell Square, W.C.1.

June 5–7.—German Society for Psychology and Psychopathology. Vienna.

June 11–14.—German Society for Tuberculosis. Norderney.

June 21–28.—Royal Sanitary Institute. Margate. Secretary of Institute, 90, Buckingham Palace Road, S.W.1.

June 28 to July 2.—Journées Médicales de Bruxelles. Brussels.

July 3–5.—National Association for the Prevention of Tuberculosis. London. Secretary of Association, Tavistock House (North), Tavistock Square, W.C.1.

July 10–12.—Oxford Ophthalmological Congress. Oxford. Mr. C. G. Russ Wood, 12, St. John's Hill, Shrewsbury.

July 20–25.—International Society of Microbiology. Paris. Dr. St. John Brooks, Lister Institute, Chelsea Gardens, S.W.1.

July 26.—International League for Combating Trachoma. Geneva.

July 26–27.—Belgian Congress of Neurology and Psychiatry. Liège. Dr. Leroy, 30, Rue Hemricourt, Liège.

August.—International Congress of Cytology. Amsterdam. Fran Professor Rh. Erdmann, Berlin-Wilmersdorf, Nassauischestrasse 17.

August 3–10.—International Society of Sexology. London. Professor F. A. E. Crew, The University, Edinburgh.

August 4–9.—International Veterinary Congress. London. Dr. F. Bullock, 10, Red Lion Square, W.C.1.

August 5–9.—International Congress of Dermatology and Syphilology. Copenhagen. Dr. S. Lumholt, 45, Raadhusplads, Copenhagen.

August 12–15.—International Union against Tuberculosis. Oslo. Secretary of Union, 2, Avenue Velasquez, Paris, VIII.

August 18–21.—International Congress of Paediatrics. Stockholm.

August 26–29.—British Medical Association Annual Meeting. Winnipeg. Financial Secretary of British Medical Association, Tavistock Square, London, W.C.1.

August to September.—International Congress of Neurologists. Bern.

August.—International Congress on Miners' Phthisis. Johannesburg. International Labour Office, Geneva.

August.—Congress of Northern Neurologists. Stockholm.

September 1–6.—International Birth Control Conference. Zürich. Mrs. Janet Chance, c.o. A. S. Cobden, Esq., 10, Adelphi Terrace, W.C.2.

September 4–8.—International Congress of Physiotherapy. Liège. Dr. Dubois-Trépagne, 25, Rue Louvreux, Liège.

September 7–10.—German Society for Natural Sciences and Medicine. Königsberg.

September 15–17.—German Orthopaedic Association. Heidelberg.

September 22–27.—International Congress of the History of Medicine. Rome. Dr. F. Rocchi, Corso Vittorio Emanuele 173, Rome.

October 2–4.—International Society of Orthopaedic Surgery. Paris.

October 6–8.—Society for the Study of Diseases of Digestion and Metabolism. Budapest.

October 9.—Association Professionnelle Internationale des Médecins. Geneva. Dr. F. Decourt, Mitry-Mory (Seine-et-Marne), France.

October 27.—American Public Health Association. Fort Worth, Texas. Dr. H. N. Calver, 370, Seventh Avenue, New York City.

1930.—International Cancer Conference. Madrid.

1930.—Congress of Equatorial Medicine. Guayaquil, Ecuador

England and Wales.

Dr. Brackenbury a Freeman of Hornsey.

ON May 10th a special meeting of the Hornsey Town Council was held for the purpose of presenting to Dr. H. B. Brackenbury, a former mayor of Hornsey, and now Chairman of Council of the British Medical Association, the freedom of the borough. Consequent upon retirement from practice and removal from the locality, Dr. Brackenbury recently resigned his membership of the Hornsey Town Council. The occasion of the resignation called forth many tributes from his colleagues, and it was resolved to express in a tangible form to Dr. Brackenbury the council's appreciation of his services. The meeting, over which the mayor (Councillor Summersby) presided, was largely attended by members of the council and burgesses. The resolution that Dr. Brackenbury be admitted an honorary freeman was proposed by the deputy mayor, Alderman Double, who said that Dr. Brackenbury's long service to Hornsey was the more notable because he had never been a man of leisure, but had had to carry the burdens of a busy practice. A man's worth might be estimated by his reputation in his own profession, and there Dr. Brackenbury was held in signal honour. The Bar suffered when he decided to enter medicine rather than law, for his deadly logic and precision of speech had been extraordinarily effective in the furtherance of the causes he had at heart. The speaker associated Mrs. Brackenbury in the compliments. The resolution was seconded by Alderman Jenkinson, who claimed for Hornsey a certain credit because it was in the affairs of that borough that Dr. Brackenbury first won his spurs as a public man and discovered his gift of utterance. After the resolution had been carried unanimously and with acclamation, the roll was signed by the new freeman, and the illuminated scroll, having been read by the town clerk, was placed in a silver casket and presented by the Mayor to Dr. Brackenbury. The scroll recalled Dr. Brackenbury's periods of service in various capacities, enumerated some special achievements, notably in educational directions, in which he had played a leading part, and went on:

"... the special knowledge and extraordinary ability which have been brought to bear by Dr. Brackenbury on his conduct of public business, combined with his personal qualities and an untiring zeal devoted especially to the causes of education and public health over so long a period of time, have earned for Dr. Brackenbury a position of great authority in the whole country, and for this borough a reputation for progress and sound administration of which the town council and the burgesses are justly proud."

Dr. Brackenbury, who was very warmly greeted, said that the occasion might be considered as being both personal and public. On the personal side he felt great pride and honour at the passing of this resolution. According to the Oxford Dictionary, a "freedom" was the citizenship of a town or city conferred *honoris causa* upon eminent persons or those who had special claims to distinction. He repudiated once for all any claim to eminence, but he supposed that every person had a certain distinction, and the council had been good enough to indicate the distinctions he was supposed to possess, on the one hand, in the length of service, and on the other, in some degree of commendable accomplishment. The length of service was a mere historical fact, and, given good will on the part of those concerned, it was largely accidental that men gave long service in public capacities. His own entrance on public life was more or less accidental. In 1898 he was invited to stand for the old Hornsey school board, and under the curious system of the cumulative vote then prevailing he was returned at the head of the poll. During his first year he was wise enough to sit and listen to what appeared to him the remarkable and unintelligible jargon that educationists spoke in those days, and to say nothing at all. In 1902 he entered the council by uncontested election, and during the sixteen years that he was a councillor his return for South Harringay was never challenged. During his entire membership of the council he had never expended a penny on elections. But in other ways undoubtedly certain sacrifices were demanded. Service on public bodies

entailed a good deal of domestic separation, and here he paid a charming tribute to his wife for her patient co-operation. Asking why men entered the service of local councils, Dr. Brackenbury said that in almost every case the reason was public spirit, a desire for the public good. He believed there were very few instances of men seeking election on public bodies for some pecuniary or other advantage. In such a borough as Hornsey those engaged in its affairs had an enormously important task in teaching the growing citizens the way of life. Not that a local authority should supply everything that everybody could need, but it should see that those who were unable to provide the means for pursuing a good life themselves were *not deprived of them. He was quite unable to* enter into any community of feeling with those people who thought that the only or the first thing for a town council to do was to keep down the rates. He agreed that there should be no waste or laxity in the administration of public funds, but he had no sympathy at all with the attitude of such people as a motive for service. In the spheres of education and public health, Dr. Brackenbury continued, he had certainly done his best to help towards the necessary teaching and provision, and when he looked at what had been accomplished in thirty years he had no regrets. He claimed that in Hornsey rather more was being done for education than in the area of other local authorities. With regard to public health, here there had been nothing less than a revolution during the last thirty years. At the beginning of the century it was considered to be the function of a public health authority merely to look after such things as sanitation, water supply, and control, as far as was then possible, of infectious diseases. A wider conception had now come in, involving the inspection and treatment of school children, infant welfare, maternity care, and a widening of many things which pertained to the office of medical officer of health. There has been brought about a peculiarly intimate and confidential relationship between the administrators of public health and the profession to which he had the honour to belong. The authorities were using the profession in various ways to such an extent that as a consequence, by reason of the Municipal Corporation Act and other Acts, members of the profession, because they were rendering these services, could not themselves be members of public bodies. He pleaded, in the public interest—not in the interest of the medical profession—that those methods and wholesome traditions which had grown up in connexion with medical practice in this country should be as far as possible respected and encouraged. They would never have taken root as they had done if they had not contained some essential good. He hoped that his old colleagues in Middlesex, in their various health and sanitary services, would utilize all the knowledge and experience which the medical profession could bring, and would regard, at least with tolerance, if not with sympathy, the established methods and traditions to which he had referred.

London Voluntary Hospitals Committee.

"The London Voluntary Hospitals Committee" is the title that has been taken by the committee elected by the hospitals in the County of London for the purpose of consultations with the London County Council under Section 13 of the Local Government Act, 1929. The Section provides that:

> "The council of every county and county borough shall, when making provision for hospital accommodation in discharge of the functions transferred to them under this Part of this Act, consult such committee or other body as they consider to represent both the governing bodies and the medical and surgical staffs of the voluntary hospitals providing services in or for the benefit of the county or county borough as to the accommodation to be provided and as to the purposes for which it is to be used."

There has not hitherto existed in London any suitable body for this purpose, and a scheme of representation was therefore drawn up and submitted to the hospitals for their comments and approval by a *joint committee consisting* of representatives of the Voluntary Hospitals (Local Government Bill) Committee of the King's Fund, the Conference of Teaching Hospitals, and the London Regional Committee of the British Hospitals Association. The scheme provides that every hospital in the area shall have the right to nominate at least two representatives, one representing the governing body and one the medical and surgical staff, upon an electoral body which is divided into six sections for the purpose of representing five areas (North-Western, Northern, North-Eastern, South-Eastern, and South-Western) and the special hospitals whose work cannot be localized in relation to any particular area. Each of these five area committees and the Non-localized Special Hospitals Committee in turn elects its own representatives upon the central committee, the method of representation being such as to ensure that teaching, non-teaching, and special hospitals are each given proportionate representation. The meetings of the various electoral bodies were *convened in the latter part of March* by members of the joint committee, to which reference has been made above, and the central committee was able to hold its first two meetings during April. Lord Riddell is the chairman of the committee, and Dr. Geoffrey Evans the honorary secretary; the address of the committee is 23, Park Square East, N.W.1. The following are the members of the committee:

Mr. A. Lawrence Abel, F.R.C.S.	Mr. M. S. Mayou, F.R.C.S.
Mr. F. S. A. Baker.	Mr. E. Vernor Miles.
Lady Barrett, M.D.	Mr. Arthur Morley.
Mr. O. N. Chadwyck-Healey.	Mrs. E. W. Morris.
Mr. Thomas Clapham.	Mr. Gilbert G. Panter.
Lieut.-Colonel *Clement* Colbeld.	Mr. D. D. Pinnock, F.R.C.S.
Dr. Edmund H. Colbeck.	Dr. Arthur Porter.
The Right Hon. C. G. Craig.	Dr. Harold Pritchard.
Mr. R. Davies-Colley, F.R.C.S.	Lord Riddell.
Prof. L. S. Dudgeon, F.R.C.P.	Mr. D. W. Roy, F.R.C.S.
Dr. Geoffrey Evans.	Dr. T. H. G. Shore.
Mr. Arthur G. Ferard.	Dr. E. Bellingham Smith.
Mr. Charles Gibbs, F.R.C.S.	Mr. H. S. Souttar, F.R.C.S.
Sir Henry Gooch.	Mr. Widdrington Stafford.
Mr. E. L. Pearce Gould, F.R.C.S.	Mr. T. G. Stevens, F.R.C.S.
Dr. A. M. H. Gray.	Mr. Austin Taylor.
Captain A. M. Hughes.	Sir William H. Wells.
Sir Henry Jackson.	Mr. J. P. Wetenhall.
Dr. J. M. H. MacLeod.	Mr. Francis P. Whitbread.
Sir George Makins, F.R.C.S.	Dr. C. M. Wilson.

Medical Society of London.

Sir Arthur Keith's oration, printed at page 893, was preceded by a general meeting of the Medical Society of London on May 12th, at which Dr. R. A. Young was elected president for the next session, in succession to Mr. *Donald Armour*. Two interesting presentations were made to the society during the evening. Dr. Voelcker, the honorary librarian, announced that Dr. James Stowers, the oldest Fellow, had presented a portrait of Robert Willan (1757–1812), who might be called the first of British dermatologists, together with some manuscript letters and some pamphlets on skin diseases. The other presentation was made by Dr. Herbert Spencer, and consisted of fifty-three autograph letters by John Coakley Lettsom (founder of the society), together with a fair typescript of the same. Dr. Spencer said that the letters, which he had acquired from a bookseller, were dated from 1799 to Lettsom's death in 1815, and thus formed a supplement to the 293 published letters (of which only eighty were written by Lettsom) in his *Life and Writings*. The letters were addressed to John Nichols, the celebrated antiquary, who was also publisher of the *Gentleman's Magazine*, and to his son John Bowyer Nichols. The subject-matter was chiefly with regard to publications appearing in the magazine; in one letter Lettsom was pleased to observe that Mr. Nichols had mentioned the Medical Society fully and politely in his last number. The letters also dealt with the affairs of the Royal Humane Society, and touched on vaccination, bills of mortality, and other topics. The handwriting, Dr. Spencer said, was accounted for by the fact that Lettsom, a busy man, customarily wrote in his carriage. The letters gave a vivid glimpse of his activities. One of them offered an appointment at twelve midnight, but said that if that was unsuitable Lettsom would see his correspondent at seven in the morning. In one letter, writing about tobacco, he gave the authority of John Hunter and Benjamin Brodie as confirming his own experience with regard to the deleterious effects of that "vegetable." Although Lettsom made from £5,000 to £12,000 a year in practice, his many charitable gifts landed him in financial difficulties; in 1803 he proposed to sell his natural history collection, and in 1814 it appeared from the letters that he borrowed £100 from

Nichols. Some of the letters were letters of condolence, including one to his friend of forty years' standing, Dr. Combe (whose mother-in-law married Lettsom's son Pickering), on the loss of his son, and a few weeks later he records the death of his own son Pickering five weeks after his marriage. "My path," he writes, "seems to be over the ashes of my children."

Central Midwives Board.

At the meeting of the Central Midwives Board for England and Wales on May 1st a letter was read from the Maternal Mortality Committee, referring to the correspondence which has taken place between the Board and the Pharmaceutical Society with regard to the fixing of a standard of lysol suitable for use by midwives, and stating that a special investigation into the relative effectiveness of the various methods of hand disinfection was being undertaken under the auspices of the Medical Research Council and of the Maternal Mortality Committee. The Maternal Mortality Committee suggested that it was desirable to await the results of such investigation before laying down a specification as to the constitution of a solution of lysol suitable for use by midwives. The Board resolved to agree to this suggestion. A letter was read from the medical officer of health for the County of London stating that he proposed to recommend to his Public Health Committee that lectures on the rules and the relationship of midwives to the various health authorities should be delivered at the County Hall to the pupil midwives in training at the Council's various hospitals by the principal medical officer of the branch of the department dealing with the supervision of midwives, or by some other medical officer engaged in that work, and asking if the Board approved his proposal. The Board welcomed the proposal.

Scotland.

Health of Scotland.

As announced in this column last week, the first annual report of the Department of Health for Scotland, covering the year 1929, has now been issued.[1] Much preliminary work has been done by the Department in preparing for the transfer on May 16th, 1930, to county councils and town councils of large burghs of the functions previously discharged by local authorities of smaller districts. It is pointed out that there is a widespread intention to transfer hospital treatment of the sick from the Poor Law, but that it will take some time to carry this into practice; for while the Poor Law stigma may be removed by treating patients under public health powers instead of under those of the Poor Law, there still remains the discrimination against the sick poor in consequence of their treatment in institutions having a lower standard of equipment than the public health hospitals. The two main difficulties in the way of reorganization are the general shortage of hospital beds in Scotland and the fact that existing Poor Law buildings are, as a rule, not suitable for the work of a modern hospital.

Housing and Town Planning.

In the ten years that have elapsed since the first Act authorizing State assistance for housing schemes in 1919, over 106,000 houses have been built in Scotland, accommodating nearly half a million persons, or one-ninth of the working-class population of Scotland. There is still, however, a shortage of at least 100,000 houses, which are estimated to take another decade to provide at the present rate of building. The output of houses has been steadily diminishing during the last two or three years, and as this may have been caused by the reduction of the rate of the subsidy in 1928, attention is drawn to the means by which greater allowances may be obtained by local authorities. The report urges the necessity for proceeding with the improvement of the housing conditions of farm servants, and outlines the directions in which this might take place. It mentions that in one large burgh 346 houses have been erected in which lighting, cooking, and the washing of clothes are done by electricity at an extra capital cost of only £7 per house, and that the corporation of Glasgow is making experiments with this type of house in four large rehousing schemes. Some idea of the future of regional planning in Scotland is obtained by the statement that over 3,000 square miles are included in four regional schemes which are in course of preparation for an area extending across the Scottish Midlands and embracing the industrial belt.

Slum Clearance.

The shortage of houses in Scotland during the last fifteen years has intensified the problem of the slum, so that many houses ready for demolition must continue to be occupied until alternative accommodation has been provided. Local authorities after the passing of the Housing (Scotland) Act, 1919, advised the closing down of over 34,000 houses. In ten years 11,000 houses have been provided to replace those closed under improvement schemes, but 23,000 houses are still required in the five large cities of Scotland alone for this purpose, according to the reports of medical officers of health. The census of 1921 revealed that the number of one-apartment houses in Scotland was 124,369, of two-apartment houses 424,238, while nearly one-fifth of the total population was living more than three to a room, and about one-half more than two to a room. The hope is expressed that the census of 1931 will indicate some improvement on these figures owing to the activities of local authorities, but it is pointed out that the problem of overcrowding is closely connected with the problem of slum clearance. The reports of the medical officers of health for Glasgow and for Edinburgh show that high death rates and high infant mortality rates are also associated with overcrowded areas. Medical officers of health and school medical officers reported that during 1928 and 1929 the condition of children affected by slum clearance schemes had materially improved.

Food Supply.

The report remarks that the consumption of milk in Scotland is still too low, and that an educational effort is required to bring home to consumers the high value of milk as a food for children. Experience of the working of the Milk and Dairies (Scotland) Act, 1914, has shown that if veterinary inspection is to have a reasonable measure of success in preventing the retention of tuberculous and other diseased animals, it must take place more than once a year. Four inspections a year are common in burghs, and in some instances there are monthly inspections, but in most inland districts, which include some of the leading dairying counties, the local authorities have not yet seen their way to provide for more than the statutory minimum of inspection. Dairy by-laws of local authorities under this Act are in operation, however, in practically all landward areas, and help to prevent contamination of milk supplies by dirt and disease of dairy workers. Reports by some county sanitary inspectors have revealed a formidable list of defects at dairy premises, such as lack of adequate water supply and of facilities for washing and scalding milk vessels. About 108 tubercle-free herds of cattle are now supplying graded milk. The Department has issued a direction that on and after July 1st, 1930, the double intradermal test alone should be used in all tuberculin testing of cattle, and that this test should meet the desire of producers for a uniform test upon which reliance can be placed. Meat inspection has been greatly improved by the operation of the Public Health (Meat) Regulation (Scotland), 1924; the arrangements under this Act are stated to be working effectively. Regulations concerning preservatives in food are also working smoothly, and the trades concerned are apparently adjusting themselves to the new conditions. Of 264 samples of mince analysed for local authorities during 1929, 29.9 per cent. were found to have been adulterated by preservatives.

Mental Welfare in Scotland.

The Rt. Hon. William Adamson, M.P., Secretary of State for Scotland, delivered an address on May 4th in Glasgow at the annual meeting of the members of the Scottish Association on Mental Welfare, under the chairmanship of Sir Henry S. Keith. Mr. Adamson referred to the recent opening of two institutions for mental defectives in Scotland—namely, Lennox Castle, provided by the Glasgow

[1] Cmd. 3529. Edinburgh: H.M. Stationery Office. 3s. 6d. net.

authorities, and Gogarburn House, established by the Edinburgh Parish Council. He thought that many more of these institutions would probably be required. Apart from institutions altogether, there would always be many mentally defective persons who required the care and friendly help of that association, which had about nineteen local care committees operating in the areas of twelve different education authorities. Some of these had done pioneer work in setting up employment and occupation centres which encouraged out-of-work pupils to develop the knowledge they had obtained in special schools, and to earn a little towards their maintenance. These centres kept the mentally defective under supervision, and prevented deterioration of mind and body. The careful notes that were being made of individual development would undoubtedly be of value in research on mental deficiency problems. Great progress had been achieved since the association was founded seven or eight years ago. The present was an important period in the history of the association because many local authorities would shortly disappear. Mr. Adamson recommended all county and town councils in Scotland to support the association by appointing representative members and by subscribing liberally to its funds. Councils could secure much valuable help in their work from local care committees. Dr. D. K. Henderson of the Glasgow Royal Mental Hospital thought that a research centre should be established to set a standard for mental work throughout the community.

The Menace of Smoke to Health.

Dr. J. R. Currie, professor of public health at Glasgow University, who delivered an address on May 9th to the Scottish branch of the National Smoke Abatement Society, on smoke nuisance and radiation, said that in winter the smoke cloud over cities assumed the form of fog, because condensation readily occurred on the numberless particles of soot in the atmosphere when damp air was near the point of saturation. The total quantity of this material in Glasgow during 1929 was equivalent to a fall of soot of 278 tons per square mile. The thick pall created by such fogs shut out sunlight and reduced the temperature. Frost combined with fog raised the respiratory death rate; in Glasgow one November a five-day fog accompanied by frost increased the number of deaths from respiratory diseases from 75 to 138 in the week of fog and to 233 in the following week. In order to diminish this evil Dr. Currie suggested that gas fires or electric radiators were excellent for household heating and cooking, although the open fire might be most suitable on hygienic grounds in a room which was continuously occupied. Dr. A. S. M. Macgregor, medical officer of health for Glasgow, remarked that respiratory diseases now constituted the infectious diseases of their large cities. With the decrease in the effects of other diseases more and more attention was being paid to the incidence and control of respiratory disease, with which the question of smoke abatement was intimately associated. Experiments had revealed that the pollution of the air in Glasgow was caused largely by domestic fires; the elimination of domestic smoke was one of the problems of this campaign. A completely smokeless atmosphere might be anticipated as coal became too precious to be wasted. Professor R. W. Dron, of the department of mining engineering at Glasgow University, advocated the use of anthracite as a smokeless fuel, and said that the smokeless condition of such cities as Paris and Berlin could be explained mainly by the fact that these cities used Scottish anthracite. It was a curious fact that anthracite was sent overseas to make other cities smokeless, while Glasgow and Edinburgh remained in smoke and grime.

Edinburgh University Chancellor.

A meeting of the General Council of Edinburgh University, which comprises all the graduates on the roll of the university, was held on May 7th. The Principal, Sir Thomas Holland, presided, and three candidates, the Marquess of Linlithgow, Sir James M. Barrie, and Lord Macmillan, were nominated. A vote by a show of hands resulted in Sir James Barrie obtaining a majority of nineteen votes over Lord Linlithgow, whose supporters, according to the regulations governing the appointment, demanded a poll of all the members of the General Council resident in Great Britain. Voting papers have therefore been sent out to the 18,000 graduates of the university; these must be returned within twenty-one days from the date of nomination.

India.

Kashmir Mission Hospital.

THE importance of co-ordination in medical relief is emphasized in the annual report of the Kashmir Mission Hospital in Srinagar for 1929. Dr. E. F. Neve, medical superintendent of the hospital, comments on the necessity of co-operation between official and voluntary health organizations, and commends the marked sympathy and help which have been received from the medical department of the Kashmir Government and its director, Lieut.-Colonel Hugo, I.M.S. Dr. Neve mentions a liberal grant made towards the work of the hospital by the Maharajah of Kashmir, and adds that the improvement in the general medical service in Kashmir during the last twenty years has been particularly notable. He contributes to the report an account of the maternity and infant welfare work in that State. About one-third of the patients who attend the hospital are women and children, insufficient food being in many cases one of the chief causes of illness. Osteomalacia is common; Dr. Neve thinks that this disease is probably toxic and, like goitre, is due to some special form of infection related to insufficient exposure to sunshine consequent on the conditions of life. Hindu women form less than 10 per cent. of the population of Kashmir, but nearly 30 per cent. of the osteomalacia patients are of this nationality. Cholera has been practically absent since 1925, when there was a serious outbreak affecting about 22,000 cases, with a mortality of 50 per cent.; this disease reappeared, however, in October, 1929, when between 200 and 300 widely scattered cases appeared, and the danger of a grave recrudescence in this present year is obvious. A Government tuberculosis dispensary has been started in Srinagar, and it is hoped that a sanatorium will be established later at Tangmarg or elsewhere. Tuberculous joint disease seems to be becoming more common. The total number of surgical operations performed in the Mission Hospital during 1929 was 6,015, with a mortality of 19. This hospital—which is conducted by the Church Missionary Society—has won widespread popularity, and the present report illustrates well the variety of ways in which it is rendering most effective service to the community.

Progress of Antirabic Treatment.

An apparent decrease in the mortality from rabies in the Madras Presidency is indicated by the report of the Pasteur Institute at Coonoor for 1928–29. In 1928 the number of deaths from rabies registered in the towns was 71, and 493 were recorded in the rural areas, giving a total of 564, as compared with 636 in the previous year. Registration of statistics appears to be defective, however, in many towns and districts. On the other hand, the fall in the death rate may be partly explained by the fact that larger numbers are reported to be seeking treatment as a result of effective propaganda on the part of the public health authorities and the provision of more facilities for treatment. Four additional centres were opened during the year. A new concession has been granted by the Government to local bodies, exempting them from the payment of the cost of antirabic vaccine supplied by the institute to Government hospitals for the treatment of indigent patients from district and municipal areas. Issues of vaccines at local centres rose from 4,700 to 5,600, and 465 patients were treated at the institute, an increase of 71. Following the recommendation of the international rabies conference, held in Paris in 1927, statistics were not compiled until six months had elapsed from the date of the completion of treatment. Four patients, who had completed the full course at the institute, are reported to have died of hydrophobia, one less than fifteen days, and three more than fifteen days, after treatment. Semple's carbolized vaccine was used throughout the year; the vaccine is

allowed to mature for a fortnight in the refrigerator before it is used, and it is not considered efficient for more than three months after the date of its preparation. During the last two years patients attending the Kasauli Institute have been treated with etherized vaccines (Alivisatos's method) as well, and the dose and period of treatment have been varied according to the severity of the case. Comparison of the effects of the different methods in use was expected to be published at an early date. Major R. H. Malone, I.M.S., officiating director, Pasteur Institute of India, draws attention in his report to the difference of opinion that seems to exist in regard to the period that must elapse before treatment is considered unnecessary in suspected cases. The two months which has been suggested is too short, he thinks, because he has found that about 12 per cent. of the deaths from hydrophobia among patients who have been treated occur between three and six months after they have been bitten. At Kasauli, during 1928, treatment was regarded as unnecessary where a period of six months had elapsed. The death is recorded of a European whose hands were licked by a rabid animal, though he was subsequently treated with carbolized vaccine; the saliva alone came into contact with scratches on both hands, the patient not being bitten. A few complaints were received about the unfavourable effects of antirabic treatment on the general condition of health. It has been observed at Kasauli that patients who have previously had malaria tend to have a relapse during a course of antirabic treatment. Experience has also shown that headache and insomnia are comparatively common complaints, and that giddiness, fainting, and palpitation may be reasonably ascribed, partly at least, to this cause.

Correspondence.

ACUTE PERFORATION OF THE STOMACH AND DUODENUM.

SIR,—While appendicitis still holds first place as a cause of the "acute abdomen," pyloric perforation will probably soon occupy second place, if it does not already do so, and perhaps I may comment, therefore, on the pyloric aspect alone of some of the points raised by Mr. A. G. Bryce in his interesting article in the *Journal* of April 26th (p. 774) and in the letter of Mr. Struthers (May 3rd, p. 838).

I am glad to find that Mr. Bryce supports my contention that many of these ulcers should be described as pyloric. What is probably of greater importance than the relationship of the ulcer to the pyloric vein is its relationship to the sudden transition from the thick-walled, freely movable, and easily stitched stomach, with a thick succulent mucosa, to the thin-walled, fixed, and rather rigid duodenum, with a thin mucosa, which does not lend itself so readily to plastic requirements and stitching.

Mr. Struthers agrees with Mr. Bryce that the addition of a gastro-enterostomy to an operation for the closure of a perforation should be reserved for cases in which stenosis is present or is likely to result from healing. I also feel strongly that a gastro-enterostomy is an undesirable addition, particularly where the patient is already suffering from shock, and speed is desirable, but I would like to raise the question whether there is any need of this operation, or whether any advantage is to be gained by performing it in the great majority of cases, provided that the pyloric ulcer is appropriately treated. When Mr. Struthers states that the results obtained by Mr. Bryce are exceptionally good, and should be accepted with caution as a guide, I think it is worth while asking whether Mr. Struthers and Mr. Bryce have exactly the same treatment of the pyloric condition in view. Mr. Bryce says: "The method of treatment was to invaginate the perforation by two layers of suture. . . . At the pylorus and in the duodenum the *suture line was made to lie in the transverse axis of the bowel*" (italics mine). If I understand Mr. Bryce aright, therefore, his method of treatment approximates to mine, which has the double object of removing the ulcer and of widening the pylorus by means of a pyloroplasty, thereby rendering the occurrence of stenosis extremely unlikely. I think it is wise to excise the ulcer, since, whatever its pathology may be, its walls are not healthy, and frequently present a curious cartilage-like consistency and brittleness. This condition may invade a considerable portion of the pyloric wall, rendering any but through-and-through stitches liable to cut out.

The method of excising the ulcer and performing at the same time and by means of the same incision a pyloroplasty, so as to produce a wide pylorus, is one I adopted some twenty years ago; I became so convinced of its value both as regards the immediate results and, so far as I could judge, the later effects, that I have advocated it to my students for many years past, and gave a short description of it in my *Textbook of Surgery*, published in 1922. At first I made the ulcer the centre of a horizontal incision running parallel with the axis of the bowel, but I now prefer to place the ulcer near the duodenal extremity of this incision. The ulcer is excised and the pylorus opened. The finger is introduced through the opening, and both stomach and duodenum are explored to ensure the existence of a perfectly free passage; with the finger still in position, a couple of retracting stitches are introduced, one at the middle of each side of the horizontal incision. On an assistant making traction by these stitches the horizontal incision becomes first diamond-shaped, and finally reverses its axis, so that it is now vertical, or transverse to the axis of the bowel, while the pylorus becomes correspondingly short and wide. The wound is stitched in this position, transverse to the axis of the bowel. As it is difficult to close this wound with an ordinary continuous in-and-out and-across stitch, such as is used in a gastro-enterostomy, three or more interrupted sutures on the in-out-and-across principle are inserted; these are tightened; the edges of the wound are seen to be inverted, and then they are further tightened and tied. The wound may be reinforced by a continuous serous-to-serous suturing, if the condition of the tissues will permit, but it is seldom necessary, and omental tissue is fixed down over the line of incision, and a drain inserted. The operation occupies little more time than any other method of dealing with the ulcer, and, in my opinion, renders it quite unnecessary to consider the pros and cons of a gastro-enterostomy. Only very rarely, in my experience, is the pylorus so extensively diseased and deformed as to render this operation inadvisable, although it may be difficult.

Notwithstanding the excellent results obtained by this method I now consider it important, irrespective of the type of operative treatment adopted, to administer a *teameal before the patient leaves hospital, and, founded on* this, to give him advice as to diet, regulation of the bowels, and in particular, if there be hyperacidity, to insist on the regular use of an antacid. In this connexion I am pleased to see Sir James Barr recommending chalk as an antacid in his letter (May 3rd, p. 839). Long personal experience enables me to say that prepared chalk is the only antacid of the many I have tried that is really suitable for regular use. Its chief drawback is messiness, and this can be largely obviated by using tablets.

Mr. Bryce refers to a pre-perforation stage, with severe and uncontrollable epigastric pain, as described by Continental writers. I have seen a few cases of this type recently. On account of the character and severity of the pain they were sent to hospital as acute perforations, and were operated on under the belief that they had perforated some hours previously. In one, operated on by Miss Ellen B. Orr, one of my assistants, the ulcer had not given way, the serous coat remaining intact, although covered with inflammatory lymph. In another, on which I operated, the ulcer gave way just as my hand was introduced over it, the hand receiving a jet of stomach content. In yet another the ulcer had obviously just perforated although it was not actually seen giving way.—I am, etc.

Glasgow, May 3rd. J. MACEWEN.

SLEEP IN HOSPITALS.

SIR,—May I congratulate you on bringing the question of sleep in hospitals to the notice of your readers?

The difficulty of allowing the patients who are seriously ill to sleep whilst the more convalescent are being washed is of primary importance. I have asked some of my architect friends to design shutters which could be unrolled from the ceiling and thus enclose special patients in a sound-proof box; but so far no practical solution has been sent to us.

The point about hospital patients being accustomed to early rising is not so true at the present day as it used to be. Many big firms have given up work before breakfast because of the greater efficiency obtained by men starting work later.

There is one other point that you do not mention in your article—that is, the effect that this early waking and washing has on the training of nurses. They carry out into the world the idea that it is essential for patients in private to be washed before 7 a.m.—I am, etc.,

London, W.1, May 6th. MALCOLM DONALDSON.

PUERPERAL INFECTION.

SIR,—The article on puerperal sepsis by Dr. Farquhar Murray in the *Journal* of May 3rd (p. 814) is concerned with matters of such importance that it cannot be allowed to pass without comment. Dr. Murray has compared, during two successive years, the incidence of sepsis amongst parturient women before and after exclusion of all possible sources of infection. From May till December, 1929, all cases infected on admission to hospital or likely to become septic were nursed in special isolation wards. Any case of pyrexia which subsequently developed in the general maternity ward was also removed for isolation. The net result of these procedures has been the reduction of the sepsis rate in the maternity wards to the low figure of 1.6 per cent. Dr. Farquhar Murray attributes these favourable results to removal of infected contacts, and concludes that puerperal pyrexia in maternity hospitals is due to contagion.

The result of our personal investigations has been to convince us that the problem of puerperal pyrexia resolves itself into a consideration of two main groups of cases: (1) a contagious group due to *Streptococcus pyogenes*, including the severest forms of puerperal fever; and (2) a much larger group of milder cases, the result of autogenous infection by a variety of organisms normally present in the female passages, which assume minor pathogenicity in consequence of the injuries and exhaustion associated with prolonged labour and instrumental delivery. It is, we believe, a common experience that cases belonging to this milder group (to which undoubtedly the *majority* of Dr. Murray's cases belong, although no bacteriological data are reported) can safely be nursed in general wards without showing any tendency to spread.

What, then, is the explanation of Dr. Murray's favourable experience? Excluding all cases with raised temperature or septic foci on admission, the groups selected by him for study comprise (*a*) cases with or without minor intervention, such as low forceps or simple perineal repair; and (*b*) cases handicapped by cardiac or renal disease, by ante-partum or post-partum haemorrhage, by slight degrees of pelvic contraction, and by certain obstetrical manipulations, including induction of labour. But having selected these two groups of cases Dr. Murray also eliminated from consideration a group of cases which he calls "suspect" for the reason that they were specially prone to become septic. The "suspect" cases, we are told, were for the most part sent into hospital by doctors, and included cases of accidental haemorrhage, placenta praevia, contracted pelvis, etc.

We find it hard to discriminate between the obstetrical complications in Group B and in the "suspect" group, and we submit that the more favourable experience in 1929 may be due, in part, to unconscious favourable selection in the 1929 cases belonging to Group B. Secondly, it is to be noted that the incidence of sepsis diminished in the isolated "suspect" group from 12.4 in the control period in 1928 to 6.9 during the experiment in 1929; this improvement is attributed by Dr. Murray to intensive supervision and nursing. Does it not follow that the "clean" cases, which remained in the general ward, being also under particular observation, profited to at least as great an extent from the same influences? Thirdly, in view of the known variations in the sepsis rate in institutions, it is probably unsafe to generalize on the limited basis of a comparison between two successive years.

The evidence discussed under the heading "Throat carriers of the haemolytic streptococcus" appears to us of subordinate value. The number of carriers of haemolytic streptococci—68 per cent.—amongst a body of healthy attendants seems abnormally high in the absence of an outbreak of sore throat. The question arises whether the haemolytic streptococci isolated can be considered identical with *S. pyogenes*, the cause of severe puerperal fever. As to the author's admission that a case of acute sore throat constitutes a danger in a maternity ward, it is surely impossible to-day that such a person should be permitted access to a parturient woman. If danger there be from this source, it is the apparently healthy ambulant throat carrier of *S. pyogenes* who is to be dreaded.

To summarize, we beg to record our unstinted admiration of the methods and results of Dr. Farquhar Murray and his colleagues, but to maintain an open mind, on the evidence available, with regard to the explanation of his success.—We are, etc.,

St. Bartholomew's Hospital, E.C.1, May 7th. H. BURY-WHITE, R. R. ARMSTRONG.

GLANDULAR FEVER.

SIR,—I was pleased to find that so competent an authority as Dr. Tidy (*Journal*, May 10th, p. 881) has confirmed the suspicion which I had had for some weeks that glandular fever is much more prevalent than is generally supposed. Although I have been familiar with the literature of the subject for several years, as my summaries in the *Medical Annual* since 1923 can testify, it was only last month that I actually recognized as glandular fever some cases which had been sent to the Western Hospital certified as typhus in two instances, and as scarlet fever in another. The diagnosis in each case was rendered difficult by the late development of the glandular swelling. The occurrence of this at once prompted a haematological examination, for which I am indebted to Dr. J. E. McCartney; he reported a condition of infective mononucleosis. I have no doubt, however, that I have previously seen many cases of glandular fever without identifying them, just as before 1905, when I first became familiar with Vincent's angina, I had seen several cases which, on retrospective consideration, were probably examples of that condition, but which I had not learnt to recognize. Many others have doubtless had a similar experience.

In its slight but undoubted degree of contagiousness, its tendency to appear in sporadic as well as in epidemic form, and the long subsequent period of depressed health which Dr. Tidy has emphasized, glandular fever resembles the epidemic diseases of the nervous system. The question therefore will doubtless arise of making glandular fever a notifiable disease and admitting patients suffering from it to isolation hospitals.

I take this opportunity of referring those interested in the subject of glandular fever, which appeals alike to the clinician, pathologist, and epidemiologist, to the excellent *monograph*[1] *recently published by Dr. E. Glanzmann* of Bern, who shows an exemplary appreciation of the labours of British workers in this field.—I am, etc.,

London, S.W.6, May 10th. J. D. ROLLESTON.

SIR,—For the second time in eight years I have had to contend with a small epidemic of mild glandular fever at Repton. This occurred last term, and after reading Dr. Letheby Tidy's article last week I write to record a few personal observations.

The infectivity of the disease is very mild, even in a school house where fifty boys are congregated together. It is possible that in view of the low virulence of the infection many cases go unobserved. No cases have occurred in a boy over 16 years of age, but the older a boy is the more severe are his symptoms. The left parotid gland is often affected first, giving rise to a diagnosis of mumps in the original patient. The glands affected are nearly always on the left side of the neck, and in mild cases there is no following infection of those on the right side. In families of several children where one child has developed glandular fever I have only seen the infection passed on once. This was in a family of six small boys, where one only developed the disease a week after his brother.—I am, etc.,

Repton, Derby, May 12th. RONALD HODSON.

[1] *Das lymphaemoide Drüsenfieber.* 1930. Berlin. S. Karger. 12 marks.

TREATMENT OF MAMMARY CARCINOMA BY RADIATION.

SIR,—Sir G. Lenthal Cheatle's lecture on this subject, published in the *Journal* of May 3rd (p. 807), is of great interest to professional radiologists, coming as it does from the pen of a distinguished surgeon. Perhaps you will permit me to make a few comments from the point of view of one who has for twenty years been concerned with the radiation treatment of breast cancer.

First, as to points of agreement. Sir Lenthal Cheatle calls attention to the prevalent practice of increasing the dose if treatment seems to be ineffective; he expresses the view that in many instances reduction might be more successful. There is no doubt in my mind that over-dosage is more common that under-dosage. With the apparatus of twenty years ago, incapable as it was of delivering a large dose in a short time, the results were often quite as good as they are now, and patients were never made *ill* by the treatment. I hasten to add that apparatus capable of delivering concentrated doses of very penetrating rays is an essential part of the equipment of a modern radiologist. It will sometimes relieve pain when small repeated doses are ineffective, and is the only form of treatment which does any good in mediastinal growth, in the swollen "fore-quarter" which follows invasion of the axillary and cervical regions, and in metastases attacking bone.

The lecturer laid stress on a wide area of irradiation, pointing out that no one can say from clinical investigation exactly where cancerous cells are located. He also called attention to the experimental work of Professor Russ, which showed that previously irradiated tissues acquired an increased resistance to implanted cancer. This necessity for wide fields has always been present to my mind. At a discussion at the Royal Society of Medicine I once heard the late Dr. Ironside Bruce say: "A widely opened diaphragm; a long anticathode skin distance; a shield over the patient's face; and the more surface your rays cover, the better." To my mind, this dictum remains good at the present day, certainly so far as prophylactic work is concerned. It implies that the actual quantity of rays falling on any given area of skin is very small—so small that no "direct lethal action" upon carcinoma cells can be conceived of as possible. Therefore, if good effects are clinically proved, they must be due in large measure to a stimulation of the local and general resistance.

There are, however, some statements made by Sir Lenthal Cheatle with which I cannot agree. If I preface my remarks by saying that during the past two decades I have dealt with thousands, rather than hundreds of cases, I do so in modesty, because, while Sir Lenthal has no need to refer to his experience, I feel that, in disagreeing with him, I must state my credentials. He says that cancers of the breast do not as a rule regress with external radiation, and that when they do they are also highly anaplastic, so that the prognosis is, in such circumstances, grave. My own experience is that most breast carcinomata can be made to diminish in size, and many to disappear, by comparatively small divided doses of *x* rays of medium quality. In the hospitals to which I am attached it is usual to send patients for a two to three weeks' course of pre-operative radiation. At the end of this time, short as it is, the tumours are usually smaller, and, more important, the pathologist's report is to the effect that the carcinoma cells show degenerative changes. The difference between my experience and that of Sir Lenthal Cheatle may be due to the dosage employed, which, in my cases, is certainly much less than is customary, and has even been ridiculed by some of my colleagues as a mere playing with, rather than a serious use of, *x* rays.

The lecturer points out that it is by no means certain that expensive radium bombs for external radiation will give better results than deep *x* rays; he adds that "the interstitial application of *x* rays is at present impracticable." This latter statement is correct only in the sense that it is not possible to get an intense interstitial action comparable with that of buried radium tubes without at the same time having an external source of radiation. But it is an easy matter to intensify the action of an external beam of *x* rays in any desired locality. This can be done by utilizing the phenomenon of secondary radiation. The heavier elements when struck by *x* rays emit a specific or characteristic radiation depending upon their atomic weight. In a paper read before the Electro-Therapeutic Section of the Royal Society of Medicine in 1912, I discussed this subject at length in its possible therapeutic applications, and showed that if a finely divided metal such as precipitated silver were injected into a tumour, each minute particle emitted secondary *x* rays in all directions when excited by a primary beam outside the body. These rays I called "pandrastic" to indicate their universal distribution. If I have not followed this up to any great extent in practice, it has been due to a wholesome dread of trauma, even a needle puncture in malignant growths. If, however, Moppett's observations on the specific effects of different wave-lengths should be confirmed, the subject of secondary rays may assume great importance, since the introduction of suitable materials into and around tumours would at one and the same time provide interstitial action and a choice of wave-lengths.—I am, etc.,

London, W.1, May 3rd. F. HERNAMAN-JOHNSON.

BLOOD CULTURE IN UNDULANT FEVER.

SIR,—The reports in the *Journal* of May 10th of five cases of undulant fever, four at least of which were apparently due to infection with *Br. abortus*, will be read with interest by all who are anxious to ascertain the frequency of this disease in Great Britain. Over twenty cases have now been reported, but in only two of them has the causative organism been isolated—once from the blood and once from the urine. In the remainder the diagnosis has been based on the results of the agglutination reaction. From the bacteriological point of view it is of importance to determine the exact type of the infecting organism, and this can be done only by its recovery from the patient. Since there still seems to be a considerable amount of uncertainty as to the best method to be adopted for this purpose, I venture to make the following remarks.

The blood should be withdrawn during a pyrexial period, and should be distributed into flasks of a suitable medium. Probably Stafseth's liver infusion broth is the most satisfactory; for a description of this medium reference should be made to Duncan's article in the *Transactions of the Royal Society of Tropical Medicine and Hygiene*, 1928, xxii, 269. Plain ordinary heart extract broth adjusted to *p*H 6.6 to 7.0 may be used. Two flasks should be inoculated: one of them should be incubated aerobically, in case the infecting organism is of the *melitensis* or of the porcine *abortus* type; the other should be incubated in a closed jar containing air, 10 per cent. of which has been replaced by CO_2, in case, as is most likely in this country, the infecting organism is of the bovine *abortus* type. The simplest way of providing the requisite CO_2 content is to connect the jar to a filter-pump, reduce the pressure by 76 mm.—1/10 of an atmosphere—and then run in CO_2 from a cylinder or from a Kipp's apparatus containing HCl and marble till the pressure is restored to that of the atmosphere. The flasks should be incubated for three weeks, subcultures being made on agar plates every five days.

It may be pointed out that CO_2 is absolutely essential for the growth of the bovine *abortus* type, and that a reduced oxygen pressure, as was used, for example, by Dr. Baxter, is not sufficient to ensure growth. If routine blood cultures were made according to this technique on all patients giving a positive agglutination reaction to *Br. abortus*, I feel sure that the infecting organism would be recovered in a considerable proportion of cases.—I am, etc.,

London School of Hygiene and Tropical Medicine, May 10th. G. S. WILSON.

BRUCELLA ABORTUS INFECTION.

SIR,—In view of the cases of *Brucella abortus* infection reported in the *Journal* of May 10th, and the editorial comments thereon, it seems desirable to refer to a case I attended in 1896 in Plymouth.

The patient, aged about 25, had recently passed into the Indian Medical Service, and had been through a special course of instruction at Netley in preparation for his duties. He came home to Plymouth before sailing for India, and was seized with a febrile attack. His brother, a medical practitioner in this city, asked me to assist him in the attendance. His symptoms were those of

an acute febrile illness, with a temperature of the typhoid type and abdominal distension: we considered the case one of typhoid fever. At the end of the third week the temperature fell to normal and his symptoms subsided, to be followed after a few days by a relapse lasting about a week, accompanied by pain in the right hip. A second similar attack with joint pain succeeded recovery from this relapse. By this time we were becoming doubtful of the correctness of our diagnosis, when fortunately he was seen by a retired Indian Medical Service officer, who recognized the disease as undulant fever. A prolonged convalescence followed the onset of recovery ensued.

The origin of the infection was a mystery. The patient had never been out of England, and the suggestion was made that possibly he might have accidentally contracted the infection during his work in the bacteriological laboratory at Netley.—I am, etc.,

H. W. WEBBER.

Royal Naval Hospital, Plymouth, May 12th.

STERILITY IN WOMAN.

SIR,—There is an interesting side-issue to the discussion on sterility started by Mr. Leith Murray's letter (April 26th). It seems to be becoming the practice among gynaecologists to advise that the seminal fluid be examined as a routine in the investigation of cases of sterility. I wish to question both the practical utility and the desirability of this examination, and, indeed, to urge that it should not be carried out unless the husband asks that it should be done. Mr. Leith Murray mentions one or two cases of threatened suicide in men who have been informed, as the result of this examination, that they are incapable of procreation. Mr. Connell (May 3rd) says that we can easily understand this (as indeed we all can), and proceeds to recommend that in all cases the semen should be examined before subjecting any woman to operation. In cases where operation is advised for a definite lesion discovered on examination, surely it is unnecessary to demand that the husband should consent to an examination some of the details of which may well appear to him to be revolting. In cases where nothing is found in the woman to account for the sterility but where dilatation is advised as a sort of forlorn hope, then I consider that the risk and inconvenience associated with this operation (which is unlikely to be successful in any case) are trifling and not worth considering when compared with the risk of humiliation and domestic unhappiness that may follow a report adverse to the husband. It may be argued that the man can refuse to have this examination made; he is unlikely to refuse, however, even if unwilling, for two reasons—first, because, if he trusts his doctor, he is likely to follow his advice, and secondly, because to decline examination is almost tantamount to admitting that he fears to face the verdict. If it were merely a question of barrenness to both that the "blame" should be laid on the responsible partner, it would be comparatively easy to do so. But I submit that there is little to be gained by this straining after scientific accuracy, and a risk that much harm may be done; for it is much more humiliating to the man (or him (and his wife) to be assured that he is incapable of procreation than it is to the woman for her to be informed that she is unlikely, as the result of conditions found on examination, to be able to have children. A woman who comes for examination on account of sterility wants to know "if there is anything wrong with her," and, if there is, what can be done about it; she rarely, in my experience, makes the suggestion that her husband should be examined. I therefore advocate that, except in special circumstances, the semen should only be examined when the husband asks for it.—I am, etc.,

Leicester, May 5th. T. C. CLARE.

HYPOGLYCAEMIA.

SIR,—The illuminating article on chronic hypoglycaemia by D. P. J. Cammidge in your issue of May 3rd (p. 812) is of particular interest to me. For some years my attention has been directed to what I can best describe as an acute manifestation of hypoglycaemia. Of the 26 such cases of which I have notes in only 3 have I been able to estimate the blood sugar at times other than those when acute symptoms have occurred. Although in each of these hypoglycaemia persisted between the acute manifestations, my investigations do not permit me to say that hypoglycaemia was chronic in every case. I need only quote one case in detail, as the clinical symptoms are precisely the same in every case.

The patient was a male, aged 31. His family history revealed nothing of importance. In childhood he had had the usual exanthemata—including diphtheria at the age of 5—and recurrent attacks of acute follicular tonsillitis; the tonsils were not removed. At the age of 11 he had an acute abdominal illness—probably an acute appendicitis. At 14, for a period of a few weeks, he had eructations of sulphuretted hydrogen. This occurred at school, and was associated with a yellow vision. He did not report it, and so was not seen by a doctor. From 19 onwards he suffered from severe hunger pain on and off for periods of several months at a time. He was very thin. There was epigastric pain of an aching character with the first few deep breaths on awakening in the morning. At 25 he suffered severe pain immediately after food, and saw a physician. At this time there was gastric dilatation and succussion, which attracted the patient's notice when he turned over in bed, and he described it as resembling the disturbance of a rubber hot-water bottle.

After he had led a stomach-tube life for a year laparotomy was performed. The surgeon's notes on the operation show that there was an enormously dilated stomach, extending down to the pelvis. No duodenal or gastric ulcer was found, and no evidence of mechanical obstruction of the pylorus or duodenum. There was no report on the appendix, which was apparently not removed. A posterior no-loop gastro-jejunostomy was performed. The operation almost entirely relieved the patient's digestive troubles, but a few weeks later hypoglycaemic symptoms appeared. About half an hour after a short spell of very active exercise the patient "felt faint," and had to sit by the road-side. During such an attack he had the following symptoms: slight hypogastric discomfort, pallor, sweating, and a sense of extreme muscular weakness associated with a fine tremor of the hands, slight dyspnoea, and a craving for food (not hunger pain). As time went on these attacks recurred from time to time; they were precipitated if the patient went without food, or if he took coffee or strong tea, and they were always associated with a craving for food, especially starches and sugar.

When I saw him he was aged 30. He was a tall, spare man, with musculature lacking in tone, and long-chested; the tonsils were flat, the fauces injected, and the tongue slightly coated. The first heart sound was accentuated at the apex; the systolic pressure was 105. His urine contained excess of phosphates; no sugar. The resemblance of these attacks to the symptoms of insulin hypoglycaemia led me to test his sugar tolerance. Fasting it was 0.08. At the end of half an hour it had risen to 0.14, and returned to 0.08 at the end of two hours. A few weeks later I had an opportunity of seeing him in an attack. The symptoms were such as I have already described. His systolic blood pressure was then 95, and his blood sugar 0.06.

Among my other cases was a lady aged 38 who, a few months previously, had had a partial gastrectomy done. She was picked up unconscious in the street. A doctor who saw her on the spot found her collapsed and pulseless; her pupils were slightly dilated, and there was no corneal reflex. I saw her half an hour later. She was then conscious, but profoundly shocked, with a pulse of 140, which was of the soon full, soon empty type. Her blood sugar was 0.05; systolic blood pressure 110. I gave her one pint of 5 per cent. solution of dextrose, which produced a most dramatic recovery. She was then given some well-sweetened cocoa, and half an hour later she insisted on going out and completing her shopping expedition. I recommended her always to carry barley sugar in her handbag, and to eat some when she felt one of these attacks threatening. Several attacks were thus averted. Some eighteen months later, with the premonitory symptoms of an attack, she found herself without her barley sugar. The attack developed, and she was taken unconscious into a London hospital under conditions similar to those which I have described.

In only 7 of my 26 cases have I been able to get an estimation of the blood sugar during an attack, and, therefore, hypoglycaemia as a cause of the symptoms is only supported in the remaining cases by the clinical symptoms and their disappearance on the exhibition of carbohydrates. In only 3 cases have I been able to get blood sugar tolerance tests. The fasting blood sugar was in all three below 0.1—one rose to 0.2 at the end of three-quarters of an hour, and the others were below 0.14 in three-quarters of an hour. The association of low blood pressure with the symptom complex is interesting in view of the relationship between the adrenal gland to blood pressure and sugar metabolism.

Of the 26 patients in this series, 17 had undergone operations involving the stomach, duodenum, or gall-bladder;

19 were men, and 7 women. The age incidence of the operation cases was determined by the age at which the operation was performed, and in every case the onset was within three months of the operation. The age incidence of the non-operation cases (5 men and 4 women) varied between 23 and 45. The symptoms in every case were slight epigastric discomfort, muscular weakness, slight dyspnoea, rapid pulse of the soon full, soon empty type, some sweating, and tremor. In no case have I found glycosuria. The symptoms always disappear on the exhibition of carbohydrates.—I am, etc.,

THOMAS E. A. STOWELL.
London, S.W.1, May 6th. M.D., F.R.C.S.

TREATMENT OF ENDARTERITIS OBLITERANS.

SIR,—The paper by Dr. Schwartzman (May 10th, p. 855) raises once more the question of the treatment of intermittent claudication (or, to use a better term, endarteritis obliterans) and of the allied arterial syndromes—angina pectoris and mesenteric arteritis. Unfortunately Dr. Schwartzman bases his observations principally on the amelioration of the subjective symptoms, and neglects the only procedure by which the action of a therapeutic agent on intermittent claudication can be studied—namely, the following up of the increase of the oscillometric index, a method strictly objective and indispensable for the study of patients with endarteritis obliterans.

In my paper in the *Journal* of February 8th (p. 234) I referred to the remarkable results obtained with pancreatic extracts deprived of insulin. Although it would be interesting to compare the action of these pancreatic extracts with that of the muscular extract utilized by Dr. Schwartzman it must be remembered that the efficacy of the pancreatic extracts, apart from certain physiopathological considerations, has in its favour the fact that the already numerous observations which have been published on that method are based, not on the vague amelioration of subjective symptoms, but on the distinct increase of the arterial permeability which is manifested, with mathematical precision, through the oscillometric exploration.—I am, etc.,

London, W.1, May 9th. A. P. CAWADIAS.

ASYLUM MEDICAL OFFICERS AND RESEARCH.

SIR,—As one of the members of a subcommittee convened by the British Medical Association to consider the status and conditions of service of asylum medical officers, may I be permitted to make a few observations, which seem peculiarly relevant at the present time?

The modern mental hospital, equipped as it is with elaborate laboratory and clinical facilities, offers opportunities for medical investigation and research which were undreamed of by our predecessors. Moreover, the establishment of the diploma in psychological medicine has awakened in many asylum medical officers an enthusiasm and interest which is abundantly reflected in their contributions to current medical literature. But what of the future of these clinical and laboratory workers? The higher posts in the mental hospital service are purely administrative in nature, and a medical superintendent of a large institution must either neglect his institution or say good-bye to medicine. Such positions hold little attraction for men whose interests are primarily in the wards or in the laboratory, but there is no alternative in our present system. Few men can afford to ignore completely the material side of life, be they ever so keen on their profession.

In an able and illuminating paper recently read before the Royal Society of Medicine,[1] Dr. Mapother, sketching the psychiatric system in America, observes that "scientific work is encouraged by establishment, just below the superintendency, of three equal positions—that of administrative assistant, clinical director, and pathologist—each providing a satisfactory career." Dr. Mapother also stated that "it is not better buildings or maintenance that constitute the real difference of American psychiatry. The difference depends on the medical spirit dominating it, and consequent preoccupation with treatment and research." Much has already been accomplished in our public institutions towards kindling this spirit among the younger generation of doctors, but unless the movement is to prove a failure, suitable inducement must be provided in the nature of higher appointments of a purely medical nature. The administrative and scientific minds are disparate; there is room for both in mental hospitals.—I am, etc.,

Brentwood, May 4th. THOMAS D. POWER, M.D.

[1] *Lancet*, April 12th, p. 851, and *British Medical Journal*, April 19th, p. 743.

SWELLING OF FEET AND ANKLES WITHOUT ALBUMINURIA OR GROSS ORGANIC DISEASE.

SIR,—I read with interest the article on this subject by Dr. A. Arnold Osman in your issue of April 26th (p. 789). During nine voyages to Australia as ship surgeon (that is, passing through the Tropics eighteen times), I have been consulted by between seventy and a hundred patients with this complaint. They were all, without exception, of the female sex, in spite of the fact that usually there are more male than female passengers among the third class. Most of them were between the ages of 16 to 25, although a few were middle-aged women. No child of either sex was seen suffering from this condition. With the exception of five or six cases they were all third-class passengers, but, in the ship I was in during most of this period, there were about seven times as many third-class as first-class passengers. All cases were examined for heart lesions and albumin in the urine, and all proved negative. No treatment other than resting with the legs raised was instituted, and they all recovered in seven to fourteen days when cooler weather was reached.—I am, etc.,

May 5th. H. M. ROYDS JONES.

FEES FOR PATHOLOGICAL TESTS.

SIR,—At the annual meeting of the governors of Charing Cross Hospital Pathological Institute, Mr. George Verity is reported as having stated that "the Pathological Institute was doing untold good in examining patients who are not of necessity eligible for treatment in hospital," but that "the work will be in jeopardy unless £1,000 is quickly subscribed towards it." May I beg the courtesy of your columns to point out that similar work with similar results is being done in the pathological departments attached to most of the voluntary hospitals throughout the country; none of these hospitals have, however, as yet, found themselves under the necessity of appealing to the general public for funds in support of this work.

The fees charged by the Charing Cross Hospital Institute of Pathology for pathological examinations are below those charged by any similar institution in this country, and are set at a level at which, without subsidies from outside sources, it is impossible for them to be performed other than at a loss. It is not surprising to anyone engaged in similar work that the authorities of the Charing Cross Institute of Pathology, having set their fees at this low level, should find themselves in need of a subsidy. As to the justification of an appeal to the public for funds to enable the continuance of this policy of fee-cutting in competition with the pathological services conducted by other voluntary hospitals, I leave your readers to judge.—I am, etc.,

S. C. DYKE,
Wolverhampton, May 7th. Secretary, The Association of Clinical Pathologists.

ANTIMALARIA MEASURES.

SIR,—In his letter published on April 12th, Lieut.-Colonel C. A. Gill defends the existence of a new party amongst malariologists possessed of doctrines so widely differing from its compeers that it has considered it necessary to employ the distinctive term "modern" and, to ensure its own identity, has dubbed the body it leaves "old." In accord-

ance with the practice of politicians, he states the ground upon which the withdrawal has been found necessary. The reasons are very pronounced. It is quite a usual weapon for parliamentary antagonists (in parliamentary language) to declare that such-and-such policy has not been fulfilled; but, in this case, an advance upon this method has been made. It is asserted that the policy of the so-called "old" party has been supported by "unsubstantiated claims" in practice of antimalaria measures, and that at its hands "incalculable harm" has resulted.

In view of the fact that Lieut.-Colonel Gill's letter is a reply to that of Sir Malcolm Watson's letter published on February 8th, where was given a large—yet not exhaustive—list of splendidly successful antimalaria works, Lieut.-Colonel Gill's assertions would have had greater weight were he to have specified instances. So far as facts are open to the profession and the lay public, there has been no neglect by the so-called "old" party in readily adapting antimalaria measures to knowledge gained locally or in any part of the world. Indeed, there seems to be no sound reason to believe that the giving of a new name to this group of malariologists will have more practical effect in preventing malarial diseases than has followed the obliteration of the name Mian Mir in favour of Lahore Cantonment.

As to the "modern" school lacking support in research as being routed by astute politicians of Lieut.-Colonel Gill's fancy, he has apparently forgotten that in India—whence this "modern" group has evolved—irrespective of work fulfilled in provincial institutes, there has been at disposal from the Government of India funds a sum of £33,000 annually since 1913-14, which has, or should have been, specially devoted to research in tropical diseases, of which, certainly, malaria investigation has not been omitted. Substantial grants in addition have been made within the last few years. Further, since 1910, numerous antimalaria committees have been formed, and medical officers have been deputed for long periods on special duty—including a chief malaria medical officer for the Punjab.

That further research in malaria causation would be advantageous may well be true, and equally so this may be said of numerous other factors connected with curative and preventive medicine, but to advance the mere theory or hope that in an undetermined future, this may be so happily fruitful as to demand radical departures from present procedure either in cure or prevention cannot warrant the failure to use such measures as are available, and have hitherto proved successful in saving human life.

I suggest that instead of the term "modern" by which the "new" party elects to be identified, it would be more appropriate to recognize it as malariologists—species "wait-and-see." The report on antimalaria measures in Kenya illustrates fully the temporizing policy of the "modern" party. It is there announced that "intensive research along other lines is more than ever necessary, for *no* antimalarial method capable of being applied by sanitarians in *all* malarious areas" (italics not in original). To obtain so valuable a panacea is no mean ambition, having regard to the various physical and climatic conditions ordinarily encountered. Meanwhile, far from advising a practical organization upon whose work a large area of the Empire can rely for future health and prosperity, that report merely illustrates the possession by the author of an obsession for research and accompanying high hopes. This phase, doubtless, is praiseworthy ambition when allowed to prevail in due proportion, but when accompanied by lack of due recognition of several no less operative factors must mislead and cause—" I thank thee,' modern party, "for teaching me that word"—*incalculable harm*.—I am, etc.,

W. G. KING, Colonel I.M.S. (ret.).

Hendon, N.W.4, May 5th.

SIR,—After seeing the letter by Lieut.-Colonel C. A. Gill, I.M.S., on malaria control (April 12th, p. 718), and looking up Sir Malcolm Watson's letter in your issue of February 8th (p. 259), which I missed owing to being at that time on the homeward voyage, may I beg space in your columns to reply to Colonel Gill?

1. It may be that originally malariologists claimed that "if all mosquitos could be destroyed, malaria would be completely abolished," but surely Colonel Gill must be aware that, for the last twenty years, species control has been in practical use, and by it the old school, of which Sir Malcolm Watson is the greatest British exponent, have achieved the results which Colonel Gill impugns. Who, then, is the "high authority" who still demands the killing of all mosquitos?

2. I emphatically deny that most exponents of the so-called old school are "completely satisfied with the state of scientific knowledge attained some thirty years ago," even in respect of mosquito bionomics in their strictly antimalarial applications. Colonel Gill has only to peruse any number of the *Review of Applied Entomology* (Series B) to see how much is still being done throughout the world on this subject, and it should not be beyond him to visualize the far-reaching practical applications which research on these lines will furnish in the hands of the old school.

3. The views expressed by Colonel Gill, however, could have been no more than the subject of an instructive academic discussion in your columns were it not for the very serious and definite charge which he makes against the old school of endeavouring to establish their viewpoint "by means of unsubstantiated claims regarding their successes." As I feel sure that Colonel Gill would regard me as belonging to the old school (though I should not so describe myself, and do not entirely agree with the views of Sir Malcolm Watson as to the futility of improvements in diet and general sanitation) I am forced to take up the matter in my own defence, as now lying under the charge of having made "unsubstantiated claims" regarding my successes by antilarval methods of control. Now malariologists who, unlike Colonel Gill, work largely for commercial interests, are not always in a position to publish their results. In my own case I have only been able to do so in respect of one control carried out for the Kepitigalla Rubber Estates, Ltd., and certain controls carried out for the Bengal-Nagpur Railway in 1925-26. If my published figures regarding these controls are "fakes" then I stand convicted of having misled the subordinate medical staffs of these concerns over diagnosis and records, of having furnished false figures to the Inspector-General of Hospitals, Ceylon, to the Chief Medical Officer of the Bengal-Nagpur Railway, and to the Railway Department of the Government of India (who authorized the publication of, and themselves printed, my railway results), as well as to the recent Whitley Commission on Indian Labour, who called officially for more recent Bengal-Nagpur Railway figures than I published three years ago.

The medical entomologist has not the British Medical Association to appeal to when thus attacked, so, leaving Sir Malcolm Watson and others of the old school to defend themselves, I must ask Colonel Gill to withdraw, after any investigation he may desire, his statement regarding "unsubstantiated claims," at least as regards my own work.—I am, etc.,

Harpenden, April 30th. RONALD SENIOR WHITE.

MEDICAL PRACTICE IN SOUTHERN RHODESIA.

SIR,—May I draw the attention of men who are well qualified in medical and surgical practice to the excellent opportunities offered by the posts in Southern Rhodesia now advertised in the medical journals? The position carries a salary of £500, rising to £650, per annum as Government medical officer, with the right of private practice, a feature which, of course, makes all the difference to these posts. Southern Rhodesia has a delightful and healthy climate, and the country is a most attractive one in which to settle. There are very good schools. Medical men who have been in practice there for a number of years speak very highly of the prospects, both from a professional and a social point of view.—I am, etc.,

R. A. ATKINS, M.D.

Office of the High Commissioner for Southern Rhodesia, Aldwych House, London, May 10th.

Medico-Legal.

"MANIPULATIVE MASSEURS" SENTENCED.

ABRAHAM COHEN, alias Max Conn, and Ramos Luro, "manipulative masseurs," were found guilty at Nottingham Quarter Sessions, on May 2nd, of obtaining money by false pretences and conspiracy to defraud. The prosecution alleged that the prisoners had professed to cure all kinds of ills by massage and application of an oil which they sold, and that in nine months last year they had taken £3,600 from hundreds of poor people who were suffering from incurable ailments.

Mr. R. G. Hogarth, a former President of the British Medical Association, stated with reference to a patient whose left leg was shorter than the right, that massage or rubbing with oil would not have the slightest effect on the condition, which was incurable. Similarly, rupture would not be cured by the treatment administered by the accused; the proper treatment was operation. In the course of his evidence Mr. Hogarth said that in a book issued by the prisoners he had read that the "magic" of Max Conn cured cases of cancer, diabetes, epilepsy, heart disease, kidney disease, tuberculosis, varicose veins, and so forth. Dr. A. C. Reid, referring to cases of blindness treated by the accused, and Mr. H. B. Tawse, to cases of deafness, said that the patients would not derive the slightest benefit from the measures adopted. For the defence it was stated that a dozen witnesses would be called to say that they had derived benefit from the treatment received at the hands of the accused. Cohen, giving evidence on his own behalf, denied having used at any time the phrase "guaranteed cure"; he had not gone beyond saying "I am hopeful that I can put you right."

After the jury had brought in its verdict, the Recorder said that the prisoners had been found guilty of conduct that was heartless and cruel to a degree. It was difficult to discover any extenuating circumstances. Cohen was sentenced to twelve months' imprisonment with hard labour in respect of the charge of false pretences and twelve months' imprisonment for conspiracy, the sentences to run concurrently. Luro was sentenced to nine months' imprisonment with hard labour for false pretences and twelve months' imprisonment for conspiracy, the sentences to run concurrently. The prisoners were also ordered to pay £250 towards the cost of the prosecution.

Obituary.

MURDOCH CAMERON, M.D., C.M., LL.D.,

Late Regius Professor of Midwifery, University of Glasgow, Gynaecologist to the Western Infirmary, and Senior Obstetrical Physician, Royal Maternity Hospital.

PROFESSOR MURDOCH CAMERON died of a cerebral haemorrhage, in a nursing home in Glasgow, on April 28th, in his 85th year, and through his death the art of obstetrics has suffered a severe loss. In 1926 failing health compelled him to resign the Regius Professorship of Midwifery in the University of Glasgow, an appointment to which he succeeded on the retirement of Professor William Leishman in 1894.

Murdoch Cameron was educated and spent the whole of his professional life in Glasgow. He graduated in 1870, and took his M.D. degree two years later. He settled in practice in the Townhead district of the city, in close proximity to the Maternity Hospital, and from the first devoted himself to the study of midwifery. In 1888 he was appointed visiting physician to the Glasgow Maternity Hospital, and he maintained an unbroken association with the institution until 1920. It was there that he performed his series of twelve consecutive successful Caesarean section operations, which established the procedure on a sound and scientific basis in this country, and removed the dread with which the operation had been previously regarded. Prior to this the performance of the operation had been entrusted to general surgeons, whose knowledge of midwifery was of the scantiest, for the simple reason that obstetricians were not in the habit of performing major surgical operations. The results were almost uniformly fatal, and it took a bold man, in face of this, to persuade himself that he could attain success where so many others had failed. But Murdoch Cameron was an optimist who never envisaged defeat. His first success was no mere stroke of luck or the action of an ignorant and foolhardy young man. Long before he had the opportunity of performing his first Caesarean section he had made up his mind that he would seize the first chance of doing it. Not only so, but he had carefully devised his method of operating, and when his chance came he was ready for it. The first operation almost ended in disaster. Arrangements had to be made hurriedly. The operating room—it could hardly be called a theatre—was cold, and in order to heat it methylated spirit was poured on to a tray and ignited. This caused an explosion of ether vapour in the middle of the operation, and fire broke out in the room. Cameron stopped his operation, assisted in extinguishing the fire, and then finished the operation, apparently unmoved by what had happened. At that time he was assistant to Professor Leishman at the University. With justifiable pride he told Leishman of his success, and received from him the chilling advice: "Well, Cameron, you have had 100 per cent. of successes. Don't do any more; you may spoil your record." The operation is now one of the commonplaces of obstetrical practice, and, in carefully chosen cases, gives as good results as those of ovariotomy.

The position of gynaecology has been revolutionized in the last forty years. It is difficult for those trained under present conditions to realize that in those days a man might be a professor of diseases of women and never have done any but the most minor of gynaecological operations. Leishman did not operate, and it was only when Murdoch Cameron succeeded to the chair, at the age of 47, that he got his first opportunity of performing major gynaecological operations. Most men at that age would have shirked the responsibility, but such a thought never entered his mind. He was naturally dextrous with his hands, and rapidly became a skilled operator. No emergency ever shook his confidence or disturbed his equanimity. With him to think was to act, and in a difficulty he could act with astonishing rapidity.

It was as an obstetrician that Murdoch Cameron did his best work. From his long association with the Glasgow Maternity Hospital he had a unique experience of the practical difficulties of obstetrics. He had a natural mechanical genius, and was full of original devices of his own for dealing with the emergencies that occur during labour.

He was endowed with a splendid physique, and enjoyed excellent health throughout his long life. His recreation was fishing. Apart from the loss of his wife about thirty years ago, his family life was singularly happy. His chief source of joy was his association with his son, Dr. S. J. Cameron, who assisted him both in his University work and in the Western Infirmary, and who, a few years ago, succeeded him as gynaecologist to the Western Infirmary. Murdoch Cameron was by nature a contented, happy, and friendly man, always willing to help a struggling junior, but when his combative instincts were aroused he could hit out vigorously. The writer of these notes worked with him for twenty years, and during the whole of that period never had an unpleasant word from him. When he retired from his professorship the University conferred on him the degree of LL.D.

A. N. McL.

AN OLD STUDENT writes:

Until he retired from the chair—indeed, probably to the end of his life—the professor was just a big, boisterously playful, incorrigible schoolboy. Some there were who took offence at his manner. All his faults lay on the surface. He was a fighter, but he fought clean and straight, and even his opponents had to pay tribute to his upright and honest character and the unselfishness of his motives. He was really one of the softest-hearted of mortals, who attempted to hide his kindly nature under a show of gruffness. His unique experience of difficult obstetrical conditions in the rachitic slum dwellers Glasgow made him an authority in his subject; in f he may be said to have founded a Glasgow school of m wifery, and though he was far from being a prolific writ many of his old students will detect in the most up-to-d practical methods and suggestions the practice and ad of their old teacher. He was always ready to help stude and practitioners in difficulties, and many of us will l his name in green memory.

H. J. B. FRY, M.D.,

Pathologist to the Research Institute, Cancer Hospital, London.

DR HUBERT JOHN BURGESS FRY, pathologist to the Research Institute of the Cancer Hospital, died there on May 5th as the result of a streptococcal infection incurred in making a post-mortem examination.

He was educated at Charterhouse, where he distinguished himself both as a scholar and as an athlete, and at Magdalen College, Oxford, of which he was a Science Exhibitioner. He took his degree in natural science in 1907, with first-class honours in physiology. He was appointed to an Oxford University biological research scholarship at Naples, as a result of which he published two very thorough and important contributions to zoology, and was awarded the B.Sc. degree. He joined St. Thomas's Hospital, graduating in medicine in 1911, and serving in several of the resident posts before specializing in pathology. He became an assistant and Jenner research scholar in the pathological department of his hospital until, on the outbreak of war, he received his commission in the R.A.M.C.(T.F.). While he was serving as a regimental medical officer to one of the London regiments the adviser in pathology (Sir William Leishman) applied for his transference to the pathological laboratory of one of the hospitals in Rouen. Both there and at Abbéville he conducted researches in influenza, and was one of the first to prepare and use immunized whole blood in the treatment of septicæmia and extensive suppuration. On demobilization he was engaged as pathologist to the central laboratory of the Ministry of Pensions. In 1922 he joined the research staff of the Cancer Hospital, and rapidly made a name for himself as an investigator in cancer. He had previously shown evidence of originality in the department of serology, and his first contribution in the study of cancer was the publication of his well-known serodiagnostic test, which, though not always a certain indication, proved to be easily the most successful method yet introduced. The large number of cancer serums that he examined by means of the Wassermann reaction enabled him to give a clear indication of the relationship between syphilis and cancer of the various organs. His experimental work and his experience of clinical pathology combined to give him a position of authority amongst cancer researchers. His last contribution, given at the meeting of the Leeuwenhoek Vereeniging, on the occasion of the opening of the Paris Cancer Institute, dealt with several cases of carcinoma arising in war wounds. He gave much of his time to committees of the British Empire Cancer Campaign; he was chairman of the editorial committee of the *Cancer Review*, to which he contributed critical reviews, mainly on subjects dealing with serology, heredity, and morbid anatomy; he was honorary secretary to the Investigation Committee and to the Scientific Advisory Committee of the Campaign; and he had a great part in the organization of the London Cancer Conference in the summer of 1928.



He took a very active part in the public life of Welwyn Garden City, where he was a councillor and a magistrate. After the commencement of his illness he was elected chairman of the urban district council. An advanced politician, he had been approached to become a parliamentary candidate, but his crowded life left him no time, nor had he much inclination for such honours. He leaves a widow (Dr. Gladys Mudd-Smith) and three young children. His merits as a pathologist, his strength of character, and his great personal charm brought him hosts of friends, who mourn his loss.

PROFESSOR ARCHIBALD LEITCH writes: I met Fry first during the war, when we were together in a casualty clearing station, and we became friends. When military dispositions separated us I tried unsuccessfully to get him attached to my mobile laboratory, though I was indirectly the means of his being appointed to a laboratory at Rouen. But after we had returned to civil life I was fortunate in inducing him to join Kennaway and myself at the Cancer Hospital. That partnership has been very happy, and the breaking of it has been a sad blow to us. He published many papers of great merit, but they were merely a preliminary, we felt, to greater things. He was an extremely hard worker, and particularly thorough in all that he did. His pleasant, smiling, modest demeanour gave grace to his sturdy independence of judgement and his unswerving devotion to his ideals of duty—professional, social, or political. Everybody loved him.

MR. ERIC PEARCE GOULD, F.R.C.S., writes: It was my privilege to know Fry intimately, both at Charterhouse and afterwards at Oxford. And now that his life has been cut short one feels that his earlier years count for more than in lives lived to their full span. Fry was an outstanding figure at school in many ways, distinguished alike at work and games, with a gentleness of manner that belied his great physical strength, and a humility of mind that matched his industry and independence of thought. He nearly died of appendicitis in his second year, and the daily prayer for Hubert John Burgess Fry in chapel for many weeks fixed his full name indelibly in the memory of his contemporaries; but to his circle of friends he was always known as "Daddy," a tribute to his sturdy solid appearance and to his no less rugged reliable character. No boy can have been better equipped naturally to profit by the stimulating teaching of O. H. Latter, biologist to the school, and under this influence the research mind of which recent years have given such ample proof developed steadily and surely. At Oxford later, as a favourite pupil of Gatch, Haldane, Arthur Thomson, and Gustav Mann, he blossomed into the outstanding figure of his year, and won, as he deserved, the best first class in the honours school of physiology of 1907. He cared nothing for the good opinions of his colleagues, and was entirely free from any worldly ambition. Popularity came to him, he never sought it. And it came to him, as did his success, the one the natural tribute paid to an upright, unselfish, charming character, the other the inevitable reward of industry, painstaking thoroughness, and independence of judgement. In the laboratory, on the cricket field, or in the river, pitting his strength and prowess as a swimmer at the end of a salmon cast against the skill of the salmon fisher on the bank, "Daddy" was always the same—concentrated, cheerful, the very best of good fellows. Whatever be the loss his untimely death may mean to medical research in England, it is the end, to those who were lucky enough to know him, of a friendship that can never be forgotten.

The following well-known foreign medical men have recently died: Professor JOSEPH KÖNIG of Münster University, an authority on the hygiene and chemistry of nutrition, aged 87; Geheimrat ERNST KÜSTER, formerly professor of surgery at Marburg, aged 80; Dr. ADOLFO FLORES, director-general of public health of Bolivia; Dr. ERNST SCHWAB, a prominent consultant at Wilbad, from trichinosis; Professor WILHELM ZANGEMEISTER, director of the Women's Clinic at Königsberg; Dr. ALEXANDER ROSNER, professor of gynæcology at Cracow; Dr. E. FEINDEL, a Paris neurologist, aged 63; Dr. PAUL J. SCHROETER, extraordinary professor of ophthalmology at Leipzig, aged 70; Dr. JOSEPH DE KONINCK, a Belgian alienist; Dr. EUGÈNE DEVIC, an eminent physician of Lyons, aged 72; Dr. JULIO A. BARRENECHEA DIAZ, a Santiago urologist; Professor MATHES, director of the medical clinic at Königsberg, aged 65; Professor RUDOLF WLASSAK, director of the Steinhof inebriate sanatorium near Vienna, and author of a standard work on the alcohol problem; and Professor YAMAGIWA, a Japanese research worker on cancer.

Universities and Colleges.

UNIVERSITY OF LONDON.

AT a meeting of the University Court on May 7th (Lord Macmillan in the chair) the thanks of the Court were accorded to the London County Council for its decision to increase the Council's maintenance grant to the University for the year beginning September, 1930, to £105,000. Thanks were also accorded to the County Borough of Croydon for the renewal for the year ending March, 1931, of its grant of £500.

Applications for the Laura de Saliceto studentship for the advancement of cancer research must reach the University by July 1st. The studentship is of the value of £150 a year for not less than two years. Full particulars can be obtained on application to the Academic Registrar of the University, South Kensington, S.W.7.

UNIVERSITY COLLEGE.

The examination for the Bucknill Scholarship (160 guineas) and for two exhibitions (value 55 guineas each) will begin on June 24th. The subjects of the examination are chemistry, physics, botany, and zoology. The scholarship and the two exhibitions are tenable at University College, London. Entry forms should be obtained from the Secretary of University College not later than June 2nd.

LONDON HOSPITAL MEDICAL COLLEGE.

The distribution of prizes at the London Hospital Medical College will be made by Lord Rayleigh, D.Sc., F.R.S., on Tuesday, June 24th, at 3 p.m., in the library of the College.

UNIVERSITY OF BIRMINGHAM.

DR. FAUSET WELSH has been appointed assistant lecturer and demonstrator in anatomy, and Dr. C. C. Cookson prosector in the department of anatomy, for the remainder of the current session.

ROYAL COLLEGE OF SURGEONS OF ENGLAND.

AN ordinary Council meeting was held on May 8th, when the President, Lord Moynihan, was in the chair.

Vacancy on Court of Examiners.

The President reported that Mr. Graham Simpson's term of office on the Court of Examiners would expire on June 11th next, and that the vacancy in the Court would be filled at the next meeting of the Council, Mr. Simpson not being a candidate for reappointment.

Portrait of the late Joseph Hodgson.

Dr. L. G. Parsons and Mr. Seymour Barling attended and presented to the College, on behalf of the medical staff of the Birmingham General Hospital, a replica of the portrait by Partridge at the hospital of Joseph Hodgson, President of the Royal College of Surgeons in 1864. The President expressed appreciation of the gift.

Membership.

Diplomas of Membership were granted to the following 138 candidates:

M. Ata Ullah, H. B. Bagshaw, G. N. Bailey, J. E. G. Baker, A. N. Barker, F. Bartholomew, G. R. Bashford, D. A. Beattie, D. H. Bolton, A. E. Bowling, Julia A. Boyd, Mabel Brewster, R. O. Brooks, A. Burkhardt, C. E. Burridge, G. G. Cameron, S. N. Chopra, D. S. Chowdhary, J. F. Coates, A. F. H. Coke, Charlotte A. G. Conway, J. H. Conyers, Margaret E. Cook, H. Coorland, H. D. Cronyn, H. Curtis, A. L. d'Abreu, C. M. Dell, W. J. D'Rosario, P. G. Dowdell, J. C. E. Dusseau, J. J. Eapen, R. E. M. Fawcett, Sheila J. Ferguson, F. H. H. Finlaison, R. H. Fish, E. D. Forster, E. V. Frederick, J. D. J. Freeman, P. R. Graves, S. R. [illegible] C. J. K. Hamilton, D. Hay, Geraldine J [illegible] Heathcote, J. Henry, J. R. Hindm[illegible] Laura M. Hollingworth, S. W. Holmes, Ethel E. Hopper, L. H. Howells, K. N. Irvine, O. Ive, L. A. Jacob, M. M. St.G. Johnstone, E. G. M. Jones, C. Jotikasthira, N. F. Kendall, J. D. Kershaw, S. Lal, F. P. L. Lander, Grace Law, R. H. Leaver, E. Z. Levy, G. S. R. Little, J. B. Lloyd, H. Lwow, H. G. McComas, S. McDonald, W. McKissock, R. W. Malim, Margery L. Maltby, M. Mandelstam, R. S. Mann, C. E. P. Markby, J. H. G. Mason, C. B. Melville, J. B. S. Morgan, F. Murray, F. J. Napier, A. M. Nodine, A. M. Nussbrecher, R. Nutt, C. L. Oakley, G. L. Ormerod, M. Owen, P. M. Oxley, C. H. Pauli, D. D. Payne, M. Phillips, F. E. Pilkington, J. R. F. Popplewell, J. O. Poynton, A. C. Price, S. Ramadas, S. Ramanathan, G. E. Ranawake, J. M. Reese, A. H. T. Robb-Smith, H. E. W. Robertson, C. G. Roberts, M. Victoria Robinson, J. D. Rose, Pattie E. Rose, K. M. Ross, C. A. Rumball, J. Sakula, K. T. Samatapala, L. Seaton, K. M. Seedat, M. H. Shah, Ursula Shelley, Edna F. Sheridan, L. Silman, S. Silman, Phyllis F. L. Simon, J. G. Sleigh, Edith M. P. Smith, P. Somasunder, B. Southwell, G. H. G. Southwell-Sander, T. M. Spilhaus, J. K. Stanger, R. W. Stephenson, B. P. Sur, F. H. Taylor, G. Taylor, J. N. Vasudeva, I. H. Wharton, J. C. G. Whitelaw, D. A. Williams, Rose E. Williams, P. S. Winton, Joyce R. Woods, G. R. H. Wraugham, W. Young.

ROYAL COLLEGE OF PHYSICIANS OF EDINBURGH.

A QUARTERLY meeting of the Royal College of Physicians of Edinburgh was held on May 6th, when the President, Sir Norman Walker, was in the chair.

Drs. James Kirkwood Slater (Edinburgh), John Henry Douglas Webster (London), and Sydney Watson Smith (Bournemouth) were introduced and took their seats as Fellows of the College. Lieut.-Colonel William Frederick Harvey, C.I.E. (Edinburgh), and Dr. Herman Petrus Gunnar (Illinois) were elected Fellows.

Dr. John Orr was elected a representative of the College on the Committee of Management of the Triple Qualification. The Parkin Prize was awarded to Dr. R. J. S. McDowall, F.R.C.P. (London). The award of the Lister Fellowship was divided equally between Drs. Ralph Stockman Begbie and Donald Stewart. Dr. W. A. Alexander, F.R.C.P., was granted recognition as a lecturer on the practice of physic.

The College decided to celebrate the 250th anniversary of its foundation on St. Andrew's Day, 1931.

Intimation was made of a bequest by Mrs. Isabella Kirk Duncanson for the foundation of a Fellowship in Medical Research.

ROYAL COLLEGE OF SURGEONS IN IRELAND.

THE following candidates have been approved at the examinations indicated:

PRIMARY FELLOWSHIP.—Dr. H. O. Clarke, B. O'Brien.
FINAL FELLOWSHIP.—Dr. R. Grainger, Dr. A. K. M. Khan.

CONJOINT BOARD IN IRELAND.

THE following candidates have been approved at the examinations indicated:

FINAL PROFESSIONAL EXAMINATION.—D. Dorgan, V. J. Fielding, T. S. Harbison, J. E. Lewis, J. Lewis, Doris F. Weir.
DIPLOMA IN PSYCHOLOGICAL MEDICINE.—Dr. E. J. Foley.

The Services.

DEATHS IN THE SERVICES.

Major Thomas Henry Hill, C.I.E., Indian Medical Department (ret.), died in London on February 19th, aged 86. His father, also Thomas Henry Hill, served as a midshipman at the battle of Cape St. Vincent in 1797, and subsequently served in Queen Isabella's Lancers during the Portuguese war of succession; then, joining the East India Company's army, he served under Napier in Sind, and in the two Sikh wars. Thomas Henry Hill, jun., was born on February 14th, 1844. In 1849, his mother being dead, and his father being sent to Burma, he entered the Lawrence School for sons of soldiers at Sanawar, near Simla, at the age of 5. When the Mutiny broke out, in 1857, the demand for medical apprentices in the I.S.M.D. was so pressing that he was taken on in that capacity, though only 13 years of age, and served through the Mutiny as a boy. Later on, in 1862, after a course at Calcutta Medical College, he obtained the diploma given to youths who successfully passed their examinations for service in the I.S.M.D. After seventeen years' military duty, chiefly on the frontier, he was posted to headquarters, and employed on the compilation of a code of medical regulations for military hospitals in Bengal, and, after its completion, of a similar code for the whole of India. He was then appointed assistant secretary to the Director of Medical Services in India, and served in that capacity until, after forty-six years' service, including four extensions of a year each, he retired in 1903. He was the first officer of the I.M.D. who was granted the rank of major, and for a long time was the only officer of the Department who held that rank. He received the C.I.E. in 1901. He was, and for several years had been, the last medical survivor of the Mutiny. The last I.M.S. survivor of the Mutiny was Deputy Surgeon-General P. W. Sutherland, a much older man than Hill, who died on May 6th, 1925. In 1890 Major Hill married Ethel, daughter of George Prussia.

Lieut.-Colonel Philip Durrell Pank, Bengal Medical Service (ret.), died in London on March 19th, aged 76. He was born on October 2nd, 1853, the son of Mr. William F. Pank of North Walsham, Norfolk, educated at St. Thomas's, and took the Edinburgh double qualification in 1879. Entering the I.M.S. as surgeon on May 31st, 1880, he became lieutenant-colonel after twenty years' service, was placed on the selected list on October 26th, 1905, and retired on May 17th, 1910. He served in the Mahsud Waziri campaign of 1881, on the North-West frontier of India, and also rejoined for service in the war of 1914–18. Most of his service was passed in political employ in Rajputana. Along with the late Colonel D. ffrench-Mullen, he was the author of *A Medical Topographical Account of Rajputana*, 1900.

Captain Sydney Hartley, M.C., Indian Medical Service, died on February 22nd, aged 35. He was born on March 1st, 1894, and served in the war of 1914–18 as an officer in the Worcestershire Regiment, which he joined as a second lieutenant on September 9th, 1914, becoming lieutenant on February 27th, 1915, resigning on May 12th, 1918. He then studied medicine at St. Thomas's Hospital and Oxford, where he graduated as M.A., M.B., and B.C. in 1922, after taking the M.R.C.S. and L.R.C.P.Lond. in 1921. After qualifying he filled the appointments of house-surgeon, casualty officer, and resident anaesthetist at St. Thomas's, and of assistant medical officer at Lewisham Hospital and Bethnal Green Hospital. He took a commission in the I.M.S. on April 30th, 1925, and was ranked captain from August 28th, 1926. He received the M.C., as a combatant officer, on February 6th, 1918.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Lords has been in committee this week on the Coal Mines Bill. The House of Commons debated the Votes for the Ministry of Agriculture and for the Board of Trade, and also the London Naval Agreement. On May 13th an effort was made to complete consideration of the Mental Treatment Bill, upon which the House sat late. The Canal Boats Bill was reconsidered by the House in committee on May 9th, but consideration was not completed.

Mental Treatment Bill.

The House of Commons, on May 13th, resumed consideration of the Mental Treatment Bill as amended. On Clause 2, which deals with the reception and discharge of voluntary patients, Dr. Fremantle and Dr. Vernon Davies had given notice of an amendment to provide that, if a voluntary patient became incapable of expressing himself as willing or unwilling to continue to receive treatment, he should not be retained as a voluntary patient for a longer period than six months, instead of the period of one month contained in the bill. This amendment was not called by the Deputy Speaker, and on Dr. Fremantle asking if he could not move it, he received the reply that the Speaker had not selected it.

Colonel WEDGWOOD moved the omission of the provision that a voluntary patient who had become incapable of expressing himself as willing or unwilling to continue to receive treatment might be dealt with under the principal Act as a person of unsound mind, or under Section 5 of the bill as a person likely to benefit by temporary treatment. When the bill became law it would be almost inevitable that everybody who went into an asylum would be sent there under the new system, and not under the old. No doctor would be hard-hearted enough to send a patient into an asylum without holding out hope of recovery. He wished to prevent people who went into an institution for voluntary treatment becoming liable to be suddenly converted into temporary patients.

Miss LAWRENCE, in opposing the amendment, said that it was moved under a complete misunderstanding of the position.

Dr VERNON DAVIES opposed the amendment, which he said was unnecessary, and might prove to be dangerous. There was no possibility of a person being illegally detained under the safeguards which existed.

Dr MORRIS-JONES also opposed the amendment. He said that if a person became a danger to himself and those around him there was only one thing to be done. They must act to the best of their knowledge and belief and keep the patient in the institution for his own good. There were the safeguards of two separate medical examinations. The experience of Scotland, where for seventy years there had been no case of illegal detention in a mental hospital, where two-thirds of the patients were voluntary patients, and where there was no judicial intervention of any sort, was evidence that there would be no serious hardship or injustice under this clause.

The amendment was rejected by 241 votes to 106.

Colonel WEDGWOOD moved an amendment to Clause 5, providing that the Board of Control shall, upon the signed request of any person who considers himself to be unjustly detained under an application, recommendation, or order, furnish to him or his authorized representative, free of cost, a copy of such application, recommendation, or order. Mr. GREENWOOD accepted the amendment, which was agreed to. After further discussion (to be more fully reported in the issue of May 24th) the bill was passed through report and read a third time.

Workmen's Compensation (Silicosis) Bill.

The Workmen's Compensation (Silicosis) Bill was considered in committee by the House of Lords on May 7th. Clause 1 proposes to extend the silicosis provisions of the Workmen's Compensation Act (1925) to industries and processes involving exposure to asbestos dust. Viscount BRENTFORD moved to leave out Clause 1 so as to strike asbestosis out of the bill. He said there had been a Home Office report by Dr. Merewether, an inspector of factories, and by an engineering inspector of factories on this subject, and they stated that in 1910–11 an investigation by the Home Office did not disclose evidence of a serious hazard to health in the asbestos industry. Last year 363 workmen who had been longest employed in the industry were examined to find out whether fibroid disease of the lungs from the inhalation of asbestos dust was very serious. The investigators came to the conclusion that 105 out of that number were affected by this form of fibrosis. This was a disease which, so far as was known, had caused only four deaths, and which at present was not within the provisions of the Workmen's Compensation Act. He thought the time had hardly come to put in this new disease. There was not sufficient certainty on the number of deaths or on the incidence of the disease, and no real efforts had yet been made to prevent it. When once a disease was included in the list for workmen's compensation it became more prevalent. When miners' nystagmus was included in the workmen's compensation diseases Parliament was told there would not be more than 200 or 250 cases. There were now 8,000 cases claiming compensation for that disease. Prevention should be tried before compensation was given.

Earl RUSSELL said that Lord Brentford had himself included in the scheme for silicosis many processes which could not show a mortality approaching that for the asbestos industry. In that industry fourteen fatal cases had now been reported. This, after all, was very considerable. There were in addition three deaths from asbestosis associated with tuberculosis. In eight of the seventeen fatal cases the total disablement before death varied from six months to several years, and in four cases from a few days to a few weeks. The incidence rate of this disease was one in eight among those actually employed and at work, or if those employed less than five years were excluded, the incidence rate was one in three. While the fibrosis associated with silicosis was in more or less isolated nodules, asbestos fibrosis was a fine cobweb ultimately permeating the greater portion of the lungs and leaving very little sound tissue. It would not be in the employer's interest to deal with the disease under the ordinary workmen's compensation provisions instead of by the manner proposed in this bill, under which a special medical body was to be set up with a general scheme of medical inspection by people who would be experts, and would be certain whether the disease had occurred or not. Lord Brentford's remark that a disease tended to become more prevalent when admitted for compensation merely meant that previously it had been wrongly diagnosed. Cases which previously would probably have been certified as tuberculosis or pneumonia or an affection of the lungs would now be certified as due to asbestos fibrosis. Earl Russell went on to read a letter in which Lord Askwith, on behalf of the owners of Cornish tin mines, withdrew his opposition to the bill. He said the scheme would be a serious liability upon the Cornish tin industry, particularly as many miners had worked in South Africa and might have the seeds of silicosis, but the mine owners recognized the importance of the measure to their workpeople, and would cordially co-operate in a suitable scheme.

Viscount BRENTFORD asked whether the clause would apply to industries casually using asbestos, such as plumbing. Earl RUSSELL replied that no industry would be subject unless there had been a case of asbestosis, and unless the incidence of asbestosis was real.

After further debate the House agreed to Clause 1.

Clause 2 authorizes the Home Secretary to make a general scheme for all industries, processes, and groups of industries or processes which have silicosis compensation schemes, the purpose of such a general scheme being to co-ordinate the medical arrangements in connexion with these compensation schemes. Such a general scheme may provide for the establishment of a medical expenses fund, and may also secure that employers shall not employ in any process involving exposure to silicosis dust or asbestos dust any workman who has been suspended in pursuance of the scheme, or has refused or wilfully neglected to submit himself to examination under the scheme.

Viscount BRENTFORD moved to omit Clause 2. He said it would involve examination presumably at least once a year of something like 75,000 workmen. When he was Home Secretary he had found that a doctor might be assumed to examine eight hundred cases a year. The clause would require an elaborate system of medical inspection involving about a hundred full-time doctors. A great portion of the expense would fall on employers, who already contributed to the national health insurance system. He assumed that if the bill passed, silicosis cases would be taken out of the hands of the panel doctors.

Earl RUSSELL said the general scheme contemplated in the clause would be confined to medical arrangements and would not deal in any way with compensation. All such questions would, in consultation with the industries concerned, continue to be dealt with by special schemes under Section 47 of the existing Act. Whatever method was adopted for payment of fees into the proposed medical expenses fund the amount that any particular industry would have to bear would depend on the incidence of silicosis in that industry, and not on the number of workers engaged. There was no intention of placing upon every industry under the different silicosis schemes the burden of having all its workers periodically examined irrespective of the incidence of silicosis in the industry. In deciding whether there should be periodic medical examinations one of the governing factors would be the extent to which silicosis was prevalent in the industry. More than one industry not at present subject to this requirement was coming to realize how valuable such examinations were, both to employers and to workers. This disease hardly became definite until after five years' work in the industry, and if its onset could be detected and the man removed from the industry the employer would escape liability to pay compensation. In view of the state of the exchequer, which would be affected by the new arrangement, the Treasury had agreed to make an annual contribution to the medical expenses fund under the scheme. In the refractory and sandstone industries the examinations in the highest

risk occupations were required to be made annually. In others they were required biennially. It was unlikely that the examinations prescribed for any industry or process would be more frequent than once a year, but in the light of experience an even longer period than two years might be allowed in certain occupations. The existing medical board was divided into three panels, with centres at Sheffield, Newcastle, and Bristol, and already covered an area from Devonshire to Caithness and the Orkneys. The new industries which would be brought under the general medical scheme would not greatly extend the area already covered, and it was anticipated that the medical board, with the addition of one or two new panels and centres, would easily cover the whole field. It was the increasing practice of coroners when inquiring into deaths alleged to be due to silicosis to hold the inquiries in co-operation with the medical board. The total cost under the new scheme would rise to between £13,000 and £15,000 a year, an addition of £4,000 or £6,000.

Viscount BRENTFORD said that Lord Russell's reply would give general satisfaction.

The House then agreed to Clause 2, and the bill was reported without amendment. The third reading was set down for May 15th.

Tuberculosis in Cattle.

Mr. SOMERVILLE HASTINGS, speaking on the vote for salaries and expenses of the Ministry of Agriculture, said that the question of tuberculosis in cattle was important for farmers because the cattle most affected were milch cattle. They did not contract the disease in their early years, but when they had reached the milk-producing age. He asked if the Minister could give an accurate estimate of the number of cows so affected. It had been suggested that they numbered nearly 1,000,000, or 40 per cent. of the milch herds of this country. Something between 4 and 8 per cent. of the samples taken of milk exhibited for sale were found to contain tubercle germs. About 2,000 deaths occurred each year among human beings as a result of infection by the bovine bacillus. As far as they knew, the germs reached the human subject in nearly every case by means of milk. Apart from deaths, 20,000 persons were affected by the disease. It was the cause of 46 per cent. of the cases of glandular tuberculosis, 50 per cent. of the cases of lupus, and 66 per cent. of the cases of tuberculous meningitis. It had been suggested that by pasteurizing milk everything necessary was done, but by pasteurizing an impure article they did not make it pure; the toxins and the bacteria were not destroyed. There was also clear evidence that certain changes took place in milk as the result of pasteurization. There was clear evidence that the calcium contained in milk was changed by heating, and became less digestible and less easily absorbed. Experiments showed that children did not do so well on pasteurized milk. From a report issued for 1928 he noticed that something like 1,700 cattle were ordered to be slaughtered; of these, 162 were so bad that they died before there was time to slaughter them. Out of 347 cattle reported as giving tuberculous milk 264 had no lesions of the udder. What was happening under the Tuberculosis Order was merely to destroy cattle after the mischief had already been done. Were the cowsheds in which these animals lived disinfected, and were experiments being carried out by the Ministry with regard to immunization of calves against tuberculosis, or the rearing of stock which was not susceptible to that disease? Farmers in this county had to pay for the T.T. certificates, and also the fees of veterinary surgeons who tested their cows. In Denmark the services of veterinary surgeons and the tuberculin used for testing were given free, and it would be useful if the same thing could be done in this country. Another method might be adopted by the Ministry—namely, that of "accredited" herds. Under that method, which was in use in America, farmers were assisted to have their herds tested, and as soon as "accredited" herds were produced in any number in a district an attempt was made to establish what was known as an "accredited" area. Where 75 per cent. of the farmers wished to form an "accredited" area compulsion was used on the rest, so that the herds might be made free from tuberculosis.

Dr. ADDISON, replying to the debate, said that the position of this country with regard to agricultural research was discreditable. For the last few years we had been spending millions in compensation for animals which had been burned for association with outbreaks of disease. It was only the other day that the country began to spend any substantial amount on research into the cause and prevention of foot-and-mouth disease. It had spent at least £10,000,000 in compensation for animals which were destroyed because they were thought to be infectious. Some years ago, in regard to medical research, the then Government, of which he was a member, got together a committee to exercise a general supervision and to give comprehensive advice on the lines which research might take, the type of cases where research might be undertaken, and so on. The present Government was considering whether it could adapt that kind of method to agricultural research.

Small-pox.—Mr. GREENWOOD said, in reply to Mr. Freeman on May 8th, that he had considered the present method of making periodical returns to the League of Nations Health Committee, under which mild cases of small-pox occurring in this country were compared with severe cases in other European countries, and had requested the British representative to bring to the notice of the League of Nations his suggestion that deaths as well as cases should be reported in order to secure a just comparison with other countries.

Psittacosis.—Replying to Mr. Mander, on May 8th, Mr. GREENWOOD said, in view of the obscure nature of psittacosis, he was advised that no useful purpose would be served by making it compulsorily notifiable. Medical practitioners and others had been invited to report cases to the local medical officer, and this procedure was being followed. The recommendation in favour of notification was merely the expression of an opinion by the compiler of a recent review of psittacosis published in the Monthly Epidemiological Report of the Health Section of the League of Nations.

Caseous Lymphadenitis in Imported Mutton.—On April 23th Miss LAWRENCE told Mr. Thorne that the Ministry of Health had made inquiries into the recent examination for caseous lymphadenitis, at a Wapping cold store, of 541 carcasses of mutton from the Patea district of New Zealand. Twenty-seven carcasses were condemned. Each had attached to the leg a certificate of a veterinary inspector of the New Zealand Government that they had been examined and found sound. The Minister was bringing the matter to the notice of the Government of the exporting country.

Proposed General Medical Service.—Replying to Mr. Freeman, on May 8th, Mr. GREENWOOD stated that he had not yet had an opportunity of considering closely the proposals of the British Medical Association for a general medical service for the nation. These proposals, if adopted, would necessitate legislation.

National Milk Publicity Council.—Replying to Mr. Hurd, on May 1st, Sir C. TREVELYAN said the milk service scheme of the National Milk Publicity Council was in operation in schools in eighty-two areas with the approval and encouragement of local education authorities. Other authorities provided milk meals under their arrangements for provision of meals. He was in close touch with the council to increase consumption of milk in schools. Asked by Mr. SMITHERS what steps were being taken to provide milk free from tuberculosis, Sir C. TREVELYAN said great care was taken in that respect.

Indian Medical Degrees.—Mr. BENN, replying to Major Pole on May 12th, said that he could add nothing to his recent answer with regard to the steps which the Government of India proposed to take following the refusal of the British General Medical Council to extend recognition to Indian medical degrees.

Manufacture of Cocaine in India.—On May 12th Mr. BENN, replying to Mrs. Hamilton, said that recently the Government of India placed before the Indian Legislature a bill to control the traffic of dangerous drugs. One clause of the bill prohibited the cultivation or gathering of the coca plant, and to this clause a select committee added the proviso that the prohibition did not apply to the cultivation or gathering of the plant by Government, the object being to allow Government to grow the coca plant and to experiment in the manufacture of cocaine if at any time it were thought desirable that the cocaine required for proper medicinal uses in India should be produced in India. This appeared to be the foundation of an incorrect report that the Government of India had authorized the cultivation of the coca plant and the manufacture of cocaine. The Dangerous Drugs Act had passed into law, but no action had been taken to authorize the cultivation of coca.

Post-Graduate Facilities for Ship Surgeons.—Mr. W. GRAHAM replying to Mr. W. Thorne, on May 6th, said that he was informed that the British Medical Association were setting up a committee to consider the desirability of providing special post-graduate facilities for ship surgeons. So far as he was aware this would not be concerned with their pay and conditions.

Smoke Abatement.—Replying to Dr. Fremantle, on May 1st, Mr. GREENWOOD said no local authority had made by-laws, or forwarded draft by-laws, under Section 5 of the Public Health (Smoke Abatement) Act, 1926. *Difficulties in framing adequate model by-laws* had not been overcome. Dr. FREMANTLE asked whether, in the opinion of the Ministry, the Act was practically inoperative. Mr. GREENWOOD confessed that might be true.

Pollution of the River Hull.—Mr. BUXTON, replying, on May 5th to Lieut.-Commander Kenworthy, said that he was aware of the serious pollution of the River Hull. He had received no complaint of damage to stock from this cause, nor had the Minister of Health received complaints that the inhabitants of the area affected had been compelled to obtain water from a distance for drinking and domestic purposes. He (Mr. Buxton) had no authority to prevent or control pollution. He had, however, brought the facts regarding the condition of the River Hull to the notice of the local authorities concerned.

Pensions.—On May 12th Mr. F. O. ROBERTS told Dr. Hunter that the cases in which further medical examination in pension claims was requisite were now reduced to very small numbers. Dr. Hunter suggested that present assessments should be made valid for three years and no further medical boards held. Mr. ROBERTS answered that it was the practice of the Department to give prolonged awards wherever justifiable. He had, however, no power to authorize awards which were not covered by medical certificate or to refrain from awarding a permanent settlement in those cases which were suitable for it. Replying further to Dr. Hunter, Mr. Roberts said that legislation to make statutory all awards, whether on errors of final awards or on over seven years' claims, was not necessary or desirable. The mere grant of statutory powers to make awards of the two classes referred to would not in itself confer material rights which pensioners did not already possess. Sir A. POWNALL asked if it were true that only 300 claims beyond the seven years' limit had been accepted, and that 6,000 had been refused. Mr. ROBERTS replied that this was so.

Medical News.

THE eleventh Congress of the French-speaking medical practitioners of North America will be held at the Windsor Hotel, Montreal, from September 16th to 19th, and a very warm invitation is extended to members of the British Medical Association who may be able to participate in it on their way back from the Annual Meeting at Winnipeg in August. The programme includes general sessions devoted to physiotherapy and cholecystitis; clinical programmes in Montreal hospitals; contributions by official delegates from Great Britain, France, and the United States; public health sessions; and various exhibits and entertainments. Further information may be obtained from Dr. Douatien Marien, P.O. Box 58, Station G, Montreal.

THE next reception of the Royal Society of Medicine will be held at 1, Wimpole Street, W.1, on Thursday, May 29th. The President and Lady Dawson will receive the guests at 8.30 p.m., and at 9 p.m. cinematograph films will be shown. Admission will be by ticket only, obtainable from the secretary.

AT the meeting of the Medico-Legal Society to be held at 11, Chandos Street, W.1, on Thursday, May 22nd, at 8.30 p.m., Dr. C. Ainsworth Mitchell will read a paper on forgeries and their detection; a discussion will follow.

THE next meeting of the Biochemical Society will be held in the Department of Physiology, the School of Medicine, Leeds, to-day (Saturday, May 17th), at 3 p.m., when papers will be read and demonstrations given.

A SESSIONAL meeting of the Royal Sanitary Institute will be held in the Public Halls, Blackburn, on Friday, May 30th, when a discussion on the reorganization of Poor Law hospitals under the Local Government Act will be opened by Dr. J. J. Buchan, president of the Society of Medical Officers of Health, at 7 p.m. On Saturday, May 31st, the meeting commences at 10.45 a.m., when a discussion on the need for further legal powers with respect to ice-cream will be opened by Dr. V. T. Thierens.

THE thirty-first annual meeting of the Lebanon Hospital for Mental Disease, Asfuriyeh, near Beirût, Syria, will be held in the Vestry Hall of St. Martin-in-the-Fields, Trafalgar Square, on Friday, May 23rd, at 3.30 p.m., under the chairmanship of Dr. Bedford Pierce, one of H.M. Commissioners in Lunacy. The speakers will include Dr. F. H. Edwards, late medical superintendent of Camberwell House.

CONTRIBUTORS to the George Vivian Poore Memorial Fund and all interested in the homecroft movement are invited to the annual general meeting of the National Homecroft Association to be held in No. 2 Committee Room, Church House, Dean's Yard, Westminster, on Thursday, May 22nd, at 3.45 p.m.

THE annual meeting of the German Opthalmological Society will be held at Heidelberg from June 12th to 14th, and of the German Central Committee for the Investigation and Control of Cancer, at Dresden at the same date.

DR. L. S. BURRELL will deliver two lectures in the M.R.C.P. evening course arranged by the Fellowship of Medicine, on May 20th and 23rd, in the lecture hall of the Medical Society of London, 11, Chandos Street, Cavendish Square, W.1, at 8.30 p.m.; the subject of the first will be intrathoracic tumours, and of the second, bronchiectasis and abscess of lung. On May 21st, at 11 a.m., Mr. Rugg-Gunn will give a clinical demonstration at the Western Ophthalmic Hospital, *Marylebone* Road, and on May 23rd, at 2 p.m., Dr. Yealland will demonstrate at the Prince of Wales's Hospital, Tottenham. No fee is payable for either of these two demonstrations. For those interested in diseases of the heart and lungs there is one week remaining of the special course at the Victoria Park Hospital; the whole of each day can be spent at the hospital, and instruction will include special demonstrations in the various departments of the hospital. The Central London Ophthalmic Hospital will hold a four weeks' course from May 19th, consisting of instruction by operation, demonstrations, and special lectures. A comprehensive morning course will be undertaken by the staff of the Hospital for Sick Children from May 26th to June 7th; early entry is desirable, as the course will only be held if there is a minimum entry of twelve. From May 26th to June 7th a course will be held at Queen Mary's Hospital, Stratford; the daily sessions, which begin at 10.30 a.m. and finish at 5.30 p.m., will comprise instruction in medicine, surgery, and the specialties, with special reference to tuberculosis. The subjects of courses to be held in June are: gynaecology, dermatology, proctology, and another intensive course in medicine, surgery, and the specialties. Copies of all syllabuses, and information relating to post-graduate work are obtainable from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A SERIES of eight lectures on tropical hygiene for lay persons proceeding to the Tropics will be given by Lieut.-Colonel G. E. F. Stammers, R.A.M.C. (ret.), from May 28th to June 6th (with the exception of May 31st and June 1st), at the London School of Hygiene and Tropical Medicine, at 5.30 p.m. The subjects include: acclimatization; choice of suitable dietary; the designing and equipping of houses; sanitation of camps; and the etiology and prevention of various tropical infections. Full particulars can be obtained from the secretary of the London School of Hygiene and Tropical Medicine, Keppel Street, W.C.1.

A SCHEME has been issued by the Ministry of Health under Section 102 (2) of the Local Government Act, 1929, giving particulars of the annual contributions to be paid from April 1st, 1930, to March 31st, 1933, by councils or combinations of councils of counties and county boroughs to voluntary associations providing assistance or supervision for mental defectives who are outside the care of institutions. Councils are authorized to require the observance of conditions relating to the efficiency, alteration, inspection, and financial supervision of the service provided, but the consent of the Minister of Health must be obtained before any contribution may be reduced or terminated. These conditions also apply to the payment of annual contributions made to the Central Association for Mental Welfare, whose services are under the supervision of the Minister. Disputes and differences arising between councils and associations are required to be referred to the Minister, whose decision is final and binding. Local authorities are informed in a circular letter that their contributions to voluntary associations may exceed those set forth in the schedules.

AT a meeting of the Society of Public Analysts on May 7th Mr. D. R. Wood, F.I.C., discussed the examination of milk for tubercle bacilli. A survey was given of the experience and results obtained in the examination of 1,000 herds in Somerset during the last four years. The relative value of microscopical and biological tests was considered, and experiments on the cytology of tuberculous milk were described. The limitations of veterinary inspection were pointed out, and the conclusion was drawn that the present methods were inadequate for the elimination of tuberculous milk.

THE Metropolitan Water Board adopted, at its meeting on May 9th, the recommendation of the Water Examination Committee that the services of Sir Alexander Houston, Director of Water Examination, who is due to retire, should be retained.

IN the seventeenth annual report of St. Andrews Hospital, Dollis Hill, N.W., an appeal is made for assistance towards the opening of a children's ward and the establishment of an electrical department. During 1929 245 children received treatment. Funds are also required for the payment of new wards and a nurses' home in course of erection. Since the issue of the last report a new ward pavilion, consisting of two wards of twelve beds each and an operating theatre, has been opened, and permanent beds have increased from 52 to 74. Although there is no out-patients' department, it was necessary to deal with 272 accident and other urgent cases during the year. The hospital makes no distinction of nationality or creed, and many patients are admitted who cannot afford to contribute anything towards their maintenance.

WE have received a copy of the publications of the Ravetllat-Pla Institute of Barcelona containing essays by Dr. Pla y Armengol and others on the results of inoculation of the tuberculous virus into newborn animals; filtration of *the tubercle virus; the rapidity of dissemination* of the tubercle virus in the organism; the biology of the virus of tuberculosis; the etiology of tuberculosis; and the study of B.C.G.

THE International Labour Office has issued from 12, Victoria Street, S.W.1, eleven further brochures, Nos. 184 to 194, in its series "Occupation and Health," the subjects dealt with being dinitrophenol; dinitrobenzene; ether; fatigue tests; fertilizers and manures; glass industry; graphite; hides and skins; iron, pig iron, and steel industries; iron carbonyl; ice-cream makers; and lignite.

LIST No. 103 of the Cambridge Instrument Company, Ltd. (45, Grosvenor Place, London, S.W.1), contains descriptions of Cambridge instruments for measuring hydrogen-ion concentration, and an account of the applications of hydrogen-ion measurements in research and industry.

ON the occasion of the celebration of the centenary of the independence of Uruguay, a medical congress, consisting of fourteen sections, will be held at Montevideo from October 5th to 12th, under the presidency of Dr. Luis Morquio, professor of children's diseases at Montevideo.

DR. HENRY SALOMON (Leicester) has been awarded the Government grant for the third time for successful vaccination in his district.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

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The ***TELEPHONE NUMBERS*** of the British Medical Association and the *British Medical Journal* are *MUSEUM 9861, 9862, 9863,* and *9864* (internal exchange, four lines).

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QUERIES AND ANSWERS.

CHRONIC MYELOGENOUS LEUKAEMIA.

"PUZZLED" inquires if there are any new theories on the etiology or treatment of the above condition. The patient is a young [illegible] references (British or foreign) would be [illegible]. Radium and deep *x*-ray therapy have been tried.

TATTOOING AND PROPHYLAXIS.

DR. ROSE JORDAN (Catford) writes: A man, aged 25, recently presented himself for examination at the tuberculosis dispensary as a contact of his brother, who had contracted pulmonary tuberculosis. He was in excellent health, muscular, and in good condition. He had served eight years in the army and had spent seven of them in India. Both his arms were elaborately tattooed in red and blue. One of the reasons he gave for having submitted himself to this decorative art was that it gave protection against infectious diseases. He told me that soldiers with well-tattooed bodies *rarely* went sick. *Is* this merely a superstition, or does the impregnation of the skin by these dyes really afford any protection against tropical diseases?

FLEA INFESTATION.

DR. B. F. FALKNER writes: "Pulex" (May 10th, p. 892) should try a vigorous spraying of all cracks, fissures, and corners of rooms with formalin. I had the same trouble some years ago when I went to live in an old house in a rural district of Kent. I had a very terrible fortnight, as the fleas were in battalions and of a huge size. Spraying with "Flit" is also a good remedy.

INCOME TAX.

Assessment of War Loan Interest.

"S. B." acquired some War Loan in September, 1929, receiving £*x* interest on December 1st, 1929. What is his liability to assessment for the years to April 5th, 1929, and April 5th, 1930, respectively?

*** Interest is assessable on the basis of the actual year for the first and second financial years for which the income is received, and thereafter on the basis of the previous year. "S. B." is therefore liable to be assessed on £*x* for 1929-30 and 2×£*x* for 1930-31.

Assistant becoming a Partner.

"J. C. H." entered into partnership on April 1st, 1930, having previously been engaged as an assistant. Is it to his financial advantage for the partnership to be treated as a new business for 1930-31?

*** The answer clearly depends on whether the profits as computed for income tax purposes for 1930-31 will be less than for 1929-30. Obviously many causes must operate in such circumstances, and it is a matter of difficulty to estimate what the net result will be; but if the practice was paying an assistant in 1929-30 and, by reason of "J. C. H." having become a partner, will not do so for 1930-31, that of itself will have a tendency to increase the assessable profits for 1930-31, and to that extent to render it unwise to claim the cessation and recommencement method. In addition, it normally involves a departure, at any rate for a time, from the convenient cash basis method.

Cost of Special Courses.

"T. S. D." has been holding various senior hospital posts, and during that time has expended money for special tuition, examination fees, etc. This was expected of him by the hospital authorities, but was not a definite condition of his employment. Can he deduct these expenses for income tax purposes?

*** No; they cannot be brought within the rule that the expenses must be incurred "wholly, exclusively, and necessarily in the performance of the duties of the office." There is the further objection that as they were incurred to increase "T. S. D.'s" professional knowledge for use over a tract of future time they are in the nature of capital outlay.

Cost of Professional Books.

"B. M. T." inquires whether he can claim the cost of a reasonable number of new medical books each year, or whether they must be definite replacements of old editions of the same book.

*** In our opinion the medical reference library of a general practitioner can be regarded as a whole, and the expense of maintaining it in a reasonably up-to-date condition can be claimed without regard to the individual books replaced. [With regard to the expense of a post-graduate course, please see reply to "T. S. D." above; the expense is not allowable for income tax purposes.]

LETTERS, NOTES, ETC.

BOOKS AND MAGAZINES FOR HOSPITALS.

IN 1919 the British Red Cross Society and the Order of St. John reorganized the then existing War Library for the Sick and Wounded on a peace-time basis. Books, magazines, and periodicals are collected from the general public and supplied by the united societies to a large number of hospitals and sanatoriums. The tenth annual report of the library committee of the two societies covers the twelve months ending September 30th, 1929, during which over 120,000 books and the same number of magazines and papers were distributed to 1,600 hospitals and other institutions. The first care of the hospital library is to collect books for ex-service men undergoing treatment. Gifts of money have also been received enabling the committee to buy many books specially asked for by patients, and to obtain children's books, for which the demand outruns the supply. An appeal is made particularly for monthly magazines, of which an inadequate number is being received, though they are among the most popular and necessary gifts for patients. Parcels should be addressed to the secretary, the British Red Cross Society and Order of St. John Hospital Library, 48, Queen's Gardens, Lancaster Gate, W.2. Leaflets for distribution describing the aims and work of the library are also obtainable on application to the secretary.

SHANTUNG MEDICAL SCHOOL.

THE annual report of the School of Medicine of Shantung Christian University for the year ending June 30th, 1929, has been received. This University is governed by a joint administration consisting of American and British sections. Its work was interrupted by military disturbances during the spring of 1928; the autumn term commenced, however, at the end of the following August, and, although Tsinan was still occupied by Japanese troops, there was no further interruption. Since 1915, 220 medical students have graduated at the University, and of these at least 197 are in active practice, most of them having served first in mission hospitals, and about half being engaged in private practice or in the service of the Government. The report contains other *details of the useful work being carried on in this* part of China in introducing Western medicine and equipping institutions.

X-RAY VIEWING LANTERN.

PHILIPS LAMPS LIMITED (145, Charing Cross Road, W.C.) send us a pamphlet describing their viewing lantern for radiographs. The lantern is constructed of sheet metal, and arranged to take all film sizes up to 12×15 in. With the object of getting a perfectly even illumination, whiter than ordinary electric light, the lighting is effected by two 60-watt "daylight blue" lamps, arranged to provide indirect lighting in such a way as to show every detail that is on the film. The lantern is furnished with rubber feet, and means are provided for securing it readily to a wall in either a vertical or a horizontal position.

EPHEDRINE.

MESSRS. BAILLIÈRE, TINDALL AND COX, 8, Henrietta Street, W.C.2, inform us that they are the publishers in this country of Chen and Schmidt's monograph entitled *Ephedrine and Related Substances*, which was mentioned in the annotation on this drug in the *Journal* of May 10th (p. 873). The book will shortly be available.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 47, 48, 49, 50, 51, 54, 55, and 56 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 52 and 53.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 227.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

446. Cardiac Neurosis.

W. D. REID (*New England Journ. Med.*, February 6th, 1930, p. 264) defines cardiac neurosis as a form of effort syndrome which is related more to psychical than to physical activity. Patients suffering from this psychoneurosis form a large and well-defined group, since they are not easily managed in practice; and because the condition is generally ill understood there is a tendency for them to receive indifferent treatment. Diagnosis is usually simple, and depends upon the exclusion of organic disease, both in the heart and elsewhere in the body. It must be remembered that cardiac neurosis may exist in conjunction with organic heart disease. The importance of a routine examination is emphasized; it is sometimes necessary to procure concrete evidence by an *x*-ray film or the electro-cardiograph in order to convince the patient that he has no organic disease of the heart. Elucidation of the cause of the neurosis may not be easy, and it is often necessary to recall the periods, phases, and accidents of life that are apt to produce psychical disturbances. Some of these factors are weakness of constitution, solitary childhood, restless or excitable parents or teachers, the emotional reactions of adolescence, business worries, and the many conflicts and stresses of life. The principles of therapy fall into four main groups: (1) suggestion, (2) persuasion, (3) analysis, and (4) re-education. In some patients the relief obtained from negative findings on examination is sufficient to produce immediate and definite benefit. In other instances it is necessary to discuss the elements of cardiological diagnosis, and to emphasize the absence of physical signs in the individual examined. A few patients require careful analysis before the psychoneurosis can be cured, and not infrequently in severe cases repeated interviews are needed before the patient is re-educated and acquires a new and healthy philosophy of life.

447. Angina Pectoris and Adrenaline.

S. A. LEVINE, A. C. ERNSTENE, and B. M. JACOBSON (*Arch. Int. Med.*, February, 1930, p. 191) studied the electrocardiographic changes in normal persons and in those suffering from angina pectoris following subcutaneous injections of adrenaline. Previous experience had shown that anginal subjects developed typical attacks after such injections, and the authors investigated the possibility of this effect having a diagnostic value in doubtful cases. The drug was administered in 1 c.cm. doses to three groups of persons: one group of 11 with angina pectoris, one of 10 of the same average age without angina, and another of 10 normal young adults. Typical pain resulted in all but one of the patients with angina, while no pain occurred in any of the controls. In the anginal group the T wave increased slightly in amplitude, but in the other two groups it showed a tendency to decrease; the increase in blood pressure and pulse rate was slightly greater in the anginal group than in the others. Because of the regularity with which adrenaline produces pain in patients with undoubted angina pectoris, its therapeutic use, and also that of ephedrine, is contraindicated; it may, however, serve a useful diagnostic purpose in those doubtful cases in which other possible explanations for the pain, such as gall-stones, or gastric or duodenal affections, are present, and in which information as to the presence or absence of angina is essential. Nearly all the patients showed the characteristic effects of adrenaline—namely, tremor, palpitation, sweating, pallor, flushing, nervousness, weakness, and pulsations in the neck and epigastrium; these manifestations were usually only of moderate severity, and none of the anginal patients gave the marked reactions which occur in persons sensitive to the drug.

448. Tuberculosis Mortality in Denmark.

K. FABER (*Nordisk Medicinsk Tidskrift*, February 22nd, 1930, p. 113) states that Denmark, with a population of about three and a half millions, has sixteen sanatoriums with 1,393 beds, thirty-six tuberculosis hospitals with 1,033 beds, three coast hospitals with 428 beds, eleven coast sanatoriums with 571 beds, and four nursing homes with 132 beds—a total of seventy institutions with 3,607 beds. This means that there are 131 beds available for every 100 deaths a year from tuberculosis, or more than one bed for every 1,000 inhabitants. Anyone can receive free treatment at these institutions without suffering from the stamp of pauperism, the State paying three-quarters and the local authorities paying one-quarter of the cost of running them. The fact that a high proportion of patients suffering from tuberculosis die in these institutions, instead of at home, is of considerable importance in limiting the spread of infection. In Copenhagen, for example, 75 per cent. of all the tuberculosis deaths occur in institutions for the tuberculous; and outside [illegible] from 25 to 50 per cent. [illegible] the tuberculosis death rate [illegible] aid is provided, 63 per cent. of the population over the age of 15 belonging to friendly societies whose members receive free medical treatment. Both they and their children are also admitted to hospital without charge. One of the many tables published by the author shows the decline of the tuberculosis death rate, classified according to age, sex, and locality, during thirty years—that is, from the period 1890–94 to the period 1920–25. The greatest decline occurred in childhood, ranging from 70 to 80 per cent., and being approximately equal for the two sexes. But in adolescence and early adult life this decline was much less marked; in Copenhagen among males between the ages of 15 and 19 it was only 47.5 per cent.; in the following age group, 20–24, in males in Copenhagen, this decline was further reduced to 37.9 per cent. The corresponding figures for females in these two age groups in Copenhagen were still less satisfactory, and it would seem that the tuberculosis death rate among women between the ages of 15 and 24 has been almost stationary during the past thirty years, the decline being only 4.1 per cent. in the age group 15–19, and only 8.4 per cent. in the age group 20–24. After the age of 25 the decline in the tuberculosis death rate again became much more marked, and in the age group 55–64 there was a decline of 72.6 per cent. among males in Copenhagen. After showing how the decline in the tuberculosis death rate varies greatly with the age, sex, and place of residence (town or country) of the patient, the author concludes that the campaign against tuberculosis as a directly infectious disease has been most effective in the three following groups: (1) in early childhood, in both sexes, in town as well as in country districts; (2) in adult life, among males living in towns; (3) in adult life, among females living in the country. He explains these differences in sex, age, and locality in terms of facilities for infection and reinfection; but he admits that he cannot distinguish numerically between the parts played by first infections and super-infections respectively.

449. Mumps Complicated by Meningo-encephalitis.

E. E. ZEMEK (*Minnesota Med.*, February, 1930, p. 107) records three personal cases, in males aged 11, 17, and 36 respectively. In the first case there was no definite history of mumps, but an epidemic existed and there was a history of probable contact. The symptoms were frontal headache, fever, vomiting, hyper-irritability, and general malaise. Rapid recovery followed lumbar puncture. In the second case, on the other hand, there was definite parotid involvement followed by delirium and amnesia, which cleared up promptly after spinal puncture. In the third case there was a history of mumps in the family, and orchitis coexisted with meningeal symptoms, which yielded at once to spinal puncture.

Surgery.

450. Combined Radiation Treatment of Malignant Growths.

H. BERNHARDT (*Med. Klinik*, January 17th, 1930, p. 83) recommends isaminblue, either alone or as a preparation to radiation, in advanced carcinomata; he reports 200 cases so treated. Isaminblue is a sulphonized compound of tri-beta-naphthol and pararosaniline; intravenous injections are given of a 0.75 to 0.8 per cent. aqueous solution, or a 5 per cent. solution in glucose. With fresh solutions there is usually no disturbance, but if the temperature rises further treatment must be delayed; sometimes definite sensations are felt in the tumour area. The dye is stored by the whole body, but the connective tissue round the tumour and metastases and the affected lymph vessels seem to have a special affinity for it, their resisting powers being enhanced. In cases unsuitable for radiation 2 to 2.5 grams are given; when used as a preliminary to irradiation 1 to 1.2 grams are given in twelve to fifteen injections spread over two to three weeks. The author states that after five to seven injections definite signs of improvement are found, including an arrest of the loss of weight, improvement in the anaemia, return of the basal metabolism and cholesterin figures towards the normal, better general health, and alleviation of the pain. During

the treatment increased carbohydrates are necessary in the food, calcium is administered, diathermy of the tumour and metastases may be employed, and opiates are stopped or lessened. The treatment lasts for about a month and is repeated in a modified form three to four months later; in some cases the effect is not manifest until some weeks after. The author considers that in a relatively high percentage of cases this drug hinders and even arrests malignant growth, preparing the tissues for irradiation and enabling advanced cases to be modified favourably for exposure to x rays.

451. Sarcoma of the Lung.

S. P. FEDOROFF (*Zentralbl. f. Chir.*, March 22nd, 1930, p. 707), who records an illustrative case, states that formerly primary malignant tumours of the lung were regarded as rare, as is shown by the fact that at Basle carcinoma of the lung formed only 1.76 per cent. of all carcinomas, and at Breslau only 1.85 per cent. In recent years, however, malignant disease of the lung has been diagnosed more frequently during life or found at necropsy. The statistics of [illegible] Pawydowsky and Alexejeff, for instance, [illegible] the period 1923–28, among 37,849 necropsies performed at Moscow, 2,788 cancerous affections were found. Of these, 64.7 per cent. involved the alimentary canal, and 12.04 per cent. the female sexual organs, while 12.04 per cent. were cases of primary cancer of the lung. Primary cancer of the lung, therefore, would appear to be as frequent as cancer of the female genitals, but it must be taken into consideration that a number of women are cured by operation or radium, and therefore do not come to necropsy. The course of pulmonary cancer varies. Sometimes it is very slow and is not infrequently mistaken for tuberculosis, while in other cases it is very rapid. Cases have recently been described in which carcinoma or sarcoma of the lung has been removed, the tumours being separated from the lung by a capsule. In one instance (Divis and Sikl) the patient was in good health a year after the operation. Fedoroff's patient was a woman, aged 38, in whom the symptoms had lasted nine months before operation, and had been mistaken first for those of hydatid disease and later for a dermoid cyst of the lung. An encapsuled tumour was found in the right lower lobe and was removed. Death from haemorrhage took place twelve days after the operation. Microscopically the tumour proved to be a mixed-celled sarcoma.

452. Injection Treatment of Varicose Veins.

E. J. GARVIN (*Med. Journ. and Record*, March 5th, 1930, p. 247) recommends the use of a solution composed of equal parts of 20 per cent. sodium chloride and 50 per cent. dextrose. This combination is less irritating than 20 per cent. sodium chloride alone, and it does not cause sloughing if injected accidentally into the adjacent tissues. The area to be injected is blocked off with a proximal and a distal tourniquet. The skin is cleansed with tincture of green soap, followed by alcohol. With the patient in the standing position, the needle is inserted into the vein; the patient is then allowed to sit, the foot being raised on a stool. The proximal tourniquet is removed to lessen the congestion, and is reapplied. From 2 to 10 c.cm. of the solution is injected through a small bore needle, the most distal varix being injected first. Immediately after the injection a pressure bandage is placed over the site. The tourniquets are allowed to remain on for three to five minutes following the injection. The treatment is given every other day; five or six injections were found necessary in the cases reported. Pain may appear at the site of injection: it gradually lessens, and finally disappears after forty-eight hours. Contraindications are: obstruction of the deep veins of the leg; phlebitis or history of a recent attack; and severe cardiac lesions.

453. Ischio-rectal Prostatectomy.

J. MINTON MEHERIN (*Arch. of Surg.*, March, 1930, p. 437) points out the disadvantages in the removal of the prostate gland by the suprapubic and perineal routes owing to the difficulties in haemostasis and after-care of the wound in the first case, and the inadequate exposure obtained by the perineal method. He claims that ischio-rectal prostatectomy is more satisfactory, and commends the Voelcker method of operation. One advantage of this procedure is that it proceeds under observation of the eye, and therefore it is not likely that pieces of adenoma will be left behind. Moreover, exact haemostasis by ligature, suture, and packing is possible, and good drainage from the base of the wound is assured. Post-operative epididymitis can be controlled by the performance of vasotomy before treatment with the indwelling catheter is commenced. A review is given of 148 cases of prostatectomy by this method, eight surgeons being concerned; the mortality rate was 4.07 per cent. There were no deaths from operative shock, and permanent fistulas or incontinence have not occurred as a post-operative complication.

Therapeutics.

454. Treatment of Chorea.

G. MARINESCO, O. SAGER, and G.-T. DINISCHIOTU (*Ann. de Méd.*, March, 1930, p. 237) strongly advocate the use of luminal and magnesium sulphate in the treatment of both acute and chronic chorea. If luminal be employed, 0.22 eg. of the sodium salt should be injected subcutaneously twice a day for twenty to twenty-five days. Magnesium sulphate should be given intraspinally in doses of 0.008 mg. per kilo of body weight in a freshly saturated (25 per cent.) solution; these injections should be repeated every five to six days. Disadvantages in the employment of the latter drug are the necessity for perfect sterilization of the solution and the difficulty of performing lumbar puncture owing to the agitated state of the patients; moreover, transient paraparesis and retention of urine may occur. No ill effects have been noted after the administration of luminal. Five cases of chorea, illustrative of the beneficial effects of these medicaments, are reported; four were treated with luminal and one with magnesium sulphate. The physiological pathology of chorea is discussed, and various authorities are cited. The present authors emphasize the great importance of the proprioceptive afferent system in the execution of normal movements, and also its importance in a pathological state in the production of the choreic syndrome, which can be caused either by absence of transcortical or diencephalic inhibition, or by a block of the afferent system. Kinnier Wilson and Foerster attach great importance to the dentato-rubro-thalamic system as the agent of this inhibition. The present authors consider that a humoral inhibition is also a great factor, and cite the well-known inhibitory action of calcium ions in the diencephalon, and the important part played by the endocrine glands and the sympathetic system in the mechanism of inhibition. The emotional instability of choreic patients (facile laughter and weeping, irritability, etc.) points to sympathetic and humoral disturbances. The abolition or diminution of the tendon reflexes in chorea is due to a functional trouble of the upper proprioceptive reflex arcs which normally intervene in the reflex functioning of the cord. Luminal and magnesium sulphate cause a diencephalo-mesencephalic inhibition which compensates for the normal inhibition of the striate body on the pallidum, and also produces a block between the proprioceptive and extrapyramidal passages, thus preventing afferent impulses from following an abnormal extrapyramidal route. By inhibition of the thalamus impulses are prevented from reaching the cortex in great numbers, and this permits of a better transcortical inhibition. The curative effect of luminal and magnesium sulphate is due to the action of the former on the cerebral circulation and cellular permeability, and of the latter drug on cellular permeability.

455. Autogenous Vaccine Therapy in Meningococcal Meningitis.

E. APPELBAUM (*Arch. of Pediat.*, January, 1930, p. 61), who records an illustrative case, states that though the use of vaccines in the treatment of meningococcal meningitis has been described by a number of authors, they have been used mostly in conjunction with other forms of therapy and in the subacute or chronic stage of the disease when serum seems to have become inefficient. Very few favourable reports have been made of the use of vaccine in the acute stage. Appelbaum's patient was a female infant, aged 20 months, in whom vaccine was used early in the course of the disease, as seventy-two hours after the second dose of serum a high degree of sensitivity developed and a most violent reaction resulted. Vaccine therapy was continued for about a month in progressively increasing doses. Subcutaneous injections were given every day and intraspinal injections every other day. The maximum subcutaneous dose was 500 million bacteria and the maximum intravenous dose one billion. On several occasions only a few cubic centimetres or no fluid at all could be obtained on lumbar puncture, indicating the presence of adhesions or partial block. Finally complete recovery ensued apart from loss of the right eye due to panophthalmia.

456. Treatment of Lymphangitis, Phlebitis, and Erysipelas.

S. KRÜGER (*Med. Welt*, March 15th, 1930, p. 367) for many years has had excellent results in the treatment of lymphangitis, phlebitis, and erysipelas by application of a dressing containing 50 parts of alcohol 96 per cent., and 1 part of sublimate solution 1 per 1,000. In cases where the skin could not tolerate sublimate a solution of copper sulphate (1 to 1.5 per cent.) was substituted. Within twenty-four hours after commencing the treatment the process was checked, and the swelling subsided in another twenty-four hours. The copper sulphate and alcohol application also proved useful in long-standing cases of whitlow and prevented the necessity of removing the nail.

Anaesthetics.

457. Infiltration Anaesthesia in Fractures.

C. O. RICE (*Anesthesia and Analgesia*, March–April, 1930, p. 76), from an experience in over 200 cases, advocates the employment of infiltration anaesthesia whenever muscular relaxation is necessary for the manipulative reduction of simple fractures and dislocations. Infiltration into the fracture gap is usually all that is required to obtain local analgesia and relaxation if reduction is undertaken at once, but after the lapse of a day or two infiltration of painful points and the surrounding tissues may be needed. After sterilizing the skin over the fracture with iodine, 5 to 10 c.cm. of a 1 *per cent. procaine-adrenaline* solution is injected into the fracture gap, and if anaesthesia and relaxation are not developing within three or four minutes the periosteum of the proximal fragment is then infiltrated around its entire circumference. By slowly infiltrating ahead of the needle the pain attending the process is minimized, and anaesthesia and relaxation are complete within ten minutes. Certain points of entrance are suggested for each type of fracture or dislocation in order to decrease the risk of injuring nerves and blood vessels. Although theoretically a compound fracture is produced the danger under ordinary precautions is negligible, and the procedure may be regarded as simple and safe, and not interfering with union; it is also of use should further manipulation of the fragments be required. By its means satisfactory alignment is made easier because the patient can be taken to the *x*-ray room and the fragments adjusted under direct vision. In a child of 3 with fracture of the forearm the method answered admirably, and the author adds that his successor has reported its satisfactory employment in more than 500 fractures.

458. Spinal Anaesthesia.

S. J. STABINS and J. J. MORTON (*Annals of Surgery*, February, 1930, p. 242) record 100 cases in which Pitkin's method of spinal anaesthesia was used, 2 c.cm. of spinocain being injected for operations below the umbilicus and 3 c.cm. for operations above it. A *hypodermic injection of ephedrine* sulphate 0.05 gram was given fifteen minutes before the spinal anaesthesia. The lateral prone position proved to be the best for injecting the spinocain, the patient being lowered into the Trendelenburg position immediately afterwards to prevent too great early diffusion and to assist the cerebral circulation. It was clear that a most careful technique was required to secure ideal anaesthesia at the desired level, and supplementary inhalation anaesthesia was sometimes necessary for long operations. Morphine or scopolamine is recommended before the spinal anaesthesia. It was found that there was no greater freedom from pulmonary complications than in any other form of anaesthesia, but post-operative discomforts, such as nausea, vomiting, gas pains, and distension, were considerably less. Spinal anaesthesia gives perfect relaxation of the abdominal wall and consequent ease of exposure. The stomach and intestines undergo violent peristalsis and spasm, so that the bowel remains small and contracted, and does not interfere with the operation. Spinal anaesthesia is to be commended in gall-bladder and pelvic operations, in non-inflammatory conditions of the stomach and intestines, in early intestinal obstruction, and in obese patients with ventral hernias. It is also held to be an ideal form of anaesthesia for cases of diabetes when not associated with marked hypertension, since there is no disturbance in the routine treatment or of the kidneys and general metabolism. It should also be used for major surgery of the extremities and for abdominal surgery in the presence of pulmonary tuberculosis. It was found that in some cases spinal anaesthesia was useful for paralytic ileus not associated with infection or mechanical obstruction. Contraindications are marked sepsis, perforations of viscera, peritonitis or localized intra-abdominal abscess, general cachectic states, hypotension, marked hypertension, and paralytic ileus associated with peritonitis. It is considered that the induction of spinal anaesthesia is not devoid of the risk of serious consequences, and that therefore it should only be employed when there is a real indication for it.

459. A. S. JACKSON (*ibid.*, p. 256) concludes that spinal anaesthesia, when properly induced, is the safest from the standpoint of the patient and the most convenient for the surgeon. A series of 1,000 cases is reviewed; there were no fatalities traceable to the spinal anaesthesia, and it is now being used as a routine procedure in all major operations below the diaphragm, as well as in some minor procedures such as cystoscopy. In cases of operations on the gall-bladder or on gangrenous and ruptured appendices, convalescence was largely devoid of the shock which would have resulted from inhalation anaesthesia; spinal anaesthesia was used in one case of perforated duodenal ulcer in a middle-aged man who was suffering from profound shock and severe peritoneal pain, with immediate relief. Post-operative sequels, such as pneumonia, embolism, ileus, gastric dilatation, and cardio-renal vascular complications, are materially reduced by the use of spinal anaesthesia; the technical difficulties of operating are simplified, particularly in cases of acute intestinal obstruction, since there is such relaxation of the peritoneum and other structures that the operative area is enlarged and the closure of the wound is facilitated. The prophylactic administration of ephedrine to govern the blood pressure has made spinal anaesthesia more popular. The technique used by the present authors was that worked out by Stout. It is admitted that there is great danger if care is not taken as regards technique, but when the correct method of induction is followed spinal anaesthesia is held to be absolutely safe.

460. Premedication for Local Anaesthesia.

G. DETAKATS (*Surg., Gynecol. and Obstet.*, February, 1930, p. 494) reports an experimental investigation aimed at the establishment of a method of producing a state of somnolence in patients under local anaesthesia; in a series of 35 patients he tested the relative values of intravenous, subcutaneous, and oral administrations of various hypnotics of the barbituric acid series. Ten patients were injected intravenously with 2 c.cm. of a 20 per cent. somnifen solution; a definite effect was produced without any untoward symptoms, but its duration was too short. In a second series from 20 to 60 cg. of neonal was injected intravenously, and in a third series 2 c.cm. of a 15 per cent. solution was injected subcutaneously; in a fourth series 20 cg. doses of neonal or allonal were given by the mouth three times during the day before the operation and at night, the total amount so administered being one gram of neonal in the twenty-four hours. The advantage of inducing rapid deep anaesthesia by intravenous medication is offset, in the author's opinion, by the uncertainty of action, the prolonged sleep, and the inability to counteract its effect. DeTakats thinks that the intravenous injection of one of the barbituric acid series seems to be indicated in poisoning with cocaine and its derivatives, since they have protective action. He believes that deep anaesthesia could be induced with larger doses, but after a trial in 35 cases the attempt was abandoned as being unsuccessful because of the considerable individual variations.

Obstetrics and Gynaecology.

461. The Terminology of Cervical Erosion.

K. V. BAILEY (*Surg., Gynecol. and Obstet.*, March, 1930, p. 513) reports the results of examining histologically 850 specimens of the uterine cervix with a view to determining the precise pathology of so-called cervical erosion, and, with this as a basis, to inquire into the problem of the inception of cervical cancer. He maintains that the group of cases hitherto known as proliferative erosion would be more accurately described as "peri-oricular cervicitis"; infection limited to the glandular cells is properly termed "glandular cervicitis"; and a third group of ulcerative erosion receives the name "ulcerative cervicitis." The features of this last group are: (1) a depressed granulomatous area extending deeply into the subjacent tissues, presenting a relatively dense structure, and containing no epithelial structures; and (2) the presence of a highly irritative type of adjacent squamous epithelium, due to ineffective proliferative downgrowths from the basal layers. Bailey remarks that erosion is divisible into stages depending on the length of time during which the local inflammatory stimulus and the reaction to it continue, and he gives illustrations of the histological diagnostic criteria in each case, emphasizing the importance of this variety of examination in determining the exact nature of such conditions of the cervix. These earlier manifestations are, he adds, of particular importance in view of the ultimate sequel to erosion—namely, malignancy.

462. Bacilluria during Pregnancy and the Puerperium.

V. JURA (*Arch. Ital. di Urol.*, December, 1929, p. 520) considers that bacilluria, while far from rare in normal men and women, is slightly more frequent in pregnant women. There is little evidence that an ascending infection occurs, but the permeability of the intestines to micro-organisms, and the possibility of the passage of bacilli through the lymphatic connexions of the caecum and ascending colon with the right kidney, or through the blood, supports the view of the endogenous origin of the bacilluria which in pregnancy has been attributed to intestinal stasis. Jura, as the result of investigations of three series of 25 cases two months before labour, during labour, and one or two days after labour, found that 12, 10, and 13 cases respectively presented infected urine. In 103 cases investigated during and after labour, 26 had

infected urine during both periods, 10 only during labour, and 17 only after labour. These results, while confirming those of other investigators, show some difference in the occurrence of bacilluria during pregnancy and the puerperium as compared with its occurrence during labour, indicating that bacilluria increases slightly after labour. In all the cases examined urinary disease of any kind was proved to be absent. As the result of these and other detailed investigations, it is suggested that the occurrence of bacilluria during pregnancy or the puerperium is associated with intestinal conditions, and that with improvement in this respect the bacilli may even disappear. Moreover, the slight virulence and the small number of organisms eliminated by the kidneys are not likely to produce any lesion of the urinary system during pregnancy in the absence of local predisposing factors. Bacilluria, therefore, cannot be considered as a real disease; its symptoms are not at all definite, and [illegible] the microscopical examination of the [illegible] treatment alone is required, and urinary disinfectants and aperients, preferably paraffin, can be prescribed, ordinary disinfectants being used externally with advantage. In obstinate cases the filtrate of broth culture of the germs isolated from the patient (Besredka's method) may be administered orally, especially in the case of *B. coli*.

463. Haemostatic Serums in Haemorrhage.

A. TZANCK (*Bull. Soc. d'Obstét. et de Gynécol. de Paris*, November, 1929, p. 600) maintains that in cases of haemorrhage the amount of blood lost is not the only point to be considered; the rapidity with which it is lost is of primary importance. The practitioner rarely encounters a fulminating haemorrhage in time to help, and therefore the symptomatology of such cases can only be learned from experimentation. Tzanck has shown that when a trocar is introduced into the carotid of the dog, convulsions occur after the fortieth second, the pupils dilate, there is hyperextension of the legs, respiration ceases, and the animal dies in two minutes. In such cases the blood lost does not exceed 70 per cent. of the total amount in the body; the red corpuscles may number 5,200,000 per c.mm. at the beginning of the haemorrhage and 3,000,000 at the end of two minutes. He suggests that this reservation of the blood elements explains the satisfactory counts obtained after severe haemorrhage when the serum of Normet is used. In cases where haemorrhage is less rapid syncope is rare, convulsions exceptional, and consciousness is maintained although dyspnoea may be extreme. Such a haemorrhage may result in the loss of 90 per cent. of the blood volume, or may lower the red count to 1,500,000, before death occurs. He concludes that in fulminating haemorrhages any fluid capable of re-establishing the blood volume would save life by effecting a dilution of the blood elements which are being concentrated as a result of the syncope. For this purpose the efficacy of the various serums differs in degree only. In the less rapid haemorrhages, on the other hand, where more than 70 per cent. of the blood is lost and where a sufficient anaemia is caused, the serums fail, and blood transfusion alone is of use. To establish the real efficacy of such a serum its effective action would have to be made manifest in cases where more than 70 per cent. of the blood had been lost and where the red count had fallen to 1,500,000. Until this has been done the action of such a serum cannot be said to equal that of blood transfusion.

Pathology.

464. The Etiology of Psittacosis.

G. ELKELES (*Deut. med. Woch.*, April 11th, 1930, p. 619) describes some experiments on the etiology of psittacosis. According to his own observations the disease in parrots is characterized by diarrhoea, shivering, weakness, and apathy. If the bird survives this stage the diarrhoea ceases and the general condition and appetite improve. Respiratory disturbances may appear, accompanied by croaking noises and the secretion of mucus. As the result apparently of dyspnoea the bird may make convulsive efforts to fly, during which it strikes its head with great force on the roof of the cage, and dies of epidural haemorrhage. Starting with a bird that had survived the diarrhoeal stage but was still suffering from difficulty in breathing, the author tested various methods of propagating the disease. A parrot was brought into close contact with the sick bird; it developed diarrhoea in the third week and died after twenty days. The organs, with the exception of the liver, proved sterile on both aerobic and anaerobic cultivation; the liver contained markedly haemophilic bacilli resembling Pfeiffer's *influenza* bacillus, but differing from it in their formation of very tiny colonies, their weak resistance, their rapid loss of virulence, and the difficulty with which they could be carried over from one culture to another. The liver and intestine of this bird showed marked pathological lesions. An organ suspension—the liver excepted—was inoculated into another parrot, which died after thirteen days with liver lesions and pericarditis. All cultures from this parrot were sterile. Passage to another parrot proved fatal again in thirteen days. Starting from the original sick parrot, the author filtered organ suspensions through a Reichel D candle, and inoculated the filtrate into a normal parrot; this bird died in nine days with liver lesions and pericarditis. Two birds in the second passage died after eighteen and twenty-five days respectively. Of six birds in the third passage, three inoculated with unfiltered material died in six, seven, and eight days respectively, and one inoculated with a filtrate died in nine days; two inoculated with filtrates were still alive on the tenth day. The author concludes that the causative agent of psittacosis is filterable, and that it is infective for canaries as well as for parrots. Without committing himself to an opinion on the significance of the haemophilic bacilli found in some of the sick birds, he draws attention to the similarity of psittacosis with the severe nervous type of influenza. It is noteworthy that the haemophilic bacilli were found in the saliva of some of the sick parrots.

435 K. L. PESCH (*Münch. med. Woch.*, March 21st, 1930, p. 484) reports seven cases of psittacosis which occurred in Cologne; all the patients had had some association with lately acquired parrots, some of which died. Three families were affected, two members in each taking the disease. The remaining case was that of an employee in the shop which supplied parrots which were responsible for four of the cases. All seven patients were seriously ill and three died. Agglutination tests were performed with typhoid and paratyphoid bacilli, and two strains of psittacosis from the London Lister Institute, but all were negative, as were cultures on bile and broth. The urine showed no abnormality, but the sputa contained pneumococci and *Streptococcus viridans*, and in one case influenza bacilli were also present. The post-mortem material came from two patients only. In the first case *Streptococcus viridans* was found in the lungs; cultures of blood from the spleen and heart remained sterile; and a haemolytic strain of *B. coli* was found in the bile. In the second case pneumococci and non-haemolytic staphylococci were found in the lung as well as the *Streptococcus viridans*, but the blood was again negative. The material from these cases was used to experiment on parrots brought up in Germany and not previously exposed to infection; 15 were injected and 6 died. Their heart blood and the liver filtrate were again injected into fresh birds, one strain continuing until the sixth successive host; eventually 36 birds died. The parrot which had infected two of the human cases was put into a cage with 5 other birds, all of which died; by injection of their heart blood and liver extract (filtered or unfiltered) the virus was conveyed to fresh birds up to the third successive host. In two cases healthy birds were infected after living in an unsterilized cage in which another had died, proving that contact infection occurs. The result of the microscopic and cultural examinations of the material from the experiments on birds also proved negative, and the author concludes that neither *B. paratyphosus* nor the streptococcus is the causal organism of psittacosis, but probably a filter-passing virus is concerned.

465. Serum Protein Changes in Malaria and Typhoid Fever.

ACCORDING to R. B. LLOYD and S. N. PAUL (*Indian Journ. Med. Research*, October, 1929, p. 583) the typical protein graphs in typhoid fever and malaria both present the same characters, the most conspicuous of which is marked reduction of the serum albumin with rise of the euglobulin. The total globulin may be unchanged or slightly reduced, but not raised. The protein changes produced by T.A.B. vaccine are essentially the same though slighter in extent, the only difference being a raised total globulin figure. The protein fractions in typhoid fever begin to return to normal on defervescence, but the normal stage is not finally reached until long after the temperature has settled. In cases of relapse in typhoid fever the return to protein normality begins on the first defervescence, and the pyrexia of the relapse has no influence on the protein change. The authors maintain that in typhoid the period of low albumin and raised euglobulin represents the stage of immunization, and that only after immunization is complete does the return to protein normality commence. They conclude, therefore, that the pyrexia of a relapse in typhoid is unconnected immunologically with the primary attack. In view of the similarity of the malaria and typhoid protein graphs the question arises whether, despite the fact that the two diseases are causally so dissimilar, the conclusions drawn from the typhoid graphs may not have the same application to malaria.

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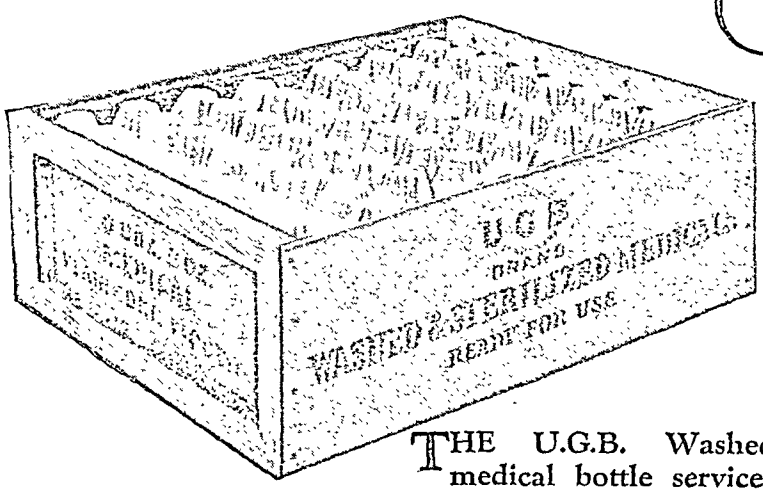
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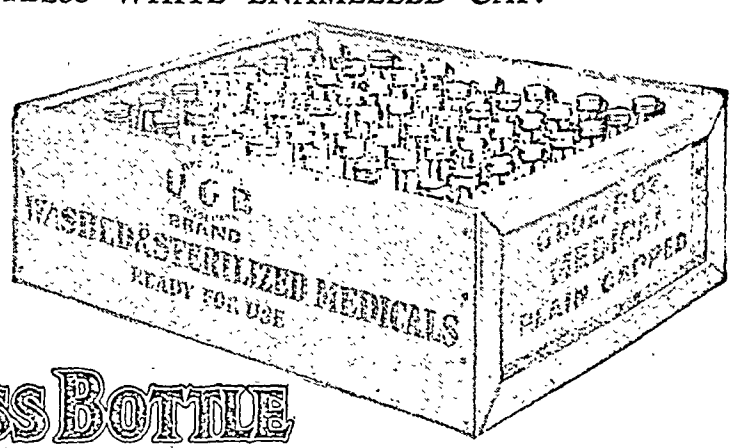
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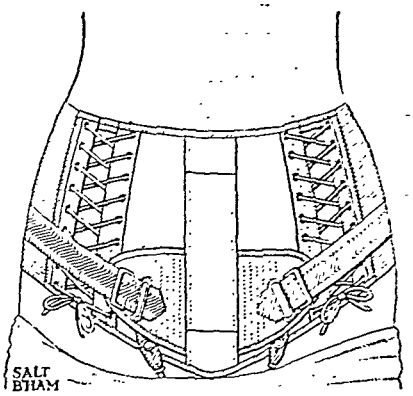
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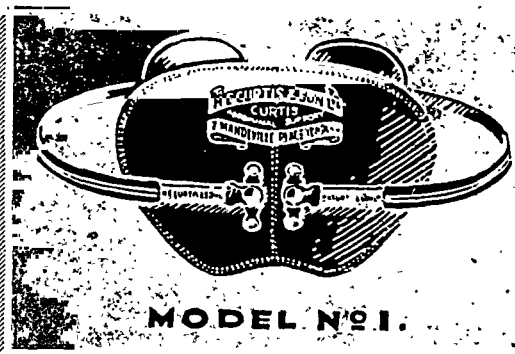
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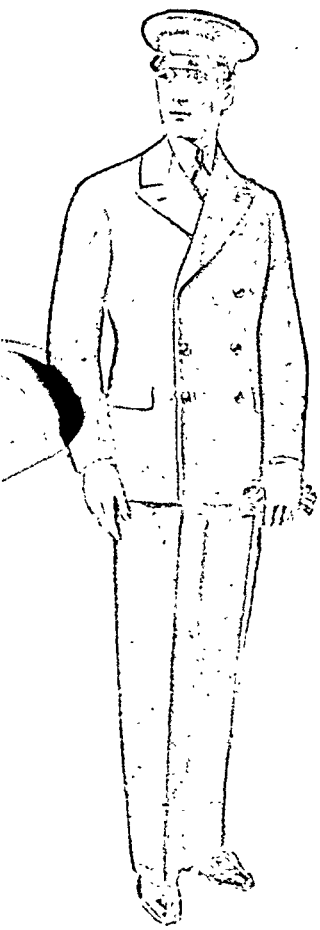
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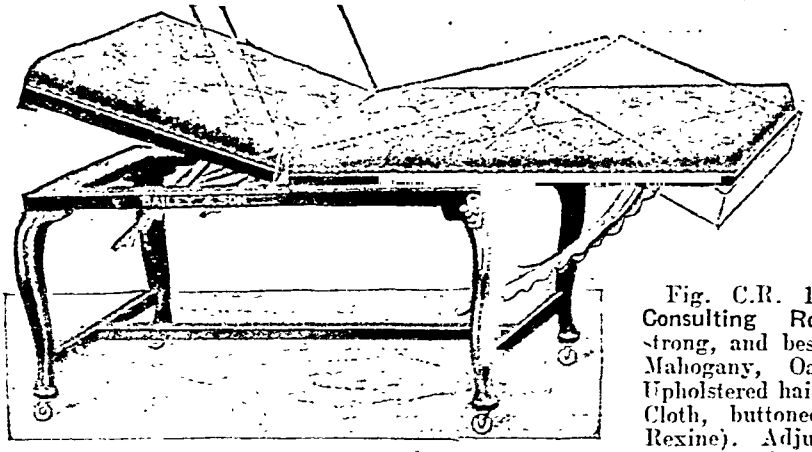
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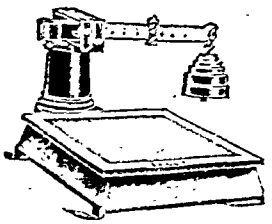
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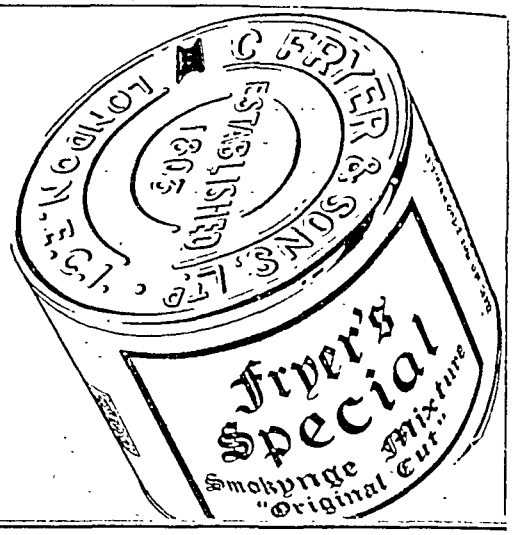
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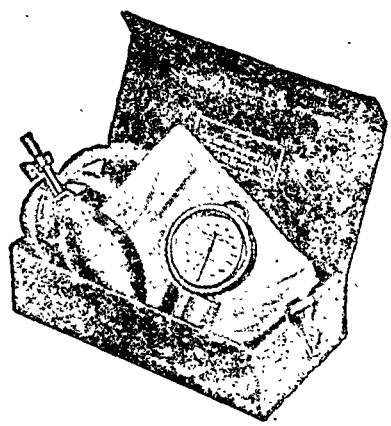
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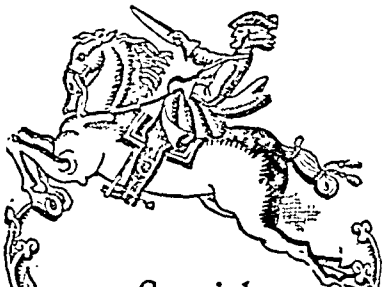
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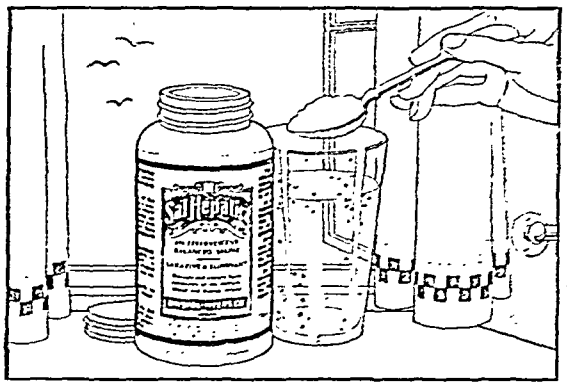
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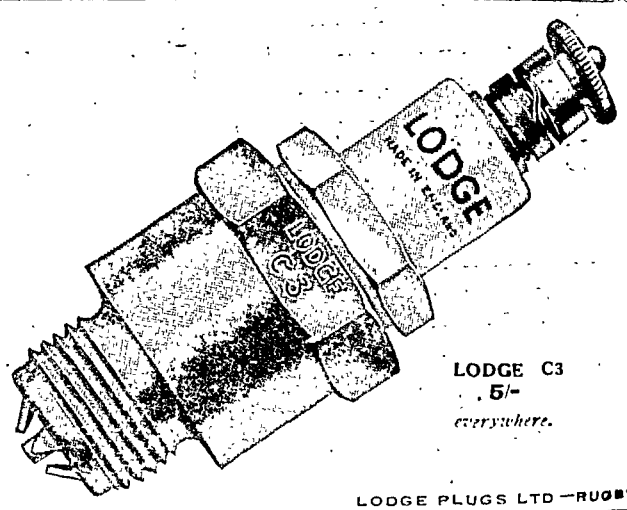
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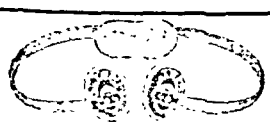
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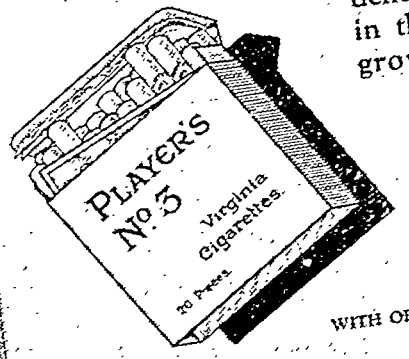


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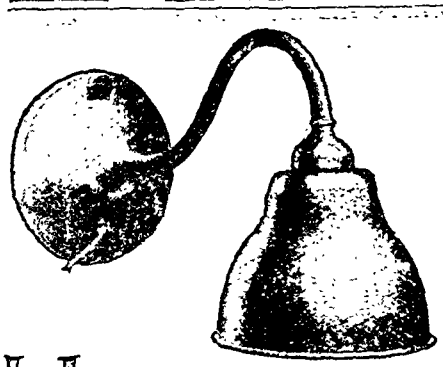
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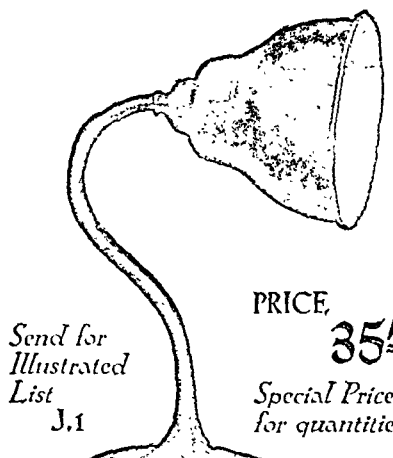
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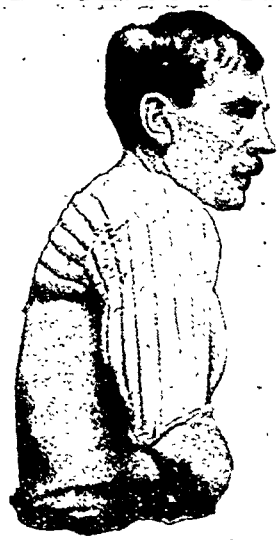
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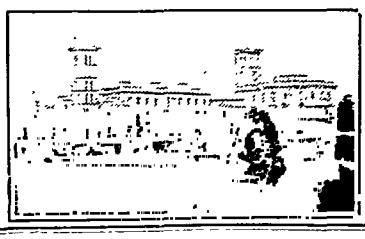
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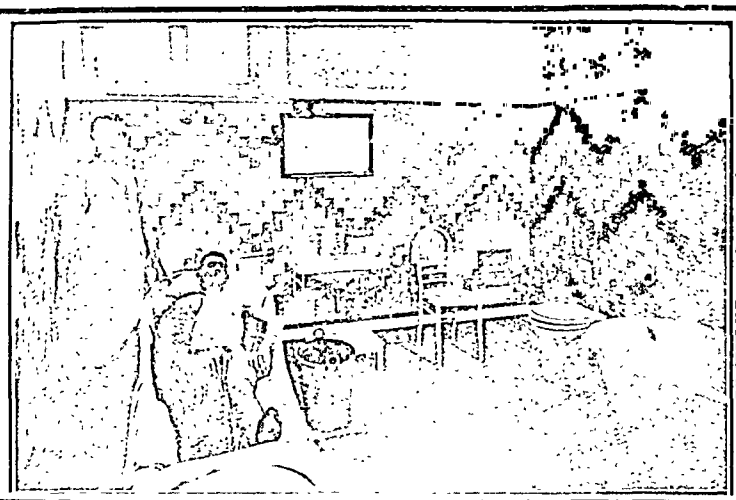
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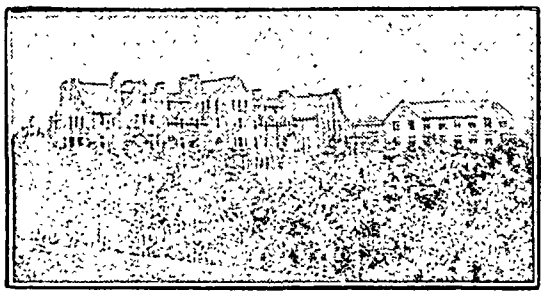
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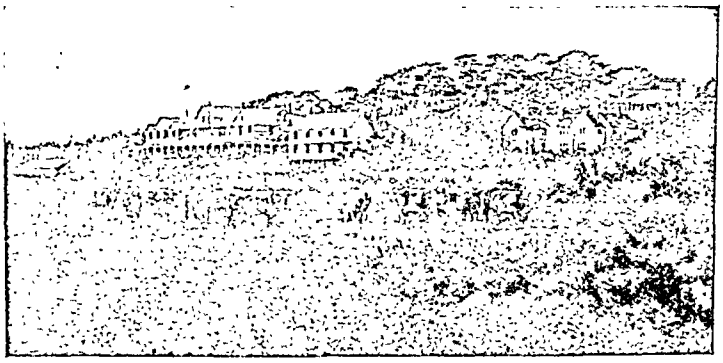
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JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
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M.R.C.P., M.D., Final F.R.C.S., F.R.C.S. (Edin.), Final M.B., B.S., and M.R.C.S., L.R.C.P. Museum and Microscope Work. Also Private Tuition.

MEDICAL PROSPECTUS (48pp.)
CONTENTS.—The method and the cost of entering the Medical Profession. *Particulars of all Medical Examinations*, Postal Courses, and Oral Classes. Suggestions for the higher Medical Examinations. Suggestions for the higher Surgical Examinations. Suggestions for the Special Diploma Examinations. Refresher Courses. Openings for Women. Hints for writing theses.

Medical Prospectus gratis along with list of Tutors, etc., on application to the Principal, Mr. E. S. WEYMOUTH, M.A., 17, Red Lion Sq., London, W.C.1. (Telephone: HOLBORN 6313.)

POST-GRADUATE MIDWIFERY.
Qualified Medical Women are admitted to
The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5
for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIBDEN, the Secretary.

F.R.C.S.(Edin.)
CLASSES, with Museum and Anatomical Demonstrations, for next Exam., will commence shortly. Correspondence work at any time. Particulars from CHAS. WHITTAKER, F.R.C.S., Surgeons' Hall, Edinburgh.

UNIVERSITY of CAMBRIDGE.
DIPLOMA IN MEDICAL RADIOLOGY AND ELECTROLOGY (D.M.R. & E.).

The Course of study for the Diploma, which is open only to duly qualified medical men and women, begins on October 1st, 1930, and occupies nine months.

The first three months may be spent either in Cambridge (where the Physics is done in the Cavendish Laboratory and the Radiology and Electrology in the Department of Radiology), or in London (where the Physics is done at the Middlesex Hospital or King's College, and the Radiology and Electrology is taught at the British Institute of Radiology). These Courses run concurrently in Cambridge and London.

The *second three months must be spent in London*, where lectures are given at the British Institute of Radiology, and are combined with clinical instruction in the large teaching hospitals.

The third three months may be spent in recognized hospitals in London or elsewhere, the student acting as clinical assistant or in similar capacity.

The examinations consist of three parts, viz.:
1. Physics, with examinations in January and April.
2. Radiology and Electrology, with examinations in April and July.
3. The presentation of a thesis or exercise which is entirely the candidate's own work, and is intended to show that he has had practical experience of the subjects.

Further information as to the Courses may be obtained from:
G. SHEAD, M.A., Secretary for the Diploma, and Lecturer in Physics as applied to Medical Radiology, Cavendish Laboratory, Cambridge.
A. E. BARCLAY, O.B.E., M.A., M.D., Lecturer in Radiology, Department of Radiology, Medical School, Cambridge.
The Educational Secretary of the British Institute of Radiology, 32, Welbeck Street, London, W.1.

UNIVERSITY OF CAMBRIDGE
Diplomas in (*a*) PUBLIC HEALTH, (*b*) HYGIENE (for foreign graduates), (*c*) TROPICAL MEDICINE AND HYGIENE.

Courses of Instruction in the Subjects of the Examinations commence October 8th, 1930. Full particulars to be obtained from Mr. J. E. PURVIS, Public Health Chemical Laboratory, Medical School, Cambridge.

University of Birmingham.
INGLEBY LECTURE, 1930.

The Ingleby Lecture will be delivered on THURSDAY, MAY 22nd, at 4 o'clock, in the Medical Lecture Theatre (Edmund Street Buildings), by Sir JOHN BLAND-SUTTON, Bart., LL.D., D.Sc., M.D., F.R.C.S., Consulting Surgeon to the Middlesex Hospital, London.

Subject: "*The Blood Trail.*"

Members of the Medical Profession are invited to attend.

London Hospital, E.
CARDIOGRAPHIC DEPARTMENT.

The post of *PATERSON RESEARCH SCHOLAR* in this Department is vacant. The salary is at the rate of £400 per annum. Further particulars on request.

Applications should be sent to the Honorary Governor not later than Saturday, June 14th.

E. W. MORRIS,
Hony. Governor.

UNIVERSITY OF LONDON.
THOMAS SMYTHE HUGHES MEDICAL RESEARCH FUND.

Applications for Grants from the Thomas Smythe Hughes Fund for assisting medical research, accompanied by the names and addresses of two references, must be made to the Academic Registrar, University of London, South Kensington, S.W.7 (from whom further particulars may be obtained), not later than June 16th, 1930.

University of London.
LAURA DE SALICETO STUDENTSHIP.

The Senate of the University of London invite applications for the LAURA DE SALICETO STUDENTSHIP FOR THE ADVANCEMENT OF CANCER RESEARCH, value £150 a year for not less than two years.

Applications should reach the University not later than July 1st, 1930. Further particulars may be obtained from the Academic Registrar, University of London, South Kensington, S.W.7.

Essex County Council.
BLACK NOTLEY SANATORIUM.

APPOINTMENT OF DISPENSER-CLERK (Female).

The County Council of the Administrative County of Essex invite applications from fully qualified persons for the above appointment at their Sanatorium for the treatment of Tuberculosis at Black Notley, near Braintree. The Sanatorium provides accommodation for the treatment of approximately 180 cases of pulmonary and non-pulmonary tuberculosis in women and children.

The person appointed will be required to reside at the Institution, and the salary will be at the rate of £160 per annum, plus board, residence, and laundry, and will rise, subject to satisfactory service, by annual increments of £10 to a maximum of £150 per annum.

The appointment will be subject to one month's notice on either side.

Applications should be made to the County Medical Officer of Health, Prudential Buildings, Duke Street, Chelmsford, on or before Monday, May 26th.

Shire Hall, Chelmsford. May 9th, 1930. JOHN H. GOOLD, Clerk of the County Council.

Cumberland County Council.
ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from fully qualified Medical Men holding a Diploma in Public Health.

Salary commences at £600 per annum, rising by annual increments of £25 to £700, with travelling and subsistence allowance.

The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, terminable by two months' written notice on either side, and the person appointed will be required to pass a medical examination and to devote the whole of his time to his duties under the supervision of the County Medical Officer of Health.

Forms of application may be obtained from the County Medical Officer, Citadel Chambers, Carlisle, on receipt of a stamped addressed foolscap envelope.

Applications, endorsed "Assistant Medical Officer," and accompanied by copies of three recent testimonials, must be received by the County Medical Officer of Health not later than Thursday, June 5th.

Canvassing is a disqualification.

C. W. ALLAN HODGSON,
Clerk of the County Council.
County Offices, Carlisle. May 12th, 1930.

Berkshire County Council.
ASSISTANT TUBERCULOSIS OFFICER AND GENERAL MEDICAL ASSISTANT.

Applications are invited for the above combined appointment. Salary £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Candidates must be qualified to hold an appointment as Tuberculosis Officer as required by the Local Government (Qualifications of Medical Officers) Regulations, 1930, and must also have a Diploma in *Public Health*. Forms of application and full particulars may be obtained from the Clerk of the County Council.

Applications, accompanied by three testimonials, must reach the undersigned on or before Saturday, May 31st.

H. J. C. NEOBARD,
Clerk of the County Council.

Warwickshire and Coventry JOINT COMMITTEE FOR TUBERCULOSIS.

MEDICAL SUPERINTENDENT OF THE WARWICKSHIRE KING EDWARD VII MEMORIAL SANATORIUM, HERTFORD HILL, near WARWICK. (195 Beds.)

Applications are invited from male qualified and registered Medical Practitioners for the post of Medical Superintendent of the Warwickshire King Edward VII Memorial Sanatorium, Hertford Hill, near Warwick. The person appointed must devote the whole of his time to the duties of the office, and must have had special practical experience in the treatment of tuberculosis in sanatoria, dispensaries, and otherwise; and must be thoroughly acquainted with modern methods of diagnosis and treatment.

In addition applicants must have held the appointment of Tuberculosis Officer or Medical Superintendent with the approval of the Minister of Health, or who, subsequent to qualification:

(1) have had at least three years' experience in the practice of his profession;

(2) have spent in general clinical work a period of not less than 18 months, of which not less than six months have been spent in a Hospital as Resident Officer in charge of beds occupied by general medical or surgical cases; and

(3) have received special training, for a period of not less than six months, in the diagnosis and treatment of tuberculosis.

The salary is at the rate of £800 per annum, plus unfurnished house, including fuel, light, and laundry, valued at £100 per annum, but not board. The salary will be subject to a deduction of 5 per cent. in respect of contributions under the Local Government and Other Officers Superannuation Act, 1922; in addition, motor car allowances in accordance with the Committee's scale and reasonable travelling expenses are paid.

The appointment is also subject to a satisfactory medical examination by one of the Committee's independent Medical Referees.

Forms of application and statement of the duties and terms of the appointment can be obtained from the undersigned. Applications, marked "Medical Superintendent," with copies of not more than three recent testimonials, must be received by me not later than Monday, May 26th.

Applicants must not be over 40 years of age. Canvassing, directly or indirectly, will be considered a disqualification.

L. EDGAR STEPHENS,
Clerk of the Joint Committee

42, Warwick Street,
Leamington.
April 28th, 1930.

County Borough of Rotherham.

ASSISTANT MEDICAL OFFICER OF HEALTH

The Rotherham Corporation invite applications from duly qualified and registered Medical Practitioners for the position of Assistant Medical Officer of Health with principal duties relating to Venereal Diseases, and Maternity and Child Welfare. The Officer appointed will also act as Medical Officer to the Municipal Maternity Home. Preference will be given to candidates holding the Diploma of Public Health. Salary £700.

The gentleman appointed will be required to devote the whole of his time to the duties of the office and to reside in the Borough, and will not be allowed to engage in private practice, and all emoluments or fees which may be payable to or received by him will have to be paid to the Corporation.

The appointment will be subject (1) to the passing of a medical examination, (2) to the provisions of the Sanitary Officers Order, 1926, (3) to be subject to the Local Government and Other Officers Superannuation Act, 1922, and (4) to termination by three months' previous notice.

A list of duties can be obtained from the Medical Officer of Health.

Canvassing, either directly or indirectly, is prohibited.

Applications, with copies of not more than three recent testimonials attached, to be sent to me, endorsed "Assistant Medical Officer of Health," not later than May 26th.

CHAS. L. DES FORGES,
Town Clerk.

Municipal Offices, Rotherham.
May 7th, 1930.

West Suffolk General Hospital, BURY ST. EDMUND'S. (108 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male or female). Salary £120 per annum, with board, residence, and laundry.

Applicants must be fully qualified and registered. Applications, giving particulars of experience, and enclosing three recent testimonials, should be addressed to the undersigned.

Applications must be received not later than May 24th, 1930.

E. J. HARDWICKE,
Secretary.

City of Birmingham. SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified Medical Practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General, Medical, General Surgical, Gynæcological, Obstetrical, and Children's Disease sections. There are completely equipped Pathological and Biochemical Laboratories and X-ray, Electro-therapeutic, Massage, Ultra-violet Ray and Electro-cardiographic Departments. Over 3,000 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, to administer anæsthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

Further particulars of the appointment may be obtained from the Medical Superintendent, R. P. STANLEY KELMAN, Esq., M.B., F.R.C.S. (Eng. and Edin.); at the Selly Oak Hospital, to whom applications, stating age, experience, and qualifications, should be forwarded not recent testimonials, accompanied by copies of later than Wednesday, May 28th.

F. H. C. WILTSHIRE,
Town Clerk.

Borough of Chelmsford.

MEDICAL OFFICER OF HEALTH AND SCHOOL MEDICAL OFFICER.

Applications are invited from duly qualified Medical Practitioners possessing the Diploma of Public Health for the appointment of Medical Officer of Health of the Borough, subject to the provisions of the Public Health (Officers) Act, 1921, and the Sanitary Officers Order, 1926.

The gentleman appointed will be required to perform all the duties generally appertaining to the position of Medical Officer of Health, to act as School Medical Officer, to undertake work in connection with Maternity and Child Welfare and to carry out all such duties as the Council may from time to time direct. He will be required to reside in the Borough unless otherwise authorised by the Council, and must devote his whole time to the duties of the office and must not engage in private practice.

He will also be required to undertake work in connection with the Chelmsford Joint Hospital, for which the Chelmsford Joint Hospital Board will pay £100 per annum.

The salary to cover all the duties specified above (including the payment by the Joint Hospital Board) will be £800 per annum.

Full particulars and terms of appointment may be obtained upon application to the undersigned, and applications on the form forwarded should reach me not later than June 11th.

Canvassing will be a disqualification.

G. E. BARFORD,
Town Clerk.

Municipal Offices,
Ramsford House,
Chelmsford. May 9th, 1930.

Derbyshire Education Committee

ASSISTANT SCHOOL MEDICAL OFFICER (Male).

The Derbyshire Education Committee require the services of an Assistant School Medical Officer (male) at a salary of £600, rising by annual increments of £25 to £700 per annum.

The candidate must be a registered Medical Practitioner of at least three years' standing. The duties will include work under the Maternity and Child Welfare service. Experience in this work and in the administration of anæsthetics is essential.

The appointment will be a designated post under the Local Government and Other Officers Superannuation Act, and the successful candidate will be required to pass a medical examination.

The officer appointed will not be allowed to engage in private or consulting practice, but will be required to devote his whole time to the duties of the office, and will act under the direction of the School Medical Officer.

Forms of application may be obtained from the undersigned, to whom they should be returned completed, together with copies of not more than three recent testimonials, on or before Monday, May 26th, endorsed "Assistant School Medical Officer."

The appointment will be determinable by three months' notice on either side.

W. M. ASH,
School Medical Officer.

New County Offices,
St. Mary's Gate,
Derby. May 5th, 1930.

City of Plymouth. DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Men for the post of whole-time Deputy Medical Officer of Health to the City of Plymouth.

Applicants must possess a Diploma in Public Health or a qualification in State Medicine.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum, and the appointment will be terminable by three months' notice on either side.

The person appointed will be required to act for the Medical Officer of Health in his absence and generally to help him in the Public Health work of the City, and in the various Sub-departments of the Public Health Department. He will act under the general supervision and direction of the Medical Officer of Health, and carry out any duties delegated to him from time to time.

Forms of application will not be provided. Candidates for this appointment should state their age and give an account of their professional qualifications and experience in all branches of Public Health work.

Canvassing will disqualify the applicant.

Applications must be received by the undersigned on or before Thursday, June 5th, and envelopes must be endorsed "Deputy Medical Officer of Health."

A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., Medical Officer of Health, City and Port of Plymouth

Town Hall,
Stonehouse,
Plymouth.
May 8th, 1930.

City of Plymouth. RESIDENT MEDICAL SUPERINTENDENT.

Applications are invited from duly qualified and registered Medical Practitioners for the post of Resident Medical Superintendent of the Plymouth City Hospital.

The salary will be at the rate of £1,000 per year, with food, quarters, lighting, heating, and washing. No canvassing for this appointment is permitted, and any canvassing will disqualify the applicant. The appointment will be terminable by three months' notice on either side.

Applicants must be holders of the F.R.C.S. or the Degree of a Master of Surgery in a University of the United Kingdom. The appointment is whole-time, and private practice is not permitted. The person appointed will be an Assistant Medical Officer in the Public Health Department, and will be on the staff of the Medical Officer of Health, who is the General Medical Superintendent of the Corporation Hospitals.

Applications will be considered only on the forms of application which will be provided. A form of application, together with further details relating to the appointment, can be obtained from the undersigned, on the receipt by him of a request for this, accompanied by a stamped and addressed envelope. Forms of application, duly completed, together with copies of not more than three recent testimonials, must be returned to the undersigned not later than June 5th.

A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., etc., Medical Officer of Health.

Town Hall,
Stonehouse,
Plymouth.
May 8th, 1930.

County Council of Nottingham-SHIRE.

ASSISTANT MEDICAL OFFICER FOR SCHOOL MEDICAL INSPECTION AND FOR MATERNITY AND CHILD WELFARE (Woman).

Applications for the above-named appointment are invited from duly registered women Medical Practitioners who have had at least three years' experience since obtaining registrable qualifications and who hold a Diploma in Public Health.

Preference will be given to candidates with previous experience of the work, particularly as regards Mental Deficiency, Refractions, and Ante-natal work.

The salary will be at the rate of £600 per annum, with travelling expenses in accordance with the County Council Scale. The appointment will be a whole-time one. The candidate appointed will be a member of the staff of the County Medical Officer, will work under his control and direction, will be required to reside in a part of the County to be approved by him, and to carry out such duties as may be prescribed.

The successful candidate will be required to pass a medical examination and to contribute to the Council's Superannuation Fund.

Forms of application may be obtained from the undersigned, and should be returned, accompanied by copies of not more than three recent testimonials, to the County Medical Officer, Shire Hall, Nottingham, on or before May 21st.

K. TWEEDALE MEABY,
Clerk of the County Council.

Royal Free Hospital,
Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:

HOUSE SURGEON to the Senior Surgeon and to the Surgeon in Charge of th Ear, Nose, and Throat Beds.
SECOND HOUSE SURGEON (male), with care of Orthopædic Beds.
THIRD HOUSE SURGEON.
FIRST HOUSE PHYSICIAN.
HOUSE PHYSICIAN to the Children's Department.
GYNÆCOLOGICAL HOUSE SURGEON.
OBSTETRIC HOUSE SURGEON.
Duties of the above to commence July 1st.

ASSISTANT ANÆSTHETIST.
SECOND HOUSE PHYSICIAN.
DISTRICT OBSTETRIC ASSISTANT. Salary £100 per annum.
CASUALTY OFFICER (male). Salary £150 per annum.
Duties of these posts to commence August 1st.

For all appointments except Second House Surgeon preference is given to applications from former Students of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be duly qualified registered Medical Practitioners and must submit applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before May 31st.

REGINALD R. GARRATT, Secretary.

Manchester Royal Infirmary.
SURGICAL OFFICER TO OUT-PATIENTS.

The Board of Management invite applications from registered Medical Practitioners for the above appointment.

The duties are to assist in the treatment of Surgical Out-patients on two mornings per week. The appointment (non-resident) is for a period of one year, but the holder of the office is eligible for re-election on two subsequent occasions for a similar period. Salary £35 per annum.

Candidates must state age, and send twelve copies of their applications and testimonials to the undersigned on or before 9 a.m. on Monday, June 2nd.

By Order,
FRANK G. HAZELL,
Gen. Supt. & Secretary.

Tynemouth Victoria Jubilee
INFIRMARY.

HOUSE SURGEON (male) required June 16th. Applicants must be doubly qualified and registered. Salary £100 per annum, with board, residence, and laundry.

Applications, stating age and other essential particulars, and accompanied by copies of recent testimonials, to be addressed to the undersigned, from whom all particulars may be obtained.

The Hospital has two resident House Surgeons and contains 30 beds and cots, an X-ray Department, and an Out-patient Department where accident cases are received.

T. E. ROWELL,
1, Northumberland Place, Secretary.
North Shields.

City of London Hospital for
DISEASES OF THE HEART AND LUNGS, Victoria Park, E.2.
(Bus, Tram, and Rail, Cambridge Heath, (L. & N.E. Railway.)

A vacancy for a *HOUSE PHYSICIAN (male)* will occur on July 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of (three) testimonials, should be sent to the undersigned on or before Monday, June 16th.

GEORGE WATTS, Secretary.

Clifton Dispensary,
DOWRY SQUARE, BRISTOL.

A RESIDENT MEDICAL OFFICER (male) will be required on September 29th. Salary £300 per annum, with partially furnished house, free of rates and taxes, and with lighting and coal.

Applications, stating age and qualifications, with testimonials, should be sent to Colonel P. STRICKLAND, Honorary Secretary, Clifton Dispensary, 15, Dowry Square, Bristol, on or before June 30th.

Darlington General Hospital.
(120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, British nationality, fully qualified. Salary £125 per annum, board and residence. Applications, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (155 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN (male) and SECOND HOUSE SURGEON (male). Salaries £125 and £100 per annum respectively, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointments are for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate to the post of Second House Surgeon will be required to enter upon his duties at once, and the House Physician will be required to enter upon his duties on June 9th.

F. J. SYMONS.
May 8th, 1930. Secretary.

Royal Surrey County Hospital,
GUILDFORD. (180 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post from Practitioners who have held Post-graduate Medical and Surgical Hospital appointments for at least one year. The candidate appointed will be required to act as House Physician, to supervise the work of Three House Surgeons, to perform such operations as may be deputed to him, and to take up the duties as early as possible. Salary £250 per annum, with board, residence, and laundry. Applications, accompanied by copies of testimonials, to be sent not later than May 27th to the General Superintendent, from whom further particulars may be obtained.

Mansfield and District Hospital.
The Board of Management of the above Hospital (140 beds) invite applications for the post of HOUSE PHYSICIAN and CASUALTY OFFICER (male).

Duties to commence on June 2nd.

The duties include charge of four beds devoted to complicated midwifery cases.

Salary at the rate of £150 per annum, with residence, board, and laundry.

The appointment is for six months and is renewable, and the salary for the second six months will be at the rate of £175 per annum.

Applications, accompanied by not more than *three recent testimonials*, to be sent to the undersigned.

Dated this 5th day of May, 1930.

ARTHUR H. LIMB, Secretary.

New Sussex Hospital for Women
NEW CHILDREN, BRIGHTON. (INCORPORATED.) (50 Beds.)

The Council of Management invites applications from fully qualified Medical Women for the following posts:

(1) HOUSE SURGEON to take up duty on June 16th.
(2) HOUSE PHYSICIAN to take up duty on June 30th.

Honorarium for each £50 per annum, with board, residence, and allowance for laundry.

Applications, with copies of three recent testimonials, to reach the undersigned on or before May 24th.

M. C. LANDER, Secretary.

Addenbrooke's Hospital,
CAMBRIDGE.

[illegible] for the post of [illegible] (male). The appointment [illegible] months from June 1st, and may be renewed for a further period of six months, but is terminable at any time by one month's written notice on either side. Salary at the rate of £180 per annum, with board, residence, and laundry. Candidates, who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four recent testimonials, to the undersigned on or before Wednesday, May 21st.

W. H. HEAD, Secretary-Supt.

Addenbrooke's Hospital,
CAMBRIDGE.

Applications are invited for the post of HOUSE PHYSICIAN. The appointment will be for six months from June 1st, but is terminable at an earlier date by one month's written notice on either side. Salary at the rate of £150 per annum, with board, residence, and laundry. Candidates (male), who must be unmarried and duly registered, are requested to forward their applications, stating age, qualifications, etc., together with copies of not more than four testimonials, to the undersigned on or before Wednesday, May 21st.

W. H. HEAD, Secretary-Supt.

The Royal Portsmouth Hospital,
PORTSMOUTH.

(Five Resident Medical Officers.)

Applications are invited for the posts of—
HOUSE PHYSICIAN (male). Salary at the rate of £150 per annum.
THIRD HOUSE SURGEON (male). Salary at the rate of £130 per annum.
CASUALTY OFFICER (male). Salary at the rate of £100 per annum.

All officers must be qualified and will be required to commence on June 1st. Six months' appointments and eligible on completing of term for extension or other resident posts.

Applications, stating age, nationality, and full details, with copies of three recent testimonials, to be sent to the undersigned on or before May 20th, from whom all particulars can be obtained.

B. WAGSTAFF, Secretary.

The London Lock Hospital.
(Founded 1746.)
91, Dean Street, W.1.

HONORARY SURGEON TO OUT-PATIENTS.

Candidates for this Hon. Staff appointment are requested to send in their applications, with not more than three copies of testimonials, to the Secretary, at 223, Harrow Road, W.9, not later than June 2nd.

Candidates must be Fellows of the Royal College of Surgeons (England). The election, which is by ballot of the Governors, will be duly announced to the candidates. No personal canvassing of the Board or Medical Staff permitted. The Laws relating to the appointment can be obtained from the Secretary.

By Order of the Board,
HY. J. EASON,
May, 1930. Secretary.

Bolton Infirmary & Dispensary.
SECRETARY'S OFFICE.

(235 Beds—including Auxiliary Hospitals.)

Applications for the appointment of RESIDENT SURGICAL OFFICER, Salary £350 per annum, with board, residence, and attendance, are invited from gentlemen having a registered Medical and Surgical qualification. The appointment will be for twelve months from July 1st.

Applications, stating age and nationality, with copies of testimonials, should be forwarded to the undersigned (from whom further particulars may be obtained) not later than Monday, the 19th inst.

ALBERT E. BRISCOE, Secretary.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

King Edward VII Hospital,
RIVELIN, SHEFFIELD.

(SURGICAL TUBERCULOSIS. (130 Beds.)

HOUSE SURGEON required immediately. Six months' appointment, with possibility extension for a further six months. Honorarium £75 per annum, with board, residence, and laundry. Preference will be given to candidates with experience in the administration of anæsthetics. Applications, with testimonials, to be sent to C. LEE PATTISON, Medical Supt.

Liverpool & Samaritan Hospital
FOR WOMEN.

Wanted, a HOUSE SURGEON for [illegible] of six months commencing July 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned before June 1st.

J. ST. GEORGE WILSON,
13, Rodney St., Liverpool.

Huddersfield Royal Infirmary.
(200 Beds.)

MALE HOUSE SURGEON required to commence duty as early as possible. Salary £150 per annum, with board, residence, and laundry.

Appointment till September, subject to renewal for six months. Applications, with testimonials from qualified candidates, to the Secretary.

Queen Charlotte's Maternity HOSPITAL, Marylebone Road, N.W.1.

ASSISTANT RESIDENT MEDICAL OFFICER (male) required to commence duty on July 1st.

Applicants must be registered. Appointment for three months. On completion of this appointment the selected candidate will be expected to proceed to the post of Senior Resident Medical Officer (for three months), on the recommendation of the Medical Staff.

The salary of the Assistant Resident Medical Officer is at the rate of £80 per annum, and of the Senior Resident Medical Officer £100 per annum, with board, residence, and washing allowance (4/- weekly).

Applications, with copies (not originals) of not more than three testimonials, will be received by the Secretary up to May 29th.

Canvassing is prohibited.

ARTHUR WATTS, Secretary.

Royal Manchester Children's HOSPITAL.

Out-patients' Department, Gartside Street, MANCHESTER.

Wanted for the Out-patients' Department, a SENIOR MEDICAL OFFICER (non-resident). He must be doubly qualified and on the *Medical Register*, and shall devote his whole time to the service of the charity. Particulars of the duties can be obtained from the Secretary. Salary £300 per annum. The appointment is for one year, with a view to extension for a further period.

Applications, stating age and experience, and accompanied by copies of not more than five testimonials, to be sent to the undersigned at the Hospital, Pendlebury, Manchester.

By Order,
W. M. HUMPHRY, Secretary.

Saint Pancras Dispensary, 39, Oakley Square, N.W.1.

The office of RESIDENT MEDICAL OFFICER will shortly become vacant. Salary £185 per annum with residence and attendance. Candidates must be legally qualified to practise Medicine and Surgery in Great Britain and Ireland and be registered. Only single men will be eligible. Applications and testimonials to be sent to the Honorary Secretary at 2, Endsleigh Street, Tavistock Square, W.C.1, on or before May 28th. The election will take place on June 3rd next.

H. PETER BODKIN, Hon Sec.

City of London Maternity HOSPITAL, City Road, E.C.1.

Applications invited from fully qualified male candidates for the post of ASSISTANT RESIDENT MEDICAL OFFICER, vacant July 1st. Three months' appointment at £80 p.a., plus board, residence, and laundry. If satisfactory the appointee becomes Senior for three months at £100 p.a. 25 copies of applications and of (three) testimonials should the undersigned by June 14th

RALPH B. CANNINGS, Secretary.

York Dispensary. — Wanted, a

RESIDENT MEDICAL OFFICER (female) to visit and attend the sick poor at their own homes to commence duties, if possible, not later than June 1st. Candidates must be duly qualified, registered, and unmarried. Salary £150 per annum, with board, lodging, and attendance, and allowance for laundry.

Applications, with testimonials, to be sent on or before May 24th to JOHN C. PETERS, Secretary, 4, New Street, York

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Duties commencing June 7th. Salary £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than May 31st.

PERCY G. BROOKS, Secretary.

Liverpool Stanley Hospital (Founded 1867).

Stanley Road, LIVERPOOL.

Applications are invited for the post of HONORARY ASSISTANT OPHTHALMIC SURGEON. Candidates are requested to give details of their qualifications for and experience of this branch of surgery.

Applications are to be lodged with the undersigned by May 30th.

FRANK WHITE, Hon Secretary.

Queen's Hospital, Birmingham.

(A General Hospital and a Medical School.)

There are vacancies in the following Resident posts. Salary at the rate of £70 p.a., together with board, apartments, and laundry.

HOUSE PHYSICIAN to serve under Dr. J. G. EMANUEL.
RESIDENT ANÆSTHETIST.
CASUALTY HOUSE SURGEON.
HOUSE PHYSICIAN for duty at the Nerve Hospital.

Full particulars may be obtained from the undersigned, to whom applications, accompanied by three testimonials, should be sent at once.

G. HURFORD,
May 12th, 1930. House Governor.

The Cancer Hospital (Free)

(Incorporated under the Royal Charter).
Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum. The appointment is for six months and subject to rules. Candidates must call upon each member of the Medical Committee not later than June 5th. A copy of the rules and the names and addresses of the Medical Committee may be obtained from the Secretary. Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Saturday, May 31st.

J. COURTNEY BUCHANAN,
Secretary.

The Lady Chichester Hospital, HOVE.

(For Neurological and Early Psychiatric Cases.)
(50 Beds.)

Medical Woman required as JUNIOR HOUSE PHYSICIAN for six months, to commence duty immediately, with board, lodging, and laundry, and an honorarium at the rate of £50 per annum.

Applications must be made in writing and be accompanied by testimonials, and sent to the Secretary, Mr. A. F. GRAVES, 117, North St., Brighton.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

TWO MEDICAL REGISTRARS required.

Applications are invited for two posts of *Medical Registrar falling vacant in June.*

Applications, which should be accompanied by copies of not more than three recent testimonials, should reach me by May 31st.

H. W. BURLEIGH,
Secretary and General Supt.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

HONORARY PSYCHIATRIST required.

Applications are invited for the post of Honorary Psychiatrist to the Hospital. They should be accompanied by copies of not more than three testimonials, and should reach me by May 31st.

H. W. BURLEIGH,
Secretary and General Supt.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

The Weir Hospital, Grove Road, Balham, S.W.12.

JUNIOR RESIDENT MEDICAL OFFICER (male, unmarried) required. Candidates must be fully qualified and duly registered. Salary £150 per annum, with board, residence, and laundry. Applications, with copies of testimonials, to be sent to the Secretary, from whom further information may be obtained.

Honorary Anæsthetist.—Applications

are invited for appointment of Honorary Anæsthetist at the ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland Street, W.1. Particulars may be obtained from the Secretary, to whom applications, accompanied by copies of three recent testimonials, should be sent not later than June 5th.

Stockton and Thornaby Hospital, STOCKTON-ON-TEES.

(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties from June 6th.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

Swansea General and Eye HOSPITAL. (316 Beds.)

Applications are invited for the following resident appointments which will become vacant on June 17th next:

HOUSE SURGEON; CASUALTY OFFICER; HOUSE PHYSICIAN; salary £150 per annum.

Appointments for six months.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned on or before May 24th.

O. C. HOWELLS, Secretary.

South Eastern Hospital for CHILDREN, Sydenham, S.E.26.

Applications are invited for the positions of ASSISTANT and RESIDENT MEDICAL OFFICERS (ladies). The appointments will be for six months from June 14th. Honorarium £75 and £100 per annum, with board, residence, and laundry. Ample time for reading.

Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woodfield," Dacres Road, Forest Hill, S.E.23, to be received not later than Monday, May 31st.

North Riding Infirmary, MIDDLESBROUGH.

(General Hospital—150 Beds.)

Wanted, THIRD HOUSE SURGEON (male), to take up duties as early as possible. Salary at the rate of £125 p.a., with board, residence, and laundry. Six months' appointment.

Candidates will be eligible for the higher appointments as they become vacant.

Applications, stating age, nationality, and previous experience, with references (copies), should be sent forthwith to the undersigned

CHARLES POSTGATE,
Secretary-Superintendent.

Weston-super-Mare General HOSPITAL. (60 Beds in use.)

HOUSE SURGEON.

The Committee require the services of a duly qualified Resident House Surgeon. Salary £130, with board, residence, and laundry. Duties to commence July 1st. Application, with copies of testimonials, to be sent to the undersigned.

LESLIE J. FURSLAND, Secretary.

Durham County Hospital.

The post of SENIOR HOUSE SURGEON is now vacant. The appointment is for six months certain. Candidates must be male and duly qualified and registered. Number of beds 75. Salary £160 per annum, with board and lodging. Applications, with copies only of testimonials, to be sent to—

79, Saddler St., Durham.

WM. R. WILSON, Secretary.

Royal Alexandra Hospital for SICK CHILDREN, BRIGHTON.

(100 Beds.)

HOUSE PHYSICIAN (male) required. Salary at the rate of £100 per annum, with board, lodging, and washing. Good experience, including Sun-ray treatment. No canvassing allowed.

To commence duties middle or end of May.

Applications, in writing, accompanied by testimonials, should be sent to A. F. GRAVES, Secretary.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male). Qualified. A knowledge of [illegible] work is desirable. Salary £200, with board, lodging, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.**
EBBW VALE, MON. *(Workmen's Medical Society.)*	MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	LLANELLY BOROUGH. *(Assistant Medical Officer of Health and Assistant School Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*

(b) Colonial Medical Service.—

WINDWARD ISLANDS MEDICAL SERVICE. (Grenada with Carriacou, St. Vincent and St. Lucia.)

(c) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

Address B.M.A. House, Tavistock Square, W.C.1. By Order of the Council of the British Medical Association.
May 14th, 1930. ALFRED COX, Medical Secretary.

West London Hospital,
Hammersmith, W.6. (234 Beds.)

Applications are invited for the post of HONORARY SURGEON, for which a present Honorary Assistant Surgeon is a candidate. In the event of his election, there will be a vacancy for an HONORARY ASSISTANT SURGEON, for which applications are also invited.

Candidates must be Fellows of one of the Royal Colleges of Surgeons of England, Edinburgh, or Ireland. The successful candidate will be required, in addition to other duties, periodically to deliver surgical courses of Lectures to the Nurses, and to undertake such teaching for the Post-Graduate College as the Board may approve.

Applications, with copies only of testimonials, must reach me not later than Thursday, May 22nd. Candidates must attend the meeting of the Medical Council on Friday, May 23rd, at 4.30 p.m., and prior to that date call upon and send copies of application and testimonials to each member thereof. They must not canvass members of the Board, but nevertheless must send copies of their application and testimonials to each member thereof, and, if so notified, attend a meeting of the Board at 5 p.m. on Tuesday, May 27th, when the election will be made.

H. A. MADGE, Secretary.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
April 7th, 1930. House Governor.

The Children's Hospital,
BIRMINGHAM. (230 Beds.)

RESIDENT SURGICAL OFFICER.

Applications are invited for the above post.

Candidates must be qualified and registered and have held previous resident appointments at a Hospital.

The salary is at the rate of £175 per annum, with board, residence, and laundry.

The appointment is tenable for one year, and the officer is eligible for re-election for a second year.

Duties to commence on July 1st.

Applications, with certificate of registration, and not more than three testimonials, should be addressed to the undersigned on or before May 24th.

CASUALTY HOUSE SURGEON.

Applications are also invited for the post of Casualty House Surgeon.

The appointment is tenable for six months as from July 1st.

The salary attaching to the post is £75 per annum, with board, residence, and laundry.

The officer appointed takes part duty at Mowsley Hall Convalescent Hospital.

Applications, giving proof of registration, and not more than three testimonials, to be sent to the undersigned.

HAROLD F. SHRIMPTON,
House Governor.

St. Bartholomew's Hospital.

OFFICE OF PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, June 10th, at 4 o'clock in the afternoon, to elect a Physician to the Hospital.

Candidates, who must be Fellows of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, May 26th.

THOMAS HAYES,
May 9th, 1930. Clerk to the Governors.

Dorset County Hospital.

APPOINTMENT OF HOUSE SURGEON.

The Committee of Management are open to receive applications for the position of House Surgeon, to take up his duties on or about June 6th.

Every candidate for the office of House Surgeon must be unmarried and possess a registered qualification to practise Medicine and Surgery from some recognized body in Great Britain or Ireland. Salary £120 per annum, with board and lodging. The appointment is for a period of not less than six months. All applications, accompanied by three recent copies of testimonials, should be sent to the Secretary, Dorset County Hospital, on or before May 20th.

Candidates must be of British nationality.

Ancoats Hospital, Manchester.

HOUSE SURGEON (Orthopædic), male or female, to commence duty June 1st next, for a period of six months. Salary at the rate of £100 per annum.

Applications, stating age, qualifications, previous experience, if any, and full particulars, to be forwarded, together with copies of three recent testimonials, on or before May 21st, to the undersigned.

By Order of the Board,
HERBERT J. DAFFORNE,
Gen. Supt. & Secretary.

Doncaster Royal Infirmary.

HONORARY ANÆSTHETISTS (Two).

Applications are invited for the above posts. Attendance on three mornings or afternoons per week as desired by the Honorary Surgeons. An honorarium of £50 per annum for each appointment.

Applications, stating full particulars, must reach the under-signed by May 22nd.

J. LAWRENCE MEARS,
Secretary-Superintendent.

British Medical Journal,

BRITISH MEDICAL ASSOCIATION HOUSE,
TAVISTOCK SQ., LONDON, W.C.1.
T/A: ARTICULATE, WESTCENT, LONDON.
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SMALL ADVERTISEMENT RATES.

Up to Six Lines (32 Words) 9s.
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(a line averages 5 words)
Address must be paid for.

All advertisements should reach the above address by not later than first post TUESDAY preceding publication.

ASSISTANCIES.

Wanted, an Assistant in a Colliery Practice in Glamorgan. Usual bond. No dispensing. Salary £330 p.a., with some extras. Furnished rooms coal, light, and attendance. — Address, No. 3317, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, under 30, for good private and panel Practice. Scope for experience in all branches of general practice. Excellent opportunity for keen young man. Salary £300, indoor.—Address, No. 3322, B.M.A. House, Tavistock Square, W.C.1.

Wanted.–Assistant, no view. Non-dispensing Practice. Small Hospital, Scotland. Cyclist and able to drive car. Bond.—Address, No. 3319, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, male, June 1st, pleasant residential district 15 miles N. of London. Good Anæsthetist, ex H.S. preferred. Salary £300 p.a., with furnished flat and board. Dispenser kept.—Address, No. 3244, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant for general Practice in Liverpool. Experience of panel and private practice necessary. Salary £360, with furnished rooms and attendance. —Address, No. 3313, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Assistant, healthy district, South Wales. Work light, comfortable home. Suit newly qualified man Protestant. Sober. State essential particulars.—Address, No. 3332, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. State full particulars.—BRITISH MEDICAL BUREAU, 35, Cross Street, Manchester.

Wanted. — Indoor Assistant, male, English, single, for industrial Practice in East London. Practically no night work. No meals.—Address, No. 3327, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Junior Assistant, by Partners in industrial Practice in University City. A man preferred with some Tropical experience and ready to maintain a standard of careful work. £300 p.a., indoor (commencing). Cyclist. Study promoted.—Address, with all particulars, No. 3324, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Male Assistant, in- [illegible] British, C. of E. preferred, [illegible] panel Practice, W.R. Yorks. [illegible] £250 p.a. Usual bond. State age and [illegible] Address, No. 3321, B.M.A. [illegible] Square, W.C.1.

Wanted. — Male Assistant, British, some experience. Indoor. Suit young married man, with view.—Apply personally 11 a.m. (not Sunday), Dr. RIDEWOOD, 103, Bethnal Green Road, E.2.

Wanted. — Assistantship or LOCUMS by Medical Woman. Experienced in private and panel practice.—Address, No. 3339, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Assistantship by Woman Doctor, aged 26; one year's experience in G.P.—Address, No. 3334, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a young indoor male ASSISTANT for a small town near Nottingham. Salary £250 per annum. — Address, No. 3241, B.M.A. House, Tavistock Square, W.C.1.

Assistant (male, outdoor), for panel and private Practice in Midlands. Protestant. State essential particulars. Usual bond. Photo, returnable.—Address, No. 3318, B.M.A. House, Tavistock Square, W.C.1.

Assistant wanted for new branch Cash Surgery, 10 miles Piccadilly. £350, plus percentage. Partnership after one year. £300 deposit and easy payments from takings. —Address, No. 3242, B.M.A. House, Tavistock Square, W.C.1.

Assistantship, part-time, required by M.B., B.S., ex H.S., H.P., and R.M.O., seven years' resident hospital experience. Now reading for senior degree, London. Own car.— Address, No. 3349, B.M.A. House, Tavistock Square, W.C.1.

Assistant (male) wanted.— Industrial Practice, W. of England. Light work. With or without view.—Address, No. 3323, B.M.A. House, Tavistock Square, W.C.1.

Part-time Assistant wanted (live in) for panel and private Practice in London suburb. Suit Post-Graduate, man or woman. — Address, No. 3301, B.M.A. House, Tavistock Square, W.C.1.

Research Assistant wanted.— Salary £400 per annum. Applications should be sent to the Hon. Dean, School of Tropical Medicine, Pembroke Place, Liverpool.

Scots Graduate (1927) desires ASSISTANTSHIP (outdoor). Has held Hospital appointments and is meanwhile a Temporary Assistant. Conscientious and reliable, well recommended. Free by arrangement. Enquiries welcomed.—Address, No. 3342, B.M.A. House, Tavistock Square, W.C.1.

MEDICAL POSTS, DISPENSERS, etc.

Wanted immediately.—M.O.H. for rural district, ALBERTA, CANADA. General Practice. Salary $2000.00. Male or female.—For particulars apply, stating qualifications, to P. R. HOOPER, Sec.-Treas., Dunstable, Alberta, Canada.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Accountancy Service.— Patient's account records kept and statements rendered; overdue accounts collected, etc. Experienced Accountant. System saves time.— Address, No. 3335, B.M.A. House, Tavistock Square, W.C.1.

B.M., B.Ch.Oxon., ex H.S. and H.P., qual. 4 years, exper. in private and panel practice, now doing Post-grad. work, will do 3 or more EVENING SURGERIES p.w. in or near London, and occasional week-ends.— No. 3303, B.M.A. House, Tavistock Sq., W.C.1.

Dispenser-Secretary required mornings and evenings for private Practice near Victoria Station. Light work; two guineas weekly.—Address, No. 3338, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Lady, 20, desires post as SECRETARY; fully trained and experienced. Good references.—Miss PAGE, Littlecote, Linksway, Northwood, Middx.

German and French Medical TRANSLATION, 25/- 1,000 words, précis 10/6. Translator with first in Modern Languages. Special terms for extensive reading. —BOTSFORD, 13, Mitre Court Chambers, Temple, London, E.C.4. Central 6839.

Part-time Work wanted by retired Colonial Medical Service man, aged 52. Only moderate salary required.— Address, No. 3303, B.M.A. House, Tavistock Square, W.C.1.

The post of Resident Medical OFFICER to ROSSALL SCHOOL will be vacant shortly. Private practice can be taken. Apply for particulars to the Headmaster, Rossall School, Fleetwood.

Typewriting.—Expert undertakes Theses, Testimonials, etc. Numerous letters of appreciation from Doctors.—'Phone Primrose Hill 0803, or write BEATRICE RADFORD, c/o Smith's, 487, Finchley Road, N.W.3.

The Royal Army Medical Corps ASSOCIATION. — If you require men trained in all branches of hospital work – Dispensers (capable of undertaking returns, clerical work, etc., connected with Ministry of Health), Clerks, Laboratory Assistants, general hospital duties, Porters, Caretakers, etc.—Apply, Secretary, 85, Eccleston Square, S.W.1.

Young Chartered Masseuse, experienced Medical Electricity, Remedial Exercises, Actinotherapy, own batteries, wants WORK with Doctor or in Institution, London or near. Has secretarial training and speaks French.— No. 3337, B.M.A. House, Tavistock Sq., W.C.1.

LOCUMS.

FOR LOCUM TENENS APPLY TO
Mr. PERCIVAL TURNER, Ltd.
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After Office Hours: Epsom 9142.

Wanted, a gentleman to act as LOCUM TENENS, September. Country Practice (Cheshire). Give experience. State essential particulars. Hospitality to wife. Car or use own.—Address, No. 3350, B.M.A. House, Tavistock Square, W.C.1.

Wanted.-Locum, total abstainer. Glamorgan. State age, qualification, nationality, references, and other essential particulars. Usual bond.—Address, No. 3348, B.M.A. House, Tavistock Square, W.C.1.

General Practitioner (retired, life abstainer), with large experience, undertakes LOCUM appointments. If work light, terms 5 guineas. Disengaged from middle of May to middle of June.—Address, No. 3345, B.M.A. House, Tavistock Square, W.C.1.

Hospitality Locum.—Expe- rienced Medical Man desires LOCUM WORK with hospitality for wife. Free June, July, and August. Own car. Terms according to work required.—Address, No. 3331, B.M.A. House, Tavistock Square, W.C.1.

Locum Tenens wanted August 5th for four weeks. Light country Practice (Derbyshire). Practically no night work or midwifery.—Address, No. 3341, B.M.A. House, Tavistock Square, W.C.1.

Locums. — Experienced and reliable Doctor, had own practice, now doing some 10 locums annually, desires further ENGAGEMENTS; 6 gns. p.w. If country, where car and driver available. Good refs.—Address, "MEDICUS," 24, Colville Road, Bayswater, W.

Locum(s) wanted by ex H.S. (experienced in G P.) between July 15th and September 30th, in seaside or country Practice. Hospitality for self and wife. Moderate salary. Cyclist, drive car.—Address, No. 3340, B.M.A. House, Tavistock Square, W.C.1.

Locums wanted.—Public Health or General Practice—by Medical Woman, L.R.C.P.S., L.M., D.P.H., good experience, excellent refs., thoroughly reliable. Free early in June. Now near Liverpool; will go anywhere.—No. 3345, B.M.A. House, Tavistock Sq., W.C.1.

Locum.—Ex H.S., H.P., wide experience general practice; own car. Free now until end of May.—Address, No. 3304, B.M.A. House, Tavistock Square, W.C.1.

L.R.C.P.&S.Ed. (lady) desires LOCUMS for summer months, free end of May, 5; years' experience G.P., private, panel, dispensing. Drive car. Excell. testimonials. Moderate fee. — Address, No. 3314, B.M.A. House, Tavistock Square, W.C.1.

PARTNERSHIPS.

Wanted. — Partner, University Graduate, ex H.P., to join large Partnership, South of England, after short preliminary assistantship, during which salary £750 per annum. Preference additional qualification. Testimonials and photograph required.—Add., No. 3344, B.M.A. House, Tavistock Sq., W.C.1.

Wanted. — Third Partner, pre- ferably University Graduate, in residential London suburb. Share just over £1,000, 2 years' purchase. House available.—Address, No. 3347, B.M.A House, Tavistock Sq., W.C.1.

Lancs Town. — Partnership (2/5th share). Old-established. Receipts £3,000. Panel 3,000. Nice house (freehold). Price for house and share £3,000, part deferred. Share of debts drugs, instruments, etc., £400.—MANCHESTER MEDICAL & SCHOLASTIC ASSOCIATION, 6, Brown Street.

Manchester. — Partnership in excellent old-estab mixed Practice. Aver. cash receipts £5,816. Panel 3,375. Good house available. 3 bedrooms. Rent £60 p.a. Premium—1/3rd share—1½ years' purchase; part by arrangement. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Partnership in a Practice estab- lished 60 years. Important part of London. Average annual receipts £6,000. Panel 2,000. Quarter share offered. — Write, with qualifications, to WOODCOCK, RYLAND & PARKER, 15, Bloomsbury Square, W.C.1.

Urgent.—Partner wishes to dis- pose of his SHARE in seaside town in Cornwall at once. About £1,400 p.a. for sale. Good surgical scope. Every investigation. Very low premium for quick sale. — Address, No 3316, B.M.A. House, Tavistock Sq., W.C.1.

PRACTICES.

Wanted. — Practice or Partner- SHIP SUCCESSION, with good panel. London (preferably N.W., W., or S.W.—not essential). Income £2,000, or more p.a. Ample capital. — Address, No. 3243, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Small Practice or NUCLEUS, with scope, by one working for M.R.C.P. No dispensing, panel, or midwifery. Must be within reasonable distance of London. Town on South Coast preferred. Rentable house. Retiring practice or death vacancy considered.—No. 3346, B.M.A. House, Tavistock Sq., W.C.1.

Wanted immediately, in South- Western County, a general mixed PRACTICE or PARTNERSHIP producing about £1,000 p.a.—Particulars will be treated in strict confidence and should be sent in the first instance to Mr C. S. MOORES, Incorporated Accountant, 15, Bedford Circus, Exeter.

Wanted immediately, Practice in or near London, preferably with large panel. Capital available.—Address, No. 3307, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Practice on or near coast anywhere between Southampton and Eastbourne. Capital available. Full particulars in confidence. — Address, No. 3312, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Large middle and working-class PRACTICE in London. Income £2,000 or over. Panel 2,000 or over. Will pay 2 years' purchase (cash) for suitable Practice. — Address, No. 3306, B.M.A. House, Tavistock Square, W.C.1.

Busy Panel and Private Practice for Sale, with prominent Corner House, garden and garage. Would suit two women Doctors. Low premium for lease of house, furniture, appliances, etc.—Address, No. 3302, B.M.A. House, Tavistock Square, W.C.1.

Channel Islands. — Small Prac- TICE, suit semi-retired Practitioner. Cash receipts 1929, £392. Beautifully situated house for sale, 3 bedrooms. Garage and garden. —BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Cheshire Country Town, near Manchester.—PRACTICE averaging £700 p.a. Panel 500. Beautiful district. Excellent modern house (freehold), 2 reception, 4 bedrooms. Tennis court, surgery, etc., separate. Premium—Practice and house—£2,000. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Cardiff area.—Mining up-to-date town, nice country. Motor cycle ample (essential). Cottage Hospital. All cash. House rent or sell. Premium 1½ yrs.' purchase. Salary £7 if sell six weeks. Photo., full particulars. — Address, No. 3315, B.M.A. House, Tavistock Square, W.C.1.

Essex Suburb, within easy reach of beautiful country.—One HALF SHARE of £2,500 p.a., all ready cash. Panel of about 1,550. Midwifery refused. Many houses being built in the neighbourhood. Exceptional opportunity.—Apply, No. 8519, PERCIVAL TURNER, Ltd., 4 and 5, Adam Street, Strand, W.C.2.

For Sale.—Cash and Panel PRACTICE, London, E. Easily worked. Average receipts about £8 0 per annum. Ample scope. Corner house. Low expenses. Long lease. Premium 1½ years purchase or near offer.—Address No. 2325, B.M.A. House, Tavistock Square, W.C.1

For Sale. — Old-estab. industrial PRACTICE, near Manchester, easily worked. Good introd. Aver. yearly receipts last three years £2,590, panel 2,910. Price £3,825 or near offer. Good house to buy or lease.—No. 3112, B.M.A. House, Tavistock Sq., W.C.1.

For Sale owing to Death. — General Country PRACTICE in Radnorshire. Good appointments and panel.—Apply BURGES, SLOAN & Co., 11, Marsh Street, Bristol.

For Disposal.—A good Practice is not always to be had directly, but Mr. PERCIVAL TURNER can generally offer applicants something suitable. Nearly all the best Practices are sold by him without being advertised. Inform. free on applic.—4, Adam St., W.C.2.

Half Share in old-established (60 years) middle and lower middle-class general PRACTICE in good Lancashire industrial town. Panel over 1,900 (and increasing). Receipts last year £2,400. Nice house in best part of district to let prior to sale. Good educational and social facilities. Death vacancy reason disposal. — Address, No. 3240, B.M.A. House, Tavistock Square, W.C.1.

Lancs.—Unopposed Practice in lovely district. Nice house, 8 rooms, bath, w.c., garden, garage. Receipts over £500. Last year £575. Apply, £150. Excellent scope. House (freehold) and Practice £2,000.—MAN-CHESTER MED. & SCHOL. ASSOC., 6, Brown St.

Leeds.—Small old-estab. Prac- TICE, with scope. Cash receipts about £400. Panel 192. Rent of Surgery, etc., £36 p.a., clear. Premium £250 for quick sale.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Lincs. — Old-established unopposed Country PRACTICE. Av. cash receipts £[illegible] p.a. Panel 700. House with delightful garden, tennis court, garage, etc., for sale or rent. Smaller house avail. Hunt., shoot., golf. Prem. £[illegible]. —No. 3326, B.M.A. House, Tavistock Sq., W.C.1.

Lock-up Surgery.—£100 p.a. Scope. Working-class.—Address, No. 3328, B.M.A. House, Tavistock Square, W.C.1.

London, S.W. (Fulham).—Very old-established Cash and Panel PRACTICE, neglected of late. Receipts now about £270 p.a., panel nearly 400. Rent of surgery 12/6 per week. Offers invited. Excellent change for younger energetic Doctor.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Lady Doctor's Practice, Liver- pool.—Cash receipts £400. Much scope. Excellent flat to rent on lease. Good introduction. — BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

London, N. (near Islington).— Old-established Cash and Panel PRACTICE. Receipts £1,300 p.a., panel 2,000. Eight-roomed house, rent £20, long lease. Premium just over two years' purchase.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

London, S.E.—Cash Practice for sale in leading main thoroughfare. Estab. over 3 years. Panel about 115. Cash takings average £5 p.w. Moderate premium accepted for prompt cash sale, to include drugs, furniture, etc. —No. 3330, B.M.A. House, Tavistock Sq., W.C.1.

London, W. (near Paddington). —Old-established Cash and Panel PRACTICE; immediate sale. Vendor having obtained appointment. Receipts £1,600, panel nearly 2,000. Rent of surgery £35 15s. p.a. Premium 1½ years' purchase.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven St., Strand, W.C.2.

Manchester.—Middle-class Prac- TICE in first-rate residential suburb. Average cash receipts £2,224 p.a. Fees 5/- to 21/-. Excellent house to rent on lease. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Manchester. — Old-estab. Prac- TICE. Cash receipts 1929, £940. Panel 830. House, 2 reception, 5 bedrooms. Garage. Rent £70 p.a. Scope for increase. Premium £1,000 for quick sale. — BRITISH MEDICAL BUREAU, 33, Cross St., Manchester.

Manchester. — Suburban Prac- TICE. Cash receipts £1,650. Panel 900. Good scope. Excellent house, 3 reception, 5 bedrooms. Garage and garden. Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Shropshire.—Unopposed Country PRACTICE. Cash receipts 1929, £1,100. Panel over 700. Appointments (transferable) £264. Scope. Excellent house, 4 bedrooms. Garage and large garden. Rent £70 p.a., or would sell for £1,250 (freehold). Premium 1½ years' purchase.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Sound Practice for Disposal. — Pleasant suburb of Manchester. Six months' introduction offered. Owner will sell or lease the house and surgery.—For terms and particulars, apply KNOTT & CASTLE, Solicitors, 3, Norfolk Street, Manchester.

To Purchasers. — Do not buy without expert assistance. With 40 yrs.' experience Mr. PERCIVAL TURNER can advise in all cases. Terms free on application to 4, Adam St., Strand, W.C.2. Telephone: Temple Bar 5011. Telegrams: "Epsomian, London."

West of England.—Old- established PRACTICE in favourite City. No panel. Little midwifery. Good house. Receipts average over £[illegible]. Scope for increase.—Address, No. 3328, B.M.A. House, Tavistock Square, W.C.1.

West of Scotland. — Old-estab- lished Medical PRACTICE for Sale within easy access of Glasgow. Panel over 1,100. Average receipts £1,400. Owner retiring. Good house and garden. — Apply, W. M. MARSHALL, ROSS & MUIRO, Solicitors, 3, Merry Street, Motherwell.

Woman Doctor practising in London would do small Highland Practice for four weeks in return for good house. — Address, No. 3309, B.M.A. House, Tavistock Square, W.C.1.

Wales. — Old-established PRACTICE. Receipts £1,450 p.a., including panel 1,300. Nice house, garage, etc., rent £60. Premium £1,500.—Apply, PEACOCK & HADLEY, Ltd., 19, Craven Street, Strand, W.C.2.

Yorkshire University City. Old-estab. mixed PRACTICE for sale. Panel 1850, receipts (accountant fig.) £1,800 p.a. last 2 yrs. Easily worked, scope for improvement. Good corner house, 4/5 bedrooms, to be sold or rented at £60 p.a. for 5 yrs. Owner specialising elsewhere. Price, 1½ yrs.' pur. Would accept £1,200 down. 3–6 months' intr.—No. 3389, B.M.A. House, Tavistock Sq., W.C.1

£500 available for purchase of PRACTICE or PARTNERSHIP, with a view to early succession. Could be supplemented by a loan equal to two-thirds of purchase price, or else the rest paid by instalments on the security of the Practice.—Address, No. 3311, B.M.A. House, Tavistock Square, W.C.1.

HOUSES, CONSULTING ROOMS

Wanted in the West End—good address—PART-TIME CONSULTING ROOM, with service, etc., for very occasional use by Practitioner.—Address, No. 3343, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Paying Guest in home of retired Medical Man, Lt.-Col. R.A.M.C., D.S.O. Golf (10 mins. from course) and tennis clubs available. Good educational centre. Healthy neighbourhood 6 miles from Ilkley.—Add., No. 3320 B.M.A. House, Tavistock Square, W.C.1.

A commodious modern Bungalow, 10 good light rooms, grounds 1/2 acre, electric light, central heating, etc., very suitable for a Doctor, occupying prominent corner position in pleasant populous district 12 miles N.E. of London. No resident practitioner. Extensive building programme rapidly progressing, and a large Practice should be made very quickly. Freehold available for £100 cash and balance on mortgage. Cost over £2,000 originally.—Write Owner, R. T. MORGAN, 129, MINORIES, E.C.3.

Bath (The Circus).—Consulting ROOMS in fine position to be Let, with attendance. Suitable for a Doctor or Dentist. —Full particulars of FORTT, HATT & BILLINGS, 3, Burton Street, Bath.

Consulting Rooms to be Let.—Harley Street and district. Whole and part-time. Lists sent on application.—ELGOOD & Co., 10, Henrietta Street, Cavendish Square, W.1. Langham 2601.

First floor Consulting Room to LET, adjoining Harley St. Good service, name plate on door, residential suite of rooms if desired.—Address, No. 3109, B.M.A. House, Tavistock Square, W.C.1.

For Sale.—Exceptionally fine HOUSE with good connection as high-class NERVE HOME. Accommodation, 18 patients. Lease 10 years, ground rent £110. Price, with valuable fittings and fixtures, £3,500.—Address, No. 3333, B.M.A. House, Tavistock Square, W.C.1.

For Sale owing to death of Doctor, CORNER HOUSE. Large Lancashire Town near sea. — Address, No. 3310, B.M.A. House, Tavistock Square, W.C.1.

Large Ground Floor Consulting ROOM to Let, with use of handsome waiting room, h. and c. water, attendance, in Park Crescent, Portland Place, W. Rent £135 p.a.—Apply, A. BARBER & SONS, 2, Fetter Lane, E.C.

[illegible] Square (adjoining).—[illegible] panel Practitioner unfurnished CONSULTING [illegible] Usual hand. Service, plate, heating, [illegible] Address, No. 33[illegible] moderate inclusive [illegible] Square, W.C.1. [illegible]d.—Address, No. [illegible]Square, W.C.1.

South Coast.—A well-built Residence, 9 bed., 3 rec., 2 bath. Full South aspect, sea views; few minutes of sea front. Central heating, electric. Admirably suitable for NURSING HOME. 1/2 acre grounds. Price, freehold, only £2,500. Vacant poss. Photo. and particulars.—PEARSON, COLE & SHORLAND, Highcliffe-on-Sea, Christchurch, Hants.

To Let from May until the end of September or October, a FURNISHED HOUSE, containing drawing room, dining room, 3 sitting rooms, 14 bedrooms, 2 bathrooms and lavatories, kitchen, pantry, larder, with 2 garages, stable, tennis court, and kitchen garden, situated on the Yorkshire Moors in the Whitby district and about 4 miles from the sea, its bracing air and peaceful locality rendering it highly suitable for a convalescent or mental home.—For further particulars apply A. SLATER, Mulgrave Estate Office, Lythe, Whitby.

Upper part over Chemist's, suit Medical Man with good qualifications willing to practise at busy corner. Rent £280 or near offer, inclusive terms.—Address, No. 3305, B.M.A. House, Tavistock Sq., W.C.1.

SUITABLE DOCTOR OR DENTIST.

Wandsworth Common.—FREEHOLD RESIDENCE. Fine position. Semi-man. rd., nr. 2 tubes, elec. stn., 4 beds., bath., 2 r.ecs., k., sc., c.l., scp. entrance for surgery, pleasant garden, ample room for garage. £1,650.—CROFTS, 3.8, Balham High Road, S.W.17. (Batt.16 8).

Warlingham, Surrey.—Within half an hour of the City by frequent train service. For Sale, FREEHOLD, admirably suitable for a School or Institution, well-built RESIDENCE, standing in delightfully timbered gardens and grounds, and comprising commodious accommodation, about 13 large bed and dressing rooms, 3 bathrooms, 4 well-proportioned reception rooms. Company's gas, water, and electric light. Garage and stabling, with rooms over, and also a Lodge at the entrance drive. PRICE, with about 3 Acres, £4,500, or the whole property of 10 Acres would be sold.

Further particulars on application to the Agents:
Messrs. JOHN D. WOOD & Co., 6, Mount Street, W.1. (20956.)

Yorkshire Spa. — Splendid opportunity to acquire fine NURSING HOME. 19 bedrooms. Profits £1,000 per annum. Price, including furniture and twill etc., £2,500, and rent £375 per annum.—JUPES, 22, Ely Place, E.C.1.

MISCELLANEOUS SALES, etc.

For Sale. — X-ray and Electro-MEDICAL APPARATUS, in excellent condition, suitable for both A.C. and D.C. current.—Address, No. 3201, B.M.A. House, Tavistock Square, W.C.1.

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Sleeping Convalescent Hut for Sale, capable of holding 2 single beds; glazed all round with Vita glass; new condition; price £15.—A. LANGLEY, 15, Phipson Road, Sparkhill, Birmingham.

1930 Riley Nine Monaco Saloon. 250 miles. Perfect. £245.
SUNBEAM FOURSOME COUPE, only run 2,000 miles. Perfect. Cost £895. Accept £525.
SPARK, Oxted, Surrey. 'Phone 223.

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Showroom: 97, Swinderby Road, Wemb

APPOINTMENTS.—Contd.

The Hospital for Epilepsy a PARALYSIS, Maida Vale, W.9.

HONORARY CLINICAL PATHOLOGIST requir

Applications are invited from Clinical Pat logists who are in a position to devote two three days a week to work in this Hospit laboratory. Details of the duties, etc., may obtained from me, and applications, accompa by copies of not more than three testimon should reach me by May 31st.

H. W. BURLEIGH,
Secretary & Gen. Supt

Medical—Scottish Prison Servi

The appointment of MEDICAL OFFICER PERTH PRISON and MEDICAL SUPER TENDENT of the Criminal Lunatic Departm at Perth Prison, etc., is vacant. Salary £4 rising by £20 annually to £600, with C Service bonus and a house. To give whole t to the Service. Further particulars may obtained on application to the Secretary, Pri Department for Scotland, Rutland Squa Edinburgh, to whom applications for the pointment should be sent on or before May 3

Weymouth and District Gene HOSPITAL, WEYMOUTH.
(86 Beds and Cots.)

Wanted, HOUSE SURGEON and [illegible] male, for June 7th [illegible]ice, now doing [illegible] with board, resi[illegible] ENGAGE[illegible] tions, stating [illegible] car and testimon[illegible]idence, [illegible] age, qual[illegible] Medical [illegible] not later than [illegible] should be [illegible]

City of Manchester.

The Public Health Committee of the Corporation require the services of a fully qualified Whole-time WOMAN MEDICAL OFFICER, experienced in midwifery and children's diseases, to hold (under the direction of the Medical Officer of Health) consultations and infant clinics at the Maternity and Child Welfare centres of the Manchester Corporation, and under the like direction to perform such other duties as appertain to the office.

The salary will be £600 per annum. A statement of the duties and conditions of office may be had on application, in writing, to the Medical Officer of Health, Civic Buildings, Mount Street, Manchester.

Applications stating age and experience, and endorsed on the envelope "Medical Officer, Child Welfare," must be sent in addressed to the Town Clerk only, and not to members of the Committee or Council, not later than Saturday, May 24th, and be accompanied by not more than three recent testimonials.

The successful candidate will be required to contribute to the Corporation Superannuation Fund, and to execute their deed of service.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

F. E. W. HOWELL,
Town Clerk.

Town Hall,
Manchester.
5th, 1930.

Birmingham Public Health Department.

TUBERCULOSIS SECTION.

TEMPORARY APPOINTMENT.

Applications are invited from single male medical Practitioners for the post of Temporary RESIDENT MEDICAL OFFICER, for a period of four months. The successful candidate will be employed both in a sanatorium and in a dispensary. Salary at the rate of £7 7s. weekly, with board, residence, and laundry. Forms of application may be obtained from the Chief Tuberculosis Officer, 44a, Broad St., Birmingham.

F. H. C. WILTSHIRE,
Town Clerk.

British Red Cross Society and Order of St John of Jerusalem.

EAST LANCS TUBERCULOSIS COLONY, BARROWMORE HALL, nr BARROW, near CHESTER.

ASSISTANT MEDICAL OFFICER (male) required. Commencing salary £250 per annum, with residence, board and laundry. The appointment will be terminable by one month's notice. Preference will be given to candidates with experience in Tuberculosis.

Applications, stating age, qualifications, and full particulars of three recent testimonials, together with copies of these, should be sent to the Medical Superintendent at the above address before May 21st.

West Herts Hospital, Hemel Hempstead

(24 miles from Euston.)

Applications are invited for the appointment of JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, with rooms, board, and laundry. There are 110 beds. The successful candidate will be eligible for the post of Senior R.M.O. in due course at a salary of £150. Particulars to be obtained of, and applications, stating essential particulars, and enclosing copies of recent testimonials, to be sent at once to—

ROBT. E. BUTTERFIELD,
Clerk to the Hospital.

Great Yarmouth General Hospital (72 Beds.)

Applications are invited for the post of RESIDENT SURGEON (one of two Resident posts). Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £125 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, and enclosing copies of three recent testimonials, should be sent at once to the undersigned.

FRANK JENNINGS, Secretary.

Elizabeth Garrett Anderson Hospital, Euston Road.

Wanted two fully qualified Medical Women as CLINICAL and SURGICAL REGISTRARS, non-resident. Honorarium £100 per annum.

Particulars can be obtained from the Secretary, to whom applications with testimonials, should be sent before 29th inst.

JEAN R. MURRAY,
Acting Secretary.

City of Manchester.

JUNIOR ASSISTANT MEDICAL OFFICERS.

The Public Health Committee invite applications from Medical Practitioners (male) for the appointment of Three Junior Assistant Medical Officers at the WITHINGTON HOSPITAL (1,200 beds) and INSTITUTION (1,150 Beds), Nell Lane, West Didsbury, Manchester. One of the Assistant Medical Officers will be required to take charge of the wards for patients suffering from Pulmonary Tuberculosis (150 beds).

The appointments will be for a period of six months and will not be renewable.

The Hospital is a recognized training school for nurses and is equipped with all modern hospital requirements.

The salary in each case will be at the rate of £275 per annum, with rations and furnished apartments.

The successful candidates will be required to commence duty as soon as possible after the appointment, also to contribute to the Corporation Superannuation Fund and to execute their deed of service.

Applications, endorsed on the envelope "Medical Appointment, Withington," accompanied by not less than three testimonials, must be forwarded to the undersigned not later than Saturday, May 24th.

Canvassing in any form, oral or written, direct or indirect, is prohibited.

F. E. WARBRECK HOWELL,
Town Clerk.

Town Hall,
Manchester.
May 16th, 1930.

Doncaster Royal Infirmary. (185 Beds.)

SECOND HOUSE SURGEON (male) required at once. Experience in Anæsthetics essential. Appointment offers opportunity to gain good surgical experience.

THIRD HOUSE SURGEON (male) required immediately. Duties include Ophthalmic, Medical, and Casualty work.

Opportunity for gaining excellent experience. Appointment is for six months, and successful candidate is eligible for re-appointment and probable promotion.

Salary, for each post, £150 per annum, with board, residence, and laundry. A New Hospital ready for occupation.

Applications, stating age, experience, and full particulars, together with copies of three testimonials, should reach the undersigned by Wednesday, May 21st.

J. LAWRENCE MEARS,
Secretary Superintendent.

General Hospital, Nottingham. (377 Beds.)

A SECOND CASUALTY OFFICER (male) required at once at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, with an intimation as to when they can commence duty if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

The Royal South Hants and Southampton Hospital.

Required for duty at this Hospital, commencing June 1st next, ASSISTANT HOUSE SURGEON. £180 per annum. CASUALTY OFFICER. £180 per annum.

Candidates, who must be male and unmarried, should apply at once to the undersigned, stating age, and enclosing copies of testimonials.

By Order,
HY. TRUSSON, Secretary.

Jessop Hospital (Firth Auxiliary) Norton, Sheffield.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female), and should be addressed at once to the undersigned at the Jessop Hospital for Women, Sheffield.

The appointment will be for one year, with a salary at the rate of £175 per annum, plus board, residence, and laundry. Previous obstetrical experience is desirable.

This Hospital contains 46 beds for the treatment of Puerperal Sepsis, and for ante-natal and gynæcological cases. 25 beds are set apart for Puerperal Sepsis.

H. B. SHELSWELL, Secretary.

House Surgeon, male, wanted

immediately for HUNTINGDON HOSPITAL. Salary £125 per annum and laundry. Testimonials, etc., to Dr. GROVE, County Hospital, Huntingdon.

County Borough of Newport.

ASSISTANT LADY MEDICAL OFFICER in the MEDICAL OFFICER OF HEALTH'S DEPT.

Applications are invited for the position of Lady Assistant Medical Officer of Health. Candidates must be duly qualified and registered Medical Practitioners; have had not less than three years' experience since graduation; special experience in Midwifery and Child Welfare work; and must hold a Diploma in Public Health.

Other qualifications being equal, preference will be given to one with experience in the Diagnosis and Treatment of V.D. among women and children, and V.V.R. Therapy.

The lady appointed will act under the direction of the Medical Officer of Health, and will devote her whole time to official duties, which will be to assist at the Maternity and Child Welfare Clinic and Centres to undertake Diagnosis and Treatment of V.D. among women and infants; V.V.R. Therapy; superintendence of practising midwives and of Health Visitors; and to carry out any other duties required by the Medical Officer of Health.

The salary will be £600 per annum. The appointment is subject to the Local Government and Other Officers Superannuation Act, 1922, and deductions from salary and the passing of a medical examination thereunder.

The appointment will be subject to two calendar months' notice on either side.

Applications should be made on forms to be obtained from the Medical Officer of Health, and must be accompanied by copies (not originals) of three recent testimonials. Envelope, addressed to the Medical Officer of Health, and marked "Assistant Medical Officer," must be received not later than June 1st.

I. HOWARD-JONES, M.D., D.Sc.
Medical Officer of Health.

Market Buildings,
Dock Street,
Newport, Mon.

County Borough of Ipswich.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER to the IPSWICH SANATORIUM. Salary £350 per annum, with board, lodging, washing, etc., subject to deductions in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922. The appointment will be for one year in the first instance. Applicants must be bachelors and must be fully qualified and registered, and must not exceed 30 years of age. They must have held a resident post in a General Hospital and also in a Hospital for the treatment of diseases of the chest.

Applications, stating age, qualifications, experience, and accompanied by recent testimonials, should be sent to the undersigned forthwith.

W. F. SUTCLIFFE,
Ipswich Sanatorium. Medical Supt.

Ethel Hedley Hospital for Crippled Children, Windermere.

An active Surgical Centre, with 50 beds, serving the Counties of Westmorland, Cumberland, and North Lancashire, with attendance at After-care Clinics in these areas.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Candidates (female) must be fully qualified and registered, and have held a previous resident appointment. The appointment is for six months commencing July 1st, with extension to one year. Salary at the rate of £150 per annum. Applications, with copies of three recent testimonials, should be submitted not later than June 7th, to the Medical Director, Ethel Hedley Hospital, Calgarth Park, Windermere.

City of Salford.

HOPE HOSPITAL.

An ASSISTANT MEDICAL OFFICER is required at Hope Hospital, Salford, Lancs. The appointment will be for six months, at the rate of £250 per annum, with full residential allowances. The Hospital contains 1,000 beds, is well equipped and up-to-date, and offers excellent opportunities of experience.

Forms of application may be obtained from the Medical Officer of Health, 143, Regent Road, Salford, to whom they must be returned, accompanied by copies of not more than three testimonials, not later than Monday, May 26th.

H. H. TOMSON, Town Clerk.

House Surgeon (lady) wanted

for GREENOCK ROYAL INFIRMARY for Medical side, for a period of six months. Salary at rate of £100 per annum. Apply to Secretary, JAMES A. LOVE, 2, Hamilton Street, Greenock.

Salford Royal Hospital.
(263 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):
HOUSE PHYSICIAN. Salary at the rate of £125 per annum.
CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.
The appointments are for a period of six months, with board and residence.
Candidates must be registered under the Medical Acts.
The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).
Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,
Salford Royal Hospital. GEORGE RUDDLE. Gen. Supt. & Secretary.
May 12th, 1930.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.
Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 2nd, with copies of *not more than three testimonials* given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.
The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.
Candidates must be unmarried and possess a legal qualification to practise.
All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, June 4th, at 4.45 p.m. precisely.
Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
May, 1930. Secretary.

St. Mary's Hospital, W.2.

SURGICAL REGISTRAR.

The Board of Management invite applications for the above post. Candidates for the appointment must be registered Medical Practitioners and Fellows or Members of the Royal College of Surgeons of England or a Graduate in Surgery of a University in the British Empire.
The salary is £200 per annum, with luncheon and tea. Copies of the regulations for the Surgical Registrar may be obtained on application to the Secretary's Office.
Applications, with copies of testimonials not exceeding three in number, should reach the undersigned on or before May 28th.

W. PARKES, Secretary.

The Willesden General Hospital
(Incorporated), N.W.10.
(106 Beds.)

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited for the above appointment. Candidates must be duly registered under the Medical Acts, and unmarried.
Salary at the rate of £100 per annum.
Detailed applications, with copies of testimonials, to be sent as soon as possible to the undersigned

R. J. HEARNE,
April 19th, 1930. Secretary.

Peterborough and District
MEMORIAL HOSPITAL. (154 Beds.)

The post of *RESIDENT HOUSE PHYSICIAN* is now vacant, and applications are invited from fully qualified Male Practitioners for the appointment.
Salary £120 per annum, with board, residence, and laundry.
Applications, stating age, qualifications, and experience, with copies of recent testimonials, to be sent immediately to the undersigned.

FRANK A. C. TAYLOR,
Secretary-Superintendent.

The Sheffield Royal Hospital.

There are vacancies for male residents—one to act as OPHTHALMIC HOUSE SURGEON, the other as *RESIDENT ANÆSTHETIST*. The Hospital is a Medical School, with 340 available beds, and there are twelve Resident Medical Officers. Salary for the first six months at the rate of £80 per annum, afterwards £100 per annum, with board, residence, and laundry.
Applications should be forwarded at once to—

W. H. BOOTH,
April 5th, 1930. Supt. & Secretary.

Evelina Hospital for Children,
Southwark, S.E.1.

The Committee of Management requires a HOUSE PHYSICIAN (male) from June 1st to December 12th (during first part of time duty in Casualty and O.P. Department). Salary £120 per annum, with board and residence. Candidates, duly registered, to send applications, giving age, qualifications (with dates), and copies of four testimonials, to the undersigned at the Hospital, before 21st inst. Applicants will be informed if they will be interviewed by the Medical Committee. Selected candidates must attend Committee of [illegible] meeting will be notified from whom rules and [illegible]ting to the post must be obtained.

By Order of the Committee of Management,
H. C. S. SMITH,
May 7th, 1930. Secretary-Supt.

The Royal Eastern Counties'
INSTITUTION FOR MENTAL DEFECTIVES, COLCHESTER.
(1,350 Patients now and a large extension will be begun this summer.)

APPOINTMENT OF JUNIOR ASSISTANT MEDICAL OFFICER.

Applications are invited for the post of Junior Assistant Medical Officer (male and unmarried) at the above Institution.
Commencing salary at the rate of £350 per annum, together with furnished apartments, board, laundry, and attendance. There are no Superannuation deductions. The appointment will be subject to termination by one calendar month's notice on either side.
Applications, stating age and qualifications, with copies of three recent testimonials, to be sent to Medical Superintendent, Royal Institution, Colchester.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of ANÆSTHETIST at the DREADNOUGHT HOSPITAL, Greenwich. Attendance on Wednesday afternoons. An honorarium of 50 guineas per annum is attached to the post.
The elected candidate will be appointed for twelve months, but will be eligible for re-election.
Applications, with copies of three testimonials, to be sent in on or before May 28th to the undersigned, from whom further particulars can be obtained.

Greenwich, S.E.10. R. E. V. BAX,
May 9th, 1930. Secretary.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried). Candidates must be duly qualified and registered. The appointment will be for a period ending October 31st, 1930. Probable promotion if satisfactory. Salaries of Resident Staff are as follows: Resident Surgical Officer £250, First House Surgeon £175, Second House Surgeon £150, and Third House Surgeon £125 per annum, with residence, board, and laundry.
Particulars of duties may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent.

A. MIDGLEY,
May 12th, 1930. *Secretary.*

East London Hospital for
CHILDREN AND DISPENSARY FOR WOMEN, Shadwell, E.1.

Applications are invited for the posts of HOUSE SURGEON (male) and HOUSE PHYSICIAN (male). Vacant June 1st. The appointments are for six months.
Board, residence, and laundry is provided. Salaries at the rate of £125 per annum.
Applications, with testimonials, to be sent to the undersigned not later than Saturday, May 24th.

W. M. WILCOX, Secretary.

Lowestoft and North Suffolk
HOSPITAL, LOWESTOFT.

JUNIOR HOUSE SURGEON (male) required. Salary £120 per annum, with board, residence, and laundry. Duties to commence in April. Applications, together with copies of three recent testimonials, to be sent to the Honorary Medical Superintendent.

Manchester Royal Eye Hospital.

JUNIOR HOUSE SURGEON required. Salary £120 per annum, with residence, board, etc.
Applications (with copies of testimonials), endorsed "House Surgeon," to be addressed to the Chairman of the Board of Management not later than May 24th.

H. R. NORTH, Secretary.

Telephone: WELBECK 2728.
Telegrams: "ASSISTIAMO, LONDON."

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TRAINED NURSES FOR MENTAL, MEDICAL, SURGICAL, AND FEVER CASES.
Nurses reside on the premises and are available for urgent calls Day or Night.

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29, York St., Baker St., London, W.1.
Mrs. MILLICENT HICKS, *Supt.*
W. J. HICKS, *Secretary*

ST. LUKE'S HOSPITAL.
FOR MENTAL DISORDERS.
Private Nursing Staff Department.
Trained Nurses for Mental and Nervous Cases can be had immediately.
Apply to Lady Superintendent,
19, Nottingham Place, London, W.1.
Telephone: Mayfair 5420.
Northern Branch.—Apply, Lady Superintendent, 57, Clarendon Rd., Leeds. 'Phone: Leeds 26165.

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No Charge to Purchasers. All Business receives Mr. NEEDES' personal attention.

Miller General Hospital,
Greenwich Road, S.E.10.

PATHOLOGIST required to carry out the work of the Pathological Department at the Hospital. Private pathological practice is allowed, and the Hospital's laboratory may be used for this purpose. The Pathologist must not accept any other appointment without the consent of the Board of Management. Salary commencing at £600 per annum. The appointment is subject to three months' notice on either side. Duties to commence if possible on August 1st next. Candidates will be expected to call upon the Members of the Honorary Medical and Surgical Staff. Applications, giving qualifications, with copies of not less than three recent testimonials, to be sent to the Secretary of the Hospital.
May 5th, 1930.

Miller General Hospital,
Greenwich Road, S.E.10.

Applications are invited for the following posts:
HOUSE PHYSICIAN (male); HOUSE SURGEON (male). Salary in each case at the rate of £125 per annum, with board, residence, and laundry.
OUT-PATIENT OFFICER (male), who is required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays 9 to 5. Salary £150 per annum, and lunch.
The appointments are for six months from July 1st next. Candidates must be unmarried. There are five Resident officers. The selected candidates will be required to attend a meeting of the Medical Council on Friday, June 6th.
Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.
May 5th, 1930.

North Ormesby Hospital,
MIDDLESBROUGH.

HOUSE PHYSICIAN required (male and unmarried). Salary £120 per annum, with board residence, and laundry. There are three Resident, and the successful candidate will be eligible for the post of House Surgeon in due course. Applications, stating age, qualifications, previous experience (if any), with [illegible] to the three recent testimonials, should be sent undersigned at once

GEORGE WATTS, Secretary [illegible] Supt.

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Electrical and X-ray.—London, W.—£1,500 £2,000. Fees 21/- up. In one of most locality on lease. Low premium. —No 8099

Death Vacancy. — Harrogate.— Now over £700 p.a. Panel over 500. Very little midwifery. Average visits 5/-. Finest house, 5 bed., etc.—No. 8664.

London, E.—£2,000 a year. Panel nearly 1,900. Mids. 25/30 at 3 to 5 gns. Visits 3/6 to 5/-. House, with garden, on lease.—No. 8663

N. Devon. — Death Vacancy.— About £670 per annum. Panel 417. Fees 3/6 to 10/6. Mids 2 to 5 gns., few cases. Good house, 6 bed and 2 attics, etc. —No 8662.

Yorks.—Country.—About £1,000, increasing. Panel nearly £400. Visits 5/- to 12/6. Mids. 3 gns. up. House, 3 recep., 3 bed., garden, etc., £50 on lease.—No. 8660

Kent Town. — Woman's Practice. £800 p.a. Small panel. 20 mids. p.a. House 4 beds., etc., garden, etc., to rent —No 8659

London, S.W. — £2,000 p.a. Non-panel 12 mids., 5 gns. up. Visits 5/- mostly, and up to 10/6 or over. Large house and garden to rent.—No 8655.

Cambs.—Over £800.—Old-estab. unopposed. Panel 475. Appts. £90. Fees 3/6 to 7/6. Large house, 5 bed., and garden, at low rent.—No. 8654.

S. Wales. — Death Vacancy. — £700 p.a., largely colliery. Panel 700. Small house, low rent or price. Premium £700 or near —No. 8651.

Lancs Town.—£2,500 p.a. Panel 1,800. Ins £120. Two house available, with 5 bed., etc. Good opportunity for two friends.—No. 8645

Berks. — About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or more. No mids., ample scope. Small house, with surgery.—No. 8941

S.W. County. — Seaside Resort. About £600 p.a. Panel about 600. Fees 3/6 to 5/6, and up. Good house, 2 recep., 5 bed., garden, garage, etc., to rent.—No. 8638.

Northants Country. — Partner or Assistant-ship with early view. 1/2 share of £1,200 p.a. Panel over 550. Unusual scope and ultimate succession. Single man preferred —No. 8622

Exeter. — Death Vacancy. — £875 p.a. Panel 800. Clubs £120. Very little mid. House, 4 bed., 2 attics, 2 recep. Sep. surgery. Rent £60 or sell.—No. 8613.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No 8634

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old estab. Panel nearly 1,000. Fees 2/6—10/6. Mids 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

London, S.E. — Residential. — Over £600 p.a. Panel 400. Appointments £20 p.a. Visits 5/6—10/6. House, 5 bed., etc.—No. 8621

S. Wales. — Colliery Practice £2,500 p.a. Panel 2,445. Contract work about £1,200 p.a. Worked from Surgery. House available.—No 8610

Cornwall. — 1/3 share of £4,200 p.a. Surgical scope. Panel 1,500. Appts £280 p.a. Fees from 3/6. Mids. 2 gns. up. Choice of houses. Premium £2,250.—No. 8608.

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TOWN.—West Riding of Yorkshire.—Average receipts for the past three years over £1,700. Conducted by Vendor 5 years. Rent of house £60. Freehold can be purchased at a moderate price. Prem. 1½ yrs.—Apply 2508.

PRACTICE in picturesque Yorkshire Dale.—Vendor retiring. Receipts 1929, £920. Freehold to be sold or leased. Scope for increase. Good garage. Premium about £1,400.—Apply 2488.

TOWN.—West Riding of Yorkshire.—Established half a century. Average audited receipts for the past three years over £1,200 (including panel £500). Rent of house £64. Premium £1,500.—Apply 2482.

OLD-ESTABLISHED PRACTICE, near Rotherham. Average receipts £2,300, including Panel and pit clubs £2,100 per annum. Premium 1½ years.—Apply 2525.

OLD-ESTABLISHED COUNTRY PRACTICE in Westmorland. Average receipts £1,661. Modern house may be purchased. Premium £2,000.—Apply 2530.

COUNTRY PRACTICE in Lincolnshire.—Average receipts over £1,300 (including panel £536 p.a.). Premium 1½ years. Purchase price of freehold £900.—Apply 2531.

OLD-ESTABLISHED COUNTRY PRACTICE in Lincolnshire. Average receipts £1,200 (including panel £330 p.a.). Premium 1½ years. Purchase price of freehold £2,000. —Apply 2532.

RECENTLY established Industrial PRACTICE in East Yorkshire. Receipts 1929, £1,300 (including panel £300 p.a.). Purchase price of freehold £1,300. Premium £1,950. —Apply 2533.

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2. DEATH VACANCY.—WEST MIDLANDS.—Market Town. Lovely country. £1,200, including panel over £700. Good fees. Opposition nominal. Good house on lease. Rent £48. All services.
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5. WEST COUNTRY.—Pleasant Country Town, 10 miles from the sea.—Agricultural and middle-class PRACTICE. Estab. 21 years. Receipts £500 p.a., and increasing. Panel and appointments. Good house to rent or for sale. Low premium for quick sale.
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1 SOMERSET.—Attractive Town, within easy reach of coast.—Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.

2. WITHIN TEN MILES OF GLASGOW.—CLEAN TOWN.—Old-estab. good middle and better-class PRACTICE, producing an average of nearly £2,950 p.a., including panel of 2,300 and appts. worth £500. Fees 2/6 to 21/-, medicine extra. Mid. from 2 gns. upwards. Very good detached house, with 3 reception, 5 bedrooms, etc. Garden. Garage. Can be purchased, or other residence secured. Premium 1½ years' purchase, £1,500 down, and balance as arranged.

3. PARTNERSHIP.—MIDLANDS.—COUNTY TOWN.—TWO ONE-FIFTH SHARES (suitable two friends or will be sold separately) are offered in a very old-established good-mixed Practice owing to the retirement of the senior of two partners. Gross cash receipts for immediate past 12 months over £5,900, including panel of 3,400. Fees from 4/-. Not much midwifery. Good house, with 2 reception, 6 bedrooms, etc. Rent on lease £75 p.a. Premium for share two years' purchase.

4. LONDON, EAST.—Old-estab. mainly working-class PRACTICE, producing over £1,800, including panel of 2,500. Suitable small house, with one reception, 3 bedrooms, etc. Garden. Rent on lease £50 p.a. Premium £3,500.

5. SOUTH-WEST COAST.—VERY FAVOURITE RESORT.—Old-established good middle-class non-panel PRACTICE, held by Vendor (who is retiring) over 20 years. Receipts average £1,142. Fees 5/- to 10/6 and upwards. Mids. 5 to 15 gns. (about 12 cases). House is an exceptionally good one, in perfect order, with ample accommodation, central heating, electric light. Good garden. Garage. Price for freehold £3,250. Premium 1½ years' purchase.

6 CORNISH RIVIERA.—Old-established good mixed PRACTICE in exceptionally attractive village which is steadily increasing. Receipts for last 12 months £1,300, including panel of over 400. Visits 5/- to 21/-. Excellent house, facing due south, with 6 bedrooms, etc. Good garden. Rent on lease £56 p.a. Premium £1,800.

7. YORKS (NORTH RIDING).—In a small pleasant market town, with pretty and prosperous surrounding country, very old-established mixed-class PRACTICE averaging £1,247 p.a., including appts. worth £80 and panel producing last year £366. Visits 3/6 to 25/-. One opponent. Good house, facing south (3 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Electric light. Vendor's freehold. Price £1,350 (£1,000 on mortgage), or would let for few years at £80 p.a. Premium £1,500. Educational and social amenities.

8. SOUTH YORKS.—GOOD TOWN. — Old-established good middle-class PRACTICE, producing for last twelve months nearly £4,500. Small selected panel of 400. Fees 5/- to 10/-. Mid. 2 to 10 gns. (only about 50 cases yearly). Suitable house, with 3 reception, 6 bedrooms, etc., and professional rooms. Electric light. Good garden. Garage for 3 cars. Rent on lease £100 p.a. Excellent schools, sport, etc. Premium £5,700.

9 NORTH DEVON.—DEATH VACANCY.—Well-established mixed-class PRACTICE, in delightful district, producing £670 p.a., including panel of 417. Visits 3/6 to 10/6. Suitable house, with 2 reception, 4 bedrooms, and maids' rooms, etc. Garden. Price for freehold £1,300. Sport of all kinds. Premium £700. Scope for increase, and surgery.

10 KENT.—Pleasant Seaside and residential Town (pop. 17,000).—Old-estab. non-dispensing middle and working-class PRACTICE, averaging for the past 3 years over £1,050 p.a. including transferable appt. worth about £200 and panel of 500. Visits 3/6 to 10/6. Very little midwifery. House contains 8 rooms, kitchen, bathroom, etc. Garden. Garage. Price freehold £1,500, but might be rented. Premium £1,500.

11 DEATH VACANCY.—CORNWALL.—Good mixed general PRACTICE, in very pretty district, producing over £1,200 p.a., including panel of 845. Fees from 2/6. Mids. from 2 gns. Rent of Surgery 15/- per week. Small house available, rent £20 p.a. Premium £850, payable £200 down and balance of yearly instalments of £150. Efficient locum in charge.

12 DEATH VACANCY. — HARROGATE. — Well-established PRACTICE, averaging about £600 p.a., including panel of 500. Fees 3/6 to 21/-. House contains 2 reception, 5 bedrooms, etc. Price £1,000, or might be rented. Moderate premium. Locum in charge.

13 CITY CONSULTING PRACTICE.—Receipts for the past 12 months nearly £600 and rapidly increasing. Fees 10/6 and 21/-. One appointment worth £25 p.a., and believed to be transferable. Two good rooms, with communicating passage and own front door, in perfect order. Rent £200 p.a. Illness reason for sale.

14 FAVOURITE SUSSEX COAST TOWN.—Small middle-class PRACTICE, non-panel, and averaging nearly £300 p.a. Visits 3/6 to 7/6. No midwifery. Suitable freehold house. Garden. Coach-house and stabling. Price £1,300. Premium £300. Vendor retiring.

15 LINCS.—Very old-established easily worked Village PRACTICE, averaging £1,535 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.

16 SUSSEX.—Unopposed Village PRACTICE, old-established, in delightful surroundings, producing about £1,100 p.a., including panel of 545 and capable of considerable increase. Exceptionally charming residence, standing in 3½ acres of well-laid-out garden, tennis court, etc., and containing lounge hall, 2 reception, 7 bedrooms (3 fitted h. and c. water basins), dressing and 2 bathrooms, etc. Central heating. Electric light. Garage. Price for Practice and house £5,000.

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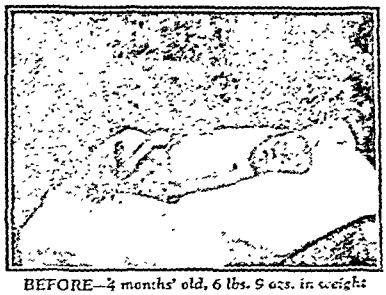
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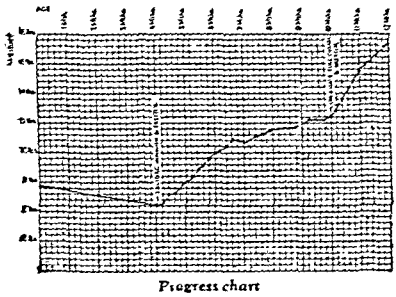
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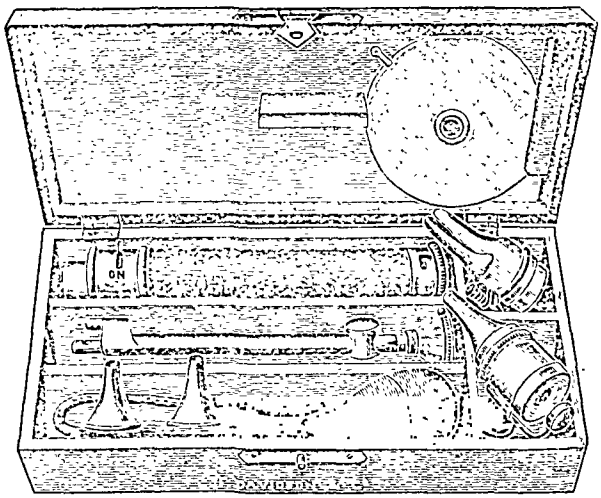
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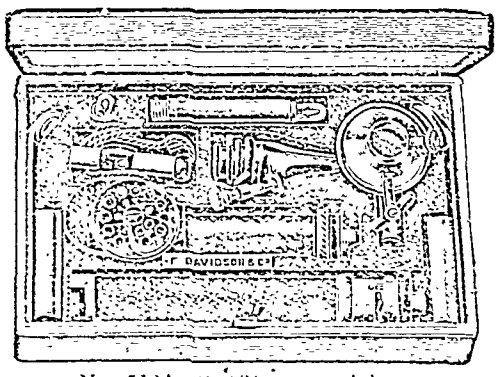
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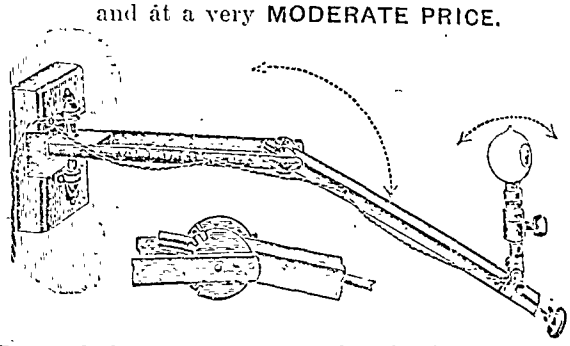
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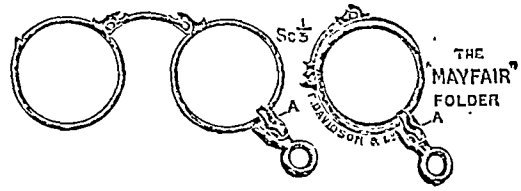


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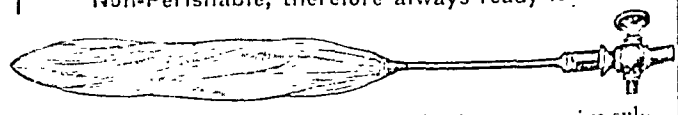
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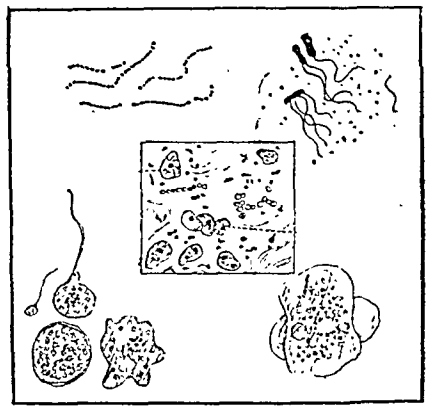
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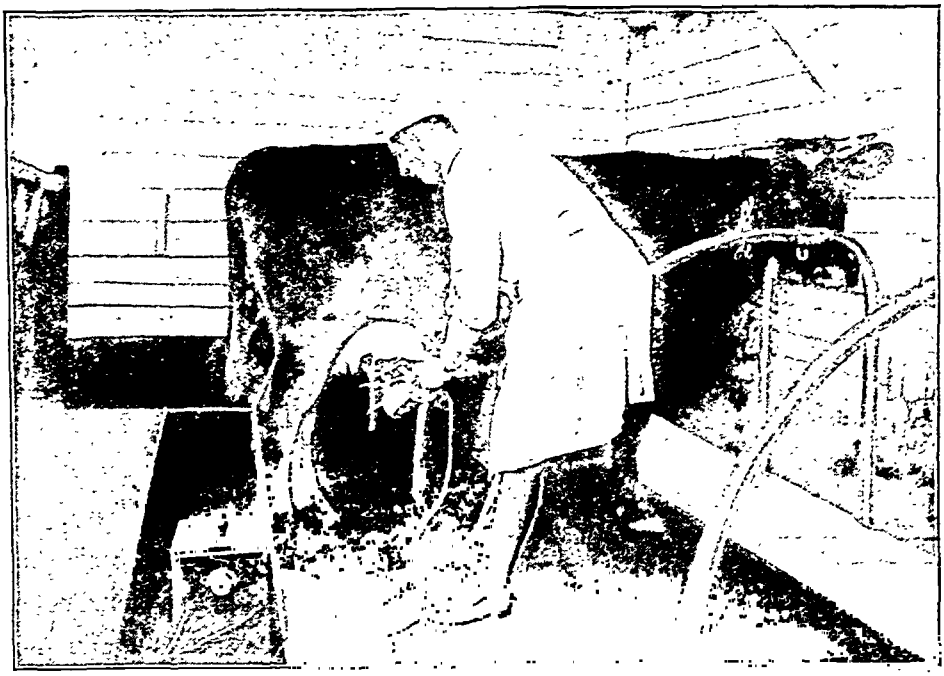
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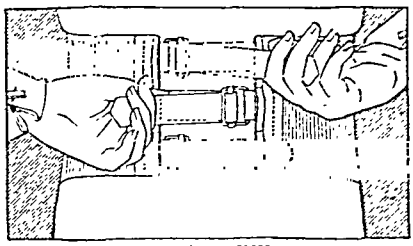
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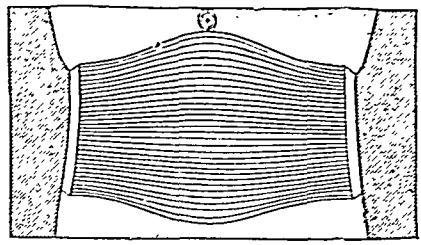
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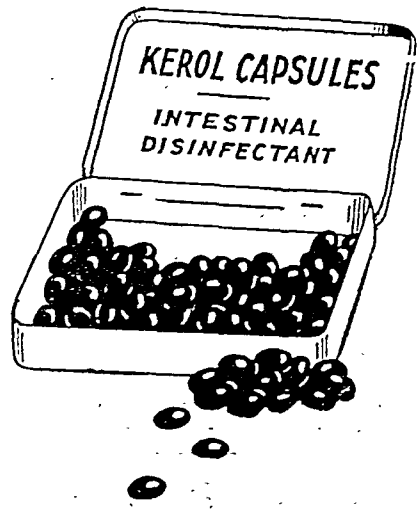
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The Pre-eminent Vitamin Food.

'BYNOTONE'

Contains essentially—bone marrow, yeast extract, hæmoglobin, liver fat and a proportion of irradiated ergosterol.

It is thus a concentrated nutrient, rich in the vitamins A, B and D and other elements which, often deficient in the ordinary everyday diet, are of vital importance to nutrition.

"Bynotone" is the ideal accessory food during the ages of active growth and adolescence, the periods of expectant and nursing motherhood and the stage of convalescence after acute disease.

Literature and clinical trial sample will be sent post free on request.

Allen & Hanburys Ltd., London, E. 2.

Telephone: Bishopsgate 3201 (10 lines). *Telegrams:* "Greenburys Edo London."

Liver Products

"A. & H."

In the treatment of Pernicious Anæmia and Sprue

"A. & H." Liver Products provide a convenient range to suit all requirements of liver therapy. They replace with advantage fresh liver, being much more convenient and palatable and at the same time highly active and stable.

Liver Extract Liquid, 'A. & H.'
In bottles of 4, 8 and 15 ozs.

Liver Extract 'Kapsol' Brand Capsules, 'A. & H.'
In tins of 20, 40 and 80 capsules and in boxes of 6 and 12 tubes.

Liver Extract Dried, 'A. & H.'
In boxes of 12 tubes to the box.

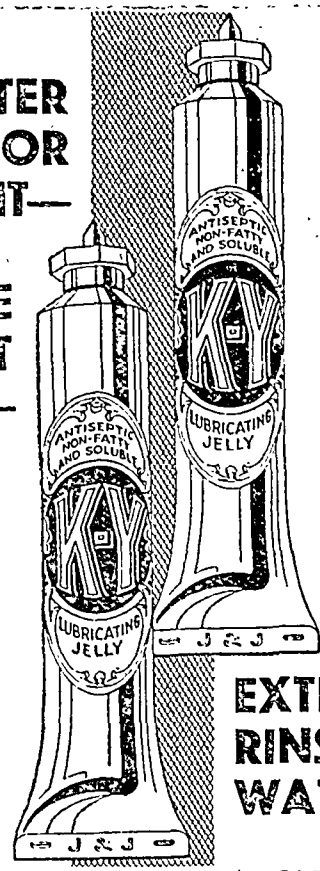
Further particulars, prices, etc., will be sent post free to members of the Medical Profession on application.

Allen & Hanburys Ltd., London, E.2

Telephone: Bishopsgate 3201 (10 Lines) Telegrams: "Greenburys Edo London"

PLEASANTER FOR PATIENT—

MORE CONVENIENT FOR YOU—



For internal examination, manual or instrumental, K-Y Jelly gives the freest lubrication. It flows readily, cannot bind, and is quickly and conveniently squeezed out of its tube in exactly the quantity required. It does not soil clothing and is easily removed from hands or instruments by rinsing them in water.

K-Y Jelly is a blend of certain vegetable substances with carefully balanced proportions of boric acid, and does not interfere with the application of local remedies.

Physicians and Surgeons are invited to write for samples to *Dept. B*, Johnson & Johnson (Gt. Britain) Ltd., Slough, Bucks, stating the name of their local supply house.

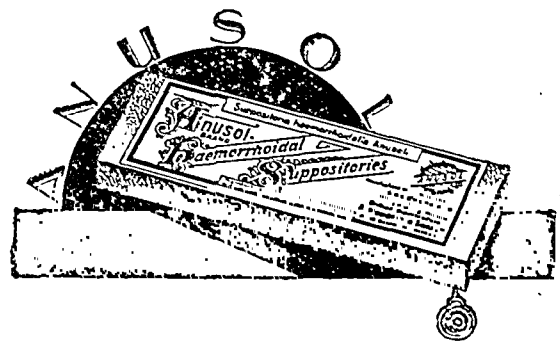
* * *

K-Y Lubricating Jelly is obtainable from medical supply houses and pharmacists throughout the world. Tubes in cartons, 1/3 (Hospital size, 2/6).

K-Y JELLY

EXTREMELY "SLIPPERY"— RINSES OFF IN WATER

JOHNSON & JOHNSON (GT. BRITAIN) LIMITED, SLOUGH AND LONDON



Before the operation—and after.

When operation is inevitable for haemorrhoids, before the operation

Anusol BRAND **Haemorrhoidal Suppositories**

will serve to keep the inflammation down, relieve pain, control haemorrhage.

After the operation, besides their anodyne effect, Anusol Brand Suppositories exert an antiseptic action and protect the field of operation by their astringent and emollient properties. They promote healing.

A trial of Anusol Brand Suppositories will prove a satisfying experience. May we send you a liberal trial package?

British Distributors:—
FRANCIS NEWBERY & SONS, Ltd., 31-33, Banner Street, London, E.C.1
Manufactured by GOEDECKE & CO. LEIPZIG (Germany)

PITUITARY
(Posterior Lobe)
EXTRACT
B.D.H.

It is particularly important that a product of the nature of pituitary extract, which is employed so often in emergency cases, should be dependable. From recent investigations *(Lancet,* March 8th, 1930, p. 522), however, it has been established that the proportions of the active principles vary considerably in different samples.

This significant fact makes circumspection in the choice of a brand of pituitary extract a vital matter.

Pituitary (Posterior Lobe) Extract B.D.H. is doubly standardised—for pressor effect and for oxytocic power—and every batch is guaranteed to be of uniform potency.

Literature and prices on request

THE BRITISH DRUG HOUSES LTD. LONDON N-1

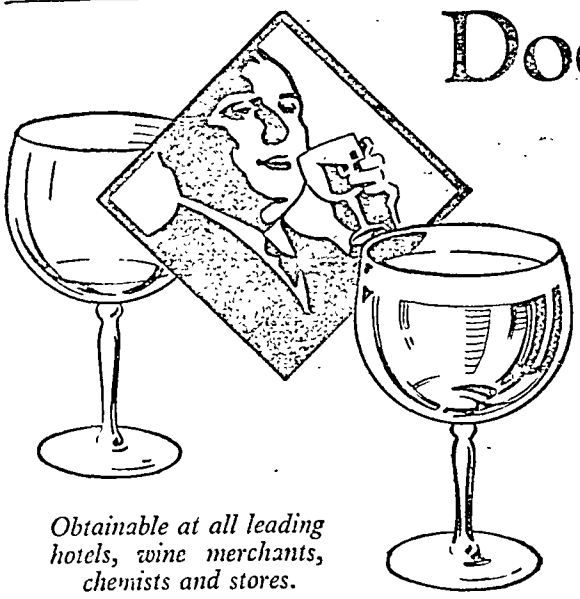
Pit.Ext./14.

You can prescribe
HUMANISED
TRUFOOD
with confidence

Humanised Trufood is unquestionably the closest approach to breast milk yet achieved, both in the proportion and the condition of its constituent, and also in relation to its physical reaction *throughout the whole process of digestion.* Every test known to medical science endorses these facts.

May we send you literature on the subject of infant feeding, and samples of our product? The above will be dispatched promptly on receipt of your professional card.

TRUFOOD LTD., THE CREAMERIES, WRENBURY, Nr. NANTWICH, CHESHIRE.



Doctors have proved its worth

SIR HENRY THOMPSON, the eminent surgeon, in his treatise on "Food and Feeding" said:—

"For those who can afford to buy bottled waters, no purer exists in any natural source than that of our own MALVERN SPRINGS. Certainly, it is wholly unnecessary to import waters for the use of the table from foreign sources.

No foreign waters of any kind whatsoever are so pure or so cheap."

Obtainable at all leading hotels, wine merchants, chemists and stores.

Head Office:
1, Connaught Place, W.2.

MALVERN WATER

THE PUREST SPRING WATER

Independent Evidence by a Leading Professional Journal.

56 THE NURSING MIRROR AND MIDWIVES' JOURNAL. APRIL 19, 1930.

The Nurses' Materia Medica.

A GUARANTEED GUIDE.

By Our Analytical Experts.

No. 16.—ROBOLEINE.

HAVING heard a good deal of the virtues of Roboleine as a good "body-builder" in cases of malnutrition, we selected a sample of this food for analysis by our experts this week, as we desired to know whether it was really as good as it was reported to be. The result has proved that its makers, Oppenheimer, Son and Co., Ltd., are justified in claiming that it contains all the vitamins at present known to medical science, and that it is an excellent digestive food. The sample analysed was found to contain the following:—

	Per cent.
Moisture	23 28
Fatty matter	4 04
Mineral matter	1 72
Phosphate as P_2O_5	0 78
Nitrogen	0 06
Equal to protein (Factor 6.38) ..	0 38
Maltose	52.00

Lecithins and citralis were also present.

Roboleine is no new product. It has been in use for fully a generation, and proved itself valuable over and over again in cases of debility, loss of weight, malnutrition, sleeplessness, and especially so in tuberculous conditions. Nursing mothers have found both the quantity and quality of their milk improved by taking it, and for artificially fed babies it makes a useful adjunct in the diet. Full directions as to dosage are issued with each bottle, and nurses may feel quite safe in taking it themselves when feeling a little run-down, or in recommending a course of it to the convalescent patient just leaving their care. After influenza, typhoid fever, or any wasting condition, Roboleine should be taken regularly for three or four weeks while strength is returning.

The extract given shows the result of an independent analysis on a sample of **ROBOLEINE** purchased in the open market and made by the expert analysts advising a leading professional journal. The report shows that **ROBOLEINE** contains all the vitamins, and it confirms all the claims made for **ROBOLEINE** by the manufacturers, both as a body-builder and an anti-infective.

The Food that builds the Body.

Roboleine

Samples sent gladly on request.

A Product of

Oppenheimer Son & Co., Ltd.,

HANDFORTH LABORATORIES,

CLAPHAM ROAD, LONDON, S.W.9.

DIET IN INDIA

The following striking tribute to the Therapeutic Value of Dimol will appeal to all Medical Practitioners in the East.

"On arrival in this country one commits indiscretions in the way of fruit-eating, cold bathing, etc.

"In a very short time, and for a whole year, I was troubled with recurrent non-amoebic dysenteries lasting about a fortnight at each attack, in spite of diet, bismuth, pulv. cret. arom. c opio, acid sulph. and kaolin. The short intervals between attacks were also periods of dieting . . . and I had to adopt cholera belts even in hot weather. Cold bathing was taboo.

"I should like to say how grateful I am personally to Dimol; I certainly would not be without it now. It can be relied upon to abort an attack and to limit the period of diet to one or two days. I can now eat forbidden fruits (melons, etc.) ad. lib., discard cholera belts, and enjoy an hour's swimming daily.

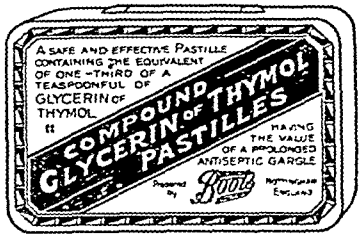
"This is my third hot weather, and I have had only one month on the hills."

——, M.B., Ch.B.(Ed.).

After long and thorough investigation at the Royal Naval College, Greenwich, Dimol pulverettes are now supplied by the Admiralty for use in His Majesty's Ships and Royal Naval Hospitals. The Commonwealth Naval Board has also decided to include Dimol tablets in the Admiralty Scale of Medicines for use in the Royal Australian Navy.

Samples and Literature will be sent on application to the

DIMOL LABORATORIES, 40, Ludgate Hill, London, E.C.4



Full size trial tin free to Medical Practitioners in the British Isles on application to Boots The Chemists, Station Street, Nottingham.

a new & genuine antiseptic pastille

COMPOUND

GLYCERIN OF THYMOL PASTILLES

The increasing use of Compound Glycerin of Thymol as an antiseptic and anti-catarrhal wash has suggested to us the introduction of this Pastille. **Each Pastille contains the equivalent of 20 minims of Glycerinum Thymol Co. B.P.C., fortified by the addition of a powerful new antiseptic, Amyl-Meta-Cresol, discovered in the Research Laboratories of Boots Pure Drug Co. Ltd.**

This antiseptic has a R.W. co-efficient of 250, and the equivalent of 2½ grains of pure Phenol has been added to each pastille.

The Pastilles have a refreshing flavour and will be found entirely pleasant in use.

Obtainable from all branches of

The Boots Chemists

NEARLY 900 BRANCHES THROUGHOUT GREAT BRITAIN

COMPOUND SYRUP OF HYPOPHOSPHITES

"FELLOWS"

Trade Mark



ATONY
DEBILITY
CONVALESCENCE
DEMINERALIZATION

ITS FORMULA

Combines Mineral Foods and Synergistic Agents.

ITS POSOLOGY

One to two teaspoonfuls after meals.

ITS EFFICACY

Is such that under its influence one observes a rapid increase of appetite and a marked elevation of tone.

FELLOWS MEDICAL MFG. CO., INC.
26 Christopher St.
New York City, U. S. A.,

Samples on Request

The Medical Profession when prescribing "Liquor Carbonis Detergens" SHOULD ADD THE WORD

Wright's

On receipt of your professional card, a package will be sent containing a sample of each of the following—

Wright's Coal Tar Soap.
Wright's Coal Tar Ointment.
Wright's Lysol.
Wright's Liquor Carbonis Detergens.

Although there is no secrecy as to the composition of Liquor Carbonis Detergens (it is described as "an alcoholic solution of coal tar"), the method of manufacture is unique. Imitations will be found to be produced by simple digestion, usually accompanied by some primitive, perfunctory, and inadequate stirring; whereas, in the case of the genuine product, the intimate contact required, for the complete extraction of all the soluble antiseptic constitutents, is attained by a series of complicated processes, involving the use of highly specialized machinery.

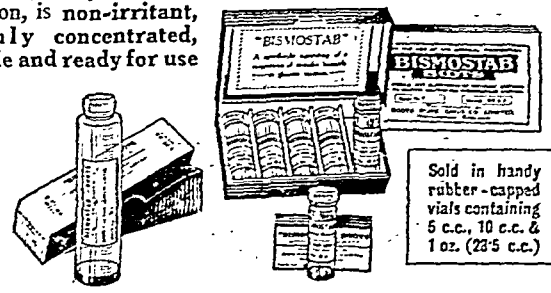
WRIGHT, LAYMAN & UMNEY LTD., 66, Park Street, Southwark, S.E.1

BOOTS PRODUCTS
OBTAINABLE THROUGH ALL BRANCHES OF
The Boots Chemists

WHOLESALE AND EXPORT DEPARTMENT.
BOOTS PURE DRUG Co. Ltd.,
NOTTINGHAM, ENGLAND.
Telephone: Nottingham 45501.
Telegrams: "Drug," Nottingham.

Bismostab (BOOTS)
METALLIC BISMUTH SUSPENSION

THE Standard Bismuth Preparation for the treatment of **Syphilis** and other **spirochætal diseases** (Bismuth having largely replaced Mercury as an adjunct to Arsenobenzol Therapy). Bismostab (Boots), a suspension of specially prepared, finely divided, pure Bismuth metal in 5% Glucose solution, is **non-irritant, highly concentrated, sterile and ready for use**



Sold in handy rubber-capped vials containing 5 c.c., 10 c.c. & 1 oz. (23·5 c.c.)

Purity, Activity and Stability
INSULIN "A.B."
TRADE A B MARK Brand

The world-wide supremacy of Insulin 'A.B.' is due to its unequivocal purity no less than to its well-known potency and stability under all conditions.

20 units per c.c. Packed in bottles containing:
5 c.c. (100 units or 10 doses) 2/- each
10 c.c. (200 „ 20 „) 4/- „
25 c.c. (500 „ 50 „) 10/- „

40 units per c.c. Packed in bottles containing:
5 c.c. (200 units or 20 doses) 4/- each

Full particulars and the latest literature will be sent free to members of the Medical Profession.

Joint Licencees and Manufacturers:

Allen & Hanburys Ltd.
Bethnal Green, London, E.2

The British Drug Houses Ltd.
Graham Street, London, N.1



ALOCOL

Colloidal Hydroxide of Aluminium

THE increasing prevalence of gastric ulcer and hyperchlorhydria has produced an advance in the treatment of these diseases.

"Alocol" (Colloidal Hydroxide of Aluminium) provides an antacid medicament far superior to subnitrate of bismuth, bicarbonate of soda and other alkalis. These merely afford a certain degree of ease, without bringing about a permanent relief of the condition.

"Alocol" absorbs the excess of hydrochloric acid without interfering with the normal antiputrefactive function of the gastric juice or harmfully affecting the processes of nutrition.

"Alocol" has been subject to extensive clinical trial, and literature giving full particulars of the results will be gladly sent to medical men on request.

For Acute or Chronic Cases of Hyperacidity

For Gastric Duodenal or Pyloric Ulcers

A. WANDER, Ltd., Manufacturing Chemists
184, Queen's Gate, London, S.W.7.

Works: KING'S LANGLEY HERTFORDSHIRE.

M.252.

A Distinct Advance Over Preparations of Acetyl-Salicylic Acid

Acetyl-salicylic acid possesses a notable disadvantage. Physicians have proved that it cannot be tolerated by patients suffering with a delicate stomach. Consequently, the value of this medicament in the wide field in which it is indicated is very seriously reduced.

"Alasil" completely overcomes this objection. By combining calcium acetyl-salicylate with "Alocol," unfavourable secondary action upon the stomach is prevented. This beneficial influence is undoubtedly due to the presence of "Alocol" (Colloidal Hydroxide of Aluminium), which preparation has brilliantly stood the test of practice in the treatment of hyperacidity and other ill conditions of the gastric tract. "Alasil" is therefore a triumph over acetyl-salicylic acid. It enables higher doses to be administered and maintains the patient's system under its influence for a greater length of time. Analgesic, Antipyretic and Sedative, "Alasil" is indicated in all cases where acetyl-salicylic acid has been used heretofore.

A supply for clinical trial with full descriptive literature sent free on request.

A. WANDER Ltd., Manufacturing Chemists,
184, Queen's Gate, London, S.W.7.

Alasil

M.255

Assimilation is easy — EFFORTLESS

When solid foods cannot be taken, these Essences quickly stimulate

DURING severe illnesses — pneumonia, gastric disorders, and extreme prostration — there is so often vital need for a food which can be rapidly assimilated without any strain on the digestive organs.

In emergencies of this kind, doctors today find Brand's Essence indispensable. A recent investigation revealed that as many as 99 *out of every* 100 interviewed recommended this product to their patients.

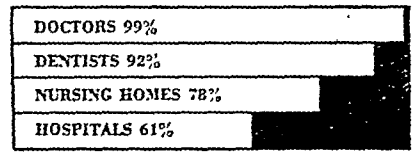
For Brand's Essences contain all those invaluable constituents of meat which promote the flow of the gastric juices and make digestion easier.

Consisting only of the pure essences of the finest fresh meats conserved in their natural form, they can be rapidly absorbed without the slightest strain on the digestion. No substances are added which would prevent easy assimilation — such as colouring matter, gelatine, or preservatives.

During that period in serious illness when a patient's vitality is at its lowest, these Essences never fail to restore energy quickly and easily. And in convalescence, when the very idea of food is repugnant, Brand's Essences bring back the appetite — prepare the patient for more solid food.

In common with other modern doctors, you need have no hesitation in recommending Brand's Essences to your patients. They are obtainable at chemists and stores throughout the world in tins and glasses. Samples will be sent you gladly on receipt of a professional card. Write Dept. F5. Brand & Co. Ltd., Mayfair Works, Vauxhall, London, S.W.8.

Investigation shows that the following percentages of Doctors, Dentists, Nursing Homes and Hospitals interviewed recommend Brand's Essences





BRAND'S ESSENCES

Made only from the finest English Beef, Chicken or Mutton

Through an exclusive process — known only to Brand's — the pure essence of the finest meats is conserved in its natural form

For Threadworms

BAYER PRODUCTS LTD BAYER LONDON

TRADE MARK 'BUTOLAN' BRAND

Bethalan

Carbamic acid ester of p-oxy-diphenyl-methane

EFFICIENT AND PALATABLE

ANTHELMINTIC

'BUTOLAN'

is readily taken even by the youngest children

Entirely non-toxic

No by-effects

Tablets 7½ gr. (0.5 gm.) in tubes of 20 and bottles of 50 and 250

Literature and treatment schedule on request

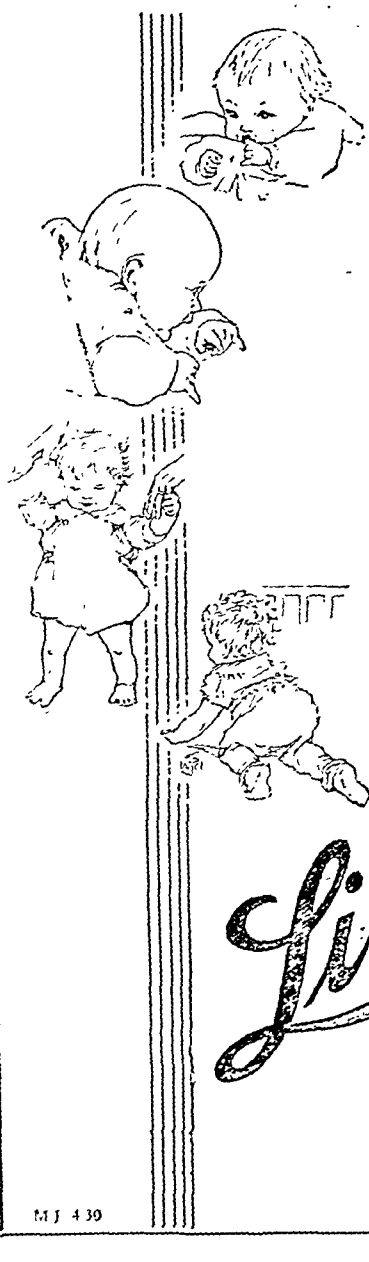
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P.O. Box 2953, CAPE TOWN.

Australasia:
Fassett & Johnson Ltd.,
36-40 Chalmers Street, SYDNEY, N.S.W.
and P.O. Box 33, WELLINGTON, N.Z.

For the BABIES—



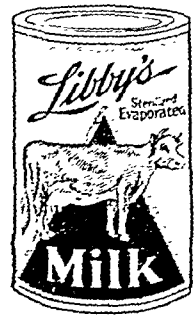
Clean-Pure-Milk as Easily Digested as Mother's Milk...

The process of sterilization absolutely destroys anything that could impair the freshness of Libby's Evaporated Milk. The sealed container provides adequate protection—it makes the milk as safe as if germs and bacteria did not exist. Sterilization gives protection—homogenization breaks up the fat globules into tiny particles and, therefore, makes the fat as readily assimilable as the fat of mother's milk. No matter what formula you may be using as a modification of milk, Libby's Milk is the ideal base from which you can start.

The whole day's feeding can be prepared at once and will keep fresh and sweet.

Libby's Evaporated Milk

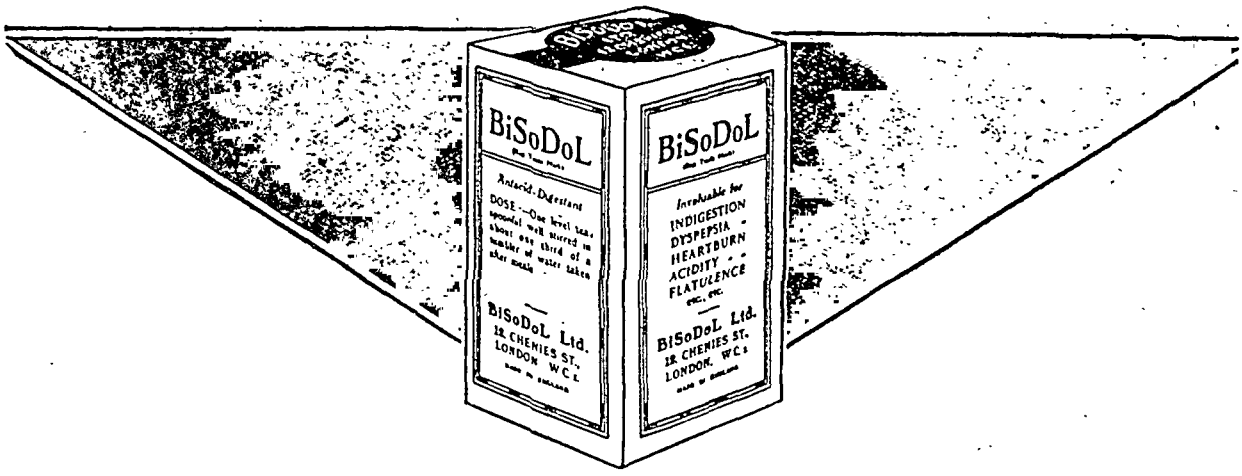
£1,000 will be paid to any Hospital or other public charity if it can be proved that the claims made for Libby's Milk are not in accordance with scientific facts.



Established 1868.

Libby, McNeill & Libby, Ltd.
(Dept. 22), 8, Gt. Tower St., London, E.C.3

MJ 4 30



The Alkalies in Respiratory Diseases

Recent work on influenza, the common cold, pneumonia, and catarrhal fevers in general, has served to focus attention on the value of the alkalies in the treatment of these infections. It has been found that a system saturated with alkalies increases the resistance to bacteria. During the influenza epidemic of 1918, patients so alkalinised showed a low mortality rate and, in the main, a quick convalescence.

BiSoDoL, a balanced alkalinising agent, may be effectively employed to combat acidosis and build up the alkali reserve without upsetting the stomach or causing alkalosis.

The utility of BiSoDol as an antacid in hyperchlorhydria, gastritis, gastric and duodenal ulcer, has been abundantly demonstrated. It has also been given with marked success for the control of cyclic vomiting and the morning sickness of pregnancy.

BiSoDoL

Samples will be gladly sent to Physicians on request.

BiSoDoL Limited,
12, Chenies Street, London, W.C.1.

Milk Intolerance.

For many years Benger's Food, as is well known, has been used by practitioners throughout the world as a routine diet in all gastric cases, debility, and in cases of milk intolerance. The reason for this may be briefly stated:—

Benger's Food is a special wheaten flour preparation containing, in suitable amount, the two natural digestive principles — Amylopsin and Trypsin — in a latent state.

It is devised and expressly intended to be used in conjunction with fresh cows' milk, or diluted milk, if desired.

The two enzymes are in such condition as to exert their digestive powers under the condition which obtains during the preparation for use.

The Amylopsin acts on the carbohydrates (Starch) of the Food and gradually changes it into soluble sugars (Dextrins and Maltose mainly, with a little Dextrose) more or less according to the length of time allowed for digestion.

The Trypsin acts on the gluten of the flour and on the proteins (Casein, etc.) of the milk so that the curd which forms is softened, and as a result it separates in the stomach in fine readily-digestible flocculi instead of large, often indigestible curds. The extent of digestion can be varied; *it is important to note that complete pre-digestion can never take place.*

Benger's Food contains no preservatives. It is palatable and is free from rough irritant particles.

These considerations show that Benger's Food is not merely a mechanical milk modifier — it is a real modifier of a peculiar character.

THE "LANCET"
describes it as "Mr. Benger's admirable preparation."

A Physician's sample will be sent post free to any member of the Medical Profession making application to the Proprietors:—

BENGER'S FOOD, Ltd., Otter Works, MANCHESTER.
NEW YORK (U.S.A.): 90, Beekman Street. SYDNEY (N.S.W.): 350, George Street. CAPE TOWN (S.A.): P.O. Box 575.

Benger's Food, in sealed tins, is on sale throughout the world by Chemists, etc.

M.1133

BENGER'S Food

REGD. TRADE MARK.

NATURALLY RICH



IN VITAMIN "D"

A "RESURRECTION"

THE mother of Baby "H" wrote to our Motherhood Bureau when he was 4 months' old (weight only 6 lbs. 9 ozs.) suffering from Marasmus following Whooping Cough complicated by Double Pneumonia. The infant was put on to *LACIDAC* (Separated) with a small quantity of *BRESTOL* and immediately made steady progress.

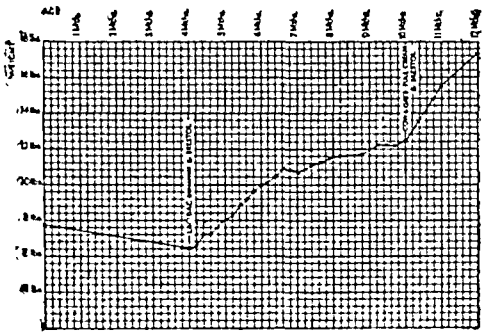
At 6 months he had gained 3 lbs. 7 ozs. and by the end of another 4 months his weight was 12 lbs. 6 ozs., and progress was so good that it was possible to change him gradually on to Cow & Gate Full Cream and Brestol.

He has now cut teeth quite successfully and at the age of 10 months is taking normally to mixed feeding and is a happy, lively baby.

His Doctor considers him a '*Resurrection.*'



BEFORE—4 months' old, 6 lbs. 9 ozs. in weight



Progress chart



AFTER—10 months' old, 12 lbs 6 ozs. in weight

COW & GATE LTD. GUILDFORD, SURREY

©

The Therapeutic Substances (Catgut) Act, 1930, is

THE SURGEON'S GUARANTEE FOR STERILITY



London Hospital

"ULTRATAN"

Chromicized and Plain

CATGUT

In tubes is prepared in accordance with and passes the prescribed tests for sterility of the Therapeutic Substances (Catgut) Regulations, 1930, *License No. 37*

4/6 per 3 tube box; 16/- per 12 tube box

LONDON HOSPITAL

"CHORDA" CATGUT

(Plain and Hardened)

Is prepared in accordance with and passes the prescribed tests for sterility of the Therapeutic Substances (Catgut) Regulations, 1930, *Licence No. 37.* "Chorda" Catgut is supplied on reels in cartons specially treated to render them impervious to moisture or air.



4/6 per 3 carton box
16/- „ 12 „ „

"Chorda" Catgut can be supplied in glass tubes if desired.

All London Hospital Catgut can be obtained from

Allen & Hanburys Ltd., 48 Wigmore St. LONDON, W. 1.

And from all the leading Surgical Equipment Houses

SANDOZ SANDOZ

CALCIUM-SANDOZ

$(C_6H_{11}O_7)_2$ Ca.

Unique Advantages:

1.—It is effective. It supplies the physiologically active calcium ion.

2.—It shows distinct superiority in all modes of administration.

ORALLY: It is well absorbed. It is easily administered and does not upset the digestive tract.

INTRAVENOUSLY: It is better tolerated than calcium chloride. The acid-base factor is eliminated.

INTRAMUSCULARLY: It is painless and non-irritating. It is the only calcium salt which can be so administered in adequate doses.

3.—It enables physicians to adequately meet the requirements of any given case.

BY VEIN, for acute need.
BY MUSCLE, to secure intense and prolonged action.
BY MOUTH, for prolonged administration, to meet an increased demand by the organism.

4.—It is completely sufficient in itself as a therapeutic agent.

CALCIUM-SANDOZ is supplied in

Ampoules containing a 10% sterile solution for intravenous or intramuscular injection.
5 c.c. size: Boxes of 2 and 10 ampoules.
10 c.c. size: Boxes of 1, 5, and 20 ampoules.

Powder for oral administration.—Cartons of 2, 4, and 16 ounces.

Tablets for oral administration.—Each tablet contains 25 grains of calcium gluconate and is especially adapted for division into three parts. Boxes of 30 and 150 tablets. Cartons containing 12 boxes of 30 tablets.

AGENCY:-
THE SANDOZ CHEMICAL WORKS
PHARMACEUTICAL DEPT.
5, WIGMORE STREET, LONDON, W.1.

SANDOZ SANDO

The Ingleby Lecture

ON

THE BLOOD TRAIL.

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BY

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WHEN men and women are impatient in relation to the discovery of causes and means for the cure of dangerous diseases it is useful to remind them of the Blood Trail as a remedy for their impatience.

Knowledge of the blood and its circulation has been acquired by slow and uncertain stages. Our interest in it begins in childhood. The colour and clotting of blood when it escapes from a living animal are among earliest experiences of what was called Animal Œconomy.

It is 300 years since Harvey discovered the circulation of the blood by observation and inference. Malpighi, at Bologna (1661), discovered the capillaries which link up the arterial and venous systems. He also saw the globules now familiar as red corpuscles. Leeuwenhoek (1673) with a simple lens saw the circulating blood in the tail of a tadpole and the web of a frog's foot. An astute observer—John Hunter—expressed this opinion in regard to the globules: The early observers probably imagined more than they saw because they used magnifying glasses!

One hundred years ago there were men who believed the earth to be flat: and there was much argument concerning the red corpuscles of the blood—were they globules or flat discs? In 1827 J. J. Lister, a wine merchant interested in optics, improved the compound lens and enabled observers to determine with certainty that the red corpuscles are circular biconcave discs. In 1862 Hoppe (Hoppe-Seyler) detected the haemoglobin of the red corpuscles. Sir George Stokes, two years later with the aid of a spectroscope, discovered the astonishing part played by haemoglobin in respiration. To-day, even with new *methods of research, it is not known how long a red* corpuscle lives fetching and carrying oxygen.

An expert—Dr. W. E. Cooke—recently describing in great detail the structure of the human erythrocyte, expresses the opinion that a volume could be written on its peculiar nature and character.[1]

Leucocytes.

The white corpuscles—leucocytes—were discovered by Hewson (1774). Seventy years later Wharton Jones detected their amœboid movements (1846). Their curious power of flowing through the walls of the capillaries without breach—diapedesis—was observed by Cohnheim (1867).

In 1883 leucocytes came prominently into notice, in consequence of the dramatic discovery by the Russian biologist Metchnikoff that they had the power of ingesting and digesting *organic particles in the blood, especially* microbes. Metchnikoff died in 1916. His Life, written by his wife, contains an account of the simple way in which the Phagocyte Theory was born. Metchnikoff was at Messina in 1882, and had been watching the mobile cells in the body of a transparent starfish larva, and the idea occurred to him that similar cells might serve in the defence of the organism against intruders. To test this idea he took some thorns from a rose tree and introduced them at night under the skin of some beautiful starfish larvæ: these larvæ are as transparent as water. *In the* course of the thorns were surrounded by mobile cells, as is to be observed in a man who runs a splinter in his finger. This simple experiment laid the foundation of Phagocytosis, to which Metchnikoff devoted twenty-five years of his life.

The Clotting of Blood.

Although coagulation of blood has been studied from early times and keen physiologists have given it attention, no one has found a satisfactory answer to the question: Why does blood clot when it leaves the body of an animal?

There is an aspect of it which concerns surgeons deeply—blood sometimes clots in blood vessels, especially veins, during life, and leads not infrequently to such a disaster as sudden death. Clotting of blood in veins during life has been recognized for centuries, and it is associated with the *condition called phlebitis—simply, inflammation of a vein.* Physicians, when making examination of the bodies of persons who died suddenly, occasionally found a large blood clot firmly plugging the pulmonary artery. In the middle of the nineteenth century it occurred to an observer that the fatal clot was not formed in the artery where it was found after death, but in some remote vessel, and becoming loose was *conveyed by the blood stream to the pulmonary* artery, which it plugged so completely as to cause death in a few minutes. A clot of this kind is sometimes rammed in the vessel as tightly as a pellet in a popgun!

It was Virchow who opened our eyes to such sequences and made physicians and surgeons realize their intellectual blindness.

When a mere boy I read in a medical journal (which I casually found among a parcel of stale papers) a lecture with a strange title—Thrombosis and Embolism. These odd Greek words attracted my attention; in plain English the title may be rendered "Clots thrown from a distance."

Ten years later, when making a post-mortem examination, that lecture came forcibly to my mind. I read with vivid interest Virchow's writings on Thrombosis and Embolism, which was deepened when I began to remove the uterus for fibroids, and came face to face with the part played by sepsis in causing coagulation of blood in the living body. Blood may be regarded as a fluid tissue, of which the plasma is the matrix, erythrocytes and leucocytes the cell elements. This question must occur to many: Why does blood remain fluid in the vessels of *living* animals? It remains unanswered.

Obstetricians and gynaecologists are specially concerned with thrombosis because blood is very apt to clot in the *big pelvic veins of lying-in women, and of men and women* who have been subject to operations on the pelvic organs. In such conditions the iliac, ovarian, and spermatic veins are liable to become reservoirs of blood clot: an entire clot, or a fragment, may be detached and swept by the blood current to the heart. Embolic clots are forcibly ejected into the pulmonary artery, and, when big, plug this vessel and kill the patient.

Post-operative pulmonary embolism occurring as a sequel to abdominal hysterectomy caused me grave concern. When I began to perform abdominal operations I soon realized that the peritoneum would not tolerate carbolic acid, neither in solution nor as a spray. When I restricted antiseptic treatment to the patient's skin and mucous membrane, my operative results immediately improved. *The mortality after hysterectomy for fibroids* fell to 1 per cent. This 1 per cent. was due to pulmonary embolism.

Gradually gynaecologists realized that post-operative embolism very rarely happened after *vaginal* hysterectomy. It is now admitted that post-operative thrombosis of blood in the iliac veins is a sequel of infection of the abdominal wound. The channels of infection are the deep epigastric veins; the iliac veins serve as reservoirs for the big clots which plug the pulmonary artery and lead to surgical tragedies. For example, a stout midwife had a large fibroid which I easily removed, and I secured the abdominal incision with thicker sutures than usual in order to obtain a sound scar in view of her occupation. On the eighth day after operation, at the usual ward visit I noticed that her temperature had suddenly risen to 103°, and said to the house-surgeon: "This forebodes thrombosis of the iliac veins. Pulmonary embolism is impending." *She died suddenly a few hours after the visit.*

I gave instructions for the pulmonary vessels to be carefully examined. The pathologist, knowing my interest in the matter, removed the thoracic organs entire. We examined them and found a *big embolus* plugging the pulmonary artery like a cork. It furnished an abundant growth of the colon bacillus.

In addition to big clots which plug with immediately fatal effect, there are smaller clots which readily traverse the large pulmonary arteries and become arrested in small vessels near the periphery of the lungs. Embolic clots of this kind are troublesome and retard convalescence. Pathologists remind us that every clot found in a pulmonary artery is not embolic. The clot may have been formed

in situ. This is true, and does not disturb the fact that venous blood is more prone to thrombose than arterial blood. *The blood in the pulmonary artery is venous in character.*

Facts accumulated since 1900 make it clear that the naked hands of surgeons are the chief infecting agents which patients risk when they submit to operations; this indictment includes midwifery manipulations.

The chief cause of post-operative thrombosis and embolism is sepsis, and its incidence has diminished enormously since surgeons adopted the habit of wearing sterilized rubber gloves when operating.

Cysts and Menstruating Tumours.

Menstruation—the rhythmical uterine bleeding of women—heralds the attainment of sexual maturity, and occurs monthly in healthy women. The cause, significance, and utility of menstruation are obscure; the blood is furnished by the peculiar tissue of the uterus known as the endometrium. Menstruation is dominated by the ovaries; and their artificial removal is followed by sterility and enduring amenorrhœa.

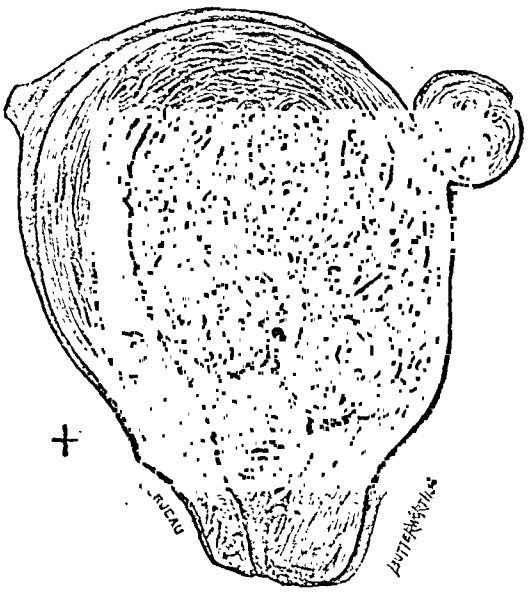


FIG. 1.—Uterus in section with a large patch of adenomyoma on its posterior wall. The new growth has permeated the peritoneal surface of the uterus. (From *Tumours.*)

Menstruation is not confined to human beings. I was astonished to discover its occurrence in macaque monkeys and baboons living in the Zoological Gardens, London; and was able to study this curious process on fresh material, but failed to discover the cause. It was suggested that menstruation happens in monkeys living in the Gardens because they are in a country and climate foreign to them. My observations were communicated to the British Gynaecological Society in 1886. In consequence of these observations W. Heape of Cambridge went to Calcutta for the purpose of studying menstruation in the sacred monkey of India—the Entellus monkey—and described his research in an elaborate paper in the *Transactions of the Royal Society* (1894). Heape's observations bear out in the main my conclusions, but the cause of menstruation remains obscure. The dominant features are these: menstrual blood is furnished by the endometrium; the superficial layer of epithelium is shed during the process; the shedding extends from the uterine orifice of the Fallopian tubes to the internal orifice of the cervical canal.

The ovaries are often occupied by cysts; many are ripening follicles and others are degenerate corpora lutea. It is not uncommon for an ovary to be converted into a cluster of cysts. Distorted ovaries of this kind are familiar to gynaecologists, and it is not uncommon to find them adherent to the body of the uterus, especially its posterior surface. In the course of operations undertaken for their removal the detachment of such cysts is apt to burst them, and they discharge thick blood resembling chocolate or tar; hence the term "tarry cysts" of the ovary. As a rule, both ovaries are affected, and this cystic condition is often associated with adenomyoma of the uterus.

Adenomyoma of the Uterus.

This tumour disease is the product of overgrowth of the endometrium with a responsive increase of the connective tissue in which the uterine glands are implanted. The increase of the endometrium leads to a corresponding enlargement of the uterus, and in clinical features it resembles a submucous fibroid. Operations are usually performed for an enlarged uterus of this kind under the impression that it contains a fibroid, but after removal its nature is easily appreciated on bisecting the mass, for it is unencapsuled and displays an intimate association with the wall of the uterus (Fig. 1). Occasionally buds of the endometrium appear on the peritoneal aspect of the uterus which to the naked eye resemble subserous fibroids, but on microscopic examination they will be found to contain diffuse tissue resembling the endometrium, and they lack a capsule. In typical examples the appearance of the cut surface of a large adenomatous mass resembles the fabric known as "watered silk." In some examples of this disease the uterus may be as big as a coco-nut and clinically mistaken for a submucous fibroid.



FIG. 2.—Microscopic features of diffuse adenomyoma of the uterus. (From *Tumours.*)

The Endometrium—the Organ of Menstruation.

For the proper understanding of the nature of the endometrium it is necessary to bear in mind that the uterus is a hollow muscular organ in which the embryo is nourished and protected from the time it leaves the Fallopian tube until it is fit to be expelled as an air-breathing child.

Until the advent of puberty—declared by the onset of menstruation—the cavity of the uterus is lined with endometrium which is covered with columnar epithelium, and beset with glands which discharge their secretion into the central cleft. The endometrium and the muscular wall of the uterus insensibly blend.

It is common knowledge that the menstrual fluid—mainly blood—is furnished by the endometrium, and this is the essential organ of menstruation. The blood is effused at intervals of four weeks, mixed with shed epithelium. Occasionally the epithelium is shed as a complete cast—menstrual decidua.

It is established that the tissues of tumours are derived from the normal tissues of the body. Tumours do not differ in their habits (ecology) from normal tissues; this is demonstrated in a curious way by tarry cysts of the ovary. In 1920 J. A. Sampson, an American gynaecologist, discovered that the lining membrane of such cysts is structurally identical with endometrium, and the blood they contain is furnished by it. These cysts actually menstruate!

How do they acquire an endometrium? Sampson explains it in this way: During menstruation blood and shed epithelium escape from the uterine cavity into the Fallopian tubes; leaking from the ostia into the pelvic cavity this fluid comes in contact with the surface of the ovary, the cells engraft themselves on the ovary, flourish, multiply and originate an endometrial cyst! I venture to suggest another explanation: Tarry cysts of the ovary are associated with adenomyomatous uteri. In this disease

epithelium is apt to permeate the wall of the uterus and bud-like outgrowths may emerge on its peritoneal surface.

When an ovary lies in contact with an adenomyomatous uterus its tissues may be implicated by the active epithelium and in this way establish a menstruating cyst. An example of such implication is represented in Fig. 3: in this instance the uterine wall is occupied by a localized patch of adenomyoma situated near the tubal angle; to the naked eye it appeared to be an intramural myoma, but unencapsuled. This raised my suspicions, and a microscopic examination proved it to be a localized patch of adenomyoma. The adherent ovary was cystic and the cavities of the cysts contained tarry blood; the endometrium they contained was derived from the uterine endometrium by *permeation*.

Although unconvinced by the theory of implantation secondary to retrograde menstruation I was unable to discard it in the face of the following facts.

A woman, aged 29, complaining of dysmenorrhœa, was submitted to the following operation by Bonney. The uterus was withdrawn from the pelvis through a median subumbilical incision,

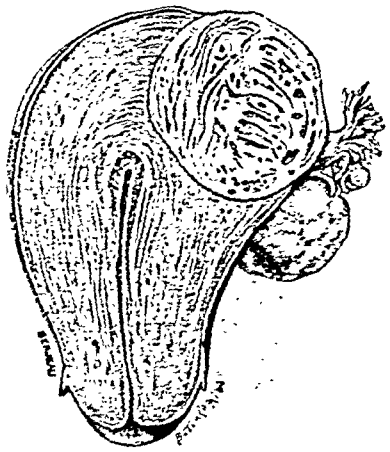


FIG. 3.—Uterus in section with a patch of adenomyoma and a cystic ovary. From a primipara aged 35. (*Tumours.*)

its cavity exposed and the endometrium thoroughly erased. During the operation the margins of the abdominal incision were soiled by blood and endometrial fragments. Two years later the patient returned with a small lump at the lower end of the abdominal scar. This lump swelled during a menstrual period and became painful: it was excised and on microscopic examination displayed the structure characteristic of normal endometrium; there was blood in the stroma and in the lumen of the glands.

This experience has the value of a reliable experiment. The adventitious vascular lump arose in a fragment erased from the endometrium and accidentally implanted on the raw margin of the abdominal incision made two years previously.

The Endometrium and the Mammary Gland: A Comparison.

The endometrium is liable to the same perversions as a compound secreting gland—for example, the mammary gland—with which its functions are closely correlated in reproduction.

When the functions of the menstrual organs are manifest the mammary glands are quiescent, though they may exhibit what is sometimes poetically called sympathy with them in activity. When the endometrium—so far as menstruation is concerned—is in abeyance—for example, during pregnancy—the mammary glands are active, and when the uterus acquits itself normally their activity is manifest.

The correlation of the breasts and endometrium is obvious in a comparison of their pathological tendencies. The essential gland elements of each are liable to similar morbid changes—adenomas, papillomas, and polypi. The liability of the mammary gland to cancer is perhaps greater than that of the endometrium. This may be due to exceptional facility of observation in the case of the breast. The very rare cystic adenomas of the breast are parallel to the large adenomyomas of the uterus.

Cancer of the endometrium differs clinically and pathologically from cancer of its neck, and, like mammary cancer, leads to secondary deposits in the lungs.

The leading clinical features of adenomyoma of the uterus are excessive and prolonged menstruation associated with enlargement of the uterus, which simulates the physical signs presented by a submucous fibroid. The tendency of adenomyomatous tissue to permeate adjacent organs explains its occurrence in the round ligaments of the uterus and the wall of the rectum. In patients under my own observation large adenomyomas were accompanied by excessive and *prolonged* menorrhagia and its sequence—profound anæmia.

The results of subtotal hysterectomy for this disease are admirable. The patients are usually nulliparous—spinsters and barren married women between 30 and 50 years of age.

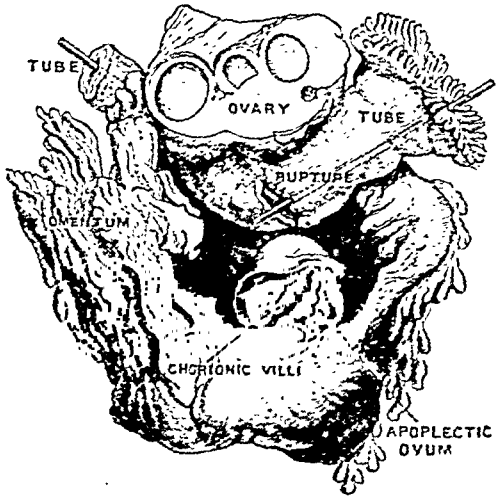


FIG. 4.—Ovary, Fallopian tube, and a fold of omentum, lying in the omental fold—a mole or apoplectic ovum which was discharged through the rent in the tube. Removed by operation in 1886.

An accurate diagnosis is only possible after removal of the uterus.

Note.—Mr. F. Roques lent me some excellent slides obtained from endometriomas, which have been useful in the preparation of this lecture.

Pelvic Hæmatocele.

Fifty years ago textbooks on diseases peculiar to women contained descriptions of disabling, and occasionally fatal, *effusions of blood in the pelvis* which occurred in healthy women in the prime of life. Such collections, when the blood was free in the pelvic cavity, were called intrapelvic hæmatoceles. When the blood was effused between the layers of the broad ligaments of the uterus it was called a hæmatoma. Various causes were suggested to account for such effusions. Occasionally they were profuse and caused death. Nothing was known of the cause.

Lawson Tait simplified our knowledge of these things. When operating on women for the relief of chronic disease of the ovaries and Fallopian tubes he occasionally found an *abundant collection of fresh blood* in the pelvis. His experience led him to announce this bold *generalization*. *Probably all forms of ectopic pregnancy have their starting place in the Fallopian tube.*

Tait produced no evidence to support his opinion. I was impressed with the brilliant conception and looked out for a sign. It came in an unexpected way.

While the Imlach trial was in progress (1886) I operated on a young and recently married woman at the Middlesex Hospital. The patient had been admitted under the care of the obstetric physician (in those days obstetricians did not perform abdominal operations); the pelvic cavity was flooded with blood, and in a pouch of omentum, associated with a rent in the Fallopian tube, lodged an oval body the size of a chestnut. I removed the tube, ovary, and

fold of omentum with the oval body in one piece, and preserved them for future study.

Three years later (1889) a woman was admitted under my care in the Middlesex Hospital with signs of intra-pelvic bleeding. I promptly operated, and found a movable body as big as a walnut with a smooth cavity at one pole, and at once recognized its similarity to the familiar uterine mole. The effused blood and clot were collected, and the operation completed. I then washed the clot in a glass vessel with a gentle stream of water from a tap. Suddenly I saw the head of an embryo rise to the surface in a gentle swirl. This clinched the evidence—I had found a *tubal mole*! The name soon became current in gynaecological literature.

When no embryo is forthcoming the presence of chorionic villi in the mole is now accepted as evidence of tubal gestation.

This lecture was opened with a recital of the Blood Trail. Let me end by reminding you that men who make original observations are often obdurate in accepting the discoveries of their contemporaries.

Harvey discovered the circulation of the blood, but did not believe in the existence of the lacteals described by Aselli (1622). The discovery of the lymphatic system was second only in importance to that of the circulation of the blood.

Baer found the human ovum, but would not accept the idea that the spermatozoon initiates development in the ovum. We may believe that the tail of the spermatozoon led to the discovery, "since things in motion sooner catch the eye than what not stirs."

Lawson Tait, in his vigorous Ingleby Lecture (1886) on Pelvic Haematocele, insisted that the blood came from the sac of an ectopic pregnancy. He not only ridiculed my discovery of the tubal mole, but warned teachers of midwifery against my transcendental notions relating to tubal abortion.

To-day a tubal mole is as familiar to a gynaecologist as a placenta to a midwife.

REFERENCES.

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SPONTANEOUS DETACHMENT OF THE RETINA.

BY

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As far as I have been able to ascertain no general account of Professor Gonin's work on the causation and treatment of spontaneous detachment of the retina has up to now appeared in English. His writings have been either in French or in German, and have been directed to explaining various aspects of his views, but there is no comprehensive article dealing with the matter. Having had the good fortune to see Professor Gonin operate, and to have his views explained to me personally, I think it may be of use to my colleagues and to the medical profession generally if I attempt to place on record what I understand to be the pathological conception on which he bases his mode of treatment.

By spontaneous detachment of the retina is meant the condition of retinal detachment found without evidence of any concomitant gross pathological condition, and excludes intraocular growths, definite inflammation, gross traumatism, etc., the detachment being unaccompanied by any of these factors and apparently having occurred *spontaneously without any obvious visible cause*. It is, however, generally allowed that some degree (not necessarily a high degree) of myopia may be present, or the condition may occur in old people where senile changes exist and without any traumatic history, or only a history of slight jarring, shaking, etc., of the eye or body.

Professor Gonin first visualizes a change in the vitreous, and subsequently in the retina, which may be unobservable to ordinary ophthalmoscopic examination. A partial liquefaction of the vitreous takes place, and a localized or general thinning of the retina, also giving no definite ophthalmoscopic evidence. The retinal change, however, is often in the region of the ora serrata, and therefore not obvious to ordinary ophthalmoscopic view unless extraordinary means are taken, such as full dilatation of the pupil and pressure deliberately made outside by the finger, *in the neighbourhood of the ciliary body*.

The primary change in the vitreous is one of partial liquefaction. The evidence for this is the frequent presence of fine floating opacities in myopic and senile eyes, and the occasional presence of a deformation of the details of the papilla, which vary with movements of the ophthalmoscope, presenting a condition similar to that seen when viewing the fundus through an irregularly astigmatic lens or cornea; in addition we can sometimes see a diffuse opacity in the vitreous associated with "floaters" or streaks, but it is allowed that the ophthalmoscopic evidence of a liquefied vitreous may pass unnoticed or give only very equivocal signs. With regard to the retina, Professor Gonin suggests that the retina, like the choroid, may be subject to strain and stress, and may be the subject of thinnings, atrophic areas, holes, and tears. The retina as well as the choroid is more firmly attached at one place than at another. The optic nerve fibres secure the retina firmly at the optic disc, but the attachment at the ora serrata is thinner, more attenuated, and more apt to fail, either as the result of pathological conditions affecting the choroid, or a senile condition associated with the attenuation of the nerve fibres and its parenchyma. On the other hand, the choroid is more firmly attached to the ciliary body and yields in the region of the optic disc and macula.

The partial detachment and retraction of the vitreous turns that body into a heterogeneous system, consisting of (1) non-albuminous watery fluid, and (2) the unaltered or only slightly altered vitreous gel. This condition has an importance, Professor Gonin thinks, in causing an unequal strain on the thinned and degenerated retina, so that any sharp abrupt movements of the eye or body may result in a sudden pull on the friable membrane. Traversing the liquefied vitreous may be strands of vitreous jelly attached at one point more or less firmly to the membrana limitans interna, and any abrupt sharp movement may cause a definite localized strain or pull at a point in the retina. The presence of any fine adhesion, the result of a small localized inflammation, would fasten the retina at such a point to the underlying choroid and would form an attachment which, as a result of even very slight trauma, would allow a tear to take place if the surrounding area were only supported by a liquid vitreous.

Professor Gonin believes that detachment of the retina only takes place if a tear or hole exists in the retina, and that this hole allows the liquid vitreous to pass through it and so raise the retina from its bed on the pigment epithelium. These retinal tears are usually situated, in recent cases, on the convexity of the detachment, but if and when the fluid shifts further round or down, then the tear may be found at a spot where the detachment has become less raised. Another area where the tears are often found is in the region of the ora serrata, because it is here that the retina is thinnest, most vulnerable, and liable to degenerative and pathological changes either from cystic degeneration or choroido-retinal atrophy. Holes in the area behind the equator are less common, and rarer often than not are the result of gross traumatism or definite pathological change.

Professor Gonin observes that in macroscopical specimens of spontaneous retinal detachment there is no gelatinous clot behind the retina—that is to say, no coagulable exudate the result of inflammation. The preretinal and subretinal spaces are filled with an identical fluid of a watery nature. The vitreous gel is retracted forward, and is best and most abundantly seen between the equator and the ora serrata, and shows more or less extensive adhesion with the retina. These macroscopical specimens frequently disclose the presence of a hole or tear.

A simple progressive stretching is not sufficient to detach the retina from the choroid, as was originally supposed to be the case in myopic detachment; on the contrary, the retina can adapt itself better than the choroid to a gradual enlargement of the globe; the retina yields only to a sudden tension, and is torn either at the

ora serrata or at some point where vitreous bands are adherent to the retina, a condition which is pathological: normally, the retina is not displaced even in complete liquefaction of the vitreous, unless some pathological cause has produced adhesions between the vitreous gel and the retina, and if a contusion occurs it results in a sudden abrupt pull on the thinned degenerated friable retina.

Professor Vogt writing recently in the *Klinische Monatsblätter für Augenheilkunde*, 1929, lxxxii, 619, says:

"It is rarely certain that *traumatic detachment* is caused by such a hole. Contusion produces a tear in the retina which is usually situated peripherally, since there the retina is thinnest and more or less lacks nerve fibres which act as support. Through this retinal perforation vitreous fluid soaks and detaches the retina from its base, the pigment epithelium. In the cases I saw, a vesicle was formed, on whose summit the perforation was situated. In the course of days and weeks the subretinal fluid increases, and larger portions of the retina are detached. Finally total *detachment* results.

"Systematic investigation of *spontaneous* detachments makes it probable that in them also such a tear or perforation is the cause of the detachment. In a large number of such recent cases one finds a perforation, a tear, exactly as in the traumatic type. Here also in the detachment which is only a few days old as yet it is placed upon a vesicle-like elevation, as in the traumatic type. Here also the detachment, originally *circumscribed*, is limited to the region of the tear. It would be denying simple facts to doubt the causal connexion between spontaneous detachment and perforation. I often found the retina in the neighbourhood of the perforation to be broken up into shreds and flakes, a sign that it is tearable and capable of little resistance.

"The weakness of the tissue is also seen in the fact that the retinal tear usually grows larger in the course of weeks or months and *occasionally new tears result. This increase is* probably caused by the swinging movements which the retina performs in the vitreous body during the movements of the globe of the eye and the body by reason of its greater specific gravity. One can, as you know, *control* these swinging movements ophthalmoscopically. I confirmed experimentally that the retina has a greater specific gravity than the vitreous body. Retinal fragments introduced into normal or liquefied vitreous fluid could be re-impregnated in it."

So much, then for the considerations which have led up to the treatment. Professor Gonin had reached these conclusions with regard to the cause of spontaneous detachment of the retina long before he applied them to the question of treatment. If it is the hole or tear, however produced, which is the fundamental cause of the detachment then if that hole can be closed the *status quo ante* ought to be obtained. Eventually he tried.

The operation is not difficult and carries no greater risk than is incurred by the time-honoured cauterization of the globe, which is done for the purpose of establishing drainage for the subretinal fluid and a possible anchoring of the retina to the choroid by the production of a contracting scar. But Gonin's whole point is that it is useless to attempt this cauterization anywhere save in the immediate proximity of the tear. The cauterization must involve the tear, the whole tear, and as far as possible only the tear, and effectively close the hole and "nail" the retina to the choroid by means of a contracting cicatrix. Much time and care must be exercised to locate the spot where the cautery is to enter. The operation is not applicable if the hole is in the region of the optic disc or macula. If the hole is large or multiple then more than one cauterization will probably be necessary, and if it cannot be reached by reason of its position in the eye then the case is not one for his operation. About 22 mm. from the corneo-scleral margin seems to be the practical limit of attempt and even such a point would be difficult to reach with precision.

Search long and diligent must be made to locate the hole, and until it is found it is useless to attempt the operation. When it has been found, it should be accurately localized and the meridian in which it lies marked by a definite technique, so that no hesitation occurs at the operation. The globe is divided for localizing purposes into various planes indicated according to a clock face: vertical, XII-VI; horizontal, III-IX; down and out, and down and in, II-VIII; IV-X, etc.

The meridian, being decided on, is indicated by two small points made at the corneo-scleral margin just under the conjunctiva by means of a pin dipped in Indian ink. Having fixed the meridian, the next point in the localization is to decide how far back the hole is from the ora serrata or from the most extreme point visible to the ophthalmoscope with fully dilated pupil and the eyeball rolled out to the extreme periphery. Professor Gonin has laid down certain figures for our assistance here, also a very explicit and practical paper has been written by Dr. Marc Amsler,[1] a clinical assistant of Professor Gonin's, which gives very useful suggestions for carrying out this task of localization:

"... la question que nous nous posons est celle-ci: combien de diamètres papillaires peut-on compter entre la *déchirure et l'ora*? En d'autres termes, combien de diamètres papillaires peut-on aligner au delà de la déchirure jusqu'à l'extrême limite visible du champ ophtalmoscopique?"

The diameter of the optic disc represents 1.5 mm., the distance from the ora serrata to the limbus is taken as 8 mm., so that if the tear appears to be 4 discs' breadth from the extreme periphery of the visible fundus, with the pupil widely dilated, the tear would be 8 + 6 mm. from the corneo-scleral margin = 14 mm.

Having found the tear, aligned the meridian, and measured the distance from the corneo-scleral margin along that line, and having marked externally on the limbus of the cornea two spots representing the meridian, the surgeon is in a position to decide if he can reach the spot indicated with his cautery. The operation is done under a local anaesthetic and the ordinary surgical technique is carried out.

Before operating Professor Gonin marks his meridian by passing a fine silk thread through the conjunctiva, immediately over the further spot of the two, thus marking the meridional alignment. This thread is knotted and drawn through just as a seamstress does when starting to sew, and is used to indicate the meridian, because, with the manipulation of the tissues, blood and fluid appear inevitably when the operation starts, and the mark previously quite obvious may become obscured; whereas the thread can always be found and made to connect the two spots indicating the meridian, so that the surgeon is never at a loss to recover his alignment during the operation should his marks become obscured. The thread is inserted on the inked spot furthest from the tear, and should eventually connect three points—namely, the two marked with Indian ink and the exact point at which the cautery is to enter the globe.

The sclerotic is laid bare over the area which has been found to correspond with the tear seen within the eye, and by means of callipers the distance from the corneo-scleral margin along the meridional line is measured to a fraction of a millimetre. This spot is marked by the pointed arm of the callipers being dipped in an alcohol solution of gentian violet, so as to mark definitely the exact spot which the surgeon, after prolonged care and calculation, has concluded represents the external point immediately over the hole in the retina. A Graefe's knife is now entered through this spot, the cutting edge of the knife being directed towards the cornea, and the depth to which it is inserted being dependent on the condition of the detachment; if subretinal fluid begins to flow out, the knife must have reached the space just external to the retina and the loss of some of the fluid may allow the retina to fall back nearer the sclera. The knife is withdrawn now, and if the operator inserts his glowing cautery he will produce a "sphere of influence" that is likely to involve the retina at the position of the tear. That this happens in some cases, probably in many, is now, I think, *definitely established*. The heat is sufficient to burn the margin of the sclera, the choroid, and to radiate through the intraocular fluid and inflame the retina. This cauterization produces an area of inflammation which in a few days' time—nine to twelve—causes a contracting scar which ultimately settles down after the inflammation has ceased. In this way it is certainly possible sometimes to close the hole, "nail" the retina to the choroid and sclera, and, if Professor Gonin's conclusions are correct, cure the detachment, the subretinal fluid being absorbed, provided that the communication with the vitreous chamber through the hole is completely closed.

REFERENCE.

[1] *Bull. de la Soc. d'Oph. de Paris*, No. 8 séance, 17, xi, 1929.

SOME PRINCIPLES IN THE MODERN TREATMENT OF RHEUMATIC DISEASES.*

BY

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THE classification of the various forms of rheumatism generally met with varies in different countries—as does also the actual type of disease. This lack of uniformity in nomenclature is one of the causes of the slow progress in the study of this group of diseases up to the present time.

CLASSIFICATION OF RHEUMATIC DISEASES.

The following classification proposed by the British Ministry of Health in its report (J. Alison Glover, 1924) is now generally adopted.

GROUP A.

1. Rheumatic fever.
2. Subacute rheumatism.

GROUP B. Non-articular manifestations.

3. Muscular rheumatism (myalgia), including fibrositis, pleurodynia, and torticollis.
4. Lumbago; classified alone on account of its occupational interest.
5. Sciatica and brachial neuritis.

GROUP C. Chronic joint changes.

6. Rheumatoid arthritis (infective periarthritis).
7. Osteo-arthritis.
8. Gout, acute and chronic.
9. Chronic joint changes unclassifiable.

GROUP A.

With Group A I do not propose to deal, since both the etiology and the treatment tend to have separated this group clinically from the others to a very large extent.

GROUP B.

We must first briefly consider the etiology of non-articular rheumatism. When a muscle is at rest its reaction is alkaline, whereas when it contracts it gives out heat, and sarcolactic acid and succinic acid are produced. In the normal tissues these are quickly got rid of by oxidization with the production of CO_2. In order that this may occur, however, it is essential that these waste products of muscular activity should be removed in the shortest possible time from the site of their formation. If there is a block in the lymphatic drainage system these substances, accumulating locally, will become irritants, and the response of the tissues to irritation is inflammation. The results of this inflammation appear in the small nodules and thickened fibrous bands which are generally found in these conditions. These differ, however, from ordinary fibrous tissue in the fact that they can be massaged away.

Although in this group the bacteriological "focus of infection" is believed by many to be the underlying causative factor, no one has yet demonstrated any specific organism recoverable from the nodules. Infective foci, if found would naturally be dealt with in every case. The most efficient local forms of treatment in this group are hydrological and physical, particularly if sweating can be induced. The principles of these methods will be described in more detail later. Of other general methods, rest, avoidance of cold and constipation, and the adoption of a diet well balanced in both its chemical and vitamin content are the most important.

GROUP C.

The majority of rheumatic patients seen in out-patient departments come within this group, excluding those whose arthritis can be traced to some specific cause, such as tuberculosis, dysentery, gonorrhoea, or the pneumococcus. Many who originally come complaining of vague though distressing gastro-intestinal symptoms will be found to develop chronic joint changes ultimately. At St. Mary's Hospital I have traced the history of a certain number of sufferers with arthritis back for some two years; in about 70 per cent. the primary reason for seeking medical aid was either gastro-intestinal or a complaint of "giddiness." Little attention seems to have been paid to this association of chronic rheumatism with digestive disorders.

If we may omit the consideration of gout (since the literature on this subject is vast, and on the whole better known) we have left for consideration rheumatoid arthritis, osteo-arthritis, and "chronic joint changes unclassifiable."

The term "rheumatoid arthritis" is perhaps one of the most misused in the whole of medicine. It is now generally accepted to mean a disease commonest among, if not confined to, young women, particularly those who follow an indoor occupation, and characterized by a process of "atrophy"—rarefaction and softening of the articular ends of the bones which enter into the affected joints. When the muscles and tendons surrounding the joints retract, considerable deformity will result. In addition, there is usually a considerable wasting of the muscles themselves, and extensive involvement of the periarticular tissues. The joints most commonly affected at first are the smaller joints of the fingers, the metacarpo-phalangeal and wrist joints, and often the maxillary joints. The lesions appear gradually and tend to be symmetrical; they advance progressively and there is in most cases an accompanying secondary anaemia. The etiology is obscure. In the Ministry of Health's report the condition is assumed to have an infective origin, but we all see many cases in which no such origin could be assigned with justice. Infection accounts for the cases seen in male patients, together with a certain and possibly large proportion in the females; the remainder would appear to result from metabolic disturbances—probably from some "endocrine imbalance." This supposition is supported by the observations of Pemberton and Pringle and Miller on the lowered glucose tolerance found in these cases. The joint effusions are invariably sterile.

The preliminary treatment should be directed towards eliminating infection if present. The teeth should be *x*-rayed, and those radiologically and clinically "found wanting" should be removed. As much digestive disorder is probably caused by removing the teeth as there is arthritis cured by it; we may, however, bear in mind the adage that "uneasy lies the tooth that wears a crown." Damp and draughts should be excluded from workroom and dwelling houses. Since the patients generally have a lowered sugar tolerance, it is wise also to exclude excess of carbohydrates from their diet. Ray has pointed out that as most persons with rheumatoid arthritis have been forbidden to eat "red meat," they will have come to depend largely on the carbohydrates, and will need to be persuaded back towards the paths of protein, fat and adequate vitamin content (especially vitamin B). Bread, sugar, jam, pastry, and potatoes are best omitted.

Permanent deformity in this form of arthritis is more to be expected than in any other forms of arthritis. Early and effective splinting is therefore a *sine qua non* of treatment. The subsequent indications are mostly hydrological and physical, and will be dealt with separately. Lately I have investigated the therapeutic value of blood transfusion in rheumatoid arthritis, in certain cases with gratifying results that will shortly be published.

Osteo-arthritis is now considered to be entirely unrelated to rheumatoid arthritis, and the term "arthritis deformans," which formerly included them both, is becoming obsolete. The lesions in osteo-arthritis are primarily those of cartilage and bone, rather than of the periarticular tissues and joint capsule; the cartilage may, in fact, become entirely replaced by fibrous tissue. The trouble is generally confined to one or two of the larger joints such as the hips, shoulders, or knees; and constitutional disturbance is noticeably lacking, though the local joint pain may be severe—usually only on movement. The ends of the bones enlarge and osteophytes form round the edges of the articulations. Briefly, osteo-arthritis may be considered as a "hypertrophic" arthritis, and the rheumatoid form as an "atrophic" arthritis. The various forms of spondylitis generally described are all osteo-arthritic manifestations in the spine.

*A paper read to the Westminster and Holborn Division of the British Medical Association, March 18th, 1930. A cinematograph film illustrating some hydrological methods of treatment was shown (by courtesy of Mr. John Hatton of Bath).

Osteo-arthritis occurs considerably later in life than the rheumatoid and infective forms of arthritis; often in association with arterio-sclerosis, high blood pressure, and local trauma. The evidence on which an infective origin is assigned to this disease seems to me to be unconvincing. A metabolic disturbance, often in combination with slight persistent trauma, seems to be the effective cause in most cases.

The aims of treatment in this group must be to promote the elimination of those products of metabolism which tend at this time of life to be retained more than previously, and for this reason spa treatment is of very real benefit to this class of patient. The local treatment is mostly directed towards relieving pain and improving the functions of the skin and muscles by hydrotherapy and massage, and later by electrotherapy. Finally, if osteophyte formation proceeds apace, steps must be taken to ensure that the inevitable fixation of the joint occurs in a suitable position; orthopaedic measures, both operative and instrumental, may have to be undertaken. It is also very important to deal with any undue increase of body weight, particularly in the so-called "climacteric arthritis," which is generally included under this heading.

Principles of Treatment.

So many therapeutic methods are advocated for use in the rheumatic diseases that it may be profitable to consider those that are most usually employed, and to try to correlate their underlying principles.

Removal of Infective Foci.

The subject of the colon as a source of sepsis is not so simple as was at one time imagined. Most normal persons can, according to Cruickshank, produce a copious growth of streptococci from their stools by the expedient of taking a mild purgative or a carbohydrate diet. One of two main types of bacterial action may obtain in the bowel, the fermentative or the putrefactive, the occurrence of either depending largely on the diet, and being capable of alteration by this means, or by implantation of the *Bacillus acidophilus*: such alteration is sometimes of considerable therapeutic benefit to the patient, even in the absence of definite colitis. Though but little is known of the degree to which retention of faecal contents may influence the arthritic process, experience teaches that it is often wise and beneficial, in the presence of stasis, to aid in their elimination, whether it be by purgation or colonic lavage, or treatment at a spa possessing sulphur or purgative waters.

Vaccines.

Vaccine therapy in arthritis has been, on the whole, disappointing. How far this should be considered to be due to incorrect selection of cases and organisms, and how far to incorrect expectations of the results likely to accrue, is a matter which it is difficult to judge. That in certain cases the results may exceed our expectations is a matter of experience. It is perhaps not sufficiently realized that even if a focus of sepsis is found, it is not of necessity the only existing focus, or the focus causing the arthritis; and to expect a vaccine to restore function to a contractured or ankylosed joint, as many appear to do, is absurd.

Non-specific Protein Therapy.

For some years the injection of T.A.B. vaccine, milk, or other proteins has been advocated in the treatment of arthritis, the rationale being that a high degree of leucocytosis is thereby achieved. Good clinical results are said to occur, but they tend to be of a temporary nature. It has been suggested that it is by reason of their protein content, rather than of their specificity, that vaccines operate for good.

Diet.

The belief that diet is of great importance in the treatment of rheumatic conditions, though up to a point well founded, has proved a source of considerable revenue to the vendors of the various "nature cures" which from time to time become popular. Most of our scientific knowledge of the value of dietetic methods in arthritis is recent, and we owe it to Pemberton and his co-workers in America.

Some fifty years ago the idea arose that this group of diseases was due to the presence of uric acid in the blood stream, and foods whose end-products included uric acid were forbidden. Chief among such foods are glandular organs (liver, etc.) and "red" meat. Most of us must have suspected at times that these foods were less harmful than was generally supposed; it is therefore interesting to note that the American workers find that in cases with an accompanying anaemia they are actually indicated, for the reason that, as in pernicious anaemia, they regenerate the blood and resistive powers. The basis of most of the "cures" advertised is a period of actual or partial starvation. The belief that the lower bowel plays an important part in the etiology of the rheumatic diseases has led to the establishment of "Plombières clinics," or, as the Americans call them, "colon-filling stations." The fact that undoubted benefit often follows colonic irrigation suggests that it is worth trying to control the formation of harmful end-products so far as possible, both quantitatively and qualitatively, by means of dietetic limitation and selection. The association of dyspeptic disorders with rheumatism has also been noted, and in view of both of these indications for a lowered diet we are driven back some way towards these empirical "cures" in our effort to lighten the load on the internal organs. Experience does, in fact, show that limitation of diet, particularly the carbohydrate constituents, is a successful adjunct to other treatment, except where there is an obvious focus of active infection.

The chief foods to restrict are bread, potatoes, rice, pastry, jam, and sweets. Vegetables are valuable as "bulk" in a restricted diet, while fruit and small doses of cod-liver oil will furnish the necessary vitamin content. An additional benefit from such a diet is a reduction in weight in the obese patient, and a consequent lessening of the physical load on his lower joints.

Drugs.

Certain drugs appear to be of use in selected cases, the chief among them being the following.

(*a*) *The Iodides.*—This group seems to benefit a minority of arthritics considerably, and may therefore be tried in the treatment of most cases. Colloidal iodine seems ineffective; the same is true of tincture of iodine, though, if we may judge from the reports of the patients themselves, the French 1908 codex tincture, administered in milk (5 minims thrice daily), is of benefit. This may be due to its potassium iodide content.

(*b*) *The Salicylates.*—These drugs have declined in popularity: their "specific" action has never been very noticeable in cases of chronic rheumatism and arthritis. As aspirin they are useful for their analgesic properties. They appear ultimately to increase the misery of the patient's plight by interfering with his appetite and digestion, and causing also a considerable degree of depression. If used they may be combined with the iodides in one mixture. Recently ortho-iodoxy benzoic acid—a drug closely akin to salicylic acid—has been much lauded in America and France for its prolonged effect. Another and somewhat similar drug recommended by Poynton is tolysin, which lacks the depressive action of the salicylates.

(*c*) *Arsenic.*—This drug has been much used, apparently with gratifying results. It is chiefly indicated, as are most drugs, in cases of the "atrophic" type, and should be given in small doses, gradually increased, over long periods. Arsenic is particularly indicated in cases with an accompanying anaemia, but is also of use when the blood count is normal, on account of its effect on the general metabolism of the body. Care must be taken when using this drug that the digestion is not disordered by it. Sodium cacodylate (1·4 to 1·2 grain) is probably the most harmless form to use when this point is being considered.

(*d*) *Thyroid Extract.*—The observation that in rheumatism the basal metabolic rate often tends to be somewhat below normal (G. Holmes, and others) has suggested that there might be a connexion between rheumatism and thyroid deficiency ("suboxidation"), and the prolonged administration of the extract has accordingly been recommended (Llewellyn). Its use is indicated in cases of "climacteric" osteo-arthritis, particularly if there is an accompanying obesity, and good reports are given of the results achieved.

(*e*) *Sulphur.*—This drug is believed by some, notably Cawadias, to be of value in these conditions; it acts probably by disinfecting the bowel, although it can be shown that the sulphur metabolism of the body is generally disordered.

Physiotherapy and Hydrotherapy.

Although the majority of the principles included under this heading were known to the Romans, the actual methods of applying them have been considerably modified during

the present century, largely as a result of the physiological investigations of the American school, and the pioneer work of Fortescue Fox in England. The term "physiotherapy" includes: heat; general and local massage; exercises, active and passive; electrotherapy; the judicious use of rest; and actinotherapy.

Heat.—Heat applied to the body produces diaphoresis, rise in the pulse rate, an effect on the blood pressure, hyperpnoea, increase in basal metabolic rate and protein metabolism, increase in the relative alkalinity of the blood and body tissues, hyperaemia of the skin, "relaxation" in the muscular tissues, and a general sedative effect. These effects are more noticeable when heat is applied generally; they are also observed to a large extent when only local applications are used. It will be seen that heat may be harmful if applied in unselected cases. The commoner devices for applying heat systematically are the radiant heat cabinet, the hot-air chamber (dry heat), hot baths of various types, the vapour bath, and the mud bath (wet heat). Locally it may be applied by means of electric lamps (radiant heat), infra-red apparatus, the high-frequency current (diathermy), local hot-air baths, mud packs, and douches.

Massage.—Massage is used to increase the blood flow through the affected tissues, to open out the smaller capillary beds, to improve the general or local metabolism of skin or muscle, and to delay or prevent the atrophy of muscle which is so often present, either as a primary condition or as a secondary result of disease due to pain or stiffness. Massage should generally be preceded by general or local application of heat.

Exercise.—Active and passive movement should generally be preceded by massage, and, if the movement of the joint is limited by adhesions, great caution is needed, since inadvertent fracture of the neighbouring rarefied bone may then occur very easily. Carried out in the deep pool or reclining bath such movements are among the most important and most successful operations in hydrotherapy, the warmth allaying muscular spasm, and the weight of the water supporting the limb and protecting it from sudden movement, thus engendering confidence in the patient's mind. Most forms of electrotherapy, such as faradism and galvanism, may also be classed as methods of inducing passive muscular movement. The arthritic of moderate grade should be encouraged to follow any sport that is within his powers, otherwise he may become a chronic invalid and his joints may stiffen rapidly.

Rest.—Local rest for an acutely inflamed joint is provided by nature owing to the pain produced by movement. Systemic rest provides a more difficult problem. From a study of the "prodromal" symptoms of twenty-five patients at St. Mary's Hospital who ultimately developed arthritis, I found that in nineteen fatigue or lassitude was the major initial subjective symptom. This may be attributed either to the increased physical difficulty of "carrying on" under a slowly progressive disability, or to the patient's psychological strain as he visualizes the apparently inevitable approach of complete crippledom. Such a state of affairs suggests the need for great caution in applying exhausting remedies until the patient has accumulated some "reserve" to fall back on. Pemberton aptly parallels the progress of an athlete in "training" to the correct course to be followed in the treatment of these patients. Bromides appear to be useful during this stage of the disease.

Actinotherapy.—Ultra-violet light, in combination with other methods of treatment, may help to produce a satisfactory end-result. It is particularly useful to bed-ridden patients with a certain degree of anaemia and malnutrition, and in conjunction with massage is said to raise their blood count in a remarkable manner.

Conclusion.

It will be realized that the range of therapeutic agents in the rheumatic group of diseases is unusually extensive. It will, I hope, also be realized that the multiplicity of these agents does not in this case indicate failure to find a suitable remedy, since it appears to be more and more obvious that the intelligent *combination* of remedies is the keystone of success, the danger lying in the adoption of any one method of treatment, to the exclusion of the rest.

EPIDEMIC CATARRHAL JAUNDICE.

An Outbreak in Yorkshire.

BY

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AYSGARTH.

No apology is needed for an account of an outbreak of catarrhal jaundice in Wensleydale in the North Riding of Yorkshire when it is stated that more than 250 cases have occurred among a population of only 5,700, living in a part of the valley less than twenty miles long. This paper, it is believed, will help to show the definite spread from case to case rather than from some common source, will confirm the estimation of an incubation period arrived at by Dr. Booth,[1] and will describe unusual points in the clinical characteristics of the disease.

Wensleydale has apparently not been immune from epidemics of this nature in the past; an epidemic of a less serious character in 1910 is remembered. As a recently qualified assistant, jaundice in epidemic form, a zymotic disease unmentioned in my medical curriculum, caused me the greatest perplexity, but my principal assured me that epidemics had frequently occurred in his thirty years of practice. Soon after the date of this epidemic Cockayne's[2] article appeared, distinguishing the disease from the more serious Weil's disease, and suggesting the name "epidemic catarrhal jaundice."

Lately, an account of an epidemic of jaundice in the Midlands has been recorded in a Ministry of Health publication by Morgan and Brown,[3] who sought to establish its leptospiral origin, but without success. A more recent publication by W. G. Booth[4] in *Public Health*, of an epidemic in Surrey, resembles in many ways the one here recorded.

Wensleydale is a broad valley, watered by the River Yore; the altitude of the villages, hamlets, and isolated farms, where these cases were seen, ranges from 600 to 1,000 feet. The water supplies are exceptionally good for a country district, and are separate for each village, the water being neutral in reaction. The district is tolerably prosperous, and there is an absence of poverty with concomitant dirt and ill-feeding. In common with most of rural England, the rat is much in evidence, but there is little likelihood of contamination of foodstuffs, as the standard of domestic cleanliness is traditionally exceedingly high. There is constant communication between the villages, which are united by ties of relationship and friendship, and there is no difficulty in accounting for the spread of an infection, although to trace the actual conveyance of this disease from case to case between the villages has been found difficult.

History of the Epidemic.

The epidemic began in the neighbourhood of Wensley, a village in the lower part of the Dale, in October, 1928. The disease attacked 18 out of 56 children in the Wensley school. No cases appeared in any other of the villages until January 29th, 1929, on which date the disease developed in two boys attending the Askrigg school, ten miles distant from Wensley. Then followed a remarkable spread in this school, 32 out of 81 being affected, the last on July 15th. Bainbridge, the sister village to Askrigg, remained immune until April 16th. The spread of the disease in this village is so significant that it is recorded in full, with dates of commencement of the cases, which appear in monthly crops.

	Illness commenced.
Harold P., school child	April 16th
John T., ,, ,, ...	May 14th
Harry B., ,, ,, ...	May 16th
Frank P., ,, ,, ...	May 19th
Mary M., ,, ,, ...	May 22nd
Leonard P., aged 15	May 19th
Jas. M., school child	June 13th
Jas. P., ,, ,, ...	June 17th
Walter B., ,, ,, ...	July 8th
May L., ,, ,, ...	July 24th

S. P., aged 32, who began with jaundice on August 24th, and who sold sweets in the village shop, probably at this point preserved the link.

The next recorded cases are: Hilda M., September 25th; Richard S. and Annie S., October 25th; Peter L., November 17th.

The last case is most helpful in arriving at the incubation period, as, having developed measles on October 18th, he was not at school after October 17th or in contact with any cases of jaundice—that is, for a period of thirty-one days. During this period cases developed in all the villages in the area.

As stated previously, the spread between the villages was found difficult to trace; the following, however, is a clear record of such. According to my list, only five cases developed between September 25th and 30th, and the sole factor in common was that the patients attended a village fete at Thornton Rust on August 28th. After a prolonged search it was found that Dorothy A., an Aysgarth girl, who developed the disease on August 23rd, was also present. She was in the house of one of the victims, and spent most of the afternoon with another, a girl of 16, who developed the disease on September 30th; this latter girl served in a shop in West Burton, four miles away, and was the first case in this village. Other cases developed there subsequently on October 27th, November 4th, and November 5th (two cases), contact being proved with this girl in each instance.

Method of Infection.

The following is typical of the spread of the infection, and occurred in a family of young adults and among their friends:

Name	Illness Commenced.	Remarks
Jane	August 16th, 1929	Infection not traced.
James } Sarah }	September 14th, 1929	
William ...	October 11th, 1929	
G. S. .. .	October 12th, 1929	A great friend of the family, often in the house.
Ann .	November 7th, 1929	
Jennie U. ...	November 8th, 1929	A little girl, inseparable from the family.
W. M. ...	December 4th, 1929	Fiancé of Ann.
D. U. ...	December 2nd, 1929	Two-year-old sister of Jennie U.
Jno. U. ..	December 29th, 1929	Father of U. children.

The intervals here are 29, 27, 28, 27, 26, 27, 26, and 27 days.

An epidemic caused by contamination of water or food by the leptospira or other organism would appear simultaneously over an area corresponding to the distribution of these. This epidemic presents entirely different features, which can be best explained by assuming personal transference, probably by droplet infection.

Period of Incubation.

In families it was noticed that cases either appeared simultaneously or at long intervals. In the "C" family, Tom and Vera commenced on March 17th and 19th respectively, their father on April 17th. In the "K" family, Jack commenced on June 17th; Arthur, attending a different school, in which there were no cases at the time, commenced on July 14th.

There were in all 39 instances of case to case spread, the intervals between which were as follows:

In 6	instances	the	interval	was	26 days.
,, 6	,,	,,	,,	,,	27 ,,
,, 4	,,	,,	,,	,,	28 ,,
,, 7	,,	,,	,,	,,	29 ,,
,, 5	,,	,,	,,	,,	30 ,,
,, 5	,,	,,	,,	,,	31 ,,
,, 2	,,	,,	,,	,,	32 ,,
,, 1	instance	,,	,,	,,	33 ,,
,, 2	instances	,,	,,	,,	34 ,,
,, 1	instance	,,	,,	,,	35 ,,

These figures suggest an incubation period varying from twenty-six to thirty-five days, thus confirming and slightly modifying Dr. Booth's[1] conclusion that it was not less than twenty and not more than forty days.

Period of Infectivity.

The periodicity of the cases in families, of which a typical instance is quoted above, surely suggests that the infective period of any one case is short. If this was not so, it is unlikely that the monthly interval would have been preserved.

Degree of Infectivity.

Close contact appears to be necessary for the transmission of the disease. In the "K" family already mentioned the two boys slept together; a little sister (aged 4), the mother, and the father escaped infection. In another family two grown-up girls who slept together developed the disease on March 21st and April 19th respectively. No other members of the household, which is a large one, were affected.

Age and Sex Incidence.

Out of 118 cases attended personally, 40 were in patients above the school age, a proportion greater than in previously recorded epidemics. The ages of the patients were as follows:

Age.	Cases.
0-5	7
6-10	41
11-15	33
16-20	13
21-30	13
31-40	6
41 and upwards	5

The youngest patient was 2 years old, and the oldest 79. Thus it appears that it is a disease attacking all ages indiscriminately; it occurs mainly among school children simply because the school provides the opportunity of infection. Of the 118 patients, 62 were males and 56 females.

Clinical Features of the Disease.

Cockayne[2] suggested that most cases of catarrhal jaundice were sporadic instances of the disease he described, and the long incubation period renders this feasible. However, in this epidemic, abdominal pain was occasionally of a severity not usually associated with catarrhal jaundice. It occurred in the early stages of the disease, and, combined with vomiting and consequent collapse, gave a picture so like an acute surgical condition that the diagnosis was a matter of great difficulty. The following case illustrates this.

H. A., a farmer, aged 35, on April 17th, 1929, complained of indigestion. On April 21st he was slightly jaundiced, but said he felt better, and asked to be allowed to take a short walk. This concession was construed into a tramp of several miles, including a climb of 500 feet, to see his sheep. On April 22nd, at 7 a.m., an urgent message was received, to the effect that he had had severe abdominal pain for several hours, and had vomited once. He was found to be collapsed, with a feeble and rapid pulse; the face was blanched and pinched. There was tenderness in the epigastrium. The abdomen was full, but not rigid; liver dullness was present; the bowels had not been opened. His condition gradually improved, but he was watched anxiously for several hours, and a diagnosis of perforated duodenal ulcer was seriously considered.

This is not an isolated instance, and it would cause me no surprise to hear that abdomens have been opened in such cases on the assumption that perforation had taken place. What we always deplore—the distance of forty miles from hospital and surgeon—was for once in the patient's favour.

Another apparent difference is the infrequent enlargement of the liver; in only 16 out of the 118 cases was this made out, the edge of the organ being felt in 4. As in other respects the cases conformed to the usual conception of catarrhal jaundice it is not necessary to give the symptoms in great detail. There was a pre-icteric stage lasting from four to ten days, with loss of appetite, nausea, vomiting, abdominal pain, and pains in the back and limbs. The temperature was usually raised, 103° F. being the highest recorded. Jaundice, rarely deep, lasted usually for fourteen days, but occasionally for a longer period, and in the worst case for three months.

The disease was in marked contrast to Weil's disease, or spirochaetal jaundice. Haemorrhages were represented by epistaxis in three instances, and petechial rashes in two.

about to be carried out by more capable hands, through the kindness of Dr. Burrell at the Brompton Hospital, Dr. Goodchild at Blencathra Sanatorium, Dr. Peill at The Sanatorium, Bridge-of-Weir, Dr. Varrier Jones at Papworth, Dr. Dickinson at Newcastle, and possibly also in Lancashire.

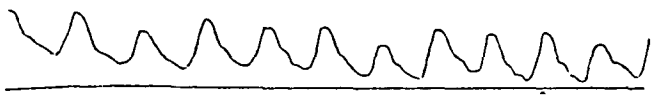
A CASE OF AORTIC STENOSIS.

BY

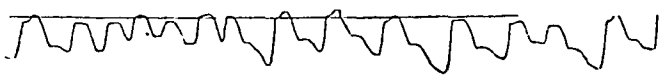
W. HARVEY BENNETT, M.D.,

BOLTON.

THE patient whose case is here recorded was a married woman, aged 53; she had had one child, which died in infancy. She gave a history of being a normal child till



Pulsus alternans, August 7th, 1929.

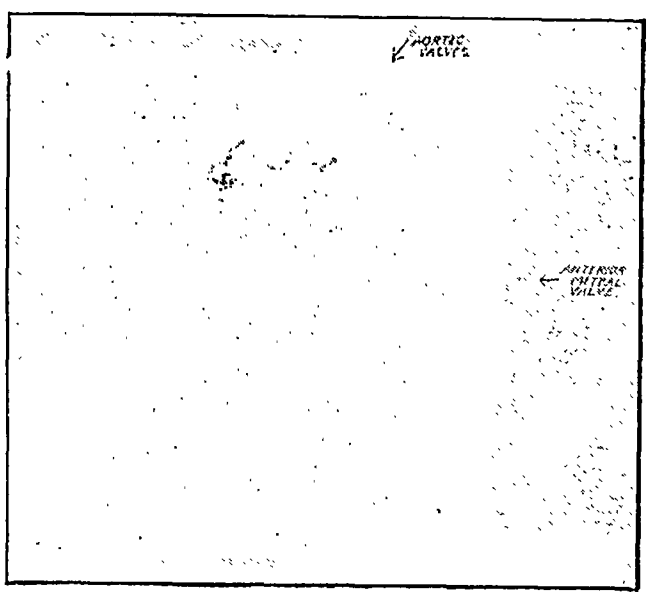


Auricular fibrillation, August 8th, 1929.



Anachrotic and coupling of beats, August 16th, 1929.

she was 7 years of age, when she had a slow fever with extreme weakness and purpura; she was confined to bed for many weeks, and she never completely recovered her strength, though her general health was good and no medical attention was required till she was about 35 years of age, when increasing shortness of breath compelled her to seek advice. She was then told that she had a very loud murmur, was advised to rest and not in any way to exert herself or hurry—that there was no danger in her



condition provided she avoided strain. The doctor kept her under observation till he died.

She first consulted me in 1926, complaining of breathlessness, dyspepsia, and insomnia. The pulse was 100, with occasional intermission. The area of cardiac dullness extended 5 inches to the left and 2 inches to the right of the mid-sternal line; the apex beat was heaving and well outside the nipple line. A loud aortic systolic with thrill and double mitral murmurs were present.

The dyspepsia and insomnia were relieved by bismuth, magnesia, and bromides. Calcium seemed to relieve the breathlessness, and she continued to take tablets of calcium lactate, 5 grains, daily for about three years, as when she discontinued them she always felt worse.

On June 10th, 1929, the pulse was 84, and there was an increase in the frequency of intermission. She complained of breathlessness, a done feeling in the abdomen, and loss of appetite. The liver was enlarged 2 inches. Digitalis, sp. aether. sulph. co., and tr. card. co. relieved the distress and she went to the seaside for rest and change of air. At the end of a week she returned home, much worse, with pleural effusions reaching symmetrically to the angles of the scapulae, and went to bed for complete rest. She became orthopnoeic; the temperature was raised intermittently to about 100°. The pulse was anachrotic with intermissions—partial heart-block. Pulsus alternans and then auricular fibrillation developed, as shown in the tracings. There was coupling of the beats after digitalis in small doses, but after fibrillating for one week the pulse dropped from 130 to 80. The blood pressure was 140 systolic and 90 diastolic.

On August 8th there was evidently infarction of the right lung, as effusion increased on that side, and blood was found mixed with the fluid when 30 oz. were removed, giving some relief to the dyspnoea. The urine also contained blood at about that time.

Death occurred from cardiac failure on August 22nd, and, though a private patient, I was able to obtain the heart for examination.

The heart weighed 17 oz. The aortic valves were calcified and admitted a finger-tip. Ulceration and vegetations were present on the cusps. The mitral ring admitted two fingers; the valves were thickened but not deformed; there was a deposit of calcium at the base of the anterior curtain. The extent of calcification is shown in the radiogram.

In this case evidently a rheumatic infection in childhood had caused changes in the valves—especially the aortic—which steadily progressed during forty-six years to calcification, and ended in ulcerative endocarditis with infarction of lung and kidneys.

One is in doubt as to the advisability of administering calcium in such cases. The association of auricular fibrillation with infective endocarditis is said to be rare, and is worthy of note.

VALUE OF THE BROMINE TEST FOR DIAGNOSIS OF PREGNANCY.

BY

GLADYS H. DODDS, M.D., D.P.H.,

ASSISTANT IN THE OBSTETRIC UNIT, UNIVERSITY COLLEGE HOSPITAL.

IN the *British Medical Journal* of November 2nd, 1929 (p. 829), C. 1. B. Voge described a new test for pregnancy. The test, which is simple and inexpensive, can be carried out by any practitioner and an immediate result obtained. Voge correlated his findings with those of the Zondek-Aschheim test and found a very close relation between the two. The drawback to the general use of the Zondek-Aschheim test is that it is expensive and requires a laboratory with a supply of immature female mice.

The reaction consists in the detection of the presence in the urine of compounds of the β-iminazolyl type by means of bromine water. Bromine water of ordinary laboratory strength (2 per cent.) is used and diluted with twice its volume of tap water; 1 c.cm. of this solution is added to 2.5 c.cm. of urine in a test tube and the mixture is brought to boiling point. A positive reaction is indicated by the presence of a pink or pinkish-brown coloration, which rapidly fades. In a negative reaction the original yellow colour remains. The reaction of the urine requires to be observed because in acid urine the coloration of the positive test is pinkish-brown, while in alkaline urine it is pink.

Application and Results.

We have carried out the test on 380 patients at the Obstetric Department, University College Hospital. The test was done on fresh urine specimens, and the results are recorded in the following table:

Duration of Pregnancy.	Positive.	Negative.	No. of Cases.	Percentage of Error.
Ante-natal Cases				
Up to 12 weeks	6	1	7	14·2
13-16 ,, ...	9*	2	11	18·7
17-20 ,, ...	25	8	34	23·5
21-24 ,, ...	19	11	30	36·6
25-28 ,, ...	44	20	64	31·2
29-32 ,, ...	34	6	40	15
33-36 ,, ...	12	5	17	29·4
37-40 ,, ...	21	5	26	19·2
Total ante-natal cases	171	58	229	25·7
Puerperal Cases				
1st-7th day of puerperium	24	11	35	
8th-28th ,, ...	17	23	40	
Gynæcological Cases ...	11	65	76	13·1

* One case of hydatidiform mole is included in this group.

It is apparent that the test is not pathognomonic of pregnancy. The error of 25.7 per cent. among the ante-natal cases makes the test of little, if any, value. The urine was pale in colour and of low specific gravity (1002-1004) in a number of the pregnant cases with negative bromine test. This may mean that the urine was too dilute to give a positive result. The test was positive in two cases where the foetus was known to have died twenty-four to forty-eight hours before the test was carried out. The positive result in the case of hydatidiform mole agrees with the theory that the test is dependent on a hormone formed by active placenta. Finally, the error of 13·1 per cent. in the non-pregnant group makes the test valueless in the diagnosis of pregnancy. The ten positive non-pregnant cases were: fibroid 1, retroverted non-pregnant uterus 1, cervicitis 2, prolapse 1, chronic pelvic peritonitis 1, menorrhagia 1, right-sided pain 1, and chronic pyelitis 2.

Conclusion.

It is clear that the bromine test is not pathognomonic of pregnancy, although the frequency with which a positive result is obtained is interesting and suggestive.

I am indebted to Professor F. J. Browne, director of the obstetric unit, University College Hospital, for permission to publish these results.

THE FAMILY INCIDENCE OF JUVENILE RHEUMATISM.

BY

N. GRAY HILL, *M.C.*, M.B., B.S., D.P.H.,

AND

MARY ALLAN, M.A.

INFORMATION has been collected from the parents of 400 of the rheumatic children that have been nursed at Queen Mary's Hospital, Carshalton, relating to the incidence of rheumatic manifestations in their families. The knowledge so obtained has been briefly summarized in the three following tables.

TABLE I.

Total number of families investigated	... ...	400
Total number of children in these families	... ...	2,156
Total number of rheumatic children in these families		540

TABLE II.—*Showing the Composition of the 400 Families, and the Number of Rheumatic Children in them.*

Families with	1	child	...	19;	rheumatic children	...	19
,, ,,	2	children	...	51;	,, ,,	...	56
,, ,,	3	,,	...	70;	,, ,,	...	81
,, ,,	4	,,	...	41;	,, ,,	...	59
,, ,,	5	,,	...	45;	,, ,,	...	66
,, ,,	6	,,	...	47;	,, ,,	...	67
,, ,,	7	,,	...	32;	,, ,,	...	48
,, ,,	8	,,	...	28;	,, ,,	...	38
,, ,,	9	,,	...	19;	,, ,,	...	32
,, ,,	10	,,	...	18;	,, ,,	...	27
,, over	10	,,	...	29;	,, ,,	...	44
Total			...	400	Total	...	540

TABLE III.—*Showing the Number of Parents with a History of Juvenile Rheumatism.*

Both parents	6 cases	= 1.5 %
Father (*but not mother*)	49 ,,	= 12.25%
Mother (but not father)	67 ,,	= 16.75%
Neither parent.	278 ,,	= 69.5 %
No family history of juvenile rheumatism	171 ,,	= 42.75%

In some cases it has been rather difficult to assess the value of the histories given by the parents about themselves, and still more so about their more distant relatives, but the information concerning the patients' brothers and sisters should be fairly reliable. The term "rheumatism," as commonly used, denotes many different pathological conditions, and embraces rheumatoid arthritis and even osteo-arthritis, fibrositis, myositis, myalgia, and other more *ill-defined maladies, so that the answers to questions are* often difficult to interpret. It is possible, of course, that in a certain number of instances adults may develop a disease closely analogous to acute or juvenile rheumatism, but *in the great majority of cases they suffer from the* rheumatoid diseases that are distinctly different, although there may be certain etiological factors in common.

For the purposes of this investigation the chronic rheumatic conditions met with among the middle-aged and more elderly have been disregarded, and special stress has been laid on a history of acute rheumatism, rheumatic fever, chorea, or heart disease, or some combination of these ills, *making their first appearance in the parents before the age* of 25. In a certain number of instances a rather arbitrary decision as to the nature of the disease has had to be made from the evidence available.

It is interesting to note that in not one of the large families—those with six children or more—was there a majority of rheumatic children; in many instances only one member of the family shows evidence of the disease. *It is of course possible that a more exhaustive inquiry,* made only after the entire family had passed the age of 25, would show an increased number of rheumatic members; but the present rather limited inquiry seems to indicate *that very few of the brothers and sisters of the rheumatic* patients develop the disease. This is surprising, since they must live under similar environmental conditions, and in all probability will get very much the same amount of maternal care and home comfort, and the same diet, while they are exposed to the same risk of infection and possess the same hereditary predispositions.

In our series there are eight pairs of twins, and in not a single instance have both twins developed recognizable manifestations of rheumatism. A rather striking point is that in only six families do both father and mother give a history of juvenile rheumatism, and in only a comparatively small number of instances is there a history of rheumatism among both the father's and mother's relatives, a point of more significance when the size of many of their families is considered.

There is, however, slight evidence in favour of the view that juvenile rheumatism occurs more frequently in certain families than in others. Excluding the children who have been patients at Carshalton, the families investigated comprised 1,756 children. Probably less, and certainly not more, than 2 per cent. of children develop rheumatism, so that if those other children were absolutely comparable with the rest of the child population, we would expect to find rather less than 35 cases of rheumatism among them, while, in fact, we find 140 cases.

We wish to thank Dr. Gordon Pugh, medical superintendent of Queen Mary's Hospital, Carshalton, for permission to publish these notes.

Memoranda:
MEDICAL, SURGICAL, OBSTETRICAL.

THE BLOOD PICTURE IN MEASLES.

IN Stitt's *Practical Bacteriology, Blood Work, and Animal Parasitology* (eighth edition) there is this statement: "It has recently been claimed that a leucopenia with a coincident marked reduction in the lymphocytes is characteristic of measles, and this occurs several days before the Koplik spots appear." On page 353, however, is the statement: "The leucopenia and lymphocyte *increase* in measles are important points in differentiating it from scarlatina" (italics mine).

In every one of 30 cases recently under my care I can endorse the first of these conflicting statements. In each instance I had, as a routine measure, made a differential count when the child was in good health, taking the blood at the same time of the day in all cases. When they became measles contacts I made bi-weekly counts, and another immediately at the onset of malaise. Comparing the count in health with that at the onset of illness I found, not only a marked reduction in small lymphocytes, but a marked increase in "others," and a reduction in eosinophils with the usual "shift to the left" and a resulting lower "weighted mean." This was found before Koplik spots—when these were present—appeared. On the strength of these findings I was able to isolate cases some days—up to five—before the rash developed.

The Arneth method was used, counting 200 white corpuscles on each slide, and arranging them in seven groups, as shown in the following table, in which three very severe measles cases are taken as illustrative of the others.

Groups.	Case I.		Case II.		Case III.	
	In Health	Five Days before the Rash	In Health	Three Days before the Rash.	In Health.	Four Days before the Rash.
Polymorphonuclears:						
One nucleus...	9	56	12	60	18	42
Two nuclei	72	88	64	55	62	79
Three or more nuclei ...	53	14	30	4	42	10
Others (large mononuclears, transitionals, mast cell-)	14	34	27	67	28	54
Large lymphocytes	9	3	9	1	10	6
Small lymphocytes	40	5	44	13	37	8
Eosinophils	3	0	14	0	3	1

Incidentally Türck cells were commonly present and a leucopenia of 4,500 to 5,000 was the rule. I have the records of all these cases, should anyone be interested. I am only tempted to publish these results because the literature is difficult to find.

Battle. H. ANGELL LANE, M.R.C.S., D.P.H.

STRANGULATED HERNIA OF THE BROAD LIGAMENT.

THE following is a record of a case, recently attended by me, of strangulated hernia of the right broad ligament, a condition which must be extremely rare, if not unique.

About three years ago the patient, a married woman aged 56, was operated on for pyloric stenosis due to chronic ulcer, a posterior gastro-enterostomy having been performed. On January 23rd, 1930, repeated attacks of vomiting occurred. Abdominal examination revealed nothing definite. On January 30th severe vomiting recurred, but ceased, and again there were no signs. The following day it again recurred, and on examination at 1 p.m. the right side of the abdomen was found to be very rigid, and there was tenderness over the appendix region, but no visible peristalsis. The bowels had not acted for two days; the vomit was not faecal. The temperature was 99.2° F. The colon was washed out, with unsatisfactory result. At a further visit, at 4.30 p.m., it was found that the vomiting had persisted, and that the condition of the abdomen had not changed. Acute appendicitis, or, alternatively, intestinal obstruction due to a band, was diagnosed. At 5.30 p.m. the vomiting had abated considerably; the abdomen was quite flaccid, distension having completely disappeared, and there was no tenderness. The bowels had not acted; apart from this there were no signs. The temperature throughout varied between 97.5° and 99.5°. In view of the history of vomiting and rigidity, however, it was decided to operate, and at 8.30 p.m. the abdomen was opened by Mr. Neil Sinclair. Free fluid was found; the small intestine was injected, and search revealed strangulation of a loop of small intestine through an opening in the right broad ligament between the ovary and the uterus, about half an inch below the Fallopian tube. The opening was about 1 inch in diameter, and about six inches of gut had found its way through from the anterior aspect and lay in the pouch of Douglas. The edge of the opening was firm and white, and was obviously of old standing. The gut was not in the slightest degree adherent. Strangulation was relieved, and the opening was abolished by dividing the Fallopian tube and the portion of broad ligament between the tube and the opening. The patient made an uneventful recovery.

It would be interesting to receive suggestions about the origin of the opening, as there does not seem to be any embryological explanation for its presence. I assisted at the earlier operation, and can vouch for the fact that the broad ligament was not damaged then. The attacks of vomiting and the absence of signs during the period prior to the operation were due, presumably, to temporary strangulations, which became relieved spontaneously.

London, S.W.5. S. CAPLAN.

SPONTANEOUS SURGICAL EMPHYSEMA.

THE case of surgical emphysema following dental treatment reported by Dr. C. B. S. Fuller in the *Journal* of May 10th (p. 862) prompts me to record two other unusual cases of surgical emphysema, which were associated with labour.

About four years ago I was called to the Farnham Infirmary to see a young married woman, aged 23, who had just been confined. Both sides of the face and neck, from the orbits downwards, were distinctly swollen, the swelling, in a lesser degree, extending over the upper part of the chest and back. The characteristic crepitant sensation of air under the skin could be felt all over the swollen area. The nurse who was present at the confinement could not say exactly when the swelling appeared, as it was not noticed until a little time after the baby was born.

A few days later a similar case occurred in the same ward. In the first case labour was rather prolonged, but the other patient was only in labour for a few hours, and everything was quite normal. The patients complained of no pain, and merely had slight discomfort from the swelling, which passed off in a few days. No obvious lesion of the respiratory tract was found, and there was nothing to indicate exactly how the air had got under the skin.

It was remarkable that I should encounter two such cases within a week, for I have not seen or heard of any similar case since, nor have I found any reference to it in any of the books I have consulted.

Farnham. F. BEDO HOBBS, M.D., M.R.C.P., D.P.H.

Reports of Societies.

VACCINE TREATMENT OF DISSEMINATED SCLEROSIS.

AT the meeting of the Section of Therapeutics and Pharmacology of the Royal Society of Medicine on May 13th, with Dr. PHILIP HAMILL in the chair, Sir JAMES PURVES-STEWART gave an account of the application in disseminated sclerosis of a "virus" cultivated from the cerebro-spinal fluid.

Sir James Purves-Stewart pointed out that the difficulty of discussing the treatment of a disease like disseminated sclerosis was enhanced because of the nature of the disease, the irregularity of its course, and the frequency of remissions and relapses. Therefore cases of alleged cure which had sometimes been published fell into one of two categories: errors of diagnosis, and examples of prolonged spontaneous remission. The treatment of this disease could be conducted on two different lines by drugs, and by a specific

or causal treatment. Among the drugs found most useful hitherto was arsenic in some shape or form, especially the arsenobenzol group, and, best of all, silver salvarsan. A second line of drug treatment consisted of colloidal silver, iodine, and mercury. Another line of treatment employed exogenous vaccines, a certain number of results had been quoted. Since 1927, his colleague Miss Chevassut, working in the research laboratories of the Westminster Hospital, had succeeded in nearly 200 consecutive cases of disseminated sclerosis in cultivating from the cerebro-spinal fluid an ultra-microscopic virus. In some cases the result was at first negative, but when the arsenic which was being given in these cases had been stopped for several weeks and the cerebro-spinal fluid was re-examined, a positive result was obtained. She had had 269 control cases with consistently negative cultures. The speaker showed photomicrographs of the *Spherula insularis*, as the organism was called, and drew attention to the characteristic sphere, with the granule attached, a large sphere being about 1 10,000 of the diameter of a blood corpuscle. The virus grew best when incubated at blood heat, and the growth of the culture required from twelve to seventy-two hours. After describing certain observations on animals injected with the culture, Sir James Purves-Stewart said that vaccines had been prepared by Miss Chevassut from actively growing cultures, and, after successful injection, an antibody developed in the blood which was inhibitory to the patient's own virus, and sometimes to the virus of other patients. Over two hundred patients had been treated, but in only seventy-three so far had the examination been continued sufficiently long to be of value. Among the seventy-three patients who had been under observation for two years and upwards encouraging but not brilliant serological and clinical results had been obtained. In early cases the signs and symptoms came to a standstill, and in some respects improved, there remained, of course, the result of the pre-existing degeneration, of whatever extent. Out of eleven early cases in which the diagnosis was definite, but in which the patient was still getting about quite easily, negative cultures were obtained in five. A certain proportion of moderate cases also showed negative cultures, but in advanced cases there was failure every time. In these cases several series of vaccinations of increasing strength were necessary before even a serological improvement was obtained. Great caution was required in claiming anything for experimental vaccine treatment in view of the well-known tendency to spontaneous remission, but there was one important difference between a spontaneous and a therapeutic remission; in the former case the patient's fluid still showed spherules and granules, and still gave positive reactions, whereas when the remission occurred as the result of vaccine treatment, not only did the patient have a clinical remission, but his cerebro-spinal fluid gave negative reactions.

DR. DOUGLAS MCALPINE put forward some points in favour of arsenic, and suggested that a comparison should be made between this new method and some control cases treated with arsenic alone. He remarked that it would be interesting to learn whether the blood serum of patients treated with arsenic was also inhibitory to the spherule. Recently a French author had described remissions lasting for as long as two or three years following on intravenous injections of a serum from the blood. DR. WILFRED HARRIS congratulated Sir James Purves-Stewart and Miss Chevassut on this work, which, he thought, would turn out to be of far-reaching importance. DR. KINGSTON BARTON said that a drug which seemed to have produced definite changes in the early stages of disseminated sclerosis was silver arsenic. There were a large number of cases which remained more or less stationary under simple treatment as carried out by the mental physician, such as the administration of the sulphates of magnesium, sodium, and potassium. The improvement was probably due to the clearing out from the intestine of some organism which was more or less the cause of the spread of the disseminated sclerotic areas over the nervous system. One of the greatest difficulties in most cases of disseminated sclerosis seen in private practice was the question of the bladder, most of the patients developing bacilluria. Many years ago he was indebted to Sir James Taylor for a hint how to control a symptom which was a severe one in many cases—namely, sleeplessness; the treatment was to give the most minute dose possible of veronal (1/2 grain).

DR. H. CARLILL made a reference to patients sent up with a clinical diagnosis of disseminated sclerosis, and who had had no arsenic for a long time, but in whom the organism was not found. He asked if it was legitimate to continue lumbar punctures for the purpose of trying to find the organism, without which at present no specific vaccine could be given. DR. L. S. KYRIE inquired if in estimating whether one was dealing with spontaneous or therapeutic remissions, it was possible to say that for any group of cases of fairly similar status the interval between the induction of therapy and the onset of remission showed any consistency. DR. W. BROUGHTON-ALCOCK asked up to what stage it would be said that a patient did not respond. Did any injury follow the use of vaccine in the tertiary stage? Must a culture be obtained before diagnosis could be made, or might the diagnosis be clinical? The PRESIDENT wished to know whether in each case the vaccine used had been autogenous, or whether, in some of the cases where it had been possible to get a culture, stock had been used. Did the vaccine deteriorate on keeping, or must it be freshly prepared from the patient's own cultures?

MISS KATHLEEN CHEVASSUT, who had been responsible for the laboratory work, said that it was quite impossible to obtain a positive culture if the fluid was contaminated; one of the great difficulties encountered was the performance of a sterile lumbar puncture. Any trace of contamination was a cause of negativity. Undoubtedly it was worth while to repeat the lumbar puncture, even after three or six months. There was probably some unknown factor which did from time to time upset cultures, and very often patients showing negative cultures in the first instance had given positive ones on subsequent examination. With regard to arsenic, she thought that it had merely a mechanical effect. If the patient had received an intensive course of arsenic a trace of this element in the cerebro-spinal fluid would inhibit the cultures; probably also the effect of arsenic excretion into the cerebro-spinal fluid interfered with the extremely delicate reaction of colloidal gold. She added that the vaccines must be injected intravenously, and must be autogenous; she did not think the vaccine remained effective for more than three months.

SIR JAMES PURVES-STEWART, replying, said that the diagnosis was both clinical and serological. In some cases the clinical diagnosis was difficult, and the serological findings were then valuable, but the pathological report was not the final criterion. In some cases after inoculation the patient became a little sleepy, and in some, after a higher dose, there might be a slight collapse for a few minutes, but these discomforts occurred in a negligible proportion of cases. The extent of the disease was more important than the duration in classifying cases as early or late. He had seen a patient who had had the disease for seventeen years, but so slightly as to necessitate very careful examination for its detection. Serological improvement was manifest after the first course of vaccine injections, and clinical improvement began even during it. Stock vaccine therapy was the ultimate aim, but at present each patient's vaccine was made from his own cerebro-spinal fluid. The Medical Research Council had appointed a panel of clinical and experimental pathologists, who would independently investigate these cases both bacteriologically and clinically; it would be a couple of years before the benefit of their work was forthcoming, and at the end of that time it would be known whether this treatment had any value.

RADIUM TREATMENT OF CANCER OF RECTUM.

AT a meeting of the Subsection of Proctology of the Royal Society of Medicine, on May 14th, Mr. CECIL ROWNTREE presiding, a discussion took place on the radium treatment of carcinoma of the rectum.

Sir CHARLES GORDON-WATSON, who showed a cinematograph film illustrating the surgery of access and implantation of radium, said that the first discussion on this subject took place under the auspices of the Subsection in November, 1927. At that time he had been treating

cases with radium for two and a half years, but he had only 15 cases on which to base his observations. His experience of the method now extended over five years, and he had been able to treat with radium over a hundred cases, but he still felt that he had not sufficient experience either to indicate what treatment should be adopted or to express any definite views as to results. On the previous occasion he had shown some cases, one being that of a woman with an inoperable growth, treated by colostomy, exposure of the rectum from behind, and radiation by needles from behind and from the vagina. The carcinoma was transferred into the fibrous structure of the rectum, and the case had been demonstrated again that evening, quite well four years after treatment. Another case shown on the previous occasion was an operable one, with a comparatively small growth on the anterior wall, which he had irradiated. That growth completely disappeared, and when shown at the last meeting the patient had been well for about a year. A year and a half after treatment the patient was anxious to have the colostomy closed. Unfortunately, as a result of the operation, haemorrhage occurred at the line of junction, and the patient died. This was a great tragedy, but it enabled a careful examination of the rectum to be made, and no trace of carcinoma was to be found anywhere. The first case showed that an inoperable carcinoma of the rectum was not always radioresistant, and the second, that a carcinoma at the operable stage could be completely destroyed and leave a patent rectum. At that time he regarded a preliminary colostomy as an essential part of radium treatment. Since then he had treated a number of cases without colostomy, and one man had been demonstrated that evening who, after treatment, without colostomy, by a posterior exposure, open operation, and needling, had only a scar in his rectum to show the site of the carcinoma.

The great obstacle to efficient radiation, as everybody realized, was difficulty of access. If surgical access was easy, there must be a good reason for preferring radium to radical surgery; if there were no special reasons for not recommending surgery, good reasons must be shown for advising radium. The strongest argument that could be urged for radium in a case considered suitable for radical surgery on both local and general grounds would be a reasonable prospect of destruction of the growth with restoration of rectal function, and without expectation of recurrence—in other words, the growth must be destroyed, and not leave any rectal stricture. A colostomy must be avoided, or at least closed at the conclusion of treatment. He had treated a few cases successfully in that way, but he was quite unable to promise freedom from recurrence. On the other hand, some cases of the operable type, which seemed to offer equally good prospects, had either responded and relapsed or had failed to respond appreciably to radium, and had been submitted to radical surgery after radium treatment. How far radiation prior to radical surgery was a factor in preventing subsequent recurrence could not be stated, but it was certainly a matter for consideration in the future.

With regard to inoperable and borderline cases, individual standards as to operability varied, so that the borderline case could not be defined, but there was general agreement in defining the advanced inoperable case. How far could these cases be helped by radium, and what were the chances of doing more harm than good? Everybody recognized that after colostomy, in the absence of liver metastasis, both the general and local condition of the patient improved in the great majority of cases. If colostomy was followed by radiation it was not easy to say whether the improvement was the result of the radium or of colostomy, or both. Even in cases which had been submitted to colostomy some months previously to radiation, rapid marked general improvement followed radiation, though marked local changes might be absent. The outstanding problem was to secure adequate and uniform radiation. To effect this a combination of methods was often necessary.

The borderline case offered the most useful field for radiation (Sir Charles Gordon-Watson continued), either as a forerunner of excision, or in some instances with prospects of cure without excision. His first attempt to treat a high rectal growth by radiation through the abdominal wall was made in January, 1928, and after mo than two years the result remained good, with no eviden of carcinoma in the rectum. He wished he could sho other cases as good, though there were others which ha made wonderful improvement, the growths in several i stances having shrunk. The efficiency of the radiatio depended on the extent of the growth and the presen of adhesions. It might in some cases be fairly easy define the limits of the growth and secure a unifor barrage; in other cases it might be absolutely impossibl If needles were employed drainage was essential. The di advantage of needles was that they required to be remove radon "seeds" were safer, but less efficient. No dou the better results obtained with needles were due to constant intensity as opposed to the diminishing intensi of the emanation. When possible, he liked to use t needles with a filter of 0.8 mm. platinum. Recurren seemed more likely with radon "seeds" than with needle The combination of the two minimized the loss of intensit but, of course, even then a uniform intensity was n obtained.

In cases of local recurrence after excision radium w of great value, especially if the recurrence was treate early. It gave hope to those who were beyond surgic help, and in moderate doses had a remarkable tonic effe on the general health. Time would show whether selectio combined with increased experience and skill, would vast improve results, or whether radium was too capricious master and too unstable a servant to be reckoned wi as a serious fighting factor in the campaign against cance It was not enough to say, "Here is a cancer of the rectum let us excise it"—or, "Let us use radium." An indi of sensitivity was required, with corresponding dosag A technique ought to be developed which allowed no u certainty in the application of the indicated dose, and f help on these lines one must look to the physicist, t biochemist, and the pathologist.

Dr. A. LACASSAGNE (assistant director of the Radiu Institute, Paris) said that neither the new nor the o radium methods had succeeded in bringing about the cu of rectal cancer. About fifty cases had been treated at t Radium Institute in Paris, most of them very advance with extirpation out of the question; but this number, sm as it was, and unfortunate as to the character of the cas was sufficient to allow of a conscientious trial of each the principal methods of radiotherapy, including cur therapy with a 4-gram "bomb." Two of the patien appeared to have been completely cured, the cure havi lasted in one case for eight years and in the other for fo years, but this result had been effected only with the he of surgery. The poor results were explained by l radiosensitivity, and were the more remarkable in contra to the good results in cancer of the cervix uteri. In Pa surgery remained the line of treatment, with radium as palliative in inoperable cases.

Mr. STANFORD CADE said that there were wide variatio in radiosensitivity according to the state of cell develo ment and the presence or absence of mitosis. There was threshold of intensity and a threshold of time, and if the were not reached the attempt to obtain amelioration of t disease failed. The use of radon or emanation was i compatible with uniform intensity. The method of inse ing radium into the lumen of the bowel was frankly ba the intrarectal interstitial method was applicable in vario ways, while telecurietherapy or treatment by "bomb was at present on trial, and it was too early to recomme or condemn the method, though one of its advantages w the multiplicity of ports of entry which might be use Pre-operative radiation was advisable in borderline cas provided the radiation was correctly carried out, and t operation not delayed beyond three or four weeks aft radiation. His own cases included a number of failur but there were some which were encouraging, and h general conclusion was that at present surgery had fi place, but that it was reasonable to anticipate radiu becoming the method of choice in the near future.

Mr. J. P. LOCKHART-MUMMERY regarded radium trea ment of cancer as still in the experimental stage, but was just at that stage that discussion was of the greate value. He thought that the use of stronger filtration w

important. Small doses for a long period gave by far the best results. Ten days were better than seven, other *factors being equal. He believed the milligram-hour* formula to be absolutely useless; it left out of account the size of the growth. Any formula which did not take into account the cubic capacity of the growth was fallacious. He agreed that radon "seeds" offered an easy way of using radium in the abdominal cavity, but they were not so efficient as needles, and at present needling was attended by not a little risk. To secure a more rapid healing of the wounds in these operations he had been using a light packing with vaseline gauze or gauze soaked in oil. His general conclusion was that radium could not be considered a substitute for operation where operation was possible.

Mr. W. S. PERRIN had treated with radium four frankly *operable cases. Two were qualified successes, and the* other two must rank as utter failures. After these latter cases he had not felt it right to recommend anybody to have radium for an operable growth of the rectum. Mr. J. E. C. NORBURY said that different growths reacted to radium in different ways. Of two cases of apparently exactly the same nature one would do extraordinarily well, and the other, with the same dose of radium, would show no effect whatever. One point which might be worth investigating was suggested by the fact that in deep x-ray treatment the effect was augmented by painting with fluorescein. Possibly in the treatment of the rectum by radium some form of injection might be given which would have the effect of increasing the radio-sensitivity of the growth.

Mr. E. T. C. MILLIGAN pointed out the value of radium in carcinoma of the anal region. Before radium was available it was often the fate of the patient to lose his rectum on account of carcinoma of the anus. The speaker had treated several cases of this nature; the only difficulty had been extension of the growth up into the rectum. With regard to radium burn, which might follow treatment of the growth at the anal canal and rectum, a friend of his, who was present at the meeting, Dr. James, an American medical man, had pointed out to him a useful method of amelioration—namely, by the conversion of the radium burn into a diathermy burn. Relief was gained and healing much quickened. Dr. JAMES, speaking further on this point, said that with a radium burn which was sensitive to diathermy the relief of pain on applying the latter method was very marked. Coagulation should go to the depth of the burn. The cases healed very rapidly—in fact, just as quickly as an ordinary open wound. Mr. W. T. WARWICK said that for certain growths a heavy dose of radium might advantageously be given for a short time, but the majority of growths reacted better to a small dose for a longer time. At St. Mark's the method of applying radium was to give a certain grading according to the layer which the growth had invaded, but this did not take into consideration the type of cell or the type of tissue reaction, all of which had to be considered. Something more was needed than the classification of the growth on an anatomical basis.

LIPOID NEPHROSIS.

AT a meeting of the Section of Medicine of the Royal Academy of Medicine in Ireland, on April 25th, with the president, Dr. R. J. ROWLETTE, in the chair, Professor MOORE read notes compiled by himself and Drs. W. M. O'Farrell and R. A. Q. O'Meara on a case of lipoid nephrosis, and demonstrated the doubly refractive granules in the urine.

Professor Moore said that the patient was a man, aged 34 years, who had oedema and a large amount of albumin in the urine. The blood pressure was 170/100. There was a small right basal pleural effusion, achlorhydria, and a mild secondary anaemia. The phenolsulphonephthalein excretion was 60 per cent. in two hours, and the water output was somewhat diminished, but the fixation of the specific gravity of the urine was normal. In 100 c.cm. of blood there were 28 mg. of urea, 2.5 mg. of uric acid, 1.4 mg. of creatinine, 600 mg. of cholesterol, 8.9 mg. of calcium, 1.4 mg. of phosphorus, and 456 mg. of chlorides. The Wassermann reaction was negative. The basal metabolic rate, estimated at a time when the oedema had practically disappeared, was *minus* 12 per cent. The urea concentration test was normal, the blood serum was milky, and the total amount of albumin excreted in twenty-four hours was 44.8 grams. Estimated as grams in 100 c.cm., the total blood protein was 2.5, the albumin 1, and the globulin 1.4, a reversal of the normal albumin-globulin ratio; *these figures, however,* improved to 5.8, 3.1, and 2.5 respectively before discharge. Doubly refractive lipoid granules were found in abundance free in the urine and in the casts, whether hyaline or fatty. The retinal arteries showed a very slightly increased light reflex, and the walls were slightly and irregularly thickened, there being a tendency to compression of the retinal veins under arterial crossings. Dr. O'MEARA gave details of the technique of examination for the doubly refractive granules, and discussed their source and the significance of their presence in urine. Dr. W. M. O'FARRELL briefly described his biochemical findings, alluding to the importance of rigorously careful technique, especially in such examinations as the estimation of serum *proteins and calcium.*

The PRESIDENT was glad that Dr. Moore had not demanded that lipoid nephrosis should be assigned a specific clinical entity, since at present it was difficult to particularize thus any condition of the kidneys. Dr. A. R. PARSONS raised the question whether the white serum was pathognomonic of lipoid nephrosis and would give the doubly refractive effect, or whether it was only found in the urine. In a case recently under his care, and regarded as nephrosis, the patient was very dropsical; the serum was at first quite clear, but later became absolutely white. Dr. E. T. FREEMAN mentioned the case of a woman recently under his care in hospital, and very similar to the one described by Dr. Moore. In the urine similar doubly refractive crystals were found, but not in so large a number as in Dr. Moore's case. The blood urea was normal, and the cholesterol was 627 mg. per 100 c.cm. The blood pressure was 118/75. The patient had been on a milk diet, and Dr. Freeman thought that much of the weakness from which she suffered and the appearance of the white fluid were due to insufficiency of the diet. The oedema had now completely disappeared, and the urinary output was always approximately equal to the increase in the patient's intake. He thought the presence of blood corpuscles in any large number must imply damage to the glomerulus, and that therefore this was present in Dr. Moore's case.

Dr. V. M. SYNGE referred to the fact that Dr. Moore's case had started with an acute attack, while in the text-books it was stated that lipoid nephrosis should start gradually. The blood pressure was 170, which for a man aged 30 was high; this also was not a characteristic of lipoid nephrosis. He wondered if this condition was really *any different to that which was formerly described as* "large white kidney" and "large white body." He mentioned the advantage of high protein diet in these cases, and added that some patients for whom he had prescribed Epstein's diet had not done well, and had suffered from headache. Dr. GEOFFREY THOMPSON said he had only seen one case of lipoid nephrosis, which was very similar to the one described by Dr. Moore. He asked if any particular value could be attached to the basal metabolic figures obtained, and remarked that an error of about 4 per cent. was allowable even in a normal case. Dr. A. HALPENNY stated that the work of Dr. Bell in America had led him to believe that cases of lipoid nephrosis were really cases of glomerular nephritis. Dr. G. E. NESBITT thought that this syndrome would fit in fairly well with the cases which used to be classified as parenchymatous nephritis.

Dr. MOORE, replying, said he did not suggest the essential unity of lipoid nephrosis. It was described in the literature as a clinical entity, and it was as such that he had shown his case. He believed that the condition was a syndrome only, and though the figures obtained by basal metabolic estimations were interesting, he would not let them dominate his clinical instinct. From recent clinical studies it would appear that glomerular changes were found fairly early in the disease.

Reviews.

DISEASES OF THE SKIN.

FOR some time past Dr. W. FRIEBOES has been bringing out in serial numbers an important atlas of skin diseases.[1] This is now completed by the appearance of the final section, which consists of thirty-two coloured plates, produced with all the skill and taste possessed by Continental colour printers. The completion of this great work is also accompanied by the simultaneous publication of a textbook of skin and venereal diseases[2] by the same author. The textbook itself is not illustrated, but where necessary reference is made in the text to the plates of the atlas. This method of publishing text and illustrations in separate volumes has some undoubted advantages. The reader is able to keep the illustration before him continuously while he is studying any particular condition; moreover, a textbook illustrated liberally enough to compete with Dr. Frieboes's atlas would be exceedingly cumbersome and heavy to handle. The textbook covers its subject-matter fairly exhaustively; it is modern though its arrangement is quite empirical. After preliminary chapters describing the position of dermatology in medicine, the nature of the primary lesions found in skin diseases, and the various methods to be employed by the physician in making a diagnosis, Dr. Frieboes begins his nosology with eczema, a disease which may be regarded as still the most important of all skin diseases; he next considers psoriasis, still the bugbear of the practising dermatologist, and subsequently goes on to the discussion of the principal dermatoses without much regard for any particular system of classification. In this he is probably wise, for no system of classification is yet satisfactory. His treatment of the whole subject is sound, but at one or two points he has omitted to mention work which deserved inclusion. Thus, he says nothing about the eruptions that have recently been shown to be due to the activity of moulds of the genus *Monilia*—which seems to be far more important than was at one time thought—and apparently he is unacquainted with the work done in this country by Garner with MacLeod and Dowlings on seborrhœa. These observers have shown that in all probability seborrhœic eczema is due to the organism formerly known as the spore of Malassez—which by cultivation they have now proved to be a member of the *Monilia* group. It is time that this work obtained more recognition from Continental dermatologists and pathologists. On the other hand, the author lays considerable stress on the dietetic treatment of lupus vulgaris. It appears that animals artificially infected with tuberculosis show a greater resistance if fed on salt-free diet, and this principle has been applied to the treatment of human tuberculosis. At Giessen it is claimed by Gerson that good results are obtained in the treatment of lupus and surgical tuberculosis by keeping the patients on a diet free from sodium chloride, while giving them a mixture of special salts several times daily; at the same time their carbohydrates are severely limited. It is also claimed that this diet is very helpful in promoting the absorption of keloid scars and the plaques of scleroderma. So far, however, this method of treatment seems not to have been adopted in this country. Altogether we can recommend Dr. Frieboes's textbook and atlas as good and solid contributions to dermatology, and no doubt they will enjoy a well-deserved popularity in German-speaking countries. It is hardly necessary to recommend it to the study of British students, who will find their wants sufficiently catered for in their own language. But those who specialize in dermatology will find in it several matters of interest.

Owing its inspiration to Dr. Frieboes is a little book by Dr. A. Ruete, entitled "A Guide to Differential Diagnosis in Dermatology."[3] This book deals, of course, with the problems of clinical diagnosis alone. It is arranged in chapters which follow the various regions of the body from the head to the heel, and thence to the mucous membranes. In each chapter the author describes the different types of dermatoses to be found in a given region, and points out their salient characteristics and how they are to be distinguished from one another. Throughout the work, the reader is referred for more detailed information to Dr. Frieboes's textbook, and is given the exact page on which he will find it. As a matter of fact, this little guide will be found very useful to the practitioner in diagnosing puzzling cases of skin disease—even to the practitioner who does not wish to go to the expense of purchasing Dr. Frieboes's large textbook. Supposing that he is in trouble over some eruption on the arm, he will refer to the chapter on the limbs, and will have a good chance, by comparing his own case with the various descriptions there given, of solving his problem. It is a little surprising that the diagnostic problems of dermatology are not more often approached in this practical way. With the exception of Sabouraud's *Regional Dermatology* and one short textbook of dermatology on these lines written in English, we know of no rival to Dr. Ruete's work.

[1] *Atlas der Haut- und Geschlechtskrankheiten.* Zugleich ein Lehrbuch von Professor Dr. W. Frieboes. Leipzig: F. C. W. Vogel. 1930. (8¼ × 11¼, pp. 19; 68 figures on 32 plates. M.52; bound, M.60.)

[2] *Lehrbuch der Haut- und Geschlechts[illegible]* ... Frieboes. Leipzig: F. C. W. Vogel. 1930. (6[illegible], M.32.50.)

[3] *Differentialdiagnostischer Führe[illegible]* ... Von Professor Dr. A. Ruete. Leipzig: F. C. ... 1930. (6 × 9¼, pp. xviii + 173, M 10; bound, M.12.)

AMERICAN MEDICAL WAR HISTORY.

THE twelfth volume of the history of *The Medical Department of the United States Army in the World War*[4] comprises two sections, the first being devoted to the pathology of acute respiratory diseases, and the second to the pathology of gas gangrene following war wounds. These subjects were chosen because they appeared to be the most important to the United States Army from the pathological standpoint. Owing to the prevalence of acute respiratory diseases in the training camps, medical officers had exceptional opportunities for studying and reporting on these diseases, and they were especially encouraged to send pathological specimens to the Army Medical Museum.

Acute respiratory diseases had proved a grave cause of sickness and death in the United States armies on occasions prior to the great war, notably in the war of 1812, the Civil War 1861–65, and during the mobilization on the Mexican frontier in 1915–16. In the years 1917 and 1918, when the United States Army was preparing at home an expeditionary force for service in France, there were three periods of high incidence of acute respiratory diseases; and of these, the third, which corresponded with the pandemic outbreak of influenza, was far the most serious. No single type of lesion predominated, typical lobar pneumonia was infrequent, broncho-pneumonia was common, and in cases where the consolidation was widespread necrosis often resulted, with the formation of abscesses and gangrene. An acute type occurred in which a dripping frothy haemorrhagic lung was found at autopsy. It was in such cases that the influenza bacillus was commonly found. In some instances haemolytic streptococci invaded the lung, causing death within a few days. The lungs from such cases showed more haemorrhage than when the influenza bacillus alone was present. But the most striking difference appeared to be a leucocytic infiltration rather than oedema of the alveolar walls. In spite of the most careful bacteriological work the conclusion come to regarding the cause of pandemic influenza is that there is more evidence pointing to the influenza bacillus than to any other organism, but no definite conclusion can yet be arrived at. The numerous illustrations, some of them in colour, of the macroscopic and microscopic appearances in the various acute respiratory diseases render this volume of the greatest interest to general pathology, apart from any particular connexion with warfare.

The second section of the book, which deals with the pathology of gas gangrene following war wounds, consists of only 17 pages of letterpress and 43 of the most admirable illustrations. The important part played by the bacteria of the soil is clearly brought out. A novel suggestion is made that in some instances the burrows of scabies were

[4] *The Medical Department of the United States Army in the World War.* Prepared under the direction of Major-General M. W. Ireland [illegible]. xii: *Pathology of the Acute Respiratory Diseases, and of Gas [illegible]angrene following War Wounds.* Washington: Government Printing Office. 1929. (Sup. roy. 8vo, pp. xiv + 583; 312 figures, 24 plates. 3.60 dollars.)

carried deep into the muscle by shell fragments, thus introducing the exciting factor of the infection into an ideal situation. The combination of other bacteria with *Bacillus welchii* sometimes appeared to modify the virulence of the latter. The presence of frank pus producers like the staphylococci checked the progress of gas gangrene. This probably accounts for the reverence which surgeons in earlier wars had shown for "laudable pus" in connexion with gangrenous wounds. Infection with anaerobes showed a high death rate but a short period of danger to life unless streptococci were associated with the anaerobes. The observations made in the American Expeditionary Force confirm the importance of circulatory failure in the production of gas gangrene. Apparently the bacteria alone are incapable of producing gas gangrene. In all probability the local ischaemia produced by damage to the circulation ranks second only in importance to intensive damage to muscle, under conditions that prevent the full access of oxygen. Although *Bacillus welchii* is only one of several anaerobes which can produce gas gangrene, it was the predominating anaerobe responsible for gas gangrene during the great war. The illustrations in this section are equal in value to those on respiratory diseases.

THE DRAMATIC IN SURGERY.

In his little volume entitled *The Dramatic in Surgery*[1] Mr. GORDON-TAYLOR has concentrated some extraordinary examples from his immense surgical experience. They are of real value to the practical surgeon as showing him difficulties with which at any time he may be confronted, and as showing him how even the most difficult problems may be successfully solved. They range over every aspect of surgery from the removal of a colossal tumour of the innominate bone to a successful suture of the heart for a gunshot wound; and from the removal of a clot for pulmonary embolism to a cosmetic reconstruction of the breast.

The surgeon who can peruse this book without learning something must be mentally blind, and if he does not enjoy reading it he must be devoid of any sense of humour: but he will lay it down feeling a grudge against the author that he does not more often allow his colleagues to share his experiences and enjoy his wit. Superb illustrations and production add to our enjoyment of this most attractive volume.

RADIOLOGY OF THE NECK.

The *Handbook of Roentgenology*, edited by Dr. JAMES T. CASE, is a series of monographic atlases each dealing with the radiology of one or other of the organs or systems of the body. The ninth volume, entitled *The Neck*,[2] by Dr. PERCY D. HAY, jun., is dedicated to Dr. Henry K. PANCOAST, who contributes an introduction, in the course of which he gives a history of the research from which data in the monograph were derived. One of the difficulties in the interpretation of radiograms of the neck is in the fact that normally the structures of the laryngeal region present a diversity of appearances. Dr. Hay's study is concerned mainly with the radiology of the soft structures of the neck, and as very little exact work had previously been done on this subject he had in the first place to elaborate and to standardize a technique for establishing the cause of the normal shadows. This technique he explains minutely, and discusses the results of his examination of fifty adults and twenty-five children. Beautifully reproduced radiograms of these cases show the shadows produced by different parts of the pharynx, larynx, trachea, the œsophagus, and other soft parts, and establish a standard for comparison with other radiograms in which evidence of some pathological condition is sought for. Without some definite guide of this kind the radiologist might easily overlook conditions causing slight deviations from the normal shadows.

Having established the normal Dr. Hay proceeds to describe and illustrate the *x*-ray findings in pathological states, including non-specific inflammations, abscesses, tuberculous infections, salivary calculi, syphilis, diphtheria, streptococcic laryngitis, diseases of the thyroid, benign and malignant tumours, diverticuli of the pharynx, neuromuscular conditions, and conditions due to trauma. The author has marked most of the radiograms illustrating abnormal conditions with arrows pointing to the situation at which there is a deviation from the normal. In an appendix he presents a reasoned argument in favour of examining the neck in all suspected thymic cases.

Dr. Hay has written a useful reference book on a hitherto somewhat neglected though obviously important field for *x*-ray diagnosis. He presents his material with great clarity, and the publishers have served him well by printing his book beautifully and on good paper. The bibliography and index are adequate.

LOCAL ANAESTHESIA IN OTO-RHINO-LARYNGOLOGY.

THERE is no region of the body in which the art of local anaesthesia has been brought to greater perfection than the head and neck. Professor CANUYT of Strasbourg has for some years been a prominent exponent of the method, and in collaboration with his colleague Dr. JOUBLOT he presents a systematic account showing that all the operations which belong to oto-rhino-laryngology can be performed efficiently under local anaesthesia.[3] Some of them not only can but should be performed in this manner. Operations on the nose fall into this class, but in this country many operators still do not avail themselves fully of the advantage offered. In tracheotomy for laryngeal obstruction local anaesthesia is indispensable, though the technique described in the book seems unnecessarily elaborate. There is a third class, such as mastoid operation and laryngectomy, where the advantages for many operators are outweighed by the disadvantages, though in some circumstances local anaesthesia must be employed.

There is nothing strikingly original in this book, but everything is very clear and precise. The anatomical points and course of the nerve trunks are shown in diagrams, and the technique of inducing anaesthesia is described in a manner which allows no ambiguity. The whole region including the tongue, jaws, and neck comes under this survey. The authors have also some general observations to offer, in the course of which they give some account of the fatal accidents that have occurred. They realize that there is no absolute security against these, whatever precautions are taken, but they are strongly opposed to the combination of local with general anaesthesia. Ephedrine is still on trial and cannot yet replace adrenaline, but they have found butyn a satisfactory substitute for cocaine.

Although the more elaborate procedures in which deeply situated nerve trunks are concerned are not likely to become popular, there is no doubt that specialists in this country do not employ local anaesthesia so much as their foreign colleagues. Those who wish to give it an extended trial will find this book an excellent guide.

PATHFINDERS IN MEDICINE.

IN 1912 Dr. VICTOR ROBINSON, editor of the Pagel-Sudhoff *Handbook of the History of Medicine*, brought out the first edition of a work containing fifteen lives of the fathers of medicine, and now, in the second edition of the *Pathfinders in Medicine*,[4] he has added fifteen more lives, more than doubled the number of pages, and increased by tenfold the illustrations. This is a collection of essays, published between 1909 and 1929, written in a popular style, but containing a store of information, much personal detail, some autographs, and interesting correspondence of the men he describes. Among the new lives is that of Samuel Guthrie (1782–1848) of Sackett's Harbor, New

[1] *The Dramatic in Surgery*. By Gordon Gordon-Taylor, O.B.E., F.R.C.S. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1929. (Med. 8vo, pp. 83; 40 figures. 12s. 6d. net.)

[2] *Handbook of Roentgenology*. Volume ix. *The Neck*. By Percy D. Hay, jun., M.D. With an introduction by Henry K. Pancoast, M.D. New York: Wm. Wood & Co., Inc. 1930. (8 × 10½, pp. xxv + 194; 66 figures. 8 dollars.)

[3] *L'anesthésie locale en oto-rhino-laryngologie*. Par G. Canuyt et J. Joublot. Paris: Masson et Cie. 1929. (6 × 9, pp. 231; 91 figures. 40 fr.)

[4] *Pathfinders in Medicine*. By Victor Robinson, M.D. Second edition. New York: Medical Life Press. 1929. (Roy. 8vo, pp. xviii + 470; 159 plates. 10 dollars post paid.)

York, a country doctor and chemist, who in 1831 made chloroform in a pure form ("Guthrie's whisky"), but "did not realize that he had discovered the waters of the modern Lethe." The account of James Y. Simpson, though it does not mention Guthrie, gives a picturesque description of his inhaling chloroform, and a good deal about Lawson Tait, who "was too original to pass the prescribed examinations" of the University of Edinburgh. In the sympathetically told story of the adventures of the pioneer medical sisters—Elizabeth and Emily Blackwell—the author gives vent to the dictum that "medical societies have too frequently been boulders in the medical path; we have advanced by stumbling over them or by avoiding them." The only living person who receives a full notice is Professor I. P. Pavlov, and he, like Brougham, has had the opportunity of reading several ante-mortem obituaries of himself (including one by Dr. Victor Robinson), for early in 1916 the death of a Russian surgeon of the same name gave rise to the belief that the great physiologist had passed away. The author regards the study of medical history as his consolation or hashish for these days of "the decadence of the human spirit," "the deepening twilight of dying faiths," and "the million-voiced roar of the motor"; for "it is the greatest of stories—the record of man's conflict with credulity."

NOTES ON BOOKS.

THE volume of the Practical Medicine Series on *General Surgery*,[9] edited by Dr. EVARTS A. GRAHAM, contains a concise account of recent advances in all departments of general surgery, including anaesthesia, radiotherapy, and orthopaedic surgery. The text is liberally interspersed with illustrations. We are pleased to find that the work of British surgeons receives ample acknowledgement.

Not many people can afford to possess the ten volumes or twenty half-volumes of the *Oxford Dictionary*, but "for those with small purses and restricted house-room, the authority of the great work flowers in more modest beds." We welcomed last year a new edition of the *Concise Oxford Dictionary*, and the *Pocket Oxford Dictionary* has now been in circulation since 1924. In response to a demand for something still smaller, yet covering the same or even a wider vocabulary, the Clarendon Press entrusted Mr. GEORGE OSTLER with the task of packing all that could be packed into 640 diminutive pages. Before his death a year ago Mr. Ostler had completed the dictionary proper and revised all the proofs. The result of his labours, entitled *The Little Oxford Dictionary of Current English*,[10] is a marvel of accuracy, legibility, and condensation which anyone may have for a florin or half a crown.

The Progress Book,[11] compiled by W. M. PILLEY, is a diary designed to facilitate the literary labours of parents who wish to keep a complete record of the progress and development of their offspring. It is classified in three main divisions—namely, record of development, medical record, and illustrated progress—and in each division there are a large number of sections under appropriate headings. The medical record division includes, among others, the following sections: birth records, ailments in infancy, vaccination record, dental record, and notes on school health examinations. An important section is entitled "Funny sayings." *The Progress Book* will serve a useful purpose if parents make a point of recording each funny saying as soon as they have heard it instead of saving it up for the delight of their friends.

A volume comprising reprints of papers contributed to various medical journals during 1929[12] by members of the staff of the wards and laboratories of the London Hospital has been issued for purposes of reference. In like manner reprints of papers[13] contributed by members of the staff of the Middlesex Hospital Medical School during the session 1928–29 to British and American periodicals have been brought together within a single cover. Both volumes may be consulted at the library of the British Medical Association.

Novial Lexike[14] purports to be a vocabulary of the most necessary words of Novial, a new international auxiliary language. The author, Mr. OTTO JESPERSEN, refers the reader for further information to his book *An International Language* published by Messrs. Allen and Unwin.

Some of our readers may be glad to know that interleaved copies of the *Pharmacopoeia of the Central London Ophthalmic Hospital* are obtainable from the publishers, Messrs. H. K. Lewis and Co., Ltd., at the price of 2s.

[9] *General Surgery.* The Practical Medicine Series. Edited by Evarts A. Graham, A.B., M.D. Series 1929. Chicago: The Year Book Publishers. (4¾ × 7½, pp. 800; 183 figures, 62 plates. 3 dollars.)

[10] Oxford: Clarendon Press. London: H. Milford. 1930. (3¼ × 5¼, pp. 626. Cloth, 2s. net; India paper, 2s. 6d. net.)

[11] *The Progress Book.* An Illustrated Register of Development from Birth till Coming of Age and After. By W. M. Pilley, M.A. Revised and enlarged edition. Specially printed for Mellin's Food Limited. London: Mears and Caldwell, Ltd., Cranmer Road, S.W.9.

[12] *Researches Published from the Wards and Laboratories of the London Hospital during 1929.* London: H. K. Lewis and Co., Ltd. 1930. (7½ × 10½; illustrated; 7s. 6d. net.)

[13] *Published Papers of the Middlesex Hospital Medical School.* By Members of the Staff. 1928-29. (7¼ × 10½.)

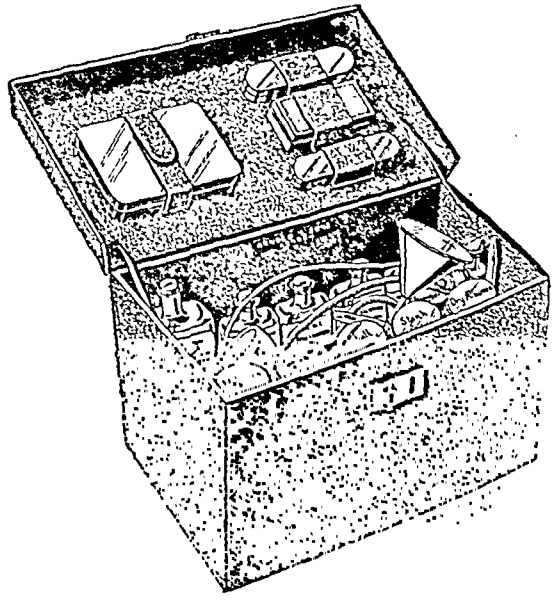
[14] *Novial Lexike.* By Otto Jespersen. London: G. Allen and Unwin, Ltd. 1930. (Post 8vo, pp. 251. 3s. 6d. net.)

PREPARATIONS AND APPLIANCES.

AN ANTIDOTE BAG.

DR. E. BARON (London, N.15) writes: The necessity for an antidote bag, complete with all the requirements, as part of the armamentarium of a modern doctor, is undeniable. This was impressed upon me when I was urgently called to a case of poisoning and found myself without any appropriate antidote to hand. The bag shown in the illustration is the sequel; it supplies the practitioner with a complete ready-to-hand equipment and drugs to deal with any case of poisoning, everything within the bag being visible and accessible as soon as the lid is lifted. The bag contains one or more antidotes for each poison and other treatment required. It is strongly recommended that the pages relative to "Poisoning: symptoms and treatment," which a well-known firm includes in its medical diary, should be placed within the bag ready for reference. The contents are arranged as follows:

The lid accommodates a hypodermic syringe with needles in a case; a box containing three ampoules; a case for tubes of hypodermic tablets; and a box containing many small boxes of tablets. To the sides are attached five wide-mouthed screw-top powder jars; one large and six small screw-top bottles containing liquids; and one mouth-gag with an opening for a stomach tube. In the central space is a stomach tube with rubber funnel (for adults) and a funnel with small rubber tube (for children). Room is left for any personal additions.



The following drugs are included in every bag. *Powders in jars:* magnesium sulphate; magnesia ponderosa; chalk; starch; and dry albumin. *Liquids in bottles:* olive oil; vinegar; French turpentine; castor oil; ether or brandy; spt. ammon. aromat.; and tinct. ferri perchlor. *Ampoules* containing pituitary extract; adrenaline; and ether. *Tablets in large box:* copper sulphate (2½ grains); pulv. ipecac. (5 grains); tannin (5 grains); potassium permanganate (2 grains); ferrous sulphate (5 grains); potassium ferrocyanide (5 grains); potassium bromide (5 grains); sodium carbonate (5 grains); tinct. opii (30 minims); and sodium bicarbonate (5 grains).

Tubes of hypodermic tablets are not included in this bag owing to the Dangerous Drugs Regulations; but it is strongly urged that a tube of each of the following should be ordered at the same time to be placed in the bag in order to complete the equipment: apomorph. hydrochlor. (1/10 grain) cum strychn. hyd. (1/60 grain); morph. hyd. (1/4 grain); strychn. hyd. (1/60 grain); strophanthin (1/100 grain); and pilocarpine nitrate (1/3 grain).

The bag and contents have been prepared for me by Messrs. John Bell and Croyden (Savory and Moore, 1928), Ltd., 50-52, Wigmore Street, W.1.

PATENTING OF MEDICAL INVENTIONS.

PROPOSED SCHEME OF DEDICATED PATENTS.

THE medical profession has for many years concerned itself with the ethical and practical problems connected with the patenting of processes for the production of substances and devices used in the diagnosis, prevention, or treatment of disease. Speaking generally, British medical workers have accepted, and acted in terms of, the view that it is undesirable that any individual should reap direct financial reward from a scientific discovery in the medical field. Their objection to the existing patent system is based in part on their appreciation of the fact that the work of innumerable investigators all over the world helps to build up the knowledge from which one individual, entering the field of work at a propitious moment, may be able to develop a patentable process; in part on their belief that a system of monopoly, by limiting the area over which a scientific discovery may be applied or developed, is contrary to the interests both of the public and of scientific workers. The traditional attitude of the profession in this country is expressed in the two following resolutions, adopted in 1903 and 1920 respectively, by the Central Ethical Committee of the British Medical Association:

> That it is contrary to the ethics of the medical profession to attempt to secure a monopoly in the sale of any article or in the treatment of disease, and especially by patenting any such article in the name of a medical practitioner whose name would necessarily be used in its advertisement.
>
> That it is undesirable for a medical man who has invented a device intended for medical purposes to take out a patent for the purpose of deriving from such patent the financial results of a monopoly.

More recently the committee restated its view in the following general principle, which was approved by the Council in December, 1929:

> That it is ethically undesirable for a registered medical practitioner who makes an invention or discovery in the medical field to derive financial benefit from the sale of the rights of such invention or discovery or from royalties from the use of it.

Later Developments.—Events in recent years have made it necessary for the medical profession to consider afresh how its ethical principles can be most effectively expressed in action. Adopted as a categorical imperative the conduct of the profession in this country would result in the complete abolition of medical patents in all countries, and this would be the ideal solution of the problems at issue. Unfortunately, neither on the Continent nor in America have scientific workers shown any inclination to adopt the ethical code guiding our own profession in this respect; and it has lately become increasingly evident that the patenting of processes for the production of hormones, vitamins, serums, and such products by workers abroad, and above all their practice of taking out "master" or "blocking" patents, based on anticipation of future research rather than on investigations already carried to a satisfactory conclusion, are having a detrimental effect on medical research in this country.

One important fact must be borne in mind: the opposition of the medical profession to the system of patents is based entirely on its desire to further research and protect the public, and whatever force this opposition has it derives from its success in securing these ends. The traditional practice of the profession must, in fact, be judged by its fruits, and if it can be shown that a modification of the present law and custom relating to patents is likely to be more effective in producing a desirable state of affairs then there could be no ethical objection to the promotion of such modification by the medical profession.

Faced with these problems, the British Medical Association set up a special subcommittee of the Central Ethical Committee to discuss and report on the various ethical and practical problems connected with the patenting of medical discoveries, and this committee recently submitted evidence before the Board of Trade Committee formed in 1929, under the chairmanship of Sir Charles Sargant, to consider how far it was desirable to amend the Patents and Designs Acts, or to effect changes in Patent Office procedure. The report of the Association's subcommittee has been published in the Annual Report of Council (*Supplement*, April 19th, 1930, pp. 130 and 150), and it will in due course come for consideration before the Representative Body. In the meanwhile, we are glad to draw attention to the two interesting documents summarized below: the first, a Memorandum on British Patent Law Reform,[1] submitted to the Board of Trade Patents Committee by a joint committee representing the Association of British Chemical Manufacturers and a number of other chemical institutions; the second, a paper on fine chemicals,[2] by Mr. Frank Lee Pyman, F.R.S., director of Messrs. Boots chemical laboratories, in which he examines some of the problems connected with the patenting of new medicinal compounds. The former document embodies a series of proposals which, with one or two small modifications, were accepted by the British Medical Association's subcommittee; the latter is, in effect, a criticism of these proposals.

MEMORANDUM OF THE JOINT COMMITTEE.

Two alternative schemes are considered in the memorandum: (1) the abolition of medical patents; (2) the establishment of a system of medical patents devised to meet, on the one hand, the ethical objections of the medical research worker to patents, and, on the other, the desire for protection on the part of the manufacturer, whose co-operation is essential if the public is to obtain full value from new medical discoveries. A non-patent system does not afford the necessary protection to manufacturers, and may in practice lead to the extended use of secret manufacture and secret remedies, with a restrictive effect on further research. In any case, without international agreement the abandonment of medical patents by this country would place both our research workers and our manufacturers at a serious disadvantage.

Existing Patent Law.

Section 38A (1) of the Patents and Designs Acts, 1907 and 1919 (Consolidated), is as follows:

> "In the case of inventions relating to substances prepared or produced by chemical processes or intended for food or medicine, the specification shall not include claims for the substance itself, except when prepared or produced by the special methods or processes of manufacture described and claimed or by their obvious chemical equivalents, provided that, in an action for infringement of a patent where the invention relates to the production of a new substance, any substance of the same chemical composition and constitution shall in the absence of proof to the contrary be deemed to have been produced by the patented process."

Under this section it is possible to take out patents for medical remedies, and these may be grouped roughly into two main classes: (*a*) definite chemical compounds with a specific effect in certain diseases. Such remedies are usually discovered in the course of purely chemical investigations, and the medical research worker only intervenes at the stage of pharmacological and clinical trials. (*b*) Biological products, such as vitamins, serums, vaccines, glandular extracts, etc. These substances generally originate with the medical research worker, but the chemist intervenes during the later stages, when isolation and investigation of the active principles—for example, adrenaline, thyroxine—is attempted. These two classes may overlap, but it is clear that there are two groups of workers concerned—chemists and medical research workers.

Attitude of the Medical Profession.

Chemists as a body seem to have no objection to taking out patents for therapeutic substances, and, indeed, eminent chemists are to be found among British patentees of such products. On the other hand, a large section of the medical profession is at present resolutely opposed to taking out such patents, whether the products concerned are of purely chemical or biological origin. This opposition they justify on the ground that a patent in relation to any medical remedy tends at first sight to give the impression of making profit out of human suffering, and because they believe that the freer use of patents would result in greater secrecy on the part of research workers, whereas the most liberal interchange of knowledge is essential to progress. The joint committee, while admitting the need for the full and rapid publication of any information

[1] Association of Chemical Manufacturers. Price 1s.
[2] *Journal of the Society of Chemical Industry*, March 21st, 1930.

bearing on medical research, doubts whether the abolition of medical patents would be the best way of securing this end.

The Object of our Patent Law.

The object of our patent law is to stimulate invention by offering a reward, and to extend industry by the application of new discoveries. It succeeds in that object, even though it often happens that the patented invention does not benefit the actual discoverer of the knowledge on which the invention depends. The borderline between invention and discovery is very difficult to define in medical fields. A discovery is often the culmination of years of progressive research by many workers, and it is unfair that the worker who merely applies some finishing touches should be able to reap the monetary reward of the cumulative effort. While such a state of affairs discourages scientific workers who have contributed to the research on which the invention is based, the fact remains that the general motive of most scientific workers is not monetary reward, but the satisfaction that comes from advancing knowledge.

Distinction between Discovery and Invention.

The authors of the memorandum proceed to consider the circumstances connected with the patenting of three important inventions subserving medical treatment.

(*a*) *Insulin.*—In 1923 Dr. Banting made the final addition to a long series of discoveries by which the preparation of insulin was rendered possible. His process was protected by a patent taken out in the name of the University of Toronto, and the British patent rights were offered by the University to the Medical Research Council, whose action in accepting them met with some criticism at the time. The Medical Research Council was animated by two considerations: first, that the patent was better in its hands than in anybody else's; and, secondly, that it was able to control the manufacture of insulin, there being at that time no Therapeutic Substances Act, by which this could be effected. Events have fully justified the Council's action, for insulin of the highest quality is now available at very low cost, owing to the fact that the few firms to whom the manufacture has been entrusted are able to devote considerable energy and capital to its production.

(*b*) *Thyroxine.*—At the time that Dr. Harington published all but the final stage of the synthesis of thyroxine, he decided not to patent this method, and thus left unguarded the possibility that other workers, perhaps abroad, might obtain a monopoly of synthetic thyroxine by discovering the last step. It happens that Dr. Harington was later successful in completing the synthesis, which was never patented. The danger remains that some foreign manufacturer may become possessed of a patent which, though of minor importance in itself, would enable him to cut out the British manufacturer, who would not be free to use the patented, and consequently cheaper, method.

(*c*) *Vitamin D.*—The example set by Toronto University has been followed by Wisconsin University. Steenbock patented the method of rendering foodstuffs antirachitic by irradiating them. Knowledge that some foodstuffs possess antirachitic properties and that the irradiation of animals cured or prevented rickets had previously been acquired by research in which British workers played a leading part. The University of Wisconsin, however, not only used the patent for the purpose of demanding royalties in this country, but claimed that it covered a later and much more important discovery which was unsuspected when the specification was drawn up. This discovery, largely to be credited to workers in this country, and published without any idea of patent application, was that ergosterol becomes vitamin D when irradiated. According to the Joint Chemical Committee, the history of the Steenbock patent illustrates the unfair advantage that can be taken by those making full use of the patent system over those who refuse to do so. Meanwhile the position has become still further complicated through attempts now being made by a foreign firm to gain control of the manufacture of vitamin D by patent applications concerning the particular conditions and methods of irradiating ergosterol.

It thus appears that the results of British research are being exploited by workers in other countries who do not hold the same opinion about the ethics of medical patents. The exploitation is usually effected by the well-known methods of making a small improvement in the published method, and then patenting it in this and other countries; often the result is that the British worker is prevented from using his own discovery.

The Position of the Manufacturer.

In order that full use may be made of new medical substances it is necessary that their production should be efficiently developed on an adequate scale. But before a manufacturer can undertake the necessary financial commitments he very naturally expects some assurance that he will obtain a reasonable return on his outlay. Such assurance is best afforded by protection against unrestricted competition, and the joint committee points out that competition is in fact likely to defeat the object which it seeks to attain—namely, improvement of quality and the reduction of price. Part of the medical investigation carried out in this country is financed by industrial companies, and if these are to be in a position to maintain their research activities they must have suitable protection either by patents or trade marks. The only alternative is the preservation of secrecy, which is admittedly undesirable.

To reconcile the conflicting views of the medical profession and the manufacturers, the British Science Guild, in its report on the reform of the British patent system,[3] makes the following suggestions:

> "That the interpretation of the word 'manufacture' should be extended so as to permit of the patenting of a wider range of biological inventions; and we think that the practical difficulties involved in such an extension are not insuperable. Biological inventions subserving medical treatment should not, however, be patentable in view of the strong contrary opinion of the medical profession."

It would, however, be difficult to devise a formula whereby it could be decided in any particular case whether the product fell within the category "biological inventions subserving medical treatment," and the joint committee suggests that the proposal to differentiate between chemical and biological substances for medicine is illogical and does not afford a satisfactory solution of the problem. It is equally emphatic in condemning the proposal to abolish medical patents. Apart from the objection that such a step would remove the necessary inducement to firms to undertake the manufacture of new remedies, there would be the difficulty that many substances subserving medical treatment have other uses in respect of which a patent would be permissible. Moreover, it is possible that the abolition of medical patents might lead to undesirable secrecy in place of free publication of the results of research. When a new drug is patented the process of manufacture and the composition of the drug are published in the patent specification, and the patentee is given a control monopoly for a limited period. Such publication leads to the development of new ideas and to further investigations, all of which would be lost if medical patents were replaced by "secret remedies." In any case, the joint committee insists that the abandonment of medical patents should not be adopted until international agreement on the subject is obtained; otherwise all markets in countries where patent legislation does not exclude medical patents will, in effect, be closed to British manufacturers. Such restriction on the scale of production would react to the detriment of the British medical profession and the public, as it would be bound to have adverse effects on the price of products.

Dedication of Medical Patents.

As a way out of the present difficulties the joint committee suggests a scheme for the dedication of medical patents to the British public. The scheme would work somewhat as follows. Every British patent in respect of inventions subserving medical purposes would be administered on behalf of the public by a department of State called the Medical Patents Trustee. This department would act in consultation with an advisory committee, on which the medical profession was prominently represented. The trustee would grant as many licences as he thought desirable, or, if necessary, he would declare the invention free and allow no greater amount of monopoly than seemed essential for securing the proper development of the invention. He would offer the first free licence to manufacture in this country to the inventor or his nominee, and then such additional licences as he considered desirable, having regard to all the facts in each case. The fees would be paid to the trustee, and not to the inventor. If the licence was worked to the trustee's satisfaction within the period stipulated he would not necessarily grant any other free licence, though at any time he might grant as many other licences as he thought fit, and make the fees as low as

[3] British Science Guild, 6, John Street, Adelphi, W.C. Price 2*s*.

seemed desirable. If the first free licence was not taken up or was not worked satisfactorily he could, if he wished, declare the invention free or grant as many licences, with or without consideration, as seemed desirable. His one aim would be to ensure that the invention was utilized in the manner in which the public could derive most advantage, both as to quality and price. Under this scheme the inventor would have the first option of taking out foreign patents, and he could then deal with foreign royalties in the usual way; or, if the inventor preferred, the medical trustee could take out and administer the necessary foreign patents, determining the royalties, or, if he thought fit, declaring them free. If it is deemed undesirable that the trustee, being a public official, should administer foreign patents, it is recommended that the option to take out such patents should lie only with the inventor or his nominees. Royalties imposed by the trustee should be no more than sufficient to cover the expense of administering the dedicated patents, any surplus being devoted to medical research. By making such dedication compulsory for all patents for inventions subserving medical purposes, whether taken out by British or foreign workers, the principle would be safeguarded that there can be no uncontrolled monopoly in Great Britain, publication would be assisted, and British workers would be protected from exploitation. Furthermore, the administration of the patents by a department of State would allow of an effective control over manufacturers, and would provide the firms with the necessary inducement to develop new remedies. This scheme the joint committee believes would allow the medical worker to contribute to the application of new knowledge by patent publication without the least suspicion that he is monetarily interested.

FRANK LEE PYMAN'S PAPER.

Mr. Frank Lee Pyman opens his paper by considering the two chief methods by which a new medicinal chemical may be established as a commercial substance: the nature of the chemical substance responsible for the physiological action of some natural material may be discovered, or the variation of physiological properties accompanying variation in chemical constitution may be deliberately investigated. By the first method, in which the sequence of events is clinical investigation of some pathological condition, followed by physiological and chemical research, such substances as thyroxine, insulin, and vitamin D have been introduced into medicine. In the second method the sequence of events is reversed: a series of allied compounds is first prepared by chemists, and then physiologists determine the member of the series having the maximum physiological effect. If then the general toxicity of the compound is low in relation to the probable therapeutic dose it may be submitted to clinical trial. The substances discovered by the first method Mr. Pyman calls "biological inventions"; substances discovered by the second method "chemical inventions."

The Part Played by the Manufacturer.

The private enterprise of commercial firms has resulted in the discovery of many important drugs, and as examples Mr. Pyman cites the extended researches of German firms that eventuated in the marketing of salvarsan, "Bayer 205," and plasmoquine. Such investigations cost a great deal, and manufacturers, not unreasonably, expect a monopoly for a time for the drugs that have been discovered through their enterprise. Moreover, a monopoly gives the manufacturer an incentive to market his product. For example, the virtues of chloramine-T, a non-patented substance, are not widely advertised by manufacturers, for the simple reason that it is more profitable to spend money on advertising preparations held by a monopoly. Another difficulty in reaping the fruits of enterprise arises from the fact that the use of substances in medicine cannot be patented unless the substances themselves are new. Mr. Pyman considers as a hypothetical case the courses of action open to the investigator who discovers that a previously described substance is efficient as a purgative:

1 He could market his substance under a registered name, in which case other manufacturers would speedily follow by marketing it under another name.

2 He could make use of it in disguise, as a constituent of a mixture of unclassified composition, but such procedure would prejudice his reputation in the eyes of the medical profession.

3 He could withhold his knowledge of the physiological activity of the known substance, and try to find some derivative or allied substance having similar physiological action and for the preparation of which a patent could be obtained.

The first course deprives the discoverer of any monopoly in his invention; the second and third prevent his discovery from becoming open or patent. From the manufacturer's point of view, then, an adequate system of monopoly patent is an incentive to research, to the marketing of products, and to the disclosure of processes. On the other hand, medical ethics prevent the patenting of drugs by registered medical practitioners, and this fact raises difficulties in connexion with new discoveries made by a team of research workers that includes a medical man.

Dedicated Patents.

Having recognized this difficulty Mr. Pyman proceeds to examine the proposal to effect a compromise between the interests of the manufacturer and the ethics of the medical profession by means of a system of dedicated patents. Such a system, he admits, may be very valuable in facilitating the patenting of inventions of the "biological" type, for it would provide medical research workers with a means of protecting their discoveries for the benefit of the nation without infringing their ethical code. But he doubts if the system is desirable in respect of inventions of the "chemical" type. Some possible national benefit might result from the proposal if it led the Medical Research Council to insist that important inventions made by persons in receipt of a public grant should be protected and the patents vested in the nation. At present it is left to the discretion of such persons to decide whether they shall patent their inventions or not, and there is the danger that if they prefer not to take out a patent foreign manufacturers may prepare their product and undersell manufacturers in this country. The case of thyroxine exemplifies yet another danger to national trade. Harington's decision not to patent his method of synthesizing thyroxine made it possible for foreign manufacturers to prepare this substance on equal terms with British manufacturers. A Swiss firm has recently taken out a British patent for effecting the conversion of Harington and Barger's azlactone into diiodothyronin in one operation instead of two, and while the particular advantage to be gained in this case may not be of much importance, it illustrates the folly from a national point of view of failing to protect an original discovery in the national interest and permitting foreign manufacturers to acquire a monopoly in an improvement of the invention. If Harington and Barger had been able to patent the synthesis of thyroxine in the national interest rather than in their own they might have been willing to do so, and in such case Mr. Pyman recognizes that dedicated patents might serve a useful purpose.

Objections to the Scheme.

A patent is in effect a reward for disclosure, and if the manufacturer is denied this he will keep his processes secret rather than broadcast them. What effect would the substitution of dedicated for monopoly patents in the case of chemical inventions have upon publication? In 1910, shortly after Dale and Laidlaw had shown that histamine has considerable physiological activity, Pyman devised and patented an improved and new synthesis of this base, and the process was published in 1911. What inducement, asks Pyman, would his employers have had to allow him to publish this new method if no patent, or a patent which they did not control themselves, could have been obtained in respect of his invention? Again, he and Carr, after extended and costly research, discovered that emetine was the mono-methyl ether of cephaeline, and, having patented the conversion of cephaeline into emetine by methylation, published their results in 1914. The partly synthetic emetine is identical with natural emetine, and the manufacturers could have put it on the market without disclosing any invention. If, therefore, no valid monopoly patent could have been granted in respect of the manufacture of emetine it would have been the obvious policy of the firm to work the process privately and to refuse

permission to Mr. Pyman and Dr. Carr to publish their results. Thus, according to Mr. Pyman, one result of substituting dedicated for monopoly patents in the case of chemical inventions will be to restrain the patenting of improved processes for the manufacture of known compounds, and consequently to hinder publication of the underlying scientific work.

A further difficulty arises from the fact that chemical inventions often proceed step by step, and if a manufacturer cannot obtain a monopoly patent for the preparation of a drug he will presumably try to protect some intermediate product essential for its synthesis. It might be argued that a patent for an intermediate would also be refused on the ground that it represented a step in the preparation of a drug, and served no other useful purpose; but this objection raises further difficulties, as many substances have been patented as intermediates for the preparation of both dyes and drugs. Mr. Pyman cites the two following examples. A patent has just been granted to the I.G. Farbenindustrie for the preparation of quinoline derivatives which "are useful therapeutically or as intermediates for the manufacture of therapeutic substances and dyestuffs." Again, Messrs. Boots and Dr. Marshall have recently patented the production of a new antiseptic from a new intermediate product which could also be used for the manufacture of a red dyestuff. Supposing that a monopoly patent for medical discoveries were denied, the firm could presumably patent the preparation of the new intermediate as a step in the process of manufacturing the dyestuff. These considerations, Mr. Pyman believes, illustrate some of the difficulties likely to arise from the substitution of dedicated for monopoly patents in the case of chemical inventions subserving medical purposes.

Nova et Vetera.

THE OLDEST MEDICAL ACT?

IN 1421, the ninth year of the reign of King Henry V, was passed what I believe is the oldest Medical Act in this country. I have consulted Halsbury's *Laws of England* and Chitty's *Statutes*, but there is no reference to this Act in either of them. In the Statutes of England, published by the Stationery Office, there is a mention of the Act, but nothing whatever is said of its repeal. It is possible that it may have been included in one of the many Statute Law Revision Bills, which are designed to clear the Statute Book of enactments which, though no longer in operation, have not been expressly repealed, but I have found nothing to support this possibility. If the statute is still law it appears to me that the position of the unqualified practitioner is not so secure as is generally thought.

Translated into more or less modern English the document reads as follows:

High and most mighty Prince, noble and worthy Lords Spiritual and Temporal, and worshipful Commons, for so much as a man hath three things to govern, that is to say soul, body, and worldly goods, the which ought and should be principally revealed by three sciences, which are divinity, physic and law, the soul by divinity, the body by physic, worldly goods by law, and this knowledge should be used and practised principally by the most learned men in the same sciences, and most approved in cases necessary to increase of virtue, long life, and goods of fortune, to the worship of God and common profit.

But worthy Sovereign it is known to your high discretion many unlearned and unapproved in the aforesaid science practise, and especially in physic, so that in this realm is every man, be he never so lewd, taking upon himself to practise and suffered to use it to great harm and slaughter of many men, wherein if no man practised therein but only learned men and approved sufficiently to be learned in art, philosophy, and physic, as is kept in other lands and realms, there should many men that dieth for default of help, live, and no man perish by ignorance.

Wherefore may it please your excellent wisdom that after your soul is of no help to your body for the causes aboveseid, to ordain and make in statute perpetually to be straightly used and kept, that no man of any manner, estate, degree, or condition practise physic from this time forward unless he has for a long time used the schools of physic, having sufficient testimonials in those degrees in the university in which he took his degree, under pain of long imprisonment and paying forty pounds to the king, and that no woman use the practice of physic under the same pain, and that the sheriffs of every shire make inquisition in their turns if there be any that forfeiteth against this statute under a reasonable pain, and then that they put this statute in execution without any favour under the same pain: also lest that they which are able to practise in physic are excluded from practice, the which be not graduated, may it please your high prudence to send writs to all the sheriffs of England that every practitioner in physic not graduated in the same science that wisheth to practise be within one of the universities of this land by a certain day that they that are able after true and straight examination be received to their degree, and that they that be not able to cease from practice until the time they are able and approved or to nevermore concern themselves with it, and that here also be set a convenient punishment.

Also, to take away the mischiefs and dangers that have long continued within this realm among the people, arising from those who have used the arts and practice of physic and surgery, pretending themselves to have been well and sufficiently instructed in the same arts, when in truth they have not, to the great deceit of the people. Now it is ordained and assented in this Parliament, that the Lords of the King's Council, for the time being, shall have power, by authority of the same Parliament, to appoint such order and punishment for those persons who shall hereafter intermeddle and use the practice of the said arts, not being skilful nor approved in them as to the same arts appertaineth, that is to say, those in physic by the universities, and the surgeons by matter of that art: and this, as it shall seem to the said Lords most convenient and necessary in the case, according to their good judgement and discretion, for the safety of the people.

The effect of this Act is to forbid the practice of medicine and surgery to all those who have not had a proper training, a condition of things which does not obtain at the present time in this country, when anyone, no matter how ignorant he may be, is able to exercise the profession of a doctor, provided he does not represent himself to be a duly qualified and registered practitioner.

It is interesting to note that of the forty-one statutes passed in the reign of Henry V six remain in operation either wholly or partially, including one regulating the visitation of hospitals, passed in 1414.

Since writing the above I have received the following note from the Editor of *The Justice of the Peace*:

"Although it has sometimes been referred to as a statute, the petition never, as such, seems to have been enacted. It does not appear in the *Chronological Table of All the Statutes* by authority; and certainly has not been formally repealed. The petition is endorsed as relegated to the Lords of the King's Council to make an ordinance to provide for the punishment of unrecognized practitioners; but no ordinance seems to have been promulgated."

L. A. PARRY, M.D., F.R.C.S.

IMPRESSIONS OF POST-GRADUATE WORK IN VIENNA.

[FROM A CORRESPONDENT.]

FOR many years the medical school of the University of Vienna enjoyed a reputation for the character of its work which was second to none in Europe; and during the last half-century this reputation has been enhanced by the genius of men who opened new avenues in the various fields of medical knowledge. One has only to recall the names of some of these leaders—Billroth in surgery, Israel in urology, Wertheim in gynaecology, Pirquet in tuberculosis, Freud in psychology—the list is unending—to realize how great has been the influence of the Vienna school on the progress of medical science and on the course of its development.

Organization.

Before 1914 post-graduate work in Vienna consisted chiefly of courses in German held under the authority of the University of Vienna; a working knowledge of German was essential to the student, though he was able occasionally to obtain individual teaching in the clinics by an English-speaking "docent." Since the war, however, graduate classes held in English are organized and con-

trolled by the American Medical Association of Vienna. By agreement with the medical faculty, private arrangements between student and teacher are no longer countenanced; the teaching of advanced medicine has been "rationalized," with the result, on the one hand, of a great increase in output, as shown by the large number of classes available, and, on the other, of a loss of elasticity and some commercialization of the teaching.

The courses are organized on the basis of at least three months' study; as, however, few English medical men, except perhaps the most recently graduated, can afford to leave their practices for so long a period, this method of organization prevents any large influx of British practitioners to the school. It is possible, however, for one who is energetic and perhaps a little catholic in choice of subjects to compress three months' classes into a period of five weeks. To take my own experience, my intention was to obtain post-graduate instruction in practical urology, in operative gynaecology, and in bone and joint surgery; to this end I joined classes in pathological, didactic, and clinical urology, and cystoscopic radiology, in operative and clinical gynaecology, in gastric surgery, in bone surgery and fractures, in local anaesthesia, and, as a sort of mental recreation, in rejuvenation. All this implied attendance at classes for eleven to twelve hours daily, and might appear likely to have resulted in acute mental indigestion; in fact, the variation in the character of the work—at one time listening to a lecture, at another operating on the cadaver, or dealing clinically with a patient—saved one from becoming stale. Operative surgery began at 7 a.m., classes finished at 8 p.m., at latest, and Saturday afternoons and Sundays were free.

The method of joining classes is as follows: the prospective student writes to the secretary of the American Medical Association of Vienna, Alserstrasse 9, Vienna, IX, who sends a handbook from which a certain amount of information is obtainable; he then notifies the American Medical Association of his intention to arrive about a certain date; and, having arrived, he reports to the cashier and joins the association. At this stage he would be well advised to address himself to the presiding genius who is in charge of forming the courses; this lady will order his destiny for the next few weeks; she will show him what courses are *opened*; *suggest* what classes *to* take and what to avoid; sandwich him into classes that have just started; steer him away from others that are waning; show him how to obtain money and food; and finally instruct him about suitable lodgings. When the prospective student goes back next day she has forgotten neither him nor his aims, and has further suggestions to make to meet his needs.

In starting a course in a given subject a lecturer posts a notice that a class limited to so many students will be opened on a certain date, each lesson lasting perhaps two hours. Operative classes are limited to two, clinical classes to four, other classes to ten; a few lecture courses are not limited in size. Most of the courses are filled and started within twenty-four hours of posting; but it is frequently possible to join a course of which one or two sessions only have been held; when one course finishes another begins within a few days. For the purpose of guiding students wishing to attend a series of classes "orientation men" are appointed in connexion with each course: as, however, these work on the basis that students will stay for three months I did not find them particularly helpful.

The success of the post-graduate courses in Vienna may be attributed to a number of causes: the work of the American Medical Association, which has organized and advertised the facilities; the wealth of clinical material available in the Allegemeiner Krankenhaus, a general hospital of nearly 6,000 beds, and in the Franz Joseph, the Wilhelmeiner, and the Pehan and other clinics; and the legal provision whereby all patients dying in hospital are available for post-mortem surgery. The actual courses differ somewhat from those in this country; incidentally, neither, in my opinion, is suitable for a graduate studying for a Fellowship. But while in this country post-graduate courses are arranged to suit the general practitioner, in Vienna they are particularized to special subjects which are differentiated from the general body of medicine. In Vienna the post-graduate student can obtain ample facilities for the study and practice of any subject in which he is particularly interested, without having to concern himself with other subjects which do not affect him.

There is no doubt that a period of post-graduate study affords a stimulus to the medical man and gives an added interest to the daily round. If, under the auspices of the British Medical Association, courses in specified subjects—for example, orthopaedics, urology, endocrinology, cardiology, or obstetrics—were organized in Vienna, Prague, or Budapest, there would be more incentive to the British doctor to avail himself of post-graduate opportunities in other countries. These courses should be for periods of three to four weeks, limited to a fixed number of students, and embrace didactic, clinical, and practical classes; it should be possible in the time to study two related subjects—for example, gynaecology and obstetrics. I am not suggesting post-graduate study abroad as a substitute for similar study in this country. Indeed, as an Edinburgh man I was gratified to hear from two experienced men, one an American and the other an Australian, who had both done post-graduate work in the United States, in Great Britain, and on the Continent, that the summer course of Edinburgh University was the most useful in the "didactic" style that they had encountered.

Cost of Post-Graduate Study.

Some idea of the cost of a visit to Vienna might be useful. Travelling by rail costs about £20 return; by air about £30. The advantage of the latter is that one can visit Berlin, Prague, Vienna, and Paris in the round trip, and I recommend it as giving a further interest to the holiday; it takes almost as long to reach Vienna, however, owing to the need for changes. The cost of rooms in Vienna is reasonable; in my pension the rate was about 10s. a day, and I was sufficiently comfortable and adequately fed. The expense of classes varies; during October, 1928, 392 courses were held at a cost of 12,000 dollars, say, about £6 10s. a course; but this sum is split up between the members of the class, so that if there are ten members the course costs 30s. each, but if only two, as in the operative classes, £3 5s. each. My own class fees, in view of the exceptionally large number of courses I joined, worked out at nearly £40 a month.

Social Life of Vienna.

The American Medical Association of Vienna does not neglect the social side, and organizes short tours and outings, dances and parties, to all of which Englishmen are invited. There are two golf courses, and facilities for tennis and bathing. To the amateur student of social conditions the state of Austria is of interest. The absence of the old aristocracy, the depression of the professional classes, the existence of severe poverty, and the constant political struggle between the highly socialistic urban population and the individualistic rural party, have converted Vienna from the gayest capital in Europe to the quietest. I was told that the consultant's fee was about five shillings, while £15 was a big operation fee: naturally more is expected from a foreigner. The financial difficulties of many medical men are almost unbelievable; pre-war investments are almost worthless; owing to the limitation of rentals to one-tenth the pre-war rent property is a burden to the owner. On the other hand, the enormous blocks of flats built by the Government to replace slum properties are visible token of the effort made to overcome the problem of reasonably housing the working classes. There was no obvious sign that these excellent flats were becoming degraded owing to inability of the slum dweller to adapt himself to his new environment.

Whether the Vienna of to-day maintains its former greatness as a medical centre may be doubted; the result of the war, the relative poverty of the professional classes, and the reduction of Austria from its old position to a republic of six million individuals have had a depressing effect on the mental attitudes of the intelligentsia. The leaders of medical thought in Vienna, it seems to me, were influenced by the fear that with the passing of political greatness Vienna had lost importance as a cultural centre.

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LABORATORY METHODS FOR THE DIAGNOSIS OF PREGNANCY.

FOR several reasons, and in a variety of instances, it is highly desirable that a definite diagnosis of pregnancy should be made as soon as possible after the menstrual cycle has become interrupted. It is equally desirable that the method adopted should not be unpleasant to patient or physician, but simple, capable of being used by the geographically isolated general practitioner, cheap in time and money, and, of course, reliable. Any method which does not fulfil these conditions can never be regarded as being entirely satisfactory. The Abderhalden test, for which the serum of the woman is brought into contact with specially prepared coagulated placenta, can be applied only by the physician who is highly trained in laboratory methods. Changes in sugar tolerance and in the amount of acetone bodies are certainly associated with pregnancy, but not solely with this condition, and therefore a satisfactory pregnancy diagnosis test based on such changes cannot be evolved. The local reaction which follows the subcutaneous injection of posterior pituitary extract or of anterior lobe hormone has been held to be diagnostic of the non-existence of pregnancy, but since this test has not been sufficiently studied its value cannot as yet be assessed.

The tests which are now in vogue are those based on the fact that in the urine of the human female are to be found considerable quantities of those hormones which are concerned with the maintenance of pregnancy. One of these, which invokes oestrous changes in the female mouse, is known as "folliculin," "oestrin," or "alpha hormone," etc. In the urine of a pregnant woman there are also to be found those pituitary derivatives which regulate ovarian function, and thus control the elaboration of the ovarian hormones. One of the tests, which has been elaborated particularly in America, depends upon the presence of oestrin in the urine. It is a quantitative test, for this hormone is to be found in the urine in cases where pregnancy does not exist, but the necessary biological assay is very difficult. The test has not been developed to any great extent for the reason that the diagnosis of pregnancy through the recognition of the existence of anterior pituitary derivatives in the urine can be made much more easily. These hormones occur also in the urine of non-pregnant individuals, but their concentration is far greater in the urine of a pregnant woman than in that of a woman who is not pregnant. This difference is sufficient to permit a very specific test to be carried out, for when that concentration which is reached during early pregnancy is present, the effect upon the immature mouse ovary of injections of urine containing these substances is such as to produce demonstrable and characteristic morphological changes therein. This effect upon the mouse ovary was noted by Zondek and Aschheim, and has been used by these authors as the basis for the well-known pregnancy test which is known by their names.

The application of this test on a large scale, as has been done, for example, in the Pregnancy Diagnosis Station attached to the Animal Genetics Department of the University of Edinburgh, has shown that only very few conditions other than pregnancy are associated with a significantly great excretion of these hormonic factors. From this work one fact of considerable interest has emerged, and that is that the urine from cases of malignant tumour can also give a positive Aschheim-Zondek reaction; but since the percentage of tumour cases in any population examined for pregnancy is likely to be small, even though malignancy can give the same reaction as does pregnancy, this fact does not destroy the usefulness of the test in the diagnosis of the latter condition. It is at the present time the most satisfactory test available, but it is far from being ideal, for it requires, if it is to be of any real service to the medical profession, that there shall be special centres established where large stocks of mice are maintained and where skilled service is available. Though the effects upon the mouse ovary are so very characteristic and so easily detectable, and though it is possible for a general practitioner who possesses a certificate to maintain a small stock of mice, it seems most unlikely that the Aschheim-Zondek test will ever become one which the general practitioner can be expected to carry out himself.

The search for the ideal test is being continued. It seemed that perhaps Voge, in his suggestion of a bromine test (*British Medical Journal*, November 2nd, 1929, p. 829), had devised an entirely satisfactory method for the detection in the urine of pregnant women of compounds of the beta-iminazoyl type, and thereby of the condition of pregnancy. He obtained results which compared exceedingly favourably with those secured in the same laboratory by means of the Aschheim-Zondek test; but further experimentation has shown that, after all, this test will not serve, for Dr. Gladys Dodds, in our present issue (p. 948), shows that in a series of cases examined by her there was some 25 per cent. of error among individuals known to be pregnant, and 13 per cent. among those known to be not pregnant.

It would appear that rather than to extend experimentation of an empirical kind it would be better to attract the attention of those who seek to devise a pregnancy diagnosis test towards an exact chemical analysis of the urines of different groups—for example, pregnant, non-pregnant, and cases of malignant tumour—in order that they might determine what differences in respect of chemical groupings distinguish them. If oestrin is present in a urine, then, as has been suggested, this might contain the hydroxyl grouping, and if this were so it could easily be detected by appropriate chemical means. If histidine-like compounds are characteristic of pregnancy, then the presence of these could be demonstrated by methods involving the production of azo-dyes. These possibilities should certainly be explored. The time has come when the attention of the organic chemist should be drawn to the accomplishments of the physiologist, for it would appear that without the help of the former the search of the latter for the ideal pregnancy diagnosis test cannot be completely successful.

FILTERABLE VIRUSES.

THE many activities of the Medical Research Council in the field of filterable viruses, and parallel activities of other bodies and individuals, both in this country and abroad, testify to the determined efforts now being made to get an understanding of the nature of this mysterious group of disease agents. At this juncture it may be fitting to review the work that has been done, taking stock of successes and failures, and estimating the gains to date. Progress has been slow, but real advance has been made is undeniable. For an example may be taken the problem of cultivation, the solution of which will open up the way to more rapid advances in the future. Until comparatively recently viruses could be cultivated only in the tissues of the living animal; but Carrel, by showing that the virus of vaccinia could be cultured along with living tissue outside the animal body, made a very definite advance. Even though this method of cultivation has told us little or nothing about the nature of viruses it has at any rate brought cultivation more under control, and has been employed with considerable success by Andrewes and Rivers in studying the problems of immunity. The Maitlands carried the question a stage further by finding an extremely simple method of growing viruses with living tissue, but here again the presence of living cells appeared essential. Are these viruses such highly specialized intracellular parasites that their growth requirements can only be supplied by living cells? Recent work by Mackenfuss and Rivers would appear to answer this question in the negative, for they have been able to show that vaccinia virus will live and possibly multiply when shut off from the living tissue by a collodion membrane. This may, of course, only be an example of survival and not of multiplication, a point which will be readily cleared up by further work, but the line of attack is ingenious and of great promise.

The question of the nature of the immunity to virus diseases has received considerable attention. Levaditi and his school have maintained that immunity to filterable viruses is largely, if not wholly, a tissue immunity in which the humours play little or no part. The work of Gordon, Ledingham, and Andrewes with vaccinia virus, and of Bedson, Zinsser, and others with the virus of herpes, has not supported this contention, and it may be concluded that in these diseases, as in those of bacterial origin, the two factors—humours and cells—work together to bring about the immune state. While however, there seems some unanimity of opinion about the importance of viral antibodies, the way in which they act has been a matter of acute controversy. The earlier work of Andrewes suggested that union between vaccinia virus and its antibody did not occur but his more recent experiments show that union does take place, though only slowly—a finding more in keeping with the work of Wilson Smith with vaccinia and herpes virus and of Bedson with the latter virus. The recent experimental investigations carried out at the London Hospital, which have gone far to establish the view that psittacosis is caused by a filterable virus—a view borne out by work in America and Germany—have added even greater interest to the study of this group of viruses, not only because psittacosis is a disease of birds to which man is susceptible, but principally because it would appear to be an example of a virus pneumonia. It has been thought for some time that influenza has a filterable virus as its exciting cause, and the work on psittacosis lends colour to this view. The common cold is another disease which has been suspected of having a virus origin, and the investigations of Dochez and his colleagues in the States would appear to go a considerable way towards confirming this hypothesis.

In conclusion, we may refer to the work on prophylactic immunization against virus disease with inactive vaccines. This method has been exploited for some years in connexion with rabies, but research along these lines was given a fresh impetus when it was demonstrated independently in France and in this country that the virus of foot-and-mouth disease could be rendered inactive by means of formalin and still retain its antigenic power. The same has been found true for other viruses, among them those of distemper, fowl plague, and yellow fever, and by successive injections of formolized virus and living virus prophylactic immunization against distemper has been practised with considerable success. It must not be concluded, however, that similar methods will necessarily be effective in all virus diseases. Obviously, such conditions as the common cold, in which one attack is not followed by a stable immunity, will not lend themselves to prophylactic immunization; and in those diseases where a solid immunity does ensue preventive measures of this kind will be impracticable, at any rate on a large scale, until the problem of growing filterable viruses has been solved. An enormous amount of work remains to be done; problems confront us which appear almost insoluble; but, as the Medical Research Council points out,[1] these problems are relatively no more difficult than those which presented themselves to bacteriological investigators in the days before Pasteur and Koch. Material progress has been made in which research workers in this country have played no small part, and we feel that ultimate success, if not imminent, is yet within sight.

BRUCELLA INFECTIONS AND PUBLIC HEALTH.

Bang's disease, or epizoötic abortion, is a well-known disease of cattle in northern latitudes. It has been recognized for many years in Britain, where it is regarded as one of the major sources of loss to stock owners—second in importance only to bovine tuberculosis. In the United States it is estimated that 20 per cent. of the cows are infected, causing an annual loss of about 175 million dollars. There are no comparable figures for this country, but there is no doubt that here, too, the annual loss must be enormous. Until recently the condition has been associated mainly with abortion in pregnant cows, and the fact that bacilli were frequently excreted in the milk was regarded as of little significance, except in so far as the calf was concerned. Nowadays, of course, it is recognized that abortion is by no means a regular symptom of an infected cow, nor is abortion in cattle always due to Bang's organism. The fact, too, that the causal organism of undulant fever in Malta was described as a micrococcus, while the organism of contagious abortion was obviously a bacillus, prevented an earlier recognition of the relation between these two conditions. During the past few years in America and in Europe extensive research has taken place on these two diseases, and it is now generally accepted that the causal organisms of both are merely varieties of the same bacillus to which the generic name Brucella has been given. Bacteriologists recognize a variety of strains, and there is as yet no general decision as to their exact status. Three main groups have been differentiated: a caprine group which includes *M. melitensis* of Bruce, mainly subtropical in its distribution; a bovine group which includes *Br. abortus* of Bang, mainly distributed throughout the temperate zones; and a porcine group, which appears to have a distribution

[1] Report of the Medical Research Council for the year 1928-29. H.M. Stationery Office. 1930. Cmd. 3656. 3s. net.

similar to that of the bovine. The names do not imply that these groups are confined to goats, cattle, and pigs respectively; only that they seem to find their optimum hosts in these animals. All three can be transmitted to cattle. Many of the suppurative conditions in horses have recently been found to be primarily caused by Brucella (though epizoötic equine abortion is not due to this group of bacteria); even birds have been experimentally infected; and natural infections have been recorded from domestic poultry in the United States. All the varieties are transmissible to man, but in different degree. The caprine varieties are the more virulent, the porcine the easiest to transmit. Milk is apparently the main source of human infection, but a number of cases are due to actual contact with infected animals. In recent years the incidence of Brucella infection in man has enormously increased, and recent estimates in America place the rate of infection as between 1 and 10 per cent. of the total population. Such infection does not necessarily connote disease; or at least disease sufficiently serious to attract the attention of the physician. But not infrequently Brucella does produce disease, which though of low mortality may cause a long illness and an extensive and protracted convalescence. The symptoms are very variable and may simulate those of tuberculosis, endocarditis, malaria, arthritis, influenza, typhoid fever, and so on. Abortion is very uncommon in the human subject, though cases are on record. Children under 5 are seldom affected, and the highest incidence of the disease is found in young adult males. A great deal of attention has lately been given to this disease in America, and it has been found that the human infection is much more common than had been suspected. While this apparent increase may in part be due to improved methods of diagnosis, it is suggested that it may also be due to the confidence placed in tuberculin testing of cattle. The Americans are great milk drinkers; and tubercle-free milk is generally regarded as clean milk, though the terms are by no means synonymous. In many places pasteurized milk has been replaced by raw milk certified free from tuberculosis, and a definite safeguard against Brucella infections has in this way been removed. Several localities have prohibited the sale of unpasteurized milk, unless it is from cattle certified free from Brucella infections as well as from tuberculosis. But there is no doubt that at the present stage the surest safeguard is pasteurization. There is, it is true, a slight loss of vitamins, but in a balanced diet this loss is negligible. Pasteurization of milk, of course, must not be allowed to become an excuse for the production of dirty milk by the dairyman. Some of the American States are building up Brucella-free herds in a manner analogous to that employed in building up tubercle-free herds. All cattle are tested, reactors are segregated, and their milk is used only after it has been pasteurized. The non-reactors and all calves are kept entirely apart from the reactors, and no physical contact is permitted. All new stock is tested and only introduced if free from infection. In this way a Brucella-free herd can be established within a very few years. The tests employed have generally been serological—agglutination or complement fixation—but recently there has been introduced an intradermal test by means of "abortin"—a substance similar to tuberculin and mallein, and employed in much the same way. The intradermal test is simpler and less expensive than the serological, and apparently it gives even more accurate results. It is of interest to remember that abortin was first prepared by M'Fadyean and Stockman in this country twenty years ago. A number of Continental countries have made the bovine disease notifiable, but, so far, Britain has regarded the Brucella infections as of little importance. A number of cases have been reported, however, and there is little doubt that once the facts are generally known many more will be found to exist. Fortunately, the disease is easily controllable—much more so than bovine tuberculosis—and there are no grounds for alarm. Pasteurization alone is sufficient to render milk safe, and concerted action, as public opinion is influenced, could quite easily eliminate Brucella infections from our herds.

ROYAL SOCIETY CONVERSAZIONE.

THE spring conversazione of the Royal Society was held on May 14th in the Society's rooms at Burlington House, the guests being received by the president, Sir Ernest Rutherford, O.M. The exhibits on this occasion were fewer than usual. A demonstration which attracted considerable attention was one arranged by Captain S. R. Douglas, *F.R.S., and Dr. Wilson Smith to record the results obtained* by Miss J. Marchal, who has been investigating at the National Institute of Medical Research a hitherto undescribed virus disease of mice termed "infectious ectromelia." The histology of this condition was illustrated by beautifully stained microscopical slides, which revealed the occurrence of cytoplastic inclusion bodies in the epithelial cells of the skin of the feet, and in the secreting cells of the pancreas and salivary glands. Necrosis of certain mesoblastic tissues, such as the liver and spleen, was found in fatal cases. The disease begins with swelling, usually of one hind foot; this is followed by gangrene and separation of the affected portion of the limb. The death rate among the infected stock was high, and post-mortem examination brought to light changes in the liver and spleen, even in the absence of external lesions. Miss Marchal attributes the condition to a filter-passing organism. A somewhat similar exhibit was that of Dr. J. Henderson Smith, from the Rothamsted Experimental Station, who displayed specimens of virus disease in tomatoes. The example shown included the occurrence of the same virus in different host plants; different viruses in the same host plant; the combination of two viruses in one plant; and the intracellular inclusions which characterize many virus diseases in animals, as well as in plants. A demonstration was given of the fact that the movement of the virus within the plant does not normally occur in the water or transpiration stream, nor across dead tissues. An illustration was given of the way in which the insects which are responsible in nature for the spread of such virus diseases were experimentally bred in the laboratory. A beautiful series of illuminated coloured transparent photographs of the natural vegetation of South Africa was provided by Dr. and Mrs. Pole Evans; these showed flower-bedecked panoramas of grassland, forest, and desert areas. Dr. Pole Evans, who took the photographs, travelled by motor car and van through the Cape, Natal, Swaziland, Zululand, the Orange Free State, and the Transvaal. The National Physical Laboratory showed an apparatus for transmitting and receiving radio wave-lengths of 4 to 10 metres; the reception and recording of signals from the Orfordness *rotating wireless beacon*; the frequency analysis of a modulated continuous oscillation; friction and wear tests of pivots and jewels; and a hygrometer for use in ship holds. A recording microphotometer was exhibited jointly by the Solar Physics Observatory, Cambridge, and the Cambridge Instrument Company, while the *Cambridge* Low Temperature Station illustrated the formation of methaemoglobin in red muscle, and explained how acetaldehyde could be used to control the wastage due to fungi attacking certain fruits. Mr. L. S. B. Leakey showed the Leakey-Harper drawing machine, which has been designed to facilitate the accurate detailed representation of human skulls; with its aid drawings can be made very speedily, and the machine can also be used for making drawings of fossil pottery, and Palaeolithic instruments. Mr. R. S. Whipple showed an early Italian globe, said to have been engra

by Paolo de Furlani, a well-known engraver and seller of maps in Venice in the second half of the sixteenth century. Photographs of the new planet were provided by the Radcliffe Observatory, Oxford. The zoological department of the British Museum supplied specimens of a Nigerian frog in and in which an oligochaete worm had been found to be parasitic. The oligochaetes are extremely rare as internal parasites, and it is believed that this is only the second case which has been definitely authenticated. Professor D. M. S. Watson, F.R.S., gave a lecture illustrated by lantern slides on the flight of pterodactyls. He showed how the osseous structure and arrangements of the skeleton varied according to the size of these reptiles; weight saving was brought to an extreme degree of effectiveness, and the articulation between the various bones had the perfection of the most ingenious machinery. Important information had thus become available as to the mode of life and habits of the pterodactyls, and, moreover, study of the way in which they left the ground and rose into the air had also a practical interest in that suggestions were deducible for improving the design of aeroplanes.

JUBILEE OF THE BRITISH DENTAL ASSOCIATION.

THE British Dental Association, which holds its annual meeting in London next week (May 27th to 31st), is celebrating the fiftieth anniversary of its incorporation. Although there were several dental societies in existence before the passing of the Dentists Act, 1878, most of them were purely scientific bodies. In consequence of that Act there arose the need for an association—to quote from the memorandum and articles—for "the promotion of the dental and allied sciences and the maintenance of the honour and interests of the dental profession by means of periodical meetings, by the publication of a journal, by the grant of money for the promotion of dental science, by the maintenance of the spirit and provisions of the Dentists Act, and last, but not least in importance, by the encouragement of a dental benevolent fund for the relief of decayed members of the profession." The Dental Reform Committee, after its preparatory work had resulted in the passing of the Act, resolved itself into the representative board of the British Dental Association, which was incorporated in 1880. The earlier Act proved a disappointment in some respects, but the association persevered until, through its labour and patience, the Dentists Act, 1921, came above the horizon. In many directions the association, which now covers Great Britain and Northern Ireland with sixteen branches, has done notable service for the profession and the public. The jubilee meetings will take place at the Hotel Great Central, in London; after an opening address by the Minister of Health, the retiring president, Mr. Malcolm Knott of Birmingham, will deliver his valedictory speech, and the new president, Mr. Norman Bennett of London, will be inducted. It is proposed to elect a number of honorary members, including distinguished representatives of the dental profession in Vienna, Berlin, Paris, Stockholm, and in each of the Dominions. A conference is to be held between the council of the association and the Dominion and Colonial representatives, on means for promoting a closer union between the dental associations of the Empire. Various scientific discussions are to be held, including one on the relative advantages and disadvantages of the modern materials used as bases in prosthetic dentistry; there is also a very full programme of table demonstrations at headquarters, of clinical demonstrations at various hospitals, and of visits to industrial clinics and London County Council dental treatment centres. A museum illustrating the history of the Dental Association during the last fifty years will be open, together with the usual trade exhibition. The social side of the meeting is excellently arranged, and includes receptions at the London Guildhall and at the Royal College of Surgeons.

THE STAFFING OF A COTTAGE HOSPITAL.

In this week's *Supplement* will be found a detailed account of the steps by which an unfortunate and, we are glad to think, unusual impasse has been reached in connexion with the staffing of a cottage hospital in North Wales. Very briefly the position is as follows: The Towyn Cottage Hospital, staffed in 1927 by the open method, has been converted into an institution with a closed staff of three general practitioners, representing two local practices, chosen by the lay committee of management according to rules which are known to have been materially altered by that committee on at least two occasions at the very time when an application for appointment to the staff fell to be considered. These changes in the rules have had the effect of excluding from the staff a local practitioner who, in the expressed opinion of the local Division of the British Medical Association, is in every way fitted to serve the hospital and was qualified for such service under the original rules at the time of his first application and later under the rules as modified at that date. The alterations in the rules have been made under a general discretionary power of the committee, the existence of which power is not questioned. We speak of this committee as a lay body because we understand that the medical staff, who are members of it, have no vote; but we cannot ignore the fact that the medical staff have possessed throughout this affair a more effective power than that of a minority vote. It is, to say the least, unfortunate that the local Division of the Association, in its efforts to secure justice for a medical man who, by all accounts, has been most unfairly treated, should have failed to secure from its members on the staff of the hospital the support which it might reasonably have expected to receive and which would have made a speedy settlement possible without undue publicity. The policy of the British Medical Association favours the open method of staffing for such hospitals as this, subject always to adequate safeguards. The subscribers to the hospital, who are fully seised of the position by the action of the local Division, have now to decide on the maintenance or modification of this policy. They have also to decide two simpler issues: first, whether they are prepared to leave the administration of their affairs in the hands of a body which has used its powers to exclude from the full benefits of the hospital service a number of those who desire to be attended by their own doctors, and has subjected an individual practitioner to grave injustice; and, secondly, whether they wish local medical opinion to be consulted or to be ignored in the selection of their medical staff.

HEALTH OF MAORI SCHOOL CHILDREN.

A REPORT by Dr. H. B. Turbott, medical officer of health, Gisborne, New Zealand, on the comparative health of the Maori and pakeha should go far to dispel any pessimism that may still prevail about the future of the Maori people. During the latter half of 1928, to find out what truth there was in various persistent statements about the dangerous health conditions among Maoris, Dr. Turbott made a careful examination of 1,423 Maori children in his district, and compared their health and physique with those of a group of 1,569 pakeha children. In his report, which is published as an appendix to the report of the Director-General of Health, New Zealand, for the year ended March 31st, 1929, he states the results of his investigation as far as possible in figures, giving in relation to each condition the incidence rate per 1,000 of children seen. Anaemia and heart trouble were more frequent among the white children, the incidence per 1,000 of the former being Maori 1.40, and white 11.47; and of the latter, Maori 4.91, and white 6.37. Respiratory disease, though small in amount, was more prevalent in the Maori group. Of Maori children 30.82 per 1,000 were considered to have unhealthy chests, 5.62 being probably tuberculous; of white

children 12.74 were weak-chested, but none were held to be suffering from pulmonary tuberculosis. Associated with this respiratory weakness among Maoris was a great deal of indigency, with its attendant evils of poor diet and bad housing. Some of the children, moreover, had to work very hard, especially where dairy farming was being undertaken, and Dr. Turbott suggests that in the circumstances it would not have been surprising if even more children had been found to be infected. The Maori physique proved, on the whole, to be better than the white; in nutrition, in posture, and freedom from deformities of the trunk and chest the Maori child had a decided advantage. Pediculosis was all too prevalent among the Maori, dissemination being facilitated by the crowded housing conditions, and, above all, by the common practice of sleeping five or six in one bed; and for similar reasons infectious skin conditions—for example, scabies and impetigo—were found to affect the Maori more than the white child. The latter, on the other hand, was found to suffer more commonly than the Maori from eczema, seborrhœa, ichthyosis, and ringworm. Perfect sets of teeth were found in 246.65 per 1,000 Maori children, and in only 50.98 white children, but Dr. Turbott points out that the more closely the Maori copies the pakeha diet the more quickly does his dental superiority vanish. Enlarged tonsils, enlarged cervical glands, goitre, phimosis, and eye troubles—all these were more prevalent in the group of white children than in the Maori group. Hernia, vulvo-vaginitis, and flat-foot were more common among the Maoris. The total number of children in each group was admittedly small, but Dr. Turbott's findings would seem to indicate that the sturdiness of the old Maori warrior has been handed on to his descendants. In health and physique they compare favourably with the pakeha, and it is noteworthy that where they are at a disadvantage—as, for example, in respiratory disease—preventive medicine might be expected to bring them up to the level of their white friends.

CHINA AND THE LEAGUE OF NATIONS HEALTH COMMITTEE.

IN September, 1929, the Ministry of Foreign Affairs in the Nanking Government of the Chinese Republic addressed a proposal to the Secretary-General of the League of Nations for collaboration with the League's Health Committee. China asked for advice and assistance with regard to the following points: (1) the formation of an efficient technical headquarters staff for the study of essential problems of public health in selected areas and for practical application in the field, as well as for the training of public health personnel and auxiliary staff; (2) the setting up of a network of indispensable medical and public health institutions in two or three areas on a sufficiently wide scale to serve as a nation-wide training field, yet limited in scope to the possibilities of a thorough and effective realization; (3) the intensive study, jointly with the Ministry of Education, of the existing facilities for medical education and of the programme of reform for the immediate future; (4) the gradual establishment of a national quarantine and epidemic diseases prevention bureau; and (5) the initiation of control, on a co-operative basis, of cholera and smallpox in the Shanghai area. The Chinese Government has now a Ministry of Health, at the head of which is a small group of Chinese foreign-educated medical men under Dr. J. Heng Liu. This Ministry is both active and ambitious; it desires to see China taking her place among other countries in attaining a modern standard of public health. The technical activities of the League's Health Committee have steadily developed, and it is now in a position to afford advice on the solution of internal problems of organization and construction on a world-wide basis without the risk of incurring any extraneous obligations or conditions. The White Paper which we have received from Geneva shows to what extent the League responded to the Chinese Government's invitation. Dr. Madsen, president of the Health Committee, instructed the medical director, Dr. Rajchman, and Dr. Bondreau to proceed to China in order to discuss with the local competent authorities a detailed project for consideration by the Health Committee. Their report, which does not represent anything more than notes on the proposals and observation on the centres they were asked to visit, is nevertheless a very good and industrious survey of medical conditions in China. It deals with the modern as well as the empirical systems of medicine, the hospitals, and public health work in China, and it touches upon the inadequacies and difficulties of medical education. For the past fifty years foreign medical men, mostly missionaries, have laboured in China to establish colleges and hospitals and to educate Chinese students in Western medicine. It has been an uphill struggle, latterly much interfered with by political troubles, and the results have been only moderately satisfactory. The great majority of practitioners are returned students from America and Europe who, as the report points out, are split into a number of groups according to the country in which their training was received. There is not as yet a general medical council, or any real merging of the groups, and until China can accomplish this she cannot be said to have a national medical profession. It would seem to us that this appeal to the League of Nations is somewhat premature, for there yet remains much spade work to be done in establishing medical education in national colleges in order to yield enough graduates to take up and carry on the reforms which are now desired. A short visit under Chinese guidance to such an immense country cannot do more than scratch the surface, and we are glad to note that the League has arranged for Dr. Park to proceed to China and give further study "to the possibilities of the satisfactory applications of the provisions of the International Sanitary Convention of 1926." The visit of the Commission and the presence of Dr. Park will help to stimulate Chinese medical leaders in the founding and extension of medical education. The setting up of a modern public health service will require a much larger number of graduates than is at present available, for it is from their ranks that the service will have to recruit its officers. Meanwhile we can only congratulate the League of Nations Health Committee on its energetic response to China's appeal for help. The report will no doubt receive serious consideration, and, if so, it will give an impetus to the task of placing modern medicine in China on a sounder basis.

RESEARCH FELLOWSHIPS IN TUBERCULOSIS.

THE first award of the Dorothy Temple Cross Research Fellowships in Tuberculosis, provided from a fund established by a recent benefaction, will be made by the Medical Research Council in July, for the academic year beginning October 1st, 1930. Applications should be lodged with the Council not later than June 30th, 1930. The object of the Fellowships, as defined in the trust deed, is to give special opportunities for study and research to persons "intending to devote themselves to the advancement by teaching or research of curative or preventive treatment of tuberculosis in all or any of its forms." Candidates must be British subjects with suitable medical, veterinary, or scientific qualifications. They must also be able to produce satisfactory evidence of their ability to make good use of the opportunities offered. The Fellowships will preferably be awarded to candidates who wish to conduct their studies or inquiries outside the borders of Great Britain. They will, as a rule, be awarded for one year, but in special cases may be renewed. The value of the Fellowships awarded will depend in each case upon the standing and qualifications of the candidate, but will not be less than £300 per annum, with travelling expenses in addition. It is also hoped to award one senior Fellowship of considerably greater value,

and with good prospect of renewal for a further period, to a well-qualified candidate wishing to undertake intensive investigation into some special problem of tuberculosis, whether in a temperate or a tropical climate. Further particulars and forms of application are obtainable from the secretary, Medical Research Council, 38, Old Queen Street, Westminster, S.W.1.

ACCIDENTS TO HYPODERMIC NEEDLES.

THE frequency with which the London and Counties Medical Protection Society is applied to by its members, in cases of hypodermic needles breaking during the administration of local anaesthetics, has prompted the council of the society to circulate recommendations on the use of hypodermic needles so as to lessen the incidence of this accident, or, should it occur, to give good ground for successfully contesting any claims arising therefrom. The recommendations that follow have been drawn up by the council after consultation with expert metallurgists. A new needle should be used for every case. Needles should never be "flamed" in order to sterilize them, as this may profoundly alter the temper of the needles and render them very brittle. Needles nearly always break at the point of entry into the holder, and a short holder should therefore be used, so that if fracture occurs at this point a large part of the needle will remain in the tissues and so be the more readily found and removed. Needles, unless of stainless steel, should not be kept in watery sterilizing solutions, which may corrode and weaken them, even though such damage may not be visible to the naked eye. When a needle breaks, the society should be advised immediately, whether a claim is made or not. In such cases the make of the needle should be stated and, when possible, both of the broken parts should be sent to the secretary. Any untoward experiences with any make of needle should be recorded. In the event of more than one breakage, not only should the two parts of the broken needles be forwarded, but also the remaining contents of that tube of needles. Lastly, members of the society are advised that owing to the difficulty of tempering so small an article as a carbon steel needle to the exact degree required, an unnecessary risk is run in using them; better and more constant results are obtainable from needles made of alloy steels (such as stainless steel) which do not require subsequent heat treatment, and are, generally speaking, far more flexible than those made of carbon steel.

ANNUAL REPORT OF THE ROSS INSTITUTE.

IN a brief notice of the annual meeting of the Ross Institute last July reference was made (*Journal*, July 20th, p. 129) to the malaria expedition to India and Ceylon which was undertaken by Sir Malcolm Watson and Major Lockwood Stevens in 1928–29; some details of the expedition, and of the developments which followed it, appear in the annual report of the Institute for the twelve months ending December 31st, 1929. In consequence of the adoption of antilarval measures in certain iron ore mines in Bihar and Orissa there has been a marked reduction there in the incidence of malaria, and similar improvement is recorded also in Assam. Another expedition, consisting of Sir William Simpson, Dr. Dalzell, and Mr. C. R. Harrison, visited Northern Rhodesia last autumn, and paid special attention to housing, general sanitary measures, and the scientific aspects of the malaria problem. Sir Malcolm Watson is now in Rhodesia on a tour of inspection, studying more especially the mines and some local conditions which affect the prevalence of this disease. Towards the end of last year two courses of instruction for planters and others engaged in the management of estates in the Tropics were held at the Institute, and facilities were provided throughout 1929 for work by medical practitioners. The importance of propaganda has always been recognized by the Institute, and Dr. Cuthbert Christy's paper on malaria prevention, which was originally published in 1917 for the education of laymen, has now been brought up to date, and is being distributed to residents in the Tropics. The support given to research work by the Institute is illustrated by the publication in an appendix to the annual report of a summary by Dr. A. Shaw-Mackenzie of a study of the diagnosis and treatment of cancer. Other subjects investigated during the year under review include certain diseases due to fungi, colitis, the symbiotic gas fermentation phenomenon, and the effects of carbohydrates on the growth of intestinal bacteria. A list of Sir Ronald Ross's publications during 1929–30 is printed as an appendix. The number of in-patients treated during the year at the Institute was sixty-eight, many having serious and chronic tropical diseases, which entailed long periods of residence. The total receipts from donations and subscriptions show an increase of about £2,500, principally due to a gift of £1,000 by the Nizam of Hyderabad and to contributions received through the Bengal Chamber of Commerce. An appeal is made for £30,000 needed to permit extension of the hospital accommodation, the library, and laboratories, and also for £250,000 for an endowment fund.

THE Royal College of Physicians of Edinburgh proposes to celebrate on St. Andrew's Day, 1931, the 250th anniversary of its foundation. It was on November 29th, 1681, that the Great Seal was appended to the Royal Charter incorporating the College, granted by King Charles II.

THE George Alexander Gibson Memorial Lecture will be delivered in the hall of the Royal College of Physicians of Edinburgh on May 27th and 28th, at 5 o'clock, by William Sydney Thayer, M.D., LL.D., Emeritus Professor of Medicine, Johns Hopkins University, Baltimore. Professor Thayer has chosen "Endocarditis" as his subject.

THE annual general meeting of the Research Defence Society will be held at the House of the Medical Society of London (11, Chandos Street, Cavendish Square, W.), on Tuesday, June 3rd, at 3.15 o'clock. The chair will be taken by the president, Lord Lamington, and Mrs. Edward Mellanby will deliver a lantern lecture on "Diet and dental disease: What we have learned from animal experiments," being the fourth Stephen Paget Memorial Lecture.

IN the issue of *Science* dated May 2nd (p. 453) appears a statement that Dr. E. A. Doisy and his co-workers, Clement D. Veler and Sidney A. Thayer, have assigned to St. Louis University patent rights in connexion with the crystalline ovarian hormone, the isolation of which Doisy announced at the thirteenth annual physiological congress in August, 1929. The terms of the donation provide that the eventual income, if any, is to be used entirely for the prosecution of research in the School of Medicine, the administration of the funds to be subject to the general financial policy of the university. Arrangements have been made whereby one manufacturing company has been given an exclusive licence to operate the patent for eighteen months, but after this period the patent rights will not be restricted, and the licence to manufacture and distribute the product may be given to other firms under the same conditions as those imposed upon the first licensee. The Committee on Grants for Research recently formed at St. Louis University has provided that all developments in the preparation of the crystalline hormone, in its clinical applications, and in the discovery of its properties, must be shared alike by the university on the one hand, and the licensee or licensees on the other. The Council on Chemistry and Pharmacy of the American Medical Association has approved of the name "theelin" for crystalline ovarian hormone prepared according to Doisy's process.

BRITISH EMPIRE RED CROSS CONFERENCE.

PERFECTING PEACE-TIME ORGANIZATION.

A *British Empire Red Cross Conference* was held in London from May 19th to 24th, its purpose being to examine the experience of the last ten years, during which the British Red Cross Society, under its supplemental charter, has extended its work from the relief of suffering caused by war to relief of suffering and improvement of health in time of peace. All the Red Cross organizations in the Dominions were represented, as were also the Central Council Branches in this country, various kindred organizations, and the International Red Cross. At the opening meeting, held at St. James's Palace, H.R.H. The Duke of York, *in an address of welcome*, referred to the recent establishment of the British Red Cross Clinic for Rheumatism, in London, as an instance of Red Cross activity with which, he hoped, visitors would make themselves acquainted. Among the imperial activities were child welfare work in India, the promotion of health education in South Africa, nursing service for women and children in Canada, and the combating of tuberculosis in Australia.

Lord Passfield, Secretary of State for the Dominions and Colonies, spoke also of imperial developments, especially the organization of nursing in New Zealand under Red Cross auspices. He gave his unreserved testimony to the value of voluntary agencies as an auxiliary to Government service, and said that in this country those charged with the public health were learning more and more to depend on voluntary effort. It was true that there were some spheres which must always remain closed to voluntary organization—he instanced the care of the insane, which must be under the control of the State—but in many other respects voluntary organization was indispensable in every civilized community, not least because it had the advantage of initiative and experiment.

Short addresses were then delivered, describing what was done in their respective countries, by representatives of the Red Cross Societies of Australia, Canada, New Zealand, South Africa, and India; and M. Max Huber, president of the International Committee of the Red Cross, added a few words, affirming that the new activities in the field of peace were in the line of Red Cross evolution.

At the second session, also held at St. James's Palace, *under the chairmanship of Sir Arthur Stanley*, brief welcoming addresses were delivered by Mr. Thomas Shaw, Secretary of State for War, and Mr. Arthur Greenwood, Minister of Health. Dame Maud McCarthy, matron-in-chief of the British Expeditionary Force, paid a high tribute to the V.A.D. in the great war, saying that their immense work would be inscribed with everlasting gratitude in the history of the nursing profession throughout the Empire.

Major-General Sir Percival Wilkinson, of the Order of St. John, described the close co-operation between that organization and the British Red Cross Society, whereby overlapping was avoided. Since the society established its clinic for rheumatism, the Order, which also had in London a light and electricity clinic, treating the same class of patient as the clinic at Regent's Park, had consulted with the society, and borderline cases were, by agreement, handed over to one institution or the other, as seemed most suitable. In the course of the discussion Brigadier-General W. F. S. Edwards, representing the Devonshire branch of the society, urged complete amalgamation of the two bodies, instancing how the existence of the two led to some overlapping. The suggestion, however, was not to the taste of the conference. Dr. Wheeler Hart said that St. John, the oldest Order of chivalry, numbered among its members very many who were profoundly jealous of its reputation and authority, and the Red Cross, though much younger, valued highly the position which it had attained. These organizations could not be run apart from sentiment, and co-operation, not amalgamation, should be the aim.

The conference divided itself into four committees to consider, respectively, the training and organization of voluntary aid detachments, the mobilization of the Red Cross for the improvement of health and the provision of relief, various aspects of the Junior Red Cross, and methods of increasing popular membership and raising funds. The reports were to be presented at a final plenary meeting at St. James's Palace on Friday morning, of which we hope to give some account next week.

PREVENTIVE MEDICINE IN THE CURRICULUM.

REPORT BY THE SOCIETY OF MEDICAL OFFICERS OF HEALTH.

A SPECIAL committee appointed twelve months ago by the council of the Society of Medical Officers of Health to consider the teaching of preventive medicine in the medical schools, and the requirements of the examining bodies in this respect, has issued its report. Professor W. W. Jameson, director of the Public Health Division of the London School of Hygiene and Tropical Medicine, was chairman of the committee, and its ten members, with the exception of Dr. H. B. Brackenbury, were professors or lecturers in public health at the universities and medical schools. The report has been unanimously approved at a recent meeting of teachers of preventive medicine.

The first task of the committee was to collect information and expressions of opinion from teachers in this country, and also to ascertain the character of the syllabuses of Continental and American schools. It was particularly desired to find out to what extent the medical schools of this country have adapted their courses to the requirements laid down seven years ago, when the General Medical Council passed resolutions expressing the view that throughout the whole period of study the attention of the student should be directed by his teachers to the importance of the preventive aspects of medicine. The present report states:

"It can hardly be said, however, that a concerted endeavour has been made by the staff of any school to seize the opportunity afforded them of breaking with tradition and of introducing into their general teaching a real emphasis on the importance of prevention. Indeed, both the resolutions of the General Medical Council and the writings of Sir George Newman [a reference to his *Recent Advances in Medical Education in England*] have apparently exercised a much greater influence on medical opinion in America and in various Continental countries than in our own."

After nearly twenty years of national health insurance—a system based on the prevention of sickness as much as on its cure—it is only within the last few years, the report adds, that any attention has been paid to the problem of conserving the health of insured persons, and this owing mainly to the efforts of those engaged on administrative duties in connexion with the scheme. That there exists a public demand for advice on the maintenance of health and the avoidance of disease is obvious from the growth of societies engaged in health propaganda, and the attention given to such matters in the press.

The responsibility for such a state of affairs must be attributed in the main, according to the committee, to the present method of medical education:

"The medical student lives in the atmosphere of the dissecting room, the laboratory, the operating theatre, and the hospital ward. His whole attention is directed to what is abnormal, and he is taught to think almost entirely in terms of individual sick persons, and never at all to regard himself as a member of a profession with great communal responsibilities. While there must always be a comparatively small number of specialized medical practitioners devoting themselves wholly to preventive work and to the administration of the public health services, it is to the main body of general practitioners that the people must look for personal guidance in prevention and in the detection of the beginnings of disease."

Although the two branches of the profession have tended in the past to proceed along rather separate lines, the provisions of the Local Government Act will result in many more practitioners than in the past being brought into intimate contact with various branches of the public health service.

The Position in Great Britain and Elsewhere.

Information gathered from the universities and medical schools in this country shows considerable variation of practice. In London the course of preventive medicine consists, as a rule, of ten to twelve lectures; in the provinces, of

twenty lectures; and in Scottish schools, of forty to sixty. There has been great improvement in teaching during the last twenty years, and most lecturers bear in mind the fact that the majority of their students will enter general practice. It is stated that all London teachers of preventive medicine are dissatisfied with the attention paid to the subject in the examinations, provincial teachers express no such dissatisfaction. Attention is drawn to the English Conjoint Board examinations, where a question on the subject may or may not be included in one of the papers headed "Principles and practice of medicine." Out of eight English Conjoint Board papers containing forty questions in all, set during 1928, only two questions had any relation to preventive medicine.

The practice in other countries is briefly summarized in the report. In Germany all candidates for the State examination in medicine must have attended a course of lectures on hygiene given by a specially selected lecturer. In Holland the lectures on hygiene are given during the last year of study—usually four times a week. In Denmark a course of lectures and visits is given during one term. Of American universities one of the most interesting is the Vanderbilt where the scheme includes a course of forty-four lectures to fourth-year students, and sixty-six hours of laboratory work and field demonstrations. At Toronto a course of forty lectures is given to fifth (penultimate) year students.

The committee concludes that the special lecturer on public health and preventive medicine should be in a position to leave to others the discussion of the scientific basis upon which the system of public health is built, and so confine his teaching to the consideration of the principles of prevention as applied to the general well-being. Much help might be given by teaching more applied physiology during the early months of the course, and opportunities for emphasizing prevention offer themselves in every one of the subjects in the curriculum, especially bacteriology, obstetrics, gynaecology and paediatrics.

Special Syllabus and Examination Tests.

A special syllabus, which does not pretend to be exhaustive, is given in the report. The main headings are: historical summary; sources of statistical information; maternity and child welfare, care of the school child; the adolescent and the child; prevention and control of communicable disease; special problems of certain communicable diseases; the influence of environment; food and the public health; and the health of workers in various industries.

Visits should be paid to places of public health interest, such as maternity centres, and it is suggested that students might pay such visits during their vacations. The committee hesitates to specify the number of hours which should be assigned to the special lecturer. If there is adequate co-operation with other members of the teaching staff a minimum of twenty-four hours should be provided in the special courses, but in the absence of such co-operation more hours must be allotted to the special subject. The course in public health should not be taken earlier than the penultimate year. It is added that adequate training can never be given by any *ad hoc* course of instruction, but only by active co-operation of all teachers of the school.

With regard to examinations, the examination tests are held to be of far less consequence than the establishment of an adequate course of instruction, but often the only means of securing the latter is the rigid enforcement of the former. Every medical student should be required, in the committee's opinion, to pass a separate examination in public health and preventive medicine, consisting of a written and oral test. The paper, which should be part of the final examination, should contain five questions, with a definite medical bias. In the other professional examinations also candidates should be expected to show some knowledge of the preventive aspects of the subjects taken.

THE COMMITTEE'S RECOMMENDATIONS.

The full text of the report is published in the May issue of *Public Health*. The committee's recommendations are as follows:

1. In every medical school a scheme should be prepared showing how each department can co-operate in teaching preventive medicine, and the authorities should put an approved scheme into operation at the earliest possible moment.

2. If an adequate scheme is adopted, a minimum of twenty-four lectures in the special course on public health and preventive medicine may be delivered.

3. The course would not be held earlier than the penultimate year.

4. The syllabus sketched previously to be taken as a model outline.

5. Medical officers of health should be invited to co-operate in the training by affording facilities to students for becoming acquainted with branches of public health work undertaken by local authorities.

6. No student to have a registrable qualification who has not passed a separate examination in public health and preventive medicine; such examination should include a written test of not less than five questions, and an oral test, and should form part, if possible, of the final qualifying examination.

7. Questions dealing with the appropriate aspect of preventive medicine should be included in the other subjects of the various professional examinations.

It is intended that the report shall be submitted to the General Medical Council for its information and consideration.

Ireland.

Irish Free State Medical Registration Council.

A MEETING of the Medical Registration Council for the Irish Free State was held in Dublin on May 6th, with the president, Dr. Dennis J. Coffey, in the chair. After arrangements had been made for the future accommodation of the Council and the office of registrar, the Council appointed the president to be returning officer for the election to fill a casual vacancy caused by the lamented death of Dr. Maurice Hayes, F.R.C.S.I., whose daughter, Miss Eileen Hayes, has been appointed registrar of the Council. The time for election expired at 1 p.m. on May 16th. Only one nomination paper having been received during the prescribed period, Mr. William Doolin, M.B., B.Ch. N.U.I., of Dublin, was declared by the returning officer to be duly elected. The new office of the Medical Registration Council is 35, Upper Fitzwilliam Street, Dublin.

Medical Benefits for Northern Ireland.

The text of the National Health Insurance (Medical Benefits) Bill was presented to the Northern (Ireland) Parliament on May 13th. It will be remembered that the Right Hon. J. M. Andrews, Minister of Labour, addressed a communication in December last to the Armagh Board of Guardians stating that the Imperial Government had made strong representations to the Government in Northern Ireland to introduce legislation making provision for the inclusion of medical benefits under the National Health Insurance Acts so that the Imperial Government may be enabled to ratify certain conventions drawn up by the International Labour Offices at Geneva in 1927. These conventions required the subscribing countries to provide medical benefits for workers, including those engaged in agricultural employment, on an insurance basis. The bill proposes to make the Ministry of Labour responsible for administration of medical benefit with the assistance of a Medical Benefit Council which will act in an advisory capacity. This council will consist of not fewer than twenty members or more than forty. It will be representative of insured persons, employers, doctors, and dentists: in addition, there will be certain representatives appointed by the Minister of Labour. There will be also local committees representative of insured persons, doctors, and chemists. It is provided in the bill to raise the rate of contribution in Northern Ireland to that payable in Great Britain in order to meet the cost of medical benefit. A considerable number of insured persons in Northern Ireland receive medical treatment under the dispensary system. With regard to such cases negotiations have been taking place for some time between the Ministers of Labour and Finance and the dispensary doctors. An agreement was reached before the introduction of the bill, with the result that a reduced capitation of 7s. 6d. will be paid to dispensary doctors for the treatment of insured persons, and it is also

part of the agreement that there will be no reduction in the existing salaries of dispensary doctors, nor any interference with their pension rights. The capitation rate for doctors on the panel, other than dispensary doctors, will be on the same basis as in Great Britain.

Coombe Lying-in Hospital.

The annual meeting of the Coombe Hospital Linen Guild, Dublin, was held at the hospital recently under the presidency of Mrs. McNeill, wife of the Governor-General of the Free State. The annual report for 1929 showed a decrease in the number of articles provided. During the year, which was a particularly busy one for the hospital, 1,500 births took place in the wards, and 1,200 in the Coombe district attended by the hospital staff. More workers and increased funds are required to carry on the work of helping to provide clothing in the district, which is one of the poorest in Dublin. Sir William Taylour, F.R.C.S.I., in proposing the adoption of the report, said that he knew of no other organization that gave more practical support to their hospitals than the linen guild. The hospital was doing work of such national importance that it should be supported by the public. At a conservative estimate the Dublin hospitals were £130,000 in debt. It would take almost as much more to bring them up to modern standards. A quarter of a million pounds was required. They could not go to the Government for the money, as Government support would increase taxation. Every source of income had been investigated, but the fact was that people had not the money to give. The only means left to the hospitals to enable them to carry on their work was the sweepstake. Those who suggested sweepstakes received a great deal of abuse in the papers and elsewhere. It was said that sweepstakes were immoral, but he could not find any Commandment that could possibly be made to refer to them, except, perhaps, "Thou shalt not covet thy neighbour's goods." The money obtained by sweepstakes, however, did not belong to any individual, and the person who bought a ticket certainly did not by that action covet anyone's goods. He could not see how the immorality or the sin arose; but he supposed it was an ethical matter which he must leave to churchmen to decide. Only by means of sweepstakes could the hospitals of Dublin be cleared of debt and made fit for the successful practice of modern surgery and medicine. Mrs. Kevin O'Higgins seconded the motion, which was passed.

Peamount Sanatorium.

Dr. Alice Barry, medical superintendent of Peamount Sanatorium, in her report for 1929, states that the average daily attendance of patients from about fifteen counties was 243. From a medical point of view the establishment of a colony at Peamount would obviate the need for "readmissions." There was a children's pavilion for fifty or sixty children, who were making their own hosiery, underclothing, etc. Mr. P. Bermingham, surgeon dentist, reports that 459 patients attended the surgery during the year. The carpentry work done by twenty-five men under the Papworth scheme, started in January last, was valued at £545. Orders were needed for wooden portable buildings of all types. Sir Conway Dwyer, F.R.C.S., chairman of the general committee of management, in moving the adoption of the report, said that the patients were showing much interest in the new industry, which should not be allowed to fail for lack of support. During the year 256 visits were paid to patients in their homes.

Prevention of Psittacosis.

The circular letter, addressed to the sanitary authorities in the Irish Free State from the Department of Local Government and Public Health, states that it has come under notice that during the last part of 1929 and since the beginning of the present year numerous cases of a serious disease, called psittacosis, have occurred in England and certain Continental countries, which are in close communication or have constant trade relations with Saorstat Eireann. The disease has been found to be associated with sickness in parrots and with close contact with these birds. The cases of human illness so far reported have apparently been infected by newly imported parrots, and there has not been any ground for apprehending danger from cage-birds of that species which have already been kept in households for more than a year. It is, however, to be noted that the conditions favouring the origination of the sickness among parrots are overcrowding, fouling of food, water, cages, etc., and strict attention should be paid to maintaining cleanliness of the birds and their surroundings. In view of the serious nature of psittacosis, and the relatively high rate of mortality resulting from outbreaks thereof, the Minister has deemed it necessary, for the purpose of obviating as far as possible the danger of its introduction into Saorstat Eireann, to make regulations entitled the Importation of Parrots (Temporary) Regulations, 1930, prohibiting the importation of any bird of the parrot species. These regulations come into force forthwith.

Scotland.

Health of Scotland.

THE following notes, extracted from the first annual report of the Department of Health for Scotland,[1] are in continuation of the paragraphs published in this column on May 10th (p. 879) and May 17th (p. 922).

Maternity and Child Welfare.

There are 87 pre-natal centres in Scotland specially equipped and staffed for the examination and advice of expectant mothers, so that difficulties or complications at confinement may be detected. The number of expectant mothers who attended the centres in 1928 was 14,941 and their total attendances were 46,935. Of this number 2,611 were referred to pre-natal wards for treatment. Health visitors made 25,275 supervisory visits to 11,110 expectant mothers. Almost one-half of the births in Glasgow were attended by midwives, of whom there were approximately 300 in practice; in Dundee midwives attended at over 40 per cent. of the total births. The number of practising midwives in Scotland early in 1929 was approximately 4,750, including those in institutions. At the end of 1929 there were 110 maternity homes registered by local supervising authorities, and a number of convalescent homes available to mothers for rest and recuperation. A Glasgow scheme for "home helps" has been in operation since 1924, and a steady increase is reported in the demand for their services. During the year 1929 there were 92,876 births, representing a birth rate of 19.02 per 1,000, as compared with 19.79 for the year 1928. The number of children under 1 year of age who died in Scotland during 1929 was 8,058, representing an infant mortality rate of 86.8 per 1,000 births, compared with 85.7 for the previous year. It is pointed out, however, that prior to 1915 the rate was constantly over 100, but that since that year it has exceeded 100 on three occasions only. The total number of children in Scotland between the ages of 1 and 5 years during 1929 was approximately 352,000, and the death rate was 11.8 per 1,000 in this age group. Health visitors made 341,145 visits; the number of children in this group who attended centres during 1928 was 14,711. At most, approximately one-third of the children in Scotland of this age group have come under health supervision provided by maternity and child welfare schemes, although local authorities are endeavouring to extend the work of their health visitors for the benefit of this group.

School Health Administration.

It is recalled that medical inspection of school children has been general in Scotland for twenty-one years—since the powers conferred by the Education (Scotland) Act 1908. Adequate schemes for treatment of children had come into operation in the burghs by 1914, but medical treatment in the counties was mainly a post-war provision. Under the education authorities established by the Act of 1918 the school medical service was greatly facilitated. The development of medical examinations in schools is indicated by the fact that the number of children inspected increased from 258,130 in 1919 to 471,979 in 1929, while the number of children treated in the two years was

[1] Cmd. 3529. Edinburgh: H.M. Stationery Office. 3s. 6d. net.

respectively 68,526 and 236,025. The medical staff employed in this work in Scotland in 1929 consisted of 37 chief school medical officers, of whom 21 were also county medical officers of health, 64 assistant medical officers, of whom 13 were part-time officials, 47 part-time local practitioners, 82 dentists, of whom 37 were part-time officers, 64 specialists in various departments, and 684 nurses, of whom 481 were district nurses.

Infectious Diseases.

The notification statistics for the sixteen principal towns of Scotland show a decrease in the number of cases of infectious disease amounting to nearly 10,000 compared with the figure for the preceding year. The principal cause was the lower prevalence of measles and whooping-cough. The death rate over the whole country from the "principal epidemic diseases" fell from 0.71 in 1928 to 0.48 in 1929. The death rate from tuberculosis in Scotland per 100,000 of the population was 84 in 1929, compared with 97 in the previous year. Sanatoriums approved for the treatment of tuberculosis numbered 119, and provided altogether 5,114 beds compared with 4,634 in 1928. If the average number of beds used for this purpose in other hospitals is added, there is in Scotland approximately one bed for tuberculosis treatment for every 900 of the population. With regard to venereal disease 51 treatment centres have been established; the number of patients dealt with during the year was 29,880, including 11,934 new patients. The total number of attendances by all patients was 460,896, and the total expenditure on this service was £82,500, of which 75 per cent. was repaid from the State grant.

Highlands and Islands Medical Services.

The passing of the Highlands and Islands (Medical Service) Additional Grant Act, 1929, has opened a new chapter in the medical history of the Highlands and Islands. The new Act provides that in addition to the annual grant of £42,000, sums may be voted annually by Parliament. Advantage has been taken of opportunities to extend the services of district nurses, and to encourage local associations to appoint nurses with full general and surgical training. The advent of the light car has made a full and efficient nursing service possible in many places; in some districts a small car enables two nurses to do in comfort the work that had previously required three. Specialist surgical services are now firmly established in Lerwick, Kirkwall, and Stornoway.

Edinburgh Royal Infirmary Appeal.

The managers of the Royal Infirmary of Edinburgh are launching an appeal to the public for £500,000 for the extension of the institution. For this purpose a preliminary meeting was held in the Edinburgh City Chambers on May 16th, at which Lord Provost Whitson presided. The chairman explained that the bicentenary of the Royal Infirmary was being made an occasion for the public to show its appreciation of the services which it had rendered in the past two hundred years. The execution of the necessary arrangements was remitted to an executive committee consisting of about forty members. Sheriff Brown described the appeal as the greatest and widest that had ever been made for the common weal in Scotland, and said that the merits of the cause were so great that it was bound to succeed if the machinery for gathering the money worked efficiently. Year by year the Royal Infirmary had dealt with an increasing number of cases; the accommodation available could not meet the demand for treatment, so that the extension of the institution was an obvious necessity. The contemplated extension includes a new hostel for nurses and three additional ward blocks, one of them being intended for midwifery in place of the present Simpson Memorial Hospital.

Autumn Post-Graduate Course in Glasgow.

Under the auspices of the Glasgow Post-Graduate Medical Association a course of instruction will be given in that city during the last two weeks in August and the first fortnight in September. The course includes most of the subjects of interest to the general practitioner. Mornings will be devoted to general medicine, surgical diagnosis, and minor surgery, in the Western Infirmary and Royal Infirmary. In the afternoons special subjects will be studied in special hospitals or in special departments of the general hospitals. During the summer months as well as at other times of the year a limited number of clinical assistantships are available in institutions in the city taking part in post-graduate medical teaching. These assistantships are intended to provide opportunities for specialized study and investigation. Graduates may be attached to wards or to out-patient departments, where they will be under the direct supervision of the physician or surgeon in charge. As in the previous year, those who desire to take advantage of these appointments must be prepared to devote to the work either the whole or part of the day, according to the terms of the particular assistantship. Enrolment is recommended for a period of three months, although shorter periods are considered. The inclusive fee for the general medical and surgical course is £10 10s., or £6 6s. for the first or second fortnight. Intending applicants may obtain further information from Dr. James Carslaw, secretary of the Glasgow Post-Graduate Medical Association, the University, Glasgow.

Selkirkshire Education Authority.

The final meeting of the County of Selkirk Education Authority was recently held in Galashiels under the chairmanship of Dr. E. M. Tyrrell. A minute of meeting of the Medical Services Joint Committee stated that lectures had been given by Dr. Calder (Stow) on milk in relation to health and disease; by Dr. Robertson, medical officer of health for Edinburgh, on "Our future health"; and by Colonel Lelean, professor of public health at Edinburgh University, on sex education. The minute also recorded that informal meetings of the staffs of several of the larger schools had been convened for the discussion of health matters by the school medical officer and by one of the education authority's dentists. A letter was submitted from the county clerk asking the authority to nominate a member to serve on the new education committee of the county council. Mr. J. Easton, vice-chairman of the educational authority, in proposing Dr. Tyrrell, said that he thought it would be a disaster to the educational interests of Selkirkshire if the services of Dr. Tyrrell, who had such a wide experience of educational affairs, could not be retained. Dr. Tyrrell regretted that he could not accept the offer. Had it been possible he would have been very glad to continue to give his services, but he was at present a paid officer of the council holding two part-time appointments. For that reason he was not eligible to be either an elected member or even a co-opted member of the education committee. Mr. Easton was then unanimously chosen as the authority's nominee. In thanking the members for their support during his term of office Dr. Tyrrell remarked that he had been associated with education for twenty-seven years, first as a member of the Galashiels school board, and later as chairman of the authority; he would have liked to complete thirty years. As one who had been intimately acquainted with the work of the authority during the eleven years of its existence he could look back with pride and satisfaction at the large amount of good work which had been done to promote education in the county of Selkirk. It was in a state of very high efficiency; schools were in excellent condition, and the teaching staff was at least equal to any in Scotland. He could not but regret the abolition of the administrative machine. Referring to Dr. Tyrrell's services Provost Ballantyne said that no chairman could have been more highly esteemed. Similar tributes were paid by other members of the authority.

Growth of Officialdom.

An address was delivered at a meeting of the Edinburgh Business Men's Club on May 13th by Dr. John Guy, deputy medical officer of health for Edinburgh, under the chairmanship of Sir Joseph Dobbie. Dr. Guy said that the ordinary citizen might well be amazed at the enormous number of officials by whom he was now surrounded and safeguarded, and who tended to increase rather than diminish. When he entered the service of the public health department, sixteen years ago, the medical officer of health

was the only officer in the department, but during the comparatively short time that had elapsed, three sub-chiefs, each with his own appropriate staff, had been added, and there were now eleven full-time medical officers and approximately thirty health visitors, apart from hospital staffs. In 1912 the city of Edinburgh spent nothing on tuberculosis, child welfare, or venereal diseases; to-day the public health department spent approximately £29,000 on tuberculosis, £19,000 on child welfare, and £23,000 on venereal diseases. The total public health expenditure in Edinburgh had risen from £35,000 in 1912 to £175,000 in 1929. He thought that there was an adequate return for all this expenditure, but a tendency was occasionally observable on the part of some officials to forget that they held their positions in a very complete sense as servants of the public, and to cultivate not only efficiency but an aloofness and superiority of bearing which could only be surpassed by the Syrian camel. Officials in all spheres of life, whether civic or national, should, by virtue of their position, look upon themselves as the helpers, assistants, and servants of the general public.

Central Midwives Board.

The examinations of the Central Midwives Board for Scotland, held simultaneously in Edinburgh, Glasgow, Dundee, and Aberdeen, have just been concluded, with the following results. Out of 152 candidates who presented themselves for the examination 141 passed. Of the successful candidates 67 were trained at the Royal Maternity Hospital, Glasgow; 23 at the Royal Maternity Hospital, Edinburgh; 5 at the Maternity Hospital, Aberdeen; 6 at the Royal Infirmary, Dundee; 13 at the Elsie Inglis Memorial Hospital, Edinburgh; 8 at Stobhill General Hospital; 4 at Barshaw Hospital, Paisley; 6 at the County Maternity Hospital, Bellshill; and the remainder at various recognized institutions.

England and Wales.

The Order of St. John and the British Red Cross Society.

THE Joint Council of the Order of St. John and the British Red Cross Society was established in 1920; the removal of its offices to 12, Grosvenor Crescent, S.W.1, is now announced. The question whether the alliance between the Order and the Society, which had been so effective during the war, should be continued was much discussed at the time of the armistice, but the experience of the past ten years has shown that the existence of a link by means of which the united forces of the Order and the Society can be brought into action has a distinct value. Thus, for example, during the industrial disturbances of 1921, 1924, and 1926, the authorities were enabled, through the Joint Council, to secure the complete co-operation of the Order and the Society in regard to first aid and transport at very short notice. Continuation of the work of the old Joint War Committee in caring for those disabled by war service has been the first consideration of the Joint Council, which has during the past ten years disbursed over one and three-quarter million pounds in promoting the comfort of ex-service men and their families. This gigantic task has been rendered possible by the co-operation of members of the Order and the Society, not only in London, but in all parts of the country. Thanks to the great number of voluntary workers of the two bodies the many individual cases have received immediate investigation and prompt assistance, a voluntary association with its power to act quickly being in this way a most valuable adjunct to an official organization. An outstanding achievement of the Joint Council in regard to the health of the civil population has been the Hospital Department, which was organized by the late Sir Napier Burnett; after his death it was developed further by Dr. Kay Menzies, and later by Mr. R. H. P. Orde. A complete survey has been made of the work of the provincial hospitals, and a bureau of hospital information has been set up, associating the council with the British Hospitals Association and the Incorporated Association of Hospital Officers. The bureau has proved of the greatest value to those concerned with the administration of hospitals, both at home and abroad. Steps to improve the system of invalid transport in the country generally were taken by the Order and the Society immediately after the war, and under the Joint Council a national ambulance service has been established with a number of well-equipped motor ambulance stations in every county. This service has been of very great advantage to the sick and to the medical profession; it mobilizes more effectively the latest discoveries of science as regards the diagnosis and cure of disease. The road service, promoted by the Joint Council as an auxiliary to the ambulance service, is designed, by means of first-aid cabinets and dressing stations, and by week-end patrols of the roads by members of the Order and the Society, who are qualified in first-aid practices, to minimize as far as possible the consequences of the increasing number of traffic accidents. The existence of a Joint Council facilitates the co-operation of members of the two societies in such philanthropic work as the council itself undertakes, and tends to promote closer relationship between the Order and the Society in the independent undertakings for which each organization is separately responsible. An instance of this is afforded by the two great curative institutions, the Clinic for Rheumatism in Peto Place, founded by the British Red Cross Society, and the London Light and Electric Clinic in Ranelagh Place, controlled by the Order of St. John. A friendly understanding has been reached which provides for the interchange of patients, or such other mutual help as may best promote the relief of suffering and cure of disease, which is the ideal of both societies. The Joint Council should thus be able to continue its work in its new home with the confidence that it fulfils a useful purpose in making it possible to place the combined resources of the Order of St. John and the British Red Cross Society at the service of the nation, without detriment to the continuance of the separate activities which each society carries on from its own headquarters for the benefit of the health of the people.

Mr. Hayward Pinch.

The retirement of Mr. A. E. Hayward Pinch, M.B., F.R.C.S., after twenty-one years' service as superintendent and director of the London Radium Institute, is announced to take place next month. The reorganization of the work of the institute consequent on its affiliation with the Mount Vernon Hospital and the setting up of the new Post-Graduate School of Radio-Therapy is in progress, and Mr. Pinch's state of health prevents him from undertaking new and more onerous duties. The committee desire to put on record their deep appreciation of the devoted service Mr. Pinch has given to the Radium Institute during his long tenure of office, and have elected him a member of the honorary consulting staff.

Manchester Medical Society.

At the annual meeting of the Manchester Medical Society held on May 7th in the University, with the president, Mr. J. Howson Ray, in the chair, Mr. A. E. Webb-Johnson, surgeon to the Middlesex Hospital, delivered an address entitled "Memories, Experiences, Doubts, and Fears." Mr. Webb-Johnson first expressed appreciation of the teaching he had received at his Alma Mater, the Manchester Medical School, and paid tribute to some of his old teachers, referring particularly to Dr. Judson Bury's class in neurology, the work of Dr. Archibald Donald, and to Mr. Alexander Wilson. He expressed special gratitude to the surgeons with whom he had worked, particularly to Mr. F. A. Southam and Joseph Collier, for whom he had acted as dresser, and Sir William Thorburn, under whom he held an appointment as house-surgeon and to whom he was private assistant some years. In lighter mood Mr. Webb-Johnson then related some of his experiences, particularly those which had exciting, interesting, romantic, or social complications. The more serious part of the address dealt with a variety of subjects which had occupied the lecturer's attention a good deal in recent years, and which had at times raised his doubts and fears. He dealt particularly with the need of financial support for medical education and research, and the opportunities which medical men so often had of bringing rich men to see the importance of this cause. He emphasized how essential it was for each

medical school to have sufficient endowments to develop with freedom, and along the lines best suited to the conditions prevailing in the particular centre. He felt strongly that there were great disadvantages in professors of clinical subjects being precluded absolutely from private practice. He dealt also with the question whether more or less experimental operations, citing particularly those on the stomach and duodenum, should be performed by hundreds and even thousands before their true value was determined. He criticized the sharp division between medicine and surgery—physicians taking so little interest in the patient after being passed to the surgeon, and the surgeons too often not being sufficiently acquainted with the physiology and pathology of the conditions for which they were operating. The true specialist, doing everything for the region for which he studied, would acquire a better perspective, and arrive sooner at the best line of treatment. The lecturer also expressed the opinion that operations accompanied by a high mortality should not be recommended without first giving the patient some indication of the risk to be faced, the chances of complete success, and the prospects if alternative lines of treatment were followed. He advanced very strong criticisms of the records departments and the "follow-up" arrangements of hospitals; the "following up" of cases should be a recognized duty of hospital authorities. In his opinion the only way to make records of cancer cases complete and of real value was to make them national in character and institute a system of compulsory notification with special certificates in case of death. Mr. Webb-Johnson's address finished with a plea for research into the beginnings of disease and for investigation of those subtle changes which were the precursors of serious disease and about which little or nothing was known. He outlined a scheme whereby observations could be made on a larger number of apparently healthy persons over a long period of time in order to detect the transitional stages from the normal to the pathological, and in this way to ascertain the changes which indicated the real beginnings of disease.

Prevention of Noise.

An example of how local authorities may obtain powers to deal with noise nuisances is afforded in a bill recently submitted for the consideration of a local legislation committee of the House of Commons by Stockton-on-Tees Corporation. One of the clauses of this bill provides that the corporation should be able to take action in the case of noise that is excessive, unreasonable, unnecessary, or injurious to health; but if the noise is made in the course of business it should be a good defence that as much as possible has been done to mitigate it. Mr. A. Moon, K.C., appearing before the House of Commons Committee on April 8th on behalf of the corporation, said that it was possible at present to take High Court proceedings against anybody making a noise nuisance, but owing to the expense involved this procedure was not open to the ordinary individual. If the clause was granted this state of affairs would be remedied. Dr. G. C. M. M'Gonigle, medical officer of health for Stockton, said that it was difficult to lay down an exact definition of a noise nuisance, but each case would have to be considered on its own merits. He cited as examples complaints that had been made about the noisy unloading of milk churns at a dairy, and about the installation of electrically operated machines which made loud and strident music in small shops from early morning to late at night. At present there was no power under which the corporation could take action if unreasonable and unnecessary noise was made in connexion with any trade, business, or occupation. The first step under the clause before the committee would be to issue an intimation of the breach, a course of action which was generally effective in other nuisance cases; the second step was a statutory notice, and the third a summons before a magistrate. In reply to a question put by Colonel Heneage, a member of the committee, Dr. M'Gonigle said that at present the unloading of milk churns was accompanied by so much noise because they were dumped from lorries on to stone floors; if rubber floors were put in not only would the noise be prevented, but incidentally the milk churns would be protected against damage. Sir Ernest Holderness, for the Home Office, asked how the corporation was going to stop the nuisance caused by electrical machines. Dr. M'Gonigle replied that an order for abatement of the nuisance would be obtained from a magistrate. He had in mind as an example a small café and ice-cream shop which had installed an electrically operated gramophone that made a noise like a fog-horn. The people in the neighbourhood were seriously disturbed, but though theoretically there was a remedy at law the cost was prohibitive. After some consultation the committee decided by a majority vote to approve the clause, on the understanding that the corporation would not take action in petty matters, but would try to arrive at agreements with parties rather than carry matters into court.

Collection and Disposal of Refuse.

A lecture on the collection and disposal of refuse was given, as one of the Chadwick public lecture series, on May 15th, at the Royal Sanitary Institute, by Mr. Edward Willis, M.Inst.C.E., chief engineer to the urban district council of Brentford and Chiswick. Sir George Humphreys, K.B.E., presided. Mr. Willis, whose lecture was illustrated with numerous slides tracing the gradual improvement effected during the last half-century, gave some historical account of the collection of house refuse, which is really a very modern sanitary measure. Such collection was entirely ignored until the nineteenth century. Even far into the century, and, indeed, right down to the passing of the Public Health Act, 1875, which consolidated certain previous legislation, the disposal of other types of town refuse received more or less scant consideration, except in certain cities where private Acts of Parliament provided for sanitation. Mr. Willis then went on to describe the different types of refuse which needed to be collected if nuisance and ill health were to be avoided. While motor transport for this purpose was more efficient under certain conditions, the horse was more effective, as well as more economical, for the actual house-to-house collection where the distance to the shoot was not great. Various means of disposal of refuse were then considered. The first of these was indiscriminate dumping, which was wholly to be condemned as a nuisance and should be absolutely stopped under all circumstances. Dumping out at sea also was considered most undesirable. Then came the use of destructors and pulverizers, and, finally, controlled shoots. With regard to this last method, which had been brought very much into prominence by the city of Bradford, and was strongly supported in many instances by the Ministry of Health, while it had its advantages, the lecturer emphasized the important fact that it was unsuitable for and should never be applied on waterlogged ground, because the refuse was liable to pollute the ground water. It was also unsuitable where there existed certain water-bearing strata, but in many other cases it was an exceptionally useful method of treatment. The destructor served an excellent purpose, but it was often desirable to screen the refuse before actual disposal, since the calorific value of the dust was probably only 2,500 British thermal units, whereas the screened refuse might have a value of over 8,000. Again, the actual dust screened out was valuable as salvage for brick burning. The salvage question was a larger one than most people imagined. Any useful income from the collection and disposal of refuse was, in fact, salvage; thus waste land, otherwise useless, when treated with refuse on the controlled principle was subsequently able to be used for sports grounds, and brought in a regular income to the local authority.

University of London Medical Graduates Society.

The annual meeting and dinner of the University of London Medical Graduates Society was held on May 13th at the Langham Hotel, with the president, Sir StClair Thomson, in the chair. The guests of the society were Dr. Edwin Deller, principal of the university, and Professor G. E. Gask, dean of the faculty of medicine. The toast of "The Guests" was proposed by Lady Barrett. Dr. E. Deller, in the course of his reply, expressed the hope that before long the university would have a home on the Bloomsbury site, which would help to draw graduates together. The society was anticipating that central house,

and was helping to draw together the graduates in what was the biggest faculty in the university. "The Society" was proposed by Professor G. E. Gask, who drew attention to the high standard which the university had always maintained in medicine; though perhaps more glamour centred round the ancient universities, it was the high standard of medicine at London that would perhaps in the end cause London to outshine them. Mr. W. McAdam Eccles, in replying, outlined the steady growth of the society since its inception in 1928, and pointed out that with over 4,000 medical graduates of the university, the scope for the society was very great. He drew attention to the enormous debt which the society owed to Sir StClair Thomson for his labour on its behalf. The meeting was then declared by the president to be resolved into a business meeting, and the election of officers for the ensuing year took place: Sir John Rose Bradford, president; Sir StClair Thomson, past-president; new vice-presidents: Lady Barrett, Sir Charlton Briscoe, and Sir Cuthbert Wallace; new members of council: Dr. Ivor Davies, Dr. E. D. Granger, Miss E. Catherine Lewis, Dr. Herbert Spencer, Mr. Herbert Tilley, and Dr. A. J. Wrigley. Mr. W. McAdam Eccles was re-elected honorary treasurer, and Dr. C. A. H. Franklin and Dr. Dorothy C. Hare re-elected honorary secretaries, and Mr. Victor Bonney as honorary secretary for overseas members. The balance sheet was presented and adopted. It was announced that the next meeting of the society would take place at Bournemouth at the Royal Bath Hotel on June 20th.

National Baby Week Council.

In spite of serious financial difficulties the National Baby Week Council records a further extension of its services in its report for 1929. Much of the work undertaken by the council has already been referred to in these columns, such as the assistance it gives in organizing health and baby weeks, baby days, baby competitions, and to the preparation and exhibition of propaganda material in connexion with maternity and child welfare. In all these activities the council has surpassed its achievements of the previous year. This development has been accompanied by a desire on the part of local committees to work in closer association with the council. In the last three months of the year 57 new local committees appointed 99 members to represent them. Progress has also been made in the overseas department, which has 25 correspondents in the Dominions and elsewhere. As a result of the expansion of the health movement, and continued co-operation with the Empire Health Committee, maternity and child welfare propaganda was included during the year in health week programmes throughout the Empire. The Imperial Challenge Shield for the best baby week campaign organized in 1928–29 outside the British Isles was won by the Kalutara Totamune Baby Week Committee (Ceylon). During 1929 the council directed particular attention to practical measures for combating maternal mortality and disability, and for lessening the dangers of infectious diseases among young children. Another question selected for special propaganda was the importance of teaching parentcraft and hygiene to school children. In its campaign for 1930 the council is urging the need for arousing interest in parentcraft among those classes of the community which are not reached by statutory and voluntary schemes of maternity and child welfare. It is also emphasizing the need for a national maternity scheme and for the better provision of nursery schools. For the first three days of baby week, which will be held from July 1st to 7th, a national conference on maternity and child welfare is being organized by the National Association for the Prevention of Infant Mortality. The subjects for discussion are: (*a*) the relationship between housing and child welfare; (*b*) infant mortality during the last twenty-five years; (*c*) the variations in young child mortality in different areas; (*d*) the relationship between orthopaedic and child welfare centres; (*e*) the care of the child of pre-school age in industrial and rural areas. Many propaganda films will be exhibited during the week. Application for admission to this display, which is by free ticket, should be made to the secretary, 117, Piccadilly, W.1.

Correspondence.

DIGITALIS IN PNEUMONIA.

SIR,—I was much interested to see in the proceedings of the Royal Society of Medicine (*British Medical Journal*, May 3rd, p. 824) the account of Professor W. E. Dixon's observations on the curative action of digitalis in toxaemia and their bearing on its use in acute pneumonia.

For many years I have treated all cases of acute lobar pneumonia or broncho-pneumonia, when the heart shows signs of failure or the pulse rate is quick (100 or over), with digitalis, and I am convinced of its value in helping the heart to resist the depressant action which the pneumonia toxin has on it. I always use the infusion or a watery extract in solid form, because 75 per cent. of the water-soluble principles are eliminated on the day of administration, so pharmacologists say, while those which are insoluble in water take several days to be excreted. I also endeavour to get the patient to take as much fluid as possible in various forms—milk, lemon tea, weak tea, etc., and especially ordinary water at the temperature of the room. I have had as much as ten pints of fluid thus taken in the day. Such administration of fluid helps to produce perspiration—and also diuresis, when associated with the infusion of digitalis—and so to wash out some of the toxins of the pathogenic organisms.

In adults I begin with a drachm of the infusion every four hours, increasing it if necessary to as much as half an ounce every four hours, or even every three hours, night and day. Time and again have I seen a marked change for the good in the heart's action within twenty-four hours of ordering the infusion, and with its continued use cases which seemed hopeless have recovered. The infusion never accumulates in the system or produces heart-block as any other preparation of digitalis may do if given over a few days. It can be discontinued the day after the temperature has come down to normal by crisis or lysis; if half an ounce has been given every four hours, this large dosage can be at once reduced to three times a day, and be discontinued the next day. I have never seen any harm result from use of the infusion; no nausea is produced, and there is no subsequent heart-block.

The best effects are obtained if the drug is used about the second or third day, and not left until later, when the heart has become materially weakened—often beyond help.—I am, etc.,

Manchester, May 12th. E. M. BROCKBANK.

MATERNAL MORTALITY.

SIR,—I have to thank Professor Louise McIlroy for her references to my recent book on maternal mortality in her most valuable article in the *Journal* of February 15th (p. 269). Nevertheless, at the risk of being thought captious, there are two corrections which I must make.

Professor McIlroy writes: "He" (the writer) "states that in the Rotunda Hospital, Dublin, during the five years preceding 1898, the death rate was 3.1 per 1,000. He states that, while asepsis was unknown, intervention during labour was limited." Apologies would be due to Sir William Smyly and his Mastership but for the fact that I did not write thus. On page 2 of my book, I wrote: "In the past" (that is, in the obstetrically prehistoric past) "intervention during labour was limited, and asepsis was unknown," and on page 5, I wrote the sentence dealing with the Rotunda Hospital; there was no connexion between the two passages. The first sentence in the first edition of my small midwifery book, and almost the only sentence which has persisted unchanged during subsequent editions, is as follows: "It is not an exaggeration to say that the most essential knowledge in midwifery is the knowledge of asepsis." This was written in 1897, and resulted from Sir William's teaching.

Then Professor McIlroy writes: "*Rectal Examination.*—Dr. Jellett lays stress upon the advantages of this." Actually I wrote as follows: "I have not had considerable experience of rectal examination during labour, and consequently I am perhaps inclined to under-estimate its value.

Also, I am doubtful of its effect on the asepsis of a nurse who has enough difficulties to contend with without the added risk of faecal contamination." I am by no means sure that this view is right, but, such as it is, it is the one I hold at the moment. If I have written elsewhere anything that conveys an opposite opinion, I am ready to apologize in advance.—I am, etc.,

HENRY JELLETT.

Christchurch, New Zealand, April 2nd.

TREATMENT OF MAMMARY CANCER BY RADIATION.

SIR,—Sir G. Lenthal Cheatle, in his valuable lecture published in the *Journal* of May 3rd (p. 807), well said that "the final treatment by radiation will emerge after experience gained by the use of external radiation alone, of interstitial radiation alone, and by the combined use of external radiation and interstitial radiation." But, so long as external radiation is confined, as it practically is now, to the treatment of inoperable primary and recurrent patients, we shall remain ignorant of its real possibilities in breast cancer. I have shown[1] that with x rays, or with radium externally in large quantities from a distance, this method leads to valuable results, and my experience (based on over a thousand cases of breast cancer) does not accord with that of Sir Lenthal Cheatle as to the radio-sensitiveness of the disease in general, for practically every patient has shown regression (partial or complete) of the local signs of disease when so treated.

It should be realized that "radio-sensitiveness" is not a simple, but a complicated factor. What, for example, shows a more prompt response than a leukaemic gland? Yet the almost invariable recurrence shows that *some* elements (whether mother cells, specialized cells, or cell components, we do not know yet) are highly radio-resistant. The time factor in "radio-sensitiveness," in short, must be greatly widened in a full conception of it, and surgeons who are accustomed to see many immediate or "dramatic" results from operative intervention, or from the intense interstitial radiation of some radium insertions, should allow a longer time than the "three weeks" mentioned by Sir Lenthal Cheatle for the full effect of external radiation treatment to be shown. The full effect may be complete regression or partial regression, with the establishment of a "residue," which must be closely followed for many years before its inactivity is considered probable (many residues should be locally excised); or, in rare instances, usually in very advanced and cachectic patients, the growth proceeds unchanged.

Sir Lenthal Cheatle mentions Paget's disease of the nipple. A recent typical case (sent to me by Mr. Sampson Handley) shows, four months after two high-voltage x-ray treatment series, an apparently complete return to the normal the breast has no palpable nodule, the skin is normal, and the axillary gland has disappeared.

Sir Lenthal Cheatle announces himself as a new follower of the method of interstitial radiation of breast carcinoma introduced by Mr. Geoffrey Keynes and by Neumann, Sluys, and Coryn. But this method has only one primary site so far in which it has *established* its value—namely, tongue cancer, a disease in which, as a rule, only local metastasis occurs. Its ultimate value is certainly not yet established in any type of cancer which often shows generalized metastasis. Those who know the effect produced experimentally by Tyzzer and L. C. Knox, with massage of carcinomata in mice in producing multiple metastases, will be inclined to consider with scepticism the end-value of any method which may involve the insertion of up to 40 radium needles throughout the substance of a highly metastatic growth, such as sarcoma or breast carcinoma. I have already seen a number of rapidly supervening spinal and pelvic metatases, time alone will show if the proportion of these is increased after radium insertion methods, with the unavoidable manipulatory "massage" this entails. External radiation methods avoid this risk, and may in consequence be superior in value; or pre-operative external radiation should be a safeguard. Sir Lenthal Cheatle makes no reference to pre- or post-operative radiation, an important aspect of the subject as I have shown, for recurrences are thus lessened in number.

Dr. Hernaman-Johnson, in his comments in the *Journal* (May 17th, p. 926), refers to the possibility of secondary radiations from introduced metallic substances being of value. I have lately shown[2] that this hope appears to be chimerical. In addition to the references there given, Holthusen has discussed the question in a fifty-page article in the *Ergebnisse der med. Strahlenforschung* (1925, Bd. 1, p. 385), and concluded that evidence as to its clinical value is completely lacking. Dr. Hernaman-Johnson refers to Moppett's experimental work, as Sir Lenthal Cheatle also does, with an encouraging note. But I am quite unable to see how Moppett's work with "monochromatic" beams from crystals can be applied to clinical conditions. Every beam we employ is polychromatic to some degree, usually to several tenths of an Ångström, even when heavily filtered. And to suppose that treating a patient with the very polychromatic unfiltered radiations from an x-ray tube "at 80,000 volts" reproduces in any way Moppett's conditions is wholly illusory, since his results appeared to show that closely adjacent wave-lengths had opposing effects on the growing chick-allantois. His work has at present no clinical bearing.—I am, etc.,

J. H. DOUGLAS WEBSTER.

London, W.1, May 17th.

[1] *Lancet*, 1926, February 27th, p. 431; 1928, July 14th, p. 63.

UNDULANT FEVER IN GREAT BRITAIN.

SIR,—Might I be permitted briefly to support your suggestion (May 10th, p. 870) that a commission of inquiry should be instituted into the incidence of Brucella infection in animals and the value of the present prophylactic measures?

The problem which recently has been outlined by medical and veterinary clinicians and pathologists (vide "Discussion on Brucella infections in man and animals," *Proc. Roy. Soc. Med.* 1929–30, xxiii, 559) may be summarized as follows: (1) Brucella infection in man arises naturally in Great Britain; as yet its incidence cannot be gauged with accuracy; the source of infection appears to be principally, if not entirely, the diseased bovine or its products. (2) Brucella infection is the most widespread contagious disease of bovines in Great Britain: no indisputable evidence as to its incidence exists; the veterinary profession is acutely divided between hygienic prophylaxis and vaccination with the living organism; on account of this ignorance the wrangling continues, and so does the disease.

The time for regret and recrimination is past; the situation, at least on the veterinary side, is far too serious. The time for action has arrived, though not, I hope, by the Ministry of Agriculture alone. I contend, Sir, that Brucella infection of man and animals in Great Britain presents a single problem, indivisible between medical and veterinary, Ministry of Agriculture or Ministry of Health. But with your main contention I fully agree, and I hope a commission of instructed medical and veterinary representatives will be constituted to study and report upon this problem.—I am, etc.,

TOM HARE.

Department of Pathology, Royal Veterinary College, N.W., May 20th.

MIXED BRUCELLA INFECTION.

SIR,—A case of *abortus* fever under my care in Rapallo seems of sufficient interest to record, particularly as the illness would appear to have been contracted in London.

A. B., aged 64, left Dublin about the third week in October, and stayed at his London club for a fortnight. About November 5th he had a slight haemoptysis, which, like a previous attack two years before, was ascribed to high blood pressure. There were apparently no signs of a pulmonary lesion, and his systolic pressure usually ranges from 200 to 230 mm. Hg. For convenience in nursing his wife transferred him to a hotel, where for a few days he felt very well. The second week he felt ill, and had fever and diarrhoea, but as he had been subject to what he termed "nervous" diarrhoea for years he did not mention this symptom, and the attack was regarded as influenzal. By November 22nd he was considered well enough to travel out to Rapallo, but

[2] *British Medical Journal*, 1929, November 23rd, p. 983.

on arrival he went straight to bed, and remained there for about a week, with a return of fever and diarrhoea.

I first saw him on December 22nd, about three days after the commencement of a third attack, and found his temperature rising in a ladder-like manner suggestive of enteric. Beyond a white furred tongue and slight reddening of the fauces nothing abnormal was found, and all abdominal discomfort or disturbance was denied. On December 26th acknowledgement of diarrhoea led to the taking of a blood sample, the local Italian pathologist reporting the Widal test negative for Eberth's bacillus and *B. paratyphosus* B, but doubtfully positive for *B. paratyphosus* A; the blood culture was negative. There was no enlargement of spleen or liver, and the diarrhoea has at no time been accompanied by pain, griping, tenesmus, or meteorism, nor has there been excessive mucus in the stools, and only on one or two occasions undigested food particles. The pathologist reported that the stools contained fewer micro-organisms than normal, and there was no trace of typhoid or dysenteric bacilli, the majority present being diplostreptococci.

The definitely undulatory nature of the fever had become apparent by January 14th, but I rejected the diagnosis of Malta fever on the ground that it was highly improbable that it should have been contracted in London, and that the diarrhoea was unusual. On the other hand, it was difficult to assess the importance of the diarrhoea on account of the "nervous" attacks for years. As regards possibility of infection here, Malta fever seems very rare in Rapallo now, though sporadic cases occur in the port of Genoa twenty miles away.

A specimen of the stools sent to Dr. A. A. Wilson of Monte Carlo confirmed Dr. Grosso's finding of a very poor flora, but Dr. Wilson found large quantities of occult blood. As no parasites or ova were found, he concluded that the evidence pointed to some type of ulcerative colitis, though to the naked eye the stools at no time suggested this diagnosis.

On January 23rd Professor Nicola Pende came from Genoa in consultation, and thought there was some enlargement of liver and spleen, though the spleen was not palpable. He leaned towards a diagnosis of Malta fever. Dr. Grosso's report on a fresh sample of blood was as follows: Agglutination test clearly positive for two strains of *Br. melitensis* and one strain of *Br. abortus* of Bang up to a dilution of 1 in 800; absolutely negative for Eberth's bacillus and *B. paratyphosus* A and B. A day later one of the strains of *Br. melitensis* agglutinated almost completely in a dilution of 1 in 1,200.

As the *Br. abortus* of Bang belongs to the same group as the chicken cholera bacillus, and can attack the intestinal mucous membrane in man, and as Peyer's patches are not affected in Malta fever as a rule, and diarrhoea and blood in stools are infrequent accompaniments, it would seem possible that in this case there has been a double infection, with the *Micrococcus melitensis* predominating. Since the first injection of anti-*melitensis* serum the diarrhoea has completely ceased.

An interesting point is that, though the patient is always a heavy milk-drinker, all the milk consumed in London was special Grade A, and out here every drop is religiously boiled. As in the Scottish case recorded in the *Journal* of February 1st (p. 195), all attempts have failed to isolate *Br. melitensis* or *Br. abortus* from the stools.—I am, etc.,

Rapallo. DOROTHY M. ANDERSON, M.D., D.P.H.

AN OBSCURE EXANTHEM.

SIR,—During the past six to eight weeks we have met with a series of cases (about forty so far) of an infectious type which have shown symptoms that differ markedly from any of the infectious cases usually seen in general practice.

The illness sets in suddenly with pyrexia (99.5° to 102.5°), increased pulse rate, headache, nausea and vomiting, generalized pain, especially lumbar pain. There are usually no chest complications, but sometimes general abdominal pain or discomfort is present. A provisional diagnosis of influenza is made and the usual remedies are applied, but when the patient is seen again in a couple of days it is found that the pyrexia has persisted although the initial symptoms have subsided. About the fourth to the seventh day a rash appears.

The rash, which is one of the characteristic features of the illness, consists of maculo-papular spots about 1/4 in. diameter, pink in colour at first, becoming tinted with blue, then light brown, and lastly yellow, before fading. The spots are not numerous (we have counted eight in one case and as many as fifty in another), quite discrete, and easy to see. The spots come out in successive crops, so that pink and bluish and brown spots can be seen at the same time, the colour depending on the day of their appearance. The spots are most numerous on the trunk, chiefly on the front of the chest and abdomen, but have been observed also on the face, arms, and legs. The rash appears on the fourth to the seventh day, lasts about a week, and then gradually fades.

The irregular pyrexia continues during the appearance of the rash, and lasts in all from ten to twenty-one days. After the first two to three days of the illness the initial symptoms subside and the patient merely complains of general malaise and some loss of appetite. The chief features of the illness are now paucity of symptoms, persistent pyrexia with relatively slow pulse, and the curious rash above described. The illness in the first few days differs from influenza in that there is usually no bronchial catarrh or other chest complication, and only a few patients have complained of sore throat. It differs from typhoid fever in the appearance of the definite rash described above, the absence of definite enlargement and tenderness of the spleen, and the subsequent course of the illness. In several cases where the rash was not quite distinctive a Widal reaction was done and proved to be negative. A large number of our cases (over 50 per cent.) occurred in children from 8 to 14 years of age. There have been very few complications, the temperature has ultimately become normal by lysis, and after a short convalescence recovery has been complete.

We shall be glad to know what experiences other practitioners have had with similar cases; and we invite comments or suggestions as to diagnosis.—We are, etc.,

M. W. CANTOR, B.Sc., M.B., Ch.B.Glas.

London, E.1, May 5th. J. SHULMAN, M.R.C.S.

GLANDULAR FEVER.

SIR,—In the *Journal* of May 10th Dr. Letheby Tidy refers to the existence of an epidemic of glandular fever. Numerous cases of this disease, or a condition associated with glandular enlargement, are being met with in various parts of London. This epidemic, however, is of unusual interest, in that it presents features differing in many respects from most of those described in the literature.

The large number of adults in the second and third decades of life, the prolonged pyrexia, and the irregular time at which glands may first appear, are of special interest. Some of the adult cases are still running an irregular temperature after the eighth week, and in some carefully observed patients glands did not appear until the sixth to the twenty-first day, and in one instance not until the fourth week. Severe and persistent headache, frontal and occipital, has been a notable feature. Enlargement of the spleen and liver, and a rose-pink macular rash on the trunk, have been observed. While the glandular enlargement is generally limited to the occipital, posterior, and pre-auricular, submaxillary, cervical, and axillary regions, transient enlargement of those in the groin also occurs.

A definite purulent exudate on inflamed tonsils has been noted in some cases, which bacteriologically contained non-haemolytic streptococci. Although an increase in the total white cells is not always present, a considerable lymphocytosis is constant. The serum reactions for typhoid fever were consistently negative, and, where performed, those for *Br. abortus* infection were also negative. Blood cultures in a series of cases at present under observation were all negative.

Several instances of more than one case occurring in the same household have been observed, and one man contracted the disease fourteen days after his wife had a milder but definite attack. So far, no instances of infection have been noted in other patients in the ward, or in attendants and nurses. Lastly, the severity of the constitutional disturbance, as well as the prolonged pyrexial illness in many of the adults, have been disconcerting features of the present epidemic. Lobar pneumonia has been a complication in one instance. As many of the cases to which I refer are still under observation with pyrexia, it is not yet possible to give a detailed account of them.—I am, etc.,

London, W.1, May 13th. DAVID KRESTIN.

GLANDULAR FEVER AND PSITTACOSIS.

SIR,—The two letters on glandular fever and psittacosis, respectively, which appeared in the *Journal* of May 10th, prompt me to send you a reply. A study of over 3,500 cases of intestinal intoxication in man and animals has led me to conclude that glandular fever, undulant fever, psittacosis, other named and unnamed fevers, and certain cases of food poisoning have a common origin, and are not clinical or even bacteriological entities. The micro-organisms primarily responsible appear to me to be mutative forms of the non-pathogenic *Bacillus coli communis*, mostly belonging to the class known as "non-lactose fermenters." The classification is a bad one, because some of the pathogenic forms may ferment lactose. Differentiation of bacilli by means of sugar tests is always arbitrary and may be untrustworthy. Furthermore, there is no justification for assuming a homology or even an analogy between the behaviour of micro-organisms *in vivo* and their behaviour *in vitro*. The differences in the clinical pictures presented are due less to the non-lactose fermenters than to other factors. All the clinical pictures may be caused by any one of the micro-organisms in question. The other factors are altered atmospheric conditions, excessive physical and mental activity, ingestion of faulty food-stuffs, and intoxicating substances, another bacterial invasion, and the *loci minoris resistentiae* of the victim. The fevers of intestinal origin are more often due to an increased activity of the non-lactose fermenters already present than to a fresh invasion from without. Consequently it comes to pass that any factor capable of lowering the victim's resistance or of causing hydration of the protein particles in the plasma may result in an increased activity of the pathogenic micro-organisms in the intestines. The increased activity may result in no more than the protein particles in the plasma undergoing acute dehydration. Dehydration is always followed by hydration, and when protein particles undergo this chemico-physical change they are apt to become arrested and precipitated in the perivascular lymphatic vessels and capillaries. The precipitation is most likely to take place in the *loci minoris resistentiae*, and these may be the lymphatic glands in some, the lungs in some, and the skin, joints, etc., in others.

In other cases the increased activity of the non-lactose fermenters may result in the *Bacillus coli communis* multiplying elsewhere than in the intestines. When this occurs the multiplication is most likely to take place in the urogenital tract, but pyelitis and cystitis do not necessarily result. In fact, at first there is no inflammation of the kidneys and bladder, and in no instance does the so-called "infection" spread from the bladder along the ureters to the kidneys. The multiplication may occur in the blood stream, but it is incorrect to hold that the *Bacillus coli* is the cause of the trouble, and this explains why vaccines made therefrom are generally useless. Another effect is to render pathogenic certain micro-organisms which are ordinarily saprophytic, such as the streptococci and staphylococci. This may result in such clinical conditions as tonsillitis, rheumatic fever, scarlet fever, haematuria, exfoliative dermatitis, abscess formation, etc. In the last five cases of perinephritic abscess I have had, the pathogenic and causative micro-organism found in the excreta was the *Bacillus paratyphosus*.

Occasionally the offending non-lactose fermenter enters either the urogenital tract or the blood stream. In the blood stream it usually undergoes a morphological change, and it is this which has led to the differentiation of micro-organisms really closely connected. The first change is from a bacilloid to a coccoid form, and the second to a still smaller particulate form which may or may not be able to pass through a filter. The best-known coccoid form is the Brucella group of micro-organisms. These micro-organisms are, in my opinion, the coccoid form of the *Bacillus faecalis alkaligenes*, and both the coccoid form in the blood and the bacilloid form in the excreta may be encountered in the same individual in cases of glandular fever, undulant fever, psittacosis, etc. Psittacosis may occur independently of parrots or of human beings who have been in contact with sick birds, and it may, according to my experience, be caused by Gaertner's bacillus and Friedländer's bacillus. The last-mentioned micro-organism is, I believe, a mutation form of the *Bacillus coli communis*. The ultra-microscopic form may be encountered in clinical conditions other than those which can carry the label "psittacosis." The passage to which exception is taken by Drs. Bedson and Western is therefore probably correct. It adds to our knowledge to have discovered a filterable virus in certain cases of so-called "psittacosis," but it carries us no further. Indeed, it impedes us when no note is taken of its origin. Experimental work would appear to show that ultra-micro-scopic particles and particles just too big to pass through a filter may be formed not only from known micro-organi-sms but also from the victim's own protein particles. The latter may be both of haemic and of cellular origin.

The formation of ultra-micro-scopic particles is determined by many factors and may be artificially set in motion, as by altering the conditions under which the micro-organisms are growing, etc. Although all ultra-microscopic particles or virnses maintain specific features—that is to say, features peculiar to their origin—they all have certain characteristics in common. They have a strong reducing action, and function as extremely powerful dehydrators. Like all powerful dehydrators, they show a predilection for neurones, thus explaining why the mental activities are altered in cases of psittaco-is. It is interesting to note that mental depression is a sequel of most infections of intestinal origin. Had we been living twenty years ago search would have been made for spirochaetes in psittaco-is. To-day it is fashionable to look for ultra-microscopic virnses, but it does not follow because they are found that they are any more the cause of the clinical condition than that the *Spirochaeta pallida* is the cause of syphilis. Both may merely play a part, and that a subordinate one.

In what direction the search is going to be in twenty years' time it is impossible to say. It is to be hoped that the differentiation so assiduously practised will have killed bacteriology ere then and that the science will become once again part of medicine. This hope is no pious expression because new clinical conditions are in the constant process of formation. Agglutination tests are of no real value because the victim's serum may fail to agglutinate his own pathogenic micro-organisms, and agglutinate micro-organisms he neither has nor has had. It is to be deplored that what Drs. Bedson and Western decry as flights of the imagination are not more common. They are at least the products of thought, which is itself an expression of correlation, the essence of co-ordinated cerebral function.—

I am, etc.,

J. E. R. McDONAGH.

London, May 11th.

TREATMENT OF TUBERCULOUS KNEES.

SIR,—Dr. Cressy's article on tuberculosis of the knee (May 10th, p. 857) is so dangerously mi-leading that it must be answered. Perhaps I may be permitted to do so, as for the last twelve years I have had many cases under my care in the Wingfield Orthopaedic Hospital, and have discussed its treatment and end-results with Rollier, Calvé, and many American and British colleagues.

Dr. Cressy's views date from the dark ages of tuberculosis, when its diagnosis was extremely uncertain and the fundamental conditions of succes-ful treatment were undiscovered. He has apparently seen eight patients with chronic synovitis of the knee during the last forty-three years. He seems to have assumed that the knees were tuberculous, but gives no grounds for the assumption. He described (inadequately) six cases; of these, two had both knees affected, which is extremely rare in tuberculosis though common in other conditions. There is nothing in his case notes which suggests any attempt to make a diagnosis.

Dr. Cressy does not give the histories of the two knees which he amputated. One fears they were sad! For even Case 1, a girl of 18 with bilateral synovitis of the knee, had four applications of the cautery. Probably these two knees which had to be amputated were *really tuberculous*. (With modern treatment amputation is very rarely nece-sary.)

In his treatment ten days after the operation "the knee is gently bent once a day. A back splint is useful during

the first fortnight. . . . The patient is able to walk without support in about twelve weeks." A tuberculous knee treated thus will get worse, and if the treatment is continued life and limb will be endangered, for ruthless attacks on the skin and subcutaneous tissue cannot completely change the histology of synovial tuberculosis. The natural history of the healing of tuberculosis is well known; local rest and good general health of the patient maintained over a period of years are necessary. Further, a tuberculous knee is not a primary but a metastatic lesion; the patient has deep-seated glandular tuberculosis, and general treatment as well as local is necessary.—I am, etc.,

Headington, Oxford, May 12th. G. R. GIRDLESTONE.

STERILITY IN WOMAN.

SIR,—In reply to Professor Blair Bell's most interesting letter (May 10th, p. 882), I shall concentrate on the two main items of divergence between us—namely, (1) patency of the tubes in the presence of "sterility without physical signs or symptoms, or even a history indicative of the state of the tubes," and (2) the relationship of the husband to operation on the female.

Professor Blair Bell must be hard pressed for an explanation when he suggests that leakage from the joints of Bonney's apparatus is the cause of my high percentage of positive results. With his experience of an identical apparatus (I quote his own words), surely he must remember that there are only two small apertures near the apex of the hollow dilator. With these two apertures suitably controlled by the thumb and finger (either hand will do) and with full *and maintained* pressure on the bulb, the manometric needle is a certain indicator that the apparatus is intact. Further, if leakage has been a factor in my cases, why has it occurred so regularly at the different levels of pressure noted in the parous and the nulliparous?

Professor Blair Bell notes that I did not state whether a radiograph was taken to prove the passage of air in my cases, and observes that all his own cases were tested in this respect. May I remind him that, in his address, he is reported as follows (*British Medical Journal*, April 5th, p. 629): "Radiographic observation, however, is often an unnecessary refinement, for anyone experienced in the method is usually able to tell by the way the manometric needle falls after reaching about 80 mm. Hg of pressure that the air is passing into the peritoneal cavity. Moreover, it can be heard whistling through the abdominal ostia of the tubes if a stethoscope is placed on either side of the hypogastrium." I find it difficult to carry on an argument conducted on such weathercock lines. Surely Professor Blair Bell does not deny me experience in this manœuvre. I assert without any reservation that my positive results represent cases in which air *has* entered the peritoneal cavity. My negative or doubtful cases have all, where the patient was willing to submit to further investigation, been tested by lipiodol injection and radiography; it will be understood, however, that the number is remarkably small, for, in my experience, as my letter made clear, it is unusual to find blockage of the tubes either in primary or secondary sterility without some evidence of fixation of the appendages.

Wherein, then, lies the reason for the divergence in our figures? So far as I can judge, it can only arise in one of three ways: (1) The totals of one or other of us are insufficient for statistical summary; in this respect I am quite satisfied with my own numbers. (2) We differ in our appreciation of normality in the pelvis; I trust that this has always been judged by Professor Blair Bell himself. (3) Professor Blair Bell has been excluding from insufflation tests such a large number of women defined by him as cases of "hormonic insufficiency" or "constitutional disturbance" that his results have varied accordingly. I am inclined to think, and I certainly hope, that this may be the main reason, but I insist that the great majority of sterile women appear perfectly fit and present neither signs nor symptoms of one or the other. Very many of these cases present some degree of anteflexion of the cervix—a feature to which less than one line and a half was devoted in Professor Blair Bell's address, but which I believe to be a very important factor in the causation of sterility, although in no single case can one, by examination alone, affirm that it is so. The cochleate uterus is in no sense an infantile uterus (as the uterine sound will invariably demonstrate). It may be associated with some "hormonic insufficiency" in adolescence, but there is not the slightest evidence that this continues into adult life. It is not by mistaken diagnosis (as a paragraph in Professor Blair Bell's letter may suggest) that I insufflate these cases when dealing with the cervix surgically. My high percentage of positive results certainly includes many cases of the kind. Why should I neglect to do so when we are in agreement that ventilation of the tubes has its successes, and why should I not demonstrate that while anteflexion may be, infection is not, the cause of the infertility? If exclusion of cases of anteflexion of the cervix—to my mind an unjustifiable omission—be the cause of the disparity in our figures, well and good; I can imagine no other group of cases sufficiently large to affect the figures in any appreciable way.

Professor Blair Bell misrepresents my views on the involvement of the husband. Never for one moment have I doubted the wisdom of testing the husband—a step both scientific and humane. I still endeavour to do it in all private cases, but, for reasons which I gave, have ceased to insist on it. In my letter I objected to the unqualified statement that "no woman should be subjected to unpleasant examinations or treatment for sterility *per se* until her husband has been proved fertile." As Professor Blair Bell now frankly admits that many of his hospital patients *are* so dealt with, perhaps he may wish to add the qualification that should have appeared in his original address.—I am, etc.,

Liverpool, May 15th. H. LEITH MURRAY.

SIR,—I find the greatest difficulty in understanding Mr. T. C. Clare's attitude to the problem of the childless marriage when he writes in the *Journal* of May 17th (p. 927) "I therefore advocate that, except in special circumstances, the semen should only be examined when the husband asks for it." Modern research has shown that childlessness is generally due to the existence of not one but several adverse factors, and that of these adverse factors approximately two-thirds are found to exist on the female side and one-third on that of the male. The study of sterility is therefore essentially a two-patient problem, and to omit the crucial test of fertility in the male is in my opinion a definite retrograde step which I cannot too strongly condemn. And what is the reason that Mr. Clare brings forward in support of this extraordinary desire to confine our routine investigation to the wife? It is that "it is much more humiliating to the man for him (and his wife) to be assured that he is incapable of procreation than it is to the woman to be informed that she is unlikely . . . to be able to have children." And so in order to shield this poor over-sensitive man from the knowledge that his semen is poor in spermatozoa or rich in pus his wife must be subjected to an entirely unnecessary dilatation and curettage. Personally, although I have examined many hundreds of husbands from the point of view of fertility, I have never yet come across one who would rather have had useless operations inflicted on his wife than learn that his own oligospermia or azoöspermia was the chief cause of the absence of children. A man who would be plunged in the depths of despair by a decline in his sexual power can learn with equanimity that his fertility is impaired. I have no hesitation in saying that Mr. Clare is advocating not only a retrograde step in medicine, but an act of injustice for which no excuse can be found.—I am, etc.,

London, W., May 18th. KENNETH WALKER.

CAUSATION OF LEUKAEMIA.

SIR,—It is probably because of the circumstantial nature of the evidence in favour of a traumatic origin of certain cases of leukaemia that so many writers are not satisfied of its existence. Dr. Harold H. Sanguinetti, who wisely observes that the question is of more than academic interest, has brought the matter into prominence again in the *Journal* of May 10th (p. 886).

To the *Lancet* of February 8th (p. 288) I contributed an article entitled "Leukaemia following trauma," based on a case where the connexion was obviously important, and on forty others collected from the literature. In it I attempted to establish the entity, drawing upon the analogy of traumatic sarcomata of bone, suggesting the presence of a predisposition to the disease, and finally essaying, for what it might be worth, an attempt on the ultimate pathogenesis. Two other cases have come to my knowledge, the evidence, however, being less convincing. Briefly, they were both cases that developed myeloid leukaemia some years after severe war wounds, the one in the chest, the other in the thigh. In both cases bones were involved.

A point of interest on which I should like to have added support is that the cases are always of the myeloid variety (one of the cases in my series was unclassified). Since the likelihood of accidental trauma preceding the occurrence of leukaemia is equal in the two varieties, one would expect that the cases, if wrongly interpreted as traumatic leukaemia, would occur in the proportional incidence of the two varieties—myeloid and lymphatic. Does not the fact that the cases reported are always of the myeloid type negative the suggestion of accidental association? Does it not mean that the association is valid, being based on a process that, however, does not obtain in lymphatic leukaemia?

Von Domarus and others believe that the trauma only assists in bringing out the disease that was previously latent. This raises the question of what are predisposition, latent disease, and disease manifest, and where the dividing lines between them are to be placed. From the point of view of the patient the trauma marks the place between perfect health and an incurable illness; his surprise is justified when he finds disillusionment. The case I described received no compensation, but I found that two cases from the German series were granted payment and one case was refused.—I am, etc.,

London, N.W. 2, May 12th. S. CHARLES LEWSEN.

COSMETIC PREPARATIONS.

SIR,—Dr. R. M. B. MacKenna's interesting article on modern cosmetic preparations (*British Medical Journal*, May 17th, p. 899) is rather disturbing. It is alarming to think we may be daily sowing the seeds of rosacea, rodent ulcer, and epithelioma. He says: "The normal skin does require an emollient . . . normally provided by the sebum manufactured by the skin itself." But how many skins are normal? Most appear to produce too much or too little sebum, or to be unduly susceptible to infection. Numerous male skins, untouched by cosmetics, develop "scrum-pox," acne, boils, or "barber's rash"; while still more appear to suffer from excessive grease or from redness bordering on erythema (whereas in similar circumstances the female skin in its cosmetic armour usually appears cool and comfortable). Then what is to be done with the numbers of people who have from childhood a sensitive skin, which peels and chaps easily and is prone to pityriasis, and which is irritated at once by heat, cold, or drought? Hitherto I have forbidden soap and prescribed "soothing" ointments or lotions—the formulae for which I see with disquiet contain "definite irritants." With what does Dr. MacKenna treat these cases, for many must always use emollients? Can he trust preparations of lanoline or olive oil? And what does he recommend for use with massage? It would be most interesting to know.

Again, I have often been struck by the excellent skins of theatrical people, young and old, who cannot always be said to combine their cosmetic treatment to the evening, and also by the superior texture of the skins of the rich—who generally use cosmetics—to those of the poor—who used not to do so, also by the frequent occurrence of rosacea among non-cosmetic users—cooks, stokers, sailors, and others exposed to extremes of temperature (which effect might possibly have been prevented by the application of an artificial sebum in the form of a protective ointment). I should very much like to know how Dr. MacKenna explains these cases.—I am, etc.,

Tunbridge Wells, May 17th. A. MAHONY-JONES.

EARLY SIGNS OF CARDIAC FAILURE OF THE CONGESTIVE TYPE.

SIR,—In regard to the above subject I should like to draw the attention of your readers to the fact that there are a large number of patients who show a rapid pulse rate and who give high venous pressure readings, but whose hearts must be considered otherwise healthy. A young man under my observation, with a quick pulse and a suggestion of hyperthyroidism, who states that he feels quite well and is able to follow his occupation as a manual worker, shows a very high venous pressure. I have frequently found, too, high venous pressures in "soldier's" heart, etc.

I dare say that these cases are not quite up to the normal standard in their reaction to the work test, but they certainly do not suffer from any serious heart trouble. On the other hand, a patient with pronounced valvular disease, whose reaction to effort is very poor, may show a normal venous pressure. Again, I have seen a patient dying from heart disease with oedema, with a slow pulse (I suppose it will be labelled non-congestive type of heart failure), who has given a low venous pressure (see *Edinburgh Medical Journal*, November, 1928).

It is my belief that in many instances high venous pressure has nothing to do with heart disease, but is simply the result of a very short diastole which does not permit the proper emptying of the great veins of their contents into the heart; a short diastole is usually found in rapid pulse. The reader may or may not accept this explanation. The fact remains that, first, we may have a high venous pressure with a practically normal heart. Secondly, we may have a low venous pressure in a patient dying from heart failure. Thirdly, we may have a high venous pressure as a result of heart failure. It is obvious that venous pressure readings, taken by themselves, are hardly reliable criteria of heart failure (decompensation), and that little of practical importance is to be gained by making special investigations of the pressure in the veins.—I am, etc.,

Liverpool, May 14th. I. HARRIS.

ABDOMINAL PAIN.

SIR,—Mr. Zachary Cope, in his valuable contribution to this much-discussed subject (May 17th, p. 895), appears to lend the weight of his authority to a common error in the investigation of abdominal pain—namely, that psychic causes can only be diagnosed by the exclusion of organic disease. No one would deny that there are many puzzling cases that require to be submitted to the elaborate (and costly) procedure of complete examination by modern methods; but there are, I believe, few physicians of experience who would not claim the ability to recognize the existence of a psychoneurosis without any further investigations than those that can be carried out in the consulting room. Some knowledge of the fundamentals of psychopathology is as necessary to the physician who would inquire into the causes of abdominal pain as is an acquaintance with the principles of radiology.

It cannot be too strongly emphasized that the psychoneuroses give rise to positive signs, mostly of a subjective nature, which are as valuable in diagnosis as are the objective physical signs of which Mr. Cope writes with all the authority of his wide experience. Diagnosis must always ultimately depend upon positive rather than negative evidence, indispensable as the latter may be in the preliminary stages of any investigation. If it is admitted that exploration of the stomach by radiology is essential to the diagnosis of peptic ulcer it is surely not unreasonable to require a psychological exploration as a preliminary to the diagnosis of a psychic disorder. It seems to me to be particularly important at the present time that all those who have to deal with gastro-intestinal disorders should carefully reconsider the position of the psychoneurotic in relation to both diagnosis and treatment. In hospital as well as in private practice the expense of x-ray examination and other diagnostic procedures becomes increasingly important as the incomes of private patients and of voluntary hospitals yearly become less adequate. Many thousands of pounds must be wasted upon cases where

careful attention to the principles of psycho-diagnosis would result *in a definite* conclusion being reached at a single interview. The confirmation of this by a psychiatrist would entail less expense both to the hospital and to the private patient than *x*-ray and laboratory investigation.

At the risk of incurring the disasters that may follow upon skating over very thin ice, may I venture to add that this is one of those cases where the physician and surgeon are apt to differ in their outlook? The latter is mainly interested in the possibility of the relief of abdominal pain by surgery; the physician, not wedded to any special line of treatment, is primarily concerned in discovering the disorder of function which is responsible for the symptom—a disorder which may be connected with one of the systems which are usually neglected in a routine surgical examination. While not advocating a divorce of the art of surgery from that of diagnosis I feel that their continued union places upon surgeons the responsibility of appreciating that a consideration of a patient's psychology may be rewarded by positive discoveries, perhaps more often than is a physical examination of the abdomen.—I am, etc.,

London, W.1, May 19th. MAURICE E. SHAW.

TREATMENT OF GASTRIC AND DUODENAL ULCER.

SIR,—I read with interest Dr. Charles Bolton's article in the *Journal* of April 19th (p. 727) on the treatment of gastric and duodenal ulcer, and was particularly struck by his conclusion that the patient must for the rest of his life obey a strict medicinal and dietetic regime. I maintain that such a serious drawback to the normal man can be avoided by the employment of my method of posterior gastro-jejunostomy combined with jejuno-jejunostomy. After this operation a man has no need of medicinal or dietetic treatment. By this means we do not perpetuate a "physiological error" in allowing pancreatic fluid and bile to enter the stomach, but give the patient a perfectly normal digestive apparatus, with the ulcer effectually short-circuited. I appeal to surgeons to give this method a trial. A copy of my correspondence on the subject of this operation with a surgeon of the Mayo Clinic, and a report of seventy-five cases treated by him at that clinic, may be seen in the Library of the British Medical Association in Tavistock Square. A diagram of the operation appeared in the *Journal* of April 24th, 1926 (p. 738). References will be found in the *Practitioner* of June, 1920; the *Lancet*, January 21st, 1921; the Epitome of the *New York Medical Journal*, 1920; and the *British Medical Journal*, June 8th, 1929 (p. 1060).—I am, etc.,

Poole, May 7th. G. G. GILLON.

AMPUTATIONS AND ARTIFICIAL LIMBS.

SIR,—We have been interested in the report of the discussion on this subject at the Royal Society of Medicine, and also in the recent letters published in your columns. As one of the speakers suggested a closer co-operation with limb-makers, we venture to give our views from the limb-fitting aspect.

We have made and fitted thousands of artificial legs, and from the experience so gained we have formed the opinion that the true Syme's stump has been unjustly condemned. In the early days following the war we were asked to give evidence to the Ministry of Pensions regarding Syme's amputations. Our favourable opinion of these, from all points of view, was contrary to that expressed by other limb-fitting centres. An inquiry was therefore instituted at the Birmingham centre, and some twenty or so patients who had been fitted by us were instructed to attend. The following results were found:

1. In all cases the men were comfortable and were wearing the foot regularly.
2. No case of stump trouble was found.
3. The initial cost of the limb and of its subsequent upkeep were very much smaller than in the case of any other limb.
4. Walking ability and length of use per day were found to be greater than with any other artificial limb.

In civil cases we have also had opportunities of seeing the results. We have had cases of double Syme's; one patient, in particular, has worn limbs for thirty years. At a later period than the inquiry referred to above the modified Syme's amputations were performed, partly, we think, from a desire to improve the shape of the stump and give it a less bulbous appearance. This, and so-called Syme's amputations which were made *above* the malleoli probably accounted for the stump trouble and re-amputations. The natural heel-pad is the best form of end bearing, the bulbous end of a good Syme's being of great service in preventing any lifting movement in the artificial limb sockets when walking. Again, the enlarged end makes artificial joints and thigh corsets unnecessary. These advantages far outweigh aesthetic drawbacks. In this connexion we would recall an article published in February, 1922, by Mr. S. T. Irwin, on the relative values of various amputations of the lower limb, from the point of view of artificial legs. He gave numbers denoting respective values in capacity of work. In his list the Syme amputation was given second place, the first being taken by amputation of toes only.

One of the chief difficulties with which a limb-maker has to contend is the length of time after the stump has healed before a limb is fitted. An idea seems prevalent that if left for a long time shrinkage will take place. Shrinkage can only be brought about, as a rule, by the wearing of a pylon or artificial leg. Generally, during the period of waiting, the hip-joint in cases of thigh amputation, and the knee in cases of below-knee amputation become partly flexed owing to the way the patient carries the stump when using crutches. This greatly increases the limb-fitter's difficulty in obtaining good results.—We are, etc.,

Birmingham, May 14th SALT AND SON, LTD.

DEATH UNDER SPINOCAIN ANAESTHESIA.

SIR,—Replying to Mr. A. Wilfrid Adams's question (*Journal*, April 19th, p. 760) I have pleasure in giving him the details for which he asks.

The patient was not operated on by myself, but by another surgeon, who has kindly furnished me with the following. Without withdrawing any cerebro-spinal fluid 2 c.c. spinocain were injected into the third to fourth lumbar interspace, and the head was lowered immediately about 30 degrees. The patient had no carditis and no intestinal obstruction, but was very anaemic, for which blood transfusion was performed. The anaesthesia was of the combined type, so the upper level of cutaneous anaesthesia was not ascertained. In my first communication of this case (April 12th, p. 693) the error of the site of the injection was entirely mine.—I am, etc.,

Victoria, British Columbia, April 30th. A. B. HUDSON.

"BIOLOGICAL REVERSION AND HIPPOCRATIC ANATOMY."

SIR,—In your review published on April 26th (p. 786) a single description is quoted which was commented on as follows: "One may be excused for mistaking this for pure osteopathy." The description deals with perithecal tension, an anatomical fact first defined and described by Professor Jean Sicard to account for the presence of albumin in the cerebro-spinal fluid due to venous obstruction. Further clinical research, based on the rigid disciplines of anatomy, enabled him to diagnose perithecal tension in six cases of intractable lumbago which were operated on by M. Robineau by laminectomy. "When the vertebral canal was opened and the perithecal fat exposed it was found to be tightly packed and to project like india rubber out of the vertebral canal. When it was removed the cord and the nerves were found to be compressed and displaced." It was owing to the instruction of my late friend Professor Sicard, in his rigid anatomical technique that my own vertebral researches were undertaken more than twelve years ago. Variations in this tension have been examined for months almost daily.—I am, etc.,

Brighton, May 19th. HUBERT HIGGINS.

Medical Notes in Parliament.

[FROM OUR PARLIAMENTARY CORRESPONDENT.]

THE House of Commons this week read the Finance Bill a second time. Unemployment was debated on the vote for the department of the Lord Privy Seal. The Estimates for Agriculture and Scotland were also in the week's business.

Consideration by the House of Lords of the Commons amendments to the Mental Treatment Bill has been fixed for May 29th.

In the House of Lords, on May 19th, the Illegitimate Children (Scotland) Bill and the Hairdressers' and Barbers' (Sunday Closing) Bill were read the first time. These bills had been read a third time by the House of Commons on May 16th.

On May 20th the Parliamentary Medical Committee decided to ask the Minister of Health to establish a standing advisory committee on clinics for rheumatism. On the same evening the committee was addressed by Dr. Copeman, one of the physicians in charge of the Red Cross clinic for rheumatism at Regent's Park.

Mental Treatment Bill.

As recorded in our issue last week, the Mental Treatment Bill passed through report and third reading in the House of Commons on May 15th. The earlier portion of the debate has already been reported.

On Clause 11, which dealt with the reorganization of the Board of Control, Dr. FREMANTLE moved an amendment to provide that the clause should read as follows:

"The Board of Control shall consist of the chairman (who shall be a paid Commissioner) and not more than four other Commissioners all of whom shall be paid Commissioners, and two unpaid Commissioners, of whom one shall be a layman and the other a laywoman."

He said that the Board of Control was being radically changed. The bill suggested that all the five members of the new Board of Control should be paid members. That cut out the unpaid Commissioners, who had done such good work hitherto at the Board of Control, and to make assurance doubly sure, a clause later in the bill said that there should be no unpaid Commissioners. There was nothing to that effect in the report of the Royal Commission, and one had to look further afield for the reason for cutting out the unpaid Commissioners. The unpaid Commissioners at present were reckoned to be doing good work. The actual numbers had come down to two. It was said that in future this work was to be done by the paid Commissioners, that the paid Commissioners were to be civil servants, and that the work was to be systematized and brought under control. It was for that reason that he proposed, in this amendment, that there should be one unpaid layman and one unpaid laywoman to bring in the unofficial element. The gist of the proposal was that there should be an unpaid official element to bring the point of view of the ordinary man and woman into the working of the Control Board. It had been clearly shown that there was a great suspicion and distrust of the official element in dealing with the question of mental disorder, and quite naturally and rightly so. They were touching the very basis of human life, and there were innumerable opportunities for things to go wrong. They wanted to establish public confidence and show that there was not going to be the iron grip of officialdom on the unfortunates who were being dealt with by this system of mental supervision and treatment. The bringing in of the human factor of the unpaid man and woman into the vital part of the machine, the Control Board, would give confidence to the public that the Board of Control was still human, in spite of the fact that it was official. It was no insult or reflection on the officialdom of the Government service to say that it still required this element. The proposal in the bill, without the unpaid element, created the greater difficulty that the functions were being divided. The Board of Control was to sit in Whitehall while the Commissioners were visiting. It was only for very special purposes that the Board of Control would be expected to spare time to visit. The unpaid man and woman would be able to do a good deal of the visiting and introduce the needs that were required. Those who had seen the unpaid visiting committees of county councils, or people like the Commissioners, at work in the mental hospitals could realize the value of their work. Simply because they were unofficial and unpaid, they could often get into closer touch with the patients and the staff in a way the officials were not able to do.

Dr. VERNON DAVIES, who seconded the amendment, said that the Board of Control had for years been gaining more and more the confidence of the public. They occupied a very special and peculiar position. They were the only safeguard that mental patients had against improper or illegal detention. Nothing would give the people more satisfaction than the knowledge that on the Board of Control there were two lay unpaid persons to look after the interests of the patients. The fact that these two people were unpaid would show that they were absolutely unprejudiced and under no departmental influence. The duties of the Board of Control were very valuable and varied. Under the bill the Board was simply going to become a department of State. He believed it was the idea of the Minister and the department that it should become a department of the Ministry of Health. The unpaid Commissioners would be a very strong safeguard that the Board did not become so departmentalized that the people of the country could not get to know what was really happening.

Mr. GREENWOOD said that he could not accept the amendment. He was of the same opinion as in the committee stage, that this principle of unpaid Commissioners really introduced an element that was foreign to the spirit of the Royal Commission. The Royal Commission anticipated a small body of full-time people running an administrative machine. The supporters of the amendment wanted a Commission larger than that recommended by the Royal Commission, with two unpaid people in it, for no other purpose than to make it a body less responsible to the Minister than the Royal Commission ever had in mind. In the early stages of the bill a strong view was expressed, not that this body was subservient to the Minister, but that it was far too independent of the Minister. The case which he had made, time after time, was that in these proposals it would be possible to get a closer contact between the Minister and administrative machinery than was possible in cases where they had unpaid people. The Royal Commission never wanted a body that was more independent. It wanted a more effective administrative machine. No one would ever persuade him that they would have a machine that was effective if it was established partly of volunteers. (Cries of "Oh!") Clearly, what members opposite wanted was a semi-independent body over whom no one was going to have control. The argument that had been repeatedly levelled against the Minister and the Board of Control was that this body, as constituted to-day, was utterly out of touch with the public, and had lost public confidence. To-day it contained people who were unpaid Commissioners. He saw no reason to believe that, if public confidence had been forfeited, it would be restored by people who were there to-day. No other department in the State placed heavy executive and administrative responsibilities on an honorary staff, and there was no reason why they should have it in the Board of Control. The fact that they had two people, a man and a woman, from whom they could not make demands, but to whom they could make requests, was not going to make a difference to the spirit of the Board of Control. Members opposite were pressing the amendment, not because they wanted more direct public control over the Board, but because, apparently, they wanted less. The amendment would be injurious to the interests of mental treatment.

Mr. E. BROWN said that the Minister's speech really drove him in favour of the amendment, for if that was the outlook of the Minister of Health and his department the sooner the House took note of it the better. He objected to the tenor of the speech.

Miss RATHBONE said she had listened with dismay to Mr. Greenwood's speech. The fact that he had laid so much stress on the Board of Control being an entirely paid Board in order that it should be directly responsible to the Minister was precisely what the public did not want. It was rather ungracious of the Minister to go out of his way to allude to the unpaid Commissioners, and say that the Board had lost the confidence of the public.

The amendment was defeated by 163 votes to 63.

Dr. FREMANTLE moved an amendment providing that two of the senior Commissioners should be medical Commissioners, which was accepted by Mr. Greenwood.

An amendment by Dr. FREMANTLE, that the paid Commissioners, other than the senior Commissioners, should be appointed by His Majesty on the recommendation of the Board of Control, was defeated.

Miss LAWRENCE moved to leave out para. 2 of Clause 16, which deals with proceedings taken against a doctor, and to substitute the following words:

"(2) No proceedings, civil or criminal, shall be brought against any person in any court in respect of any such matter as is mentioned in the last preceding sub-section, without the leave of the High Court, and leave shall not be given unless the court is satisfied that there is substantial ground for the contention that the person, against whom it is sought to bring the proceedings, has acted in bad faith or without reasonable care.

"(3) Notice of any application under the last preceding sub-section shall be given to the person against whom it is sought to bring the proceedings, and that person shall be entitled to be heard against the application.

"(4) Where on an application under this section leave is given to bring any proceeding, and the proceedings are commenced within four weeks after the date on which leave was so given, the proceedings shall for the purposes of the Public Authorities Protection Act, 1893, be deemed to have commenced on the date on which notice of the application was given to the person against whom the proceedings are to be brought."

She said that the Royal Commission pointed out that the protection allowed by the law to medical men against whom proceed-

ings were taken was not sufficient, and many doctors would not sign certificates on account of the difficulties in which they might be landed. The Government resolved to carry out the recommendations of the Royal Commission, and inserted a form of words that was discussed in committee. As a result of that discussion the Minister of Health promised to meet some of the difficulties and objections raised. The Government had very considerably amended the original clause, which provided that the doctor was obliged to apply to the judge for a stay of proceedings. In this new clause proceedings might be conducted in a more appropriate way. Before an action began, a judge had to be satisfied that there was substantial ground for it. Many people who had undergone treatment had been discharged partially cured, and they were unfortunately very likely to take legal proceedings. Mr. Somerville Hastings, in the second reading discussion, had said that there were two classes of insane people, and that one of them included those people who never believed them and bore a grudge against everyone. It was quite likely that there might be a mass of baseless actions against doctors, and the Government had provided that leave must be given for the initiation of such proceedings against a medical practitioner. That was the main change that they had made in the bill, and she hoped that its new form would meet the apprehensions that were expressed by hon. members.

The amendment was agreed to, and the report stage was concluded.

On the motion for the third reading,

Dr. VERNON DAVIES said that the bill, which would affect thousands of people, had been passed through the House with a minimum of discussion and a maximum of forced closure. They had not been able to do justice either to themselves or to the people whom they represented. It was useless to say that the Opposition regarded the bill as satisfactory. They had the greatest hopes on the second reading. They visualized that there were great opportunities for this class of patient if they could get them in the early stages of disease. In the committee stage they were strongly desirous of helping. Some of the medical men, who had a certain knowledge of what they were talking about, found the Minister of Health and the Parliamentary Secretary most determined opponents of what they proposed. There were many provisions in the bill which were not going to act as they wanted them to act. The bill would be detrimental to the treatment of mental disease. It would prevent some of these people submitting themselves for treatment as early as they should do. The obstinacy of the Minister in refusing to accept change with regard to the Board of Control would have a detrimental effect. People were going to be more suspicious of the Board of Control than ever in the past. They would regard it as a Department of the Ministry of Health. Labour members simply jeered at the medical profession. They thought that their motives were not of the best and purest, and imputed to them unworthy motives. It had constantly been done in that House. The medical profession had been more or less the butt of the Labour party. They had not remembered that the health of this country was in the hands of the medical men, and that people's opinion regarding the medical men of the country was not improved by constant ill-informed criticism. Members who had had the opportunity of expert advice from men who had no axes to grind, and who had retired from practice, had, by their rigid adherence to the party whip or blindly following a department, passed on to the Statute Book a bill not half so good as it might be. Nevertheless, he hoped that the bill would give some relief to the poor people of the country.

Mr. WINTERTON said that of all people who had the right to complain the medical profession had the least. The bill would probably never have seen the light in that House except for the demand of the medical profession that they might be relieved of certain obligations which most other professions were willing to accept. In the bill the privileges of the ordinary individual were invaded to give extra privileges to the medical profession and place them in an entirely privileged position, which no other profession had ever asked for. If he could feel sure in his heart that the patients who would come for treatment under the bill were as secure as were the doctors he would feel a great deal happier about it. It came with ill grace that those who had got so much out of the bill and had supported it through thick and thin against the liberty of poor people should now complain that they had not enough.

Dr. MORRIS-JONES said he felt sure that this was a very excellent bill, and he congratulated the Minister of Health on getting it through. It was a great charter for the poor of the country, and for the first time it gave them as great a chance as the rich. He could not quite agree with Mr. Winterton, who talked about the privileges of the medical profession. He denied emphatically that there was anything in the bill which conferred any privileges on the profession in any shape or form. The bill got away from the spirit of detention to that of prevention and treatment. When the bill came to be adopted and understood in the country it would be successful.

The bill was then read a third time.

Fibrosis of the Lungs in Miners.—Replying to Mr. Hopkin, on May 15th, Mr. CLYNES said the expert committee of the Medical Research Council would be asked to consider the extension of the research into causes of fibrosis of the lungs of miners in the anthracite district, which had been organized by Professor Cummins, director of the Welsh National Memorial Association. The Council had already made a grant for the expenses in connexion with research at this laboratory.

Radium.—On May 15th Mr. GREENWOOD told Commander Bellairs that the radium purchased by the Radium Trust and Radium Commission had so far been obtained on "most favoured nation" terms.

Vaccination Order, 1929.—Sir C. TREVELYAN, on May 7th, in reply to Mr. Groves, said that it was unnecessary to call the attention of the governors of State-aided schools to the Ministry of Health's Vaccination Order of October 1st, 1929. This Order was to the effect that so long as the small-pox prevalent in this country retained its mild character it was not generally expedient to press for vaccination of persons of school age or adolescents who had not been previously vaccinated, unless they had been directly exposed to small-pox infection. This Order had, in Sir Charles's opinion, received sufficient publicity.

Grants to Maternity Hospitals. Mr. GREENWOOD informed Major Carver, on May 15th, that under the new system of payment grants to maternity hospitals would be made in their entirety for 1929, so that there would be no gap between the Ministry of Health's payments and payments by the local authorities concerned.

Manufacture and Distribution of Quinine in India.—Mr. BENN told Major Pole, on May 15th, that he had not yet received a report from the Government of India on cultivation of cinchona and the manufacture and distribution of quinine in India. The Government of India was in consultation with the provincial Governments on the question of centralizing the whole subject of cinchona cultivation and the manufacture and distribution of quinine. This would be the first step towards reducing the price of quinine.

Foot-and-Mouth Disease.—Mr. NOEL BUXTON told Dr. Fremantle, on May 15th, that he had learnt of a reported discovery in Buenos Aires of an effective vaccine against foot-and-mouth disease, and was making inquiries.

National Health Insurance: Valuation of Approved Societies.—In a reply to Mr. Rhys Davies, on May 16th, Mr. GREENWOOD said the valuation of the first group of approved societies and branches under the national health insurance scheme, made as at December 31st, 1927, had now been completed. Progress was being made with the second group, valued as at December 31st, 1928, and he hoped the results would be available about the end of 1930. The results of the valuation of the last group should be available about a year later.

Pensions.—Mr. F. O. ROBERTS, replying to Sir A. Pownall on May 19th, said that of 318 applications for pensions outside the seven years' limit dealt with since last November, 300 were given pecuniary compensation. The remaining 18 needed only a brief course of treatment.

Obituary.

DR. CHARLES JOHN BATTLE of Klerksdorp, Transvaal, died on March 19th, at the age of 50, after an illness lasting two months; he was the son of the late Mr. Charles Key Battle, and nephew of Mr. W. H. Battle, consulting surgeon to St. Thomas's Hospital. Charles Battle received his medical education at St. Thomas's, and obtained the diplomas M.R.C.S., L.R.C.P. in 1903, after which he practised for some time in Natal and also on the East Rand. During the war he served in East Africa with a commission in the South African Medical Corps. He then commenced practice in partnership with Dr. Orford in Klerksdorp, where he held the appointments of medical officer of health, medical superintendent to Klerksdorp Hospital, district surgeon, and railway medical officer. His special diagnostic ability, his energy, and his unselfish devotion to those he served, won for Dr. Battle high esteem and deep affection, and sincere sympathy is felt for his widow and his mother. He was a member of the British Medical Association.

The following well-known foreign medical men have recently died: Dr. BOEZ, director of the Pasteur Institute at Saigon; Dr. LOUIS CHARLES LEHR, emeritus professor of genito-urinary surgery at Georgetown University School of Medicine, aged 54; and Dr. DAVID HUMMEL COOVER, emeritus professor of ophthalmology, Colorado University School of Medicine, aged 77.

The Services.

TERRITORIAL DECORATION.

THE Territorial Decoration has been conferred upon Lieut.-Colonels H. E. McCready, *M.C.*, and J. D. Comrie (ret.), under the terms of the Royal Warrant of October 13th, 1920.

DEATHS IN THE SERVICES.

Surgeon Major Alexander Gamack, Madras Medical Service (ret.), died at Hampstead on March 8th, at the great age of 98. He was born on February 13th, 1834, the son of William Gamack, solicitor, of Peterhead, and was educated at Aberdeen, where he graduated as M.A. in 1853 and M.D. in 1856 of Marischal College, also taking the L.R.C.S.Ed. in 1856. Entering the I.M.S. as assistant surgeon on August 4th, 1856, he became surgeon major on July 1st, 1873, and retired on August 1st, 1879, over half a century ago. Most of his service was spent in civil employ in the Madras Presidency, where he was for many years civil surgeon of Madura. He was, of course, the oldest I.M.S. officer on the retired list, and was the last survivor of the company's medical officers.

Dr. Charles Frederick Kennan Murray, O.B.E., late surgeon R.N., died at Pulmet, Elgin, Cape Colony, on March 7th, aged 81. He was born in Wicklow on September 27th, 1848, and was educated in Dublin, graduating as M.D. in 1868, M.Ch. in 1884, and M.A.O. in 1896 of the Queen's University, Ireland; and also took the L.R.C.S.I. in 1867 and the F.R.C.S.I. in 1884. In August 1889, he entered the Navy as surgeon, and served on H.M.S. *Rattlesnake*, the flagship of Sir Edward Commerell, V.C., R.N., in the Ashanti war, when he served in boat work on the River Prah, and attended the admiral when he was wounded, also being wounded himself. He was mentioned in dispatches, and received the Ashanti medal. In 1892 he resigned the Navy and settled in Cape Colony, where he married the second daughter of the late Sir John Charles Molteno, K.C.M.G., the first premier of Cape Colony. He was the first president of the Colonial Medical Council, and was unanimously re-elected to that office for twenty-seven years. He was for many years surgeon to the Victoria Cottage Hospital, Wynberg, and consulting surgeon to Somerset Hospital, Capetown. When the war of 1914–18 began he undertook the sole charge of a large practice to free his son, Dr. Kennan Murray, for service in the South African Field Ambulance in France, and also served in a local military hospital, receiving the O.B.E. after the war.

Colonel John Francis Williamson, C.B., C.M.G., formerly of the R.A.M.C., died at Dover in the first week of March, aged 79. He was born at Glasslough, Monaghan, on February 6th, 1851, the son of the Rev. A. Williamson of Ardess, Fermanagh, and was educated at Trinity College, Dublin, where he graduated as M.B. and L.Ch. in 1876. Entering the Army as surgeon on February 4th, 1879, he attained the rank of colonel on November 20th, 1903, and retired on February 6th, 1906. He received the C.M.G. in 1901, the C.B. in 1904, and a distinguished service pension in 1910. He had a very long list of war services: Afghanistan, 1878–79, battle of Charasiab, action on Kabul Heights, defence of Sherpur cantonments, the march under General Roberts from Kabul to the relief of Kandahar, when he served with the Seaforth Highlanders, and battle of Kandahar; mentioned in dispatches in the *London Gazette* of December 3rd, 1880, medal with three clasps, and bronze star. Egypt, 1882, battle of Tel-el-Kebir, medal, and Khedive's bronze star. Burma, 1887–88, North-West frontier of India 1897–98, Mohmand and Tirah expeditions, mentioned in dispatches in *London Gazette* of January 11th, 1898, medal with two clasps. South Africa, 1899–1902, in charge of a general hospital, operations in Cape Colony, mentioned in dispatches in *London Gazette* of April 16th, 1901, Queen's medal with 5 clasps, King's medal with two clasps, C.M.G. East Africa, 1903–4 operations in Somaliland, as principal medical officer, mentioned in dispatches by General Manning, August 17th, 1903, and General Sir C. C. Egerton, May 30th, 1904, and in *London Gazette* of September 2nd, 1904, medal with clasp, and C.B.

Lieut.-Colonel George Hart Desmond Gimlette, C.I.E., Bengal Medical Service (ret.), died at Southsea on March 7th, aged 72. He was the eldest son of the late Fleet Surgeon Hart Desmond Gimlette, R.N.; Surgeon Rear-Admiral Sir Thomas Desmond Gimlette, K.C.B., R.N. (ret.), was his brother. He was born on September 8th, 1855, at St. Aubyn, Stoke Damerel, was educated at St. Thomas's, and took the M.R.C.S. and L.S.A. in 1877, also graduating as M.D. and M.Ch. in the Royal University, Ireland, in 1879. Entering the I.M.S. as surgeon on March 31st, 1879, he became lieutenant-colonel after twenty years' service, was placed on the selected list for promotion on June 16th, 1905, and retired, with an extra compensation pension, on April 1st, 1910. He served in the Egyptian campaign of 1882, when he took part in the action at Tel-el-Kebir and pursuit to Zagazig, and received the medal and the Khedive's bronze star. In 1883 he was one of the medical officers deputed from India to work in the cholera epidemic which was then devastating Egypt. Towards the end of that year, on his return to India, he joined the Political Department, in which the rest of his service was spent, and was posted as Residency surgeon to Katmandu, the capital of Nepal. In 1891 he became Residency surgeon of Baghelkand, and in 1897 of Indore, where he was also P.M.O. of Central India. In 1901 he was appointed Residency surgeon of Haidarabad, then considered the best executive appointment held by any medical officer in India, and kept that post till his retirement. When the war of 1914–18 started he at once rejoined for service, and as P.M.O. of the Indian hospital ship *Sicilia* for over two years, made many trips to France, Egypt, and Gallipoli. In 1917 he rejoined for service in India, and was re-employed there for some time as Residency surgeon of Maisur, but later in that year went to Iraq on military duty. In 1901 he was given the C.I.E. He was the author of a work entitled *A Postscript to the Records of the Indian Mutiny*, 1927. While Residency surgeon of Nepal, and *ex officio* Assistant Resident, an experience fell to his lot which probably no other medical officer ever shared. The Indian Government maintained at Katmandu a small corps of two hundred men, called the Resident's escort. It was the custom for the Resident to make a tour along the Nepalese frontier in the cold weather, taking half the escort with him, the other half remaining at Katmandu, with the Assistant Resident, who was in charge during his chief's absence. In 1925, while the Resident was on tour, a revolution broke out in Nepal, which was completely successful, the insurgents seizing the Government and killing all of their chief opponents whom they could catch. Some of the defeated leaders took refuge in the Residency. The leader of the victorious revolutionists demanded their surrender, which of course meant their immediate execution, and Gimlette had to make up his mind at very short notice whether he would comply with the request, and give up the refugees to their deaths, or defy the victorious party and refuse, staking his own life, and the lives of all in the Residency, on the hope that the revolutionary leaders would realize the rashness of an attack on an English Residency. Of course, the small escort could have put up no effectual fight against the revolutionists, but could only have defended the Residency to the death. Fortunately the successful leader had the sense to see that an attack on the Residency, however successful for the moment, meant war with England, and probably the end of Nepal; and was also strong enough to restrain his followers. No attack was made on the Residency, the refugees were protected, and in the end were safely passed down under escort into British India, and interned at Benares. Colonel Gimlette was unmarried; he leaves two surviving brothers, Surgeon Rear-Admiral Sir Thomas Desmond Gimlette, K.C.B., R.N. (ret.), and Dr. J. D. Gimlette, and three sisters.

Universities and Colleges.

UNIVERSITY OF OXFORD.

George Herbert Hunt Travelling Scholarship.

THE electors of the George Herbert Hunt Travelling Scholarship have awarded the scholarship for 1930 to Ronald Graeme Macbeth, B.M., Oriel College.

UNIVERSITY OF CAMBRIDGE.

THE Council of the Senate has appointed Professor H. R. Dean, M.D., a member of the Council of the Lister Institute of Preventive Medicine for ten years.

At a congregation held on May 16th the following medical degrees were conferred:

M.B., B.CHIR.—J. V. Broad, E. C. Wynne-Edwards, E. R. Keeble.
B.CHIR.—L. J. Hardon.

UNIVERSITY OF LONDON.

THE ceremony of presentation day was held on May 14th. There was an academic procession from the Imperial Institute to the Albert Hall, in which the Chancellor, Lord Beauchamp, the Senate, and officers of the University took part. The Lord Mayor of London and the Lady Mayoress were among the guests assembled in the hall. The Chancellor in his address referred to the fact that that was the first meeting of the kind under the new constitution created by the new statutes made by the Commissioners under the University of London Act of 1926. After welcoming the guests he expressed regret at the approaching resignation of the Vice-Chancellor, Sir Gregory Foster. The total number of candidates for all examinations was 36,633, as against 34,941 in the previous academic year, and 11,937 in 1913. Of the 3,946 candidates for degrees, 2,458 were internal and 1,488 external. The total number of successful candidates at all examinations was 15,793, and of those who obtained degrees and diplomas 3,036, as compared with 15,186 and 3,039 respectively in the previous year. The roll of internal students now comprised 10,200 names, as compared with 4,950 on the corresponding date in 1914 and 9,886 in 1929.

At the service held in Westminster Abbey the sermon was preached by Canon C. E. Raven of Liverpool.

The graduation dinner was held in the evening at the Fishmongers' Hall, when the Chancellor presided. The toast of "The University" was proposed by the Prime Minister, who said that while many colleges and universities have been founded by benefactors, the London University was founded by a high idea. The University had gone from strength to strength, and it had the largest number of students of any university in the country. He expressed his great interest in the Post-Graduate Medical School proposed to be founded in connexion with the University. The Chancellor, in acknowledging the toast, stated that the University had on that day 11,000 students reading for their degrees. The toast of "The New Graduates" was proposed by the Archbishop of Canterbury, who congratulated the University upon the great strides it had made.

UNIVERSITY COLLEGE.

A public lecture on the secretory action of the nervous system will be given by Professor G. H. Parker of Harvard University on Friday, May 30th, at 5.30 p.m. The chair will be taken by Professor D. M. S. Watson, F.R.S. The lecture is open without fee to students of the University and others interested in the subject.

UNIVERSITY OF MANCHESTER.

THE Council has gratefully accepted the offer of the Manchester Medical Society to present to the University its medical library, which has been housed in the University since 1875, and for a number of years has been supported jointly by the Manchester Medical Society and the University. Provision has been made for the members of the Manchester Medical Society to continue their use of the medical library, and the society has undertaken to make an annual grant towards the cost of maintenance.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.

AT a meeting of the Royal College of Surgeons of Edinburgh held on May 15th, when Dr. James Haig Ferguson (President) was in the chair, the following 21 successful candidates, out of 68 entered who passed the requisite examinations, were admitted Fellows:

S. Annaswami, D. J. Brown, E. J. Burton, A. B. Cook, J. E. Erdheim, M. Husnain, F. W. Holmore, K. L. H. Kirkland, D. A. Langhorne, Shu Pui Li, J. C. McMaster, C. D. Meadowcroft, Marjorie Murrell, James Purce, A. D. D. Pye, Marion A. Radcliffe-Taylor, J. F. Robinson, J. B. de C. M. Saunders, A. B. Smith, R. F. Ward, D. Wilkie.

Bathgate Memorial Prize.

The Bathgate Memorial Prize, consisting of bronze medal and set of books, after a competitive examination in materia medica, has been awarded to Mr. G. L. G. Major.

Medical News.

PROFESSOR LEONARD HILL will deliver the annual oration of the St. John's Hospital Dermatological Society on May 28th, at 5 p.m., at St. John's Hospital, 49, Leicester Square, his subject being the penetration of the skin by radiation. On the evening of the same day the annual dinner of the society will be held at Kettner's Restaurant at 6.45 for 7 p.m.

THE summer sessional address before the Abernethian Society of St. Bartholomew's Hospital will be delivered by Sir Archibald Garrod on Thursday, June 5th, at 8.30 p.m. The subject will be "St. Bartholomew's fifty years ago."

AN open-air lecture on "Cabbages and kings" will be given at the Chelsea Physic Garden, Swan Walk, Chelsea, by Dr. A. W. Hill, director of the Royal Botanic Gardens, Kew, on Thursday, May 29th, at 5 p.m. Sir William Collins, chairman of the Chadwick Trustees, will preside. Information about Chadwick Public Lectures may be had from the secretary, Mrs. Aubrey Richardson, at the offices of the Trust, 204, Abbey House, Westminster, S.W.1.

THE sixth annual meeting of the National Institute for the Deaf will be held at the Church House, Westminster, S.W.1 (entrance, Great Smith Street), on Friday, May 30th, at 3 p.m., under the chairmanship of Lord Charnwood. The Rt. Hon. Stanley Baldwin, M.P., will speak.

A MEETING of the International Pharmaceutical Federation will be held at Stockholm from July 16th to 18th, when the following subjects will be discussed: nomenclature of new drugs, international formularies, control of specialties, influence of industry on pharmacy, standardization of drugs, and supply of drugs to ships.

THE Fellowship of Medicine announces that two free demonstrations will be given at the Miller General Hospital, Greenwich; on Monday, May 26th, at 2 p.m., Dr. E. C. Warner will describe selected cases of disease in children, and on Friday, May 30th, at 2 p.m., Mr. Arthur Gray will demonstrate gynaecological operations. Dr. B. T. Parsons-Smith will deliver two lectures especially suitable for the M.R.C.P. at the Medical Society of London, 11, Chandos Street, Cavendish Square, both at 8.30 p.m.; on Tuesday, May 27th, he will discuss coronary thrombosis, and on Friday, May 30th, cardiac failure. From May 26th to June 7th there will be a morning course in diseases of children at the Hospital for Sick Children, Great Ormond Street, and an all-day course in medicine, surgery, and the specialties, with especial reference to tuberculosis, at Queen Mary's Hospital, Stratford. Courses in June will be as follows: [illegible] Hospital for Women, June 16th [illegible] Blackfriars Skin Hospital, June [illegible] medicine and surgery at the Prince of Wales's Hospital, all day, June 16th to 28th; and proctology at St. Mark's Hospital, all day, June 30th to July 5th. Copies of syllabuses and particulars of all post-graduate work are obtainable from the secretary of the Fellowship, 1, Wimpole Street, W.1.

A POST-GRADUATE lecture on elective localization of streptococci following their inoculation into the teeth of dogs will be delivered at the Royal Dental Hospital of London School of Dental Surgery, Leicester Square, W.C., by Dr. E. C. Rosenow of the Mayo Clinic, Rochester, U.S.A., on Monday, May 26th, at 5 p.m. Admission is free.

AT a meeting of the Royal Society on May 22nd Dr. H. H. Dale communicated a paper by Professor G. H. Parker of Harvard on ciliation of the Fallopian tubes. Sir Charles Sherrington communicated a paper by Mr. H. E. Roaf on visual acuity in light of different colours. A joint paper by Sir Charles Sherrington and Mr. J. C. Eccles on numbers and contraction values of individual motor units examined in some muscles of the limb was read in title only. Before the meeting Professor Elliot Smith showed a cast of the Peking skull.

A SPECIALLY conducted visit to the new dock at Tilbury, and the Orient liner *Orontes*, will be made on Friday, June 20th, in aid of King Edward's Hospital Fund for London; a steam launch will leave Westminster pier at 9.30 a.m. Lunch will be served on board the *Orontes*, and afterwards representatives of the Port of London Authority will demonstrate the new dock. Tickets, price one guinea, can be obtained from the secretary of King Edward's Hospital Fund for London, 7, Walbrook, E.C.4. Early application should be made as the number of the party is limited.

THE fifth International Congress of Physiotherapy will be held at Liège from September 14th to 18th, and not as announced in the *Journal* of May 17th. Twenty-five countries have already appointed national committees, and the particular subjects to be discussed will be: the rôle of physiotherapy in the treatment of rheumatic disorders; physiotherapeutic treatment of the disorders of the central nervous system; and the university tea[illegible] There will be sections dealing with [illegible] education, radiology, electrology, and thermotherapy, hydrology, and actinology. Following this congress the second annual meeting of the International League against Rheumatism will be held in Liège from September 18th to 20th, and members of the congress will be allowed to take part in all its meetings. Travelling concessions have been sanctioned by the French and Belgian Governments in connexion with the congress, further details of which may be obtained from Dr. W. Kerr Russell, 126, Harley Street, W.1.

THE first Congress of the International Society of Experimental Phonetics will be held at the University of Bonn from June 10th to 13th. Physicists, medical practitioners, dentists, linguists, and teachers are invited to attend. The subscription is ten marks. Further information can be obtained from the Phonetisches Institut der Universität Bonn, Poppelsdorfer Allee 25, Bonn.

THE first Transcaucasian Congress of Obstetrics and Gynaecology will be held in Tiflis in September, when the following subjects will be discussed: the pelvis in the Transcaucasian races, treatment of inflammation of the adnexa, pregnancy and infectious diseases, obstetrical assistance, and gynaecological prophylaxis and treatment in the Transcaucasian Republic.

THE eleventh salon des médecins for the exhibition of works of art by medical practitioners, dentists, veterinary surgeons, and members of their families will be held at 117, Boulevard St. Germain, Paris, on June 24th. Further information can be obtained from Dr. Paul Rabier, 84, Rue Lecourbe, Paris, XVe.

THE Mothercraft Lending Library (16, Porchester Square, London, W.2) has issued a catalogue (price 6d.) of books on infant feeding and care, child training and education, diet and food values, and nursery management and hygiene, and allied subjects. Parents, nurses, and child educationists for a subscription of 10s. 6d. a year, or 1s. a month, may borrow books included in this list, and others that will be added from time to time, and obtain advice on nursery problems.

REMUNERATION at the rate of £150 guineas a year has been sanctioned by the London County Council to each of seven medical superintendents of fever hospitals of the Metropolitan Asylums Board, in respect of services rendered in connexion with consultative work on and diagnosis of small-pox since the death of Dr. Wanklyn, consultant on small-pox to the Council, about a year ago.

AN effort is being made to establish in Bournemouth a home for elderly nurses, and an appeal has been issued by Miss Beatrice Harraden. Miss B. Hyla Greves, daughter of a past-president of the Dorset and West Hants Branch of the British Medical Association, is the honorary secretary of the Elderly Nurses Permanent Home Fund, which is being brought into being to provide this home; contributions may be sent to the honorary treasurer, Mr. F. Cobley, c/o Westminster Bank, Southbourne.

AN attempt in Lübeck, Germany, to secure immunization against tuberculosis by administering B.C.G. vaccine to infants has been followed by a number of deaths, and by a larger number of cases of serious illness. During the past two months 246 infants—about half the number born in Lübeck in that period—had undergone the treatment, and a report from Berlin dated May 20th states that up to that time seventeen of the infants had died, and over twenty others were seriously ill. The authorities at Lübeck are of the opinion that no contamination of the cultures could have occurred either during their transit from Paris or in the course of their further development in Lübeck itself. Professor Lange is investigating the outbreak on behalf of the State Office of Health, and an inquiry is being made also by the public prosecutor's department. Those in charge of the investigations are considering careless or incorrect handling or administration and pollution of the cultures as possible causes of the infections. It is stated that the health authorities allowed midwives to apply the preparation without medical control.

A REPORT has been issued on the work carried out during 1929 in the pathological laboratories of the City of London Hospital for Diseases of the Heart and Lungs. Investigations devised to establish the existence or otherwise of a filterable bacillus were undertaken on behalf of the Medical Research Council, and in collaboration with Dr. R. E. Glover and Dr. A. Stanley Griffith, of the department of animal pathology, Cambridge; no evidence was obtained of the existence of such a filterable form. A study of the clinical and pathological characteristics of pulmonary asbestosis was conducted by Dr. W. Burton Wood and Dr. S. Roodhouse Gloyne. The report contains reprints of publications on these subjects.

THE issue of the *Medical Journal of Australia* for March 22nd contained an appreciative leading article on the late Dr. William Henry Armit, its editor from 1914 to 1930, and this was followed on April 5th by a full obituary notice with portrait.

A SPECIAL number of *Bruxelles-médical* has recently been published giving an illustrated account of the annual congress known as the Journées Médicales de Bruxelles, which was held last June at Brussels.

THE late Mr. A. H. Tubby, consulting surgeon to Westminster Hospital and the Evelina Hospital for Children, has left estate of the value of £98,108, with net personality £37,812. He bequeathed £800 to Westminster Hospital and £100 to the Alpine Club.

THE Minister of Health has appointed Mr. W. A. Ross, O.B.E., and Mr. J. C. Wrigley to be Assistant Secretaries of the Ministry of Health.

THE London County Council has appointed Dr. Clifford Ellingworth as medical superintendent of Queen's Hospital, Sidcup, at a remuneration of £1,000 a year, with house. Fifty-seven applications were received in response to the advertisement of the appointment.

DR. HENRY H. I. HITCHON has been appointed to the Commission of the Peace for the borough of Heywood, Lancs.

THE Marquess of Linlithgow has resigned the office of President of the British Social Hygiene Council, and Sir Basil Blackett has accepted the invitation of the Executive Committee to succeed him.

THE following appointments have recently been made in foreign medical faculties: Professor Franz Hamburger of Graz, in succession to the late Professor Pirquet in the chair of paediatrics in Vienna; Dr. Wilhelm Pfannenstiel of Münster, professor of hygiene at Marburg; Dr. Adolf Jarisch of Innsbruck, professor of pharmacology at Düsseldorf, in succession to Professor Henburer; Professor Verzar, director of the physiological institute of Debreczen, successor of Professor Broemser in the chair of physiology at Basle; Dr. Cestan, professor of neurology and psychiatry at Toulouse, professor of clinical medicine in the same faculty; and Dr. Jean Turckini, professor of hydrology at Montpellier.

Letters, Notes, and Answers.

All communications in regard to editorial business should be addressed to ***The EDITOR, British Medical Journal, British Medical Association House, Tavistock Square, W.C.1.***

ORIGINAL ARTICLES and LETTERS forwarded for publication are understood to be offered to the *British Medical Journal* alone unless the contrary be stated. Correspondents who wish notice to be taken of their communications should authenticate them with their names, not necessarily for publication.

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All communications with reference to ADVERTISEMENTS, as well as orders for copies of the *Journal*, should be addressed to the Financial Secretary and Business Manager.

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QUERIES AND ANSWERS.

PNEUMATIC DRILLS AS A CAUSE OF DISEASE.

DR. JOHN MCMILLAN (Shotts, Scotland) writes: Is there any record of the use of pneumatic breakers or picks (such as are used in breaking up the concrete and asphalt pavements of the London streets) having a deleterious effect on the health of men who work with such tools?

DANISH TREATMENT OF ITCH.

DR. ALEXANDER CANNON (Hong-Kong) writes: In reply to the inquiry of Dr. Douglas Ross in the *Journal* of February 15th (p. 320), there are many ways in which the first stage of the preparation of the ointment can be made up, still keeping to the same formula. Remembering that the chief difficulty is in getting the sublimated sulphur into solution, this is often done by first taking half of the 50 per cent. KOH and, if necessary, passing H_2S until saturation occurs, and then adding the other half. Another method is to use twice the amount of 50 per cent. KOH; this is not essential, but it saves considerable time in making up this first ingredient. In actual practice it does not matter very much whether a clear yellow solution is obtained, but this is the ideal, and can be achieved by using the best sublimated sulphur and KOH. A good deal also depends upon the meticulous preparation in this first step, often the best part of a whole day being required to get the end-result. Mr. Shenton, of Messrs. A. S. Watson and Co., informs me that they have made the solution according to the formula without difficulty. Mr. Cable, the chief Government apothecary of Hong-Kong, assures me that more often than not the colour is an orange yellow, and sometimes reddish in certain lights; the results of treatment are the same, however, which is the main point. The technique used by Mr. Cable is to dissolve the KOH and, while the solution is still hot, to sift the sublimed sulphur through a 40 sieve, while one man *constantly* stirs. As soon as the surface is covered with the commercial sublimed sulphur, this is stirred until dissolved, no more being added till then. Before the whole quantity is dissolved, a tedious process, the mixture frequently thickens considerably; we let it stand in the pan overnight, and in the morning a thick crust has formed, with a deep yellow-orange clear solution below. This is filtered, and the next step is then taken. Marcussen of Copenhagen always obtains a clear yellow solution, but he frequently uses 2 kg. of 50 per cent. KOH. With regard to the statement of Dr. Douglas Ross, "gentle heat merely blackens the mixture," I am at a loss to explain. All that I can say is that if the heat is never more than gentle, we have failed to produce a mere blackening; therefore I feel that it would be wise to seek further advice, and I should be greatly obliged if Dr. Martindale, or some other well-known chemist, would favour us with an exposition of the whole facts, if merely from the academic point of view. One thing I do know, and that is: carefully carry out the instructions given and you cannot fail to meet with success in every case.

INCOME TAX.

Motor Car Transactions.

R W. F. W." bought a car in 1922 for £530, and has been allowed depreciation at the rate of 20 per cent. on the written-down value since the depreciation regulation came into force. In June, 1929, he sold the car for £35 and bought a new one for £235. What should he claim?

*** The depreciation allowance was extended to the assessment of professional profits for 1925-26 and the following years. Consequently "W. F. W." has presumably had the allowance for

the five years 1925-26 to 1929-30 inclusive. We calculate the aggregate amount so allowed to be £228. He should therefore claim as an expense of the year 1929 the amount of the obsolescence allowance—that is, £235–£35=£200, and for the year 1930-31 depreciation at 20 per cent. on £235—that is, £47.

"C. D. S." bought a car in 1925 for £250. Last October he sold it for £10 and bought a second-hand car for £70. What can he claim?

*** Only the actual out-of-pocket expense of replacing the car—namely, £70–£10=£60. The difference between that amount and the £250 original outlay represents the gradual loss of capital sunk in the original car. As we have often pointed out, the only safe course is to claim the "depreciation" allowance as soon as possible—that is, as soon as any year occurs in computing the profits of which the expense of renewal of a car has not arisen and been claimed as such.

Residence Abroad.

"MEMBER" left England on July 6th, 1928, relinquishing his house in September, 1928, and since then has been continually travelling abroad. During the past four months he has been in the Irish Free State, where he hopes to settle permanently. He has a considerable holding in British companies and, of course, pays income tax by deduction from the dividends. Has he any claim for 1929-30 on the ground of foreign residence?

*** If, when he left England—or, at least, as from September, 1928—he definitely intended to sever his residential connexion with this country, we are of opinion on the above facts that he could claim to be regarded as a foreign resident for 1929-30. But it is not clear that this would assist him. Foreign residents—whether British subjects or not—are liable to income tax in respect of income derived from this country. Unless, therefore, "Member" is being regarded by the authorities as liable in respect of earnings during his absence from the United Kingdom, or is in receipt of interest on holdings in 5 per cent. War Loan—with regard to which foreign residents have special relief from British income tax—we see no advantage accruing from his claim to non-residence in the United Kingdom during 1929-30. For 1930-31 the position is different, as he will presumably be held liable to Free State tax, and will need to make a claim to secure relief from double taxation on the same income.

Motor Car Renewals.

"C." explains that in dealing with the liability of the firm of which he is a member the individual partners have in the past claimed and have been allowed the cost of replacing their cars as professional expenses. "C." would like to claim depreciation so far as his car is concerned, but his partners are claiming renewal expenditure this year.

*** It is a settled principle that renewal expenditure and depreciation cannot be allowed for the same year. A partnership is assessable as a single entity for income tax purposes, and, in our opinion, "C." cannot claim depreciation for a year in which the firm's assessment has been reduced by the allowance of renewal expenditure for any of his partners.

Cash Receipts Basis.

"S. C." explains that his firm is assessed on the "cash basis." One partner is retiring, his share being purchased by the remaining partners. Will the cash which reaches the retiring partner after he has ceased to practise, as his share of practice debts, be assessable for income tax?

*** Undoubtedly *not* so far as the retiring partner is concerned; his professional income has ceased, and with it his liability to assessment for any period after retirement. Neither will those receipts be assessable on the firm if they discard the cash basis in favour of value of bookings for the period after the change. But if the remaining partners desire to adhere to the cash basis they must bring into the account the whole of the cash receipts, whether paid over to the retired partner or not; the retained cash receipts by themselves do not reflect the full gross earning capacity of the practice.

Depreciation on Electrical Equipment.

"G. E." explains that the local inspector of taxes has offered him a rate of 7½ per cent. only on the written-down value for *x*-ray and other electrical appliances. This is inadequate, and in effect will postpone the real relief until obsolescence allowance can be claimed when the machines are replaced. They are now about five years old. Cannot he claim to have the allowance on the original cost instead of the written-down value?

*** No; the value as written down by the appropriate rate to the commencement of the financial year for which the allowance is claimed is the basis which has judicial support. "G. E.'s" only prospect of further present relief is to induce the inspector to allow depreciation at a higher rate than 7½ per cent.; at 10 per cent. it would take so long to reduce the value of the equipment to a break-up value that that rate would seem to be at least low enough for the safety of the Revenue.

Cost of Professional Accommodation.

"J. C." states that the inspector of taxes agrees to allow him to deduct as a professional expense one-half of the cost of the combined residence and surgery, etc. He asks as to the inclusion of certain specified items of expense.

*** "Estimated rental value" of the premises: this amount is the figure on which income tax is payable under Schedule A, and will be shown on the collector's demand note or receipt. "Landlord's tax": this is not deductible. "Rates and water rate": yes, according to the total amount payable for the year for which the professional receipts are calculated. "Estimated average repairs": the correct amount to deduct is the whole of the expenditure on those portions of the premises which are used professionally; if that cannot be ascertained, take half the total repairs. In either case the amount is that expended for the year in question, not an average figure.

LETTERS, NOTES, ETC.

CHANGES AND CHANCES.

FLEET SURGEON W. E. HOME, R.N.(ret.), writes: Your mention of the death of Fleet Surgeon W. Redmond (at Vancouver, at the age of 90) recalls to me three of his experiences. The first illustrates the changes of fortune. Sixty years ago he served in a sailing brig, under a lieutenant who used to complain to Redmond that he must soon retire, as there was no chance of promotion in the navy. Luckily he delayed a little; the tide turned, and he finished up, thirty years later, an Admiral, with a G.C.B. and G.C.M.G. and a Colonial Governorship to his credit. Redmond himself on retirement practised in Eastern Canada, but as he had once to drive ten miles to a labour case, and on the way got off the road into a snowdrift (from which his horse and trap were only rescued by driving in a herd of cattle to make a path out), spent a night from home, and only got 5 dollars, he thought the rewards too meagre, and went west—in fact, on the first transcontinental train into Vancouver of the Canadian Pacific Railway. He once drove into a village where a quack was cracking up Indian root pills, or something unofficial. "Ah!" said the quack to the people, "I see over there a man of education. Sir" (addressing Redmond), "is not this true: *Populus vult decipi?*" And Redmond said, "It is true." "And, Sir, is this not also true: *Decipiatur?*" "Yes, that is true, too," said Redmond. "Now," said the quack, "you see this man of education agrees with me. Can you do better than take my advice?" In British Columbia, when I knew him, he lived in a shack near the naval hospital at Esquimalt, spent the summers in shooting and fishing and the winters in the south. He had much charm of manner and was always a welcome visitor to the hospitals near which he rested, whether in California or British Columbia, so his experience became wide and his advice was much valued.

SWELLING OF FEET AND ANKLES WITHOUT ALBUMINURIA OR GROSS ORGANIC DISEASE.

"M.D., C.M." writes: In view of the article on this subject by Dr. Osman in the *Journal* of April 26th (p. 780) and of Dr. Royds Jones's letter on May 17th (p. 928), I think my experience while on a voyage from Liverpool to Valparaiso in November and December, 1919, may be of general interest. After a few days at sea I noticed considerable swelling of my feet and legs up to the knees, with pitting on pressure; this alarmed me considerably, but on examining my urine I found no albumin present, and I was otherwise in the best of health. On looking about for a cause it occurred to me that the daily morning hot brine bath might be giving rise to the condition. At first I used to take these baths fairly hot, and since one is allowed very little fresh water to sponge down with afterwards, I did not bother about this. However, on noting the swelling I was then more careful not to take the sea baths too hot, and to sponge myself all over with fresh water afterwards; the swelling did not recur, although I continued the salt sea baths for the whole of the voyage, and also on the return voyage from Buenos Aires to Southampton in the following March. I was then 48 years old, and now, eleven years afterwards, I am in good health and have no signs of albuminuria. It is a well-known clinical fact that a salt-free diet helps in dropsy, even in cases of Bright's disease. Many of the public have great faith in the efficacy of hot salt baths for the feet and legs in all sorts of affections, such as sore feet and rheumatism. Further investigation into the habits of people who suffer from this kind of oedema is indicated, whether they indulge in salt freely with their food, and whether they are given to bathing their limbs with hot sea-water.

VACANCIES.

NOTIFICATIONS of offices vacant in universities, medical colleges, and of vacant resident and other appointments at hospitals, will be found at pages 44, 45, 46, 47, 48, 49, 52, 53, and 54 of our advertisement columns, and advertisements as to partnerships, assistantships, and locumtenencies at pages 50 and 51.

A short summary of vacant posts notified in the advertisement columns appears in the *Supplement* at page 235.

EPITOME OF CURRENT MEDICAL LITERATURE.

Medicine.

467. The Heart Sounds in Mitral Stenosis.

J. J. MOZER and P. DUCHOSAL (*Arch. des Mal. du Cœur*, February, 1930, p. 74) has employed the electrophono-cardiograph to analyse the cardiac rhythm in mitral stenosis. By means of this instrument an electro-cardiogram is taken simultaneously with an electrical record of the sounds heard at the apex. The presystolic murmur was well shown, but never in the presence of auricular fibrillation or flutter. It was sometimes, though not usually, crescendo, the apparent frequency of this effect on auscultation being due to its being followed by the abrupt first sound. Reduplication of the first sound could readily be distinguished from a short presystolic murmur in the tracings. A diminuendo diastolic rumble following the reduplicated second sound generally faded away, but might be abruptly cut short by the succeeding first sound if diastole was short. The amplitude of the oscillations produced by the first heart sound was greater than that of the second. No sound is ordinarily heard during systole in pure mitral stenosis, but some of the tracings showed vibrations during this period; these were inaudible, since the frequency was only 25 to 30 each second. The elements of the reduplicated second sound were found to have a fairly constant time interval which was uninfluenced by respiration, the first element corresponding to the normal second sound, the second element falling in diastole. Reduplication never occurred if aortic incompetence coexisted, and from their findings the authors conclude that it is due to vibrations set up at the constricted mitral orifice by the transmitted shock of closure of aortic valves. Electrophono-cardiographic evidence is not in accord with the view that reduplication is due to relative alterations in tension in the pulmonary and systemic circuits.

468. Late Sequels of Poison Gases.

A. JACQUELIN and Mlle F. KONÉCHOWSKY (*Paris Méd.*, February 15th, 1930, p. 159) discuss the chronic non-tuberculous broncho-pulmonary lesions which persist after gas poisoning during the war. Of 200 unselected patients discharged with pension, 72 had inhaled either asphyxiating or vesicant gases in the years 1916–18. Of these, 83 per cent. were non-tuberculous, while 17 per cent. had pulmonary tuberculosis. The majority of the former class presented symptoms of pulmonary fibrosis, emphysema, and bronchitis, causing cough, dyspnœa, expectoration, and occasionally haemoptysis. Among these non-tuberculous cases 44 per cent. had emphysema, with or without pulmonary fibrosis. Chronic bronchitis with moderate emphysema was present in 19 per cent. Several patients had bronchiectasis with (ultimately) pulmonary abscess or gangrene. Paroxysmal dyspnœa, which became asthmatic in some cases, occurred in 11 per cent. Repeated attacks of haemoptysis were reported by 6 per cent. of the patients, while 3 per cent. of these had mediastinal adenopathy or mediastinitis, frequently simulating syphilitic lesions. The authors conclude that, apart from tuberculosis, two groups of lesions can be differentiated; the first, which is not entirely or necessarily due to poison gas, consists of patchy apical fibrosis, emphysema, chronic bronchitis, and may be due to other causes, such as the inhalation of irritating dust, excessive smoking, or alcoholism. The second group of lesions is produced definitely by gas poisoning in young, hitherto healthy subjects. These lesions comprise severe deforming pulmonary fibrosis, with definite basal emphysema; severe chronic purulent bronchitis, bronchiectasis, and pulmonary abscess; paroxysmal intractable dyspnœa, frequently amounting to true asthma.

469. Varicella Gangrenosa due to B. diphtheriae.

J. ZAHORSKY (*Journ. Amer. Med. Assoc.*, February 15th, 1930, p. 484) records the case of a boy, aged 7, who developed varicella, one of the lesions of which became gangrenous on the right leg. The nose and throat were normal. Considerable weakness of the left arm and leg was present. The heart showed a gallop rhythm, the liver was enlarged, and the urine contained albumin. Since these symptoms suggested diphtheria, a culture of the gangrenous lesions was taken and showed the presence of virulent diphtheria bacilli; 15,000 units of antitoxin were injected, but death, preceded by a high temperature and convulsions, took place. There was no autopsy. A fatal case of gangrenous varicella in which virulent *B. diphtheriae* was isolated from the nose during life was recently reported by Joe. In the present case, however, there was no faucial or nasal diphtheria present in the patient or in any member of the family.

470. Psittacosis.

C. KRUMWIEDE, MARY MCGRATH, and C. OLDENBUSCH (*Science*, March 7th, 1930, p. 262) recently investigated the etiology of psittacosis from material obtained from a series of cases, but in no instance was there any evidence of infection from *B. psittacosis*. A sick parrot in a family with two ill adults furnished the only case where material from both sources could be studied. On the death of the parrot an emulsion of its organs when fed and injected into another parrot gave rise to the same symptoms, and inoculation of another parrot with the emulsified organs of the first, filtered through a Berkefeld filter, produced the same picture, and materials from this latter parrot had the same result. Upon feeding a parrot with sputum and blood from one of the adult cases a disease resembling that of the parrot which had presumably been the source of infection resulted. The filtered organs of the inoculated parrot acted similarly upon another parrot, filtered material from which again caused fatal disease in a third parrot. The authors conclude that the primary cause of the disease was the filterable virus obtained from the original parrot and from the human sputum and blood; this virus killed mice, though its virulence for them did not appear to be very great, as a few survived. Emulsion of the organs of a fatal human case was also fatal for a parrot, but the results of filtration experiments are not yet completed. The authors conclude that a filterable virus is definitely indicated as the causative factor.

Surgery.

471. Surgical Treatment of Typhoid Carriers.

B. BERGGLES (*Wien. Arch. f. inn. Med.*, November, 1929, p. 285), who records five illustrative cases in patients aged from 20 to 47, three of whom were men and two women, emphasizes the epidemiological significance of two forms of late complications in enteric fever—namely, cholecystitis and osteitis—since patients with such complications are liable to become chronic carriers. Whereas no undoubted success resulted from the medical treatment of carriers with cholecystitis, 73 per cent. of those in whom cholecystectomy was performed could be regarded as cured. He concludes, therefore, that until the possibility of disinfecting the gall-bladder and bile ducts has been experimentally proved, treatment with this object should not be recommended. The clinical course of typhoid osteitis resembles that of osteitis due to the ordinary pyogenic organisms. Bacteriological investigations of the pus in every case of this kind are therefore necessary for the detection of carriers, and the treatment in such cases can only be surgical.

472. Shoulder Dislocations.

E. RIXFORD (*Amer. Journ. of Surg.*, February, 1930, p. 268) accounts for the fact that half of all dislocations occur at the shoulder by this joint possessing greater mobility than stability owing to the construction and roominess of the capsule, and by the small size of the glenoid cup, which covers only one-third of the cartilaginous surface of the head of the humerus. More than 90 per cent. of shoulder dislocations are primary subglenoid displacements in front of the triceps tendon, and are four times more frequent in men than in women. Dislocation may be due to a blow on the top of the shoulder, or as the result of leverage, the abduction of the shoulder being forced beyond the normal limit. Recognition

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the shoulder, Dugas's sign in anterior dislocation, positive palpation of the head of the humerus in its abnormal position, and *x*-ray examination, which shows the exact position of the head and reveals any complicating fracture. Dislocations of the shoulder are easily reduced without an anæsthetic if treated at once, but the difficulty of reduction increases with time; the cutting of the subscapularis muscle sometimes makes reduction more simple. The oldest and most satisfactory method is lateral traction when muscular relaxation has been secured. Old, unreduced dislocations must be treated according to each individual case: some are better left alone; others can be reduced after the contracted soft parts have been cut; while in other cases little but the resection of the head of the humerus can be done. Habitual dislocation may be treated by suturing the capsule through

an axillary incision or by shortening or re-attaching the supraspinatus. After reduction of the dislocation the arm should be bound to the side for two or three weeks to aid the healing of the wound in the capsule, after which time movement may be increased gradually.

473. Coxa Vara.

A. TREVES (*Bull. et Mém. Soc. de Chir.*, 1930, Tome xxii, Nos. 2 and 3, p. 67) considers that the percentage of cases suffering from coxa vara which belong to the adiposo-genital class has been greatly exaggerated, and that there are many cases which are independent of this diathesis. Cases are quoted as examples of the two principal types of coxa vara—namely, (1) that occurring in adolescents, which frequently coincides with puberty, and is often unilateral and analogous to genu valgum and tarsalgia; and (2) the progressive bilateral coxa vara which follows slight injury to a diseased hip, and gives the appearance of a slipped epiphysis, or of a fracture of the neck of the femur. The treatment in young children whose bones are still soft should consist in restoration at a single sitting, followed by the application of Whitman plaster in abduction and slight internal rotation. For adolescents the best results are obtained by successive plasters applied monthly. In cases where the neck of the femur is soft, rest should be recommended. Plasters must be kept on for at least three or four months. In cases where the coxa vara is established, or the bones are recalcified, subtrochanteric osteotomy is the treatment which gives the best results.

474. Cystitis Secondary to Kidney Disease.

V. VINTICI and N. N. CONSTANTINESCO (*Journ. d'Urol.*, February, 1930, p. 113) define cystitis as renal when it is due to a primary lesion of the kidney, such as pyelonephritis, calculus, or hydronephrosis, and not to infection with *B. coli* or pyogenic organisms. It occurs more frequently in women than in men. The bladder is more susceptible to infection from the organs above it than from below, as in the latter case the infection is usually confined to the bladder, while in cases of kidney infection there is almost invariably a reaction in the bladder as well. The bladder may react to kidney disease reflexly without any evidence of disease of the bladder, the inferior mesenteric ganglion referring the stimuli from the kidney to the bladder. Diagnosis is difficult when the patient complains of bladder trouble without any evidence of kidney disease, and in this case diagnosis as to the cause and nature of the lesion must be made by means of a microscopical examination of the urine, a cystoscopy followed by ureteral catheterization, or by pyelography. When the cystitis is accompanied by pyuria, frequency of micturition, and pain, diagnosis is simple. Prognosis depends on the response of the kidney trouble to treatment, since after the lesion has been dealt with the bladder quickly becomes normal; in cases where the bladder infection is bacillary in origin months or even years may elapse before a cure is effected. Treatment depends on the primary lesion, and may be nephrectomy, nephropexy, or nephrolithotomy, according to the individual case. Local treatment for the cystitis is unnecessary, as the trouble subsides immediately the causative factor has been removed, but it may possibly hasten convalescence. A principle which may well be followed is that a cystitis which persists or recurs, or which does not answer to simple treatment, must be suspected of being due to a pathological lesion of the kidney.

Therapeutics.

475. Pyretotherapy in Paralytic Dementia.

THE means employed in pyretotherapy, or the artificial induction of pyrexia, as a treatment of the psychoses may be divided into two classes: chemical, by hypodermic injections of sodium nucleinate or of various proteins; and infective, by the introduction of living organisms, especially the parasite of malaria and *Spirochaeta recurrentis duttoni*. The application of pyretotherapy to paralytic dementia is largely empirical, and few attempts have been made to explain the way in which the effects are brought about. H. W. EDDISON (*Journ. Mental Sci.*, January, 1930, p. 66) has endeavoured to do this by a study of the part played by the reticulo-endothelial system in the genesis and control of pyrexia, of the changes in the haematopoietic tissues in paralytic dementia, and of the effect of pyretotherapy upon the reticulo-endothelial system and its relation to the changes found in the blood-forming tissues in this disease. The study was based on a systematic observation for four years of 67 cases of untreated paralytic dementia and 21 of non-paretic syphilis, and involved 1,000 histological examinations; 500 blood examinations were made in 28 cases of paralytic dementia treated with relapsing fever, and in 4 treated by injections of foreign protein. In this series of cases changes were found in the bone marrow and blood in paralytic dementia, which showed that the leucopoietic functions were impaired and that the leucocyte reserve was diminished. In untreated cases there was a definite leucopenia. When leucocytosis was stimulated the intensity of the neutrophilic reaction varied inversely with the stage to which the paralytic dementia had advanced. Under the same conditions the Schilling index rose in direct proportion to the stage of the disease; the rise was most marked in those cases in which the decline was accelerated by pyretotherapy, and least marked in those which were benefited. The better the condition of the patient after treatment, the nearer did the differential leucocyte count and Schilling index approach the normal, and the converse was equally true. These changes are referable to affection of the reticulo-endothelial system, and therefore the involvement of this system by the syphilitic virus apparently constitutes one of the factors which determine whether a given syphilitic subject will develop paralytic dementia. In general, pyrexia is associated with a leucocytic reaction, and pyretotherapy stimulates the resistive function of the reticulo-endothelial system. Eddison considers that malarial therapy should be reserved for those cases in which a satisfactory leucocytic reaction has been obtained in a preliminary test with a mild leucogenic agent; owing to the importance of the reticulo-endothelial disturbance, patients who have benefited from malarial therapy should reside for a time at a high altitude in order to stimulate erythropoiesis and benefit leucopoiesis. Prophylactic malarial treatment should be advised for all syphilitic patients in whom few, if any, secondary or tertiary symptoms have been noted.

476. Vaccine Therapy in Chronic Ulcerative Colitis.

IN 1925 Bargen of the Mayo Clinic reported the isolation of a Gram-positive diplococcus from the depth of the ulcers in 90 per cent. of cases of chronic ulcerative colitis. After confirmatory animal experiments, vaccines and bacterial filtrates were prepared, and subcutaneous injections of these brought about clinical and pathological improvement in 80 per cent. of his cases. During the past two years W. Z. FRADKIN and I. GRAY (*Journ. Amer. Med. Assoc.*, March 22nd, 1930, p. 849) have had under their care fifteen patients with a definite history, symptoms, and proctoscopic evidence of chronic ulcerative proctitis; in three the Bargen diplococcus could not be detected in spite of repeated bacteriological trials, but in the remaining twelve the organism was found after the first, second, or third sigmoidoscopic examination. An autogenous vaccine prepared from this micro-organism was administered subcutaneously to these twelve patients three times a week for eight weeks; after eight injections improvement was noted in ten patients, and after eight weeks the patients reported that they felt better than at any time during their illness. In two cases vaccine therapy had to be continued for four months before cure was established. Only two patients failed to respond to the treatment. All the patients treated were given a diet of a high calorie value and rich in vitamins. The authors believe that the improvement noted in these cases was due to the vaccine treatment, and emphasize the need for repeated sigmoidoscopic examinations if the organism is not isolated at the first attempt. Improvement is noted more often and sooner, and is more lasting, when the vaccine therapy is supported by rest, fresh air, small blood transfusions, with high calorie and high vitamin diets, and the eradication of all possible foci of infection.

477. Serum Treatment of Adder Bite.

W. MENE (*Münch. med. Woch.*, February 21st, 1930, p. 307) has tested the toxicity of adder poison by the neutralizing action of antivenene serum E.R. of the Pasteur Institute, Paris. Increasing doses of dried adder poison dissolved in physiological saline solution were mixed *in vitro* with the same amount of E.R. serum, and after standing for an hour at 37° C. were injected intravenously into mice. Two samples of adder poison were tested. In one set it was found that the lethal dose of adder poison for a mouse was neutralized by a dose of 0.025 c.cm. of serum E.R. In the other set a dose of 0.0625 c.cm. of the same serum neutralized one and one-third times the lethal dose for the mouse for the sample of mixed adder poison. Whereas a mouse died within two hours after receiving the poison, another mouse was rescued by a dose given seventy minutes after the injection of the poison. The research confirms the findings of previous observers that E.R. serum is a powerful specific for the treatment of adder bite.

478. Adult Pooled Serum in Prophylaxis of Measles.

A. E. SIEGEL and H. ERMANN (*Amer. Journ. Med. Sci.*, February, 1930, p. 192), during an epidemic of measles among the school children of Philadelphia, injected the pooled Wassermann-negative serum of the children's parents in 5 c.cm. doses into fifty-five susceptible children without the development of a single case of measles even in an attenuated form.

Ophthalmology.

479. Radon in Chorioidal Sarcoma.

R. FOSTER MOORE (*Brit. Journ. of Ophthalmol.*, April, 1930, p. 145) reports a case of melanotic sarcoma of the choroid which was treated by means of radon seeds inserted intraocularly; twelve months have now elapsed since treatment was instituted. The reason for employing this method instead of removing the eye was that the right was an old blind eye, and the patient refused to have the left, the only seeing eye, removed. The patient, a man aged 65, had suffered from chronic blepharitis for several years. The right eye was convergent, and was the subject of a large dense leucoma adherens; with it he could just see hand movements. A large, very dark globular mass was seen in the lower part of the globe, and the ophthalmoscope showed that it invaded the dilated pupillary aperture. The vitreous was muddy, but there were no keratic precipitates and no evidence of iritis. The acuity was 6/60 and the visual field was reduced. The tumour was completely opaque to transillumination; the lower part of the iris was pushed a little forward; the tension was normal. Under general anaesthesia the conjunctiva was incised and a flap made which was dissected cleanly off the sclerotic. The knife was then pushed straight into the globe with a slight backward slope. The seed, of 1 millicurie strength with 0.5 mm. platinum filter, was inserted straight into the growth along the knife track. To the seed was attached a piece of black silk to facilitate future localization. The conjunctival flap was then replaced in position. After fourteen days the seed was removed under general anaesthesia. Apart from recurring pain, probably due to iritis, no important change was noticed. After about three months, as the growth was still easily visible, another seed of the greater strength of 5 millicuries with 0.5 mm. platinum filter was inserted at the same spot in the same way as previously. This seed was removed ten days later. At the present date, except for the blepharitis, the eye has given no trouble or pain. The growth has so regressed that it can only be seen with difficulty by looking well down behind the iris. Moore considers that an intraocular melanotic sarcoma can be made to shrink greatly, and perhaps to disappear, by this treatment, and that the danger of dissemination is no greater and no less than in removal of the eye. Without being dogmatic, he suggests that this method might be employed in cases of accessible intraocular sarcoma where the growth has not yet seriously spoiled the eye, and in the rare cases where the growth occurs in an only eye or in one which is the only useful eye.

480. Iridotasis for Primary and Secondary Glaucoma.

G. H. BELL (*Arch. of Ophthalmol.*, February, 1930, p. 194) reports 40 cases of glaucoma, in which iridotasis, an operation first suggested by Borthen in 1911, was undertaken; the results in 35 of these cases were good, but were poor in the remainder. Bell suggests that before operation is considered patients with chronic types of primary glaucoma, and also secondary glaucoma, should be first examined carefully for septic foci and receive appropriate treatment. Syphilis and other diseases should be excluded, and the patients be kept on a lactose and *acidophilus* diet. More than fifty patients thus treated have not so far come to operation owing to reduction in the ocular tension following treatment. The technique of iridotasis includes the drawing of the iris through a small incision in the anterior chamber, so that when the iris is withdrawn the pigmented epithelial layer is exposed and turned up opposite the anterior lip of the wound. Bell considers that the Reese iridectomy is the operation of choice in the acute inflammatory types of glaucoma. In the chronic types iridotasis is preferred, as there is a minimum injury to the eye and the iris is but little damaged. The operation is particularly indicated in patients with high blood pressure, or in whom the vessels are so fragile that a cutting operation might produce a haemorrhage of large proportions. It is a valuable operation in haemorrhagic glaucoma, and in cases in which the La Grange operation, the Elliot trephine, or an iridectomy has been unsuccessful. Iridotasis is the operation of choice in secondary glaucoma following anterior uveitis, and in that following extraction of the cataract; it may also be of advantage in buphthalmos. The only contraindication to the operation is a developing cataract complicating the glaucoma, when iridectomy is preferable. Late infections can be prevented by using a zinc sulphate solution (2 grains of zinc to 1 ounce of boric acid solution) in the eye night and morning; and this should be continued for a long time. While pleased with the results obtained by iridotasis, Bell considers that the prognosis in operations for glaucoma is unfavourable throughout, since patients usually seek treatment too late in the disease.

481. Operative Treatment of Retinal Detachment.

ACCORDING to J. GONIN (*Bruxelles-Méd.*, March 23rd, 1930, p. 564) the majority of the causes of blindness, such as ocular variola, gonorrhoea, cataract, and glaucoma, have been treated with increasing success, and only detachment of the retina has remained as apparently incurable. This affection is relatively frequent, more so than glaucoma, and more to be dreaded, since it often attacks eyes previously sound, with the exception of a certain degree of myopia. It spares no class of society, and, if more frequent in myopics and on the approach of old age, it occurs also in young and healthy subjects. Its pathogenesis is unknown. The first hypothesis that the elongation of the eye in myopia was a cause has been abandoned. A theory still held is that detachment of the retina is due to the raising of this membrane by an exudation of the choroid. Leber, having observed in cases of sudden detachment a tear in the retina, has concluded that the vitreous liquid escapes into the retroretinal space through this opening, and that the raising is not caused by a newly formed exudate, but by a simple change of situation of the liquid normally contained in the ocular cavity; this theory has been confirmed by clinical observations. Gonin states that these retinal tears are usually in the shape of a crescent or elongated horseshoe, and that their formation results from abnormal adhesions between the retina and the vitreous body, which can exist for a long time without ill effects. Treatment, to be successful, must be directed to the closing of these tears. Gonin performs a thermo-cauterization with the point of a Paquelin cautery across the sclerotic on a spot corresponding to the tear; this fixes the edges in a cicatrix common to the retina, the choroid, and the scleral shell. This treatment is well tolerated, and the results in many cases have surpassed expectations, complete cure being obtained in fifteen days. The great essential in the operation is the localization of the tear, and this is the only difficulty. In cases of longer duration than two or three weeks the chances of success are diminished, since the tears are more difficult to recognize, the retina is reapplied with greater difficulty, and the functional restoration is imperfect. Therefore, as early a diagnosis as possible should be made, and the operation be performed at once. Palliative treatment is strongly deprecated.

Obstetrics and Gynaecology.

482. Association of Menstruation and Ovulation.

E. NOVAK (*Journ. Amer. Med. Assoc.*, March 22nd, 1930, p. 853) discusses recent advances in the physiology of menstruation under the following four heads: the occurrence of menstruation without ovulation; the underlying cause of menstruation; the duality of the ovarian secretions; and the role of the anterior pituitary in the sex cycle. The sequence of events in the menstrual cycle is first briefly reviewed. Novak maintains that radical readjustments must be made in the physiological conception of menstruation. In the lower animals the sex cycle can occur independently of ovulation. Menstruation without preceding ovulation is not the rule in women, but it occurs at times, though the associated endometrial cycle would naturally be different in such cases. Even if preceding ovulation is the rule, it is not certain that the two are related in the nature of cause and effect. The doctrine of the "primacy of the ovum" in the regulation of menstrual periodicity must be abandoned in the light of recent evidence. No constituent of the ovarian structure is more important than any other in this respect, and there is evidence that the pituitary may, by the probable periodicity of its own function, be the regulator of the menstrual rhythm. The dual nature of the ovarian secretion has been definitely established, especially by the recent demonstration by Corner of an active corpus luteum extract, with properties in some respects antagonistic, in others supplementary, to those of the already well-recognized ovarian follicle hormone. The latter cannot now be regarded as the only female sex hormone, and the anterior pituitary secretion appears to play an even more fundamental part in sex physiology. Since the characteristic secretion of the corpus luteum has very different properties from those of the follicle and the placenta, the term "gestational gland" to include these three structures is incorrect. Novak holds that the most important and practical recent contribution to sex physiology is the discovery that the anterior portion of the pituitary gland supplies the motor energy of the ovary. Though the isolation of the follicle hormone has as yet yielded practically no therapeutic results, the discovery of the underlying role of the anterior pituitary secretion may be more productive of results in the treatment of disorders of the sex cycle.

483. Tubal Permeability in Sterility.

M. FRANCILLON-LOBRE and J. DALSACE (*Le Scalpel*, January 18th, 1930, p. 57) report a series of 222 unselected cases of women who complained of sterility, the condition being primary in 155 and secondary in 66. Lipiodol examinations were made in 208 cases, and 40 utero-tubal insufflations were given. The authors state that to obviate the chance of starting an ascending infection the patients should be selected, and only examined between the fifth and the twelfth day after menstruation. Careful preparation of the patient is necessary, and also constant measurement of the pressure of the lipiodol injection; rest and post-operative care should follow each investigation, which should never be considered as an out-patient procedure. Nearly all the women examined had previously undergone various therapeutic measures and in some there had been surgical intervention. In 17 cases an injection of lipiodol was given several months after an insufflation and in 10 cases the previous results were confirmed, but in the remainder impermeability to oxygen was associated with permeability to lipiodol; in two of these cases pregnancy followed some time after the lipiodol exploration. The authors add that another advantage of the use of lipiodol is the discovery of uterine or tubal lesions which may escape observation in insufflation. The physio-pathology of the uterus and tubes can only be studied by the help of radiograms in series, which may reveal causes of sterility other than simple obliteration of the tubes—namely, kinetic spasms, elongations, malformations, and latero-flexions. Great difficulty was experienced in obtaining records of the subsequent history of the 222 women examined, but the authors discovered that 19 (8.5 per cent.) subsequently became pregnant. In these 19 cases a total of 23 pregnancies was reported, 15 living infants being born; there were 7 miscarriages and one extrauterine gestation. As a result of the diagnosis made after lipiodol insufflations 19 women underwent laparotomy, and many lesions were discovered and remedied which were undetectable by vaginal examination.

484. The Sedimentation Test in Pregnancy.

P. B. BLAND, L. GOLDSTEIN, and A. FIRST (*Surg., Gynecol. and Obstet.*, February, 1930, p. 429) studied the sedimentation of the erythrocytes in pregnancy especially in its relation to anaemia, the existence of a blood deficiency in pregnancy having been previously described. Tests performed upon 540 healthy women in different months of gestation were analysed. It was found that 536 (99 per cent.) had an increased sedimentation index, while in six women as early as the second month of pregnancy three showed an increased index, and of 453 examined in the sixth month or later 75 per cent. showed a marked acceleration of sedimentation. The authors remark that anaemia appears to be a factor in determining the rate of settling of the erythrocytes in pregnancy, as it is in other pathological conditions. The sedimentation value is an index of the coagulating property of the blood, a prolonged or delayed sedimentation indicating a delay in coagulation at the time of the expulsion of the foetus and placenta, with the possibility of post-partum haemorrhage. A patient with a severe grade of anaemia combined with slow sedimentation would be very prone to excessive haemorrhage during or after labour. The sedimentation rates occurring during pregnancy were maintained during the first ten days following delivery. The authors conclude that the sedimentation of the erythrocytes is much more rapid in the pregnant than in the non-pregnant state; the acceleration is primarily due to the increased fibrinogen content of the plasma, and secondarily to the physiological anaemia and leucocytosis present in pregnancy.

Pathology.

485. A Proteolytic Uterine Ferment.

THOUGH most secretions containing digestive ferments are produced by endodermal tissues, tryptic ferments have been demonstrated in such mesodermal organs as the kidneys, liver, and spleen. P. CAFFIER (*Münch. med. Woch.*, March 7th, 1930, p. 389), following Frankl, Halban, and Aschner, has therefore examined the secretion of the human uterus at different stages in the menstrual cycle, and states that he has obtained definite evidence of the presence of a proteolytic ferment which appears to be formed in the glandular epithelium of the endometrium, the largest amount being found when the endometrial glands are proliferating most actively. The activity of this ferment was found to be destroyed by heating to 80° C. or by the addition of formalin, but after complete drying at 56° an active suspension could be prepared from the same material three months later. Since this ferment is present in maximum amount in the free secretion of the uterus in the pre-menstrual phase, Caffier considers it likely that it takes an active part in [illegible] integration of the endometrium associated [illegible]; by the destruction of gland cells further ferment is liberated, and the menstrual discharge is thus largely an autolytic product. The uterine ferment possibly destroys unfertilized ova and spermatozoa, and may play a part in preparing the endometrium for the implantation of the fertilized ovum.

486. Spontaneous Tuberculosis in the Guinea-pig.

THE liability of the guinea-pig to contract tuberculosis spontaneously when living in the same room as tuberculous animals was noted by Koch, and has been confirmed by many other workers on tuberculosis, including Reisman and Baylis (see *Epitome*, February 15th, para. 177). As the result of experimental work at Cambridge, A. S. GRIFFITH (*Journ. Path. and Bact.*, January, 1930, p. 153) has found that this disease does appear spontaneously in guinea-pigs, but rarely. Casual tuberculosis acquired by these animals is generally of respiratory origin, and is often remarkable for the enormous enlargement of the tracheo-bronchial glands, which contain cheesy caseous substance and have greatly thickened capsules. Spontaneous tuberculosis of alimentary origin occurs chiefly in young animals which have been suckled by mothers with tuberculous abdominal ulcers. The type of infecting tubercle bacillus was ascertained by several observers to be either bovine or human, the former predominating. Of seven strains examined by Griffith, six were bovine and one was human. Recently he has discovered two further cases of spontaneous tuberculosis in guinea-pigs, cultures from which proved to be of the avian type, a type to which the guinea-pig is highly resistant. The cultures exhibited the moist slimy character of the typical avian bacillus and showed many branched forms. The condition differed from that caused by mammalian bacilli in that the lesions were yellow and purulent with little surrounding fibrotic change, and the tubercle bacilli were more abundant in the pus. The author thinks, therefore, that it may be taken as proved that spontaneous tuberculosis of the bovine, human, or avian type does occur in guinea-pigs.

487. The Reticulocyte Response in Anaemia.

C. S. YANG and C. S. KEEFER (*Arch. Int. Med.*, March, 1930, p. 456), from observations in 53 cases of secondary anaemia, found that the response of the reticulocytes depended upon the severity and cause of the anaemia and upon the form of treatment, the counts ranging from 1 to 35 per cent. The most marked reaction occurred in the anaemias associated with hookworm infection, haemorrhage, dysentery, undernutrition, pregnancy, and malaria; usually, the lower the original count the higher did it rise during recovery. Poor nutrition seemed to play a considerable part, and treatment with liver and iron or cod-liver oil and a high calorie diet resulted in an increased percentage of reticulocytes, and an improvement in the anaemia. In many instances the results obtained by such treatment were as striking as those brought about in pernicious anaemia by the administration of liver or liver extract; it seems that feeding of liver is not specific only for pernicious anaemia, but that it has a beneficial effect in many secondary anaemias, and in many cases a combination of liver and iron was found to be more effective than either alone. From their own cases and from others previously reported secondary anaemia was often found to react in the same way to treatment with liver or liver and iron as does pernicious anaemia to liver or liver extract.

488. The Anaemia of Splenectomized Rats.

M. LEVI (*Lo Sperimentale*, March, 1930, p. xvi) removed the spleens of a number of rats which had been bred in Florence; two or three days later the animals showed symptoms of illness, and haemoglobinuria was found to be present. Anaemia developed, the red cells falling from 9,000,000 to 1,200,000 per c.mm.; there was a relative leucocytosis associated with the appearance in the blood of a large number of polymorphonuclear cells. The platelets likewise showed a marked increase, and the colour index varied from 1.1 to 1.25. Examination of the blood with brilliant cresyl blue revealed the presence of fairly large bodies in the red corpuscles, sometimes large enough to fill the entire cell, and exhibiting active Brownian motility. Stained by the Giemsa method, they appeared as granules and as straight or curved rods. Four to five days after splenectomy about 2 to 5 per cent. of the red cells were affected, but by the sixteenth day practically every cell was attacked. Preliminary experiments showed that a normal rat put into the same cage as a splenectomized rat developed the typical intracellular formations. The author is satisfied that splenectomy in rats in Italy has apparently the same effect as in other countries; he maintains an open mind as to the nature of the intracellular bodies, regarding their bacterial nature as not yet definitely proved.

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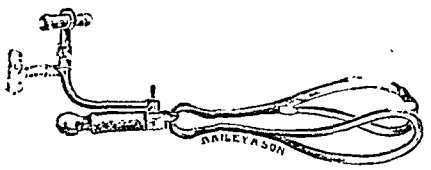
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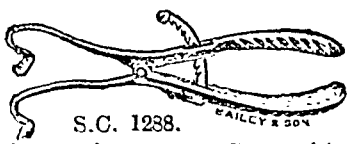
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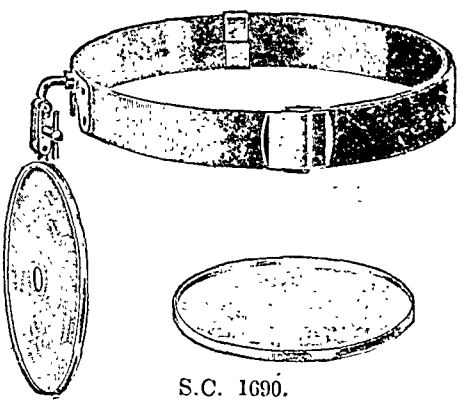
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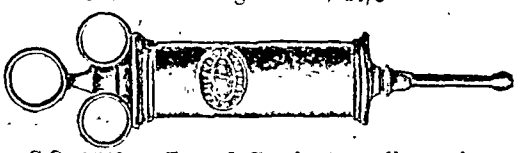
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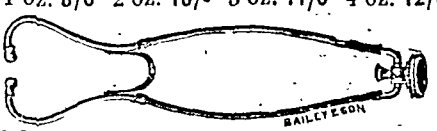
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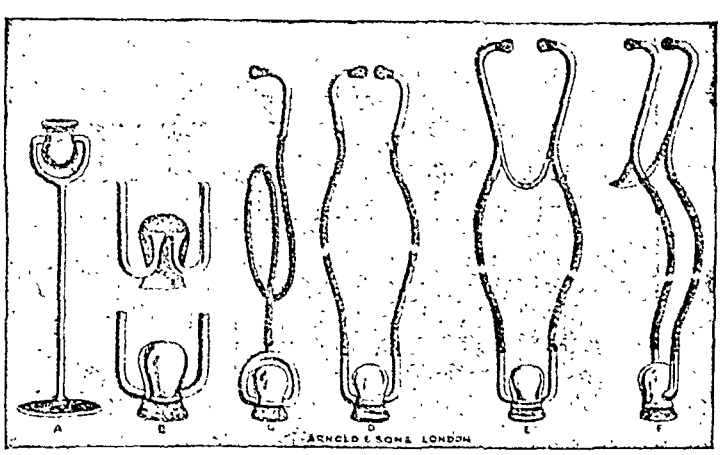


Fig. A.	Fig. B.	Fig. C.	Fig. D.	Fig. E.	Fig. F.
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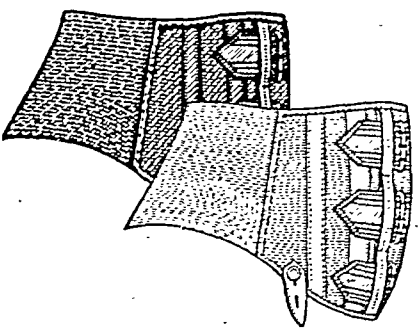
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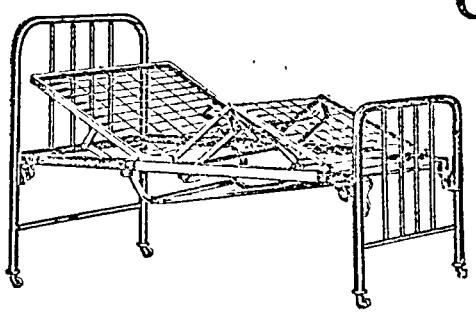
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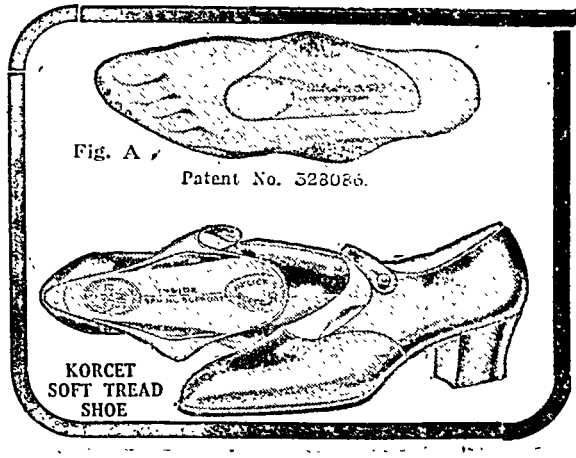


Fig. A.

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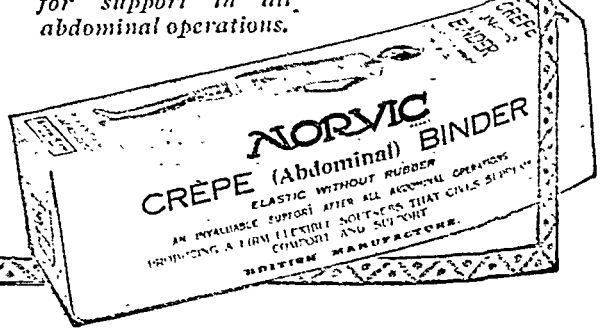
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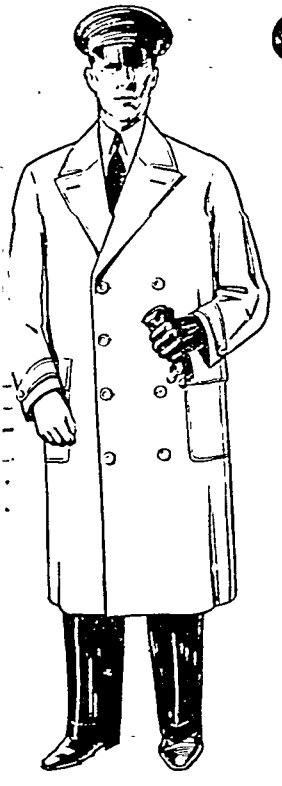
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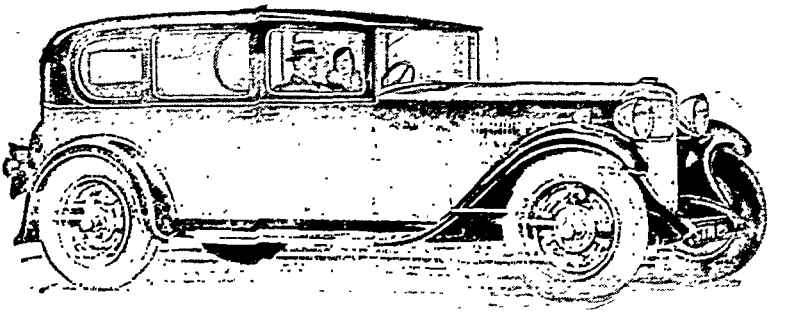
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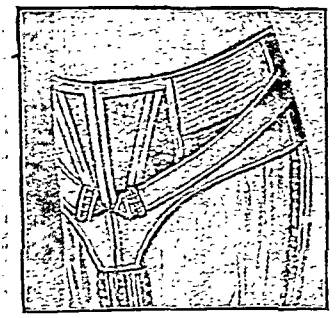
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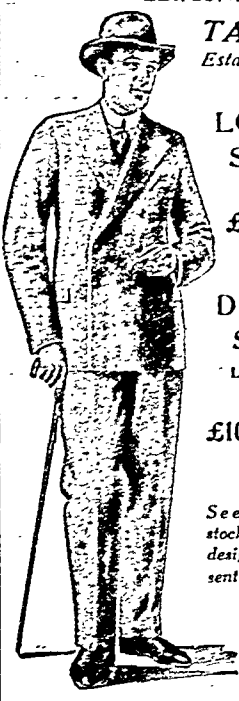


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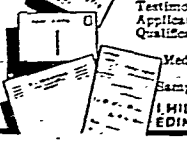
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For further particulars apply to the Physician-Superintendent.

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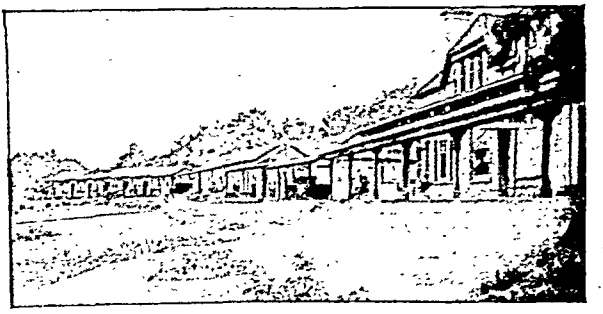
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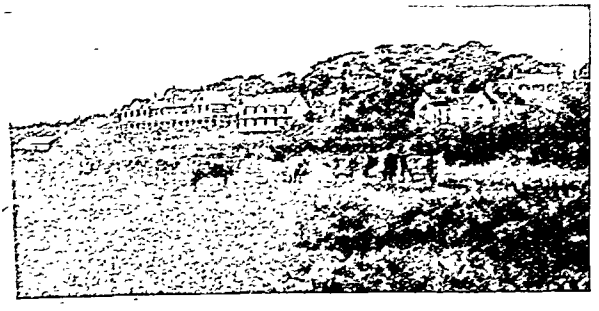
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L. WHITTAKER SHARP, M.B.(Camb.).
ANDREW MORLAND, M.B.(Lond.).

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	SUBJECT.
MAY 29th. Sir THOMAS LEWIS, M.D., F.R.S. (Physician, University College Hospital).	"Reactions of the Skin to Cold."
JUNE 5th. Prof. G. E. GASK, F.R.C.S. (Director, Surgical Unit, St. Bartholomew's Hospital).	"The Value of Radium in Surgery."
JUNE 12th. Col. L. W. HARRISON, M.B., F.R.C.P. (Director Venereal Dept., St. Thomas's Hospital).	"The Development of the Modern Treatment of Syphilis."

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National Hospital for Diseases of THE HEART, Westmoreland St., W.1.

The ST. CYRES LECTURE for the year 1930 will be delivered at the above Hospital on Wednesday, June 4th, at 5 p.m., by JOHN COWAN, Esq., M.D., D.Sc.
Subject: "*The Fibroses of the Heart.*"
Members of the Medical Profession are cordially invited.

LEOPOLD SALZER PRIZE.

Attention is called to this CASH PRIZE of £100 to be offered on January 1st, 1931, to the author of the best Essay upon the treatment, according to the principles of Homoeopathy, of INSANITY in all its forms. For full particulars apply to the Secretary, British Homoeopathic Association (Inc.), 45, Russell Square, W.C.1.

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	Final	143
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D.P.H. (Various) 1906-29 (Completed Exam.)		286
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Mr. Stanford Cade.	Epithelioma of Penis.	Wednesday, June 11th.
Mr. H. P. Winsbury White.	Commonplace Difficulties in the Diagnosis and Treatment of Urinary Calculus.	Wednesday, June 18th.
Mr. W. K. Irwin.	The Diagnosis and Treatment of some important Bladder Conditions.	Wednesday, June 25th.
Mr. R. H. Jocelyn Swan.	Stricture of the Urethra.	Wednesday, July 2nd.
Mr. Kenneth Walker.	Genito-Urinary Tuberculosis.	Wednesday, July 9th.
Dr. David Thomson.	Common Infections of the Genito-Urinary Tract.	Wednesday, July 16th.
Sir Thomas Carey Evans.	Stone in the Bladder, with special reference to Treatment by Litholapaxy.	Wednesday, July 23rd.
Mr. Claude Mills.	Some interesting Urological Cases, with Demonstration of Pathological Specimens and Radiograms of same.	Wednesday, July 30th.

No fee will be charged for attendance at the lectures, etc. Registered Medical Practitioners and Students are invited to attend any branch of the work in which they are interested. Tea will be served at 4 p.m.

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Further particulars can be obtained from the Secretary, 37, Russell Square, W.C.1.
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Qualified Medical Women are admitted to The Mothers' Hospital of the Salvation Army, Lower Clapton Road, E.5 for practical fortnightly Courses in Midwifery. These include delivery of normal cases, attendances at all abnormal cases, operations, ward rounds of visiting staff, V.D. clinics, and antenatal clinics. For further particulars, fees, etc., apply to EDGAR DIEDEN, the Secretary.

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The Senate invite applications for the UNIVERSITY CHAIR OF PHYSIOLOGY tenable at Middlesex Hospital Medical School. Salary £1,000 a year. Applicants are informed that there is also at the School a University Professor of Biochemistry responsible for teaching this branch of Physiology.
Applications (12 copies) must be received not later than first post on June 12th, by the Academic Registrar, University of London, S.W.7, from whom further particulars may be obtained.

London Hospital, E.

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The post of PATERSON RESEARCH SCHOLAR in this Department is vacant. The salary is at the rate of £400 per annum. Further particulars on request.
Applications should be sent to the House Governor not later than Saturday, June 14th.
E. W. MORRIS,
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HOUSE SURGEON (Junior, male), six months. Salary £150 per annum, with residence, board, and washing.
Applicants (who must be duly qualified and registered) are requested to send in their applications, stating age, qualifications, and experience, with three recent testimonials, endorsed "House Surgeon," to—
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RESIDENT ANÆSTHETIST (male) required. Salary for the first six months at the rate of £80 per annum, after which £100 per annum, with board, residence, and laundry. There are twelve Resident Medical Officers. Applications should be forwarded at once to—
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Kent Education Committee.
SCHOOL MEDICAL SERVICE.

SCHOOL MEDICAL INSPECTOR (Woman).

The Kent Education Committee invite applications for the appointment of a permanent School Medical Inspector, to act under the supervision of the School Medical Officer. The duties will consist mainly of work in connection with secondary and private schools, together with some elementary school work and such other duties as may be allotted to the officer. The appointment is open to women doctors only.
The selected candidate will be required to devote the whole of her time to the duties of the office.
The salary offered is at the rate of £600 per annum, rising by £12 10s. increments to £650 per annum, together with travelling and subsistence allowances.
The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, and will be terminable by three months' notice on either side.
The successful candidate will be required to pass a medical examination as to physical fitness.
Applications, stating age and full qualifications, and accompanied by copies of three recent testimonials, must be forwarded to the undersigned not later than June 14th.
No official form of application will be issued, and canvassing will be considered a disqualification.

ALFRED GREENWOOD, M.D.,
Sessions House, School Medical
Maidstone. Officer.
May 5th, 1930.

Essex County Council.

BLACK NOTLEY SANATORIUM.

APPOINTMENT OF DISPENSER-CLERK (Female).

The County Council of the Administrative County of Essex invite applications from fully qualified persons for the above appointment at their Sanatorium for the treatment of Tuberculosis at Black Notley, near Braintree. The Sanatorium provides accommodation for the treatment of approximately 180 cases of pulmonary and non-pulmonary tuberculosis in women and children.
The person appointed will be required to reside at the Institution, and the salary will be at the rate of £100 per annum, plus board, residence, and laundry, and will rise, subject to satisfactory service, by annual increments of £10 to a maximum of £150 per annum.
The appointment will be subject to one month's notice on either side.
Applications should be made to the County Medical Officer of Health, Prudential Buildings, Duke Street, Chelmsford, on or before Monday, May 26th.
Shire Hall, JOHN H. GOOLD,
Chelmsford. Clerk of the County
May 9th, 1930. Council.

Salop County Council.

MEDICAL INSPECTION OF SCHOOL CHILDREN AND MATERNITY AND CHILD WELFARE.

Applications are invited from registered Medical Practitioners (male) for the post of Assistant Medical Officer to work under these Schemes. Salary £600 per annum, rising by annual increments of £25 to a maximum of £700, with travelling and out-of-pocket expenses on a fixed scale.
The salary will be subject to a deduction of 5 per cent. for superannuation under the Local Government and Other Officers Superannuation Act, 1922, and the candidate selected will be required to pass a medical examination.
Candidates must possess a Diploma in Public Health, and experience in Refraction work will be considered an important additional qualification.
Applications should be received on or before Wednesday, June 11th, by the County Medical Officer of Health, College Hill House, Shrewsbury, from whom forms of application, conditions of appointment, list of duties, and any other information can be obtained.

City of Sheffield.

NETHER EDGE HOSPITAL.

Applications are invited from duly qualified Medical Women for the post of RESIDENT HOUSE PHYSICIAN in the above Hospital.
The appointment will be, in the first instance, for one year. Salary at the rate of £150 per annum.
Applications, stating age, qualifications, and experience, and accompanied by not more than three recent testimonials, should be sent at once to the Medical Superintendent, City General Hospitals, Fir Vale, Sheffield.

Cumberland County Council.

ASSISTANT COUNTY MEDICAL OFFICER OF HEALTH.

Applications are invited from fully qualified Medical Men holding a Diploma in Public Health.
Salary commences at £600 per annum, rising by annual increments of £25 to £700, with travelling and subsistence allowance.
The appointment is subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922, terminable by two months' written notice on either side, and the person appointed will be required to devote the whole of his time to his duties under the supervision of the County Medical Officer of Health.
Forms of application may be obtained from the County Medical Officer, Citadel Chambers, Carlisle, on receipt of a stamped addressed foolscap envelope.
Applications, endorsed "Assistant Medical Officer," and accompanied by copies of three recent testimonials, must be received by the County Medical Officer of Health not later than Thursday, June 5th.
Canvassing is a disqualification.

C. W. ALLAN HODGSON,
County Offices, Clerk of the
Carlisle. County Council.
May 12th, 1930.

Oldbury Urban District Council.

ASSISTANT MEDICAL OFFICER.

The Council invite applications for the above appointment.
Applicants must be registered Medical Practitioners holding the Diploma of Public Health, and with experience in Ante-natal work, and preference will be given to those who have held a resident appointment at a Maternity Hospital with an ante-natal clinic.
The person appointed will act under the supervision of the Medical Officer of Health and School Medical Officer, and assist him in the general administration of the Health Department, including the School Medical and Maternity and Child Welfare services.
The person appointed must devote whole time to the duties of the appointment.
Salary £600 per annum, with £10 travelling expenses per annum.
Application forms, with further particulars of the appointment, may be obtained from the undersigned, and should be returned, together with copies of three recent testimonials, not later than June 12th, endorsed "Assistant Medical Officer."

ARTHUR CULWICK,
Council Offices, Clerk of the Council.
Oldbury.
May 16th, 1930.

County Borough of Ipswich.

Applications are invited for the post of ASSISTANT MEDICAL OFFICER to the IPSWICH SANATORIUM. Salary £350 per annum, with board, lodging, washing, etc., subject to deductions in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922. The appointment will be for one year in the first instance. Applicants must be bachelors and must be fully qualified and registered, and must not exceed 30 years of age. They must have held a resident post in a General Hospital and also in a Hospital for the treatment of diseases of the chest.
Applications, stating age, qualifications, experience, and accompanied by recent testimonials, should be sent to the undersigned forthwith.

W. F. SUTCLIFFE,
Ipswich Sanatorium. Medical Supt.

The Royal Infirmary, Sheffield.
(500 Beds.)

The Weekly Board of Management invite applications for the post of HOUSE SURGEON.
The salary attached to the appointment (which will terminate on September 30th next) is £80 per annum, with board and residence.
Applications, with copies of testimonials, should be addressed to the undersigned forthwith.
Board Room, JNO. W. BARNES, F.C.I.S.,
May 14th, 1930. Gen. Supt. & Sec.

Arbroath Infirmary.

Wanted, for Arbroath Infirmary, SENIOR RESIDENT MEDICAL OFFICER (male) for the period from the date of his acceptance of the appointment to January 14th, 1931, at a salary of £120 per annum.
The appointment affords excellent opportunity for surgical and other experience.
The House contains about 50 beds.
Applications, with two recent testimonials, addressed to the Chairman, Weekly Committee, Arbroath Infirmary, to be lodged by Tuesday, May 27th.

Antrim County Council.

CHIEF TUBERCULOSIS MEDICAL OFFICER wanted.

The County Council of the County of Antrim hereby give notice that they will at their meeting to be held in the County Courthouse, Belfast, on Tuesday, June 17th next, proceed to appoint a registered Medical Practitioner as Chief Tuberculosis Medical Officer for the County, at a salary of £750 per annum, with an annual allowance of £120 for travelling expenses. The person appointed must devote his whole time to the duties of the office and reside in the City of Belfast, his absence not to exceed 40 days. In addition to the ordinary duties of the office, the person appointed will require to attend all meetings of the Tuberculosis Committee and Insurance Committee and act as Medical Adviser to the latter Committee, and generally to perform such duties as may be assigned from time to time by the Council with the approval of the Ministry of Home Affairs.

Candidates must either—

(a) Have acted as Superintendent or Assistant Superintendent of a Sanatorium or Tuberculosis Dispensary for at least six months, or

(b) Have obtained a certificate of proficiency in the diagnosis and treatment of Tuberculosis, or

(c) Attended a six months course of instruction at any Institution that may be recognised by the Ministry of Home Affairs for Northern Ireland as an efficient school for giving such instruction, or

(d) with raise satisfy the Ministry that he possesses special knowledge of the diagnosis and treatment of Tuberculosis.

Preference will be given to candidates who have had at least three years' experience in Tuberculosis work and have obtained a Diploma in Public Health.

The appointment to be regarded as temporary pending the reform of the Local Government services, but the officer appointed will be considered eligible for promotion to the post of County Medical Officer of Health if and when the Public Scheme of Local Government Reorganization comes into operation, and in this connection the Council will take into consideration any experience of a general character which candidates possess.

The person appointed will also have to carry out the duties of the office of Medical Superintendent of the Sanatorium and such portion of the Tuberculosis Dispensary Work for which he is appointed Medical Officer by the Council.

Salary £600 per annum, and an additional £40 per annum.

Applications, stating qualifications and experience, accompanied by testimonials, must be received by the undersigned at the County Courthouse, Belfast, not later than June 7th next.

ALEXANDER MILLAR, Secretary.

County Courthouse, Belfast. May 14th 1930

Berkshire County Council.

ASSISTANT TUBERCULOSIS OFFICER AND GENERAL MEDICAL ASSISTANT

Applications are invited for the above combined appointment. Salary £600 per annum. The appointment will be subject to the provisions of the Local Government and Other Officers Superannuation Act, 1922. Candidates must be qualified to hold an appointment as Tuberculosis Officer as required by the Local Government (Qualifications of Medical Officers) Regulations, 1930, and must also have a Diploma in Public Health. Forms of application and full particulars may be obtained from the Clerk of the County Council.

Applications, accompanied by three testimonials, must reach the undersigned on or before Saturday, May 31st.

H. J. C. NEOBARD, Clerk of the County Council.

Shire Hall, The Forbury, Reading.

May 16th 1930

City of Manchester.

RADIOLOGIST.

The Public Health Committee invite applications from registered Medical Practitioners for the appointment of Radiologist at the CRUMPSALL HOSPITAL, Crumpsall, Manchester, at a salary at the rate of £500 per annum.

The successful candidate will be required to give four half-day sessions per week at the Hospital, respond to emergency calls, provide his own locum for holiday duty, execute the Corporation Deed of Service, and to commence duty as soon as possible after appointment.

Applications, endorsed on the envelope "Radiologist, Crumpsall," accompanied by not less than three testimonials, must be forwarded to the undersigned not later than Monday, June 2nd.

F. E. WARBRECK HOWELL, Town Clerk.

Town Hall, Manchester. May 15th 1930.

City of Plymouth.

DEPUTY MEDICAL OFFICER OF HEALTH.

Applications are invited from duly qualified and registered Medical Men for the post of whole-time Deputy Medical Officer of Health to the City of Plymouth.

Applicants must possess a Diploma in Public Health or a qualification in State Medicine.

The salary will be at the rate of £750 per annum, rising by annual increments of £50 to £900 per annum, and the appointment will be terminable by three months' notice on either side.

The person appointed will be required to act for the Medical Officer of Health in his absence, and generally to help him in the Public Health work of the City, and in the various Sub-departments of the Public Health Department. He will act under the general supervision and direction of the Medical Officer of Health, and carry out any duties delegated to him from time to time.

Forms of application will not be provided. Candidates for this appointment should state their age and give an account of their professional qualifications and experience in all branches of Public Health work.

Canvassing will disqualify the applicant.

Applications must be received by the undersigned on or before Thursday, June 5th, and envelopes must be endorsed "Deputy Medical Officer of Health."

A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., Medical Officer of Health, City and Port of Plymouth.

Town Hall, Stonehouse, Plymouth.

May 8th, 1930.

City of Plymouth.

RESIDENT MEDICAL SUPERINTENDENT.

Applications are invited from duly qualified and registered Medical Practitioners for the post of Resident Medical Superintendent of the Plymouth City Hospital.

The salary will be at the rate of £1,000 per year, with food, quarters, lighting, heating, and washing. No canvassing for this appointment is permitted, and any canvassing will disqualify the applicant. The appointment will be terminable by three months' notice on either side.

Applicants must be holders of the F.R.C.S., or the Degree of a Master of Surgery in a University of the United Kingdom. The appointment is whole-time, and private practice is not permitted. The person appointed will be an Assistant Medical Officer in the Public Health Department, and will be on the staff of the Medical Officer of Health, who is the General Medical Superintendent of the Corporation Hospitals.

Applications will be considered only on the forms of application which will be provided. A form of application, together with further details relating to the appointment, can be obtained from the undersigned, on the receipt by him of a request for this, accompanied by a stamped and addressed envelope. Forms of application, duly completed, together with copies of not more than three recent testimonials, must be returned to the undersigned not later than June 5th.

A. T. NANKIVELL, M.D., M.R.C.P., D.P.H., etc., Medical Officer of Health.

Town Hall, Stonehouse, Plymouth.

May 8th, 1930.

County Borough of Rotherham.

ASSISTANT MEDICAL OFFICER OF HEALTH

The Rotherham Corporation invite applications from duly qualified and registered Medical Practitioners for the position of Assistant Medical Officer of Health with principal duties relating to Venereal Diseases, and Maternity and Child Welfare. The Officer appointed will also act as Medical Officer to the Municipal Maternity Home. Preference will be given to candidates holding the Diploma of Public Health. Salary £500.

The gentleman appointed will be required to devote the whole of his time to the duties of the office and to reside in the Borough, and will not be allowed to engage in private practice, and all emoluments or fees which may be payable to or received by him will have to be paid to the Corporation.

The appointment will be subject (1) to the passing of a medical examination; (2) to the provisions of the Sanitary Officers Order, 1925; (3) to be subject to the Local Government and other Officers Superannuation Act, 1922, and (4) to termination by three months' previous notice.

A list of duties can be obtained from the Medical Officer of Health.

Canvassing, either directly or indirectly, is prohibited.

Applications, with copies of not more than three recent testimonials attached, to be sent to me, endorsed "Assistant Medical Officer of Health," not later than May 26th.

CHAS. L. DES FORGES, Town Clerk.

Municipal Offices, Rotherham.

May 7th, 1930.

County Borough of Newport.

ASSISTANT LADY MEDICAL OFFICER in the MEDICAL OFFICER OF HEALTH'S DEPT.

Applications are invited for the position of Lady Assistant Medical Officer of Health. Candidates must be duly qualified and registered Medical Practitioners; have had not less than three years' experience since graduation; special experience in Midwifery and Child Welfare work; and must hold a Diploma in Public Health.

Other qualifications being equal, preference will be given to one with experience in the Diagnosis and Treatment of V.D. among women and children, and U.V.R. Therapy.

The lady appointed will act under the direction of the Medical Officer of Health, and will devote her whole time to official duties, which will be to assist at the Maternity and Child Welfare Clinic and Centres to undertake Diagnosis and Treatment of V.D. among women and infants; U.V.R. Therapy; superintendence of practising midwives and of Health Visitors; and to carry out any other duties required by the Medical Officer of Health.

The salary will be £600 per annum. The appointment is subject to the Local Government and Other Officers Superannuation Act, 1922, and deductions from salary and the passing of a medical examination thereunder.

The appointment will be subject to two calendar months' notice on either side.

Applications should be made on forms to be obtained from the Medical Officer of Health, and must be accompanied by copies (not originals) of three recent testimonials. Envelopes, addressed to the Medical Officer of Health, and marked "Assistant Medical Officer," must be received not later than June 1st.

J. HOWARD-JONES, M.D., D.Sc. Medical Officer of Health.

Market Buildings, Dock Street, Newport, Mon.

City of Birmingham.

SELLY OAK HOSPITAL.

CASUALTY OFFICER (Male).

Applications are invited from fully qualified Medical Practitioners for the appointment of Casualty Officer (male) at the Selly Oak Hospital, Birmingham.

The present Hospital accommodation is 550 beds, divided into General, Medical, General Surgical, Gynæcological, Obstetrical, and Children's Disease sections. There are completely equipped Pathological and Biochemical Laboratories and X-ray, Electro-therapeutic, Massage, Ultra-violet Ray and Electro-cardiographic Departments. Over 3,000 operations are performed annually.

The appointment will be for a period of six months in the first instance, but may be extended at the end of that time.

The person appointed will be required to assist at operations, to administer anæsthetics, and to undertake casualty and such other duties as may be assigned to him by the Medical Superintendent.

The salary attached to the appointment is at the rate of £200 per annum, together with full residential emoluments (rations, apartments, laundry, and attendance).

Further particulars of the appointment may be obtained from the Medical Superintendent, R. P. STANLEY KELMAN, Esq., M.B., F.R.C.S. (Eng. and Edin.), at the Selly Oak Hospital, to whom applications, stating age, experience, and qualifications, should be forwarded not later than Wednesday, May 28th.

F. H. C. WILTSHIRE, Town Clerk.

City of Salford.

HOPE HOSPITAL.

An ASSISTANT MEDICAL OFFICER is required at Hope Hospital, Salford, Lancs. The appointment will be for six months, at the rate of £250 per annum, with full residential allowances. The Hospital contains 1,000 beds, is well equipped and up-to-date, and offers excellent opportunities of experience.

Forms of application may be obtained from the Medical Officer of Health, 145, Regent Road, Salford, to whom they must be returned, accompanied by copies of not more than three testimonials, not later than Monday, May 26th.

H. H. TOMSON, Town Clerk.

City of Bradford.

LOCUM TENENS required during July and August for Bacteriological and Pathological work.

Salary £12 12s. per week.

Applications should be sent to the Medical Officer of Health, Town Hall, Bradford, as soon as possible.

N. L. FLEMING, Town Clerk.

Town Hall, Bradford. May 12th, 1930.

The Hospital for Sick Children,
Great Ormond Street, London, W.C.1.

A HOUSE SURGEON and a HOUSE PHYSICIAN are required on July 1st.

Gentlemen are invited to send in their applications, addressed to the Secretary, before 12 o'clock on Monday, June 2nd, with copies of not more than three testimonials given specially for the purpose, and also evidence of their having held a responsible Hospital appointment.

The appointments are made for six months. Salaries at the rate of £100 per annum, laundry allowance £5, board and residence in the Hospital.

Candidates must be unmarried and possess a legal qualification to practise.

All candidates must be in attendance to appear before the Joint Committee, if required, at their meeting on Wednesday, June 4th, at 4.45 p.m. precisely.

Forms of application and copies of the rules may be obtained from the Secretary.

By Order of the Board of Management,
JAMES McKAY,
May, 1930. Secretary.

The Gloucestershire Royal
INFIRMARY AND EYE INSTITUTION, GLOUCESTER. (153 Beds.)

Applications are invited for the posts of HOUSE PHYSICIAN (male) and SECOND HOUSE SURGEON (male). Salaries £135 and £100 per annum respectively, with board, residence, and laundry. (Four Resident Medical Officers.)

The appointments are for six months, which may be extended for similar periods by re-election from time to time.

Applications, stating age, qualifications, and nationality, with copies of not less than three recent testimonials, must be sent to the undersigned. The elected candidate to the post of Second House Surgeon will be required to enter upon his duties at once, and the House Physician will be required to enter upon his duties on June 9th.

F. J. SYMONS.
May 8th, 1930. Secretary.

The Cancer Hospital (Free)
(Incorporated under the Royal Charter), Fulham Road, London, S.W.3.

The Committee are prepared to receive applications for the post of HOUSE SURGEON. Salary at the rate of £100 per annum. The appointment is for six months and subject to rules. Candidates must call upon each member of the Medical Committee not later than June 5th. A copy of the rules and the names and addresses of the Medical Committee may be obtained from the Secretary. Previous experience as a House Surgeon is indispensable.

Applications, with three (copies only) testimonials, to be sent to the undersigned not later than the first post on Saturday, May 31st.

J. COURTNEY BUCHANAN,
Secretary.

St. Bartholomew's Hospital.
OFFICE OF PHYSICIAN.

Notice is hereby given that a meeting of the Election Committee will be held on Tuesday, June 10th, at 4 o'clock in the afternoon, to elect a Physician to this Hospital.

Candidates, who must be Fellows of the Royal College of Physicians of London, are required to lodge 50 copies of their applications and testimonials with the undersigned on or before Monday, May 26th.

THOMAS HAYES,
May 9th, 1930. Clerk to the Governors.

Royal United Hospital, Bath.

Wanted, a HOUSE PHYSICIAN. Salary £120 per annum.

The appointment will be for not less than six months, and candidates must be male, unmarried, and of British nationality.

Applications, with three testimonials, must be addressed to the undersigned.

GERALD A. KENYON, Asst. Secretary.

Rotherham Hospital.

Wanted, SENIOR HOUSE SURGEON (male). Qualified. A knowledge of Eye work is desirable. Salary £200, with board, lodgings, and washing.

Applications, with copies of recent testimonials, to be sent to the Secretary, G. W. ROBERTS, 8, Moorgate Street, Rotherham.

Honorary Anæsthetist.—Applications are invited for appointment of Honorary Anæsthetist at the ROYAL NATIONAL ORTHOPÆDIC HOSPITAL, Great Portland Street, W.1. Particulars may be obtained from the Secretary, to whom applications, accompanied by copies of three recent testimonials, should be sent not later than June 5th.

Miller General Hospital,
Greenwich Road, S.E.10.

Applications are invited for the following posts:

HOUSE PHYSICIAN (male); HOUSE SURGEON (male). Salary in each case at the rate of £125 per annum, with board, residence, and laundry.

OUT-PATIENT OFFICER (male), who is required to see Medical and Surgical cases. Attendance daily (except Sunday) from 9 to 1; Tuesdays 9 to 5. Salary £150 per annum, and lunch.

The appointments are for six months from July 1st next. Candidates must be unmarried. There are five Resident officers. The selected candidates will be required to attend a meeting of the Medical Council on Friday, June 6th.

Applications, stating age, nationality, qualifications, and experience, accompanied by copies of not more than three recent testimonials, to be sent to the Secretary as soon as possible.

May 5th, 1930.

Miller General Hospital,
Greenwich Road, S.E.10.

PATHOLOGIST required to carry out the work of the Pathological Department at the Hospital. Private pathological practice is allowed, and the Hospital's laboratory may be used for this purpose. The Pathologist must not accept any other appointment without the consent of the Board of Management. Salary commencing at £600 per annum. The appointment is subject to three months' notice on either side. Duties to commence if possible on August 1st next. Candidates will be expected to call upon the Members of the Honorary Medical and Surgical Staff. Applications, giving qualifications, with copies of not less than three recent testimonials, to be sent to the Secretary of the Hospital.

May 5th, 1930.

Royal Edinburgh Hospital for
SICK CHILDREN.

MATRON.

Fully trained Nurse holding General and Children's Certificates wanted for the Royal Edinburgh Hospital for Sick Children (132 cots), to enter on her duties on September 1st. She will have the superintendence of the Nursing and Domestic Staff, and the entire charge of the household arrangements, with the help of an Assistant Matron and a Home Sister. She will also be in charge of the Convalescent Home at Gullane (24 cots) with the help of a Sister in charge. Salary £200. Twelve copies of applications, with four recent testimonials, to be lodged on or before June 21st with Messrs. HENRY & SCOTT, W.S., 56, Frederick Street, Edinburgh.

Merthyr General Hospital,
MERTHYR TYDFIL.

Applications are invited for the post of RESIDENT HOUSE SURGEON at this Hospital (male) for a period of six months. Salary at the rate of £150 per annum, with board, rooms, and laundry.

Applicants must have had experience in administration of anæsthetics. Duties to commence in May.

Applications, stating age and qualifications, and enclosing copies (only) of not more than three testimonials, should be addressed Hon. Secretary, Hon. Medical Staff, Merthyr General Hospital.

South Eastern Hospital for
CHILDREN, Sydenham, S.E.26.

Applications are invited for the positions of ASSISTANT and RESIDENT MEDICAL OFFICERS (ladies). The appointments will be for six months from June 14th. Honorariums £75 and £100 per annum, with board, residence, and laundry. Ample time for reading.

Applications, by letter only, stating age and qualifications, with copies of testimonials, should be sent to the Hon. Secretary, WALTER MASON, M.B.E., "Woodfield," Dacres Road, Forest Hill, S.E.23, to be received not later than Monday, May 31st.

Stockton and Thornaby Hospital,
STOCKTON-ON-TEES.
(140 Beds.)

Applications are invited for the post of JUNIOR RESIDENT MEDICAL OFFICER (male), for a period of at least six months.

Salary £150, with board, residence, and laundry.

Candidates must be doubly qualified and unmarried, and are required to commence duties from June 6th.

Application, stating age, nationality, and experience, together with copies of three recent testimonials, to be sent to the undersigned.

J. WILKINSON, Secretary.

The London Lock Hospital.
(Founded 1746.)
91, Dean Street, W.1.

HONORARY SURGEON TO OUT-PATIENTS.

Candidates for this Hon. Staff appointment are requested to send in their applications, with not more than three copies of testimonials, to the Secretary, at 283, Harlow Road, W.9, not later than June 2nd.

Candidates must be Fellows of the Royal College of Surgeons (England). The election, which is by ballot of the Governors, will be duly announced to the candidates. *No personal* canvassing of the Board or Medical Staff permitted. The Laws relating to the appointment can be obtained from the Secretary.

By Order of the Board,
HY. J. EASON,
May, 1930. Secretary.

Royal Manchester Children's
HOSPITAL.
Out-patients' Department, Gartside Street, MANCHESTER.

Wanted for the Out-patients' Department, a SENIOR MEDICAL OFFICER (non-resident). He must be doubly qualified and on the *Medical Register*, and shall devote his whole time to the service of the charity. Particulars of the duties can be obtained from the Secretary. Salary £300 per annum. The appointment is for one year, with a view to extension for a further period.

Applications, stating age and experience, and accompanied by copies of not more than five testimonials, to be sent to the undersigned at the Hospital, Pendlebury, Manchester.

By Order,
W. M. HUMPHRY, Secretary.

Bristol Homeopathic Hospital.
(Bruce Melville Wills Memorial.)

The Board of Management invite applications for the appointment of RESIDENT MEDICAL OFFICER at a salary of from £120 to £150 per annum, according to experience, with board, laundry, and residence in the Hospital, etc., provided.

Good Surgical and general experience.

Applications should be forwarded with three copies of recent testimonials, addressed to the undersigned, stating the earliest date they can commence duties, if appointed.

H. HUNTER (Lt.-Colonel),
Secretary.

Hull Royal Infirmary.
(272 Beds.)

Applications are invited for the post of HOUSE SURGEON (male) to the Ophthalmic and Ear, Nose, and Throat Departments, vacant now.

Salary £150 per annum, plus board, residence, and laundry.

The appointment will be for six months in the first instance, and will be terminable by one month's notice on either side.

Applications, with copies of testimonials, should be addressed to the undersigned.

R. J. CARLESS,
April 7th, 1930. House Governor.

Saint Pancras Dispensary,
39, Oakley Square, N.W.1.

The office of RESIDENT MEDICAL OFFICER will shortly become vacant. Salary £185 per annum, with residence and attendance. Candidates must be legally qualified to practise Medicine and Surgery in Great Britain and Ireland and be registered. Only single men will be eligible. Applications and testimonials to be sent to the Honorary Secretary at 2, Endsleigh Street, Tavistock Square, W.C.1, on or before May 28th. The election will take place on June 3rd next.

H. PETER RODKIN, Hon. Sec.

Clifton Dispensary,
DOWRY SQUARE, BRISTOL.

A RESIDENT MEDICAL OFFICER (male) will be required on September 29th. Salary £300 per annum, with partially furnished house, free of rates and taxes, and with lighting and coal.

Applications, stating age and qualifications, with testimonials, should be sent to Colonel P. STRICKLAND, Honorary Secretary, Clifton Dispensary, 13, Dowry Square, Bristol, on or before June 30th.

Liverpool & Samaritan Hospital
FOR WOMEN.

Wanted, a HOUSE SURGEON for period of six months commencing July 1st. Salary at the rate of £100 per annum. Applications, with testimonials, to be addressed to the undersigned before June 1st.

J. ST. GEORGE WILSON,
13, Rodney St., Liverpool.

Royal Free Hospital,

Gray's Inn Road, W.C.1.

Applications are invited for the following resident appointments:—

HOUSE SURGEON to the Senior Surgeon and to the Surgeon in Charge of the Ear, Nose, and Throat Beds.

SECOND HOUSE SURGEON (male), with care of Orthopædic Beds.

THIRD HOUSE SURGEON.

FIRST HOUSE PHYSICIAN.

HOUSE PHYSICIAN to the Children's Department.

GYNÆCOLOGICAL HOUSE SURGEON.

OBSTETRIC HOUSE SURGEON.

Duties of the above to commence July 1st.

ASSISTANT ANÆSTHETIST.

SECOND HOUSE PHYSICIAN.

DISTRICT OBSTETRIC ASSISTANT. Salary £100 per annum.

CASUALTY OFFICER (male). Salary £150 per annum.

Duties of these posts to commence August 1st.

For all appointments except Second House Surgeon preference is given to applicants from former Students of the London (Royal Free Hospital) School of Medicine for Women. Candidates must be duly qualified registered Medical Practitioners and must submit applications, stating age and accompanied by copies of three recent testimonials, to the undersigned on or before May 31st.

REGINALD R. GARRATT, Secretary.

Royal Free Hospital,

Gray's Inn Road, W.C.1.

Applications are invited for the post of RESIDENT ANÆSTHETIST to the Gynæcological and Obstetric Units. Candidates must be fully qualified and experienced, should send application stating age, accompanied by copies of three recent testimonials, to the undersigned on or before 31st inst. The appointment is made for a period of six months, but renewable. Preference will be given to candidates who have held resident posts in the Hospital.

REGINALD R. GARRATT, Secretary.

Chesterfield and North Derbyshire Royal Hospital.

(150 Surgical and Med. al Beds.)

CASUALTY OFFICER

Applications are invited from fully qualified men for the above post. The appointment is for six months.

Candidates must have held previous Hospital appointments.

Salary at the rate of £200 per annum, with board, apartments and laundry. Duties include those of House Surgeon to the Ear, Nose, and Throat Department.

Applications stating age together with copies of three recent testimonials should be sent to the undersigned not later than Thursday, 29th instant.

G. SPANCKE, Supt. & Secretary.

May 19th 1930

National Hospital, Queen Sq., W.C.1.

JUNIOR REGISTRAR.

Applications are invited for the post of Junior Registrar who will be required to attend the Hospital each afternoon in the Out-patient Department. The salary is £200 a year. Applications with recent testimonials, should reach the undersigned, from whom any further particulars may be obtained, on or before Saturday, June 7th.

GODFREY H. HAMILTON, Secretary.

National Hospital, Queen Sq., W.C.1.

ASSISTANT PHYSICIAN.

The Board of Management invite applications for the post of Assistant Physician.

Particulars of the appointment may be obtained from the undersigned, to whom applications should be sent on or before June 7th.

Applicants must be Members or Fellows of the Royal College of Physicians.

GODFREY H. HAMILTON, Secretary.

Elsie Inglis Memorial Maternity HOSPITAL,

Spring Gardens, EDINBURGH.

(60 Beds.)

Applications are invited from qualified Medical Women for the posts (2) of HOUSE SURGEON for above Hospital. The appointments are for six months from July 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before June 9th.

Queen's Hospital for Children,

Hackney Road, London, E.2.

HOUSE PHYSICIAN required on June 30th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments. The duties include those of House Surgeon to the Ear, Nose, and Throat Department.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with not more than four testimonials, on or before June 9th.

T. GLENTON-KERR, Secretary.

May 12th, 1930.

Queen's Hospital for Children,

Hackney Road, London, E.2.

CASUALTY OFFICER required on July 12th. Six months' appointment. Salary £100 a year, with board, residence, and washing. Preference given to candidates who have previously held resident appointments.

Applications must be made on forms to be obtained from the Secretary, and must be sent in, with copies of not more than four testimonials, on or before June 9th.

T. GLENTON-KERR, Secretary.

May 12th, 1930.

North Riding Infirmary,

MIDDLESBROUGH.

(General Hospital—150 Beds.)

Wanted, THIRD HOUSE SURGEON (male), to take up duties as early as possible. Salary at the rate of £125 p.a., with board, residence, and laundry. Six months' appointment.

Candidates will be eligible for the higher appointments as they become vacant.

Application, stating age, nationality, and previous experience, with references (copies), should be sent forthwith to the undersigned.

CHARLES POSTGATE, Secretary-Superintendent.

Seamen's Hospital Society.

The Committee of Management invite applications for the appointment of ANÆSTHETIST at the DREADNOUGHT HOSPITAL, Greenwich. Attendance on Wednesday afternoons. An honorarium of 50 guineas per annum is attached to the post.

The elected candidate will be appointed for twelve months, but will be eligible for re-election.

Applications, with copies of three testimonials, to be sent in on or before May 23rd to the undersigned, from whom further particulars can be obtained.

R. E. V. BAX, Secretary.

Greenwich, S.E.10.

May 9th, 1930.

Seamen's Hospital Society. GREENWICH.

HOUSE PHYSICIAN and HOUSE SURGEON required at DREADNOUGHT HOSPITAL, Greenwich, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by June 10th to the undersigned.

R. E. V. BAX, Secretary.

Seamen's Hospital Society. GREENWICH.

RESIDENT MEDICAL OFFICER required at ALBERT DOCK HOSPITAL, Connaught Road, E.16, for six months from July 1st. Salary £110 per annum and a proportion of fees, with board, residence, and washing. Candidates must be male.

Applications, with copies of three testimonials, to be sent in by June 10th to the undersigned.

R. E. V. BAX, Secretary.

Elizabeth Garrett Anderson HOSPITAL, Euston Road.

Wanted, Two fully qualified Medical Women as MEDICAL and SURGICAL REGISTRARS, non-resident. Honorarium £100 per annum.

Particulars can be obtained from the Secretary, to whom applications, with testimonials, should be sent before 29th inst.

JEAN R. MURRAY, Acting Secretary.

Hospital for Women at Leeds.

HOUSE SURGEON wanted, duties to commence immediately. Appointment to terminate on October 31st. Salary at the rate of £50 per annum, with board, quarters, and laundry. Applications, with copies of three testimonials, should be sent to the Secretary, Hospital for Women, Coventry Place, Leeds.

S. CECIL HILL, Secretary.

May 5th, 1930.

Salford Royal Hospital.

(283 Beds.)

Applications are invited for the following vacancies in the Resident Medical Staff (male):—

HOUSE PHYSICIAN. Salary at the rate of £125 per annum.

CASUALTY HOUSE SURGEON. Salary at the rate of £125 per annum.

The appointments are for a period of six months, with board and residence.

Candidates must be registered under the Medical Acts.

The Hospital has the approval of the Royal College of Surgeons of England, and appointments here are recognized for the English Fellowship (Final).

Forms of application, which may be obtained from the undersigned, must be delivered at once.

By Order of the Board,

GEORGE RUDDLE, Gen. Supt. & Secretary.

Salford Royal Hospital.

May 19th, 1930

St. Thomas's Hospital.

Applications are invited for—

(1) The appointment of a PHYSICIAN to the Hospital.

(2) The appointment of a PHYSICIAN in charge of Out-patients.

These appointments date from September 1st.

Candidates must be Fellows or Members of the Royal College of Physicians of London.

Applications, giving full academic career, with copies of testimonials, must be sent in to the Secretary and Clerk to the Governors on or before June 16th.

St. Thomas's Hospital.

VACANCY.

The appointment of an ASSISTANT DENTAL SURGEON, to date from July 1st. Candidates must be Fellows or Members of the Royal College of Surgeons of England and Licentiates in Dental Surgery.

Applications, with copies of testimonials, must be sent in on or before June 16th to the Secretary and Clerk to the Governors.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

HONORARY CLINICAL PATHOLOGIST required.

Applications are invited from Clinical Pathologists who are in a position to devote two or three days a week to work in the Hospital laboratory. Details of the duties, etc., may be obtained from me, and applications, accompanied by copies of not more than three testimonials, should reach me by May 31st.

H. W. BULLEIGH, Secretary & Gen. Supt.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

TWO MEDICAL REGISTRARS required.

Applications are invited for two posts of Medical Registrar falling vacant in June.

The posts are for one year, renewable for a further year. Honorarium £100.

Applications, which should be accompanied by copies of not more than three recent testimonials, should reach me by May 31st.

H. W. BULLEIGH, Secretary and General Supt.

The Hospital for Epilepsy and PARALYSIS, Maida Vale, W.9.

HONORARY PSYCHIATRIST required.

Applications are invited for the post of Honorary Psychiatrist to this Hospital. They should be accompanied by copies of not more than three testimonials, and should reach me by May 31st.

H. W. BULLEIGH, Secretary and General Supt.

The Metropolitan Ear, Nose, and THROAT HOSPITAL (1838)

(Incorporated), Fitzroy Sq., W.1.

CLINICAL ASSISTANT.

Applications are invited for the above appointment, and should be forwarded to the undersigned.

L. L. PHILLIPS, Secretary.

The Hospital for Men,

St. Dean Street, W.1.

The Private Ward Unit for the reception of patients suffering from G.U. Diseases is now open. Full particulars as to terms, etc., can be obtained from the Secretary at The London Lock Hospital, 283, Harrow Road, W.9.

Southern Rhodesia Medical SERVICE.

Three ASSISTANT AND RELIEVING GOVERNMENT MEDICAL OFFICERS are required for the Southern Rhodesia Medical Service. Salary £500 per annum, rising by £25 per annum to £650 per annum, with private practice.

Preference will be given to holders of Public Health or Tropical Medicine certificates.

Applications, with full particulars of qualifications, age, past appointments held, etc., with copies of references, should be addressed to the Official Secretary, Office of the High Commissioner for Southern Rhodesia, Crown House, Aldwych, London, W.C.2, from whom copies of conditions of appointment to the Southern Rhodesia Medical Service can be obtained.

Bolingbroke Hospital

(120 Beds), Wandsworth Common, S.W.11

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male).

The appointment is for twelve months from July 1st next.

Salary £200 per annum, with board, residence, and laundry.

Candidates must be fully qualified and registered.

Applications, stating age, qualifications, and experience, with copies of not more than three testimonials, should be sent to the undersigned on or before June 12th.

W. S. RANDOLPH BISS,
Secretary-Superintendent.

Northampton General Hospital.

There is a vacancy immediately for an ASSISTANT HOUSE SURGEON, male, British nationality. Salary £150 per annum, with board, residence, and laundry.

The successful candidate will be appointed for the period ending September 30th, and will be eligible for re-election for a further period of six months.

Candidates must be duly qualified and registered.

Applications, stating age, qualifications, etc., with copies of testimonials, to reach the undersigned not later than first post on June 4th.

H. ST. JOHN WOOD,
May 19th, 1930. Secretary-Supt.

Royal Halifax Infirmary.

Wanted, a THIRD HOUSE SURGEON (male, unmarried). Candidates must be duly qualified ointment will be for a 31st, 1930. Probable Salaries of Resident Staff are as follows: Resident Surgical Officer £250, First House Surgeon £175, Second House Surgeon £150, and Third House Surgeon £125 per annum, with residence, board, and laundry.

Particulars of duties may be obtained from the undersigned, to whom applications, with copies of testimonials, should be sent.

A. MIDGLEY,
May 12th, 1930. Secretary.

Edinburgh Hospital for Women

AND CHILDREN,
Whitehouse Loan, EDINBURGH.
(50 Beds.)

Applications are invited from qualified Medical Women for the posts of SENIOR HOUSE SURGEON and HOUSE PHYSICIAN at the above Hospital. The appointments are for six months from July 1st, with board, residence, and laundry.

Applications, with copies of testimonials, to be received by the Secretary on or before June 9th.

The Willesden General Hospital

(Incorporated), N.W.10.
(106 Beds.)

APPOINTMENT OF HOUSE PHYSICIAN.

Applications are invited for the above appointment. Candidates must be duly registered under the Medical Acts, and unmarried.

Salary at the rate of £100 per annum.

Detailed applications, with copies of testimonials, to be sent as soon as possible to the undersigned.

R. J. HEARNE,
April 19th, 1930. Secretary.

Margate and District New GENERAL HOSPITAL, MARGATE.

Applications are invited for the post of RESIDENT MEDICAL OFFICER (male), to commence duties on June 20th next. Twelve months' engagement (renewable).

Salary £125 per annum, with rooms, board, and laundry.

Applications, accompanied by copies of testimonials, should be sent to the Secretary, Margate Cottage Hospital, as soon as possible.

Sussex Eye Hospital,

QUEEN'S ROAD, BRIGHTON.

The Committee of Management hereby give notice that a meeting of the Committee will be held on June 19th for the purpose of appointing an HONORARY SURGEON and an HONORARY CLINICAL ASSISTANT. The latter will be required to help in the Out-patients' Department only on Tuesdays and Fridays at 12.30 each day. The appointment to be for two years, and the successful candidate to be eligible for re-appointment at the end of that period.

Applications, in writing, for the vacant offices, with testimonials, must be sent to the Hospital, addressed to the Assistant Secretary, on or before Tuesday, June 10th.

Candidates must be registered under the Medical Acts. No candidate to hold either appointment unless he resides in Brighton or Hove.

A. F. GRAVES,
Board Room, Queen's Road, Brighton. Assistant Secretary.
May 15th, 1930.

Royal Hampshire County HOSPITAL, WINCHESTER. (158 Beds.)

Vacancies will occur on July 1st next for the following officers:

SENIOR RESIDENT MEDICAL OFFICER. Salary £200 per annum.

HOUSE PHYSICIAN. Salary £150 per annum.

HOUSE SURGEON. Salary £150 per annum.

Board, lodging, and attendance is provided in each instance. Candidates (male), who must be unmarried, must be of British nationality and duly qualified and registered. Applications, stating age, and enclosing copies of recent testimonials, should be sent to the undersigned.

HERBERT MASLEN, Secretary.

Great Yarmouth General HOSPITAL. (72 Beds.)

Applications are invited for the post of HOUSE SURGEON (one of two Resident posts).

Applicants must be male and unmarried, and should be prepared to commence duties immediately.

Salary at the rate of £125 per annum, with board, residence, and laundry.

Applications, stating age and qualifications, together with copies of three recent testimonials, to be forwarded to the undersigned.

FRANK JENNINGS, Secretary.

General Hospital, Nottingham.

(377 Beds.)

A SECOND CASUALTY OFFICER (male) required at once at the above Institution. Candidates are desired to send applications, stating age, qualifications, and experience, together with copies of testimonials, to the undersigned, with an intimation as to when they can commence duty if appointed.

The appointment is for six months. Salary at the rate of £150 a year, with board, residence, and laundry.

PETER M. MACCOLL,
House Governor & Secretary.

Ear and Throat Hospital,

Edmund Street, BIRMINGHAM.

HOUSE SURGEON wanted, with clinical experience, and also in administering Anæsthetics. Salary at the rate of £150 per annum, with board and residence. Duties to commence July 1st. Appointment for three months to September 30th, when one of the other Senior House Surgeon appointments will be vacant.

Applications and testimonials to be forwarded on or before June 11th to the undersigned.

S. G. GREW,
May, 1930. Secretary.

King Edward VII Hospital,

RIVELIN, SHEFFIELD.

SURGICAL TUBERCULOSIS (130 Beds.)

HOUSE SURGEON required immediately. Six months' appointment, with possibility extension for a further six months. Honorarium £75 per annum, with board, residence, and laundry. Preference will be given to candidates with experience in the administration of anæsthetics.

Applications, with testimonials, to be sent to C. LEE PATTISON, Medical Superintendent.

The Prince of Wales's General HOSPITAL, Tottenham, N.15.

Applications are invited for the post of HONORARY SURGICAL REGISTRAR (honorarium of £100 per annum).

Candidates must be Graduates in Medicine of a British University, or a Fellow or Member of the Royal College of Surgeons.

Applications, accompanied by three recent testimonials, to be sent on or before Wednesday, June 4th next, to—

J. C. BURDETT,
May 16th, 1930. Director.

Manchester Royal Infirmary.

OUT-PATIENT DEPARTMENT.

HOUSE PHYSICIAN (either sex).
HOUSE SURGEON (either sex).

The Board of Management of the Manchester Royal Infirmary invite applications for the above non-resident appointments.

Applicants must be registered and hold a Medical and Surgical qualification, preference being given to applicants who have held a Hospital appointment.

The appointments are for 12 months (six months as House Physician and six months as House Surgeon) and the duties are whole-time, except Sundays. Salary £200 per annum.

Applications, with testimonials, stating age, to be forwarded at once to the Chairman of the Medical Board.

By Order,
FRANK G. HAZELL,
May 19th, 1930. Gen. Supt. & Sec.

Royal Free Hospital,

Gray's Inn Road, W.C.1.

Applications are invited for the appointment of ASSISTANT MEDICAL OFFICER in the Female V.D. Clinic. Intending candidates should submit applications, stating age and experience, with copies of three recent testimonials, to the undersigned on or before June 14th.

The appointment is tenable for five months in the first instance; hours of duty to be arranged. Salary at the rate of £350 per annum. Duties to commence August 1st.

REGINALD R. GARRATT,
Secretary.

Torbay Hospital, Torquay.

(146 Beds.)

HOUSE PHYSICIAN and HOUSE SURGEON wanted for July. Salary £175 per annum, with board, residence, and laundry allowance. Candidates must be fully qualified, registered, and unmarried.

Applications, stating age, nationality, qualifications, and experience, must be received by the undersigned not later than first post on Saturday, June 14th, with copies of not more than three recent testimonials.

E. L. GRIST,
May 17th, 1930. Secretary.

Torbay Hospital, Torquay.

Notice is hereby given, in accordance with Rule 8, that the Court of Governors will meet on June 26th to elect a Physician in charge of a V.D. Clinic. Salary £2 2s. per session (two sessions per week).

Candidates are required to be registered under the Medical Act.

Applications (sixteen copies), giving full particulars of experience, accompanied by sixteen copies of not more than three testimonials, should be sent to the undersigned not later than Tuesday, June 17th.

E. L. GRIST,
May 17th, 1930. Secretary.

Royal Surrey County Hospital,

GUILDFORD. (180 Beds.)

RESIDENT MEDICAL AND SURGICAL OFFICER AND REGISTRAR.

Applications are invited for the above post from Practitioners who have held Post-graduate Medical and Surgical Hospital appointments for at least one year. The candidate appointed will be required to act as House Physician, to supervise the work of Three House Surgeons, to perform such operations as may be deputed to him, and to take up the duties as early as possible. Salary £250 per annum, with board, residence, and laundry. Applications, accompanied by copies of testimonials, to be sent not later than May 27th to the General Superintendent, from whom further particulars may be obtained.

The Royal Infirmary,

SUNDERLAND. (290 Beds.)

Wanted, HOUSE SURGEON (male). Salary £140 per annum, with board, residence, and laundry.

Applications, stating age, qualifications, and accompanied by copies of testimonials, to be sent to the undersigned.

S. C. FRYERS,
House Governor & Secretary.

Dorset Mental Hospital,

HERRISON, DORCHESTER.

LOCUM TENENS ASSISTANT MEDICAL OFFICER required for six weeks from June 21st, preferably with Mental Hospital experience. Apply, with particulars and references, to Medical Superintendent.

APPOINTMENTS—Important Notice.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1 (*in the case of Scottish appointments, with the Scottish Medical Secretary*, 7, Drumsheugh Gardens, Edinburgh).

(a) British Islands.

Town or District.	Town or District.	Town or District.
CONTRACT PRACTICE.	**CONTRACT PRACTICE** *(contd.)*	**PUBLIC HEALTH.** *(contd.)*
EBBW VALE, MON. *(Workmen's Medical Society.)*	NEATH AND DISTRICT. *(Medical Aid Association.)*	CORNWALL EDUCATION COMMITTEE. *(Assistant School Medical Officer—Female.)*
GILFACH GOCH, GLAMORGAN. *(Workmen's Medical Scheme.)*	OAKDALE, MON. *(Medical Officer for Medical Aid Association.)*	LLANELLY BOROUGH. *(Assistant Medical Officer of Health and Assistant School Medical Officer.)*
LLWYNYPIA, CLYDACH VALE, PENYGRAIG, GLAMORGAN. *(Workmen's Medical Scheme.)*	OGMORE VALLEY, GLAMORGAN. *(Wyndham Colliery Medical Aid Society.)* *(Workmen's Medical Scheme.)*	MIDDLESBROUGH COUNTY BOROUGH. HOLGATE HOSPITAL. *(Assistant Medical Officer.)*
MARDY, GLAMORGAN. *(Workmen's Medical Scheme.)*	**PUBLIC HEALTH**	YORKSHIRE NORTH RIDING EDUCATION COMMITTEE. *(Assistant School Medical Officer.)*
MERTHYR VALE COLLIERY WORKMEN'S MEDICAL COMMITTEE. *(Workmen's Medical Scheme.)*	AYRSHIRE EDUCATION AUTHORITY. *(Whole-time Assistant School Medical Officer.)*	YORKSHIRE WEST RIDING COUNTY COUNCIL. *(School Medical Inspector.)*

(b) Overseas.

Medical Practitioners are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Division or Branch named in the second column or with the Medical Secretary of the British Medical Association, B.M.A. House, Tavistock Square, W.C.1.

Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.	Town or District.	Hon. Sec. of Division or Branch.
NEW SOUTH WALES. *(All Friendly Society Appointments.)*	Dr. R. H. TODD (Hon. Sec., New South Wales Branch), Savings Bank Building, 21, Elizabeth St., Sydney, N.S.W.	SOUTH AUSTRALIA. *(Lodge Appointments.)*	Secretary, South Australian Branch, 207, North Terrace, Adelaide.	WELLINGTON, NEW ZEALAND. *(Contract Practice Appointments.)*	Dr. G. F. V. ANSON (Hon. Sec., New Zealand Branch, British Medical Association, P.O. Box 156, Wellington, New Zealand.
QUEENSLAND. *(Brisbane Associated Friendly Societies Institute.)*	The Hon. Sec., Queensland Branch), British Medical Association, B.M.A. Building, Adelaide St., Brisbane.	VICTORIA. *(All Institute or Medical Dispensaries.)*	Dr. FRANK DAVIES (Hon. Sec., Victorian Branch), British Medical Association, Medical Society Hall, East Melbourne, Victoria.	WESTERN AUSTRALIA. *(Contract and Lodge Practices.)*	Hon. Sec., Western Australian Branch, British Medical Association, No. 6, Bank of N.S.W. Chambers, St. George's Terr., Perth, Western Australia.

By Order of the Council.

May 21st, 1930. ALFRED COX, Medical Secretary.

St. Mary's Hospital, W.2.

SURGICAL REGISTRAR.

The Board of Management invite applications for the above post. Candidates for the appointment must be registered Medical Practitioners and Fellows or Members of the Royal College of Surgeons of England or a Graduate in Surgery of a University in the British Empire.

The salary is £200 per annum, with luncheon and tea. Copies of the regulations for the Surgical Registrar may be obtained on application to the Secretary's Office.

Applications, with copies of testimonials not exceeding three in number, should reach the undersigned on or before May 28th.

W. PARKES, Secretary.

Manchester Northern Hospital

FOR WOMEN AND CHILDREN, Park Place, Cheetham Hill Road, MANCHESTER.

The Committee of Management require the services of a SENIOR HOUSE SURGEON and JUNIOR HOUSE SURGEON, both duly qualified, who are to commence duties on July 1st.

Senior House Surgeon, salary £130 per annum, with board and residence; Junior House Surgeon, salary £100 per annum, with board only.

Applications, stating age and experience, with copies of recent testimonials, to be sent to the Secretary, Mr. JAMES C. DANIELS, 38, Barton Arcade, Manchester, not later than 12 noon on June 2nd.

The Royal South Hants and

SOUTHAMPTON HOSPITAL.

Required for duty at this Hospital, commencing June 1st next, ASSISTANT HOUSE SURGEON, £120 per annum. CASUALTY OFFICER, £120 per annum.

Candidates, who must be male and unmarried, should apply at once to the undersigned, stating age, and enclosing copies of testimonials.

By Order,
HY. TRUSSON, Secretary.

Royal Victoria Infirmary,

NEWCASTLE-UPON-TYNE.

The House Committee declare vacant the office of HONORARY ASSISTANT to the Electrical and Massage Departments.

According to statutory provision every candidate must be registered in Medicine and Surgery.

Applications, stating age, qualifications, and previous experience, must be sent to the House Governor and Secretary not later than Saturday, May 31st.

The appointment will be made on Thursday, June 5th.

Personal canvassing will be considered a disqualification for office.

As the scope of the work of the Departments and the duties of the officer appointed thereto are at present the subject of investigation by the House Committee, applicants should communicate with the House Governor and Secretary for information in this respect.

S. DUNSTAN,
May 16th, 1930. House Gov. & Sec.

City of London Hospital for

DISEASES OF THE HEART AND *LUNGS, Victoria Park, E.2.*

(Bus, Tram, and Rail, Cambridge Heath, (L. & N.E. Railway.)

A vacancy for a HOUSE PHYSICIAN (male) will occur on July 1st. Six months' appointment. Salary at the rate of £100 per annum. Board, residence, and laundry provided.

Applications, with copies of (three) testimonials, should be sent to the undersigned on or before Monday, June 16th.

GEORGE WATTS, Secretary.

King's College Hospital.

The Committee of Management invite applications for the post of JUNIOR UROLOGICAL SURGEON. Applications, with copies of three testimonials, should be sent before June 10th to the House Governor, King's College Hospital, Denmark Hill, S.E.5, from whom particulars of the duties may be obtained.

Ethel Hedley Hospital for

CRIPPLED CHILDREN, WINDERMERE.

An active Surgical Centre, with 50 beds, serving the Counties of Westmorland, Cumberland, and North Lancashire, with attendance at After-care Clinics in these areas.

Applications are invited for the post of RESIDENT HOUSE SURGEON. Candidates (female) must be fully qualified and registered, and have held a previous resident appointment. The appointment is for six months commencing July 1st, with extension to one year. Salary at the rate of £150 per annum. Applications, with copies of three recent testimonials, should be submitted not later than June 7th, to the *Medical Director, Ethel Hedley Hospital*, Calgarth Park, Windermere.

Jessop Hospital (Firth Auxiliary)

NORTON, SHEFFIELD.

Applications are invited for the post of RESIDENT MEDICAL OFFICER from registered Medical Practitioners (male or female), and should be addressed at once to the undersigned *at the Jessop Hospital for Women, Sheffield.*

The appointment will be for one year, with a salary at the rate of £175 per annum, plus board, residence, and laundry. Previous obstetrical experience is desirable.

This Hospital contains 46 beds for the treatment of Puerperal Sepsis, and for ante-natal and gynæcological cases. 25 beds are set apart for Puerperal Sepsis.

H. B. SHELSWELL, Secretary.

Hertford County Hospital.

Applications are invited for the post of HOUSE PHYSICIAN (male). Duties commencing June 7th. Salary £150 per annum, with board, residence, and laundry. The appointment is for six months in the first instance.

Applications, with copies of three recent testimonials, should be sent to the undersigned and be received not later than May 31st.

PERCY G. BROOKS, Secretary.

ASSISTANCIES.

Wanted. — Junior Assistant, by Partners in industrial Practice in University City. A man preferred with some Hospital experience and ready to maintain a standard of careful work. £300 p.a., indoor (commencing). Cyclist. Study promoted.—Address, with all particulars, No. 3419, B.M.A. House, Tavistock Square, W.C.1.

Wanted, a Lady Assistant to help superintend Private Ultra-violet Clinique in the Provinces. Previous experience not necessary.—Address, stating essential particulars, No. 3543, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant (married), reliable and energetic, in panel and private Practice, nice residential town near Liverpool. Salary £350, free house and commission on mids. Partnership offered after 12 months if suitable.—Address, No. 3404, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, indoor, male, by Partners in good private and panel Practice in Cheshire town. Some G.P. and Hospital experience necessary. Salary £300 p.a. — Address, No. 3532, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant male, with view to Partnership, in good-class Suburban and Country Practice. Scotland. Protestant. Experienced ex H.S., age about 30. Preferably Public School Boy. — Address, No. 3410, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistant, under 30, for good private and panel Practice. Scope for experience in all branches of general practice. Excellent opportunity for keen young man. Salary £300, indoor.—Address, No. 3322, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—An Assistant in a Colliery Practice in South Wales. Terms, £375 per annum, with furnished rooms, attendance, etc.—Address, giving age, references, etc., to No. 3415, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Assistantship (part-time or whole) or Locums by woman M.B., B.Ch., D.P.H. Good experience, panel and private. Excellent references. Free, in London. Interview.—Address, No. 3431, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistant, outdoor, West Riding, Yorkshire. Experience in G.P. necessary. Salary £350 per annum, with furnished rooms, light, and attendance. Usual bond. — Address, No. 3407, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Woman Assistant, indoor. Nice Country Practice. Work light. Drive car. Small salary. Photograph (returnable).—Address, No. 3542, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Assistantship, with definite view and scope, Edin. Graduate, Scotch, 26 years, single, T.T., Protestant. 4 yrs.' experience G.P., panel, private, industrial. Able to take sole charge.—Address, No. 3411, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Indoor Male Assistant, young, single, for private and panel Practice, South Coast. Commencing salary of £300. Photo. (returnable), age, height, experience. — Address, No. 3414, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Experienced, indoor, male ASSISTANT, under 30, Protestant, English or Scot. Private and panel Practice. Clean town. Prospects. Salary from £300 p.a. Photo. — Address, No. 3425, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — For large panel and private Practice in pleasant South Wales town (near coast), ASSISTANT, with some experience in general practice. Salary £300 indoor, or £400 outdoor.—Address, No. 3430, B.M.A. House, Tavistock Square, W.C.1.

Wanted. — Lady Assistant, outdoor, Harrow district. Some experience preferred but not essential.—Address, with full particulars, No. 3405, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Indoor Male Assistant for mixed Practice in Liverpool. Salary £300 p.a., all found, with increase later. Ample leisure. References essential.—Address, No. 3429, B.M.A. House, Tavistock Sq., W.C.1.

Wanted.—Indoor and Outdoor ASSISTANTS (male) for Country and Town Practices, with and without view. State full particulars.—BRITISH MEDICAL BUREAU, 33, Cross Street, Manchester.

Wanted. — Young male Assistant, British, panel and private Practice; ex H.S. preferred. £250 indoor, or £400 outdoor. Usual bond. Essential particulars and testimonials (copies).—Address, No. 3428, B.M.A. House, Tavistock Square, W.C.1.

Wanted.—Lady Assistant, outdoor, working-class Practice near London, newly qualified or otherwise.—Address, No. 3427, B.M.A. House, Tavistock Sq., W.C.1.

M.D.(Oxford), aged 34, Hospital experience, requires PART-TIME ASSISTANTSHIP in London.—Address, No. 3420, B.M.A. House, Tavistock Square, W.C.1.

Required immediately for Midlands.—Male ASSISTANT, thoroughly reliable and willing. Used to panel and private practice and Dental Anæsthetics. Abstainer. Usual bond. £350 p.a., with furnished rooms and attendance. — Address, No. 3424, B.M.A. House, Tavistock Square, W.C.1.

Research Assistant wanted.—Salary £400 per annum. Applications should be sent to the Hon. Dean, School of Tropical Medicine, Pembroke Place, Liverpool.

MEDICAL POSTS, DISPENSERS, etc.

A Lady Dispenser-Bookkeeper supplied immediately on request, qualified and with practical experience in private practice and dispensary work, also trained in Bacteriological Laboratories of the LONDON COLLEGE OF PHARMACY FOR WOMEN. Preparation for Examinations.—Write, wire, or 'phone (Park 0969), Secretary, 7, Westbourne Park Road, W.2.

Dispenser - Bookkeeper, male (42), desires POST, Yorkshire; Bradford or Leeds districts preferred but not essential. Thoroughly experienced; used good-class practice. — Address, No. 3408, B.M.A. House, Tavistock Square, W.C.1.

Doctors requiring qualified Dispensers, Nurse Dispensers, Secretary Dispensers or Chauffeuse Dispensers, are invited to write, wire, or 'phone Temple Bar 5858, THE DISPENSERS' BUREAU, 15, Lindsay House, 171, Shaftesbury Avenue, London, W.C.2.

Indian, M.B., B.S., L.R.C.P. (Lond), M.R.C.S.(Eng.), doing Post-Graduate work, desires PART-TIME WORK in London. Free now. Young, energetic, abstainer, reliable. —Address, No. 3557, B.M.A. House, Tavistock Square, W.C.1.

Lady Dispenser, 24, Hall qualification, experienced dispensing, minor dressings, typing, desires POST with Doctor in or near London. Excellent references. Free now.—Address, No. 3421, B.M.A. House, Tavistock Square, W.C.1.

Medical Superintendent required for NEUROLOGICAL INSTITUTION. Salary £300 per annum, with board and quarters for single man. Previous Neurological experience essential. Preference will be given to an applicant interested in remedial occupations and one used to administrative duties.—Apply, enclosing qualifications, references, and testimonials, to BOX 877, c/o ALDRIDGE'S ADVERTISING SERVICE, 34, Paternoster Row, E.C.4.

Receptionist - Secretary (lady) requires POSITION, N., N.W., or West End of London. Married and thoroughly capable. — Address, No. 3403, B.M.A. House, Tavistock Square, W.C.1.

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APPOINTMENTS.—Contd.

City of Liverpool.

PUBLIC ASSISTANCE COMMITTEE.

RESIDENT ASSISTANT MEDICAL OFFICER (Male).

The Committee invite applications for the appointment of a Resident Assistant Medical Officer (male) at the MILL ROAD INFIRMARY, Liverpool, at a salary after the rate of £200 per annum, together with the usual residential allowances.

Candidates must be single, fully qualified, and registered.

The appointment will be for a period of one year in the first instance, subject to extension for a further period not exceeding twelve months, at the option of the Committee.

Applications, stating age, qualifications, etc., with copies of three testimonials, to be received by the undersigned not later than Tuesday, June 3rd.

WALTER MOON,
Town Clerk.

Public Assistance Offices,
Brougham Terrace, Liverpool.
May 20th, 1930.

General Infirmary, Salisbury.
(General Hospital—151 Beds.)

Two HOUSE SURGEONS (male) required to commence duty at the end of June and the beginning of July.

Candidates must be unmarried, fully qualified, and registered. Salary £150, with board, etc.

Applications, with copies of testimonials, to be sent to the House Governor and Secretary, from whom a copy of the rules may be obtained on application.

The Manor House Hospital,
Golders Green, London. (112 Beds.)

Applications are invited for the post of HOUSE SURGEON. Salary at the rate of £200 per annum, with board, residence, and laundry. Candidates (male and unmarried) must be fully qualified and registered. Applications, stating full particulars, should be addressed to the Secretary at the Hospital as soon as possible.

Resident Medical Officer required Salary at the rate of £150 per annum, with board, lodging, and laundry. Hospital contains 70 beds.

Applications to be sent to the Secretary, CHELMSFORD & ESSEX HOSPITAL, CHELMSFORD, by May 24th.

House Surgeon, male, wanted immediately for HUNTINGDON HOSPITAL. Salary £125 per annum and laundry. Testimonials, etc., to Dr. GROVE, County Hospital, Huntingdon.

The Royal Infirmary,
SUNDERLAND.

APPOINTMENT OF HONORARY PHYSICIAN.

The Board of Management invites applications for the appointment of an Honorary Physician. Candidates for the office shall be a Doctor in Medicine of some British or Irish University or a Fellow or Member of a Royal College of Physicians, and be registered according to the Medical Act.

The Hospital has 291 beds (including 29 pay beds) and the usual special departments. The person appointed will be required to practise as a Consulting Physician and not as a General Practitioner.

The Board of Management is prepared to guarantee the selected candidate, for a period of five years, an income from this and other public appointments, of £500 per annum.

Copy of rules may be obtained from the undersigned, by whom all applications, stating age, and giving full particulars of qualifications and experience, must be received by not later than June 28th.

Canvassing will be considered a disqualification, but candidates shall be at liberty to send to each member of the Board of Management copies of their applications and testimonials.

S. C. FRYERS,
House Governor and Secretary.

Rotherham County Borough.

RESIDENT ASSISTANT MEDICAL OFFICER.

The Public Assistance Committee invite applications for the above post at the Hospital, Alma Road, Rotherham.

Salary £150 per annum, together with usual residential allowances.

Candidates must be single, not exceeding 30 years of age, fully qualified and registered.

The appointment will be for the period of one year in the first instance.

Applications, stating age, qualifications, etc., together with copies of three testimonials, to be sent to the Public Assistance Officer, 26, Moorgate Street, Rotherham, not later than June 7th.

Municipal Offices, CHAS. L. DES FORGES,
Rotherham. Town Clerk.
May 20th, 1930.

West Herts Hospital,
HEMEL HEMPSTEAD.
(24 miles from Euston.)

Applications are invited for the appointment of a SENIOR RESIDENT MEDICAL OFFICER to commence duties on or about July 1st next. Salary £150, with rooms, board, and laundry. Also a JUNIOR RESIDENT MEDICAL OFFICER to commence duties on or about June 1st next. Salary £100, etc.

There are 110 beds.

Particulars to be obtained of, and applications, stating essential particulars and enclosing copies of recent testimonials, to be sent at once to—

ROBT. L. BUTTERFIELD,
Clerk to the Hospital.

Children's Hospital, Sheffield.

Applications are invited for the post of THIRD RESIDENT MEDICAL OFFICER (East End Branch, Nursery Street), vacant July 1st. Salary £100 per annum, with board, residence, and laundry.

Candidates (female and unmarried), who must possess registered qualifications, should forward applications, stating age, etc., together with copies of three recent testimonials, to the undersigned.

The successful candidate will be eligible for senior posts when vacant.

T. H. G. GARTLAND, Secretary.

The Islington Dispensary,
303, Upper Street, N.1.

The Committee invite applications for the appointment of ASSISTANT RESIDENT MEDICAL OFFICER (lady, unmarried).

Candidates must be duly qualified and registered Practitioners. Salary £220 per annum, with furnished residence. Applications before May 29th, on printed forms to be obtained (by post-card) from the Hon. Secretary at the Dispensary. Duties commence June 15th.

London Jewish Hospital,
Stepney Green, E.1.

CASUALTY OFFICER (male or female), non-resident, required on June 1st. Applications should be sent to the Secretary immediately, with copies of three recent testimonials. Salary at the rate of £150 per annum, with luncheon and tea. Appointment for six months. The holder, who must possess a registered qualification, will be required to attend the Out-patient Department daily (Monday to Friday) at 9 a.m.

Administrative County of LONDON.

HOSPITAL SERVICE.

The LONDON COUNTY COUNCIL invites applications from qualified Medical Practitioners for appointments to positions in the undermentioned Hospitals. Candidates must be single and have had previous residential Hospital experience. The persons appointed will be required to carry out such duties as may be assigned by the Medical Superintendent, and, should occasion arise, to assist at any of the other establishments or medical districts under the control of the London County Council.

(a) Bermondsey and Rotherhithe Hospital, Lower Road, Rotherhithe, S.E.16. ASSISTANT MEDICAL OFFICER, with Surgical experience. Provisional commencing salary £400 a year, with free board, lodging, and laundry.

(b) Hackney Hospital, High Street, Homerton, E.9. SENIOR ASSISTANT MEDICAL OFFICER (Physician). Provisional commencing salary £400 a year, with free board, lodging, and laundry.

(c) Paddington Hospital, 285, Harrow Road, W.9. ASSISTANT MEDICAL OFFICER, with experience in the care of Medical Wards and the administration of Anæsthetics. Provisional commencing salary £330 a year, with free board, lodging, and laundry.

(d) St. Leonard's Hospital, Hoxton Street, N.1. THIRD ASSISTANT MEDICAL OFFICER, with Surgical experience. Provisional commencing salary £400 a year, with free board, lodging, and laundry.

(e) St. Stephen's Hospital, 369, Fulham Rd., S.W.10. ASSISTANT MEDICAL OFFICER. Provisional commencing salary £360 a year, with free board, lodging, and laundry.

The salaries and conditions of appointment in each case are subject to review by the Council. Appointments will be subject to the Council's regulations under the Superannuation and Provident Fund except as provided in the Local Government Act, 1929.

Forms of application may be obtained from the Medical Officer of Health (Staff Division), The County Hall, Westminster Bridge, S.E.1. A stamped addressed envelope should be enclosed, and forms must be returned by Friday, May 30th. Canvassing disqualifies.

Candidates desiring to apply for more than one appointment must send in a separate form of application in respect of each Hospital. Inquiries for any further details as to the nature and scope of the duties at the individual Hospitals should be addressed to the Medical Superintendent of the Hospital concerned.

MONTAGU H. COX,
Clerk of the London County Council.

West London Hospital,

Hammersmith, W.6. (254 Beds.)

Required, One HOUSE PHYSICIAN, One HOUSE SURGEON, and One AURAL AND OPHTHALMIC HOUSE SURGEON and RESIDENT ASSISTANT CASUALTY OFFICER for six months from July 1st next, subject to one month's notice on either side. Salary at the rate of £100 per annum, with board, lodging, and laundry allowance. Candidates must be registered under the Medical Act.

Applications (which must be made on printed forms obtained from me) must reach me not later than first post on Friday, June 13th. Selected candidates will be required to call upon such Members of the Medical Staff as directed, to be in attendance at a meeting of the Medical Council on Friday, June 27th, at 4 p.m., and the House Committee meeting at 4.45 p.m. on the same day, when the appointments will be made.

H. A. MADGE, Secretary.

Swansea General and Eye HOSPITAL. (316 Beds.)

Applications are invited for the following resident appointments which will become vacant on June 17th next:

HOUSE SURGEON; CASUALTY OFFICER; HOUSE PHYSICIAN; salary £150 per annum.

Appointments for six months.

Applications, stating age, nationality, and qualifications, together with copies of three recent testimonials to be forwarded to the undersigned on or before May 31st.

O. C. HOWELLS, Secretary.

Darlington General Hospital.

(120 Beds.)

Wanted, JUNIOR HOUSE SURGEON, male, British nationality, fully qualified. Salary £125 per annum, board and residence. Applications, stating age, qualifications, and experience, accompanied by copies of two recent testimonials, to be addressed to me forthwith.

A. RIDDLE, Secretary.

County Borough of Wolverhampton.

DEPUTY MEDICAL OFFICER OF HEALTH.

The Corporation invite applications for the post of Deputy Medical Officer of Health (male). The salary will be £650 per annum, rising by annual increments of £25 to £750 per annum, and will be subject to deductions in accordance with the provisions of the Local Government and Other Officers Superannuation Act, 1922. The successful candidate will be required to pass a medical examination and to devote the whole of his time to the duties of the office. Candidates must hold a registrable qualification in Public Health and have special experience in Maternity and Child Welfare work and Infectious Diseases.

Applications, endorsed "Deputy Medical Officer," giving age, degrees and qualifications, and particulars of previous Post-graduate experience, accompanied by copies of three recent testimonials, must be received by me not later than first post on May 30th.

J. BROCK ALLON,
Town Clerk.

Town Hall,
Wolverhampton.
May 12th, 1930.

Administrative County of LONDON.

The LONDON COUNTY COUNCIL invites applications for the position of MEDICAL SUPERINTENDENT in the Public Health Department, for duty at ST. ANDREW'S HOSPITAL, Bow, E.3. Candidates must be qualified by law to practise both Medicine and Surgery in England. The scale of salary attaching to the position is £1,000 a year, rising by increments of £50 a year to £1,200 a year, with free lodging, board, and laundry. The salary, emoluments, and conditions of service are subject to review. The candidate appointed will be required to live on the premises, and no accommodation is available for a wife or children.

Application forms, containing full details, obtainable (stamped addressed foolscap envelope necessary) from the Clerk of the Council, The County Hall, Westminster Bridge, S.E.1, to whom they must be returned by Friday, May 30th. Canvassing disqualifies.

MONTAGU H. COX,
Clerk of the London County Council.

Derbyshire Royal Infirmary,

DERBY

(General Hospital—346 Beds.)

Applications are invited for the post of ASSISTANT HOUSE SURGEON and CASUALTY OFFICER.

Candidates must be qualified and registered under the Medical Acts.

The appointment is tenable for 12 months, with a possibility of extension for a further period of 12 months. Salary will be £150 per annum, with apartments, board, etc.

Applications, with copies of testimonials (not more than three), to be sent to the undersigned not later than June 6th.

WALTER BANKS,
May 20th, 1930. Supt. & Secretary.

Altrincham General Hospital,

CHESHIRE.

Applications are invited for the post of SENIOR HOUSE SURGEON. Salary £160 per annum, with board, residence and laundry; also JUNIOR HOUSE SURGEON at the rate of £120 per annum, with board, residence, and laundry.

The appointments are for six months in the first instance.

Applications, stating age and experience together with copies of recent testimonials, to be sent in not later than Monday, June 9th to—

Mr. WILLIAM MOODY,
31, Market St., Secretary
Altrincham, Cheshire.

The King Edward VII Welsh NATIONAL MEMORIAL ASSOCIATION

Required at the SOUTH WALES SANATORIUM, TALGARTH, BRECONSHIRE (304 beds for Pulmonary cases), ASSISTANT RESIDENT MEDICAL OFFICER (male). Salary £250 per annum, plus maintenance. This appointment is limited to a period of one year.

Applications, stating age, qualifications, and previous experience, together with copies of three recent testimonials, should reach the undersigned not later than Tuesday, June 3rd.

Dr. D. A. POWELL,
Principal Medical Officer.
Memorial Offices,
Westgate Street,
Cardiff.

General Lying-In Hospital,

York Road, Lambeth, S.E.1.

RESIDENT MEDICAL OFFICER required for July 1st next. Appointment for three months; £100 per annum, with board. Applications, with three testimonials, to be sent to the Secretary not later than June 9th.

County Borough of Rochdale.

ASSISTANT MEDICAL OFFICER OF HEALTH AND CLINICAL TUBERCULOSIS OFFICER.

The Health Committee invite applications for the appointment of Assistant Medical Officer of Health and Clinical Tuberculosis Officer at a salary of £700 per annum.

Candidates must be registered Medical Practitioners, and must be qualified to hold an appointment as Tuberculosis Officer and Venereal Diseases Officer, in accordance with the Local Government (Qualifications of Medical Officers and Health Visitors) Regulations, 1930, and must also possess the Diploma of Public Health.

The successful candidate will be required to devote the whole of his time to the duties of the office, which include attendance at the Tuberculosis and Venereal Diseases Clinics, also Bacteriological Laboratory work, or any other Public Health duties assigned by the Medical Officer of Health, under whose direction and supervision such officer will act.

Forms of application may be obtained from the Medical Officer of Health, Town Hall, Rochdale, to whom all applications should be returned, endorsed "Assistant Medical Officer of Health," so as to be delivered not later than the first post on Tuesday, June 10th.

WM. HENRY HICKSON,
Town Clerk.

Town Hall,
Rochdale.
May 19th, 1930.

Lancashire County Council.

PUBLIC ASSISTANCE COMMITTEE.

PARK HOSPITAL, DAVYHULME, near MANCHESTER.

APPOINTMENT OF JUNIOR RESIDENT MEDICAL OFFICER.

Applications are invited from registered Medical Practitioners (men) for the appointment of a Junior Resident Medical Officer at the above Hospital. Candidates should be unmarried. The appointment will, in the first instance, be for a period of six months, the successful applicant being eligible for reappointment for a further period of six months at the end of that period.

The salary is at the rate of £200 per annum, together with the usual residential allowances.

The Hospital comprises 500 beds.

Applications, accompanied by copies of not more than three testimonials, should be addressed to the County Medical Officer, Public Assistance (Hospital and Medical) Department, County Offices, Preston, not later than June 14th.

GEORGE ETHERTON,
County Offices, Clerk of the County Council
Preston.
May, 1930.

Walthamstow Borough Council.

HOSPITAL FOR INFECTIOUS DISEASES, CHINGFORD.

RESIDENT MEDICAL OFFICER.

Applications are invited for the above position from qualified and registered Practitioners (men or women). Preference will be given to candidates with experience of fever, or who have obtained a Diploma in Public Health.

Salary £300 per annum, with rooms, fuel, light, and board, and the appointment is limited to one year only.

Applications, in writing, stating age, qualifications, and experience, and endorsed "Resident Medical Officer," and when able to take up duties, to be made by post only to the undersigned, such applications to be received not later than 3 p.m. on Friday, May 30th.

C. SYDNEY WATSON,
Town Hall, Town Clerk
Walthamstow, E.17.

Bath, Somerset & Wilts Central CHILDREN'S ORTHOPÆDIC HOSPITAL.

COMBE PARK, BATH.

Applications are invited for the post of HOUSE SURGEON, falling vacant on July 1st. The appointment will be for six months, with salary at the rate of £120 per annum, together with quarters, board, and laundry.

Candidates must have had special experience in administering anæsthetics.

Applications, with copies of three recent testimonials, should be forwarded to reach the undersigned not later than Saturday, June 14th.

HAROLD J. FRICKER, Secretary.

The Royal Liverpool Children's HOSPITAL,

Myrtle Street, LIVERPOOL.

The Committee invite applications for the appointment of an HONORARY ANÆSTHETIST. Applications should be forwarded to the Secretary of the Hospital at the above address.

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Royal London Ophthalmic HOSPITAL

(Moorfields Eye Hospital), City Road, E.C.1.

NINE OUT-PATIENT OFFICERS.

Applications are invited for the post of Out-patient Officer to attend on two mornings each week as follows:
Monday and Thursday;
Tuesday and Friday;
Wednesday and Saturday.

Candidates must be registered Medical Practitioners. Salary at the rate of £100 per annum. The Out-patient Officers will be appointed for a period of one year from July 1st, and will be eligible for re-appointment. Eight of the present nine Out-patient Officers are applying for re-appointment. Copies of regulations governing the appointment can be obtained on application.

Applications, with testimonials, stating age and qualifications, must be received not later than May 28th, by—

ARTHUR J. M. TARRANT,
Secretary.

Royal Manchester Children's HOSPITAL.

The Board of Governors invite applications for the post of ASSISTANT SURGEON. To attend two days per week, at present Friday and Saturday, at the Out-patients' Department, Gartside Street, Manchester, and take charge of SIX beds at the Hospital, Pendlebury, and in addition to do urgency work and holiday duties at the Out-patients' Department and Hospital.

Candidates must be Fellows of the Royal College of Surgeons, England. Honorarium £50 per annum.

Applications, with copies of not more than six testimonials, to be addressed not later than June 7th to the Secretary, from whom further particulars of the duties of the office may be obtained. Canvassing not allowed.

By Order,
W. M. HUMPHRY,
May 17th, 1930. Secretary.

Wigan Infirmary.

(180 Beds.)

Wanted, July 1st, for six months, a THIRD HOUSE SURGEON (male). Salary £150 per annum, with board, apartments, and washing. Doubly registered. Candidates may be requested to remain to take appointments of Second House Surgeon and Senior House Surgeon, each for a period of six months, subject to satisfactory service.

Applications, stating age, nationality, and qualifications, with copies of three recent testimonials, should reach the undersigned as soon as possible.

A. STANLEY BRUNT,
May 15th, 1930. Gen. Supt. & Sec.

Norfolk and Norwich Hospital, NORWICH.

Applications are invited for the post of HOUSE SURGEON. Salary £120 per annum, with board, residence, and laundry. Preference will be given to a candidate who has held a previous Hospital appointment. Candidates (male), who must possess registered qualifications, should forward applications, stating age, nationality, etc., together with copies of testimonials, to the undersigned not later than Tuesday, June 3rd, and the successful candidate will be required to take up the appointment on June 17th.

FRANK INCH,
May 23rd, 1930. House Gov. & Secretary.

MR. HERBERT NEEDES,

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This Agency (the oldest in the Kingdom) undertakes the SALE of PRACTICES and PARTNERSHIPS, AUDITS, and VALUATIONS, and the SUPPLY OF LOCUMS and ASSISTANTS.

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2. EDGWARE (N.W.).—Well-estab. PRACTICE of £500 in prosperous and growing district offering immense scope. Panel 400. Excellent corner house, garden and garage, on long lease. Vendor occupied elsewhere. Price, to include furn. and fittings, £1,000.
3. LONDON, N.W.—Very old-estab. PRACTICE, at present run as a "Lock-up," returning, with 3 hours' daily attendance, £700 a year, mostly panel. Capital house in excellent main road (freehold) for sale. Capable of great extension by resident man.
4. PRACTICE of £850 in busy Town within 40 miles. Increasing panel. Industrial area. Lowest fee 2/6. Convenient corner residence and nice garden, long lease, low rent. Premium £1,200.
5. IN A CHARMING Country Town within 30 miles, old-estab. PRACTICE, returning last year £800, incl. panel of 500. Held over 30 years. Good society. Suitable residence available. Scope for younger man of ability.
6. LANCS.—Surgical and Private good-class PRACTICE of over £1,500, of which nearly 50% is from operative work. Rapidly increasing. Convenient residence, well situate, with garage. Premium only £1,200.
7. REQUIRED.—PARTNERSHIP or PRACTICE returning £1,000 upwards in or around London or Town on South Coast.
8. REQUIRED.—PRACTICE in Devon or Cornwall up to £1,500, by D.S.O. interested in Eye work.
9. REQUIRED.—Small PRACTICE, with decent house and garden. Rough shooting and fishing. Ample capital. Details in confid.
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W. J. HICKS, *Secretary.*

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S. Devon Resort. — About £1,000 p.a. Panel 1,045. Fees 2/6 up. 4 bed., 2 recep., surg., etc., on lease.—No. 8571.

Notts.—Country.—Over £1,000 p.a. Panel 592. Mids. from 42/-. Visits mostly 5/- up. 5 bed., 3 recep., etc. Large garden, tennis, etc.—No. 8670.

Dorset.—Death Vacancy.—Unopposed. Nearly £1,100. Panel 670. Mids. 2 to 5 gns. Good house, 7 bed., etc., to let with option.—No. 8669.

Essex Suburb.—£1,150 p.a. Non-panel, but ample scope. Fees 5/- up. House and garden on lease.—No. 8668.

S. W. County.—Near Sea.—Share worth £700, ample scope. Very little midy. Visits 5/- to 4 gns. Choice of houses. Ample scope.—No. 8666.

Hants. — Semi-rural. — Nearly £1,000 p.a. Small panel. Fees 5/6 to 15/-. House, 2/3 recep., 5/6 bed., large garden.—No. 8653.

Electrical & X-ray.—London, W. —£1,500/£2,000. Fees 21/- up. Must be in good locality on lease. Low prem.—No. 8555.

Death Vacancy. — Harrogate.—Now over £700 p.a. Panel over 500. Very little midwifery. Average visits 5/-. Good house, 5 bed., etc.—No. 8664.

Yorks.—Country.—About £1,000, increasing. Panel nearly £400. Visits 5/- to 12/6. Mids. 3 gns. up. House, 3 recep., 3 bed., garden, etc., £50 on lease.—No. 8660.

Kent Town. — Woman's PRACTICE. £800 p.a. Small panel. 20 mids. p.a. House 4 beds., etc., garden, etc., to rent.—No. 8659.

London, S.W. — £2,000 p.a. Non-panel. 12 mids., 5 gns. up. Visits 5/- mostly, and up to 10/6 or over. Large house and garden to rent.—No. 8655.

Cambs.—Over £800.—Old-estab. unopposed. Panel 475. Appts. £90. Fees 3/6 to 7/6. Large house, 5 bed., and garden, at low rent.—No. 8654.

S. Wales. — Death Vacancy. — £700 p.a., largely colliery. Panel 700. Small house, low rent or price. Premium £500 or near.—No. 8651.

Lancs Town.—£2,500 p.a. Panel 1,800. Ins. £120. Two houses available, with 5 bed., etc. Good opportunity for two friends.—No. 8645.

Berks. — About £1,000 p.a. Panel 555. Visits 5/- to 10/6 or more. No mids., ample scope. Small house, with surgery.—No. 8641.

S. W. County. — Seaside Resort. About £600 p.a. Panel about 600. Fees 3/6 to 5/6, and up. Good house, 2 recep., 5 bed., garden, garage, etc., to rent.—No. 8638.

Northants Country. — Partner or Assistantship with early view. 1/2 share of £1,200 p.a. Panel over 550. Unusual scope and ultimate succession. Single man preferred.—No. 8622.

Exeter. — Death Vacancy. — £875 p.a. Panel 800. Clubs £120. Very little mid. House, 4 bed., 2 attics, 2 recep. Sep. surgery. Rent £60 or sell.—No. 8615.

London, N.—About £650. Lady Doctor's PRACTICE. Small panel. Visits from 2/6. Small flat.—No. 8634.

Cornwall.—Unopposed Country. About £1,400 p.a. Panel about £550. Clubs and appts. about £100 p.a. Mids. 2—6 gns. Visits 5/- to 21/-. Excellent house and garden to rent.—No. 8631.

Surrey Town. — 2/5 share of £2,600 p.a. Old-estab. Panel nearly 1,000. Fees 2/6—10/6. Mids. 3—12 gns. House, 3 beds., etc., to let.—No. 8629.

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SOMERSET.—Country Town PRACTICE. Medium-sized house to rent (or for sale). Receipts (approx.) £600. Panel 500. Premium 1½ years' purchase.

LONDON, N.W.—NUCLEUS middle and working-class PRACTICE. House to rent. Receipts £250. Panel 155 (recently started—scope). Premium £350 or near offer.

SOMERSET.—PARTNERSHIP in well-established Country Practice on Devon Borders, with excellent scope. Highly suitable for experienced man fond of country life. Sport of all kinds. Guaranteed share worth £750 at 2 years' purchase.

BEDS.—NUCLEUS Country PRACTICE. Medium-sized house, with all conveniences. Receipts about £500. Panel (increasing) 80. Premium £350.

LONDON, N.W.—NUCLEUS G.P. in thickly populated middle and working-class locality. Excellent 10-roomed house for sale or rent. Receipts nearly £450. Panel (rapidly increasing) 550. Premium £650. Plenty of scope.

SURREY.—Within easy distance of London. Middle-class PRACTICE. Excellent house for sale or rental. Receipts £570. Panel (over) 290. Premium £900.

LONDON, N.—NUCLEUS G.P. situated in residential locality. Excellent scope. Receipts £500. Panel over 100. House for sale or rental. Premium £775.

CORNWALL.—Well-established Country Town PRACTICE with excellent scope (Death Vacancy). Receipts (approx.) £1,300. Panel (about) 900. Suitable house available. Premium £800. (Terms might be arranged.)

LONDON, NORTH.—Look-up SURGERY, with living accommodation if desired, situated in working-class district. Receipts £260 p.a. Panel 170. Premium £300 or near reasonable offer.

HERTS.—In close proximity to London.—Middle-class G.P. Good-sized house and grounds. Receipts £1,500. Panel 800. Scope for development. Premium 1½ years' purchase. House £2,200. Part could remain.

ESSEX.—NUCLEUS non-Panel G.P., with excellent house, for sale or to rent. Receipts approx. £250 p.a. Scope for panel if desired.

WEST COUNTRY.—Oxford or Cambridge Varsity Graduate desired as PARTNER, with view to Succession in three or four years' time, in old-established good-class, non-panel Practice, situated in country town. Receipts over £2,000 p.a. Half share is offered to well-qualified man, aged about 30, at 2 years' purchase.

LONDON, S.E.—Middle and working-class G.P. in residential locality. House to rent. Receipts approx. £1,100. Panel 600. Premium £1,500 cash.

BEDS.—PARTNERSHIP in Town Practice. Receipts approx. £1,300 p.a. Panel 1,760. Half share for disposal, with view to Succession, at 2 years' purchase. Preliminary assistant-ship entertained.

DERBYSHIRE.—PARTNERSHIP in old-established non-panel Practice in best part of large town. Receipts approx. £3,000 p.a. Quarter share now, with view to larger share at 2 years' purchase.

LONDON, E.—Suburban middle and working-class PRACTICE. Small house to rent on lease at low rental. Receipts average £1,265. Panel about 1,500. Premium for Practice and lease, £2,100.

S. WALES.—DEATH VACANCY.—Receipts about £700 p.a. Panel 660. Large colliery. Excellent scope. Small house to rent at £52 p.a., or would sell. Premium for Practice, £660 cash.

KENT COAST.—PARTNERSHIP in old-established non-dispensing non-panel Practice. Fees 5,- to 1 gn. Suitable house available. Receipts nearly £3,500. One-third share for disposal, with view to half at 2 years' purchase. Suitable only to well-qualified man of sound experience and good address.

WALES.—Middle-class non-dispensing G.P. Excellent freehold house. Receipts average £1,433. Panel nearly 400. Premium 1 year's purchase.

N. WALES.—DEATH VACANCY.—Good-class PRACTICE situated in Seaside Health Resort. Large house for sale or to rent at £25 p.a. Receipts approx. £1,200 p.a. Small panel. Premium 1 year's purchase.

GLOS.—Well-established non-dispensing G.P. situated in good-sized town. Receipts £820. Panel 550. House to rent or for sale. Premium £1,650. A long Partnership introduction would be considered. Suitable for either sex.

LANCS.—(Near Seaside Resort).—Middle and working-class G.P., situated in growing locality. Suitable house available. Receipts £1,005. Panel 250. Excellent scope. Premium £1,000 cash.

GLOS.—Well-established middle and working-class PRACTICE. Medium-sized freehold house, with grounds. Receipts average £1,270 p.a. Panel 1,100. Fees 2/6 up. Premium for house and Practice £2,700.

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2. KENT.—Near London.—Cash PRACTICE for sale. Takings £18 per week, increasing. Scope for panel. Rent of surgery 17,6 per week. Premium, including drugs, furniture, etc., £650.
3. LONDON, N. (near Islington).—Old-established Cash and Panel PRACTICE. Receipts £1,300 p.a., panel 2,000. Eight-roomed house, rent £80, long lease. Premium just over 2 years' purchase.
4. LONDON, S.E.—Old-established Cash and Panel PRACTICE, held 34 years by Vendor, now selling through ill health. Receipts £1,000 a year, panel 1,100. House to rent. Densely populated district. Prem. £1,600.
5. LANCS.—Large Town.—Well-established PRACTICE. Receipts £1,200 a year, panel nearly 600. Semi-detached house for sale with Practice. Premium 1½ years' purchase.
6. SUSSEX.—Seaside Town.—Third Share of a very old-established Practice, held 29 years by Vendor, now wanting help through age. Receipts £2,000 p.a., panel 1,000. Premium for third share £1,400.
7. LONDON, E.—Cash and Panel PRACTICE. Receipts now about £500 p.a.; have been much more. Panel 400. Eight-roomed house, rent £65 p.a. Offers invited.
8. LONDON, S.W. (Fulham).—Very old-established Cash and Panel PRACTICE, neglected of late. Receipts now about £270 p.a., panel nearly 400. Rent of surgery 25/- per week. Offers invited. Excellent chance for young energetic Doctor.
9. LONDON, N.—Well-established PRACTICE. Receipts last 12 months £500, increasing. Small panel. Nice semi-detached house, garden and garage. Rent £120. Premium moderate for quick sale.

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1. BIRMINGHAM.—Well-estab. mainly working-class and panel PRACTICE. Receipts £763. Panel 660 (approx.), both steadily increasing. Suitable house, garage, and garden.
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3. MIDLANDS.—Panel and Private PRACTICE. Estab. 5 years. Receipts £700. Panel 456, both increasing; appointments worth about £70 p.a. House to rent. Garage, etc.
4. WEST MIDLANDS.—Well-estab. PRACTICE in market town and agricultural district. Receipts £1,572. Panel 500. Appointments worth £118. Good house. Garage and all conveniences.
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6. YORKSHIRE.—Large County Borough.—Well-estab. working and middle-class PRACTICE. Receipts over £1,500 p.a., and steadily increasing. Panel about 1,700. Good house to rent.
7. DEATH VACANCY.—NORTH WALES COAST.—Good-class PRACTICE. Estab. 3 years. Receipts £1,200, and increasing. Small panel, not encouraged, but scope. Good modern house to rent or purchase.

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British Medical Bureau

(THE SCHOLASTIC, CLERICAL & MEDICAL ASSOCIATION LTD.)
(FOUNDED 1880.)

12, Stratford Place,
Oxford Street, W.1.

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The Association has long been favourably known to the members of the Medical Profession as a thoroughly trustworthy and successful Agency for the transaction of every description of Medical, Scholastic and Accountancy business, and the BRITISH MEDICAL ASSOCIATION has every confidence in recommending its members to consult Mr. A. V. STOREY, the General Manager, in all transactions requiring the services of a Medical Agent.

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The **Manchester Medical Agency**, lately under the control and management of the Manchester Medical Committee, has now been taken over by the **British Medical Bureau** as their **Northern Branch.**
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Telephones: CENTRAL 3925; after Office Hours: RUSHOLME 2549.
Telegrams: "LOCUM, MANCHESTER."

Practices and Partnerships for Disposal. Full particulars sent free.

1 YORKSHIRE (W.R.).—Practice averaging £1,700 p.a. in manufacturing town. Panel 1,737. House (4 bedrooms), garage, and small garden, for sale. Scope. Premium 1½ years' purchase.

2 WEST MIDLANDS. — Partnership in Practice of about £2,850 p.a. in country town. Panel 1,700. Exceptional and extremely attractive house (11 bed and dressing rooms); garages and garden, for sale. Good social centre. Premium one-half share 2 years' purchase.

3 EAST COAST.—Partnership in good-class non-dispensing Practice of £3,400 in small select Seaside Resort. Practically no panel. Very great scope. Premium one-half share 2 years' purchase.

4 KENT. — Partnership in Practice of well over £2,000 p.a. in beautiful country district. Panel about 2,000. Detached modern house (4 bed. and dressing rooms) for sale. Premium one-half share 2 years' purchase.

5 MEDITERRANEAN RESORT.—Partnership in good-class non-dispensing Practice of between £1,300/£1,400 p.a. Suitable flat to rent. Premium one-half share £960, with succession to whole Practice later.

6 LONDON, S.W. — Good-class non-panel PRACTICE in pleasant residential outlying suburb. Receipts formerly about £1,500 p.a. House in good position. Premium based on results.

7 NORTH MIDLANDS. — Country Practice about £1,000 in old-fashioned village, easy reach of County Town. Panel nearly 600. House (6 bed and dressing rooms), with garage, garden, and orchard, for sale. All kinds of sport. Premium 1½ years' purchase.

8 EAST ANGLIA.—Partnership in Practice in attractive part. Panel 1,840. Nice house (4 bedrooms) to be sold or let. Share worth £1,000 p.a. at 2 years' purchase. Preliminary Assistantship.

9 LONDON, N.W. — Steadily increasing PRACTICE easy distance of Marble Arch. Receipts 1929, £422. Panel 550. House, with 3 bedrooms, for sale. Great scope. Premium £650.

10 DEATH VACANCY.—HARROGATE.—Receipts about £600 p.a. Panel over 500. Well-situated house (6 bedrooms) to rent.

11 LONDON, N.—Sound easily worked PRACTICE in residential district. Receipts average £2,590 p.a., including small select panel. Good corner house (5 bed and dressing rooms), with garden, for sale. Small Hospital. Premium £5,000.

12 SOUTH WALES. — Steadily increasing PRACTICE in good Town, with beautiful surrounding country. Receipts last 12 months £750. Panel 700. Centrally situated house (6 bedrooms) for sale. Scope for increase.

13 SOUTH OF ENGLAND.—Practice worth £500 p.a. in a coast town. Detached house (6 bed and dressing rooms) to rent. Premium £500.

14 HOME COUNTIES.—Increasing Country PRACTICE within 30 miles of London. Receipts average over £870 p.a. Panel 499. Detached house (5 bedrooms), garage, and good garden, to rent. Premium 1½ years' purchase.

15 DEATH VACANCY. — DORSET. — Country PRACTICE nearly £1,100 p.a. Panel about 670. House (8 bed and dressing rooms), garden, garage, etc., to rent.

16 EAST ANGLIA.—Assistantship, with view to Partnership, in Country Town Practice. Share worth £1,000 p.a. offered to suitable man (aged 30—35) at 2 years' purchase.

17 GLOUCESTERSHIRE.—Country Practice of £550 p.a. in delightful part. Panel 450. Excellent modern house (5 bedrooms), garden and garage, for sale. Premium 1½ years' purchase.

18 EAST ANGLIA.—Country Practice (held by Medical Woman) in picturesque part. Receipts average between £850/£900 p.a. Panel 600. Semi-detached house (5 bedrooms) for sale or rent. Premium 1½ years' purchase.

19 X-RAY PRACTICE in large Town in the S.W. Receipts average £950 p.a. Vendor on Staff of Hospital. Premium £900.

20 HULL. — Practice in rapidly increasing area. Cash receipts 1929, £1,300. Panel 750. Modern house (5 bedrooms) for sale. Unlimited scope. Premium £1,950 or near offer.

21 LONDON, E. — Cash and Panel Practice (held by Medical Woman) in densely populated area. Receipts £360 p.a. Panel 290. Small house. Rent £50. Prem. £450.

22 ITALY.—Sound Practice about £,2000 p.a. in a Town. Premium 1½ years' purchase. An experienced gentleman, aged about 35/45, should do well.

23 ESSEX. — Non-panel Practice averaging over £1,400 p.a. in populous suburban district. Detached double-fronted house, with good garden, etc., for sale. Scope for increase. Premium £2,000.

24 DEATH VACANCY.—BIRMINGHAM.—PRACTICE averaging £750 p.a. Panel 380. Charming house (4 bed and dressing rooms), garage and nice garden, for sale.

25 DEATH VACANCY.—SOUTH WALES.—Contract and Panel PRACTICE of about £650 p.a. in colliery district. Small house (3 bedrooms) to be let or sold. Moderate premium.

26 NOTTINGHAMSHIRE. — Country PRACTICE averaging £1,070 p.a. Panel 700. Good house (6 bedrooms), garage, and 1½ acres ground, to rent. Great scope. Premium 1½ years' purchase.

27 KENT. — Partnership in Practice about £4,000 p.a. in good residential district. Panel about 1,100. House (6 bedrooms), with nice garden, for sale. Scope for surgery. Premium for a 5/24ths share 2 years' purchase.

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Practices and Partnerships for Disposal (continued).

28 SOUTH OF ENGLAND. — Partnership in *non-dispensing Practice* £3,600 p.a., in attractive watering-place. Panel about 1,800. Great scope. One-fourth share now and up to one half later. Premium 2 years' purchase. Good prospects for one holding the F.R.C.S.

29 SOUTH-WEST OF ENGLAND.—Practice over £2,000 p.a. in small country town near the coast. Panel 1,080. House (5 bedrooms), *with electric light, for sale. Premium* 1½ years' purchase.

30 WEST END OF LONDON. — Attractive PRACTICE about £1,000 p.a. (over £400 from X-ray and Electrical work). Lease of very good house *for* sale. Scope. Premium 1½ years' purchase.

31 LONDON, N.—Increasing Practice of over £500 in pleasant residential district. Panel over 100. Well-situated house (4 bedrooms) for sale or rent. Premium £775.

32 LONDON, S.W. — Practice in Suburban District. Receipts over £2,000 p.a. No panel or appointments. House, with 5 bedrooms, to rent. Premium 1½ years' purchase.

33 LONDON, E.—Practice of £1,269 p.a. in populous suburban area. Panel 1,480. Small house (3 bedrooms). Premium, to include lease of house, £2,100.

34 ITALY. — Season Practice in famous City. Average receipts last 4 seasons £522. Up-to-date Hospital. Premium £563.

35 LONDON, E.—Cash and Panel Practice of about £850 p.a. (£310 from panel). Well-situated house (3 bedrooms) to rent. Considerable scope. Premium £1,000.

36 NURSING HOME in favourite Town on Kent Coast. *Net profit* about £1,000 p.a. Double-fronted residence, with operating theatre, to be let or sold. Premium—Goodwill—£1,000. Highly recommended.

37 BIRMINGHAM.—Practice over £1,200 p.a. in residential suburb. Small panel. Particularly nice house to rent on lease. Premium 1½ years' purchase.

38 LONDON, S.W.—Partnership in Practice over 4,000 p.a. in suburb. Panel 4,700. House, with 3 bedrooms, to rent. One-fourth share at 2 years' purchase. Preliminary Assistantship.

39 KENT.—Country Practice over £800 p.a. in beautiful part. Panel 580. Attractive residence (5 bedrooms, central heating) in grounds of 2½ acres, to be sold. Sport. Premium 1½ years' purchase.

40 EASTERN COUNTIES.—Country Practice £1 200 p.a. in agricultural district. Panel 425. Very nice house (6 bedrooms), electric light, garage, and garden (over acre), for sale. Premium 1½ years' purchase.

41 MIDLANDS.—Partnership in Practice over £6,700 p.a. in first-rate town. Panel 2,160. Incoming Partner must have held H.S. and H.P. appointments. One-fourth share at first. Good Hospital.

42 CARMARTHENSHIRE.—Practice averaging *nearly £700 p.a. in Country Town. Panel 415. Large double-*fronted house, garage and garden, for sale. Sport. Premium 1½ years' purchase.

43 WEST MIDLANDS. — Practice of nearly £1,500 p.a. in small market town in agricultural district. Panel 500. Good house (7 bed and dressing rooms), with electric light and gas, for sale. Scope *for* increase. Premium £2,100.

44 SOUTH OF ENGLAND.—Partnership in Country Town Practice of nearly £2,300 p.a. Small panel. Well-built house (6 bedrooms) to rent. Premium one-half share 2 years' purchase. Scope for Surgery.

45 SOUTH OF ENGLAND. — Practice averaging £750 p.a. in first-rate country town. Panel 997. Double-fronted corner house (4 bedrooms) to rent. Scope for increase. Premium 1½ years' purchase.

46 GLOUCESTERSHIRE.—Practice averaging £1,500 p.a. in an industrial village. Panel 1,169. House (5 beds.) for sale. Beautiful surrounding country. Prem. £1,850.

47 WEST MIDLANDS.—Junior Partner required in Country Town Practice nearly £2,400 p.a. Panel about 1,000. One-third share at first at 2 years' purchase. Knowledge of Surgery an advantage.

48 SOUTH COAST. — Practice worth about £500 p.a. in favourite health resort. No panel or night work. Excellent semi-detached house (4/5 bedrooms) for sale. Scope. Premium £400.

49 WEST OF ENGLAND.—Steadily increasing PRACTICE (carried on by Medical Woman) of well over £700 in first-rate town. Panel 550. Centrally situated house in excellent position for sale. Premium £1,050.

50 KENT AND SURREY BORDERS.—PRACTICE about £800 p.a. in growing and pleasant residential district. Choice of residence for sale. *Good scope.* Premium £1,200.

51 EASTERN COUNTIES. — Partnership in Country Practice of £1,800 p.a. Panel 755. Partner should be able to give anæsthetics. *Premium* one-half share 2 years' pur.

52 LONDON, W. — Good middle-class non-panel PRACTICE £1,160 p.a. in Western suburb. Attractive detached house (8 bedrooms, including attics) for sale. Considerable scope. Premium £1,150.

53 S.E. COAST. — Practice of nearly £1,100 p.a. in favourite Health Resort. *Panel* 560. House (5 bedrooms) for sale. *Good* scope. Premium £1,500.

54 SCOTLAND.—Sound Practice in thriving Hospital and University Town. Income last year £728 (including £130 from panel (not encouraged). Modern corner house (9 rooms), garage and garden, for sale or rent. Premium to effect prompt sale £750, including book debts.

55 LONDON, S.W.—Partnership in non-dispensing Practice over £3,200 p.a. in first-rate residential suburb. Small select panel. Hospital and scope for surgery. Premium one-third share 2 years' purchase.

56 KENT. — Partnership in Country Practice nearly £2,200 p.a. Panel 1,200. House (4 bedrooms), with good garden, to rent. Sport. Premium one-half share £2,000.

57 SCOTLAND. — Practice about £1,000 p.a. in small seaport town on South-West coast. Panel about 460. House (5 bedrooms), with good garden, for sale or rent. Premium £1 000.

58 SOUTH AFRICA.—Old-established PRACTICE of over £1,600 in a Town with large White population. Climate ideal—no tropical diseases (altitude nearly 5,000 ft.). Delightful residence (5 bedrooms, electric light) in perfect order, with 2 acres grounds, to be let. Very good scope. Hospital. Premium £1,200

59 EASTERN COUNTIES. — Country PRACTICE of £855 p.a., easy distance of good town. Panel 470. House (5 bedrooms), with garage and garden, to rent. Premium £1,200.

60 SHROPSHIRE.—Third Partner required in Country Practice in delightful part. Convenient house in own grounds (6 bedrooms), with company's water and gas, for sale. Cottage Hospital. Share worth about £1 500 at 2 years' purchase.

61 LONDON, S.E. — Practice of about £600 p.a. in outlying suburban district. Panel 160. Excellent modern house (6 bedrooms), with garden and garage. Premium £750.

62 YORKSHIRE.—Seaside Town.—PARTNERSHIP in Practice nearly £1,950 p.a. Panel over 900. Double-fronted house (8 bedrooms) for sale. Premium two-fifths share £1,400.

63 ESSEX.—Partnership in Practice nearly £1,800 p.a in *rapidly developing neighbourhood.* Panel about 500. Small house (3 bedrooms) to rent. Premium two-fifths share 1½ years' purchase.

64 SOUTH MIDLANDS. — Partnership in Electro-therapeutic Practice of about £2,000 p.a. in first-rate town. One-third to one-half share at about 1½ years' purchase.

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1. WEST END.—Well-established good-class non-dispensing and non-panel PRACTICE, worth last year nearly £1,500 and offering considerable scope. Visits 10/6 (very few), £1 1s., and 3 for £2 2s. Practically no midwifery (discouraged). Expenses light (car not kept) and no bad debts. Exceptionally well-situated ground floor Flat, with good accommodation. Rent on long lease (which is valuable) £350. Premium £3,500. Introduction for 12 months given.
2. SOUTH DEVON.—COUNTRY PRACTICE, steadily increasing, and situated in very pleasant agricultural district, within easy reach of coast. Gross cash receipts for past 12 months £2,326. Panel produces, with mileage, about £420. Fees 3/6 to 21/-. Only about 20 cases of midwifery from 2 to 5 gns. Suitable house, in main street, with 2 reception, 5 bedrooms, etc. Garden. Garage. Rent on lease £50 p.a. Good sport. Premium £2,800.
3. LONDON, NORTH.—Old-established working-class PRACTICE, in well-populated district. Cash receipts for last financial year nearly £1,400, including panel of over 2,000. Practically no midwifery. Expenses very small. Double-fronted house in good position (2 reception, 2 bedrooms, bathroom, etc., and professional accommodation). Rent on lease (12 years to run and renewable) £80 p.a. Premium £3,000.
4. SOMERSET.—Attractive Town, within easy reach of coast.—Old-established and increasing PRACTICE, producing for the immediate past twelve months over £3,000, including panel of 1880, and appts. worth about £250. Fees 2/6 to 21/-. Cottage Hospital, and good surgical scope. Two very suitable houses available at very moderate rents. Sport of all kinds. Premium £4,500.
5. SOUTH OF ENGLAND (Thriving Seaport Town, pop. over 30,000).—Old-established mixed-class PRACTICE, averaging at present £500 p.a., but offering exceptional scope. Panel of about 430 and 2 small appts. Visits 3/6 to 5/-. Practically no midwifery. Very attractive residence, on main road and near the sea, with professional rooms, 2 reception, 4 bedrooms, bathroom, etc. Pretty garden. Garage. Rent on lease £100 p.a. Premium 1½ years' purchase.
6. WITHIN TEN MILES OF GLASGOW.—Prosperous old-established good middle and better-class PRACTICE, producing an average of nearly £2,950 p.a., including panel of 2,300 and appts. worth £500. Fees 2 extra. Mid. from 2 gns. upwards. Very good 3 reception, 5 bedrooms, etc. Garden. Garag or other residence secured. Premium 1½ years' purchase, £1,500 down, and balance as arranged.
7. PARTNERSHIP.—MIDLANDS.—COUNTY TOWN.—TWO ONE-FIFTH SHARES (suitable two friends or will be sold separately) are offered in a very old-established good mixed Practice owing to the retirement of the senior of two partners. Gross cash receipts for immediate past 12 months over £5,900, including panel of 3,400. Fees from 4/-. Not much midwifery. Good house, with 2 reception, 6 bedrooms, etc. Rent on lease £75 p.a. Premium for share two years' purchase.
8. SOMERSET COAST.—In a small but increasing and delightful seaside resort, the five-twelfths share of a very old-established PRACTICE, producing last financial year £1,600, but offering exceptional scope. Panel brings in £480 and appointments. Visits 5/- to 4 guineas. Mid. 4 to 6 gns.; only about 12 cases yearly. Choice of 2 suitable houses (price, freehold, £950), with gardens. Electric light and gas. Premium 2 years' purchase.
9. SOUTH-WEST COAST.—VERY FAVOURITE RESORT.—Old-established good middle-class non-panel PRACTICE, held by Vendor (who is retiring) over 20 years. Receipts average £1,142. Fees 5/- to 10/6 and upwards. Mids. 5 to 15 gns. (about 12 cases). House is an exceptionally good one, in perfect order, with ample accommodation, central heating, electric light. Good garden. Garage. Price for freehold £3,250. Premium 1½ years' purchase.
10. CORNISH RIVIERA.—Old-established good mixed PRACTICE in exceptionally attractive village which is steadily increasing. Receipts for last 12 months £1,300, including panel of over 400. Visits 5/- to 21/-. Excellent house, facing due south, with 6 bedrooms, etc. Good garden. Rent on lease £56 p.a. Premium £1,800.
11. YORKS (NORTH RIDING).—In a small pleasant market town, with pretty and prosperous surrounding country, very old-established mixed-class PRACTICE averaging £1,247 p.a., including appts. worth £80 and panel producing last year £366. Visits 3/6 to 25/-. One opponent. Good house, facing south (3 reception, 5 bedrooms, bathroom, etc.). Garden. Garage. Electric light. Vendor's freehold. Price £1,350 (£1,000 on mortgage), or would let for few years at £80 p.a. Premium £1,500. Educational and social amenities.
12. SOUTH YORKS.—GOOD TOWN. — Old-established good middle-class PRACTICE, producing for last twelve months nearly £4,500. Small selected panel of 400. Fees 5/- to 10/-. Mid. 2 to 10 gns. (only about 50 cases yearly). Suitable house, with 3 reception, 6 bedrooms, etc, and professional rooms. Electric light. Good garden. Garage for 3 cars. Rent on lease £100 p.a. Excellent schools, sport, etc. Premium £5,700.
13. KENT.—Pleasant Seaside and residential Town (pop. 17,000).—Old-estab. non-dispensing middle and working-class PRACTICE, averaging for the past 3 years over £1,050 p.a. including transferable appt. worth about £200 and panel of 500. Visits 3/6 to 10/6. House contains 8 rooms, kitchen, bathroom, etc. Garden. Garage. Price freehold £1,500, but might be rented. Premium £1,500.
14. DEATH VACANCY.—CORNWALL.—Good mixed general PRACTICE, in very pretty district, producing over £1,200 p.a., including panel of 845. Fees, from 2/6. Mids. from 2 gns. Rent of Surgery 15/- per week. Small house available, rent £20 p.a. Premium £850, payable £200 down and balance of yearly instalments of £150.
15. DEATH VACANCY. — HARROGATE. — Well-established PRACTICE, averaging about £600 p.a., including panel of 500. Fees 3/6 to 21/-. House contains 2 reception, 5 bedrooms, etc. Price £1,000, or might be rented. Moderate premium. Locum in charge.
16. LINCS.—Very old-estab. easily worked Village PRACTICE, averaging £1,335 p.a., including panel and appts., producing £740 p.a. Fees from 2/6. Not much midwifery. Nearest opponent 6 miles. Suitable house, with 3 reception, 4—5 bedrooms, bathroom, etc. One acre of garden. Price £900. Good sport and schools within reach. Premium 1½ years' purchase. Cottage Hospital.
17. MANCHESTER.—PRACTICE is situated in a growing district offering very large scope. Income about £1,700 p.a., including panel producing £430. Fees 3/6 upwards. Excellent detached house, well situated, with 3 reception, 5 bedrooms, etc., all in good order. Price £1,800. Premium 1½ years' purchase.
18. HANTS.—COUNTRY PRACTICE.—Very old-established, situated in most attractive district near Sussex Border. Receipts average over £800 p.a.. Panel of 480. Detached house in half an acre of garden, 2 reception, 5 bedrooms, etc. Rent £55 p.a. Hunting, golf, etc., and first-class schools within reach. Premium £1,300.
19. LONDON, SOUTH-WEST.—Very old-established non-residential PRACTICE, averaging about £4,000 p.a. Panel of 1,500, but large scope for more. Fees 2/6 upwards. Suitable house or flat can easily be obtained to meet purchaser's requirements. Rent of surgery on long lease £100 p.a. Premium 1½ years' purchase.
20. YORKS.—In a clean and thriving manufacturing town, an old-established Homœopathic and partly Allopathic PRACTICE, held about 50 years by Vendor who is retiring. Cash receipts for the past three years average £2,400 p.a. Patients middle and better-class. Midwifery refused. Good house available, rent £100 p.a. Premium only one year's purchase, part down and balance by arrangement.
21. LANCS.—LARGE TOWN.—Very old-established good industrial class PRACTICE, producing £2,500 p.a., including panel of 1,804, and appts. worth about £120 p.a. Fees 2/6 upwards. Very suitable for two friends in partnership, as two houses available. Good sport and schools. Premium 1½ years' purchase. A one-half share will be offered with view to succession in six or twelve months if desired.
22. CHESHIRE.—Industrial Town within easy reach of Manchester.—Well-established PRACTICE producing £2,600 p.a., with panel of 2,870. Fees 2/6 to 3/6, medicine extra. Good house, with ample accommodation. Price £1,000, or would be rented at £70 p.a. Premium 1½ years' purchase, half down and balance by instalments.
23. SOUTH OF ENGLAND.—LARGE SEAPORT TOWN.—Old-established mixed general PRACTICE. Average income nearly £1,900. Panel of 2,500. Fees 2/6 to 7/-. No mids. No Assistant kept. Well-situated house, with good accommodation. Rent on lease £120. Prem. £3,300.
24. WITHIN 40 MILES OF LONDON.—In a thriving Riverside and Hospital town (pop. over 40,000).—Old-established mixed-class and increasing PRACTICE worth over £2,300 last year, including panel of 1,600 to 1,700. House contains professional accommodation, 2 reception, 4 bedrooms, bathroom, etc. Small garden and garage. Rent on lease £60 p.a. Premium £3,650, to include good book debts of £500, drugs, etc., and consulting room and surgery furniture.
25. BORDERS OF BERKS AND HANTS.—In a delightful district, an old-established mixed-class PRACTICE averaging for the past three years £904 p.a. (last year £973), including panel of 400. Visits 5/- to 12/6, medicine extra (3/6). Very little midwifery. One opponent. House contains ample accommodation (2 sitting rooms, 7 bedrooms, bathroom, etc.). Large garden and garage. Water laid on and gas plant installed. Rent £50 p.a. Premium £1,400. Excellent sport.
26. PARTNERSHIP.—WEST MIDLANDS.—The Third share (with increase to half in 4 years and eventual succession if desired) is offered in very old-established mixed-class Practice in small town, largely residential, in midst of agricultural district of exceptional beauty. Cash receipts average £2,367 p.a., including panel of 1,084. Opposition not strong. Expenses light. Choice of two houses (small) which can be bought for £600 or £700. Premium 2 years' purchase.
27. SURREY.—In a beautiful residential district within 40 miles of London (good train service) a small mixed-class PRACTICE worth about £600 p.a. and offering scope. Select panel of 200. Charming house with ample accommodation in very pretty grounds (tennis court, etc.) of 1¼ acres. Price, freehold, £3,500. Premium 1½ years' purchase.
28. WITHIN FIFTY MILES OF LONDON.—In a pretty residential district, a well-established PRACTICE averaging over £700 p.a., including panel of 538, and appts. worth about £60. Visits 3/6 to 21/-, medicine extra. Midwifery discouraged. Railway station in place. Very good house (3 reception, 5 bedrooms, etc.), with large garden, tennis court. Garage. Elec. light. Price for freehold £3,000. Premium £1,050. Exceptionally good educational facilities for boys.

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Full Schedule of Terms and Conditions will be forwarded on application.

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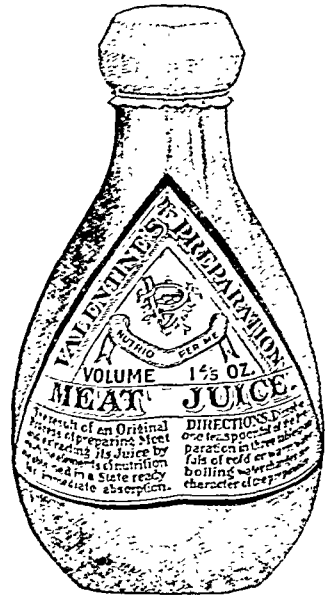
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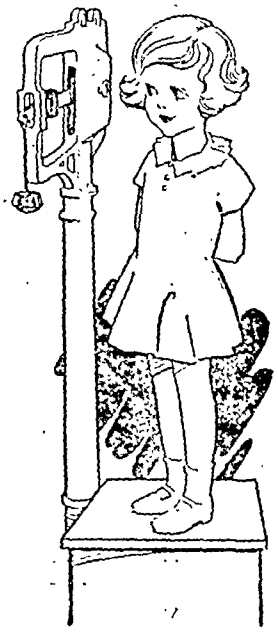
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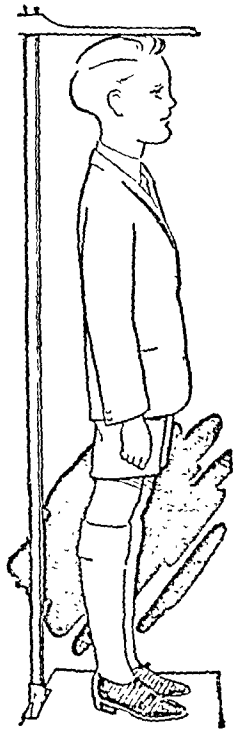
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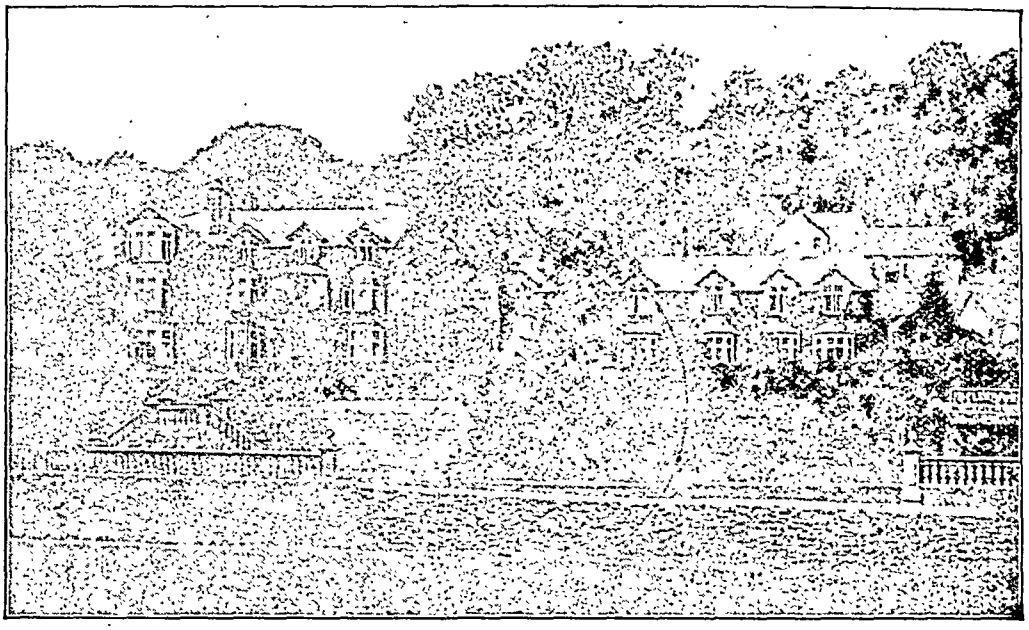
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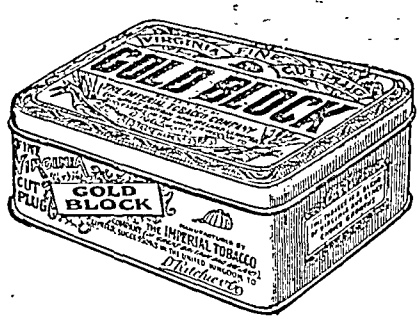
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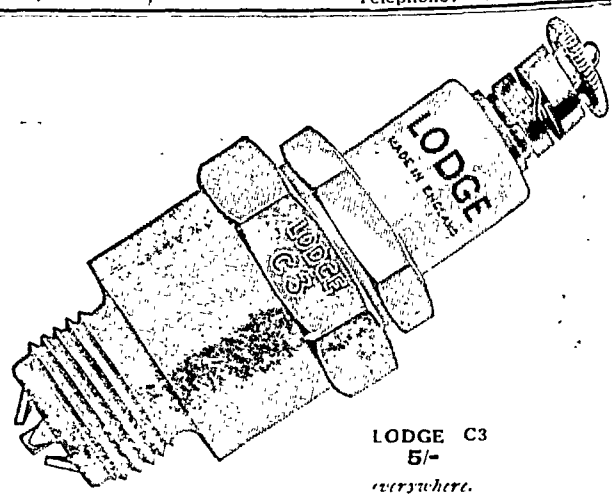
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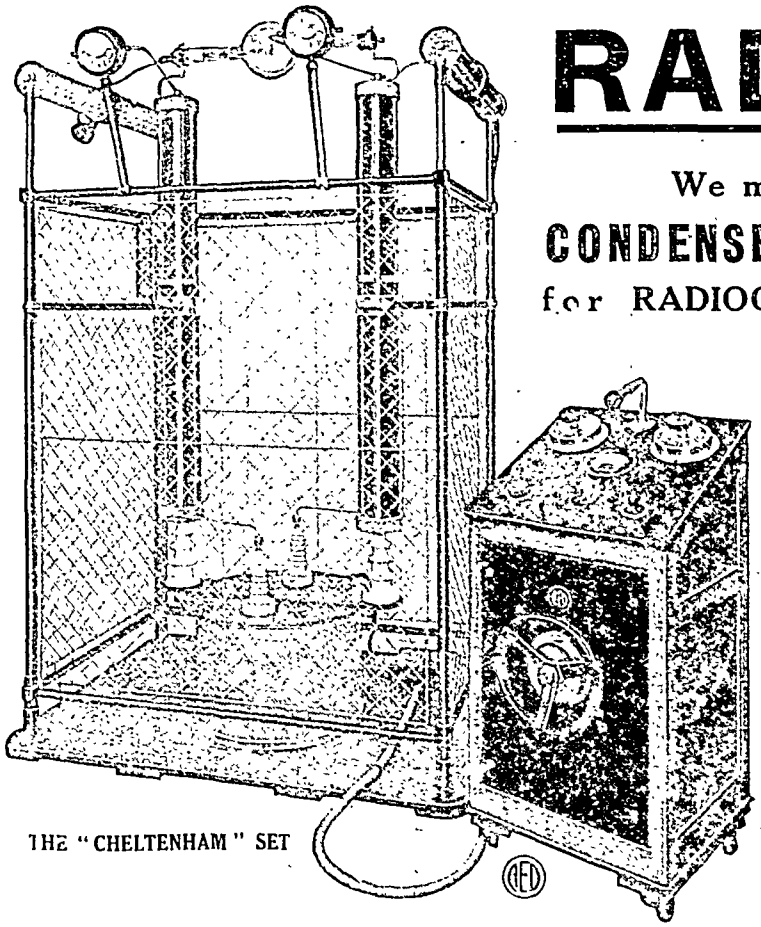
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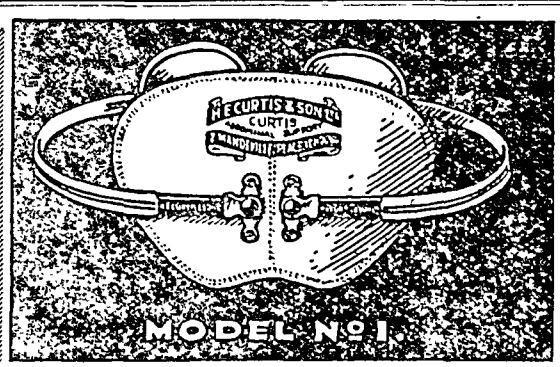
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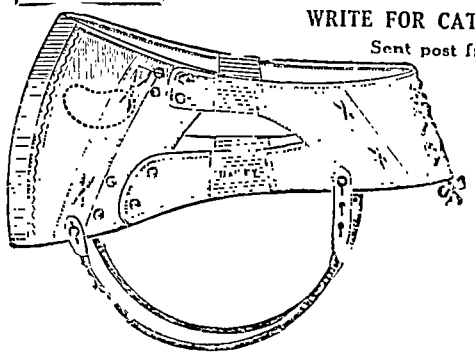
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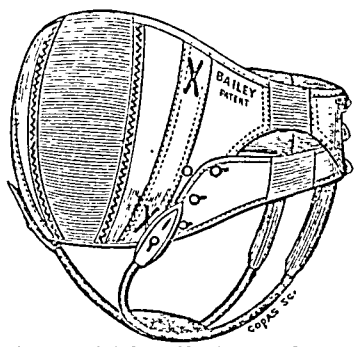
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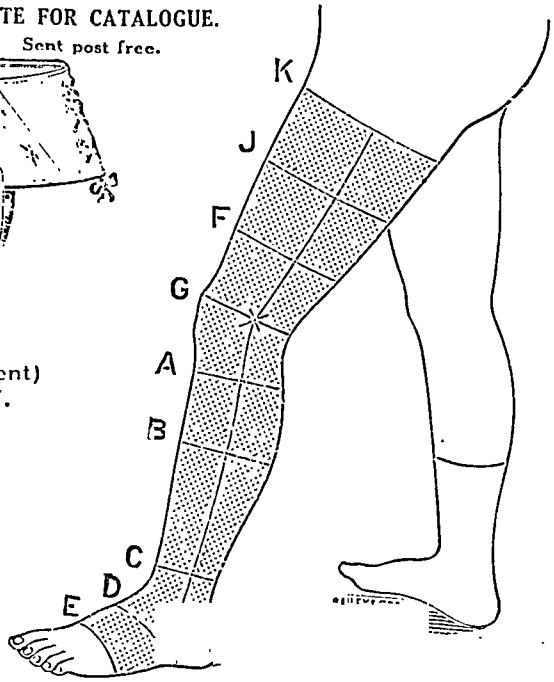
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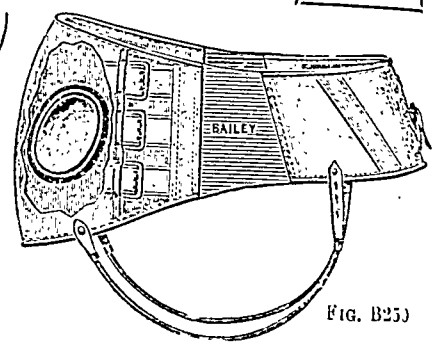


FIG. B25J
(Showing Interior of Cup.)
SPECIAL BELT FOR AFTER COLOSTOMY.

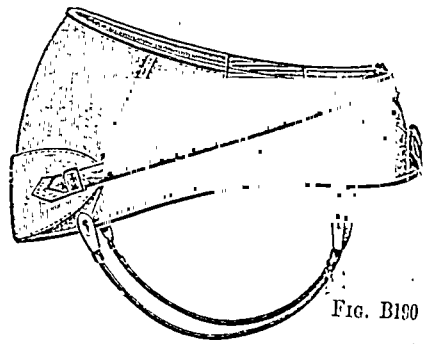
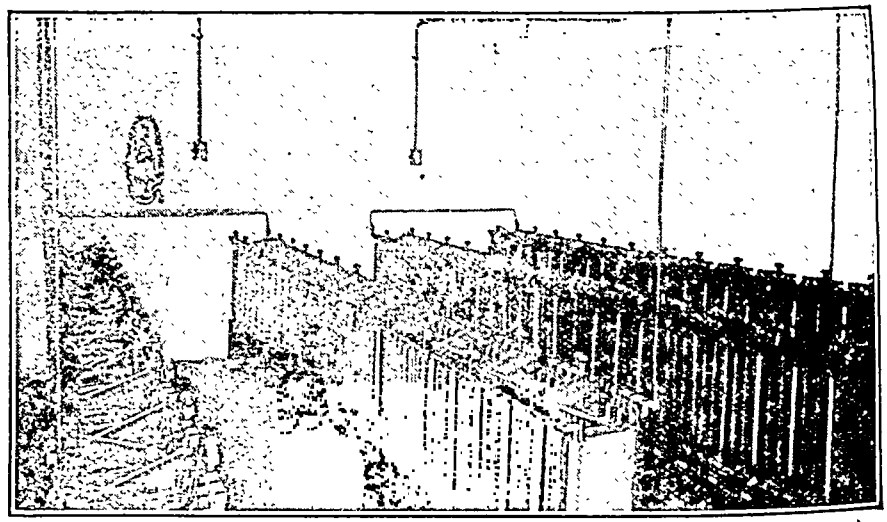


FIG. B190
BELT FOR ENTEROPTOSIS.

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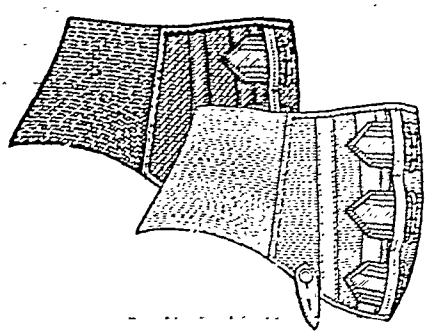
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56 THE NURSING MIRROR AND MIDWIVES' JOURNAL. APRIL 19, 1930.

The Nurses' Materia Medica.
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By Our Analytical Experts.

No. 16.—ROBOLEINE.

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	Per cent.
Moisture	23.28
Fatty matter	4.04
Mineral matter	1.72
Phosphate as P_2O_5	0.78
Nitrogen	0.06
Equal to protein (Factor 6.38) ...	0.38
Maltose	52.00

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Roboleine is no new product. It has been in use for fully a generation, and proved itself valuable over and over again in cases of debility, loss of weight, malnutrition, sleeplessness, and especially so in tuberculous conditions. Nursing mothers have found both the quantity and quality of their milk improved by taking it, and for artificially fed babies it makes a useful adjunct in the diet. Full directions as to dosage are issued with each bottle, and nurses may feel quite safe in taking it themselves when feeling a little run-down, or in recommending a course of it to the convalescent patient just leaving their care. After influenza, typhoid fever, or any wasting condition, Roboleine should be taken regularly for three or four weeks while strength is returning.

The extract given shows the result of an independent analysis on a sample of **ROBOLEINE** purchased in the open market and made by the expert analysts advising a leading professional journal. The report shows that **ROBOLEINE** contains all the vitamins, and it confirms all the claims made for **ROBOLEINE** by the manufacturers, both as a body-builder and an anti-infective.

The Food that builds the Body.

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3. Low toxicity. (One-sixth as poisonous as lysol.)
4. Great powers of penetration, reaching deep-seated inflammation.

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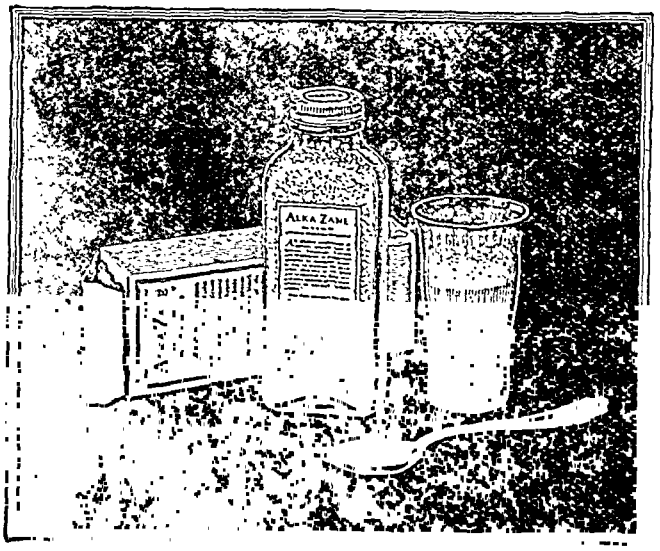
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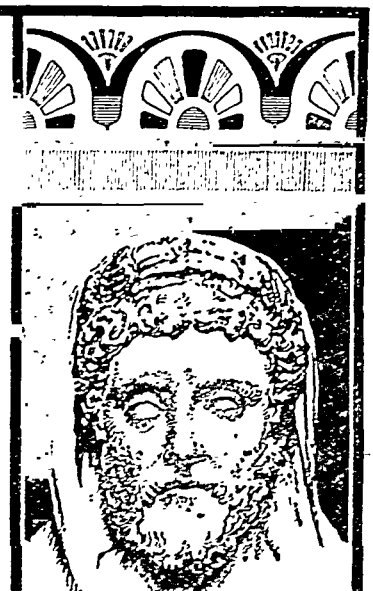
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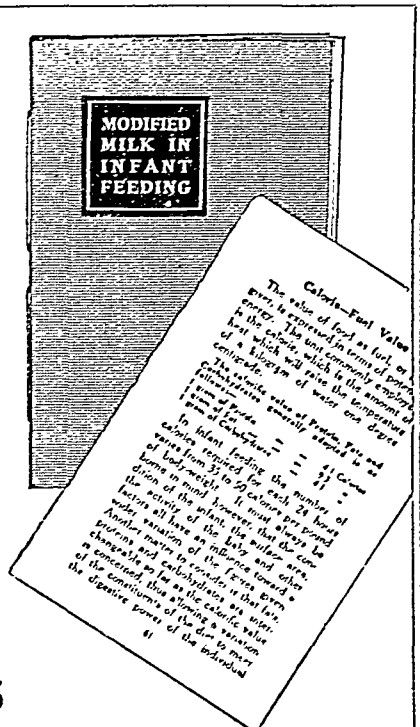
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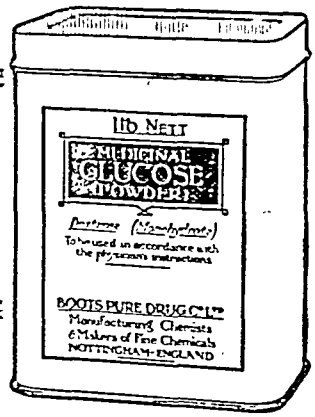
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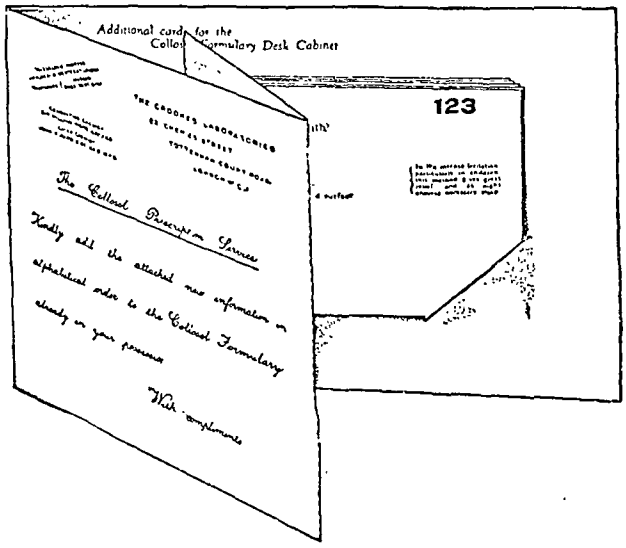
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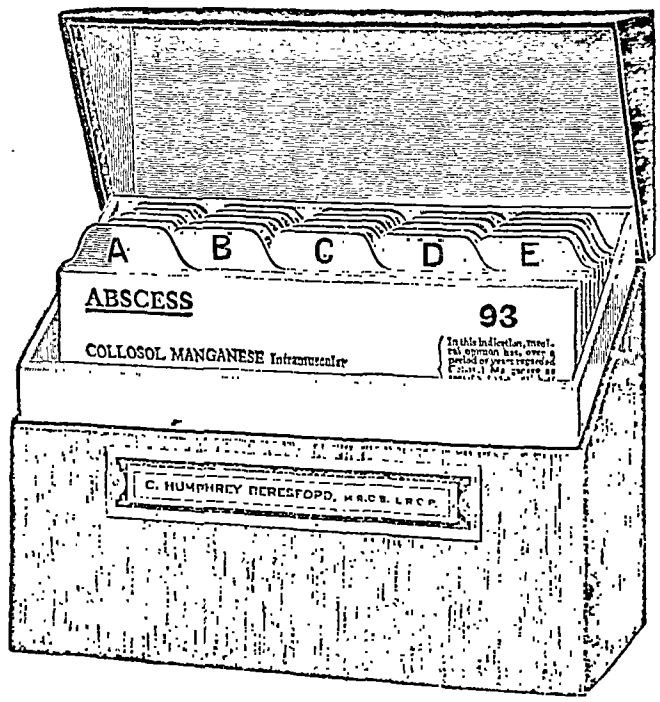
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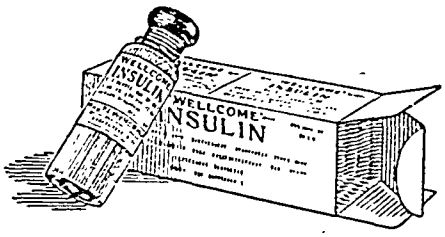
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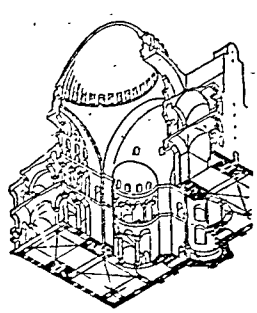
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Observations ON

ASTHMA: RESULTS OF TREATMENT.

BY

D. M. LYON, M.D., D.Sc., F.R.C.P.ED.,
PROFESSOR OF THERAPEUTICS AND CLINICAL MEDICINE, UNIVERSITY OF EDINBURGH;

AND

R. M. MURRAY-LYON, M.D., M.R.C.P.ED.,
EDINBURGH.

GENERAL impressions gained from clinical experience, though sufficient for the individual observer, should be confirmed by definite evidence whenever possible. A series of nearly 500 cases of asthma examined in the Royal Infirmary of Edinburgh seemed to offer an opportunity of obtaining information regarding the course of the disease and of the results which may be expected from treatment. A preliminary analysis of these case records has already been published.[1] The patients were all recommended to the hospital by their own doctors as cases of "asthma." The majority of them were examined as out-patients, while a proportion of the more severe cases were treated in the wards for a time. A diagnosis of "asthma" was based on the finding of the patient's own doctor, and on an examination of the individual and a careful history of his illness. Cases of dyspnoea dependent on obvious cardiac or renal disease have not been included. On the other hand, patients with marked bronchitis have only been accepted as asthmatic when a definite account of paroxysmal attacks of dyspnoea was forthcoming. Exception may be taken to the inclusion of cases which have developed asthmatic symptoms only after a long history of chronic bronchitis, but it has been found impossible to draw a hard-and-fast line. There is a tendency on the part of medical writers at the present time to regard "true" asthma solely as a manifestation of the allergic syndrome and to set aside, as not being asthma, cases in which the presence of allergy could not be proved. True asthma, then, would include those cases which show a positive inheritance of asthma, hay fever, or one of the other exudative diseases, and those in which sensitiveness to some protein can be demonstrated, while patients who only develop asthmatic symptoms after severe or repeated attacks of bronchitis are merely regarded as "asthmatic bronchitis." It has not been possible for us to make such a distinction on account of the large part which respiratory disorders play at the onset of true asthma even in early life; in addition, evidence of constitutional predisposition is often found in cases of late development. All our cases have therefore been taken together as examples of the asthmatic syndrome.

The Edinburgh inquiry has now been in progress for about nine years, a steady stream of patients coming for examination and advice at all seasons. As an estimate of the value of treatment can be made only after a sufficient interval, it has been decided to leave out of this survey all patients seen for the first time within the past twelve months. This leaves a total of 379 patients about whom we have endeavoured to obtain information. The short, simple questionary employed has been completed in some cases by the sufferers themselves, in others by their medical attendants. Many of the patients have recently reported in person, giving us an opportunity of obtaining more detailed information. For various reasons it has been impossible to trace 88 of the patients, chiefly because of change of residence, which appears to be more frequent than has been suspected. Replies concerning 291 patients have been received. These records reveal that 36 patients have died; 63 state that their asthma is still as bad as ever; the remaining 192 have derived benefit from treatment. These may be divided into four classes according to the degree of improvement. No fewer than 63 claim to have been "cured," by which is meant that they now enjoy complete freedom from attacks. Some of them have been in good health for years. Those "improved" but not cured number 129. Very great improvement is recorded by 60 patients, many of whom have now only occasional attacks, and these usually mild in character. The third class—those much improved—contains 57 individuals, while only 12 record their improvement as slight. It will thus be seen that a large proportion of the asthmatics still living have received substantial benefit from treatment. The "improved" and "cured" together total 65 per cent. of the whole. Reports concerning those now dead show that some in this group had improved or were free of asthma for a time before death, and that they died from some other condition unconnected with asthma.

While these results are highly encouraging, it is clear that no definite improvement can be guaranteed to an individual sufferer. Many cases are readily amenable to treatment; others appear to be quite resistant, and superficially it is not obvious why this should be so. These differences in the results obtained stimulate inquiry into the factors which lead to them. The points of importance in this connexion appear to be: (*a*) the form of treatment employed; (*b*) the age at which symptoms originally appeared; (*c*) the duration of the asthma before satisfactory treatment is begun; (*d*) the patient's age when first seen; and the questions of (*e*) heredity; (*f*) sensitization; and (*g*) the relation to respiratory infections. Attempts to classify patients according to the severity of the disease have not been successful. The gravity of the condition is difficult to assess for statistical purposes. Patients vary so greatly in their estimates of what constitutes a severe or a mild attack, and the frequency of asthmatic paroxysms is often so variable throughout the seasons, that comparison of one case with another is almost impossible. The physical condition of the patient and the presence or absence of other disease also have considerable influence upon the ultimate result, but the information recorded on these questions is not sufficient to enable an analysis to be made.

Relation of Treatment Employed to the Results Obtained.

Since asthma is such a variable disorder, and individual cases differ so greatly, it is impossible to lay down a uniform plan of treatment for all types. Patients must be treated individually. The clinical examination usually indicated what lines of therapy would be most successful, and an appropriate scheme was drawn up for the patient. Instructions regarding general hygienic measures, alterations of diet, avoidance of late meals, attention to the bowels, and so forth, were given at the time of the examination. The principal treatment was, in many instances, carried out under the supervision of the patient's own doctor. Those who suffer from such a chronic and distressing malady as this are apt to become dissatisfied with one line of treatment and try one remedy after another. Where information on this point has appeared of importance it has been included in our analysis. The figures for treatment have been compiled from the patients' answers to the questionary, checked and supplemented from our records.

The recognition of a specific causal agent and its removal or avoidance is clearly the most satisfactory line of treatment when it is applicable. Sometimes the matter is extremely simple and a relatively slight modification makes all the difference. Such minor adjustments are apparently not considered of importance by the patients, for they are seldom mentioned in the returns. Avoidance of an irritant plant or removal of a domestic pet can easily be arranged, but when the irritation arises from some common protein which cannot readily be eliminated, recourse may be had to specific desensitization. Such specific irritants have not been numerous in this series, but the results of their removal have been striking. In the majority of cases in which elimination has been practised the patients have been completely relieved of symptoms.

The importance of environment in aggravating or in relieving symptoms of asthma is well recognized by the general public, and many of our patients (86) have sought relief in a change. Rather more than half of this group found their condition to be just as bad in their new surroundings: two patients believed that they became definitely worse; but 45 per cent. of those who changed their residence claimed improvement thereby. A few asthmatics claimed that they had obtained complete relief

from symptoms as the result of changing their surroundings.

Examination of the nose and throat has been carried out in the majority of the patients (252). Most of the subjects were found to show some abnormality, though not necessarily severe enough to require treatment. While remarkable cures may occur after nasal operations, experience shows that such results are exceptional, and caution is necessary in recommending this class of treatment. It is safer never to suggest an operation as a cure for asthma, but only to recommend it when it appears desirable for other reasons—for example, to remove a definite obstruction or to lessen a tendency to recurrent catarrh. In spite of this conservative attitude, 115 patients have been operated on. The operations include 67 for tonsils and adenoids, 18 for polypi, 24 for turbinectomy, 14 for submucous resection, and, in addition, cauterization has been carried out when considered desirable. These procedures undoubtedly benefited the patients by removing irritation or sepsis and by giving a freer airway, and so have contributed to the general results of treatment. Our figures do not show this very clearly. Of patients upon whom operations were performed 18.3 per cent. are returned as cured, in contrast to 29.4 per cent. of cures among those who had no operation. When the "cured" and "improved" are taken together the position is reversed, the figures 66.9 per cent. and 63.2 per cent. showing a small advantage in favour of those who had undergone operation.

Since respiratory infections play so large a part in relation to asthma, either as causal agents or as secondary complications, their treatment including avoidance of prophylaxis is of great importance. Where this factor seemed to be prominent, the patient was given a course of autogenous vaccine made from a laryngeal swab. The results of this treatment have been most gratifying. Patients have not only suffered less from colds, but after the course of vaccines have often had complete freedom from asthma for some time, or no further return of symptoms. It is significant that the proportion of cured and improved patients who received vaccine treatment is distinctly higher than that of the unfavourable groups. A few of the more resistant cases have undergone treatment by diathermy, ultra-violet radiation, or by x rays, with apparent benefit.

Probably all the patients at some time or other have received drug treatment, yet only half of the returns (153) include this item. The figures given in the table for each group form an interesting commentary on the value of drugs as curative agents, favourable cases showing less than the others. This may be merely that, having failed to benefit from other measures, the unresponsive patients have had greater opportunity for trying such remedies. Though it is interesting to find that the patients who were cured received less drug treatment and a higher proportion of vaccines, and that the position with regard to patients who were not cured is reversed, too much weight must not be given to these figures, since they also reflect to some extent the types of case dealt with.

Age at Onset.

The average age at onset of the asthmatic symptoms is much the same in all the groups, except the fatal cases, which have a much higher age-incidence (see table). It is found that in about a third of all the cases (35.4 per cent.) the onset occurs in the first decade. Taking the patients who began to suffer in the first five years of life it will be found that the number "cured" is somewhat low, while the proportion of "unchanged" is relatively high. These differences do not hold for the second quinquennium, nor up to middle life, but a large proportion of the cases commencing after the age of 40 are also unfavourable; 66 per cent. of those who became asthmatic late in life are in the two lower categories. From these observations it would seem that the prognosis is not so good in cases commencing in the first five years, or after middle life.

Duration of Asthma before Treatment.

The length of the illness before the patient came to the clinic has varied greatly. While most of the patients had suffered for a short time only, some had had the disease for a longer period, and 10 had been asthmatic for over thirty years. Of all cases of less than five years' standing when first seen, no less than 32.6 per cent. were cured, while the percentage "unchanged" numbered only 14.0 per cent. These figures may be compared with the proportion that the "cured" and the "unchanged" bear to the whole

	Cured.	Improved.	Unchanged	Dead.
Number of cases	63	129	63	35
Average age at onset (years) ...	21.5	17.5	20.4	31.4
Average duration (years) ...	7.3	10.6	10.6	10
Age at onset:	Per cent.	Per cent.	Per cent.	Per cent.
0–5 years	15.9	19.4	27.0	8.6
Over 40 years	12 7	7.5	20.7	40.0
Duration 0–5 years	44 4	25.6	19.4	37.1
Heredity positive...	27.0	42.2	42.0	28 6
Protein sensitive	50.0	50.0	55.0	41.7
Respiratory infection	85.8	89.0	77 7	94.3
Treatment.				
Elimination	14.2	3.1	—	—
Benefit from change of house	41 7	47.2	10.5*	—
Drugs	23.8	48.8	79.4	69.5
Nasal operations	31 8	51.1	47.5	16.7
Vaccines	73.0	69.7	57.2	61 0

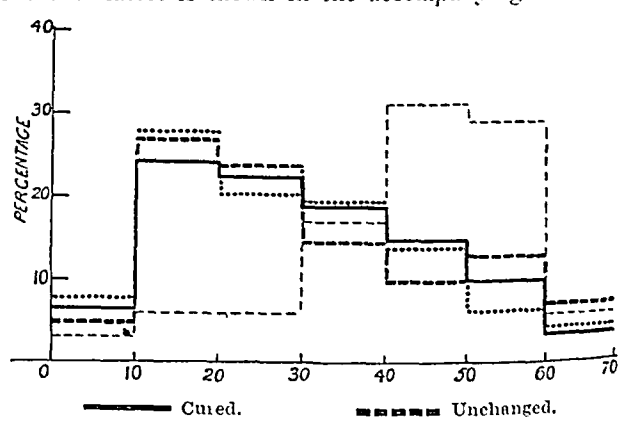
* Temporary.

The figures shown above are the percentages of all cases "cured," "improved," etc., which showed a positive heredity or were treated by drugs and so forth.

series, which is 21.6 per cent. in each case. Cases of longer than five years' duration naturally show a smaller proportion of "cures." The same point is illustrated also by the average duration of the illness in each group—the figure for the "cured" being 7.3 years, in contrast to 10.6 years for each of the "improved" and "unchanged," and 10 years for those who died. These figures indicate the importance of prompt and efficient treatment, and show that the earlier the case is attended to the better the result. The outlook is by no means hopeless, however, in cases of longer duration, for of the ten who had suffered for upwards of thirty years one was returned as cured and five as improved.

Age at Examination.

The ages of patients when first seen ranged from earliest years up to 70. The percentage in each decade for the different classes is shown in the accompanying chart. The



The age of patients when examined at the clinic. The percentage distribution by ten-year periods of the different groups is shown graphically.

numbers for the first ten years are probably unduly low since many of the younger patients are dealt with elsewhere. In the succeeding age periods, the values for the groups other than the dead decline fairly uniformly. The "unchanged" group shows a slight excess between the ages of 20 and 30, and again after 50. The age when the

patient commenced treatment is in itself probably of little importance when allowance is made for the age at first onset of the disease and for the length of time it has been in existence.

Relation to Etiological Factors.

Heredity.—The occurrence of asthma in one or more of the near relatives of the patients has been taken for our purpose as evidence of a positive inheritance. Such an association has been found in 37.3 per cent. of all the cases in the present series. It should be noted that although a definite inheritance is more common in those patients who begin to have symptoms in the first ten years of life (about 1 in every 2 patients), there is a fairly uniform proportion of positives in each succeeding period (1 in 3 patients). From the table it will be seen that the figures for the cured and for the dead are distinctly lower than those for the other groups. If the occurrence of skin lesions among relatives is also included as evidence of an "exudative" heredity, the figures become even more definite. The percentage of positives for the whole series now becomes 41.0 and for the various groups: "cured" 31.7, "improved" 42.2, "unchanged" 48.4, dead 31.5. An attempt has been made to gauge the constitutional element by grouping the patients according to the number of the following factors which they show: asthma heredity, the occurrence of skin lesions among relatives, and the presence of hay fever, skin rashes, or protein sensitiveness in the patient. It is found that those subjects with the greater evidence of allergy begin to have symptoms earlier in life. From this it would appear that asthmatics having a positive heredity are somewhat less amenable to treatment, and that the less favourable results for the first five years of life might be explained by the greater proportion of hereditary cases commencing at this period.

Protein Sensitivity.—From a statistical point of view it is unfortunate that all the subjects have not been exposed to the same set of proteins. Owing to the large number of individual test substances available, it was not at first found possible to employ them all on each patient, and the choice was mainly guided by the history of the case. Later, the plan of testing every subject with a comprehensive series of "grouped" proteins has been adopted. The figures obtained, therefore, do not necessarily represent the true extent of sensitization, but merely the positive reactions found. The "positives" recorded include multiple sensitivity as well as single specific responses. The groups give a similar proportion of positive results, except that the figure for fatal cases is a little low. It should be observed, however, that in the case of the "cured" patients about half of the positives reacted to a *single* protein.

Respiratory Catarrhs and Infections.—These appear to be of great importance in the development of the asthmatic condition at all ages. It is sometimes said that in early life the exudative diathesis manifests itself by respiratory symptoms indistinguishable from bronchitis. After middle life a history of prolonged or severe bronchitis is more commonly found as a forerunner of the asthma. The patients, when examined, were merely asked whether such conditions were present at the time of, or immediately before, the first attack of asthma, and no account has been taken of previous health in regard to respiratory disorders. The proportion of individuals who give this history is high, and is much the same in each group. There is really no significant difference between the groups in this respect, and this factor does not appear to influence the result of treatment.

The Fatal Cases.

This group stands out from the others in various respects. Inheritance and protein sensitization are rather lower in this class, while respiratory infections are much the same as in the others. The average age of onset in the group is considerably higher—namely, 34.4 years, as contrasted with 21.5, 17.5, and 20.4 for the others. While 7 cases began before the age of 20, a large percentage of this group developed symptoms after middle life. A number of deaths is to be expected in such a group, but the proportion actually recorded is very much greater than would occur in a similar age sample of the community during the same length of time. Of the 36 deaths, 28 occurred in subjects over the age of 40, 3 were under 20 years of age, and 5 between 20 and 40. Acute illnesses accounted for at least 8 of the deaths; these were influenza (patients aged 7, 14, 48, 55); pneumonia (aged 17); cholecystitis (54); meningitis (40); gastric haemorrhage (39). There were two suicides (50 and 61). Two fatalities were due to phthisis (26 and 32), both patients having previously had undoubted asthmatic symptoms. Syphilis accounted for 4 deaths (36, 60, 60, and 70) and cerebral haemorrhage for one (51). Five were attributed to heart failure (36, 43, 58, 63, and 70). In the case of the remaining 14 the exact cause of death has not been ascertained. These include some of the most severe cases, in which the patients are known to have been almost constantly dyspnoeic and in a condition of status asthmaticus with advanced emphysema and cardiac embarrassment. Additional information shows that before death 2 of the patients had been "cured" of their asthma, 7 were considerably improved, 2 slightly benefited, and 15 were unchanged. These figures have not been incorporated in the other sections.

Summary.

The results of treatment in 291 cases of asthma are reported. Of these, 66 per cent. have been benefited and 12.4 per cent. have died. No single scheme of treatment can be laid down for all cases; each patient must be treated individually. The most successful forms of therapy appear to be elimination when applicable, and vaccine treatment where respiratory infections complicate the asthma. Cases which react to a single protein are usually favourable, but the occurrence of multiple sensitivity is of little importance in relation to treatment. Among many factors less easy to assess, change of residence and general hygienic measures have contributed to the patients' improvement. The results of operations on the nose or throat are disappointing, and such treatment should only be recommended to relieve definite local symptoms. Cases arising in the first five years of life are less successful than those beginning later. This may depend on the unfavourable factor of a positive heredity. Asthmatic symptoms commencing after middle life are also apt to be less amenable to treatment. The duration of the disease before effective treatment is undertaken is of the greatest importance; the longer the delay the less satisfactory the result, although certain cases of long standing have benefited considerably under adequate treatment.

REFERENCE.

1 *Lancet*, March 9th, 1929, p 517.

A GOITRE SURVEY IN ALBINO RATS.

BY

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DURING the past three years the practice has been followed of recording, at post-mortem examination, the state of the thyroid gland in all animals used in the laboratories of the Pasteur Institute, Coonoor, for experimental work on diseases of faulty nutrition. Post-mortem records of 2,561 albino rats have accumulated during this period. It is with these that the present survey deals.

Of the 2,561 animals 393 were "controls" fed throughout life on complete diets, and 2,168 were rats fed from an early age (approximately 40 days) until the time of their death on various deficient diets. Goitre did not occur in the former group; 148 cases of the disease occurred in the latter. The goitres were classified as follows: (*a*) Small enlargements amounting to less than twice the size of the normal organ, 84; these were called "slight goitres." (*b*) Moderate enlargements amounting to more than twice but less than four times the size of the normal organ, 41; these were called "small goitres." (*c*) Marked enlargements amounting to four or more times the size of the normal organ, 23; these were called "large goitres."

The relation of these goitres to endemic and hereditary influences, to hygienic conditions of life, to age, sex, and atmospheric temperature, to food, and to iodine, has now to be considered.

Endemic Influences.

Goitre is not endemic in Coonoor, nor in its neighbourhood. The indigenous inhabitants are entirely free from it. European and Anglo-Indian settlers do not acquire it, though their children may occasionally exhibit slight swellings of the gland, especially girls about the age of puberty. The iodine content of the soil is relatively high—118 to 400 parts per 10 millions (Newcomb). The urinary excretion of iodine by young adult males ranges from 60 to 400γ* per litre. The water supply is piped; it is bacteriologically pure and exceptionally soft. There is a poverty of lime in the soil. Endemic influences played no part in the causation of the goitres with which this survey deals.

Hereditary Influences.

Although many post-mortem examinations have been made in our well-cared-for and well-fed rats, no case of goitre has so far been found among them. This stock has been bred through many generations during the past eight years and has become acclimatized to the altitude (6,000 feet above sea-level). New blood is introduced from time to time to prevent in-breeding. The rats are small-sized and their thyroids are, at all ages and body weights, about half the size of those of albino rats used for experimental work in the United States of America (Fig. 1). Hereditary predisposition—a potent influence in the genesis of goitre—played no part in the causation of the goitres with which this survey deals.

Hygienic Conditions.

These are as nearly perfect as is possible in animals kept in captivity. A stock of between 500 and 800 animals is maintained throughout the year for breeding purposes. They live in straw-filled, screened cages; a pair with their young to each cage. The cages are kept scrupulously clean, and the straw is constantly renewed. The animals are exposed to sunlight when weather conditions permit, these conditions are favourable for the greater part of the year. The stock diet consists of unleavened bread (chapattis) made from whole wheat flour (atta) and lightly smeared with butter, the hard crusts of white loaves, diluted milk, sprouted "gram" (legume), green vegetables, and carrots *ad libitum*, an occasional small ration of raw meat, and fresh water in abundance. Under these conditions the stock animals remain in perfect health, are very fertile, and invariably rear the whole of their young, no matter how large the litters may be. There is practically no infantile mortality. During the past fifteen months there has been no death from natural causes among this stock. Reduction of their numbers is effected by killing off the older animals when they are 20 to 24 months old; in such of these as have been examined goitre has not been found. The young are removed for experimental purposes when they are about 40 to 50 days old; a sufficient number being retained for replenishment of the breeding stock. From time to time numbers of these young rats have been killed and their thyroids examined; no enlargement of the gland has ever been found. It may therefore be assumed that no young rats come to the experimentation rooms with enlarged thyroids. Any enlargement of the gland occurs subsequent to their transfer from stock.

The young rats used for the experimental production of diseases of faulty nutrition live under similar conditions of perfect cleanliness. Their screened cages are frequently sterilized; droppings adhering to the screens are removed by hand. A large staff of animal attendants is employed to maintain the high standard of cleanliness demanded. The animals are usually confined in separate cages; but sometimes they are paired for special purposes, as when it is desired to note the effects of certain diets on fertility. Their conditions of life differ from those of the stock animals in the following particulars: the majority are isolated from companionship with their kind; they are not provided with straw for bedding; and their food, except in well-fed controls, is invariably faulty in some respect. Both in the stock rats and in those used for experimental purposes the goitrigenous influence of "dirt"—a potent one in ill-fed animals—is thus rigidly excluded. This factor was not, therefore, concerned in the causation of the goitres with which this survey deals.

* γ represents 1/1,000 of a milligram.

Influence of Sex.

Among the 148 goitres there were 56 in males and 92 in females—an incidence of 4.5 per cent. in the former and of 7.8 per cent. in the latter. This difference in sex incidence is in conformity with the well-known fact that females are more subject to goitre than males.

Influence of Age.

One fact of probable significance emerged from a statistical analysis of the data relating to the age of the animals and the incidence of goitre. The incidence of the disease was highest (12.4 per cent.) in rats whose age—100 to 120 days—corresponded to the period of attainment to sexual maturity. A second rise, to 11 per cent., occurred in rats aged 220 to 240 days; but the number of animals of this age was small (76). No goitre occurred in rats aged 60 to 80 days. At age periods other than the three mentioned, the incidence of the disease was between 5 and 7 per cent.

Influence of Atmospheric Temperature.

The maximum shade temperature in Coonoor rarely rises above 76° F.; the minimum rarely falls below 50° F. From the middle of March to the beginning of October the maximum temperature in my animal houses is round about 75° F., the minimum round about 65° F. From October to March the maximum is 60° to 65° F.; and the minimum 55° to 60° F., falling occasionally to 50° F., and very occasionally to below 50° F. The temperature conditions prevailing between March and October appeared to be more favourable to the development of these goitres than those prevailing between November and the end of February.

Influence of Associated Diseases.

Associated diseases do not appear to have exercised any influence on the incidence of goitre in these rats: for whatever these diseases may have been—and they covered a wide range of morbidity—they were found as frequently in non-goitrous as in goitrous animals. In 51 of the 148 cases of goitre there was no associated disease.

Influence of Food.

As previously stated, no case of goitre occurred among 393 well-fed rats, while 148 cases occurred among 2,168 deficiently fed rats. This difference is statistically significant. It indicates that faulty food, deficient in certain elements and complexes necessary for normal nutrition, was the direct, or the indirect, cause of the goitres from which the rats suffered.

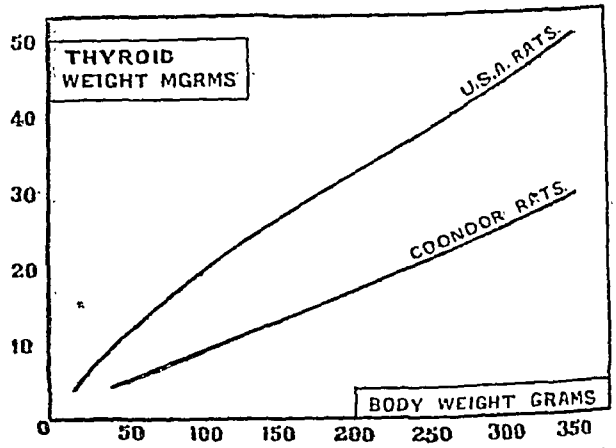


FIG. 1.—Showing the weight of the thyroid gland of Coonoor albino rats according to body weight (regression line $y = 0.080x + 1.24$; standard deviation of thyroid weights about the regression line: 1.35; correlation between thyroid weight and body weight: + 0.95. For these calculations I am indebted to Lieut.-Colonel C. Newcomb, I.M.S.). The curve of thyroid weights for U.S.A. albino rats (Donaldson's *The Rat*, 1924, p. 218) is included for purpose of comparison.

1. *The Well-fed Group.*

Of the 393 animals in the well-fed group 121 were controls, fed on stock diet. They were killed by drowning. Their thyroids were removed and weighed, and the weights charted against the body weights of the animals (Fig. 1).

So far from any of these thyroids being enlarged they were all found to be small relative to those of albino rats in the United States of America.

Forty animals in the well-fed group were fed, from the age of 40 days to the end of their lives, on certain national diets of India. These were of good biological value and of similar composition to that on which the stock rats were fed. The animals were killed by drowning on the 198th day of life; none were goitrous. A third group of 144 were fed on certain complete natural diets into which whole milk entered largely; these also were killed by drowning, at ages ranging from 200 to 220 days; no case of goitre occurred among them. The remaining 88 animals received complete synthetic diets containing iodine in the form of potassium iodide, this salt comprising 0.45 per cent. of the "salt mixture" (McCollum's) used in the preparation of the diets. These were killed by drowning at ages varying from 143 to 254 days; none were goitrous. It is to be noted that in the presence of a complete diet the continued ingestion of iodine in relatively large amounts did not cause thyroid enlargement in any of the 88 animals.

The average urinary excretion of iodine by the animals comprising the well-fed group was as follows: (*a*) stock diet, 56γ per litre; (*b*) national diets, 85γ per litre; (*c*) milk diets, 70γ per litre; (*d*) synthetic diets, 200,000γ per litre.

2. *The Deficiently Fed Group.*

A large number of faulty diets were used in the feeding of the 2,168 animals comprising this group. It is unnecessary for my present purpose to describe each of these in detail. Some were synthetic diets made up of refined materials; but the majority were defective diets composed of foodstuffs in common use by man. All had one or other or several of the following faults: deficiency of vitamin A, deficiency of vitamin B (fractions not differentiated), deficiency of vitamin C, deficiency of mineral salts, and deficiency of animal protein. No diets were used in which "vitamin B" (or either of its fractions), "vitamin D," "mineral salts," or "protein" was the sole deficiency. The various diets were grouped, according to the nature of their defects, into twelve categories. These, together with the number of animals used and the number of goitres occurring among them, are shown in Table I.

TABLE I.—*Showing Deficiencies of Diets, Number of Animals Fed on the Deficient Diets, and Number of Goitres.*

Category	Deficiency or Deficiencies of the Diets.	No. of Animals Used.	No. of Goitres.	Percentage Incidence of Goitre.
I.	Vitamin A	79	2	2.5
II.	Vitamin C	110	0	0
III.	Vitamins A and C	306	17	5.5
IV.	Vitamins B and C	54	1	1.8
V.	Vitamins A, B, and C	357	42	11.4
VI.	Vitamin A and animal protein ...	20	1	5.0
VII.	Vitamins A and B and animal protein	36	4	11.1
VIII.	Vitamins A and C and animal protein	354	11	3.1
IX.	Vitamins A, B, and C and animal protein	30	6	20.0
X.	Vitamins A and C, mineral salts and animal protein	628	55	8.7
XI.	Vitamins A, B, and C, mineral salts, and animal protein	120	7	5.8
XII.	Vitamin C, mineral salts, and animal protein	64	2	3.1
	Total	2,168	143	6.8
	Nil: Complete diets	393	0	0

These results appear to justify the general conclusion that vitamin deficiency was the main dietetic factor concerned in the occurrence of goitre in the rats under survey. While not desiring to assign to any single vitamin deficiency a paramount place in favouring the development of these goitres, it would seem from the foregoing data that deficiency of vitamin A was of great importance, that a combination of vitamin deficiencies was more potent in favouring the development of goitre than the deficiency of a single vitamin, and that default of other food essentials, such as suitable protein and mineral salts, was not without some contributory influence. Whatever may have been the paramount dietetic factor concerned in the production of these goitres the broad general fact remains: rats living under sanitary conditions and fed on perfectly constituted diets did not develop goitre, whereas rats fed on imperfectly constituted diets did.

Some of the deficient diets were of a composition admitting of little or no growth, as, for instance, when their content of certain vitamins was very low; the period of survival of these rats was relatively short. Other diets, though lacking optimum amounts of one or more vitamins, contained enough to allow of considerable growth, and of longer periods of survival. An analysis of the rates of growth and of the periods of survival of the 2,168 ill-fed rats with respect to size of the goitres showed that the greater the daily average gain in body weight and the longer the period of survival, the larger, as a rule, were the goitres. Thus, a diet composed of white flour, meat residue, olive oil, salt mixture (containing potassium iodide), and water permitted of little or no growth in young rats, though a few survived for periods as prolonged as 165 days and were then killed. The incidence of goitre (which was of the lymphadenoid type) in rats fed on this diet was 25 per cent.; but all the goitres were "slight" or "small." On the other hand, a diet composed of white bread, dried yeast, lime, and feebly iodized water admitted of considerable growth and of the survival of some animals for periods as prolonged as 191 days. The incidence of goitre among young rats fed on this diet, during the spring and summer months, was 41.7 per cent., the majority being "large goitres." Both the rate of growth and the period of survival of the animals were dependent in great measure on the character of the food and the degree of its defects. The dietetic conditions most favourable to the production of considerable goitres were provided by diets composed of foodstuffs which, while deficient in certain essentials (chiefly vitamins), were not wholly devoid of them.

The urinary excretion of iodine by animals fed on the deficient diets ranged between 33 and 158γ per litre; except in animals fed on synthetic diets containing potassium iodide, when it averaged 200,000γ per litre.

Influence of Iodine.

Iodine, either in the form of iodized drinking water or of potassium iodide, was added to the diets of 630 of the 2,168 ill-fed rats; it was not added to the diets of the remaining 1,538. Seventy-three cases of goitre, or 11.5 per cent., occurred among those receiving iodine; 75 cases, or 4.8 per cent., occurred among those not receiving iodine.

Of the twelve categories into which the deficient diets fell (Table I) there were three which afforded definite information regarding the effect of adding or withholding iodine. These were: (III) a combination of vitamin A and vitamin C deficiencies, other essentials being adequate; (V) a combination of vitamin A, vitamin B, and vitamin C deficiencies, other essentials being adequate; and (X) a combination of vitamin A and vitamin C deficiencies with deficiency of mineral salts and of animal protein. Grouping the diets having these faults together, it was found that 576 animals fed upon them had iodine added to their food, while 725 had no iodine added to their food. In the former there were 66 goitres, or an incidence of 11.4 per cent.; in the latter there were 48 goitres, or an incidence of 6.6 per cent. Taking into consideration only those experiments in which goitre occurred it was found that there were 73 goitres among 378 animals to whose food iodine was added, and 75 among 1,236 animals to whose food iodine was not added; an incidence of 19.3 per cent. in the former, and of 6 per cent. in the latter.

Twelve of the 23 "large goitres" occurred in 72 animals to whose food iodine was added; an incidence of 16.6 per cent. Eleven of the 23 "large goitres" occurred in 220 animals to whose food iodine was not added; an incidence of 5.9 per cent.

Seventeen of the 41 "small goitres" occurred in 132 animals to whose food iodine was added; an incidence of 12.8 per cent. Twenty-four of the 41 "small goitres" occurred in 500 animals to whose food iodine was not added; an incidence of 4.8 per cent.

Forty-four of the 84 "slight goitres" occurred in 174 animals to whose food iodine was added; an incidence of 25.3 per cent. Forty of the 84 "slight goitres" occurred in 456 animals to whose food iodine was not added; an incidence of 8.7 per cent.

These differences are statistically significant; they indicate that the administration of iodine to the deficiently fed animals definitely favoured goitre-production.

The urinary excretion of iodine in the rats to whose deficient food iodine was added, and amongst whom goitre occurred, ranged between 85 and 158γ per litre, except in animals fed on synthetic diets containing potassium iodide, when it averaged 200,000γ per litre.

Histological Appearances of the Goitres.

Ninety-five of the 148 goitres were serially sectioned and examined microscopically. In 16 of these the post-mortem changes were so marked as to obscure the histological picture. The remaining 79 fell into the following groups, though it was not always easy to decide to which group certain specimens belonged.

(*a*) Nine were glands presenting no abnormality other than their "slight" increase in size.

(*b*) Seven were "slight" or "small" enlargements in which intense hyperaemia was the only obvious pathological change.

(*c*) Eight were colloid glands, all being "slight goitres." Some of them contained small keratinization cysts.

(*d*) Sixteen were simple hypertrophic enlargements, several appearing to merge into the lymphadenoid condition. Nine were "large" and seven were "small" goitres.

(*e*) Thirty-five were lymphadenoid goitres, 25 being "slight," 4 "small," and 6 "large." The characters of this type of goitre and the dietetic conditions under which it arises have previously been described in this *Journal*.

(*f*) Four were chronic hypertrophic goitres, presenting the features characteristic of this condition. All were of moderate size and all occurred in rats fed for long periods on natural diets consisting largely of whole wheat flour (atta) but poor in green vegetables and in vitamin A-bearing ingredients.

Summary.

1. A survey was made of 2,651 albino rats in a locality (Coonoor) where goitre is not endemic; 148 were found at post-mortem examination to have goitre. Of these goitres 84 were classified as "slight," 41 as "small," and 23 as "large."

2. The temperature conditions of the spring and summer months in Coonoor appeared to have been more favourable to the development of the goitres than those of the autumn and winter months.

3. The incidence of goitre was higher in females than in males.

4. Goitre was commonest in rats whose age corresponded to the period of attainment to sexual maturity.

5. Associated diseases did not appear to have exercised any appreciable influence on the incidence of goitre in these rats.

6. The goitres are not due to endemic influences.

7. The rats had no hereditary predisposition to goitre, nor were they subjected to insanitary conditions of life; both of these influences are favourable to the genesis of goitre.

8. Well-fed rats (393), living under sanitary conditions, did not develop goitre; ill-fed rats (2,168), living under sanitary conditions, did. The incidence of goitre in the latter was 6.8 per cent.

9. Faulty food deficient in vitamins was the direct, or the indirect, cause of the goitres.

10. The dietetic conditions most favourable to the production of considerable goitres were provided by diets deficient in, but not wholly devoid of, certain food essentials (chiefly vitamins).

11. The administration of iodine to deficiently fed rats was definitely favourable to goitre production; its administration to rats fed on physiologically complete diets did not favour the occurrence of goitre.

12. All grades of goitre ("slight," "small," and "large") were more common in deficiently fed rats to whose food iodine was added than in those to whose food iodine was not added.

13. The urinary excretion of iodine by rats fed on deficient diets having a composition favourable to goitre production was in some experiments as low as 33γ per litre and in others as high as 200,000γ per litre.

14. The histological appearances of 79 of the 148 goitres are briefly described; 44.3 per cent. were lymphadenoid goitres; 25.3 per cent. were hypertrophic goitres, some merging into the lymphadenoid condition.

15. The normal thyroid glands of Coonoor stock albino rats are, at all ages and body weights, approximately half the size of the normal thyroid glands of albino rats in the United States of America. Standards of normal thyroid weights for albino rats in one part of the world may not be applicable to albino rats in another part of the world.

COKE-MEN AND BY-PRODUCTS WORKERS: THEIR COMPLAINTS AND MALADIES.

BY

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COKE, so essential for the smelting of iron, and also useful for domestic heating, is the residue left when coal has been subjected to a high temperature, away from contact with air, and which during the process of carbonization has lost several of its volatile constituents. It is a British product. Coking of coal goes back as far as 1590, when a patent was granted to John Thornborough, a Dean of York. Until recently, the carbonization was mainly effected in what are known as "bee-hive" coke ovens, rows of which can be seen from almost any railway train passing through a mining area. When these ovens are properly filled with coal, closed up, and heated by flues, the gas given off ignites within the ovens and fills the dome with flame. When all the gas has burned off the upper part of the dome is opened, the red-hot material inside is cooled by water spray, and is subsequently removed. As this is a wasteful method, "bee-hive" ovens have been replaced by "retort" and by "by-product" ovens. In the latter the gases are not burned off at their point of origin inside the oven, but pass by an up-take pipe to the roof into a water-sealed trough or collecting main, whence, to quote from the *Encyclopaedia Britannica*, "they are drawn by exhausters through a series of air and water-cooled condensers and scrubbers." In the first condenser, tar is deposited by the fumes passing from the ovens, and in the second the ammoniacal liquor is caught. This liquor, after a process of scrubbing, and with its ammonia content increased, passes on to the ammonia stills. During scrubbing with creosote or heavy tar oil, benzene is removed. When the remaining material is distilled, the tar, having yielded up burning oil, becomes pitch, and the benzene is removed from the creosote oil by steam in heated stills. To the ammoniacal liquor lime is added, and on heating this the ammonia is vaporized. The ammonia is collected, and is subsequently condensed in metallic tanks containing sulphuric acid. Ammonium sulphate—a highly valued product for manurial purposes—is thus formed. Further by-products can still be obtained, such as toluol, naphthalene, pyridine, and motor spirit—the last, also known as benzol, being a mixture of benzene, toluene, and xylene.

The by-products obtained from coal vary with the coal-fields which furnish the raw material. South Wales coal gives the largest amount of coke—80 per cent., compared with 75 per cent. from that of county Durham; but Durham coal furnishes a larger amount of tar—3.85 per cent., compared with 2.6 per cent. from Welsh coal. The coal of South Yorkshire contains the largest amount of crude benzol—namely, 1.37 per cent.—while the coal of Durham contains 0.93 per cent., and that of South Wales 0.60 per cent. These figures are interesting, not on account of their varying commercial and economic values, but because they

probably explain some of the differences observed in the complaints and maladies of the workers.

In a works plant those who suffer most severely are the men working at the hydraulic mains which carry the heavy, thick fumes directly away from the ovens. Lids on the mains have to be opened, and the sluggishly moving tar is pushed on with long iron implements so that it does not block the channel. During this brief operation it is impossible for the men to avoid inhaling some of the dense fume that rises into the air, and their bare skin cannot be otherwise than adversely affected by the contact. The men whose duty it is to close the valves at the entrance of the hydraulic mains proximal to the ovens, to prevent any reflux from the hydraulic mains towards the ovens, are affected in a similar manner by the escape of fume. Precautionary measures have to be observed at every stage, for even at the terminal stages there are risks to health and limb. This is true in the distillation of tar. A leakage may occur owing to a structural defect in a still, and burns may be caused if the tar ignites. The stills have to be periodically cleaned out, and the residue, which adheres firmly to the interior, has to be removed with a pick; this is a dusty proceeding.

In England and Wales 15,000 men are employed at coke ovens and in by-products works. Although there is a National Union of Coke-men and By-products Workers, it is difficult to obtain exact data of their illnesses, as they are members of different benefit societies. For several years workers in this industry have been supposed to suffer from stomach troubles to a greater extent than those following other vocations; this is indeed their most frequent and disabling complaint. There are other maladies to which they are also especially susceptible—for example, rheumatism and lumbago, skin eruptions, and warts, the latter being frequently the forerunner of ulcers which assume the characters of malignancy. Medical men residing in mining areas who attend the indisposed workmen call the stomach trouble gastritis, but there has not been, so far as I am aware, any pathological report based upon post-mortem examination clearly defining this condition, apart from cases in which cancer was found after death in the mucous membrane of the stomach of patients who were said to have had gastritis. The frequency of gastric complaints is widely admitted, particularly in the county of Durham. Symptoms develop at any age and at any period of service, in some instances three or four years after commencing work; in one patient whom I saw only six months had elapsed; the majority of the cases occur during the second or third decade of work. The symptoms complained of are pain in the region of the stomach one or two hours after taking food (although on other occasions the pain may have no relation to food), attended by flatulence, belching of sour gas, and the expulsion of acrid liquid or what is known as "water-brash." Sometimes the pain is so severe that even strong men are overcome by it. There may be marked distaste for food; on the other hand, appetite may not be impaired. The mere sight of food may cause a feeling of sickness, which ends in the vomiting of sour liquid. With the exception of a little milk no food is taken for a day or two. There are periods of remission during which the men return to work, and continue working for years with occasional digestive breakdowns. Some of them on reaching home after a day's work are drowsy, and fall asleep before taking a meal. They have a sense of fatigue which muscular work does not explain; it is toxaemic. In a considerable number who present these gastric symptoms ulceration of the lining membrane of the stomach ensues, while in a smaller number the malady ends in cancer. Surgical treatment may become necessary when the symptoms of ulceration are severe, or where the ulcer has perforated the wall of the stomach. Recovery is possible, but an operation sometimes reveals not a simple ulcer, but a malignant growth. Sallow complexions are common. It is exceptional to find workmen who have spent fifteen or twenty years in the industry with the ruddy glow of health. They usually lose their colour in time. I have been struck by the light weight of many of the men. Some of them weigh only 8 st.; they readily inform the medical examiner of the weight they have lost. The work is admittedly not heavy, but it is fatiguing owing to exposure to great heat and fume.

Men employed in by-products works are liable to rashes on the skin, to warts, which, as already stated, become epitheliomata, a form of cancerous growth with ulceration, also to burns; especially is this the case among workers in tar. The rashes appear mostly on the skin of the back of the hands and forearms, usually commencing as an acute inflammation of the skin or dermatitis; the redness is accompanied by a considerable degree of itching, and by the presence of small circumscribed elevations of the skin called papules, which may become pustular and painful. Boils form, and these, when they have discharged their contents, leave a bluish flat mark. Warts are not uncommon; their presence is hazardous, for they are apt to be irritated or rubbed off and to become malignant. They appear on the back of the hands and forearms, also upon the scrotum and penis; so long as they remain simple warts they can be successfully removed, but when they become malignant the genitalia and infected glands in the groin may have to be removed. If the malady has progressed too far surgical treatment can give only temporary relief; yet a considerable length of life may be assured, for some of the patients I have examined had been operated upon seven or eight years previously. The warts appear in various situations. I have alluded to their presence on the genitalia. I have seen them on the brow, on the eyelids, also hanging from just inside the nostrils. They have the usual rough, uneven surface of warts generally, and they are dry and painless. The skin of the hands, which is often freckled, is hard, thickened, and disposed to crack. The "keens" thus formed are painful, and do not heal readily if work is continued. Small shot-like bodies are occasionally felt in the skin of the arms; these are not painful at first: the superjacent skin subsequently becomes red, then dark, then it fades away, and a white mark is left. Small, red, angry-looking spots frequently appear on the chest, accompanied by itching, or there may be large, black, warty moles, especially on the back of the trunk.

During the breaking up of solid pitch no fine dust may be observed in the atmosphere a few feet above the surface of the pitch, but if the men do not wear goggles they frequently suffer from an acutely painful inflammation of the eyelids, the result either of fume or of a very fine impalpable dust. The skin of the hands and of the other parts of the body becomes reddened and itchy. These symptoms are commoner among the men who break up the pitch obtained from Durham coal than among those similarly employed in Derbyshire, which suggests that there is some inherent difference in the coal. Many tar and pitch burns become septic.

As might be expected from exposure to heat and cold, the men suffer from bronchial and other types of catarrh, and from rheumatism and lumbago. Recurrences of bronchial catarrh predispose the individual to pulmonary tuberculosis, or to a general breakdown in health in the early forties, followed by physical unfitness to resume work at the coke-ovens. I have not been able to confirm the possibility that workers are poisoned by sulphuretted hydrogen, although an equally subtle form of poisoning may occur at the level of the ovens. The doors of the ovens have to be sealed as hermetically as possible. Now and then, either as a result of the expansion of the raw material during its conversion into coke, or of the displacement of a brick, there is a leakage of gas at the sides and at the foot of the doors of the ovens. Not long ago a workman employed at the ovens was suddenly observed to fall and to become unconscious; he was removed; a similar fate befell his successor. A leak had occurred, probably of carbon monoxide gas. The leak was sealed up, but two days later when the coking operations had been resumed, a fresh workman was similarly overcome by gas at the same oven door.

I have recently examined twenty-three by-products workers who were under medical treatment, thirteen of these for gastritis and six for boils. It would be unreasonable to take these figures as in any way indicating the percentage of men in this industry who suffer from stomach trouble, because the men who were examined were more or less picked. At the same time I have received the

impression from conversation with doctors in the mining areas that frequency of painful digestion and inability to take food are general symptoms.

With reference to occupational, scrotal, and penile cancer I have had the records of the Royal Victoria Infirmary, Newcastle-upon-Tyne, examined for the last two years, and I find that in 1928 fourteen operations concerned with these types of malignant disease were performed; three of the patients were coal miners, two were gas stokers and chemical workers. Five were men aged 50 to 60, three 60 to 70, and three 70 to 80. During 1929 sixteen patients were operated on for the same malady; of these eight were coal miners, one a worker in oils, and one in pitch; four were aged 50 to 60, five 60 to 70, and five 70 to 80.

Smoke, fume, and excessive heat with alternating exposure to cold are the harmful agents. In such an inquiry as I have been making two forms of illness have to be considered: there are the minor forms which cause a good deal of discomfort and temporary disablement, and which may be regarded as complaints of the workmen—for example, loss of appetite, pain after food, and vomiting, the lighter forms of skin troubles such as itchiness, boils, and "keens" on the hands; and there are the more serious forms of illness which result in cancer. The occupational operations we have been dealing with concern the manufacture of products obtained from the combustion of coal. There is a difference in regard to the manipulation of the raw material and the products obtained from it. The products obtained from coal are the more harmful. Chimney-sweeps, for example, have for long exhibited a high liability to scrotal cancer; so, too, have briquette makers, workers in mineral oils, arsenic grinders, colour mixers, and workers in tar and its derivatives. With "pitch cancer" we have long been familiar.

In Germany tar distillation is the cause of a higher percentage of accidents than any of the other operations. Pitch breakers there suffer considerably, too, from eczema, but cases of cancer are comparatively few. In Upper Silesia, however, of thirty anthracene workers who had been employed for over ten years twenty-two suffered from skin eruptions, and three, with six to eight years' service, had been operated on for scrotal cancer. In France coke-men and tar workers suffer from dermatitis, but cancer is less frequently met with than in Great Britain. Cancer is infrequently observed in the United States. Dr. Thacher of the Chicago By-products Coke Corporation informs me that the ailments of the men in his employment are the same as those of the men following other trades in the district—namely, severe colds and influenza; he also states that a few of the men suffer from gastric ailments. Heart disease is a common cause of death, but, in his opinion, he does not regard this circumstance as in any way related to their occupation. During the last three years one workman died from cancer of the stomach.

Twenty years ago Sir Thomas Legge drew attention to the fact that blast furnace tar and pitch do not possess the same carcinogenic properties as those of coal tar. The pitch obtained from coke ovens and gas works and used for making briquettes is said to be the cause in Great Britain of more than one-half of the notifiable cases of cancer. Drs. Bridge and Henry, in an investigation between 1920 and 1927, found that of 163 cases of cancer occurring among briquette workers, in 11 per cent. the disease was located in the scrotum, and in 71.2 per cent. in the head, arms, etc.; that out of 103 cases among tar distillers 39.8 per cent. were affected in the scrotum and 37 per cent. in the head, limbs, etc.; while in 47.3 per cent. of the men employed in gas works the disease was located in the scrotum, and in 23.6 per cent. in the head and elsewhere. Interesting information is also supplied by Dr. Prosser White in his encyclopaedic work *Occupational Diseases of the Skin*, by Dr. O'Donovan, and by Dr. Scott of Broxburn in his helpful monograph upon the incidence of cancer among workers in shale oils and their derivatives.

A microscopic examination of the blood does not reveal anything absolutely definitive. This may be due to the fact that the work is carried on in the open air, and is to some extent interchangeable. In some cases the blood shows a marked deficiency of leucocytes or white corpuscles; in others the number of these cells is practically normal.

Although the atmosphere of by-product coke ovens and the conduits which carry the liquid and gaseous material away from them is redolent of fume, there are, as already stated, certain classes of workers engaged in the transit of the material whose health appears to be more severely affected than others in the industry, such as workers at the top ovens, at the hydraulic mains, the men who adjust the valves in the shafts leading into the hydraulic mains, and those who break up the solid pitch—all these are liable to be adversely affected by dust, heat, and fume.

While the main incidents of the industry from a health point of view are painful and irritating conditions of the skin, some of which exhibit a tendency to become malignant, there are also the stomach troubles to which reference has been made; of these it may be said that the severity of the pain experienced by the workman, the physical debility that ensues, and the consequent loss of time, together form a triad of circumstances which call for recognition and careful consideration dietetically, medicinally, and industrially.

BATHS AS ARTIFICIAL CLIMATES.

THE TREATMENT OF RHEUMATISM IN WINTER.*

BY

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SINCE the attention of the medical profession has been directed to the chronic rheumatic diseases two lines of advance have been energetically followed, especially in England and America—namely, the investigation and treatment of the infective element in these diseases, and the use of orthopaedic methods for the rectification of posture, avoidance of pressure upon inflamed joints, and prevention and cure of deformity. Good work on these lines has brought relief in many intractable cases, and is a welcome contribution to the campaign against rheumatism.

It is, however, possible to approach this problem from another and equally logical point of view. Five years ago an international committee on rheumatism, consisting of a small group of medical men who had long experience of rheumatic diseases in the northern countries of Europe, came into existence. They held conferences in France, Holland, Germany, Czechoslovakia, Hungary, Austria, and England.[1] The committee, now an international league, has become a small connecting link between larger national bodies in these countries as well as in Russia and America. Many of their members are specializing entirely in this group of diseases; some are workers at university clinics, physicians or directors of hospital departments, of special hospitals for rheumatism, or of bath clinics in towns; others are engaged in the treatment of rheumatism on a large scale in spas and health resorts. It is clear from the various reports on rheumatism issued by the Ministries of Health and Social Welfare, especially in England, that this large group of diseases has a vast incidence in cold climates, and that it is chiefly responsible for crippling and disablement in great industrial populations, not tending to shorten life, but spreading like a blight over the working period of life. The problem, apart from its medical interest, is also of great economic importance.

In the view of the league such a mass of invalidity in the best years of life demands an organized and co-operative effort for special investigation and special methods of treatment. Existing provision of this kind, especially for the treatment of early cases, is at present so fragmentary that only an insignificant fraction of the vast number of rheumatic persons can benefit by it.

The league attaches great importance to the investigation of causation. Its provisional statement[2] comprises four prime factors: a cosmic or external influence—

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climate, surroundings, and occupation; a constitutional anomaly which causes some to suffer while others escape; a defective function of the skin; and a factor of infection. These factors operate so variably and unequally that sometimes one and sometimes another appear to be dominant, with the result that diagnosis and treatment become an individual study.

What are the conditions that make infection operative?[1] To obtain a true picture of the etiological field all such conditions, whether essential or accidental, must be elucidated. The merulius is not a sufficient cause for dry rot in timber: there must also be a deficiency of oxygen and heat. I confess to an inveterate belief that one of the essential conditions in the production of rheumatic diseases is the influence of cold and damp. In a biological sense climate signifies the energies outside ourselves, from which are drawn the stimuli necessary to life. The healthy organism reacts to them favourably; but if from any cause it has lost physiological contact, if a warm-blooded animal fails in its normal reactions to the stimulus of cold in a medium many degrees cooler than itself—if, that is to say, external cold no longer generates internal heat—then another series of less favourable reactions will occur. The demand made upon physiological heat production is very variable, both in the same locality and in different localities. The maximum demand is made in northern climates, especially in winter and spring, and the minimum demand in equatorial regions at all seasons of the year.

In the young and healthy the impressions of cold appear to evoke a perfect response and adaptation. The whole sensitive keyboard can be safely played upon; but in age and disease the limits of safety may be confined to a few notes. The activity of the heat-generating muscular system is an important element; with active locomotor organs it is possible to make good any loss of heat by muscular exercise. That is impossible for rheumatic persons who are deprived of their activity. There is one law for the fit and another for the frail, and the exposure which brings vigour to the one is dangerous to the other. It follows that for each person there is an ideal external temperature which best promotes the harmonious working of the functions, and an ideal range of temperature within which their reactions may be exercised.

The well-known results of severe exposure of healthy subjects, or slight exposure of sensitive subjects, may be summarized as follows:

(*a*) *Low Temperature of the Skin.*—In health, with an air temperature of 10° C. (50° F.), the uncovered parts of the skin are from 3° to 4° C. cooler than the covered part.[1] Upon undressing in a cold room the skin cools down, the loss of body heat increasing by at least a third. A marked lowering of skin heat is therefore an immediate result of exposure, and becomes a protection against further loss of heat.

(*b*) *Contracted Peripheral Circulation.*—The capillary bed is more or less closed with areas of complete stasis, which is a chronic condition in sensitive subjects under repeated exposure.

(*c*) *Inactivity of the Sweat Glands.*—It is a cardinal fact that transpiration, or true sweating, is in abeyance in cold climates, and can only be produced artificially by strong exercise or external heat.

(*d*) *Lowering of the Temperature of the Body.*—In proportion as the response to cold by production of heat fails, oxidation and metabolism are defective, and the exposed body loses heat like an inanimate object.

(*e*) *Lowering of Resistance to Additional Exposure, and especially to Infection and Injury.*—Lode[2] has shown that rats with a temperature artificially lowered by 4° to 5° C. are extremely vulnerable to infection, 85 per cent. dying of inoculated staphylococcus, pneumococcus, or tubercle, as against 12 per cent. of normal animals. Pasteur's classical experiment may be recalled, showing that poultry after standing in cold water easily fall victims to chicken cholera. It seems clear that repeated or prolonged chilling causes alterations in the tissues, with diminished power of forming antitoxins.

The effects of heat in baths are exactly the contrary. (*a*) Baths raise the temperature of the skin, so that the skin becomes not the coolest, but the hottest part of the body; (*b*) they increase the circulation by opening up the capillary bed (the plethysmograph shows increased bulk of a limb immersed in a hot whirlpool); (*c*) they powerfully increase the activity of the sweat glands, which may have been in abeyance for years; (*d*) they temporarily raise the temperature of the blood, and, if it is subnormal, repeated baths may raise it permanently; (*e*) they increase the resistance to cold and injury, and in all probability to infection also.

We may now ask, What are the observed functional disturbances in the early stages of chronic rheumatic disease? It is a striking fact that they are precisely, one after another, the observed effects of exposure to cold in frigo-sensitive persons.[4]

The following table shows the surface temperatures in a woman, aged 37, with arthritis following sea-bathing.[3]

Surface Temperatures in Arthritis.

	Before Treatment.	After Treatment.	Normal (Di Gaspero).[3]
Dorsum of left foot ..	25° C.	31.4°	32.4° C.
Dorsum of right foot	Colder (off the scale)	31.3°	
Left knee	25.8°	—	35.1°
Right knee	25.0°		
Dorsum of left hand	30°	31.3°	32.5°
Dorsum of right hand ...	30.3°	31.6°	

A habitual inactivity of the skin, with contracted peripheral vessels, is an observation familiar enough to students of rheumatism. Schulhof[5] has described the partial closure of the superficial capillary beds. The lowering of resistance to cold and injury are admitted, and it would be difficult to believe that the same is not true of resistance to infection. It would seem, therefore, that there is a group of functional disturbances, making up a clinical entity, which is caused by exposure to climate and is cured by heat in baths, and that these disturbances accompany the development of rheumatic disease. They may, in fact, be regarded as the departures from physiological health to which warm-blooded animals are liable in a cold climate.

What may be described as "chronic chill" is a fruitful field for investigation, at present but little explored. The act of "catching cold" is constantly done, and happily by homely remedies is easily undone, but what is its significance as a cause of disease? Shade,[10] who studied the effects of chill in a German division during a severe winter, records how 2,700 men were exposed to an exceptional degree of cold and damp. Although they were men of three years' field service, "chill diseases" were increased fourfold. He concludes that damp cold brought on rheumatic diseases, and dry cold and wind respiratory troubles.

I suggest that there are large numbers of chilled or chilly persons going about their ordinary avocations with inactive skin, showing areas often 5° or 6° C. below normal, with a body temperature usually subnormal, and with contracted peripheral circulation. They are not yet ill, but they show an exaggerated liability to disease. I agree with van Breemen[7] that the organism often goes on resisting up to a point, until suddenly a barrier seems to be broken down, and rheumatism, perhaps progressive arthritis, sets in, which can hardly be checked.

It is well known that a change of climate is sometimes a cure for rheumatism;[11] as a prophylactic it is much more powerful. For those who need and cannot get it, the elements of a tropical climate might well be artificially produced. I would suggest that baths operate as an "artificial climate," and should be used deliberately as such. This conception is strengthened by an appeal to the long-established habits of northern nations. In bleak and exposed climates the inhabitants have from time immemorial used a people's bath. Its essential feature is always hot vapour, with vigorous stimulation of the skin. The Russians, Finns, Swedes, North American Indians, Eskimos, and also, it seems, the Celtic races in pre-Roman Britain, all used more or less primitive vapour baths, in

which the body was exposed to an intense degree of moist heat. The contemporary practice is equally widespread. The baths of Finland have been well described by Kajava.[12] The circulation, contracted by the cold, is literally whipped into activity in these baths. Another form of artificial climate with vapour at lower temperatures was the Roman bath, which was originally taken from the East and became a part of the Roman civilization in Britain and Gaul. The eastern Hammams have always utilized vapour with surface stimulation and passive movement, but in the so-called "Turkish" bath, introduced into Britain in 1856, only dry heat is used.

In the northern people's baths, ancient and modern, the essential elements are: heat, moisture, surface stimulation by switching and friction, and time. It is idle, perhaps, to speculate whether the disuse in England of sweating baths may be partly responsible for the prevalence of rheumatism and catarrh. But I would submit that heat and moisture, so employed, can, like a hot or tropical climate, rectify the disturbances caused by exposure to cold; that in rheumatic affections, by increasing the circulation, they can prevent the localization of the disease in the joints, disperse swellings already formed, relieve pain, restore the power of movement, and improve if not re-establish the resistance to cold; that, in short, the "bath complex" (heat, moisture, and movement) is, in skilful hands, an exceedingly powerful remedy, perhaps the most powerful, in the prevention and treatment of rheumatic diseases.

Certain indispensable conditions of success remain to be noticed. The question is asked whether the hot bath can produce permanent results. Slow diseases need slow remedies, and chronic rheumatism especially requires a slow, repetitive, and cumulative treatment. In prescribing an artificial climate a little advance should be made from day to day. It is necessary that the bath should be repeated before the surface and deep temperatures and circulation have lost the effect of the preceding treatment. In other words, the climatic influence is, so far as possible, continuous, and the effect gradual and cumulative, as in nature. The poor success of baths in a cold climate is often due, in my belief, to the mistaken doctrine that rheumatic patients require "hardening" or "toning up." It is impossible to counteract chronic disorders of temperature and circulation if after a brief exposure to heat a rheumatic subject is allowed to pass into a cold dressing-room or the open air. To produce results analogous to those of a hot climate the active agency of the bath must be supplemented by a thermal environment[13] in which the patient remains for a few hours each day. All risk of intercurrent chilling must be carefully avoided. Two cases of my own (among many) may illustrate this point.

A middle-aged lady with Parkinson's disease and rigid and painful muscles was recommended to a British spa for long-continued hot pool baths. In the pool, so long as the shoulders were covered, she was free from pain and moved with comparative ease, but exposure to the air even in the pool room, and later in the dressing room, immediately brought back her pain and stiffness. She returned no better for her treatment.

Another chilly subject, a farmer, with severe subacute arthritis of middle life in hands and knees, went south to an Italian spa for hot mud baths. In these baths the pain and stiffness were very soon alleviated, and the warmth of the local climate and of the heated hotel prevented any sensation of chill throughout the cure. He came back walking with comfort, the disease arrested, and the process of cure established.

It is something more than a fanciful analogy that in many chronic diseases man reverts a little towards the condition of cold-blooded or hibernating and immobile animals, and it is not unreasonable to suppose that prolonged and gentle and increasing warmth, like that of the spring, is more likely to restore the warm-blooded state and to overcome chronic chill than brief or alternating exposures. But such a conception would, if accepted, involve the application of a different practice to rheumatic illness from that which usually obtains, and which is undoubtedly proper in other forms of illness.

No single kind of bath is a specific for rheumatism, but four methods may be mentioned which are justified by age-long experience and by precise modern investigation.[14]

1. *The hot pool*, with more or less prolonged immersion. Recently, in Transjordania, I have seen the Bedouin resorting in winter to the natural thermal pools, not for brief immersion but very often for the greater part of the day. Their tolerance of heat is extraordinary. A danger with which hydrologists are familiar was brought to mind at another pool near Tiberias where the bath-keeper stated that his wife was cured of intractable rheumatism by sitting for hours in the Roman pool a treatment which, however, brought on heart trouble. The risk of "thermal debility" in baths is not to be forgotten, and should be carefully guarded against by "heart cooling."

2. *Muds.* With these, higher temperatures than in baths can be used in local applications, and the desired local and general reaction very accurately produced. Here again heart cooling is indispensable.

3. *Vapour*, with or without switching. Besides being the most soothing of all procedures for tension and pain, vapour may be made the most stimulating of all external applications. A wide range and flexibility of application give it an essential value in cold climates. The prolonged use of vapour at various and progressive grades of temperature is extraordinarily valuable.

4. *Salt.* Local and general applications of brines are entirely justified in arthritic cases, and form one of the most powerful of surface treatments.

A cure for rheumatism in the warmth of summer is traditional in most countries, and is well justified by what has been already set forth. But it is reasonable to suppose that artificial climates are likely to be most needed by frigo-sensitive persons when the external conditions are most unfavourable. It is true that certain forms of arthritis are at their worst in the hot months of the year, but rheumatic persons usually suffer most in winter and spring.

Except at Bath, the systematic treatment of rheumatism in the winter months is little practised in England. An interesting example of what can be done in a cold country with mud baths is furnished by recent reports from Russia.[15] For a number of years very good results have been obtained with hot sedimentary muds in the summer season in Southern Russia. A careful trial of the same treatment by means of exported muds has now been carried out in the winter season in several northern cities. In the winter of 1914–15 a thousand military patients were treated in this manner in Leningrad, the men being housed in warm buildings and carefully protected from intercurrent chill. Professor Alexandroff states that the results obtained from winter treatment in the towns have proved in no respect inferior to those experienced in the summer, and that there are now in Russia several properly organized clinics for this form of treatment in winter.

It would seem that the incidence of rheumatic disease in England is the most serious in the world. No one who is conversant in any degree with the complex character of these diseases will advocate one method of approach or one line of treatment to the exclusion of others. The Ministry of Health, in its pronouncement at the International Conference on Rheumatism at Amsterdam in 1927, and more than one report, has foreshadowed a threefold programme for investigation and treatment: (1) centres for physical treatment in towns; (2) development of spa hospitals; (3) an arthritis unit or units for intensive study in association with the medical schools. To this programme those who are responsible for the international league have given their unreserved support.

My present purpose is to endeavour to indicate, from rather wide experience, what appear to me to be the essential features and conditions of success of a centre for physical treatment in a northern climate. In the first place, the centre must have for its nucleus a bath clinic with its proper therapeutic elements—namely, heat, moisture, mechanical stimulation, and time. The baths and its surroundings will actually represent a climate in miniature, and it will operate by counteracting climatic influences in those who are injuriously affected by them. This means the establishment, or perhaps rather the re-establishment, in England of people's baths, where the functional disturbances associated with rheumatism can be relieved, and the development of rheumatic diseases prevented, especially in the cold months of the year.

To serve this purpose a large warmed building will be required, with a temperature approaching 70° F. in all its parts. The main feature will be the central pool or pools of moving water with its complement of gases, at the selected degree or degrees of heat. In association with

these, departments will be provided for treatment either by mud, with the proper mud kitchen, or by vapour at various temperatures, or by thermal brine. Light and artificial sunshine will certainly have a place, as well as a judicious selection of local and accessory physical treatment. There will also be ample accommodation for manipulations, movements, frictions, and switching, and couches for packs and prolonged and quiet resting. An artificial climate will pervade the place, and winter gardens with a subtropical temperature, refreshment rooms, library, games and recreations, and a gymnasium, may properly be included in the scheme. Last but not least, fountains of soft drinking water, hot and cold, will be provided in all departments for treatment, inasmuch as the free use of water internally is of great assistance to the external treatment of rheumatism.

The great majority of rheumatic persons, both in the early and later stages of the disease, and many others who suffer from chill, might well be recommended to spend from two to three hours a day in a medical establishment of this description. Men and women after the day's work would take with advantage a couple of hours for treatment, rest, and recreation at such a bath clinic. For all serious cases, especially of arthritis, warmed hostels should be available in close proximity.

Apart from the great towns, where the need for such facilities is probably the greatest, there are British marine resorts well suited for a winter cure, where rheumatic cases are already treated with benefit, and it is not inconceivable that at some future time the people's bath clinics may also be established at the spas and along the coasts.

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A BLOOD SERUM TEST OF GENERAL PARALYSIS.

BY

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LANGE's gold-sol test depends on the capacity of pathological cerebro-spinal fluid to bring about a coagulation in a gold-sol whose hydrogen-ion concentration lies between *p*H 6.1 and *p*H 6.3. This coagulation is ascribed to one or several globulin fractions (Cruickshank,[1] Felton,[2] Fischer,[3] Weston,[4] Mellanby and Anwyl-Davies,[5] and others). Lange tried to extend his test to serum, but was unsuccessful; the difficulty lies in the fact that every serum, if tested like cerebro-spinal fluid, gives a strong paretic curve ascribed to globulin. I have devised a serological test of general paralysis, evolved in the course of work on the pathogenesis of the disease and of certain physiological and pathological features of the cerebro-spinal fluid. My object in this article is to describe this test and its clinical application; the work on which it is based, and my views about the cause of the reaction, will appear in another scientific journal.

THE GEL TEST.

By a process of sensitization to be described below I have been able to produce a gold-sol which, for a period long enough to enable the experimenter to examine a considerable number of serums, gives distinct and easily distinguishable colour reactions in normal and paretic serum (or, probably, in the serum of any patient whose cerebro-spinal fluid would show a paretic curve). I have also found that one drop from several cubic centimetres of glycerin which has been poured into a test tube containing a small amount of solidified serum and allowed to stand at room temperature for one minute or longer gives an instantaneous characteristic reaction with sensitized gold-sol. The serum before solidification must be shaken for a few seconds with decolorizing charcoal. The solidification is effected by heating to 80° C.; boiling is permissible, but it distinctly weakens the reaction.

Preparation of the Gold-sol.

I prepare the gold-sol according to Eicke's method, but with one or two very slight modifications. I always distil the water over potassium permanganate in a Jena glass still. Further, having added 1.5 c.cm. of a 5 per cent. solution of potassium permanganate drop by drop at intervals of about one second to the 500 c.cm. of distilled water (containing 0.5 c.cm. of 10 per cent. gold chloride and 2.5 c.cm. of a 5 per cent. solution of dextrose), beginning when its temperature has reached 90° C., I continue with a 1 per cent. solution of potassium carbonate, gradually increasing the intervals between the drops from about two to five seconds as the colour change approaches. As soon as the colour change occurs I rapidly remove the flame. The gold-sol is now ready for immediate use and can be cooled in plugged 100 c.cm. Erlenmeyer flasks under a cold-water tap.

Apparatus Required.

The requisites are as follows: (*a*) stock solutions, preferably kept in Jena glass flasks, of gold-sol prepared by the above method, and normal hydrochloric acid; (*b*) one 50 c.cm. beaker, one 100 c.cm. beaker, both preferably of hard glass; (*c*) one 50 c.cm. burette, one 25 c.cm. burette, and one 2 c.cm. burette (graduated in 0.01 c.cm.); (*d*) one dropping pipette (Dreyer's pattern), and one 10 c.cm. pipette; (*e*) a number of straight button-end dropping tubes*; and (*f*) a number of test tubes, extra strong, 4 in. by 1/2 in. A simple device (not essential, but particularly useful for dealing with large numbers of serums) can be obtained from S. W. Bush, Sir William Dunn School of Pathology, Oxford. It has been made according to my instructions, and consists of a solid duralumin pan with a stout copper inlet serving as a lid, and holding a thermometer and fifty test tubes of the size described above. I recommend that three Dreyer pipettes should be kept and calibrated as follows: one pipette marked at 0.5 c.cm. and 0.9 c.cm.; two pipettes marked at 0.1 c.cm. and 0.5 c.cm. The first pipette serves for measuring the saline, the other two for measuring the cerebro-spinal fluid. I always work with 0.5 c.cm. of cerebro-spinal fluid dilutions, adding 2.5 c.cm. of gold-sol.

"Adjustment" of the Gold-sol.

To adjust the gold-sol the procedure is as follows:

1. Four test tubes, each containing a 1 in 10 dilution of normal cerebro-spinal fluid in 0.4 per cent. saline, are set up.

2. The 50 c.cm., 25 c.cm., and 2 c.cm. burettes are filled with gold-sol, distilled water, and normal hydrochloric acid respectively.

3. 12.5 c.cm. of gold-sol are run into the 50 c.cm. beaker.

4. 19.5 c.cm. of distilled water are run into the 100 c.cm. beaker.

* Obtainable from Henry W. Bush and Co., Ltd., Rembrandt Works, Lavington Street, London, S.E.1. Price list No. 655, 1929, Catalogue No. 815.

5. 0.5 c.cm. of normal hydrochloric acid is run into the beaker containing distilled water and the contents mixed by a few rapid circular movements.

6. Five drops of the hydrochloric acid thus diluted are transferred with a drop tube, kept specially for the purpose, into *the beaker containing the* 12.5 c.cm. of gold-sol, and the contents are mixed in the manner described in 5.

7. 2.5 c.cm. of the now acidified gold-sol are run into one of the test tubes containing the 1 in 10 dilution of normal cerebro-spinal fluid. The contents of the tube are mixed by shaking.

If no change, or only a slight change, occurs in the gold-sol in the test tube the whole procedure must be repeated, with the difference that now six drops of acid are added. Adding another drop of acid to the remaining gold-sol is useless. The required degree of acidity is reached when the gold-sol, on being added to the diluted cerebro-spinal fluid, assumes a blue colour, which turns to steel-blue in approximately one minute. With such a gold-sol the ordinary events are reversed: normal cerebro-spinal fluid precipitates it; paretic cerebro-spinal fluid hardly precipitates it at all, or only to a much less degree. The beginner will therefore find it useful to set up a 1 in 10 dilution of paretic and of normal cerebro-spinal fluid, and to test both. If the difference between normal and paretic cerebro-spinal fluid is distinct, he will know that he has not added too much acid; the addition of too much acid sometimes decolorizes both fluids and makes the gold-sol unsuitable. An important point to note is that the right degree of acidity is reached when the normal cerebro-spinal fluid turns blue, and that after this a further addition of acid is not permissible. The determination of the end-point is easy on account of the sharp change.

A note is made of the number of drops of diluted hydrochloric acid that must be transferred to the beaker containing the gold-sol (see 6 above), and this number will be found to be sufficient in dealing with the rest of the stock solution of gold-sol as long as this does not undergo any spontaneous change. It generally takes ten drops of N/40 hydrochloric acid to obtain a gold-sol suitable for the reaction; consequently it is practical to begin by adding ten drops of the N/40 hydrochloric acid to the 12.5 c.cm. of gold-sol, and then only to undertake "adjusting" if it proves necessary.

Technique of the Test.

The gold-sol is now "sensitized," and the remaining procedure is as follows:

1. With a wire-loop about 0.01 gram of animal charcoal is placed at the bottom of two test tubes; the charcoal in each tube should be approximately the size of a grain of barley.

2. Into one of the two test tubes five drops of the patient's serum are dropped with a Dreyer pipette, and in the other the same amount of serum from a patient known to be paretic. The pipette must be dry and clean for each of these operations.

3. The two test tubes are gently shaken by hand for about ten seconds, care being taken not to splash the sides of the tubes more than can be helped.

4. Both test tubes are partially immersed in a beaker containing water. The water is heated to 80° C., and the serum solidified to a jelly-like mass.

5. The test tubes are removed from the beaker and 4 c.cm. of glycerin is added to each, and the tubes are allowed to stand for five minutes at room temperature.

6. From each of the test tubes one drop of glycerin is transferred by means of a straight drop tube into other test tubes; separate drop tubes must be used. The test tubes containing one drop of glycerin each are called A and B.

7. Two straight drop tubes set aside for the purpose are dipped into the beaker containing the sensitized gold-sol, and at the same time about 1 c.cm. is drawn up into each of the two tubes. It is well to make a mark at 1 c.cm., and so to adjust the rubber teats that, as nearly as possible, the same amount of gold-sol is drawn up into both tubes. After gold-sol has been withdrawn from the beaker it should not be returned.

8. The charged drop tubes are brought into position above the two tubes A and B, and discharged simultaneously with a sudden jerk. This completes the test.

Result of the Test.

The gold-sol in the tube containing one drop of "unknown" glycerin will, if the latter has stood over non-paretic serum, instantaneously turn a brilliant blue colour; the gold-sol in the tube with paretic glycerin will show a brilliant red colour. This occurs in many cases, but the result of the test is in no way invalidated if exactly the opposite occurs—namely, "paretic" glycerin turns the *gold-sol blue, and "non-paretic"* glycerin allows the gold-sol to retain its red colour; this phenomenon I describe as "reverse." It may also happen, though rarely, that the difference in colour between the two tubes is not very distinct, and in this case a repetition of the test may be necessary. The crucial point, however, is that difference in colour from that of the "paretic" glycerin indicates non-paretic serum; identity of colour indicates paretic serum. It is not essential to use fresh serum; serum several months old, and even infected, though its use is undesirable, will produce reaction.

If several serums have to be examined together it is advisable to arrange the sequence of tubes as follows, calling the tubes containing "unknown" glycerins A_1, A_2, A_3, etc., and the tubes containing "known" paretic glycerin B. Six pairs of tubes—A_1-B, A_2-B, A_3-B, etc.—should be set up at the same time, as this number just takes up the amount of "sensitized" gold-sol available.

Value of the Test.

I have applied the test in 285 cases, among which there were nine cases of general paralysis; in some of the cases I applied the test a number of times. Only one serum from a patient believed to be non-paretic gave a reaction of general paralysis, but on clinical examination of the patient concerned and examination of the cerebro-spinal fluid this case proved to be one of either general paralysis or of the rare type of encephalitis lethargica which, imitating the neurological and psychotic symptoms of tabo-paresis, may be mistaken for general paralysis. Several features in the case make me incline to adopt the latter diagnosis.

Discussion.

My views about the nature of the reaction will appear in a later paper, but I may say briefly that I ascribe the reaction to the presence of a hypothetical thermostable catalytic substance of low molecular weight adsorbed to the molecules of albumin and globulin, more loosely to the latter and travelling through the glycerin at great speed. I assume, further, that the thermostable catalyst is surrounded by a layer of protective colloid which should be capable of undergoing various chemico-physical changes in the blood serum.

In my view the order of events which characterize the onset and course of general paralysis is as follows: a primary change in the blood serum, spontaneously reversible or reversible by the chemico-physical changes in the blood serum induced by malarial treatment; and secondly, irreversible changes in the central nervous system and the meninges.

If the value of the test is substantiated I would suggest that the blood of every syphilitic patient should be subjected to it at least once a year, and if the reaction is positive malarial treatment should be applied immediately, even though the Wassermann reaction, or any other similar reaction, should prove negative in the blood and cerebro-spinal fluid. It is possible that the change occurs an appreciable time before the permanent change in the central nervous system and the meninges, and it may be that only during this interval can malarial treatment be applied with preventive effect.

I am indebted to Dr. T. S. Good, medical superintendent of the Oxford County and City Mental Hospital, Littlemore, for facilities afforded; and to my colleagues Dr. C. W. S. Davis-Jones, first assistant medical officer, and Dr. F. M. Stewart, second assistant medical officer, both of this hospital, for kindly collecting numerous samples of blood required in the course of this investigation. I gratefully acknowledge the invaluable help I have received from my laboratory assistants, W. MacDougall and J. G. Watchorne, members of the male nursing staff of the hospital.

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THE ETIOLOGY OF CERTAIN LESIONS AT THE HIP-JOINT.

BY

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I PROPOSE to correlate some recent researches in the anatomy of the parts about the hip-joint, with special reference to their embryology, and to indicate the practical application of this by illustrative pathological conditions. In a paper such as this it is impossible to deal with all the various possible lesions, but I will mention a few of the more important from the standpoint of how they occur, giving an outline of the necessary treatment; this is better than taking a list of diseases and discussing them seriatim.

The first sign of the limbs in the developing foetus is seen at the third week, when the four limb buds appear; in the lower extremities the bud consists of ten lateral processes of the corresponding somites of mesoblast. As the processes grow out they as it were drag with them corresponding portions of the primitive neuroblastic neural tube, which ultimately form the spinal nerves, and in this way the twelfth dorsal to the fourth sacral nerves are formed. Recent work has shown that the lateral processes of the primitive segments consist of two separate parts—a central core of mesoblast, with a covering of mesenchyme. This mesenchyme is probably the more primitive body tissue in which stiffening takes place to form the skeleton; the original idea of mesoblastic uniformity is being gradually abandoned. As the limb buds grow out they lie at first parallel to the trunk, but by the sixth week of intrauterine life the lower limbs have assumed a position at right angles to the trunk, and some differentiation into their three mature portions has occurred. While this is taking place condensation of mesoblastic cells occurs in the centre of the bud, starting first in the proximal part of the free limb and in the tissues carrying it; these ultimately form the buried portions of the limb and also the limb girdle. At quite an early stage of condensation in the case of the lower limb the femur assumes a shape approaching in some measure its adult form. This shape is determined apparently (Hume) by the deposition on the femur of a limiting layer of cells, derived from the surrounding mesenchyme, this layer ultimately forming the periosteum of the bone. At the ends of the bars of mesoblast the covering layer is usually very thin, to allow, apparently, for the changes which occur later on in and around the epiphyseal line. When the layer is actually deficient, leakage of cells may ensue, which suggests the real origin of exostoses—comparable with the leakage of cells from beneath the periosteum of an adult bone at muscle or tendon insertions, where spurs and other outgrowths sometimes occur.

While condensation of the buried and free limb is taking place rotation has commenced in an inward and backward direction, so that the future flexor surface from being ventral becomes dorsal. When it is remembered how very fragile the foetal cells must be at this stage, in spite of the term "condensation" being applied to them, the cause of congenital malformation of the limbs or spine becomes more comprehensible. It is fairly easy to surmise the cause of congenital dislocation of the hip, the "central splint" of cells being severed where the free limb is attached to the trunk, when the limb buds rotate.

To carry explanations too far leads to difficulty, but it is interesting to remember in the case in point that an acetabulum of a kind is formed, in spite of the fact that the head of the femur has never been in its proper position. That circumstances will affect morphological change is evidenced by the more rational form the acetabulum assumes after successful treatment for congenital dislocation of the hip. All this evidence tends to support a theory of developmental anomaly as the cause of this condition, rather than of obstetrical accidents, etc.; but I suppose the explanation is of academic rather than of practical importance.

Anatomical landmarks are the most useful guides in classifying congenital dislocation of the hip, which may be of any degree, ranging from a slight subluxation of the joint to a complete derangement, with the head of the femur lying anywhere from the dorsum ilii to the obturator foramen. The most common place is situated on the dorsum ilii above the acetabulum, where it is probably driven by the weight of the body falling on an already dislocated joint; that the capsule stretches with the excursion of the bone is what would be expected from the developmental evidence already considered, the capsule being mesenchymal in origin and really part of the limb bud.

It is unnecessary to enumerate the cardinal symptoms and signs of this condition, the most satisfactory diagnostic information being that obtained by *x*-ray photographs. Before passing to the rationale of hip-joint symptomatology in general, however, a note about treatment may be permitted. The earlier the condition is diagnosed the more successful is the treatment. This is now being practically standardized as reduction of the dislocation by manipulation and fixation of the limb, fully flexed and everted in a plaster case; from this position the limb is gradually released during a period of nine months or so. The form of treatment by clamps and splints, advocated on the Continent, has been abandoned.

The hip-joint, from its very nature, is fairly stable; in its resting position it is locked by the action of the ilio-femoral ligament, or Y-shaped ligament of Bigelow, which is rendered tense by full extension and slight internal rotation of the femur, muscular strain thereby being reduced to a minimum. When the joint has to be moved again it is unlocked by slight internal rotation of the femur, and the muscles take the strain. Consequently, when any condition in the hip-joint itself, or closely adjacent to it, causes the slightest effusion, the joint capsule and the ligaments, especially the ligamentum teres, must be relaxed, and the classical flexion, abduction, and external rotation occur. External rotation beyond that which occurs with an extended locked joint is made possible by the fact that flexion has occurred first. Muscle ache on standing or walking, apart from joint pain, is thus explained, while the degree of limp is determined by the extent of the deformity and any change in the upper end of the femur which may be present. The principal nerve supply to the hip-joint is by the obturator, the motor nerve of the adductor group of muscles, and, should it be irritated for more than a short time, the adductors pass into reflex spasm, causing the secondary deformities of hip-joint disease—namely, flexion and adduction. Internal rotation follows to a greater or less degree, in spite of the normal action of the adductors, owing to the fact that the patient lies on the sound side and gravity comes into operation.

In addition to the foregoing, which may be termed the gross signs of hip-joint disease, there is another equally important group of manifestations, not so obvious, perhaps, which depend on some anatomical change in the head or neck of the femur, the consequent deformities being best elicited by means of a tape-measure and a subsequent *x*-ray examination. The normal angle of the neck of the femur is 125 degrees, and the neck has a slight forward inclination of 12 degrees; it follows, therefore, that any alteration in the angle of the neck, or any bony changes in the head or neck, will be reflected in the total length of the limb, and in the relation of the tip of the great trochanter to Nélaton's line.

The question then arises how best to distinguish between the various possible conditions which may be present when one is faced with a case suggesting trouble in the region of the hip-joint. The age of the patient is of value, especially in such conditions as congenital dislocation of the hip, which is noticed first in young children, and adolescent coxa vara in children at or just after puberty; for the rest it is not of diagnostic value, at any rate at first. Following this a history is elicited which may bring out the story of an injury, even some time previously, which broadly suggests the possibility of one of the epiphyseal group of diseases, such as pseudo-coxalgia or traumatic coxa vara. A simple epiphyseal strain, with its consequent pain and limping, usually settles down after about ten days' rest in bed, but, failing this, an *x*-ray examination will often help to exclude more serious lesions. Careful physical examination will, of course, elicit difference in the length of the

limbs, as well as bony displacements and deep-seated tenderness, the possible conditions always being borne in mind. This physical examination should always be supplemented by *x*-ray photography, which it may be necessary to repeat at intervals; it is only since the advent of radiography that any really exact knowledge of the state of affairs has been possible.

Reference to the head of the femur prompts me to say a few words about its blood supply. The head receives a variable branch of the internal circumflex artery through the ligamentum teres, while the neck is supplied by numerous tiny twigs via the retinaculae in the capsule of the hip-joint from the digital anastomosis, which also sends a branch direct to the base of the neck. Recently some German anatomists have traced out the course of these rather feeble vessels in the bone itself, demonstrating that they run remarkably straight courses to form a network at the epiphyseal line. From this fact can be explained, perhaps, the changes which occur so frequently in the young when the epiphysis is moved relatively to the shaft of the bone, as by a fall. As the result of this injury there is thrombosis of the arterial whorl at the epiphysis; this is a possible explanation of the pseudo-coxalgia which crops up from time to time in hip-joints previously the seat of congenital dislocation which have been successfully reduced but too violently.

Epiphyseal strain, when it develops in the hip-joints of children following an injury, constitutes a definite threat of future trouble if not properly treated by rest and so forth, since cases occurring presumably without infection may end in a traumatic coxa vara; should a haematogenous infection be superadded pseudo-coxalgia will most certainly occur. Fortunately or unfortunately for this infective theory of the cause of pseudo-coxalgia, most careful cultures have been made in definite cases of the condition with only negative results, but this does not prove that the condition was always such. When cultures have been successful a *Staphylococcus aureus* of low virulence has been obtained, and, supposedly, a suppurative epiphysitis would have supervened had the micro-organism been more virile. When it is considered how frequently healthy children knock themselves about with no ill result the question arises why only some should suffer, especially as the upper epiphysis of the femur is always subjected to a sheering strain. Of late the importance of calcium metabolism and its relation to infections generally has attracted much attention; this is of special importance when dealing with bony conditions. Phosphorous and calcium taken by the mouth as food can only be metabolized in the presence of accessory food substances—the vitamins A and D—balance being preserved between these two elements and the excess being excreted. This is not the whole story, in the light of Collip's researches into the functions of the parathyroid bodies, since he found that, quite apart from vitamins, the normal level of blood calcium depended on the presence of the hormone of these bodies in the circulation.

"Late rickets" is a convenient label to apply to those epiphyseal changes in patients who are too old for this disease in its generally accepted form. Is it not more desirable to recast the whole story of calcium metabolism, and to presume, at any rate for the moment, that rickets is one indication of a general metabolic dysfunction which may be manifest at any time, at any rate in the early years of life? We may go further and consider a condition such as urticaria, which is by no means infrequently present in cases of rickety and adolescent coxa vara. Does not this suggest the importance of general measures as well as local splinting, etc., in the treatment of these bone joint lesions?

In days gone by cod-liver oil was the standby in all these nutritional diseases, but of late the results have not been uniformly successful, the reason being shown to rest in its variable vitamin content. When cases of bone disease are treated by sunlight, the ultra-violet light of which synthesizes the vitamin in the skin, remarkable results have been obtained, especially in conditions such as pseudo-coxalgia, which is often most difficult to distinguish from tubercle and has been treated similarly.

Pseudo-coxalgia is essentially an epiphyseal disease, appearing first as a destructive process, quietly continuing until a natural attempt at arrest brings about hypertrophic growth of bone, frequently very soft, with the result that the top of the femur is mushroomed and coxa plana results. The Americans describe coxa plana, due to this cause, as resembling the buffer of a railroad car rather than a mushroom, the top of which is really too big in proportion to its stem to be an exact simile. Treatment in the early stages must be expectant, with rest and massage at definite times; later deformities may require adjustment.

Mention of the femoral epiphysis leads on to another condition in which it is affected—namely, certain types of coxa vara. It is impossible in a short paper to enter into a full discussion of this disease, but as a rule it is bilateral, and angulation occurs at one of three points—epiphyseal, cervical, or basal. As regards the types, these are fairly well defined, the most interesting being the infantile, or cervical, which *x*-ray evidence definitely indicates as being of developmental origin. So far as can be ascertained, it appears that a diaphyseal spur develops which has a separate centre of ossification between the epiphysis and diaphysis proper, forming a triangular wedge of bone (Elmslie). The cementing cells between the portions of bone are weakened and give way, there being two layers instead of the usual one, as a result of the strain of the body weight. In the adolescent type there is no diaphyseal spur, and the slipping of the epiphysis is due to the weakening of the cementing cells from injury to the blood supply, and presumably to faulty calcium metabolism at the place, the changes not being comparable with those of true rickets. The onset is marked by pain and limping, the limb being flexed, adducted, and everted. Treatment aims at correcting the deformity by suitable extension; it should be continued until skiagrams show that buttressing by new bone has taken place.

In a purposely short paper it is impossible to go fully into all the conditions about the hip-joint; those mentioned have been discussed very broadly to avoid dogmatism.

Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

SCLEREMA NEONATORUM.

THE case of an infant who undoubtedly suffered from this unusual complaint, and is now alive and in good health, seems sufficiently interesting to be recorded.

The mother, aged 36, who had a history of scarlet and rheumatic fevers, indigestion apparently of hepatic origin, and several attacks of urticaria, was in poor health up to the time of her confinement on December 16th, 1929. She had been married eighteen months before she became pregnant. She does not appear to have had sufficient exercise. Her appetite was small, but she enjoyed fats in the form of butter and cream. She had mitral disease, which at first caused little inconvenience, and she complained of various "rheumatic" pains, induced by climatic changes. The father, a meagre, C 3-looking individual, has suffered for many years from chronic nasal catarrh.

The mother commenced to vomit as soon as she became pregnant, and continued, on and off, during pregnancy. She took "milk of magnesia" continuously, and had some difficulty with constipation. She lost weight, and had several attacks of bronchitis and night sweats. By the seventh month she complained of palpitation, swelling of the ankles, morning and evening, and of attacks of fainting. Her urine, which was tested frequently, never contained any albumin, but phosphates and urates were present in excess of normal. For the last two weeks prior to her confinement her abdomen felt "senseless." After being nine hours in labour she was given chloroform and delivered with forceps of a female child, which weighed 5¼ lb. She recovered from the confinement fairly well, but had several attacks of vomiting, and the involution of the uterus was delayed. She had no milk till the ninth day.

Delivery was hastened in view of the mother's cardiac condition. On the cord, which was unusually thick, there was, about one and a quarter inches from the umbilicus, what proved to be a haematoma, two and a quarter inches long, dipping into Wharton's jelly. The placenta appeared to be normal. The child seemed to be heavier than it actually was, and its skin was hard and stiff, preventing it from moving its limbs, but not interfering with sucking. The hardness, which apparently involved the whole skin, seemed most pronounced and remained longest over the buttocks, which were dark blue in colour. At no time did the skin pit on

pressure, and there were no haemorrhages. The hardness disappeared gradually about three weeks after birth, and was followed by a general desquamation.

Four days after birth the child developed a paronychia of its right index finger, and a few days later a swelling was observed on the inner side at the middle of the right upper arm, over the brachial artery. This gradually increased in size, and was diagnosed as an enlarged gland, an angioma, or an abscess. It never gave any fluctuation, but felt like rubber, and moved freely under the skin. In view of the paronychia, it was incised on the twenty-fourth day, and about 1½ drachms of pus were evacuated. The wound healed without delay, and at the present time, three months after birth, the child weighs 10¼ lb., and is happy and apparently in good health.

In view of the unknown pathogenesis of this obscure condition it is interesting to note: (1) the unsatisfactory condition of the mother's health, with symptoms pointing to allergy or hepatic insufficiency; (2) the delay in lactation; (3) the localized septic focus in the infant, which may have had something to do with its survival and recovery.

Wolverhampton. W. GOLDIE, *M.C.*, M.B., Ch.B.

ANTERIOR POLIOMYELITIS SIMULATING LANDRY'S PARALYSIS.

THE following case seems to be of sufficient interest and rarity to warrant publication.

On October 23rd, 1929, at 10 a.m., I saw Miss F., aged 35, a nullipara. She complained of vague pains in the back and lower limbs, but was afebrile. She did not look ill. The pulse and temperature were normal. The next day the condition was unchanged, but the temperature was 100.5° F.

On the morning of October 25th the patient was found to have flaccid paralysis of the lower limbs; the knee-jerks were absent; the plantar reflex was flexor on both sides. The abdominal cutaneous reflexes were indefinite; cutaneous and deep sensation apparently normal.

On October 26th no abdominal reflex was present and the plantar reflex was abolished. The abdomen was definitely distended. The patient urinated with difficulty, but apparent intestinal paresis was present. Temperature 101°, respirations 17, pulse 99. Towards night olive oil and soap-and-water enema, *plus* 1 c.cm. of pituitrin, gave a scanty result, but relieved the abdominal distension temporarily.

On October 27th the abdomen was again distended. The patient looked ill and distressed. Respirations had quickened and were *entirely thoracic*. There were tremors of the tongue, face, and arms; the pulse was very fast and irregular. Speech later on in the day became incoherent, articulation thick; movements of arms erratic. The patient died towards midnight of bulbar paralysis. The ultimate picture was certainly like asphyxia.

The case was obviously poliomyelitis, but of a rapidly ascending nature, with main incidence on the anterior cornua of grey matter. Its chief features were very similar to those of Landry's paralysis, except for the fact that there was obvious acute infection (fever) present. Unfortunately there were no facilities to take the electrical reactions of the paralysed muscles, which in Landry's paralysis are supposed to show no reaction of degeneration. Such a test would doubtless prove valuable in the differential diagnosis.

Ingleton, West Yorks. J. MACLEOD, M.B., Ch.B.Aberd.

PROPHYLAXIS AGAINST DYSENTERY BY ORAL VACCINES.

CASES of diarrhoea and dysentery have been occurring at Hillsleigh School (a branch of the Royal Eastern Counties Institution, Colchester) during the last few years. The children are of low grade, and it was deemed necessary to prevent further outbreaks. All the stools examined bacteriologically proved negative, and it was therefore decided to test the blood of all the patients.

Samples were taken from 48 children; in 26 cases the serum did not agglutinate Flexner's bacillus, *B. dysenteriae* Y, or Shiga's bacillus in any of the dilutions employed—namely, 1 in 10, 1 in 25, 1 in 50, and 1 in 100. In 14 cases the serum agglutinated a strain of Flexner's bacillus in dilutions of 1 in 10. In 4 cases it agglutinated Flexner's bacillus in dilutions of 1 in 25 as well as 1 in 10, but weaker dilutions were negative. Five of the 18 serums which agglutinated Flexner's bacillus also agglutinated Shiga's bacillus in a 1 in 10 dilution, but weaker dilutions were negative. Seven cases which agglutinated Flexner's bacillus also partially agglutinated a *B. dysenteriae* Y suspension in a 1 in 10 dilution, but weaker dilutions were negative. Four cases agglutinated *B. dysenteriae* Y in 1 in 25 dilution, but no other type.

All the cases at this branch home, whether positive or negative, received a course of oral antidysentery vaccine six months ago, each patient having three doses of 5 c.cm. each. This vaccine contains equal parts of Shiga's and Flexner's bacilli, and is given on three consecutive days. There was no reaction of any kind, and up to the present no case of dysentery has occurred since the patients received the vaccine.

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British Medical Association.

CLINICAL AND SCIENTIFIC PROCEEDINGS.

LANCASHIRE AND CHESHIRE BRANCH: SOUTHPORT DIVISION.

Surgery in Relation to Diseases of the Colon.

ON March 27th Professor D. P. D. WILKIE gave a British Medical Association Lecture to the Southport Division, entitled "Surgery in relation to diseases of the colon." The meeting was held in the Assembly Room of the Prince of Wales Hotel, Southport, and was well attended, there being about forty members present, including visitors. The lecture was made particularly interesting by the demonstration of lantern slides.

Professor Wilkie said that more disabilities arose from disorders of the large bowel than from anywhere else in the body; apart from acquired disorders there were many congenital causes which might render the normal function of the colon impossible. The small bowel was the active segment of the digestive canal, and therefore the colon and the stomach, with less digestive activity, were much more liable to be the seat of pathological changes. The proximal colon was the part from which toxic absorption might be expected. The lecturer, who dealt mainly with non-malignant diseases of the colon, compared the caecum and caeco-colic tract to the stomach, showing how it suffered from the same type of disease—namely, ulcers, the constricting as well as the fungating types of carcinoma, and occasionally from a large single diverticulum. He also commented on dilatation, diverticulum, and tuberculous stricture of the caecum, and described the disorders of the nerve supply of the colon. *Referring* to the spastic types of constipation, he said that it was beyond dispute that many individuals who enjoyed good health had a mobile proximal colon. In certain cases where there had been long complaint of dragging on the right side fixation of the colon had given immediate and lasting relief. The operation of colopexy was of undoubted value in some cases. In atonic dilated caecum the patient usually complained of right-sided abdominal discomfort, and showed evidence of intestinal toxaemia. There was constipation, lassitude, and acute pain in the right iliac region suggestive of a lesion of the appendix. X-ray examination revealed a low dilated caecum, with marked delay in emptying. Treatment by liquid paraffin and senna often greatly benefited these cases, but operation would, of course, give the surest relief: removal of the appendix and plication of the caecum abolished pain and facilitated the emptying of the caecum.

Professor Wilkie then referred to the redundant colon, and remarked that cases of colon stasis had been associated with this condition. Some individuals have a colon one and a half times as long as the average. It might be that the pelvic colon alone was redundant, necessitating resection

of a loop: in other cases the whole colon was long, causing chronic disability, and, indeed, complete invalidism. It was in this latter type of case that such marked success had been achieved by colectomy; this operation might be performed in stages, either by preliminary colostomy or by a preliminary anastomosis between the caecum and colon, followed by a second operation of resection of the colon. The results of this operation were striking, and proved the toxic character of colon stasis. In colitis only very severe cases needed surgical treatment; ileostomy was the operation of choice. The ordinary case of colitis did well with lavage, and vaccine or sero-therapy. The lecturer discussed the indications for surgery in diverticulitis of the colon—namely, perforation, pericolic abscess, subacute obstruction, and recurring attacks with disability. At one time he had been greatly attracted by Arbuthnot Lane's work, but gradually he became prejudiced. In the last few years the few cases of colectomy he had performed had proved to be the most successful operations he had ever undertaken; they were not free from danger, because, if the operation proved easy, it was probably not required. In cases of real necessity it was extremely difficult, owing to the number of adhesions and to the patient being very much below par.

The lecture was warmly received by a most interested audience. Questions were asked by Dr. E. W. LEWIS (chairman of the Southport Division), Mr. HUGH REID of Liverpool, Mr. GRAHAM BRYCE of Manchester, Dr. CALLAM of Burnley, and Drs. ANDERSON and CRONIN LOWE of Southport, and Professor WILKIE briefly replied. Dr. BENTALL proposed, and Dr. ANDERSON seconded, a vote of thanks to Professor Wilkie for his most lucid and instructive lecture.

Reports of Societies.

TECHNIQUE AND RESULTS OF PROSTATECTOMY.

IN the Section of Urology of the Royal Society of Medicine on May 22nd, with Mr. FRANK JEANS presiding, a discussion took place on the technique and results of prostatectomy.

Mr. KENNETH WALKER, in opening, said that he had been struck with the discrepancies between the methods employed by members of the British school of prostatectomists. The nearer a technique reached perfection, the fewer were the variations, and the fact that surgeons differed so widely in their methods showed that perfection was far from being attained. The methods of dealing with haemorrhage—one of the three difficulties most likely to be met with during convalescence, the others being sepsis and obstruction—were very varied. He himself had encountered some failures in every method. Packing had certain disadvantages, the chief being the increased sepsis, and the unpleasant state of the bladder and urine when the packing was removed. Therefore when bags came into use he eagerly adopted them, and applied them for two years in various forms, but in several cases the bag did not satisfactorily control the haemorrhage. Sir John Thomson-Walker's open method of prostatectomy was distinctly a move in the right direction; it was an attempt to substitute for a blind operation one which was precise and gave control under the eye. The speaker had made use of the open operation, but he found that although in itself it was excellent, there were many cases for which it was manifestly unsuited, cases in which the extra time necessary was, if not fatal, at least dangerous. Still later a method had been suggested by Harris in Australia, which aimed at making the operation still more exact by obliterating the prostatic cavity. He had not had sufficient experience of that to pass final judgement, but he knew that with a sharp boomerang needle a fair amount of haemorrhage could be produced during the process of inserting the lateral sutures. The technique must vary, therefore, with the patient. Lately in those cases not suited for the open operation, he had gone back to packing, but the question was how long to leave it in. Haemorrhage might occur from two to five days after the removal of the packing, apart from any question of secondary haemorrhage later on; he had therefore extended the time for which the packing remained in position. The chief difficulty was that it increased the amount of painful spasm. With regard to sepsis and the part played by a urethral catheter in combating it, he added that he did not tie the catheter and leave it in at the time of operation, but it was useful subsequently for drainage, and later still during the final stages of convalescence.

Mr. SWIFT JOLY said that he had looked up the figures of the cases treated at the hospital by Freyer's technique; they numbered 198, and there had been nineteen deaths. Four of these deaths occurred on the first day after operation, and were undoubtedly due to a mixture of shock and haemorrhage. After that he started packing, and had 159 cases, with fourteen deaths, no death occurring immediately after the operation; one patient had died on the day after the removal of the packing, and all the others about the second or third week. Since starting with the Thomson-Walker open operation, which had given the best results, he had operated on 207 cases, and had had seventeen deaths (8.8 per cent.), but no death in the first week. The causes of those seventeen deaths were: pulmonary embolism (one), myocarditis (one), influenza (one), pneumonia or broncho-pneumonia (four), and pyelonephritis (ten). With the Thomson-Walker method the immediate deaths had been wiped out. The disadvantages of the Freyer method were inadequate haemostasis, sepsis, risk of contraction of the prostatic cavity, and shock. The method of packing the cavity had the disadvantages of pain, haemorrhage after removal of the packing, and possible sepsis. With regard to the Thomson-Walker operation, he had not at first liked the lengthening of the time the patient was on the table; he had tried the method tentatively at first, but he was now pleased with it, and would be very sorry to go back to any other operation. Shock was practically negligible, and sepsis was undoubtedly diminished.

Mr. JOHN EVERIDGE said that the preliminary treatment was of importance, a few days in a hospital or nursing home being a great advantage. He regarded the Thomson-Walker operation as ideal; if the technique was faithfully followed post-operative obstruction was almost impossible. When the Thomson-Walker operation was not possible Mr. Everidge performed a two-stage operation. In cases where the second stage followed at a short interval it was important to fix the tube at the upper end of the wound. He nearly always gave a general anaesthetic for the first stage, for, although this was not absolutely necessary, it furnished the means for having a kind of "dress rehearsal" for the big operation which followed. He favoured the use of the Pilcher bag. Looking over the records of his cases, he found that the vast majority of deaths had been directly or indirectly associated with haemorrhage. One post-operative complication which had to be borne in mind was ileus, and to prevent this he made a routine practice of putting a small tube in the rectum. With regard to results, he had studied his last 150 cases, and had found eight deaths directly or indirectly due to haemorrhage; there were four deaths from primary shock, three of these after stovaine anaesthesia, and the total mortality was 10.66 per cent. A one-stage operation was performed in 93 of the cases, and a two-stage method in 57.

Mr. CLIFFORD MORSON supported the open method of suprapubic prostatectomy. He had heard a distinguished foreigner describe the advantages of the perineal route, but, so long as permanent incontinence was a complication, he thought that few surgeons would endanger their reputation by performing an operation by that method. His own technique was similar to that of Thomson-Walker, except that he did not tie in the catheter at the operation. As a pupil of Freyer, he knew from personal experience that though the immediate results of his procedure had given a low mortality, post-operative obstruction had occurred much too frequently. This disastrous complication had been eliminated by the Thomson-Walker technique. A criticism had been raised that there was more shock with the open method, and he agreed that this might be the

case in the hands of a slow and clumsy operator. Rapidity of operation, consistent with thoroughness, was all-important, but it was a fallacy to suppose that haemorrhage caused shock. At the Annual Meeting of the British Medical Association at Portsmouth he had read a short paper on the division of the vas deferens after prostatectomy, which was published in the *Journal* (1923, vol. ii, p. 1032), but few surgeons in Great Britain had felt disposed to adopt the technique, though it was followed by urologists of repute on the Continent, and by a great many in America. After describing the operation, Mr. Morson said that it made it possible to guarantee to the patients that whatever complications might follow they would never suffer from orchitis. He gave the figures for his last 128 prostatectomies, conducted according to the Thomson-Walker technique at St. Peter's Hospital. Cases in private practice were excluded, so as to avoid any suggestion of an attempt to improve on purely hospital statistics. Of the 128 cases, 26 were complicated by such conditions as stone, stricture, and diverticulum; the remaining 102 included cases of pre-operative retention and uraemia. Of the 26 patients with complications such as stone, etc., two died, and of the 102 patients seven died, so that the total mortality for the 128 was just over 7 per cent. The patients remained in hospital after prostatectomy for an average of 28.5 days.

Sir JOHN THOMSON-WALKER said he always used the retained catheter; it was employed in order to help the washing, not for drainage at all in the first instance, and was taken out on the seventh day. He was increasingly inclined to give continuous irrigation; this was extremely easy with a retained catheter. If the patient had not passed urine by the twelfth day the catheter was replaced, this time for the purpose of drainage. On the average, taking his private cases, the urine was passed after 11.6 days, and the wound was dry after 16.2 days, a result as good as, if not better than, that obtained with the perineal operation. All cases could not be treated by the routine operation, but the number of cases in which he did not perform the routine variety was not large. In some the operation was impossible because of severe sepsis, with infection of the kidneys, and it was necessary to drain the bladder by suprapubic cystotomy. He believed the open operation was too severe for many of the cases in which prostatectomy was required as a secondary operation. It was also wise not to spend too much time when operating on the very old or feeble patient, or in the presence of serious complications, such as bronchitis; in such cases he performed prostatectomy, if it was necessary, by the closed method. The time taken by him was 17½ or 18 minutes; if the suture at the base of the bladder was not inserted he could do it well in 13 minutes. Shock was not a necessary factor with the open operation. Sir John Thomson-Walker then repeated a number of the comparative figures with regard to mortality and duration in private and in hospital practice which he gave in his recent third Lettsomian Lecture (*British Medical Journal*, March 15th, p. 512). He thought the reason why better results were obtained in private practice was that the patients were attended after operation by specially trained nurses and by the surgeon who had performed the operation, and who had had a long training in the complications and their rapid treatment. He did not think it necessary to keep the packing in for more than forty-eight hours; if afterwards there was bleeding the packing could be replaced.

Mr. G. E. NELIGAN said that, after enucleation of the prostate, he used the Pilcher bag, which he filled with air and tethered to the right thigh. One important point was not to let the patients heal too soon; the majority of complications occurred because of a too early passing of urine. He never encouraged any patient to pass urine before the end of three weeks. If urine was not passed by then he put in a bougie and tied a catheter. In his last 100 cases there were five deaths; the average healing time was 25½ days, five cases required 40 to 44 days to heal, and two which developed strictures, and had to be reopened took sixty days. In the previous 100, using different techniques, there were eight deaths, and there were complications which, he was sure, were due to allowing the patients to pass urine too soon.

Mr. WINSBURY WHITE considered that the more experience that was gained by young surgeons the more would they tend to do one-stage rather than two-stage operations; in other words, so long as they were in the dark, they would be wise to think rather of the two-stage than of the single-stage operation. He had had the temerity to venture into the perineal region a few times, and if the technique was followed carefully that method gave as perfect a result as one could wish. He had also followed Mr. Morson's plan of dividing the vas deferens, and had never had a case of epididymitis; it seemed to him a very sound preventive measure.

Mr. JOCELYN SWAN referred to the value of the long incision which Sir John Thomson-Walker had advocated; this enabled the surgeon to see what he was doing. He wanted not only to see but to anchor the prostate, which he did by means of forceps, and made a semicircular incision around the posterior part with a pair of scissors. The two things against which it was necessary to fight were haemorrhage and sepsis; the first was undoubtedly controlled by the open operation. He did not make a practice of putting a suture in a continuous line around the posterior two-thirds of his cavity, but he inserted two lateral sutures, especially if he saw bleeding points, which were apt to occur on the margins. He used these sutures also as tractors, because a little drag on them would open up the cavity, and it could be seen whether there were any tags or pieces left which required removal. He thought it was time the use of the term "two-stage prostatectomy" was given up. The first operation had nothing to do with the prostate: it was a preliminary operation to free the patient from his renal troubles.

Mr. CYRIL NITCH agreed that open prostatectomy was the ideal form. In his last 100 cases, 41 were one-stage and 59 were two-stage operations. The mortality in the first category was 3.7 per cent., and in the second 10 per cent. The two-stage operation was performed on patients who were too ill to withstand the shock of the one-stage operation. The interval between the two stages varied enormously; it depended solely on the recovery of the patient either from his sepsis or from his renal deficiency. He found in fifteen of his cases that the bladder required drainage for periods of over a month, and in three of them for six, seven, and fifteen months respectively. With regard to the control of primary haemorrhage, he had practically given up all bags, packs, and plugs. If the haemorrhage was profuse at the time of operation, he inserted a bag, but this happened very rarely. Eight of his patients had epididymitis afterwards; two of them had had a catheter tied in after the one-stage operation. In two of the 100 cases there was post-operative obstruction; in both of these the Freyer operation had been followed. Among the two-stage cases, nineteen had chronic retention, thirteen had retention and cystitis, and there were seventeen with over ten ounces of residual urine, with or without cystitis.

Mr. SYDNEY MACDONALD remarked that serious haemorrhage did not often occur on the table; when it did the only thing was to ram in a plug quickly, and leave it in, as a rule, for forty-eight hours. With regard to reactionary or secondary haemorrhage, which occurred later on, he had not plugged a case for some years past. The chemical pathologist grouped his cases for him, and if he was at all worried about the haemorrhage he transfused at once. Transfusion had never failed him; even in serious haemorrhages it acted like a charm. When ileus occurred it was very often a uraemic rather than a septic manifestation. The difficult patients were those who developed uraemia without any preliminary danger signals. Mr. J. B. MACALPINE had had within the last twelve or eighteen months two cases with severe trouble from ileus; in each of them he was convinced that the trouble was due to uraemia. He adopted the Thomson-Walker technique for prostatectomy, with the variation that on opening the bladder he did not allow the urine contained therein to flow out into the suprapubic space; it was sucked away so that there was no contamination. With regard to means of stopping the haemorrhage, he looked upon the bag as a non-surgical instrument. The greater number of

haemorrhage cases might be left to take care of themselves. More rapid healing and diminution of sepsis would be obtained if the wound were kept completely dry by suction. Mr. E. T. C. MILLIGAN referred to the value of diathermy in controlling primary haemorrhage after enucleation of the prostate. It was useless to push the electrode into the prostatic bed, but if the bleeding points were first picked up, the prostatic bed being dried, those points could be sealed off quite easily.

Mr. E. W. RICHES, taking up the remark of one speaker about contamination of the wound by reason of a full bladder, said that it had always surprised him that urologists should fill the bladder; it was quite easy to open it without the necessity of distending it with fluid. He now arrested haemorrhage by the routine use of the Pilcher bag. He had done away with all traction methods, splints, weights, and apparatus; these were uncomfortable and occasionally harmful. The bag fitted snugly in the prostatic cavity, and it arrested haemorrhage before the patient left the operating table. The bag also had a value in that it prevented the cavity from collapsing, and it contributed to the prevention of post-prostatectomy obstruction. Mr. GALE had had the opportunity of observing many methods employed by urologists. He thought that bags and packing should be avoided where possible. Open operation was certainly the best, but he had seen a patient leave the hospital at nineteen days and return in a few weeks with obstruction. Incontinence more frequently followed the fibrous type of prostate than the ordinary type. Mr. HOPE CARLTON uttered a warning against the suction method, which in his experience had given rise to accidents. Dr. HAROLD DODD mentioned preoperative treatment in prostatectomy cases; it should extend over at least a week, sedatives being given every night and salines three times a day. To push salines before operation was of great benefit, and the same measure was valuable in the treatment of post-operative ileus. After the operation the temperature sometimes went up markedly, whereupon the hourly administration of potassium citrate during the day had remarkably beneficial results.

Mr. JEANS, from the chair, said that his impression was that the adoption of the open operation represented a falling into line with the general progress of surgery. It prevented immediate haemorrhage, and therefore did away with packing or bags as routine procedures. With regard to Harris's method, reported from Australia, he was of opinion that the prostatic bed was not the place for plastic surgery. If an ordinary operation was performed where haemorrhage was not expected, and it was found to be going on, it was a good measure to take out the tube, whereupon the musculature contracted, as did the uterus when a retained placenta was removed, and the haemorrhage ceased.

INFECTIOUSNESS AND IMMUNITY.

AT a meeting of the Section of Epidemiology and State Medicine of the Royal Society of Medicine on May 23rd, with Dr. F. E. FREMANTLE, M.P., in the chair, a paper was read by Dr. PERCY STOCKS, reader in medical statistics in the University of London, on infectiousness and immunity in regard to chicken-pox, whooping-cough, diphtheria, scarlet fever, and measles.

Dr. Stocks said that a survey of the pronouncements of epidemiologists as to the most important factors in the control of epidemics left one with the impression that these exhibited to a remarkable degree at least two of the characteristics of the phenomena of which they treated—namely, variability and periodicity. The last swing of the pendulum seemed to have brought about, rapidly and unmistakably, the viewpoint that immunity was the most interesting and perhaps the most important of the factors concerned in the mechanism of epidemics. There were two methods by which immunity changes in a population might be studied by means of notification records: first, by measuring the apparent infectiousness of cases of the disease at different periods of time; and secondly, by actually following up contacts intimately exposed to infection and comparing their subsequent behaviour with control groups not so intimately exposed. An index of infectiousness was wanted which, whilst avoiding the assumption that there was no reservoir of infection other than clinical cases, and allowing for changes both in the facility of transmission from case to case and in the proportion of non-immune persons in the population, would yet be sufficiently simple to calculate to make it of practical use to public health workers not trained in mathematics. In a previous paper he had defined such an index, and termed it "the index of apparent infectiousness." It involved the definition of a secondary case, for the purpose of the index, as a child of defined age who developed the disease at a defined interval of time after a person residing in the same house, the interval being chosen to embrace most of the possible range in the incubation period. After giving a description of his methods of computation, Dr. Stocks said that the resulting index of apparent infectiousness was the product of two other indices not so readily measured—namely, the index of true infectiousness or relative facility of transmission from person to person, which was subject to sudden fluctuations, and the index of communal susceptibility. The index of apparent infectiousness was very easily measured by merely sorting the notification forms into alphabetical order of streets, bringing together all pairs of cases occurring in the same house, with the specified interval between the onsets and with the specified age of the second case. The behaviour of this index, considered in relation to the epidemic curve, could indicate something about what was happening to the factors of which it was a product, for it could be safely said that the immunity of a population did not change in a sudden or explosive manner, and hence such sudden fluctuations in the index as were statistically significant must be attributed to changes in facility of transmission, and that a gradual rise in the index continuing over years without reference to seasonal influences was almost certainly due to changes in the immunity index.

After a further close description of his methods, Dr. Stocks, with the aid of charts, described the application of them to the particular diseases covered by his paper. In the case of diphtheria and scarlet fever the changes in apparent infectiousness during the five years 1925–29 occurring in St. Pancras had been worked out for comparison with the other diseases. In diphtheria no sudden fluctuations were evident in the index of apparent infectiousness, but only gradual changes. His data were not extensive enough to prove that sudden fluctuations, occasioned, as they must be, by changes in true infectiousness rather than communal immunity, did not occur in diphtheria, but the contrast with the other diagrams suggested that they were not characteristic, and that this might be the reason why epidemics of an explosive character were also not characteristic of diphtheria. The calculations made on the basis of these St. Pancras figures suggested that there were seven or eight immunizations to every clinical case notified, and this certainly agreed with the estimate made in Baltimore from Schick tests, in which there were seven latent cases to each clinical case. He thought, however, that this was an over-estimate, for the assumption that all the children born into the population were going to be exposed to diphtheria infection, even in London, was not, in his opinion, justified. It had been proved conclusively that many children brought up in middle-class homes remained Schick-positive, and most of these had presumably escaped exposure to the bacillus in any considerable doses. If it were supposed that in St. Pancras one-third of the families were sheltered from exposure to diphtheria, and that one-third of the births were into such families, certain consequential computations would lead one to suppose that about 35 per cent. of the whole child population under 10 were susceptible, which was not unreasonable. He also discussed the epidemic and the immunity curves in scarlet fever, and suggested that the progressive decline in scarlet fever incidence over the last century had been accompanied by, or caused by, a progressive increase in the communal inherent immunity, and in the capacity of the population rapidly to acquire such immunity without severe reaction when exposed to infection, a capacity which might also be inherited. With regard to whooping-cough, he produced some figures on the basis of the notifications in

Holborn and in Wandsworth, and his conclusion was that there was strong evidence against the existence of latent immunization to whooping-cough being acquired by close contact; but nevertheless, in spite of little isolation of cases being practised at home, and the length of the infectious period, it appeared that out of 721 contacts under 10 who had never had whooping-cough only 187 contracted the disease within two months, and 221 within four years, of exposure. This suggested that about 70 per cent. of contacts under 10 years of age who had not had whooping-cough would escape it altogether. It must be concluded that the bulk of children escaped whooping-cough by virtue of an inherent immunity rather than by avoiding contact with infection. Chicken-pox offered in this country an almost virgin soil to the statistician, apart from some hospital statistics. Here, again, he produced figures from Paddington, where the disease had been notifiable for some years, and said that the facts might be explained if it were supposed that about one-half the children born had an inherent immunity to chicken-pox and escaped the disease for that reason. Another quarter would have chicken-pox by 6 years of age, leaving about a quarter of any random sample about that age susceptible. On the other hand, the facts could be equally well explained by latent immunization with about one latent case to each clinical case, and to settle which was the correct explanation, or whether both played a part, further data were necessary. The combined evidence suggested that a certain proportion, possibly about a quarter to a third, of children born retained an inherent immunity, and that latent immunization protected others, possibly another quarter. In the course of some brief remarks on measles, Dr. Stocks showed by figures what must happen to the child population in an urban area when subjected to a measles epidemic, assuming the occurrence of an epidemic every two years, the production of latent immunes at the rate of three to each case, and the loss of latent immunity at the rate of 50 per cent. in one year and 100 per cent. in two years. It appeared that on this basis almost complete immunization of the mobile portion of the child population (aged 3 and upwards) would be brought about before the epidemic ended, leaving only very young children unprotected. Finally, with regard to German measles, or rubella, he thought it must be assumed, on some figures from St. Pancras, that there was widespread inherent immunity to German measles, or else that latent immunization was an important factor as in measles; and which of these was the correct explanation could only be settled by further research. He urged that everything possible should be done to make notification records of all these diseases as accurate as possible, for important advances in the knowledge of the mechanism of epidemics could undoubtedly be made from a study of them.

Sir WILLIAM HAMER said that he could not understand how it was possible to believe that there were three latent cases for each recognized case of measles. If measles in the London elementary schools were taken, investigations had shown that a second crop of measles in a school outbreak exhausted practically all the susceptible cases. If there were three latent cases for every recognized case, why was it that in the infants' departments of the London schools, when the disease "got going," all the cases were recognizable cases? He submitted that what had been called the "firing off of the gunpowder heaps of susceptible children" was really the factor which governed the whole situation. It would account for the sudden fluctuations which Dr. Stocks had described. The moral of it all was that the recommendation made by Dr. Stocks as to the desirability of improving notification records should be supported by all epidemiologists.

Professor Major GREENWOOD made one or two minor criticisms of the paper before affirming his complete agreement with the general argument of Dr. Stocks. He had never been able to believe that the mysterious change of virulence in an organism could be demarcated by some artificial boundary like Westminster Bridge. He had also an objection to the view, suggested in the paper, that the word "case" and the word "patient" were synonymous. In his own limited academic view, a case could have no age at all. The difficulty which all workers experienced in this subject was the liability to argue unconsciously in a circle. Dr. Stocks made some calculations on the assumption that all families were at risk of infection by scarlet fever—at first sight rather a startling proposition. But he thought it was a case of arguing in a circle. One made certain assumptions as to what proportion was naturally immune, and then one was rather in danger of turning round and concluding that the results agreed with those assumptions, tending to forget that they were part of the original hypothesis. Professor Greenwood went on to give certain illustrations to show that in these questions of the distribution of cases in families the state of affairs was much more complicated than might be at first suppo-ed. Dr. Stocks was certainly right that one had to separate out this question of acquired immunity and to consider the mechanism of it, and when an acceptable mechanism from the laboratory point of view was arrived at, an hypothesis would have finally to be chosen which best fitted the actual observational data. What the statistician wanted was not absolute truth, which was unobtainable, but an accurate standard of what people meant when they made these returns.

Dr. E. W. GOODALL remarked that in measles, chicken-pox, rubella (a name he preferred to German measles), and whooping-cough there was no clinical evidence of carriers, or at any rate of carriers for any length of time. It was almost unheard of for a person who had had these diseases to go out of hospital and give rise to cases outside. Therefore he was not disposed to agree that immunization was produced in these diseases by carrier cases. He doubted very much whether there were many missed cases of measles or rubella; there were many unnotified cases, but that was another matter. Of four common diseases, measles came first in point of infectiousness, chicken-pox came next, mumps third, and whooping-cough last of all.

Dr. W. BUTLER said that it was very interesting that the Section should have a paper attempting to measure particular kinds of immunity. During what might be called the bacteriological period attention was devoted to the infecting agent, and for a long time the part played by immunization was ignored. It was obvious from the first that to be infectious there must be susceptibility, but Dr. Stocks had carried the matter to a degree of unusual definiteness and precision. The speaker would have thought that measles presented to a less degree than most infections immunity acquired in this manner. At the age of 4 or 5 not more than 10 per cent. of children could possibly become immunized in this form. At birth there was congenital immunity, almost absolute for the first six months, and this gradually declined until 4 or 5 years of age, when the highest degree of susceptibility was attained, and from then onwards permanent immunity appeared to be increasingly conferred.

Surgeon Captain DUDLEY said that lately he swabbed 200 boys eight times in the course of the year, and 45 per cent. of those boys were found to be carriers of diphtheria bacilli. As regards diphtheria bacilli, everybody in London was infected over and over again, and why they did not get diphtheria he did not know. A large number of Schick-positive people could, unless conditions were suitable, come in contact with diphtheria, and yet not get clinical diphtheria. He added that he was a strong believer in variations of the qualities of the infecting agent.

Dr. J. D. ROLLESTON said that the medical officers of fever hospitals presented a very interesting field of study. It was a remarkable fact known to everyone that the staff of fever hospitals were comparatively immune to the infectious diseases which they had to look after, and that it was chiefly those who had just joined the staff who were most likely to go down. Medical officers remained immune to the diseases during the two or three years they were on the staff of the hospital, but afterwards they might return to the hospital to see their friends, who might show them some interesting cases, and then they contracted the disease. A distinguished French epidemiologist had worked out that no less than 35 per cent. of doctors in the infectious diseases departments of the Paris hospitals were Schick-positive.

ENDOMETRIOMA.

AT a meeting of the North of England Obstetrical and Gynaecological Society at Liverpool on March 21st, with the president, Dr. J. W. BURNS, in the chair, Professor D. DOUGAL (Manchester) described a case of endometrioma of the abdominal wall occurring in a married nullipara aged 44.

Professor Dougal said that the patient had had an operation fifteen years previously for a gangrenous appendix, and for seven years had complained of pain at the lower end of the scar before menstruation. She had in addition a uterine fibroid reaching to the umbilicus, which when she was operated on was free from the abdominal scar. A tarry cyst was discovered at the operation. It arose from the left ovary, which, however, did not show characteristic glands or stroma of an endometrioma, but the excised tender portion of the abdominal scar was typical.

Dr. H. H. GLEAVE (Liverpool) contributed a note on endometrial autotransplants in the rabbit, quoting the results of observations on forty-five rabbits in which shavings of endometrium were tied into an incision in the liver. These developed into enormous cysts, which, however, reached a maximum of growth in two months, and were no bigger a year later. Dr. Gleave said that the papilliferous condition of the uterus seen in rabbits in a condition of pregnancy, or pseudo-pregnancy, was exactly reduplicated in the endometrium of the cyst from the influence of the corpus luteum hormone. Similarly, the oestrous rabbit showed cysts with thickened endometrium like the blunt folds of the uterus. After oöphorectomy both the uterus and cyst atrophied, but the injection of twenty-five rat units of oestrin daily for a week restored the endometrium to the oestrous type. Injections of pulped endometrium into the ear vein gave negative results. Vascularity of the site of implantation favoured the taking root of the implant, and Dr. Gleave concluded that the muscle of the implantation cyst arose from the graft itself, and not by metaplasia of the local tissue. These experiments, he considered, offered support for Sampson's theory of the origin of endometriomata.

Dr. J. W. A. HUNTER (Manchester) said there were two factors in the growth of human endometrioma implantation and devitalization at the area of implant. Professor BLAIR BELL (Liverpool) did not agree that the papilliferous condition of the rabbit endometrium was always due to pseudo-pregnancy; it could occur as a result of long-continued oestrus. Professor DIBLE (Liverpool) thought the experiments mainly demonstrated that the endometrium of the cysts and uterus was in the same condition at any one time.

Inversion of the Uterus.

Professor BLAIR BELL described a case of acute puerperal inversion of the uterus which had occurred in a three-para who had had a spontaneous termination to a full-term pregnancy. When examining the woman half an hour after the accident he found that the uterus and cervix were completely inverted, the placenta being centrally attached to the fundus. Shock was not marked, so under an anaesthetic the placenta was detached and the inverted uterus manually replaced. After a slightly febrile convalescence the recovery was uninterrupted, and two years later the patient had an uneventful confinement. In a case of chronic inversion described by Professor Blair Bell a nulliparous patient, seven years after the menopause, had had bleeding for six weeks. A necrotic, fibromyomatous polypus protruded through the vulva, which was removed with scissors. The pedicle consisted of the inverted, senile uterus, on the apex of which was situated the tumour. Laparotomy was performed and the uterus and appendages were removed, with complete recovery of the patient. The importance of the spontaneity of the inversion and fundal attachment of the placenta or tumour was emphasized in the description.

Professor MILES H. PHILLIPS (Sheffield) was of the opinion that in acute inversion the uterus should not as a rule be replaced at once.

Dr. M. M. DATNOW (Liverpool) showed a specimen of primary ovarian pregnancy in which Spiegelberg's criteria had been fulfilled. He showed also a calcified dermoid, which as a parasitic cyst had caused no symptoms.

Reviews.

THE MEDICAL ANNUAL, 1930.

THERE can be few medical publications in the English language that are so widely read as *The Medical Annual*.[1] It appeals to the general practitioner, who wants a compact review of the latest works on diagnosis and treatment; it appeals to the specialist, who wants to keep in touch with advances in departments of medicine and surgery other than his own; it is, moreover, one of those delightful books that, once taken up, are difficult to put down again.

The current volume is full of interest. Dr. Geoffrey Hadfield contributes a well-written article on the subject of nephrosis. He considers that the tendency at present is to regard this condition as a slowly evolving type of nephritis rather than as a general metabolic disorder. The main practical outcome of the controversy is the clear necessity for allowing oedematous cases of Bright's disease much larger quantities of protein than has been customary in the past—provided that they can utilize it without retaining nitrogen. Dr. Robert Hutchison gives a brief account of the intestinal flora, and the part played by diet in determining the relative proportions of the different organisms composing it. Nothing, he wisely points out, has emerged from experimental work of late years to give any support to the view that, as the result of bacterial action in the intestine, poisonous substances are elaborated which by their absorption gain access to the tissues and lead to chronic intoxication. He likewise deprecates the prevalent, and largely unjustifiable, administration of vaccines prepared against normal inhabitants of the intestine. The surgical treatment of gastric ulcer is a never-failing subject of interest. Mr. Rendle Short unhesitatingly recommends partial gastrectomy. For duodenal ulcer he advocates destruction by the cautery, together with removal of the appendix. That elusive term "puerperal morbidity" continues to evade definition, and its etiology remains obscure. A certain proportion of severe infections seems to be referable to *Streptococcus pyogenes*, but it is clear that fever in the puerperium may often occur in the complete absence of this organism. The infectious fevers are dealt with very thoroughly by Dr. J. D. Rolleston. He is convinced of the value of antitoxic serum in the treatment of severe, especially septic, cases of scarlet fever, and points out that it may lead to a striking improvement in the general condition without an immediate fall of temperature to normal. It is a pity that all reference to the modern method of performing the Widal reaction has been omitted, and that no mention is made of the significance of O agglutinins in the serum of inoculated patients. Colonel Lister deals with affections of the eye; we can find in this section no description of "pink eye," which has prevailed in epidemic form in parts of Europe during the past year, and which has often proved so refractory to treatment. Dr. W. H. Wynn discusses the value of sanocrysin in the treatment of pulmonary tuberculosis, and concludes that it is of most value in the early exudative type of case. In acute pulmonary tuberculosis sanocrysin alone has but little effect, but when combined with artificial pneumothorax it gives most encouraging results. Mr. Geoffrey Jefferson's critical articles on the surgical treatment of trigeminal neuralgia are of very real value in pointing out the necessity of differentiating between the various classes of patient; cases of post-herpetic neuralgia may experience no relief from operation, while cases of atypical neuralgia are invariably made worse. Mr. Thurstan Holland contributes a section on *x*-ray diagnosis, which deals with a number of different conditions; it is interesting to note that, apart from rare exceptions, all radiographical circular shadows appearing in the lung areas are indicative of cavitation. The author of the section on animal diseases communicable to man has made a commendable attempt to use the new bacterial terminology. Apart from small slips, such as the misspelling of *Pfeifferella* and the assigning of a masculine

[1] *The Medical Annual*. Forty-eighth year. Bristol: J. Wright and Sons, Ltd.; London: Simpkin Marshall, Ltd. 1930. (Demy 8vo, pp. c + 650; 130 figures; 61 plates. 20s. net.)

gender to *muriseptica*, he has made one serious mistake—namely, that of allocating *Corynebacterium diphtheriæ* to the *Clostridium* group, or group of spore-bearing anaerobes, a group to which it has no affinity whatever. The volume is a credit to the care and industry of the producers, and the numerous illustrations it contains add greatly to the value of the text.

PHARMACOLOGY AND THERAPEUTICS.

THERAPEUTICS, Pharmacology, and Materia Medica[2] by Dr. FRANÇOIS ARNAUD, professor of medicine at Marseilles, is one of the best French textbooks on this subject that we have seen. The author's aim has been to give a systematic account of the science of therapeutics, based on a rational plan, and in pursuit of this aim the drugs are classified according to their use. This method of approach is familiar in Britain, but is a striking advance on the method still frequently adopted in French textbooks of classifying the vegetable drugs according to the natural orders of the plants from which they are derived.

The volume is of substantial size (878 pages), and in the case of each drug sections are devoted to the materia medica, pharmacology, therapeutic uses, and methods of application. A comparison with standard English or American textbooks on the same subject reveals certain interesting differences. The methods of administration of drugs are treated very thoroughly, and in this respect the book is superior to most textbooks of a similar size in our language. The number of drugs described is large, and an amount of space that seems rather excessive is devoted to drugs that are generally regarded as of secondary importance. The treatment of the purely pharmacological aspect of the subject is not satisfactory. Apparently French authors do not recognize many facts that are in this country regarded as completely established. For example, alcohol is classified as a central nervous stimulant, bromides are stated to be excreted almost completely within thirty-six hours, and adrenaline is stated to stimulate the intestinal muscle. This divergence in pharmacological outlook is reflected in the discussion on the therapeutic uses of drugs. Little distinction is made between the action of digitalis on hearts with normal rhythm and its action in auricular fibrillation. Ergot is recommended for the treatment of haemoptysis and pneumonia. It is stated that pituitary extract can be given by mouth, though hypodermic administration is mentioned as being preferable.

The accounts of the history of the subject show an amusing difference from those usually given in textbooks written in English or German. For example, in the history of insulin no mention is made of the work of Minkowski, and the work of Banting and Best is represented as a continuation of the work of Lagnesse, while the subsequent development of the clinical application of insulin is attributed chiefly to French workers. The book reveals, indeed, in a somewhat striking manner, the fact that French pharmacology has, during the present century, developed in a curiously insular manner. All standard textbooks on pharmacology in English or German show a large measure of agreement regarding the fundamental facts of the subject, but French authors seem to pay relatively little regard to pharmacological work done outside their own country during the present century.

BILIARY DISEASE.

THE *Munchener medizinische Wochenschrift*, a well-known weekly medical journal in Germany, has recently published short series of clinical lectures by different writers, and the course on diseases of the liver and bile ducts was entrusted to Professor LEPEHNE of Königsberg. The choice is excellent, since the author is one of the best known of the younger German workers in this branch of clinical medicine. Lepehne's lectures[3] have now been published as a short book of about 150 pages, at the modest price of six marks (bound). As would be expected from a man of Lepehne's ability as a research worker on several aspects of hepatic disease, the lectures are scientific, and take note of all the recent advances from America, Great Britain, and Holland. Being addressed particularly to practising physicians, however, all methods of value in diagnosis and all modern methods of treatment are fully described. If there is not much which can be abstracted here from this little book, it is only because it follows so closely and systematically the modern trend of opinion on hepatic and biliary disease. One method of treatment advocated for cases of severe hepatic damage (acute hepatitis, acute yellow atrophy, cirrhosis, etc.) is probably unfamiliar to many British readers. The value of glucose in hepatic disease is, of course, now well recognized, but Richter and Umber in Germany have claimed greater success from insulin and glucose combined, so as to fix a large quantity of glycogen in the liver and protect the glandular cells. In this treatment 20 to 30 units of insulin may be given daily along with 30 to 40 grams of sugar, and the dose of each may even be increased. In cases of catarrhal jaundice (hepatitis) the icterus disappears with great rapidity when this treatment, to which Lepehne fully subscribes, is adopted.

MOSQUITOS OF NORTH AMERICA.

THE literature dealing with the culicidae accumulates with such rapidity that a periodic stocktaking is essential to the student who wishes to keep abreast of the subject. Thus it is that *A Handbook of the Mosquitoes of North America*,[4] by ROBERT MATHESON, makes a timely and welcome appearance. In seven chapters of some 260 pages in all, the book presents a clear, summarized account of two-thirds of the 123 species recorded from this region. To the more comprehensive works of Howard, Knab, and Dyar, *The Mosquitoes of North and Central America and the West Indies* (1912–1917), and of Dyar, *The Mosquitoes of the Americas* (1928), it will serve as an admirable introduction.

The first chapter deals with the well-known facts of mosquito morphology, on the intelligent understanding of which depends the success of the student in unravelling the intricacies of systematics. The biology of mosquitos and the range of variation in their habits are discussed in Chapter II. The next chapter is devoted to the relation of mosquitos to disease, and an excellent map is provided showing clearly the endemic areas of malaria in the United States. *Anopheles quadrimaculatus*, *A. crucians*, and *A. maculipennis* are the chief vectors. In Canada endemic malaria is unknown. Brief reference is made to the recent experimental transmission of yellow fever by Bauer by inoculating monkeys of the genus Macacus with the crushed bodies of infective individuals of six species of Aedes and one Eretmopodites. The problem of mosquito control forms the subject of Chapter IV. The methods described are all well known. The question of the repellent effect of species of Chara and Phyllotria to ovipositing mosquitos, which the author has himself investigated, is still *sub judice*. Much intensive research remains to be done on the feeding habits of culicine larvae before our knowledge of the efficacy of stomach poisons is established on a satisfactory basis. The chapter on the study, collection, and preservation of mosquitos will prove useful to the general student, who may do much to advance our scanty knowledge by making accurate observations of the feeding habits and hosts of the adults.

The final and greater part of the book is devoted to systematics of the Anophelini and Culicini. Of the former tribe 8 species are described; of the latter there are descriptions of 73 species belonging to 9 genera. Annotations of the distribution and breeding habits, where known, are appended to each species. The book is well illustrated by twenty-three text figures and twenty-five plates. There is also a useful general index.

[2] *Thérapeutique, Pharmacologique et Matière Médicale.* Par Dr. François Arnaud. Paris: Masson et Cie. 1930. (6½ × 10, pp. IX + 878. 80 fr.)

[3] *Die Erkrankungen der Leber und Gallenwege.* Von Professor Dr. G. Lepehne. München: J. F. Lehmann. 1930. (Med. 8vo, pp. 163. Paper cover, M.4.50; bound, M.6.)

[4] *A Handbook of the Mosquitoes of North America.* By Robert Matheson. London: Baillière, Tindall and Cox. 1930. (6½ × 9½, pp. XVII + 253; 29 figures, 25 plates. 25s. net.)

MEDICAL MICROBIOLOGY.

THE production of textbooks on bacteriology in Italy has hitherto been on a very modest scale; and it has been intermittent and inadequate to the needs of Italian students. This is attributed by Professor SANARELLI, in the preface which he contributes to Professor VITTORIO PUNTONI's manual of medical microbiology,[5] to the limited circulation of Italian scientific books. Students have, in consequence, necessarily had recourse to foreign books; and in these, Sanarelli complains, the work even of the best Italian observers is rarely appreciated at its true value, and is often overlooked altogether. The publication of Puntoni's work, which does honour to the Roman school of microbiology, removes this reproach. In a brief historical introduction the author refers, with some evident national pride, to the contributions of Italians in founding the science of microbiology. It was Spallanzani who demolished the theory of spontaneous generation, which was seriously obstructing the progress of the science; and the first conception of the pathogenic specificity of micro-organisms is due to Agostino Bassi. Bassi not only discovered the microbe of silkworm disease, but appreciated the main points of the epidemiology and prophylaxis of the disease, including antisepsis. Of Puntoni's book it may be said that it forms a reliable guide to the whole subject of medical microbiology, including the general technique and the special investigation of bacteria, fungi, protozoa, and ultra-microscopic organisms. The list of organisms included in the work is very complete, and their properties, including the phenomena of immunity and allergy, are described with great clearness; and the illustrations are good and well chosen. The book is evidently the outcome of the author's own observations, and is in no sense a mere compilation, although the observations of other workers receive full recognition. It is an excellent and practical manual.

NOTES ON BOOKS.

THE useful and clearly written little work, by Drs. JOHN GUY and G. J. I. LINKLATER, on *Hygiene for Nurses*,[6] which is drawn up in accordance with the syllabus issued by the General Nursing Council, is divided into two parts. The first deals with the communal aspects of hygiene, such as water, ventilation, heating, lighting, sewage disposal, communicable diseases, and external parasites. The second part is devoted to the personal aspects of hygiene, including a consideration of food, clothing, mental and physical exercise, and the relation of the nurse to public health. Appendixes contain an account of the activities of the Scottish Board of Health, as well as the list of notifiable diseases and the composition of various foods.

The fourth volume of the thirty-ninth series of *International Clinics*,[7] of which the first three were noticed in our issue of December 7th, 1929, p. 1060, contains, like its predecessors, a number of attractive and well-written articles on a great variety of subjects. The first five papers emanate from the Fitzsimons General Hospital of the United States Army, and are devoted to the treatment of pulmonary tuberculosis by heliotherapy, artificial pneumothorax, phrenicectomy, and other surgical methods. A section entitled "Diagnosis and Treatment" includes papers on the home treatment of diabetes, the surgical aspects of chronic ulcerative colitis, and the importance of a scientific foundation in mental hygiene. In the section on surgery the papers deal with the surgical physiology of the phrenic nerve, the injection treatment of varicose veins, the diagnosis and treatment of hernia, the history of thoracic surgery, the complications of extrapleural thoracoplasty, the anterior abdominal incision, radium therapy of cancer of the rectum, and the surgical treatment of pulmonary tuberculosis. The final sections, entitled respectively "Medical Questionnaires" and "Medical Trend," contain a heterogeneous collection of short crisp articles on such topics as the treatment of burns, prevention of measles, recent work in undulant fever, the nature of exanthematides, the biological diagnosis of pregnancy, the control of rheumatism, the use of leeches in present-day treatment, the Mayo Clinic and Foundation, the Pan-Pacific Surgical Conference, and many others, eminently suited for busy practitioners who wish to keep their reading up to date.

Halcyon, or the Future of Monogamy,[8] written on prophetic lines like Bellamy's *Looking Backwards* and H. G. Wells's *War of the Worlds*, is an extremely clever addition to the To-day and To-morrow Series. Beginning with an account of the present-day trend of public opinion about sexual matters, the author, Miss VERA BRITTAIN, who has a keen, not to say sarcastic, eye for our inconsistencies, pictures the future, as described in "The History of English Moral Institutions in the Nineteenth, Twentieth, and Twenty-first Centuries," by Minerva Huxterwin, Professor of Moral History in the University of Oxford, and a *soi-disant* kinswoman of Edward Westermarck, author of "The History of Human Marriage." In the second of the chapters quoted from this book written in the middle of the twenty-first century, the "Period of Sexual Reform (1930–1975)" is described, and this is followed by the third chapter on "Scientific Progress (1950–2000) and its relation to the Moral Revolution." The last chapter on "The Triumph of Voluntary Monogamy (2000–2030)" refers to the benefits resulting from the universal knowledge of birth control, the Married Women's Independence Act (1949), and other Acts. Thus early and happy marriages between those of similar ages became common and venereal disease negligible. This vigorous advocacy of birth control, sex instruction, and trial marriages will arouse much thought and, no doubt, strong opposition.

DR. DAVID YELLOWLEES's little book entitled *Psychology's Defence of the Faith*[9] is based on a course of lectures delivered at a conference of the Student Christian Movement, held at Swanwick last summer. The author's main purpose is to consider what psychology has to do with religion, and to indicate and discuss some of the psychological factors connected with religious belief and its development.

[5] *Manuale di Microbiologica Medica*. Del Vittorio Puntoni. Prefazione del Professor G. Sanarelli. Rome: Studio Editoriale degl'Istituti Universitari Socrate Bucciarelli. 1930. (*Sup. roy.* 8vo, pp. xv + 735; 327 figures. Lire novantotto.)

[6] *Hygiene for Nurses*. By John Guy, M.D., D.P.H., etc., and G. J. I. Linklater, O.B.E., M.D., D.P.H., etc. Edinburgh: E. and S. Livingstone. 1930. (Cr. 8vo, pp. vii + 212; 38 figures. 5s. net.)

[7] *International Clinics*. Vol. IV. Edited by Henry W. Cattell, M.D. Philadelphia. Thirty-ninth series. London: J. B. Lippincott Company. 1929. (Med. 8vo, pp. xi + 303; illustrated. 12s. 6d. net.)

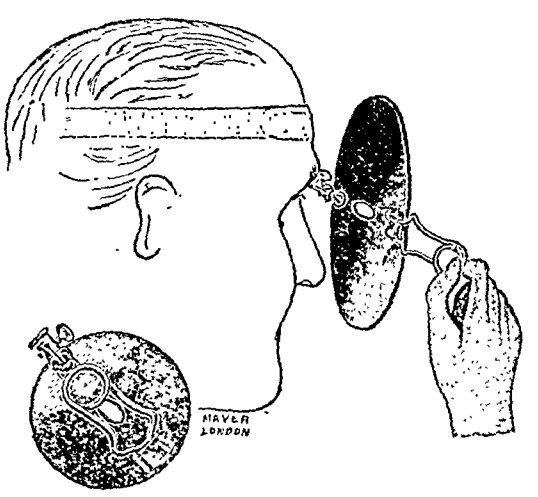
[8] London: Kegan Paul, Trench, Trubner and Co.; New York: E. P. Dutton and Co. (Fcap. 8vo, pp. 92. 2s. 6d. net.)

[9] London: Student Christian Movement. (Cr. 8vo, pp. 190. 5s. net.)

PREPARATIONS AND APPLIANCES.

AN ADJUSTABLE HEAD MIRROR.

MR. O. POPPER, F.R.C.S.Ed. (London, W.), writes: The instrument here illustrated was shown at a recent meeting of the Section of Laryngology of the Royal Society of Medicine. Although designed mainly for the nose, throat, and ear surgeon, this mirror may be found useful in other departments of surgery where one is operating on deep parts (rectum, cervix, etc.), where a strong beam of light is essential, and where it is necessary to alter the direction of the beam frequently during the operation. The illustration is self-explanatory. The direction of the beam is adjusted by means of the detachable wire spring handle, which has been previously sterilized, and then inserted with the surgically clean hand into the socket on the



back of the mirror casing without manual contact with the latter. The mirror can now be moved with ease and safety, and with due regard to asepsis. In spite of the bewildering array of headlights, the mirror remains the most efficient as well as the cheapest and most certain form of illumination.

The illustration also shows the handle in the reverse position, where it occupies very little space. I believe this handle to be preferable to the clothes peg generally employed, in that it never slips, does not occupy any reflecting surface of the mirror or injure the latter, and that it is always carried (reversed) on the mirror. It adds very little to the bulk or cost of the instrument. The makers are Messrs. Mayer and Phelps of New Cavendish Street, W.1.

TWENTY-FIVE YEARS IN SURGERY.*

BY

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THERE comes a time in the course of every adventure when one stands to gaze backwards on the path he has already trod and forwards to what may be to come. I think there need be little excuse that one who has completed twenty-five years as a student in surgery should in such a manner hesitate, contemplate, and formulate. Inevitably an address of this kind is egotistical, but it must be understood that almost every opinion expressed has been moulded as much by one's association as by one's own experience.

The questions one first asks oneself are: "Has it been worth while?" and "Would you do it again in the same way?" I can answer that it has been well worth while, and that I would do it again in a different way. I would do everything better. I can say with entire honesty that I have done nothing perfectly; as has been well said, "An ideal is for pursuit, and not for capture." It is my conviction that in no other work can such variety of interest be found, such sympathy be created, and such gratitude be won.

In any attempt at a retrospect of twenty-five years in practice I cannot begin without acknowledging the very deep debt I owe to my early master and teacher, the late Edward Ward, and to my very close friend and colleague Lord Moynihan. These two men beyond all others have been my inspiration. I must also say that without the constant affection, confidence, and sympathy of those who have trusted me I could not have carried on with that happiness I have always had in my work. Comedy and tragedy have come to me as to all of us: comedy to lighten the burden of our responsibility, and tragedy to test our endurance and our faith. No one could be more sensitive to tragedy than I am, and there have been times, many times, when I have wondered whether I could or ought to go on—when I have lost assurance in my skill, my patience, or my strength.

I came into surgery at a time when the abdomen was beginning to take the foremost place—a place still, I think, in advance of that of any other branch of surgery. Bland-Sutton and Arbuthnot Lane were the big men in London: Jessop and Mayo-Robson in Leeds. That brilliant star Moynihan was just flashing into his supreme place in the "surgical sky." Operations in the abdomen were becoming commonplace, but still were attended by a high mortality, and were certainly followed by very painful and tedious convalescence. I remember abdominal sections completed by filling the abdomen with a solution of weak carbolic acid and inserting four gauze drains, one into each of the abdominal quadrants. These were also the days of the Bantock's pelvic glass drainage tubes, a prolific source of worry, of pain, and of post-operative adhesions. This was also the time of suppurating bones and joints, especially of the spine. One of my most vivid recollections is of the multitude of such cases appearing for dressing and of the prevalence of lardaceous disease. Gone indeed are all these, just as that very common medical disease chlorosis, which flooded the out-patient room, is gone.

Probably next to the war—that sterile chasm blasted across our path of progress—the most important change in the profession has been the passing of the National Health Insurance Act. This Act has, I think, been a help to most doctors. It has had no material effect on hospital practice, and has, in the main, been of service to the patients.

Reflecting on what has been achieved, my thoughts spring at once to the introduction of x rays and of radium. These two, the most marvellous advances in surgical science of our time, have revolutionized our work, and we have not yet seen the best of either. I remember the beginning of the radium epoch twenty years ago—its early promise, its early decline; and now we are fortunate in seeing its resurrection in a form so gigantic that it bids fair within the lifetime of all of us to eclipse in usefulness everything that surgery has given to humanity—excepting the work of Lister, whereby alone radium is so far capable of being put to its effective use. When I remember those surgical masterpieces of my early teachers—the exquisite dissections of mouth, tongue, and neck, associated as they were with mutilations so abhorrent—I view to-day with a very special gratitude the marvellous results achieved with radium, especially as I never had the skill or the courage to deal adequately with malignant disease in this particular area by the usual operative means.

It follows when one has reached a "milestone" that he can take stock of each particular branch of his work and formulate on it definite views. It is possible that the views I have formulated may be of interest to you. What operations do I think right in each case? What do my colleagues who have to live with them afterwards tell me about the ultimate results? I propose to tell you these things as briefly as I can.

Chronic Appendicitis.

I will begin with the commonest abdominal condition we see—appendicitis. One fact stands out beyond all others, and that is the sooner an operation is done when acute appendicitis is diagnosed the better. I would like to omit the term "subacute appendicitis" altogether. I would include it with acute. Chronic appendicitis is the most difficult abdominal condition to diagnose *correctly*. Most cases diagnosed as chronic appendicitis are tuberculosis of the ileo-cæcal glands, or, more rarely, are renal or ovarian troubles. Some are due to the drag of a big cæcum, part of a condition of abdominal ptosis. Twenty-five years ago no single case of tuberculous ileo-cæcal glands was diagnosed or operated upon in the Leeds Infirmary; last year 37 were operated upon. Pelvic appendicitis, a very serious condition because so difficult to recognize unless the rectum be examined, has rightly come to occupy a definite place in our teaching and in our nomenclature. In 1904 the cases of acute and recurrent appendicitis operated upon at the Leeds Infirmary numbered 137; last year no fewer than 204 were operated upon. Of the former 14 died, of the latter 32 died. It is probably true to say that more lives have been saved by early operation on cases of appendicitis than in all other abdominal diseases.

Gall-stones.

Operations for gall-stones are no light matter: first, because there is still an appreciable operative mortality even in simple cases, and, secondly, because there are far too frequent recurrences. Removal of the gall-bladder does not preclude the re-formation of stones, and while realizing that stones may be left behind in the bile ducts, I am of opinion that this alone does not account for the frequency of recurrence. It is said that the recognition of a small stone in the common duct is an easy matter. I have found it one of the most difficult things I have to do.

I do not believe in operations for gall-stones after one attack. In my opinion exercise, dieting, and treatment by drugs (the best of which is hexamine glycocholate) offer a good chance of permanent cure. Such a line of treatment should, of course, follow every operation done for gall-stones, realizing that the basal cause (probably an increase in blood chole-terol) is still to be dealt with.

I have come more and more to the view that in many cases where the gall-bladder is in good condition, and where well-marked pancreatitis exists, the proper operation is removal of stones followed by a cholecysto-duodenostomy. I do not think removal of a gall-bladder, even a fairly healthy one, does any harm, but it is a more serious operation than cholecystotomy or cholecysto-duodenostomy. It may be one of the most difficult as well as one of the most dangerous of all abdominal operations.

I believe in removal of the appendix as a preliminary part of an operation for gall-stones, on the supposition that it is an organ likely to give trouble, and also because it may be the source of that low type of infection of the biliary tract apparently necessary with other things to the formation of stones. In 1904 there were 45 operations for gall-stones in the Leeds Infirmary, 7 of which were fatal. Last year there were nearly 200 such operations, and 30 of the patients died.

*An address to the Huddersfield Medical Society.

Gastric and Duodenal Ulcers.

I have a more personal interest in the surgical treatment of gastric and duodenal ulcer than in any other condition, and you will expect me to have definitely crystallized views.

In 1904 not a single case of duodenal ulcer was operated on under that name in the Leeds Infirmary, but there were 69 patients with gastric ulcer, of whom 11 died. Last year 89 patients with simple gastric ulcer of all kinds were operated upon and 15 died, while no fewer than 216 cases of duodenal ulcer of all kinds were operated upon, with only 23 deaths. Of these patients no fewer than 107 had perforated ulcers, and 19 died.

I am of opinion that gastric and duodenal "ulcers" are appearing and disappearing in most of us. They begin as erosions of Peyer's patches, and are due to infection by lymph stream from the intestinal tract, probably the ileo-caecal angle. Every attack of serious indigestion means one erosion or more; every cure of such an attack means the healing of an erosion. I would call an ulcer an unhealed erosion—unhealed because its situation makes it liable to injury and incapable of rest, and because of some quality in the gastric juices of which we really know very little. Certainly it is not a matter of hyperacidity alone. I think the presence or absence of bile is an important factor.

I believe in the cure of an early gastric or a duodenal ulcer by medical means; but they are not all cured. Can I lay down any time limit when surgery should step in? And when surgery has stepped in, what of the future? We all know those distressing acute ulcers which perforate or bleed. These ulcers have been held up as a reason for early operation, but we have not yet arrived at a stage when we are capable of diagnosing them. They are frequently without symptoms. Certainly such acute ulcers are very rarely found by *x*-ray diagnosis, and other methods of investigation have been singularly unhelpful. The Rehfuss and other stomach contents tests have been disappointing in my experience. I have come to the conclusion that any ulcer clearly shown by *x* rays will not disappear permanently and fully except as a result of operation. Obviously perforation needs operation; but does haemorrhage? One haemorrhage does not, but two haemorrhages do. When I operate for perforation or for haemorrhage I like to do something to try to ensure the cure of the ulcer.

Treatment of Duodenal Ulcer.

I do not think we can discuss the treatment of duodenal and gastric ulcer in conjunction. They are, in my view, as different in their treatment as in their symptomatology. To take duodenal ulcer first, there is little doubt that the early symptoms of the chronic ulcer are those of hyperchlorhydria, a vague term indicating relief of symptoms by alkalis or by food. In my opinion treatment by Maclean's alkali method—really nothing more than we did when I was a student, except that Maclean makes it intensive—is the right method to pursue, remembering that regularity and appropriate meals, adequate exercise and mental peace, and removal of septic foci, are essential to success. I would suggest that medical treatment should go on for twelve months, but an *x*-ray examination should be made much earlier. The essential features of medical treatment are persistency and regularity.

I think very few duodenal ulcers are found on *x*-ray examination. Distortion of the duodenal cap and pyloric stenosis with increased gastric peristalsis are the usual findings. If these are found, or if the crater of an ulcer is seen, then I think operation should be undertaken. In the absence of any *x*-ray findings, if the symptoms are persistent and worrying, I should advise operation after twelve months' medical treatment. One can afford to wait if the patient will submit, because malignant disease practically never occurs.

The question of what operation shall be done is still a matter of controversy. Experts in radiology tell us that the best results are those where a short-circuit opening is a very small one, in fact where nothing appears to go through from the stomach, and only intestinal contents regurgitate. If this is a fact we should indeed pause and think whether gastro-jejunostomy is the right operation. An appreciable percentage of duodenal ulcer operations is unsuccessful. They relieve; they ensure by suture of the affected area that perforation, and probably haemorrhage, shall not occur; but they replace one kind of indigestion by another not so bad and not so dangerous. In addition they sometimes render the patient liable to unexpected high intestinal dyspepsia with diarrhoea coming on for no apparent reason immediately after the ingestion of innocuous foodstuffs. Occasionally the duodenal ulcer is replaced by a jejunal ulcer, a very much more serious matter.

I have definite views on the operative treatment of duodenal ulcer. I would, of course, remove the appendix, and burn out and suture the ulcer area, but would prefer a gastro-duodenostomy to a gastro-jejunostomy. This operation has been strongly advocated by my colleague Mr. Flint, and I have practised it whenever possible. Why should a gastro-duodenostomy be preferable? I think because it allows a better reflux of duodenal contents into the stomach—a reflux we know to take place towards the end of digestion in normal health. In addition, it allows food to remain in the stomach for the purpose of digestion longer than a gastro-jejunostomy does.

Treatment of Gastric Ulcer.

Now gastric ulcer is entirely different. I do not agree that gastric ulcers are *very* liable to malignant degeneration, but I have often seen this happen, and I feel, therefore, for this reason, and because gastro-enterostomy is rarely satisfactory in my hands, that the proper operative procedure is partial gastrectomy. Medical treatment should be as for duodenal ulcer, but it is easier to get an *x*-ray picture of a gastric ulcer, and when an ulcer is diagnosed by this means, in my opinion it will not heal *permanently* by any other than operative treatment. I do not mean that every ulcer can be diagnosed by *x* rays, but it is not my practice to operate for gastric ulcer in the absence of a positive *x*-ray report. I recognize that MacLean claims definite cures of both gastric and duodenal ulcer by the intensive alkali treatment. Such cures he supports by *x*-ray evidence. Neither my medical friends nor all my surgical colleagues can claim similar success by the same means applied in the same way.

Now although partial gastrectomy is the operation for gastric ulcer, and gives, I think, better results than gastro-jejunostomy for duodenal ulcer, the operation may be very difficult and is dangerous; it may even be impossible. In the latter circumstance excision of the ulcer with a gastro-enterostomy is most favoured, though I myself have done a large number of cholecysto-gastrostomy or gastric bilification operations, with results which have gratified me in the main. Merely to excise either a duodenal or a gastric ulcer is not enough; the disordered physiology of the stomach has to be repaired if recurrence is to be avoided.

In both gastric and duodenal cases the "cure" does not finish with the operation; I do not think it ever finishes. The patients must go on all their lives taking care in their habits and their diet. The abuse of smoking has been considered an important factor in both gastric and duodenal ulcer. I am of opinion that moderate smoking is not deleterious, but I am in the habit of prohibiting abuse.

Miscellaneous Operations.

I have been almost consistently disappointed with my work on malignant disease, excepting that of the breast and large intestine. I do not advise early colotomy for carcinoma of the rectum in the absence of the possibility of cure of the disease.

My prostatic work has been successful. The introduction of an almost routine two-stage operation has lowered the mortality in private practice very markedly, though it is still too high for my happiness. In infirmary practice, however, last year twenty-eight patients were operated upon by the one-stage operation and seven died, whereas of twenty-three operated upon by the two-stage operation only three died.

For some years I was in the midst of short-circuiting and resection for abdominal ptosis, particularly of the large intestine. I am glad to say I never did either

myself. I know the results were not good, and these operations have almost ceased to be performed at Leeds. It is, however, only fair to say that there are still surgeons who would have us continue on the old lines.

Outside the abdomen, operations on the thyroid and hernia operations remain about as they were when I began, with much the same good results. A great advance has, however, been made in the surgical treatment of exophthalmic goitre.

It has been said that surgery has gone as far as it can; that it is as perfect as it can ever be. I do not agree with either view, and most certainly not with the latter. I would instance the mortality from pulmonary and cardiac embolus in patients who are apparently first-class risks; nothing has been done to combat successfully this, our biggest risk and most dreaded catastrophe. I believe there are yet bigger fields to conquer and better plans and material to be found for the campaign. The perfect anaesthetic is yet to come, and better methods are needed of preventing and dealing with post-operative ileus. Radium is narrowing the field, for it is taking away from us the most unproductive and disappointing of all our efforts; but what a vast deal remains to be done, particularly in dealing with gastric and duodenal ulcer, gallstones, and enlargement of the prostate.

Conclusion.

A great deal has been done to popularize spinal anaesthesia. High spinal anaesthesia has never been accepted, while various kinds of local anaesthesia combined with general have had, and are having, their day. Intratracheal, intradermal, intravenous, and rectal general anaesthesia by all kinds of methods and machines have heralded a "perfect" anaesthetic. Nitrous oxide, oxygen, and carbonic acid gas have had their place in the procession, while drugs like scopolamine, morphine, hedonal, avertin, and a host of others, have been hailed with acclamation. Ether and chloroform have been always with us, and I think stand unrivalled. Methods of administration have changed in bewildering fashion, but the greatest improvement has undoubtedly been the conditions under which anaesthetics are given. The preliminary hypodermic of scopolamine and morphine, the absolute quietude and semi-darkness of the surroundings, the initiation by nitrous oxide followed by ether—all these things have indeed made an operation a much less terrible business than it was twenty-five years ago.

I have realized after all these years that one may have skill, courage, perseverance, and power, but more than these is essential. An understanding mind and a sympathetic spirit constitute the priceless asset. These two qualities come to most of us only after years of practice. They largely constitute what is meant by "experience." These two things a patient, driven as he is to distraction by fear and doubt, will move heaven and earth to find.

ROYAL SOCIETY OF TROPICAL MEDICINE AND HYGIENE.

BIENNIAL DINNER.

THE biennial dinner of the Royal Society of Tropical Medicine and Hygiene was held at the May Fair Hotel, London, on May 22nd, with the president, Dr. G. CARMICHAEL LOW, in the chair. When the loyal toasts had been honoured, the chairman expressed the society's thanks to Sir John Rose Bradford, P.R.C.P., for taking the place of the Marquess of Reading, whose health had prevented his attendance.

Sir JOHN ROSE BRADFORD, proposing the toast of "The Society," said that medicine as a whole had three functions: to relieve, to cure, and to prevent; the last was the greatest. Tropical medicine was a branch of medicine as a whole, and had faithfully served the highest objects of medicine. No other branch of medicine had during the last fifty years produced such striking results, and tropical medicine should be justifiably proud of its record. Its work was recognized by the commercial world, the industrial world, and the Government. An extraordinarily important part in the development of tropical medicine had been played by British workers. It had been well said that Great Britain produced great men in medicine, but did not always appreciate the greatness of the men she produced. One reason for the remarkable development of tropical medicine was its close association with the ancillary sciences, particularly zoology, and one of its attractions was the possibility of combining exact clinical and exact scientific work. One way of showing appreciation of the great men who had been members of the society would be to provide it with a suitable home.

The PRESIDENT, in reply, mentioned the work of Sir Patrick Manson and of Sir Ronald Ross, and enumerated some of the other leaders in tropical medicine and hygiene who had been members of the society since its foundation in 1907. The proposal to build a house for the society was a matter which he had deeply at heart, but a great deal more money was needed before the "Manson House" could be opened. Dr. Low paid a tribute to the work of the officers of the society, particularly Miss Mildred Wenyon. He visualized the society in its new home as the head of tropical medicine for the whole world—a society which would institute re-search, discuss imperial problems, and have meeting rooms where these returning from the Tropics could get into touch again with medicine and home.

Dr. P. MANSON-BAHR, proposing the health of "The guests," regretted the absence of Dr. Drummond Shiels, M.P., a pillar of strength in work, war, politics, and play, and Sir James Michelli, treasurer of the Seamen's Hospital Society. Likening the gifts of the society's guests to those of an international football team, he paid compliments in turn to Sir John Rose Bradford, Lady Manson, and Mrs. Albert Chalmers; Lieut.-General H. B. Fawcus, Director-General A.M.S.; Surgeon Vice-Admiral Gaskell, Medical Director-General R.N., and Air Commodore J. McIntyre, Director-General R.A.F.M.S.; the Editors of the *Lancet* and the *British Medical Journal*; Sir James Maxwell and Colonel Reginald St. Johnson, Governor of the Leeward Islands (both members of the medical profession), and Sir Herbert J. Read, ex-Governor of Mauritius; Mr. Donald Armour, president of the Medical Society of London, Professor Frederick G. Hobday, principal of the Royal Veterinary College, and Sir Basil Blackett, chairman of the Colonial Development Advisory Committee.

Sir HERBERT READ, replying, associated himself with the tribute paid to the memory of Sir Patrick Manson, and agreed that it was impossible to overrate the importance of tropical medicine and hygiene. The death rate among European officials in British West Africa had fallen in thirty years from 70 to 9 per 1,000, and in Mauritius and Jamaica the figures compared not unfavourably with those of towns in this country. Admiral GASKELL, also replying, spoke of the strong and friendly connexion between the society and the Navy. He had been to almost every fourth part of the world which existed, but had not contracted all the diseases which he might have contracted, thanks to the magnificent work of experts in tropical disease. Great Britain needed a strong Navy much as an individual needed personality—to prevent people playing games of bluff—and one of the ways of maintaining the personnel at its very best was the prevention of tropical disease.

Colonel W. P. MACARTHUR, proposing the toast of "The Chairman," said that there was hardly a single major quality desirable in a president that Dr. Low did not possess. In the first place, it was popularly rumoured that he was a Scotsman; and for any Scotsman to join the ranks of an organized body was but a preliminary step to becoming leader of it. Another desirable quality in the president was his wise caution; he could never have found himself in the unhappy position of having to eat his own words. Colonel MacArthur recalled Dr. Low's classical work on filariasis and malaria, and mentioned a paper by him and Manson on the intestinal ulcers of kala-azar. Dr. Low had served the society well in many offices, and in collecting funds his precept followed his own magnificent example. His kindly nature, his honesty of purpose, his sturdy loyalty, and his sense of humour had endeared him to all, and those who knew him best could best testify to the strong leaven of humanity underlying his austere devotion to professional duty and his determination to add still further to his already stupendous list of causes of enlargement of the spleen.

British Medical Journal.

SATURDAY, MAY 31ST, 1930.

PHYSIOLOGICAL FACTORS IN DIABETES.

WHEN in 1904 the late Dr. George Oliver of Harrogate founded a lectureship at the Royal College of Physicians of London to commemorate William Sharpey, one of his chief aims was to encourage the application of physiological knowledge to the prolongation of life. An excellent example of the fulfilment of this purpose is in the use of insulin for the treatment of diabetes—the subject-matter of Professor Macleod's Oliver-Sharpey Lectures for 1930, of which reports have appeared in our issues of May 10th (p. 868) and May 17th (p. 918). Modern medicine has seen many advances in the prevention and cure of disease; but the treatment of diabetes is perhaps the outstanding example of prolongation of life without arresting, or in popular terms "curing," the malady.

In his lectures Professor Macleod described a series of researches which have been pursued at Toronto since the introduction of insulin in 1922. These further researches are of the greatest practical importance in medicine. For example, the behaviour of the depancreatized animals treated with insulin and fed exclusively on meat and fat showed that raw pancreas was required in addition to insulin to enable such animals to live on a diet from which carbohydrates had been excluded. Every now and then a diabetic patient is met with in whom insulin seems insufficient by itself to maintain health. Often, indeed, improvement can be obtained for such cases by increasing the carbohydrate and diminishing the fat and the meat in the diet. It remains to be proved whether some patients in this group would tolerate a fat-rich diet if raw pancreas were administered in addition to insulin. Another problem well worth studying was the effect of pregnancy in depancreatized animals. There was no evidence that the foetal insulin had in any way benefited the maternal organism. This is an important fact, because it has been stated that a diabetic woman during pregnancy might live to some extent on the insulin of her unborn baby, and need smaller doses of insulin. Occasionally, as the lecturer said, this may be possible, but to count upon it exposes both mother and child to grave danger. In lactation it is clear that the blood sugar is depleted to furnish sugar for the mother's milk. Insulin hypoglycaemia is thus a real danger. The remedy consists in adding to the intake of sugar rather than in decreasing the insulin.

Soskin's observations with regard to the failure to use carbohydrate when a large amount of protein is being metabolized demand attention and careful study; and his warning that the antidiabetic power of any remedy must not be judged solely by its capacity to lower the blood sugar in a normal animal cannot be too strongly emphasized. Soskin found that none of the preparations that had been introduced and advertised simply on the ground that they had this capacity could keep a depancreatized animal alive for a long enough period to justify their acceptance as insulin substitutes. Professor Macleod sounded this warning again even more emphatically at the end of his second lecture, when he dealt with synthalin. It was possible, he said, that the effects this substance appeared to have were dependent on the undoubted damage it did to the liver cells, and that, for this reason, it was a dangerous drug to use. He dwelt also on the physiological fact that insulin has a much greater effect on animals previously fed on carbohydrate than on those which have undergone carbohydrate deprivation. This is a valuable clinical point in dealing with those patients who seem to need immense doses of insulin—in other words, with the insulin-resistant type. The immediate application of the facts mentioned in these lectures about the nervous regulation of insulin secretion is not so obvious. At the moment it seems as though stimulation of the vagus increases the secretion of insulin, but that the same nerve may carry inhibitory fibres. However this may be, Professor Macleod regards hormone control as more important than nerve control from a practical standpoint. He indicated other conditions besides diabetes which are associated with disturbed insulin secretion, such as epilepsy, muscular dystrophy, and excessive corpulence or leanness, all of which call for further investigation.

Professor Macleod in these Oliver-Sharpey Lectures has once more demonstrated the fundamental connexion between physiology and medical practice. The teaching hospitals could help to strengthen this tie by appointing to their staffs physiologists who would instruct students in applied physiology and help them to correlate physiology with clinical medicine.

THE FIRST REGISTER OF BIO-PHYSICAL ASSISTANTS.

CERTAIN administrative problems concerned with electrical treatment and actinotherapy have now been before the profession and the British Medical Association for some years. The practitioner has often neither time nor facilities for such work, and it was with this in mind that the Representative Body of the Association, in July, 1928, pointed out the necessity for the registration of competent and suitable lay persons to whom doctors could with confidence send their patients for treatment. Following on the resolution adopted by the Annual Representative Meeting at Cardiff, warning the public of the risks involved in the use of radiation and electricity as methods of treatment by untrained and unqualified persons, the Science Committee presented to the Council of the Association in December, 1928, a report on the practical steps to be taken in the organization of courses of training in these procedures, and the preparation of a roll of persons who had satisfactorily followed such courses. Authority was thereupon given by the Council to the Science Committee to get together a small committee of experts to draw up a syllabus, and details of training and examination, with a view to the issue by an authorized and independent body of a diploma of proficiency in treatment by light, including ultra-violet light, heat, and electricity. This expert committee divided the subject into two parts, and decided that for the present it was desirable that the examination for Part I should be inaugurated so as to give effect to the resolution of the Representative Body. The members of the expert committee, having drawn up general lines of procedure, entered into an arrangement with the Society of Apothecaries of London to institute a register of approved persons under the conditions

which they had laid down. This practicable plan, largely due to the initiative of Professor W. E. Dixon, was reported to the Council and the Representative Body last year; regulations were drawn up, as recorded in our issue of June 1st, 1929 (p. 1012); and we are now able to welcome the publication of the first *Register of Bio-Physical Assistants*.[1] This register contains a history of its inauguration, full details of what is required in order to become a registered bio-physical assistant, a statement of the undertakings which registered persons are required to sign, and the first list of names arranged both alphabetically and topographically.

Radiological authorities have often pointed out the dangers which may follow the improper use of ultra-violet lamps. Many of the lamps on sale emit rays to which man has never hitherto been exposed—that is, which are not present in sunlight. The evidence of the harm they may do is overwhelming. Few of us would dare to have prescriptions containing poisons dispensed by an untrained person, but the dispensers of rays have been, up to now, uncontrolled, unregistered, and not rarely unqualified. It is obviously right that members of the medical profession should have trustworthy information to enable them to distinguish between lay persons who have been properly trained to dispense electricity and rays, and those who have not. At the present time, all kinds of rays are used by charlatans in Europe and America to exploit the public. Barbers employ them, especially for their lady clients; beauty institutes have set up appliances which are generally a harmless fraud, though ultra-violet light has been used in some of these cosmetic parlours; sun-ray institutes are the fashion, and the public is indulging in self-treatment. Some countries have already taken action. The Superior Council of Public Hygiene of France, consulted by the Minister of Hygiene, has declared "that in view of the serious accidents which may result from the use of ultra-violet irradiations handled by incompetent persons, it is necessary, in the interest of public health, to confine the use of these procedures to hospital services, and to authorize their application only by specialist physicians." In the United States the Council on Physical Therapy of the American Medical Association has reported on the danger to the public of incitements to self-treatment by the sale of generators of ultra-violet energy; it points out that undue confidence is reposed in the advertising literature, and that unsuitable cases are often treated, or cases not amenable to treatment.

The British Medical Association has been mainly responsible for the setting up of the *Register of Bio-Physical Assistants*, and we regard it as a first step in the control of the new class of medical technicians or dispensers of physical forms of treatment. It is most important that all such technicians or dispensers should be under the control of the medical profession and their work placed on an ethical basis. We believe that the present register is a valuable means towards attaining this aim, and we therefore appeal to all practitioners, in so far as they are able, to send their patients who require such treatment to properly registered dispensers, with confidence that those holding the certificate issued by the Society of Apothecaries, which entitles them to use the suffix B.P.A., possess the proper skill and training, and are under the control of an ethical code.

[1] The History of the Formation of the *Register of Bio-Phys. Assistants*, together with the Regulations of the Examination for the Diploma and a List of those on the Register. Printed and Published under the direction of the Society of Apothecaries of London.

CAROTENE AND VITAMIN A.

RECENT work on carotene suggests that we may be on the way to a solution of yet another biochemical puzzle. It is not very long since the demonstration that vitamin D was derived from a sterol, and that its production was the result of the action of short wave-length light on ergosterol, served to clear up a good many difficulties, both clinical and experimental. Several workers have recently published results suggesting that a similar relation may exist between carotene and vitamin A.

Carotene is one of a group of coloured substances nowadays generally known as the lipochromes, because their physical properties in some respects resemble those of fats. They are very widely distributed in nature, and are found both in plants and in animals, though it is likely that the latter do not manufacture them for themselves, but derive them from the ingestion of plant food. Carotene itself is a hydrocarbon of deep red colour, and having the empirical formula $C_{40}H_{56}$. It is obviously an unsaturated compound, and Zechmeister and Cholnoky[1] have shown that it is easily reduced by hydrogen, in the presence of platinum, to a colourless, more saturated body.

The idea that carotene and vitamin A may be related is by no means new, but earlier attempts to establish a relation failed, probably because, as suggested by Moore,[2] the experiments were carried out before vitamins A and D had been differentiated, and the diets used were lacking in both. More recent experiments would seem to make it certain that carotene can replace very fully a pure A deficiency, provided that other vitamins are present. A comparison of the chemical and physical properties of vitamin A and carotene is interesting. Vitamin A must be a colourless compound, since very potent cod-liver oil concentrates are almost colourless, while carotene is highly coloured; vitamin A is freely soluble in alcohol, carotene sparingly so; both compounds give a blue colour with antimony trichloride, but with vitamin A the colour is permanent, with carotene it is fleeting; and the absorption spectra are different. Evidently the two substances are not identical. The questions that have yet to be answered are these: Assuming that there is a close relationship between vitamin A and carotene, is one to be regarded as precursor and the other as product, and, if so, which is which? Are both of them biologically potent, or are we perhaps faced with the troublesome possibility that vitamin A is an extremely potent substance present as an impurity in all samples of carotene so far examined?

Green and Mellanby have carried out a number of interesting observations on the anti-infective function of carotene. Their previous work had shown that vitamin A was capable of protecting animals against infection,[3] and they had produced some evidence of its remedial action in cases of puerperal sepsis.[4] In a recent paper[5] they describe investigations tending to the conclusion that carotene also will protect rats against infections (xerophthalmia, tongue abscess, mastoid infections, enteritis, cystitis, and so forth); and that it will assist the recovery of animals in which infections have developed as a result of vitamin A deficiency. They have obtained these results not only with pure carotene, but with vegetables known to be rich in this substance. Collison, Hume, Smedley-

[1] *Berichte der Deutsch. Chem. Gesellschaft*, 61, ii, 1534.
[2] *Biochem. Journ.*, 23, 802.
[3] *British Medical Journal*, vol. ii, 1922, p. 661.
[4] *British Medical Journal*, vol. i, 1923, p. 984.
[5] *Journ. Exper. Path.*, ii, 61.

Maclean, and Smith[6] have shown that there is much carotene in spinach and in the green part of the cabbage leaf; carrots, too, are an important source of this substance. Carotene has been of interest in another connexion. Hypercarotinaemia has long been known to be associated with the yellow pigmentation of the face and palms that sometimes occurs in various pathological states, particularly in diabetes; and its presence has been thought to indicate a bad prognosis. Careful work has shown, however, that the condition has no pathological significance at all; indeed, in diabetic subjects it may be traced to their consumption of a diet containing large amounts of green vegetables.

EPSOM COLLEGE.

THE council of Epsom College has instructed Messrs. Pite, Son, and Fairweather, the well-known hospital architects, to prepare detailed plans and specifications and to obtain tenders for a new school sanatorium of fifty beds, estimated to cost approximately £25,000. It is hoped that the building will be completed in the autumn of 1931. With this decision the programme of improvements and extensions commenced in 1924 and carried on steadily ever since will be concluded except for relatively minor additions. Since that date there have been erected the War Memorial Chapel, a large chemical block, a new games pavilion, and a fine covered rifle range, with numerous other extensions to existing buildings. The erection of the new sanatorium will permit of the present one being turned into an additional house for forty boys, bringing the total number of boys up to 440, and so enabling the admission of at least a moiety of applicants who now have to be declined. Sketch plans of the sanatorium were reproduced in these pages on December 3rd, 1927, and only small modifications have been introduced into the final plans. These follow closely the lines on which the Ministry of Health considers that a model school sanatorium should be built, and the council has received valued assistance from medical officers of other leading public schools in its aim to provide such a building as will meet all likely needs for years to come. Up to date only some £8,000 has been received in response to the special appeal made to the profession: for this the council has to thank generous individual donors, the British Medical Association, the *Lancet*, the medical staffs of a number of hospitals, various societies, and other bodies: it is hoped that still others will help to swell this sum materially, so that the council may not have to draw largely on funds that it is anxious not to deplete. It is still open to a donor of £10,000 to give his own name or the name of any person whom he desires to commemorate to the main sanatorium, and a donor of £5,000 may do likewise to a single block; while a large ward may be named for £3,000, or a small ward for £1,000, and a single bed for £100. All donors of ten guineas and upwards are entitled to votes, proportional to their donations, at the annual elections of foundationers and pensioners, and such donors become life governors of the college. Donations will be gratefully received at the Epsom College Office, 49, Bedford Square, London, W.C.1.

THE LEAGUE OF NATIONS AND DANGEROUS DRUGS.

THE reports laid before the Council of the League of Nations by the Advisory Committee on Traffic in Opium and other Dangerous Drugs afford little ground for thinking that any effectual progress has been made in restricting international commerce in the scheduled drugs to medicinal and scientific purposes. The disclosures in regard to the extent of the illicit traffic are disquieting and disheartening. Egypt has become a nation of addicts; "every village has its heroin victims," we are told, and "they are the youth of the country." Seizures of smuggled cocaine, often under forged labels, to the amount of more than 5,000 ounces, are reported from India, Burma, Malaya, and Hong-Kong. To one firm alone in Mulhouse has been traced the illicit export, in three and a half years, of 6,414 kilos of heroin, 943 kilos of morphine, and 205 kilos of cocaine. In New York, on board a vessel from France, were discovered eight cases, billed as "brushes," which contained 4,800 ounces of morphine and 2,000 ounces of cocaine. Such seizures probably represent only a fraction of the appalling world-wide traffic which is going on in defiance of the terms of the Hague and Geneva Conventions. Moreover, the Advisory Committee affirms that "there still remain important sources of supply and centres of distribution which have not yet been traced." The assembly of the League last September, dismayed by the persistence of the illicit traffic after ten years' efforts to secure its reduction or suppression, called upon the Advisory Committee to proceed without delay to prepare plans for the limitation of dangerous drugs to medical and scientific purposes. It adumbrated the summoning of a conference of representatives of manufacturing and consuming countries for the same purpose, and urged the strengthening of the Advisory Committee by the addition of representatives of non-manufacturing countries. Considering that most of the manufacturing countries have undertaken, in accordance with Article 9 of the Hague Convention of 1912, to enact laws or regulations to limit the manufacture, sale, and use of the scheduled drugs to medical and legitimate purposes only, and to co-operate with one another to prevent other uses of such drugs, the action now resolved upon cannot be regarded as unduly expeditious. Unfortunately neither Turkey nor Persia, large producers of opium, has as yet ratified either the Hague or Geneva Conventions, and continue to afford facilities for illicit exports, chiefly to the Far East. The Advisory Committee, while adverse to an increase of its membership, has outlined suggestions for procedure for limitations of manufacture "which might be adopted for arriving at a solution before the meeting of the conference," which the Assembly of the League desires to convene. The suggestions outlined by the committee cover: "(*a*) the fixation of the total amount of the drugs to be manufactured annually; (*b*) the allocation of that amount between the manufacturing countries; (*c*) the distribution of that amount so as to ensure that each country receives the amount required for its medical and scientific needs." Critics of the Advisory Committee might not unreasonably complain that these questions should have received consideration and been adequately determined during the ten years in which the committee has so laboriously deliberated. It is, however, painfully evident that much remains to be done, and done with zeal and alacrity, if the pious aspirations of the Hague and Geneva Conventions to suppress the abuse of opium and other dangerous drugs are to be internationally achieved.

J. G. ADAMI.

THE memoir of J. George Adami,[1] by his widow, with contributions from various friends, is a concise and cleverly written biographical sketch, which places in a clear light the grounds on which Adami has been properly regarded as a leader in pathology. Among the several appreciations, that by Professor Warthin is perhaps of most interest, as affording what appears to be a very just conception of Adami's position as a pathologist. Adami had little concern for the discovery of new phenomena; he was never a routine experimental investigator. The material with which he worked he found ready to hand in the data and

[6] *Biochem. Journ.*, 23, 634.

[1] *J. George Adami*: A memoir by Marie Adami, together with contributions from others, his friends, and an introduction by Sir Humphry Rolleston, Bt., G.C.V.O., K.C.B. London: Constable and Co., Ltd. 1930. (Demy 8vo, pp. xlii + 179; 1 portrait. 10s. 6d. net.)

phenomena described in the current literature of pathology. In his best-known work—the *Principles of Pathology*—it was not his aim to re-state these data and their classification, but to expound the laws and principles governing the production of phenomena and determining their classification. He sought to give the known facts of pathology a logical significance, through principles derived from deduction and projected against a background of general biology. A profound knowledge of biology rendered him peculiarly fitted for this task, and his work, in its purely scientific aspect, will be chiefly remembered as having left a deep impress upon the evolution of the philosophy of pathology and as forecasting the essential importance of the biological standpoint. It is probable, however, that a feature in Adami's character which is rare among men and which appears to have been the mainspring of his extraordinarily active career—his spirit of universal friendliness and sympathetic attachment to his fellow-men—will have a foremost place in the recollection of those who knew him personally. He loved people and surrounded himself with an environment of outspoken friendship. Interest in others was a special quality in him throughout his life; in youth this had found expression in the support demanded of him by his own family; in student days it is seen in the relationships he maintained with numerous friends, both old and young, for whom no service was too much; and in later life the same friendly interest was displayed towards colleagues and friends. His outlook was never confined to pathology; whatever was human, that had his friendly interest. At his table might be found men of science, of letters, of music, adventurers from the homeland discovering Canada, artists of the new and old schools, men of finance, or ne'er-do-wells. As Vice-Chancellor of the University of Liverpool he took the broadest possible view of his functions; he strove to develop local and civic patriotism, to promote ideals of beauty, intellectual activity, and dignity, whether in architecture, city administration, or in social affairs; to attract the best minds to the city and form a society of the best in all departments of human activity. Of Adami's numerous undertakings the foremost in importance was, perhaps, his establishing the school of pathology in McGill University. In the Dominion, pathology had not been regarded as an individual subject; it had been taught by men engaged in clinical work, and was practically an untouched field. Under Adami's hands the School of Pathology came into being; and he drew round him a group of enthusiastic students, many of whom in after days occupied important posts throughout the American continent.

THE EMPIRE RED CROSS CONFERENCE.

THE delegates attending the British Empire Red Cross Conference, the earlier proceedings of which were reported in last week's issue (p. 968), assembled for their final session at St. James's Palace on May 23rd under the presidency of the Hon. Sir Arthur Stanley. Various subcommittees, to which the consideration of certain matters had been referred, presented their reports and recommendations, all of which were agreed to by the conference. One report had to do with the duties and obligations of voluntary aid detachments. In view of the fact that the scheme for such detachments is designed to supplement the medical services of the naval, military, and air forces of the Crown in every part of the world on general mobilization, the conference placed on record its opinion that wherever somewhat similar schemes were in operation anywhere in the Empire they should follow, as far as local exigencies permit, the general lines of the British scheme, and that in those Dominions and Colonies where no such schemes are in operation consideration should be given to the desirability of inaugurating them. It was further resolved that in order to provide a trained personnel for enrolment in the voluntary aid detachments, steps should be taken to raise and train bodies of men and of women, which, while containing members prepared to assume liability for service under Government, may also include others either undergoing the courses of preliminary instruction or unable for the moment to undertake an official obligation. It was pointed out that the peace programme of the Red Cross needs a large body of workers, who will concern themselves with the improvement of health, the prevention of disease, and the mitigation of suffering throughout the world, and that members of detachments can give valuable personal service to the community in rendering first aid at various public functions, and in assisting at hospitals, orthopaedic and child welfare clinics, and scouts camps, also in helping district nurses and health visitors. The conference, therefore, suggested that in every Dominion and Colony steps should be taken to provide and replenish the personnel of voluntary aid detachments, to furnish a reserve of men and women, if required, in a time of emergency, and to carry out the varied duties incumbent upon a national Red Cross Society. Certain other propositions related to the qualifications for membership of the detachments, the method of training, the uniform (which, it was urged, should be common for the whole Empire, so far as diverse climatic conditions permitted), and the awards, which are to include a long-service medal for fifteen years' service for Red Cross members throughout the Empire. Another series of resolutions concerned the formation of branches throughout the Empire, and the council was asked to set up a committee to co-ordinate the work of Red Cross development in fresh areas, in liaison with the Colonial Office, medical missions, and kindred societies. Methods of obtaining more publicity and a more regular flow of subscriptions were discussed, and it was recommended that an extension fund should be inaugurated for the purpose of starting the Red Cross movement in territories where no such movement at present exists. The help to be given by the Red Cross to victims of peace-time disaster was the subject of another report. The national Red Cross societies were asked to endeavour to persuade their Governments, not so far parties to the international Relief Union Convention—which has been signed by thirty-five Governments—to follow the Governments of Great Britain, India, and New Zealand in giving adhesion. Every national society was also urged to form committees or sections charged with the study of the specific relief measures that may become necessary within its territory, to prepare plans for action in time of emergency, and to establish an organization for emergency relief, capable at short notice of mobilizing the resources of the society both in material and in personnel. One other important work was proposed for the Imperial Red Cross—namely, that every Red Cross unit should develop a service of interpretation and education in the principles which promote health and prevent disease. In Great Britain, it was urged, the Red Cross branches should get into touch with rural community councils, councils of social service, or guilds of help, where such exist, with a view to the closest co-operation with their health committees. A final resolution called the attention of Red Cross societies within the British Empire to the importance of social and economic conditions as factors in the health and welfare of the people, and recommended the establishment of committees of Red Cross societies "to investigate and consider the effect of these conditions upon public health, and to co-operate with other health and welfare agencies in carrying out such investigations and educating the public to the importance of considering economic and social conditions in respect to their effect upon health." It will thus be seen that the Red Cross in peace is attempting an ambitious, if necessarily somewhat vague, programme. In five years' time, when another British Empire Red Cross Conference will meet, presuming no tragic diversion of Red Cross energies to fields of war, these ideas and suggestions will have got more clearly into focus.

ATMOSPHERIC POLLUTION.

THE Department of Scientific and Industrial Research has published the fourteenth report on the investigation of atmospheric pollution which is concerned with observations in the year ended March 31st, 1928. As mentioned in the introduction to the previous report, which concluded the series issued by the advisory committee in association with the Meteorological Office, the department has undertaken to collate the results of local observations on atmospheric pollution, and to carry out research on its nature and measurement. Since the ultimate object of these investigations is to assist public authorities and industrial concerns in dealing with the smoke nuisance and with questions of public health, a standing conference of co-operating bodies has been established to which representatives may be sent by all bodies contributing to research funds or maintaining records. The main purpose of the conference, apart from receiving reports and making recommendations, is to inform the department of problems or difficulties that arise in the course of the work of its constituent bodies. It also seeks to promote the practical application of the knowledge gained. Care has been taken in the present report to simplify the arrangement of statistical information in order to stimulate public interest and encourage the collection of local data. Purification of the air does not appear to have progressed as rapidly as is popularly supposed. Both in London and in Glasgow, for example, little improvement has been observed in the state of the atmosphere since 1922. The total deposit in London during 1927–28 was 316 tons per square mile, while deposits in Glasgow for the same area weighed 320 tons. These results are shown graphically along with curves for sulphate deposits. Particular attention is directed to sulphates and tar as products of combustion. Seven of the eight stations in London reported an increase in deposits of sulphates compared with the general average; nor is any improvement indicated throughout the country. The actual weight of tar deposited per square mile at Salford during the year was 36 tons, and a total of 140 tons of sulphates per square mile was recorded at Burnley. As an indication of smoke pollution the data referring to tar and sulphates are regarded as probably the most reliable, although carbonaceous matter—of which there was a heavy deposit at Newcastle-on-Tyne—is also considered to be very important. The department points out that data will continue to be imperfect unless a considerable number of local authorities and others take part in systematic observations, using standard methods and appliances. Copies of the report, which contains four appendixes, are obtainable from H.M. Stationery Office (3s. 6d.).

METHODS AND PROBLEMS OF MEDICAL EDUCATION.

THE sixteenth series of *Methods and Problems of Medical Education*[1] follows the death, on February 16th last, of Dr. Richard Mills Pearce, jun., its editor from the commencement in 1924. Dr. Pearce was also Director for the Medical Sciences, and as the representative of the Rockefeller Foundation was well known, and will be much missed in this country, which he often visited. The present instalment is devoted to accounts of the departments and institutes of anatomy, histology, and embryology, and contains twenty-five articles describing the teaching arrangements in fourteen countries, in such distant parts of the world as Chile, Japan, India, Australia, New Zealand, and Canada. The three departments in this country of which accounts appear are those of the Universities of Edinburgh and Manchester and of the London Hospital, where anatomical instruction was first given in 1781 by Sir William Blizard, who was, after a considerable interval, followed by such well-known men as Hughlings Jackson and Frederick Treves; the lectureship was held by a member of the staff until 1900, when Sir Arthur Keith was appointed. At Manchester histology, or microscopical anatomy, is taught in the anatomical department, thus agreeing with the American schools, four of which—New Orleans, Cincinnati, Jefferson Medical College, and Tennessee—are reviewed; but in addition Professor Lewis H. Weed of the Johns Hopkins University contributes an article on a plan for a department of anatomy, and Dr. Davenport Hooker shows how anatomy is taught at the University of Pittsburgh in a single correlated course, wherein the development, cytology, histology, and gross anatomy of the various parts of the body are connected up. At the Universities of Otago in New Zealand and of Toronto histology is taught in the anatomical department, as it has been at Sydney since 1923, though there by a special professor. The plans and details of the departments, as usual in these publications, should be extremely valuable and instructive to those about to organize such institutes.

[1] *Methods and Problems of Medical Education* (Sixteenth Series). New York: The Rockefeller Foundation. 1930. (8 × 11, pp. 251; illustrated.)

THE WINNIPEG MEETING: SCIENTIFIC EXHIBITS.

THE committee which is responsible for the organization of the Pathological Museum in connexion with the Annual Meeting at Winnipeg, in August, has issued invitations to members who are proposing to be present to submit specimens, casts, photographs, diagrams, microscopical slides, or other material for display. The honorary secretary of the committee, Dr. Daniel Nicholson, has prepared a form on which advance notification of the nature of such exhibits can be conveniently recorded. Arrangements will be made for the provision of microscopes, if required. As many as possible of the exhibits should be sent, before August 7th, to the Pathological Museum, care of Dr. Daniel Nicholson, Medical College, Winnipeg, Manitoba, Canada. Address cards will be issued in due course. Dr. J. C. Boileau Grant is the chairman of the committee, and it is hoped that a particularly good and representative series of specimens and illustrations will be forthcoming.

LEAGUE OF NATIONS HEALTH COMMITTEE.

AT the recent session of the Council of the League of Nations the Health Committee of the League was reconstituted for a period of three years from July 1st, 1930. The new members of the committee appointed by the Council after consultation with the outgoing committee include Dame Janet M. Campbell, senior medical officer for maternity and child welfare, Ministry of Health, who is chairman of the committee of health experts on infant welfare of the health organization of the League. Sir George Buchanan, senior medical officer, Ministry of Health, has been reappointed a member of the Health Committee on the nomination of the governing body of the Office International d'Hygiène Publique in Paris.

THE May issue of the *Canadian Medical Association Journal* announces that the Royal Society of Canada has awarded to Professor A. B. Macallum, M.D., F.R.S., who retired last year from the chair of biochemistry in McGill University, the Flavelle medal for conspicuous achievement in science, and to Sir Andrew Macphail, M.D., professor of the history of medicine at McGill, the Lorne Pierce medal for outstanding merit in Canadian literature.

THIS year's Morison Lectures, on "Nervous Semeiology," will be delivered before the Royal College of Physicians of Edinburgh by Dr. S. A. Kinnier Wilson on June 2nd, 3rd, and 4th, at 5 o'clock. The Dr. Alexander Black Lecture, on "Folk Medicine in Scottish Ballad Literature," will be delivered by Dr. David Rorie on June 20th, at 5 o'clock.

Nova et Vetera.

THE LIBRARY OF THE MANCHESTER MEDICAL SOCIETY.

BY

E. M. BROCKBANK, M.D., F.R.C.P.,

CHAIRMAN OF THE LIBRARY COMMITTEE.

As briefly announced in the *British Medical Journal* of May 24th (p. 984) the Manchester Medical Society, at its annual meeting on May 7th, resolved to offer to present its very large and valuable library, the largest of its nature in England outside London, to the University of Manchester, and this offer has been gratefully accepted.

The library, like the society, has been in existence for close on 100 years, both having been founded in 1834 through the initiative of Dr. John Hull, gynaecological surgeon. Hull was an unusually well-educated man even for those days, when professional education was based on broader lines than it is nowadays, and he could read Latin, Greek, French, German, and Italian. He was an early advocate of the operation for Caesarean section, and took part in pamphlet warfare on the subject, which was conducted in a personally offensive way by an opponent. He was the first surgeon to use the term "phlegmasia dolens." It was most probably his extensive knowledge and love of books that suggested to him the formation of the Medical Society, just as similar qualities led Thomas Percival to found the Literary and Philosophical Society in the town half a century earlier.

Since 1874 the library has been housed in the Medical School along with books owned by the University, and there the society has also had its reading room and held its meetings. An annual fixed grant in aid of the upkeep of the library, and of its own medical books in it, has been made by the council of the University, the society making up the balance in expense and spending by far the greater part of its income in so doing. But the constantly increasing cost of books and periodicals and of the administration of a library of 50,000 volumes has now got beyond the means of the society, with its limited income, to bear.

Such a decision was hastened by the necessity for further accommodation for its books, and the council of the University naturally asked what guarantee there would be, if it spent a large sum in providing this, that the books of the society would now be moved to a central institution in the town, the formation of which has long been looked upon with very favourable eyes by the local profession. So after careful consideration, over several years, the society, though its pride of ownership resisted the idea, felt that it was best in all interests that the books should remain where they are, and accordingly offered them to the University on terms permanently favourable to its members.

Growth of the Library.

The first catalogue of the library (1835) comprised 1,075 volumes and pamphlets. It grew very slowly, only 800 books being added in ten years, and it was not until 1858, when Thomas Windsor undertook to act as its honorary librarian, that there was considerable increase in the number of books, 10,000 volumes being added in the next six years. Windsor was an ophthalmic surgeon, but his heart was in books, and he obtained them for the society in large numbers from all over Europe, presenting many at his own expense. His object was to make the library as universal a storehouse of medical knowledge as was possible, and he carried this out so thoroughly by purchasing second-hand books of all dates, and European languages dead and alive, and in such quantities that the committee of the society eventually resolved that the money could be more profitably used for the purchase of current literature. The result was that Mr. Windsor withdrew his interest from the library and, it is sad to say, a handsome legacy for its maintenance from his will. He then collected for the American libraries, which readily took all he could send.

In addition to the 35,000 volumes belonging to the Medical Society the University has alone 20,000 of its own, acquired by purchase or by gift, for the Medical Society's library is not the first in the town which has been so transferred to the University. Thus the trustees of the Royal Infirmary and of the St. Mary's Hospitals found that their libraries, of about 7,000 volumes in size, occupied space which could be put to much practical use for charitable purposes, and as they were never used they presented them to the University. Both libraries contained many books which were duplicates of those in the library of the Medical Society and the University, and these have been disposed of in exchange for others, to the benefit of the common library. It adds greatly to facilities for study and research when all available books are collected in one large library, within one building, and under one authority, and are not scattered in smaller collections in different parts of the town under various owners.

Further contributions to such a central library were made by the Bolton and Macclesfield hospitals presenting their collections of books to it, and one would like to mention here the handsome legacy by the late Dr. Percy Cooper of close on 2,000 books, many of unusual medical interest and new to the society.

The library is very rich in complete sets of scientific medical periodicals, of British, German, French, and American publication, and in this line alone offers facilities for scientific research which are unequalled in any medical library in England, outside London. A new feature of it is a collection of all matters of historical interest in local medical life, biographical notices, portraits of local doctors, hospital reports, scientific journals, etc.

Some Treasures of the Collection.

In the space at my disposal I can give only a brief account of some of the books that belonged to the Manchester Medical Library. There were about a dozen incunabula—that is, books printed in the cradle age of the art, the fifteenth century, and all from Continental presses; the earliest book is of the date 1480 from an Italian press. Some of them are very fine examples of the earliest book-producer's work—ink as black, and paper as white, as on the day of publication. In all there are close on 600 books printed by foreign presses before 1600, 200 dating before 1550. And there are 150 copies of English printers' work before the date 1675, and another 100 before 1700.

Among the treasures are fine copies of the Aldine Press of Venice, which was established late in the fifteenth century, and of the Elzevir Press, which was publishing in various towns in Holland a century later. The earliest printed book in the collection is a large folio volume on a surgical subject which was printed by Nicolaus G. Ghirardengus on his first press at Venice in 1480. Only three copies are known to be in libraries—one in the very large collection of the Surgeon-General, Washington, one in the Royal Library at Berlin, and the other in the Medical Society's library. It is an Italian version of Guy de Chauliac's *Chirurgia magna*, which passed through many editions and translations, and became the textbook of surgical practice beyond the sixteenth century. He lived from 1300 to 1368 at Avignon, and was the most erudite surgeon of his time. His account of the Black Death clearly shows that our modern Oriental plague is identical with the disease that spread from Asia and Africa into Europe about 1348, and is reputed to have then caused a mortality of one-fourth of the population of the world.

A short manuscript written about Henry VII's reign on a medical subject, and very like notes of a lecture on urines, with small line illustrations, recently attracted the attention of a collector, who offered £150 for it. Some of the bindings of the early printed books are fine examples of a master binder's work.

There are a dozen books printed in the sixteenth century in London, the earliest date being 1548. A rare English book is the *Speculum Matricis or the Expert Midwives Handmaid*, by J. Wolveridge (London, 1671). Only two other copies are known, and these are in the libraries of the Royal College of Physicians of Edinburgh and the Royal College of Surgeons.

A very interesting volume in the library contains six, more or less complete, rare and curious tracts. Five of them